



Appendix for Test report

1. Appendix A: 20dB Emission Bandwidth

1.1 Test Result

TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
TM1	Ant1	2402	1.035	2401.479	2402.513	---	PASS
		2441	1.035	2440.479	2441.513	---	PASS
		2480	1.035	2479.479	2480.513	---	PASS
TM2	Ant1	2402	1.2488	2401.375	2402.623	---	PASS
		2441	1.2428	2440.375	2441.617	---	PASS
		2480	1.2507	2479.373	2480.623	---	PASS
TM3	Ant1	2402	1.2488	2401.363	2402.611	---	PASS
		2441	1.2767	2440.355	2441.631	---	PASS
		2480	1.2448	2479.363	2480.607	---	PASS

1.2 Test Graphs

TM1_Ant1_2402



TM1_Ant1_2441



TM1_Ant1_2480



TM2_Ant1_2402



TM2_Ant1_2441



TM2_Ant1_2480



TM3_Ant1_2402



TM3_Ant1_2441



TM3_Ant1_2480



2. Appendix A1: Occupied Channel Bandwidth

2.1 Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
TM1	Ant1	2402	0.99	2401.5	2402.49	---	PASS
		2441	0.9927	2440.5	2441.49	---	PASS
		2480	0.9922	2479.5	2480.49	---	PASS
TM2	Ant1	2402	1.1574	2401.42	2402.57	---	PASS
		2441	1.155	2440.42	2441.57	---	PASS
		2480	1.1574	2479.41	2480.57	---	PASS
TM3	Ant1	2402	1.1512	2401.42	2402.57	---	PASS
		2441	1.1518	2440.42	2441.57	---	PASS
		2480	1.1547	2479.42	2480.57	---	PASS

2.2 Test Graphs

TM1_Ant1_2402



TM1_Ant1_2441



TM1_Ant1_2480



TM2_Ant1_2402



TM2_Ant1_2441



TM2_Ant1_2480



TM3_Ant1_2402



TM3_Ant1_2441



TM3_Ant1_2480



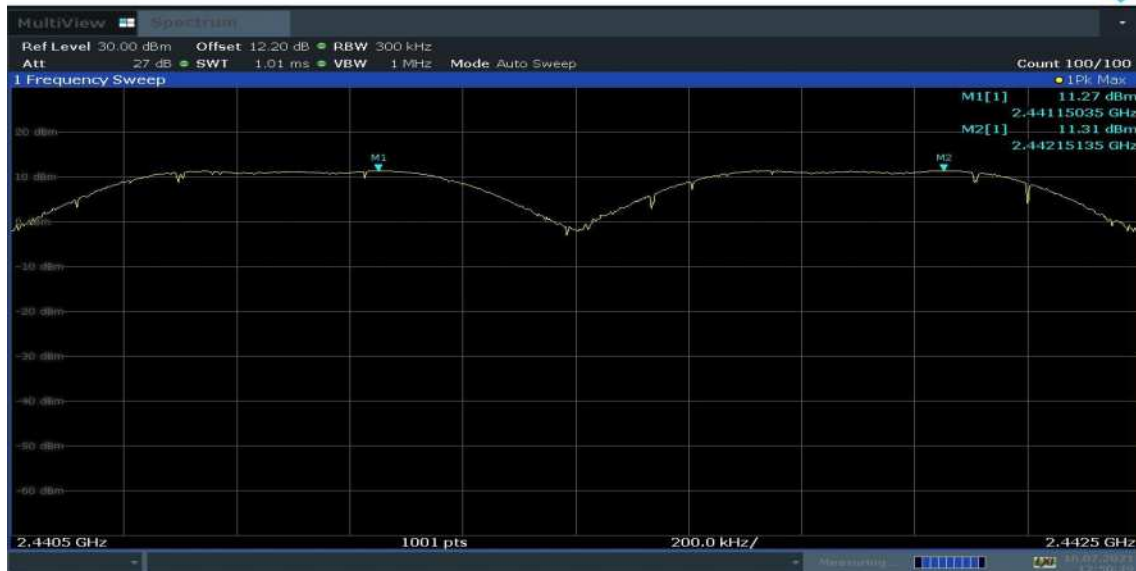
3. Appendix B: Carrier frequency separation

3.1 Test Result

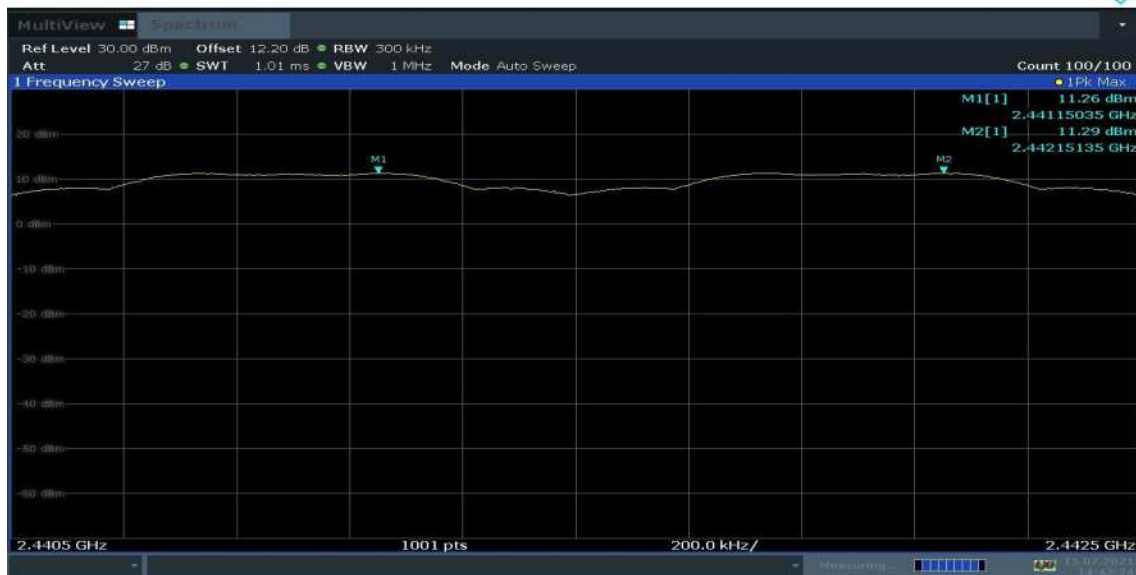
TestMode	Antenna	Channel	CarrierFrequency Separation [MHz]	Limit[MHz]	Verdict
TM1	Ant1	Hop	1.001	≥ 0.69	PASS
TM2	Ant1	Hop	1.001	≥ 0.834	PASS
TM3	Ant1	Hop	1.003	≥ 0.851	PASS

3.2 Test Graphs

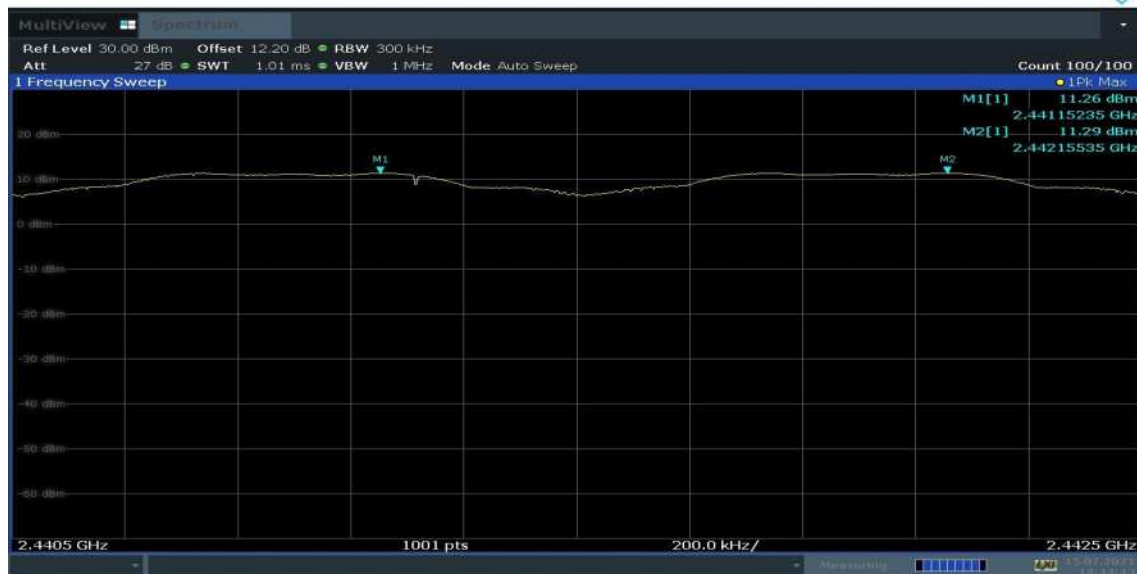
TM1_Ant1_Hop



TM2_Ant1_Hop



TM3_Ant1_Hop



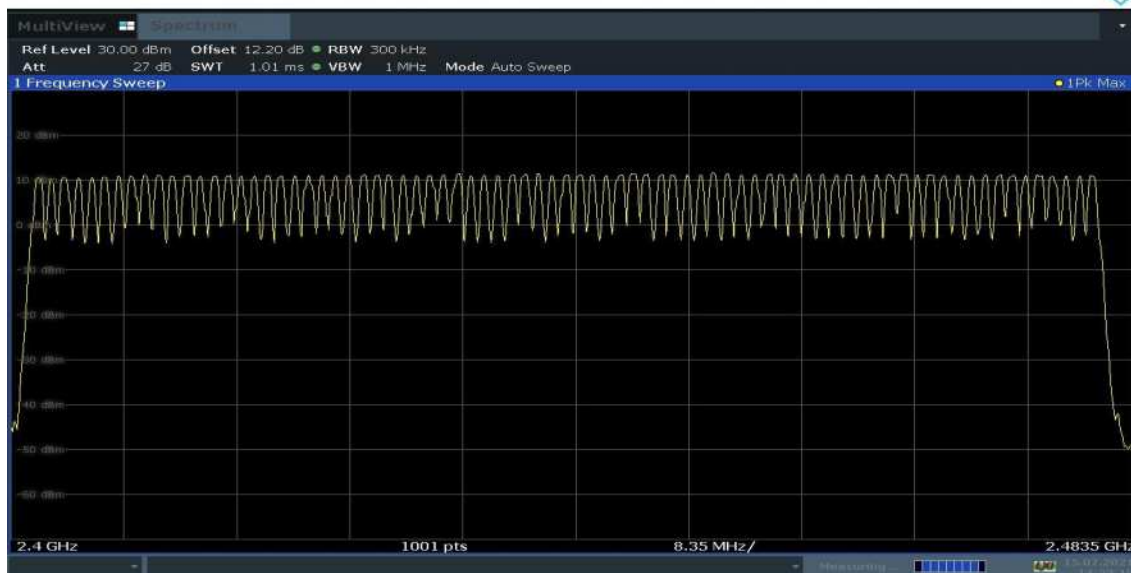
4. Appendix C: Number of hopping channels

