

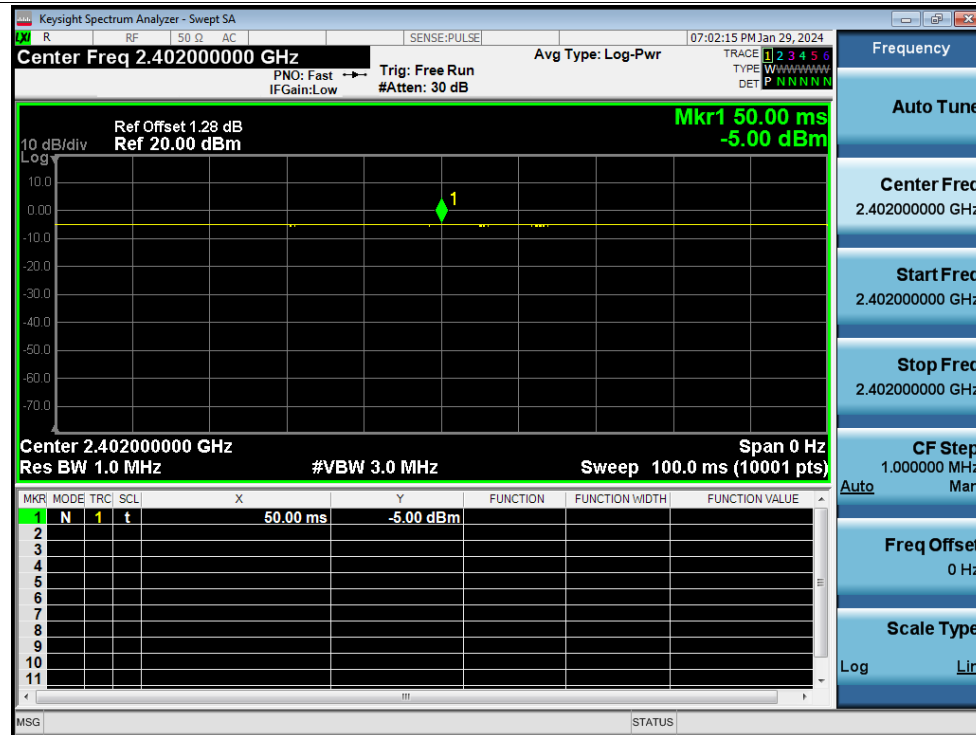
Appendix A

Duty Cycle

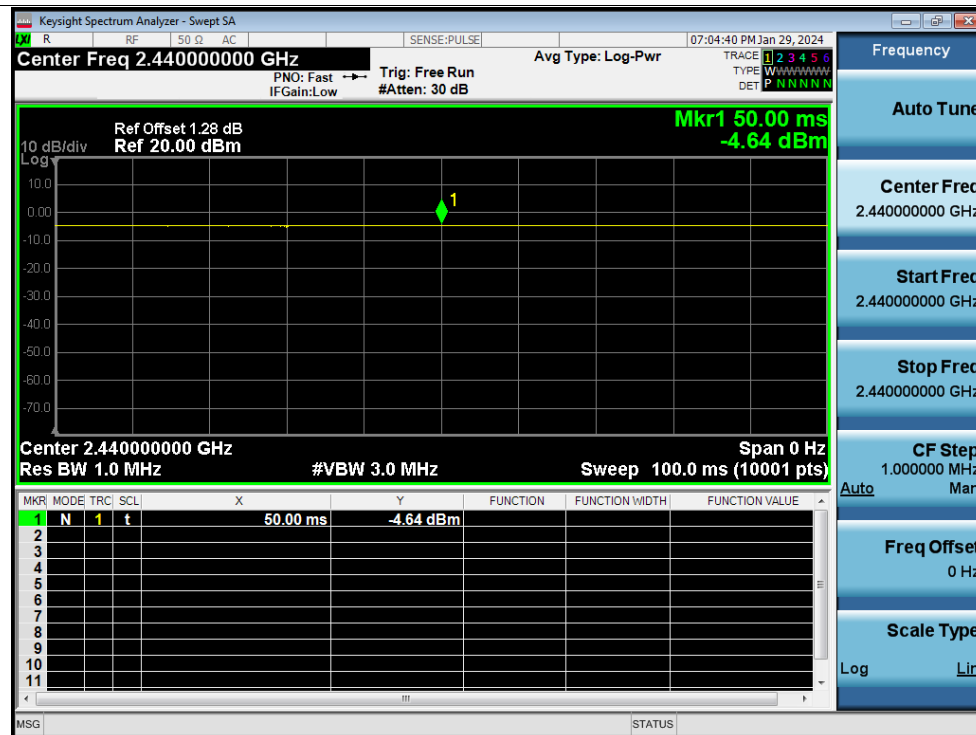
Condition	Mode	Frequency (MHz)	Antenna	On Time (ms)	Period (ms)	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)	Final settingFor VBW (kHz)
NVNT	BLE 1M	2402	Ant1	0	0	100	0	0	1
NVNT	BLE 1M	2440	Ant1	0	0	100	0	0	1
NVNT	BLE 1M	2480	Ant1	0	0	100	0	0	1

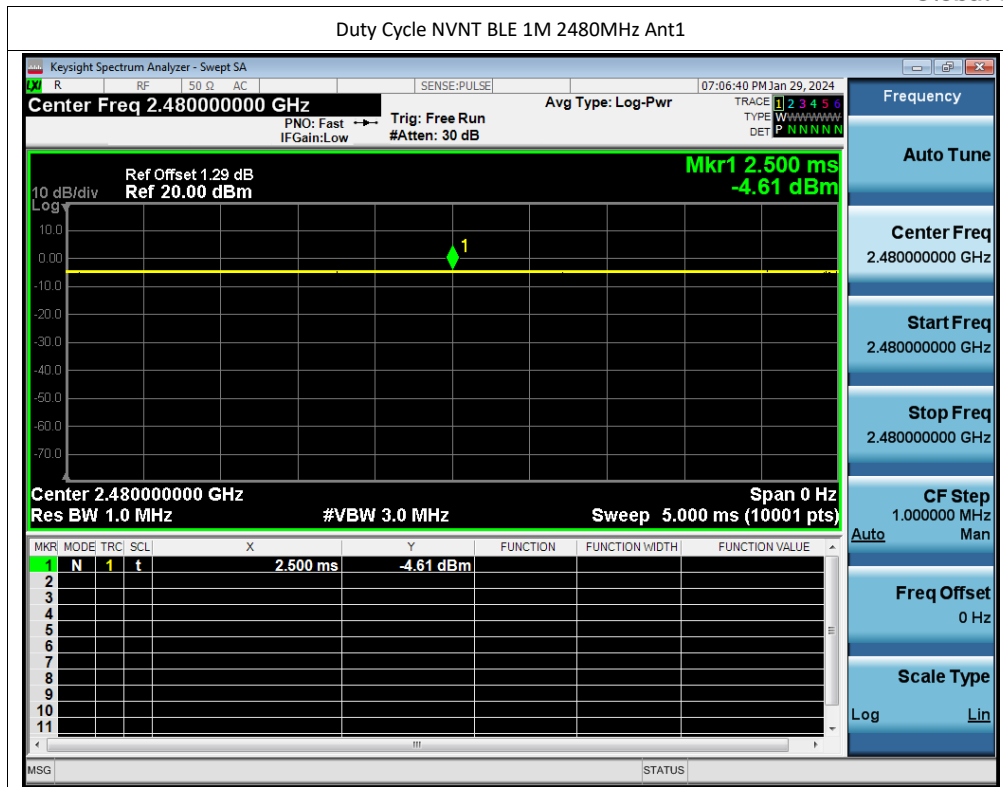
Test Graphs

Duty Cycle NVNT BLE 1M 2402MHz Ant1



Duty Cycle NVNT BLE 1M 2440MHz Ant1



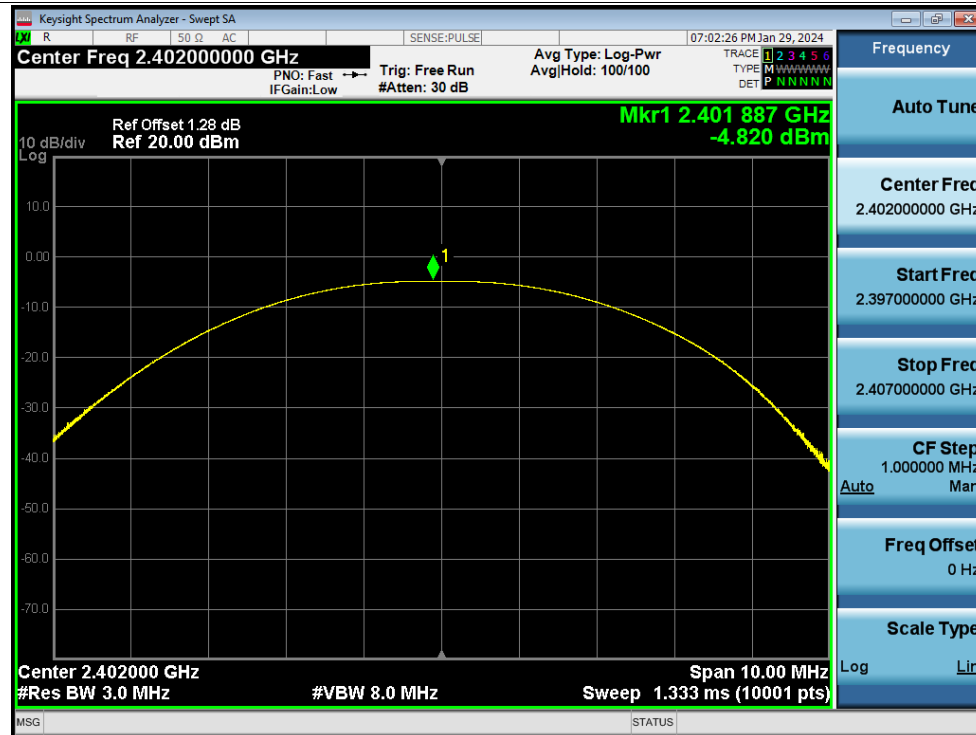


Maximum Conducted Output Power

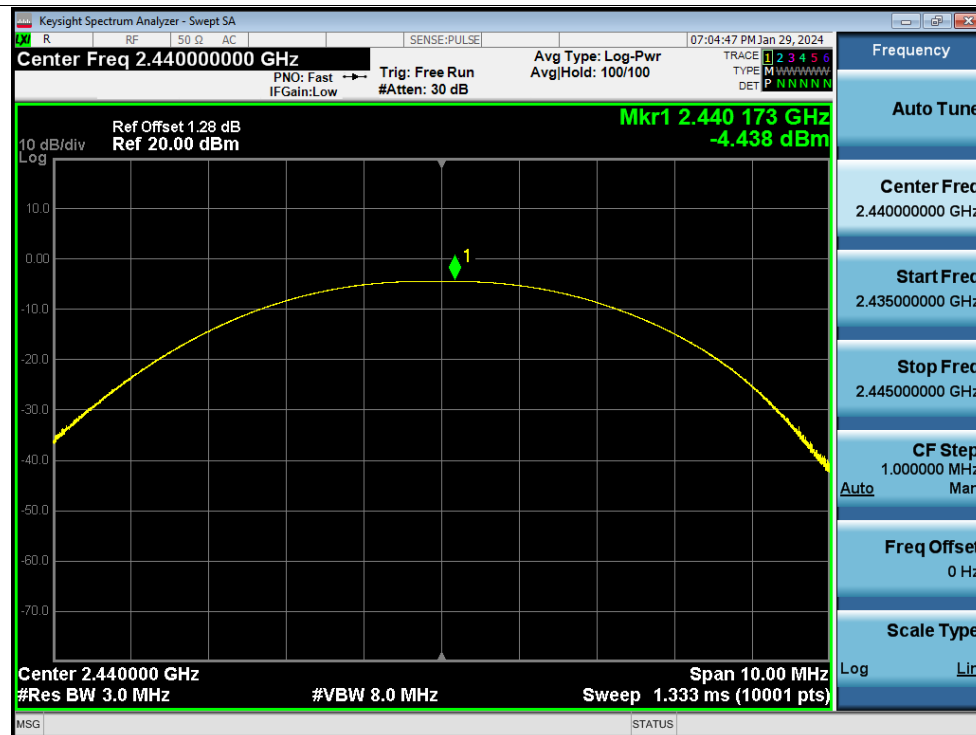
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	Ant1	-4.82	0	-4.82	30	Pass
NVNT	BLE 1M	2440	Ant1	-4.44	0	-4.44	30	Pass
NVNT	BLE 1M	2480	Ant1	-4.28	0	-4.28	30	Pass

