



Appendix for Test report

1. Appendix A: DTS Bandwidth

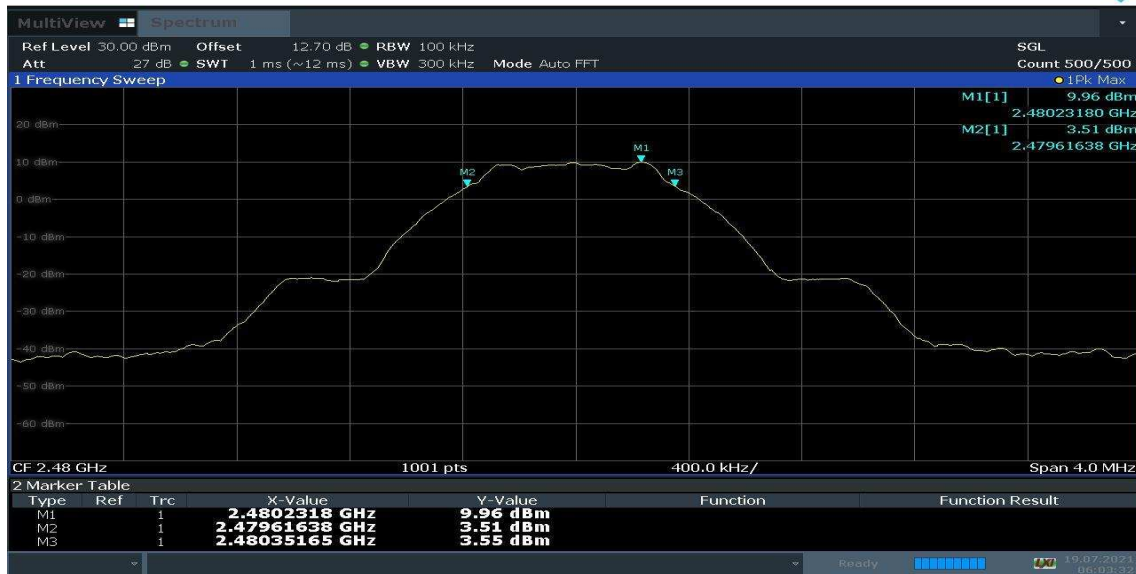
1.1 Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_TM1	Ant1	2402	0.7313	2401.62	2402.352	≥0.5	PASS
		2440	0.7353	2439.616	2440.352	≥0.5	PASS
		2480	0.7353	2479.616	2480.352	≥0.5	PASS
BLE_TM2	Ant1	2402	1.1588	2401.413	2402.571	≥0.5	PASS
		2440	1.1588	2439.413	2440.571	≥0.5	PASS
		2480	1.1588	2479.413	2480.571	≥0.5	PASS

1.2 Test Graphs



BLE_TM1_Ant1_2480



BLE_TM2_Ant1_2402



BLE_TM2_Ant1_2440



BLE_TM2_Ant1_2480

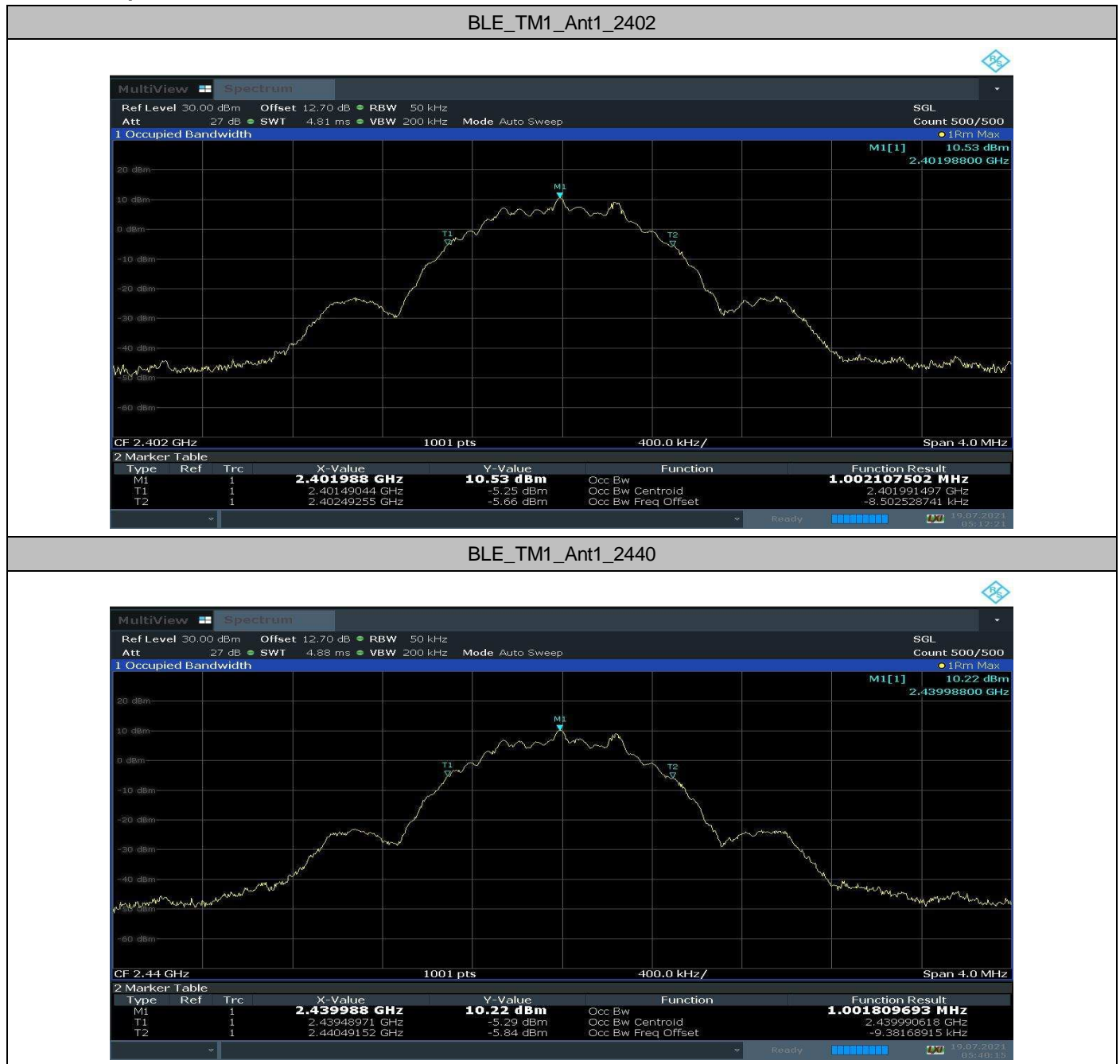


2. Appendix B: Occupied Channel Bandwidth

2.1 Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_TM1	Ant1	2402	1.0021	2401.49	2402.49	---	PASS
		2440	1.0018	2439.49	2440.49	---	PASS
		2480	1.0031	2479.49	2480.49	---	PASS
BLE_TM2	Ant1	2402	1.9887	2401.01	2403.0	---	PASS
		2440	1.9845	2439.01	2440.99	---	PASS
		2480	1.9895	2479.01	2481.0	---	PASS

2.2 Test Graphs


BLE_TM1_Ant1_2440

BLE_TM1_Ant1_2480



BLE_TM2_Ant1_2402



BLE_TM2_Ant1_2440



BLE_TM2_Ant1_2480

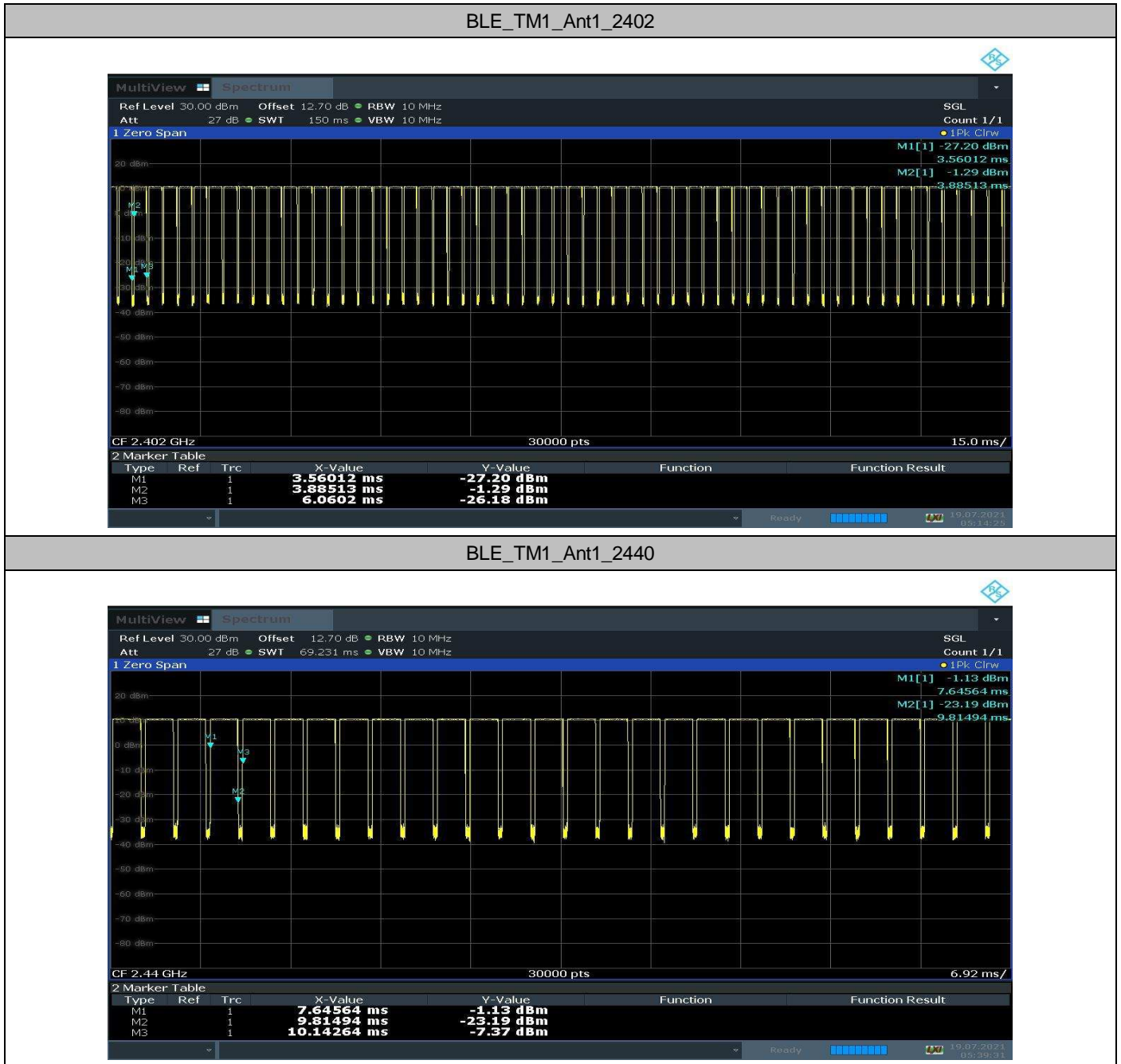


3. Appendix C: Duty Cycle

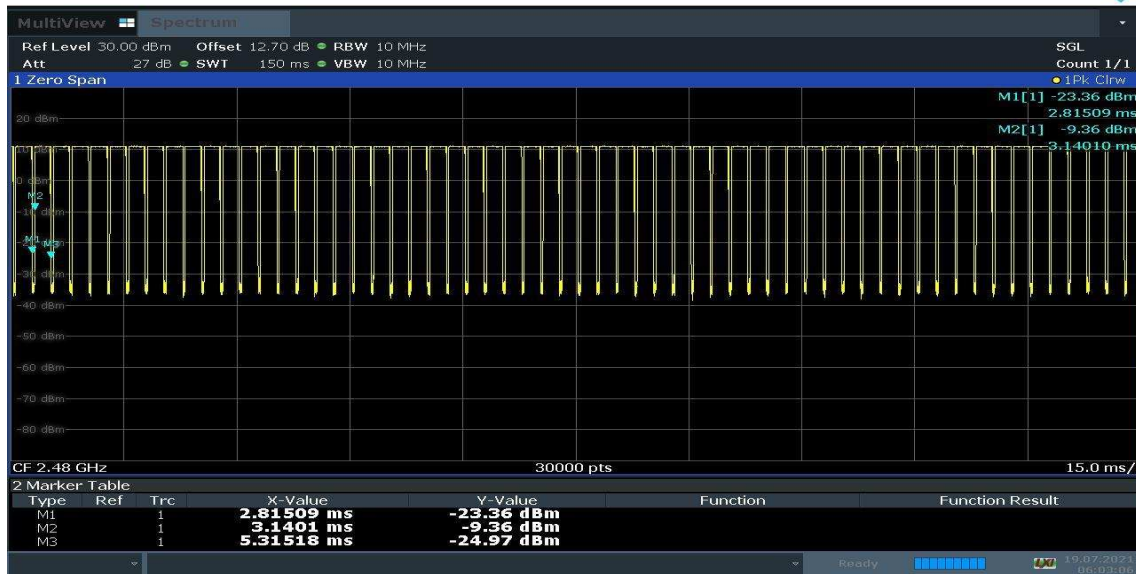
3.1 Test Result

TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Limit[MHz]	Verdict
BLE_TM1	Ant1	2402	2.18	2.5	87.2	---	PASS
		2440	2.17	2.5	86.8	---	PASS
		2480	2.18	2.5	87.2	---	PASS
BLE_TM2	Ant1	2402	1.11	1.87	59.358	---	PASS
		2440	1.12	1.88	59.574	---	PASS
		2480	1.11	1.87	59.358	---	PASS

