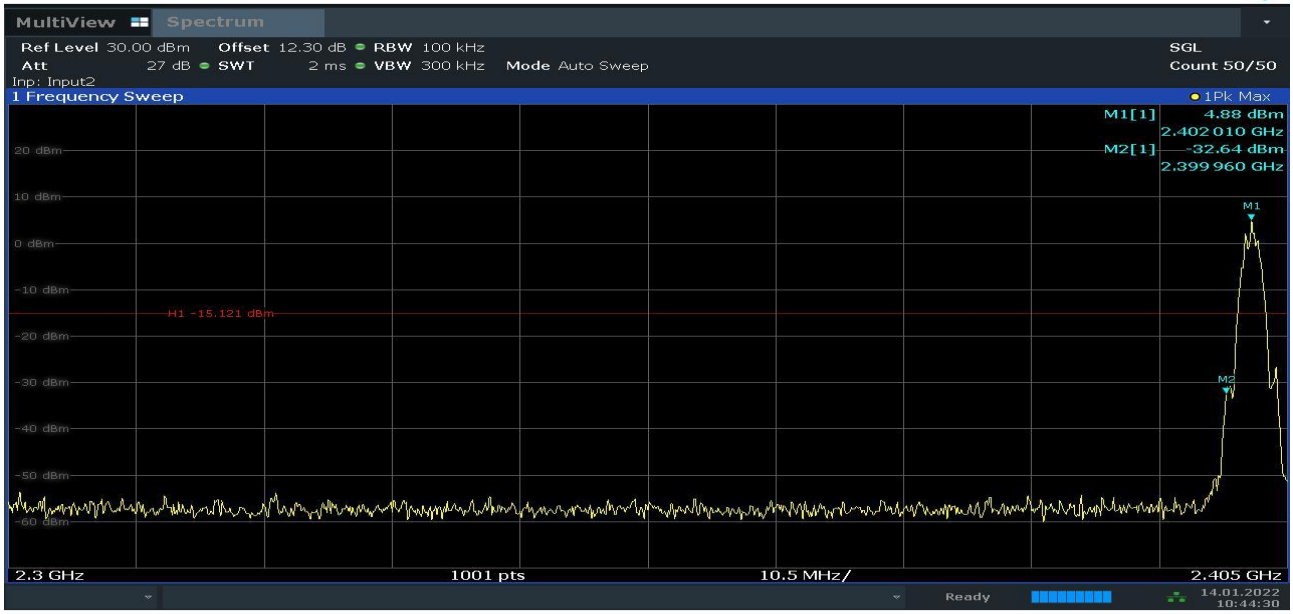
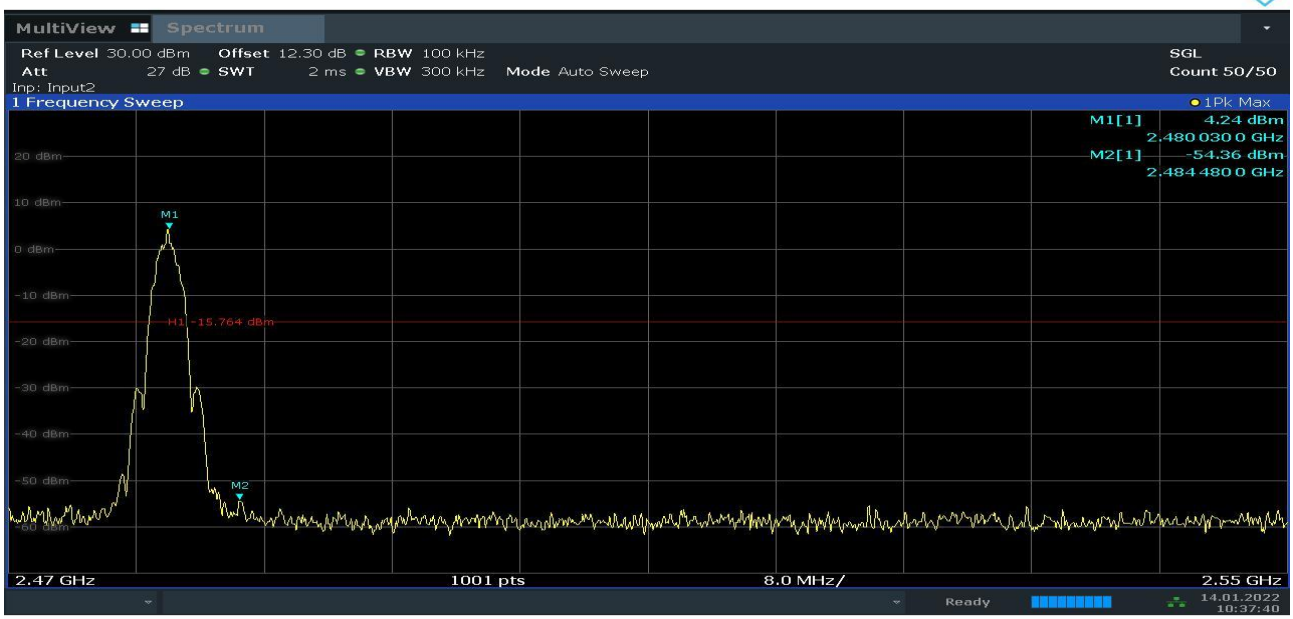
BLE_TM2_Ant1_Low_2402



10:44:30 14.01.2022

BLE_TM2_Ant1_High_2480



10:37:40 14.01.2022

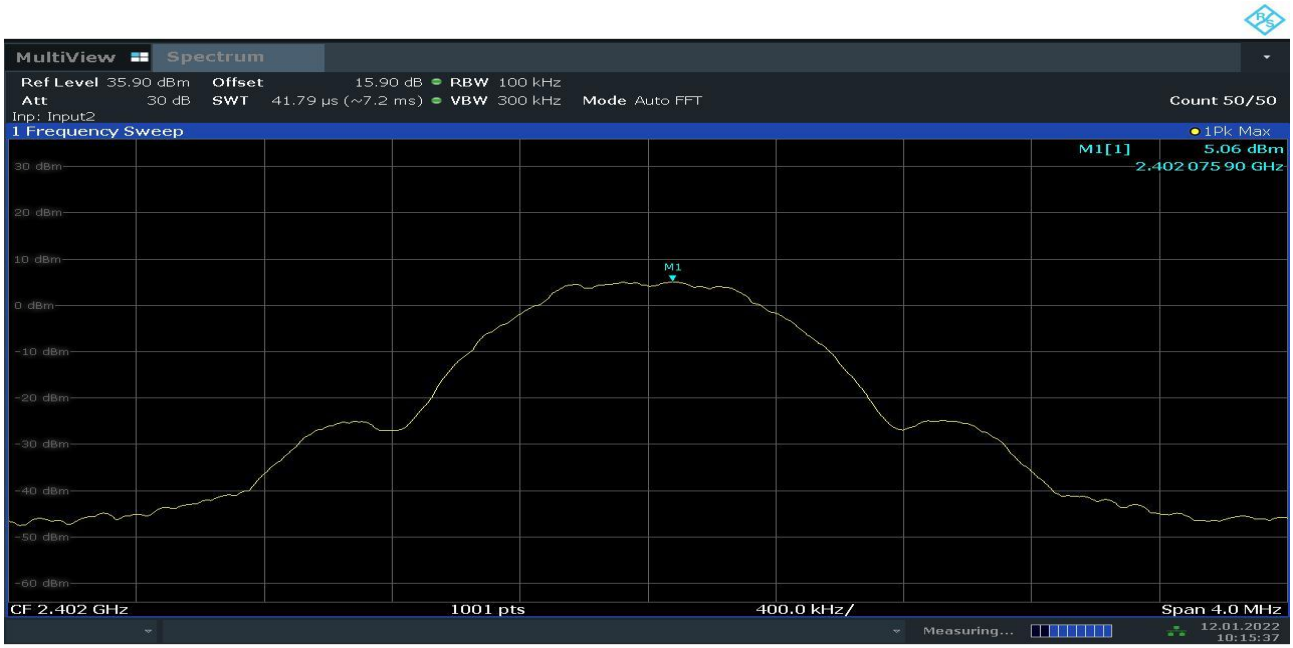
7.Appendix G: Conducted Spurious Emission

7.1 Test Result

TestMode	Antenna	Channel	RefLevel[dBm /100kHz]	Result[dBm]	Limit[dBm /100kHz]	Verdict
BLE_TM1	Ant1	2402	5.06	＜Limit	-24.94	PASS
		2440	4.24	＜Limit	-25.76	PASS
		2480	4.31	＜Limit	-25.69	PASS
BLE_TM2	Ant1	2402	2.97	＜Limit	-27.03	PASS
		2440	2.55	＜Limit	-27.45	PASS
		2480	2.73	＜Limit	-27.27	PASS