4.1 Test Result

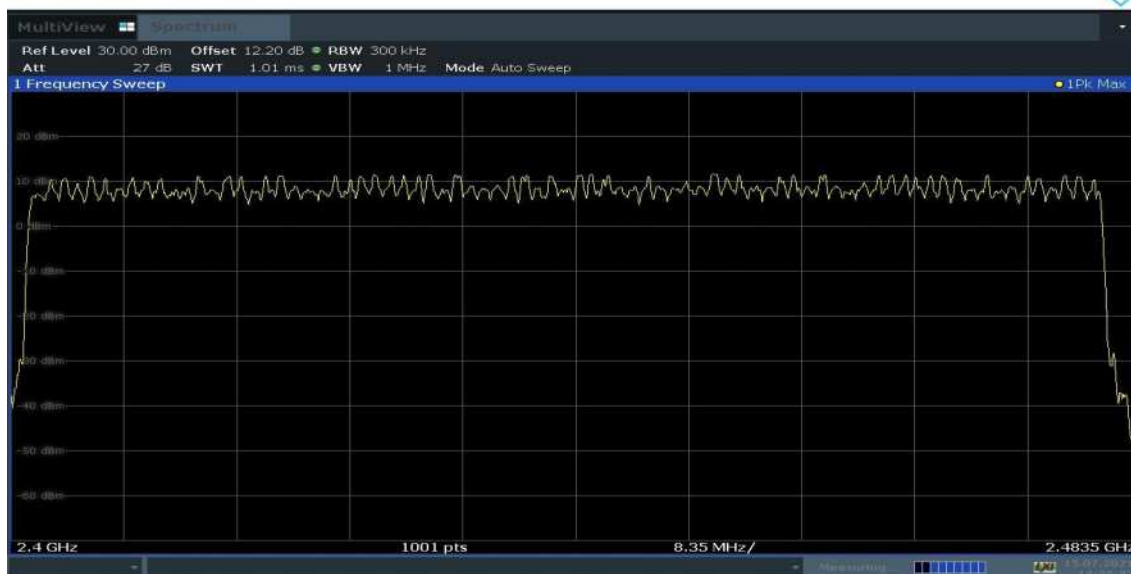
TestMode	Antenna	Channel	Number of Hopping Channel	Limit	Verdict
TM1	Ant1	Hop	79	≥ 15	PASS
TM2	Ant1	Hop	79	≥ 15	PASS
TM3	Ant1	Hop	79	≥ 15	PASS

4.2 Test Graphs

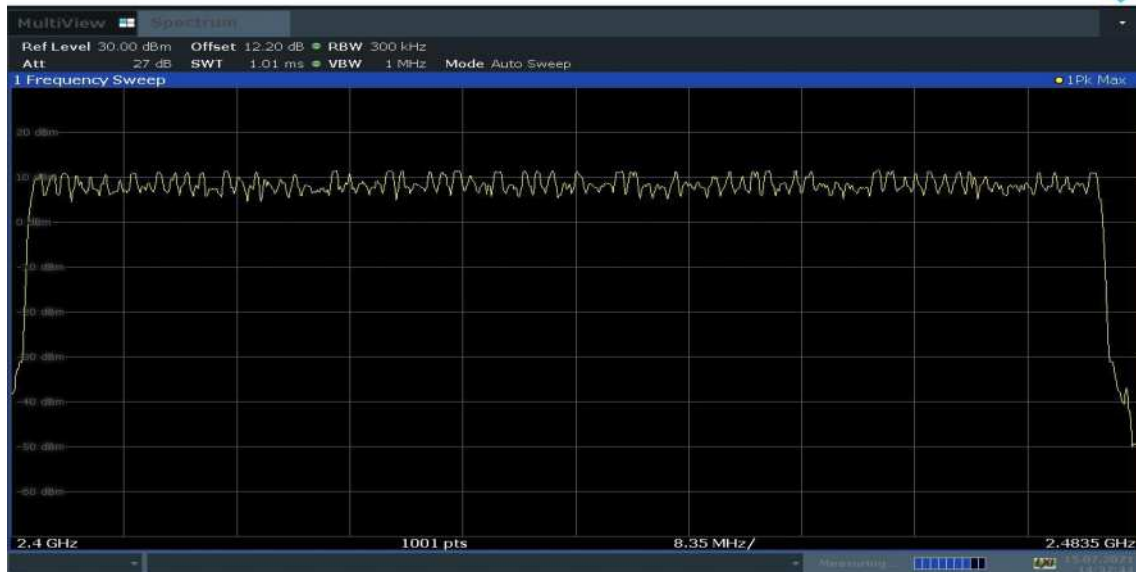
TM1_Ant1_Hop



TM2_Ant1_Hop



TM3_Ant1_Hop



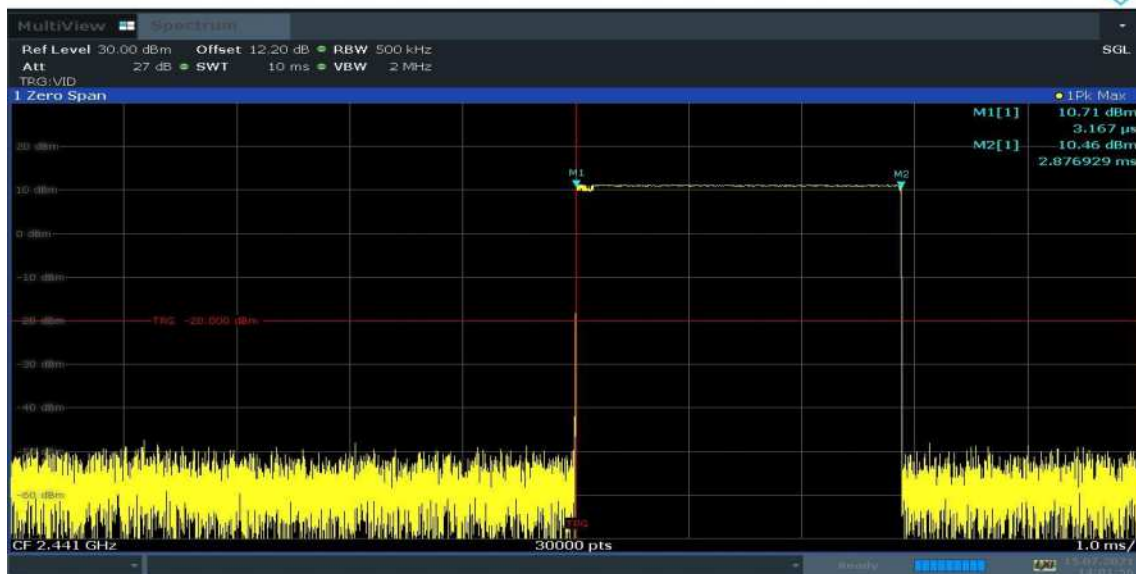
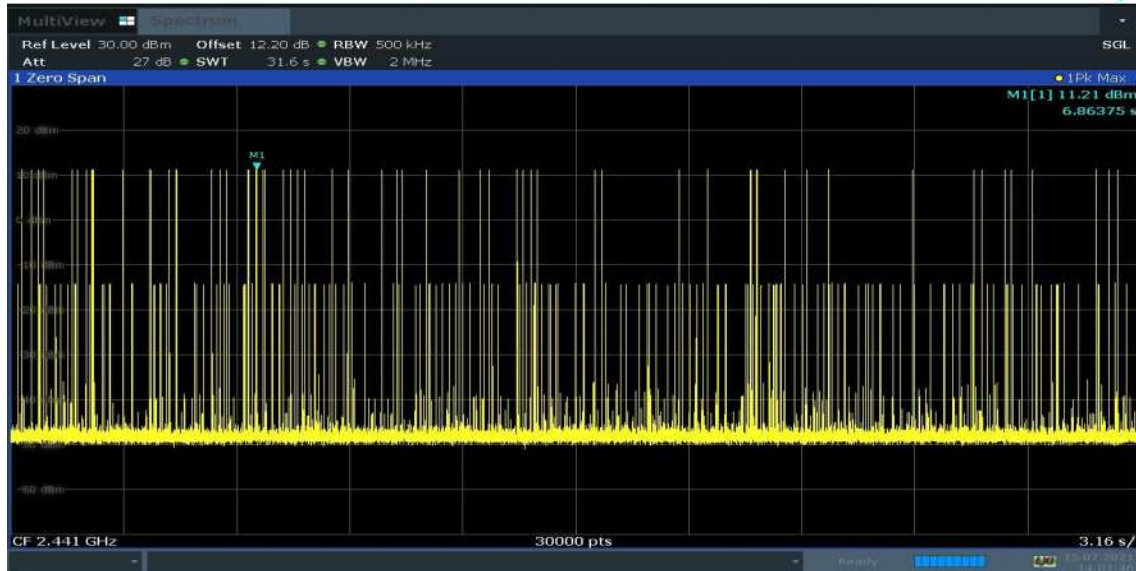
5. Appendix D: Time of occupancy

5.1 Test Result

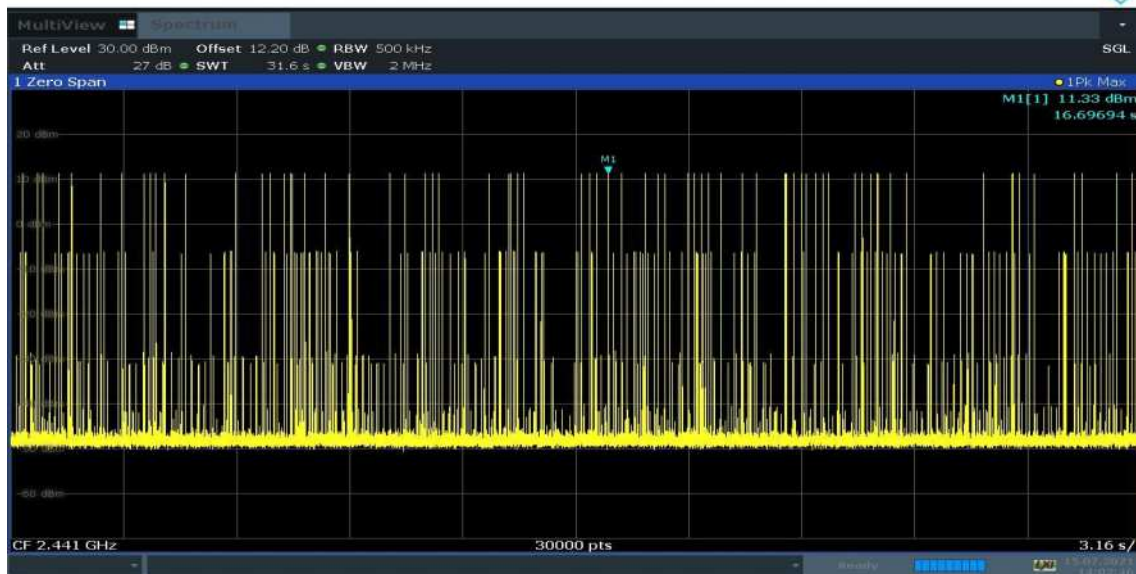
TestMode	Antenna	Channel	Burst Width [ms/hop/ch]	Total Hops [hop*ch]	Dwell Time [s]	Limit[s]	Verdict
TM1	Ant1	Hop	2.874	57	0.164	≤ 0.4	PASS
TM2	Ant1	Hop	2.884	69	0.199	≤ 0.4	PASS
TM3	Ant1	Hop	2.883	71	0.205	≤ 0.4	PASS