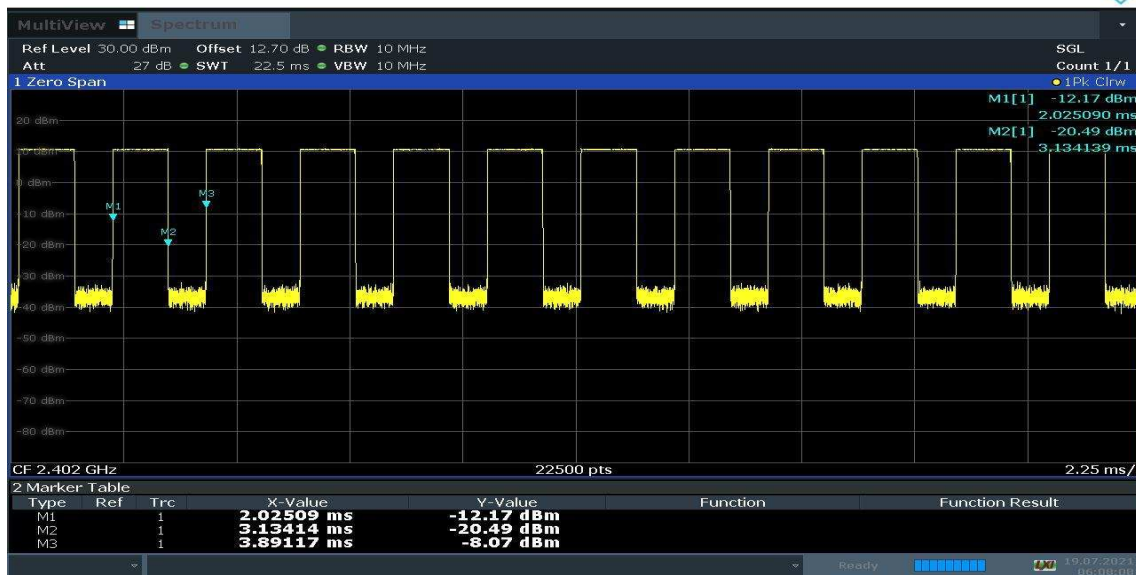
3.2 Test Graphs



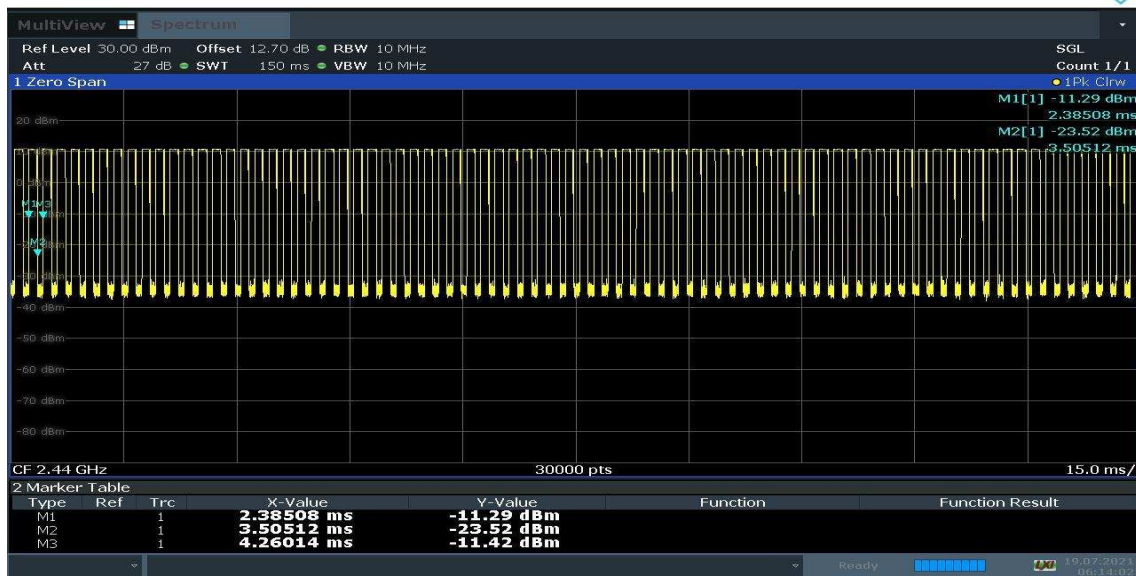
BLE_TM1_Ant1_2480



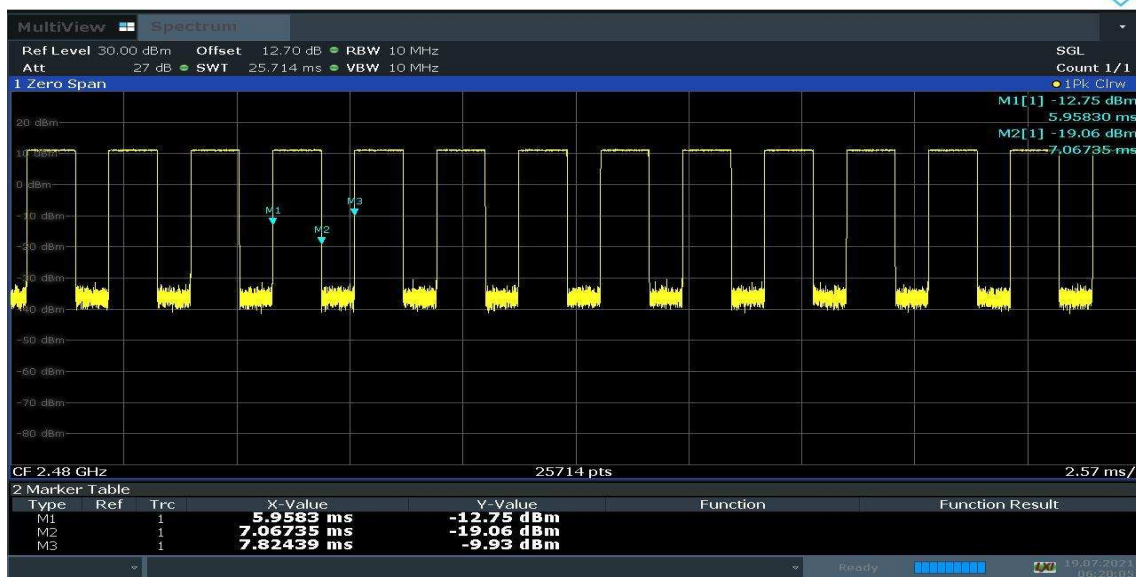
BLE_TM2_Ant1_2402



BLE_TM2_Ant1_2440



BLE_TM2_Ant1_2480



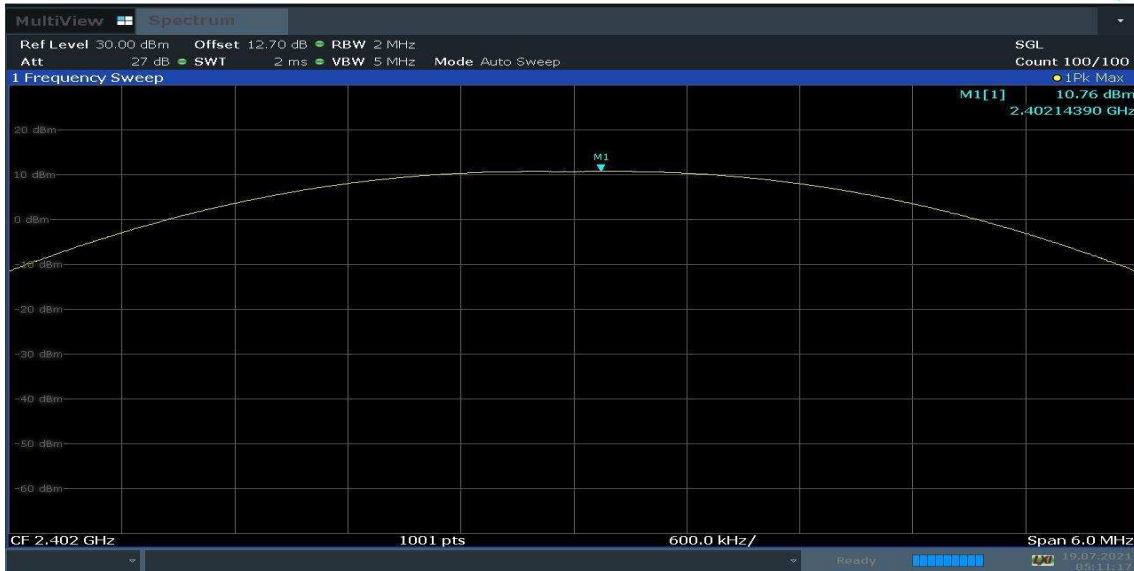
4. Appendix D: Maximum Peak output power

4.1 Test Result

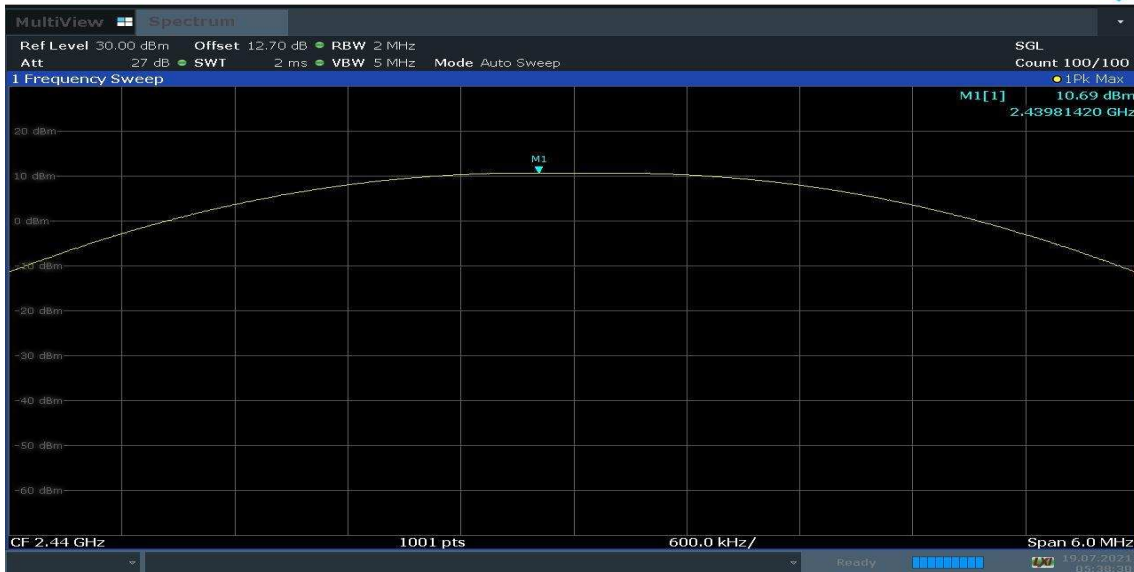
TestMode	Antenna	Channel	Conducted Result[dBm]	Conducted Limit[dBm]	EIRP Result[dBm]	EIRP Result[dBm]	Verdict
BLE_TM1	Ant1	2402	10.76	30	4.16	36	PASS
		2440	10.69	30	4.09	36	PASS
		2480	11.11	30	4.51	36	PASS
BLE_TM2	Ant1	2402	10.72	30	4.12	36	PASS
		2440	10.71	30	4.11	36	PASS
		2480	11.14	30	4.54	36	PASS

