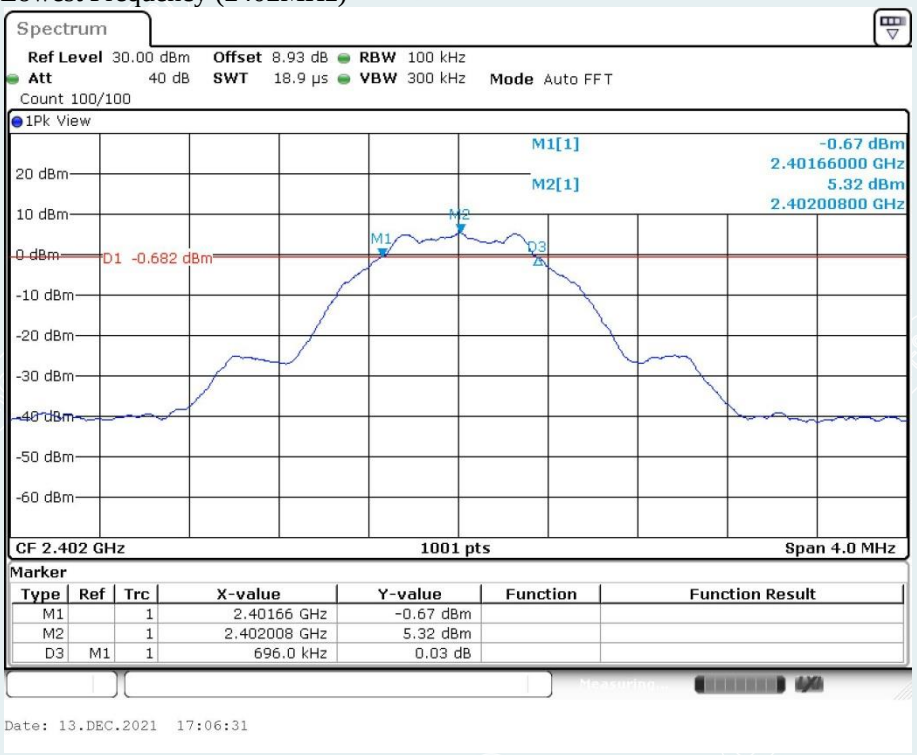
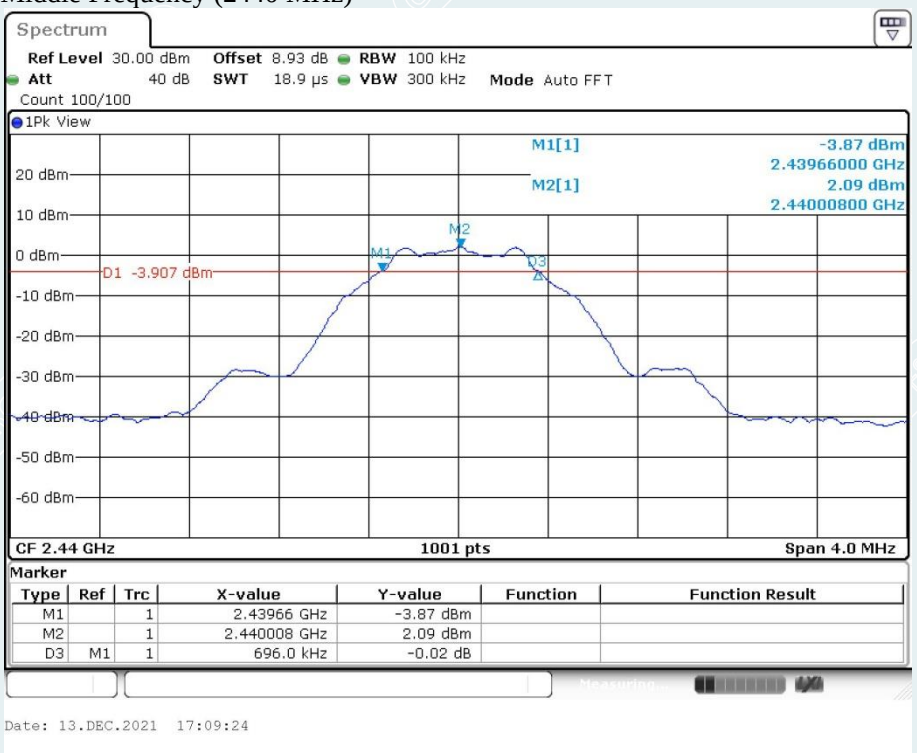
For 1Mbps

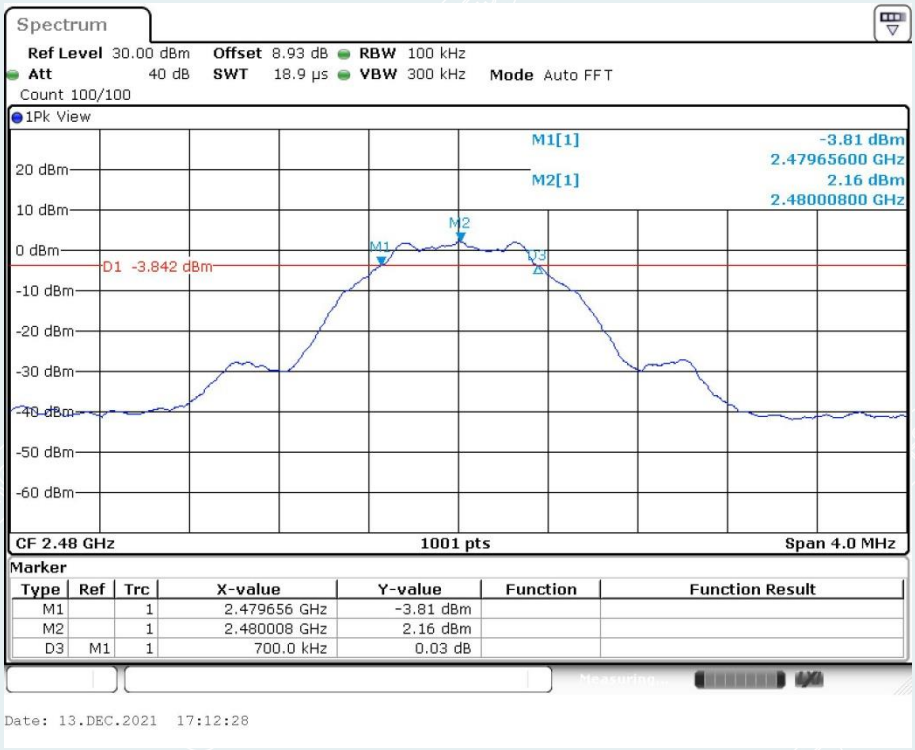
Lowest Frequency (2402MHz)



Middle Frequency (2440 MHz)

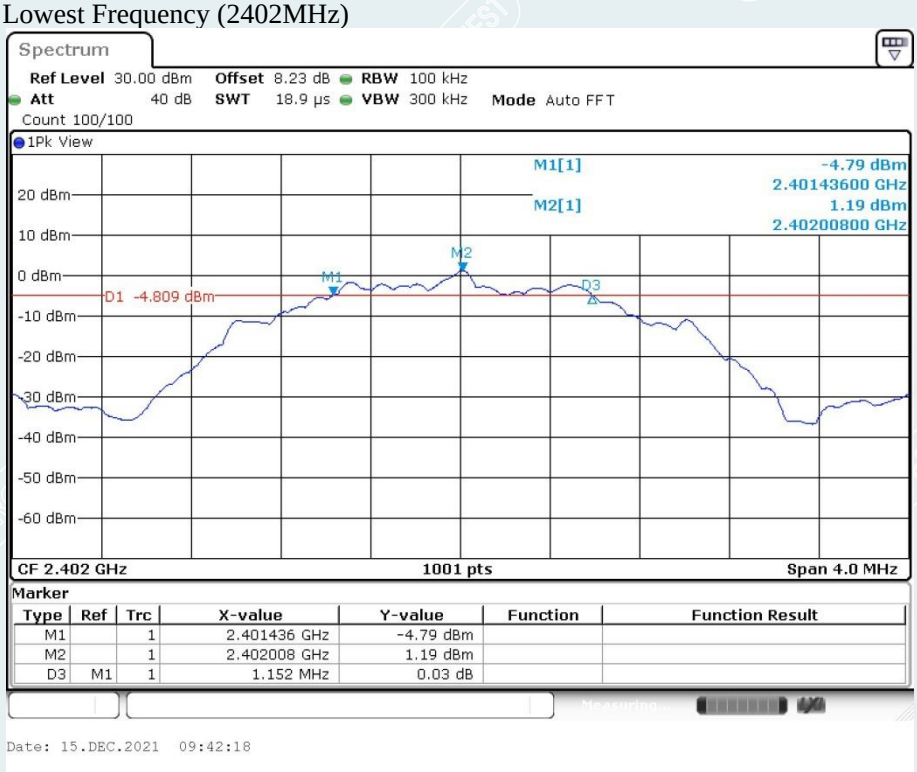


Highest Frequency (2480MHz)

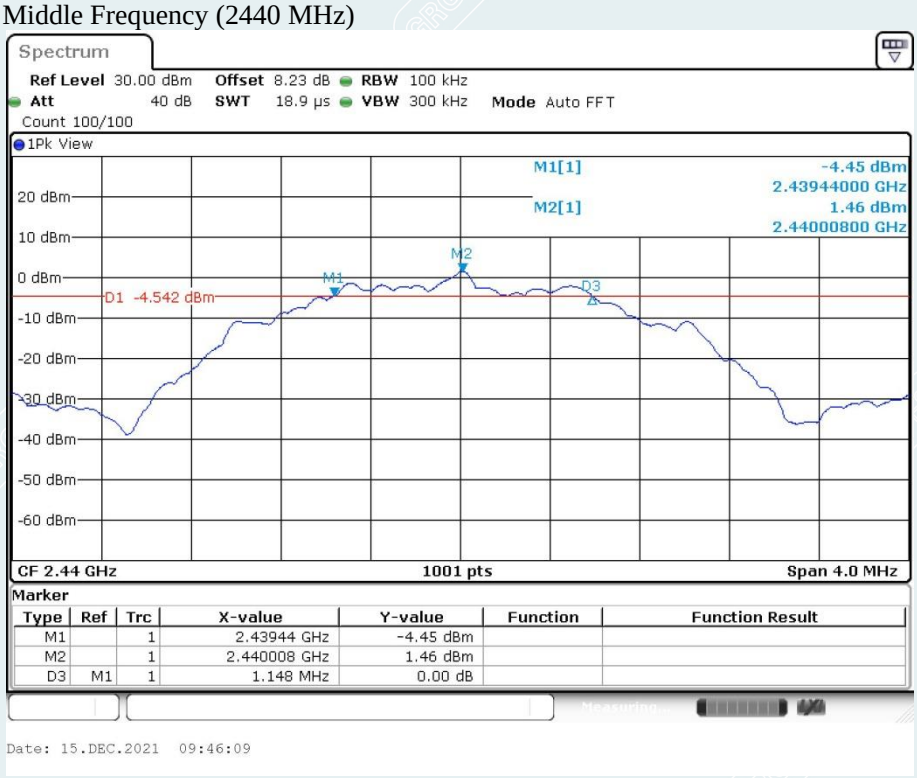


For 2Mbps

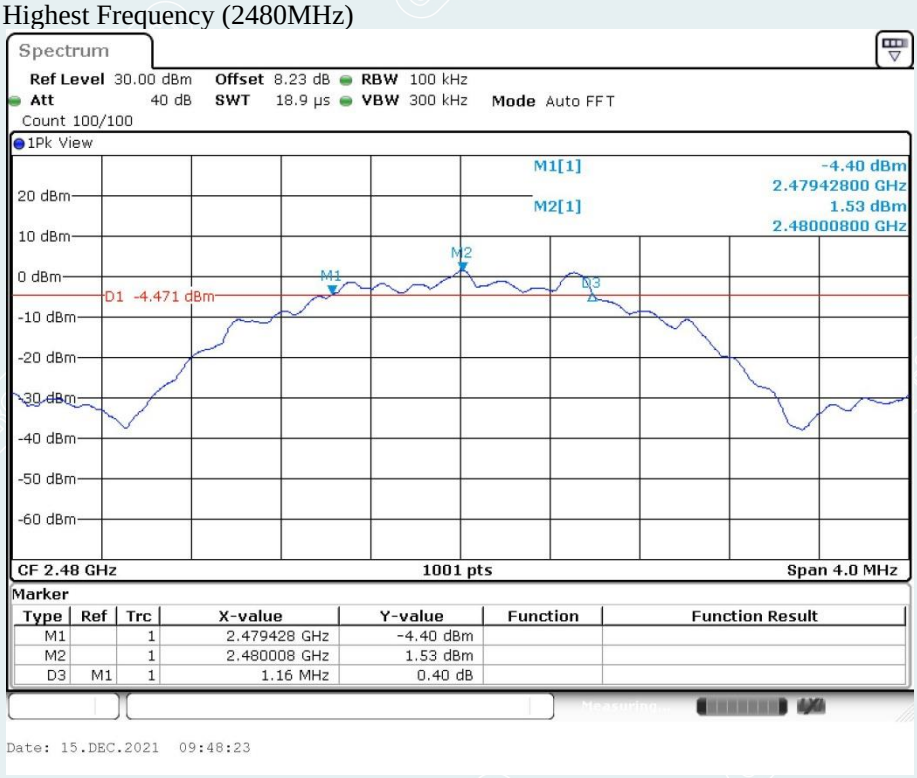
Lowest Frequency (2402MHz)



Middle Frequency (2440 MHz)



Highest Frequency (2480MHz)



8. MAXIMUM PEAK OUTPUT POWER

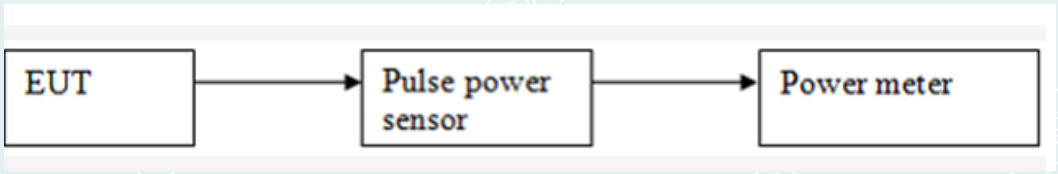
8.1 LIMITS

The maximum Peak output power measurement is 1W

8.2 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.

