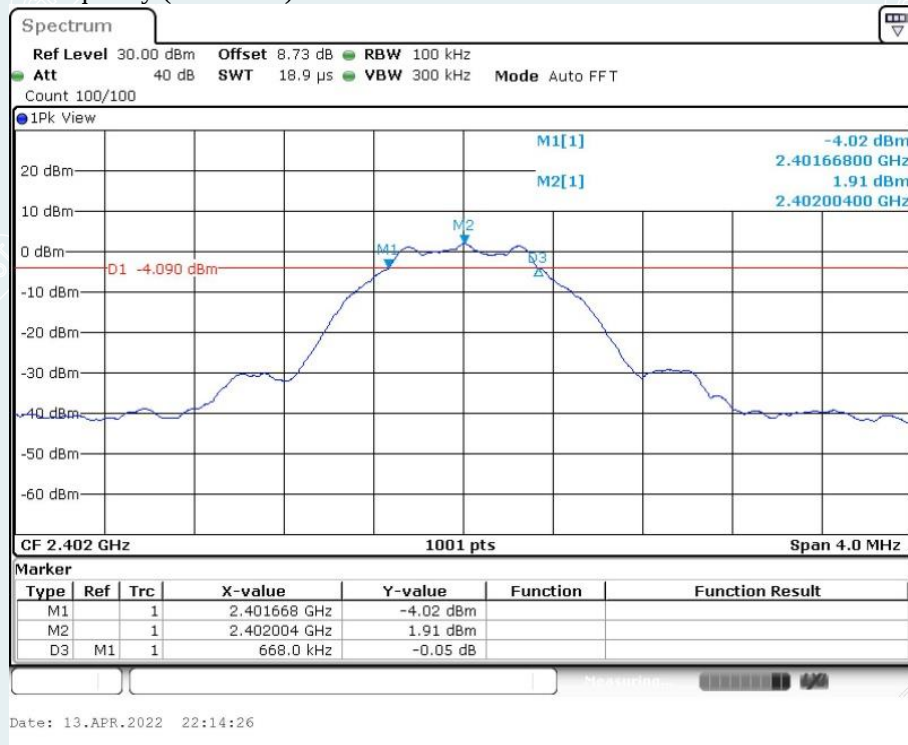
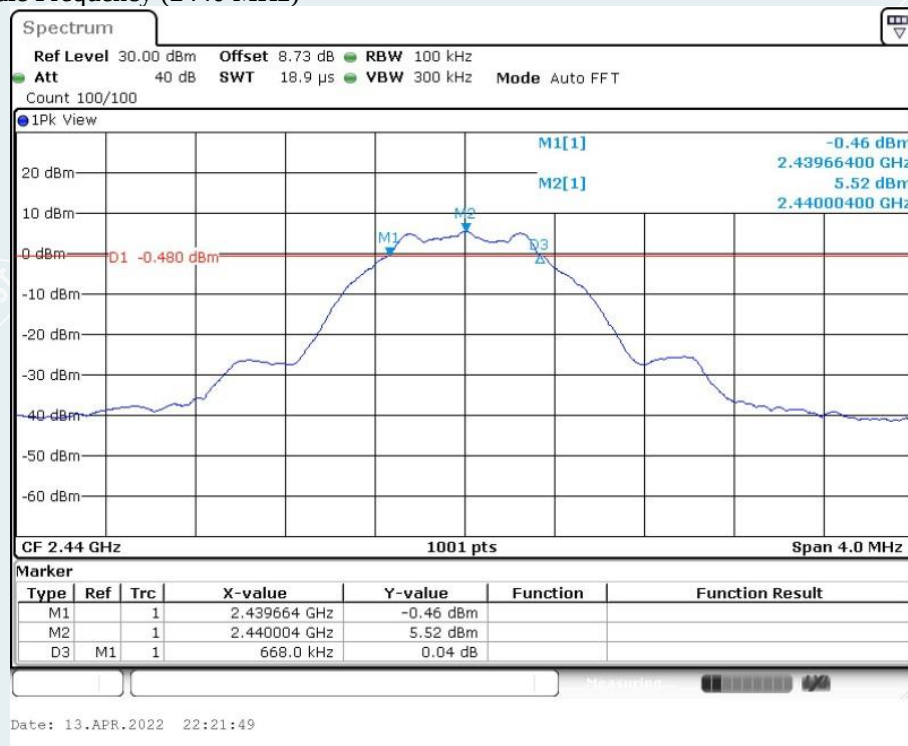


BLE_1M

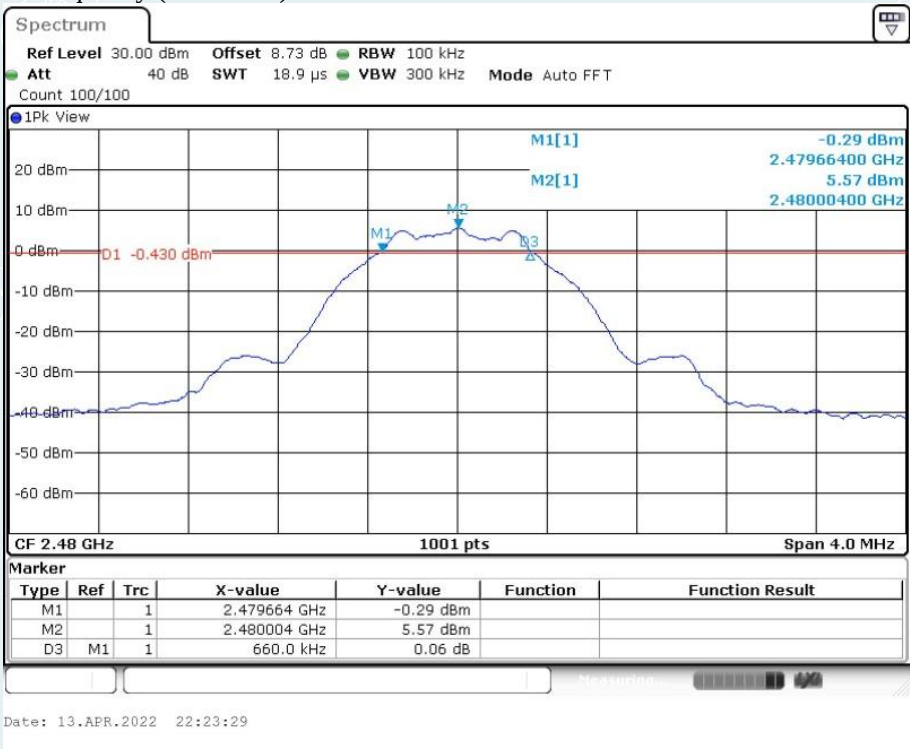
Lowest Frequency (2402MHz)



Middle Frequency (2440 MHz)



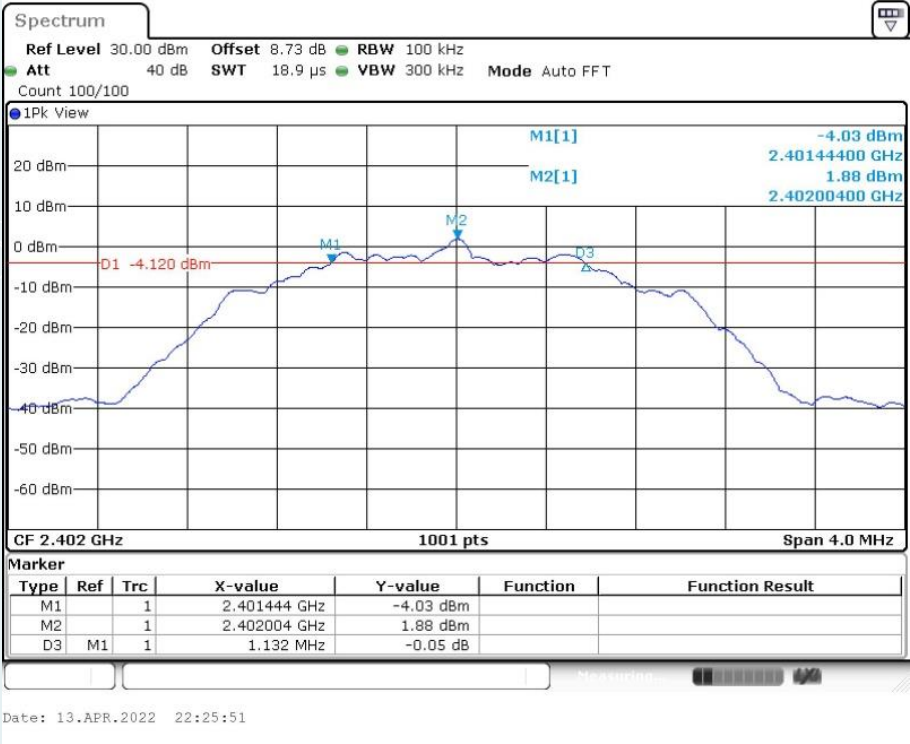
Highest Frequency (2480MHz)



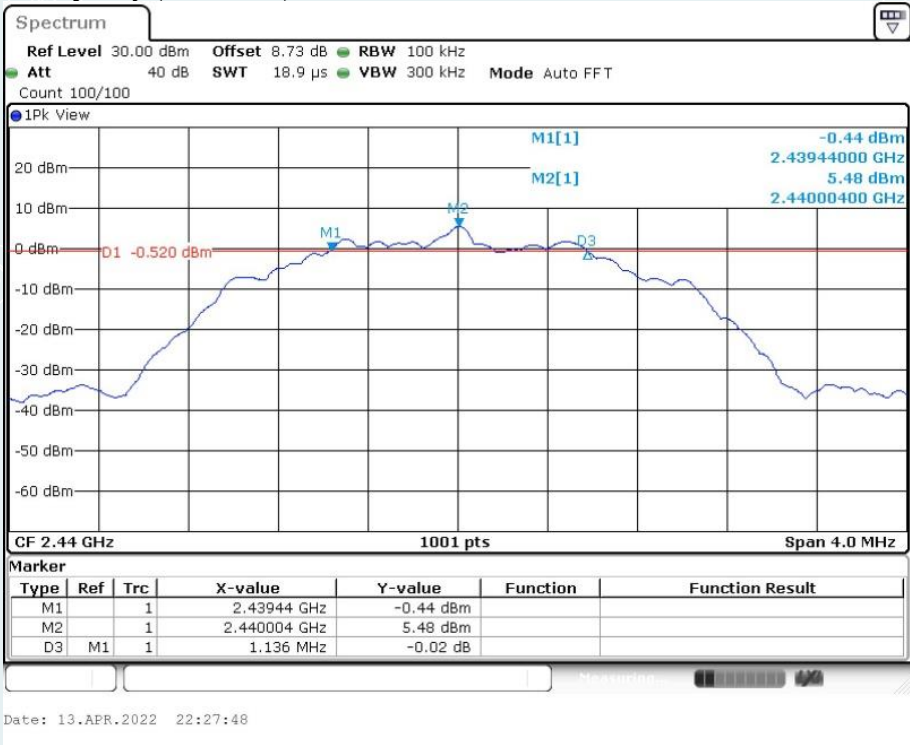
----- The following blanks -----

BLE_2M

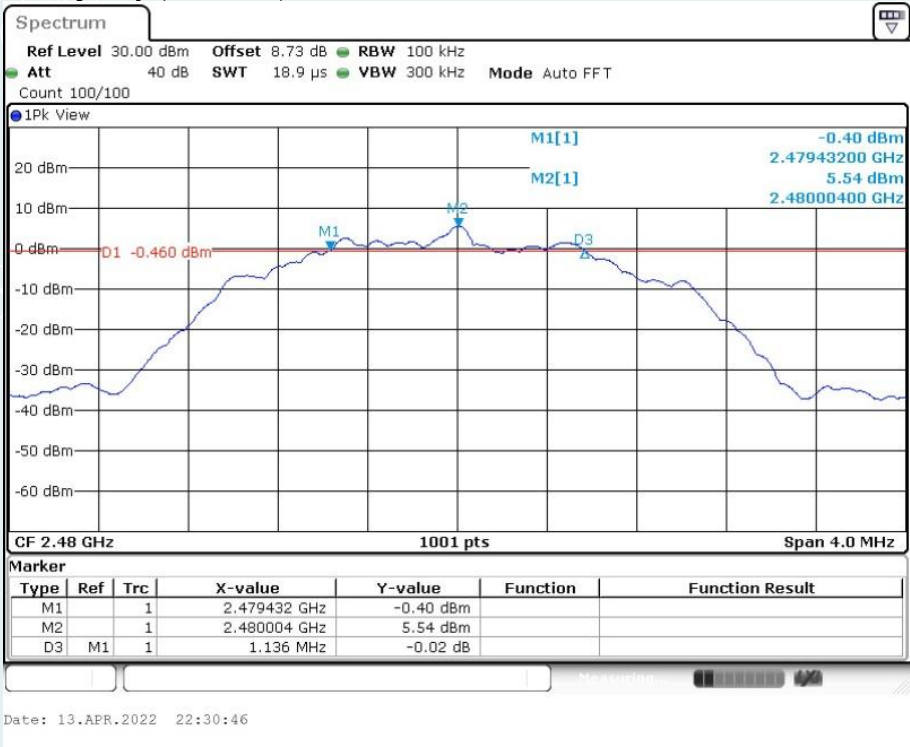
Lowest Frequency (2402MHz)



Middle Frequency (2440 MHz)



Highest Frequency (2480MHz)



----- The following blanks -----

7. MAXIMUM PEAK OUTPUT POWER

7.1 LIMITS

The maximum Peak output power measurement is 1W

7.2 TEST PROCEDURES

- 1) RF output of EUT was connected to the broadband peak RF power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 2) Set to the maximum power setting and enable the EUT transmit continuously.
- 3) Measure the conducted output power and record the results in the test report.