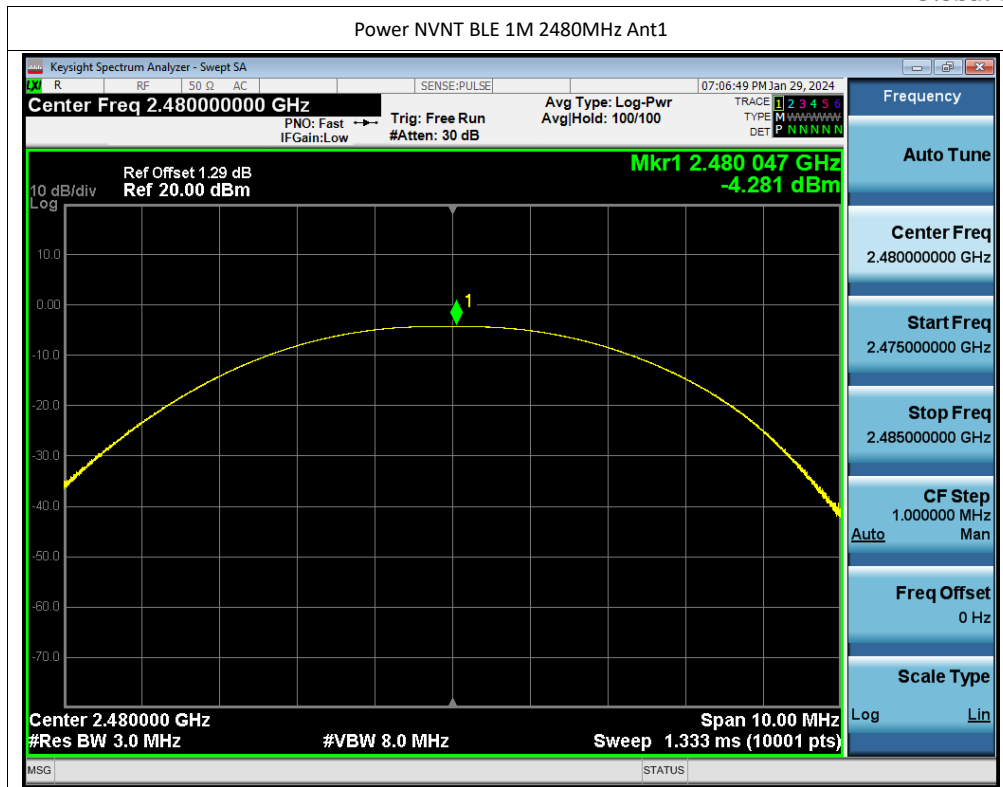
Test Graphs

Power NVNT BLE 1M 2402MHz Ant1



Power NVNT BLE 1M 2440MHz Ant1





-6dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1M	2402	Ant1	0.7	0.5	Pass
NVNT	BLE 1M	2440	Ant1	0.67	0.5	Pass
NVNT	BLE 1M	2480	Ant1	0.66	0.5	Pass

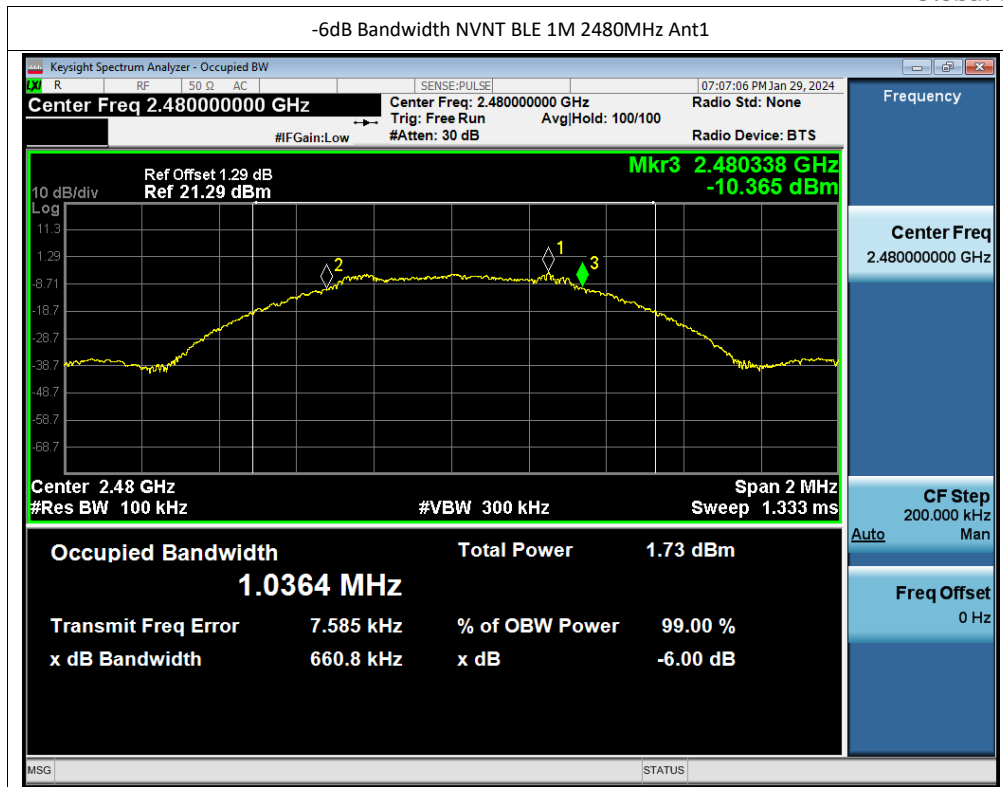
Test Graphs

-6dB Bandwidth NVNT BLE 1M 2402MHz Ant1



-6dB Bandwidth NVNT BLE 1M 2440MHz Ant1





Occupied Channel Bandwidth

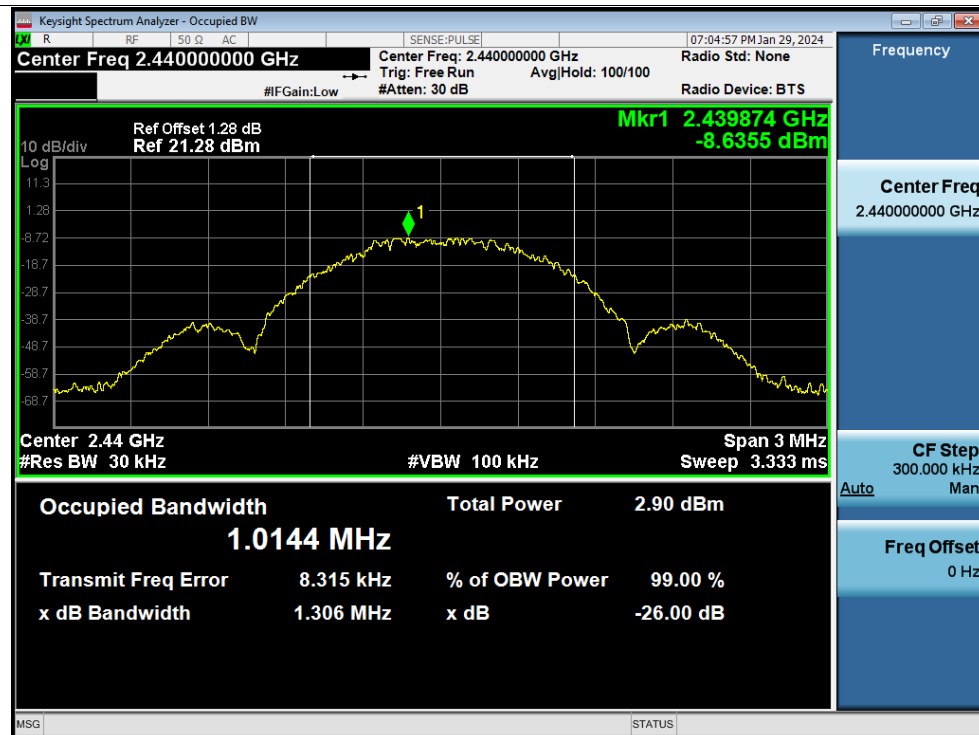
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	BLE 1M	2402	Ant1	1.042
NVNT	BLE 1M	2440	Ant1	1.014
NVNT	BLE 1M	2480	Ant1	1.036