8.3 TEST SETUP



8.4 TEST RESULTS

Environment: 23.5℃/48%RH Voltage: AC120V/60Hz
Tested By: Lu Wei Date: 2021-12-13

For 1Mbps

Channel	Frequency (MHz)	Measured Channel Power (dBm)	Limit	Peak/ Average	Result
Lowest	2402	2.22	1W (30dBm)	Peak	Pass
Middle	2440	2.41			Pass
Highest	2480	2.54			Pass

For 2Mbps

Channel	Frequency (MHz)	Measured Channel Power (dBm)	Limit	Peak/ Average	Result
Lowest	2402	2.28	1W (30dBm)	Peak	Pass
Middle	2440	2.46			Pass
Highest	2480	2.63			Pass

9. POWER SPECTRAL DENSITY

9.1 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.

9.2 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 kHz ≤ RBW ≤ 100 kHz. Set the VBW ≥ [3 × 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.

9.3 TEST SETUP

9.4 TEST RESULTS

Environment: 23.5℃/48%RH Voltage: AC120V/60Hz
Tested By: Lu Wei Date: 2021-12-13 to 2021-12-15

For 1Mbps

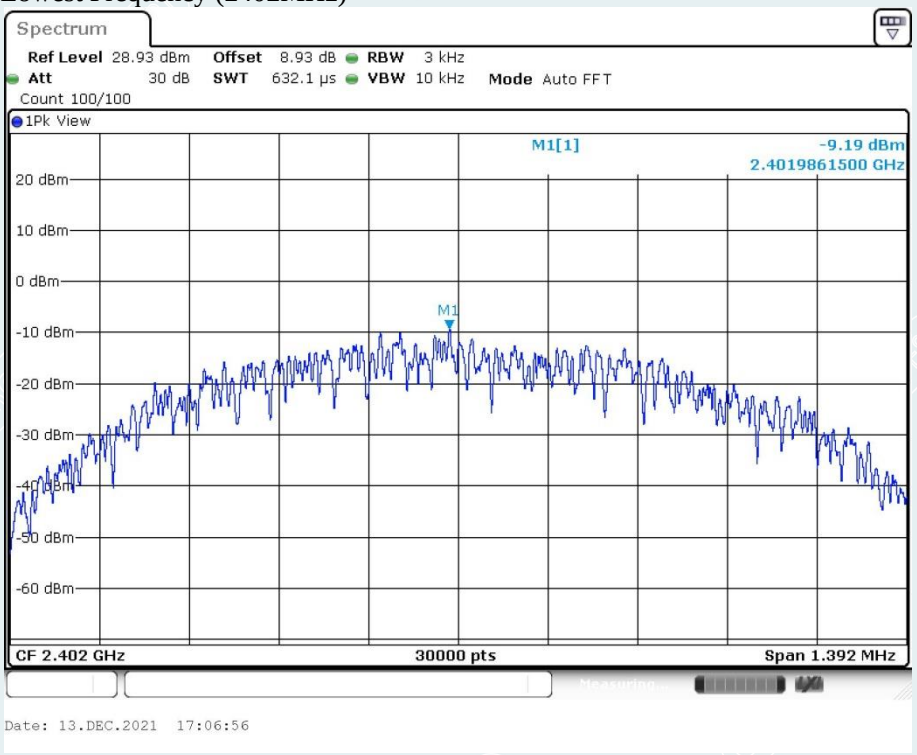
Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Test Result
Lowest	2402	-9.19	8.00	PASS
Middle	2440	-12.36		PASS
Highest	2480	-12.29		PASS

For 2Mbps

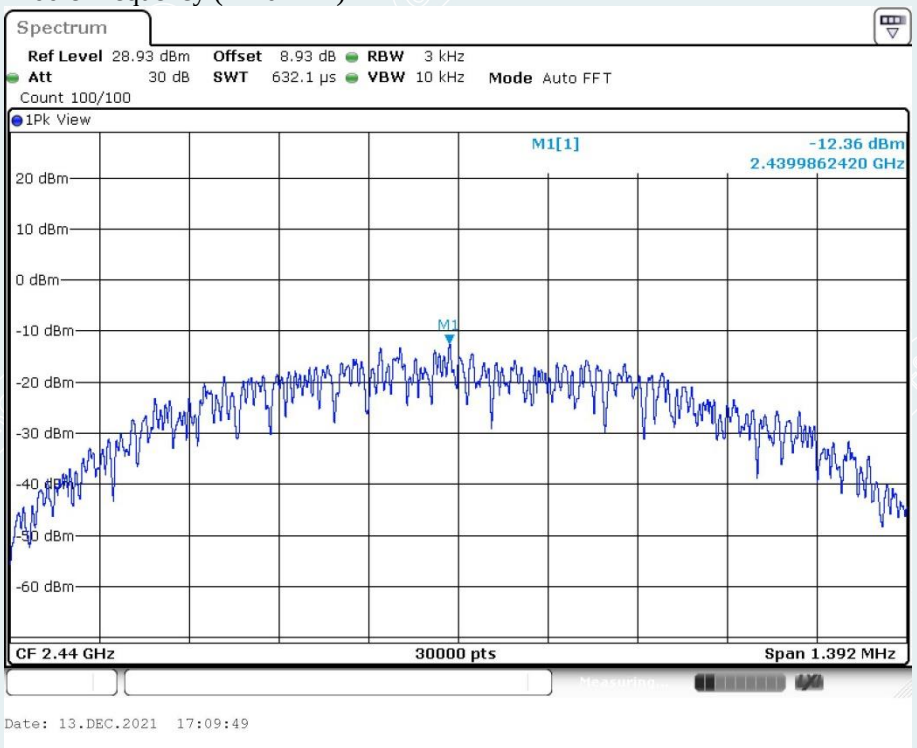
Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Test Result
Lowest	2402	-15.82	8.00	PASS
Middle	2440	-15.53		PASS
Highest	2480	-15.46		PASS

For 1Mbps

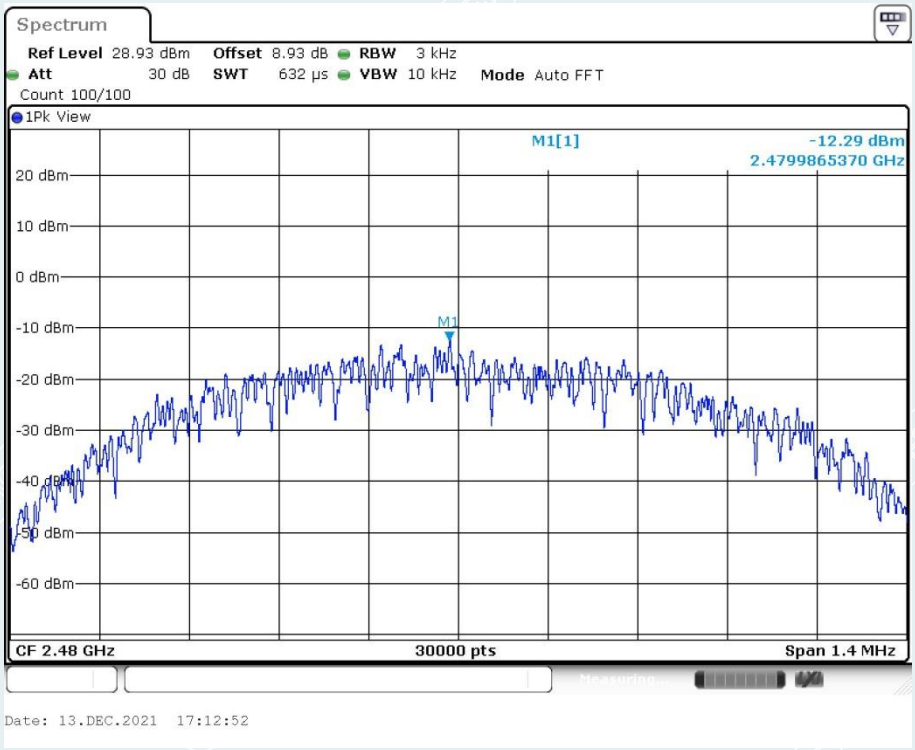
Lowest Frequency (2402MHz)



Middle Frequency (2440MHz)

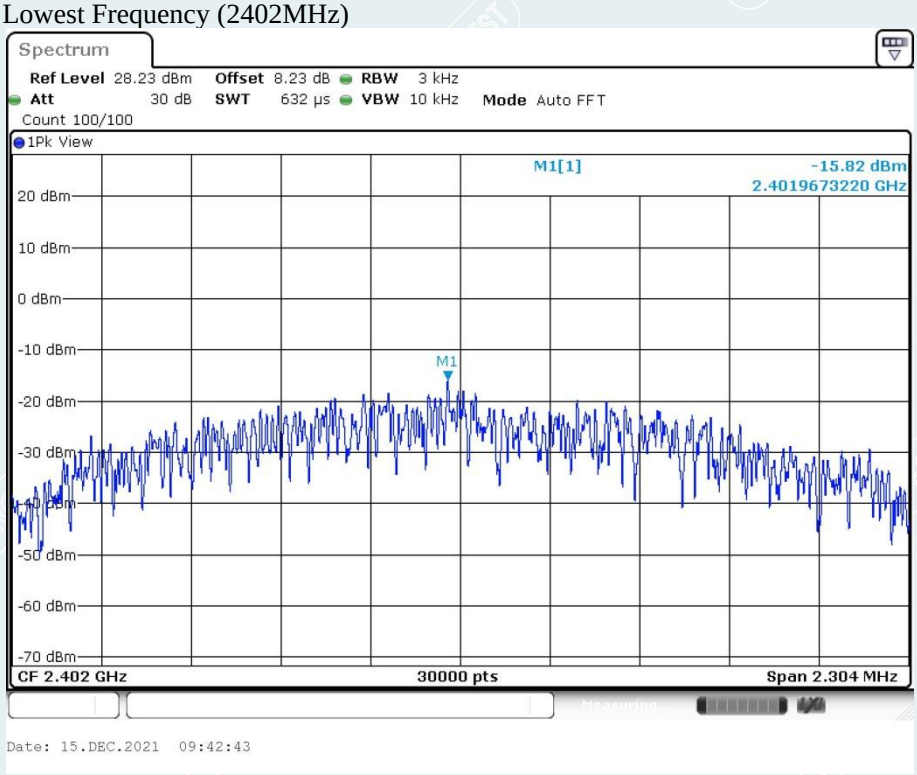


Highest Frequency (2480MHz)

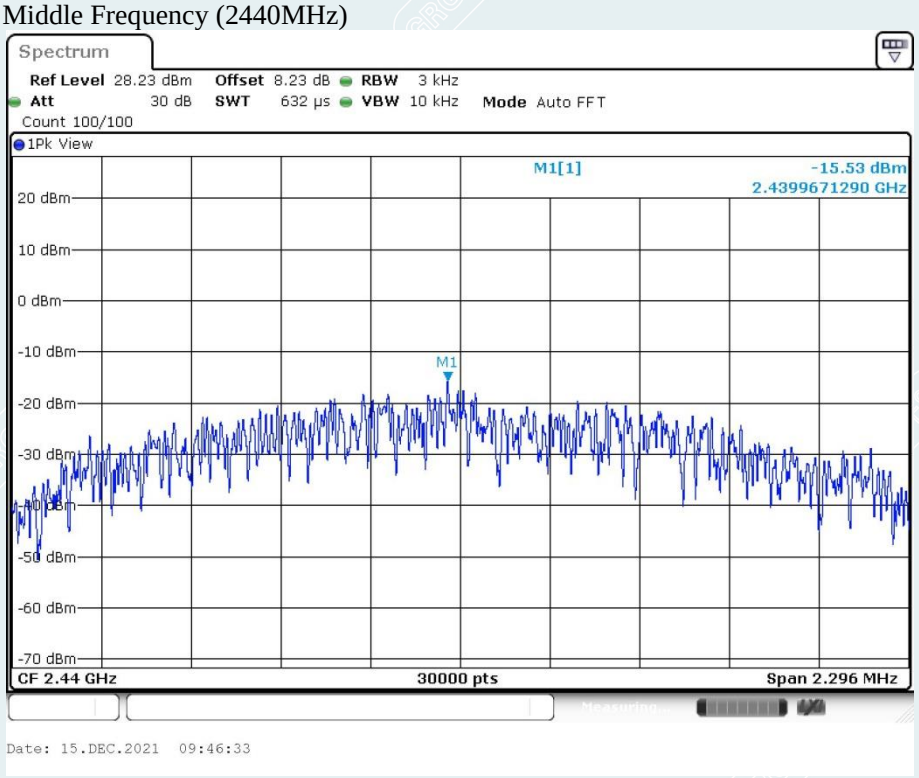


For 2Mbps

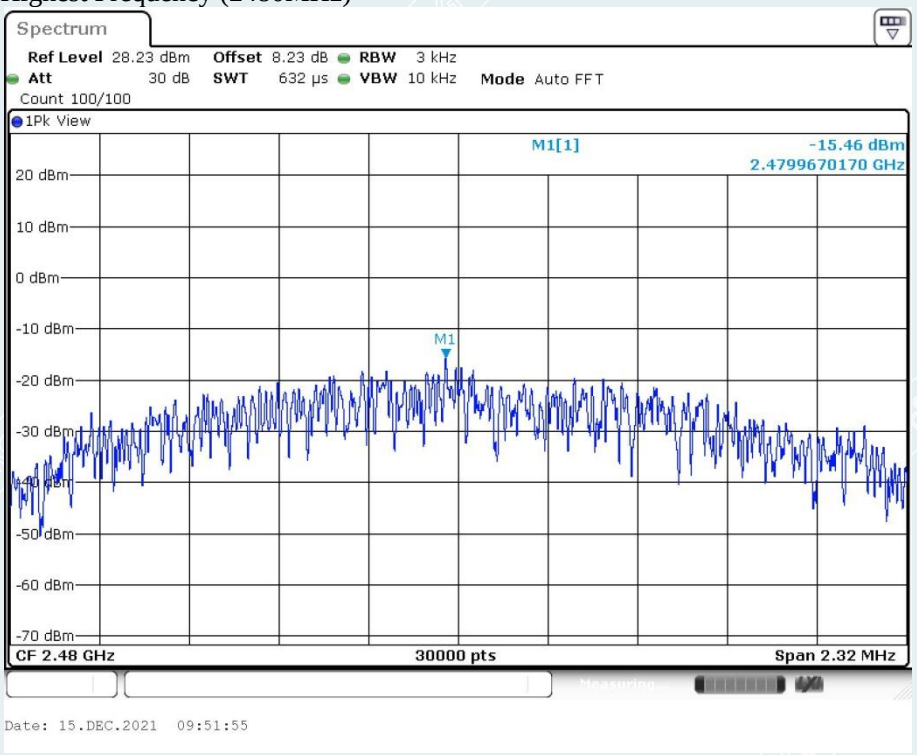
Lowest Frequency (2402MHz)



Middle Frequency (2440MHz)



Highest Frequency (2480MHz)



10. CONDUCTED BAND EDGES AND SPURIOUS EMISSIONS

10.1 LIMITS

In any 100kHz 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 20dB below that in the 100kHz 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 30dB instead of 20dB.

