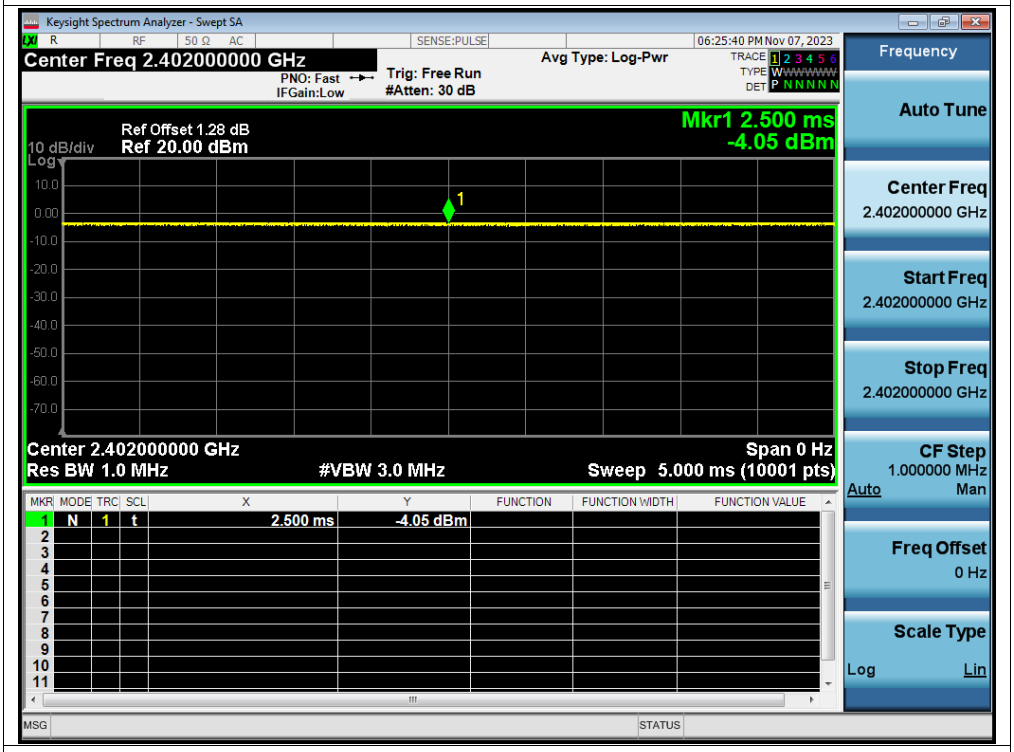
Appendix A

Duty Cycle

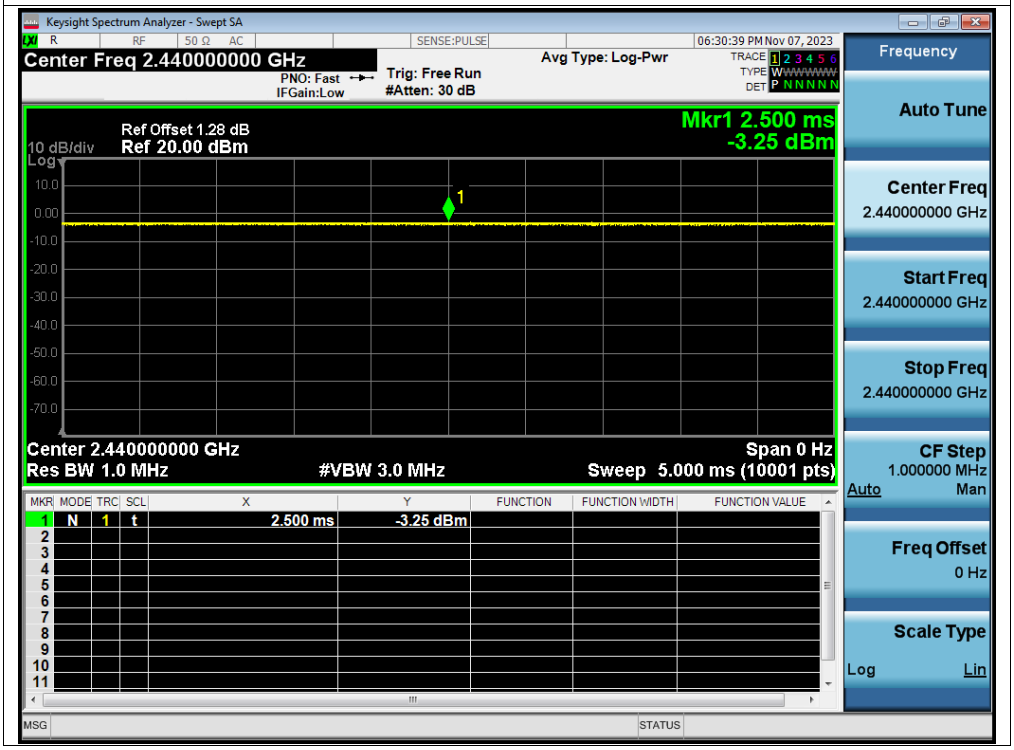
Condition	Mode	Frequency (MHz)	Antenna	On Time (ms)	Period (ms)	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)	Final settingFor VBW (kHz)
NVNT	BLE 1M	2402	Ant1	0	0	100	0	0	1
NVNT	BLE 1M	2440	Ant1	0	0	100	0	0	1
NVNT	BLE 1M	2480	Ant1	0	0	100	0	0	1
NVNT	BLE 2M	2402	Ant1	0	0	100	0	0	1
NVNT	BLE 2M	2440	Ant1	0	0	100	0	0	1
NVNT	BLE 2M	2480	Ant1	0	0	100	0	0	1