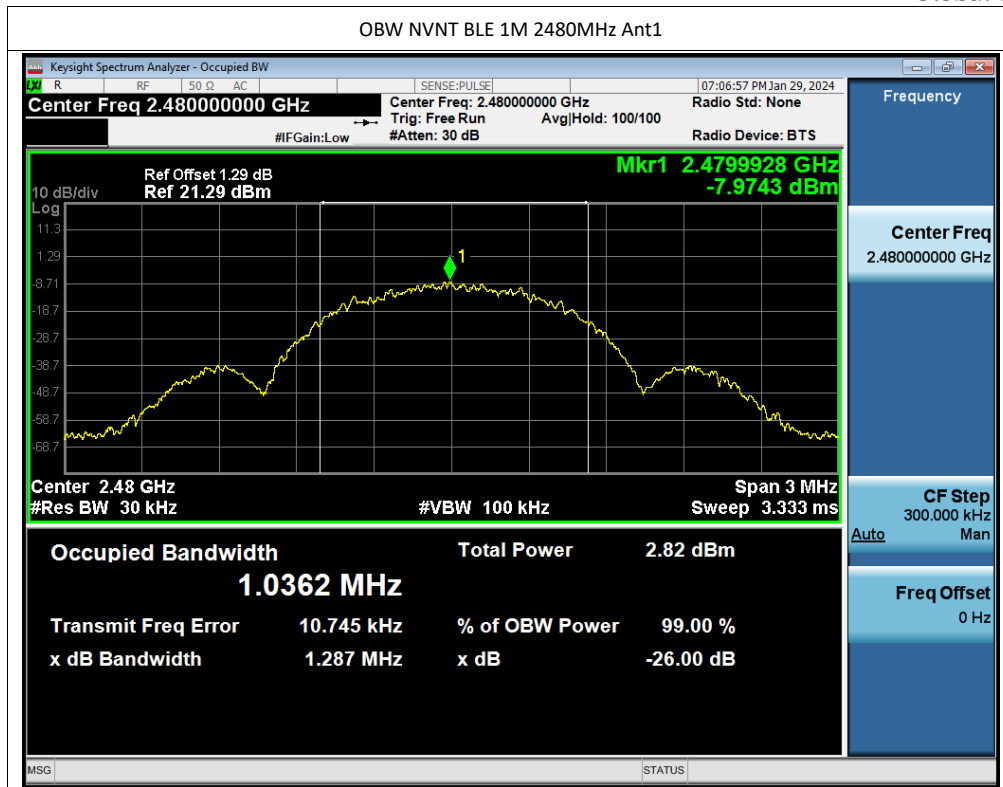
Test Graphs

OBW NVNT BLE 1M 2402MHz Ant1



OBW NVNT BLE 1M 2440MHz Ant1



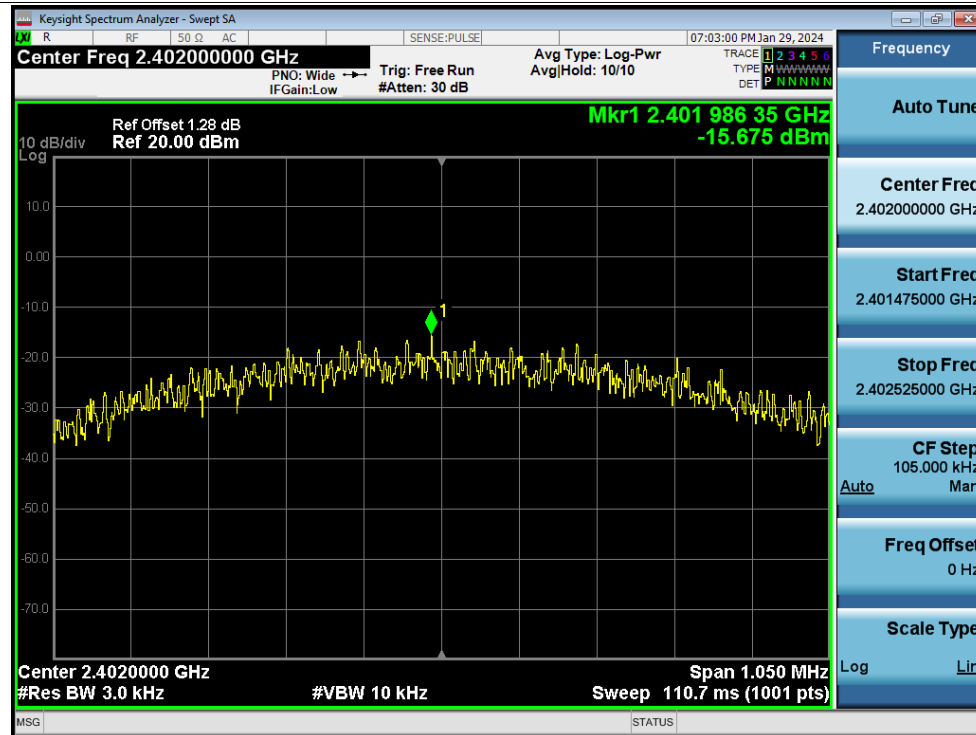


Maximum Power Spectral Density Level

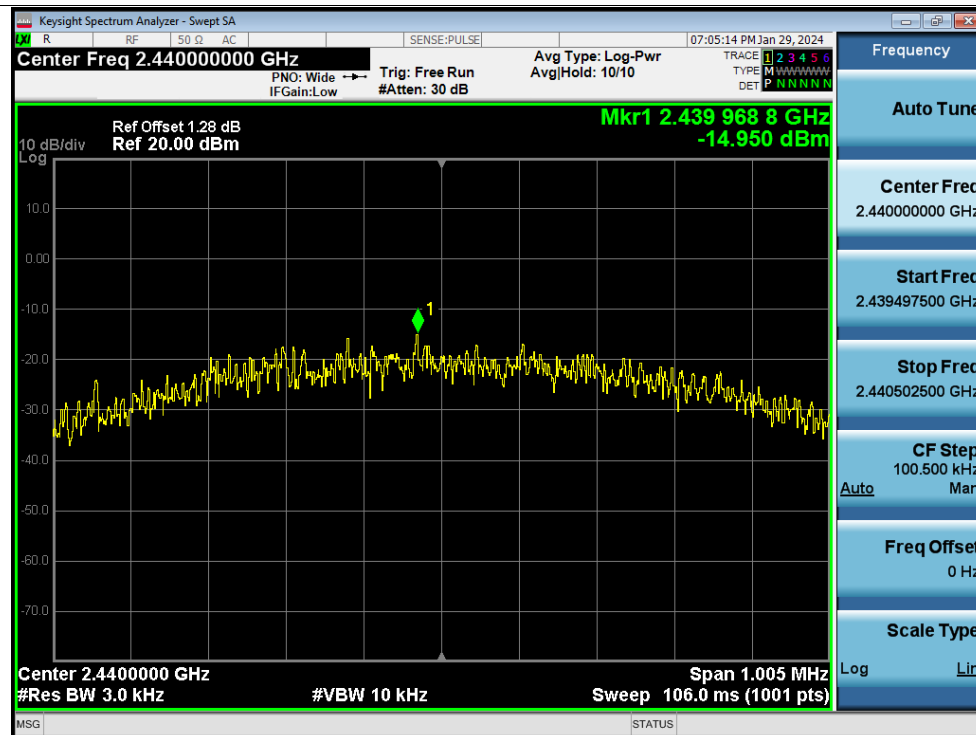
Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Duty Factor (dB)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	BLE 1M	2402	Ant1	-15.68	0	-15.68	8	Pass
NVNT	BLE 1M	2440	Ant1	-14.95	0	-14.95	8	Pass
NVNT	BLE 1M	2480	Ant1	-14.66	0	-14.66	8	Pass

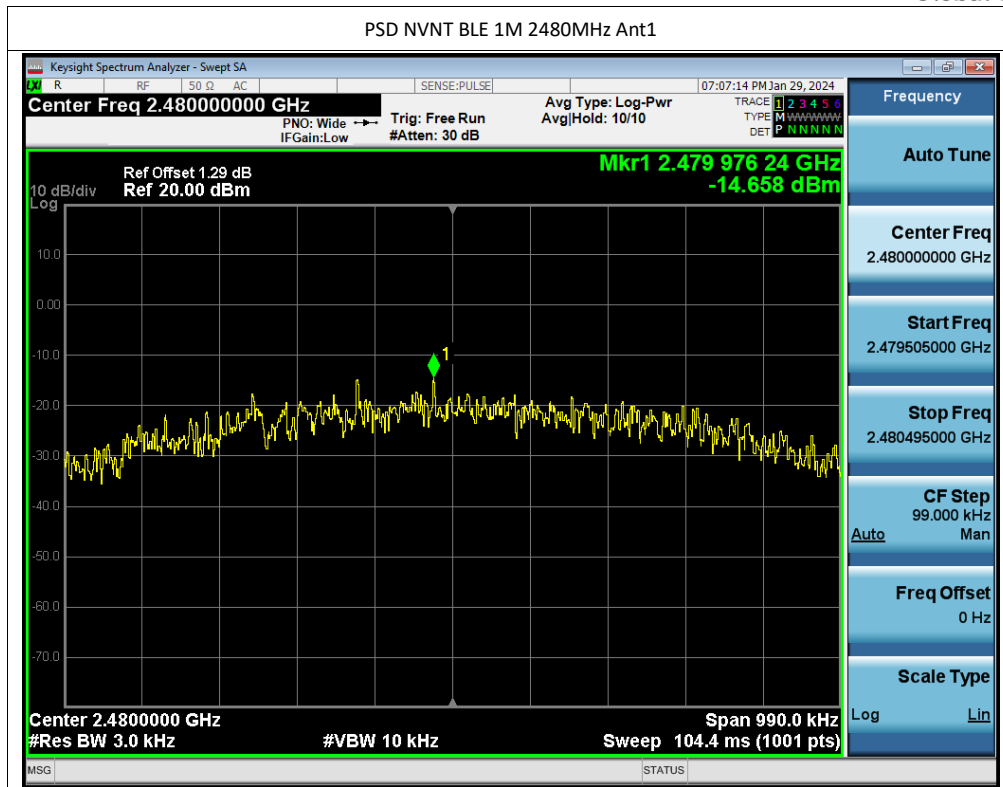
Test Graphs

PSD NVNT BLE 1M 2402MHz Ant1



PSD NVNT BLE 1M 2440MHz Ant1



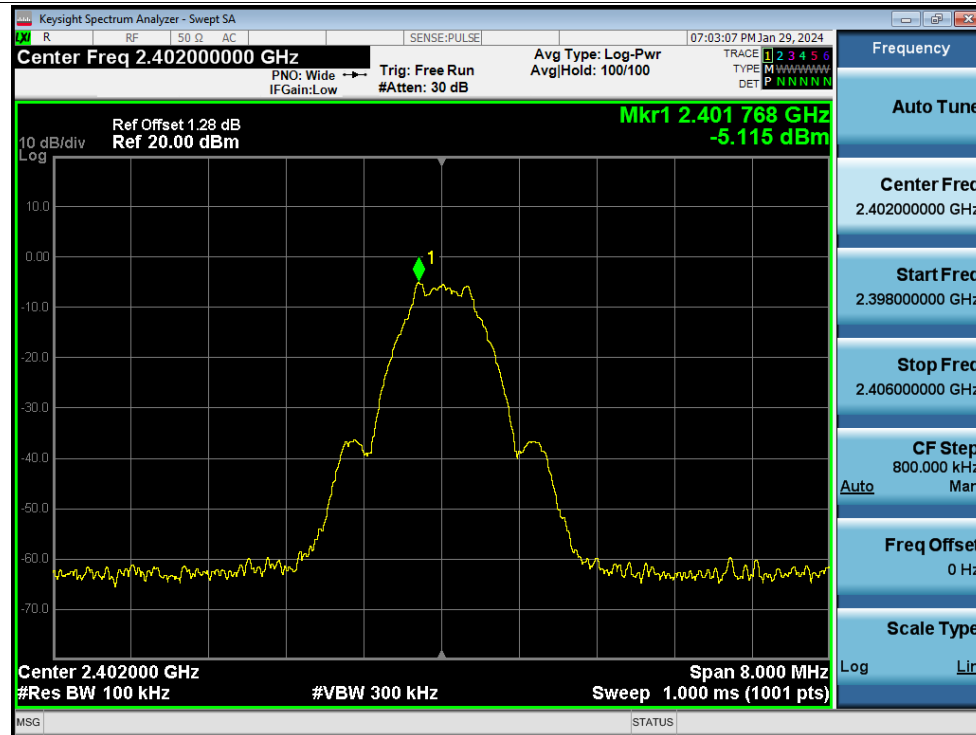


Band Edge

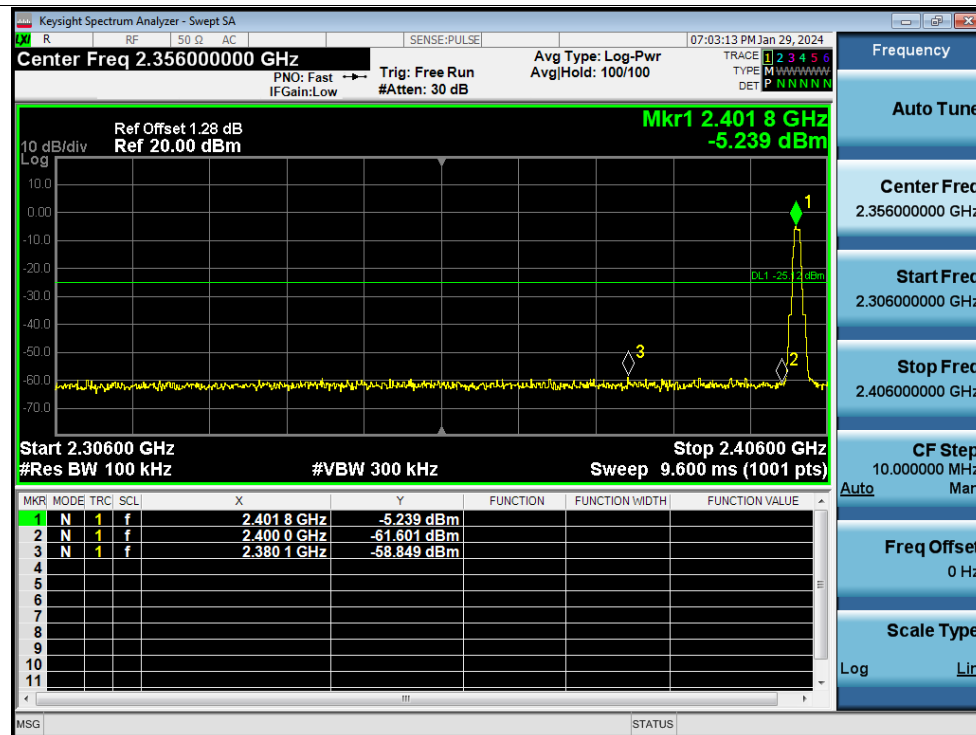
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-53.74	-20	Pass
NVNT	BLE 1M	2480	Ant1	-54.1	-20	Pass