10.2 TEST PROCEDURES

Test procedures follow KDB 558074 D01 DTS 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.

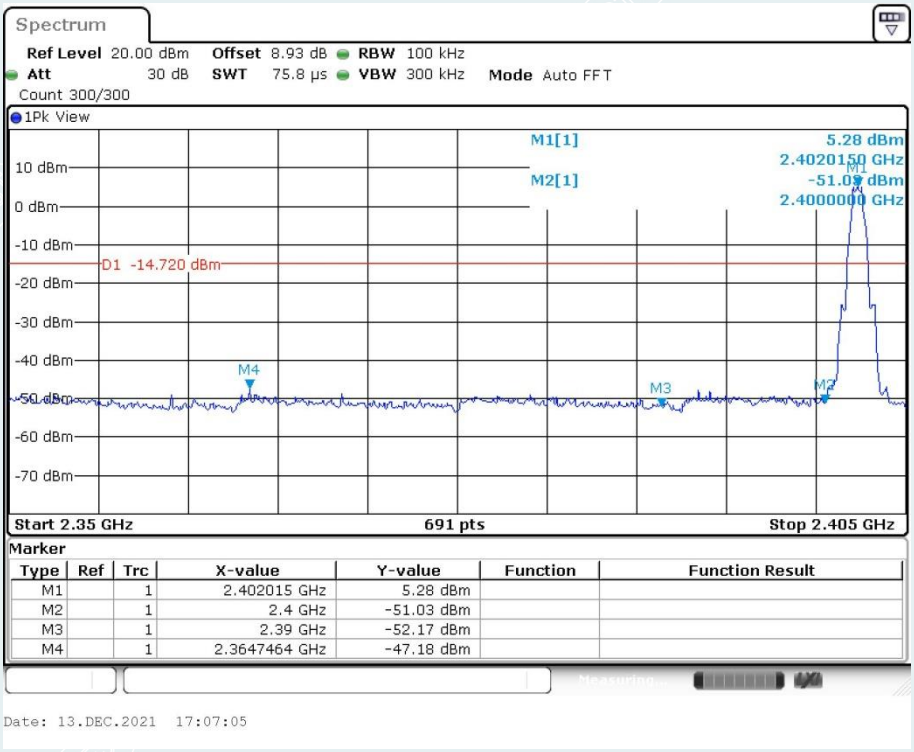
10.3 TEST SETUP

10.4 TEST RESULTS

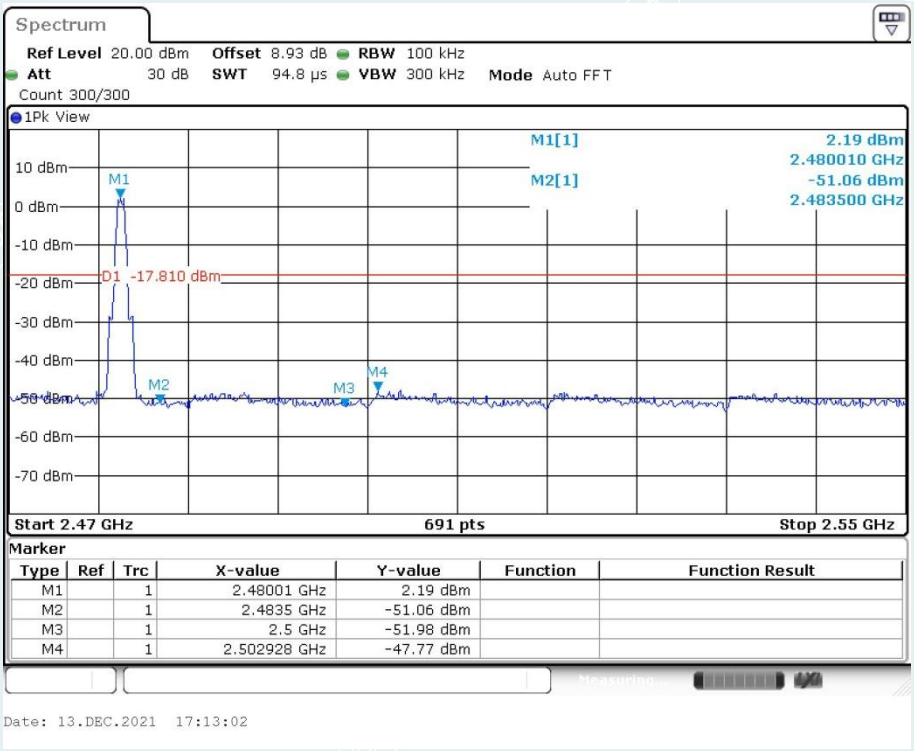
Environment: 23.5℃/48%RH Voltage: AC120V/60Hz
Tested By: Lu Wei Date: 2021-12-13 to 2021-12-15

For 1Mbps

Lowest Frequency (2402MHz)
2.35GHz-2.405GHz



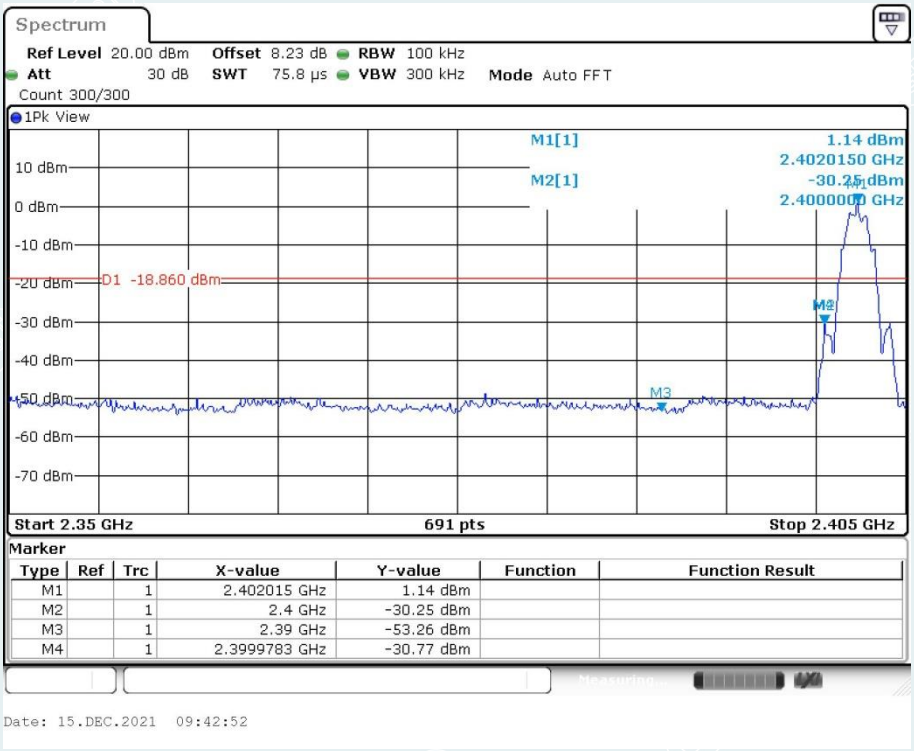
Highest Frequency (2480MHz)
2.47GHz-2.55GHz



For 2Mbps

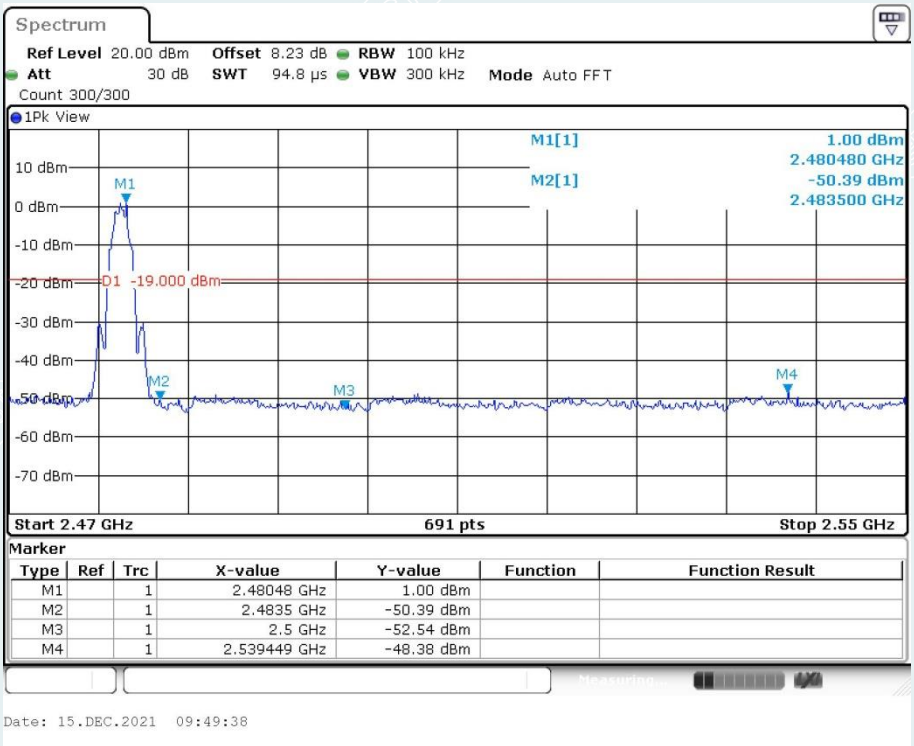
Lowest Frequency (2402MHz)

2.35GHz-2.405GHz



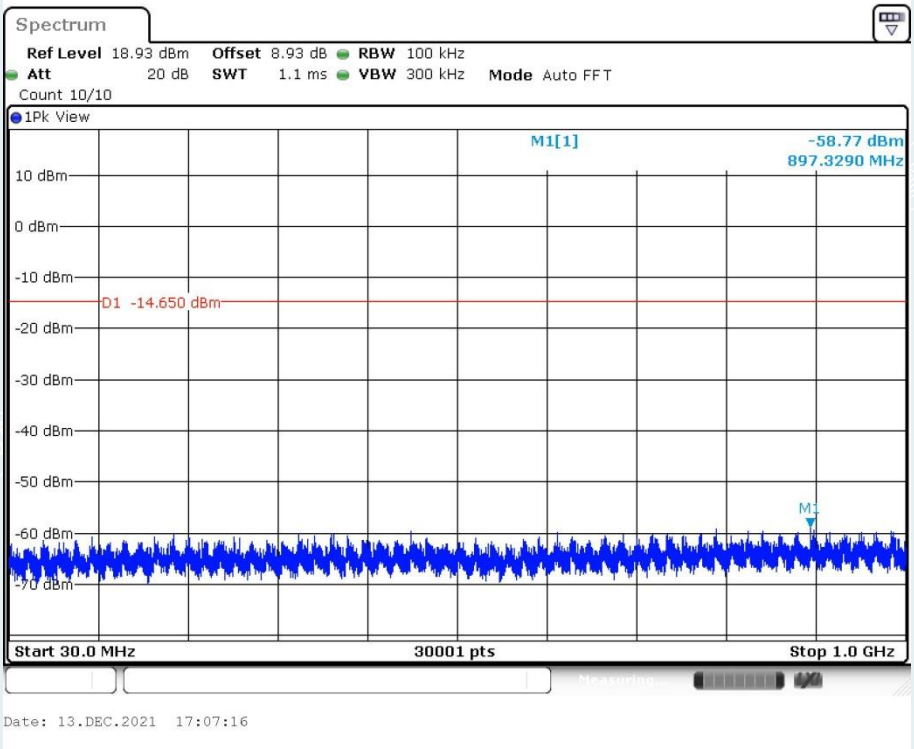
Highest Frequency (2480MHz)