5.2 Test Graphs

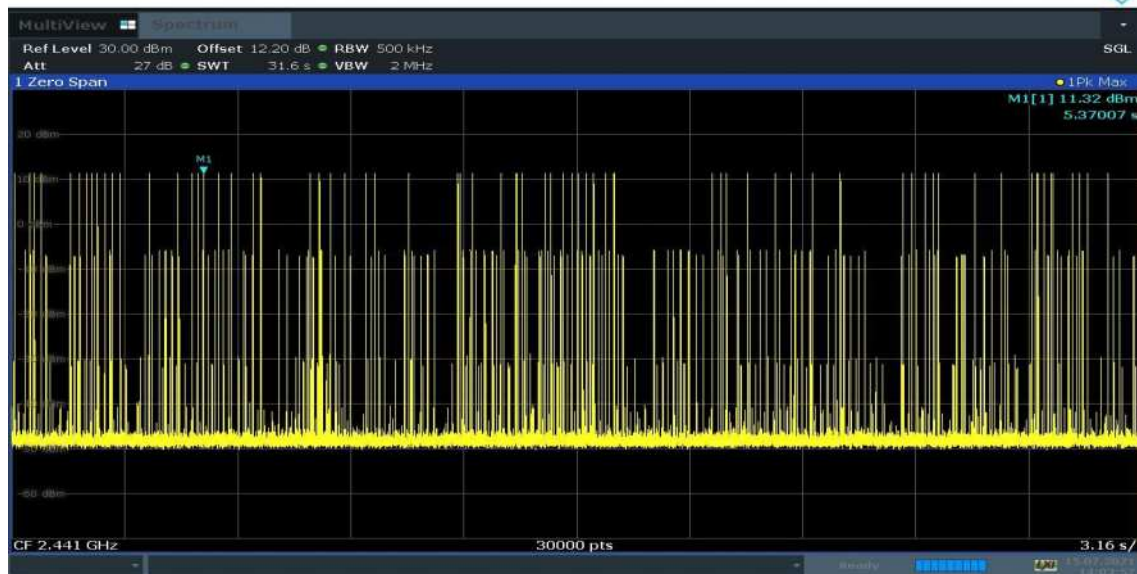
TM1_Ant1_Hop



TM2_Ant1_Hop



TM3_Ant1_Hop



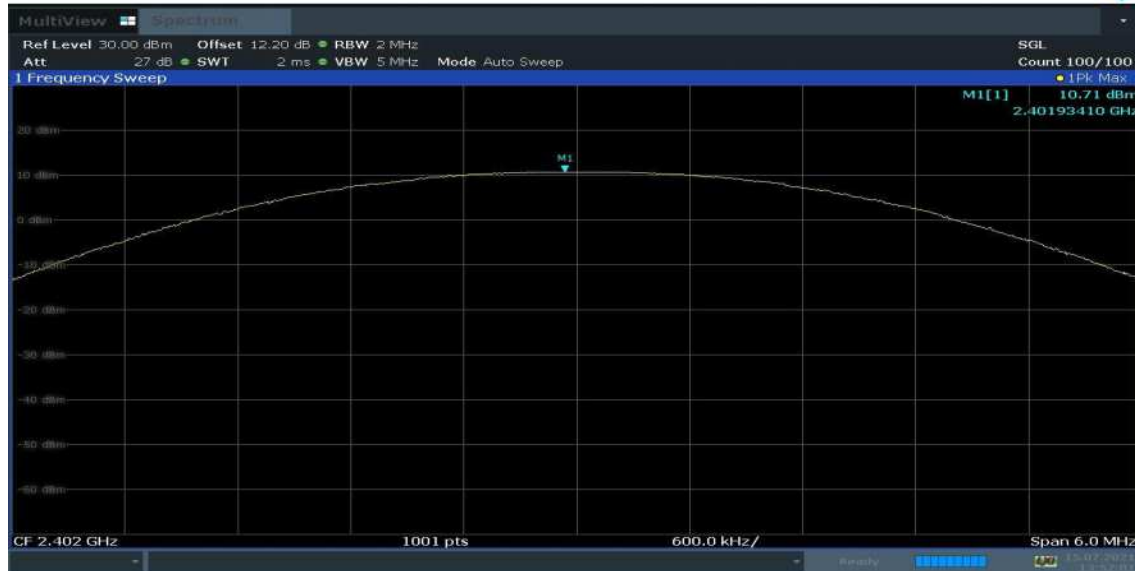
6. Appendix E: Maximum Peak output power

6.1 Test Result

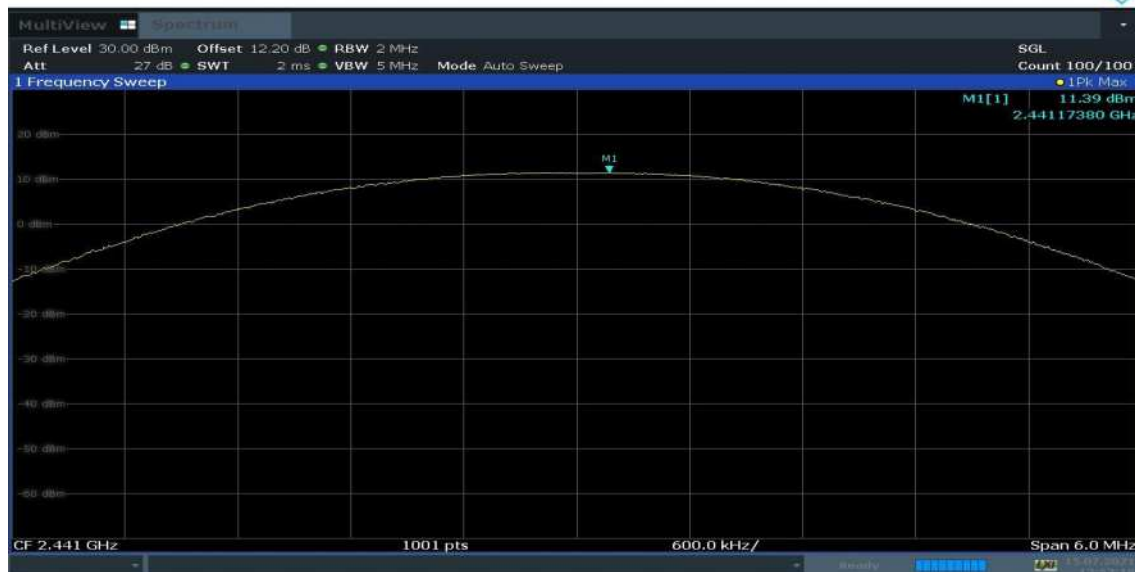
TestMode	Antenna	Channel	Conducted Result[dBm]	Conducted Limit[dBm]	EIRP Result[dBm]	EIRP Result[dBm]	Verdict
TM1	Ant1	2402	10.71	30	7.71	36	PASS
		2441	11.39	30	8.39	36	PASS
		2480	11.1	30	8.1	36	PASS
TM2	Ant1	2402	10.67	30	7.67	36	PASS
		2441	11.41	30	8.41	36	PASS
		2480	11.12	30	8.12	36	PASS
TM3	Ant1	2402	10.71	30	7.71	36	PASS
		2441	11.44	30	8.44	36	PASS
		2480	11.11	30	8.11	36	PASS