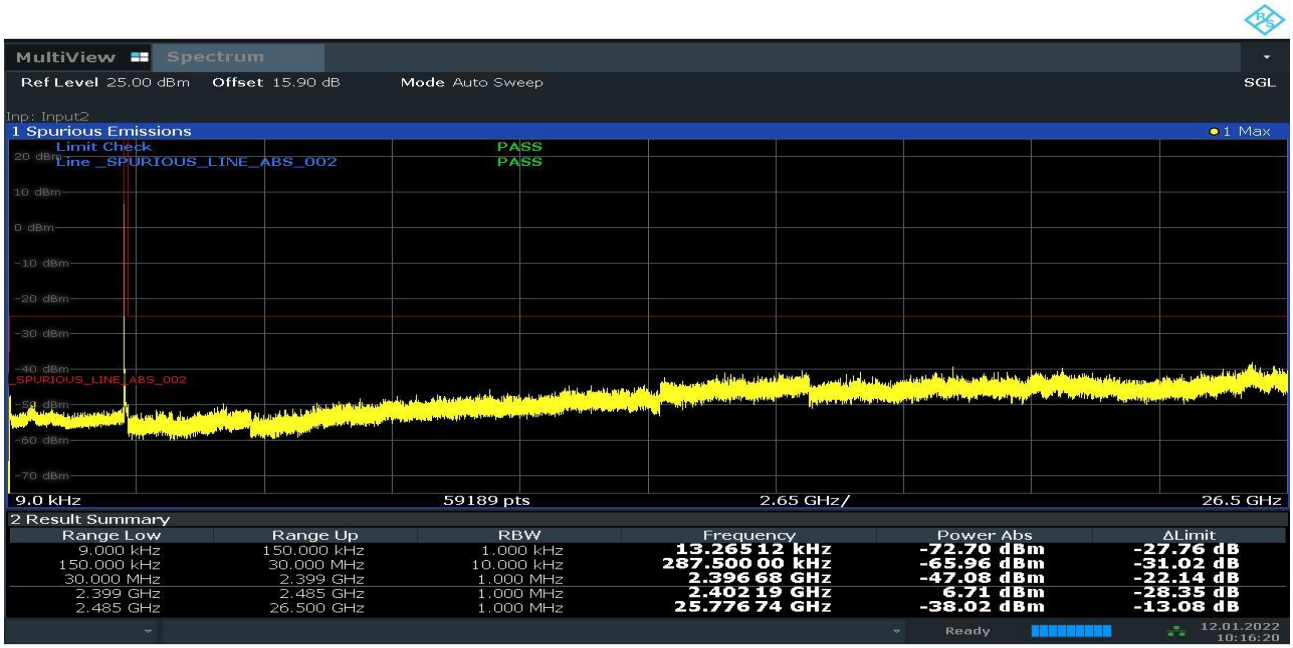
7.2 Test Graphs

BLE_TM1_Ant1_2402_0~Reference



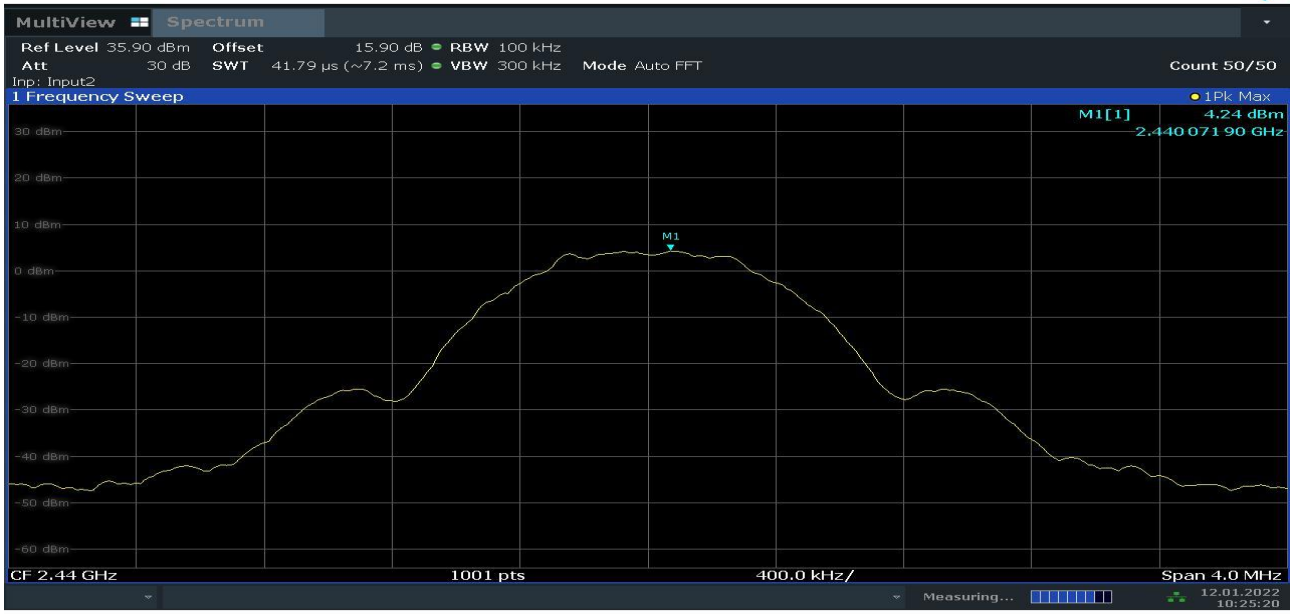
10:15:38 12.01.2022

BLE_TM1_Ant1_2402_9KHz~26.5GHz



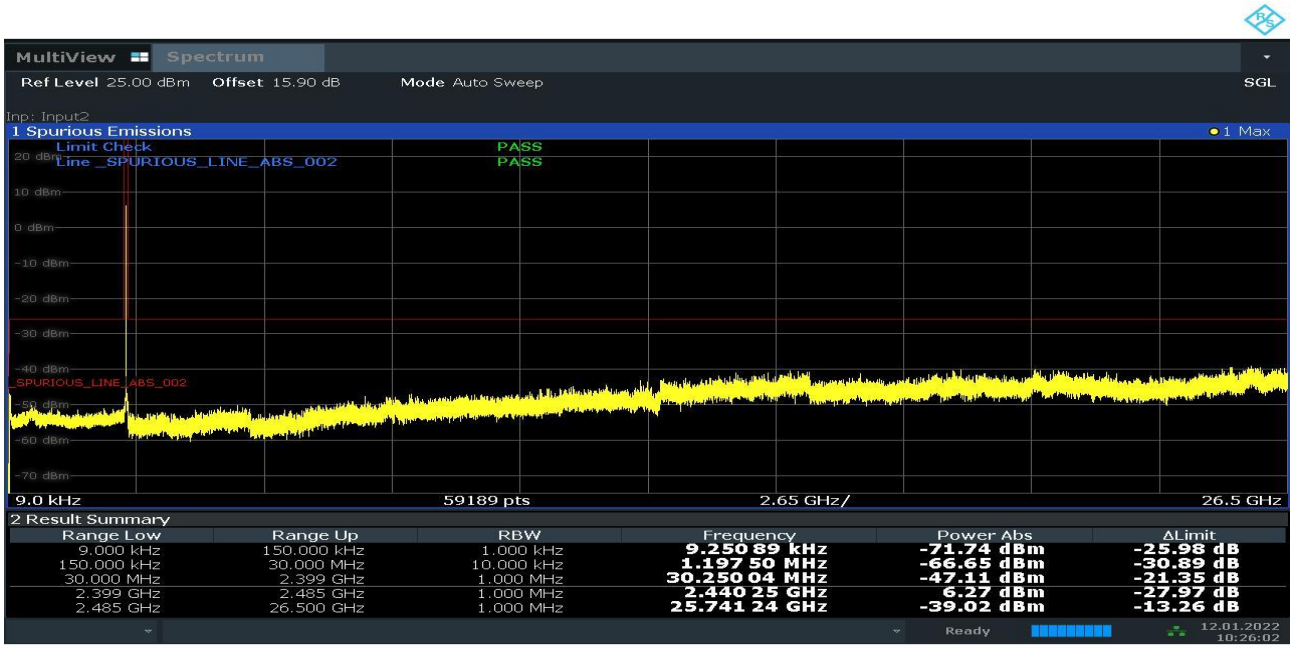
10:16:21 12.01.2022

BLE_TM1_Ant1_2440_0~Reference



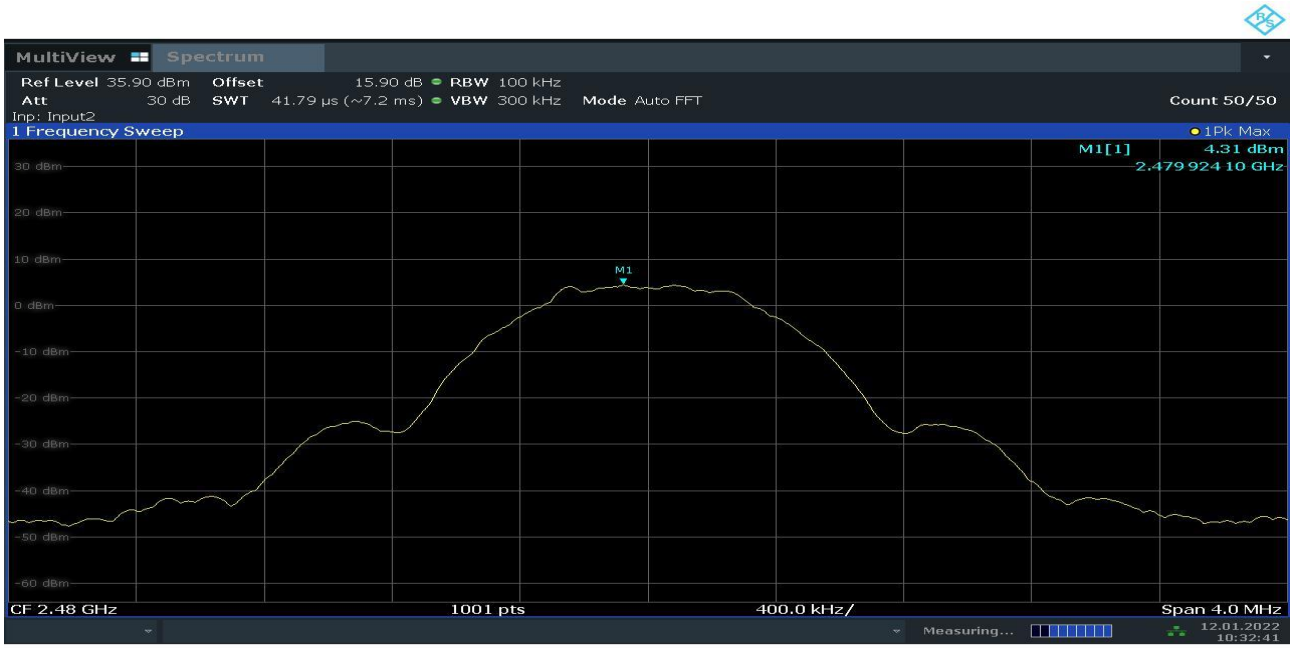
10:25:20 12.01.2022

BLE_TM1_Ant1_2440_9KHz~26.5GHz