Test Graphs

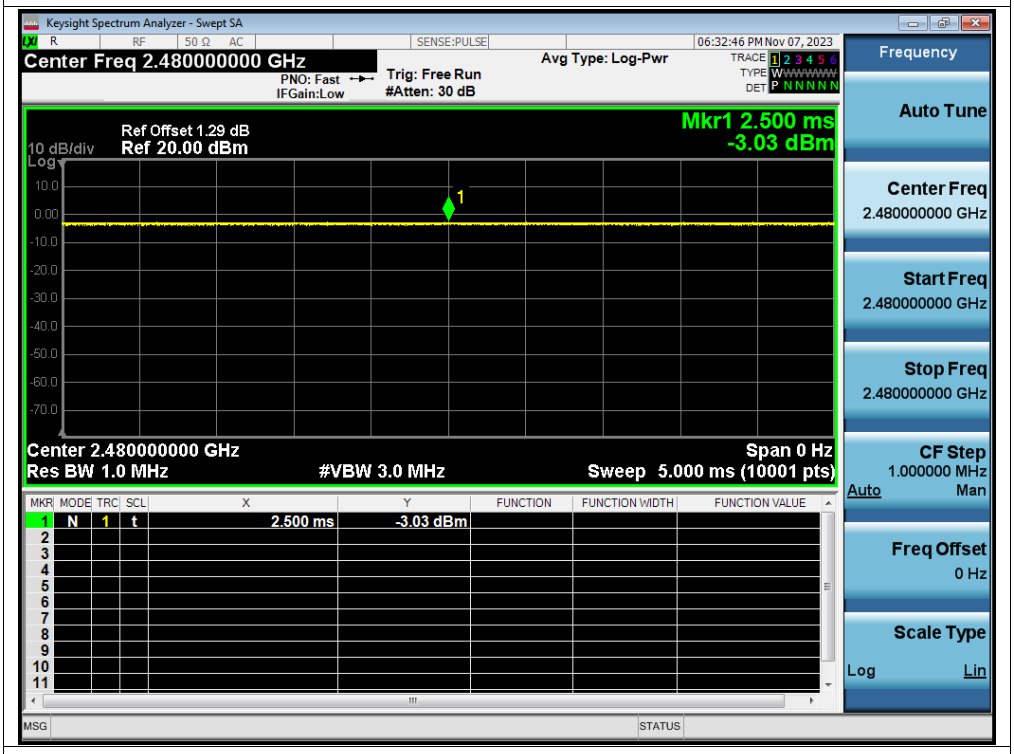
Duty Cycle NVNT BLE 1M 2402MHz Ant1



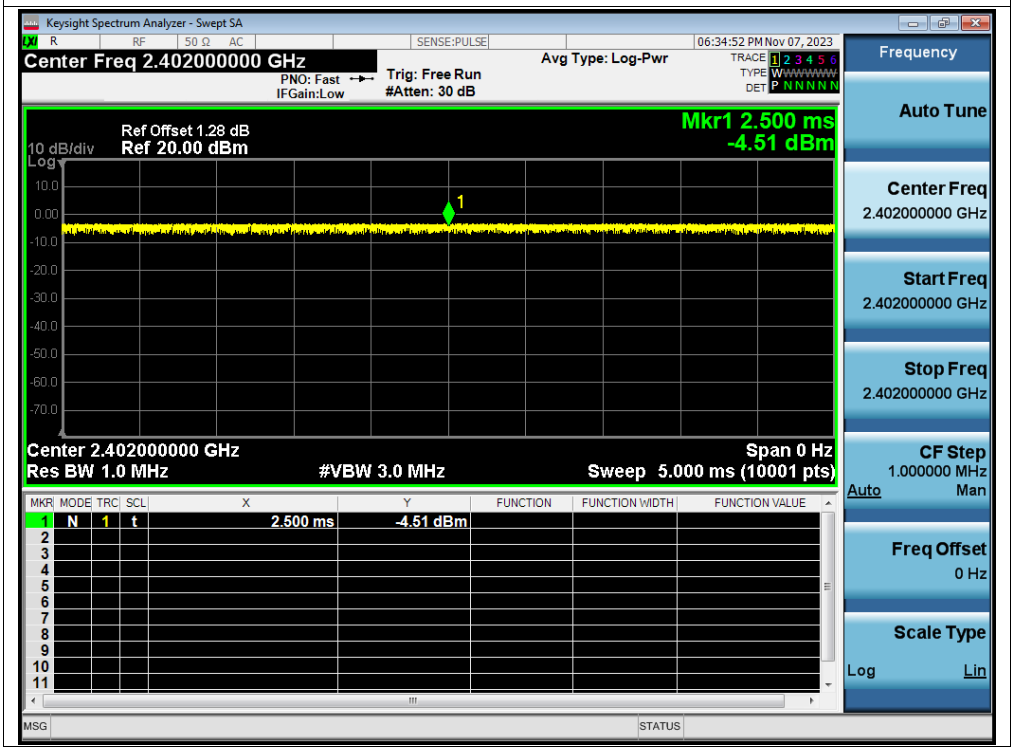
Duty Cycle NVNT BLE 1M 2440MHz Ant1



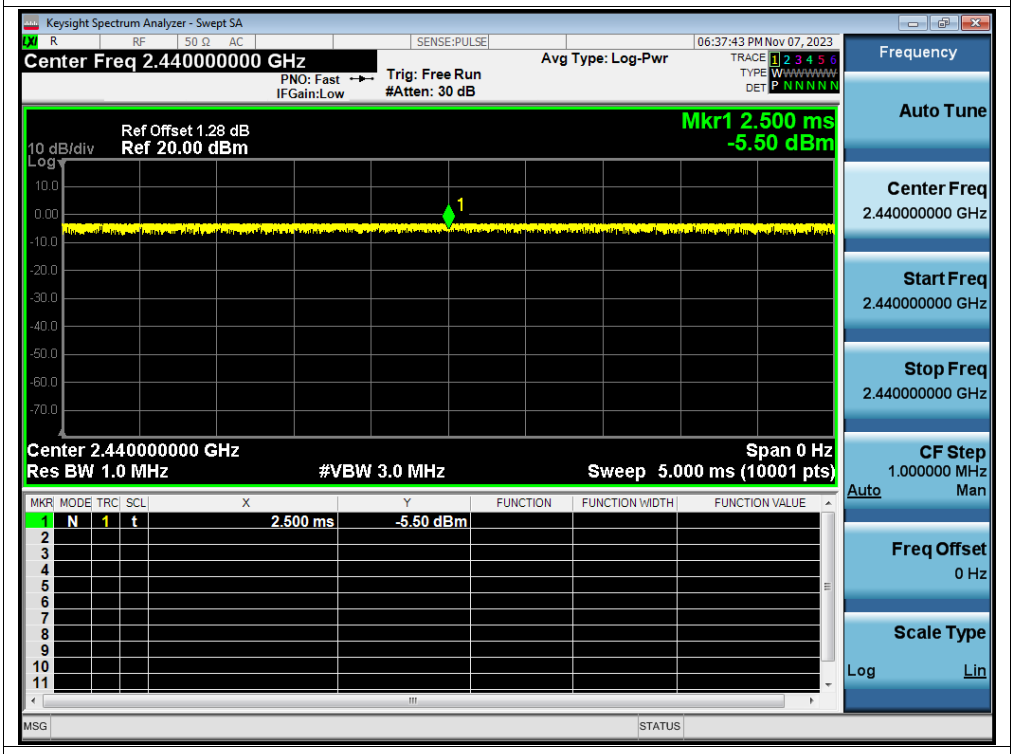
Duty Cycle NVNT BLE 1M 2480MHz Ant1



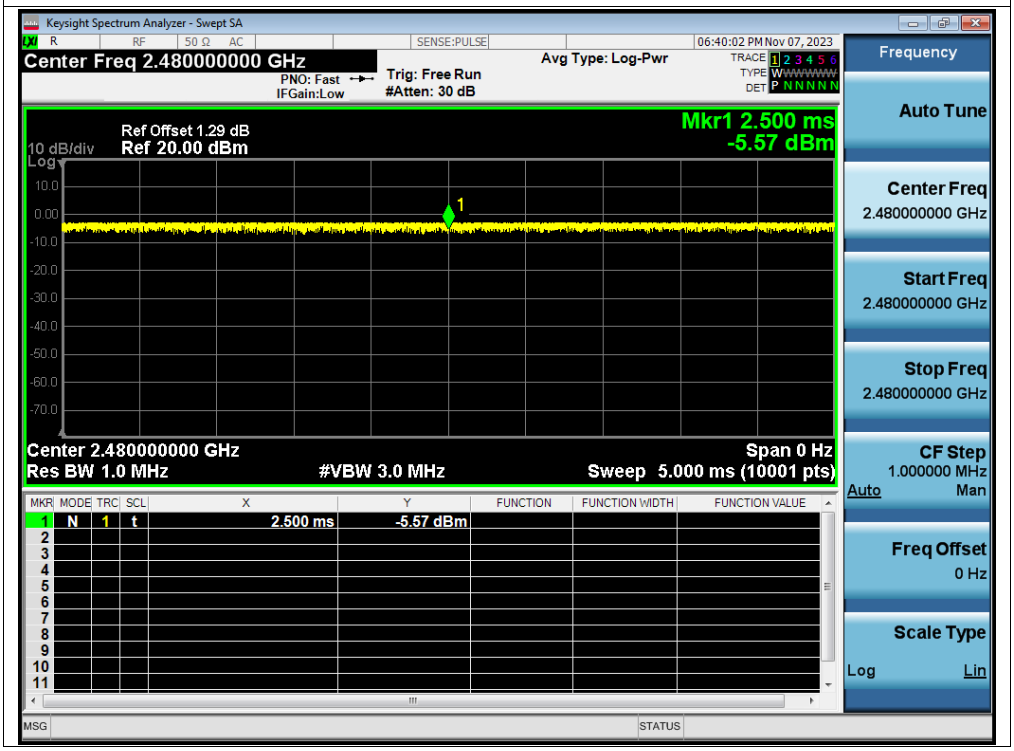
Duty Cycle NVNT BLE 2M 2402MHz Ant1



Duty Cycle NVNT BLE 2M 2440MHz Ant1



Duty Cycle NVNT BLE 2M 2480MHz Ant1

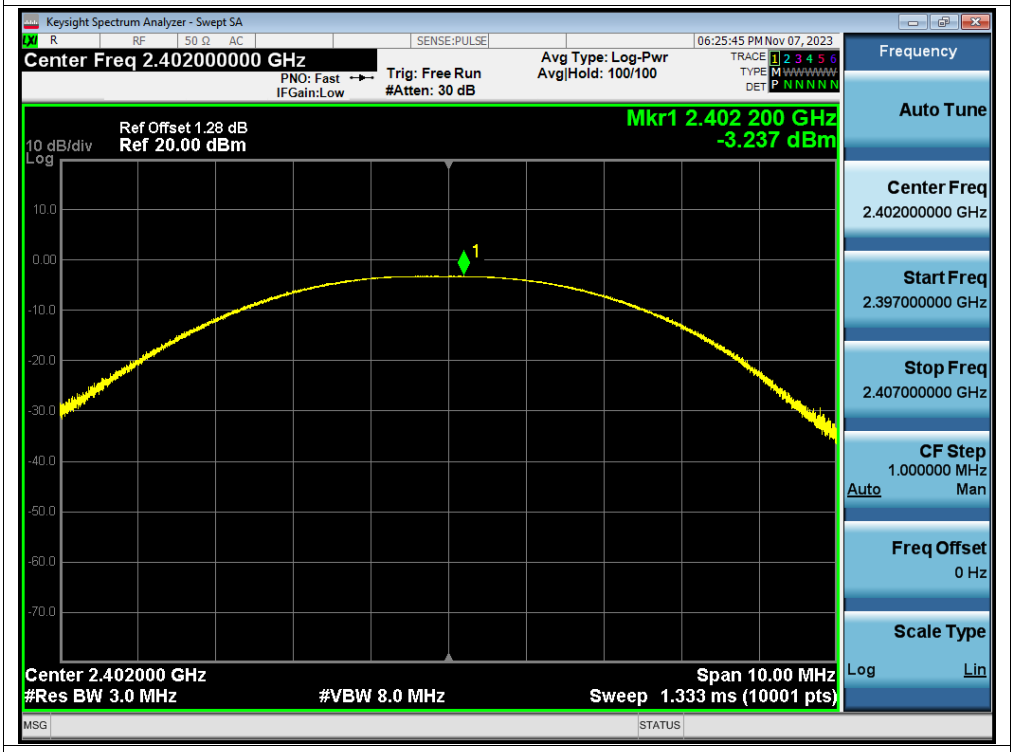


Maximum Conducted Output Power

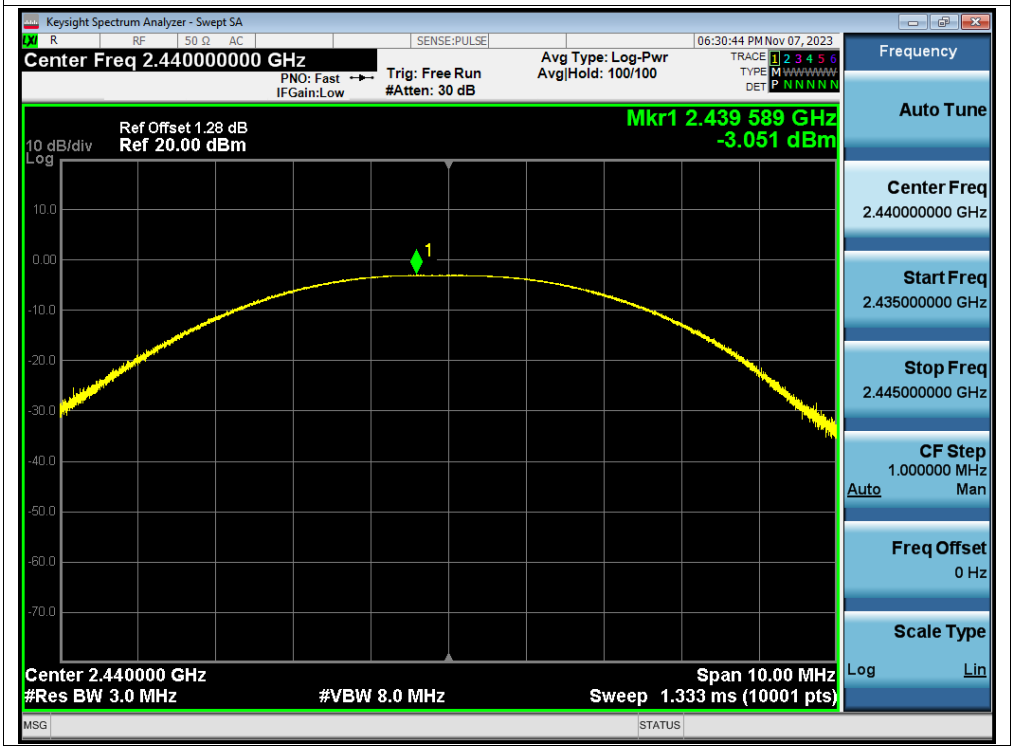
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	Ant1	-3.24	0	-3.24	30	Pass
NVNT	BLE 1M	2440	Ant1	-3.05	0	-3.05	30	Pass
NVNT	BLE 1M	2480	Ant1	-2.71	0	-2.71	30	Pass
NVNT	BLE 2M	2402	Ant1	-3.23	0	-3.23	30	Pass
NVNT	BLE 2M	2440	Ant1	-3.04	0	-3.04	30	Pass
NVNT	BLE 2M	2480	Ant1	-2.71	0	-2.71	30	Pass

Test Graphs

Power NVNT BLE 1M 2402MHz Ant1



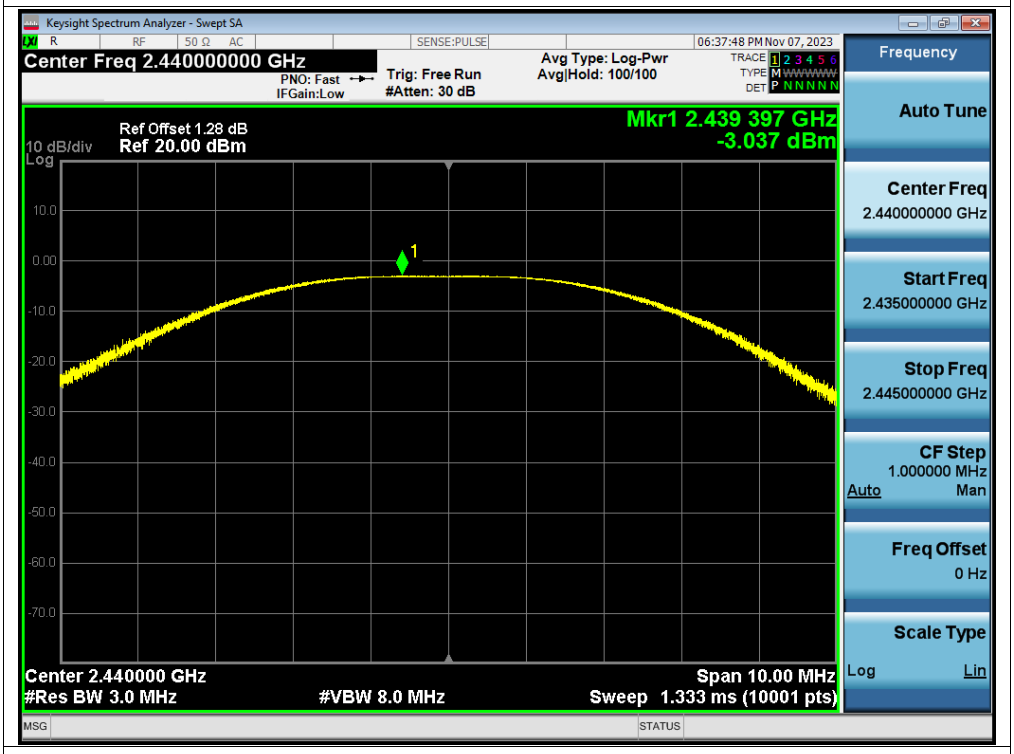
Power NVNT BLE 1M 2440MHz Ant1



Power NVNT BLE 1M 2480MHz Ant1

Power NVNT BLE 2M 2402MHz Ant1

Power NVNT BLE 2M 2440MHz Ant1



Power NVNT BLE 2M 2480MHz Ant1

-6dB Bandwidth

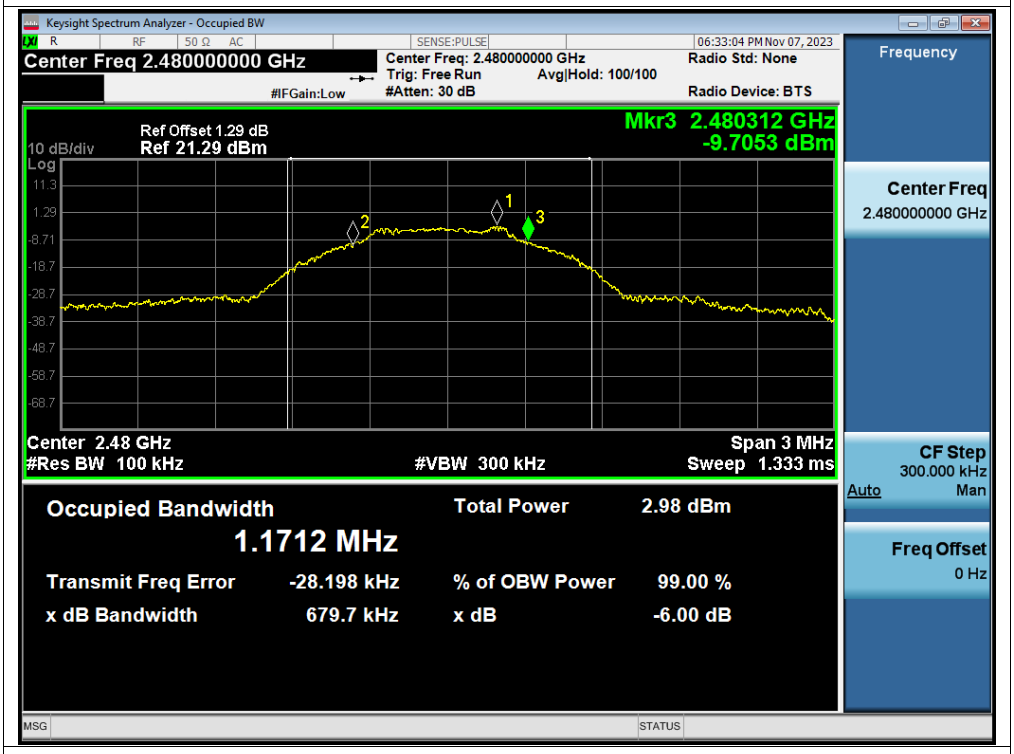
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1M	2402	Ant1	0.659	0.5	Pass
NVNT	BLE 1M	2440	Ant1	0.674	0.5	Pass
NVNT	BLE 1M	2480	Ant1	0.68	0.5	Pass
NVNT	BLE 2M	2402	Ant1	1.258	0.5	Pass
NVNT	BLE 2M	2440	Ant1	1.256	0.5	Pass
NVNT	BLE 2M	2480	Ant1	1.271	0.5	Pass

Test Graphs

-6dB Bandwidth NVNT BLE 1M 2402MHz Ant1

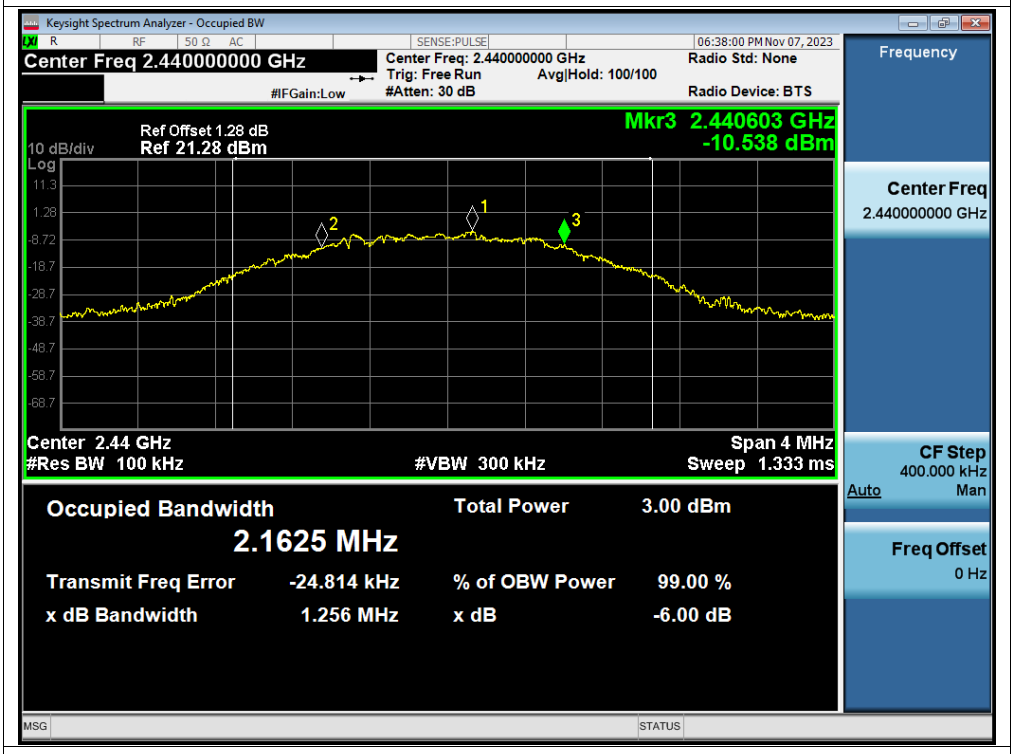
-6dB Bandwidth NVNT BLE 1M 2440MHz Ant1

-6dB Bandwidth NVNT BLE 1M 2480MHz Ant1



-6dB Bandwidth NVNT BLE 2M 2402MHz Ant1

-6dB Bandwidth NVNT BLE 2M 2440MHz Ant1



-6dB Bandwidth NVNT BLE 2M 2480MHz Ant1

Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	BLE 1M	2402	Ant1	1.117
NVNT	BLE 1M	2440	Ant1	1.152
NVNT	BLE 1M	2480	Ant1	1.152
NVNT	BLE 2M	2402	Ant1	2.144
NVNT	BLE 2M	2440	Ant1	2.171
NVNT	BLE 2M	2480	Ant1	2.186