7.3 TEST SETUP



7.4 TEST RESULTS

Environment: 22.5°C/49%RH

Tested By: Lu Wei

Voltage: DC 12V

Date: 2022-04-03

BLE_1M

Channel	Frequency (MHz)	Measured Channel Power (dBm)	Limit	Peak/Average	Result
Lowest	2402	0.85	1W (30dBm)	Peak	Pass
Middle	2440	4.79			Pass
Highest	2480	4.76			Pass

BLE_2M

Channel	Frequency (MHz)	Measured Channel Power (dBm)	Limit	Peak/Average	Result
Lowest	2402	1.24	1W (30dBm)	Peak	Pass
Middle	2440	5.08			Pass
Highest	2480	5.02			Pass

8. POWER SPECTRAL DENSITY

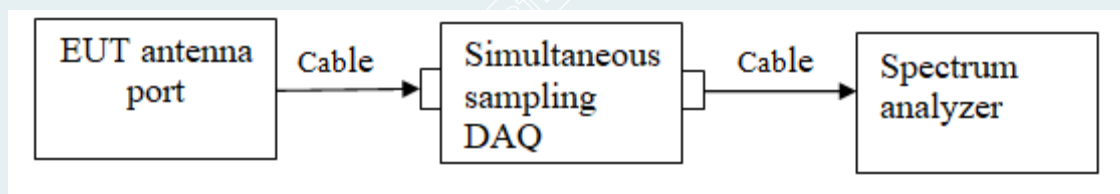
8.1 LIMITS

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

8.2 TEST PROCEDURES

- 1) Remove the antenna from the EUT, and then connect a low loss RF cable from antenna port to the spectrum analyzer.
- 2) Position the EUT was set without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
- 3) Set the analyzer span to 1.5 times the DTS bandwidth. Set the RBW to $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$. Set the VBW $\geq [3 \times \text{RBW}]$. Detector = peak. Sweep time = auto couple. Trace mode = max hold. Allow trace to fully stabilize. Use the peak marker function to determine the maximum amplitude level within the RBW. If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.
- 4) Repeat above procedures until all frequencies measured were complete.

8.3 TEST SETUP



8.4 TEST RESULTS

Environment: 23.6°C/53%RH
 Tested By: Lu Wei

Voltage: DC 12V
 Date: 2022-04-13

BLE_1M

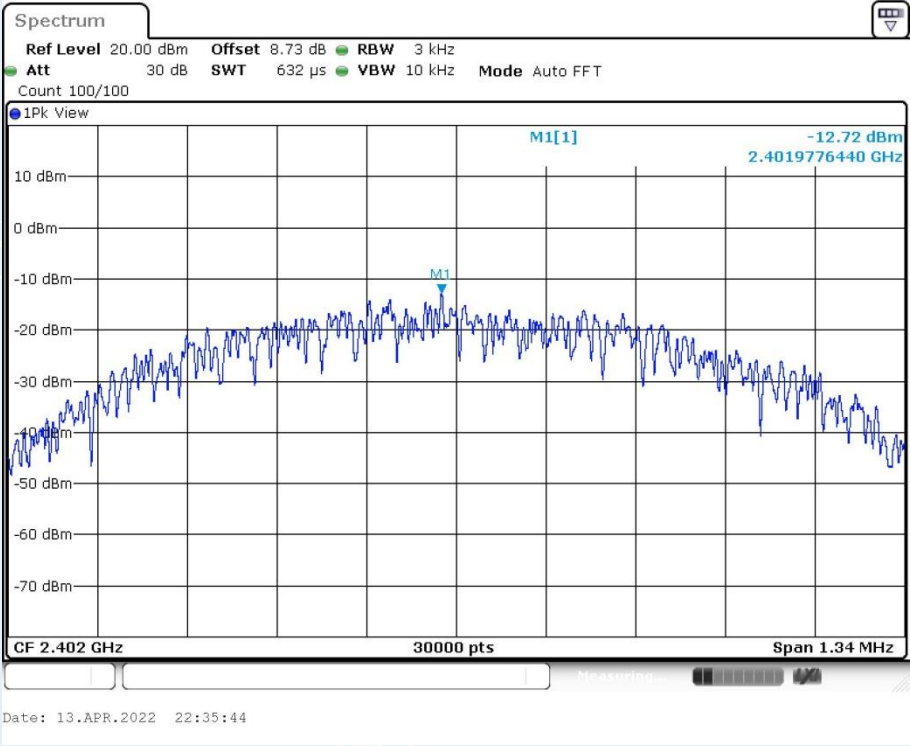
Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Test Result
Lowest	2402	-12.72	8.00	PASS
Middle	2440	-8.96		PASS
Highest	2480	-9.06		PASS

BLE_2M

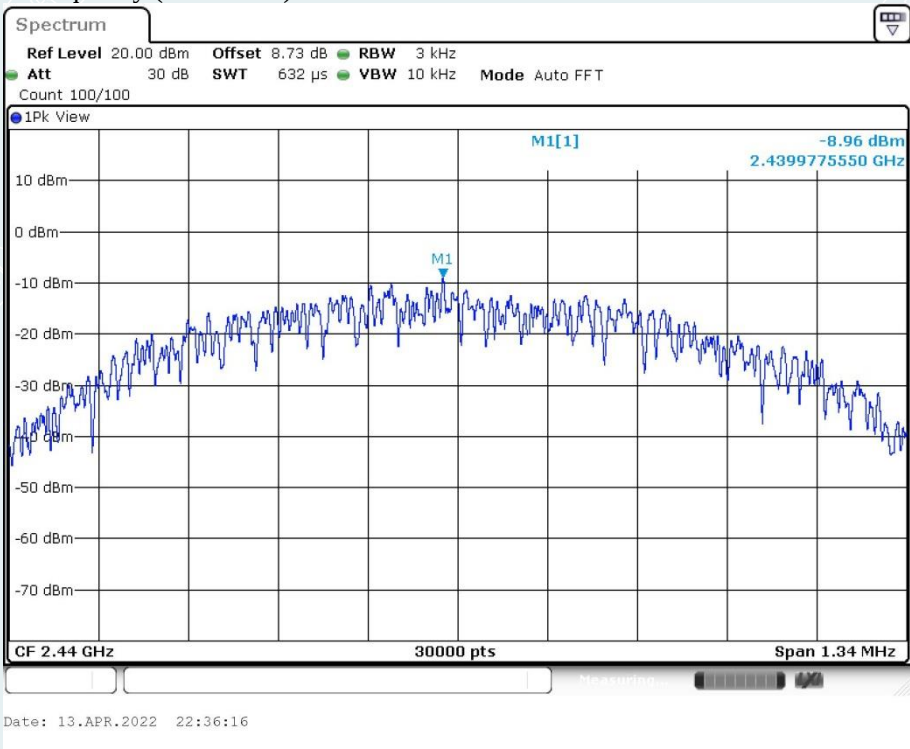
Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Test Result
Lowest	2402	-16.43	8.00	PASS
Middle	2440	-12.64		PASS
Highest	2480	-12.71		PASS

BLE_1M

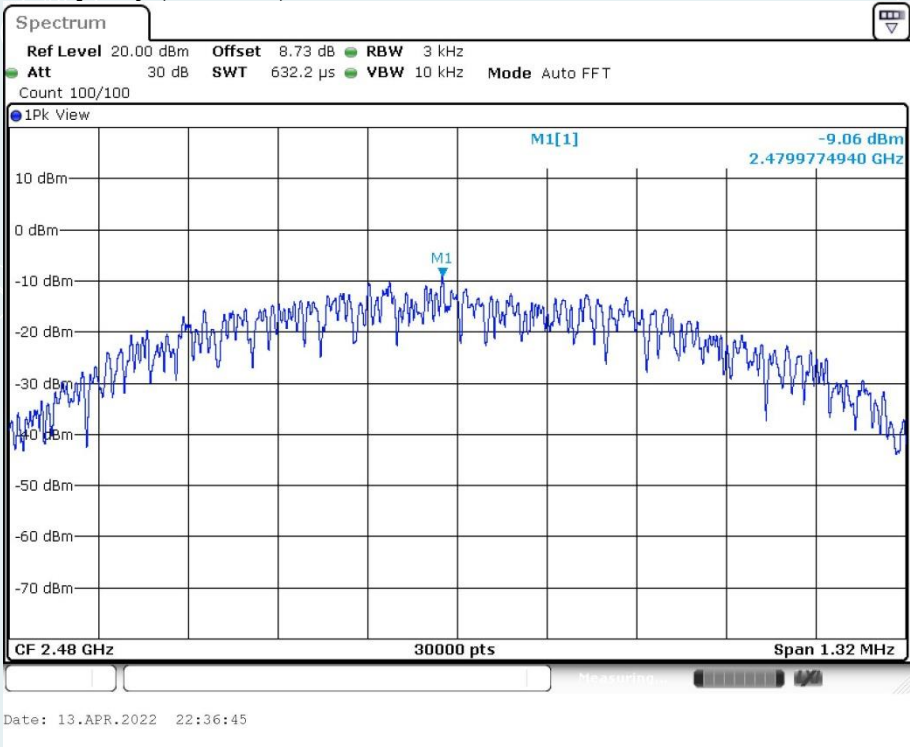
Lowest Frequency (2402MHz)



Middle Frequency (2440 MHz)



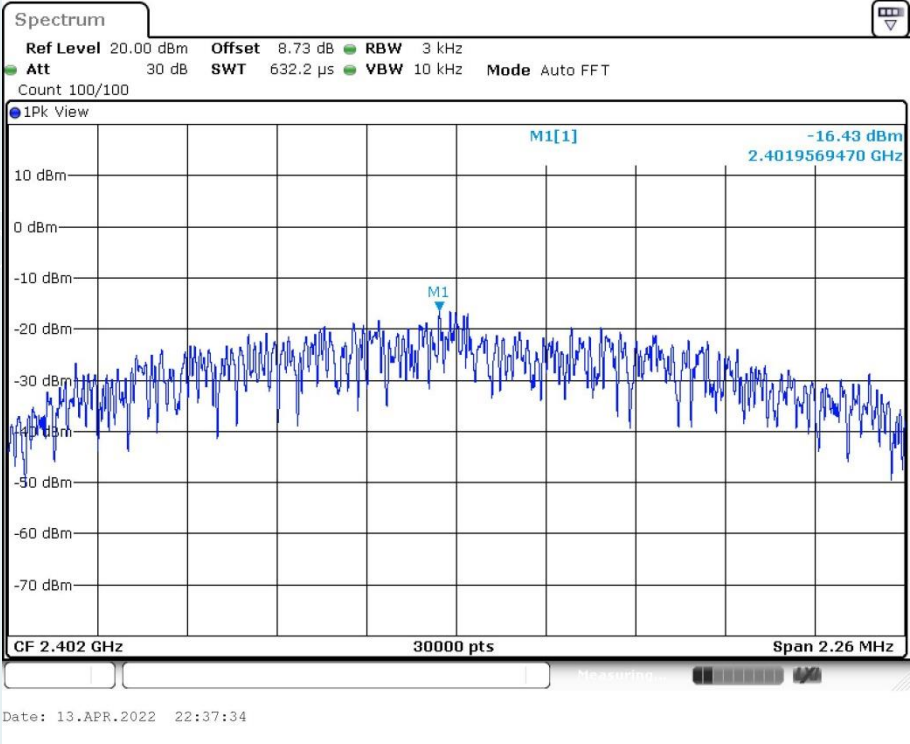
Highest Frequency (2480MHz)



