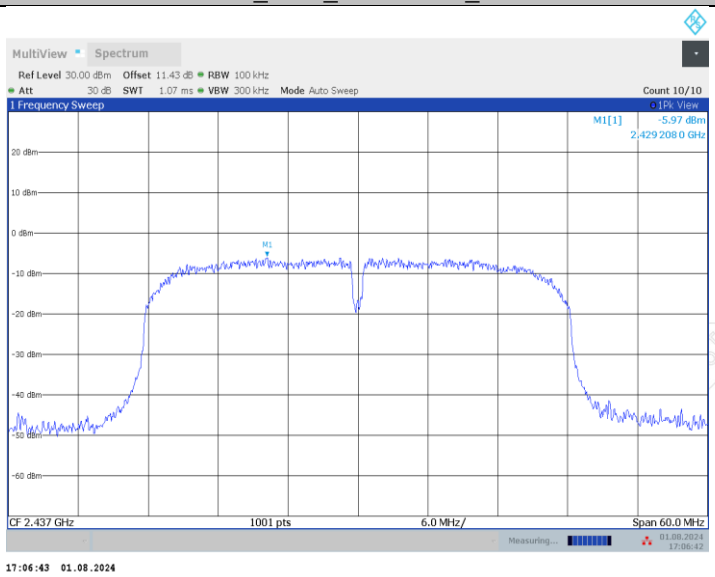
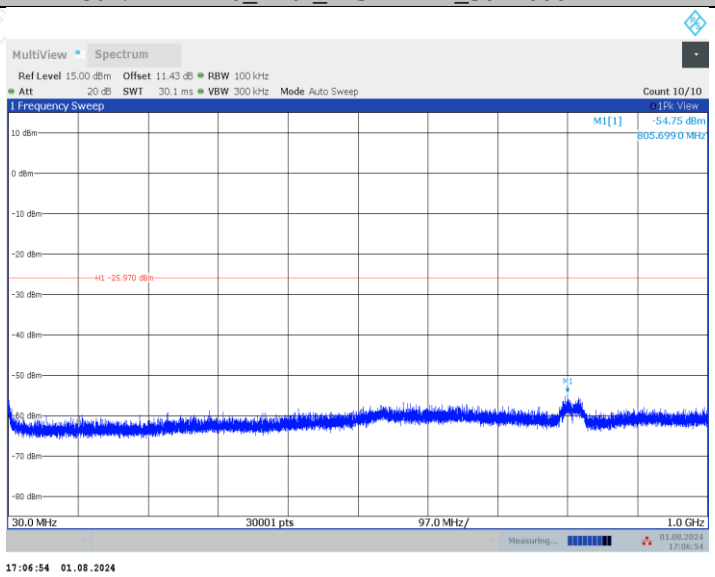
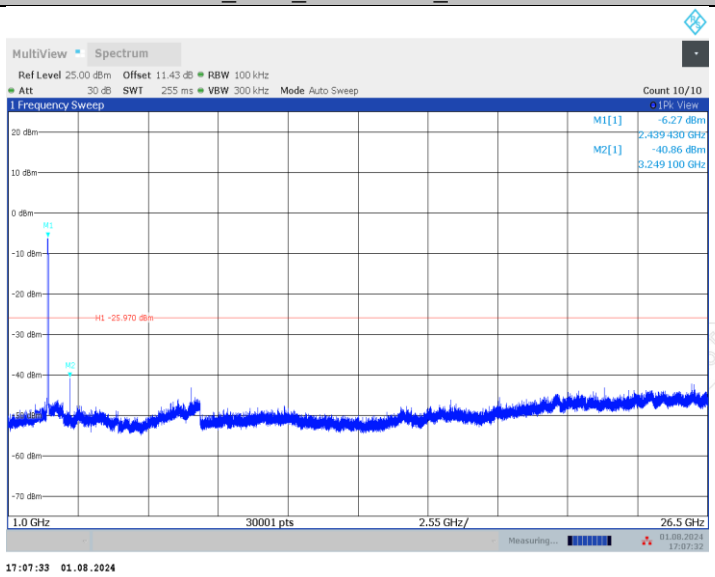
802.11n HT40_Ant1_2437 MHz _0~Reference



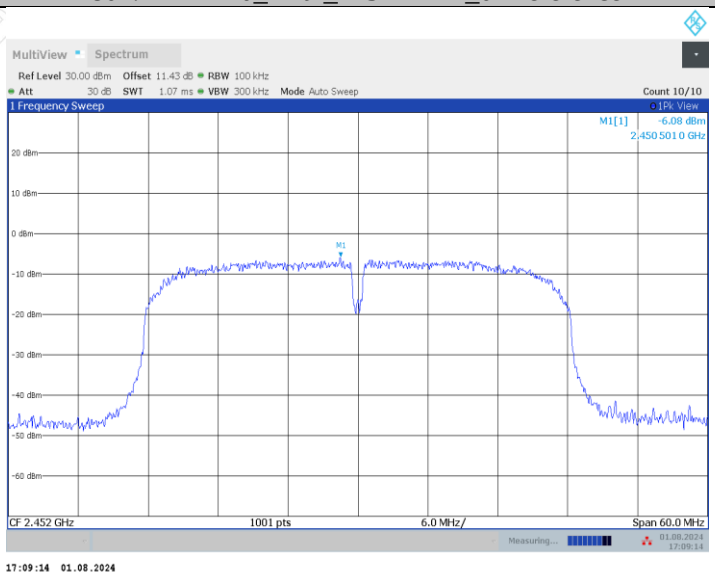
802.11n HT40_Ant1_2437 MHz _30~1000 MHz



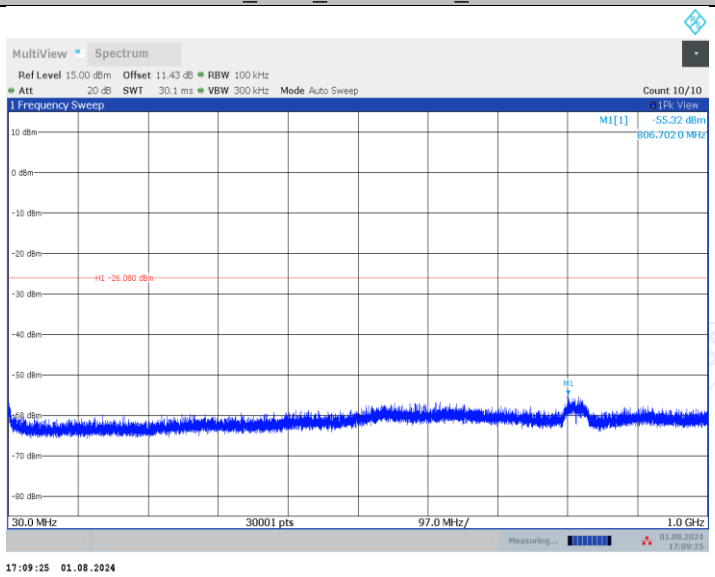
802.11n HT40_Ant1_2437 MHz _1000~26500 MHz



