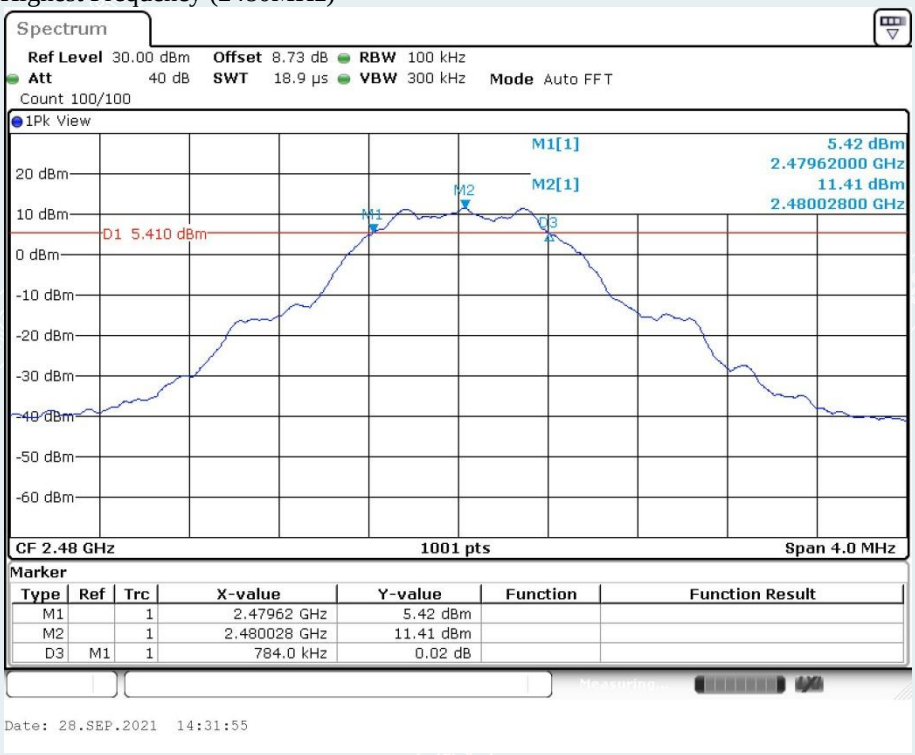
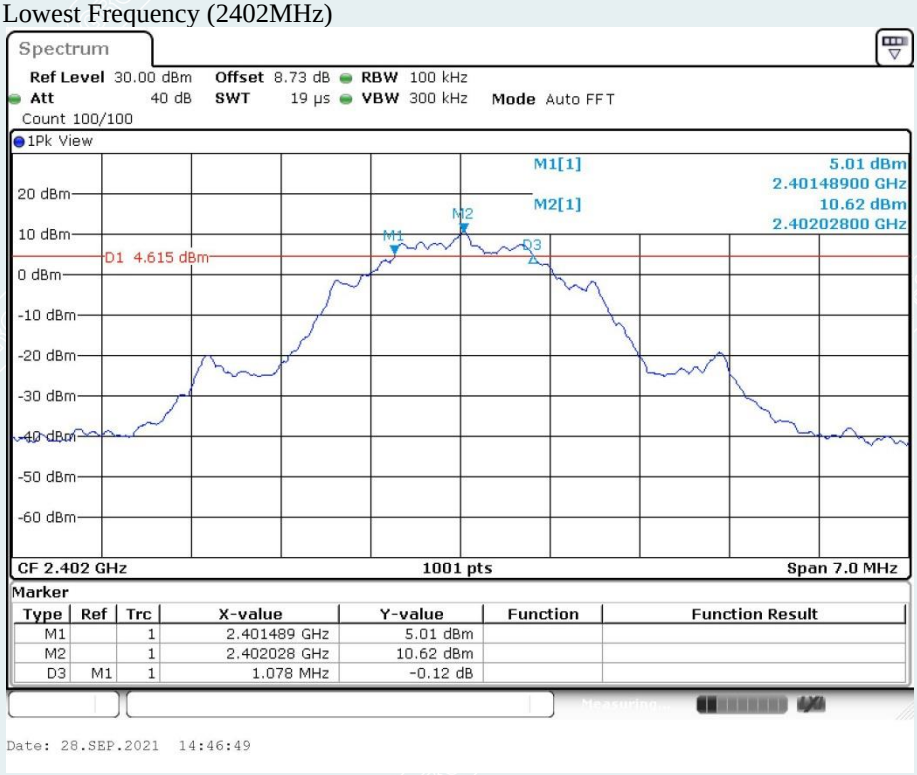
Highest Frequency (2480MHz)

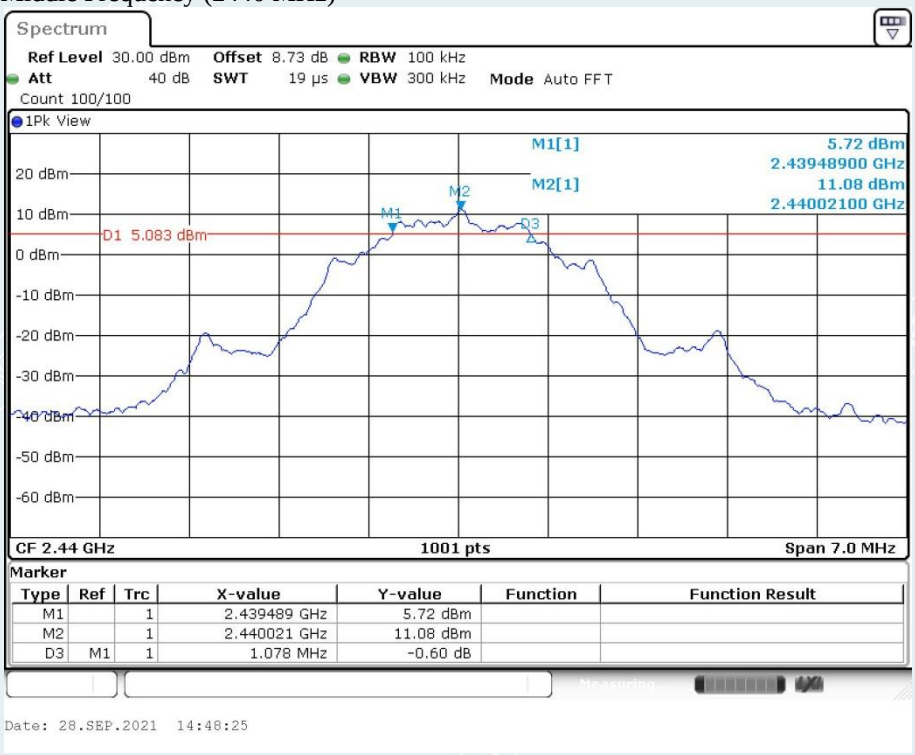


For 2Mbps

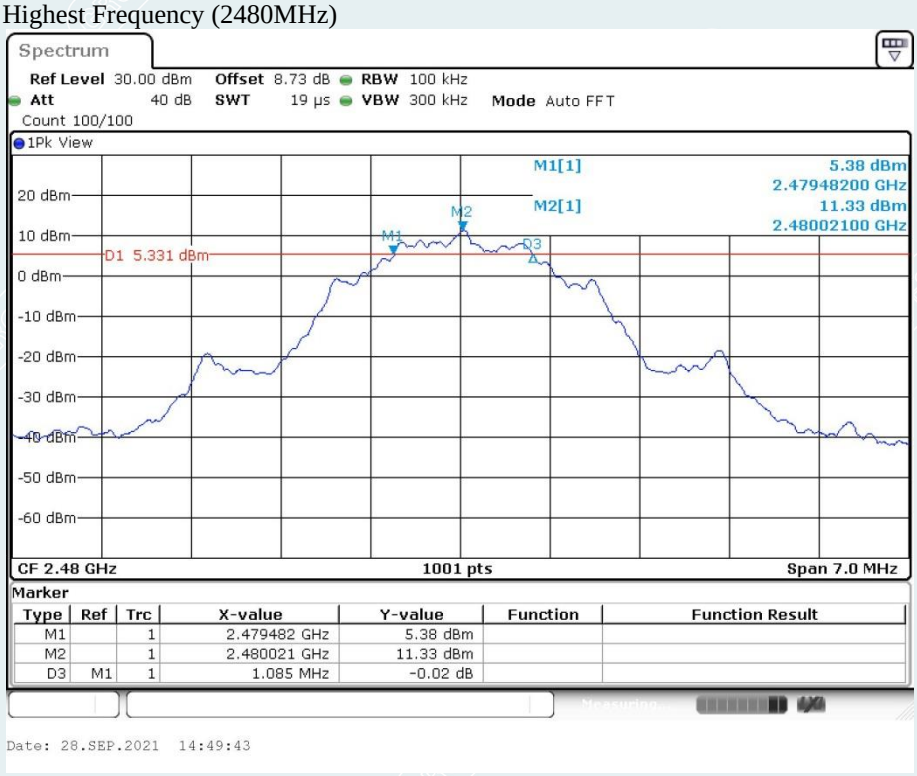
Lowest Frequency (2402MHz)



Middle Frequency (2440 MHz)



Highest Frequency (2480MHz)



8. MAXIMUM PEAK OUTPUT POWER

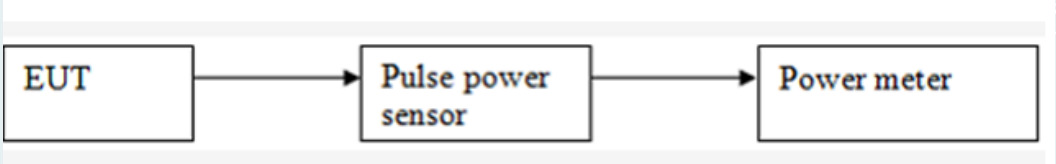
8.1 LIMITS

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

For 1Mbps

Channel	Frequency (MHz)	Measured Channel Power (dBm)	Limit	Peak/ Average	Result
Lowest	2402	11.46	1W (30dBm)	Peak	Pass
Middle	2440	10.39			Pass
Highest	2480	11.90			Pass

For 2Mbps

Channel	Frequency (MHz)	Measured Channel Power (dBm)	Limit	Peak/ Average	Result
Lowest	2402	10.47	1W (30dBm)	Peak	Pass
Middle	2440	10.39			Pass
Highest	2480	11.59			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

For 1Mbps

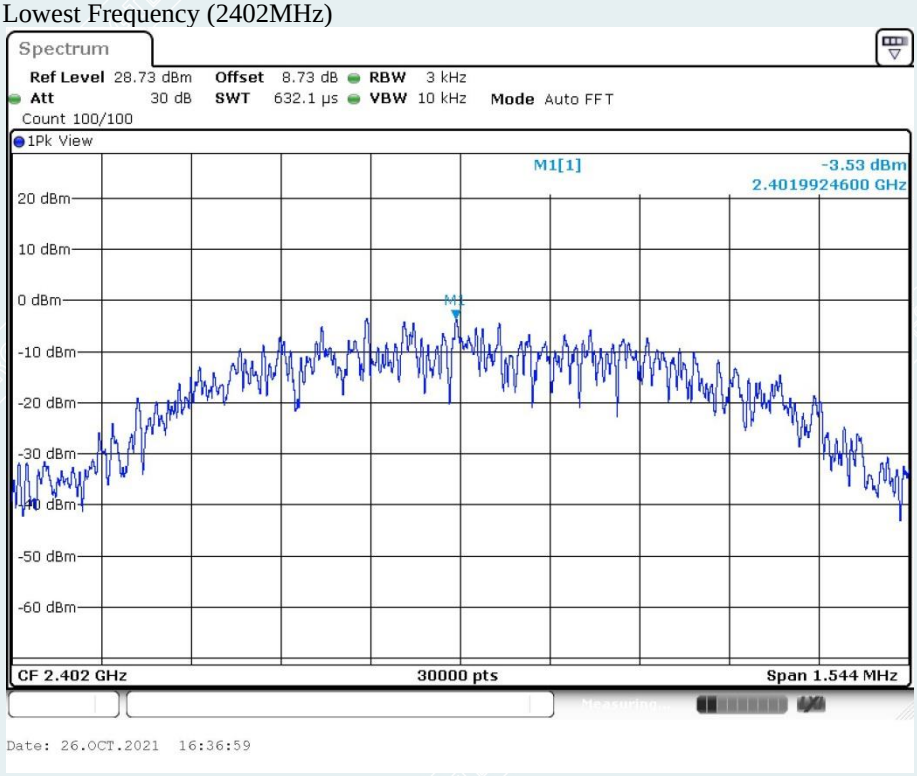
Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Test Result
Lowest	2402	-3.53	8.00	PASS
Middle	2440	-3.39		PASS
Highest	2480	-3.26		PASS