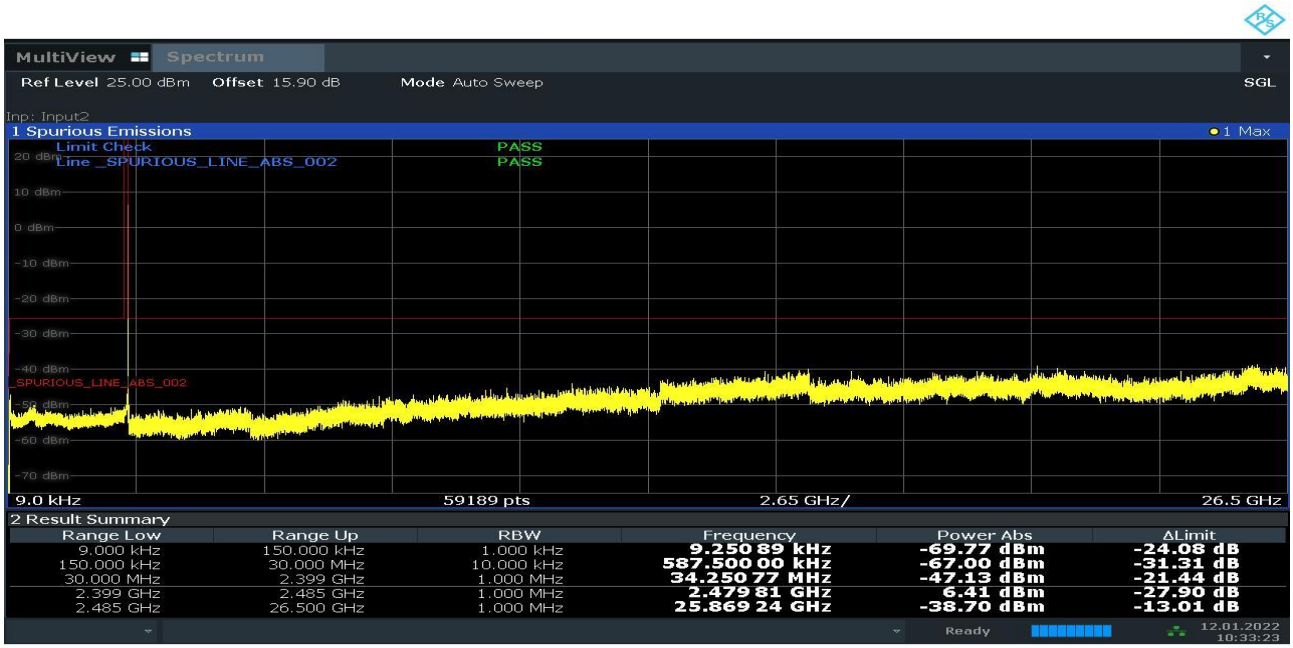
10:26:03 12.01.2022

BLE_TM1_Ant1_2480_0~Reference



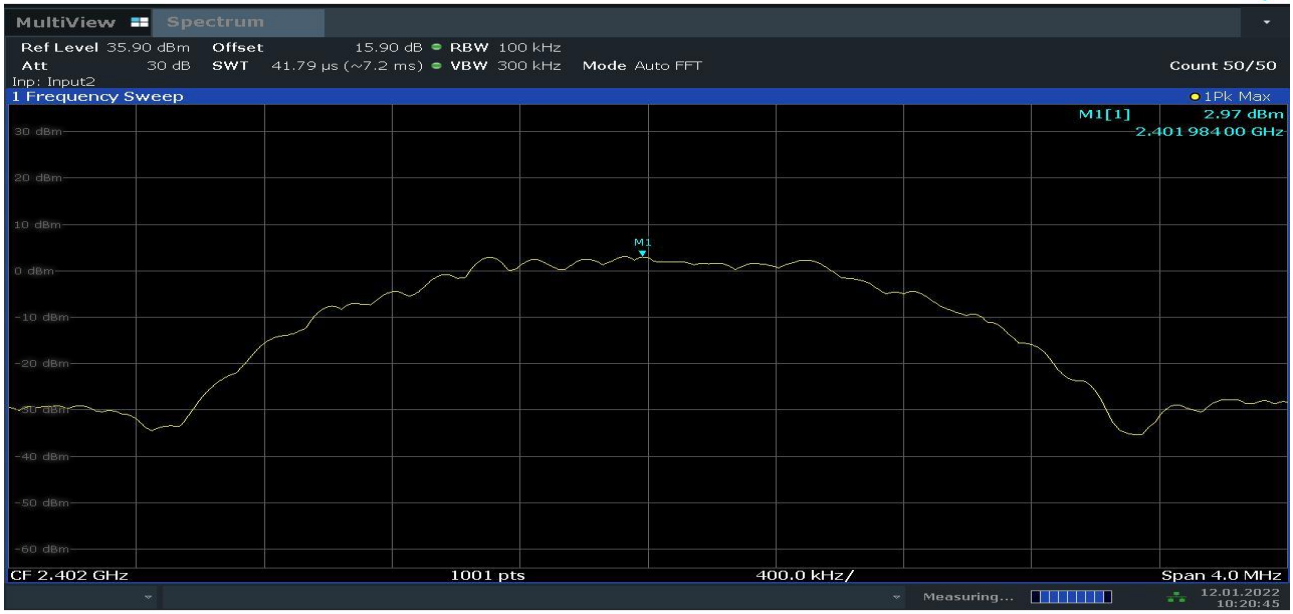
10:32:42 12.01.2022

BLE_TM1_Ant1_2480_9KHz~26.5GHz



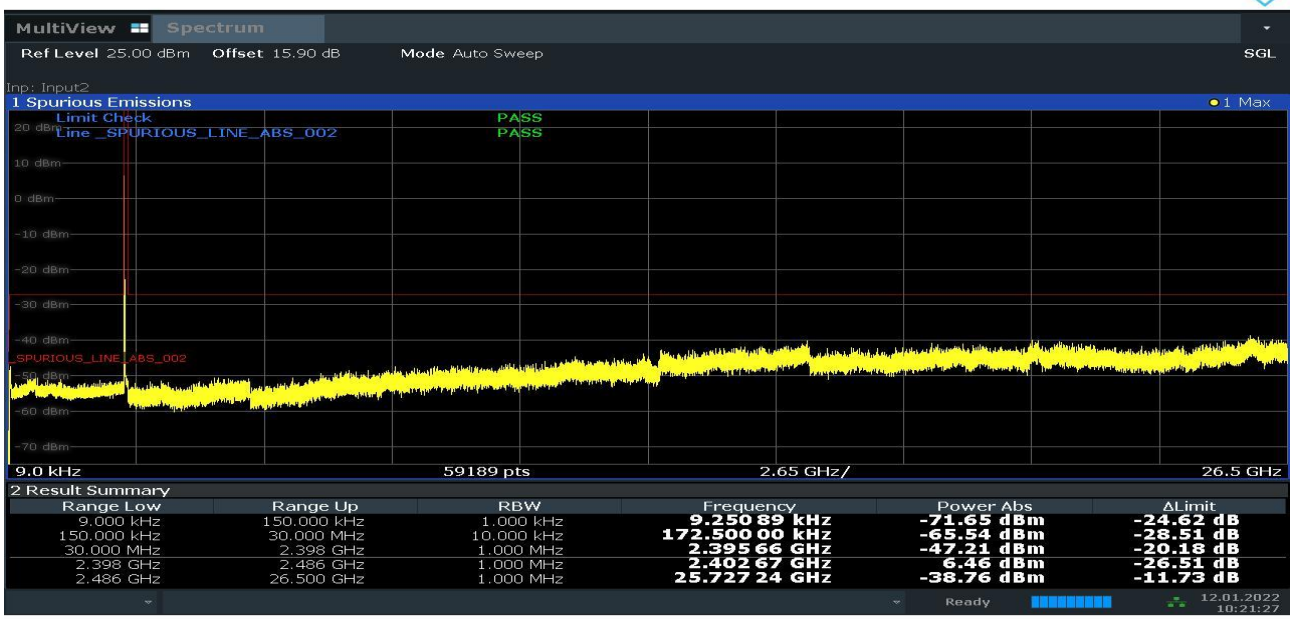
10:33:24 12.01.2022

BLE_TM2_Ant1_2402_0~Reference



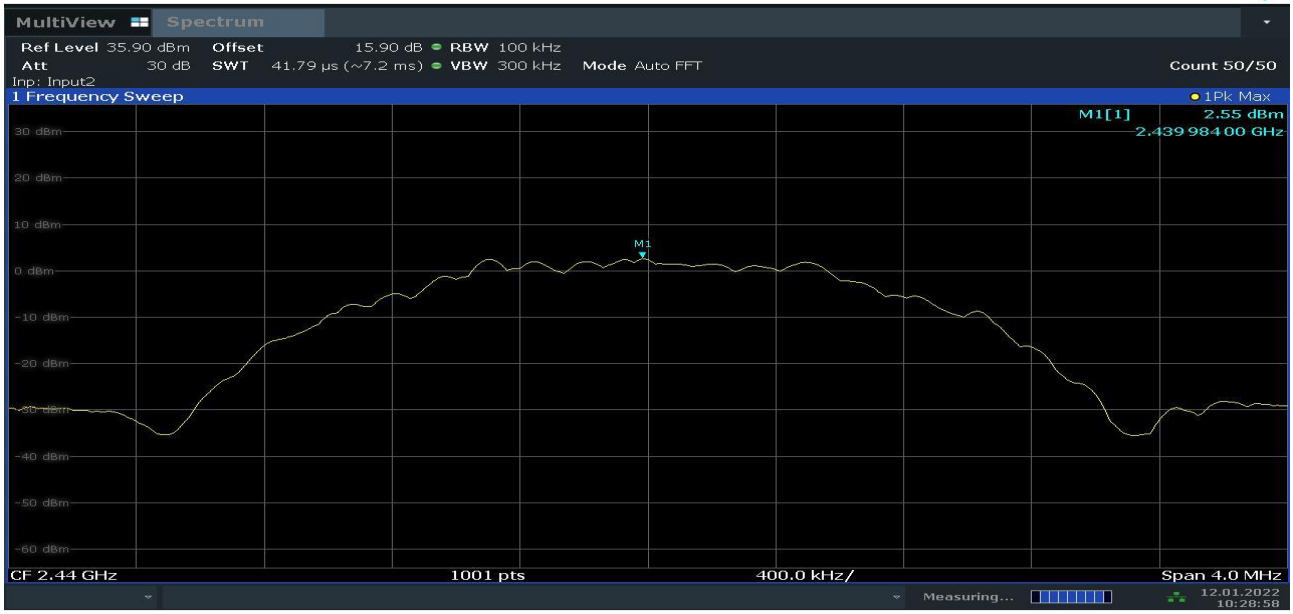
10:20:45 12.01.2022