Test Graphs

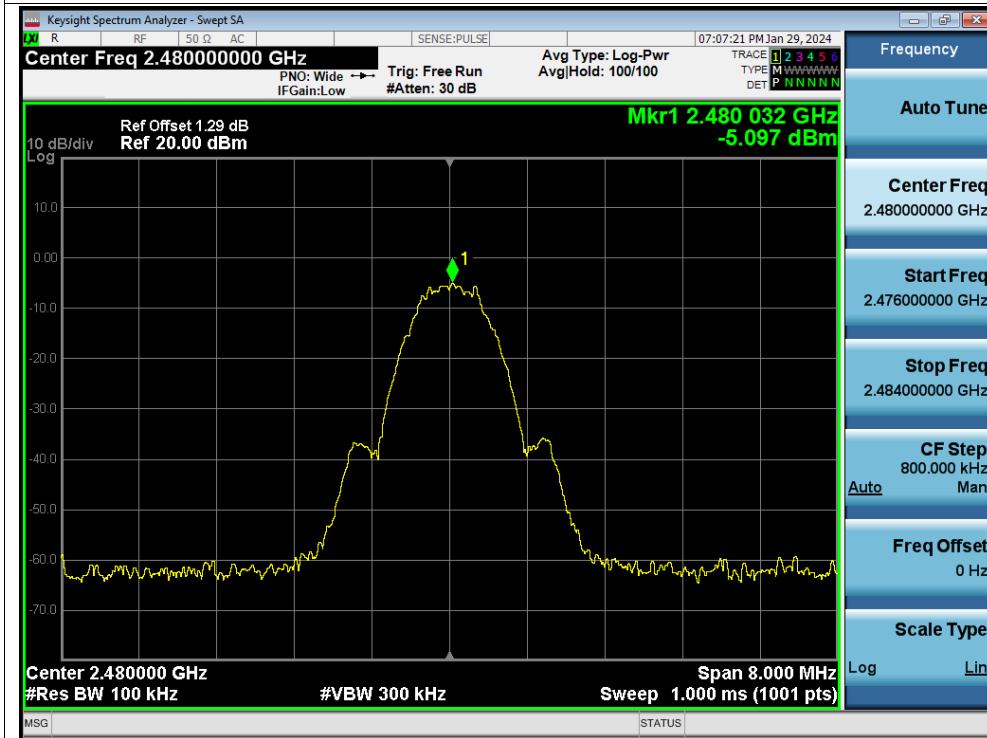
Band Edge NVNT BLE 1M 2402MHz Ant1 Ref



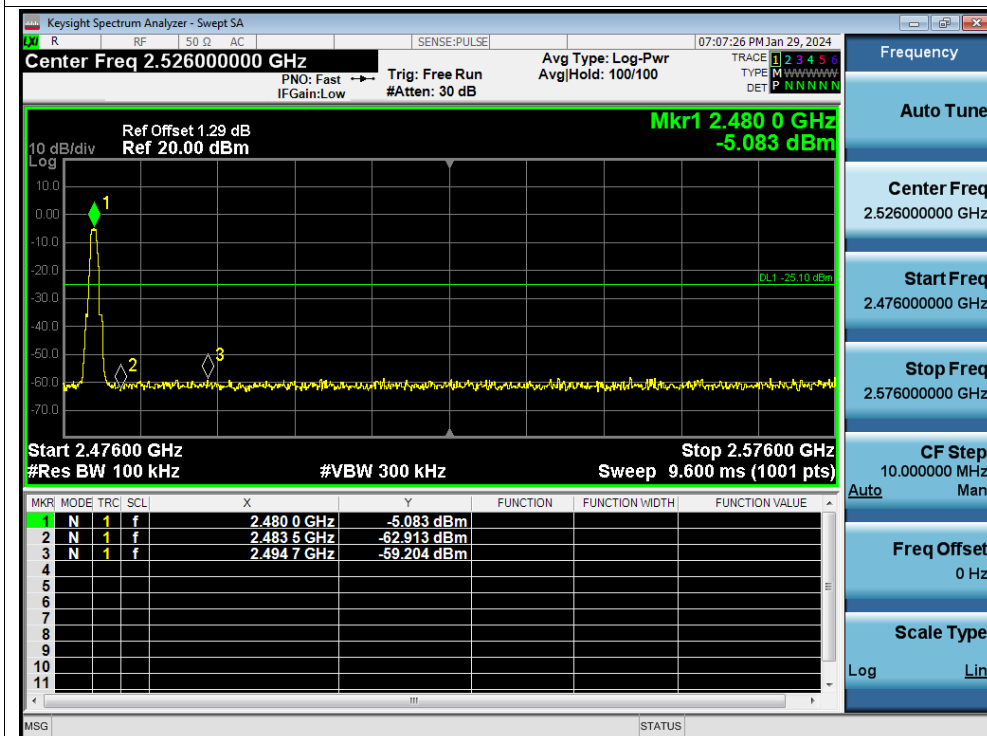
Band Edge NVNT BLE 1M 2402MHz Ant1 Emission



Band Edge NVNT BLE 1M 2480MHz Ant1 Ref



Band Edge NVNT BLE 1M 2480MHz Ant1 Emission

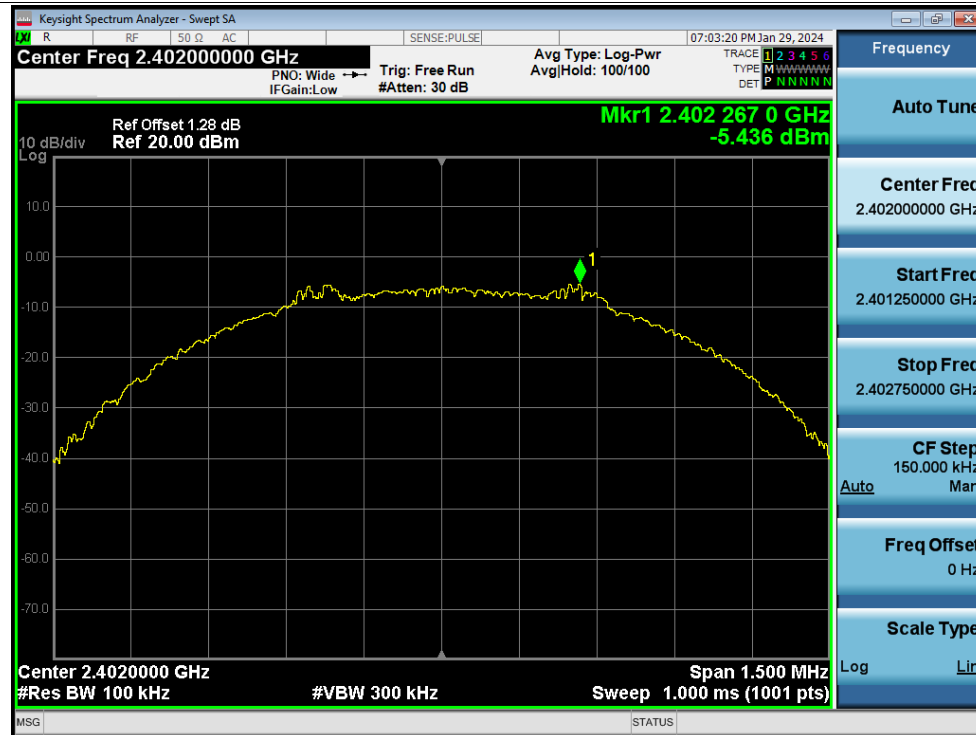


Conducted RF Spurious Emission

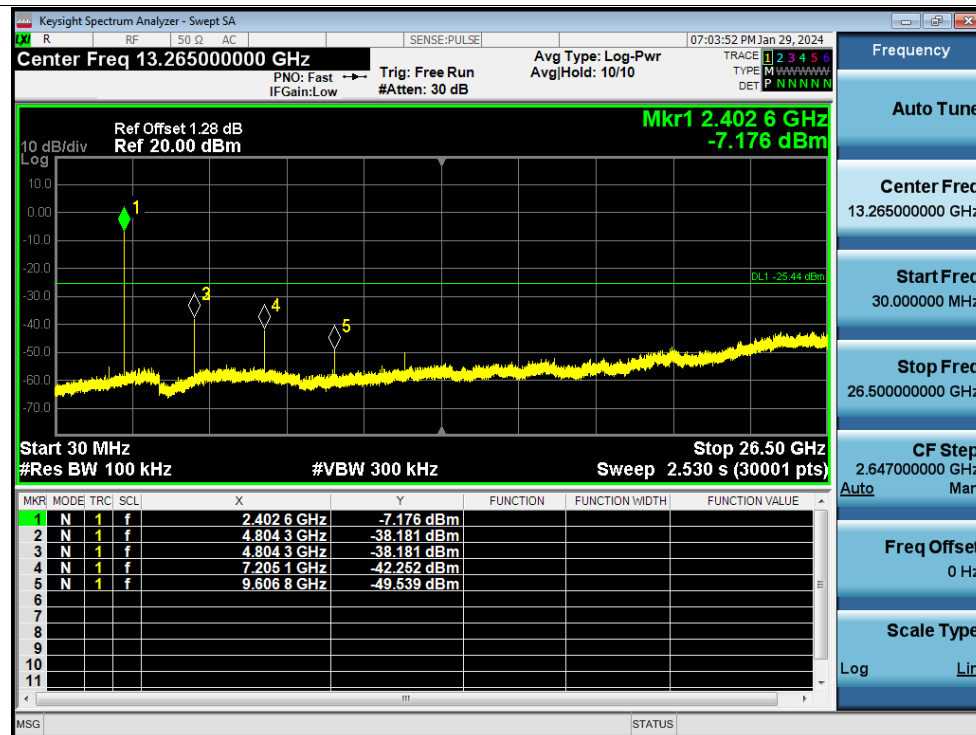
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-32.74	-20	Pass
NVNT	BLE 1M	2440	Ant1	-34.62	-20	Pass
NVNT	BLE 1M	2480	Ant1	-33.51	-20	Pass

Test Graphs

Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Ref



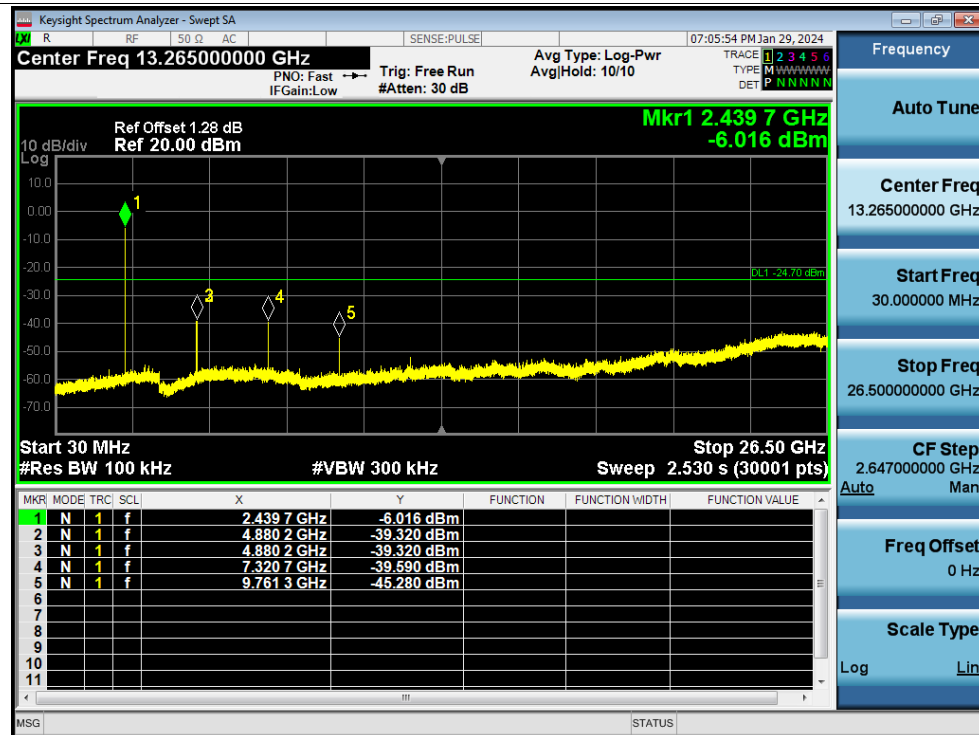
Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Emission



Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Ref



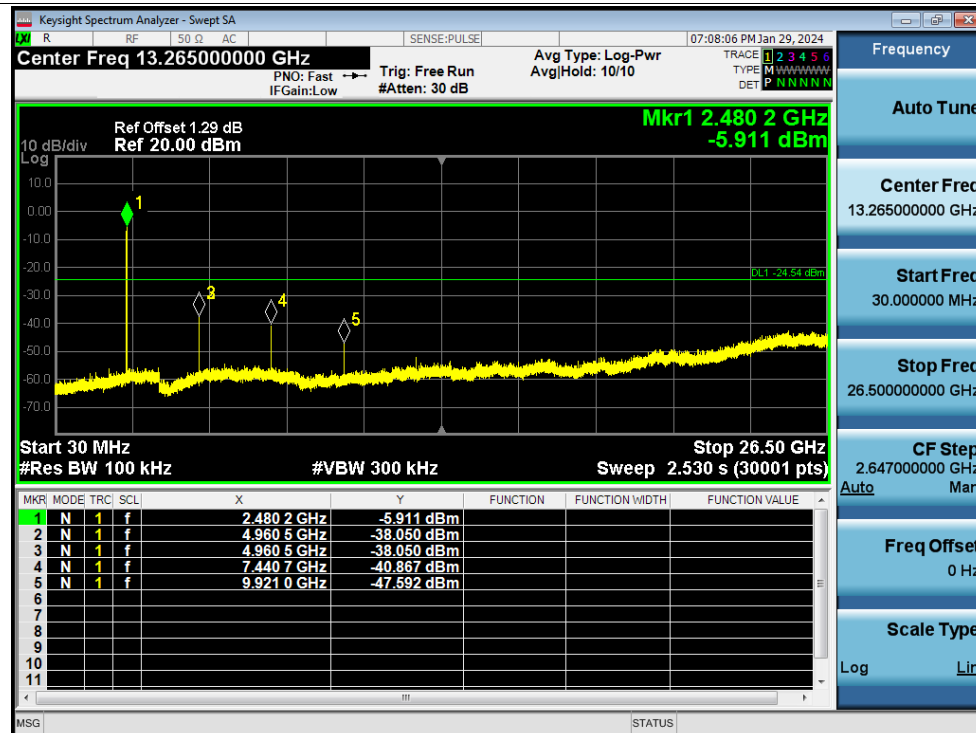
Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Emission



Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Ref



Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Emission

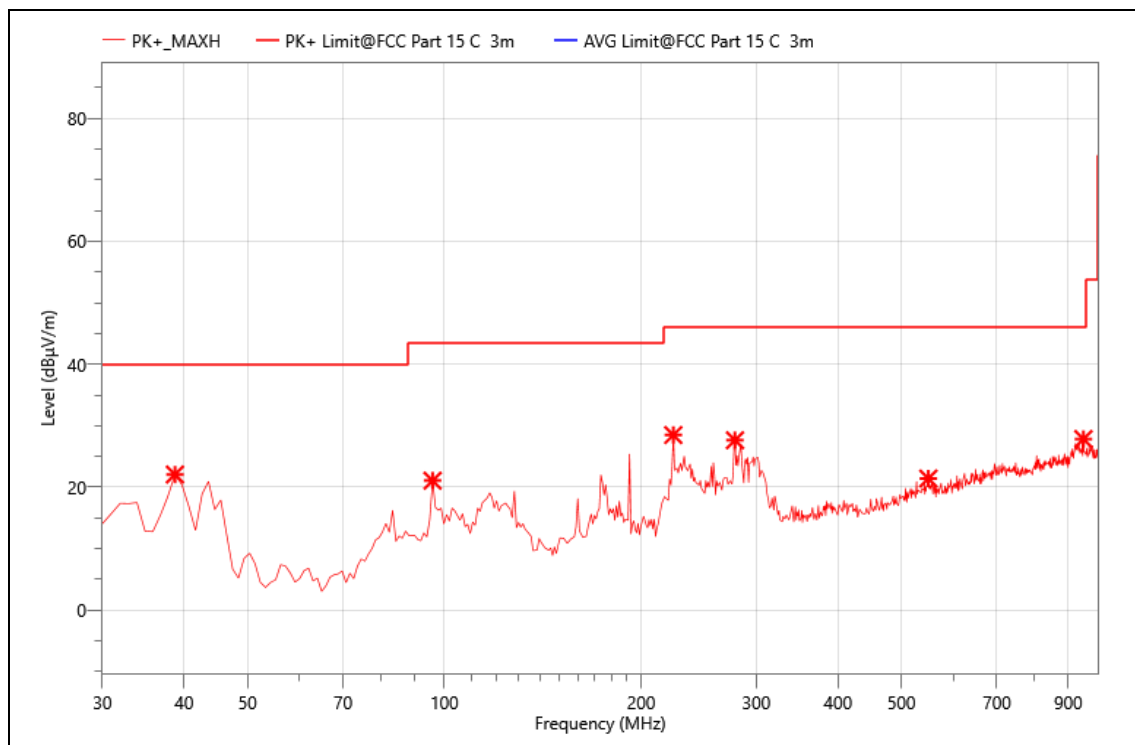


RADIATED TEST RESULTS

The data of the mode (BLE 2402) are recorded in the following pages.

The worst result as bellow:

EUT :	smart lock
MN:	F05
Mode:	BLE 2402
Power:	DC 3.7V
TE:	Vier
Date	2024/01/26
T/A/P	24.1°C/53.3%/101.5Kpa

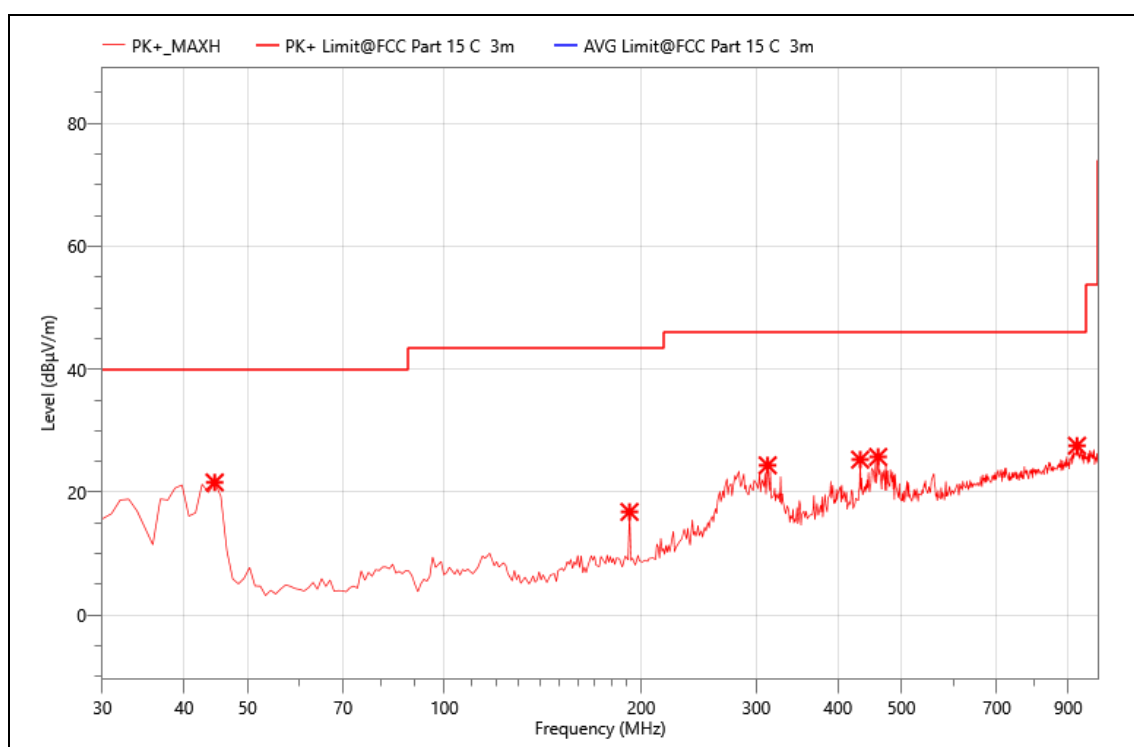


Critical_Freqs

No.	Freq. (MHz)	Reading (dBμV)	Corr. (dB)	Meas. (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Det.	Pol.
1	38.730	41.38	-19.31	22.07	40.00	17.93	PK+	H
2	95.960	45.57	-24.49	21.08	43.50	22.42	PK+	H
3	224.000	49.10	-20.6	28.50	46.00	17.50	PK+	H
4	278.320	46.79	-19.14	27.65	46.00	18.35	PK+	H
5	549.920	31.15	-9.73	21.42	46.00	24.58	PK+	H
6	949.560	31.26	-3.41	27.85	46.00	18.15	PK+	H

Note : [Margin=Limit-Meas.]; [Meas.=Reading+Corr.]

EUT :	smart lock
MN:	F05
Mode:	BLE 2402
Power:	DC 3.7V
TE:	Vier
Date	2024/01/26
T/A/P	24.1°C/53.3%/101.5Kpa



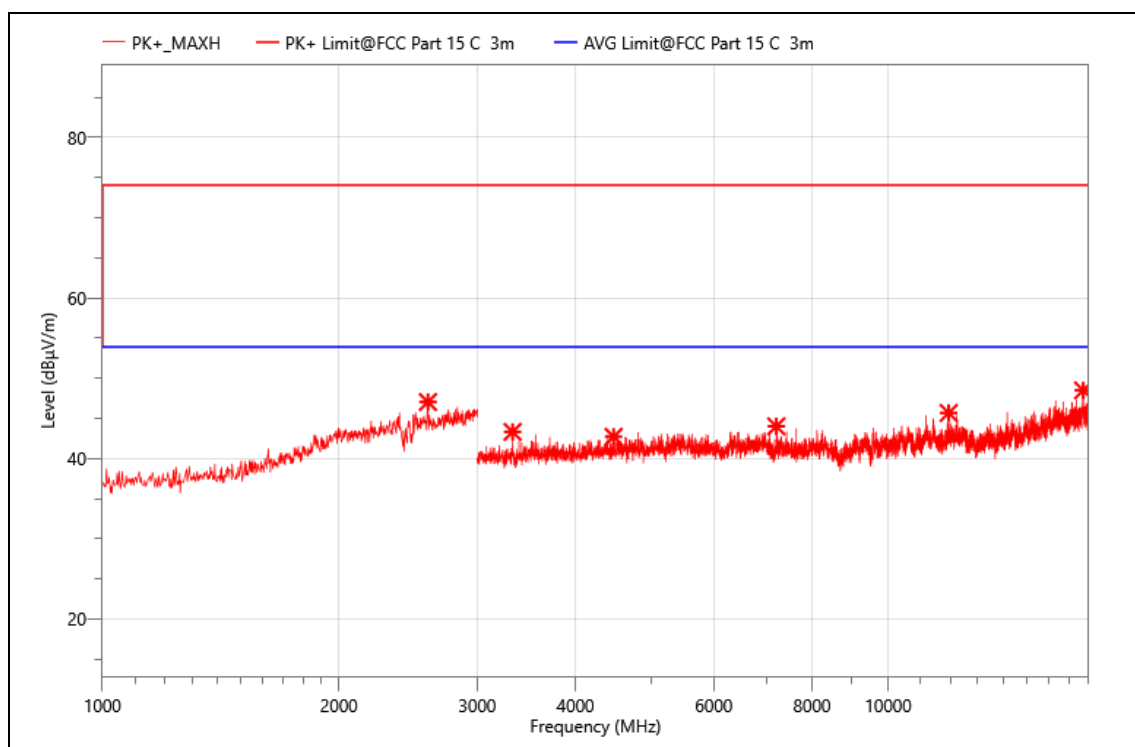
Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	44.550	43.84	-22.24	21.60	40.00	18.40	PK+	V
2	191.990	39.37	-22.57	16.80	43.50	26.70	PK+	V
3	312.270	42.73	-18.34	24.39	46.00	21.61	PK+	V
4	432.550	39.46	-14.15	25.31	46.00	20.69	PK+	V
5	460.680	39.40	-13.65	25.75	46.00	20.25	PK+	V
6	928.220	30.66	-3.09	27.57	46.00	18.43	PK+	V

Note : [Margin=Limit-Meas.]; [Meas.=Reading+Corr.]