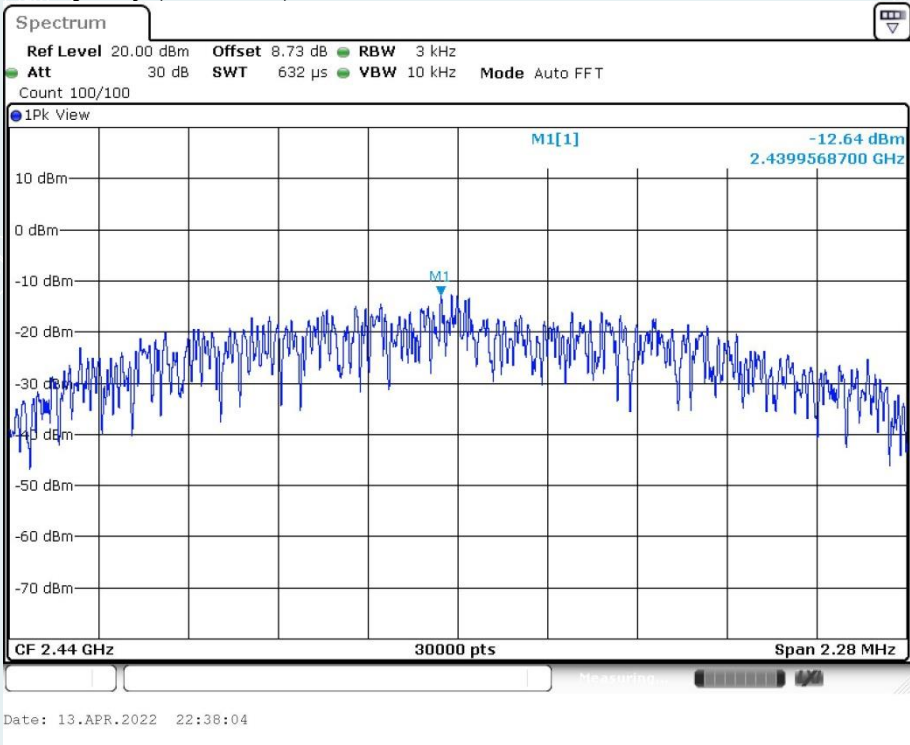
----- The following blanks -----

BLE_2M

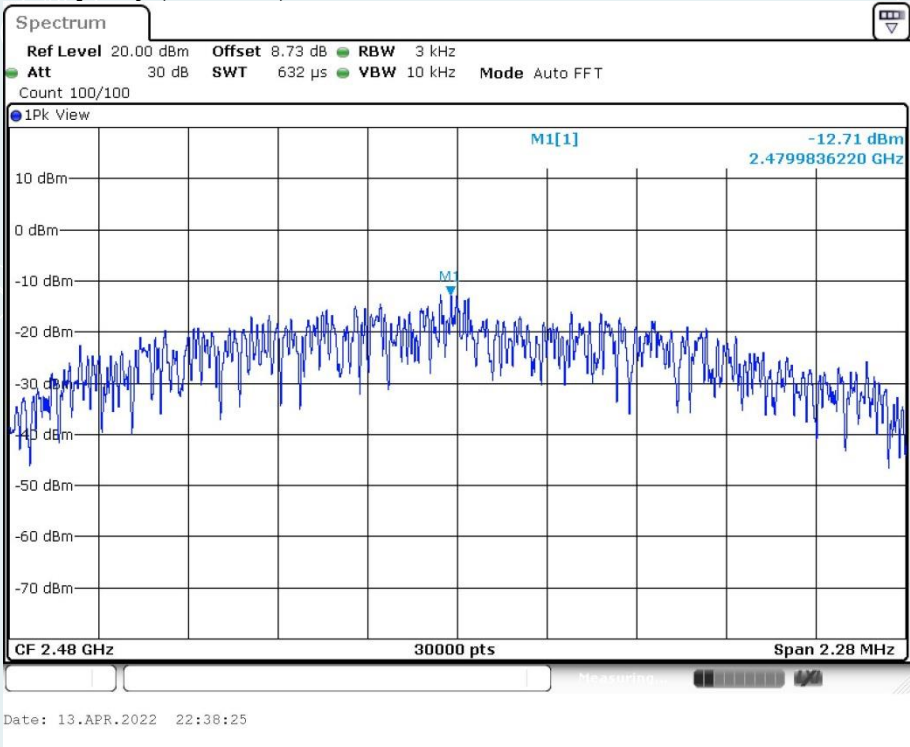
Lowest Frequency (2402MHz)



Middle Frequency (2440 MHz)



Highest Frequency (2480MHz)



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9. CONDUCTED BAND EDGES AND SPURIOUS EMISSIONS

9.1 LIMITS

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

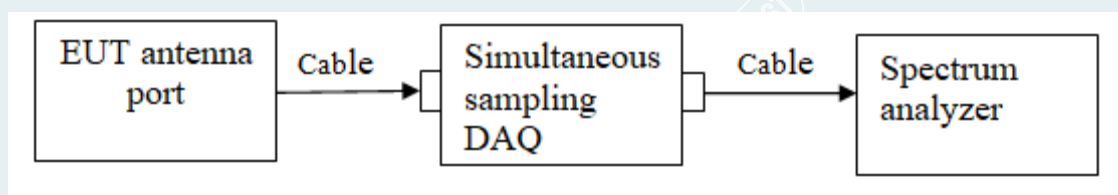
9.2 TEST PROCEDURES

Test procedures follow KDB 558074 D01 15.247 Measurement Guidance v05r02.

Remove the antenna from the EUT and then connect a low attenuation cable from the antenna port to the spectrum.

- 1) Remove the antenna from the EUT and then connect a low attenuation cable from the antenna port to the spectrum.
- 2) Set the spectrum analyzer: RBW =100kHz; VBW =300kHz, Frequency range = 30MHz to 26.5GHz; Sweep = auto; Detector Function = Peak. Trace = Max, hold.
- 3) Measure and record the results in the test report.
- 4) The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