BLE_TM2_Ant1_2402_9KHz~26.5GHz



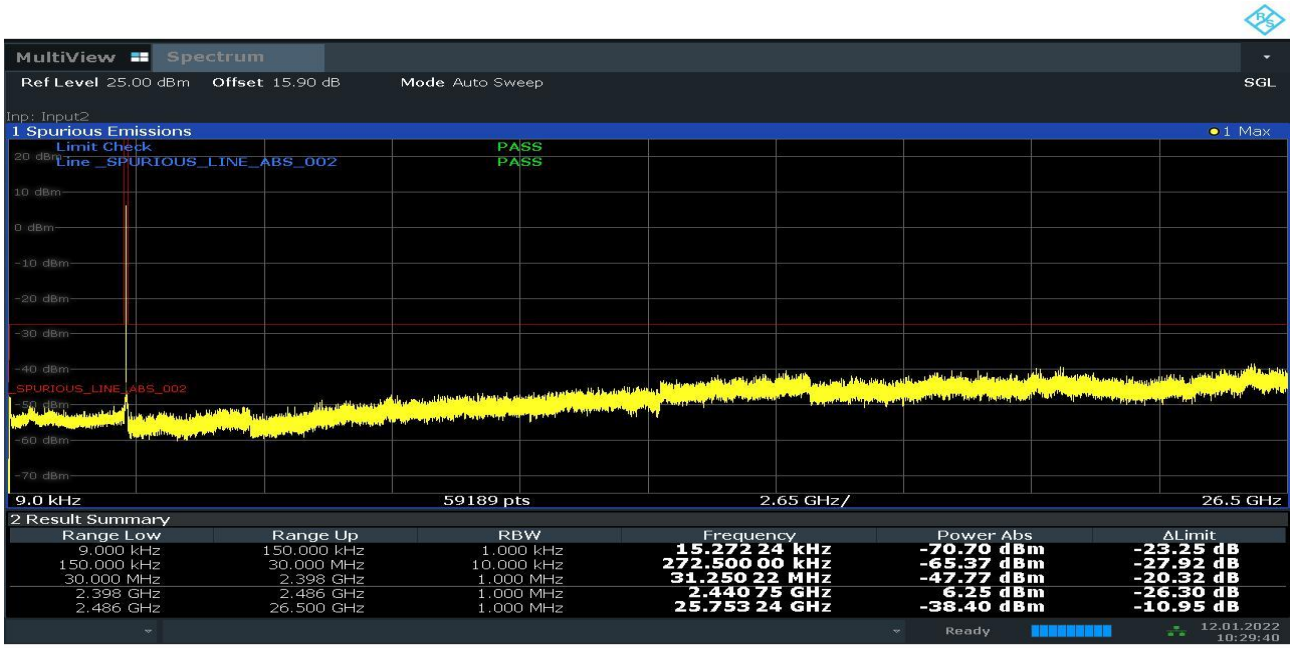
10:21:28 12.01.2022

BLE_TM2_Ant1_2440_0~Reference



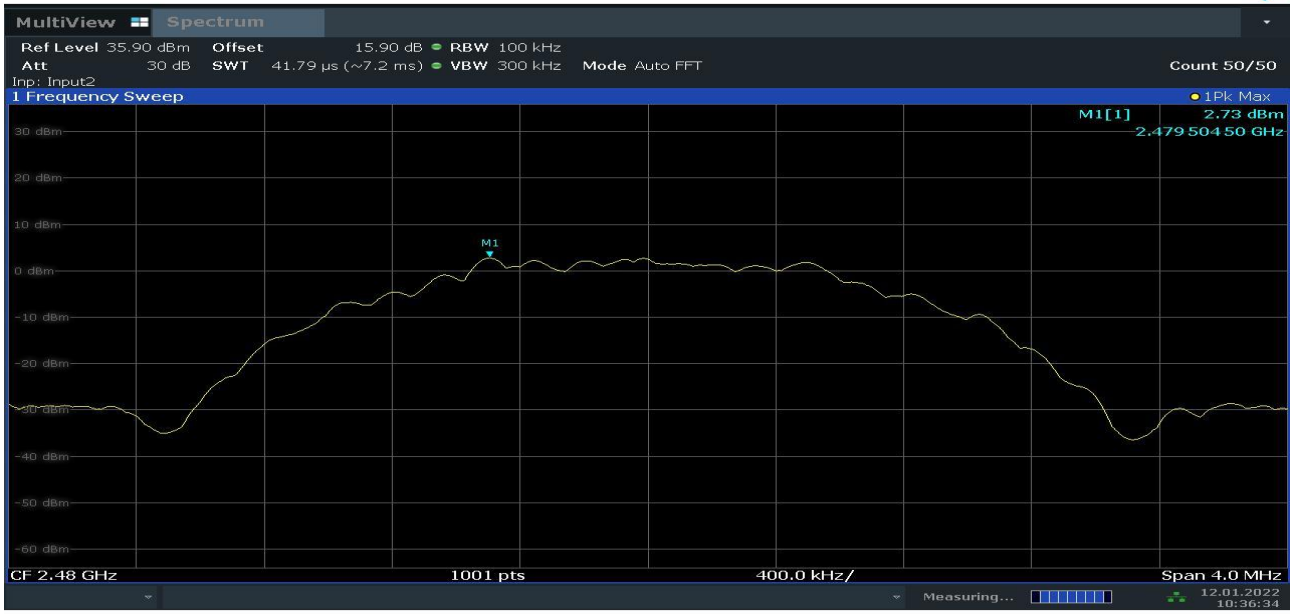
10:28:58 12.01.2022

BLE_TM2_Ant1_2440_9KHz~26.5GHz



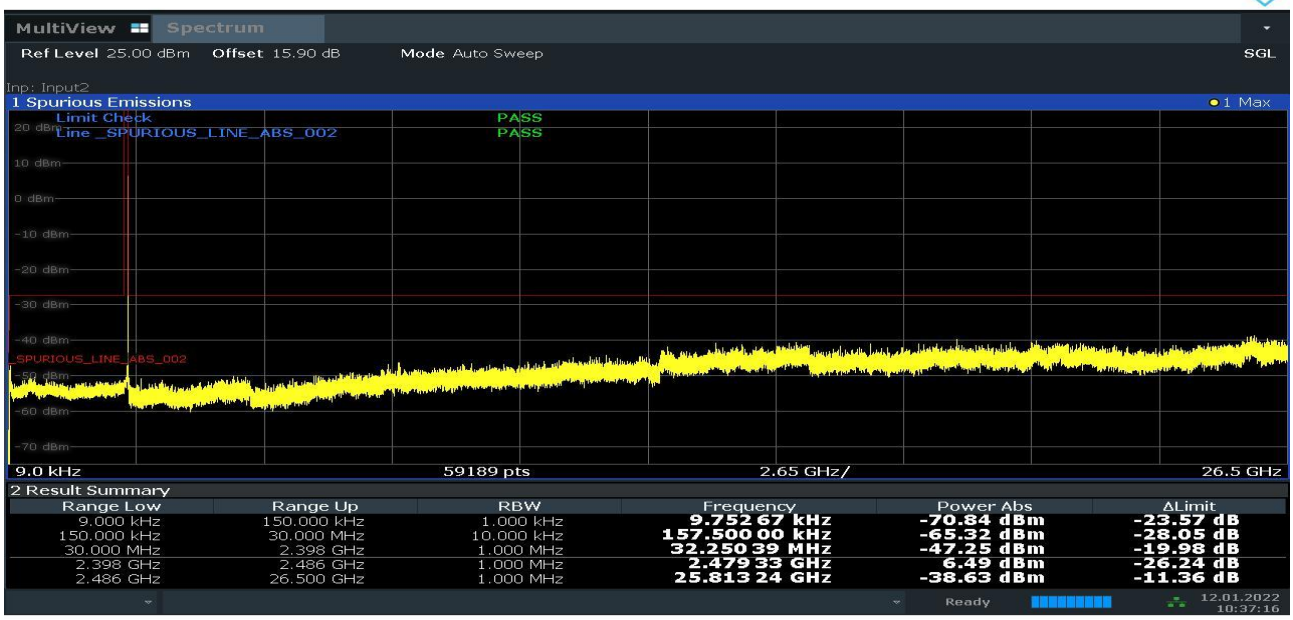
10:29:41 12.01.2022

BLE_TM2_Ant1_2480_0~Reference



10:36:34 12.01.2022

BLE_TM2_Ant1_2480_9KHz~26.5GHz