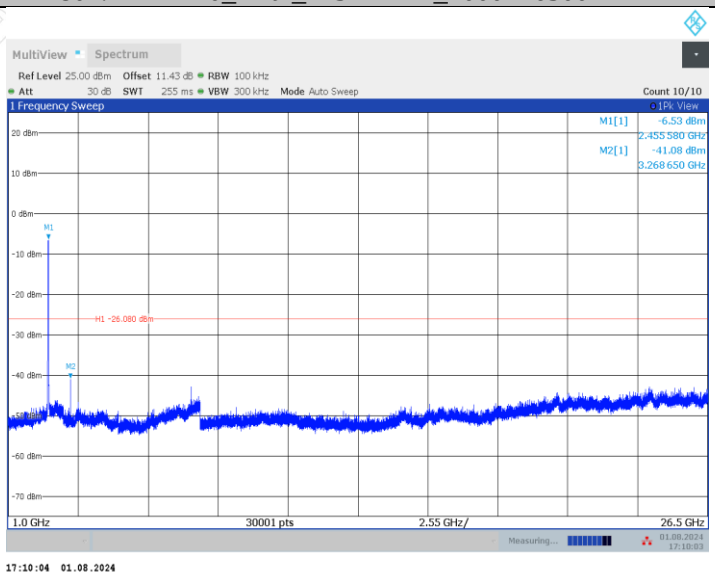
802.11n HT40_Ant1_2452 MHz _0~Reference



802.11n HT40_Ant1_2452 MHz _30~1000 MHz



802.11n HT40_Ant1_2452 MHz _1000~26500 MHz



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			

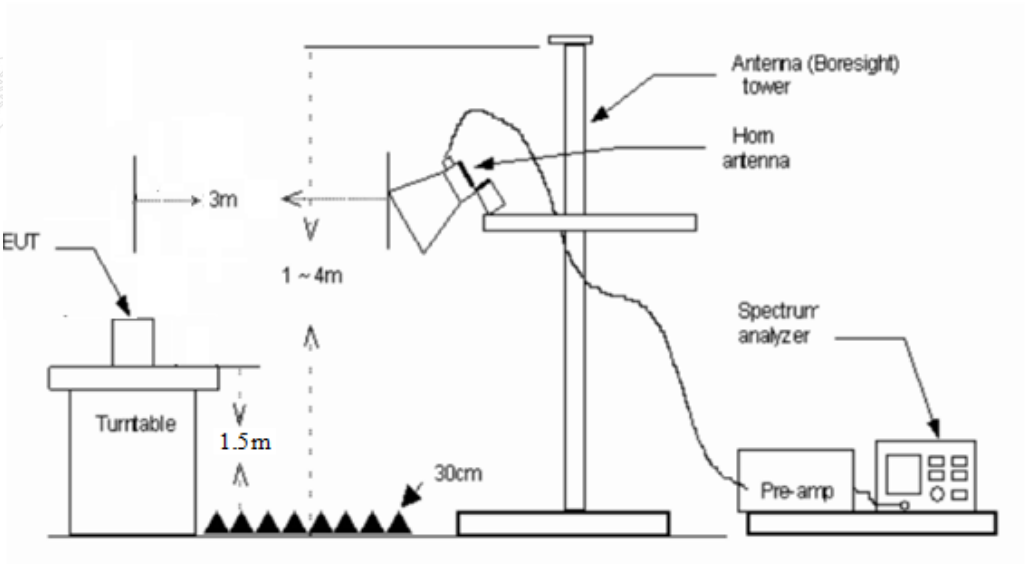
Frequency (MHz)	Quasi-peak(μV/m)	Measurement distance(m)	Quasi-peak(dBμV/m)@distance 3m
0.009-0.490	2400/F(kHz)	300	128.5~93.8
0.490-1.705	24000/F(kHz)	30	73.8~63
1.705-30.0	30	30	69.5
30 ~ 88	100	3	40
88~216	150	3	43.5
216 ~ 960	200	3	46
Above 960	500	3	54

11.2 TEST PROCEDURES

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
   c) If the EUT is configured to transmit with duty cycle ≥98%，set VBW≤RBW/100 (i.e.,10kHz) but not less than 10 Hz.
   d) If the EUT duty cycle is ＜98%，set VBW≥1/T, Where T is defined in section 2.9.

Repeat the procedures until all the PEAK and AVERAGE versus polarization are measured.

11.3 TEST SETUP



11.4 TEST RESULTS

The test are under the EUT typical placement for ceiling mounted the EUT can rotate 90 ˚, 180 ˚, 270 ˚etc. lying flat, standing on the table, etc. Only the worst case EUT lying flat results recorded in the report.

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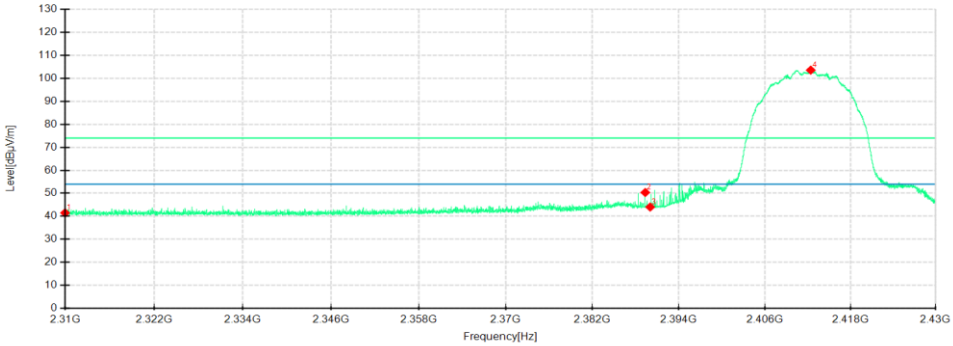
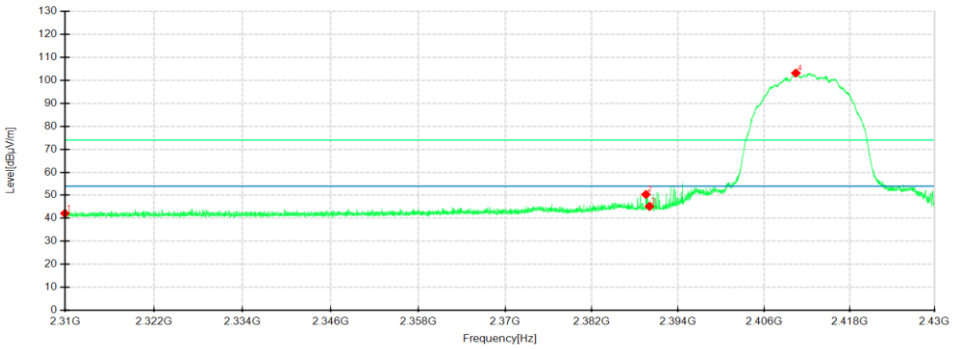
Test Voltage:	DC 5V	Test Engineer:	Qin tingting
Test Date	2024-08-24	Environmental Conditions	24.3℃/64%RH/101.0kPa

802.11b mode
Lowest Channel
Frequency 2412MHz
Detector mode: Peak Polarity: Horizontal