For 2Mbps

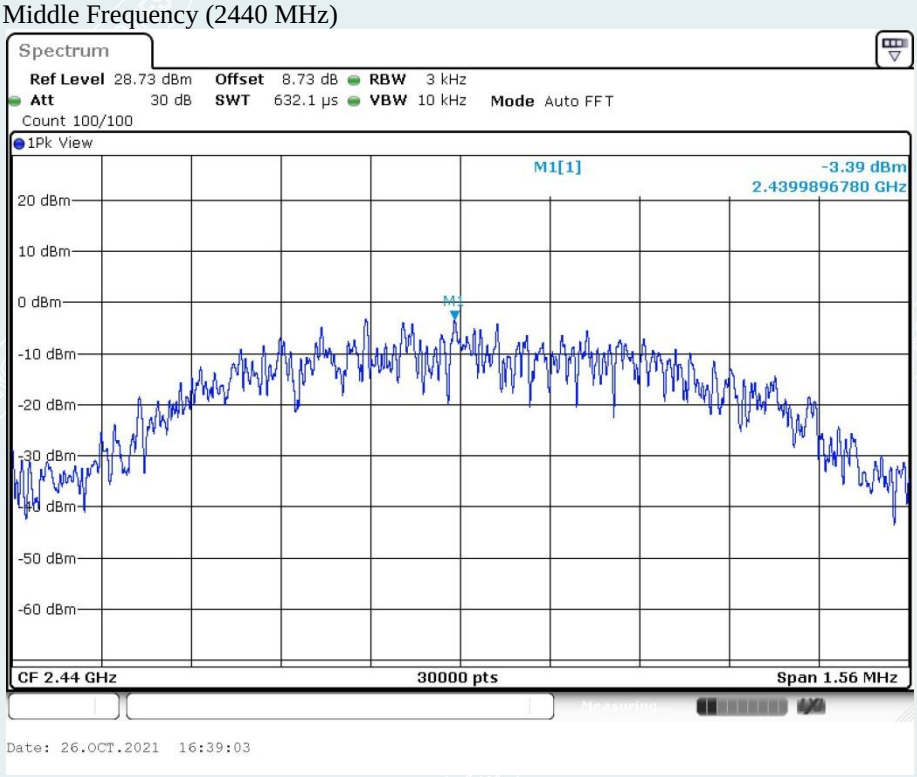
Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Test Result
Lowest	2402	-5.75	8.00	PASS
Middle	2440	-5.45		PASS
Highest	2480	-5.38		PASS

For 1Mbps

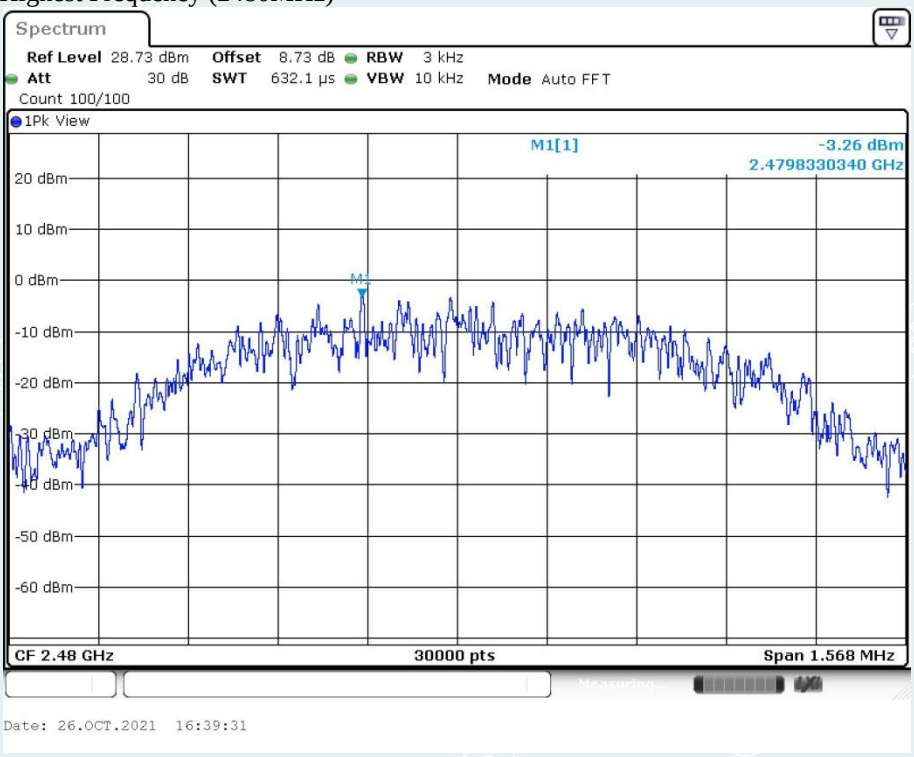
Lowest Frequency (2402MHz)



Middle Frequency (2440 MHz)

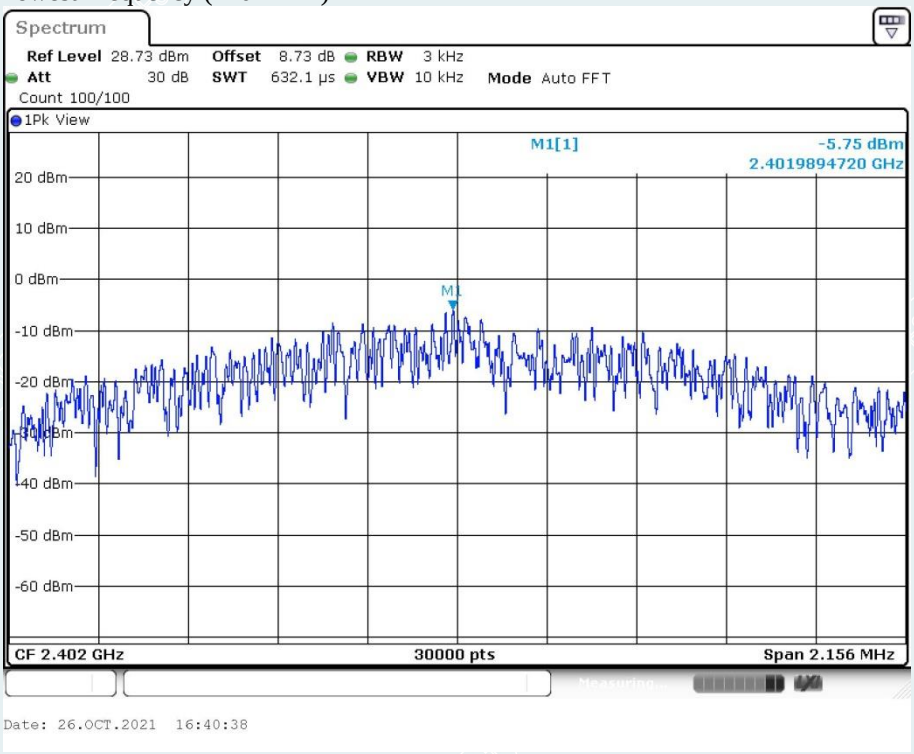


Highest Frequency (2480MHz)

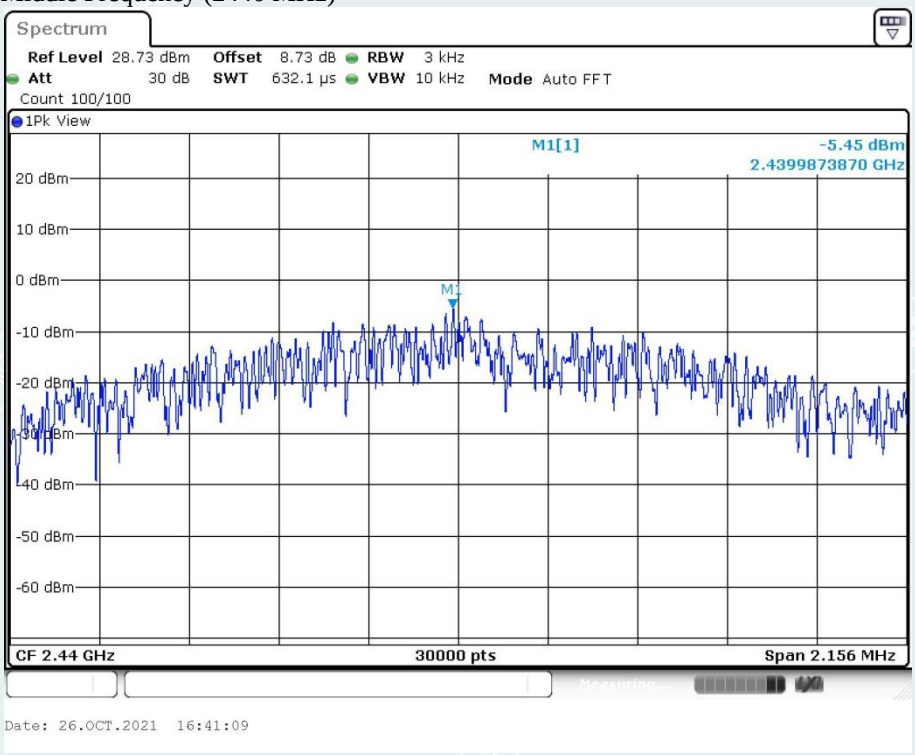


For 2Mbps

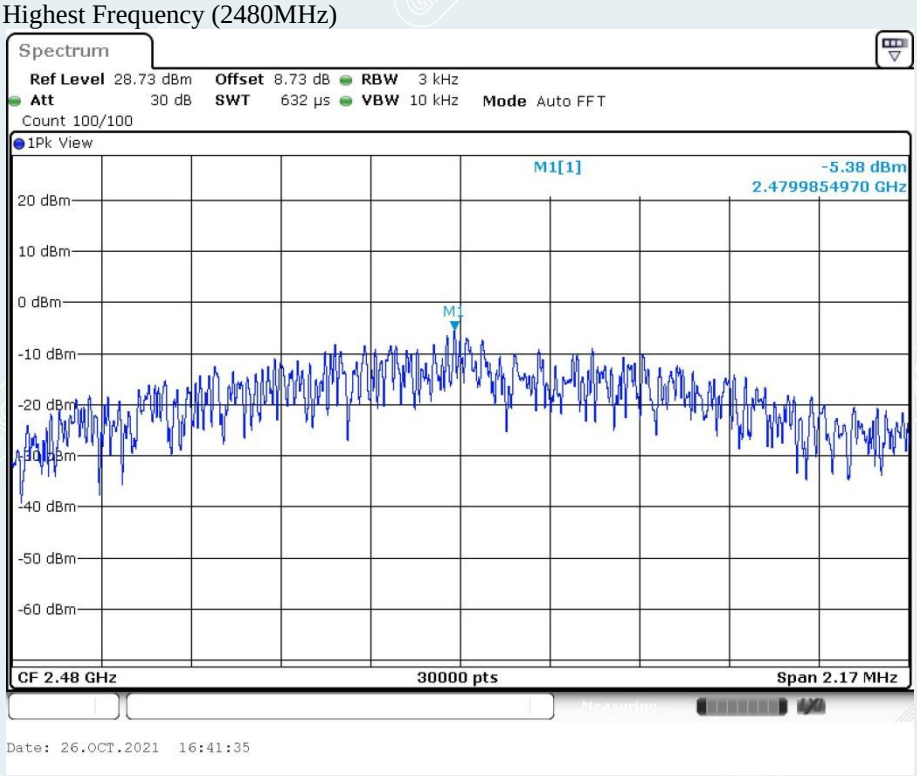
Lowest Frequency (2402MHz)



Middle Frequency (2440 MHz)



Highest Frequency (2480MHz)



10. CONDUCTED BAND EDGES AND SPURIOUS EMISSIONS

10.1 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.