9.3 TEST SETUP



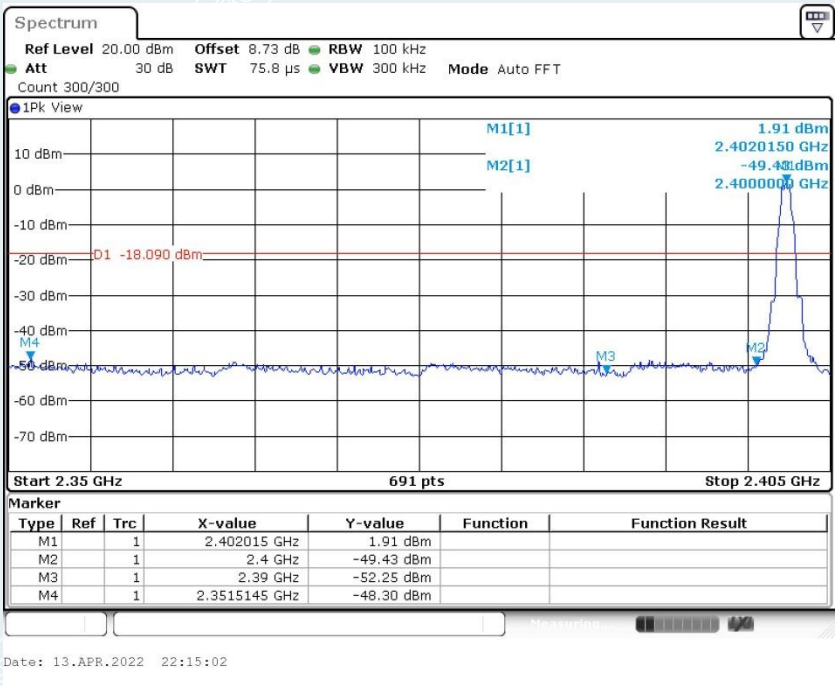
9.4 TEST RESULTS

Environment: 23.6°C/53%RH
Tested By: Lu Wei

Voltage: DC 12V
Date: 2022-04-13

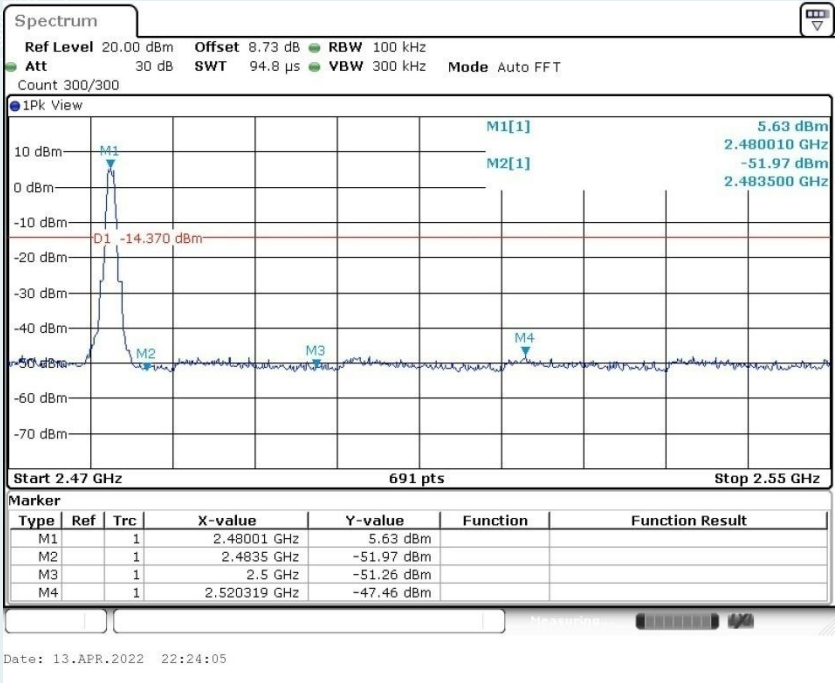
BLE_1M

Lowest Frequency (2402MHz)
2.30GHz-2.405GHz



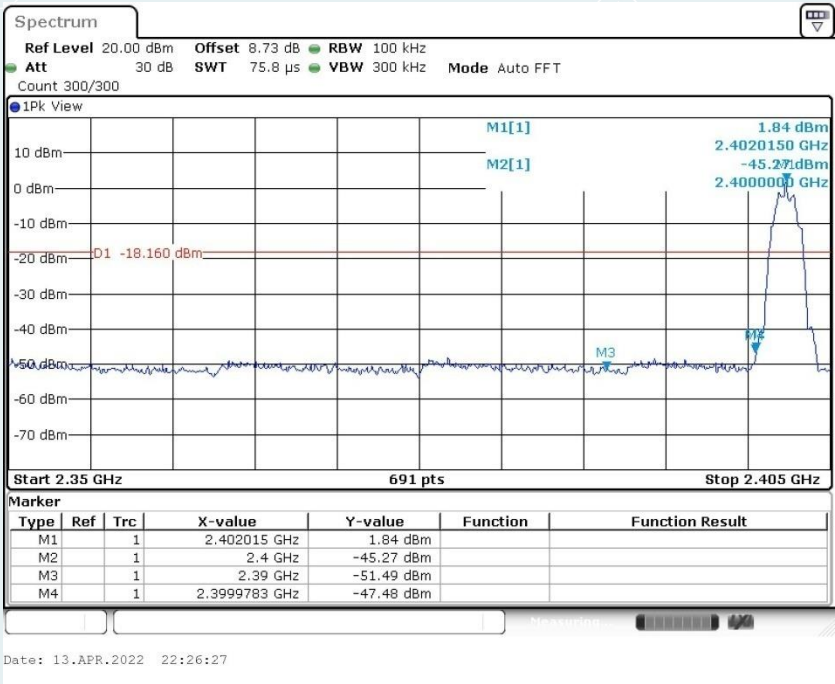
----- The following blanks -----

Highest Frequency (2480MHz)
2.47GHz-2.55GHz

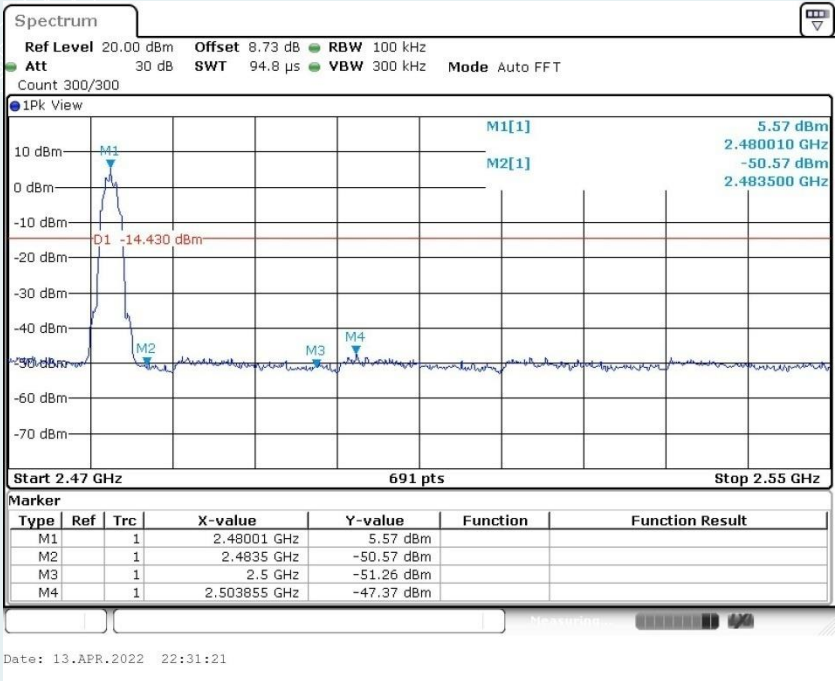


BLE_2M

Lowest Frequency (2402MHz)
2.30GHz-2.405GHz

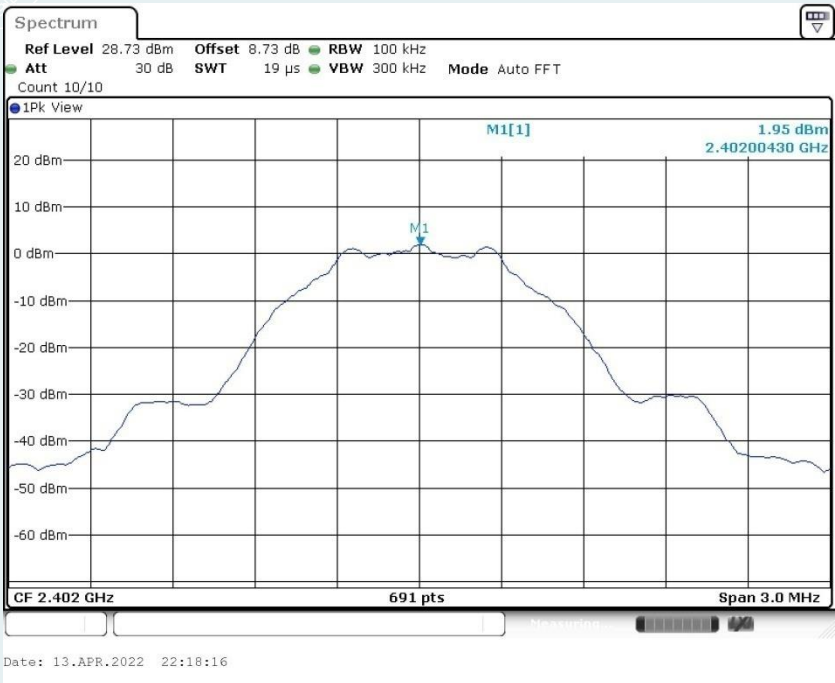


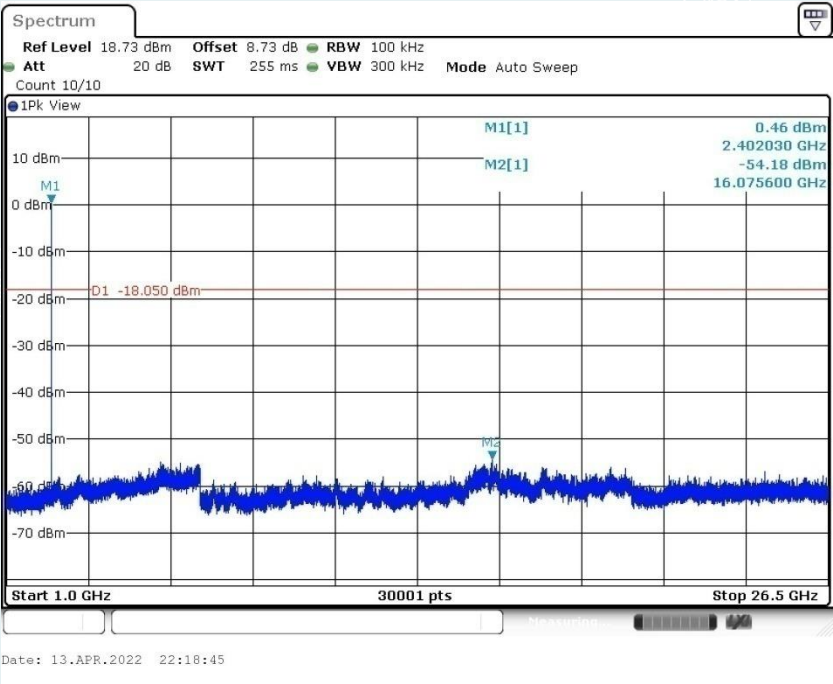
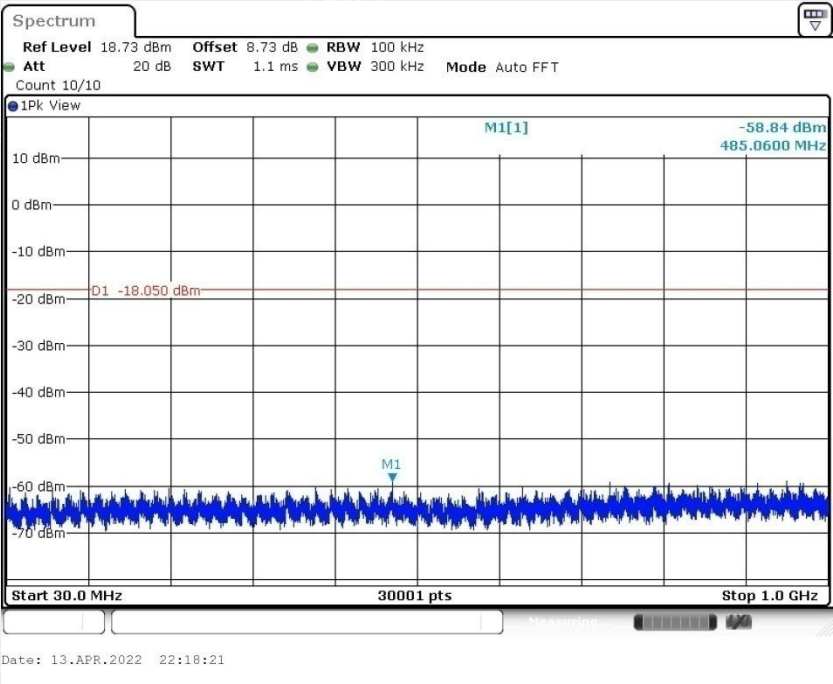
Highest Frequency (2480MHz)
2.47GHz-2.55GHz



BLE_1M

Lowest Frequency (2402MHz)





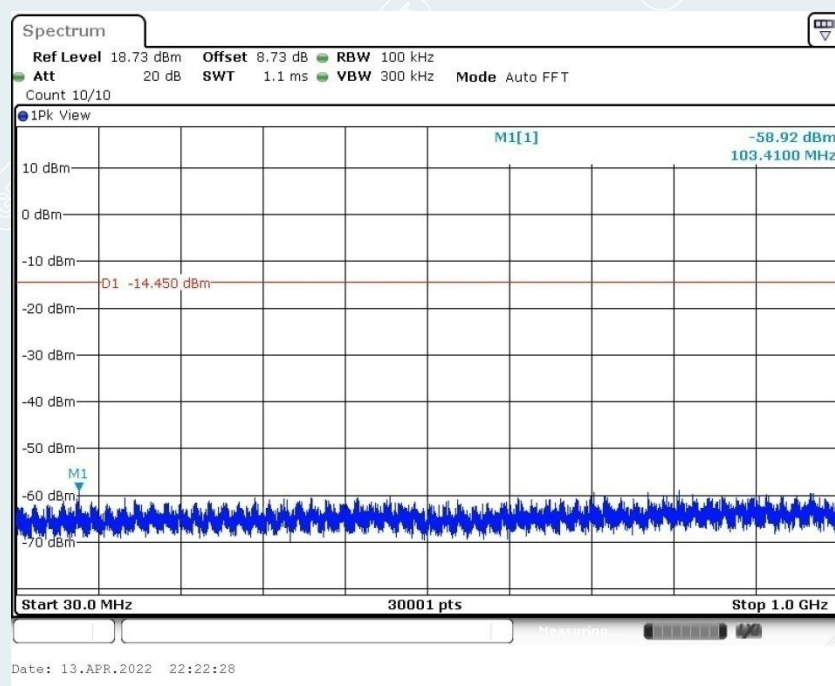
Spectrum

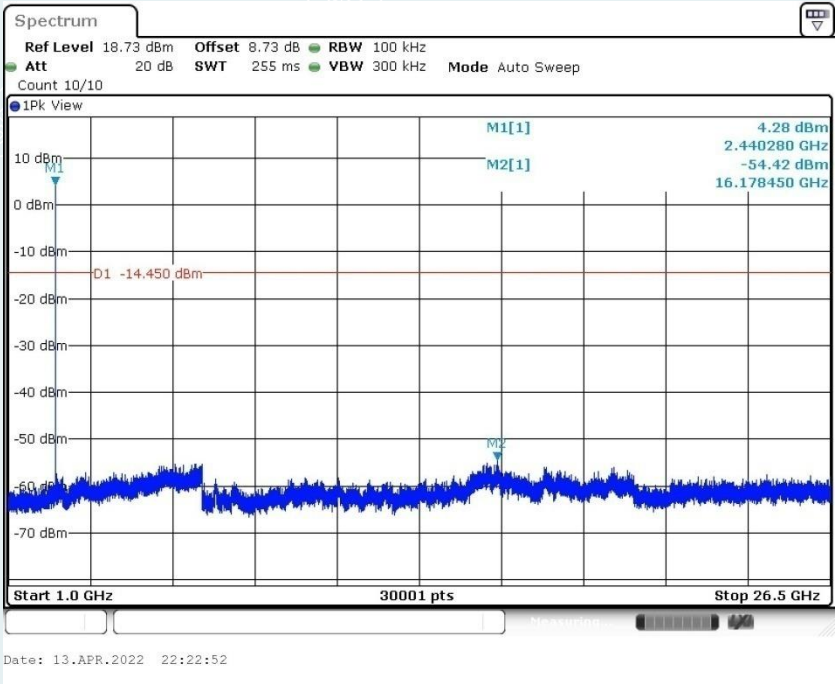
Ref Level 28.73 dBm Offset 8.73 dB RBW 100 kHz
Att 30 dB SWT 19 μ s VBW 300 kHz Mode Auto FFT
Count 10/10

1Pk View

M1[1] 5.55 dBm
2.44000430 GHz

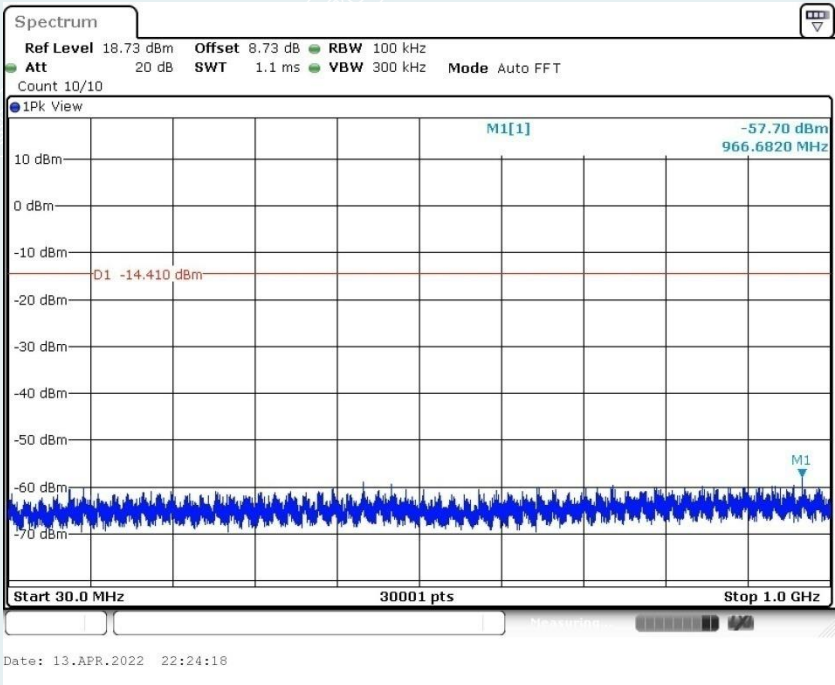
CF 2.44 GHz 691 pts Span 3.0 MHz

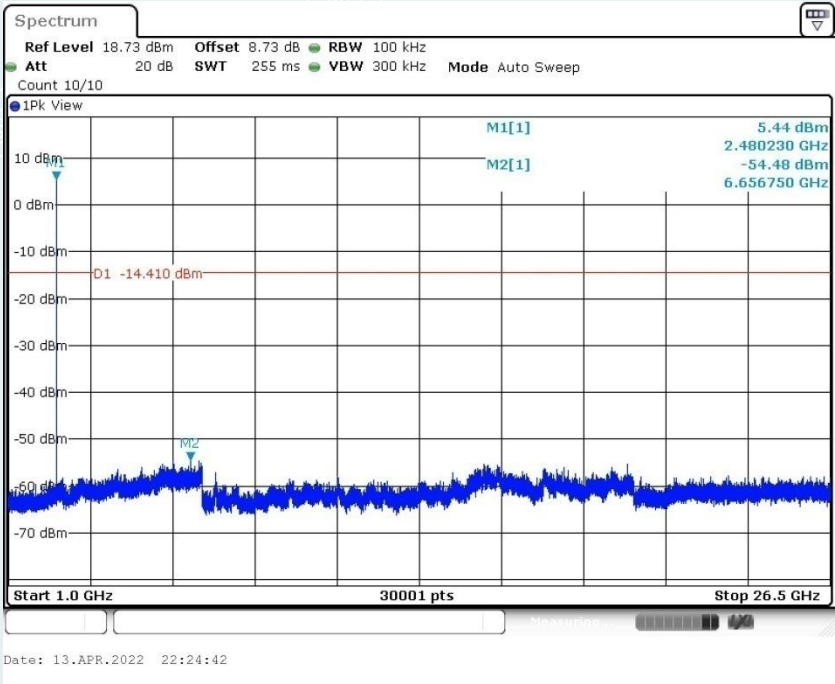




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Highest Frequency (2480MHz)