Test Graphs

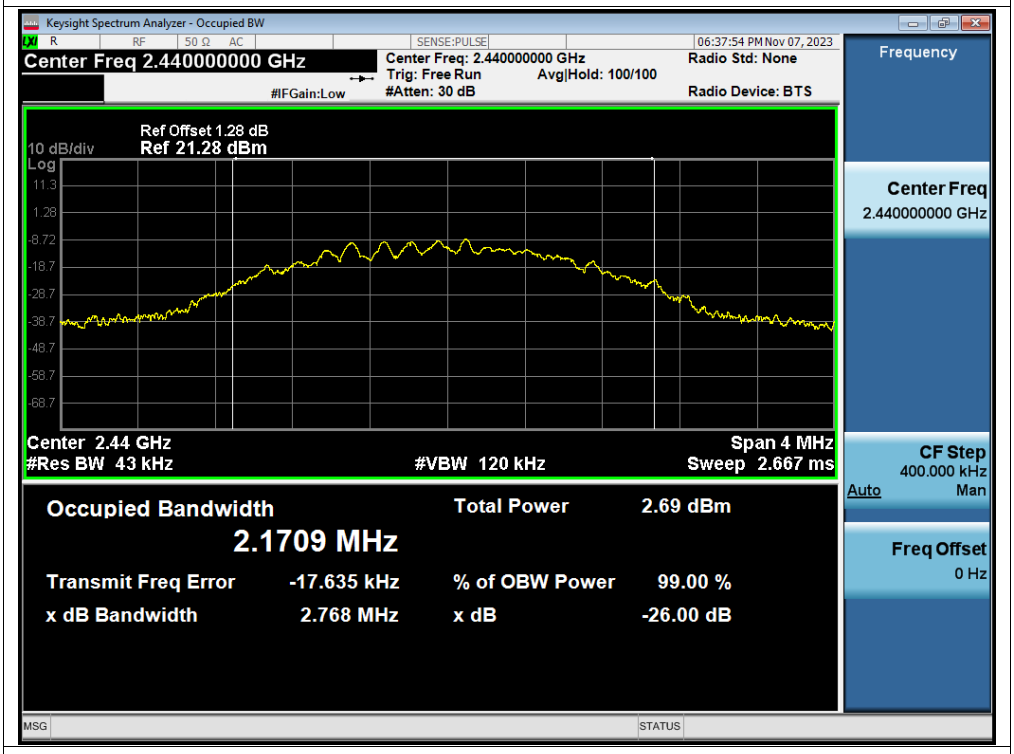
OBW NVNT BLE 1M 2402MHz Ant1

OBW NVNT BLE 1M 2440MHz Ant1

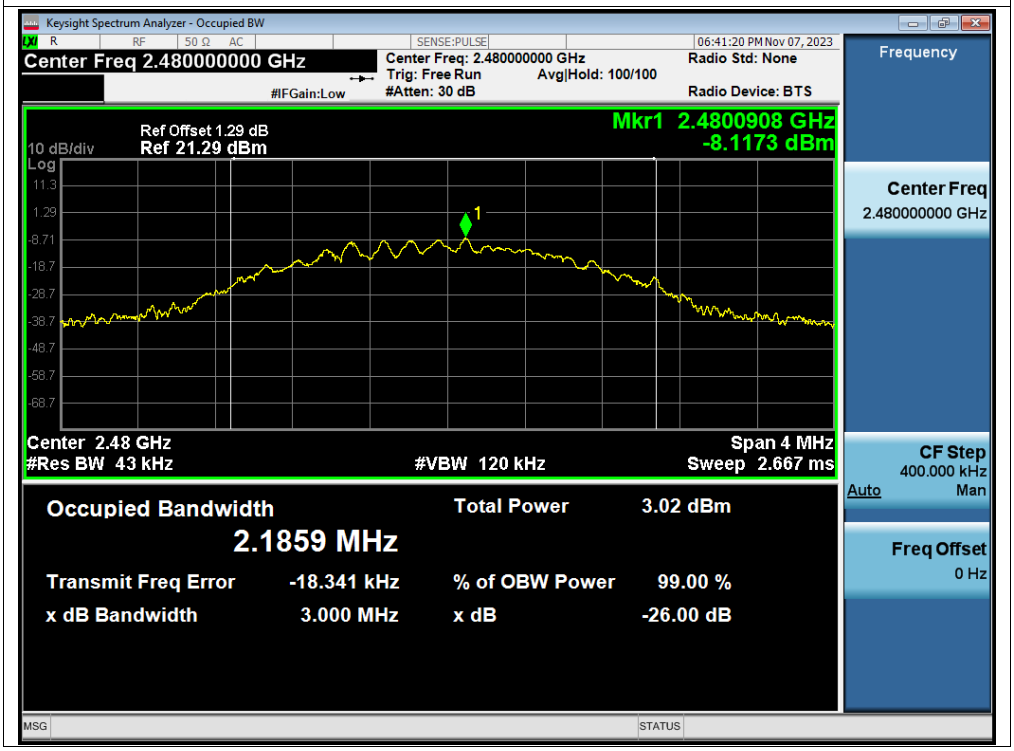
OBW NVNT BLE 1M 2480MHz Ant1

OBW NVNT BLE 2M 2402MHz Ant1

OBW NVNT BLE 2M 2440MHz Ant1



OBW NVNT BLE 2M 2480MHz Ant1

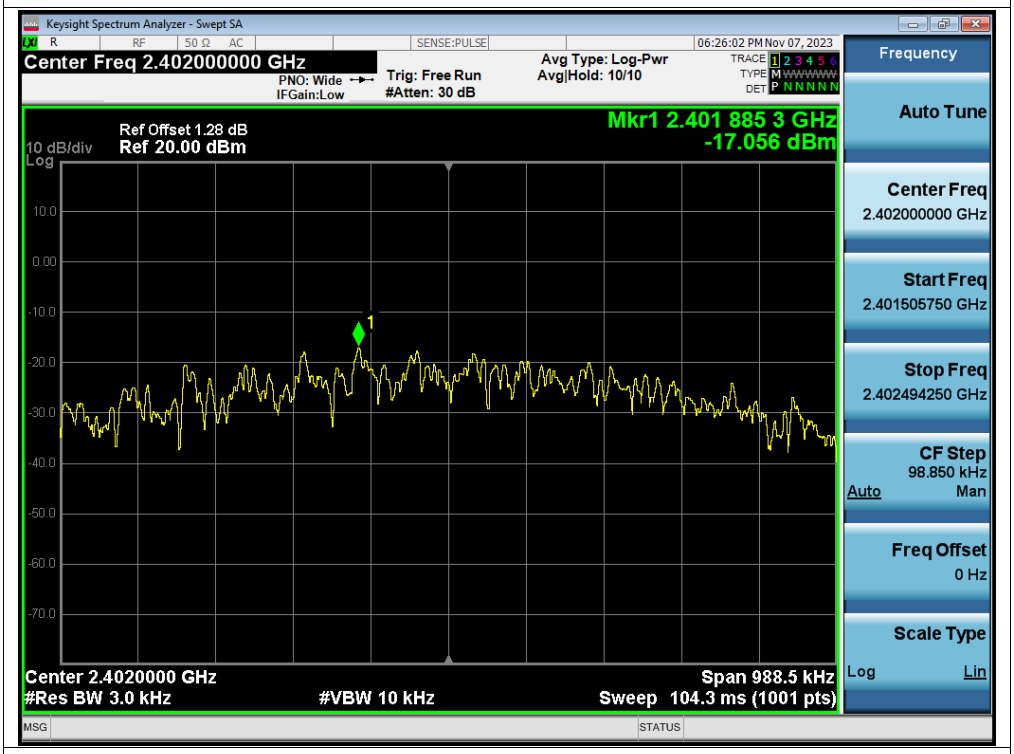


Maximum Power Spectral Density Level

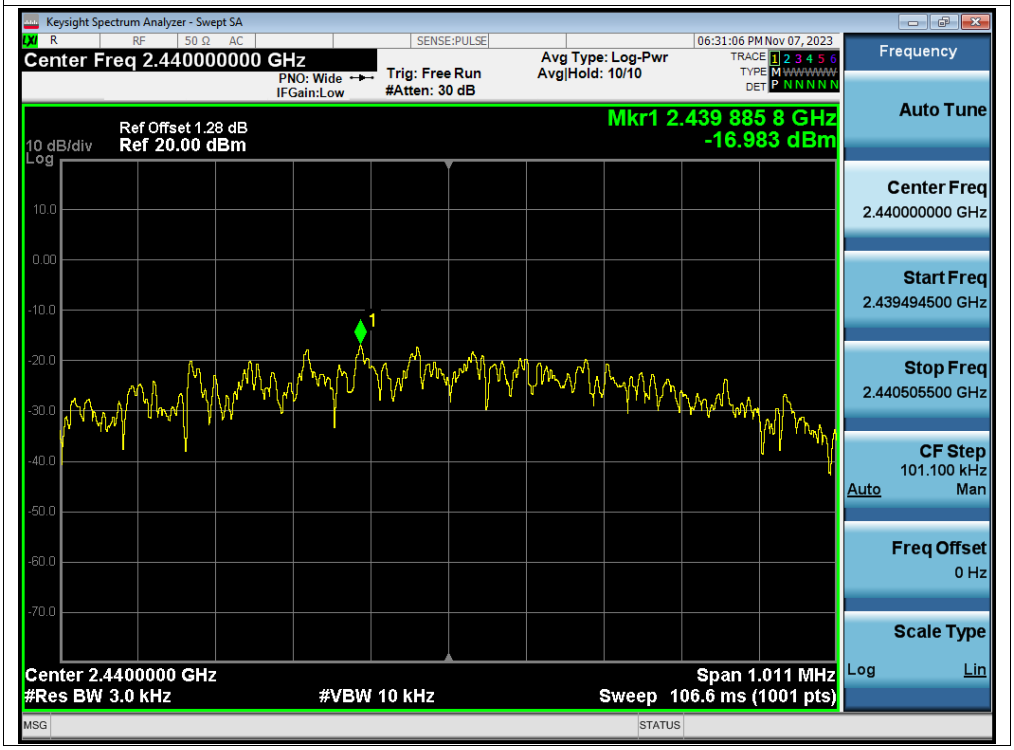
Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Duty Factor (dB)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	BLE 1M	2402	Ant1	-17.06	0	-17.06	8	Pass
NVNT	BLE 1M	2440	Ant1	-16.98	0	-16.98	8	Pass
NVNT	BLE 1M	2480	Ant1	-16.68	0	-16.68	8	Pass
NVNT	BLE 2M	2402	Ant1	-20.14	0	-20.14	8	Pass
NVNT	BLE 2M	2440	Ant1	-19.89	0	-19.89	8	Pass
NVNT	BLE 2M	2480	Ant1	-19.75	0	-19.75	8	Pass