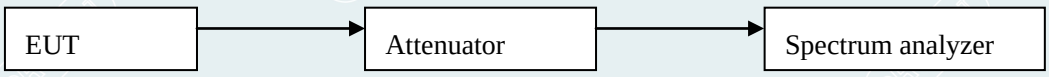
10.2 TEST PROCEDURES

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

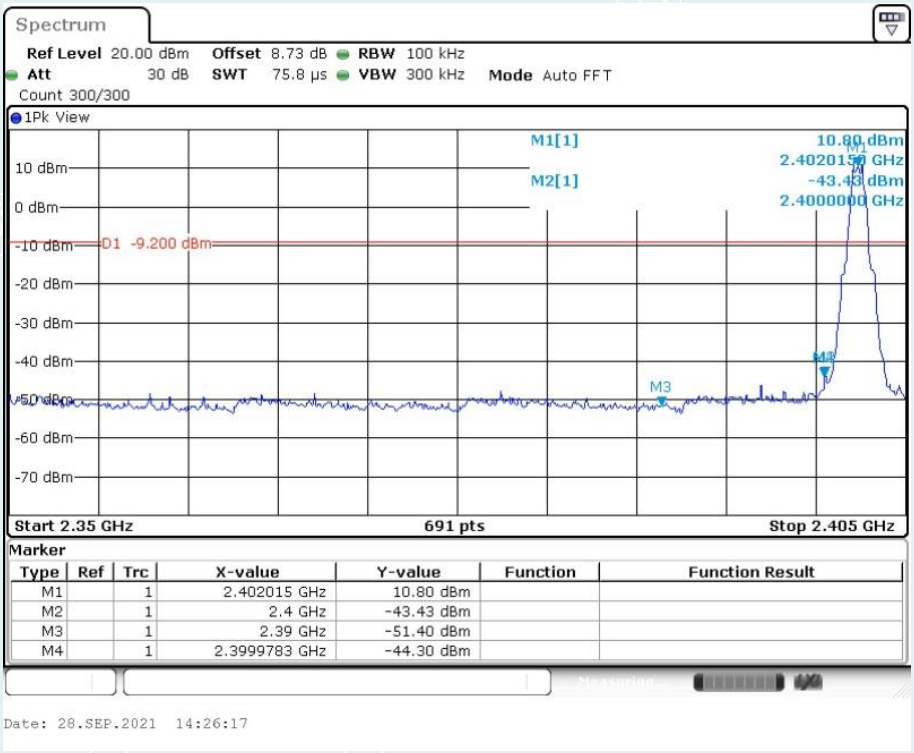


10.4 TEST RESULTS

For 1Mbps

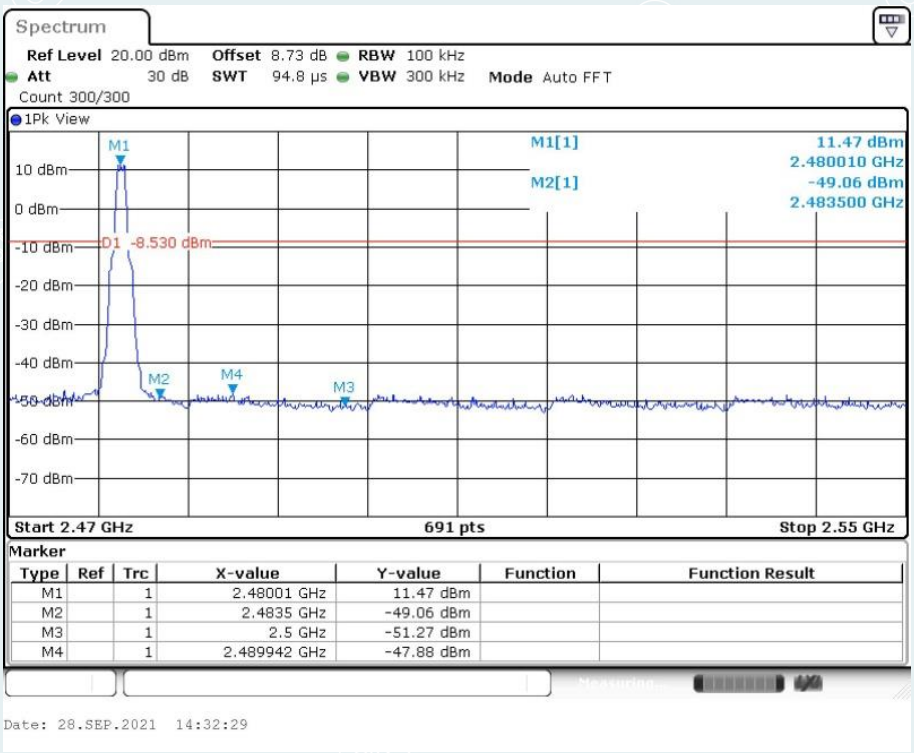
Lowest Frequency (2402MHz)

2.35GHz-2.405GHz



Highest Frequency (2480MHz)

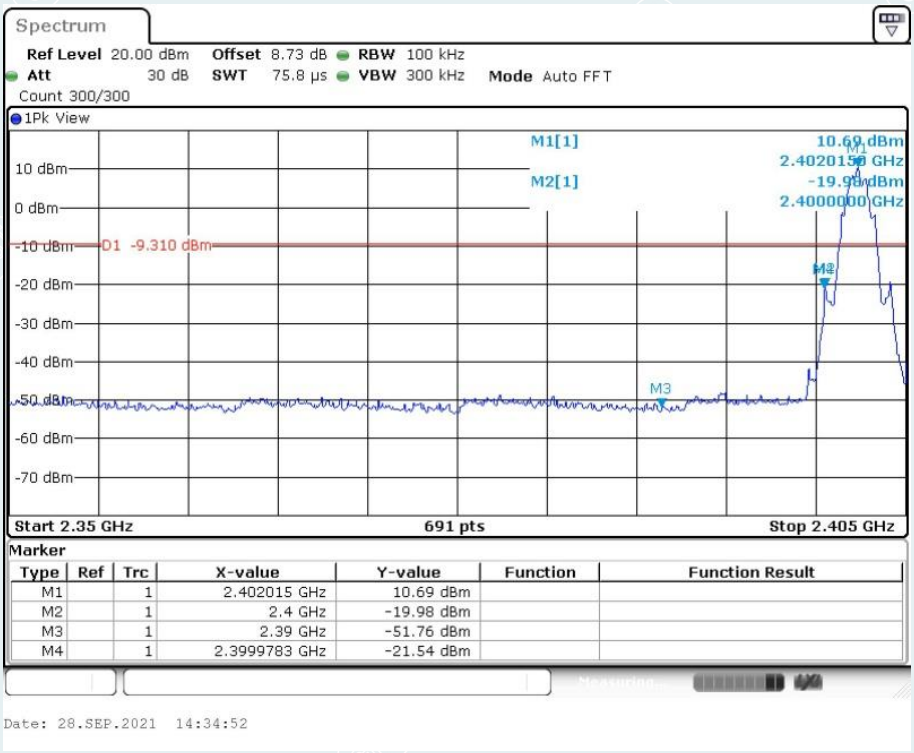
2.47GHz-2.55GHz



For 2Mbps

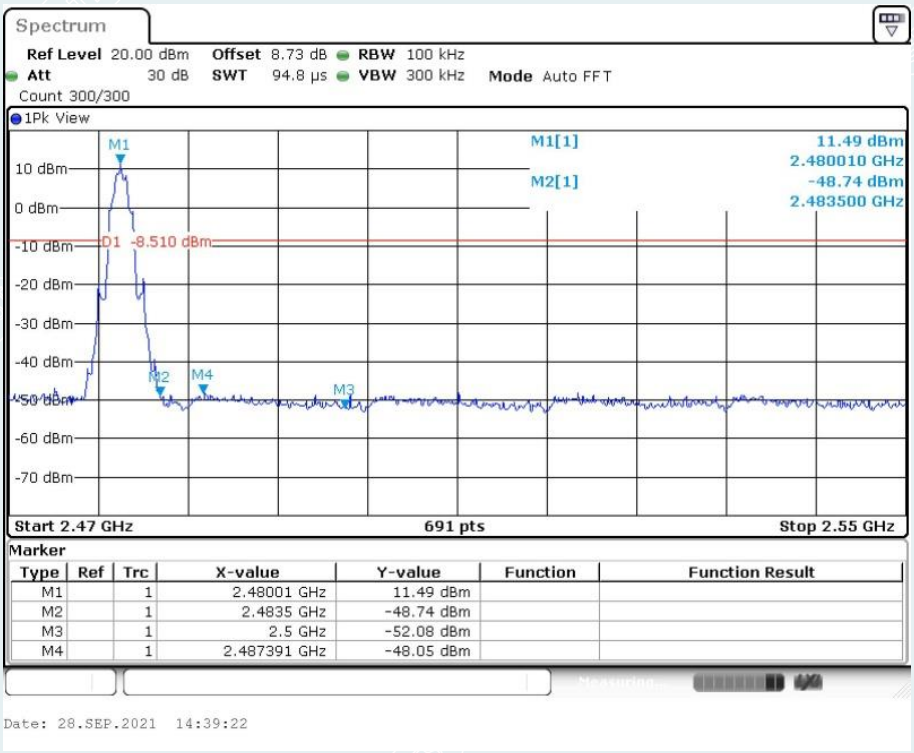
Lowest Frequency (2402MHz)

2.35GHz-2.405GHz



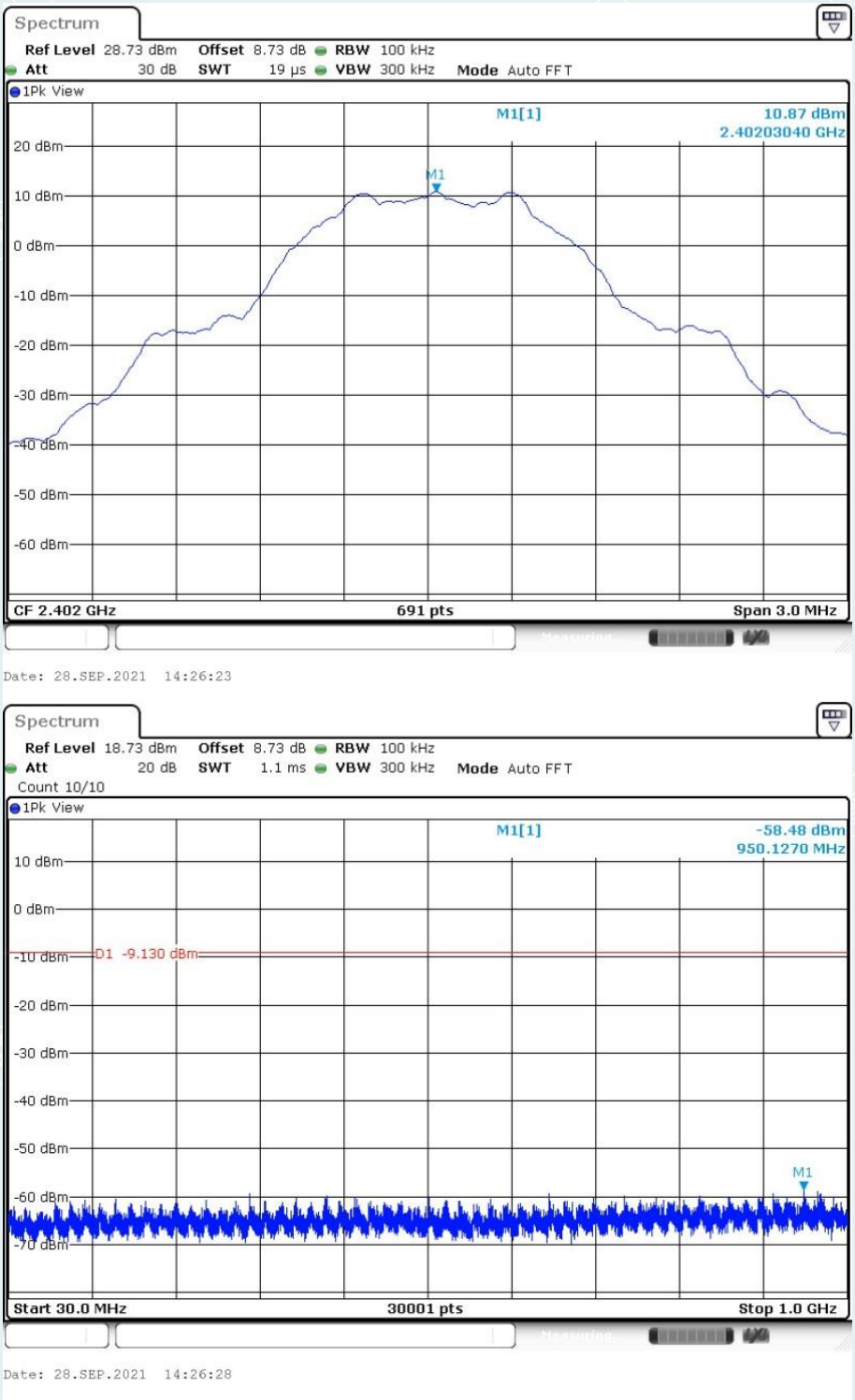
Highest Frequency (2480MHz)