10:37:17 12.01.2022

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

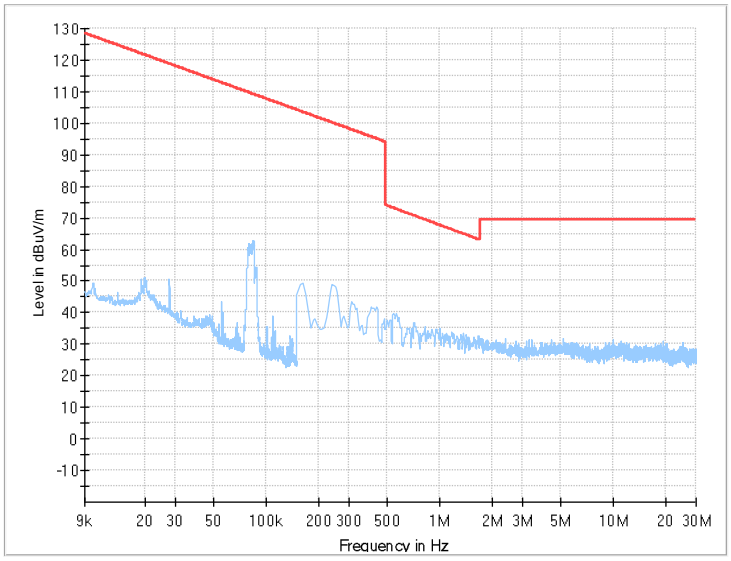
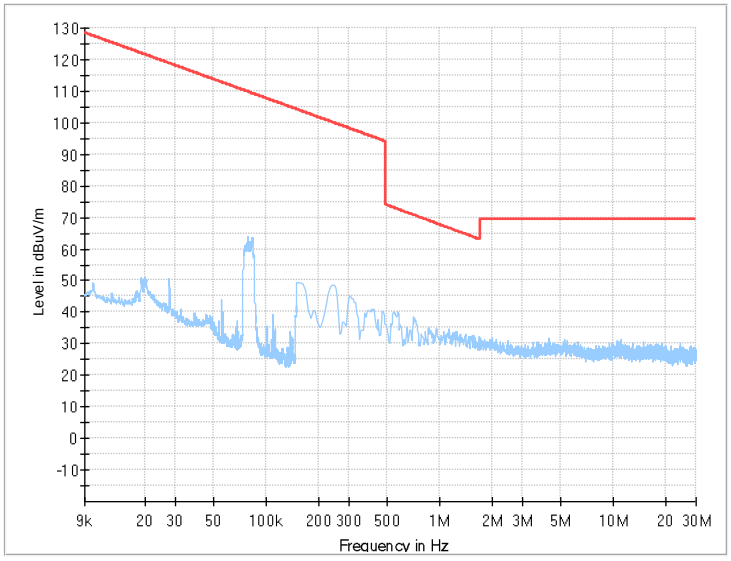
8.1.1. BLE

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.

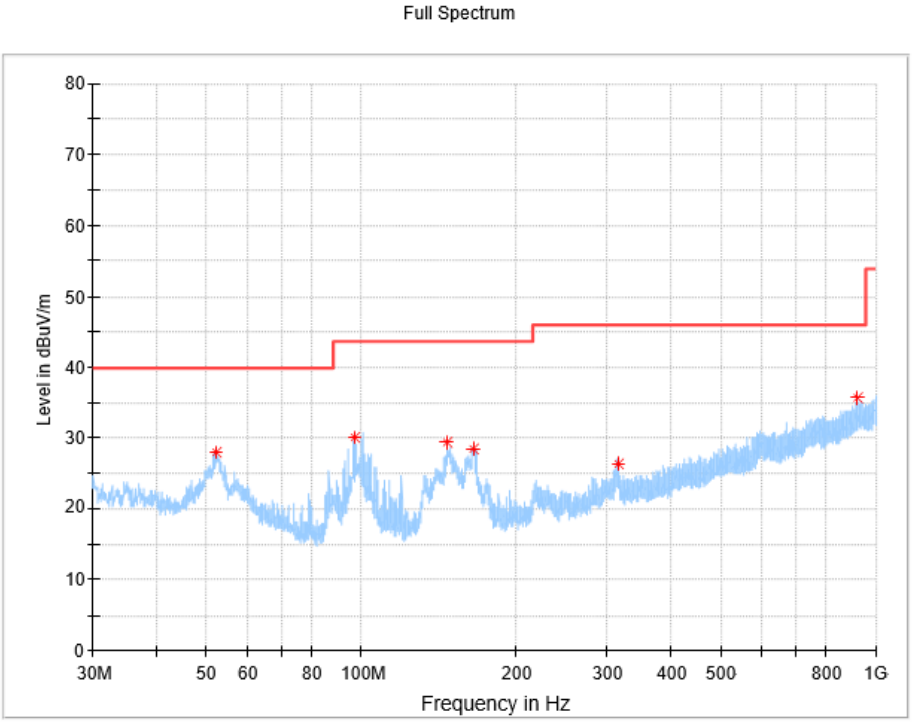
Worst case CH_2402-BLE_1M

Worst case CH_2402-BLE_2M


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).