Test Graphs

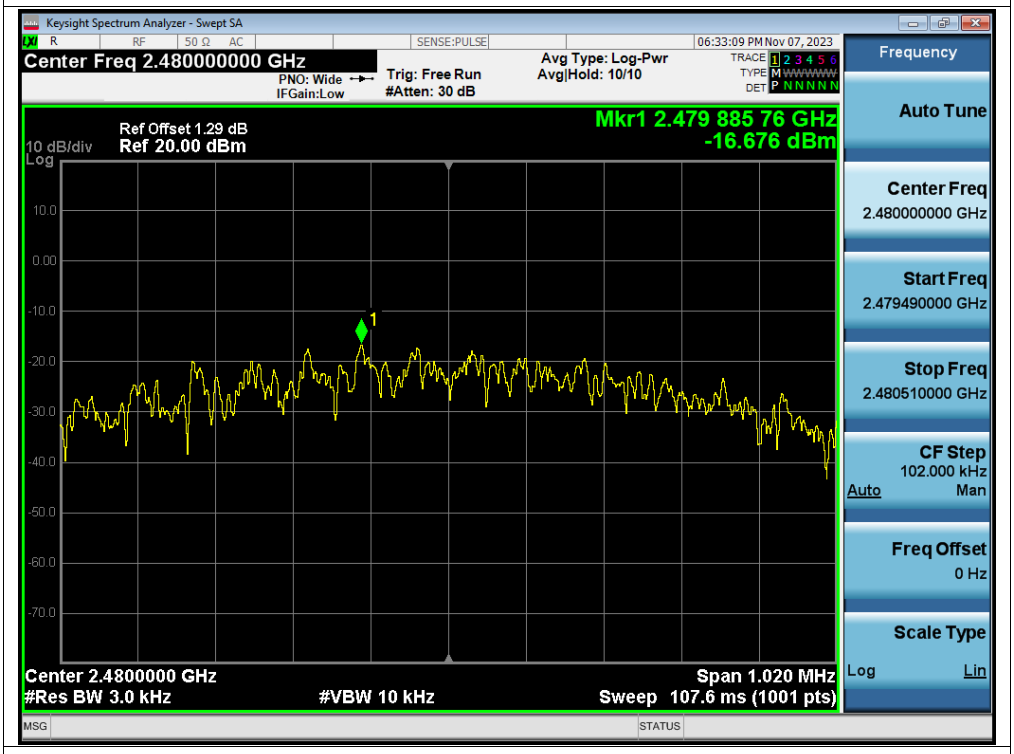
PSD NVNT BLE 1M 2402MHz Ant1



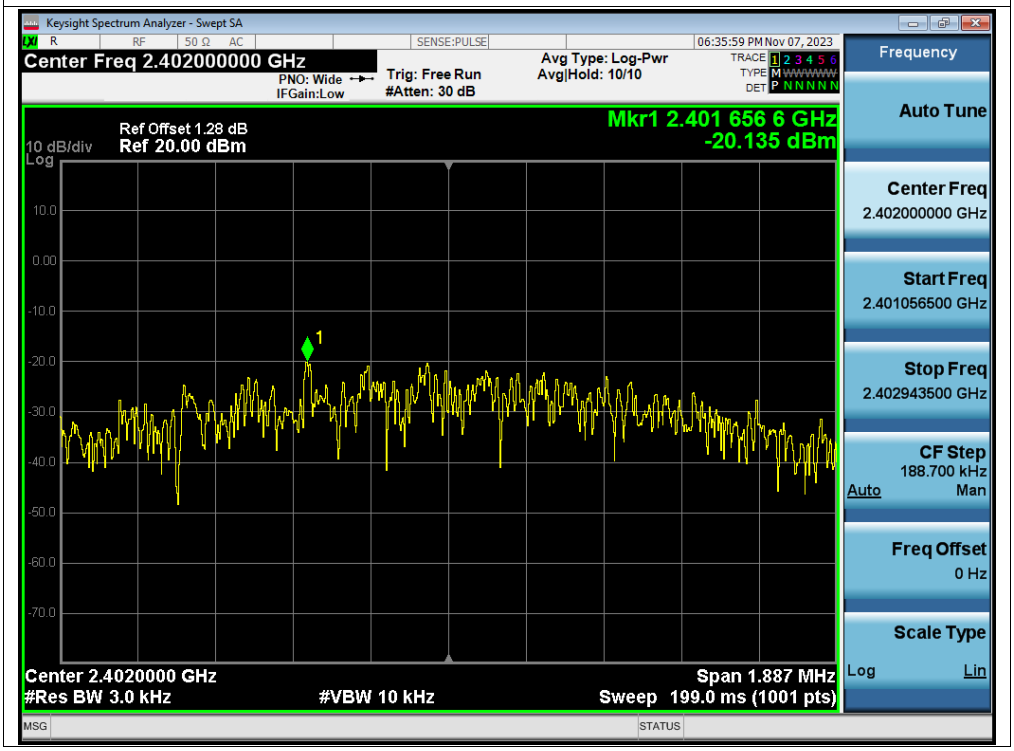
PSD NVNT BLE 1M 2440MHz Ant1



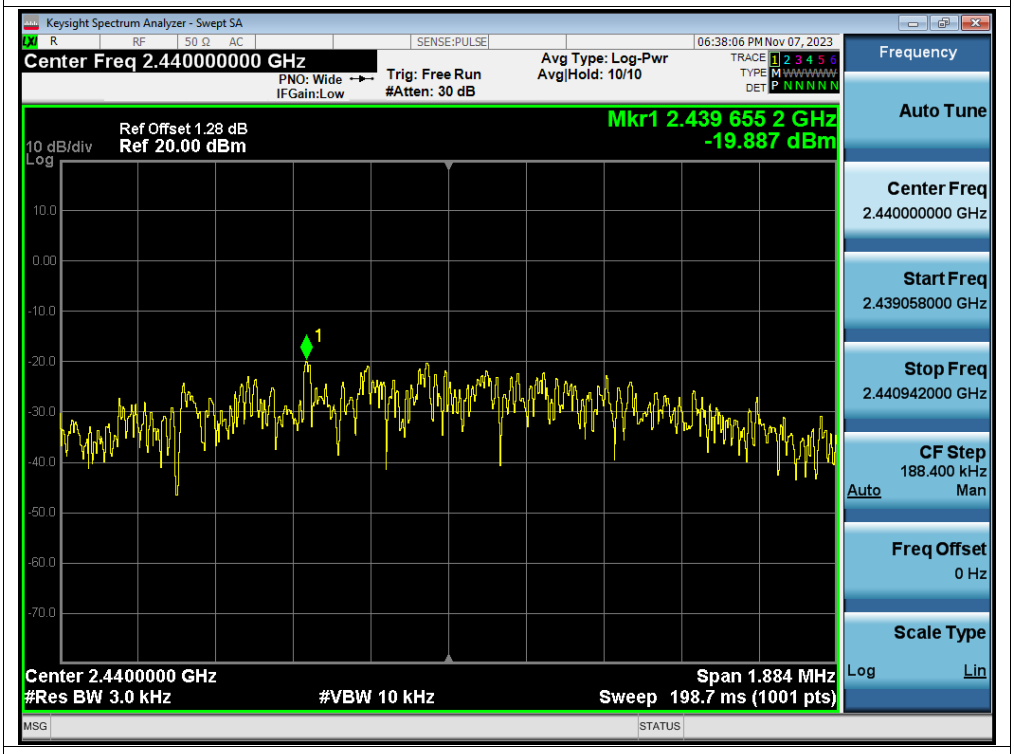
PSD NVNT BLE 1M 2480MHz Ant1



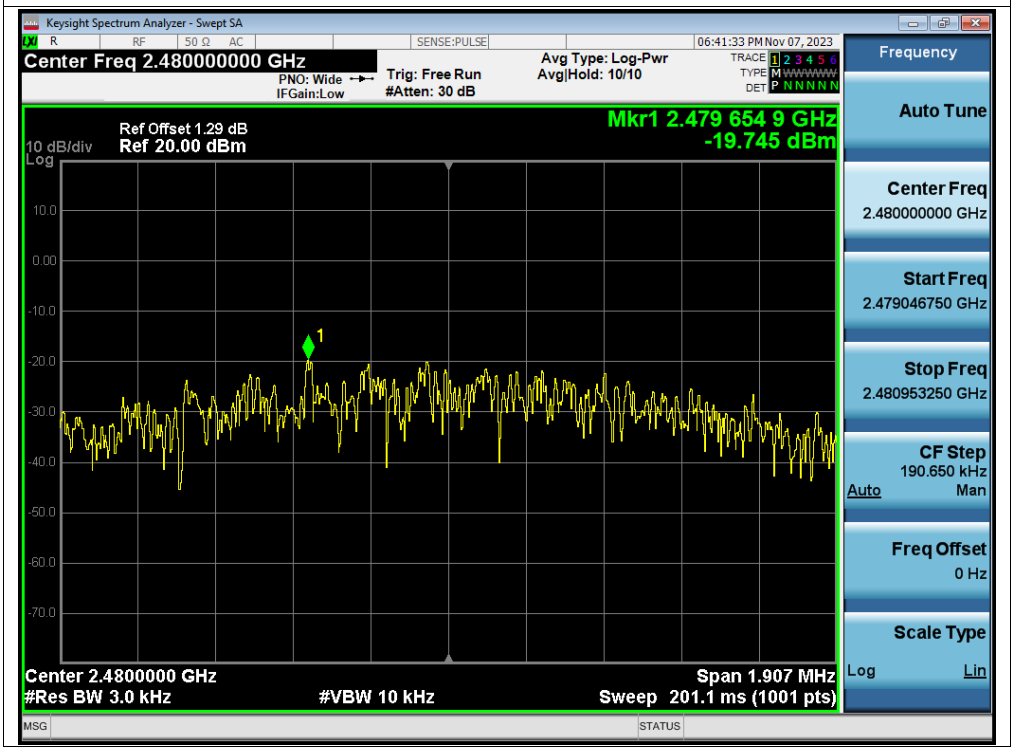
PSD NVNT BLE 2M 2402MHz Ant1



PSD NVNT BLE 2M 2440MHz Ant1



PSD NVNT BLE 2M 2480MHz Ant1



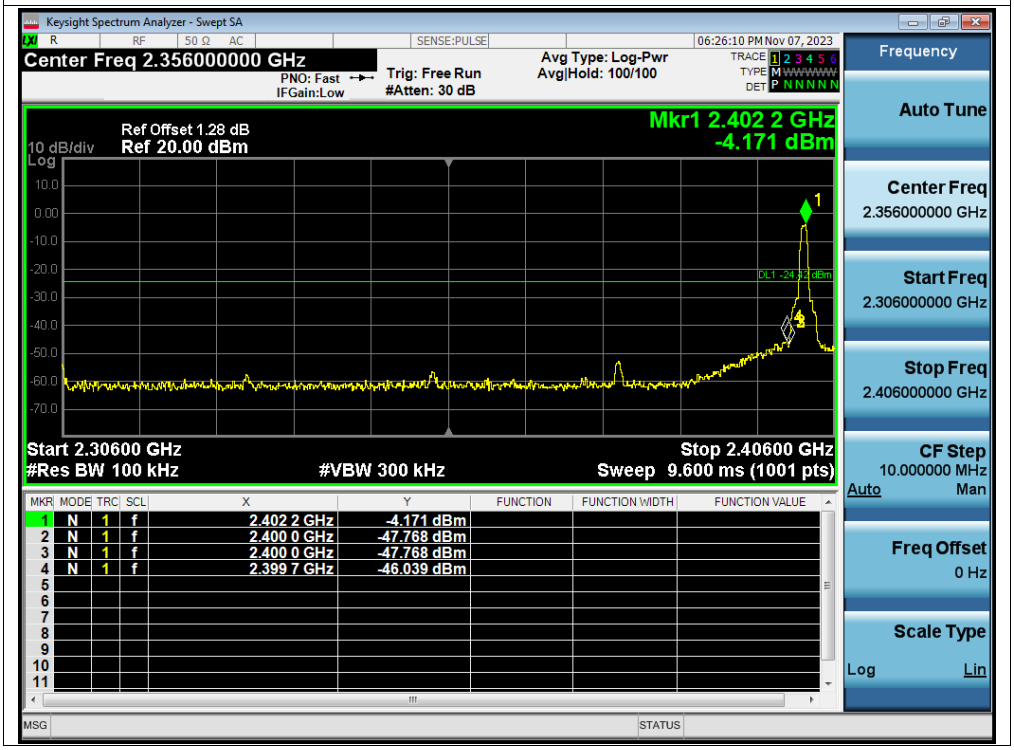
Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-41.61	-20	Pass
NVNT	BLE 1M	2480	Ant1	-42.63	-20	Pass
NVNT	BLE 2M	2402	Ant1	-29.92	-20	Pass
NVNT	BLE 2M	2480	Ant1	-34.95	-20	Pass

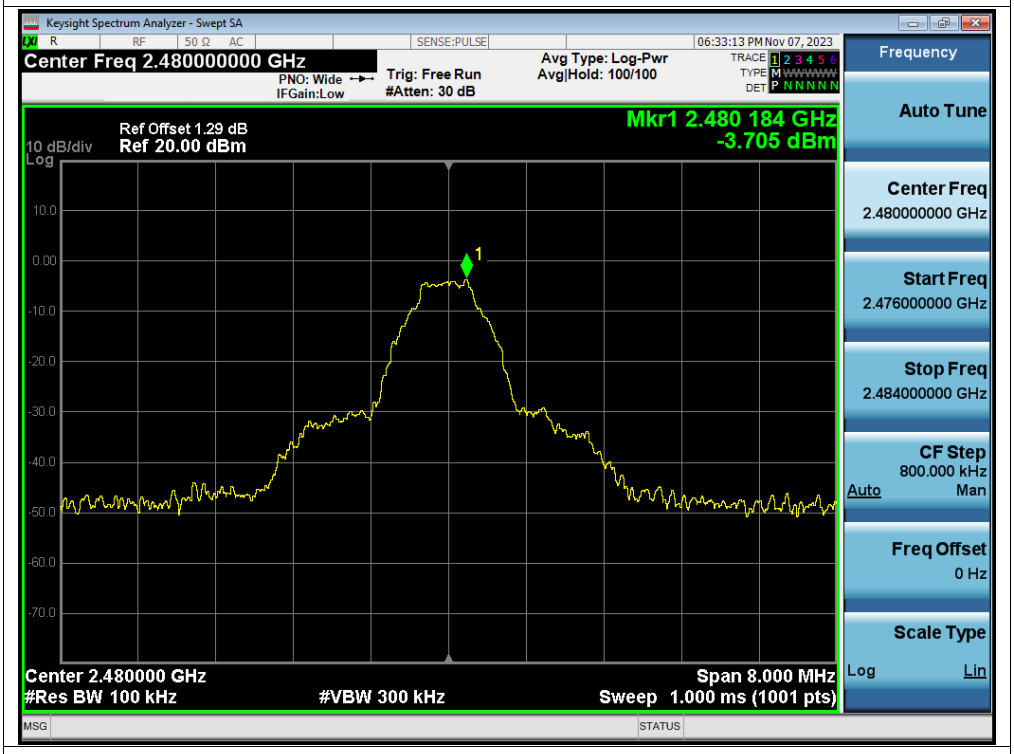
Test Graphs

Band Edge NVNT BLE 1M 2402MHz Ant1 Ref

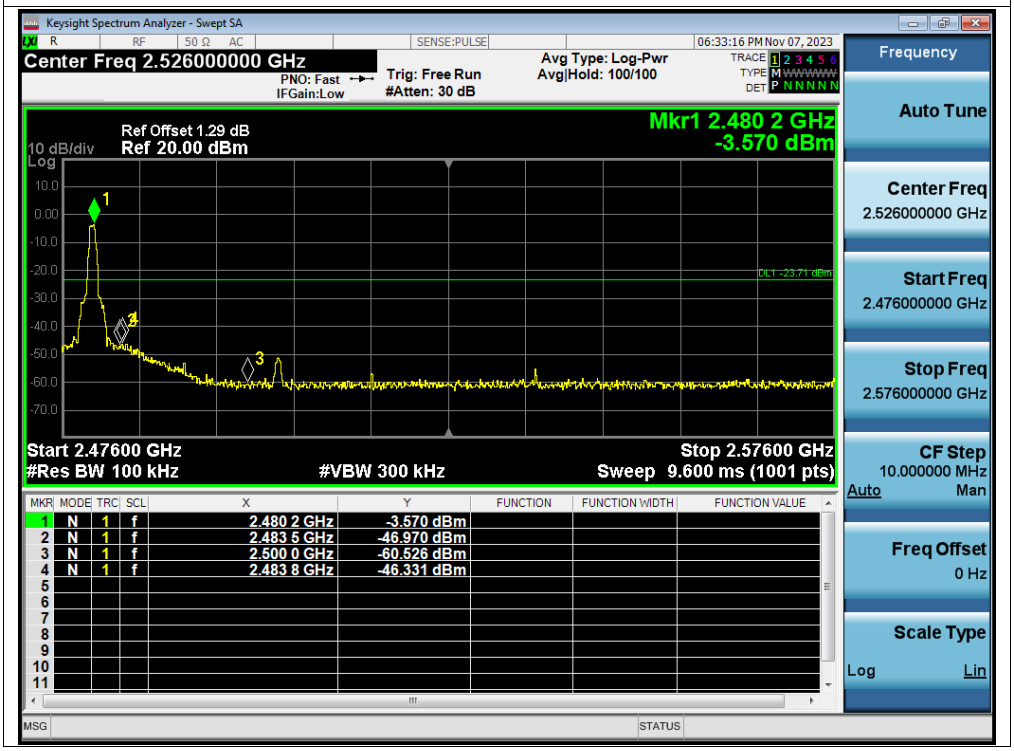
Band Edge NVNT BLE 1M 2402MHz Ant1 Emission