6.2 Test Graphs

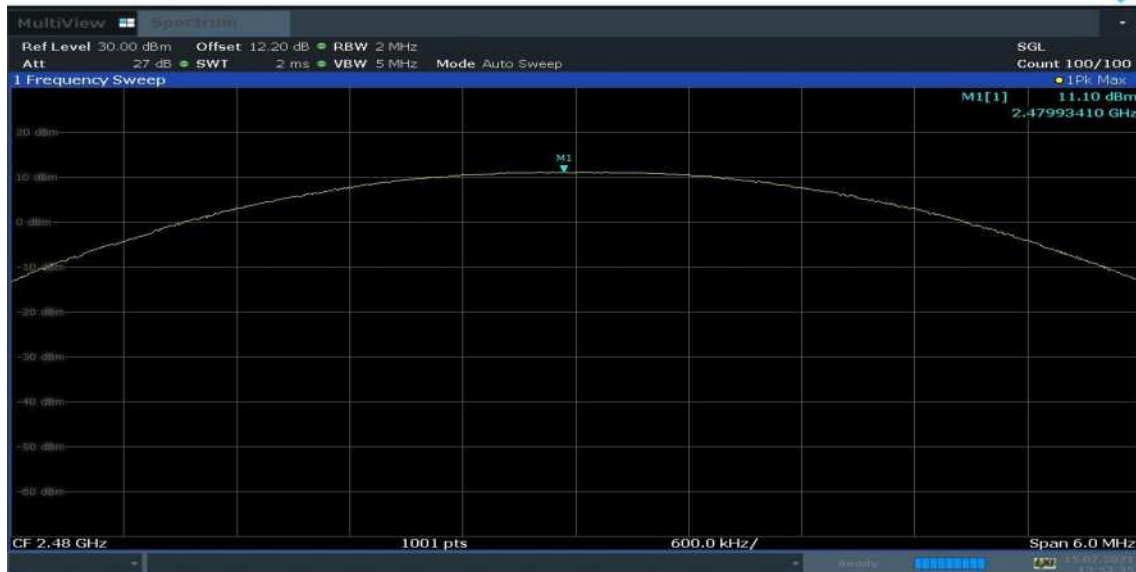
TM1_Ant1_2402



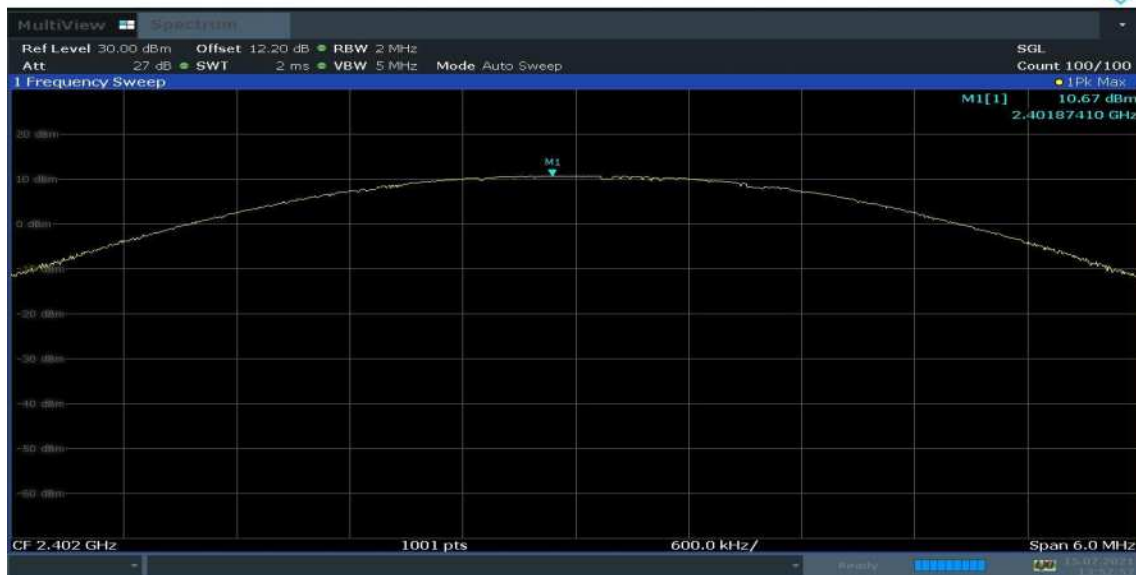
TM1_Ant1_2441



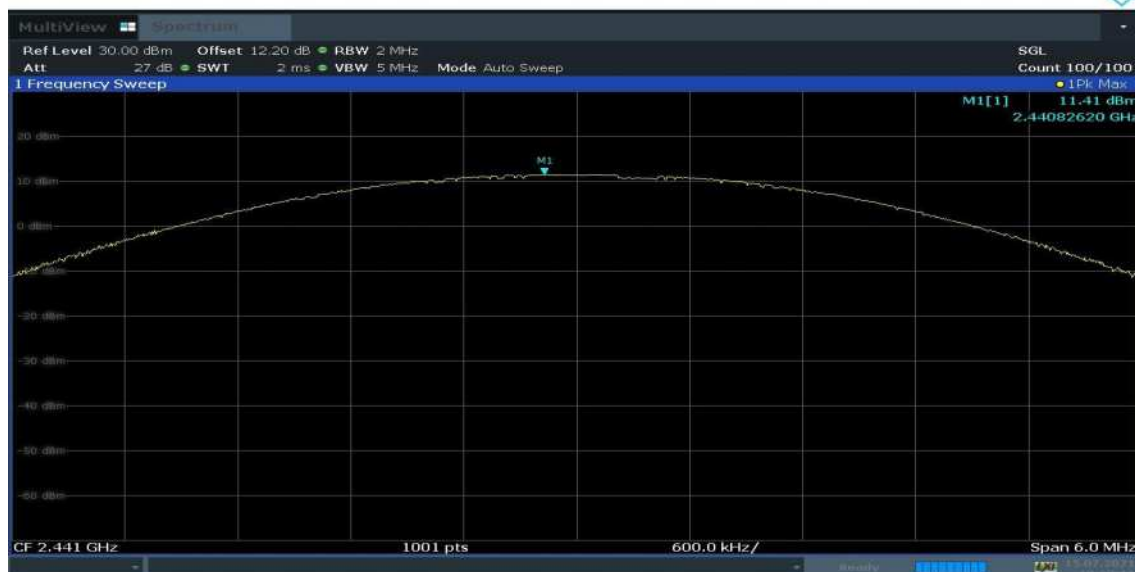
TM1_Ant1_2480



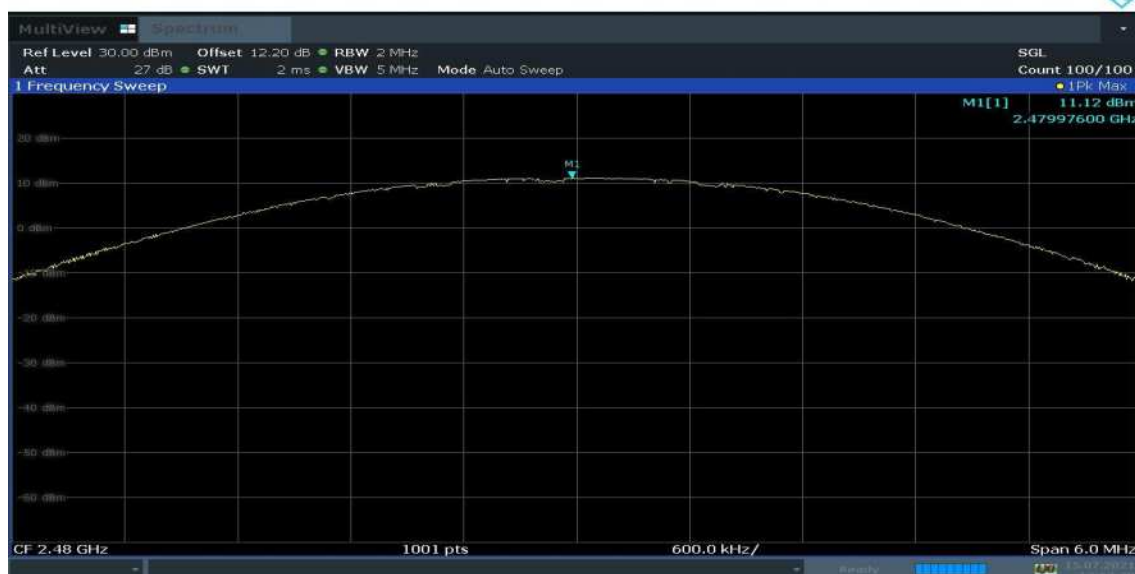
TM2_Ant1_2402



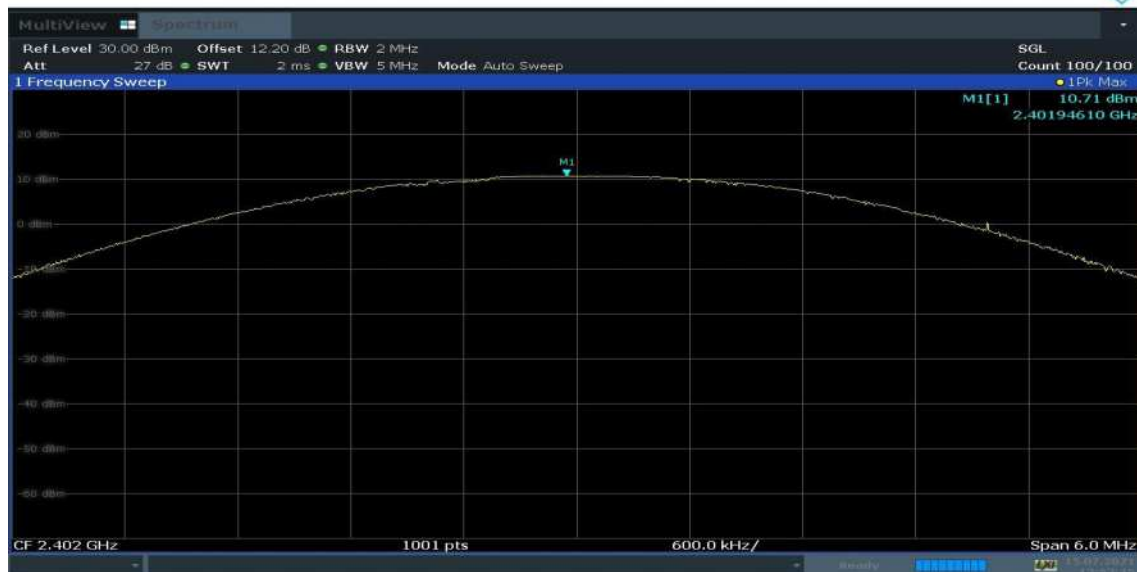
TM2_Ant1_2441



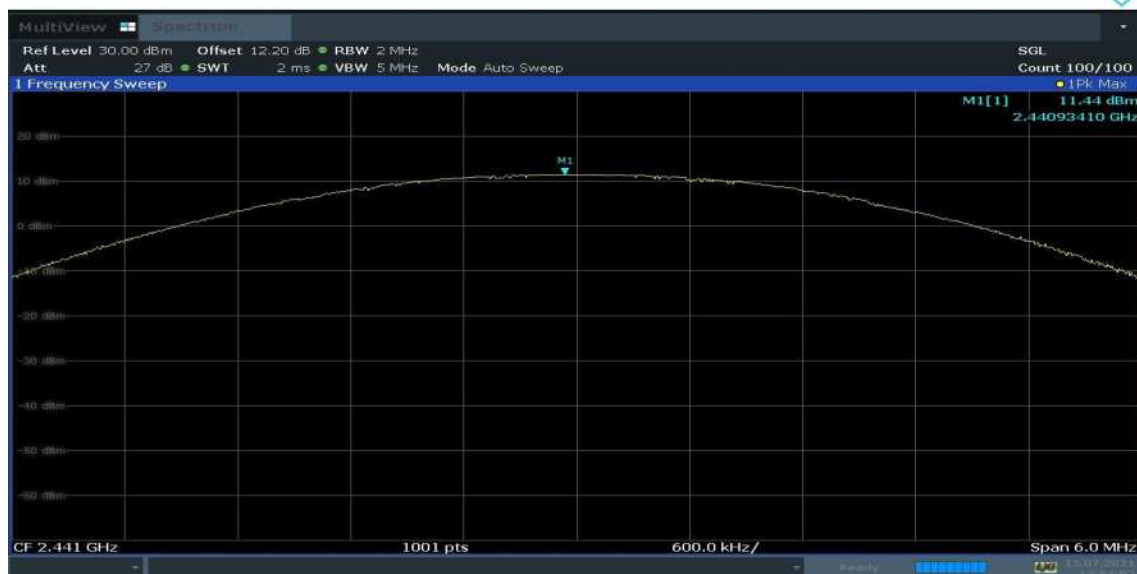
TM2_Ant1_2480



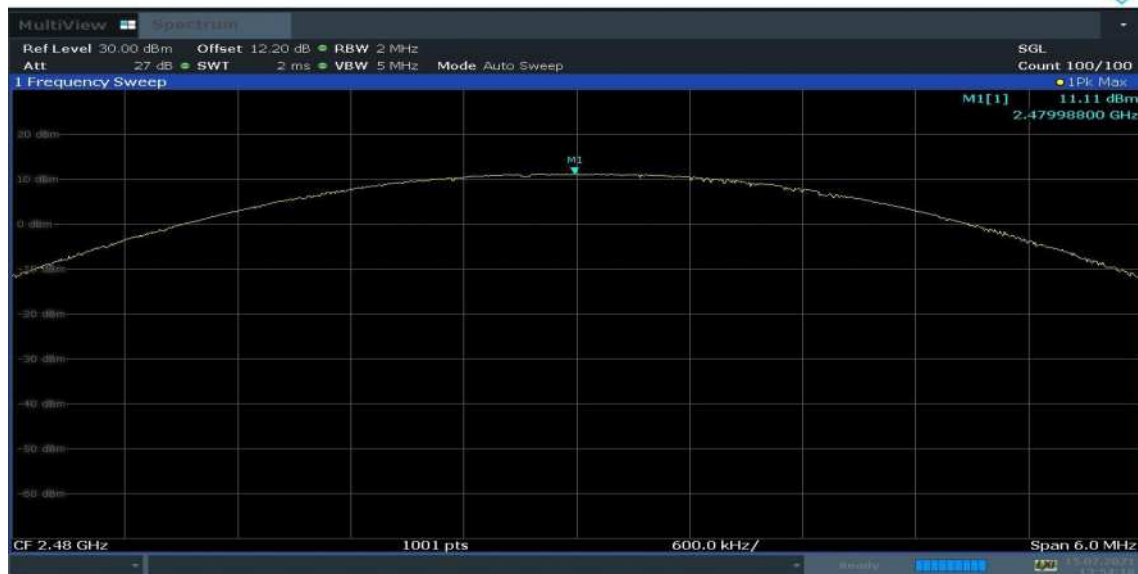
TM3_Ant1_2402



TM3_Ant1_2441



TM3_Ant1_2480



7. Appendix F: Band edge measurements

7.1 Test Result

TestMode	Antenna	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
TM1	Ant1	2402	10.47	-50.958	-9.53	PASS
		2480	10.745	-53.808	-9.255	PASS
		Hop_2402	10.464	-49.097	-9.536	PASS
		Hop_2480	11.085	-52.662	-8.915	PASS
TM2	Ant1	2402	6.205	-42.245	-13.795	PASS