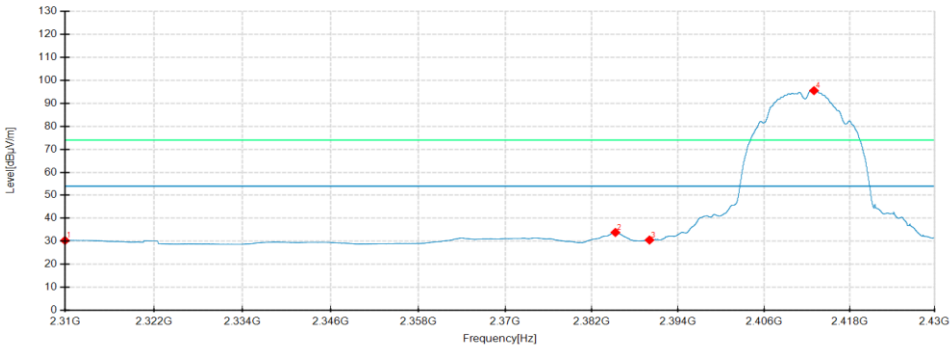


Detector mode: Peak Polarity: Vertical

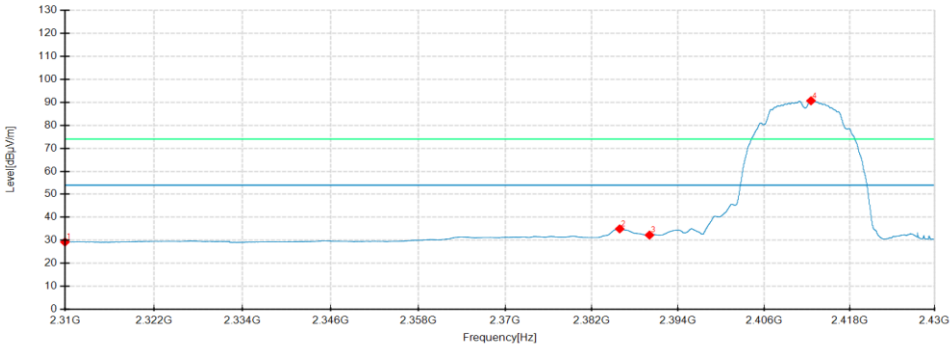


No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Comment
1	2310.0000	46.99	41.51	-5.48	74.00	32.49	200	32	Horizontal	/
2	2389.3200	55.77	50.37	-5.40	74.00	23.63	100	210	Horizontal	/
3	2390.0000	49.42	44.03	-5.39	74.00	29.97	100	344	Horizontal	/
4	2412.4350	108.68	103.59	-5.09	74.00	-29.59	100	328	Horizontal	No limit
1	2310.0000	47.46	42.14	-5.32	74.00	31.86	100	15	Vertical	/
2	2389.5000	55.84	50.37	-5.47	74.00	23.63	100	201	Vertical	/
3	2390.0000	50.65	45.18	-5.47	74.00	28.82	100	108	Vertical	/
4	2410.4550	108.58	103.16	-5.42	74.00	-29.16	100	325	Vertical	No limit

802.11b mode
Lowest Channel
Frequency 2412MHz
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	Comment
1	2310.0000	35.84	30.36	-5.48	54.00	23.64	200	342	Horizontal	/
2	2385.2550	39.30	33.85	-5.45	54.00	20.15	100	317	Horizontal	/
3	2390.0000	35.95	30.56	-5.39	54.00	23.44	100	332	Horizontal	/
4	2413.0050	100.60	95.53	-5.07	54.00	-41.53	200	342	Horizontal	No limit
1	2310.0000	34.55	29.23	-5.32	54.00	24.77	100	338	Vertical	/
2	2385.8550	40.43	34.96	-5.47	54.00	19.04	100	85	Vertical	/
3	2390.0000	37.75	32.28	-5.47	54.00	21.72	100	69	Vertical	/
4	2412.5850	96.09	90.69	-5.40	54.00	-36.69	200	21	Vertical	No limit

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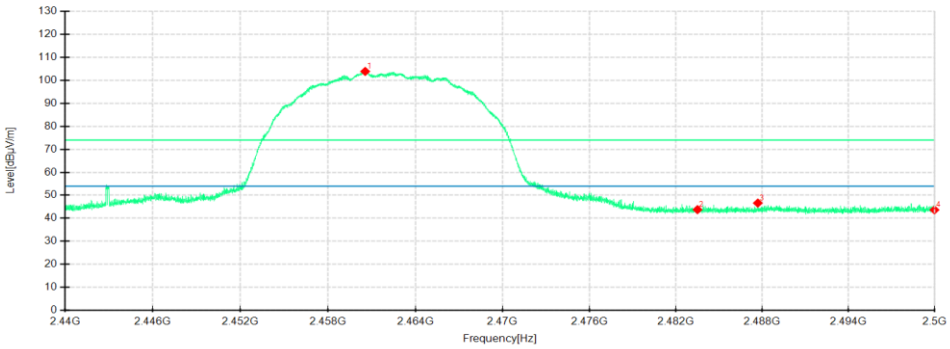
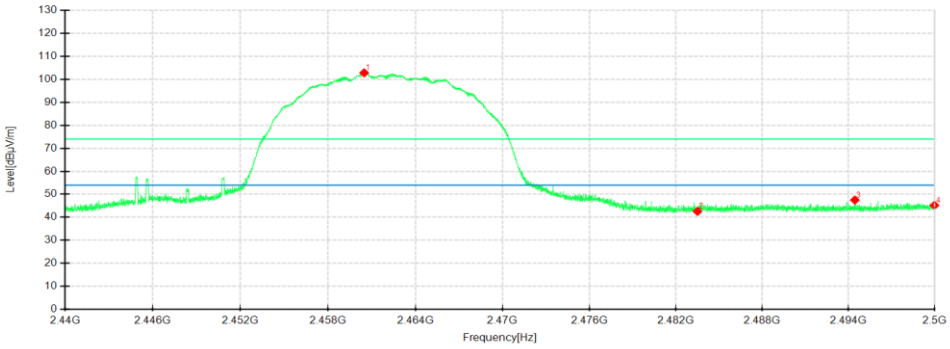
802.11b mode
Highest Channel
Frequency 2462MHz
Detector mode: Peak Polarity: Horizontal

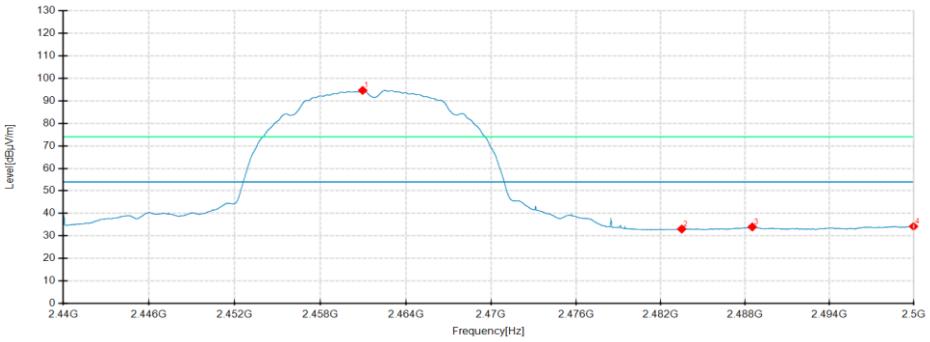


Detector mode: Peak Polarity: Vertical

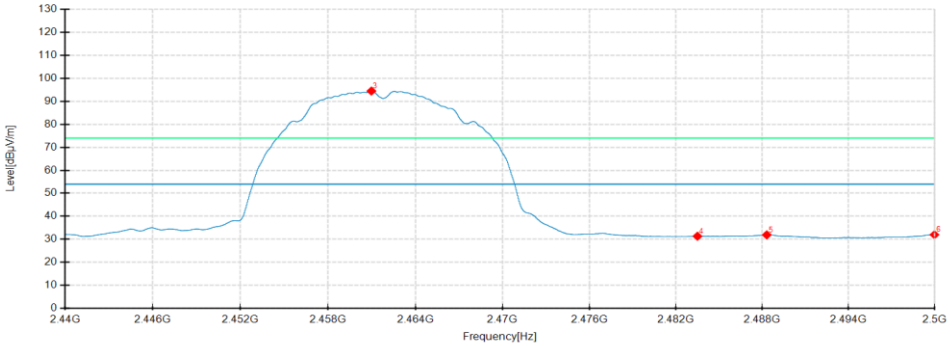


No.	Frequency MHz	Reading dBµV/m	Level dBµV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Comment
1	2460.5500	108.52	103.89	-4.63	74.00	-29.89	100	20	Horizontal	No limit
2	2483.5000	48.60	43.77	-4.83	74.00	30.23	100	304	Horizontal	/
3	2487.6925	51.52	46.64	-4.88	74.00	27.36	100	304	Horizontal	/
4	2500.0000	48.66	43.67	-4.99	74.00	30.33	100	319	Horizontal	/
1	2460.4825	108.02	102.84	-5.18	74.00	-28.84	200	65	Vertical	No limit
2	2483.5000	47.65	42.58	-5.07	74.00	31.42	200	80	Vertical	/
3	2494.4425	52.52	47.51	-5.01	74.00	26.49	200	49	Vertical	/
4	2500.0000	50.19	45.20	-4.99	74.00	28.80	200	80	Vertical	

802.11b mode
Highest Channel
Frequency 2462MHz
Detector mode: Average Polarity: Horizontal