Above 1000MHz~10th Harmonics:

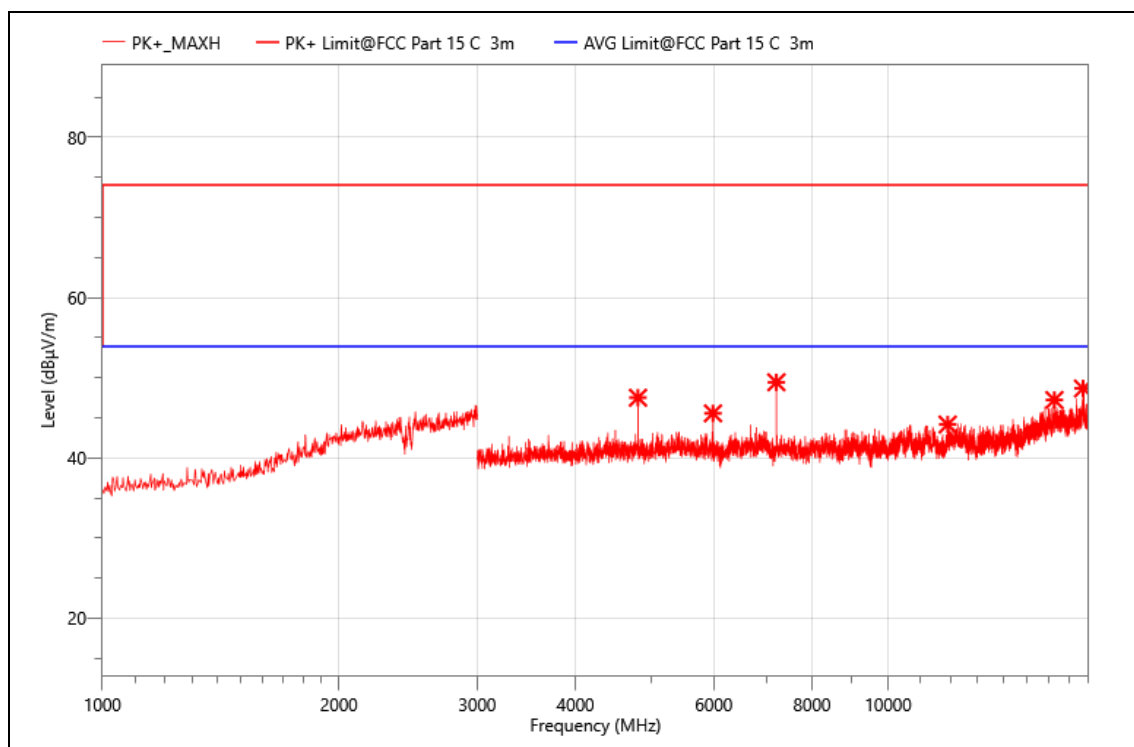
EUT :	smart lock
MN:	F05
Mode:	BLE 2402
Power:	DC 3.7V
TE:	Vier
Date	2024/01/26
T/A/P	24.1°C/53.3%/101.5Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBμV)	Corr. (dB)	Meas. (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Det.	Pol.
1	2596.000	55.17	-8.13	47.04	74.00	26.96	PK+	H
2	3327.000	57.75	-14.43	43.32	74.00	30.68	PK+	H
3	4473.000	54.74	-12.03	42.71	74.00	31.29	PK+	H
4	7206.000	52.01	-8	44.01	74.00	29.99	PK+	H
5	11941.500	50.15	-4.47	45.68	74.00	28.32	PK+	H
6	17710.500	48.54	-0.05	48.49	74.00	25.51	PK+	H

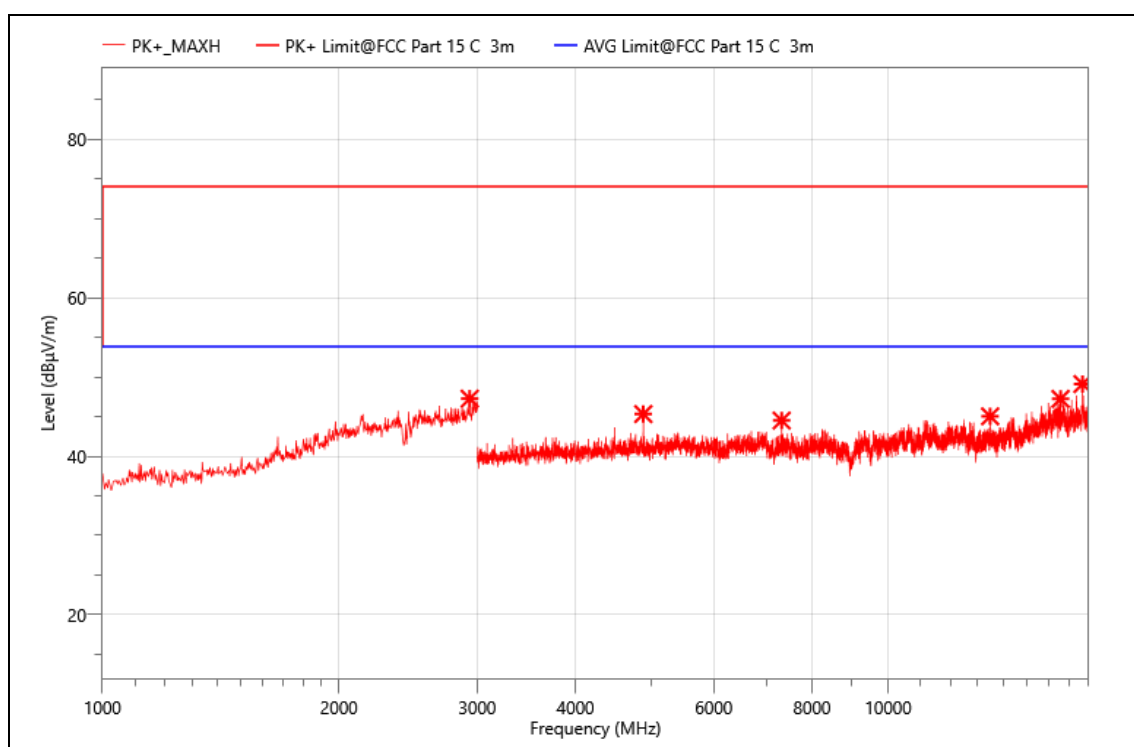
EUT :	smart lock
MN:	F05
Mode:	BLE 2402
Power:	DC 3.7V
TE:	Vier
Date	2024/01/26
T/A/P	24.1°C/53.3%/101.5Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	4804.500	58.85	-11.34	47.51	74.00	26.49	PK+	V
2	5985.000	54.57	-9.01	45.56	74.00	28.44	PK+	V
3	7207.500	57.43	-7.99	49.44	74.00	24.56	PK+	V
4	11905.500	48.55	-4.38	44.17	74.00	29.83	PK+	V
5	16278.000	48.58	-1.35	47.23	74.00	26.77	PK+	V
6	17707.500	48.64	0.02	48.66	74.00	25.34	PK+	V

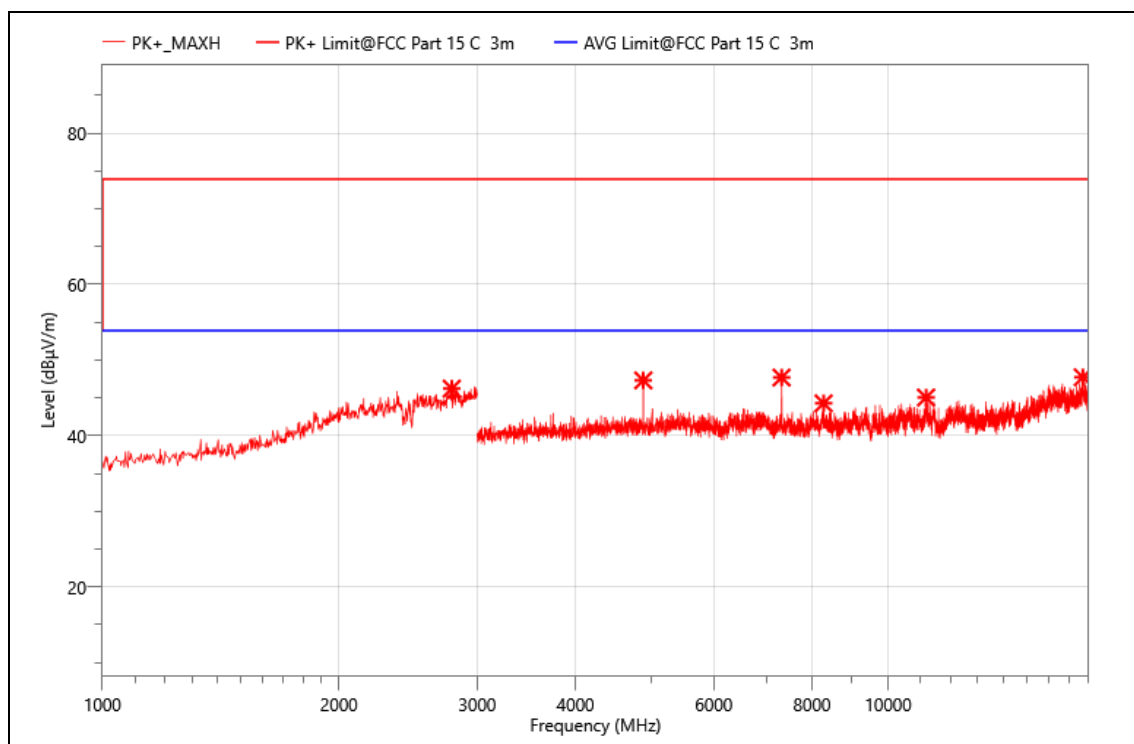
EUT :	smart lock
MN:	F05
Mode:	BLE 2440
Power:	DC 3.7V
TE:	Vier
Date	2024/01/26
T/A/P	24.1°C/53.3%/101.5Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	2934.000	54.79	-7.51	47.28	74.00	26.72	PK+	H
2	4879.500	56.48	-11.14	45.34	74.00	28.66	PK+	H
3	7320.000	52.39	-7.87	44.52	74.00	29.48	PK+	H
4	13483.500	49.39	-4.34	45.05	74.00	28.95	PK+	H
5	16573.500	48.75	-1.5	47.25	74.00	26.75	PK+	H
6	17676.000	48.81	0.31	49.12	74.00	24.88	PK+	H

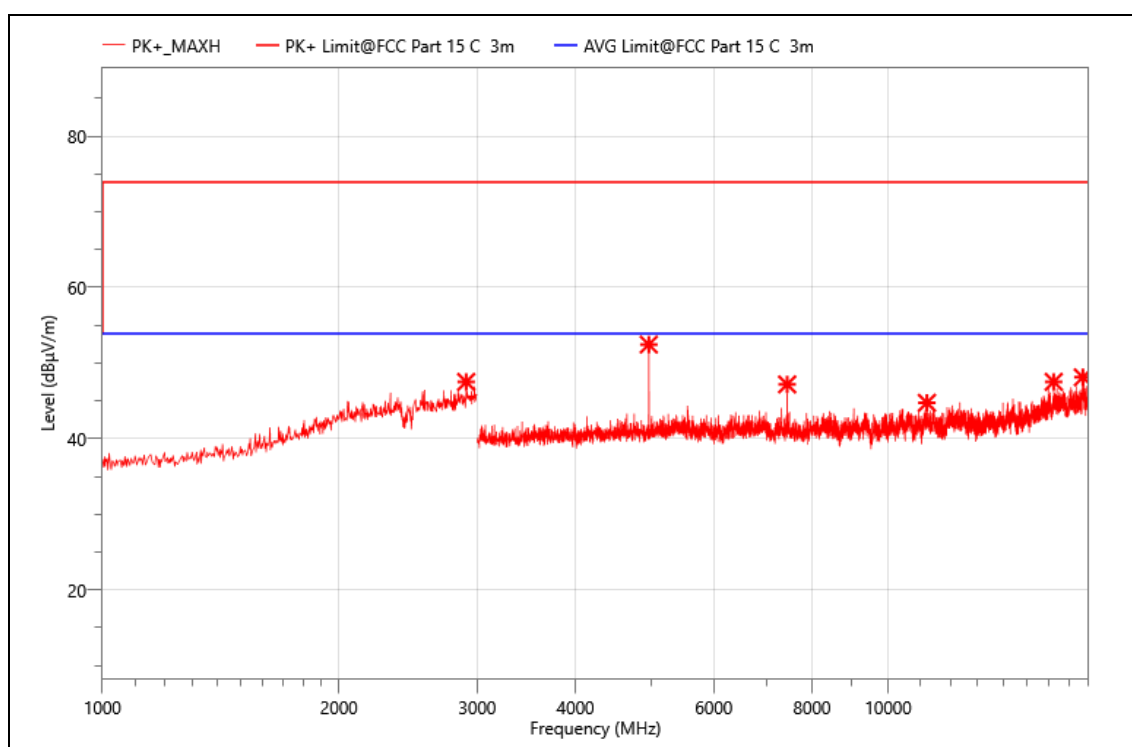
EUT :	smart lock
MN:	F05
Mode:	BLE 2440
Power:	DC 3.7V
TE:	Vier
Date	2024/01/26
T/A/P	24.1°C/53.3%/101.5Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	2784.000	54.65	-8.43	46.22	74.00	27.78	PK+	V
2	4879.500	58.45	-11.14	47.31	74.00	26.69	PK+	V
3	7318.500	55.51	-7.82	47.69	74.00	26.31	PK+	V
4	8277.000	52.29	-8.01	44.28	74.00	29.72	PK+	V
5	11176.500	49.50	-4.45	45.05	74.00	28.95	PK+	V
6	17694.000	47.52	0.21	47.73	74.00	26.27	PK+	V