		2480	9.17	-54.664	-10.83	PASS
		Hop_2402	10.55	-40.177	-9.45	PASS
		Hop_2480	10.95	-52.566	-9.05	PASS
TM3	Ant1	2402	4.387	-41.059	-15.613	PASS
		2480	6.529	-54.283	-13.471	PASS
		Hop_2402	10.464	-40.077	-9.536	PASS
		Hop_2480	11.085	-53.23	-8.915	PASS

7.2 Test Graphs

TM1_Ant1_Low_2402



TM1_Ant1_High_2480



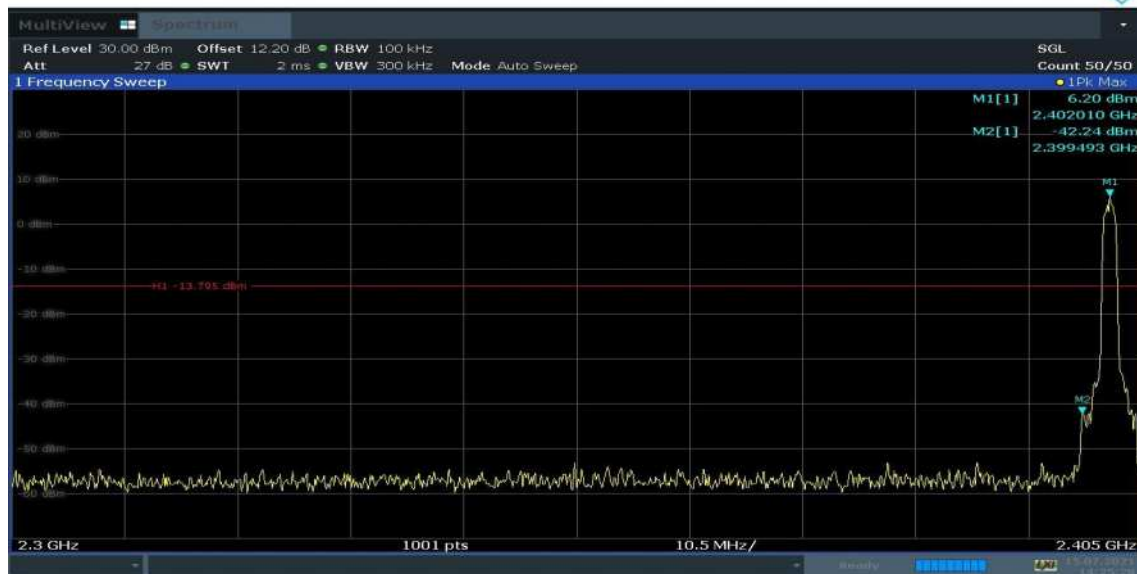
TM1_Ant1_Low_Hop_2402



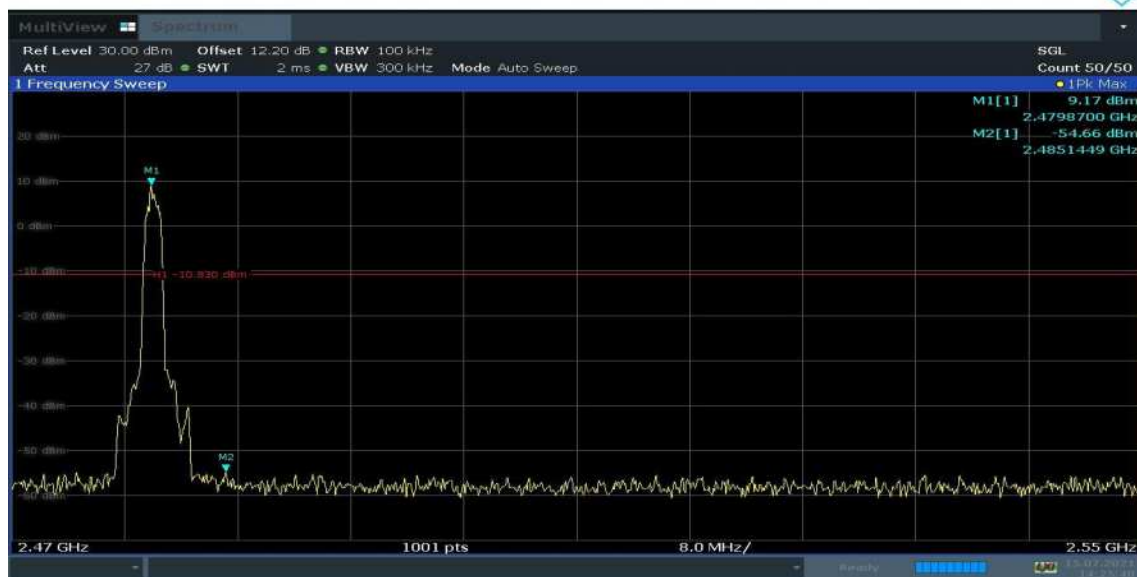
TM1_Ant1_High_Hop_2480



TM2_Ant1_Low_2402



TM2_Ant1_High_2480



TM2_Ant1_Low_Hop_2402



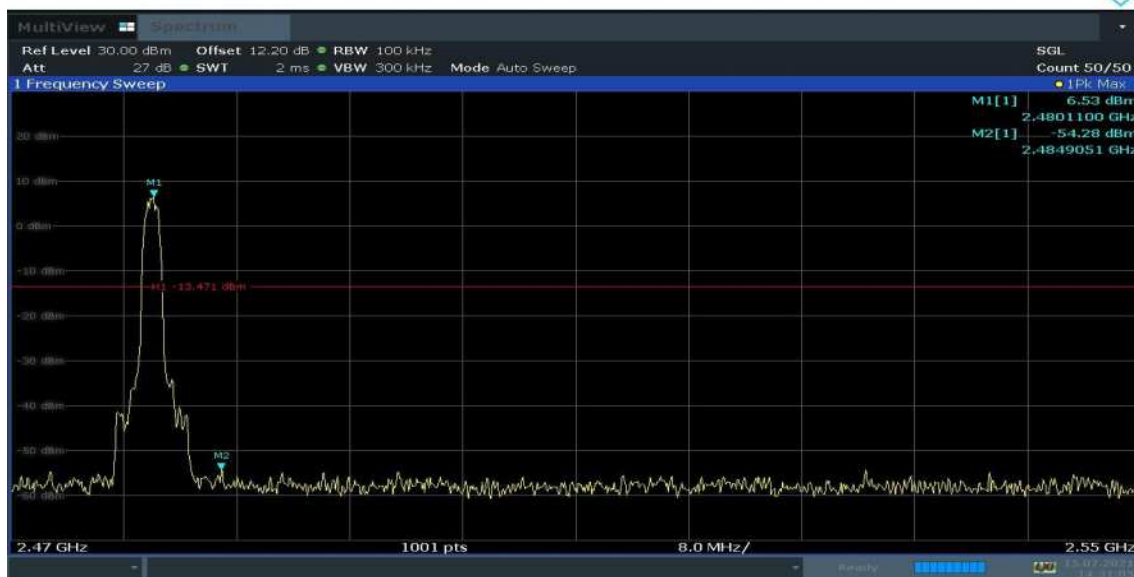
TM2_Ant1_High_Hop_2480



TM3_Ant1_Low_2402



TM3_Ant1_High_2480



TM3_Ant1_Low_Hop_2402



TM3_Ant1_High_Hop_2480



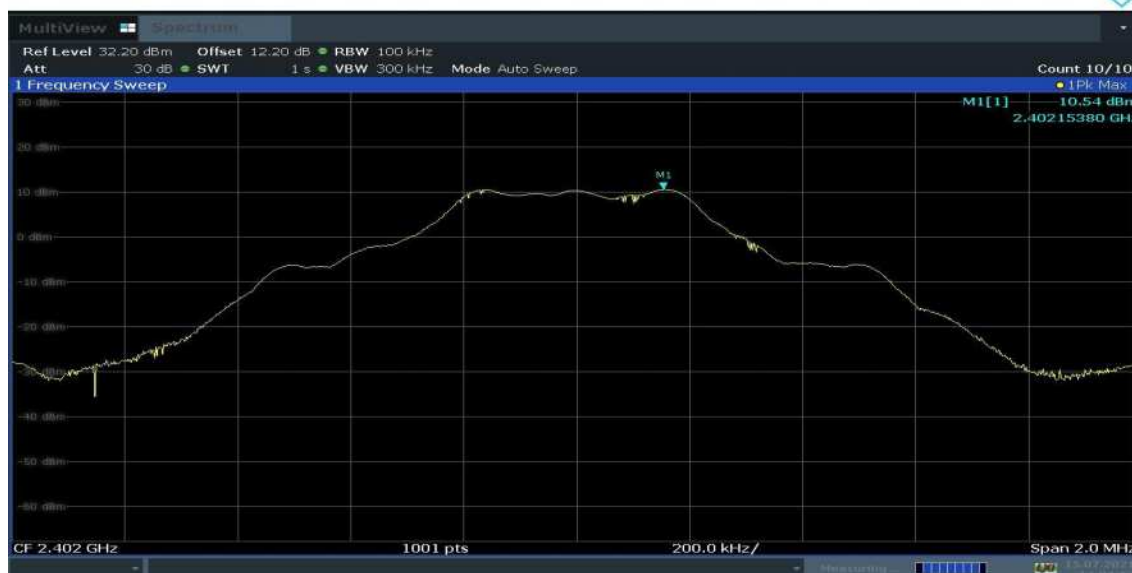
8. Appendix G: Conducted Spurious Emission