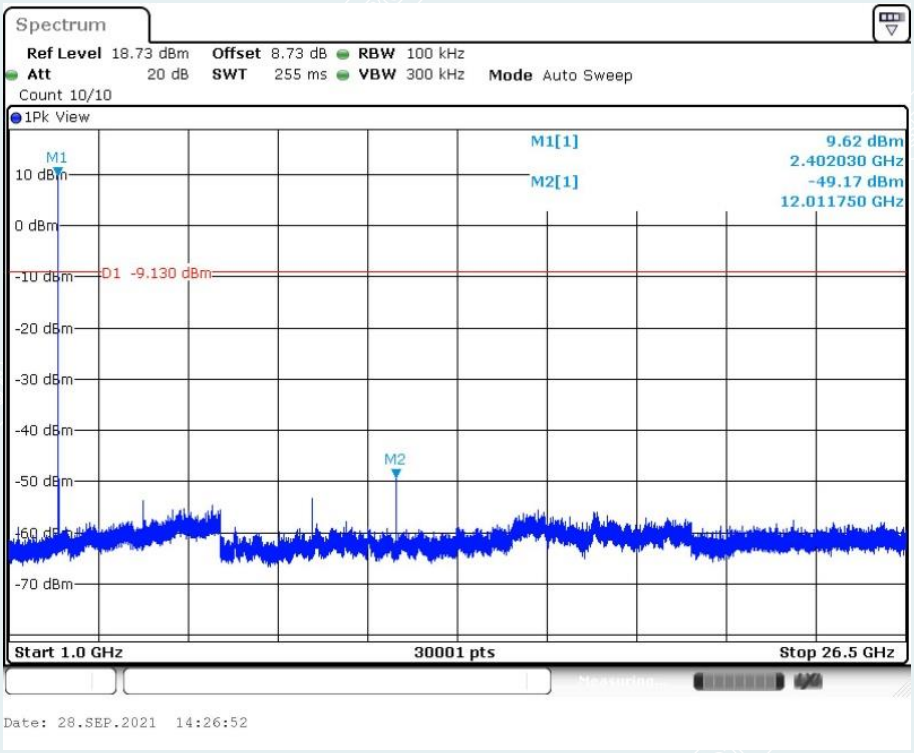
2.47GHz-2.55GHz



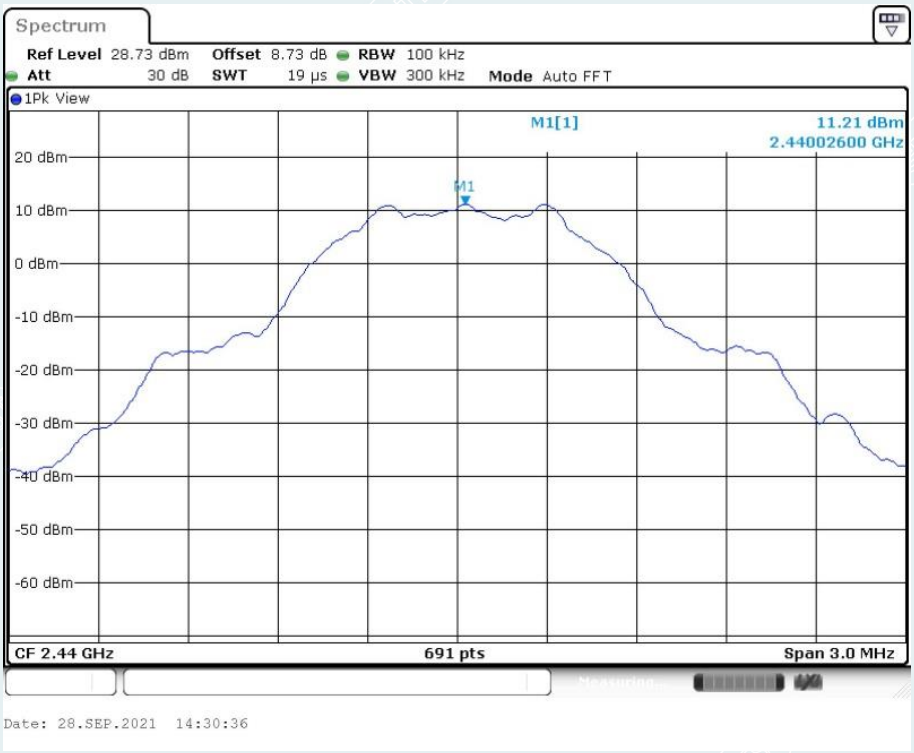
For 1Mbps

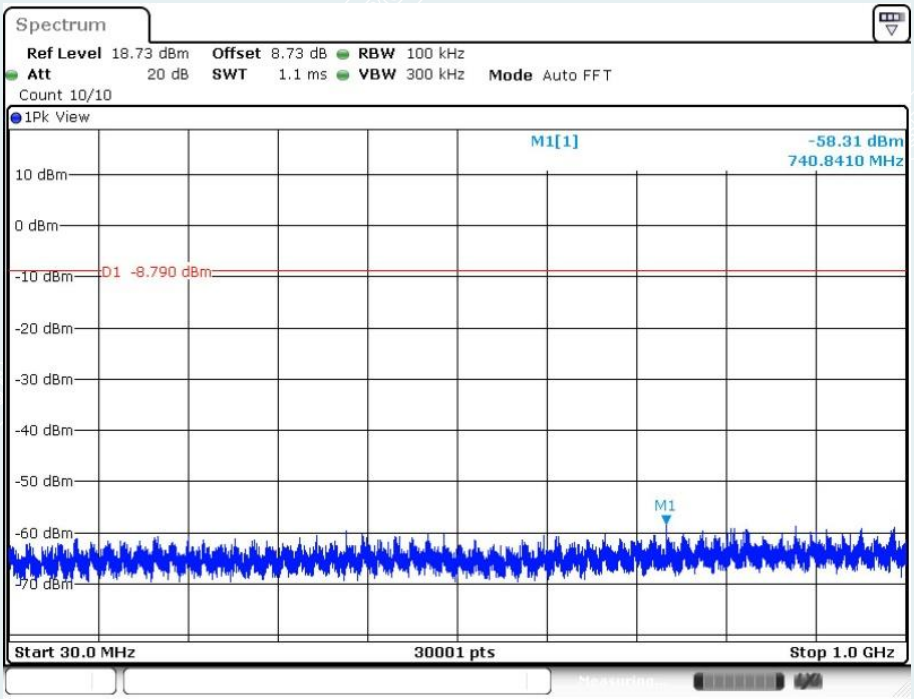
Lowest Frequency (2402MHz)

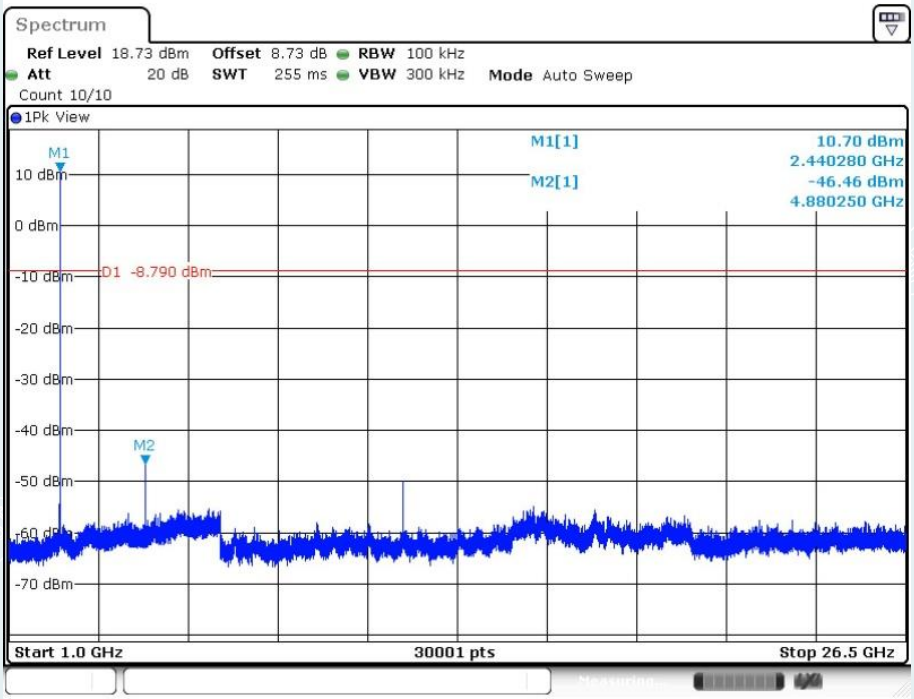




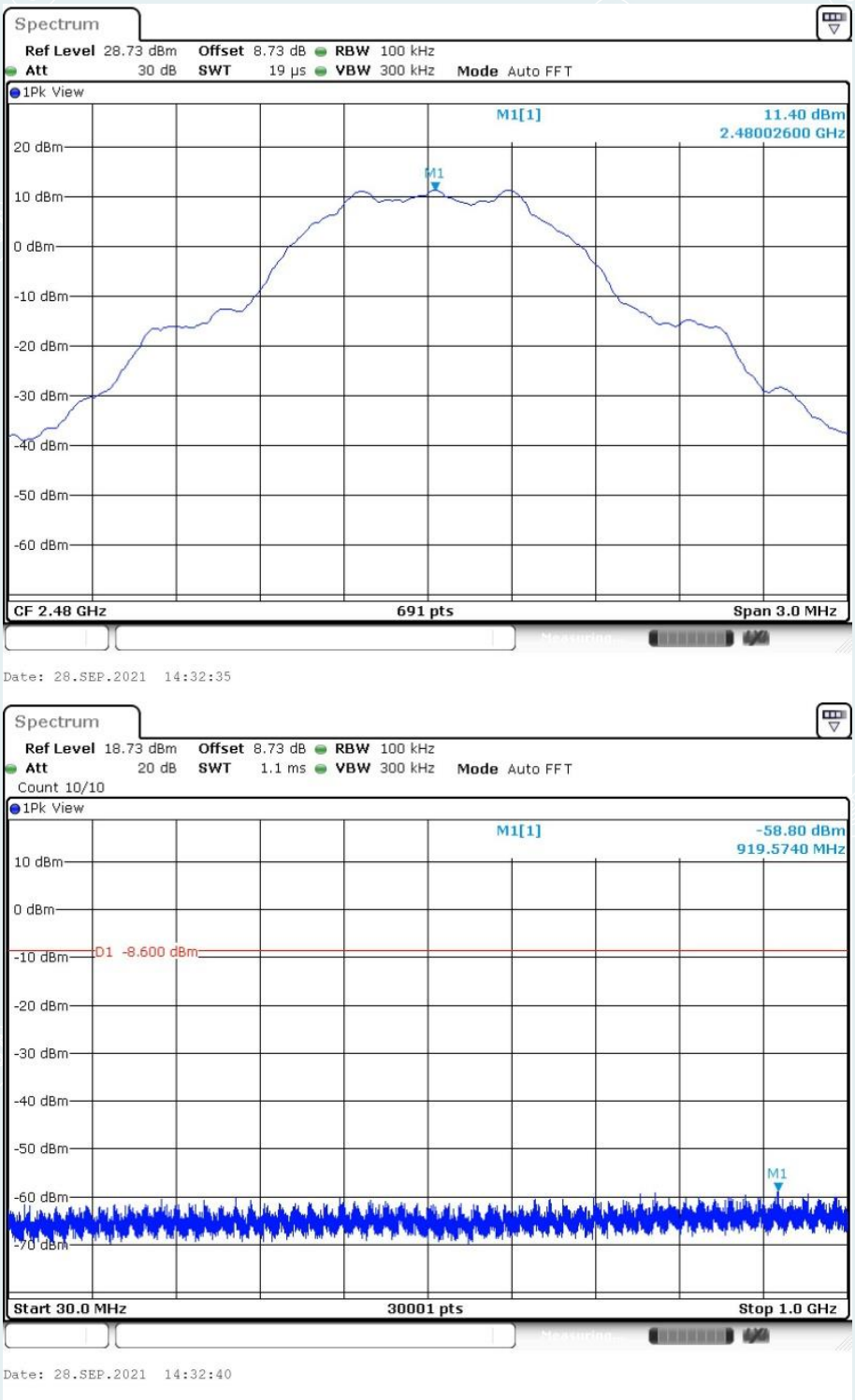
Middle Frequency (2440MHz)

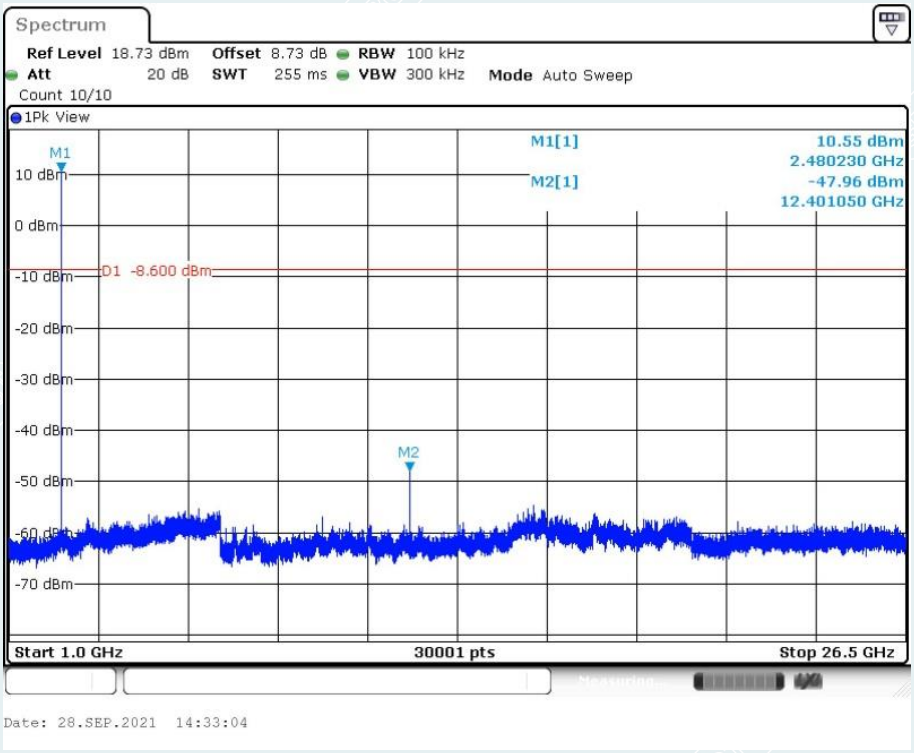



Spectrum
Ref Level 18.73 dBm Offset 8.73 dB RBW 100 kHz
Att 20 dB SWT 1.1 ms VBW 300 kHz Mode Auto FFT
Count 10/10
1Pk View
M1[1] -58.31 dBm
740.8410 MHz
10 dBm
0 dBm
D1 -8.790 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
Start 30.0 MHz
30001 pts
Stop 1.0 GHz
Date: 28.SEP.2021 14:30:41