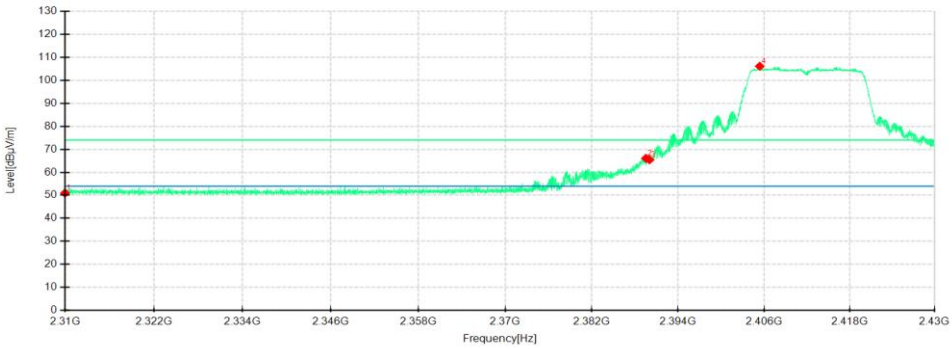


Detector mode: Average Polarity: Vertical

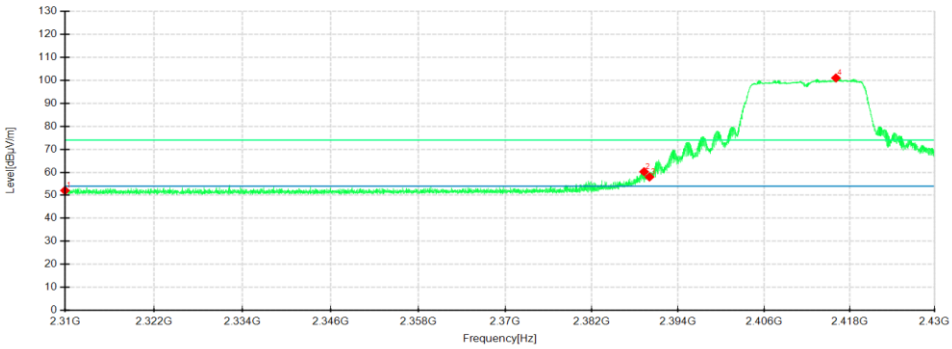


No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Comment
1	2460.9700	99.27	94.64	-4.63	54.00	-40.64	100	0	Horizontal	No limit
2	2483.5000	37.86	33.03	-4.83	54.00	20.97	100	0	Horizontal	/
3	2488.5100	38.88	33.99	-4.89	54.00	20.01	100	340	Horizontal	/
4	2500.0000	39.21	34.22	-4.99	54.00	19.78	100	10	Horizontal	/
1	2310.0000	37.50	32.22	-5.28	54.00	21.78	100	210	Vertical	No limit
2	2390.0000	37.50	32.22	-5.28	54.00	21.78	100	210	Vertical	/
3	2460.9775	99.66	94.48	-5.18	54.00	-40.48	200	69	Vertical	/
4	2483.5000	36.40	31.33	-5.07	54.00	22.67	200	339	Vertical	/

802.11g mode
Lowest Channel
Frequency 2412MHz
Detector mode: Peak Polarity: Horizontal

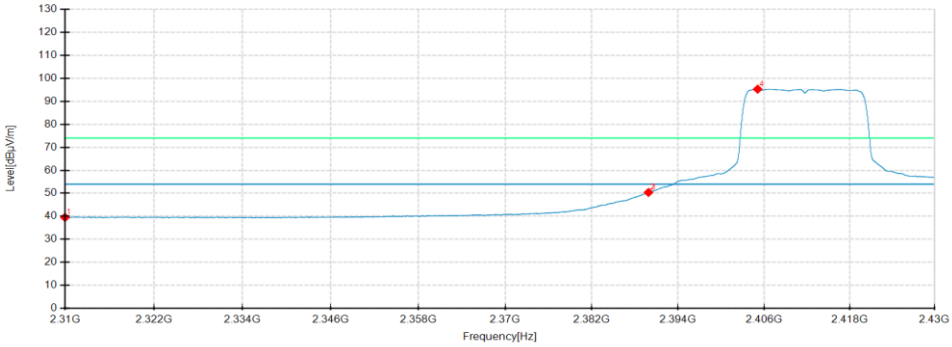


Detector mode: Peak Polarity: Vertical

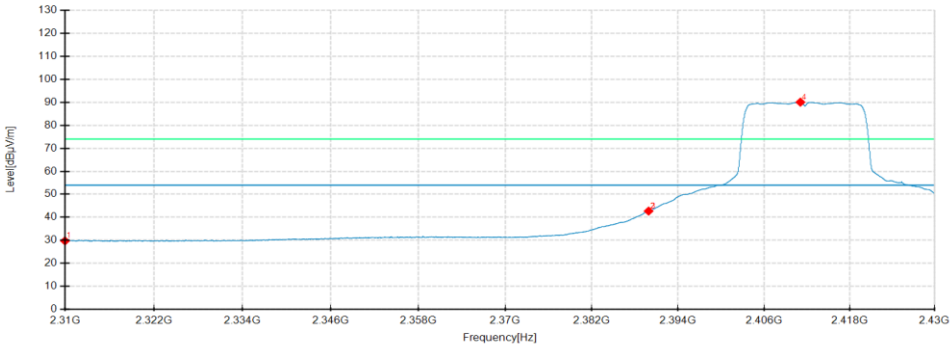


No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Comment
1	2310.0000	46.46	50.98	4.52	74.00	23.02	200	277	Horizontal	/
2	2389.5000	61.51	66.11	4.60	74.00	7.89	100	186	Horizontal	/
3	2390.0000	60.85	65.46	4.61	74.00	8.54	100	199	Horizontal	/
4	2405.4000	101.31	106.12	4.81	74.00	-32.12	100	186	Horizontal	No limit
1	2310.0000	47.40	52.08	4.68	74.00	21.92	100	341	Vertical	/
2	2389.2450	55.73	60.26	4.53	74.00	13.74	100	188	Vertical	/
3	2390.0000	53.44	57.97	4.53	74.00	16.03	200	196	Vertical	/
4	2416.0950	96.43	101.04	4.61	74.00	-27.04	100	164	Vertical	No limit

802.11g mode
Lowest Channel
Frequency 2412MHz
Detector mode: Average Polarity: Horizontal