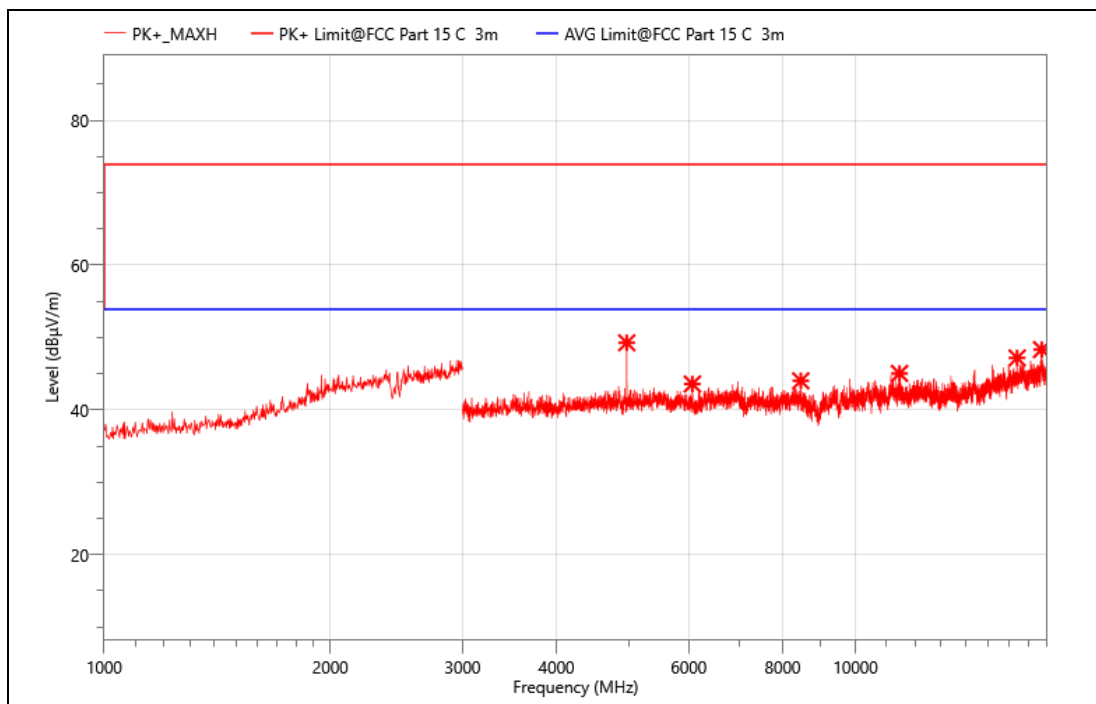
EUT :	smart lock
MN:	F05
Mode:	BLE 2480
Power:	DC 3.7V
TE:	Vier
Date	2024/01/26
T/A/P	24.1°C/53.3%/101.5Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	2904.000	55.28	-7.77	47.51	74.00	26.49	PK+	V
2	4959.000	63.80	-11.35	52.45	74.00	21.55	PK+	V
3	7438.500	55.13	-7.95	47.18	74.00	26.82	PK+	V
4	11202.000	49.15	-4.4	44.75	74.00	29.25	PK+	V
5	16246.500	48.05	-0.53	47.52	74.00	26.48	PK+	V
6	17692.500	47.90	0.22	48.12	74.00	25.88	PK+	V

EUT :	smart lock
MN:	F05
Mode:	BLE 2480
Power:	DC 3.7V
TE:	Vier
Date	2024/01/26
T/A/P	24.1°C/53.3%/101.5Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	4960.500	60.62	-11.34	49.28	74.00	24.72	PK+	H
2	6066.000	51.59	-8.01	43.58	74.00	30.42	PK+	H
3	8457.000	52.13	-8.11	44.02	74.00	29.98	PK+	H
4	11445.000	49.50	-4.46	45.04	74.00	28.96	PK+	H
5	16411.500	48.43	-1.25	47.18	74.00	26.82	PK+	H
6	17691.000	48.10	0.23	48.33	74.00	25.67	PK+	H

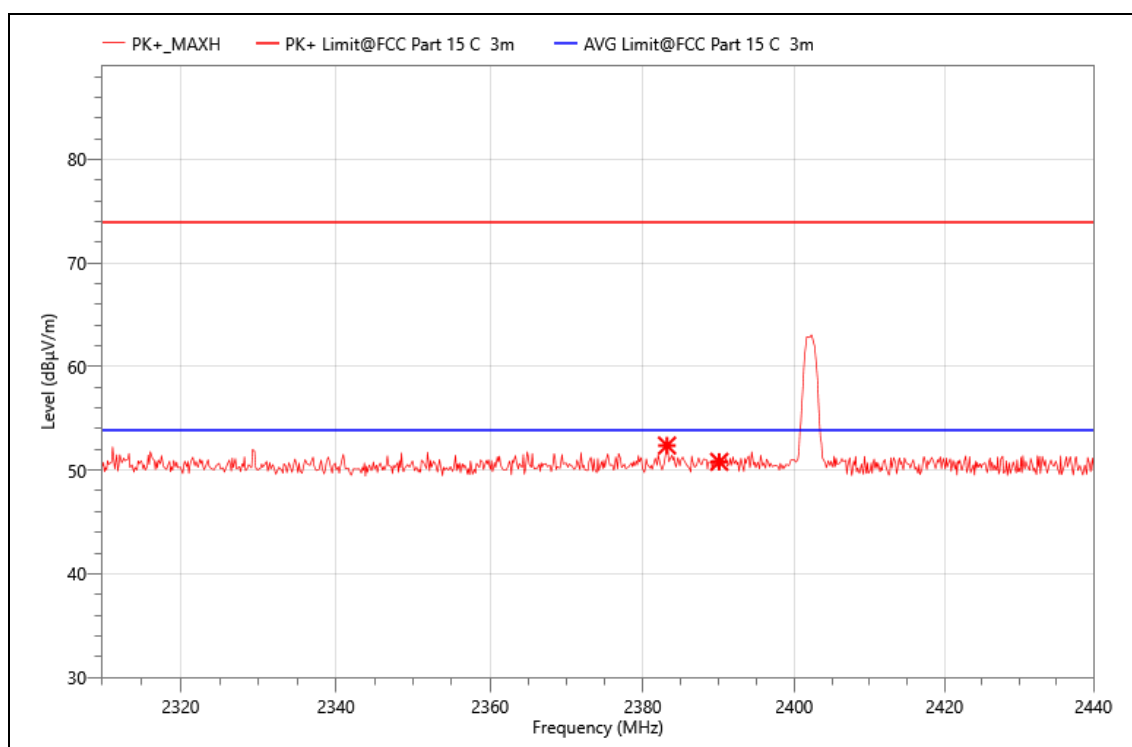
No others harmonics emissions are higher than 20 dB below the limits of 47 CFR Part 15.247.

Note:

1. [Margin=Limit-Meas.]; [Meas.=Reading+Corr.]
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.
5. Measuring frequencies from 1GHz to 25GHz.

Band edge:

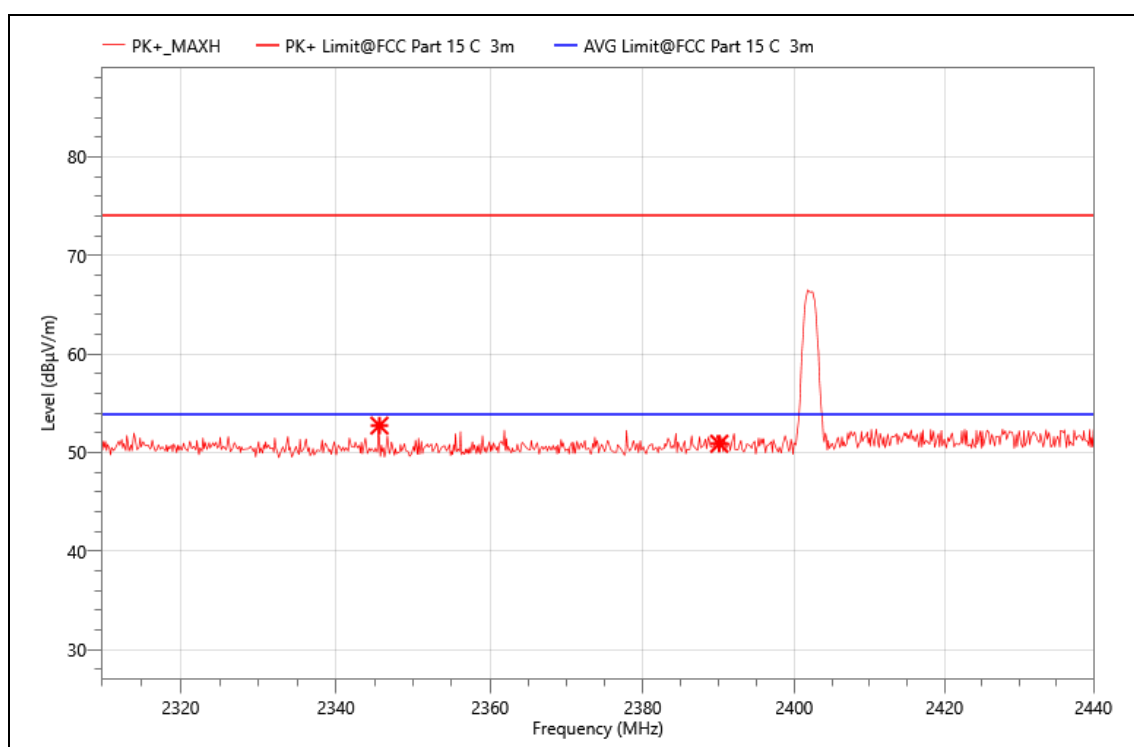
EUT :	smart lock
MN:	F05
Mode:	BLE 2402
Power:	DC 3.7V
TE:	Vier
Date	2024/01/26
T/A/P	24.1°C/53.3%/101.5Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	2383.190	26.45	25.93	52.38	74.00	21.62	PK+	V
2	2390.080	24.85	25.96	50.81	74.00	23.19	PK+	V

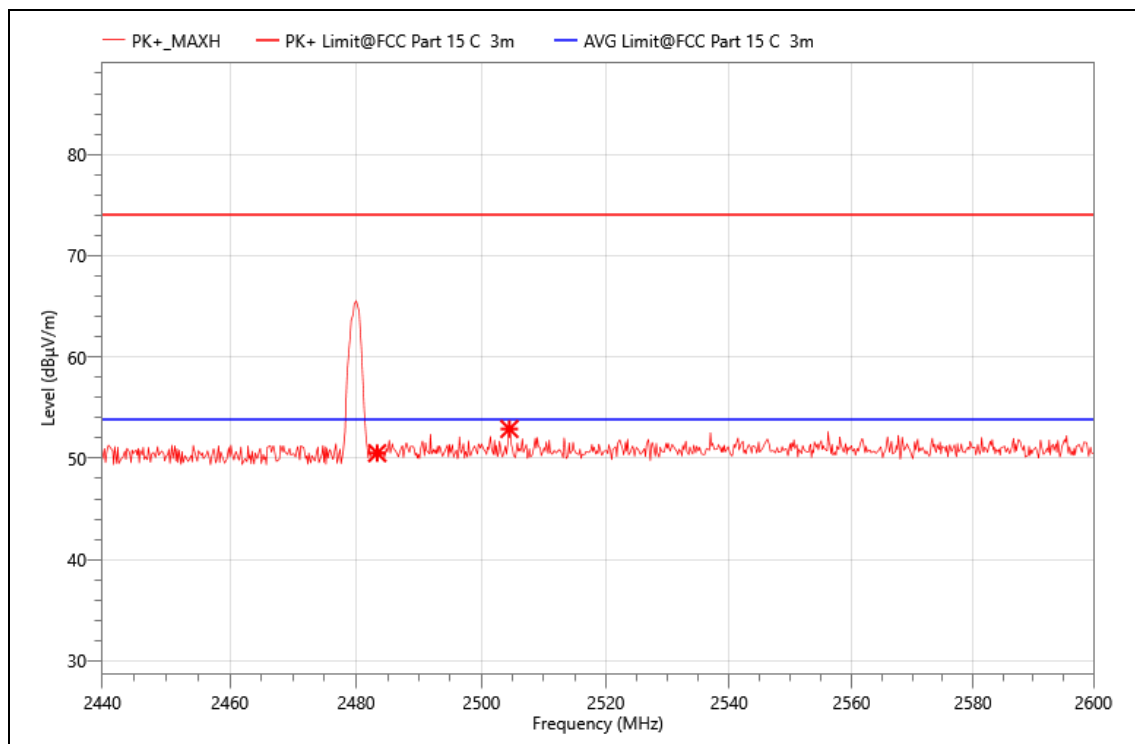
EUT :	smart lock
MN:	F05
Mode:	BLE 2402
Power:	DC 3.7V
TE:	Vier
Date	2024/01/26
T/A/P	24.1°C/53.3%/101.5Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	2345.620	27.18	25.55	52.73	74.00	21.27	PK+	H
2	2390.080	24.93	25.96	50.89	74.00	23.11	PK+	H