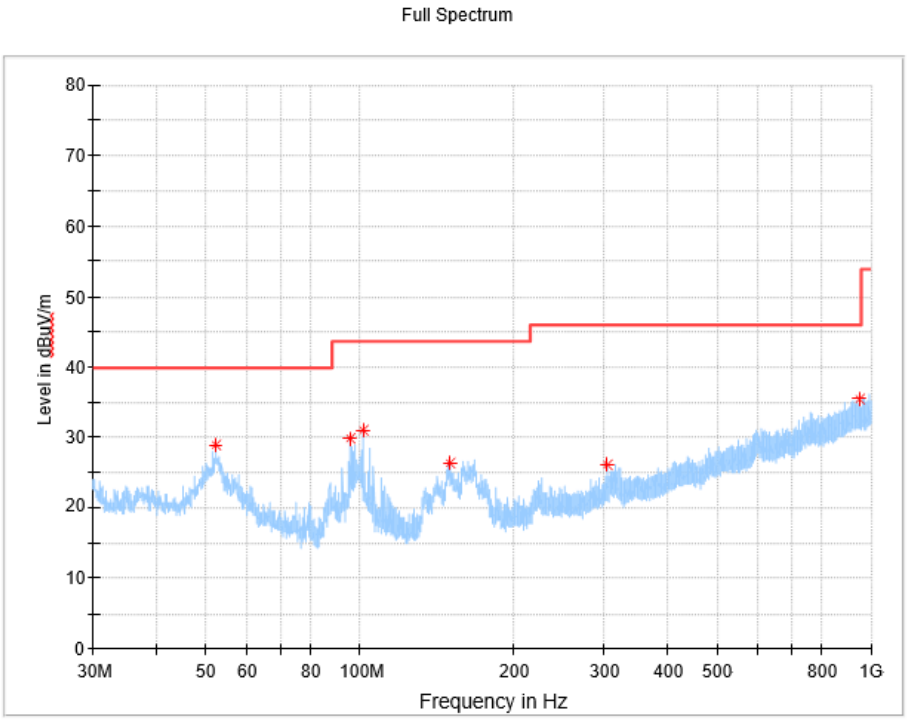
Worst case CH_2402- BLE_1M



MEASUREMENT RESULT: QP Detector

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
52.164500	28.07	20.5	40.00	11.93	100.0	270.0	V
97.172500	30.17	18.3	43.50	13.33	100.0	44.0	V
147.176000	29.34	14.8	43.50	14.16	100.0	218.0	V
164.539000	28.49	15.6	43.50	15.01	100.0	218.0	V
316.732000	26.36	20.8	46.00	19.64	100.0	268.0	H
920.751000	35.71	31.0	46.00	10.29	100.0	261.0	V

Worst case CH_2402- BLE_2M



MEASUREMENT RESULT: QP Detector

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
52.067500	28.85	20.5	40.00	11.15	100.0	288.0	V
95.378000	29.83	18.0	43.50	13.67	100.0	57.0	V
101.392000	30.94	18.6	43.50	12.56	100.0	120.0	V
149.455500	26.24	14.8	43.50	17.26	100.0	130.0	V
305.189000	26.19	20.6	46.00	19.81	100.0	286.0	H
952.033500	35.35	30.9	46.00	10.65	100.0	166.0	H

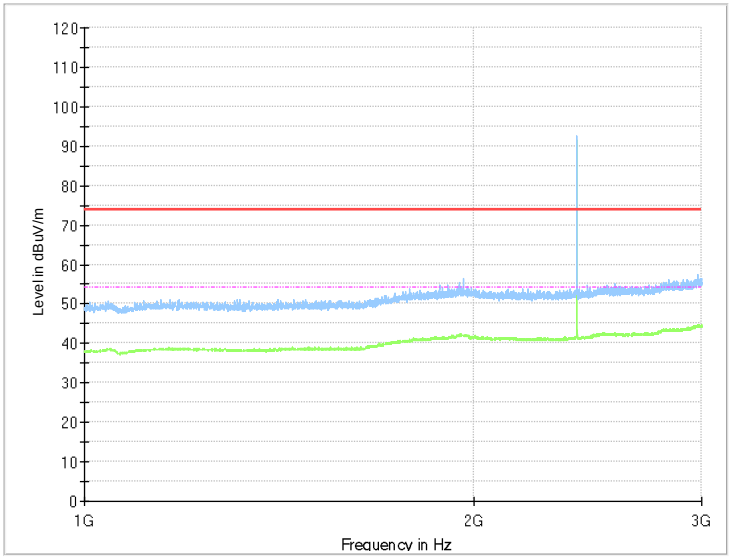
8.2.3. Part 3: Testing Range of "1 GHz to 3 GHz"

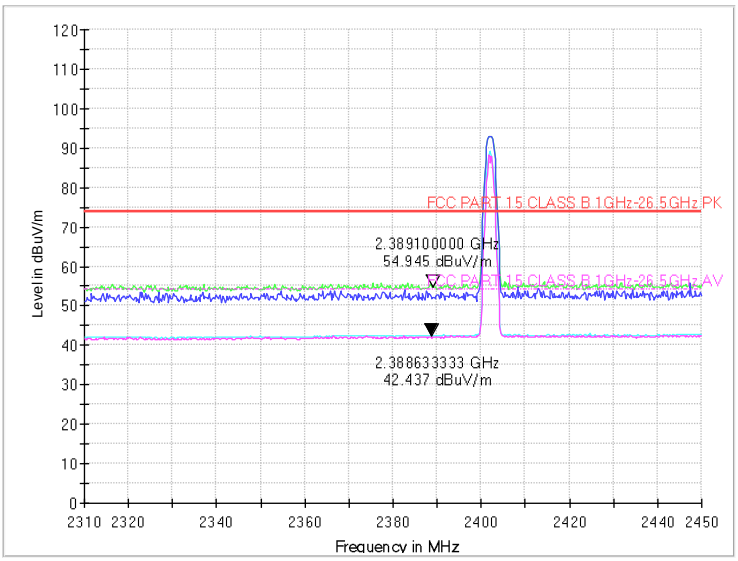
Note 1: The testing range of "1 GHz to 3 GHz" is for checking radiated emissions located in restricted bands near the EUT operating bands. The test results and plot for testing range of "1 GHz to 3 GHz" showed as below is the WORST case for all Test Modes and Channels. This range will not be presented 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 dBμV/m) and Average Limit (54 dBμV/m).

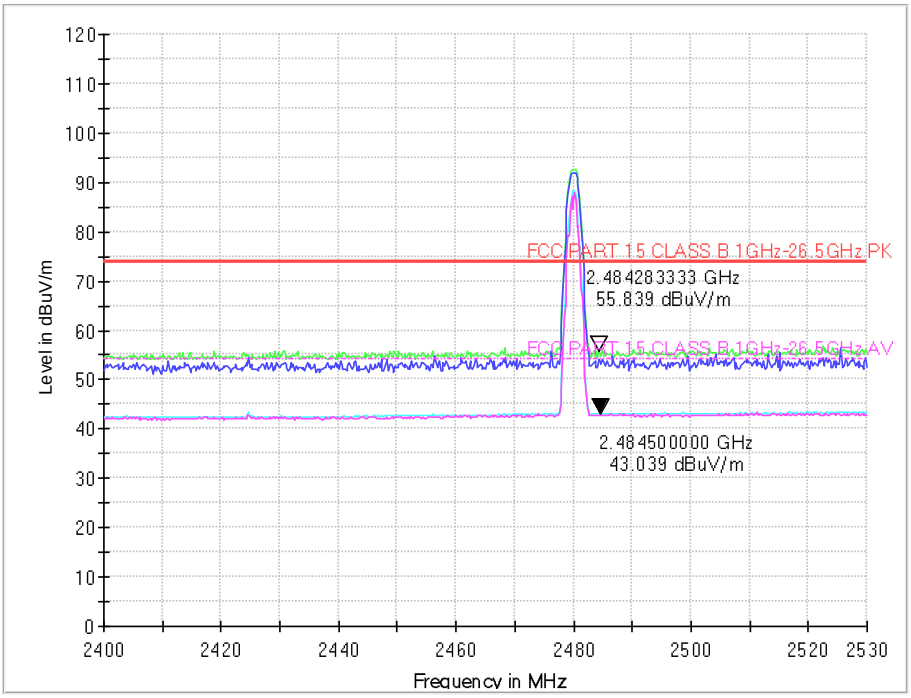
Note 3: The peak spike exceeds the limit line is EUT's operating frequency.