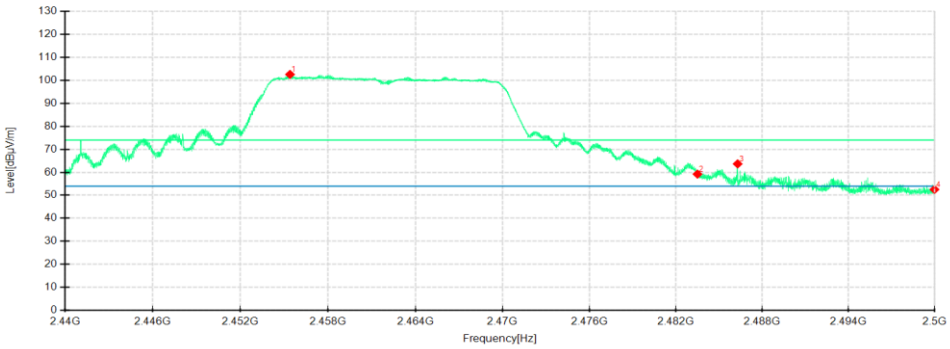


Detector mode: Average Polarity: Vertical

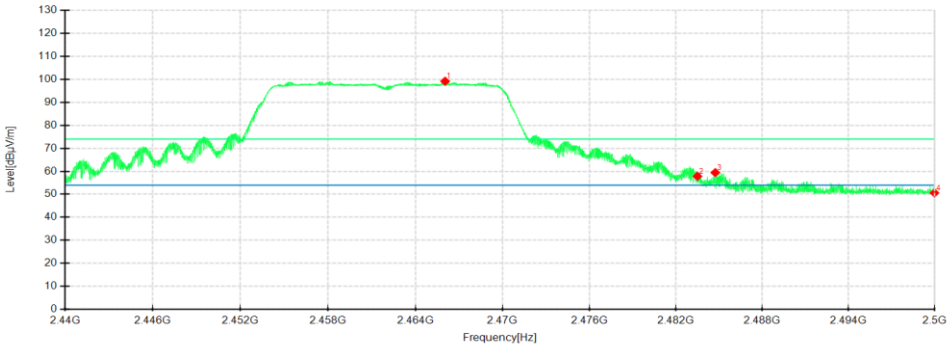


No.	Frequency MHz	Reading dBµV/m	Level dBµV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Comment
1	2310.0000	35.00	39.52	4.52	54.00	14.48	200	187	Horizontal	/
2	2389.8600	45.79	50.40	4.61	54.00	3.60	100	197	Horizontal	/
3	2390.0000	45.94	50.55	4.61	54.00	3.45	100	197	Horizontal	/
4	2405.1000	90.50	95.30	4.80	54.00	-41.30	100	209	Horizontal	No limit
1	2310.0000	35.05	29.73	-5.32	54.00	24.27	100	192	Vertical	/
2	2389.8750	48.18	42.71	-5.47	54.00	11.29	100	164	Vertical	/
3	2390.0000	48.24	42.77	-5.47	54.00	11.23	100	164	Vertical	/
4	2411.1000	95.51	90.09	-5.42	54.00	-36.09	100	148	Vertical	No limit

802.11g mode
Highest Channel
Frequency 2462MHz
Detector mode: Peak Polarity: Horizontal

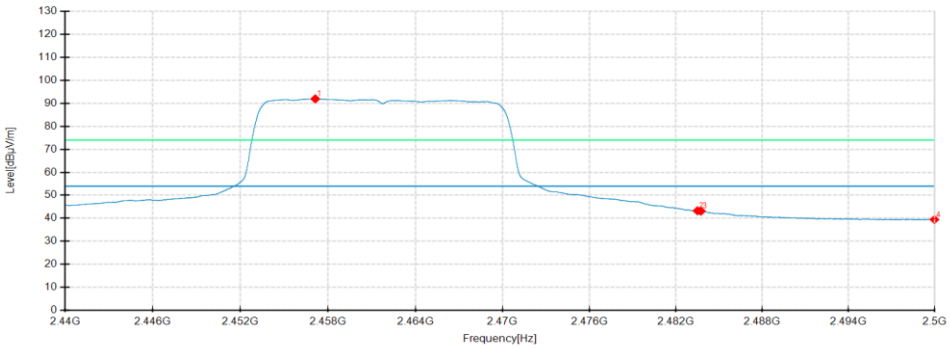


Detector mode: Peak Polarity: Vertical

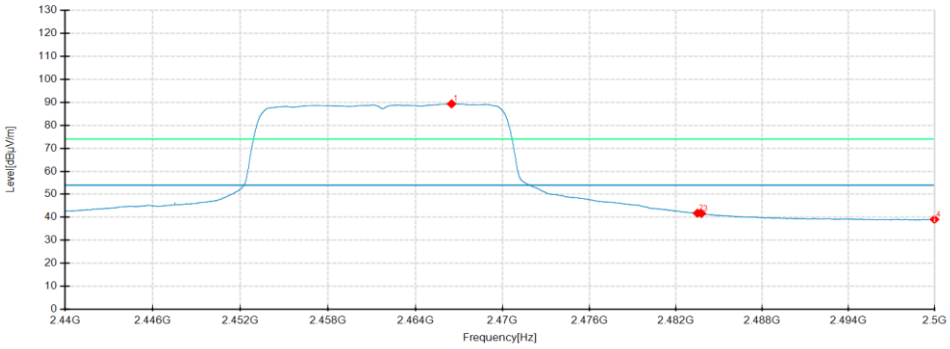


No.	Frequency MHz	Reading dBµV/m	Level dBµV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Comment
1	2455.3900	97.16	102.58	5.42	74.00	-28.58	100	210	Horizontal	No limit
2	2483.5000	54.05	59.22	5.17	74.00	14.78	100	96	Horizontal	/
3	2486.2900	58.53	63.67	5.14	74.00	10.33	100	32	Horizontal	/
4	2500.0000	47.54	52.55	5.01	74.00	21.45	200	200	Horizontal	/
1	2466.0550	94.35	99.19	4.84	74.00	-25.19	100	186	Vertical	No limit
2	2483.5000	52.92	57.85	4.93	74.00	16.15	100	173	Vertical	/
3	2484.7375	54.50	59.44	4.94	74.00	14.56	100	186	Vertical	/
4	2500.0000	45.60	50.61	5.01	74.00	23.39	200	20	Vertical	/

802.11g mode
Highest Channel
Frequency 2462MHz
Detector mode: Average Polarity: Horizontal



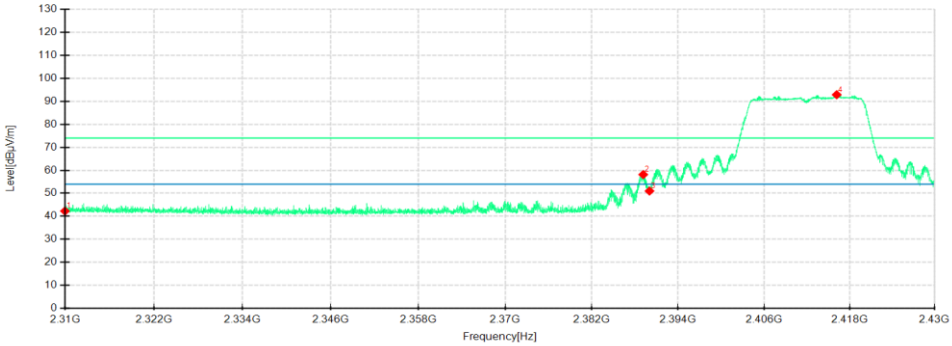
Detector mode: Average Polarity: Vertical



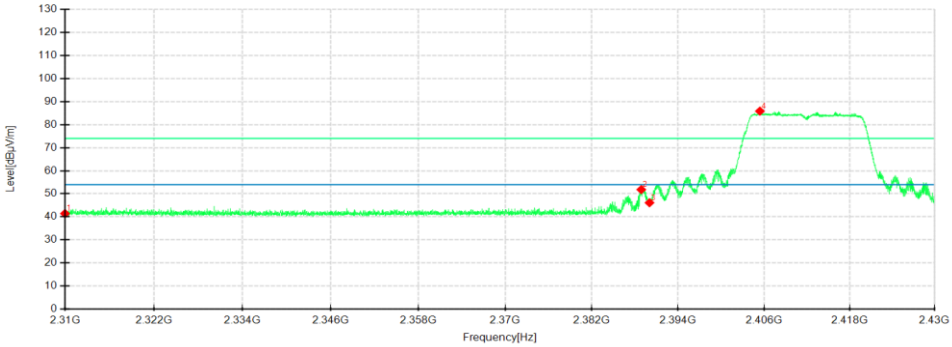
No.	Frequency MHz	Reading dBµV/m	Level dBµV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Comment
1	2457.1225	86.54	91.95	5.41	54.00	-37.95	100	359	Horizontal	No limit
2	2483.5000	38.10	43.27	5.17	54.00	10.73	200	314	Horizontal	/
3	2483.7400	37.97	43.13	5.16	54.00	10.87	200	314	Horizontal	/
4	2500.0000	34.46	39.47	5.01	54.00	14.53	200	301	Horizontal	/
1	2466.4975	84.48	89.33	4.85	54.00	-35.33	100	176	Vertical	No limit
2	2483.5000	36.86	41.79	4.93	54.00	12.21	100	176	Vertical	/
3	2483.7700	36.72	41.66	4.94	54.00	12.34	100	176	Vertical	/
4	2500.0000	34.10	39.11	5.01	54.00	14.89	100	188	Vertical	/

Test Voltage:	DC 5V	Test Engineer:	Qin tingting
Test Date	2024-09-02	Environmental Conditions	25.8℃/56%RH/101.0kPa