4.2 Test Graphs

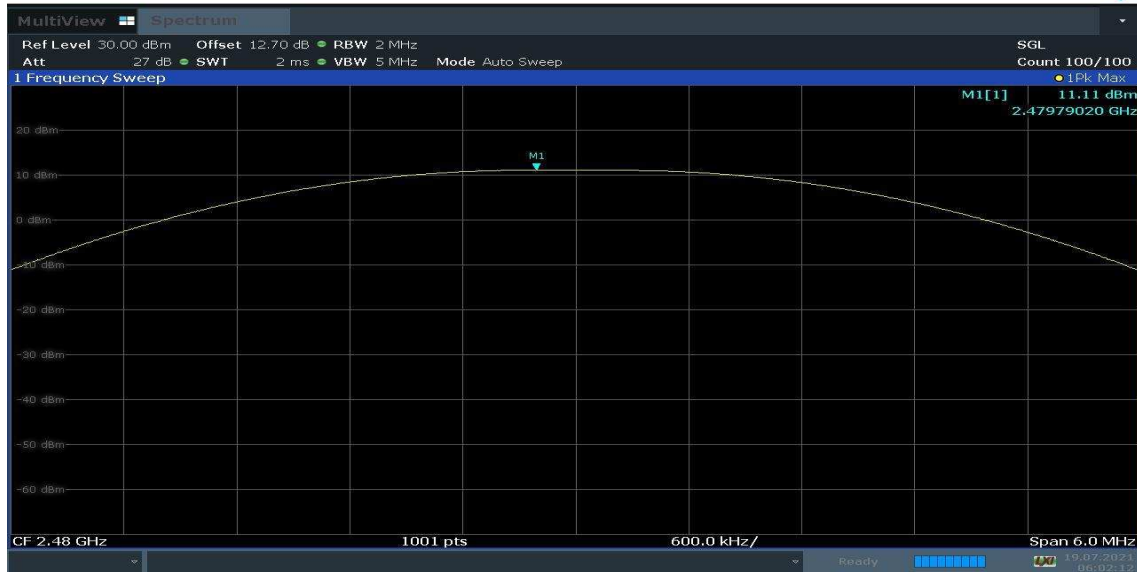
BLE_TM1_Ant1_2402



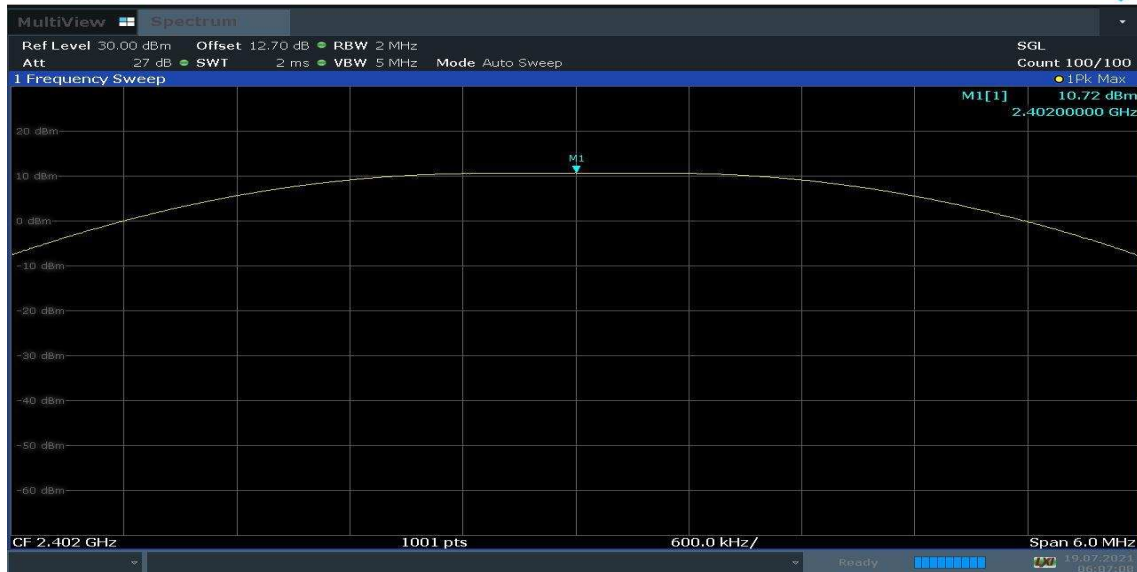
BLE_TM1_Ant1_2440



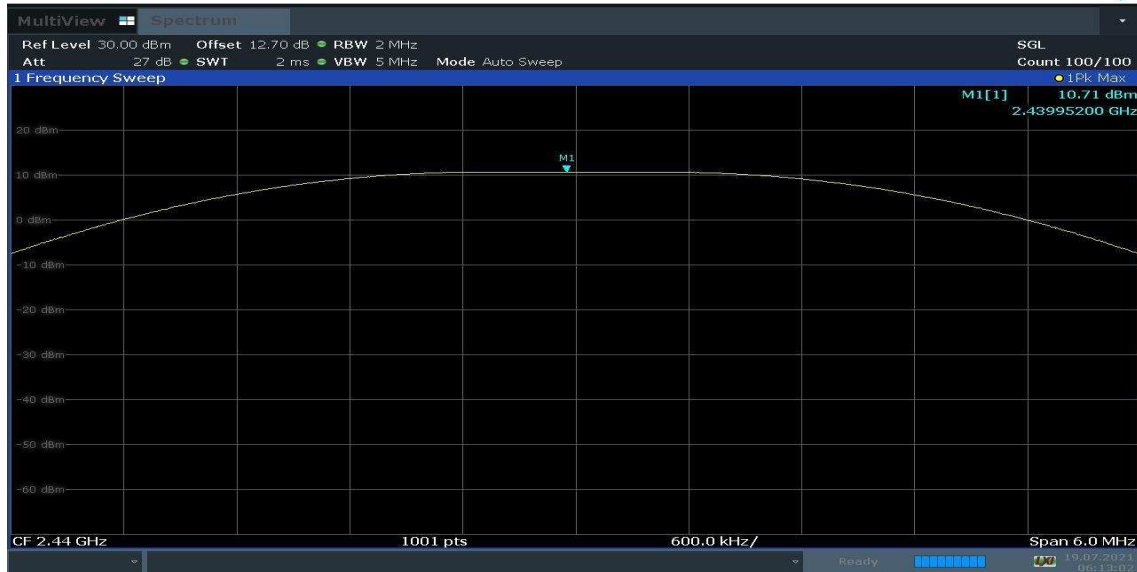
BLE_TM1_Ant1_2480



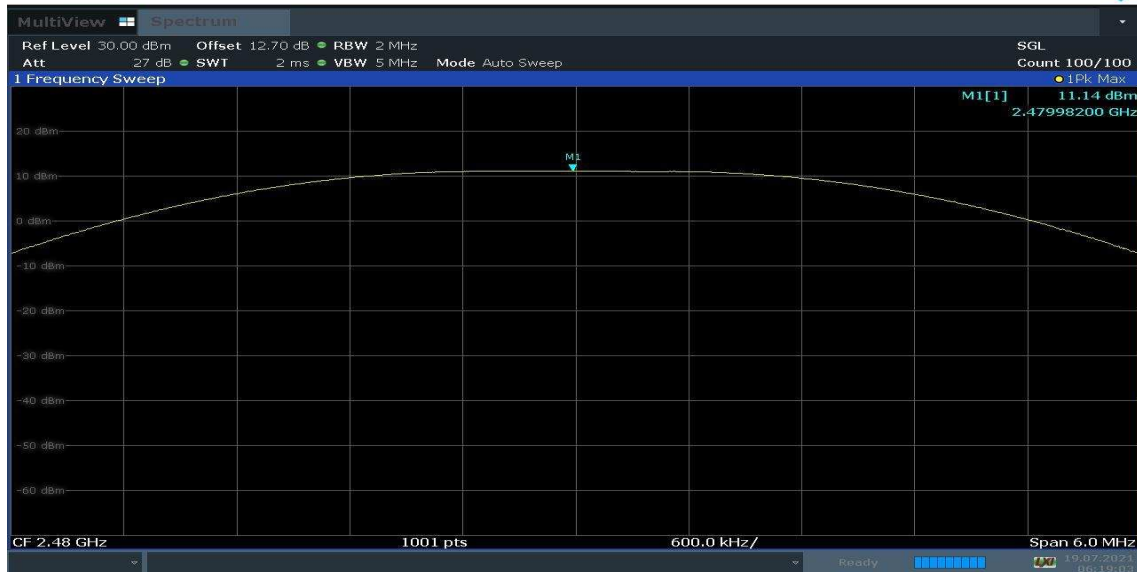
BLE_TM2_Ant1_2402



BLE_TM2_Ant1_2440



BLE_TM2_Ant1_2480



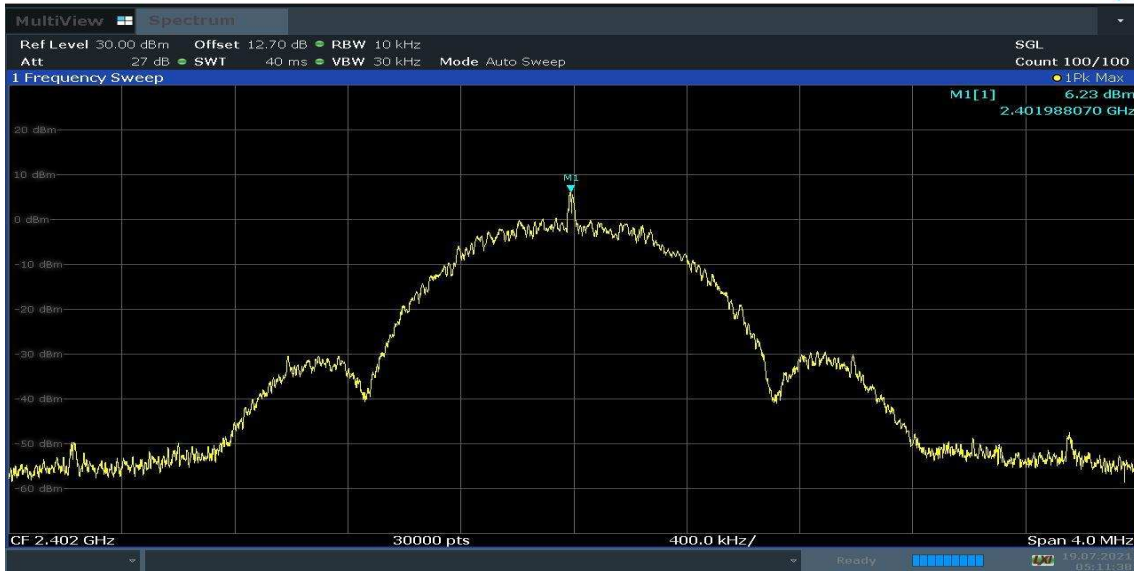
5. Appendix E: Maximum power spectral density

5.1 Test Result

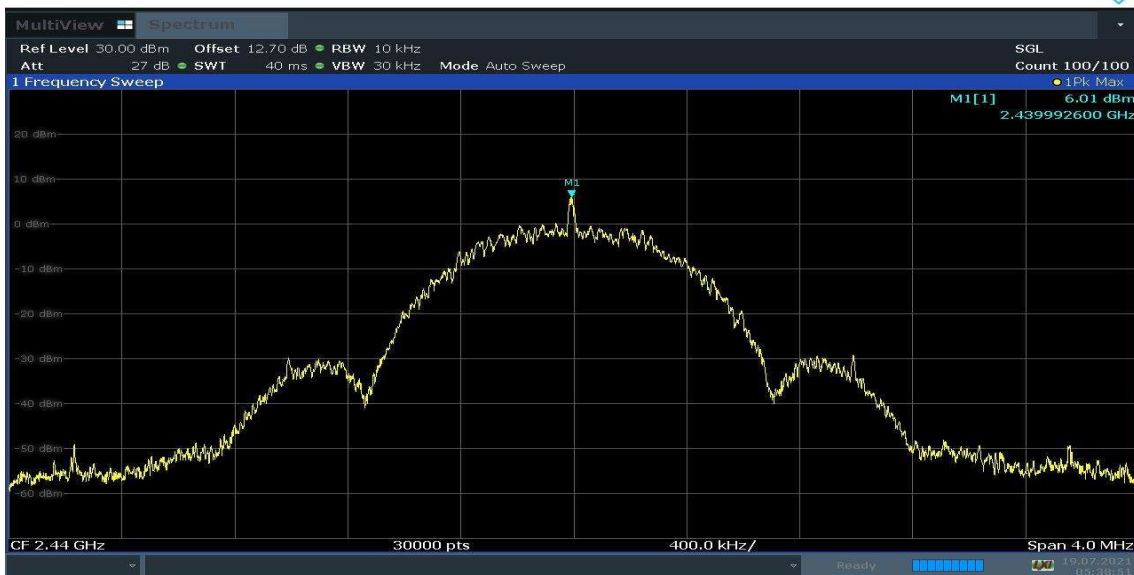
TestMode	Antenna	Channel	Result[dBm/10kHz]	Limit[dBm/3kHz]	Verdict
BLE_TM1	Ant1	2402	6.23	<=8	PASS
		2440	6.01	<=8	PASS
		2480	6.66	<=8	PASS
BLE_TM2	Ant1	2402	6.19	<=8	PASS
		2440	6.1	<=8	PASS
		2480	6.59	<=8	PASS