8.1 Test Result

TestMode	Antenna	Channel	RefLevel[dBm/100kHz]	Result[dBm]	Limit[dBm/100kHz]	Verdict
TM1	Ant1	2402	10.54	<Limit	-19.46	PASS
		2441	11.35	<Limit	-18.65	PASS
		2480	10.96	<Limit	-19.04	PASS
TM2	Ant1	2402	10.56	<Limit	-19.44	PASS
		2441	11.35	<Limit	-18.65	PASS
		2480	10.97	<Limit	-19.03	PASS
TM3	Ant1	2402	10.58	<Limit	-19.42	PASS
		2441	11.36	<Limit	-18.64	PASS
		2480	11.0	<Limit	-19.0	PASS

8.2 Test Graphs

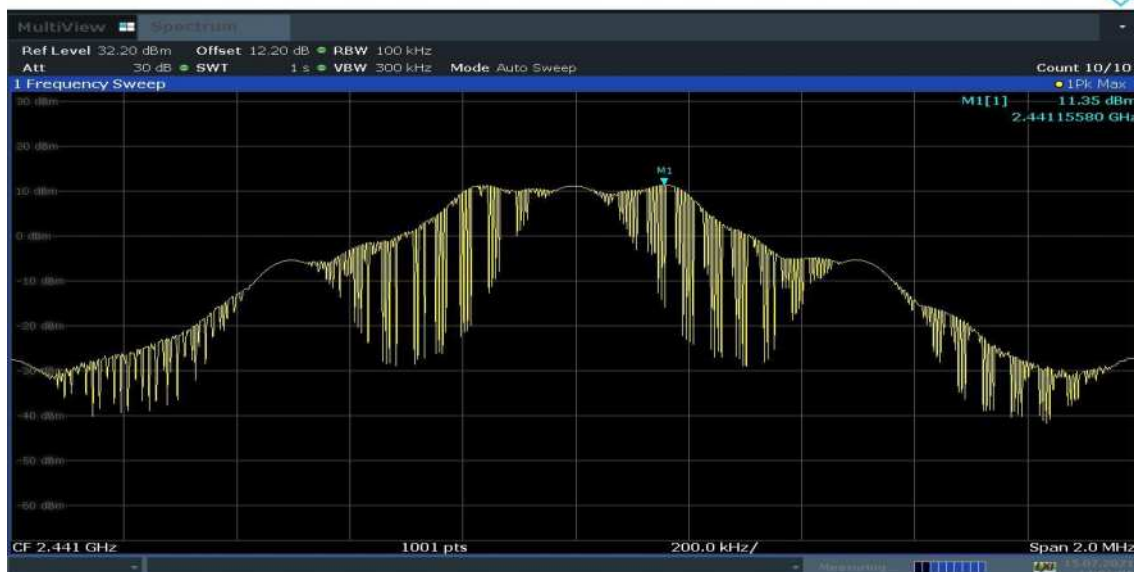
TM1 Ant1 2402 0~Reference



TM1 Ant1 2402 0.009~26500



TM1_Ant1_2441_0-Reference



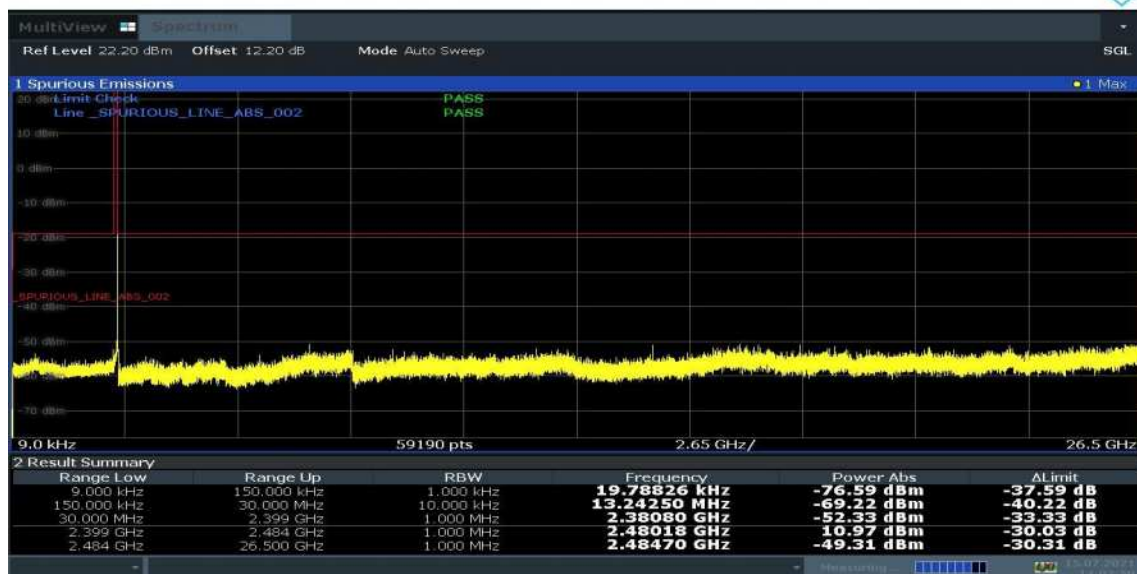
TM1_Ant1_2441_0.009~26500



TM1_Ant1_2480_0-Reference



TM1_Ant1_2480_0.009~26500



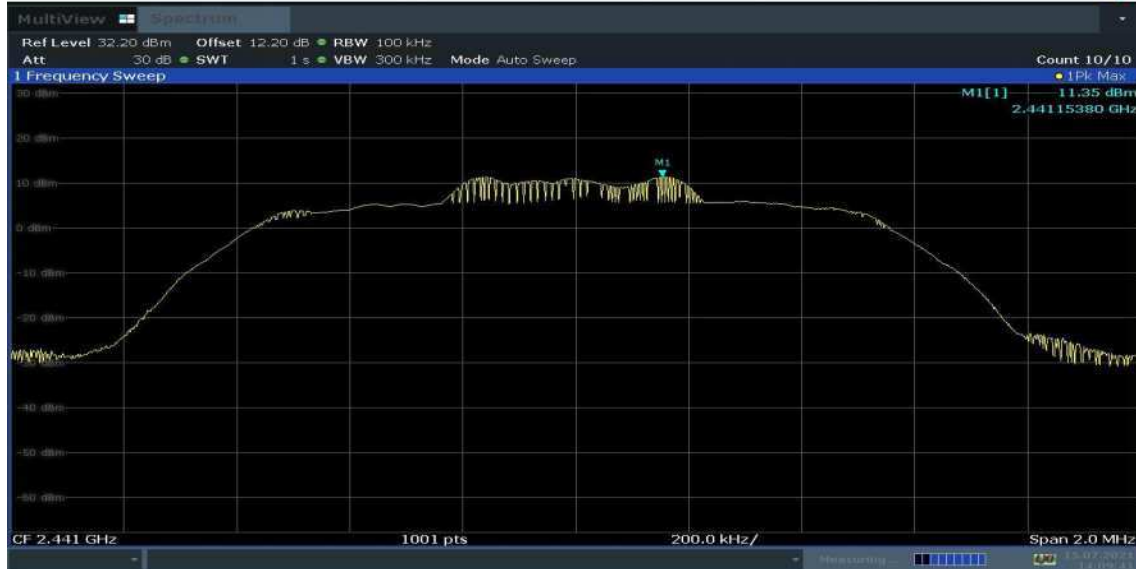
TM2_Ant1_2402_0-Reference



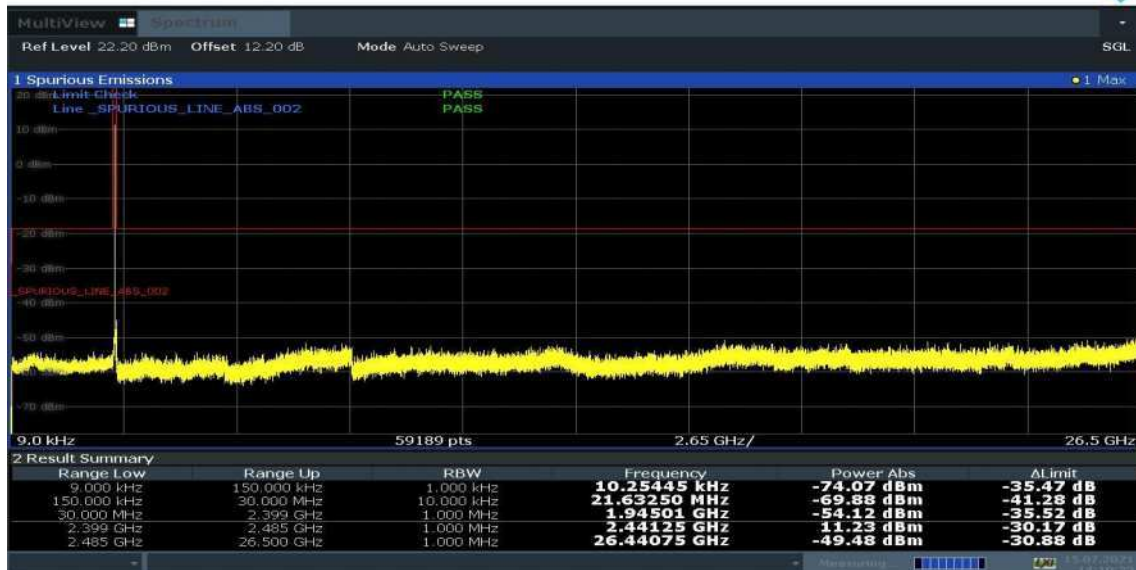
TM2_Ant1_2402_0.009-26500



TM2_Ant1_2441_0-Reference



TM2_Ant1_2441_0.009-26500



TM2_Ant1_2480_0-Reference



TM2_Ant1_2480_0.009-26500



TM3_Ant1_2402_0-Reference



TM3_Ant1_2402_0.009-26500



TM3_Ant1_2441_0-Reference



TM3_Ant1_2441_0.009-26500



TM3_Ant1_2480_0-Reference



TM3_Ant1_2480_0.009-26500



9 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 MHz 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.