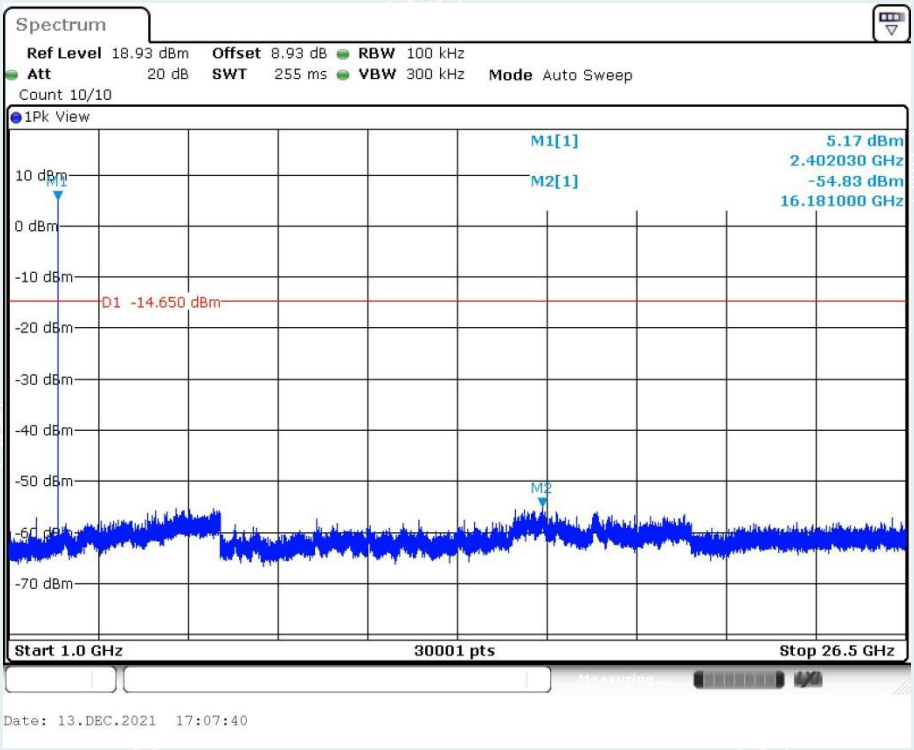
2.47GHz-2.55GHz



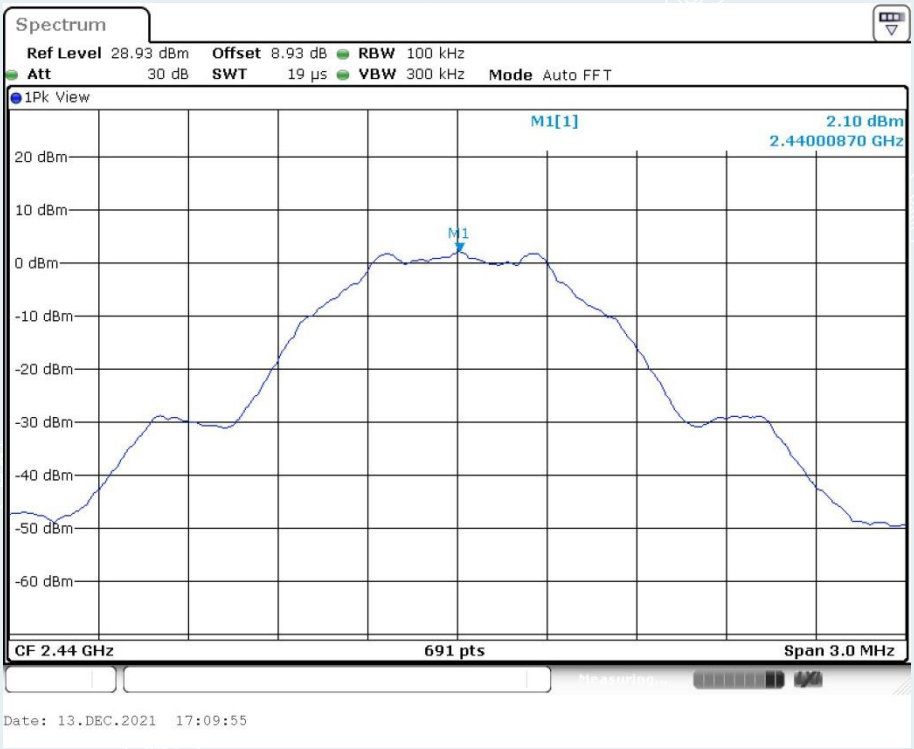
For 1Mbps

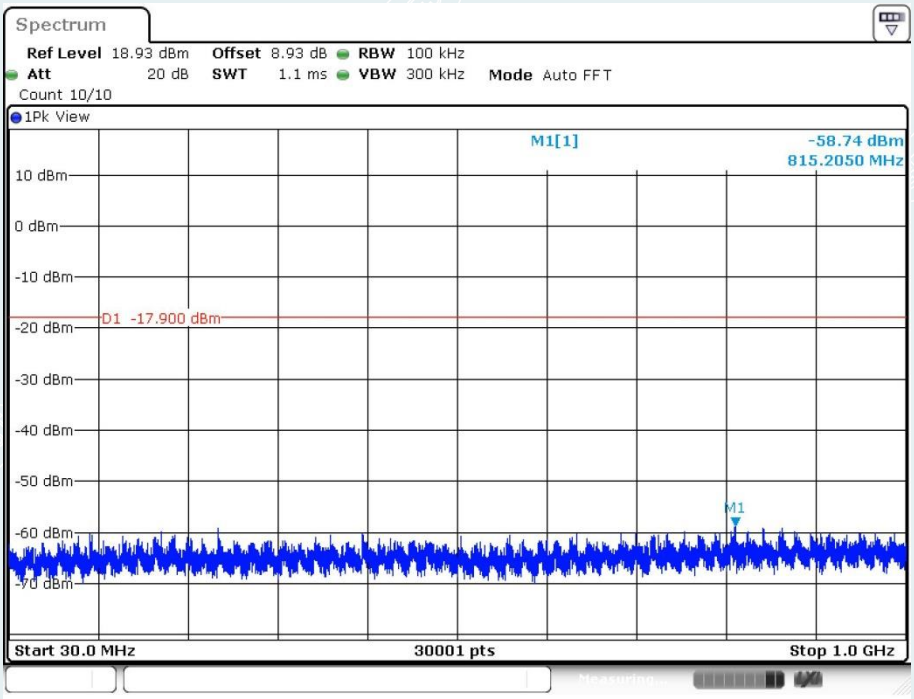
Lowest Frequency (2402MHz)



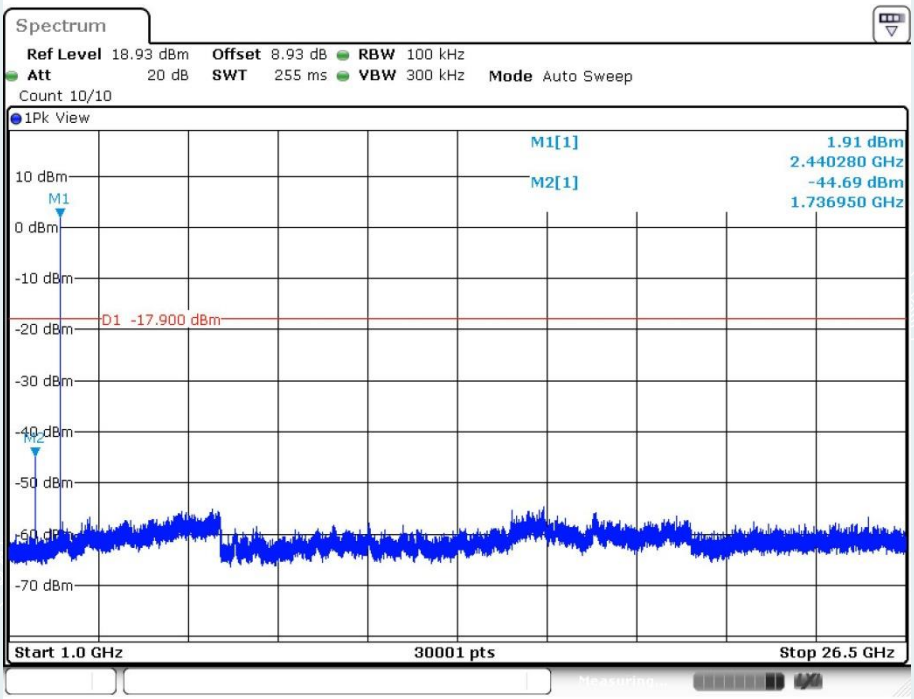


Middle Frequency (2440MHz)



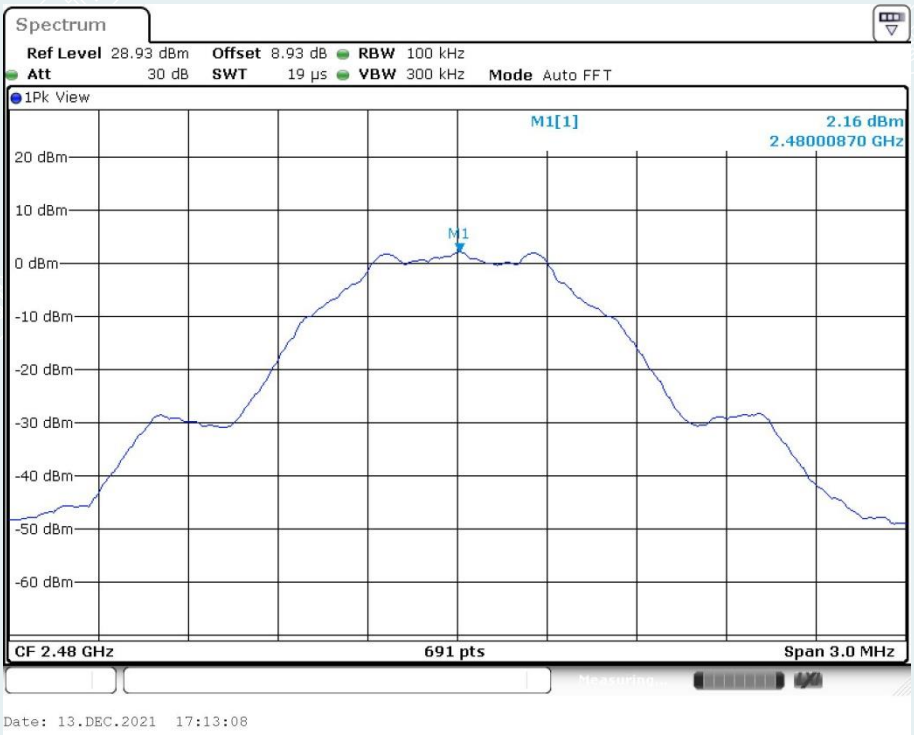


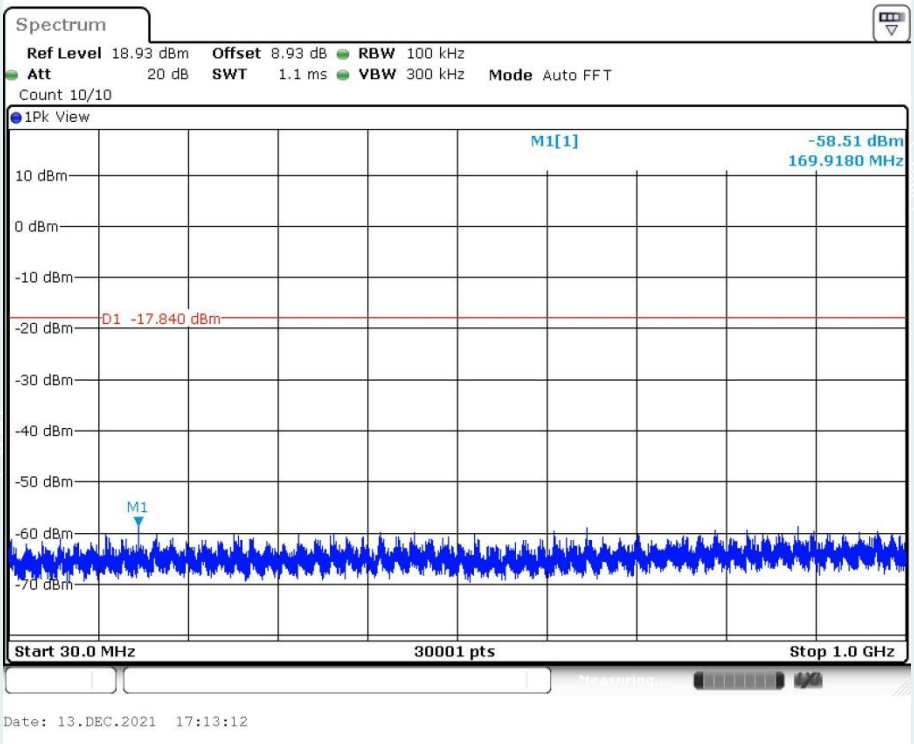
Date: 13.DEC.2021 17:09:59

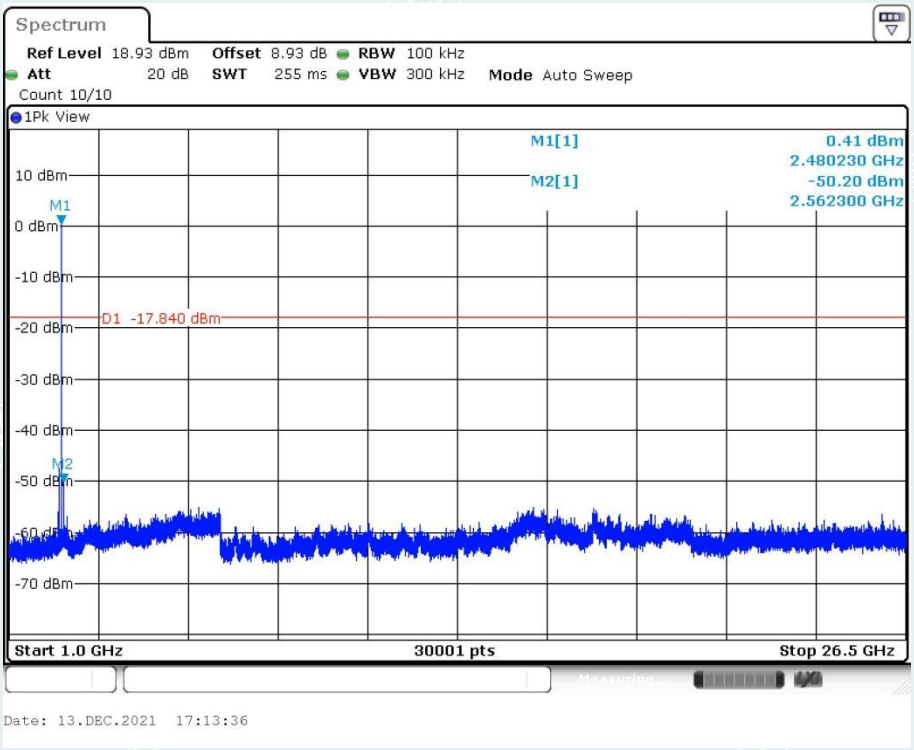


Date: 13.DEC.2021 17:10:23

Highest Frequency (2480MHz)