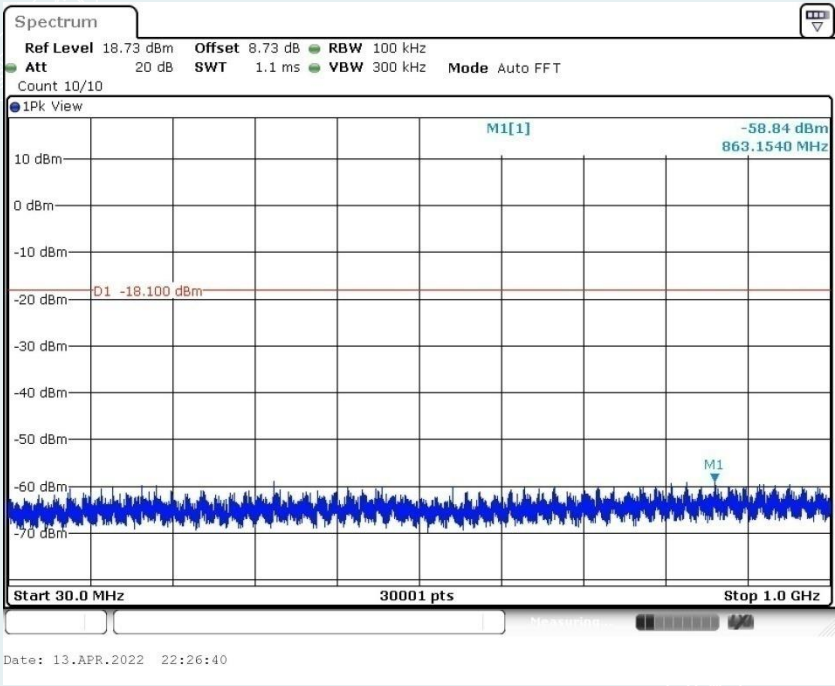
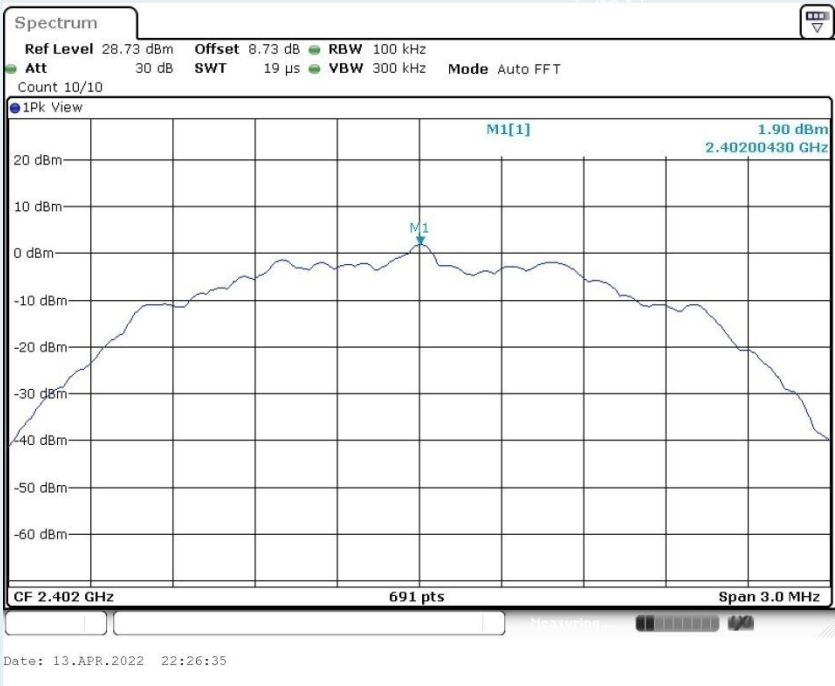


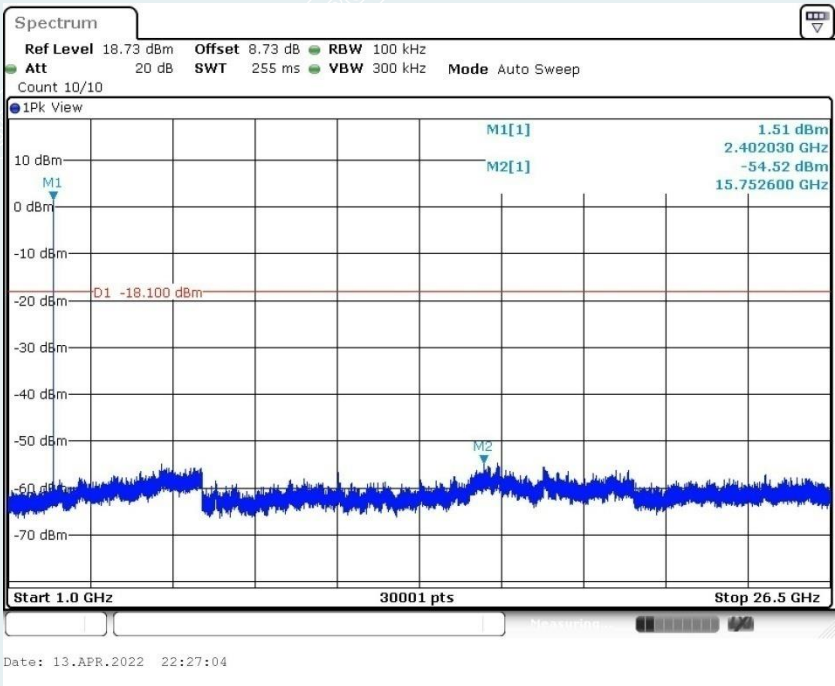


----- The following blanks -----

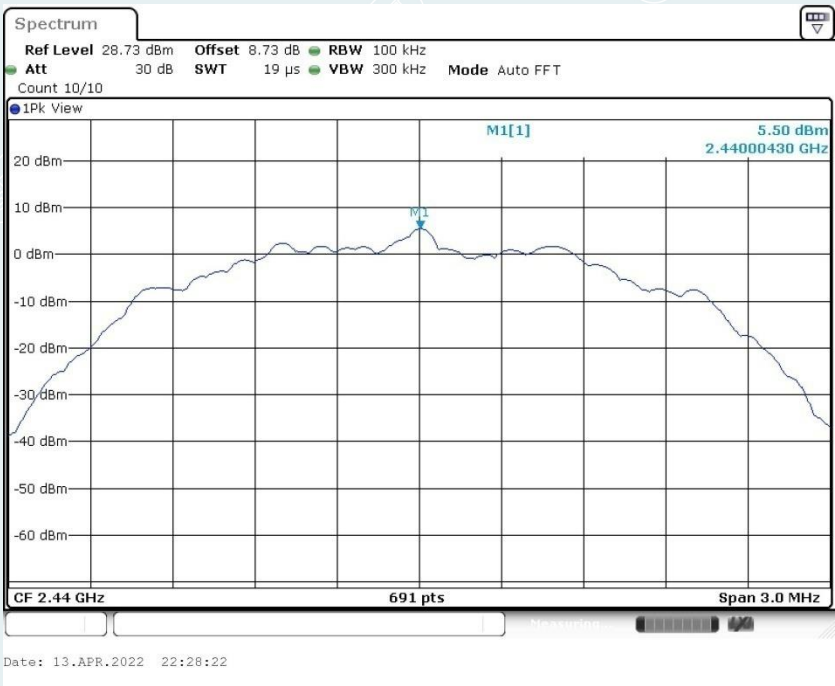
BLE_2M

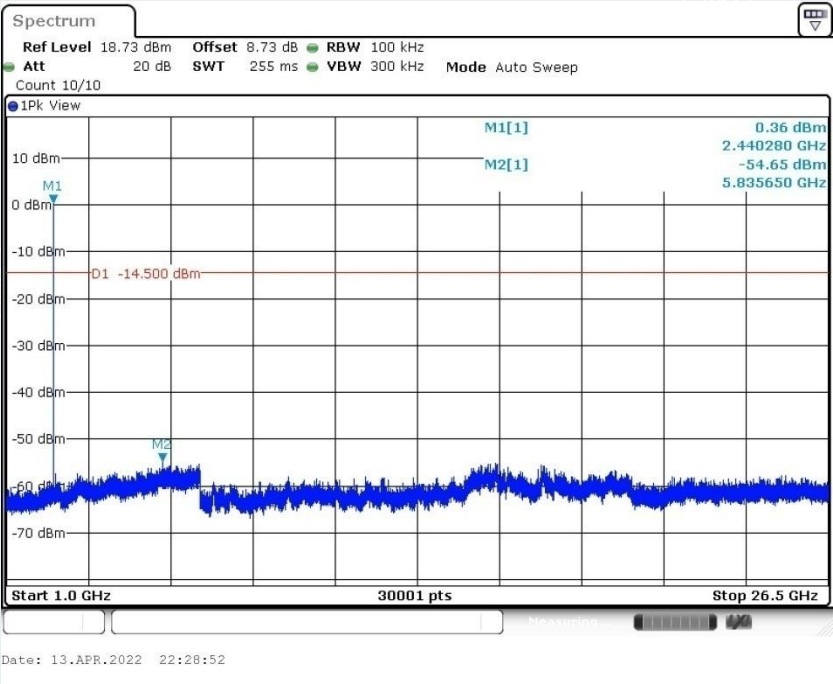
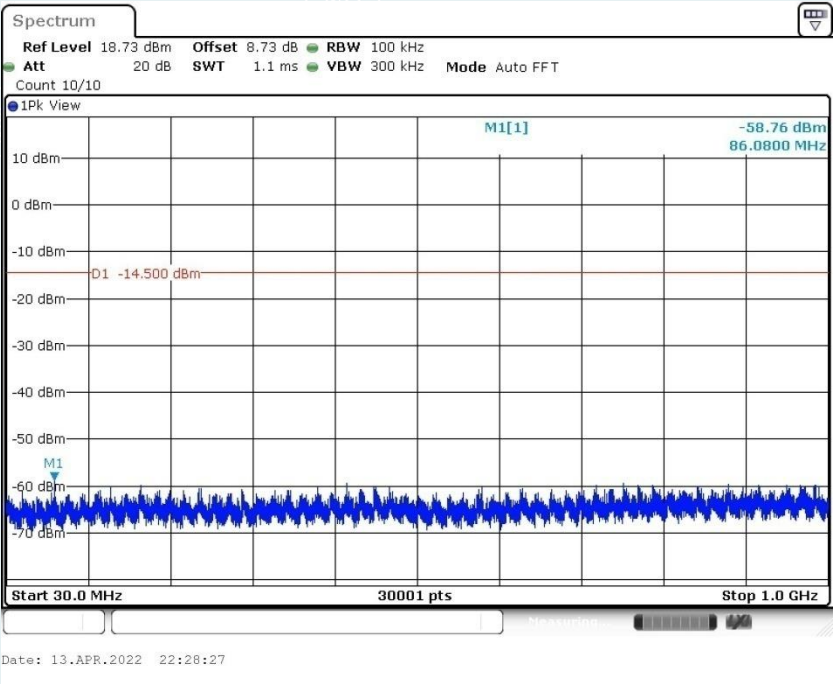
Lowest Frequency (2402MHz)