8.2.3.1. TM1_BLE_1M

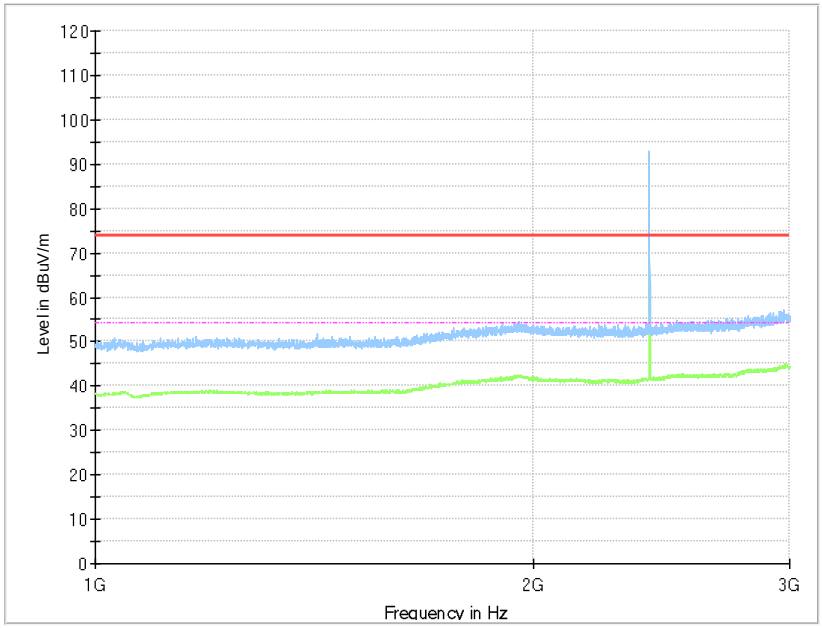
Worst case CH_2402 (1 GHz to 3 GHz)

CH_2402（Band Edge）

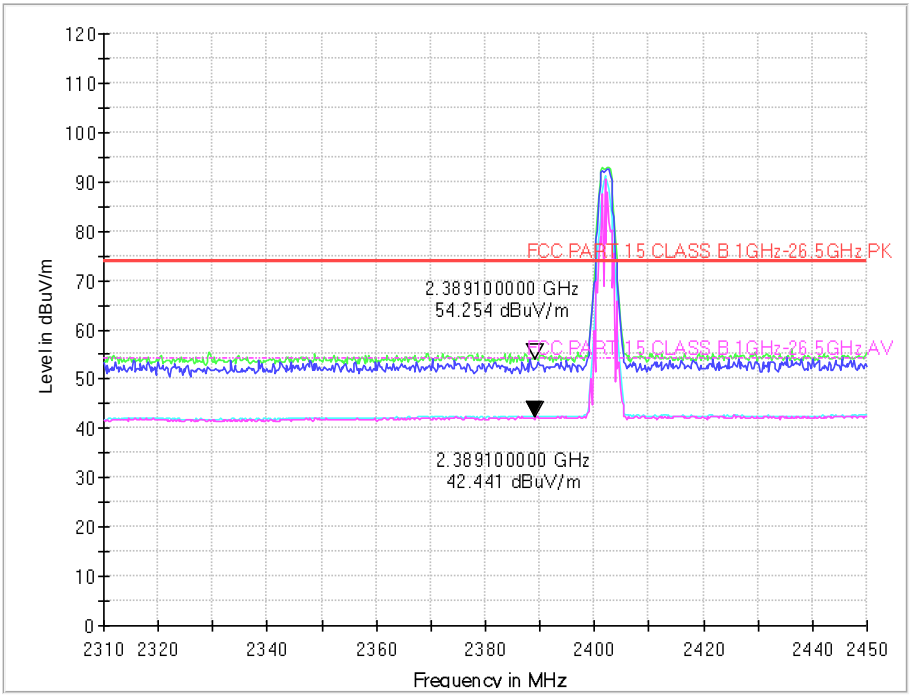


CH_2480（Band Edge）

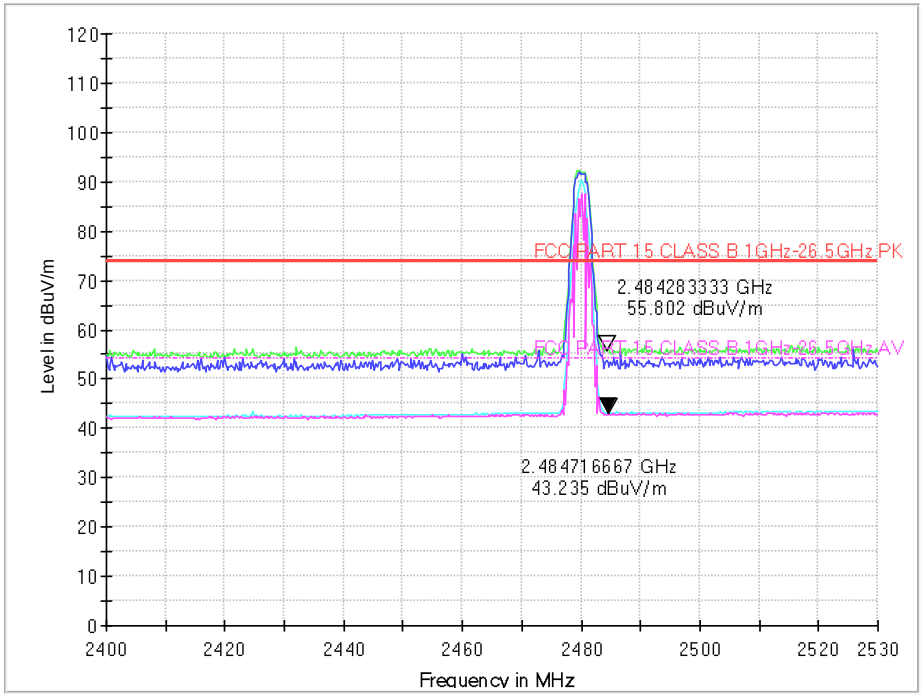


8.2.3.2. TM2_BLE_2M

Worst case CH_2480 (1 GHz to 3 GHz)


CH_2402（Band Edge）


CH_2480（Band Edge）

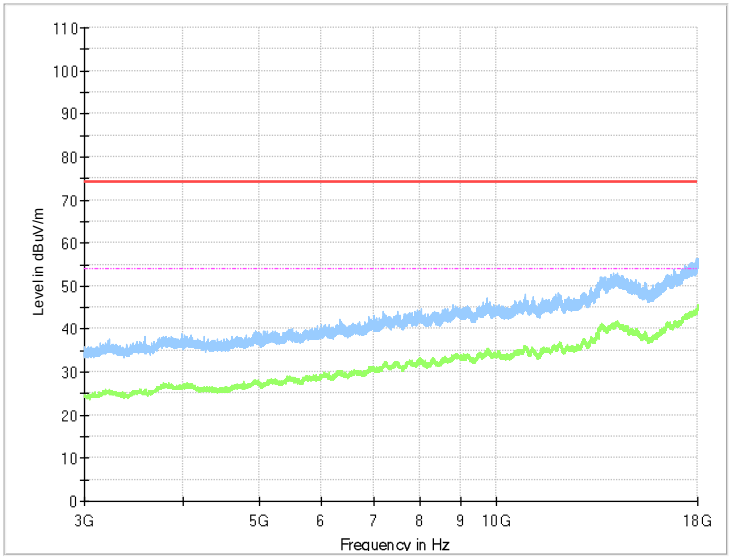


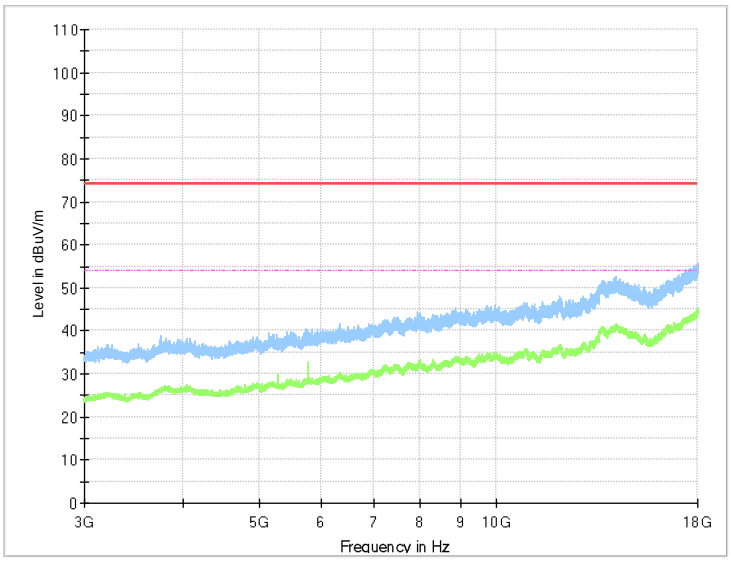
8.2.4. Part 4: Testing Range of "3 GHz to 18 GHz"

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 dBµV/m) and Average Limit (54 dBµV/m).