802.11n HT20 mode
Lowest Channel
Frequency 2412MHz
Detector mode: Peak Polarity: Horizontal

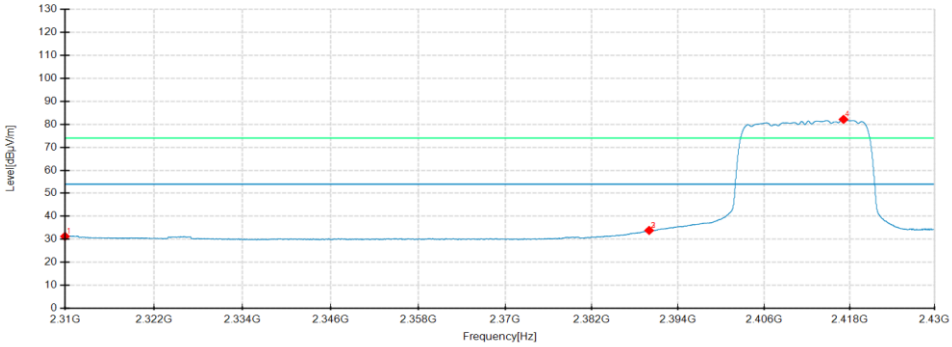


Detector mode: Peak Polarity: Vertical

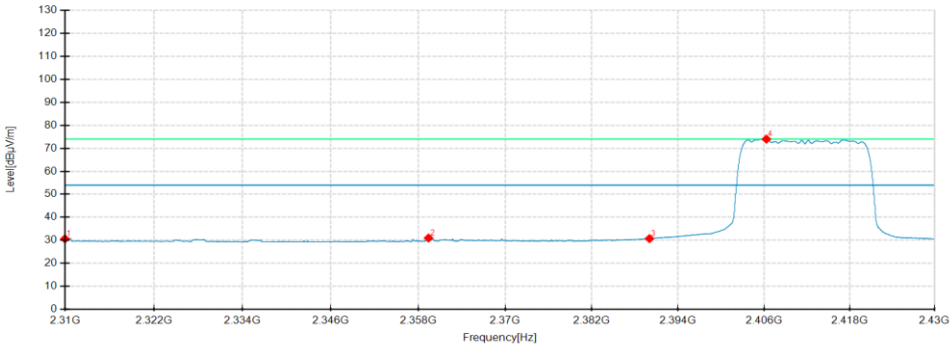


No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Comment
1	2310.0000	47.77	42.29	-5.48	74.00	31.71	100	131	Horizontal	/
2	2389.1250	63.54	58.14	-5.40	74.00	15.86	100	86	Horizontal	/
3	2390.0000	56.39	51.00	-5.39	74.00	23.00	100	131	Horizontal	/
4	2416.2000	97.92	92.89	-5.03	74.00	-18.89	200	94	Horizontal	No limit
1	2310.0000	46.76	41.44	-5.32	74.00	32.56	100	272	Vertical	/
2	2388.8550	57.30	51.83	-5.47	74.00	22.17	200	9	Vertical	/
3	2390.0000	51.60	46.13	-5.47	74.00	27.87	200	342	Vertical	/
4	2405.4150	91.31	85.87	-5.44	74.00	-11.87	200	9	Vertical	No limit

802.11n HT20 mode
Lowest Channel
Frequency 2412MHz
Detector mode: Average Polarity: Horizontal

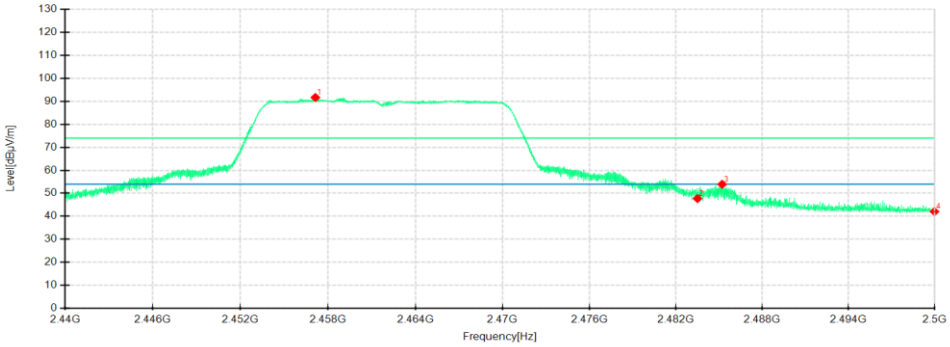


Detector mode: Average Polarity: Vertical

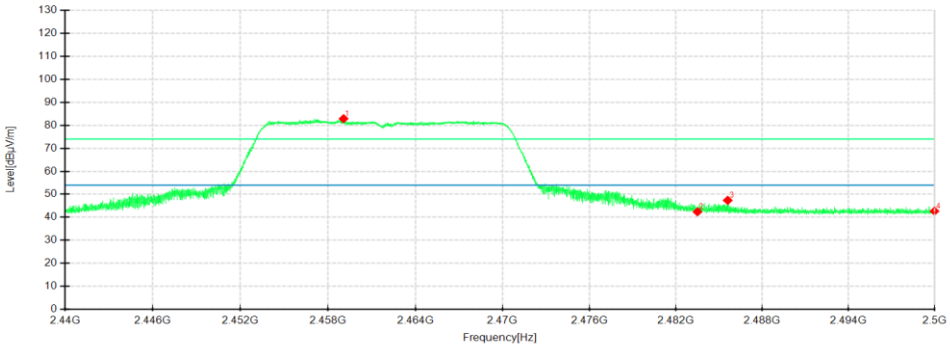


No.	Frequency MHz	Reading dBµV/m	Level dBµV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Comment
1	2310.0000	36.76	31.28	-5.48	54.00	22.72	100	122	Horizontal	/
2	2389.9500	39.25	33.86	-5.39	54.00	20.14	100	108	Horizontal	/
3	2390.0000	39.13	33.74	-5.39	54.00	20.26	100	108	Horizontal	/
4	2417.1600	87.16	82.15	-5.01	54.00	-28.15	100	122	Horizontal	No limit
1	2310.0000	35.96	30.64	-5.32	54.00	23.36	200	21	Vertical	/
2	2359.4400	36.47	31.00	-5.47	54.00	23.00	100	39	Vertical	/
3	2390.0000	36.20	30.73	-5.47	54.00	23.27	200	21	Vertical	/
4	2406.3300	79.45	74.01	-5.44	54.00	-20.01	200	21	Vertical	No limit

802.11n HT20 mode
Highest Channel
Frequency 2462MHz
Detector mode: Peak Polarity: Horizontal