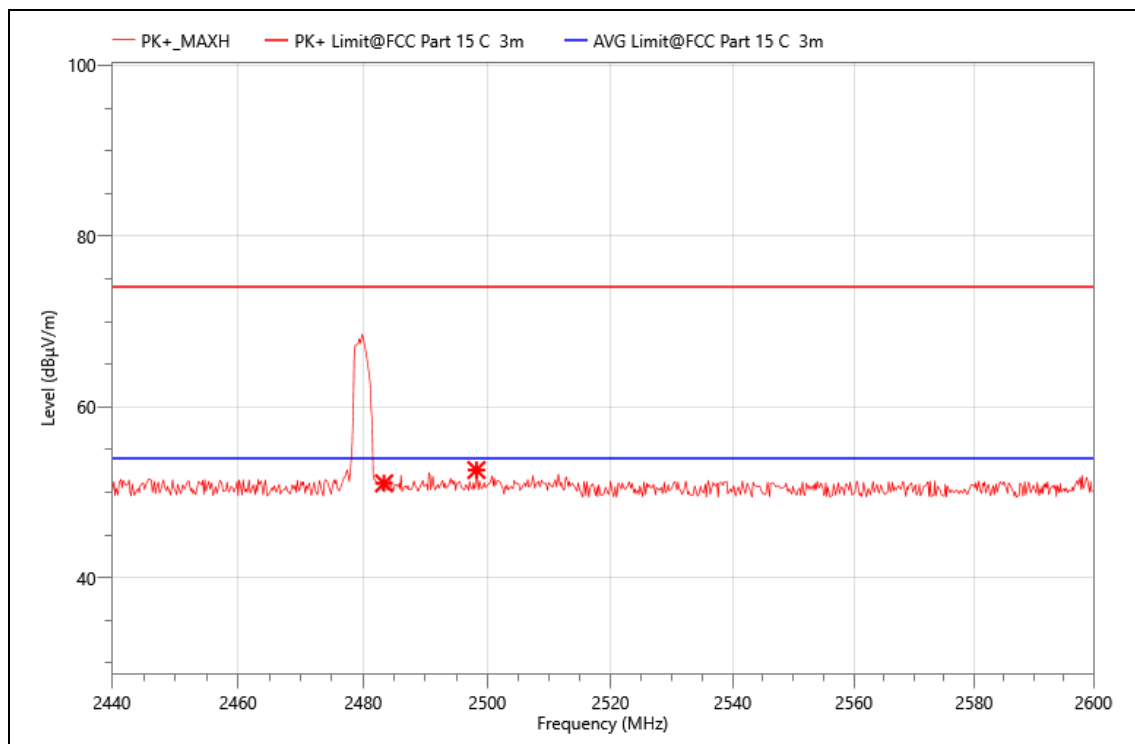
EUT :	smart lock
MN:	F05
Mode:	BLE 2480
Power:	DC 3.7V
TE:	Vier
Date	2024/01/26
T/A/P	24.1°C/53.3%/101.5Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	2483.360	24.80	25.71	50.51	74.00	23.49	PK+	H
2	2504.480	27.10	25.8	52.90	74.00	21.10	PK+	H

EUT :	smart lock
MN:	F05
Mode:	BLE 2480
Power:	DC 3.7V
TE:	Vier
Date	2024/01/26
T/A/P	24.1°C/53.3%/101.5Kpa



Critical_Freqs

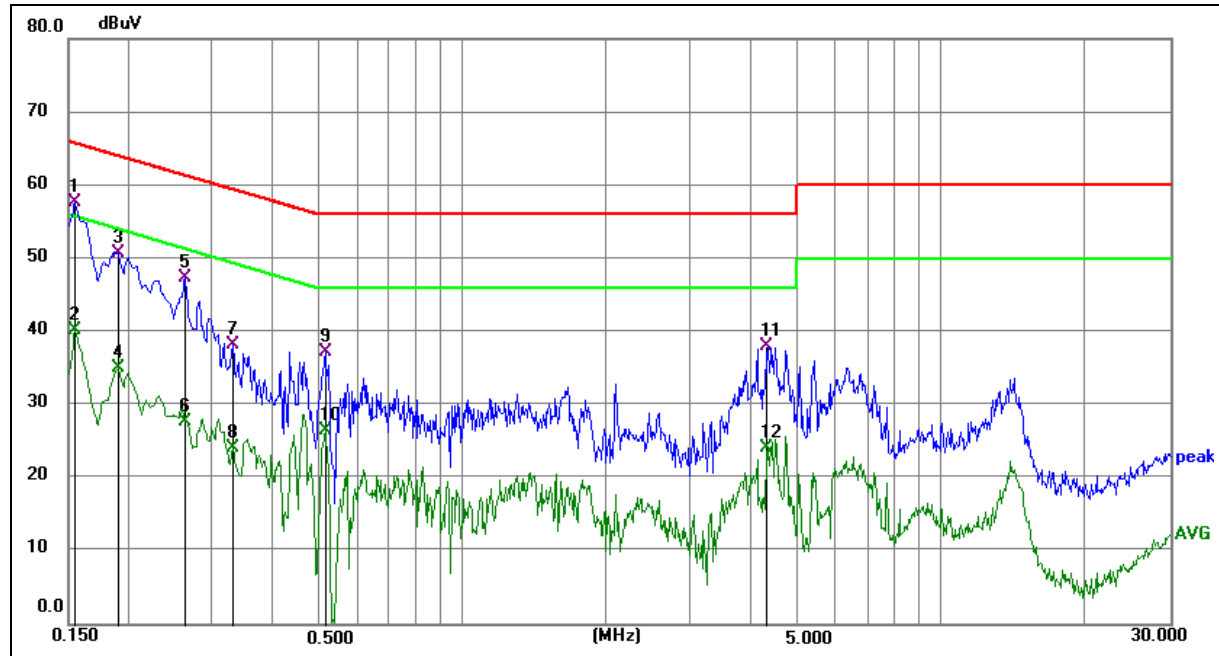
No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	2483.360	25.34	25.71	51.05	74.00	22.95	PK+	V
2	2498.240	26.84	25.76	52.60	74.00	21.40	PK+	V

Note:

1. [Margin=Limit-Meas.]; [Meas.=Reading+Corr.]
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AC POWER LINE CONDUCTED EMISSIONS

LINE L1 RESULTS (BLE 1M 2402)

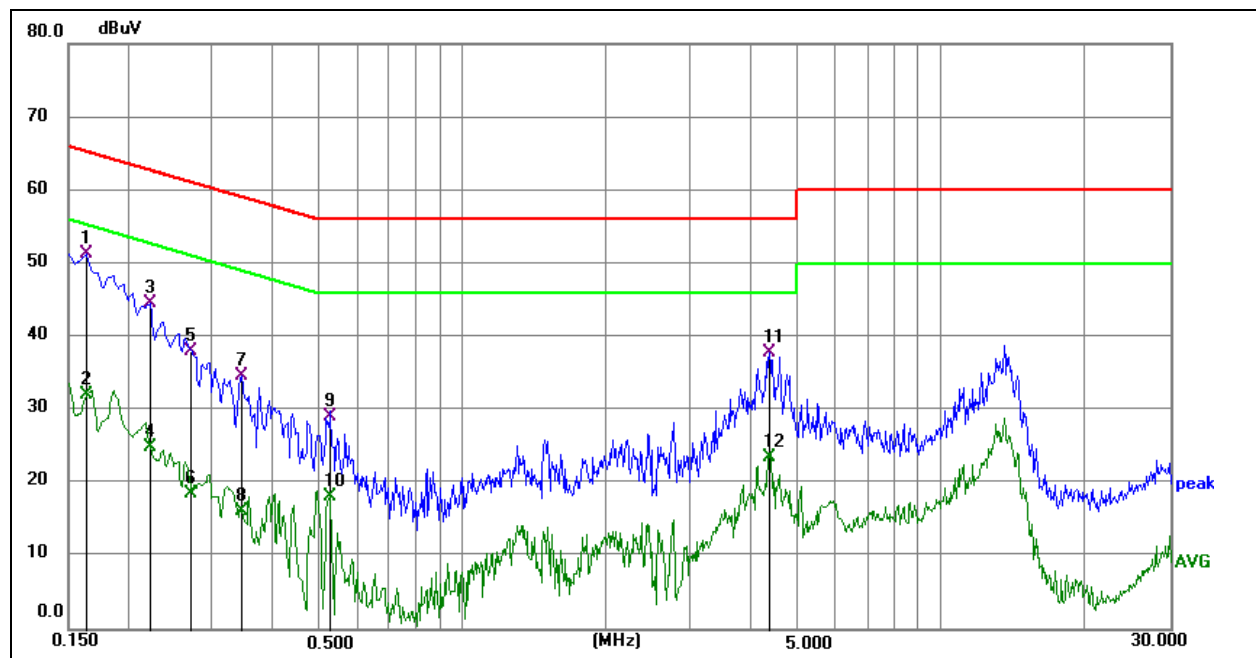


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1544	47.74	9.90	57.64	65.76	-8.12	QP
2	0.1544	30.34	9.90	40.24	55.76	-15.52	AVG
3	0.1905	40.77	9.94	50.71	64.01	-13.30	QP
4	0.1905	25.13	9.94	35.07	54.01	-18.94	AVG
5	0.2625	37.62	9.81	47.43	61.35	-13.92	QP
6	0.2625	17.98	9.81	27.79	51.35	-23.56	AVG
7	0.3300	28.28	9.92	38.20	59.45	-21.25	QP
8	0.3300	14.11	9.92	24.03	49.45	-25.42	AVG
9	0.5144	27.29	9.86	37.15	56.00	-18.85	QP
10	0.5144	16.72	9.86	26.58	46.00	-19.42	AVG
11	4.3573	27.80	10.22	38.02	56.00	-17.98	QP
12	4.3573	13.85	10.22	24.07	46.00	-21.93	AVG

Note: 1. Result = Reading +Correct Factor.

2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.

LINE N RESULTS (BLE 1M 2402)



Phase: N

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1635	41.33	9.96	51.29	65.28	-13.99	QP
2	0.1635	22.09	9.96	32.05	55.28	-23.23	AVG
3	0.2220	34.66	9.93	44.59	62.74	-18.15	QP
4	0.2220	15.01	9.93	24.94	52.74	-27.80	AVG
5	0.2714	28.04	9.90	37.94	61.07	-23.13	QP
6	0.2714	8.64	9.90	18.54	51.07	-32.53	AVG
7	0.3435	24.65	9.90	34.55	59.12	-24.57	QP
8	0.3435	6.31	9.90	16.21	49.12	-32.91	AVG
9	0.5265	19.14	9.99	29.13	56.00	-26.87	QP
10	0.5265	8.27	9.99	18.26	46.00	-27.74	AVG
11	4.3620	27.44	10.28	37.72	56.00	-18.28	QP
12	4.3620	13.31	10.28	23.59	46.00	-22.41	AVG

Note: 1. Result = Reading +Correct Factor.

2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. All test modes had been tested, only the worst data record in the report.