Worst case CH_2402- BLE_1M


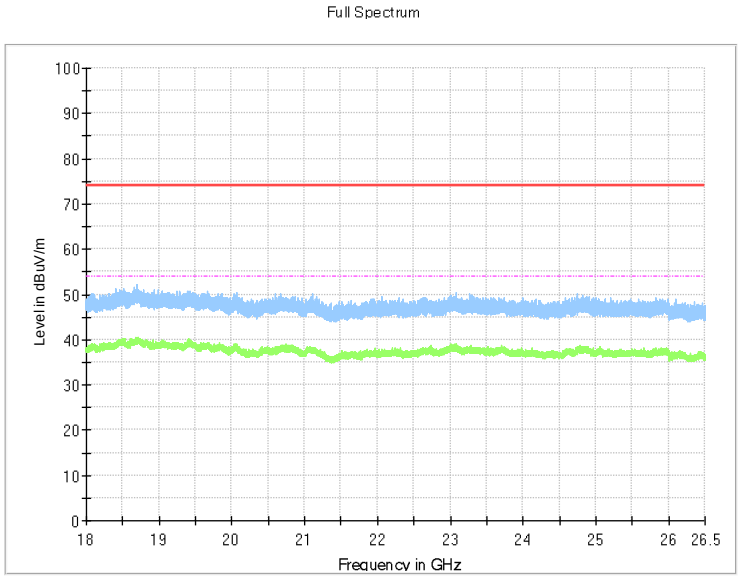
Worst case CH_2402- BLE_2M


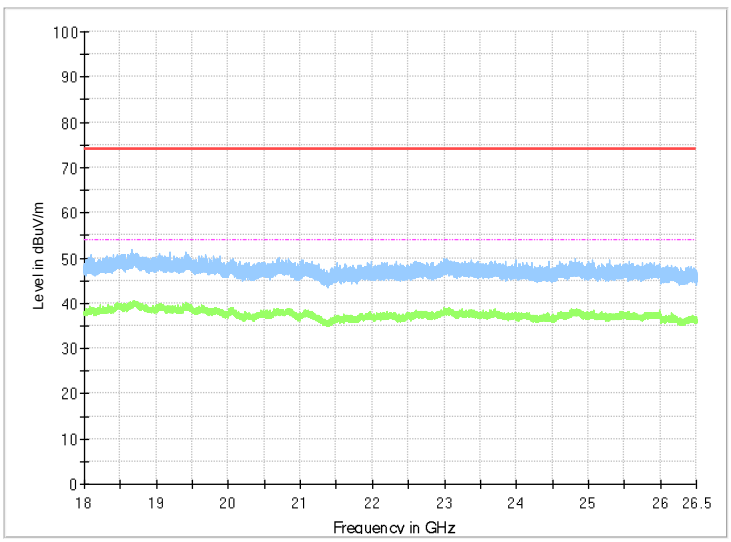
8.2.5. Part 5: Testing Range of “18 GHz to 26.5 GHz”

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 dBµV/m) and Average Limit (54 dBµV/m).

Worst case CH_2402- BLE_1M


Worst case CH_2402- BLE_2M


9. Appendix I: Conducted Emission at Power Port

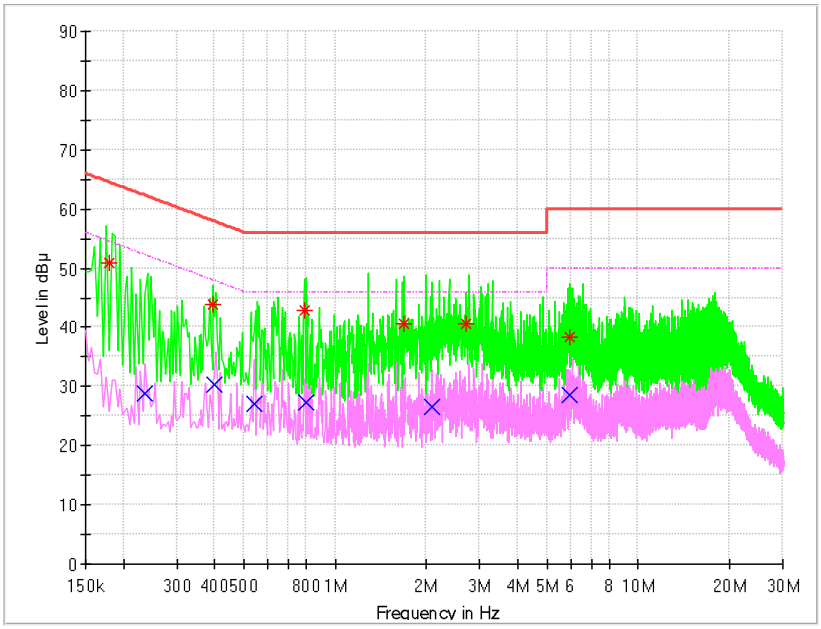
Note 1: The test results and plot for testing range of “150 kHz to 30 MHz” showed as below is the WORST case for all Test Modes and Channels. This range will not be presented for each Test Mode and each Channel.
Note 2： RBW =9 kHz; VBW = 30 kHz

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	2402	(see Test Graphs)	(see Test Graphs)	PASS

9.2. Test Graphs

Worst case CH_2402- BLE_1M



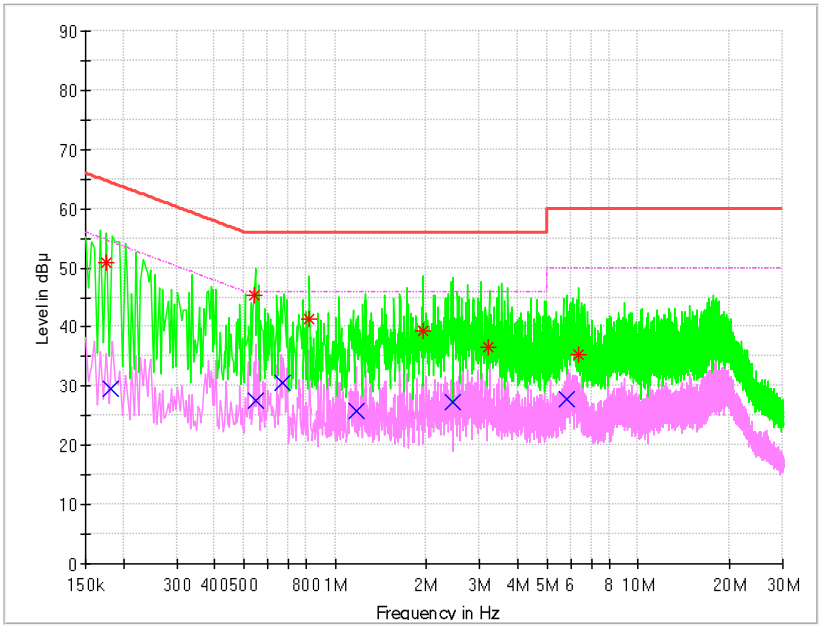
MEASUREMENT RESULT: QP Detector

Frequency (MHz)	Level (dBµV)	Limit (dBµV)	Transd. (dB)	Margin (dB)	Line	PE
0.179749	50.94	64.5	9.6	13.56	L1	FLO
0.393002	43.90	58	9.6	14.10	L1	FLO
0.794196	42.80	56	9.6	13.20	L1	FLO
1.687019	40.60	56	9.6	15.40	L1	FLO
2.694323	40.64	56	9.6	15.36	L1	FLO
5.952098	38.37	60	9.8	21.63	L1	FLO

MEASUREMENT RESULT: AV Detector

Frequency (MHz)	Level (dBµV)	Limit (dBµV)	Transd. (dB)	Margin (dB)	Line	PE
0.235540	28.92	52.25	9.6	23.33	L1	FLO
0.400775	30.44	47.84	9.6	17.40	L1	FLO
0.542278	26.95	46	9.6	19.05	L1	FLO
0.803548	27.31	46	9.6	18.69	L1	FLO
2.080222	26.49	46	9.6	19.51	L1	FLO
5.937798	28.56	50	9.8	21.44	L1	FLO

Worst case CH_2402- BLE_2M



MEASUREMENT RESULT: QP Detector

Frequency (MHz)	Level (dBµV)	Limit (dBµV)	Transd. (dB)	Margin (dB)	Line	PE
0.175523	50.79	64.7	9.6	13.91	N	FLO
0.541631	45.32	56	9.6	10.68	L1	FLO
0.821170	41.40	56	9.6	14.60	L1	FLO
1.942892	39.34	56	9.6	16.66	L1	FLO
3.212901	36.70	56	9.6	19.30	L1	FLO
6.363102	35.42	60	9.8	24.58	L1	FLO

MEASUREMENT RESULT: AV Detector

Frequency (MHz)	Level (dBµV)	Limit (dBµV)	Transd. (dB)	Margin (dB)	Line	PE
0.180894	29.48	54.45	9.6	24.97	N	FLO
0.545524	27.46	46	9.6	18.54	L1	FLO
0.671700	30.71	46	9.6	15.29	L1	FLO
1.168877	25.73	46	9.6	20.27	L1	FLO
2.436947	27.21	46	9.6	18.79	L1	FLO
5.828501	27.82	50	9.8	22.18	L1	FLO

Note:

1, Level =Reading level by receiver + Transd (correcton factor + cable loss)

The reading level is calculated by software which is not shown in the sheet.
2, Margin=Limit - Level

END