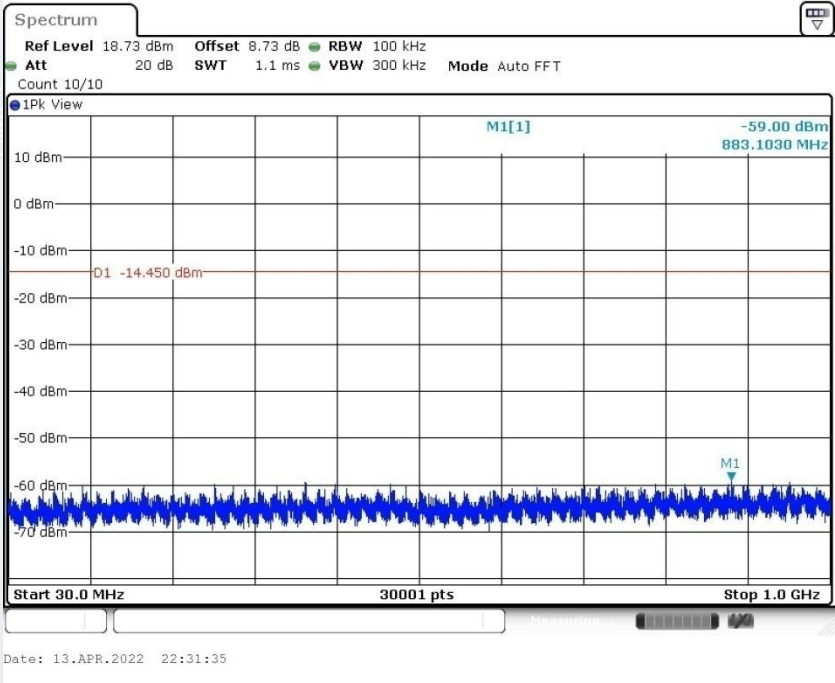
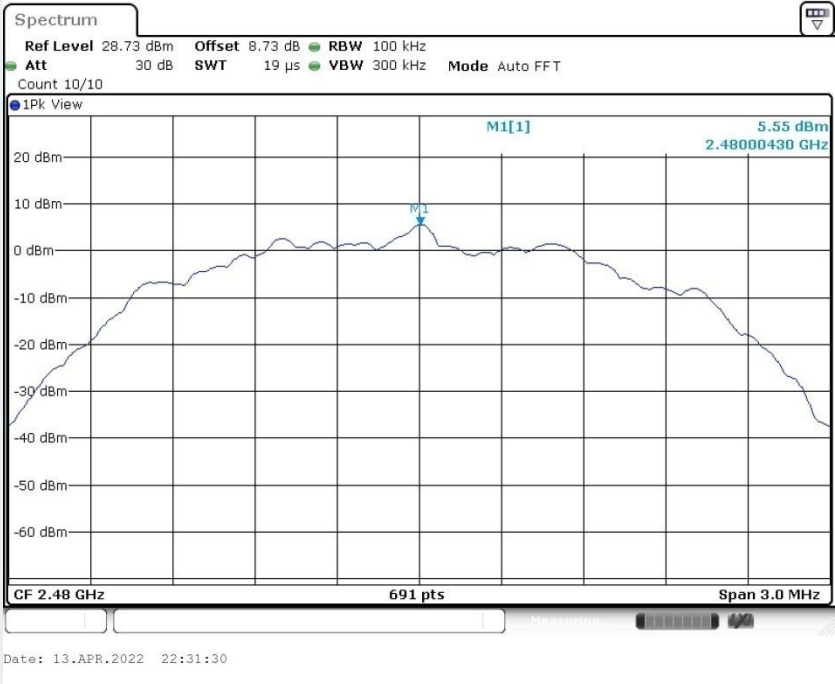
Middle Frequency (2440MHz)

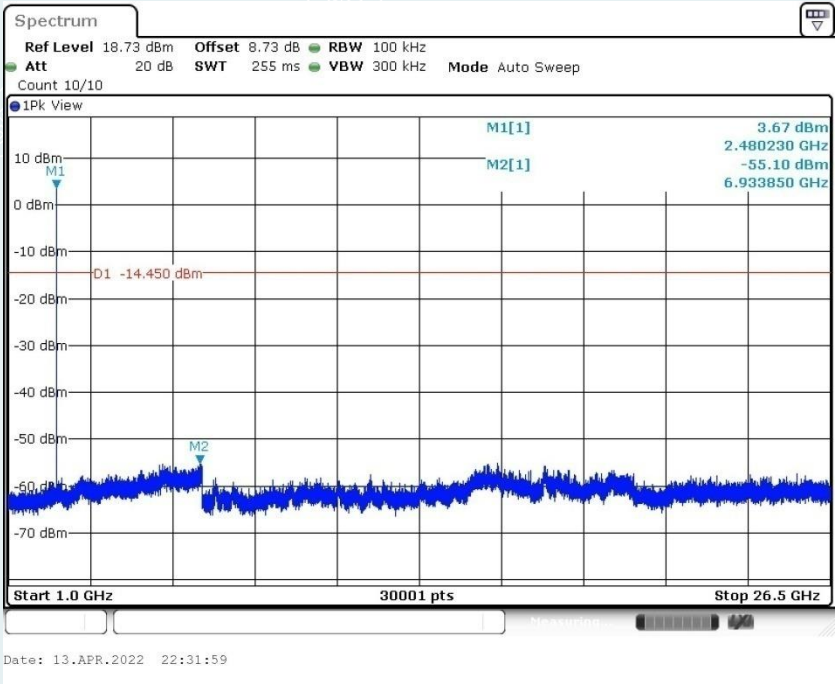




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Highest Frequency (2480MHz)





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10. RESTRICTED BANDS OF OPERATION

10.1 LIMITS

Section 15.247(d) In addition, Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	
13.36 - 13.41			

Frequency (MHz)	Quasi-peak(μ V/m)	Measurement distance(m)	Quasi-peak(dB μ V/m)@distance 3m
0.009-0.490	2400/F(kHz)	300	128.5~93.8
0.490-1.705	24000/F(kHz)	30	73.8~63
1.705-30.0	30	30	69.5
30 ~ 88	100	3	40
88~216	150	3	43.5
216 ~ 960	200	3	46
Above 960	500	3	54

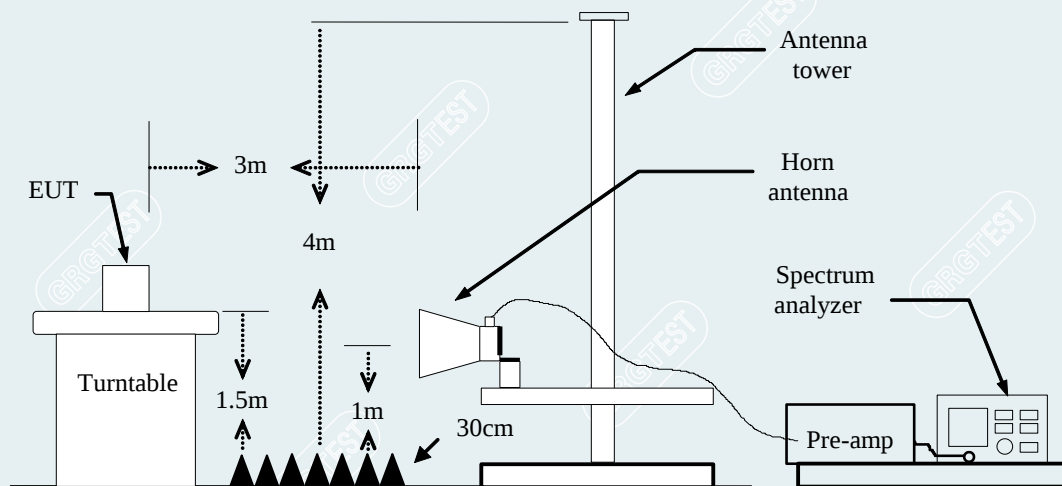
10.2 TEST PROCEDURES

Test procedures follow KDB 558074 D01 15.247 Meas Guidance v05r02.

- 1) The EUT is placed on a turntable, which is 1.5m above the ground plane.
- 2) The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
- 3) EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
- 4) Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
 - a) PEAK: RBW=1MHz / VBW=1MHz / Sweep=AUTO.
 - b) AVERAGE: RBW=1MHz / VBW=1/T / Sweep=AUTO.

If the EUT is configured to transmit with duty cycle $\geq 98\%$, set $VBW \leq RBW/100$ (i.e., 10kHz) but not less than 10 Hz. If the EUT duty cycle is $< 98\%$, set $VBW \geq 1/T$, Where T is defined in section 2.9.
- 5) Repeat the procedures until all the PEAK and AVERAGE versus polarization are measured.

10.3 TEST SETUP



10.4 TEST RESULTS

Equipment:	DiLink	Test Date	2022-04-06
Model No.:	DiLink 3.0F	Test Engineer:	Lu Qiang
Test Voltage:	DC 12V	Environment:	25°C/60%RH

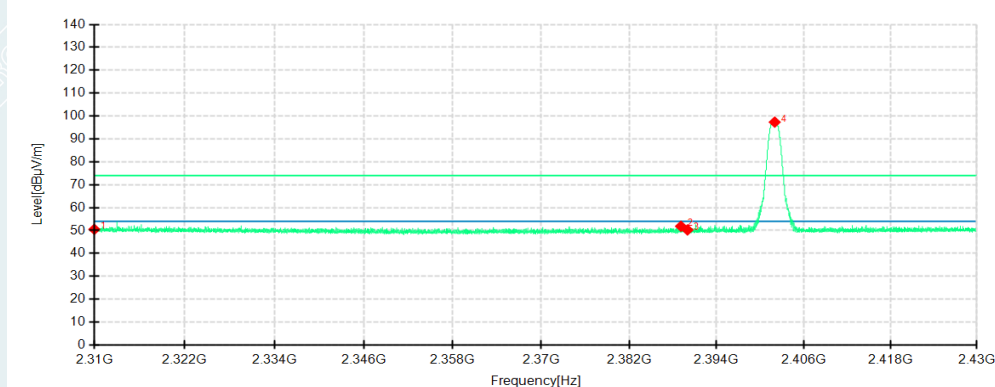
BLE 1M

Lowest Frequency

Frequency 2402MHz

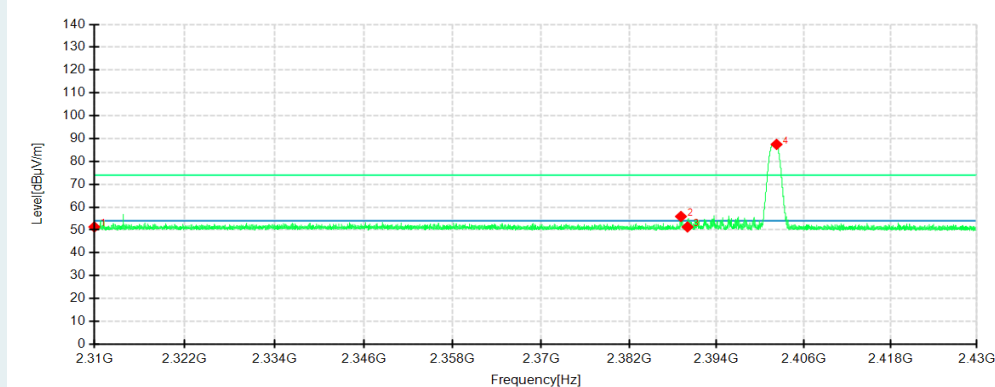
Detector mode: Peak

Polarity: Horizontal



Detector mode: Peak

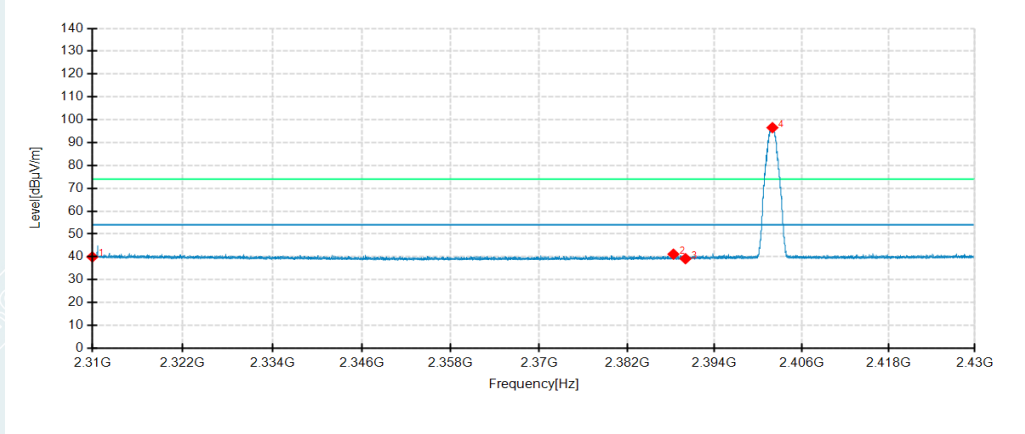
Polarity: Vertical



No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBμV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2310.0000	46.57	50.50	3.93	74.00	23.50	200	198	Horizontal	/
2	2389.1040	48.73	51.86	3.13	74.00	22.14	100	122	Horizontal	/
3	2390.0000	47.12	50.25	3.13	74.00	23.75	200	253	Horizontal	/
4	2401.9920	94.13	97.33	3.20	74.00	-23.33	100	95	Horizontal	No limit
1	2310.0000	46.82	51.33	4.51	74.00	22.67	100	264	Vertical	/
2	2389.1040	51.63	55.91	4.28	74.00	18.09	100	264	Vertical	/
3	2390.0000	47.05	51.32	4.27	74.00	22.68	100	264	Vertical	/
4	2402.2560	83.31	87.46	4.15	74.00	-13.46	100	54	Vertical	No limit