5.2 Test Graphs

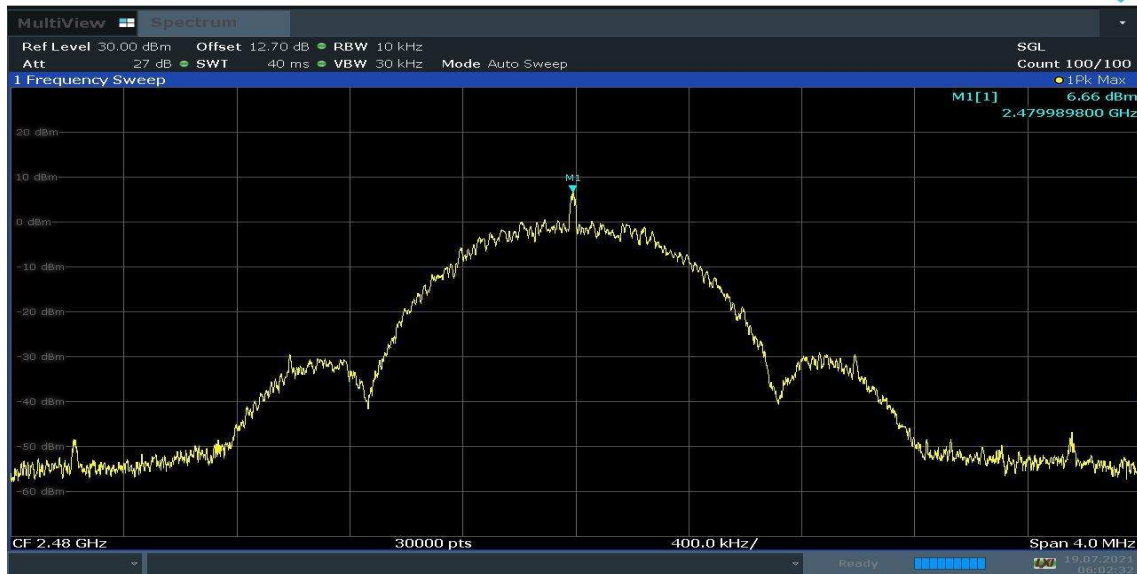
BLE_TM1_Ant1_2402



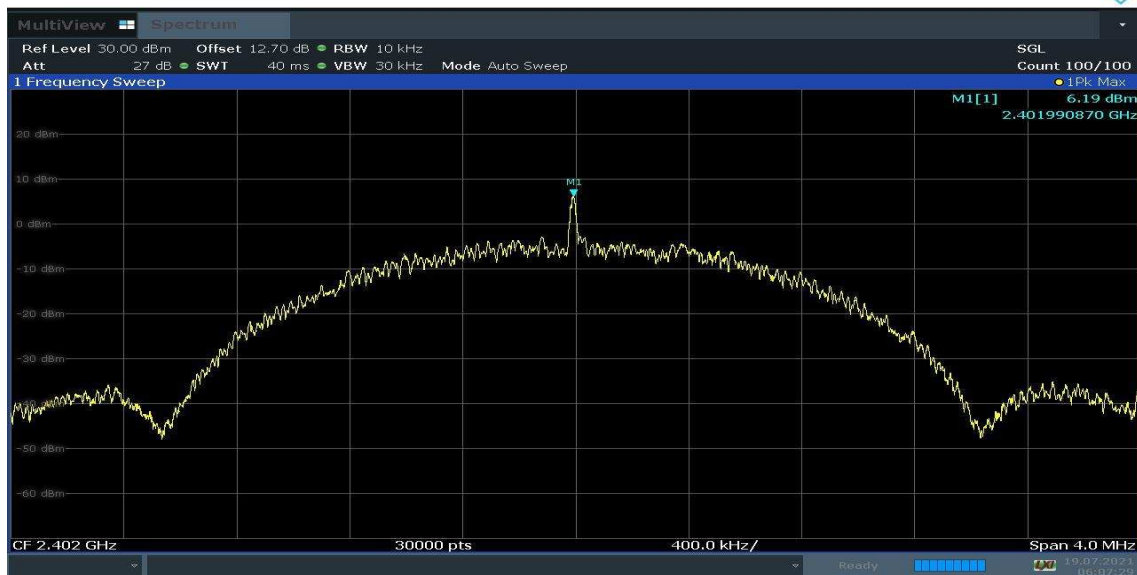
BLE_TM1_Ant1_2440



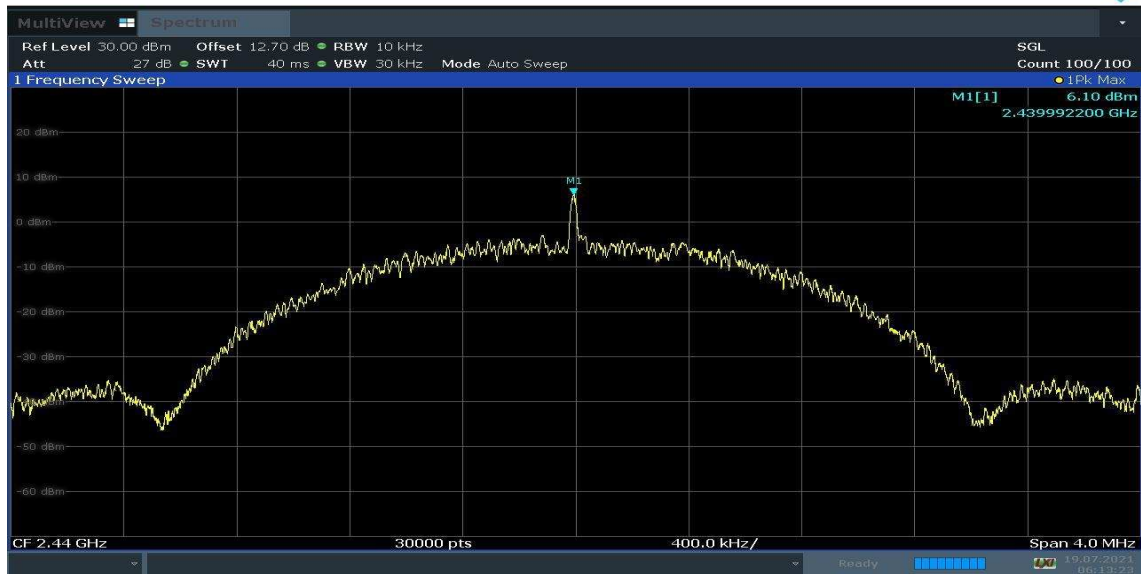
BLE_TM1_Ant1_2480



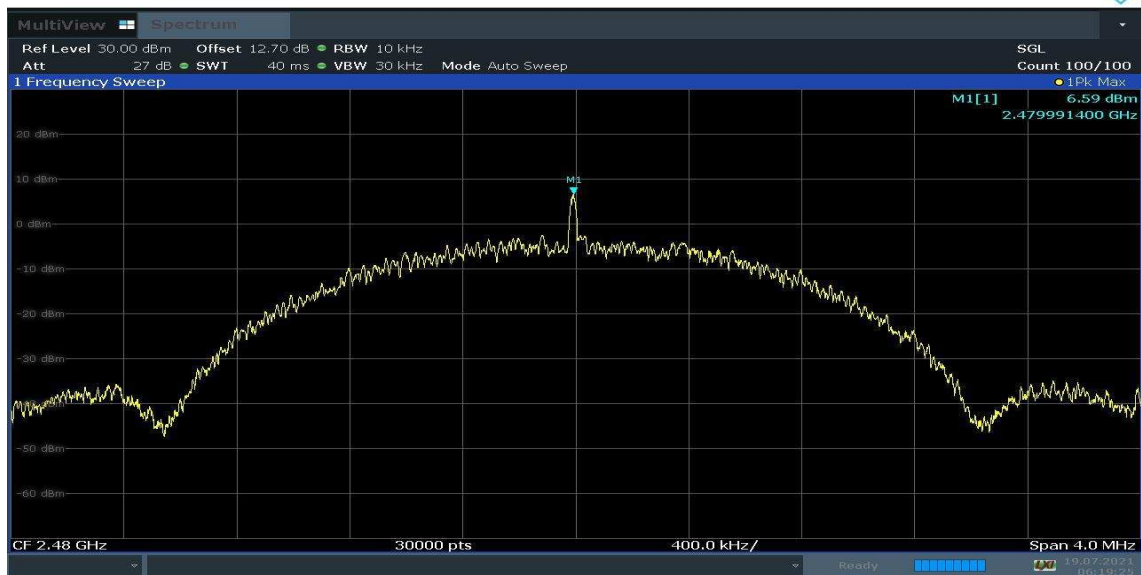
BLE_TM2_Ant1_2402



BLE_TM2_Ant1_2440



BLE_TM2_Ant1_2480

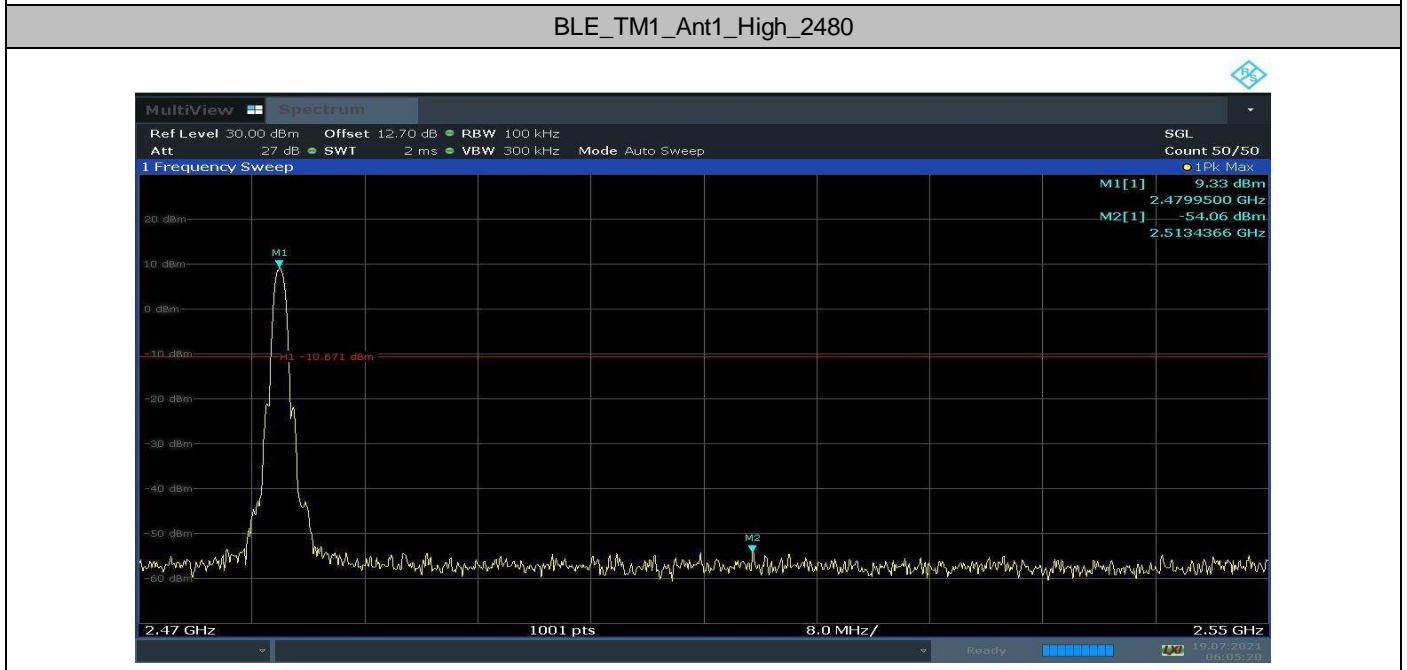
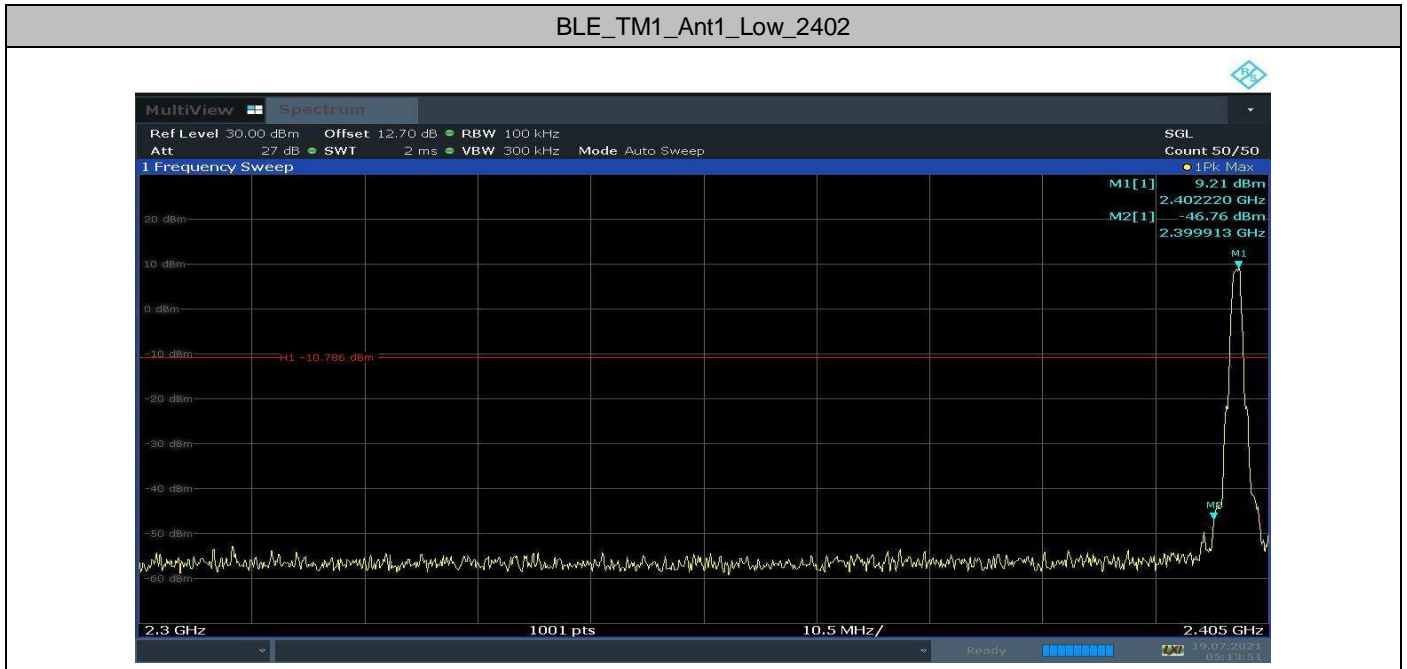


6. Appendix F: Band edge measurements

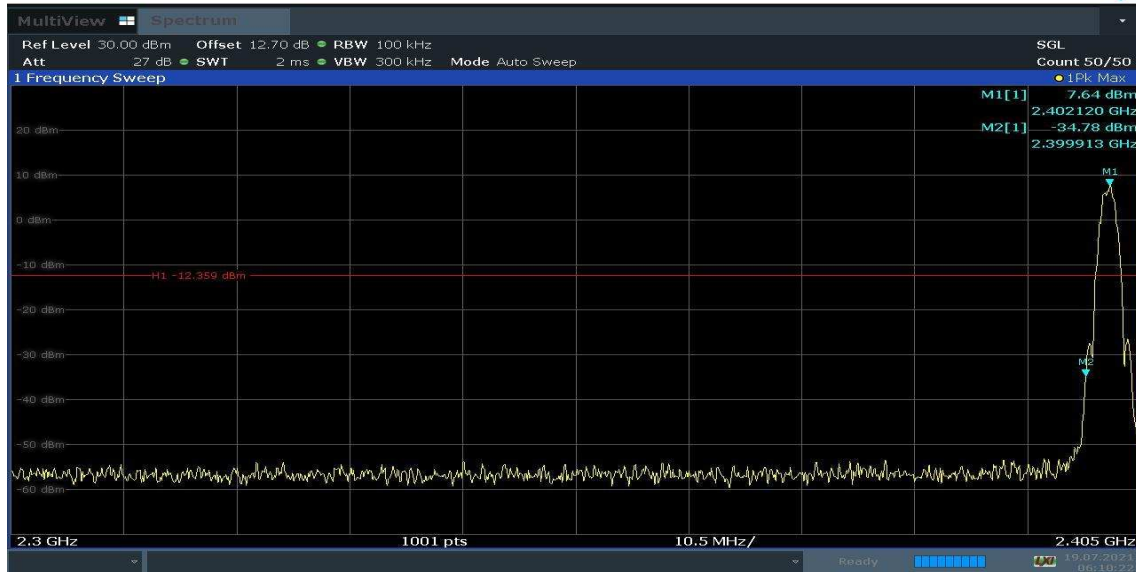
6.1 Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_TM1	Ant1	Low	2402	9.214	-46.761	-10.786	PASS
		High	2480	9.33	-54.062	-10.670	PASS
BLE_TM2	Ant1	Low	2402	7.641	-34.781	-12.359	PASS
		High	2480	7.76	-53.194	-10.240	PASS

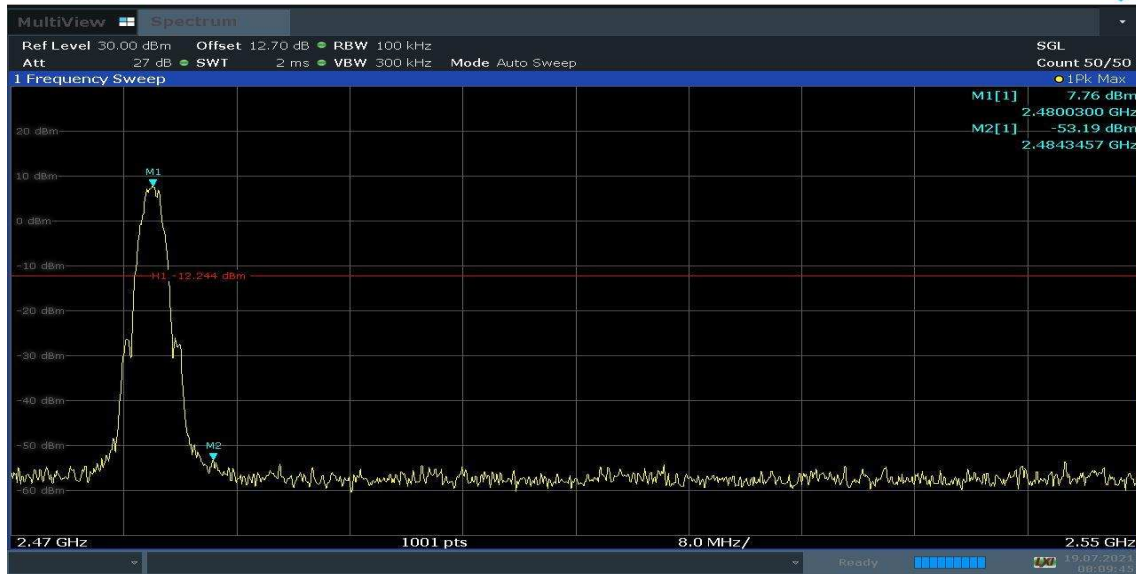
6.2 Test Graphs



BLE_TM2_Ant1_Low_2402



BLE_TM2_Ant1_High_2480



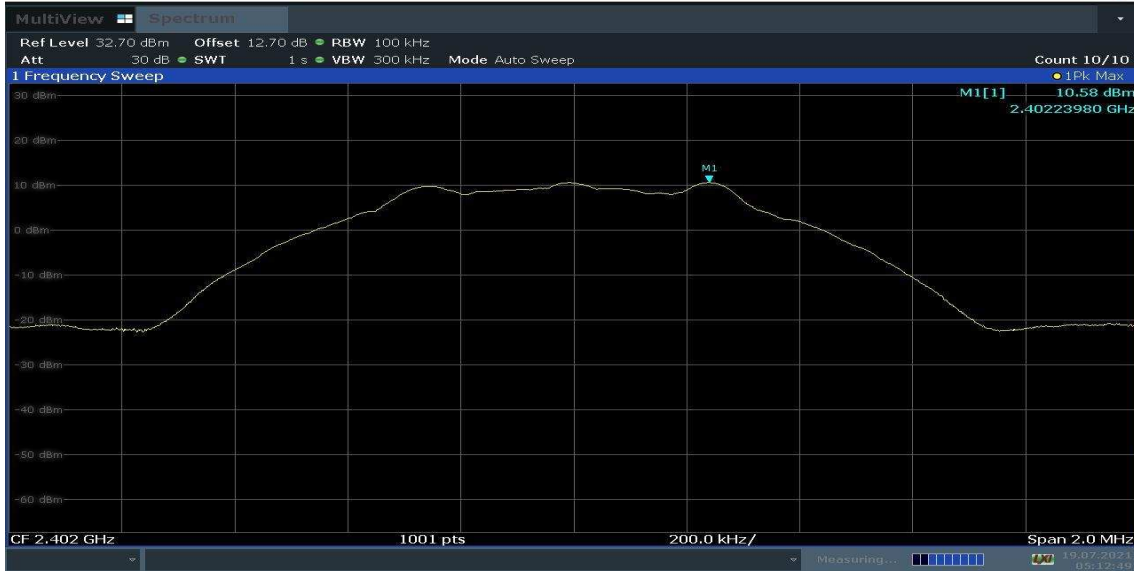
7. Appendix G: Conducted Spurious Emission

7.1 Test Result

TestMode	Antenna	Channel	RefLevel[dBm /100kHz]	Result[dBm]	Limit[dBm /100kHz]	Verdict
BLE_TM1	Ant1	2402	10.58	<Limit	-19.42	PASS
		2440	10.24	<Limit	-19.76	PASS
		2480	10.69	<Limit	-19.31	PASS
BLE_TM2	Ant1	2402	10.6	<Limit	-19.4	PASS
		2440	10.39	<Limit	-19.61	PASS
		2480	10.78	<Limit	-19.22	PASS