Band Edge NVNT BLE 1M 2480MHz Ant1 Ref

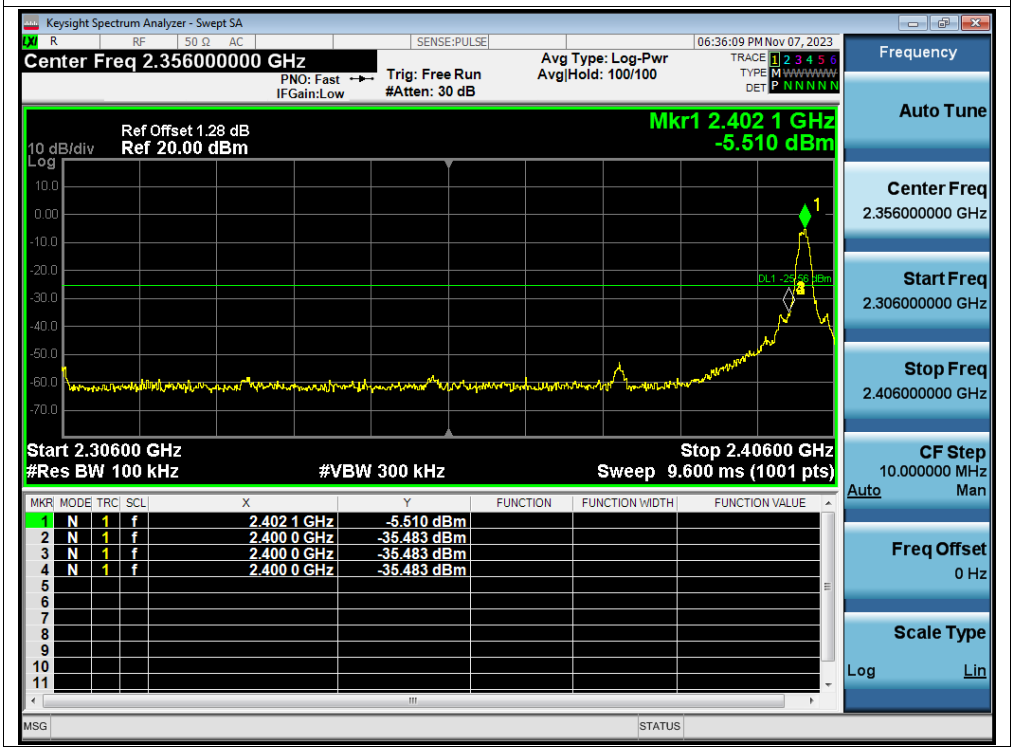


Band Edge NVNT BLE 1M 2480MHz Ant1 Emission



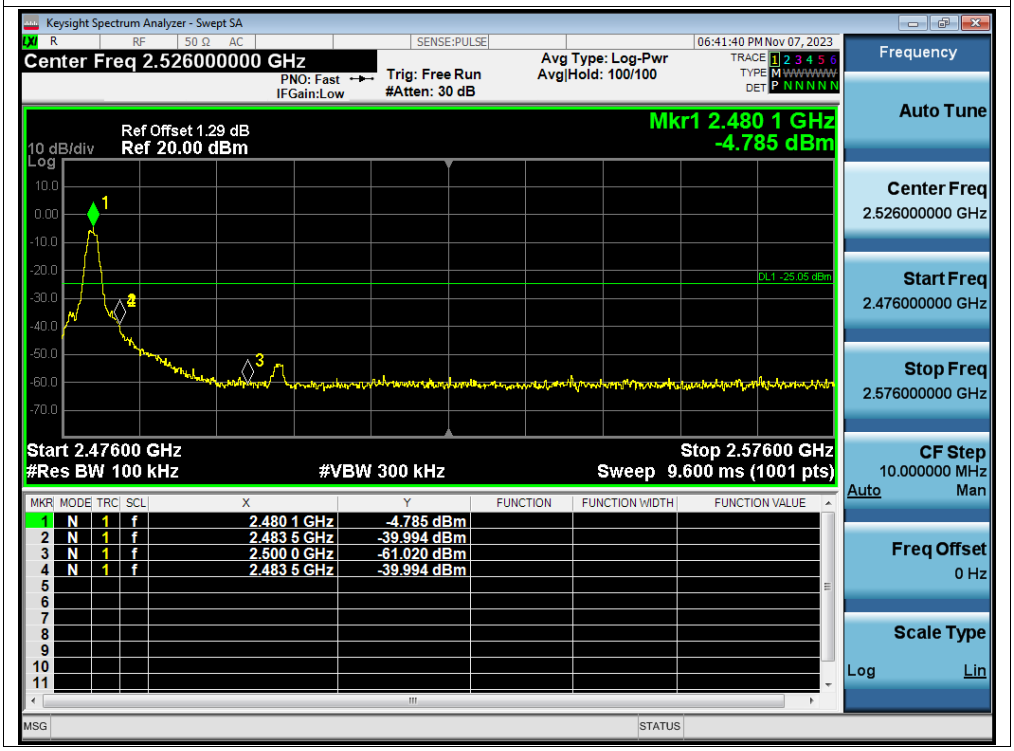
Band Edge NVNT BLE 2M 2402MHz Ant1 Ref

Band Edge NVNT BLE 2M 2402MHz Ant1 Emission



Band Edge NVNT BLE 2M 2480MHz Ant1 Ref

Band Edge NVNT BLE 2M 2480MHz Ant1 Emission



Conducted RF Spurious Emission

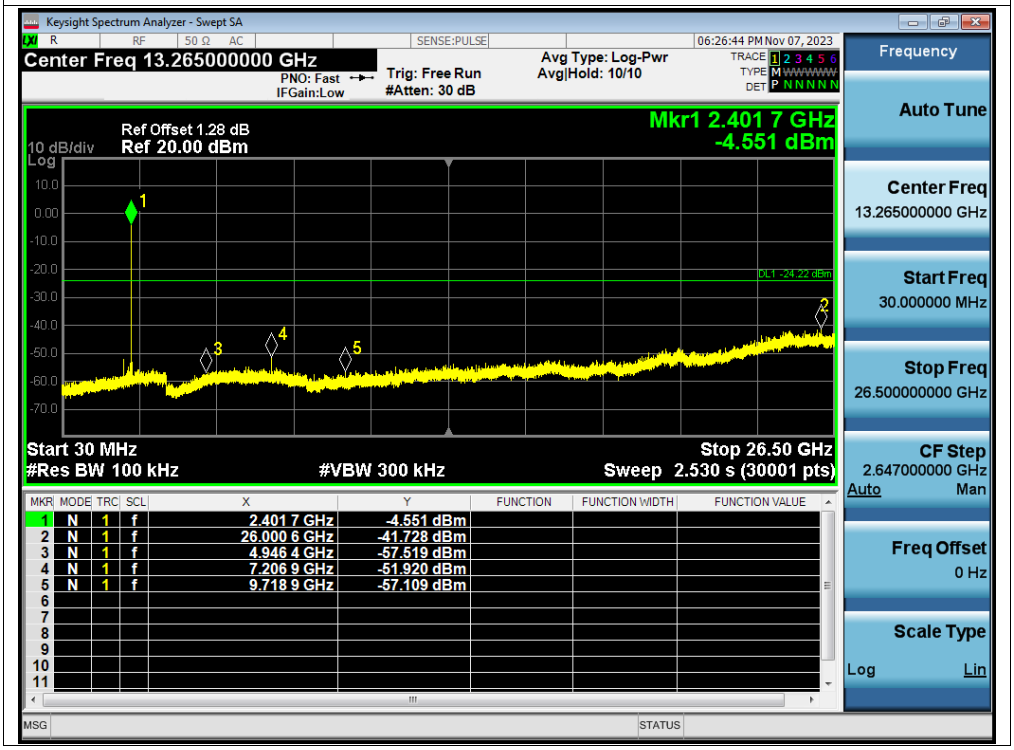
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-37.5	-20	Pass
NVNT	BLE 1M	2440	Ant1	-37.9	-20	Pass
NVNT	BLE 1M	2480	Ant1	-38.12	-20	Pass
NVNT	BLE 2M	2402	Ant1	-36.45	-20	Pass
NVNT	BLE 2M	2440	Ant1	-36.18	-20	Pass
NVNT	BLE 2M	2480	Ant1	-36.41	-20	Pass

Global Testing Group

Test Graphs

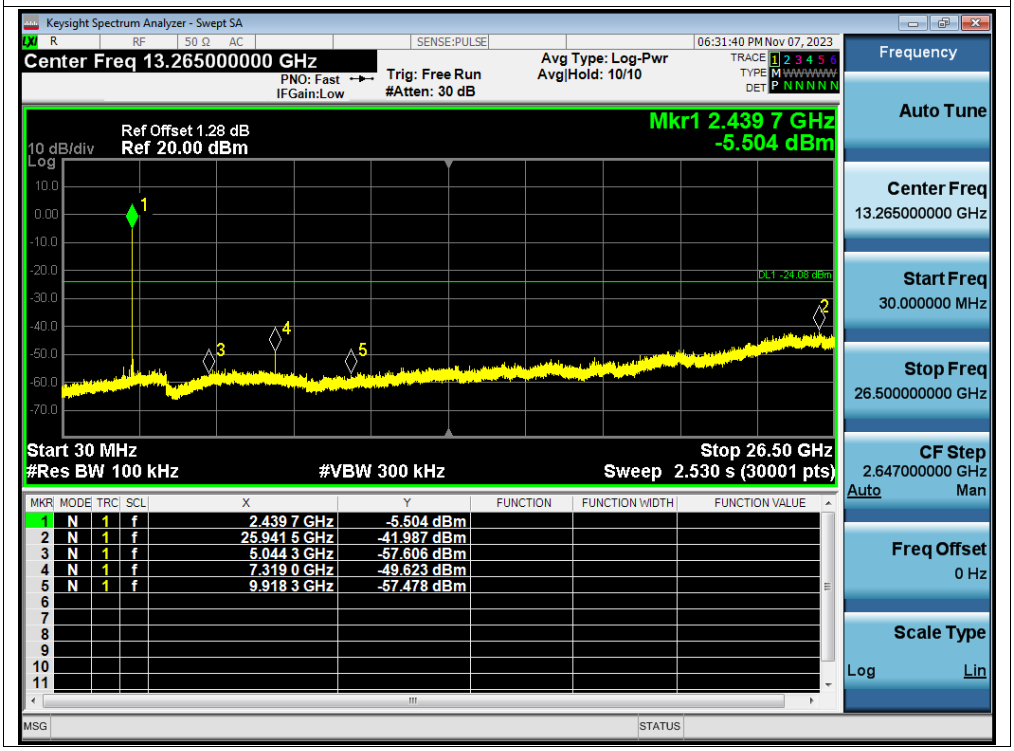
Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Ref

Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Emission



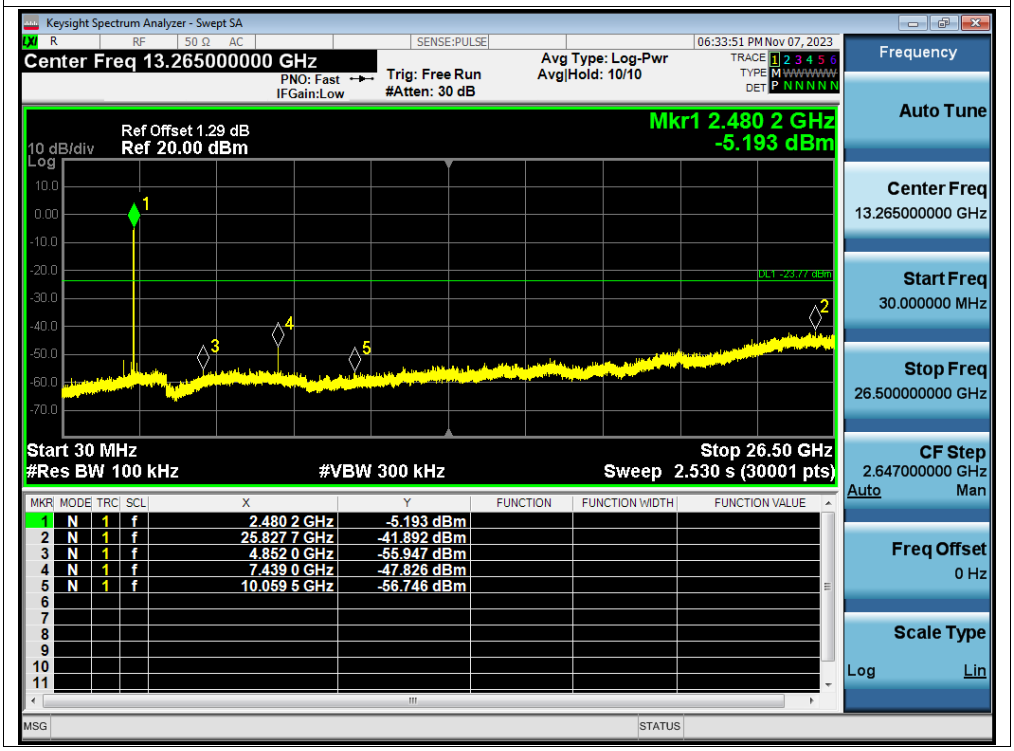
Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Ref

Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Emission



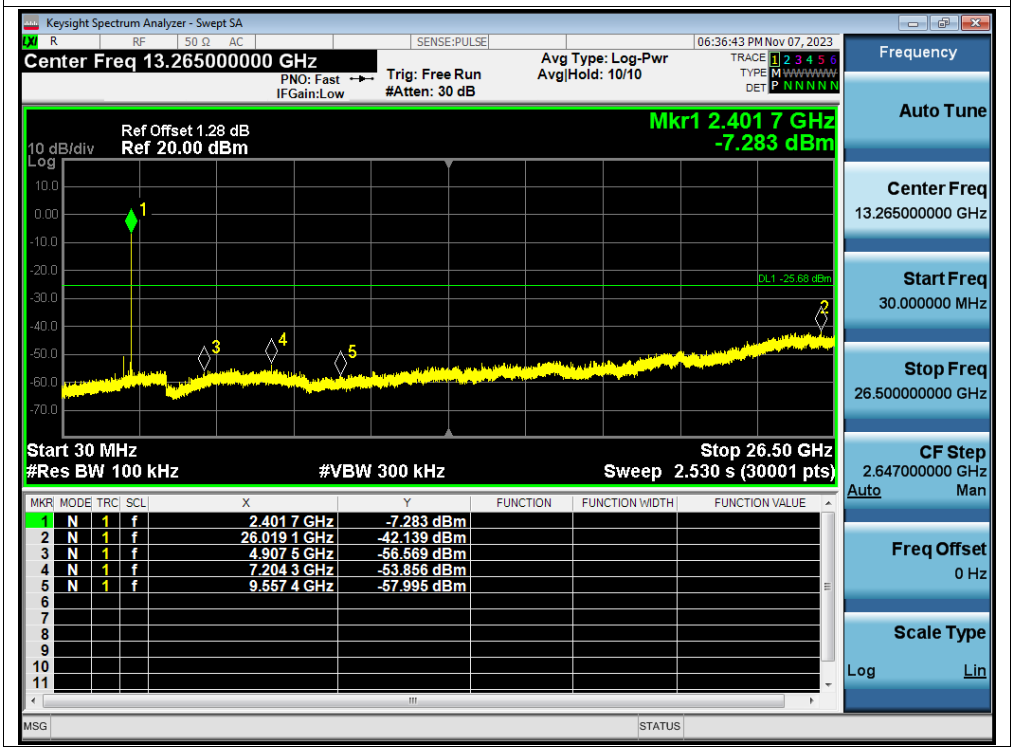
Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Ref

Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Emission



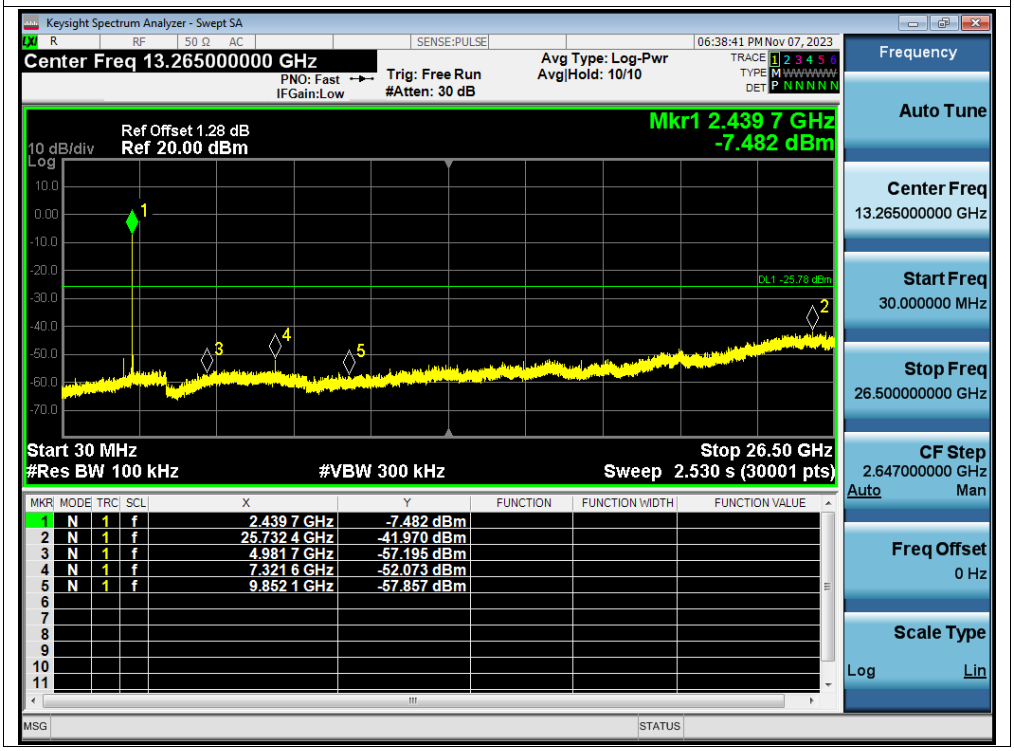
Tx. Spurious NVNT BLE 2M 2402MHz Ant1 Ref

Tx. Spurious NVNT BLE 2M 2402MHz Ant1 Emission



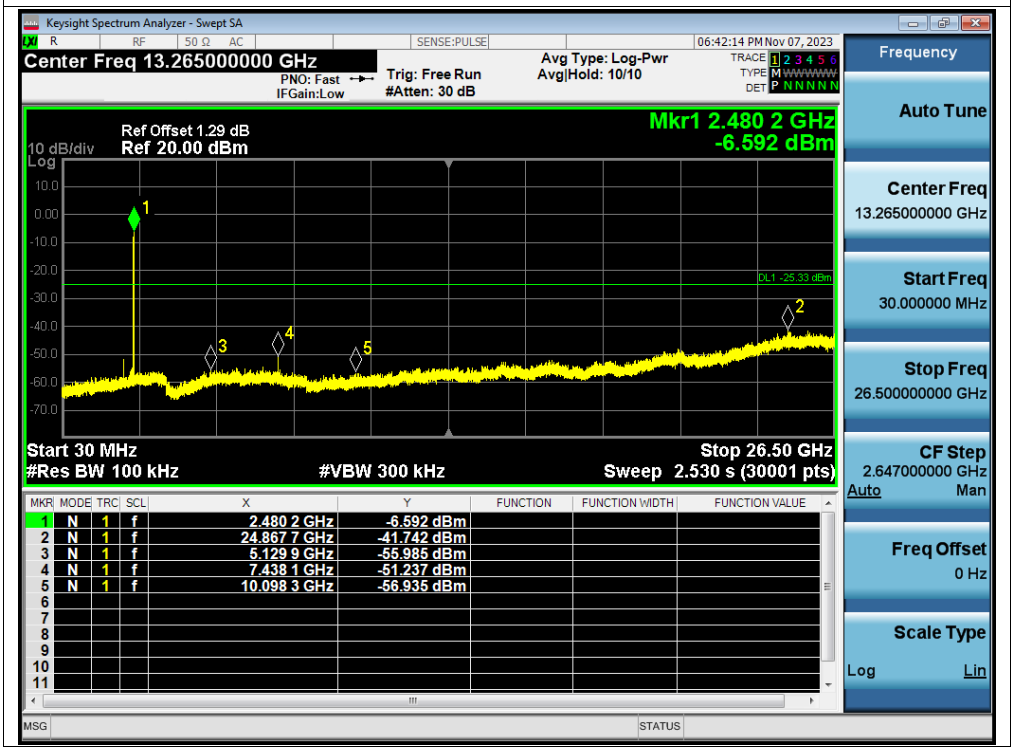
Tx. Spurious NVNT BLE 2M 2440MHz Ant1 Ref