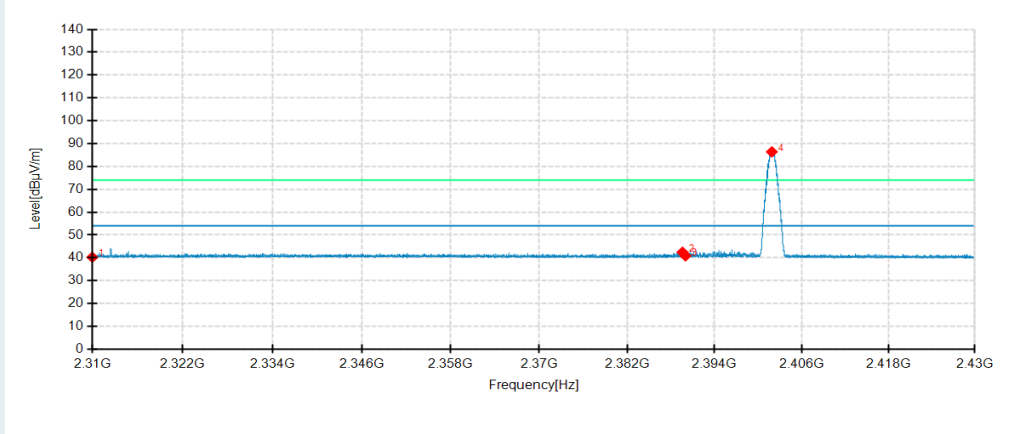
Lowest Frequency
Frequency 2402MHz
Detector mode: Average

Polarity: Horizontal



Detector mode: Average

Polarity: Vertical



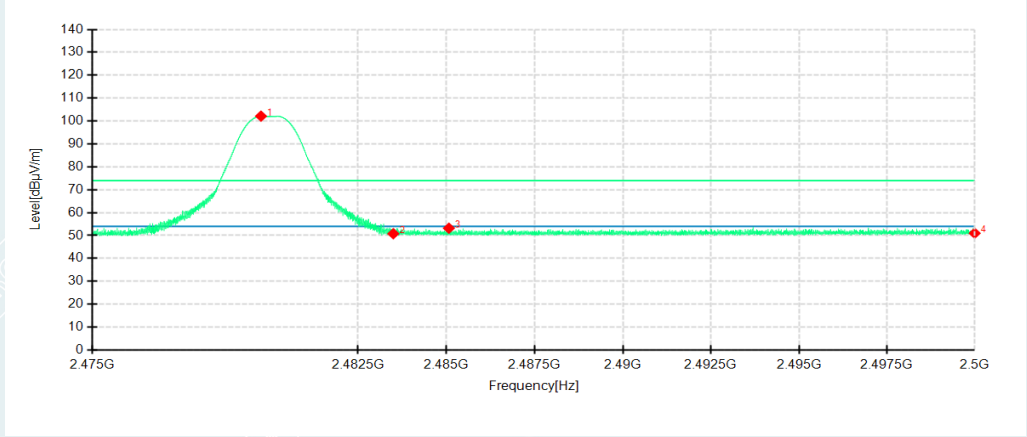
No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2310.0000	36.02	39.95	3.93	54.00	14.05	100	108	Horizontal	/
2	2388.3480	38.03	41.16	3.13	54.00	12.84	200	265	Horizontal	/
3	2390.0000	36.04	39.17	3.13	54.00	14.83	200	265	Horizontal	/
4	2401.9560	93.34	96.54	3.20	54.00	-42.54	100	95	Horizontal	/
1	2310.0000	35.74	40.25	4.51	54.00	13.75	100	246	Vertical	No limit
2	2389.5960	38.14	42.42	4.28	54.00	11.58	100	265	Vertical	/
3	2390.0000	36.60	40.87	4.27	54.00	13.13	100	265	Vertical	/
4	2401.8720	82.24	86.40	4.16	54.00	-32.40	100	54	Vertical	No limit

Highest Frequency

Frequency 2480MHz

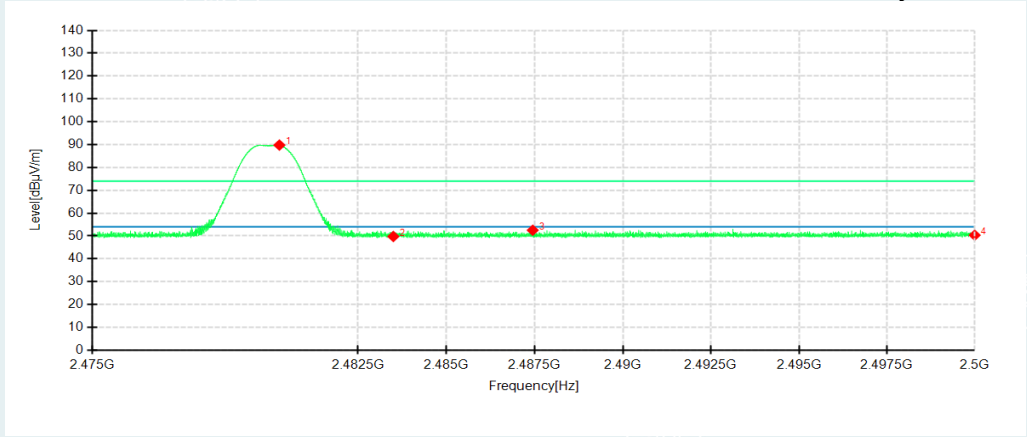
Detector mode: Peak

Polarity: Horizontal



Detector mode: Peak

Polarity: Vertical



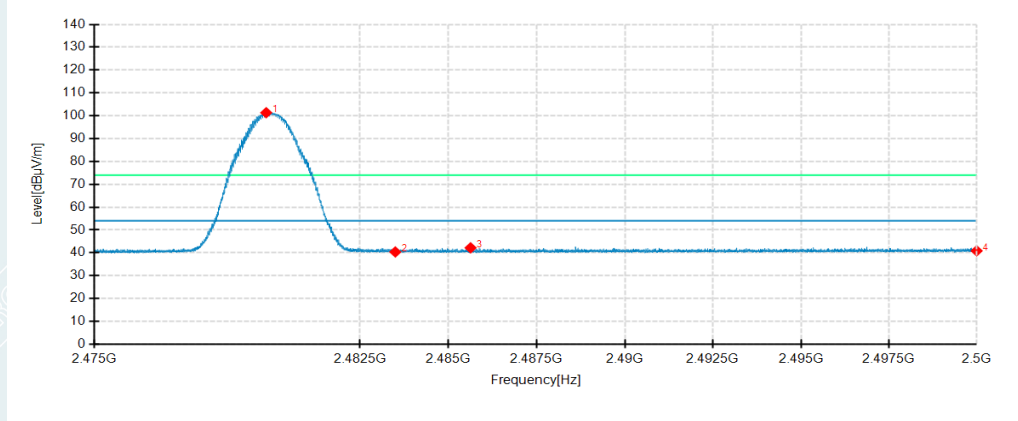
No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2479.7600	97.88	102.13	4.25	74.00	-28.13	100	96	Horizontal	No limit
2	2483.5000	46.46	50.79	4.33	74.00	23.21	200	213	Horizontal	/
3	2485.0725	48.83	53.19	4.36	74.00	20.81	100	96	Horizontal	/
4	2500.0000	46.35	51.00	4.65	74.00	23.00	200	60	Horizontal	/
1	2480.2800	86.11	89.79	3.68	74.00	-15.79	100	56	Vertical	No limit
2	2483.5000	46.09	49.78	3.69	74.00	24.22	100	264	Vertical	/
3	2487.4475	48.82	52.52	3.70	74.00	21.48	200	96	Vertical	/
4	2500.0000	46.60	50.35	3.75	74.00	23.65	200	325	Vertical	/

Highest Frequency

Frequency 2480MHz

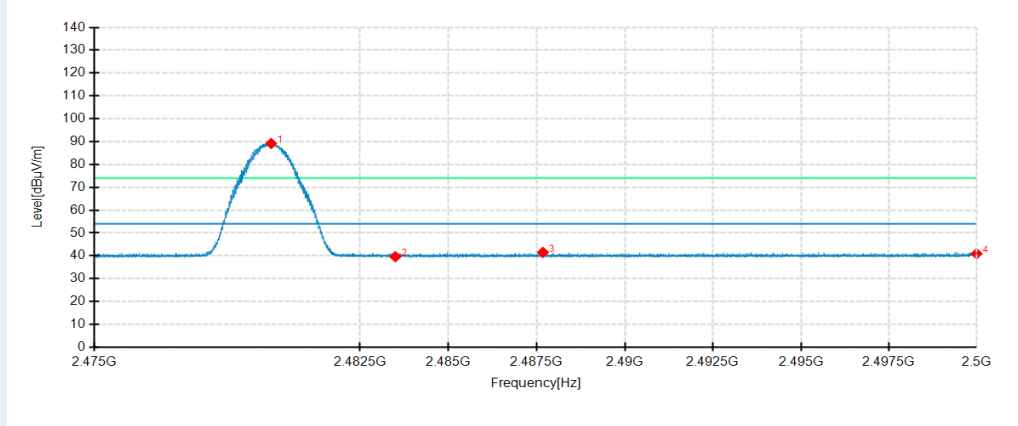
Detector mode: Average

Polarity: Horizontal



Detector mode: Average

Polarity: Vertical

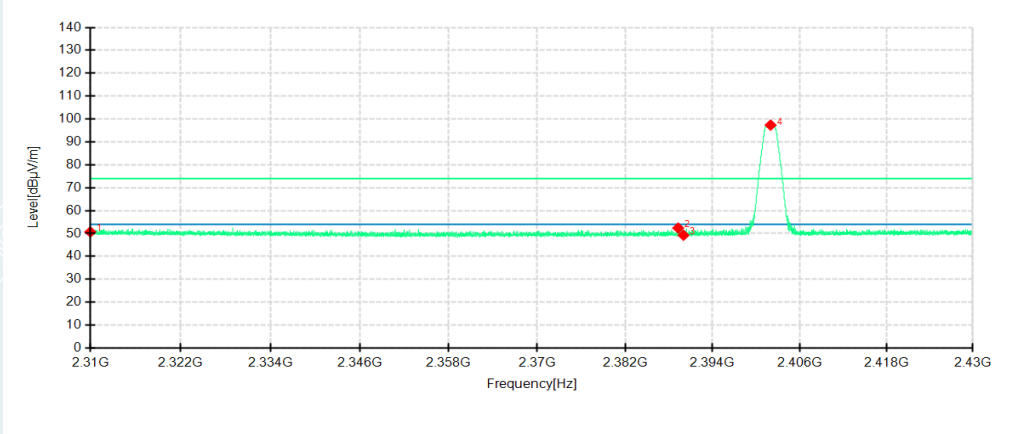


No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBμV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2479.8500	97.08	101.34	4.26	54.00	-47.34	100	95	Horizontal	No limit
2	2483.5000	36.04	40.37	4.33	54.00	13.63	100	221	Horizontal	/
3	2485.6300	37.81	42.18	4.37	54.00	11.82	100	195	Horizontal	/
4	2500.0000	36.22	40.87	4.65	54.00	13.13	200	184	Horizontal	/
1	2479.9900	85.49	89.17	3.68	54.00	-35.17	200	95	Vertical	No limit
2	2483.5000	35.92	39.61	3.69	54.00	14.39	100	264	Vertical	/
3	2487.6800	37.81	41.52	3.71	54.00	12.48	100	164	Vertical	/
4	2500.0000	37.18	40.93	3.75	54.00	13.07	100	264	Vertical	/

Remark: Max field strength in 3m distance. No any other emission which falls in restricted bands can be detected and be reported.