Spectrum
Ref Level 18.73 dBm Offset 8.73 dB RBW 100 kHz
Att 20 dB SWT 255 ms VBW 300 kHz Mode Auto Sweep
Count 10/10
1Pk View
M1[1] 10.70 dBm
2.440280 GHz
M2[1] -46.46 dBm
4.880250 GHz
M1
10 dBm
0 dBm
D1 -8.790 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
M2
-50 dBm
-70 dBm
Start 1.0 GHz
30001 pts
Stop 26.5 GHz
Date: 28.SEP.2021 14:31:05

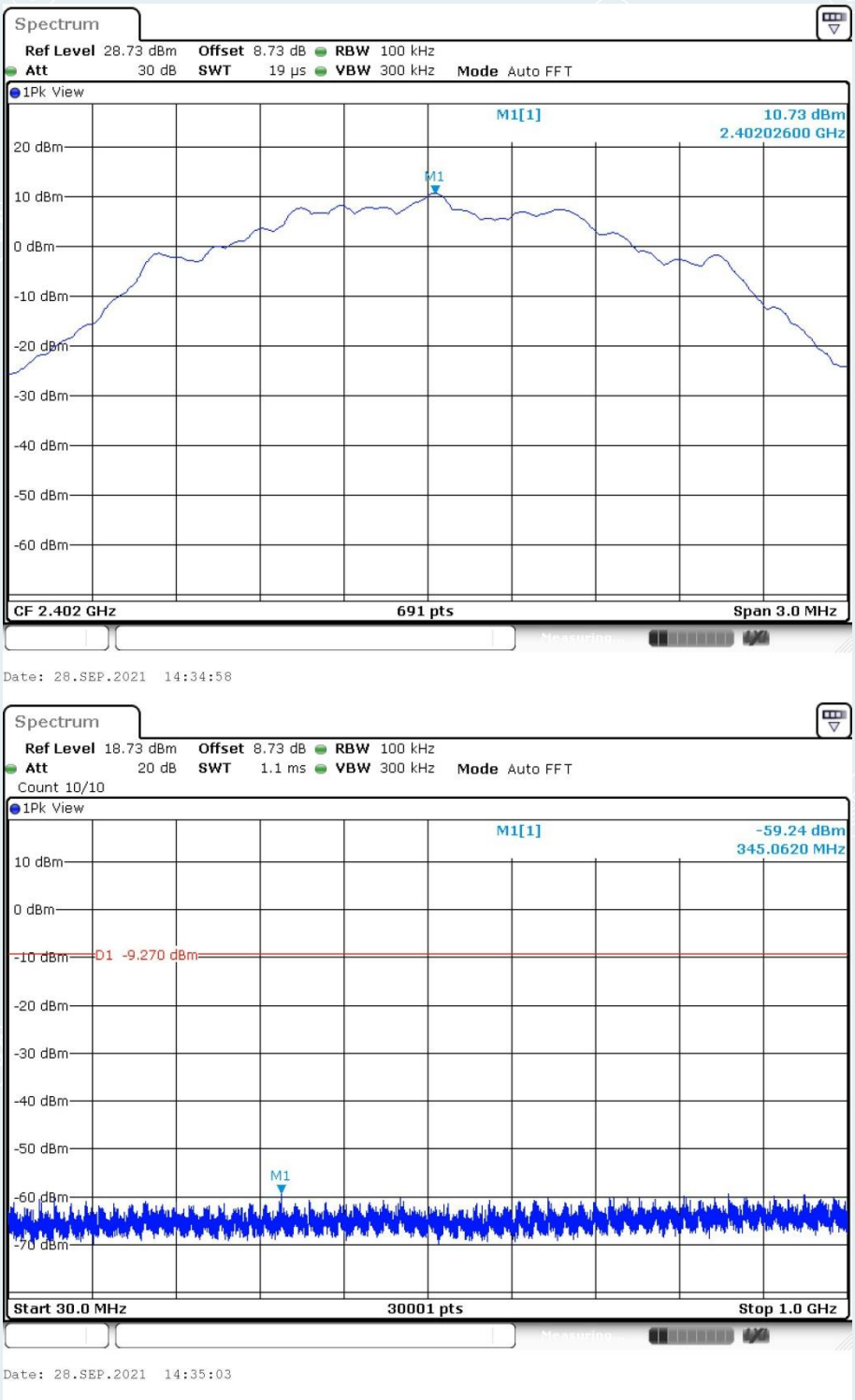
Highest Frequency (2480MHz)

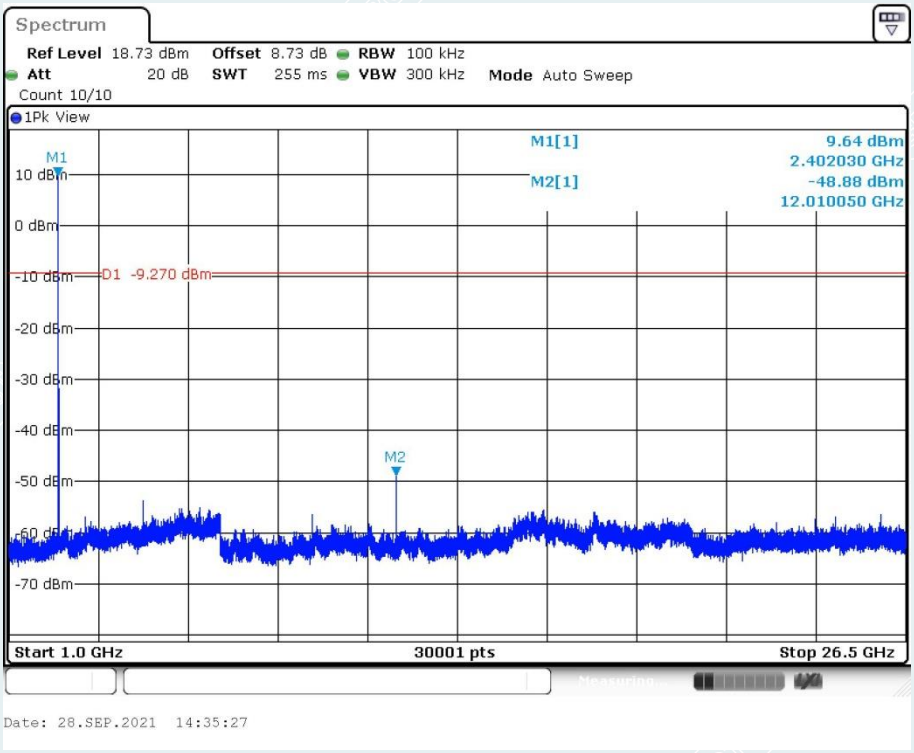



Spectrum
Ref Level 18.73 dBm Offset 8.73 dB RBW 100 kHz
Att 20 dB SWT 255 ms VBW 300 kHz Mode Auto Sweep
Count 10/10
1Pk View
M1[1] 10.55 dBm
2.480230 GHz
M2[1] -47.96 dBm
12.401050 GHz
D1 -8.600 dBm
Start 1.0 GHz 30001 pts Stop 26.5 GHz
Date: 28.SEP.2021 14:33:04

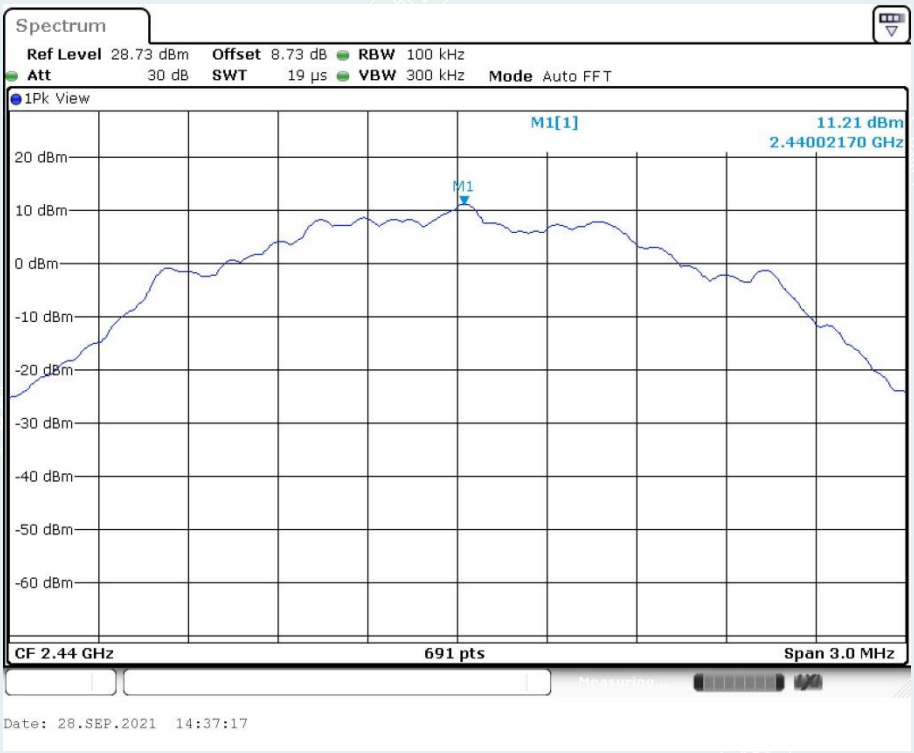
For 2Mbps

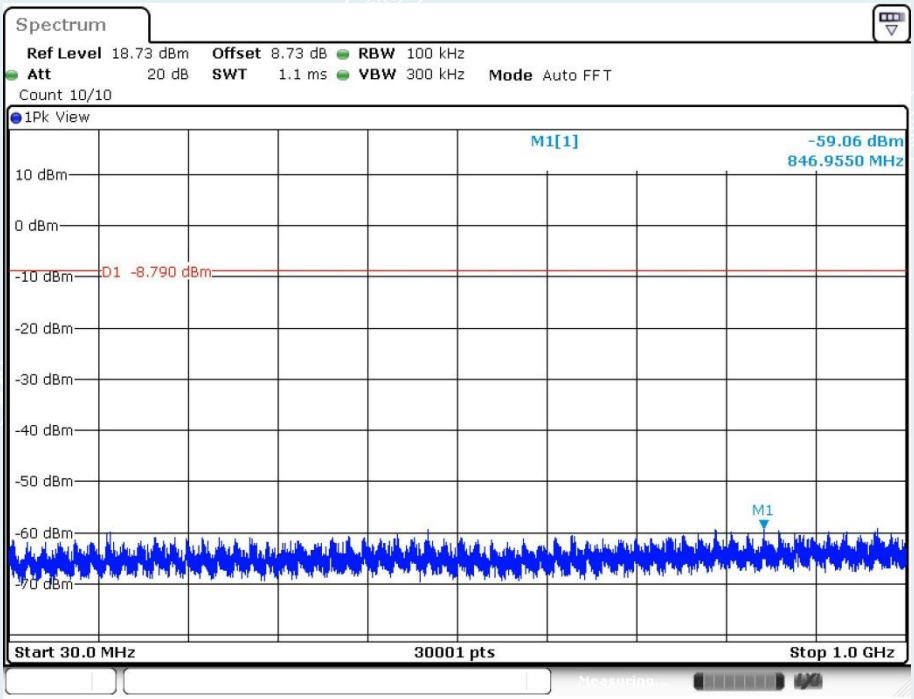
Lowest Frequency (2402MHz)