7.2 Test Graphs

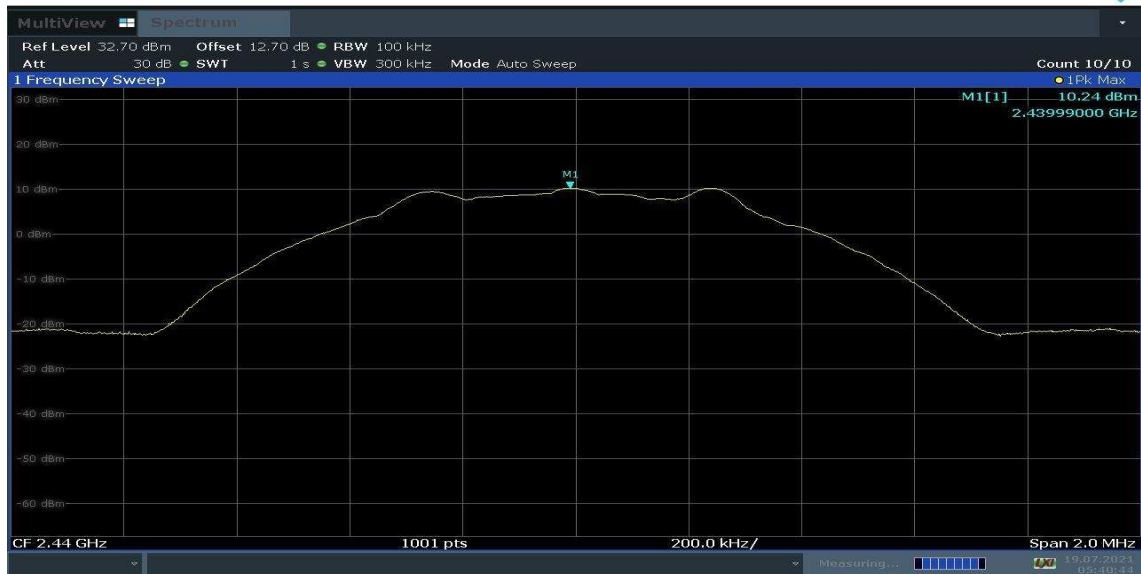
BLE_TM1_Ant1_2402_0~Reference



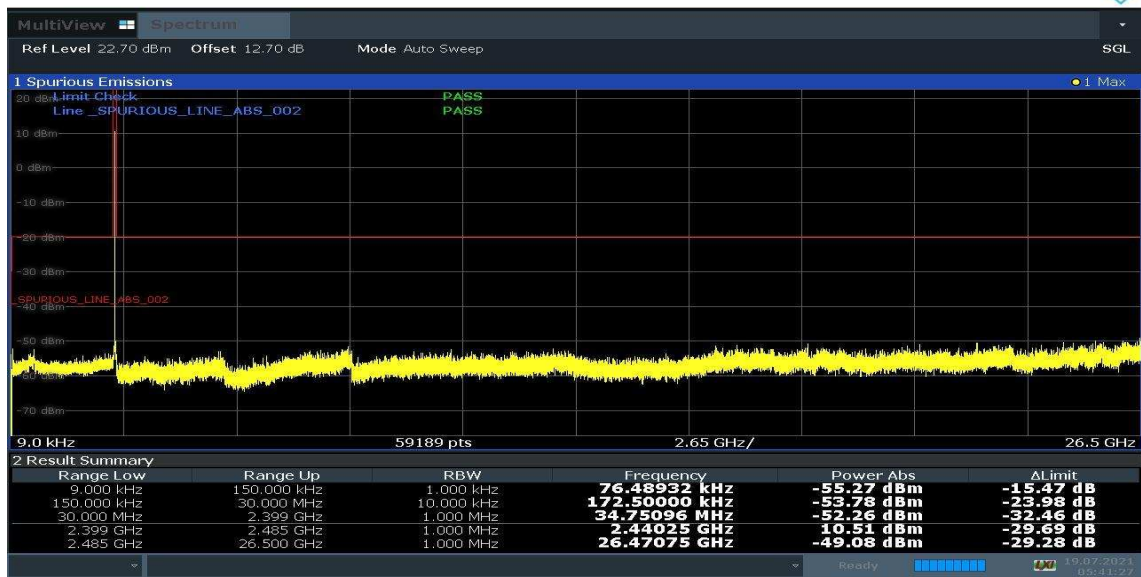
BLE_TM1_Ant1_2402_0.009~30



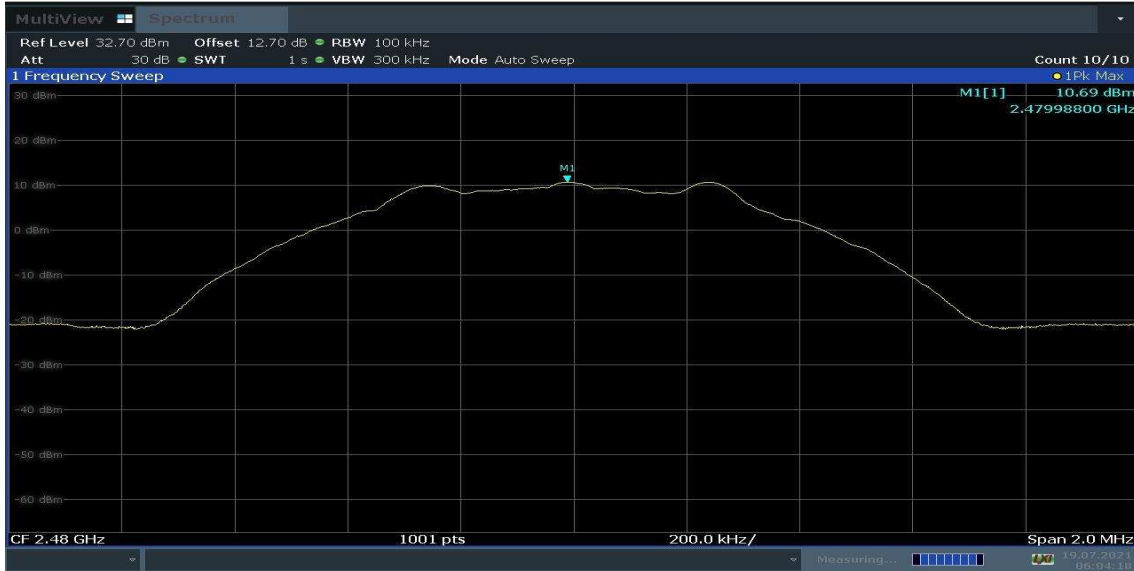
BLE_TM1_Ant1_2440_0~Reference



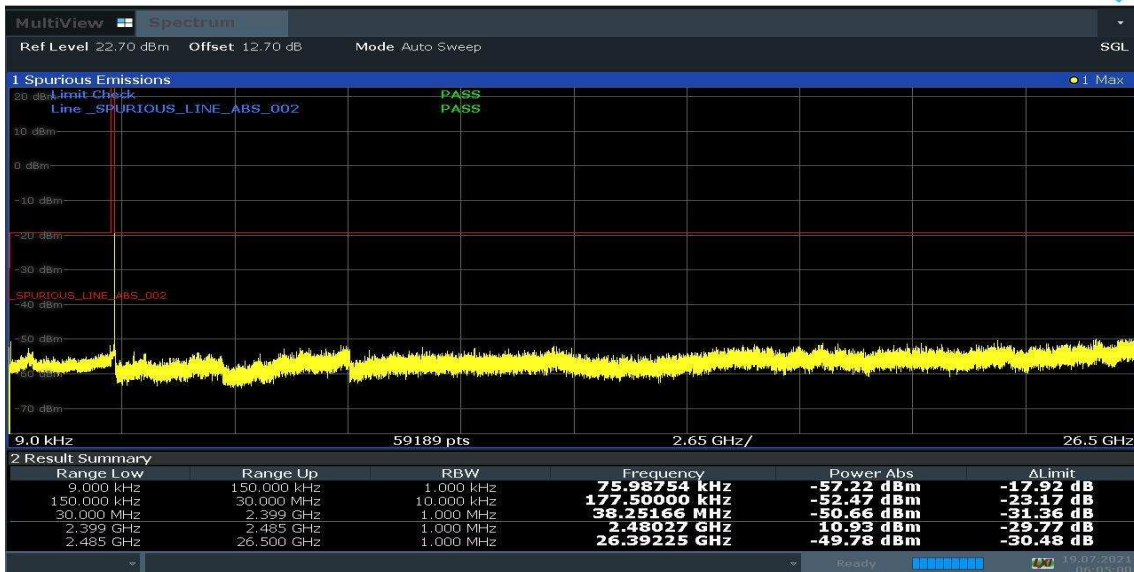
BLE_TM1_Ant1_2440_0.009~30



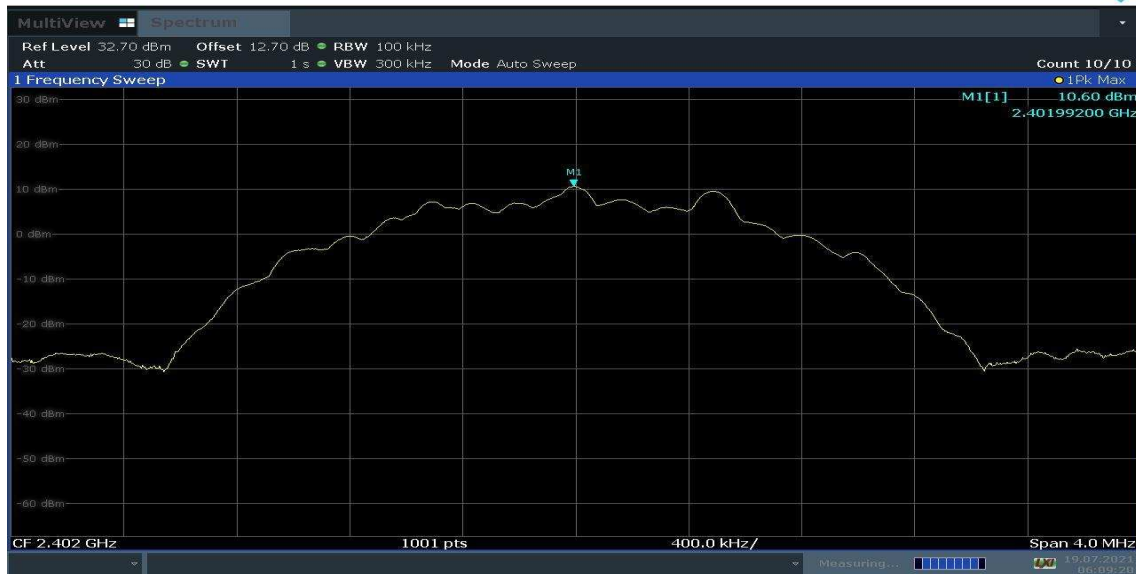
BLE_TM1_Ant1_2480_0~Reference



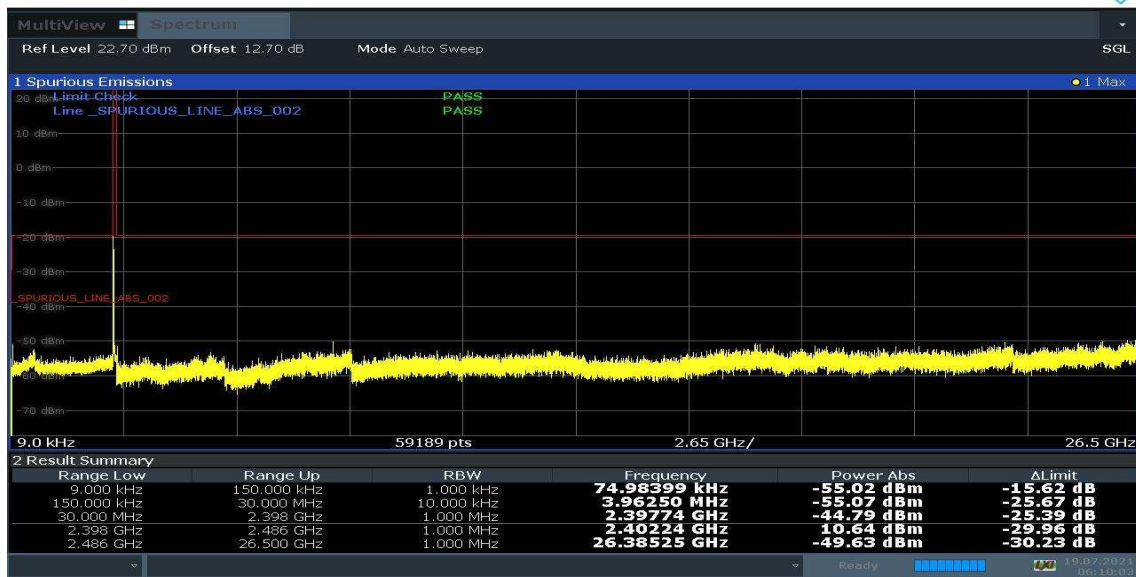
BLE_TM1_Ant1_2480_0.009~30



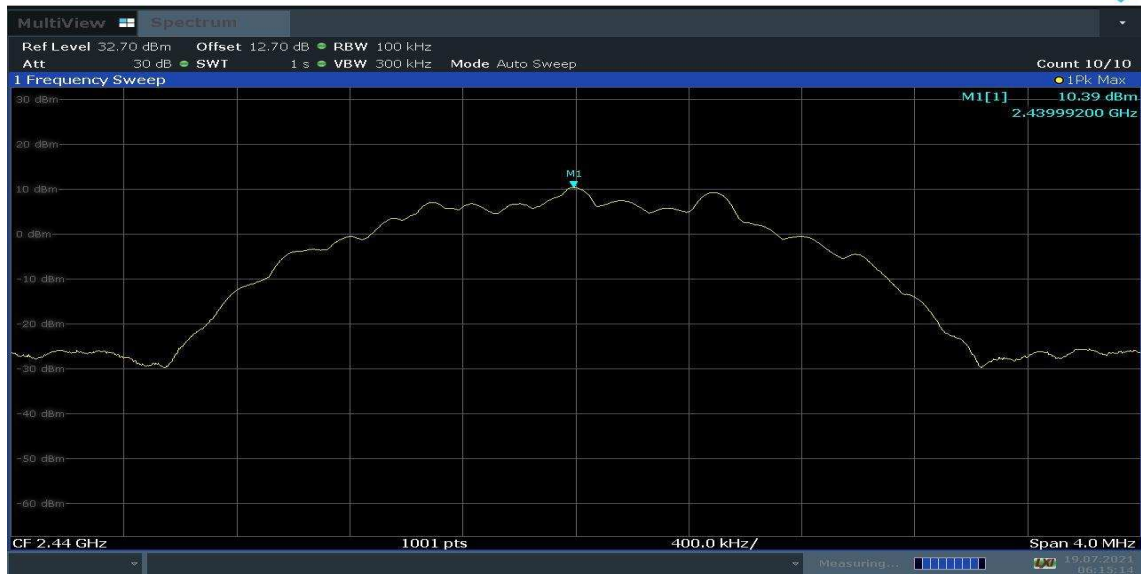
BLE_TM2_Ant1_2402_0~Reference



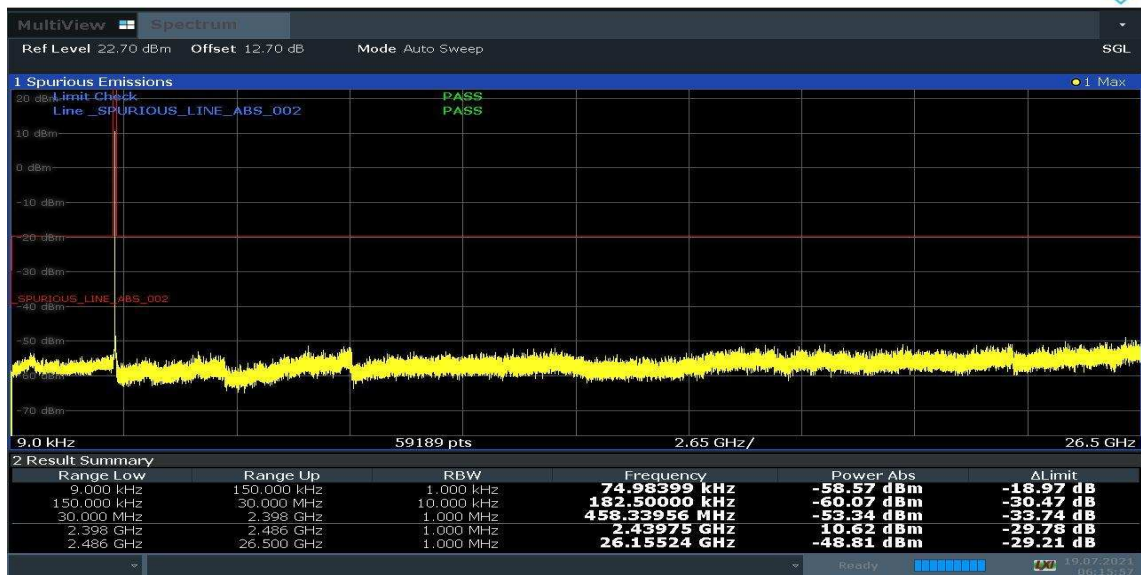
BLE_TM2_Ant1_2402_0.009~30



BLE_TM2_Ant1_2440_0~Reference



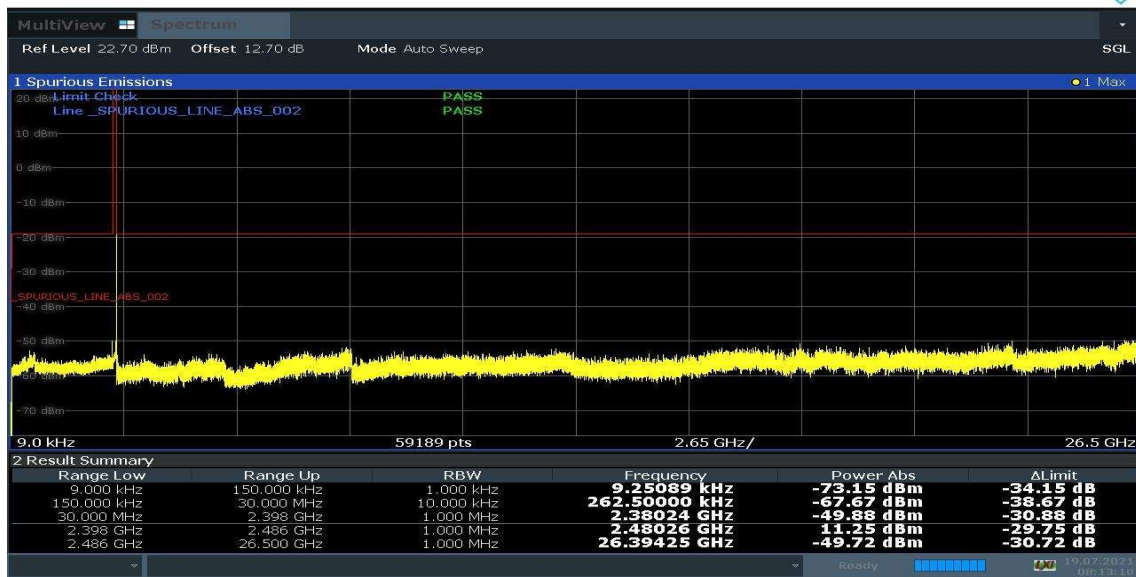
BLE_TM2_Ant1_2440_0.009~30



BLE_TM2_Ant1_2480_0~Reference



BLE_TM2_Ant1_2480_0.009~30



8. Appendix H: Radiated Spurious Emission & Spurious in Restricted Band

Note:

1. We tested all modes & antennas, the data presented below is the worst case.
2. The simultaneous transmission has been considered
3. The whole testing range is from “9 KHz to 26.5 GHz (10th harmonics)” is divided into 5 parts according to the test site settings, which are:
 - (Part 1): Test range of “9 KHz to 30 MHz”, RBW =9 kHz, VBW = 30 kHz
 - (Part 2): Test range of “30 GHz to 1 GHz”, RBW = 100 kHz, VBW = 300 kHz.