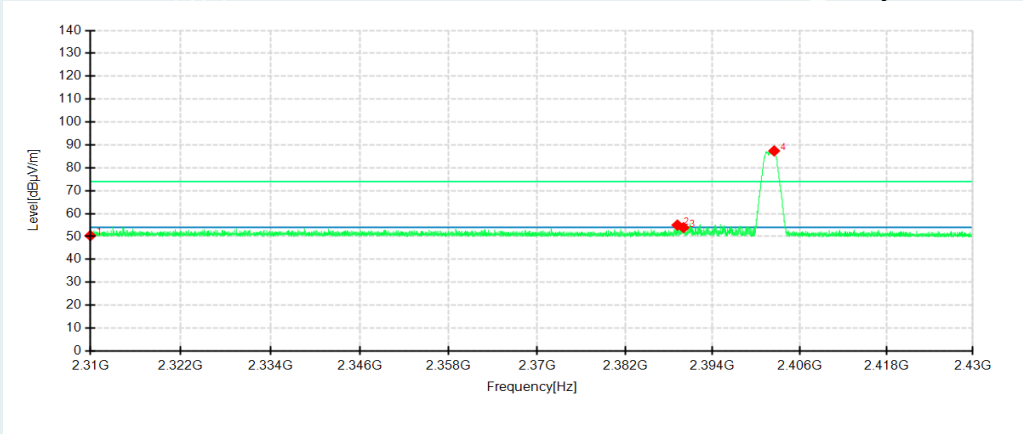
BLE 2M
Lowest Frequency
Frequency 2402MHz
Detector mode: Peak

Polarity: Horizontal



Detector mode: Peak

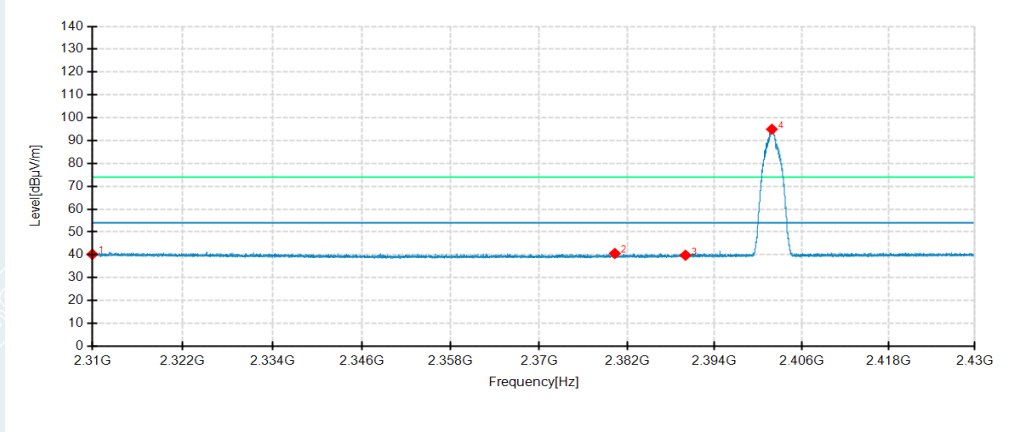
Polarity: Vertical



No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2310.0000	46.74	50.67	3.93	74.00	23.33	200	265	Horizontal	/
2	2389.2720	49.26	52.39	3.13	74.00	21.61	100	260	Horizontal	/
3	2390.0000	46.11	49.24	3.13	74.00	24.76	200	126	Horizontal	No limit
4	2401.9800	94.14	97.34	3.20	74.00	-23.34	100	95	Horizontal	/
1	2310.0000	45.87	50.38	4.51	74.00	23.62	200	95	Vertical	/
2	2389.1640	50.71	54.99	4.28	74.00	19.01	100	264	Vertical	/
3	2390.0000	49.59	53.86	4.27	74.00	20.14	100	264	Vertical	/
4	2402.4720	83.24	87.39	4.15	74.00	-13.39	100	54	Vertical	No limit

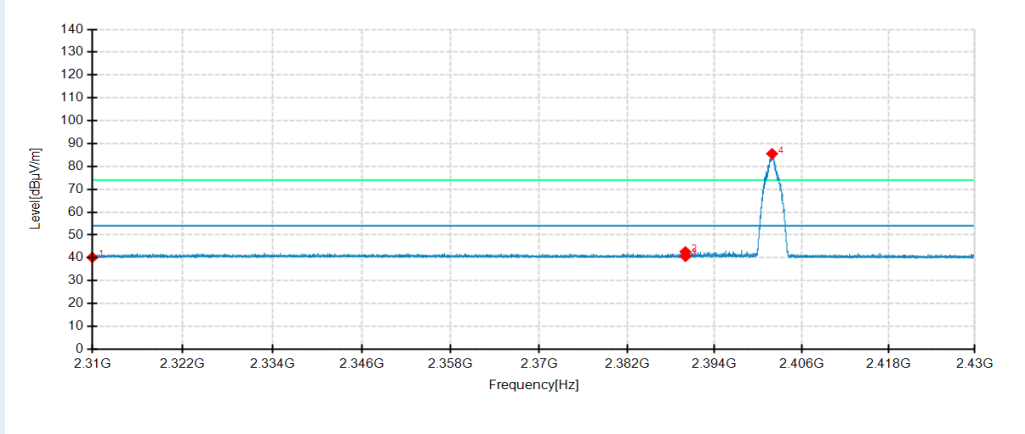
Lowest Frequency
Frequency 2402MHz
Detector mode: Average

Polarity: Horizontal



Detector mode: Average

Polarity: Vertical



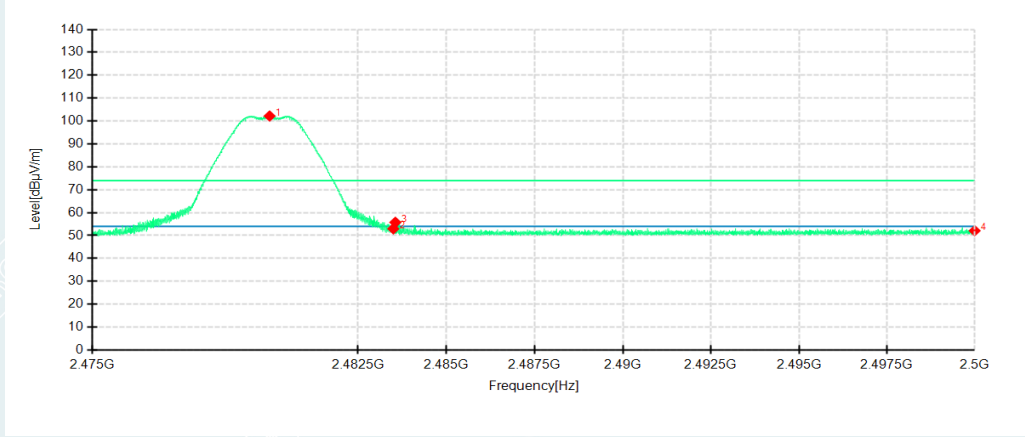
No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2310.0000	36.30	40.23	3.93	54.00	13.77	200	264	Horizontal	/
2	2380.3320	37.50	40.59	3.09	54.00	13.41	100	144	Horizontal	/
3	2390.0000	36.68	39.81	3.13	54.00	14.19	100	284	Horizontal	/
4	2401.8840	91.76	94.96	3.20	54.00	-40.96	100	98	Horizontal	No limit
1	2310.0000	35.65	40.16	4.51	54.00	13.84	200	232	Vertical	/
2	2389.9920	38.33	42.60	4.27	54.00	11.40	100	264	Vertical	/
3	2390.0000	36.37	40.64	4.27	54.00	13.36	100	264	Vertical	/
4	2401.9080	81.40	85.56	4.16	54.00	-31.56	100	51	Vertical	No limit

Highest Frequency

Frequency 2480MHz

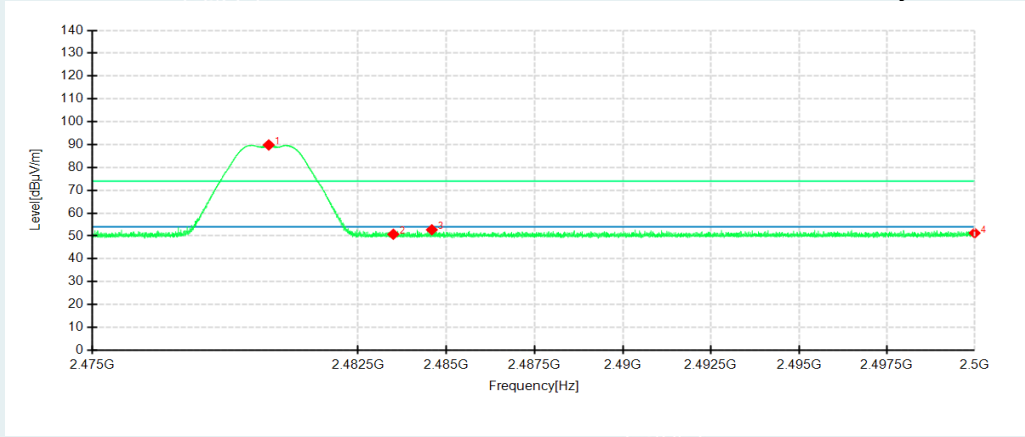
Detector mode: Peak

Polarity: Horizontal



Detector mode: Peak

Polarity: Vertical



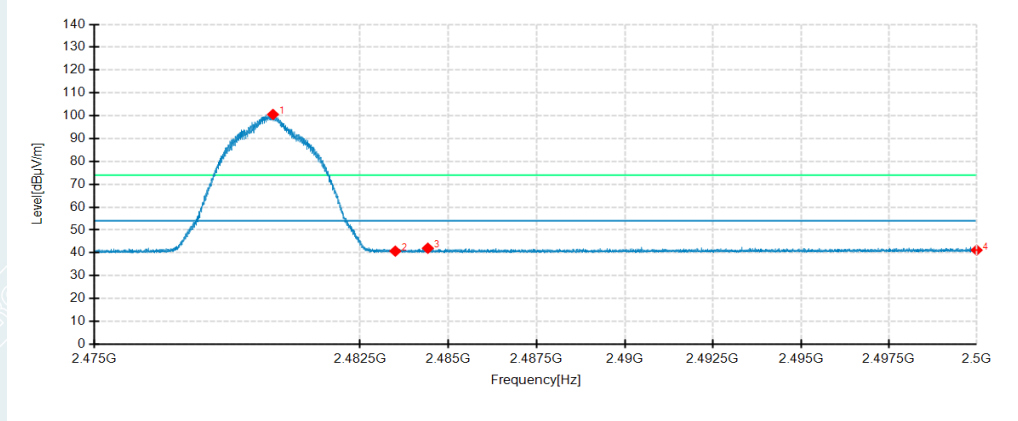
No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBμV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2480.0025	97.93	102.19	4.26	74.00	-28.19	100	94	Horizontal	No limit
2	2483.5000	48.59	52.92	4.33	74.00	21.08	100	250	Horizontal	/
3	2483.5575	51.42	55.75	4.33	74.00	18.25	100	94	Horizontal	/
4	2500.0000	47.44	52.09	4.65	74.00	21.91	200	266	Horizontal	/
1	2479.9775	86.15	89.83	3.68	74.00	-15.83	100	54	Vertical	No limit
2	2483.5000	47.05	50.74	3.69	74.00	23.26	200	122	Vertical	/
3	2484.5900	49.01	52.70	3.69	74.00	21.30	100	177	Vertical	/
4	2500.0000	47.53	51.28	3.75	74.00	22.72	200	115	Vertical	/

Highest Frequency

Frequency 2480MHz

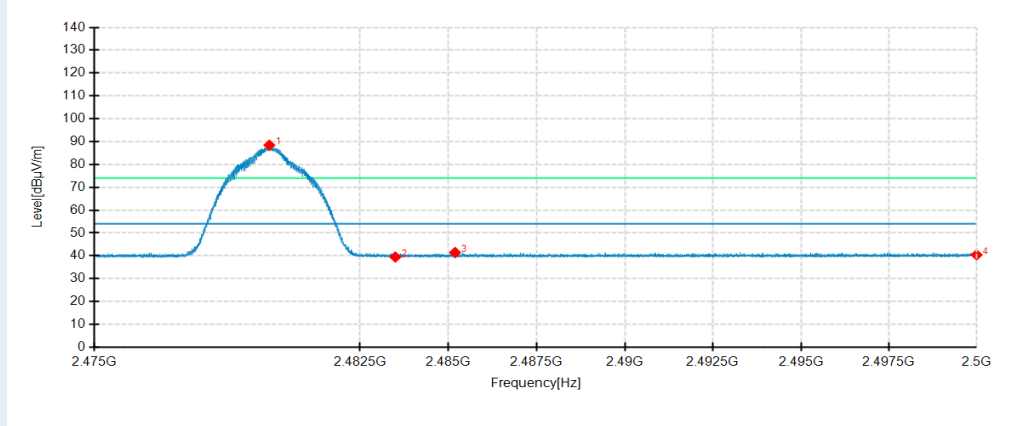
Detector mode: Average

Polarity: Horizontal



Detector mode: Average

Polarity: Vertical



No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBμV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2480.0425	96.31	100.57	4.26	54.00	-46.57	100	94	Horizontal	No limit
2	2483.5000	36.40	40.73	4.33	54.00	13.27	100	101	Horizontal	/
3	2484.4200	37.66	42.00	4.34	54.00	12.00	100	94	Horizontal	/
4	2500.0000	36.51	41.16	4.65	54.00	12.84	200	159	Horizontal	/
1	2479.9400	84.73	88.41	3.68	54.00	-34.41	100	52	Vertical	No limit
2	2483.5000	35.78	39.47	3.69	54.00	14.53	200	95	Vertical	/
3	2485.1900	37.75	41.45	3.70	54.00	12.55	100	4	Vertical	/
4	2500.0000	36.66	40.41	3.75	54.00	13.59	200	95	Vertical	/

Remark: Max field strength in 3m distance. No any other emission which falls in restricted bands can be detected and be reported.

APPENDIX A. PHOTOGRAPH OF THE TEST CONNECTION DIAGRAM

Please refer to the attached document E20211217696105 -10 Test Photo.

APPENDIX B. PHOTOGRAPH OF THE EUT

Please refer to the attached document E20211217696105 -11 EUT Photo.

----- End of Report -----