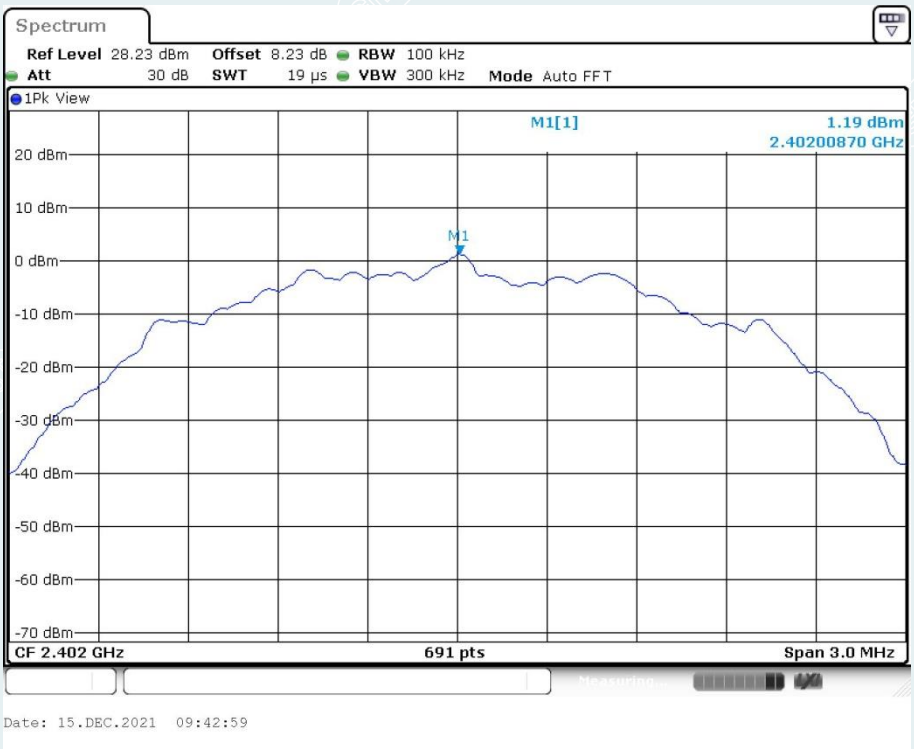


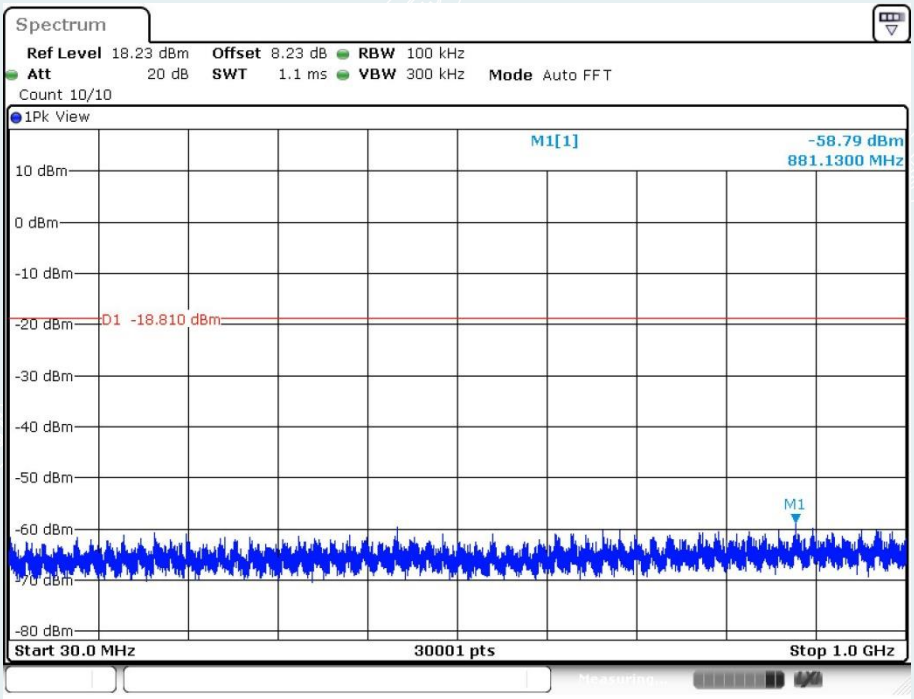


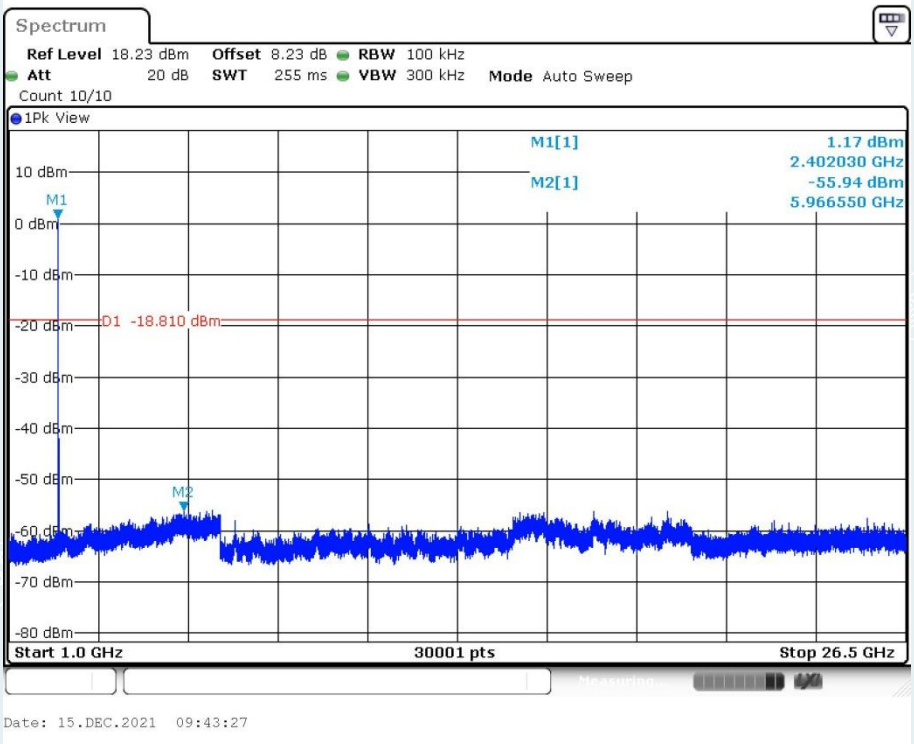


For 2Mbps

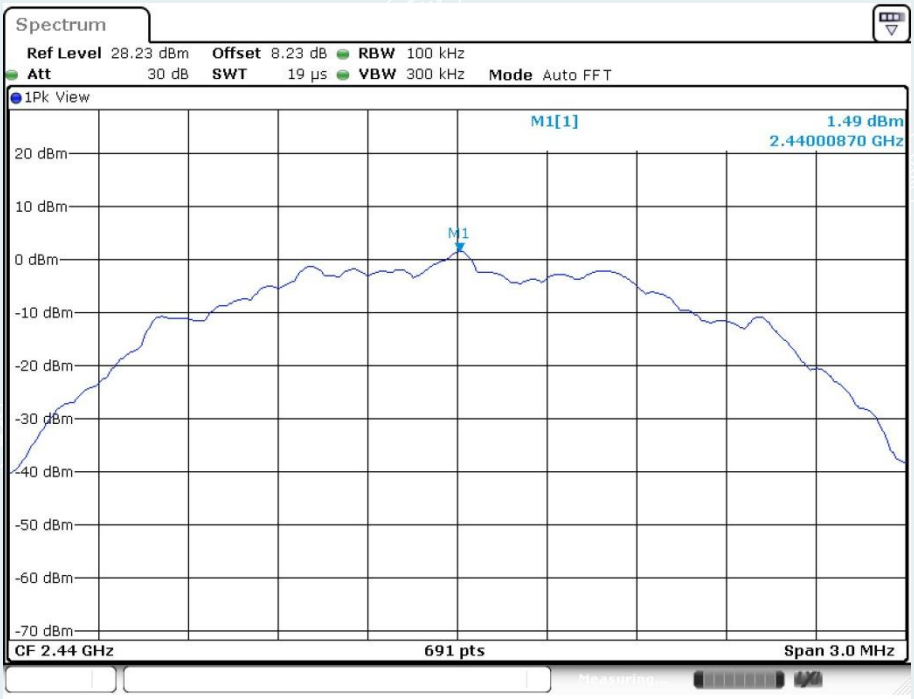
Lowest Frequency (2402MHz)

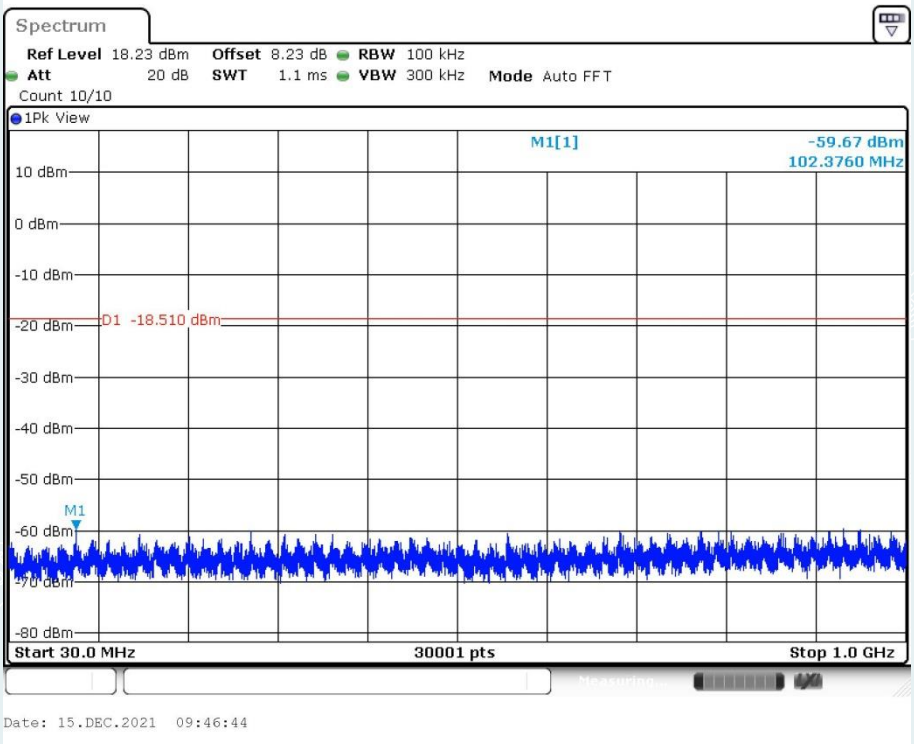


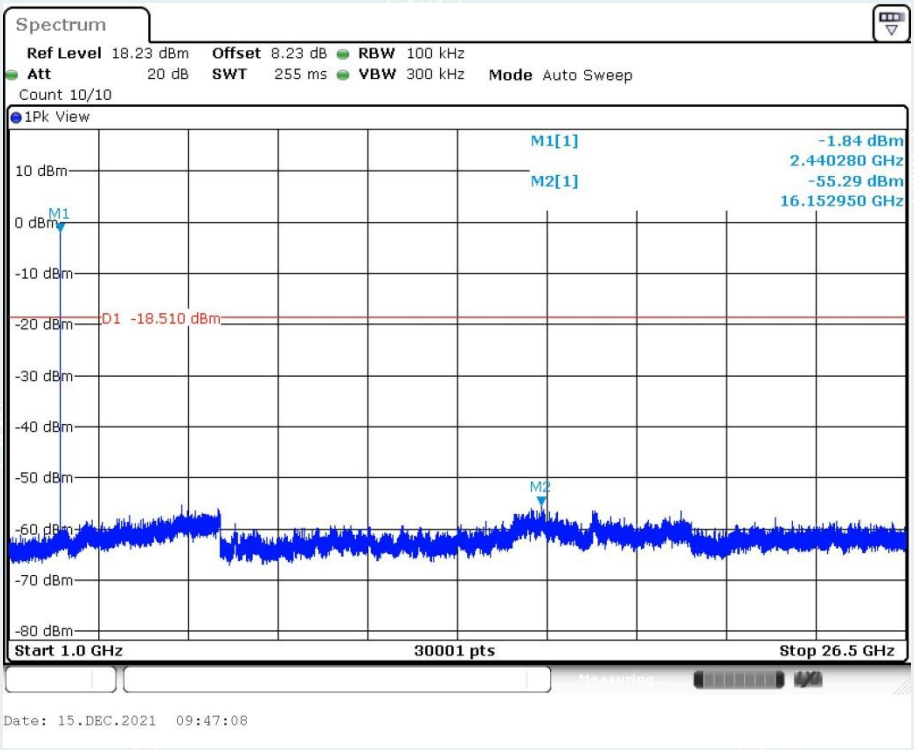




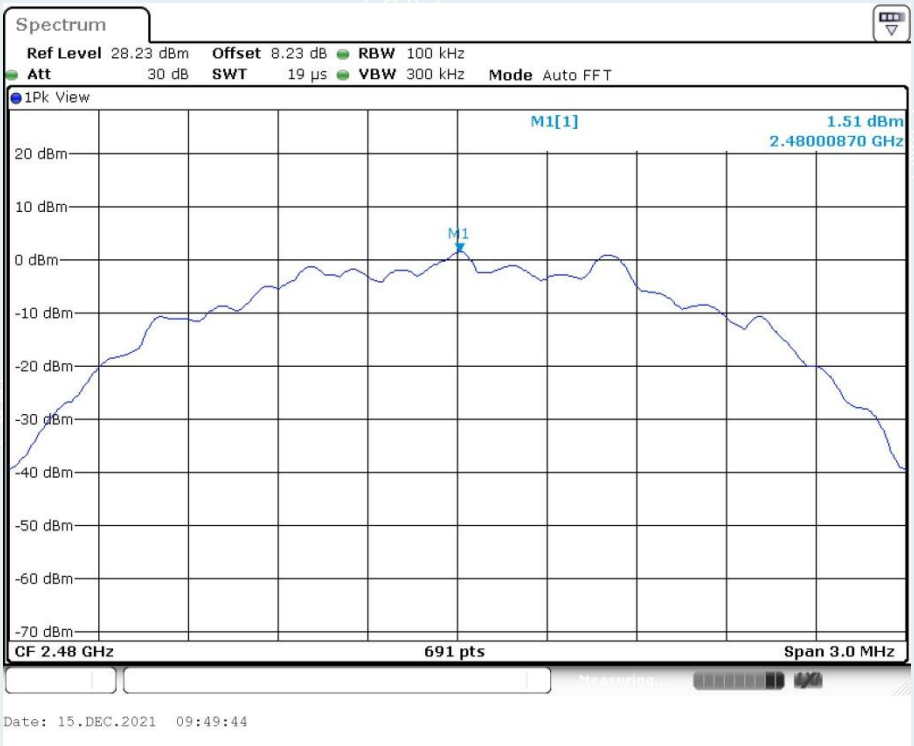
Middle Frequency (2440MHz)