 - (Part 3): Test range of “1 GHz to 3 GHz”. RBW = 1 MHz, VBW = 3 MHz.
 - (Part 4): Test range of “3 GHz to 18 GHz”, RBW = 1 MHz, VBW = 3 MHz.
 - (Part 5): Test range of “18 GHz to 26.5 GHz”. RBW = 1 MHz, VBW = 3 MHz.

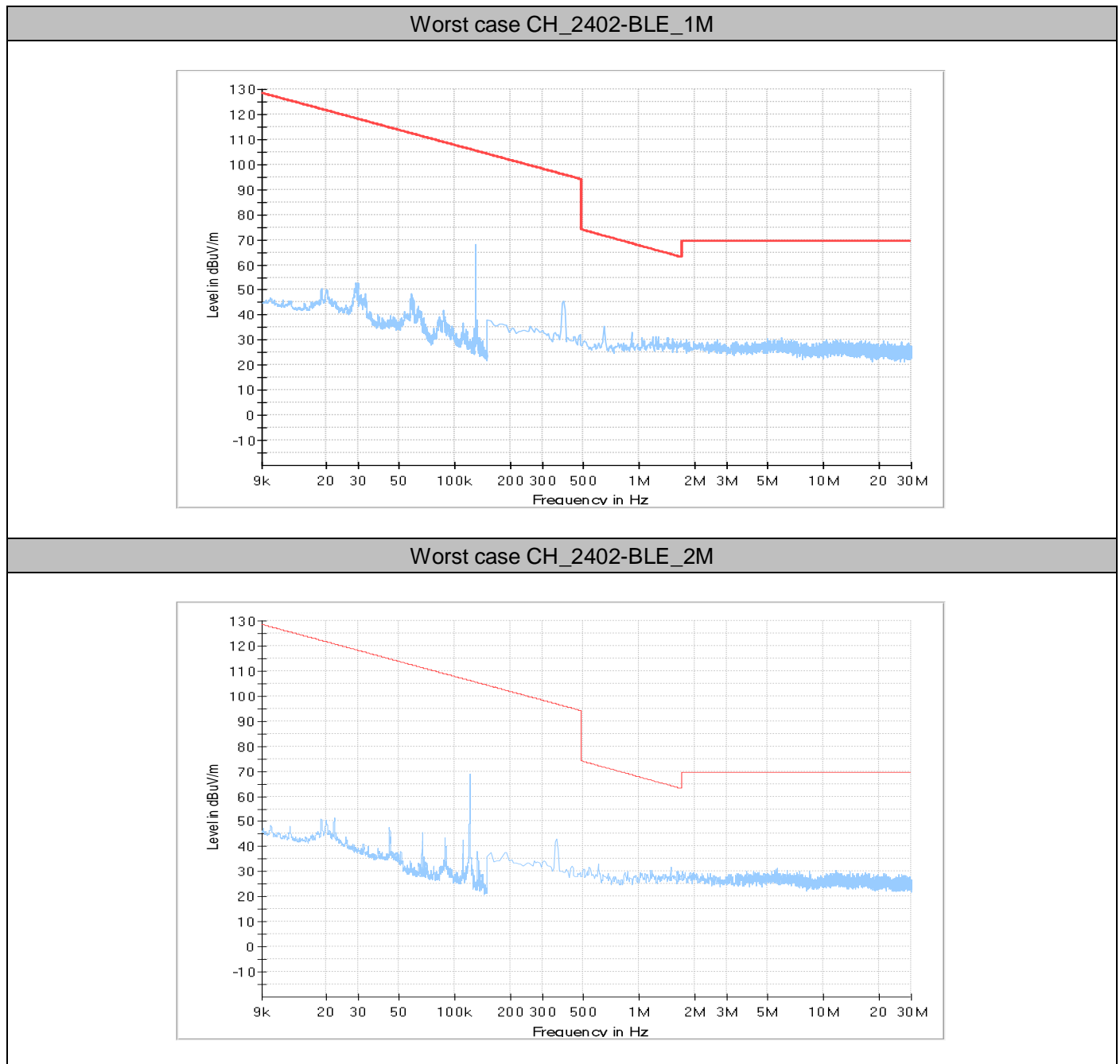
8.1 Test Results

Test Mode	Antenna	Test Channel	Spurious Emissions Result	Spurious Emissions Limit	Verdict
TM1_BLE_1M	Ant1	2402	(see Test Graphs)	(see Test Graphs)	PASS
	Ant1	2480	(see Test Graphs)	(see Test Graphs)	PASS
TM2_BLE_2M	Ant1	2402	(see Test Graphs)	(see Test Graphs)	PASS
	Ant1	2480	(see Test Graphs)	(see Test Graphs)	PASS

8.2 Test Graphs

8.2.1 Part 1: Testing Range of “9 kHz to 30MHz”

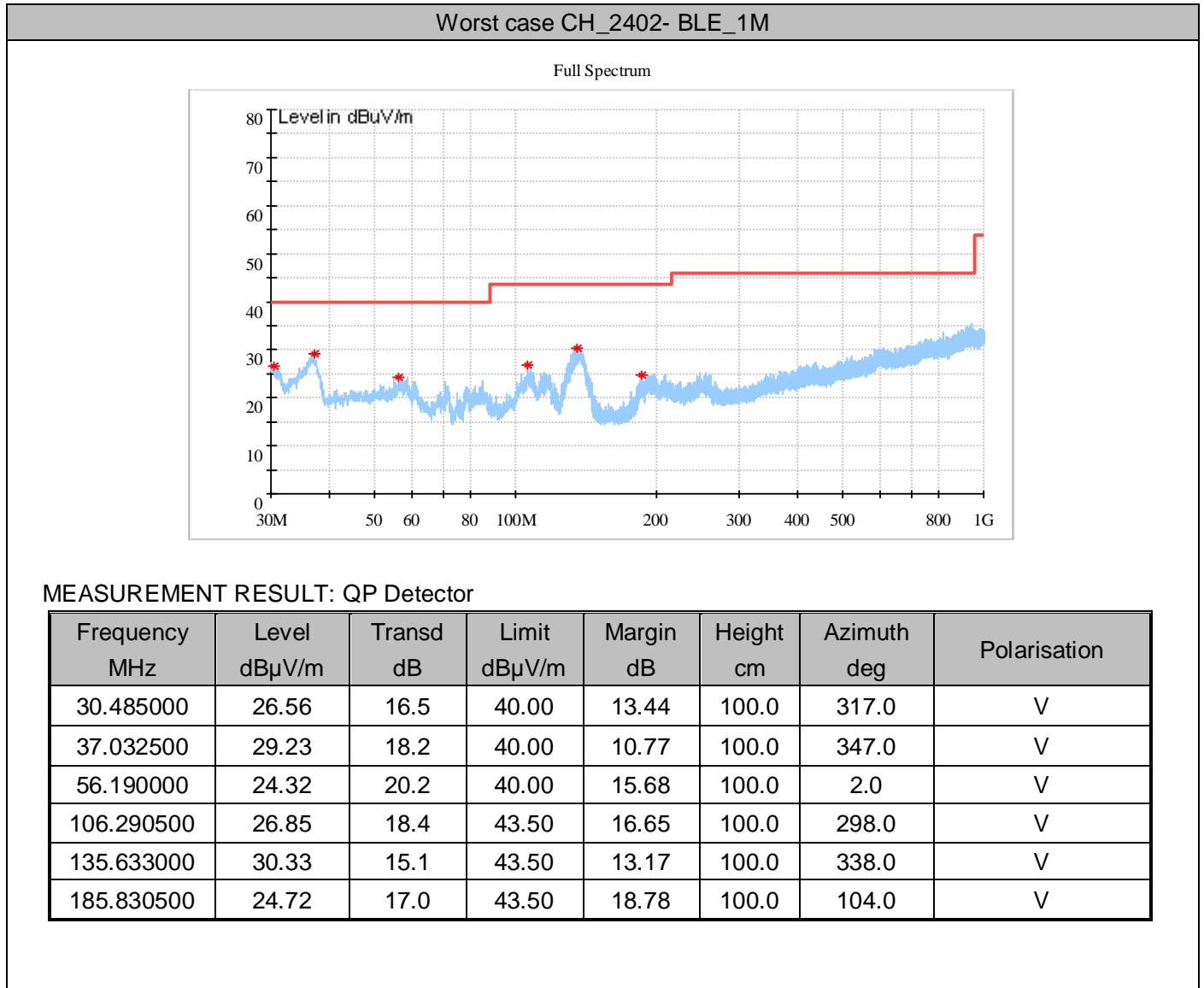
Note 1: The test results and plot for testing range of “9 kHz to 30MHz” showed as below is the WORST case for all Test Modes and Channels. This range will not be presented for each Test Mode and each Channel.



8.2.2 Part 2: Testing Range of “30 MHz to 1 GHz”

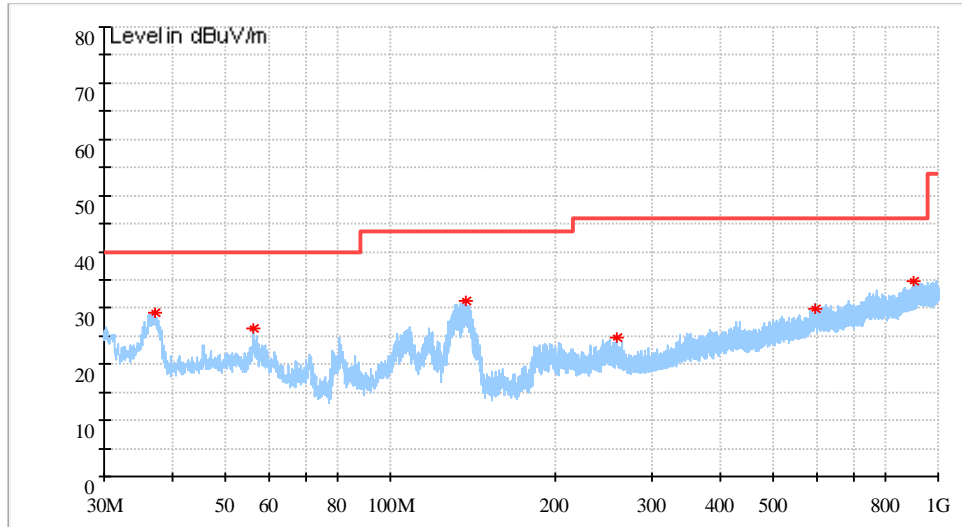
Note 1: The test results and plot for testing range of “30 MHz to 1 GHz” showed as below is the WORST case for all Test Modes and Channels. This range will not be presented for each Test Mode and each Channel.

Note 2: The emissions in this range are mainly from the Platform Device (Notepad PC and its ancillary components).