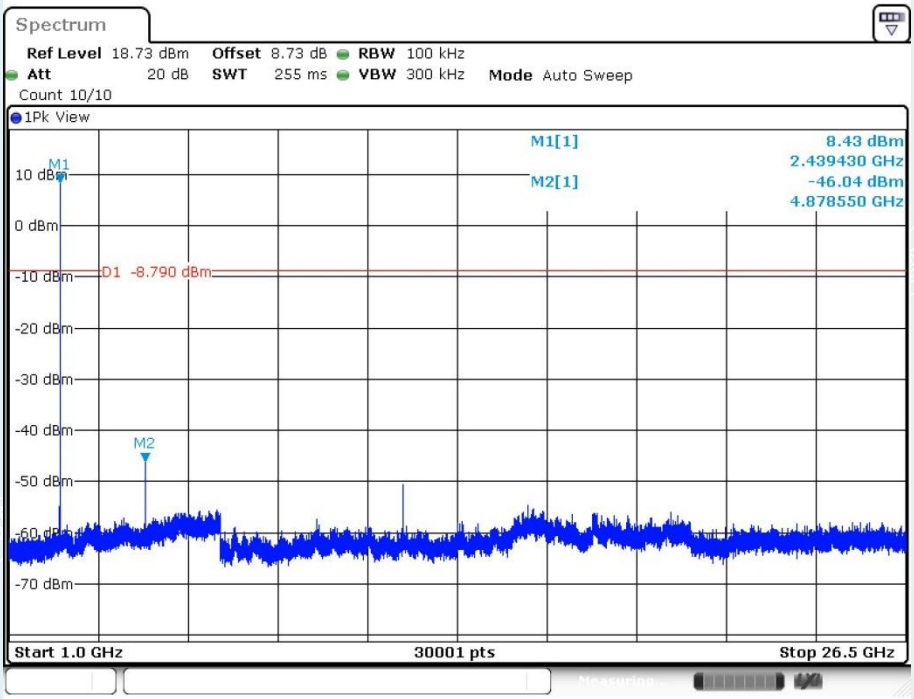




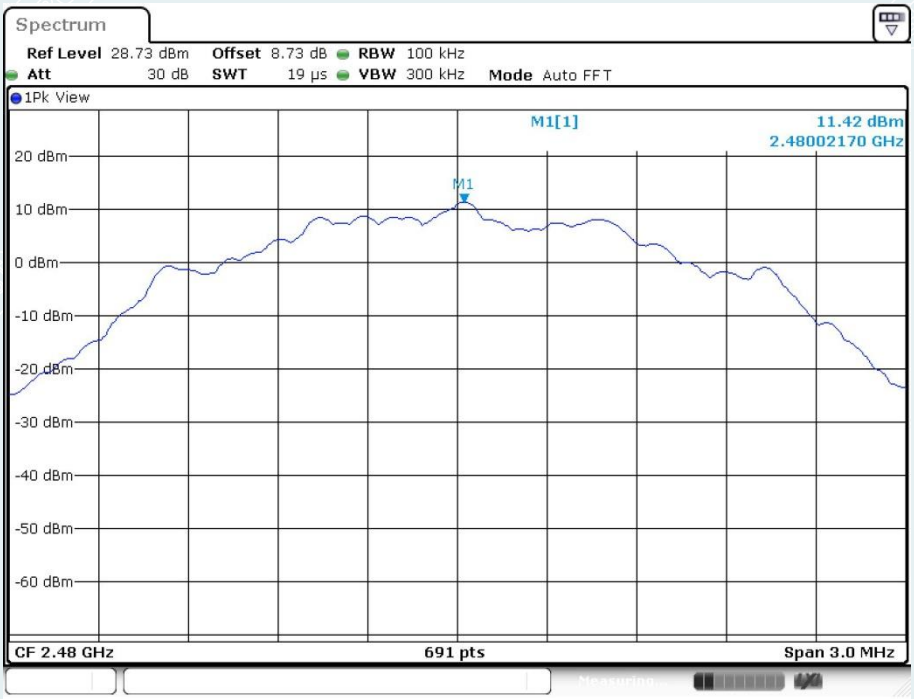
Middle Frequency (2440MHz)

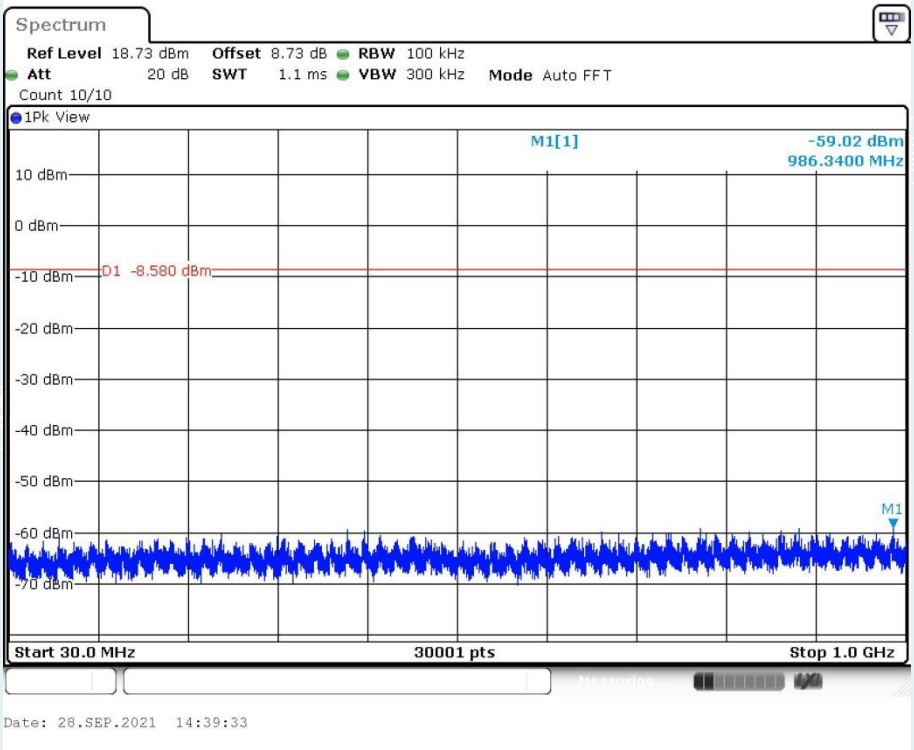


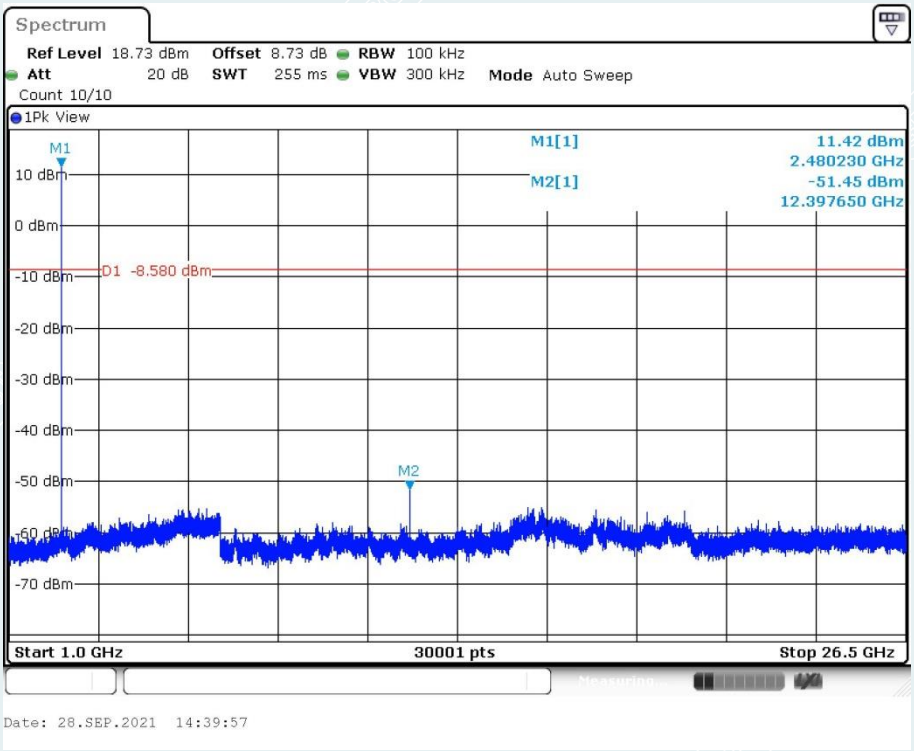

Spectrum
Ref Level 18.73 dBm Offset 8.73 dB RBW 100 kHz
Att 20 dB SWT 1.1 ms VBW 300 kHz Mode Auto FFT
Count 10/10
1Pk View
M1[1] -59.06 dBm
846.9550 MHz
D1 -8.790 dBm
M1
Start 30.0 MHz 30001 pts Stop 1.0 GHz
Date: 28.SEP.2021 14:37:22


Spectrum
Ref Level 18.73 dBm Offset 8.73 dB RBW 100 kHz
Att 20 dB SWT 255 ms VBW 300 kHz Mode Auto Sweep
Count 10/10
1Pk View
M1[1] 8.43 dBm
2.439430 GHz
M2[1] -46.04 dBm
4.878550 GHz
D1 -8.790 dBm
M1
M2
Start 1.0 GHz 30001 pts Stop 26.5 GHz
Date: 28.SEP.2021 14:37:46

Highest Frequency (2480MHz)






Spectrum
Ref Level 18.73 dBm Offset 8.73 dB RBW 100 kHz
Att 20 dB SWT 255 ms VBW 300 kHz Mode Auto Sweep
Count 10/10
1Pk View
M1[1] 11.42 dBm
2.480230 GHz
M2[1] -51.45 dBm
12.397650 GHz
D1 -8.580 dBm
Start 1.0 GHz 30001 pts Stop 26.5 GHz
Date: 28.SEP.2021 14:39:57

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

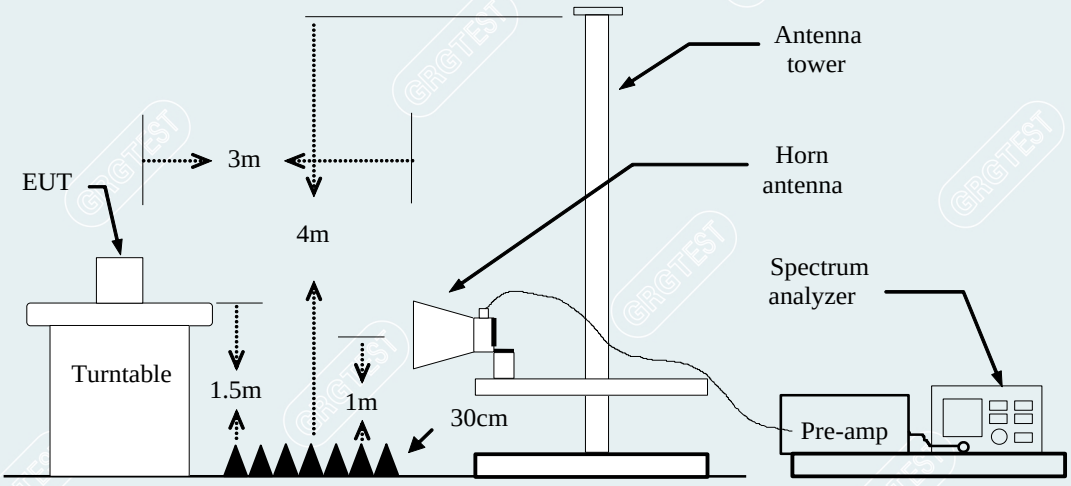
Frequency (MHz)	Quasi-peak(μV/m)	Measurement distance(m)	Quasi-peak(dBμV/m)@distance 3m
0.009-0.490	2400/F(kHz)	300	53.8~88.5
0.490-1.705	24000/F(kHz)	30	43~53.8
1.705-30.0	30	30	49.5
30 ~ 88	100	3	40
88~216	150	3	43.5
216 ~ 960	200	3	46
Above 960	500	3	54

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.