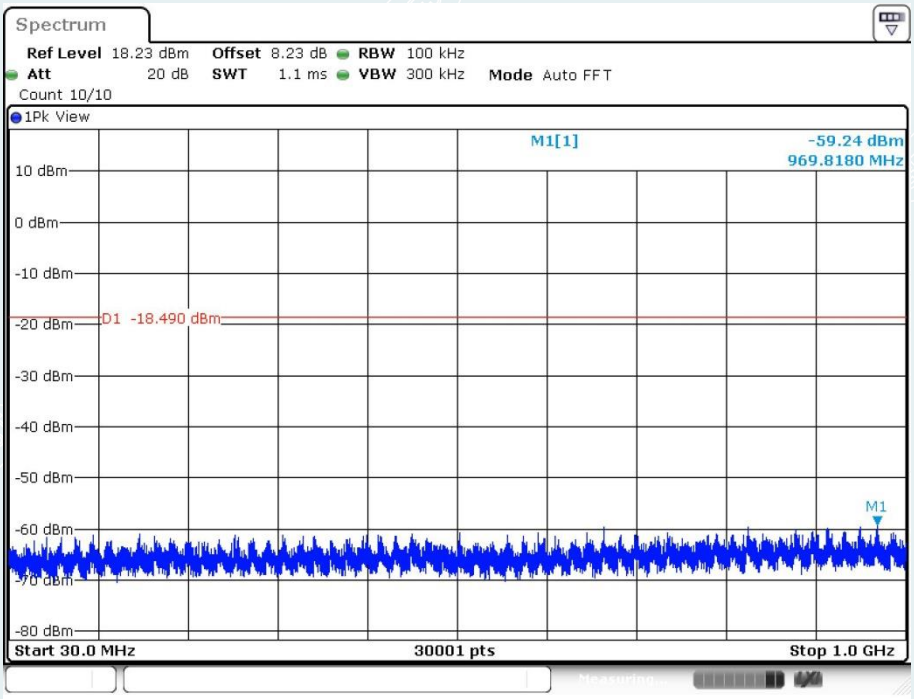

Spectrum
Ref Level 28.23 dBm Offset 8.23 dB RBW 100 kHz
Att 30 dB SWT 19 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] 1.49 dBm
2.44000870 GHz
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
CF 2.44 GHz 691 pts Span 3.0 MHz
Date: 15.DEC.2021 09:46:39

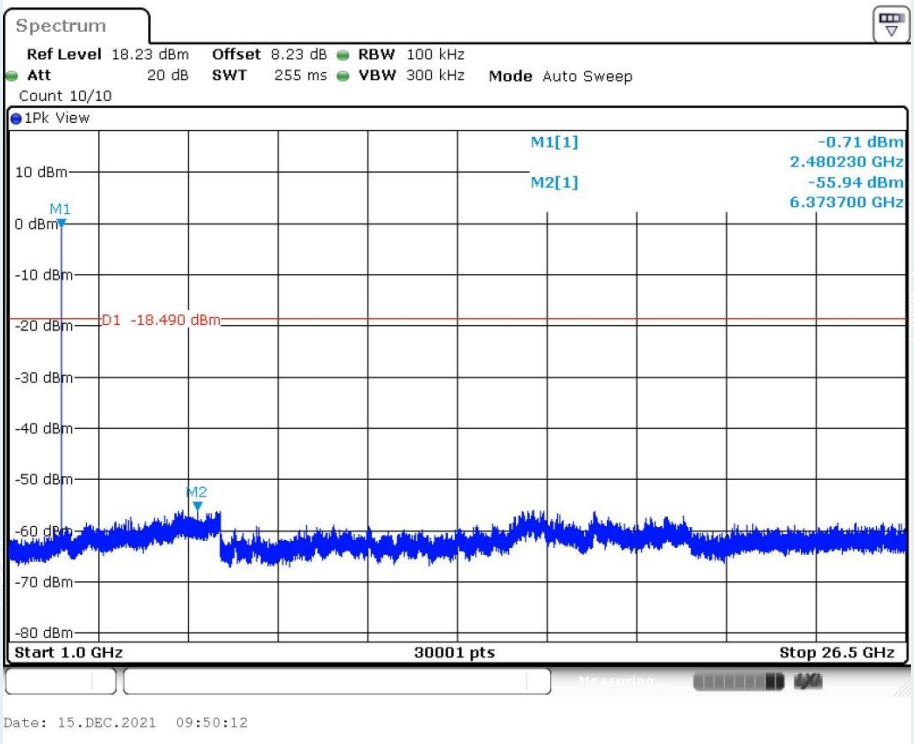

Spectrum
Ref Level 18.23 dBm Offset 8.23 dB RBW 100 kHz
Att 20 dB SWT 1.1 ms VBW 300 kHz Mode Auto FFT
Count 10/10
1Pk View
M1[1] -59.67 dBm
102.3760 MHz
10 dBm
0 dBm
-10 dBm
D1 -18.510 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
M1
-60 dBm
-70 dBm
-80 dBm
Start 30.0 MHz 30001 pts Stop 1.0 GHz
Date: 15.DEC.2021 09:46:44



Highest Frequency (2480MHz)




Spectrum
Ref Level 18.23 dBm Offset 8.23 dB RBW 100 kHz
Att 20 dB SWT 1.1 ms VBW 300 kHz Mode Auto FFT
Count 10/10
1Pk View
M1[1] -59.24 dBm
969.8180 MHz
D1 -18.490 dBm
M1
Start 30.0 MHz 30001 pts Stop 1.0 GHz
Date: 15.DEC.2021 09:49:48


Spectrum
Ref Level 18.23 dBm Offset 8.23 dB RBW 100 kHz
Att 20 dB SWT 255 ms VBW 300 kHz Mode Auto Sweep
Count 10/10
1Pk View
M1[1] -0.71 dBm
2.480230 GHz
M2[1] -55.94 dBm
6.373700 GHz
D1 -18.490 dBm
Start 1.0 GHz 30001 pts Stop 26.5 GHz
Date: 15.DEC.2021 09:50:12

11. RESTRICTED BANDS OF OPERATION

11.1 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			

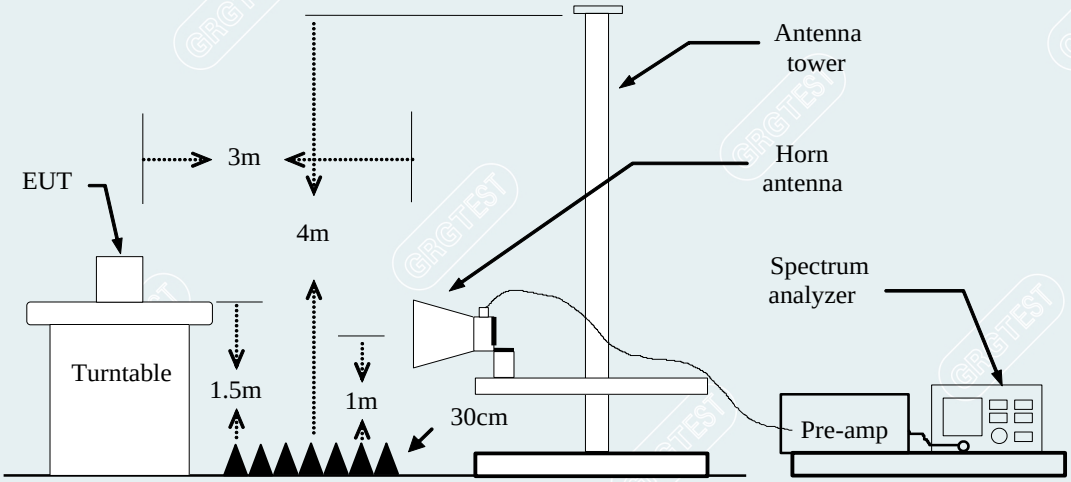
Frequency (MHz)	Quasi-peak(μV/m)	Measurement distance(m)	Quasi-peak(dBμV/m)@distance 3m
0.009-0.490	2400/F(kHz)	300	128.5~93.8
0.490-1.705	24000/F(kHz)	30	73.8~63
1.705-30.0	30	30	69.5
30 ~ 88	100	3	40
88~216	150	3	43.5
216 ~ 960	200	3	46
Above 960	500	3	54

11.2 TEST PROCEDURES

Test procedures follow KDB 558074 D01 DTS 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.
5) Repeat the procedures until all the PEAK and AVERAGE versus polarization are measured.

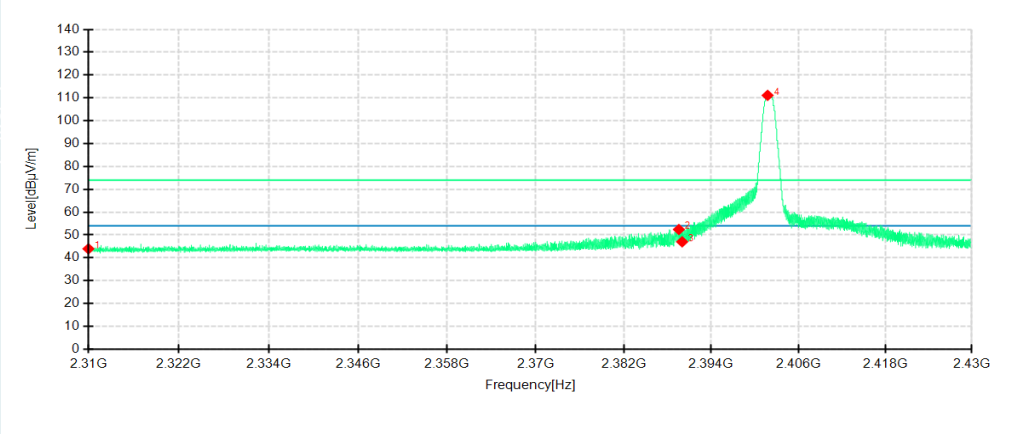
11.3 TEST SETUP



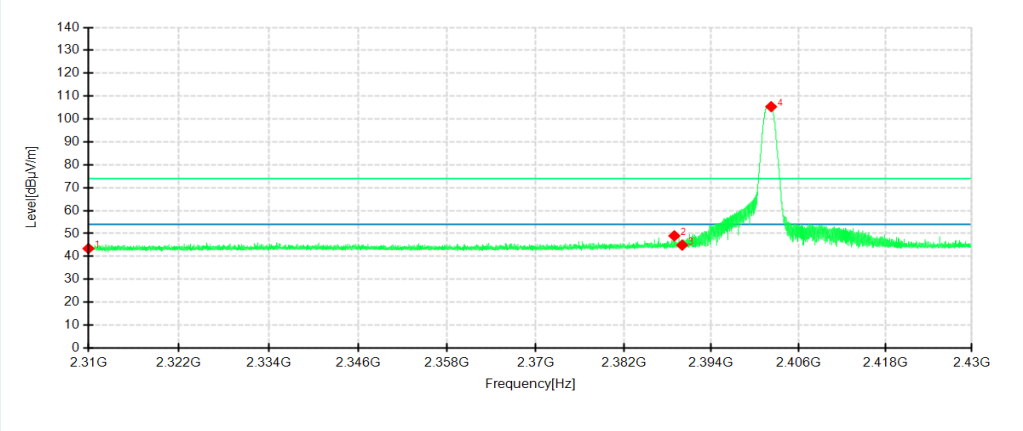
11.4 TEST RESULTS

For 1Mbps

Lowest Frequency
Frequency 2402MHz
Environment: 25℃/60%RH Voltage: AC120V/60Hz
Tested By: Lu Qiang Date: 2021-12-16
Detector mode: Peak Polarity: Horizontal