Worst case CH_2402- BLE_2M

Full Spectrum



MEASUREMENT RESULT: QP Detector

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Height cm	Azimuth deg	Polarisation
37.032500	29.10	18.2	40.00	10.90	100.0	294.0	V
56.093000	26.26	20.2	40.00	13.74	100.0	60.0	V
137.621500	31.19	15.0	43.50	12.31	100.0	294.0	V
259.259500	24.80	19.9	46.00	21.20	100.0	189.0	H
598.468500	29.93	27.4	46.00	16.07	100.0	144.0	H
898.877500	34.66	30.6	46.00	11.34	100.0	163.0	V

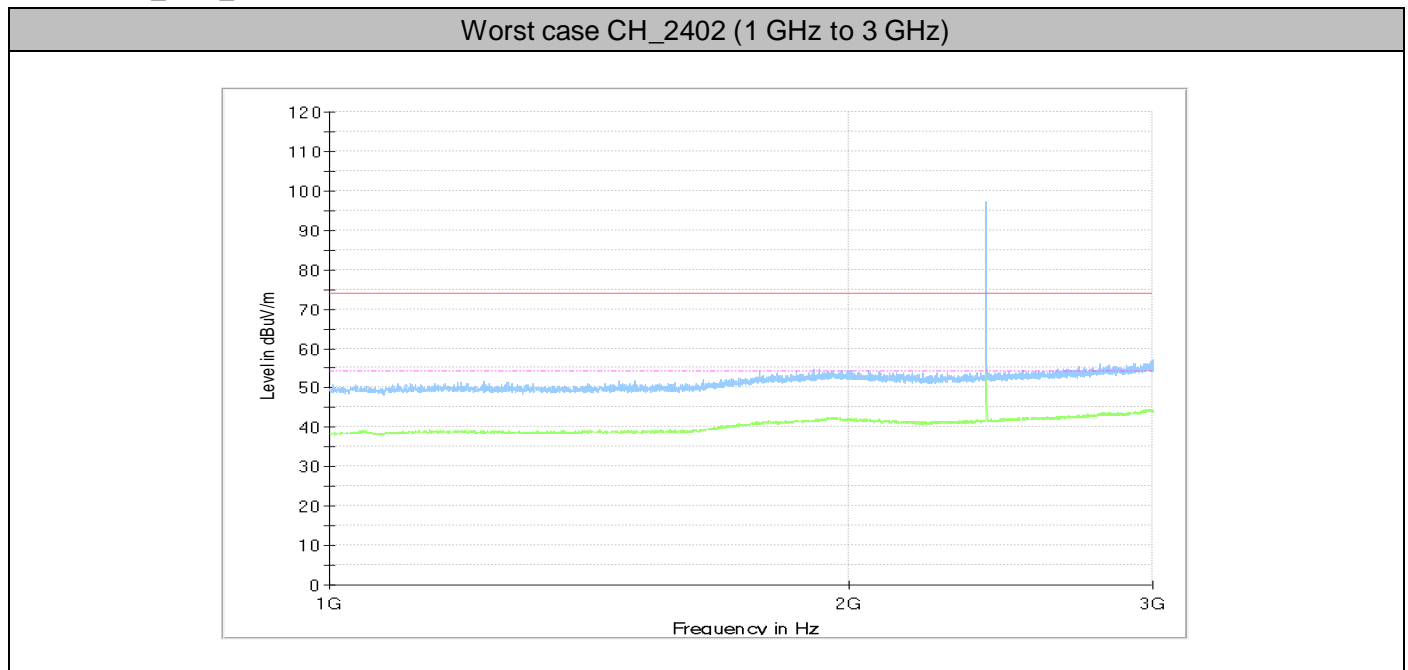
8.2.3 Part 3: Testing Range of “1 GHz to 3 GHz”

Note 1: The testing range of “1 GHz to 3 GHz” is for checking radiated emissions located in restricted bands near the EUT operating bands. The test results and plot for testing range of “1 GHz to 3 GHz” showed as below is the WORST case for all Test Modes and Channels. This range will not be presented for each Test Mode and each Channel.

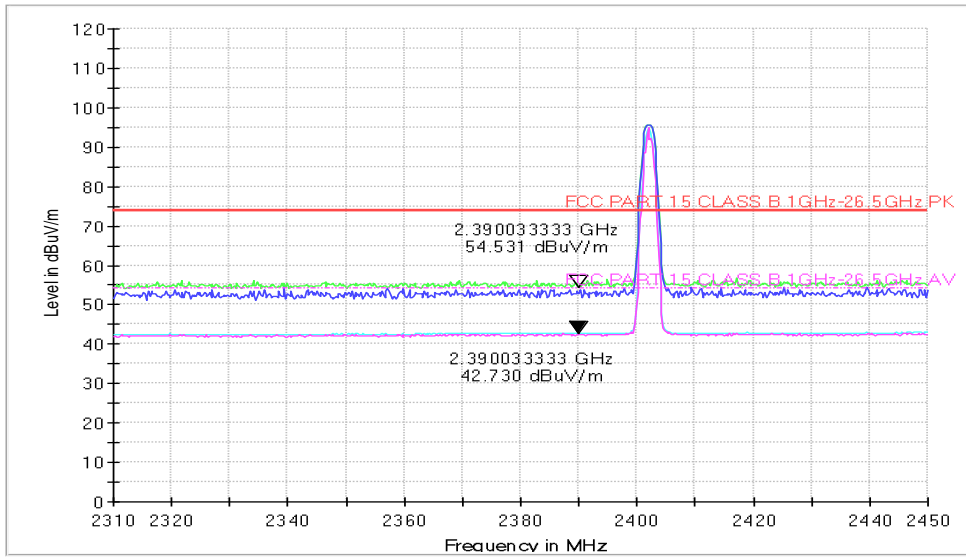
Note 2: Two limits are required in the testing range above 1 GHz, that is Peak limit (74 dB μ V/m) and Average Limit (54 dB μ V/m).

Note 3: The peak spike exceeds the limit line is EUT’s operating frequency.

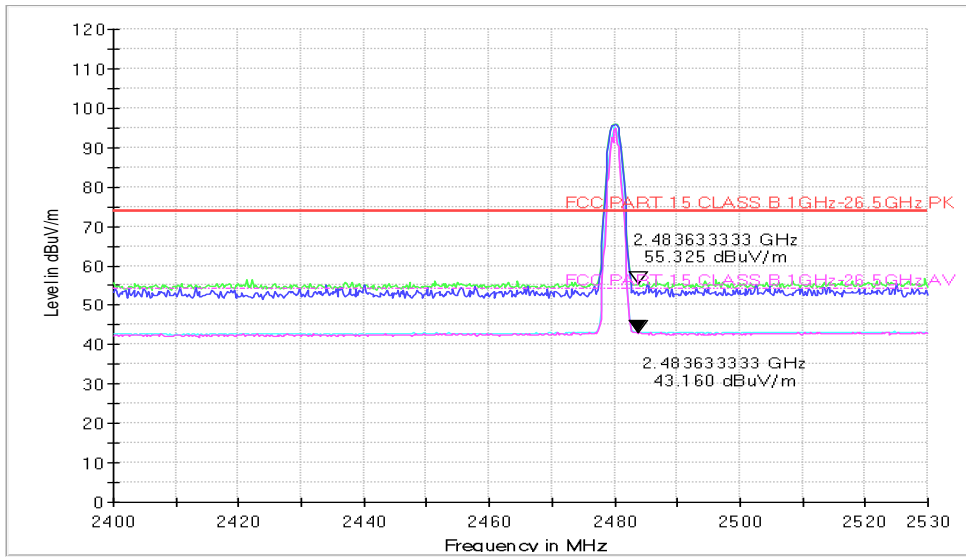
8.2.3.1 TM1_BLE_1M



CH_2402(Band Edge)

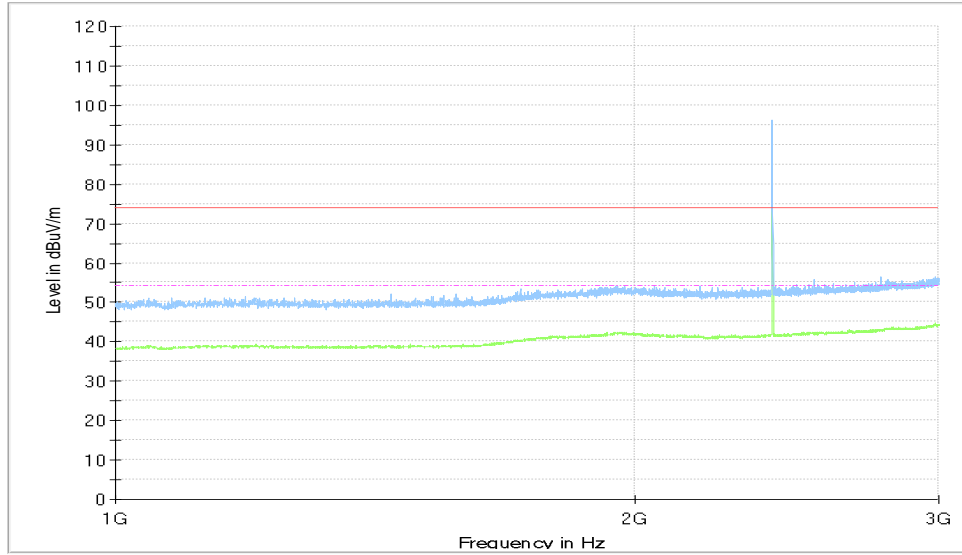


CH_2480(Band Edge)

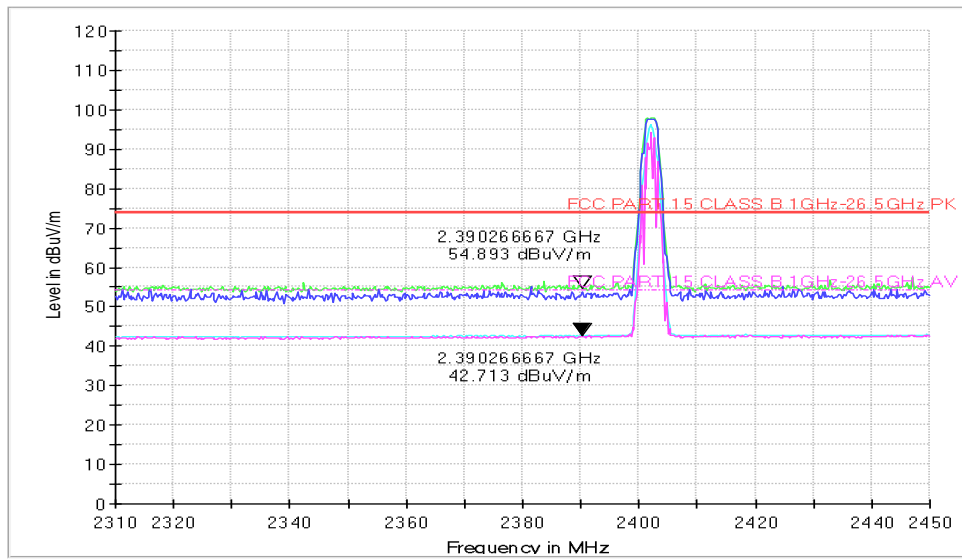


8.2.3.2 TM2_BLE_2M

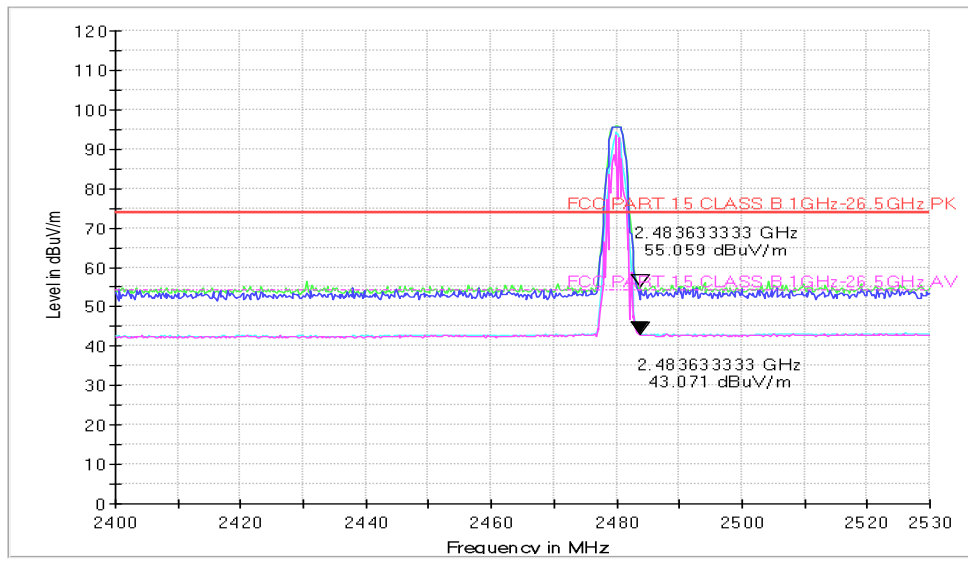
Worst case CH_2480 (1 GHz to 3 GHz)



CH_2402(Band Edge)



CH_2480(Band Edge)