Tx. Spurious NVNT BLE 2M 2440MHz Ant1 Emission



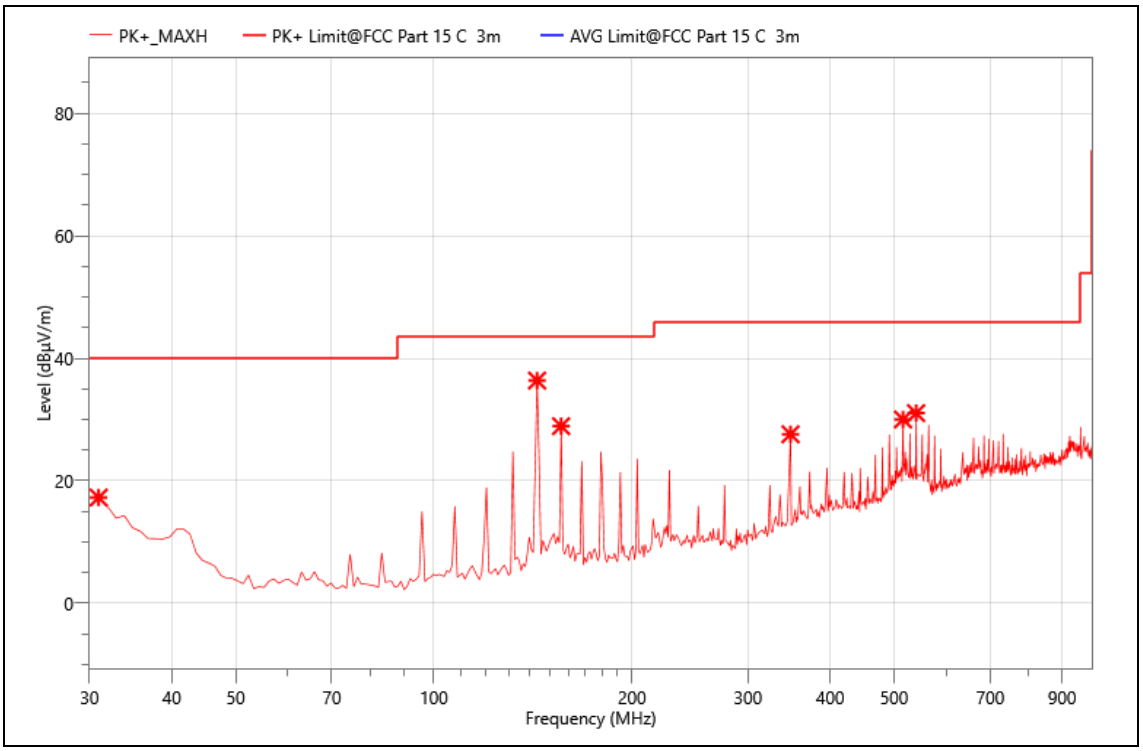
Tx. Spurious NVNT BLE 2M 2480MHz Ant1 Ref

Tx. Spurious NVNT BLE 2M 2480MHz Ant1 Emission



The data of the mode (BLE 2M 2402) are recorded in the following pages.
The worst result as bellow:

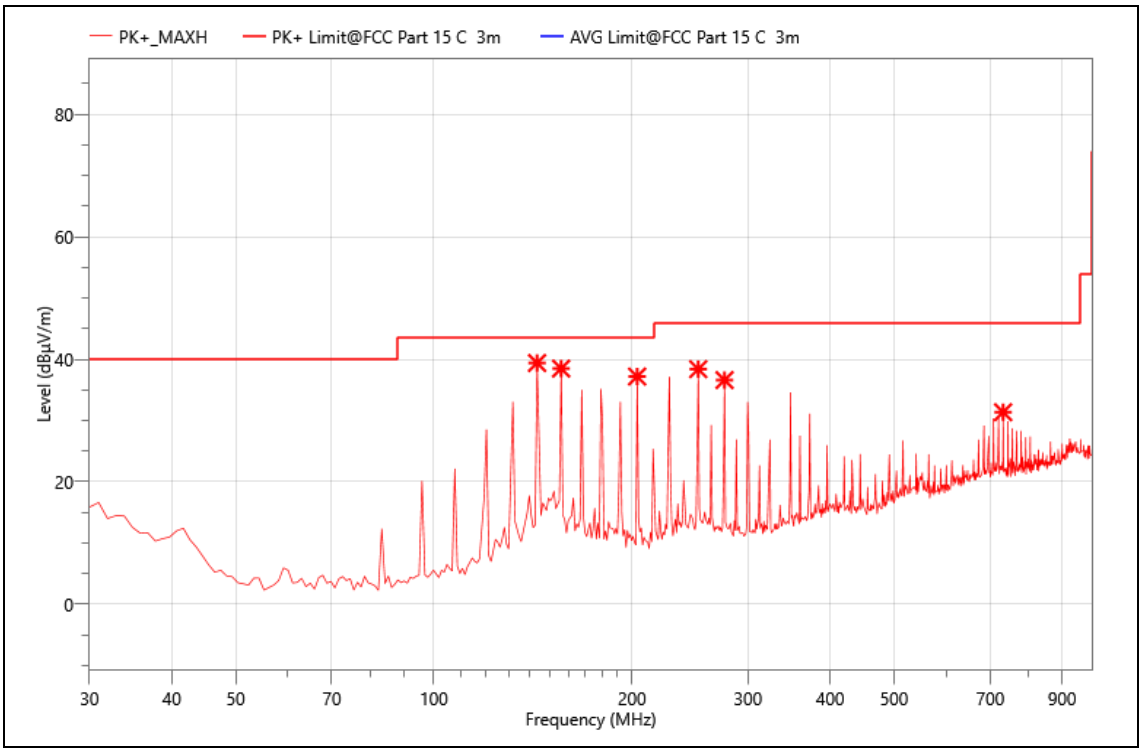
EUT :	E-Scooter
MN:	Trail
Mode:	BLE 2M 2402
Power:	DC 48V
TE:	Big
Date	2023/11/30
T/A/P	24.3℃ / 54% / 101Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dBµV/m)	Det.	Pol.	Corr. (dB)
1	30.970	32.07	17.27	40.00	22.73	PK+	V	-14.8
2	143.490	59.89	36.37	43.50	7.13	PK+	V	-23.52
3	156.100	50.16	28.92	43.50	14.58	PK+	V	-21.24
4	348.160	44.11	27.60	46.00	18.40	PK+	V	-16.51
5	515.970	41.43	30.02	46.00	15.98	PK+	V	-11.41
6	540.220	41.31	31.06	46.00	14.94	PK+	V	-10.25

EUT :	E-Scooter
MN:	Trail
Mode:	BLE 2M 2402
Power:	DC 48V
TE:	Big
Date	2023/11/30
T/A/P	24.3℃ / 54% / 101Kpa



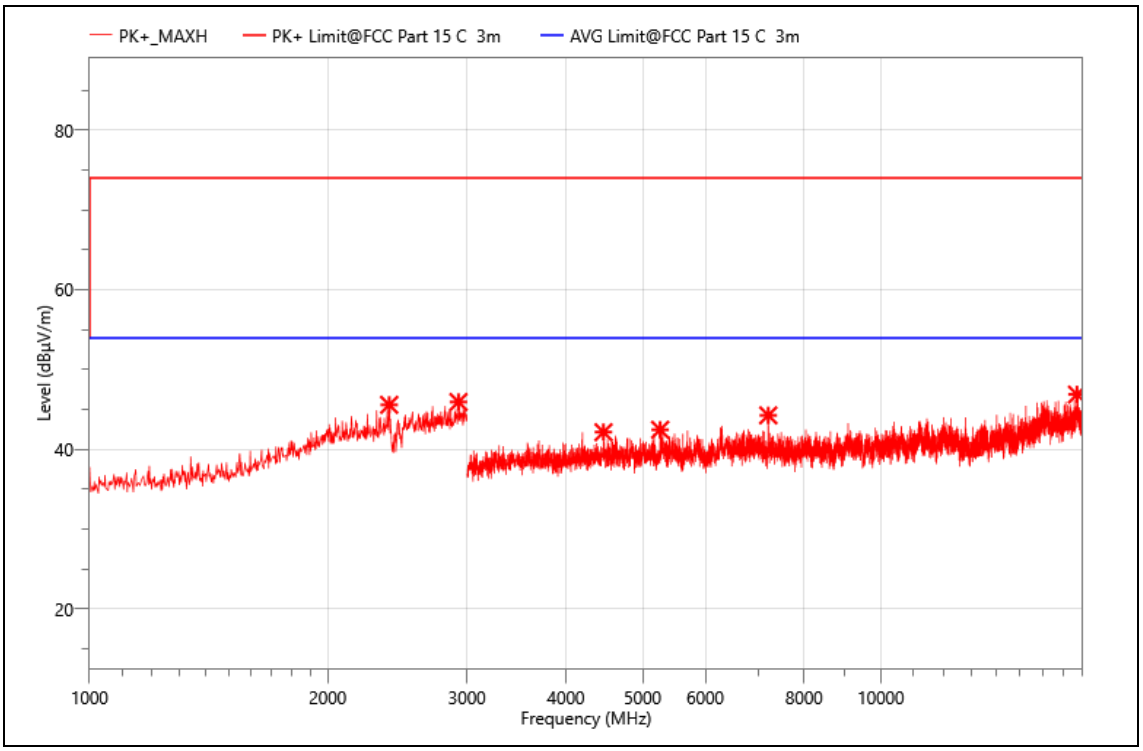
Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dBµV/m)	Det.	Pol.	Corr. (dB)
1	143.490	62.92	39.40	43.50	4.10	PK+	H	-23.52
2	156.100	59.73	38.49	43.50	5.01	PK+	H	-21.24
3	203.630	59.01	37.19	43.50	6.31	PK+	H	-21.82
4	252.130	57.38	38.39	46.00	7.61	PK+	H	-18.99
5	276.380	55.61	36.61	46.00	9.39	PK+	H	-19
6	732.280	38.43	31.37	46.00	14.63	PK+	H	-7.06

Note: 1. Meas.= Reading + Corr.

Above 1000MHz~10th Harmonics:

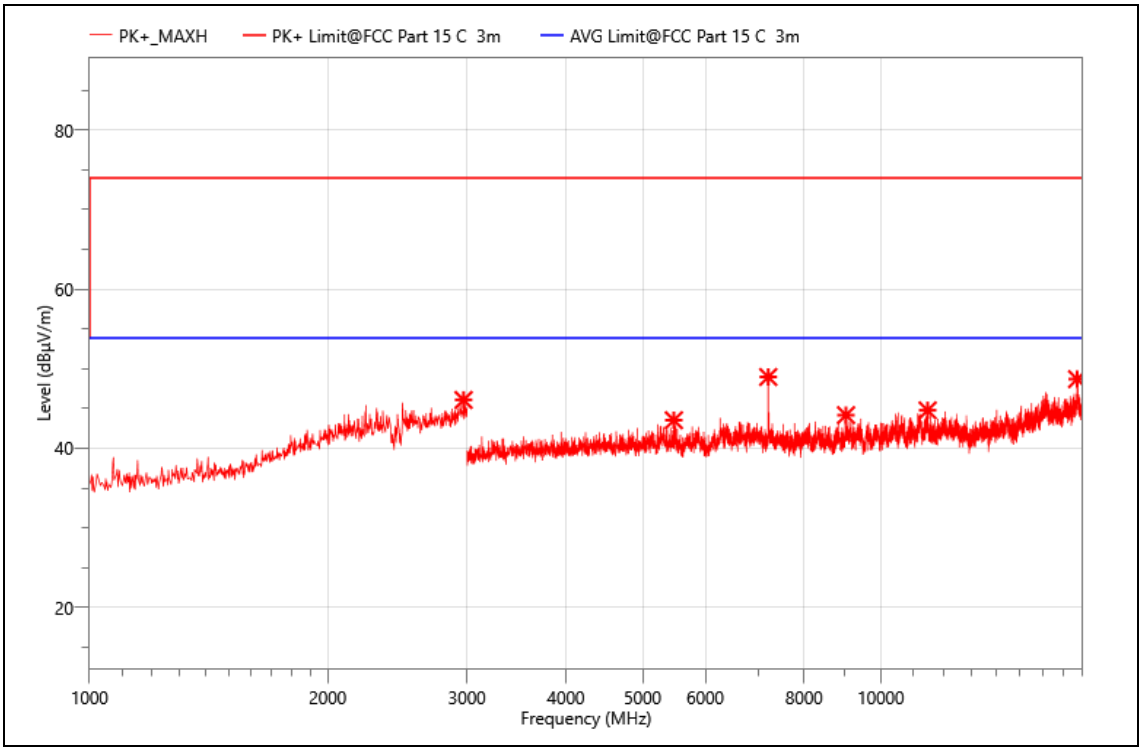
EUT :	E-Scooter
MN:	Trail
Mode:	BLE 2M 2402
Power:	DC 48V
TE:	Big
Date	2023/11/30
T/A/P	24.3℃ / 54% / 101Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dBµV/m)	Det.	Pol.	Corr. (dB)
1	2392.000	54.10	45.57	74.00	28.43	PK+	V	-8.53
2	2926.000	53.49	45.92	74.00	28.08	PK+	V	-7.57
3	4462.500	54.12	42.14	74.00	31.86	PK+	V	-11.98
4	5262.000	52.15	42.45	74.00	31.55	PK+	V	-9.7
5	7207.500	52.01	44.25	74.00	29.75	PK+	V	-7.76
6	17700.000	46.83	46.86	74.00	27.14	PK+	V	0.03

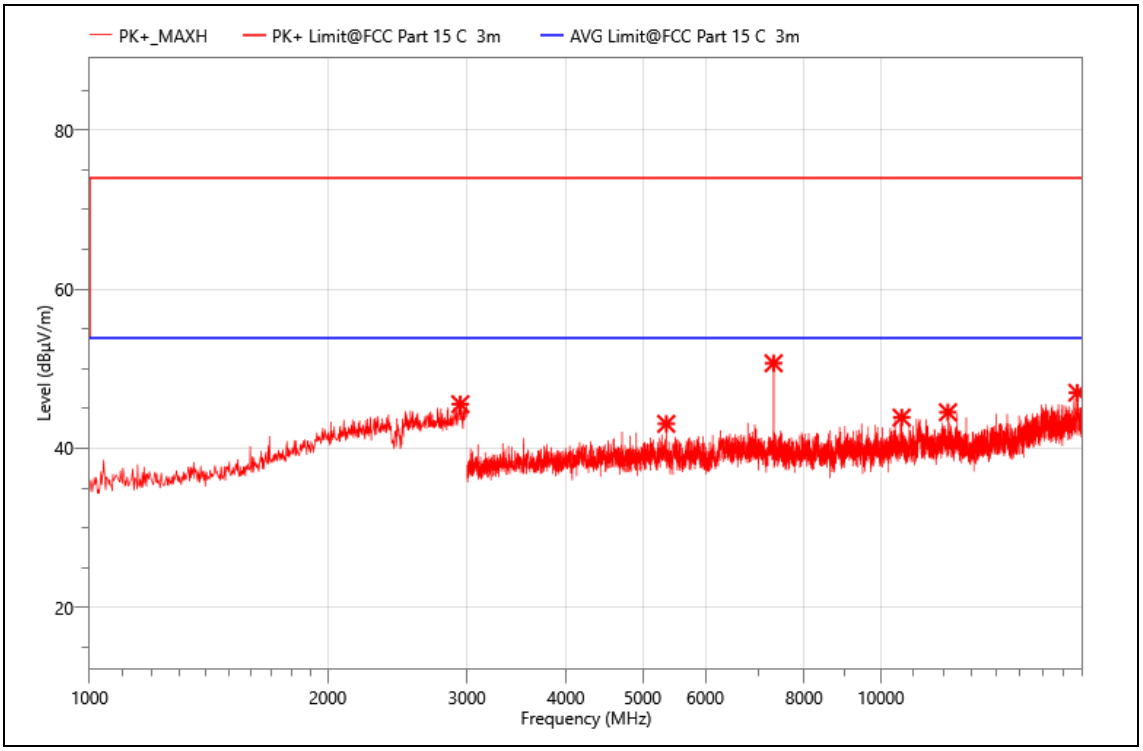
EUT :	E-Scooter
MN:	Trail
Mode:	BLE 2M 2402
Power:	DC 48V
TE:	Big
Date	2023/11/30
T/A/P	24.3℃ / 54% / 101Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dBµV/m)	Det.	Pol.	Corr. (dB)
1	2970.000	53.23	46.07	74.00	27.93	PK+	H	-7.16
2	5476.500	52.88	43.52	74.00	30.48	PK+	H	-9.36
3	7207.500	56.71	48.95	74.00	25.05	PK+	H	-7.76
4	9037.500	51.43	44.16	74.00	29.84	PK+	H	-7.27
5	11458.500	48.83	44.76	74.00	29.24	PK+	H	-4.07
6	17706.000	48.53	48.68	74.00	25.32	PK+	H	0.15