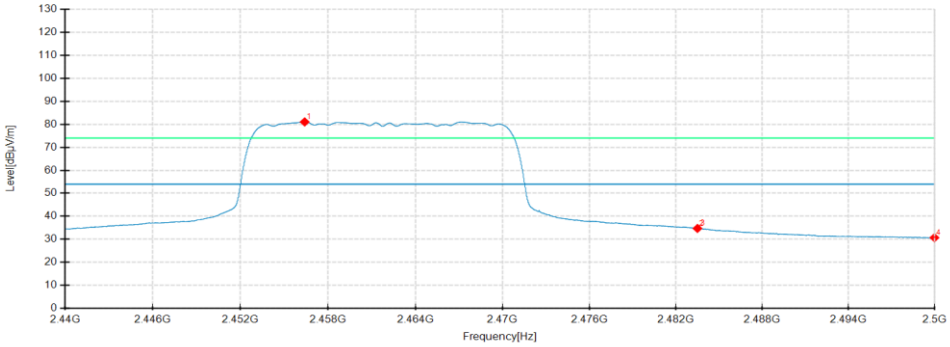


Detector mode: Peak Polarity: Vertical

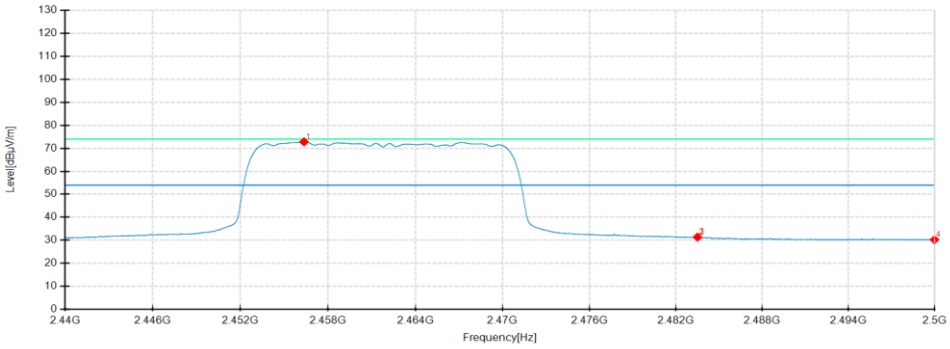


No.	Frequency MHz	Reading dBµV/m	Level dBµV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Comment
1	2457.1300	96.27	91.68	-4.59	74.00	-17.68	100	93	Horizontal	No limit
2	2483.5000	52.56	47.73	-4.83	74.00	26.27	200	71	Horizontal	/
3	2485.2100	58.77	53.92	-4.85	74.00	20.08	100	93	Horizontal	/
4	2500.0000	47.06	42.07	-4.99	74.00	31.93	100	197	Horizontal	/
1	2459.0650	88.07	82.89	-5.18	74.00	-8.89	200	358	Vertical	No limit
2	2483.5000	47.48	42.41	-5.07	74.00	31.59	200	358	Vertical	/
3	2485.6000	52.44	47.38	-5.06	74.00	26.62	200	360	Vertical	/
4	2500.0000	47.66	42.67	-4.99	74.00	31.33	200	210	Vertical	/

802.11n HT20 mode
Highest Channel
Frequency 2462MHz
Detector mode: Average Polarity: Horizontal

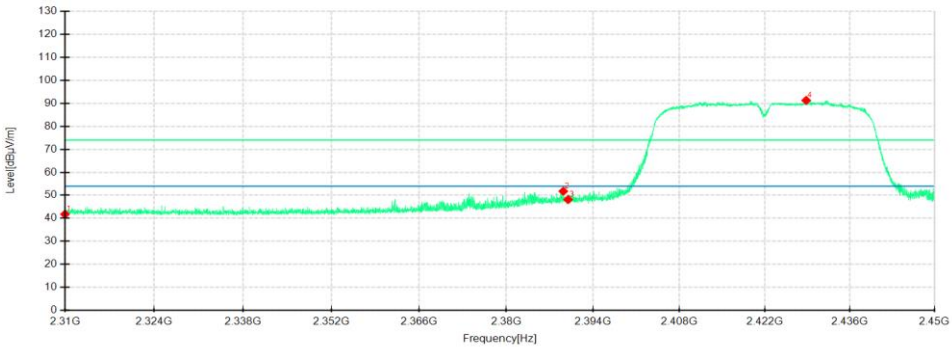


Detector mode: Average Polarity: Vertical

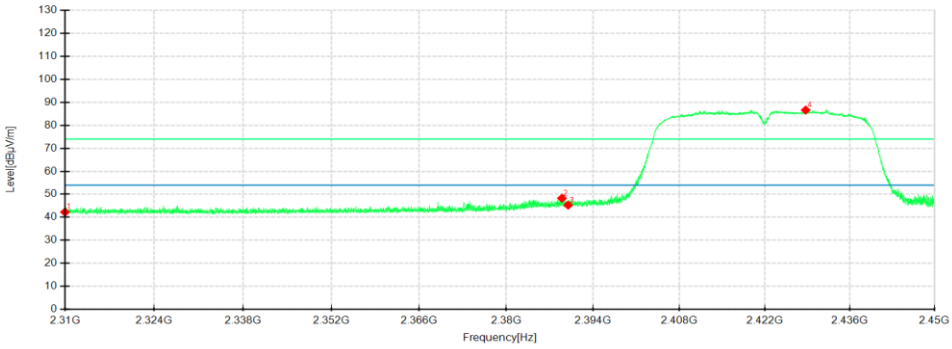


No.	Frequency MHz	Reading dBµV/m	Level dBµV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Comment
1	2456.3950	85.64	81.06	-4.58	54.00	-27.06	200	88	Horizontal	No limit
2	2483.5000	39.56	34.73	-4.83	54.00	19.27	200	88	Horizontal	/
3	2483.5675	39.63	34.79	-4.84	54.00	19.21	200	88	Horizontal	/
4	2500.0000	35.71	30.72	-4.99	54.00	23.28	100	78	Horizontal	/
1	2456.3500	78.01	72.82	-5.19	54.00	-18.82	200	359	Vertical	No limit
2	2483.5000	36.44	31.37	-5.07	54.00	22.63	200	359	Vertical	/
3	2483.5225	36.47	31.40	-5.07	54.00	22.60	200	359	Vertical	/
4	2500.0000	35.28	30.29	-4.99	54.00	23.71	200	301	Vertical	/

802.11n HT40 mode
Lowest Channel
Frequency 2422MHz
Detector mode: Peak Polarity: Horizontal

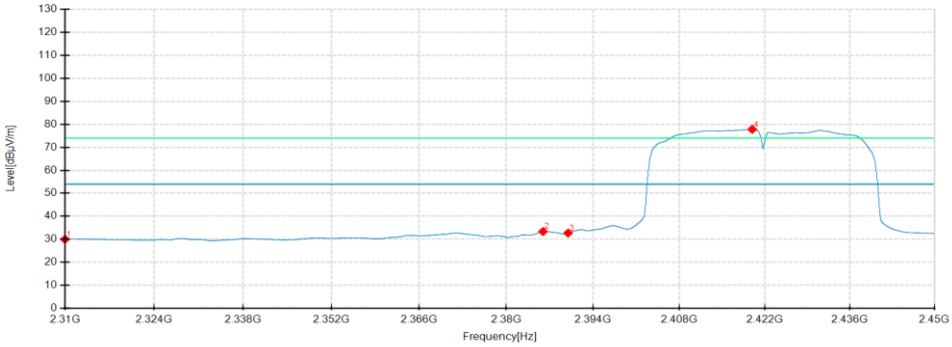


Detector mode: Peak Polarity: Vertical

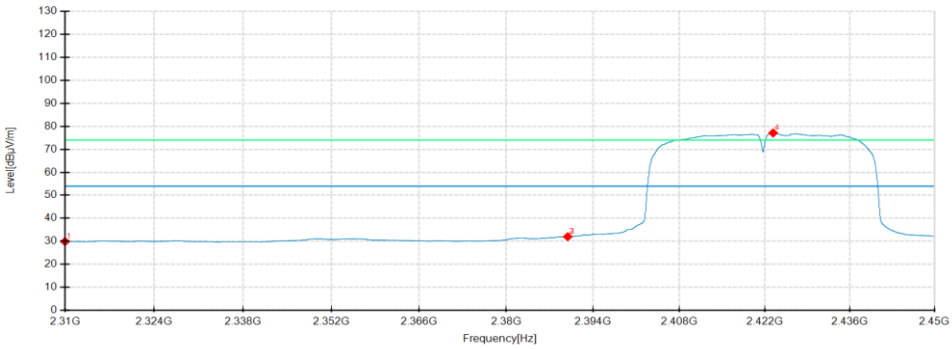


No.	Frequency MHz	Reading dBµV/m	Level dBµV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Comment
1	2310.0000	47.27	41.79	-5.48	74.00	32.21	200	264	Horizontal	/
2	2389.2225	57.17	51.77	-5.40	74.00	22.23	100	225	Horizontal	/
3	2390.0000	53.54	48.15	-5.39	74.00	25.85	100	186	Horizontal	/
4	2428.8250	96.12	91.28	-4.84	74.00	-17.28	100	212	Horizontal	No limit
1	2310.0000	47.58	42.26	-5.32	74.00	31.74	200	20	Vertical	/
2	2389.0125	53.76	48.29	-5.47	74.00	25.71	200	330	Vertical	/
3	2390.0000	50.76	45.29	-5.47	74.00	28.71	200	360	Vertical	/
4	2428.7375	91.97	86.64	-5.33	74.00	-12.64	200	20	Vertical	No limit