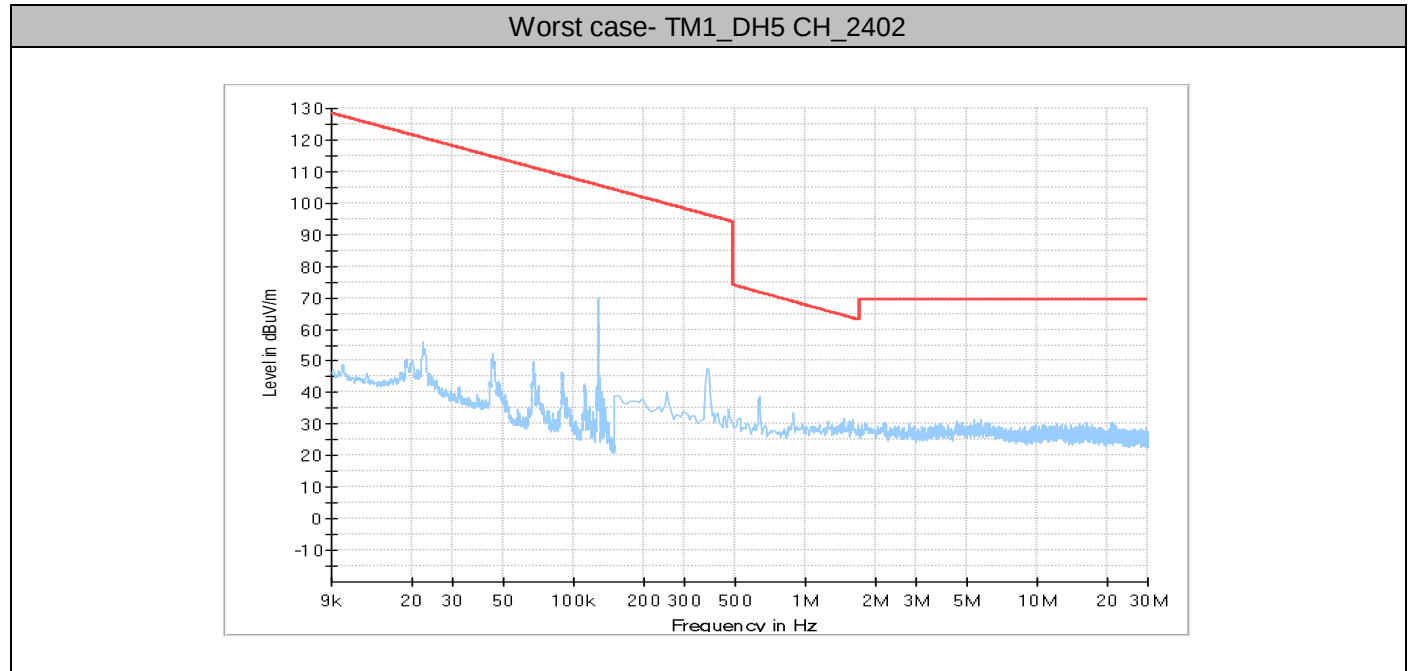
9.1 Test Results

Test Mode	Antenna	Test Channel	Spurious Emissions Result	Spurious Emissions Limit	Verdict
TM1_DH5	Ant1	2402	(see Test Graphs)	(see Test Graphs)	PASS
	Ant1	2480	(see Test Graphs)	(see Test Graphs)	PASS

9.2 Test Graphs

9.2.1 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.

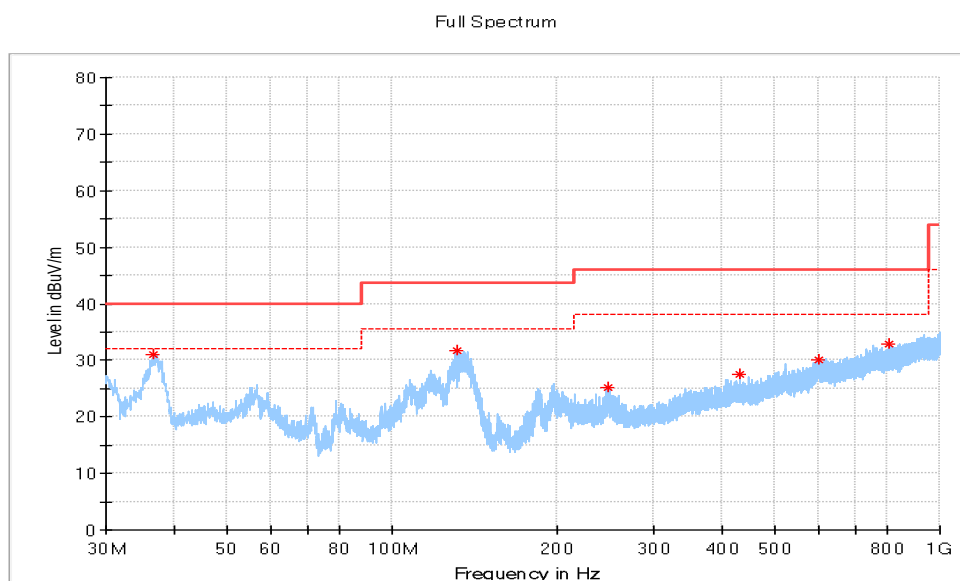


9.2.2 Part 2: Testing Range of “30 MHz to 1 GHz”

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- TM1_DH5 CH_2402



MEASUREMENT RESULT: QP Detector

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarisation
36.741500	31.11	18.1	40.00	8.89	100.0	359.0	V
130.928500	31.83	15.2	43.50	11.67	100.0	296.0	V
247.910500	25.22	19.7	46.00	20.78	100.0	13.0	H
431.919500	27.51	23.8	46.00	18.49	100.0	95.0	V
601.475500	30.13	27.4	46.00	15.87	100.0	345.0	H
808.182500	32.93	29.3	46.00	13.07	100.0	210.0	V

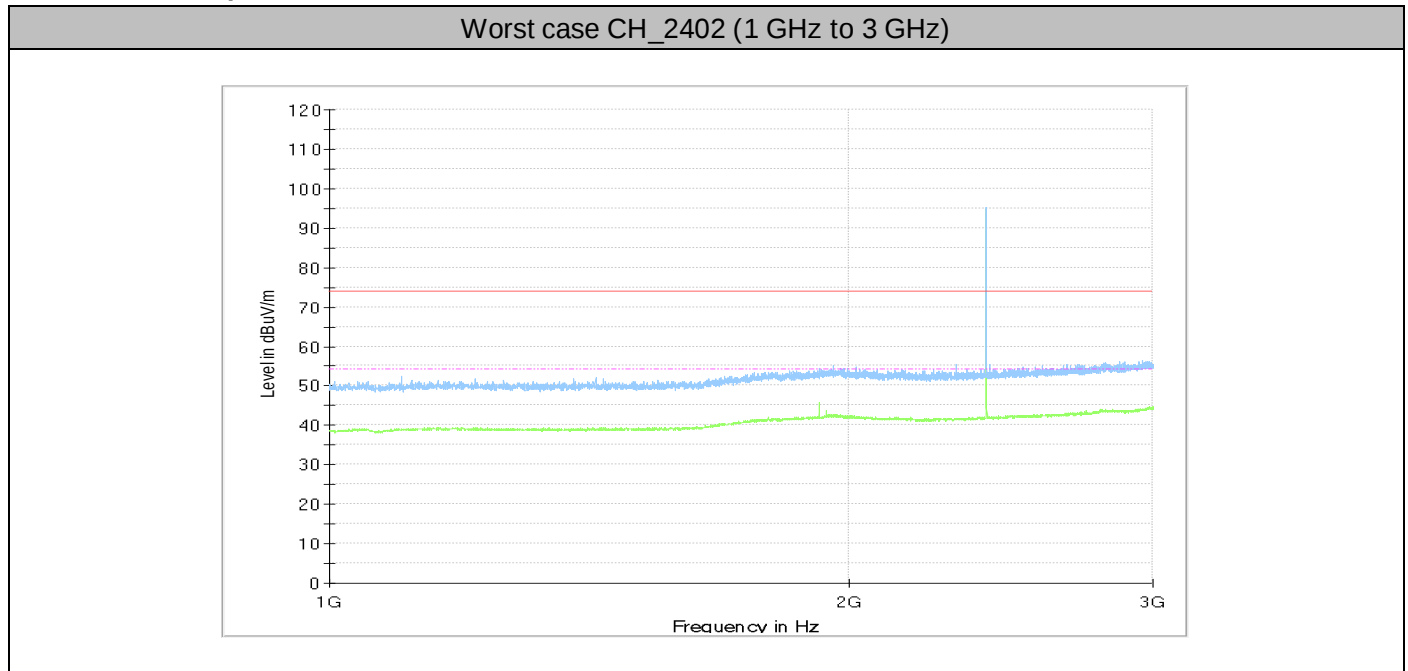
9.2.3 Part 3: Testing Range of “1 GHz to 3 GHz”

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.

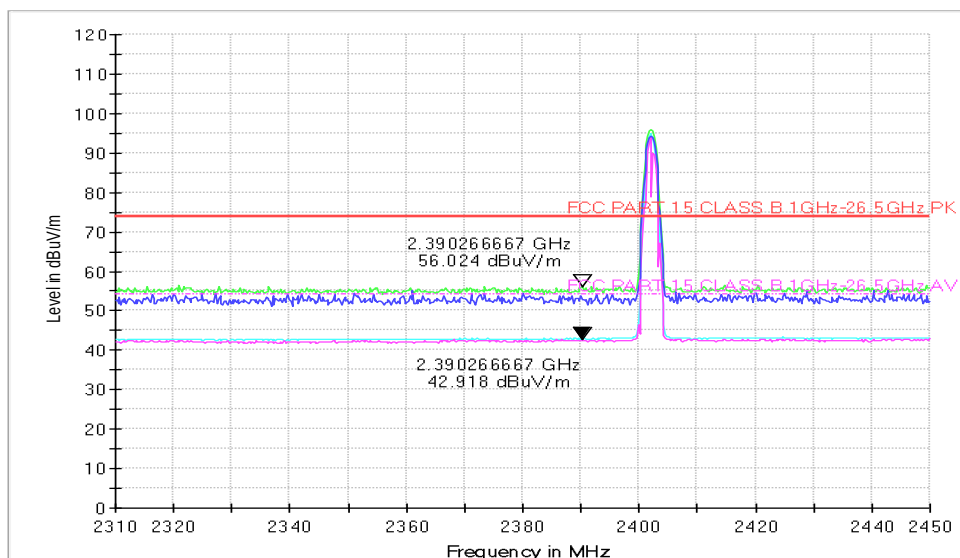
Note 2: Two limits are required in the testing range above 1 GHz, that is Peak limit (74 dB μ V/m) and Average Limit (54 dB μ V/m).