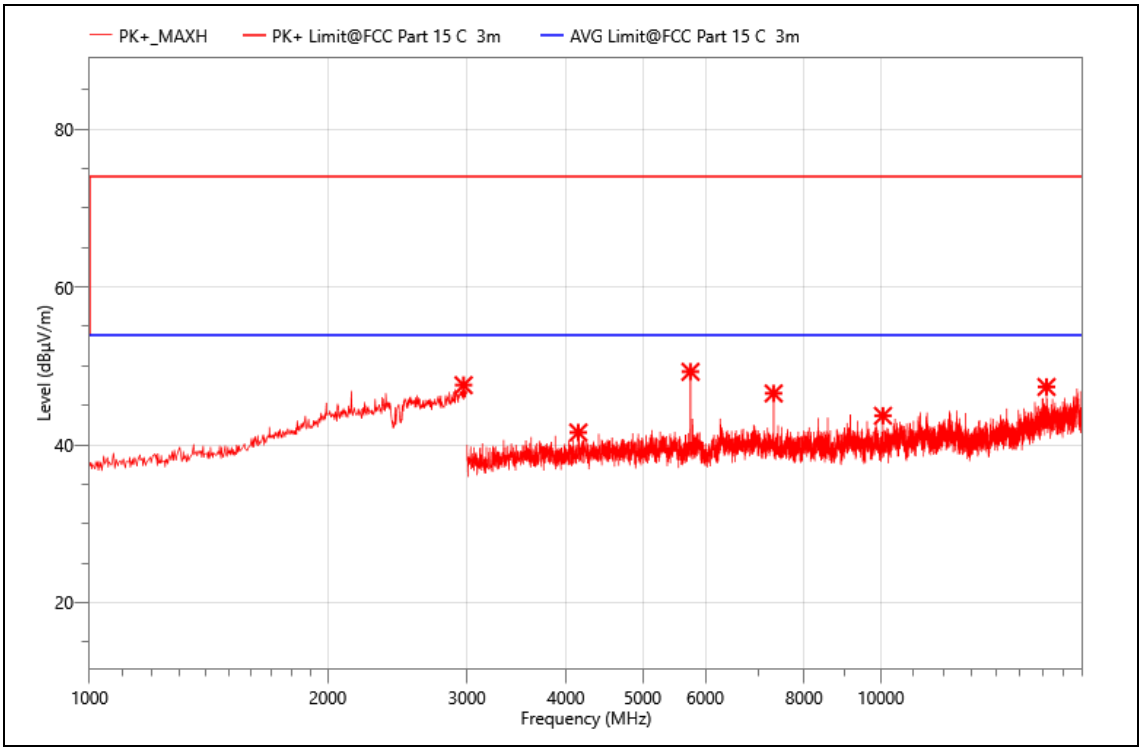
EUT :	E-Scooter
MN:	Trail
Mode:	BLE 2M 2440
Power:	DC 48V
TE:	Big
Date	2023/11/30
T/A/P	24.3℃ / 54% / 101Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dBµV/m)	Det.	Pol.	Corr. (dB)
1	2942.000	53.01	45.54	74.00	28.46	PK+	H	-7.47
2	5356.500	52.88	43.07	74.00	30.93	PK+	H	-9.81
3	7321.500	58.80	50.68	74.00	23.32	PK+	H	-8.12
4	10626.000	48.78	43.85	74.00	30.15	PK+	H	-4.93
5	12159.000	49.23	44.52	74.00	29.48	PK+	H	-4.71
6	17718.000	46.60	46.98	74.00	27.02	PK+	H	0.38

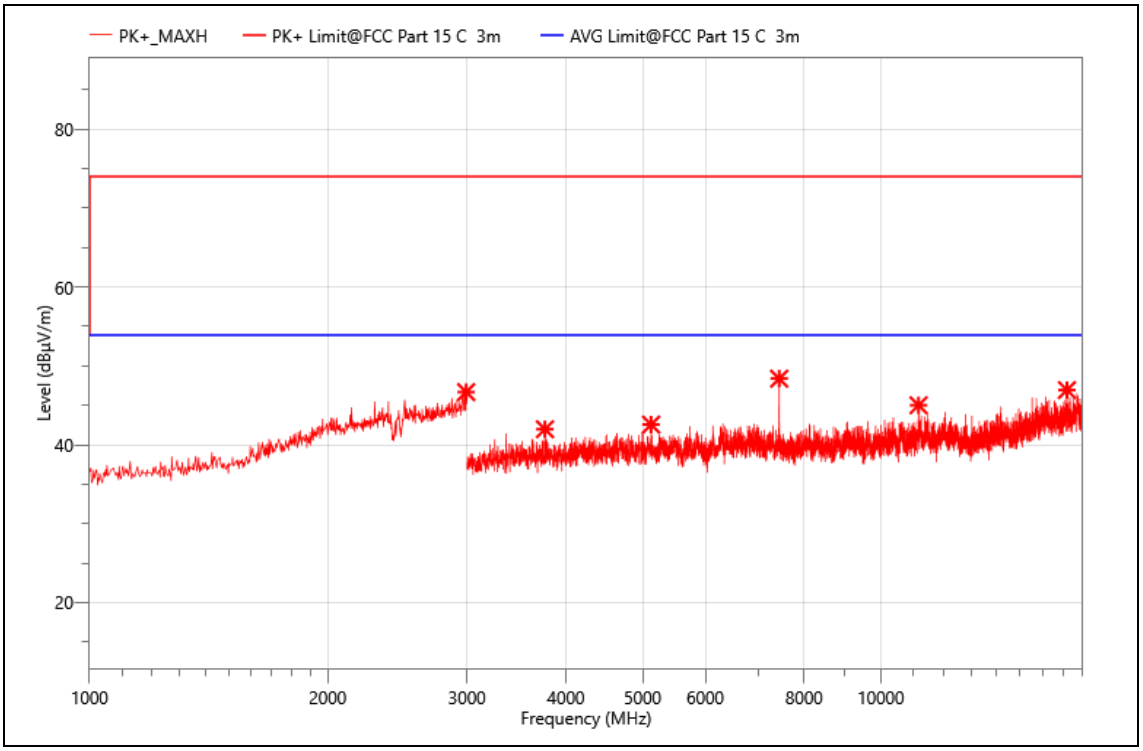
EUT :	E-Scooter
MN:	Trail
Mode:	BLE 2M 2440
Power:	DC 48V
TE:	Big
Date	2023/11/30
T/A/P	24.3℃ / 54% / 101Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dBµV/m)	Det.	Pol.	Corr. (dB)
1	2970.000	54.73	47.57	74.00	26.43	PK+	V	-7.16
2	4147.500	54.26	41.57	74.00	32.43	PK+	V	-12.69
3	5748.000	58.30	49.26	74.00	24.74	PK+	V	-9.04
4	7321.500	54.64	46.52	74.00	27.48	PK+	V	-8.12
5	10062.000	49.75	43.69	74.00	30.31	PK+	V	-6.06
6	16198.500	47.70	47.34	74.00	26.66	PK+	V	-0.36

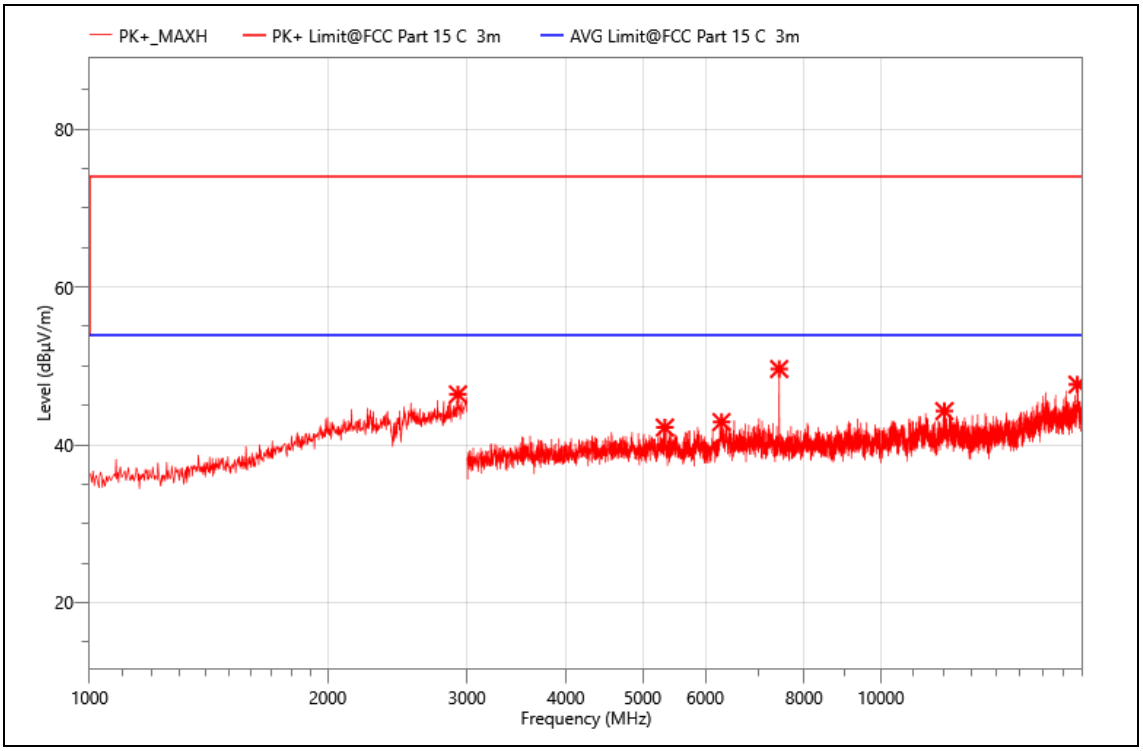
EUT :	E-Scooter
MN:	Trail
Mode:	BLE 2M 2480
Power:	DC 48V
TE:	Big
Date	2023/11/30
T/A/P	24.3℃ / 54% / 101Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dBµV/m)	Det.	Pol.	Corr. (dB)
1	2992.000	53.68	46.69	74.00	27.31	PK+	V	-6.99
2	3763.500	55.58	41.98	74.00	32.02	PK+	V	-13.6
3	5125.500	52.66	42.57	74.00	31.43	PK+	V	-10.09
4	7441.500	56.31	48.39	74.00	25.61	PK+	V	-7.92
5	11161.500	48.98	45.02	74.00	28.98	PK+	V	-3.96
6	17191.500	47.91	46.95	74.00	27.05	PK+	V	-0.96

EUT :	E-Scooter
MN:	Trail
Mode:	BLE 2M 2480
Power:	DC 48V
TE:	Big
Date	2023/11/30
T/A/P	24.3℃ / 54% / 101Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dBµV/m)	Det.	Pol.	Corr. (dB)
1	2922.000	54.00	46.40	74.00	27.60	PK+	H	-7.6
2	5335.500	51.98	42.20	74.00	31.80	PK+	H	-9.78
3	6291.000	50.32	42.90	74.00	31.10	PK+	H	-7.42
4	7441.500	57.53	49.61	74.00	24.39	PK+	H	-7.92
5	12033.000	48.38	44.28	74.00	29.72	PK+	H	-4.1
6	17721.000	47.20	47.64	74.00	26.36	PK+	H	0.44

Other harmonics emissions are lower than 20dB below the allowable limit.

Note: (1) All Readings are Peak Value.

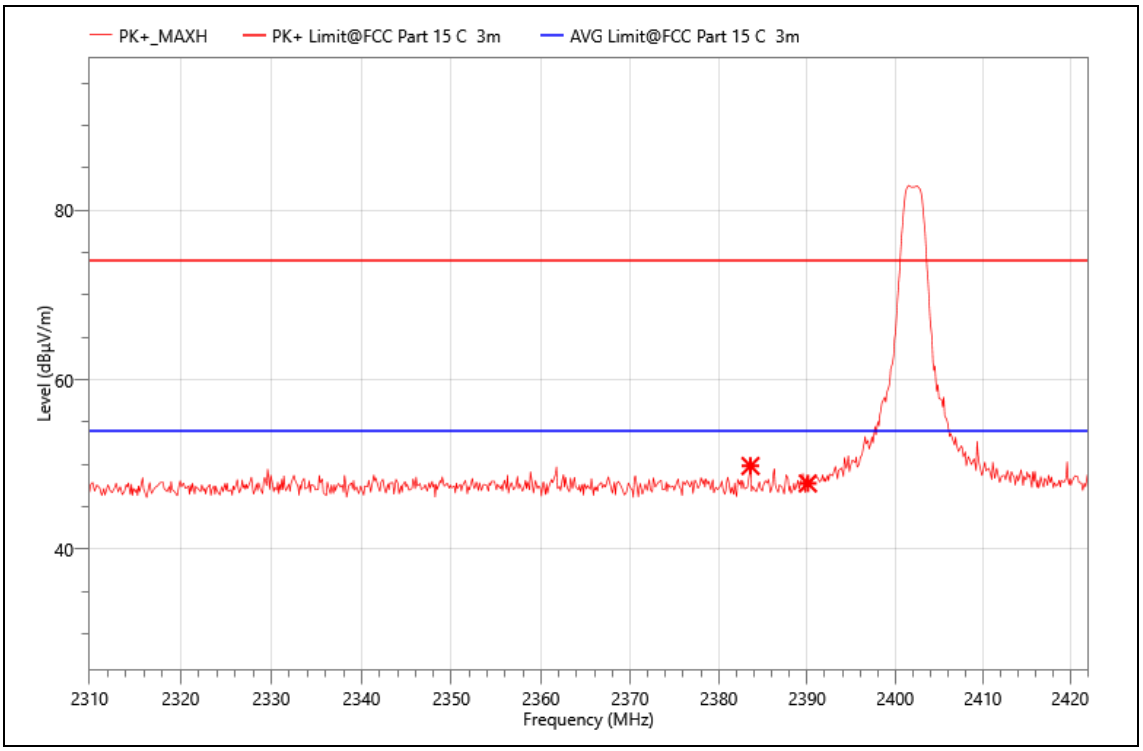
(2) Meas.= Reading + Corr.

(3) The average measurement was not performed when the peak measured data under the limit of average detection.

(4) Measuring frequencies from 1GHz to 25GHz.