802.11n HT40 mode
Lowest Channel
Frequency 2422MHz
Detector mode: Average Polarity: Horizontal

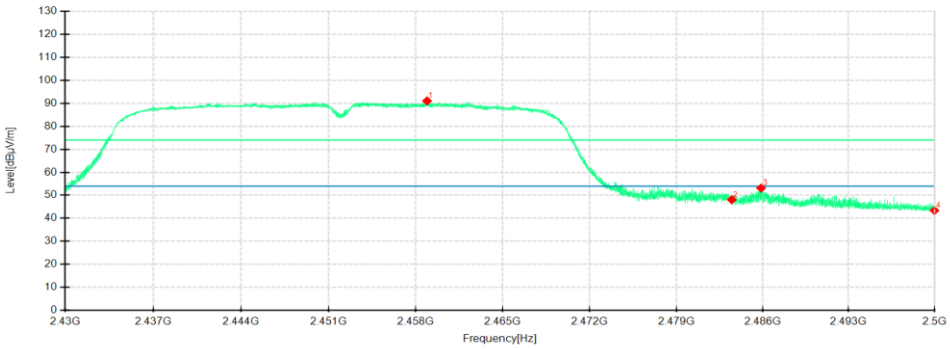


Detector mode: Average Polarity: Vertical

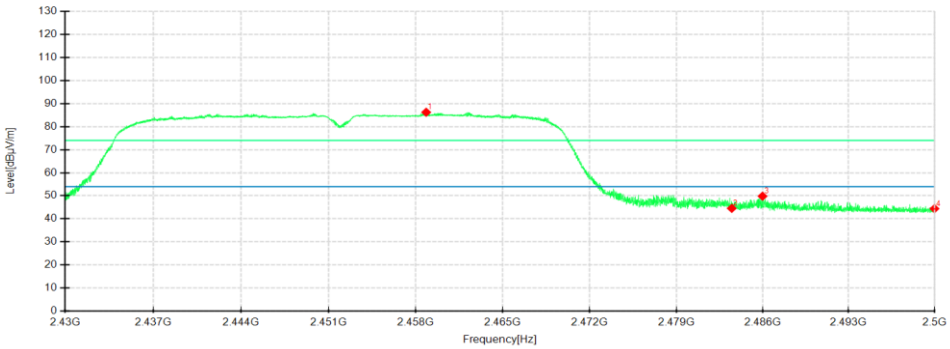


No.	Frequency MHz	Reading dBµV/m	Level dBµV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Comment
1	2310.0000	35.47	29.99	-5.48	54.00	24.01	200	339	Horizontal	/
2	2385.9500	38.82	33.38	-5.44	54.00	20.62	100	273	Horizontal	/
3	2390.0000	38.10	32.71	-5.39	54.00	21.29	100	285	Horizontal	/
4	2419.9700	82.81	77.84	-4.97	54.00	-23.84	200	339	Horizontal	No limit
1	2310.0000	35.20	29.88	-5.32	54.00	24.12	100	340	Vertical	/
2	2389.9400	37.49	32.02	-5.47	54.00	21.98	100	340	Vertical	/
3	2390.0000	37.50	32.03	-5.47	54.00	21.97	100	340	Vertical	/
4	2423.4000	82.47	77.12	-5.35	54.00	-23.12	100	340	Vertical	No limit

802.11n HT40 mode
Highest Channel
Frequency 2452MHz
Detector mode: Peak Polarity: Horizontal

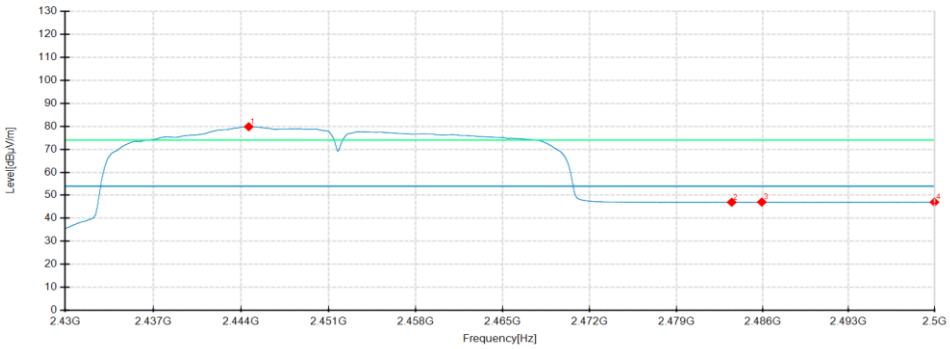


Detector mode: Peak Polarity: Vertical

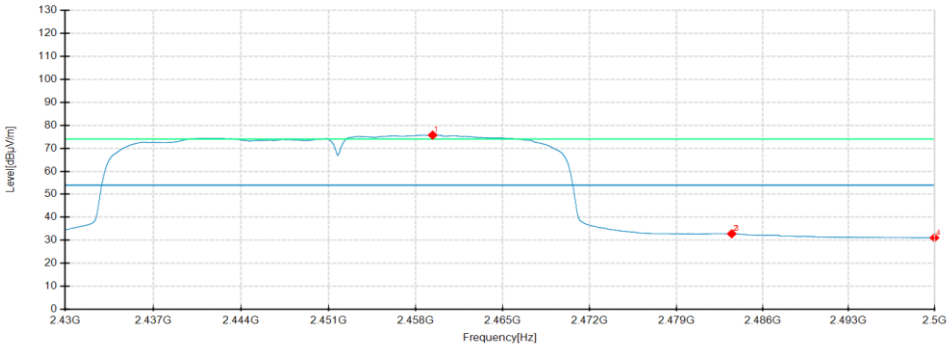


No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Comment
1	2458.9100	95.67	91.06	-4.61	74.00	-17.06	100	302	Horizontal	No limit
2	2483.5000	52.92	48.08	-4.84	74.00	25.92	100	302	Horizontal	/
3	2485.8775	57.98	53.12	-4.86	74.00	20.88	100	224	Horizontal	/
4	2500.0000	48.40	43.41	-4.99	74.00	30.59	100	70	Horizontal	/
1	2458.8400	91.44	86.26	-5.18	74.00	-12.26	100	339	Vertical	No limit
2	2483.5000	49.64	44.57	-5.07	74.00	29.43	200	360	Vertical	/
3	2486.0000	54.88	49.82	-5.06	74.00	24.18	200	20	Vertical	/
4	2500.0000	49.42	44.43	-4.99	74.00	29.57	200	34	Vertical	/

802.11n HT40 mode
Highest Channel
Frequency 2452MHz
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	Comment
1	2444.6300	84.44	79.83	-4.61	54.00	-25.83	100	311	Horizontal	No limit
2	2483.5000	51.83	46.99	-4.84	54.00	7.01	100	22	Horizontal	/
3	2485.9388	51.91	47.05	-4.86	54.00	6.95	100	22	Horizontal	/
4	2500.0000	51.99	47.00	-4.99	54.00	7.00	100	22	Horizontal	/
1	2459.3563	80.92	75.74	-5.18	54.00	-21.74	100	1	Vertical	No limit
2	2483.5000	37.92	32.85	-5.07	54.00	21.15	100	339	Vertical	/
3	2483.5938	37.92	32.85	-5.07	54.00	21.15	100	339	Vertical	/
4	2500.0000	36.09	31.10	-4.99	54.00	22.90	100	339	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 E20240724756701-test setup photo-FCC+IC.

APPENDIX B. PHOTOGRAPH OF THE EUT

Please refer to the attached document E20240724756701-EUT photo.

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