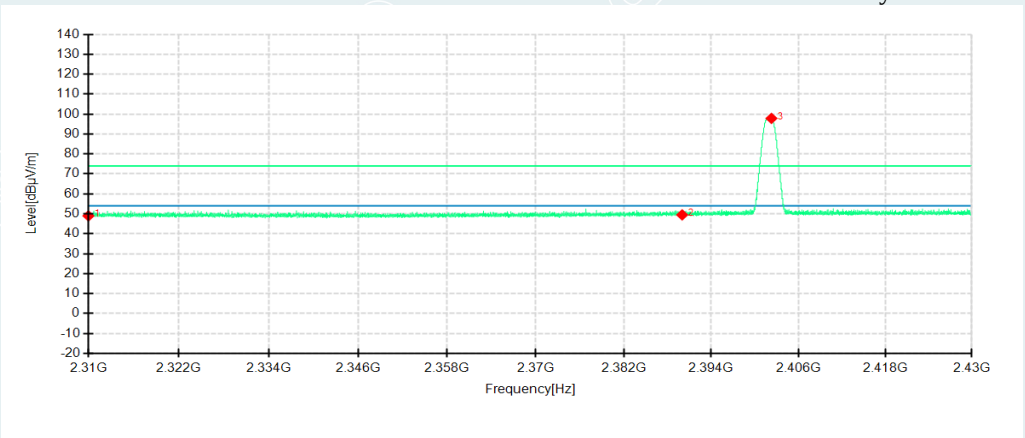
11.3 TEST SETUP



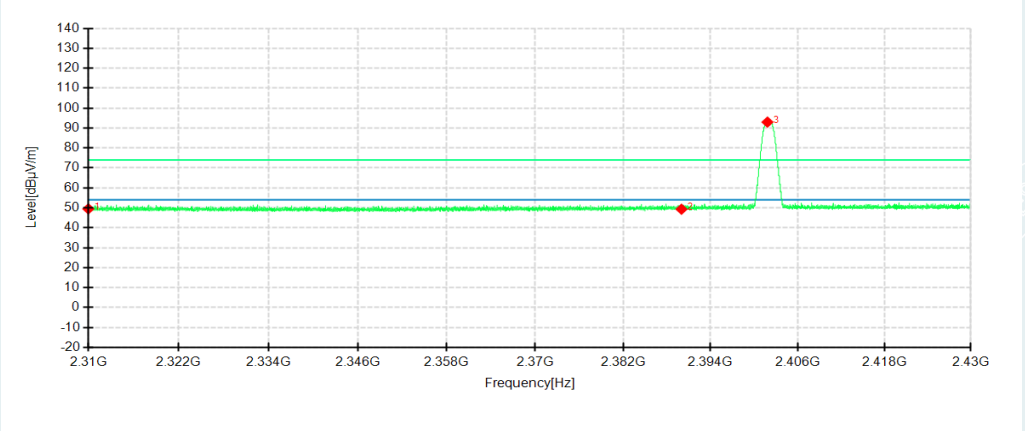
11.4 TEST RESULTS

For 1Mbps

Lowest Frequency
Frequency 2402MHz
Detector mode: Peak Polarity: Horizontal

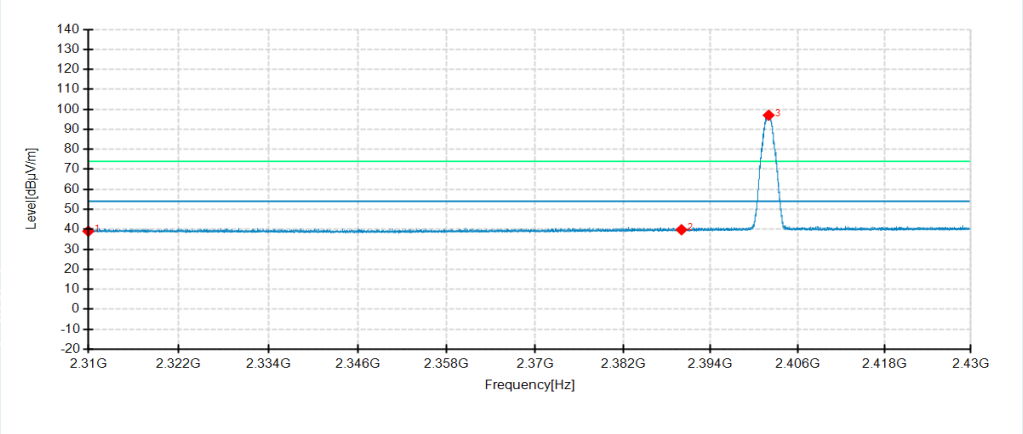


Detector mode: Peak Polarity: Vertical

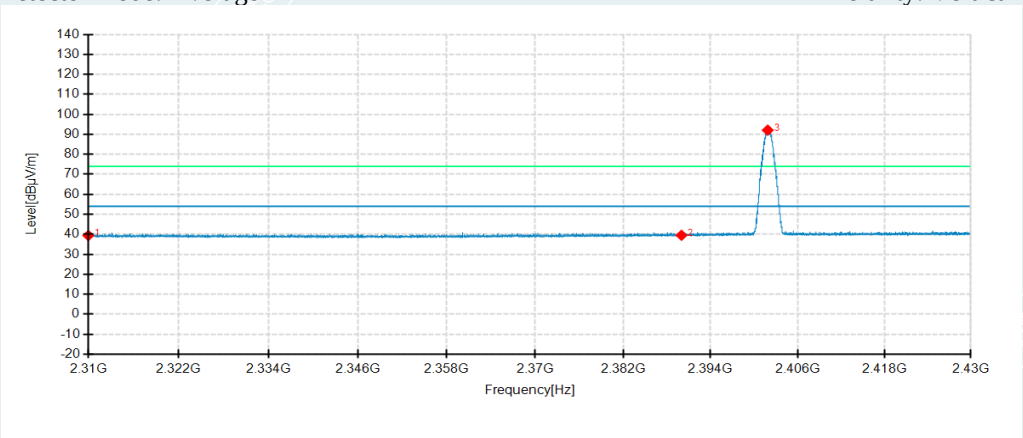


No.	Frequency MHz	Reading dBµV/m	Level dBµV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2310.0000	45.46	48.94	3.48	74.00	25.06	100	217	Horizontal	/
2	2390.0000	45.64	49.45	3.81	74.00	24.55	100	167	Horizontal	/
3	2402.2680	93.84	97.83	3.99	74.00	-23.83	100	167	Horizontal	No limit
1	2310.0000	45.98	49.46	3.48	74.00	24.54	100	193	Vertical	/
2	2390.0000	45.48	49.29	3.81	74.00	24.71	200	175	Vertical	/
3	2401.8240	88.98	92.97	3.99	74.00	-18.97	100	193	Vertical	No limit

Lowest Frequency
Frequency 2402MHz
Detector mode: Average Polarity: Horizontal

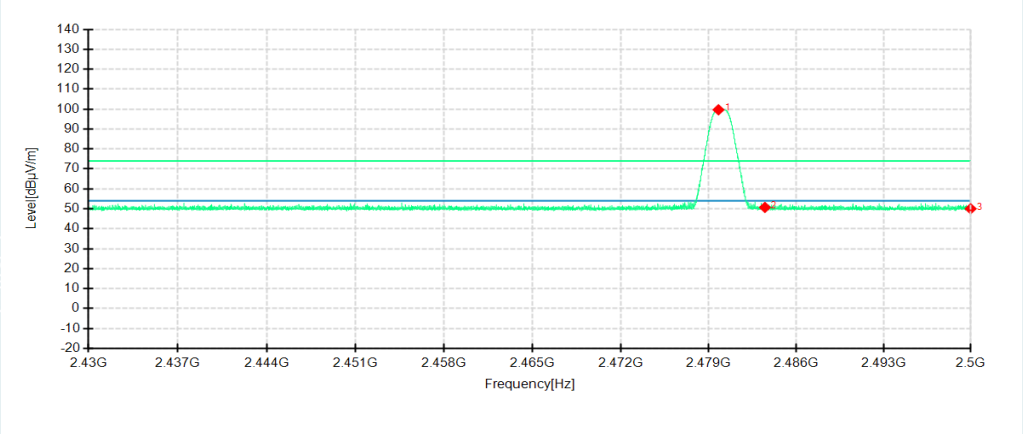


Detector mode: Average Polarity: Vertical

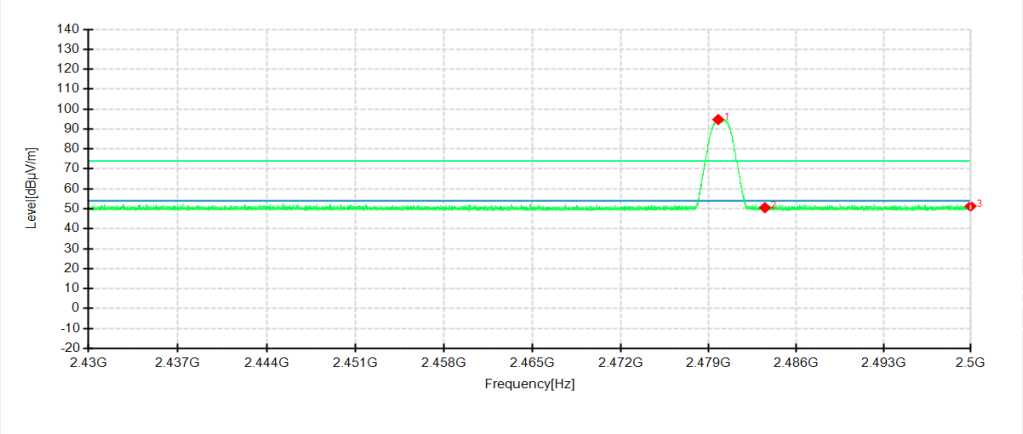


No.	Frequency MHz	Reading dBµV/m	Level dBµV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2310.0000	35.52	39.00	3.48	54.00	15.00	100	167	Horizontal	/
2	2390.0000	35.96	39.77	3.81	54.00	14.23	200	151	Horizontal	/
3	2401.9920	93.06	97.05	3.99	54.00	-43.05	100	167	Horizontal	No limit
1	2310.0000	35.90	39.38	3.48	54.00	14.62	200	167	Vertical	/
2	2390.0000	35.67	39.48	3.81	54.00	14.52	100	126	Vertical	/
3	2401.8600	88.10	92.09	3.99	54.00	-38.09	100	193	Vertical	No limit

Highest Frequency
Frequency 2480MHz
Detector mode: Peak Polarity: Horizontal

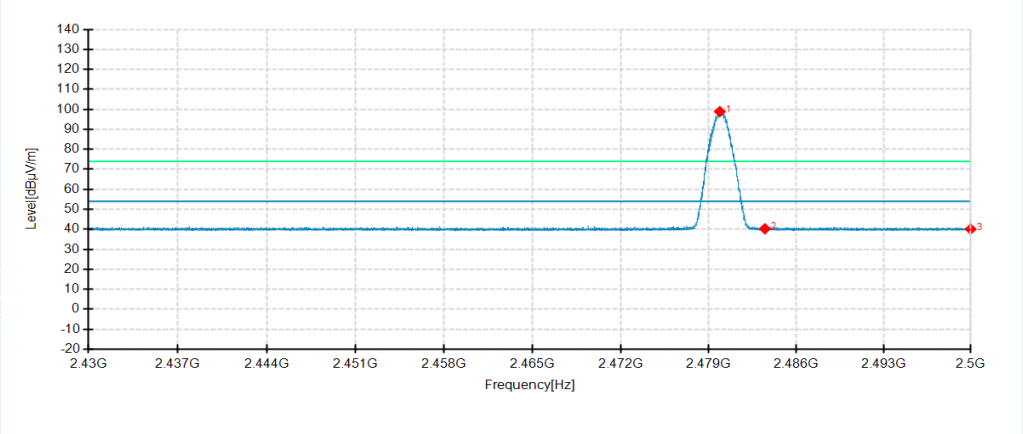


Detector mode: Peak Polarity: Vertical

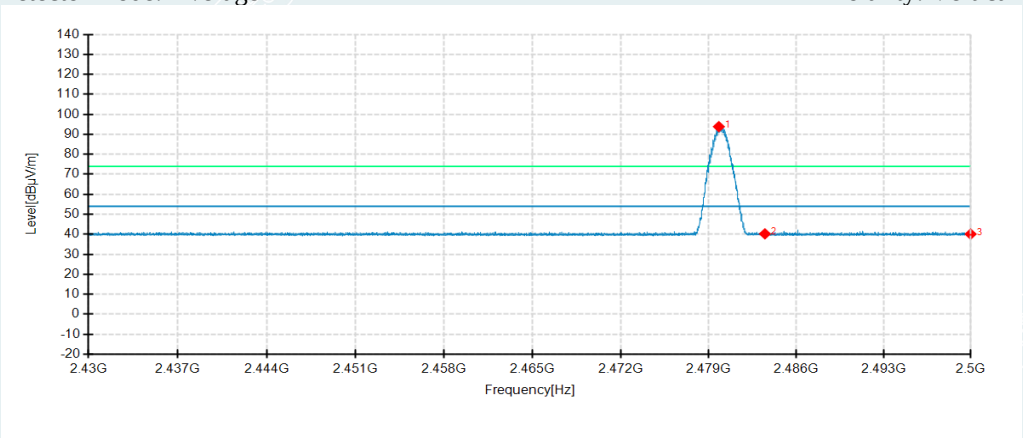


No.	Frequency MHz	Reading dBµV/m	Level dBµV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2479.7910	95.32	99.64	4.32	74.00	-25.64	100	353	Horizontal	No limit
2	2483.5000	46.37	50.70	4.33	74.00	23.30	200	0	Horizontal	/
3	2500.0000	45.64	50.02	4.38	74.00	23.98	200	193	Horizontal	/
1	2479.7700	90.43	94.75	4.32	74.00	-20.75	100	193	Vertical	No limit
2	2483.5000	46.20	50.53	4.33	74.00	23.47	200	357	Vertical	/
3	2500.0000	46.93	51.31	4.38	74.00	22.69	100	0	Vertical	/

Highest Frequency
Frequency 2480MHz
Detector mode: Average Polarity: Horizontal



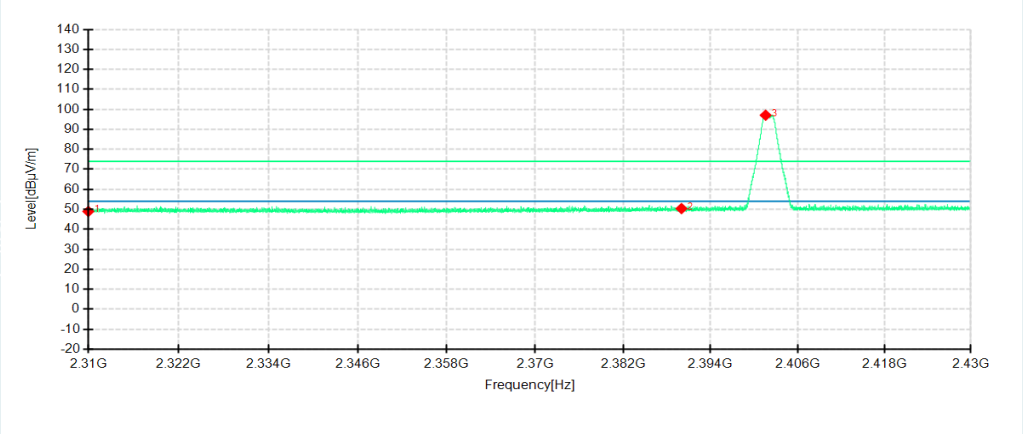
Detector mode: Average Polarity: Vertical