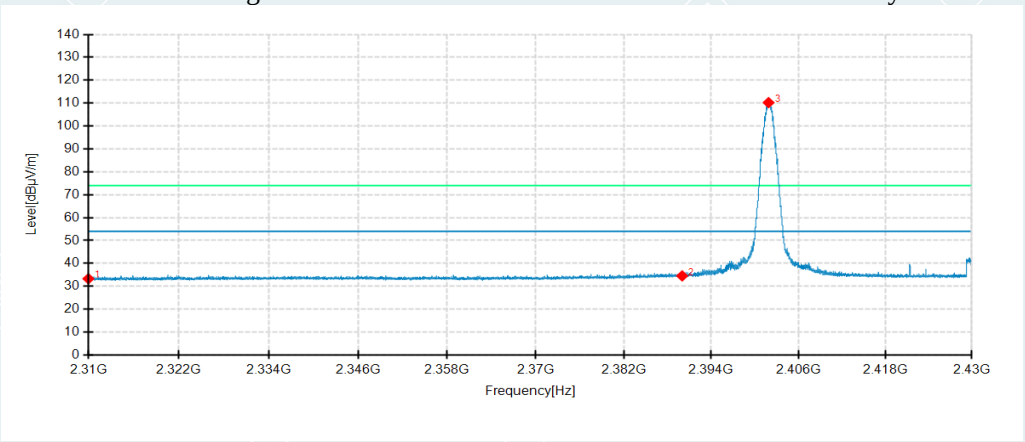
Detector mode: Peak Polarity: Vertical



No.	Frequency MHz	Reading dBµV/m	Level dBµV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2310.0000	40.46	43.94	3.48	74.00	30.06	100	218	Horizontal	/
2	2389.5480	48.60	52.40	3.80	74.00	21.60	200	142	Horizontal	/
3	2390.0000	43.20	47.01	3.81	74.00	26.99	100	218	Horizontal	/
4	2401.7400	107.13	111.12	3.99	74.00	-37.12	200	142	Horizontal	No limit
1	2310.0000	39.95	43.43	3.48	74.00	30.57	100	348	Vertical	/
2	2388.9240	45.19	48.98	3.79	74.00	25.02	200	218	Vertical	/
3	2390.0000	41.12	44.93	3.81	74.00	29.07	100	142	Vertical	/
4	2402.2320	101.41	105.40	3.99	74.00	-31.40	200	218	Vertical	No limit

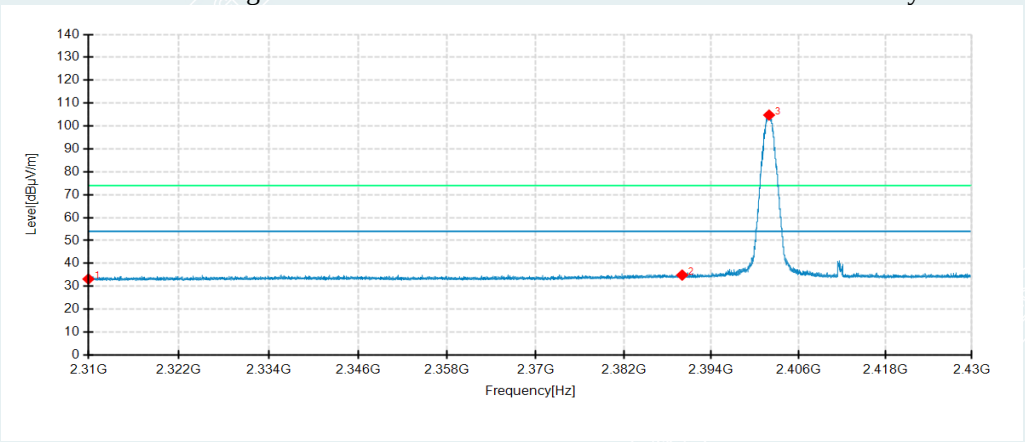
Lowest Frequency
Frequency 2402MHz
Environment: 25℃/60%RH
Tested By: Lu Qiang
Detector mode: Average

Voltage: AC120V/60Hz
Date: 2021-12-16
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	29.83	33.31	3.48	54.00	20.69	200	219	Horizontal	/
2	2390.0000	30.73	34.54	3.81	54.00	19.46	200	304	Horizontal	/
3	2401.8720	106.23	110.22	3.99	54.00	-56.22	200	142	Horizontal	No limit
1	2310.0000	29.70	33.18	3.48	54.00	20.82	200	218	Vertical	/
2	2390.0000	31.09	34.90	3.81	54.00	19.10	100	353	Vertical	/
3	2401.9440	100.80	104.79	3.99	54.00	-50.79	200	218	Vertical	No limit

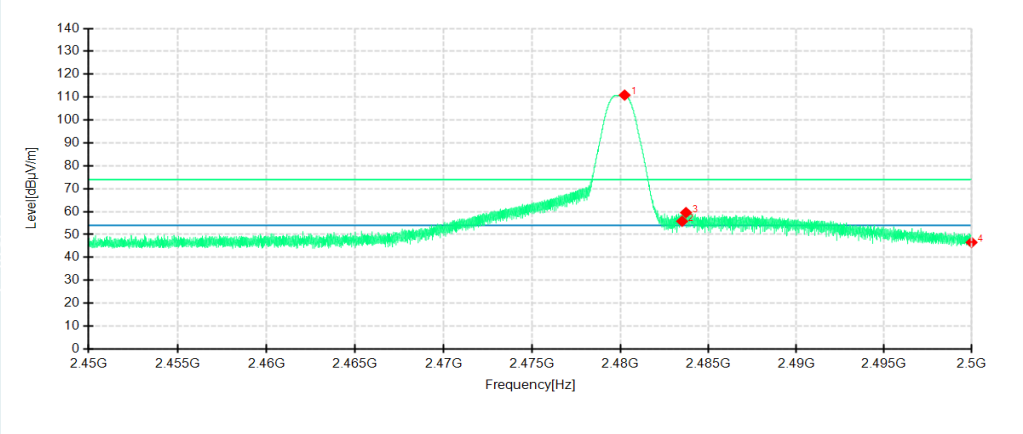
Highest Frequency

Frequency 2480MHz

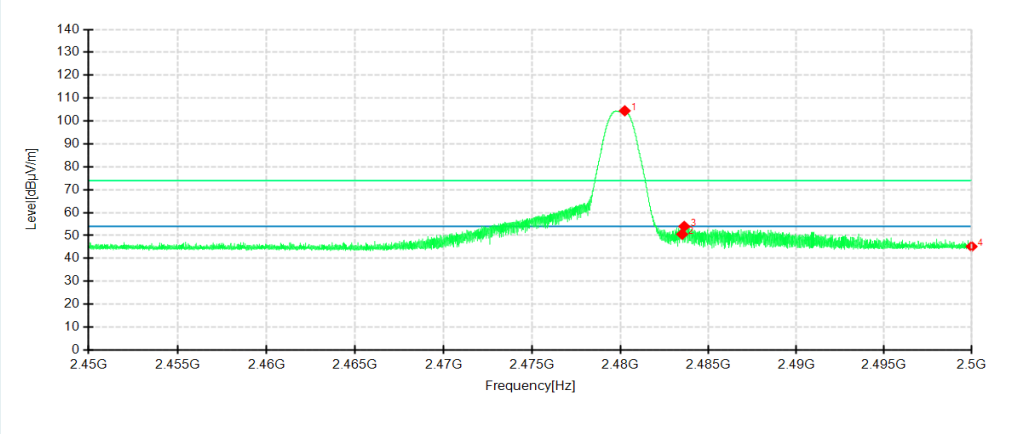
Environment: 25℃/60%RH Voltage: AC120V/60Hz

Tested By: Lu Qiang Date: 2021-12-16

Detector mode: Peak Polarity: Horizontal

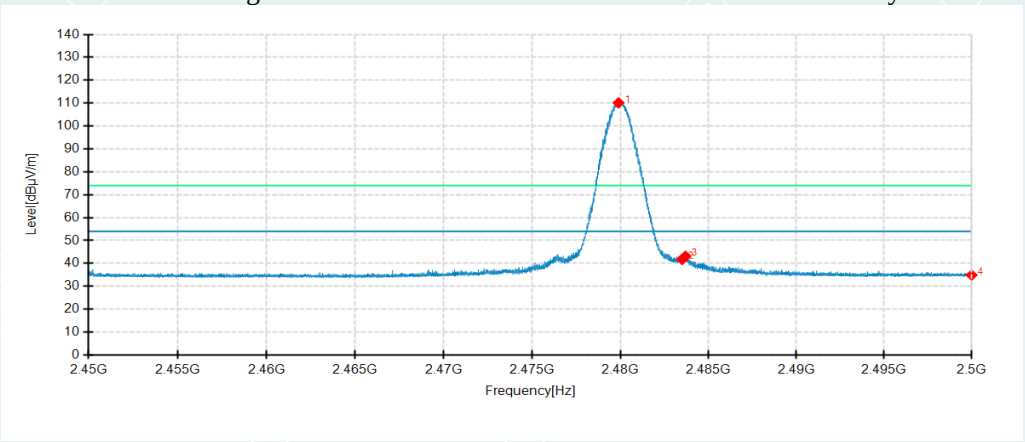


Detector mode: Peak Polarity: Vertical

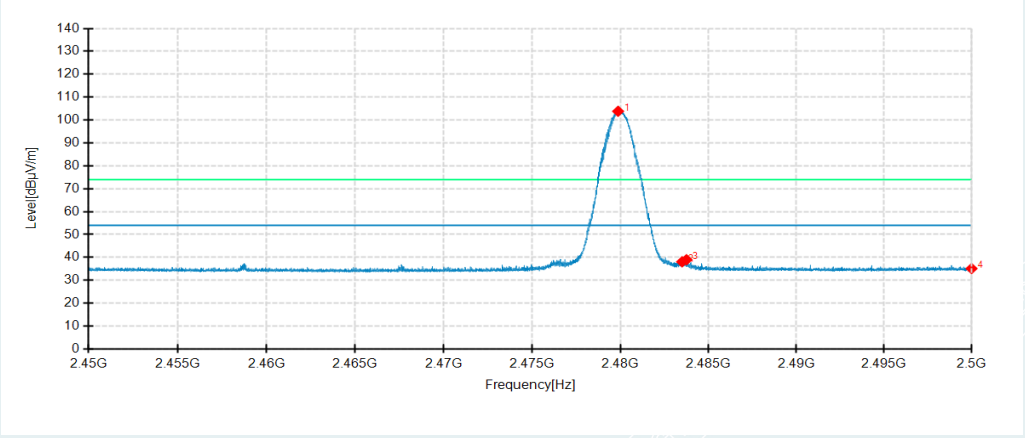


No.	Frequency MHz	Reading dBµV/m	Level dBµV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2480.2350	106.56	110.88	4.32	74.00	-36.88	200	218	Horizontal	No limit
2	2483.5000	51.46	55.79	4.33	74.00	18.21	200	161	Horizontal	/
3	2483.7200	55.26	59.59	4.33	74.00	14.41	200	218	Horizontal	/
4	2500.0000	42.17	46.55	4.38	74.00	27.45	200	6	Horizontal	/
1	2480.2450	100.13	104.45	4.32	74.00	-30.45	200	211	Vertical	No limit
2	2483.5000	46.21	50.54	4.33	74.00	23.46	200	142	Vertical	/
3	2483.6200	49.65	53.98	4.33	74.00	20.02	200	211	Vertical	/
4	2500.0000	40.80	45.18	4.38	74.00	28.82	100	75	Vertical	/

Highest Frequency
Frequency 2480MHz
Environment: 25℃/60%RH Voltage: AC120V/60Hz
Tested By: Lu Qiang Date: 2021-12-16
Detector mode: Average Polarity: Horizontal



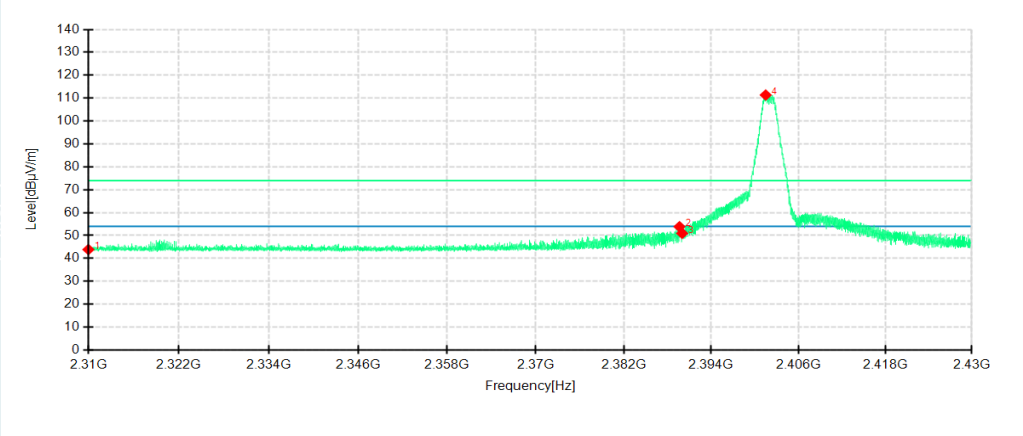
Detector mode: Average Polarity: Vertical