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

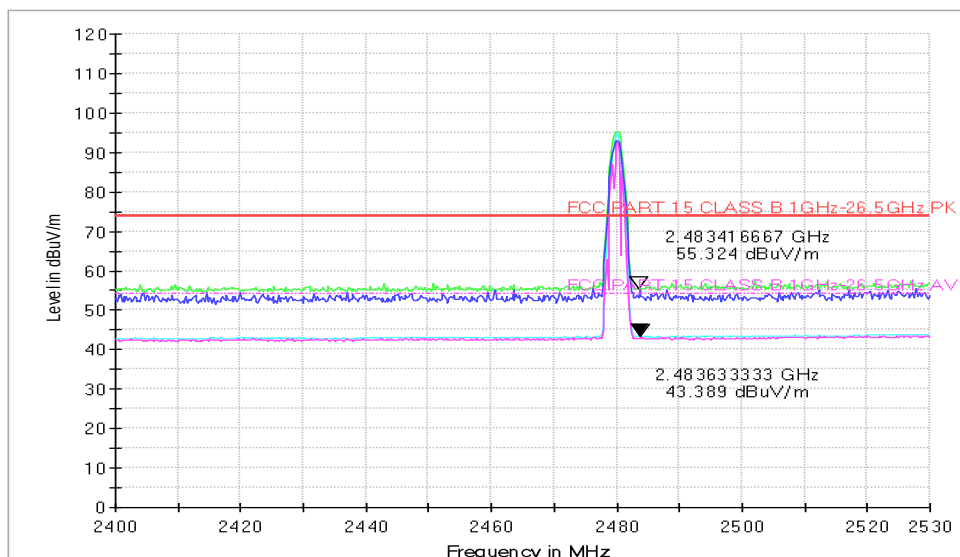
9.2.3.1 TM1_DH5 power



CH_2402(Band Edge)



CH_2480(Band Edge)



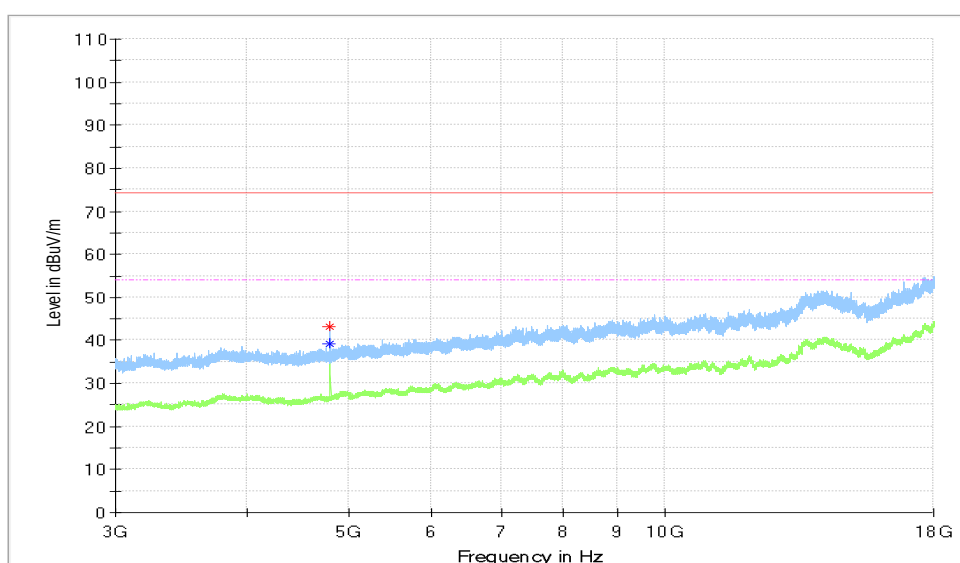
9.2.4 Part 4: Testing Range of “3 GHz to 18 GHz”

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_2402- TM1_DH5



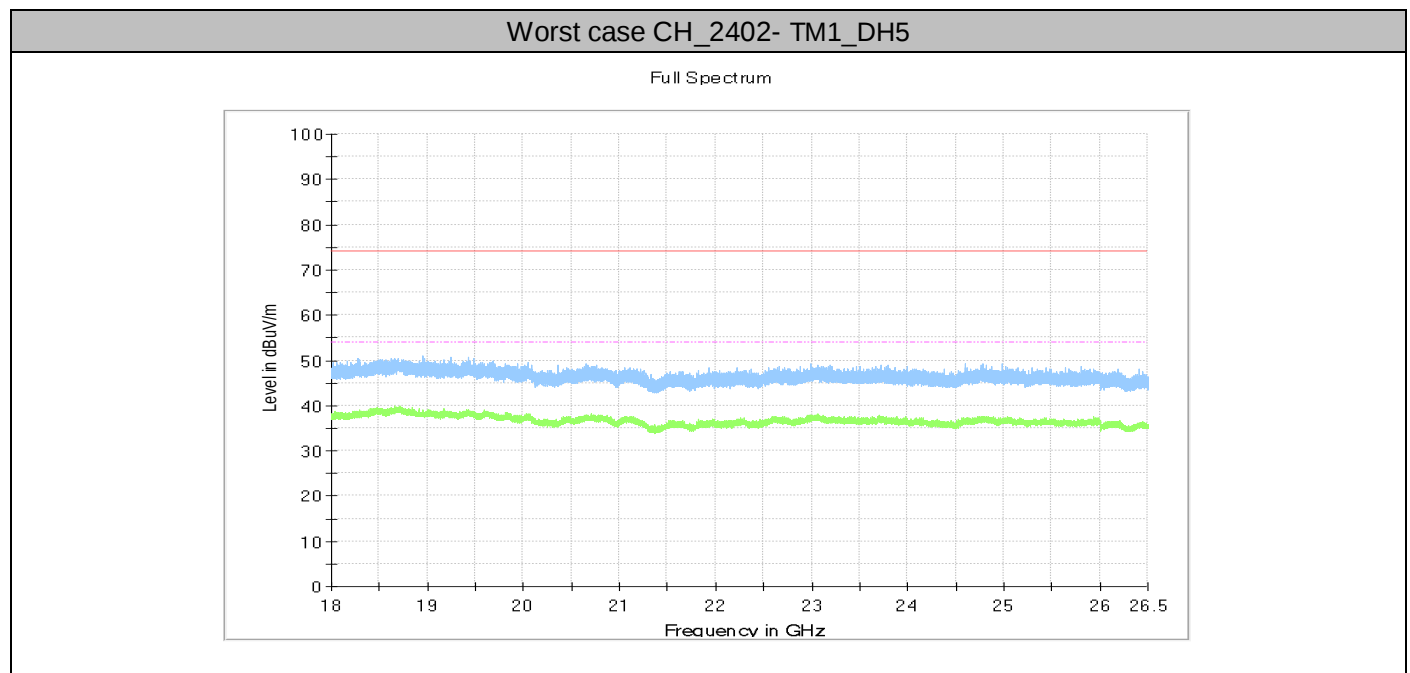
Frequency	MaxPeak	Average	Limit	Margin	Meas. Time	Bandwidth	Height	Pol
4803.500000	43.12	---	74.00	30.88	---	---	150.0	H
4804.000000	---	39.20	54.00	14.80	---	---	150.0	H

9.2.5 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).



10. 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.

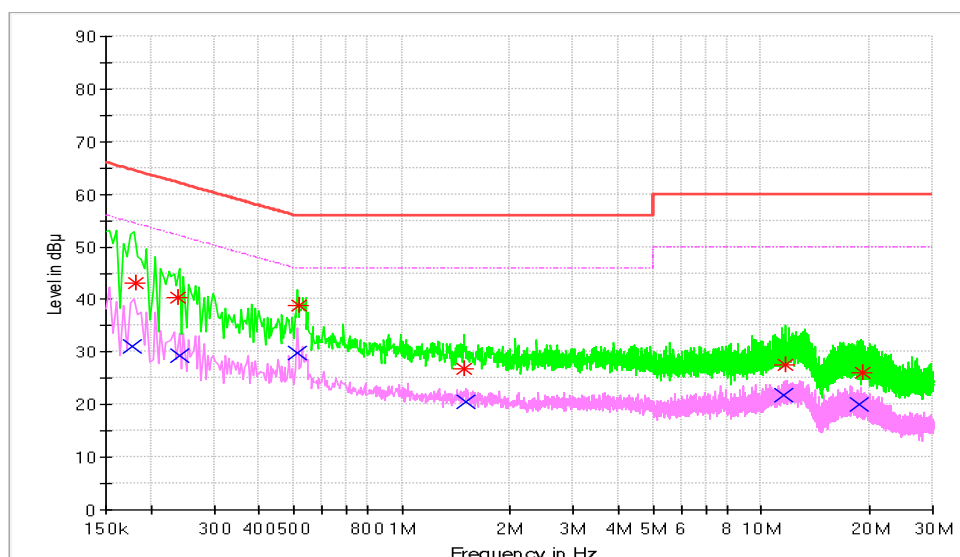
Note 2: RBW =9 kHz; VBW = 30 kHz

10.1 Test Results

Test Mode	Antenna	Test Channel	Maximum Emissions	Limit	Verdict
TM1_DH5	Ant1	2402	(see Test Graphs)	(see Test Graphs)	PASS

10.2 Test Graphs

Worst case CH_2402- TM1_DH5



MEASUREMENT RESULT: QP Detector

Frequency (MHz)	Level (dBμV)	Limit (dBμV)	Transd. (dB)	Margin (dB)	Line	PE
0.181214	43.07	64.43	9.7	21.36	N	FLO
0.237027	40.41	62.20	9.7	21.79	N	FLO
0.514266	38.88	56.00	9.7	17.12	L1	FLO
1.492584	26.78	56.00	9.7	29.22	L1	FLO
11.598206	27.46	60.00	10.2	32.54	L1	FLO
19.183589	25.96	60.00	10.2	34.04	L1	FLO

MEASUREMENT RESULT: AV Detector

Frequency (MHz)	Level (dBμV)	Limit (dBμV)	Transd. (dB)	Margin (dB)	Line	PE
0.177915	30.97	54.58	9.7	23.61	N	FLO
0.239456	29.24	52.12	9.7	22.87	N	FLO
0.512720	29.89	46.00	9.7	16.11	L1	FLO
1.501120	20.61	46.00	9.7	25.39	L1	FLO
11.482508	21.93	50.00	10.2	28.07	L1	FLO
18.806003	20.04	50.00	10.2	29.96	L1	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