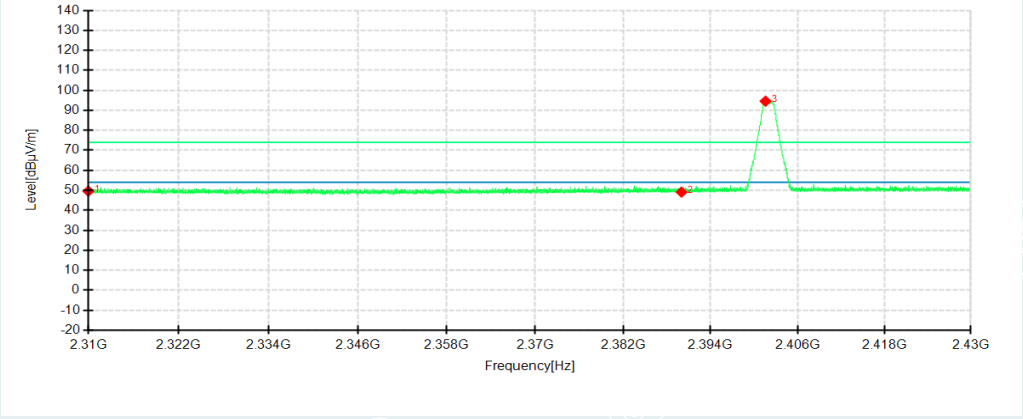
No.	Frequency MHz	Reading dBµV/m	Level dBµV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2479.8960	94.55	98.87	4.32	54.00	-44.87	100	353	Horizontal	No limit
2	2483.5000	35.91	40.24	4.33	54.00	13.76	100	167	Horizontal	/
3	2500.0000	35.66	40.04	4.38	54.00	13.96	200	193	Horizontal	/
1	2479.8190	89.51	93.83	4.32	54.00	-39.83	100	193	Vertical	No limit
2	2483.5000	35.87	40.20	4.33	54.00	13.80	200	167	Vertical	/
3	2500.0000	35.70	40.08	4.38	54.00	13.92	100	193	Vertical	/

For 2Mbps

Lowest Frequency
Frequency 2402MHz
Detector mode: Peak Polarity: Horizontal

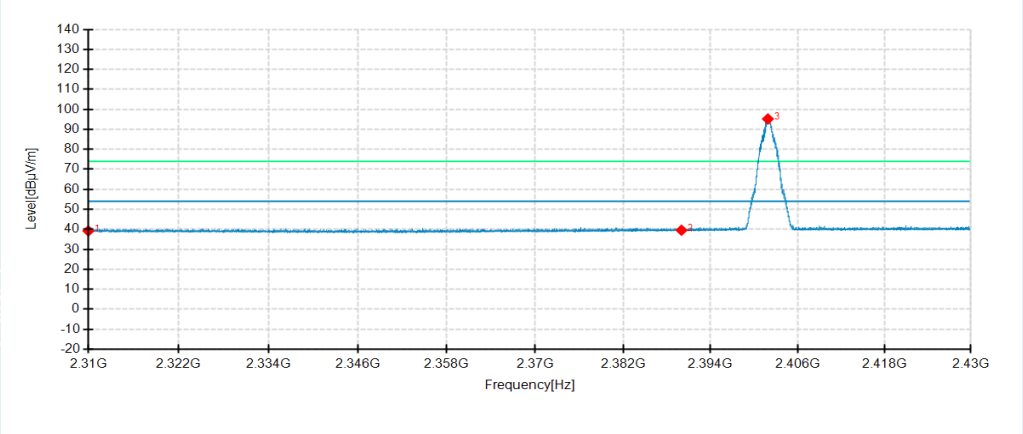


Detector mode: Peak Polarity: Vertical

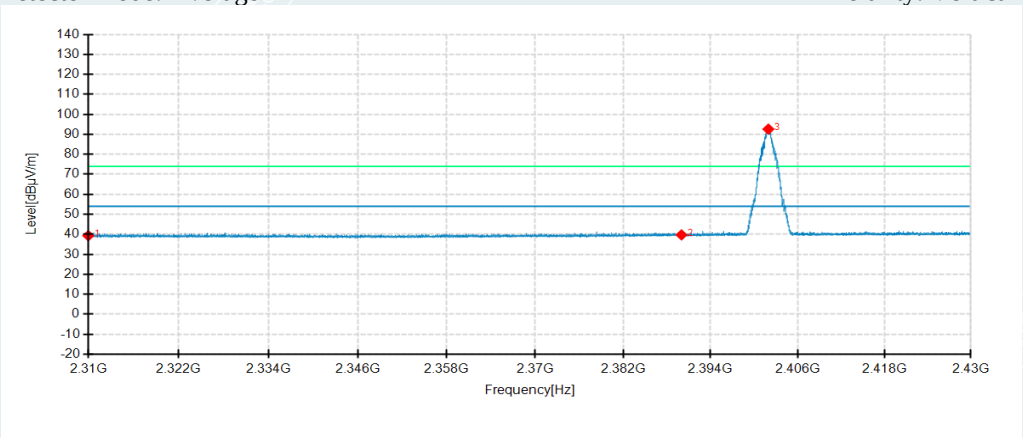


No.	Frequency MHz	Reading dBµV/m	Level dBµV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2310.0000	45.44	48.92	3.48	74.00	25.08	200	193	Horizontal	/
2	2390.0000	46.54	50.35	3.81	74.00	23.65	200	193	Horizontal	/
3	2401.5720	93.06	97.05	3.99	74.00	-23.05	100	167	Horizontal	No limit
1	2310.0000	46.07	49.55	3.48	74.00	24.45	100	13	Vertical	/
2	2390.0000	45.28	49.09	3.81	74.00	24.91	200	167	Vertical	/
3	2401.5600	90.57	94.56	3.99	74.00	-20.56	100	193	Vertical	No limit

Lowest Frequency
Frequency 2402MHz
Detector mode: Average Polarity: Horizontal

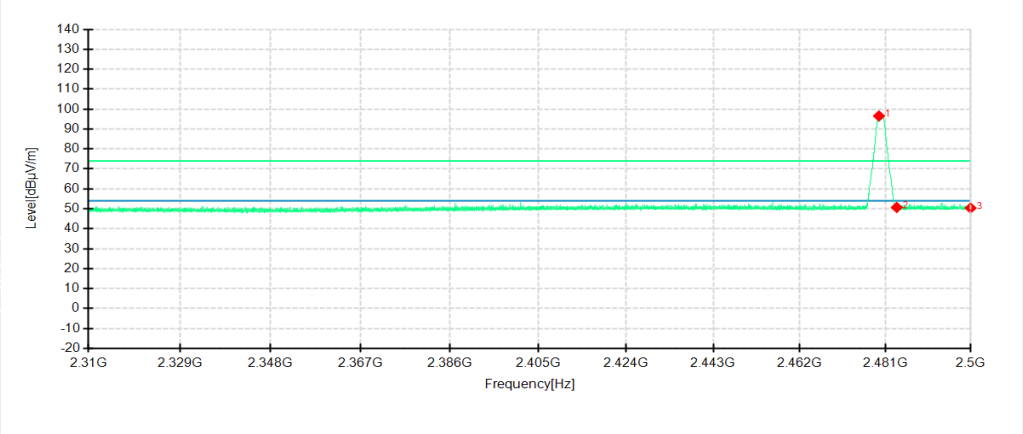


Detector mode: Average Polarity: Vertical

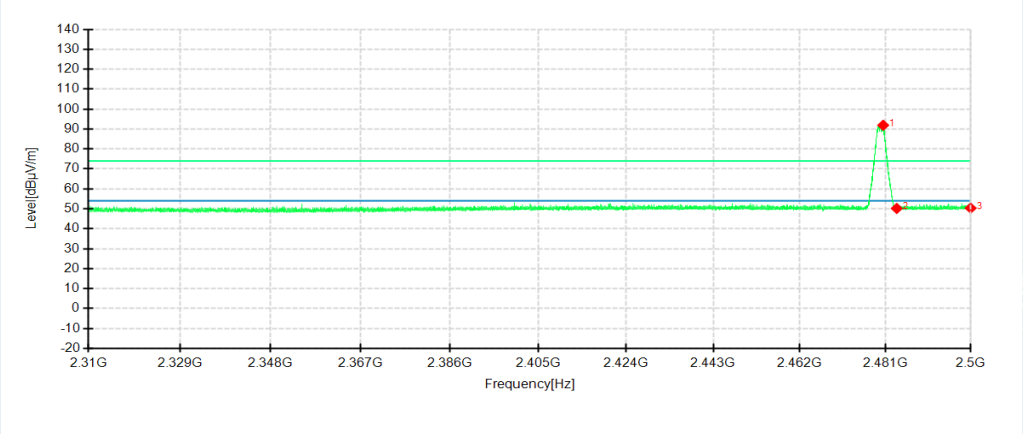


No.	Frequency MHz	Reading dBµV/m	Level dBµV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2310.0000	35.68	39.16	3.48	54.00	14.84	100	167	Horizontal	/
2	2390.0000	35.69	39.50	3.81	54.00	14.50	200	193	Horizontal	/
3	2401.8840	91.20	95.19	3.99	54.00	-41.19	100	167	Horizontal	No limit
1	2310.0000	35.81	39.29	3.48	54.00	14.71	100	25	Vertical	/
2	2390.0000	35.88	39.69	3.81	54.00	14.31	200	341	Vertical	/
3	2401.9560	88.59	92.58	3.99	54.00	-38.58	100	193	Vertical	No limit

Highest Frequency
Frequency 2480MHz
Detector mode: Peak Polarity: Horizontal

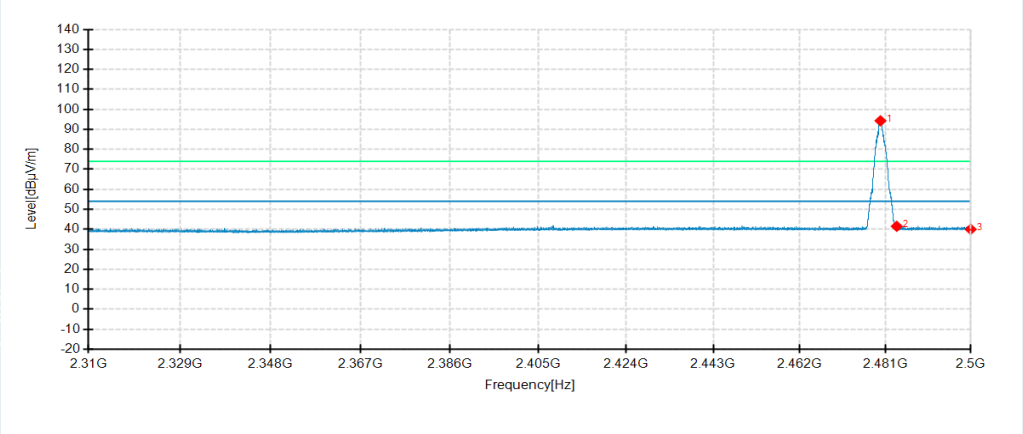


Detector mode: Peak Polarity: Vertical

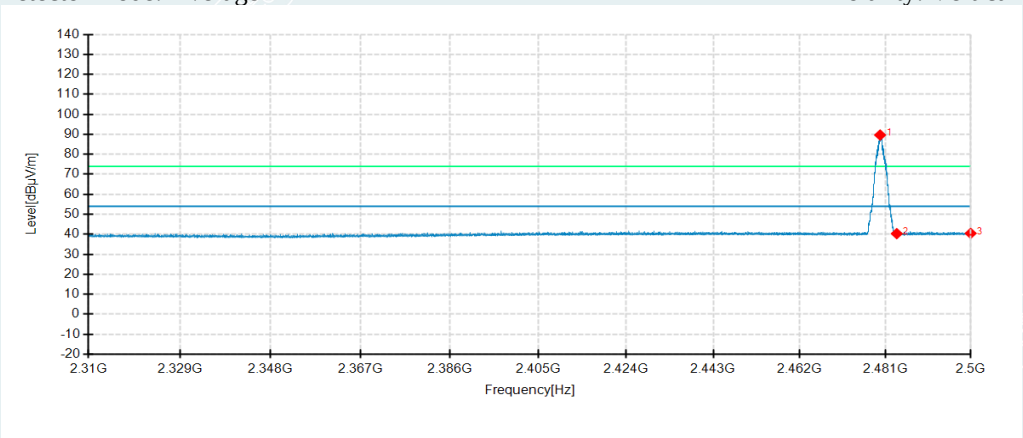


No.	Frequency MHz	Reading dBµV/m	Level dBµV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2479.5560	92.21	96.53	4.32	74.00	-22.53	100	282	Horizontal	No limit
2	2483.5000	46.36	50.69	4.33	74.00	23.31	100	282	Horizontal	/
3	2500.0000	45.99	50.37	4.38	74.00	23.63	100	167	Horizontal	/
1	2480.4870	87.56	91.88	4.32	74.00	-17.88	100	193	Vertical	No limit
2	2483.5000	45.85	50.18	4.33	74.00	23.82	200	323	Vertical	/
3	2500.0000	45.95	50.33	4.38	74.00	23.67	200	208	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 dBuV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2479.8790	89.94	94.26	4.32	54.00	-40.26	100	274	Horizontal	No limit
2	2483.5000	37.14	41.47	4.33	54.00	12.53	100	283	Horizontal	/
3	2500.0000	35.58	39.96	4.38	54.00	14.04	100	225	Horizontal	/
1	2479.8030	85.31	89.63	4.32	54.00	-35.63	100	193	Vertical	No limit
2	2483.5000	35.98	40.31	4.33	54.00	13.69	100	94	Vertical	/
3	2500.0000	36.08	40.46	4.38	54.00	13.54	100	28	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 Test setup photo.

APPENDIX B. PHOTOGRAPH OF THE EUT

Please refer to the attached document EUT Photo.

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