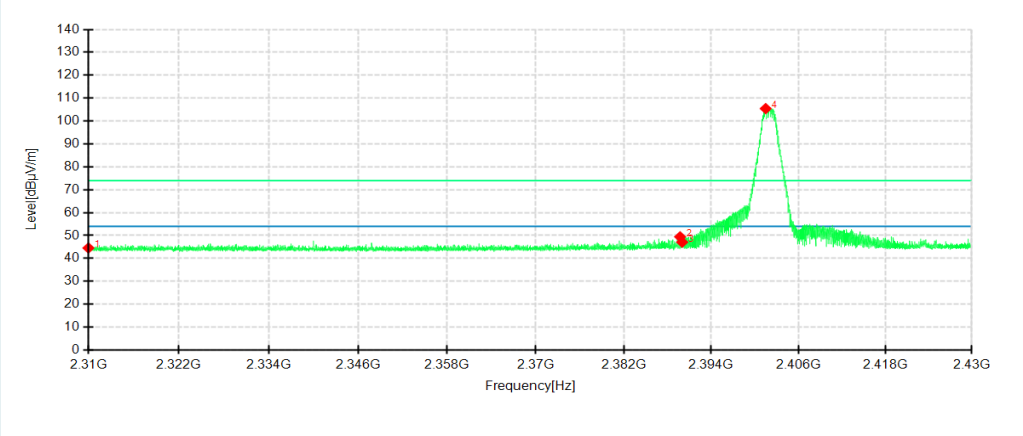
No.	Frequency MHz	Reading dBµV/m	Level dBµV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2479.8900	105.82	110.14	4.32	54.00	-56.14	200	218	Horizontal	No limit
2	2483.5000	37.39	41.72	4.33	54.00	12.28	200	218	Horizontal	/
3	2483.6900	38.80	43.13	4.33	54.00	10.87	200	218	Horizontal	/
4	2500.0000	30.52	34.90	4.38	54.00	19.10	200	101	Horizontal	/
1	2479.8650	99.50	103.82	4.32	54.00	-49.82	200	212	Vertical	No limit
2	2483.5000	33.74	38.07	4.33	54.00	15.93	200	219	Vertical	/
3	2483.7450	34.65	38.98	4.33	54.00	15.02	200	142	Vertical	/
4	2500.0000	30.75	35.13	4.38	54.00	18.87	100	121	Vertical	/

For 2Mbps

Lowest Frequency
Frequency 2402MHz
Environment: 25℃/60%RH Voltage: AC120V/60Hz
Tested By: Lu Qiang Date: 2021-12-17
Detector mode: Peak Polarity: Horizontal



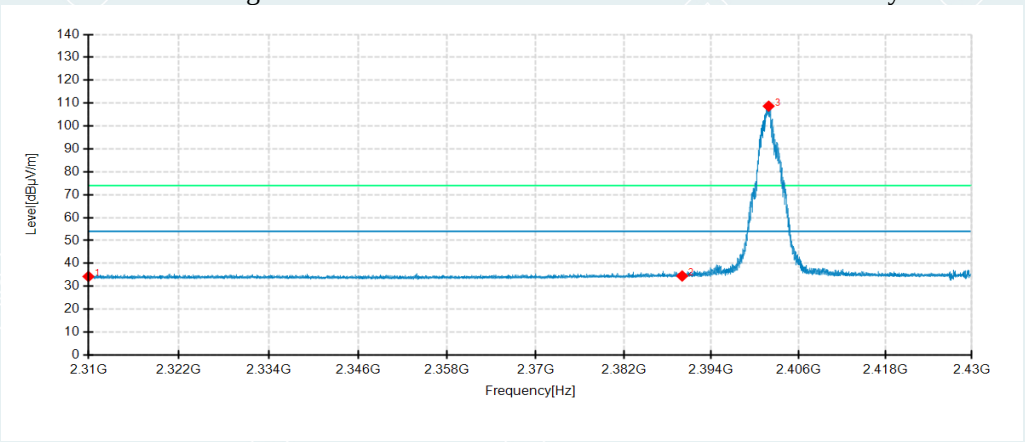
Detector mode: Peak Polarity: Vertical



No.	Frequency MHz	Reading dBµV/m	Level dBµV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2310.0000	40.39	43.87	3.48	74.00	30.13	200	142	Horizontal	/
2	2389.6320	50.06	53.86	3.80	74.00	20.14	200	142	Horizontal	/
3	2390.0000	47.13	50.94	3.81	74.00	23.06	200	142	Horizontal	/
4	2401.4760	107.37	111.36	3.99	74.00	-37.36	200	341	Horizontal	No limit
1	2310.0000	41.08	44.56	3.48	74.00	29.44	200	218	Vertical	/
2	2389.7160	45.62	49.43	3.81	74.00	24.57	200	218	Vertical	/
3	2390.0000	43.29	47.10	3.81	74.00	26.90	100	280	Vertical	/
4	2401.4760	101.44	105.43	3.99	74.00	-31.43	200	218	Vertical	No limit

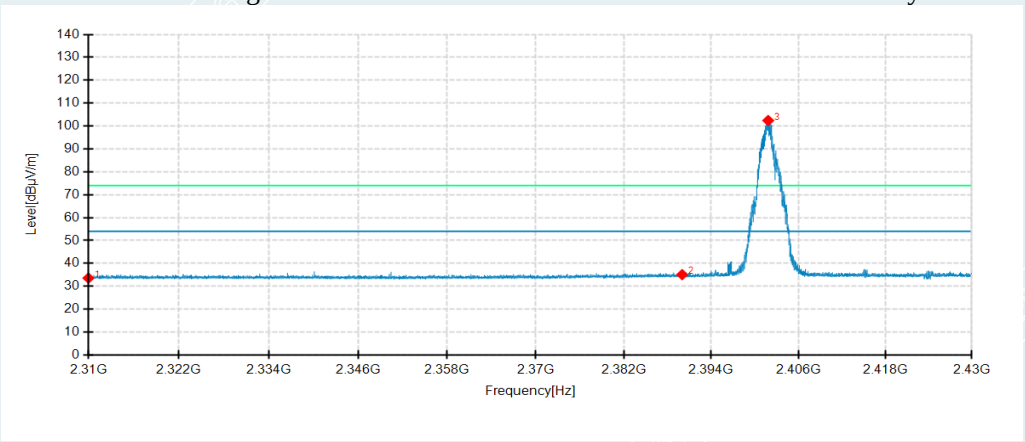
Lowest Frequency
Frequency 2402MHz
Environment: 25℃/60%RH
Tested By: Lu Qiang
Detector mode: Average

Voltage: AC120V/60Hz
Date: 2021-12-17
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	30.79	34.27	3.48	54.00	19.73	200	142	Horizontal	/
2	2390.0000	30.69	34.50	3.81	54.00	19.50	100	218	Horizontal	/
3	2401.8840	104.70	108.69	3.99	54.00	-54.69	200	142	Horizontal	No limit
1	2310.0000	30.10	33.58	3.48	54.00	20.42	200	81	Vertical	/
2	2390.0000	31.27	35.08	3.81	54.00	18.92	100	142	Vertical	/
3	2401.8240	98.42	102.41	3.99	54.00	-48.41	200	218	Vertical	No limit

Highest Frequency

Frequency 2480MHz

Environment: 25℃/60%RH

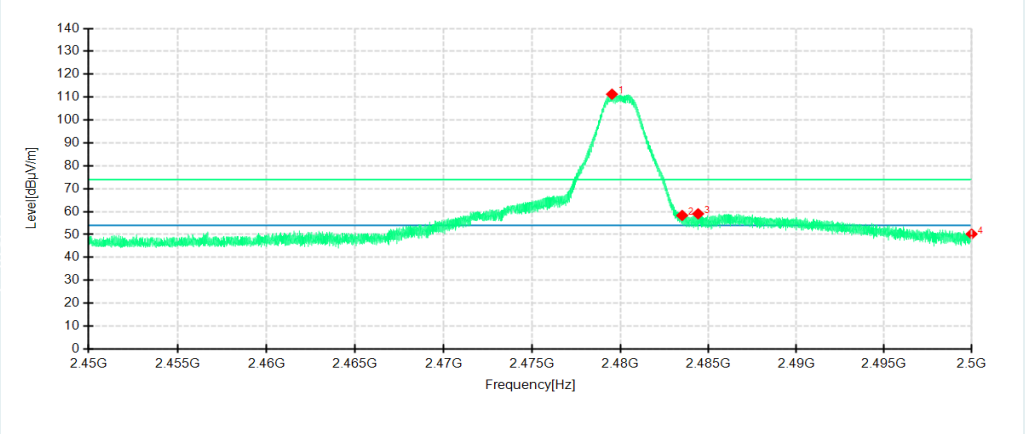
Voltage: AC120V/60Hz

Tested By: Lu Qiang

Date: 2021-12-17

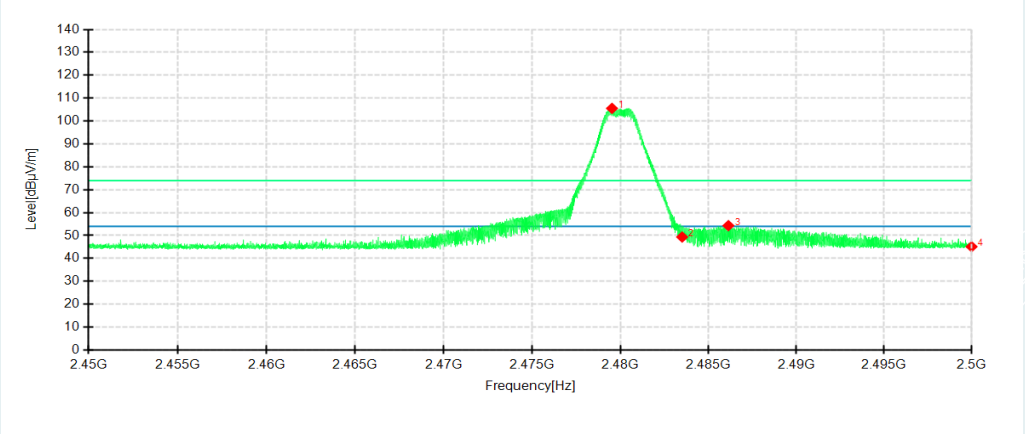
Detector mode: Peak

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	2479.5200	106.95	111.27	4.32	74.00	-37.27	200	142	Horizontal	No limit
2	2483.5000	53.98	58.31	4.33	74.00	15.69	200	142	Horizontal	/
3	2484.4100	54.72	59.05	4.33	74.00	14.95	200	142	Horizontal	/
4	2500.0000	45.83	50.21	4.38	74.00	23.79	200	142	Horizontal	/
1	2479.5200	101.20	105.52	4.32	74.00	-31.52	200	86	Vertical	No limit
2	2483.5000	45.01	49.34	4.33	74.00	24.66	200	101	Vertical	/
3	2486.1300	49.97	54.31	4.34	74.00	19.69	200	86	Vertical	/
4	2500.0000	40.74	45.12	4.38	74.00	28.88	100	273	Vertical	/

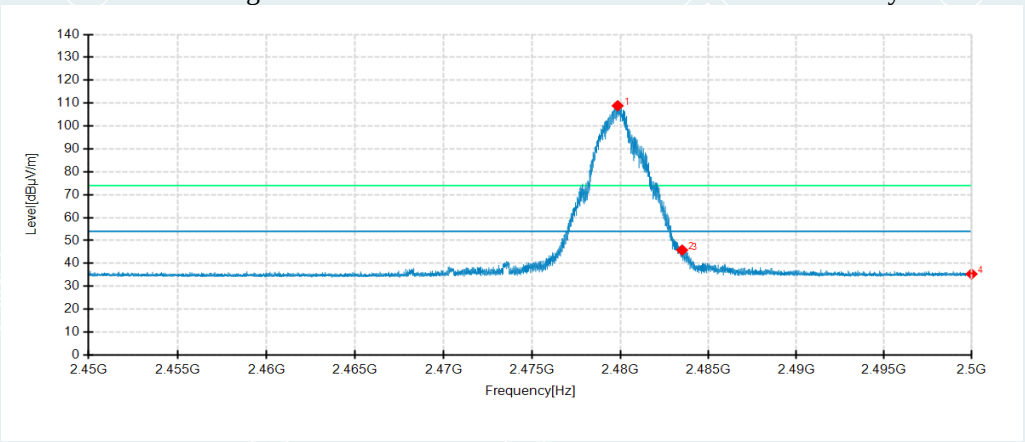
Highest Frequency

Frequency 2480MHz

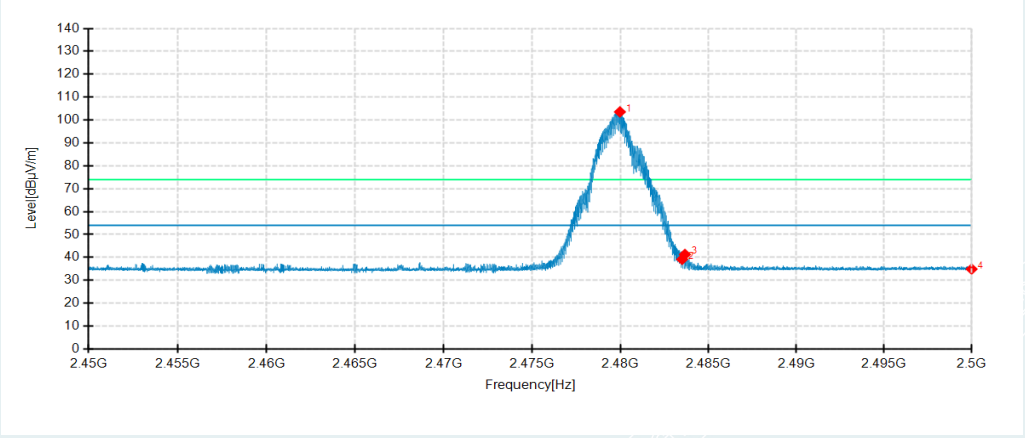
Environment: 25℃/60%RH Voltage: AC120V/60Hz

Tested By: Lu Qiang Date: 2021-12-17

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	2479.8400	104.54	108.86	4.32	54.00	-54.86	200	142	Horizontal	No limit
2	2483.5000	41.49	45.82	4.33	54.00	8.18	200	163	Horizontal	/
3	2483.6600	41.25	45.58	4.33	54.00	8.42	200	340	Horizontal	/
4	2500.0000	31.01	35.39	4.38	54.00	18.61	100	122	Horizontal	/
1	2479.9700	99.23	103.55	4.32	54.00	-49.55	200	80	Vertical	No limit
2	2483.5000	34.82	39.15	4.33	54.00	14.85	200	197	Vertical	/
3	2483.6600	36.96	41.29	4.33	54.00	12.71	200	80	Vertical	/
4	2500.0000	30.52	34.90	4.38	54.00	19.10	100	142	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 E202111252962-11-Test photo.

APPENDIX B. PHOTOGRAPH OF THE EUT

Please refer to the attached document E202111252962-12-EUT photo.

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