Band edge:

EUT :	E-Scooter
MN:	Trail
Mode:	BLE 2M 2402
Power:	DC 48V
TE:	Big
Date	2023/11/30
T/A/P	24.3℃ / 54% / 101Kpa

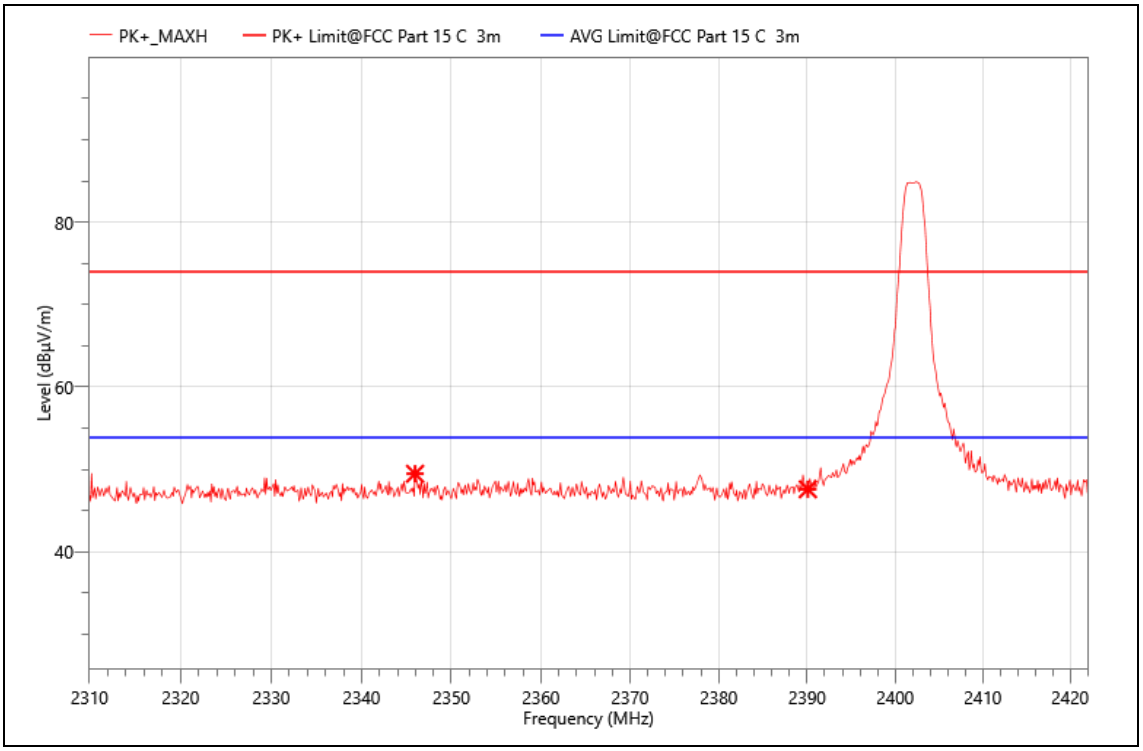


Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dBµV/m)	Det.	Pol.	Corr. (dB)
1	2383.584	27.23	49.83	74.00	24.17	PK+	H	22.6
2	2390.080	25.05	47.77	74.00	26.23	PK+	H	22.72

Meas.= Reading + Corr.

EUT :	E-Scooter
MN:	Trail
Mode:	BLE 2M 2402
Power:	DC 48V
TE:	Big
Date	2023/11/30
T/A/P	24.3℃ / 54% / 101Kpa

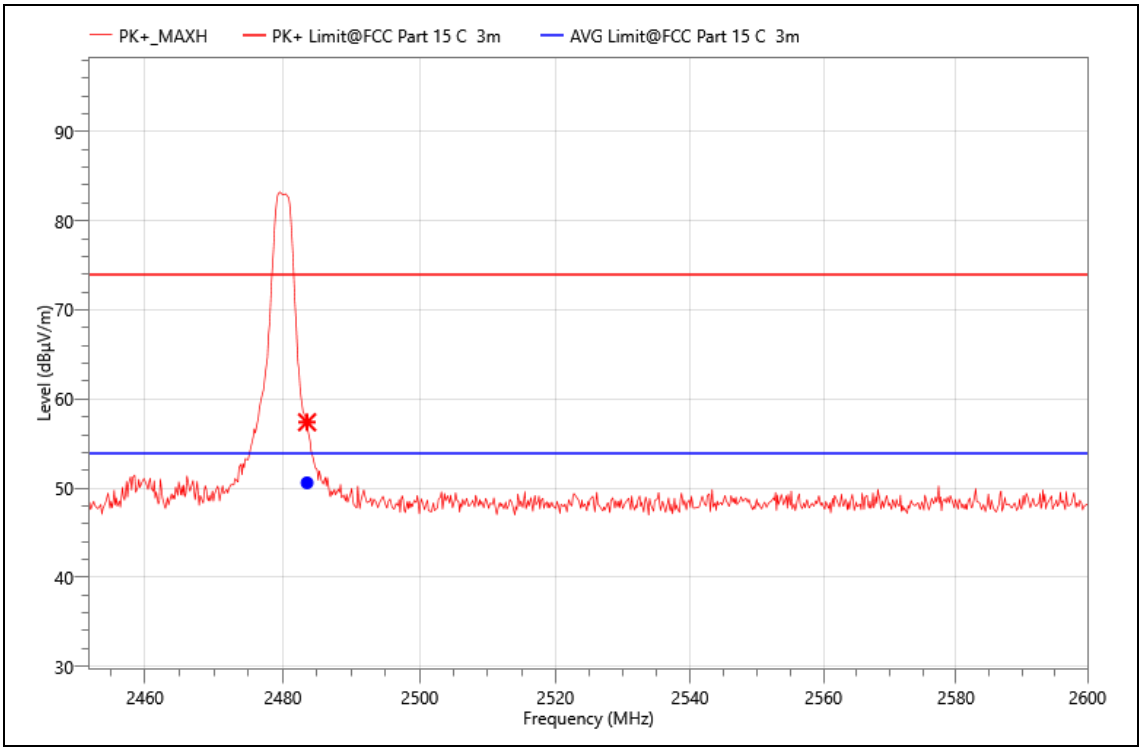


Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dBµV/m)	Det.	Pol.	Corr. (dB)
1	2345.952	26.76	49.46	74.00	24.54	PK+	V	22.7
2	2390.080	24.86	47.58	74.00	26.42	PK+	V	22.72

Meas.= Reading + Corr.

EUT :	E-Scooter
MN:	Trail
Mode:	BLE 2M 2480
Power:	DC 48V
TE:	Big
Date	2023/11/30
T/A/P	24.3℃ / 54% / 101Kpa



Critical_Freqs

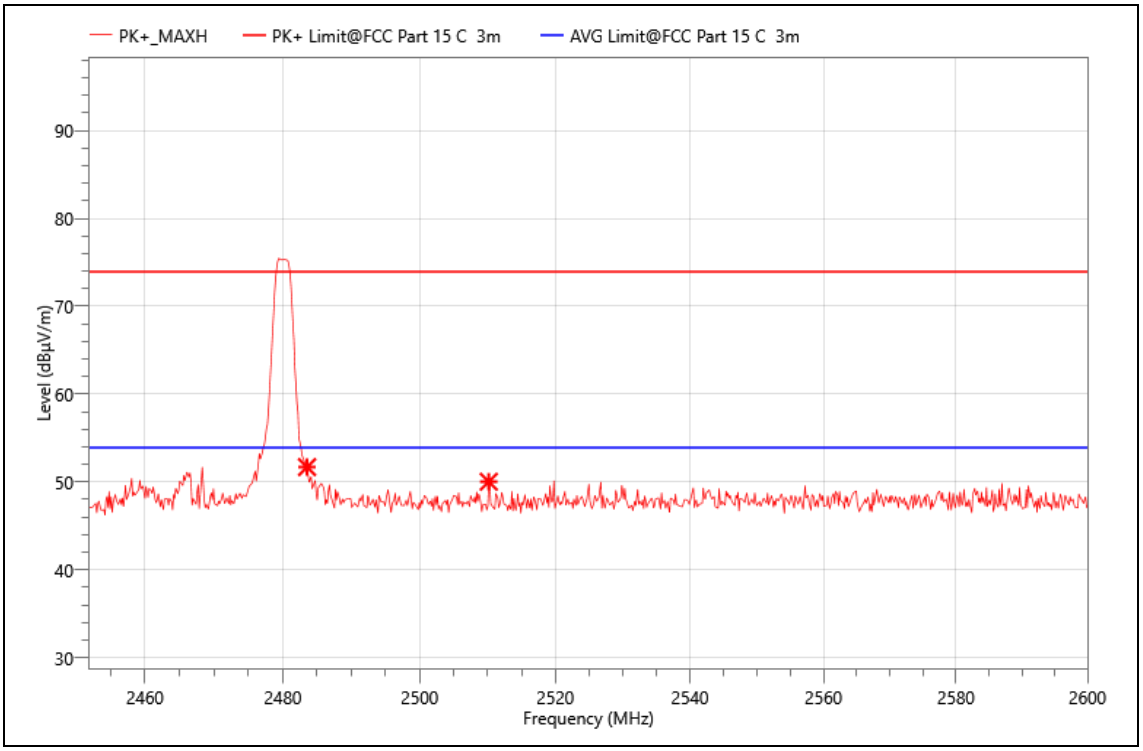
No.	Freq. (MHz)	Reading (dBµV)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dBµV/m)	Det.	Pol.	Corr. (dB)
1	2483.524	34.25	57.40	74.00	16.60	PK+	H	23.15

Final_Result

No.	Freq. (MHz)	Reading (dBµV)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dBµV/m)	Det.	Pol.	Corr. (dB)	Verdict
1	2483.524	27.45	50.60	53.90	3.30	AVG	H	23.15	PASS

Meas.= Reading + Corr.

EUT :	E-Scooter
MN:	Trail
Mode:	BLE 2M 2480
Power:	DC 48V
TE:	Big
Date	2023/11/30
T/A/P	24.3℃ / 54% / 101Kpa



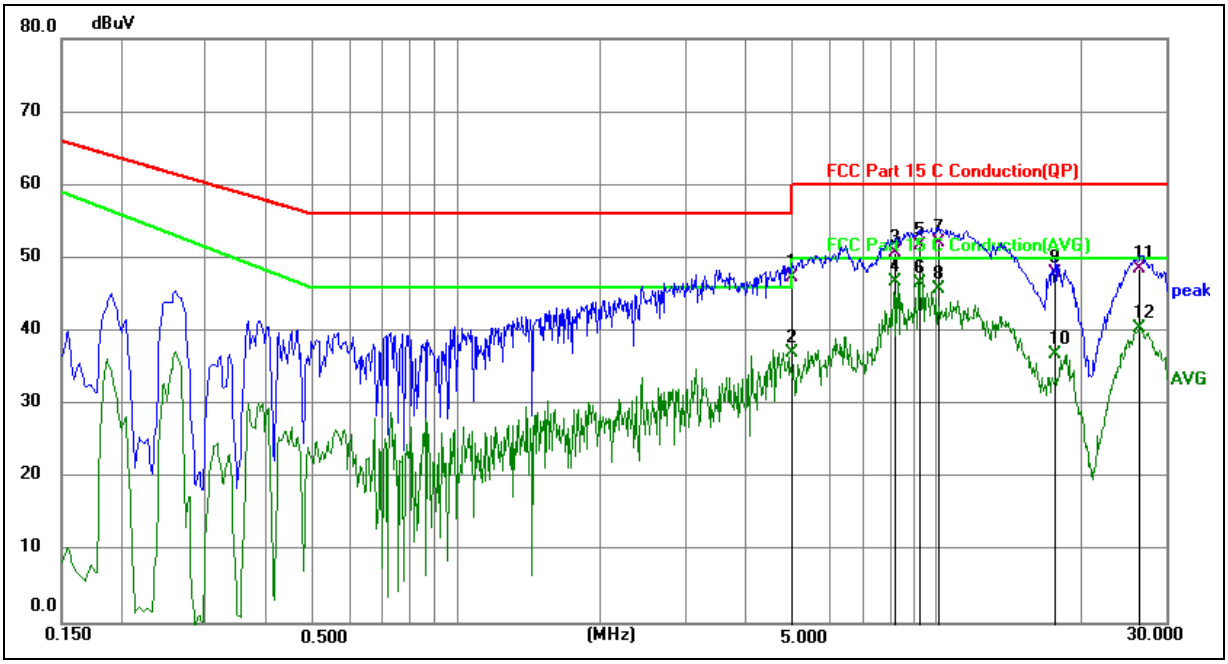
Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dBµV/m)	Det.	Pol.	Corr. (dB)
1	2483.524	28.55	51.70	74.00	22.30	PK+	V	23.15
2	2510.164	26.92	50.03	74.00	23.97	PK+	V	23.11

Meas.= Reading + Corr.

AC POWER LINE CONDUCTED EMISSIONS

LINE L1 RESULTS (BLE 2M 2402)

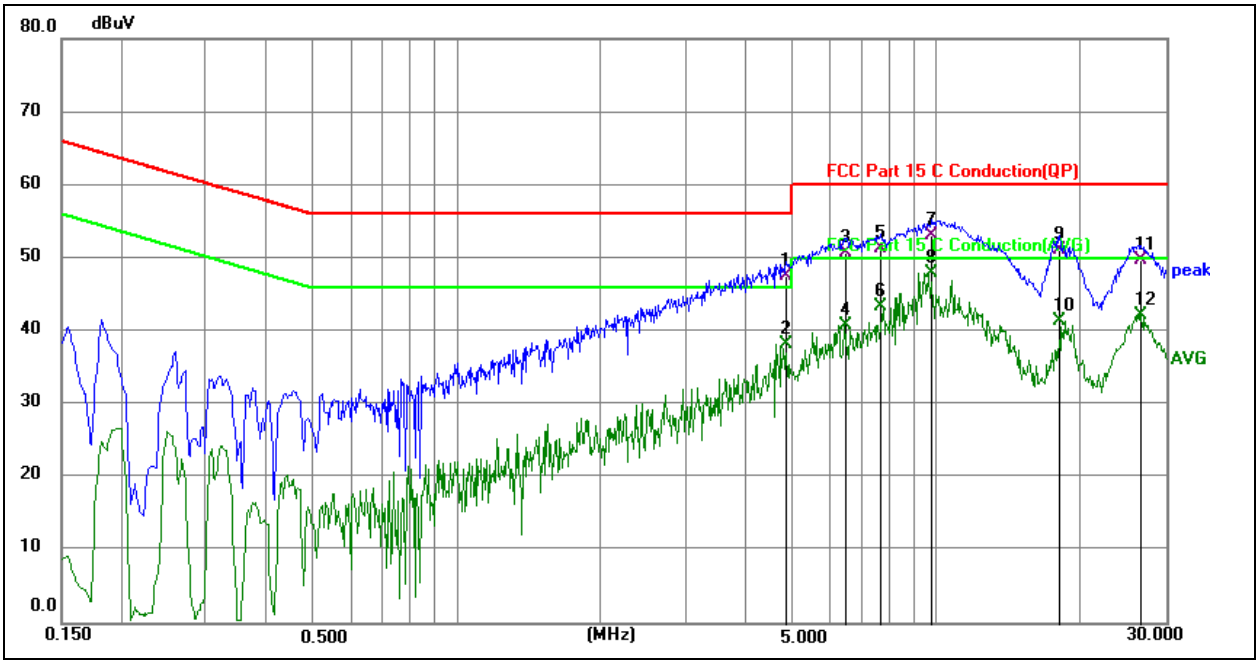


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	4.9920	37.06	10.24	47.30	56.00	-8.70	QP
2	4.9920	26.78	10.24	37.02	46.00	-8.98	AVG
3	8.1960	39.96	10.74	50.70	60.00	-9.30	QP
4	8.1960	36.03	10.74	46.77	50.00	-3.23	AVG
5	9.2490	40.90	10.90	51.80	60.00	-8.20	QP
6	9.2490	35.57	10.90	46.47	50.00	-3.53	AVG
7	10.1130	41.19	11.01	52.20	60.00	-7.80	QP
8	10.1130	34.82	11.01	45.83	50.00	-4.17	AVG
9	17.6550	36.83	11.07	47.90	60.00	-12.10	QP
10	17.6550	25.80	11.07	36.87	50.00	-13.13	AVG
11	26.4390	37.51	11.09	48.60	60.00	-11.40	QP
12	26.4390	29.33	11.09	40.42	50.00	-9.58	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 2M 2402)



Phase: N

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	4.8525	37.22	10.28	47.50	56.00	-8.50	QP
2	4.8525	27.98	10.28	38.26	46.00	-7.74	AVG
3	6.4680	40.37	10.43	50.80	60.00	-9.20	QP
4	6.4680	30.42	10.43	40.85	50.00	-9.15	AVG
5	7.6245	40.72	10.58	51.30	60.00	-8.70	QP
6	7.6245	32.76	10.58	43.34	50.00	-6.66	AVG
7	9.7665	42.28	10.92	53.20	60.00	-6.80	QP
8	9.7665	37.10	10.92	48.02	50.00	-1.98	AVG
9	17.9790	40.05	11.05	51.10	60.00	-8.90	QP
10	17.9790	30.35	11.05	41.40	50.00	-8.60	AVG
11	26.5605	38.65	11.15	49.80	60.00	-10.20	QP
12	26.5605	31.08	11.15	42.23	50.00	-7.77	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.