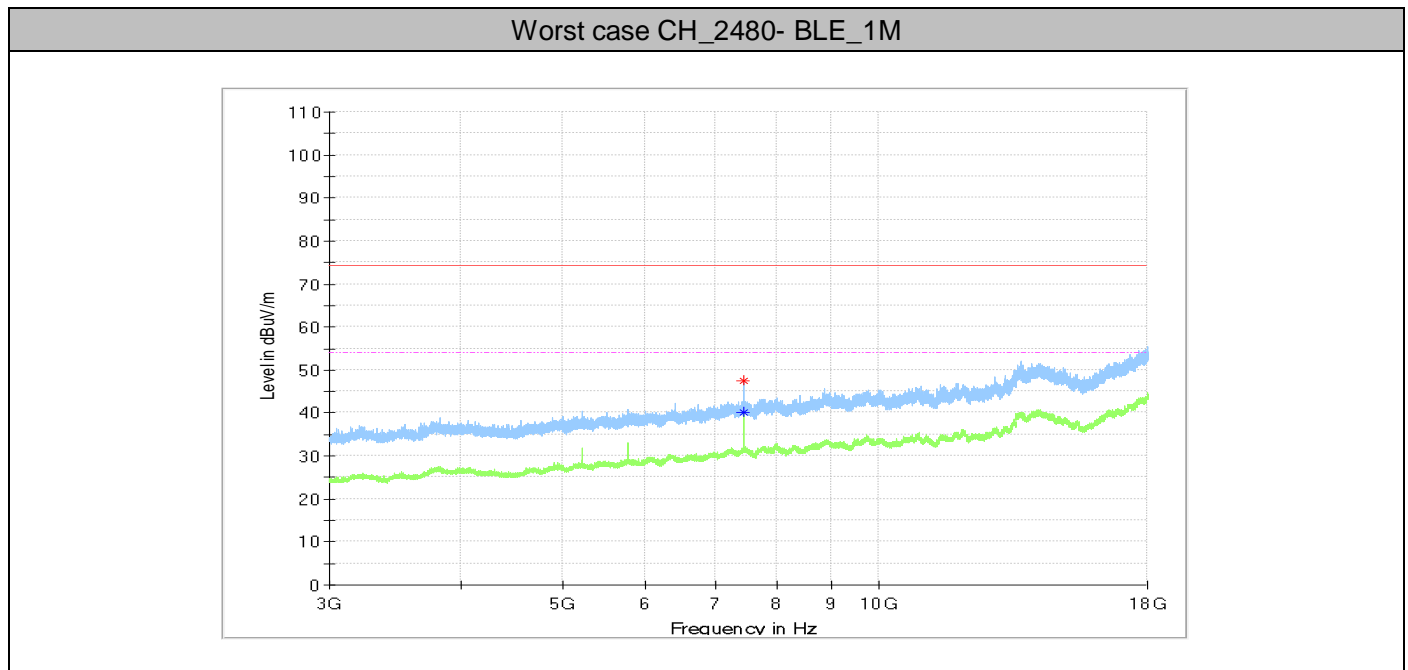


8.2.4 Part 4: Testing Range of “3 GHz to 18 GHz”

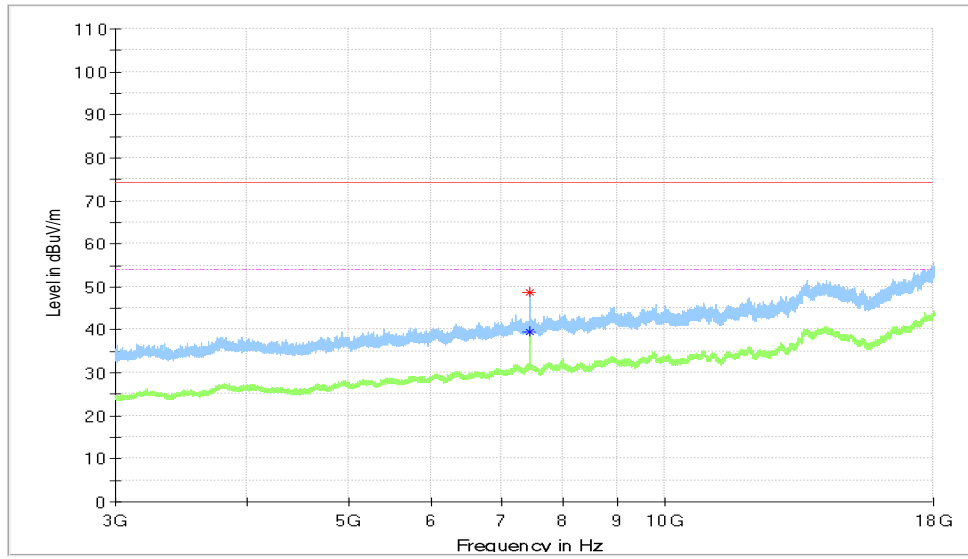
Note 1: The test results and plot for testing range of “3 GHz to 18 GHz” showed as below is the worst case for all Test Modes and Channels. This range will not be presented for each Test Mode and each Channel.

Note 2: The testing range of “3 GHz to 18 GHz” is for checking radiated emissions located in restricted bands faraway from the EUT operating bands.

Note 3: Two limits are required in the testing range above 1 GHz, that is Peak limit (74 dB μ V/m) and Average Limit (54 dB μ V/m).



Worst case CH_2480- BLE_2M

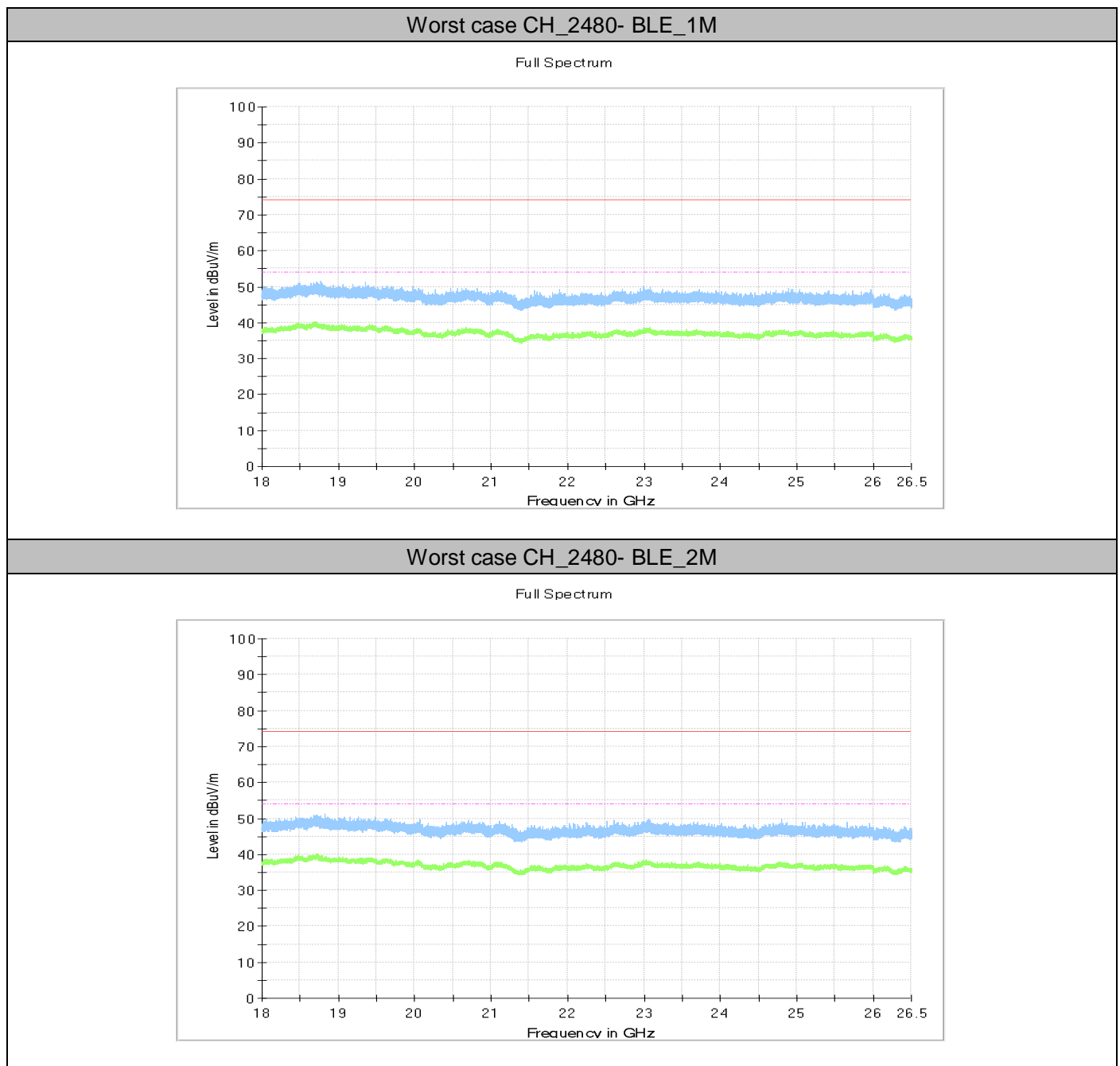


8.2.5 Part 5: Testing Range of “18 GHz to 26.5 GHz”

Note 1: The test results and plot for testing range of “18 GHz to 26.5 GHz” showed as below is the WORST case for all Test Modes and Channels. This range will not be presented for each Test Mode and each Channel.

Note 2: The testing range of “18 GHz to 26.5 GHz” is for checking radiated emissions located in restricted bands faraway from the EUT operating bands.

Note 3: Two limits are required in the testing range above 1 GHz, that is Peak limit (74 dB μ V/m) and Average Limit (54 dB μ V/m).



9. Appendix I: Conducted Emission at Power Port

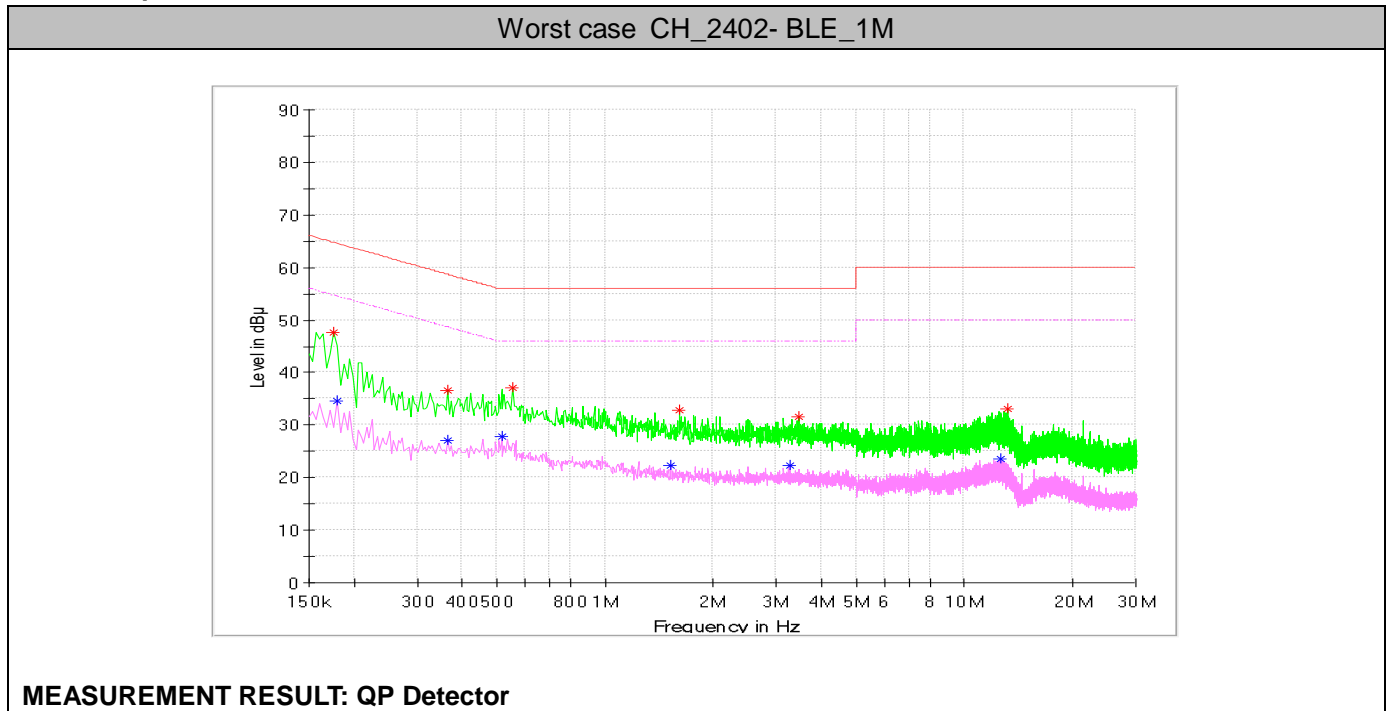
Note 1: The test results and plot for testing range of “150 kHz to 30 MHz” showed as below is the WORST case for all Test Modes and Channels. This range will not be presented for each Test Mode and each Channel.

Note 2: RBW =9 kHz; VBW = 30 kHz

9.1 Test Results

Test Mode	Antenna Port	Test Channel	Maximum Emissions	Limit	Verdict
TM1_BLE_1M	Ant1	2402	(see Test Graphs)	(see Test Graphs)	PASS
TM1_BLE_2M	Ant1	2480	(see Test Graphs)	(see Test Graphs)	PASS

9.2 Test Graphs



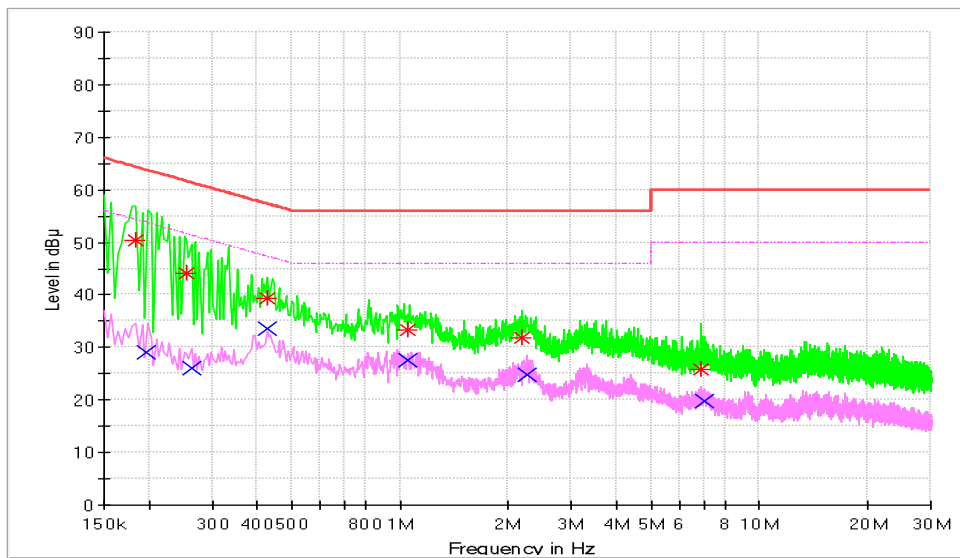
MEASUREMENT RESULT: QP Detector

Frequency (MHz)	Level (dBµV)	Limit (dBµV)	Transd. (dB)	Margin (dB)	Line	PE
0.176119	47.65	64.67	9.7	17.02	N	FLO
0.366412	36.50	58.58	9.7	22.08	L1	FLO
0.552975	37.06	56.00	9.7	18.94	L1	FLO
1.608919	32.76	56.00	9.7	23.24	L1	FLO
3.444694	31.58	56.00	9.8	24.42	N	FLO
13.235494	33.14	60.00	9.8	26.86	L1	FLO

MEASUREMENT RESULT: AV Detector

Frequency (MHz)	Level (dBμV)	Limit (dBμV)	Transd. (dB)	Margin (dB)	Line	PE
0.179850	34.60	54.49	9.7	19.89	L1	FLO
0.366412	27.07	48.58	9.7	21.51	L1	FLO
0.515662	27.88	46.00	9.7	18.12	N	FLO
1.526831	22.31	46.00	9.7	23.69	L1	FLO
3.276788	22.39	46.00	9.8	23.61	N	FLO
12.571331	23.56	50.00	10.3	26.44	L1	FLO

Worst case CH_2480- BLE_2M



MEASUREMENT RESULT: QP Detector

Frequency (MHz)	Level (dBμV)	Limit (dBμV)	Transd. (dB)	Margin (dB)	Line	PE
0.176119	47.42	64.67	9.7	17.25	N	FLO
0.220894	40.99	62.79	9.7	21.80	L1	FLO
0.511931	40.59	56.00	9.7	15.41	N	FLO
0.888788	34.97	56.00	9.7	21.03	N	FLO
3.911100	33.61	56.00	9.8	22.39	N	FLO
12.198206	35.24	60.00	10.3	24.76	N	FLO

MEASUREMENT RESULT: AV Detector

Frequency (MHz)	Level (dBμV)	Limit (dBμV)	Transd. (dB)	Margin (dB)	Line	PE
0.176119	35.81	54.67	9.7	18.86	L1	FLO
0.220894	30.96	52.79	9.7	21.83	L1	FLO

0.511931	31.22	46.00	9.7	14.78	N	FLO
0.922369	24.34	46.00	9.7	21.66	N	FLO
3.996919	21.38	46.00	9.8	24.62	N	FLO
12.339994	24.38	50.00	10.3	25.62	N	FLO

Note:

1, Level =Reading level by receiver + Transd (Antenna factor + cable loss – preamplifier gain)

The reading level is calculated by software which is not shown in the sheet.

2, Margin=Limit - Level

END