

General Procedure for conducted measurements in restricted bands

- a) Measure the conducted output power (in dBm) using the detector specified (see guidance regarding measurement procedures for determining quasi-peak, peak, and average conducted output power, respectively).
- b) Add the maximum transmit antenna gain (in dBi) to the measured output power level to determine the EIRP level (see guidance on determining the applicable antenna gain)
- c) Add the appropriate maximum ground reflection factor to the EIRP level (6 dB for frequencies ≤ 30 MHz, 4.7 dB for frequencies between 30 MHz and 1000 MHz, inclusive and 0 dB for frequencies > 1000 MHz).
- d) For devices with multiple antenna-ports, measure the power of each individual chain and sum the EIRP of all chains in linear terms (e.g., Watts, mW).
- e) Convert the resultant EIRP level to an equivalent electric field strength using the following relationship:

$$E = \text{EIRP} - 20\log D + 104.8$$

where:

E = electric field strength in dB μ V/m,

EIRP = equivalent isotropic radiated power in dBm

D = specified measurement distance in meters.

- f) Compare the resultant electric field strength level to the applicable limit.
- g) Perform radiated spurious emission test.

Quasi-Peak measurement procedure

The specifications for measurements using the CISPR quasi-peak detector can be found in Publication 16 of the International Special Committee on Radio Frequency Interference (CISPR) of the International Electrotechnical Commission.

As an alternative to CISPR quasi-peak measurement, compliance can be demonstrated to the applicable emission limits using a peak detector.

Peak power measurement procedure

Peak emission levels are measured by setting the instrument as follows:

- a) RBW = as specified in Table 1.
- b) VBW $\geq 3 \times$ RBW.
- c) Detector = Peak.
- d) Sweep time = auto.
- e) Trace mode = max hold.
- f) Allow sweeps to continue until the trace stabilizes. (Note that the required measurement time may be

longer for low duty cycle applications).

Table 1—RBW as a function of frequency

Frequency	RBW
9-150 kHz	200-300 Hz
0.15-30 MHz	9-10 kHz
30-1000 MHz	100-120 kHz
> 1000 MHz	1 MHz

If the peak-detected amplitude can be shown to comply with the average limit, then it is not necessary to perform a separate average measurement.

Trace averaging across on and off times of the EUT transmissions followed by duty cycle correction

If continuous transmission of the EUT (i.e., duty cycle ≥ 98 percent) cannot be achieved and the duty cycle is constant (i.e., duty cycle variations are less than ± 2 percent), then the following procedure shall be used:

- a) The EUT shall be configured to operate at the maximum achievable duty cycle.
- b) Measure the duty cycle, x , of the transmitter output signal as described in section 6.0.
- c) RBW = 1 MHz (unless otherwise specified).
- d) VBW $\geq 3 \times$ RBW.
- e) Detector = RMS, if $\text{span}/(\# \text{ of points in sweep}) \leq (\text{RBW}/2)$. Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If this condition cannot be satisfied, then the detector mode shall be set to peak.
- f) Averaging type = power (i.e., RMS).
 - 1) As an alternative, the detector and averaging type may be set for linear voltage averaging.
 - 2) Some instruments require linear display mode in order to use linear voltage averaging. Log or dB averaging shall not be used.
- g) Sweep time = auto.
- h) Perform a trace average of at least 100 traces.
- i) A correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 percent duty cycle. The correction factor is computed as follows:
 - 1) If power averaging (RMS) mode was used in step f), then the applicable correction factor is $10 \log(1/x)$, where x is the duty cycle.
 - 2) If linear voltage averaging mode was used in step f), then the applicable correction factor is $20 \log(1/x)$, where x is the duty cycle.
 - 3) If a specific emission is demonstrated to be continuous (≥ 98 percent duty cycle) rather than turning on and off with the transmit cycle, then no duty cycle correction is required for that emission.

NOTE: Reduction of the measured emission amplitude levels to account for operational duty factor is not permitted. Compliance is based on emission levels occurring during transmission - not on an average across on and off times of the transmitter.

Determining the applicable transmit antenna gain

A conducted power measurement will determine the maximum output power associated with a restricted band emission; however, in order to determine the associated EIRP level, the gain of the transmitting antenna (in dBi) must be added to the measured output power (in dBm).

Since the out-of-band characteristics of the EUT transmit antenna will often be unknown, the use of a conservative antenna gain value is necessary. Thus, when determining the EIRP based on the measured conducted power, the upper bound on antenna gain for a device with a single RF output shall be selected as the maximum in-band gain of the antenna across all operating bands, or 2 dBi, whichever is greater. However, for devices that operate in multiple frequency bands while using the same transmit antenna, the highest gain of the antenna within the operating band nearest in frequency to the restricted band emission being measured may be used in lieu of the overall highest gain when the emission is at a frequency that is within 20 percent of the nearest band edge frequency, but in no case shall a value less than 2 dBi be used.

See KDB 662911 for guidance on calculating the additional array gain term when determining the effective antenna gain for a EUT with multiple outputs occupying the same or overlapping frequency ranges in the same band.

Radiated spurious emission test

An additional consideration when performing conducted measurements of restricted band emissions is that unwanted emissions radiating from the EUT cabinet, control circuits, power leads, or intermediate circuit elements will likely go undetected in a conducted measurement configuration. To address this concern, a radiated test shall be performed to ensure that emissions emanating from the EUT cabinet (rather than the antenna port) also comply with the applicable limits.

For these cabinet radiated spurious emission measurements the EUT transmit antenna may be replaced with a termination matching the nominal impedance of the antenna. Procedures for performing radiated measurements are specified in ANSI C63.10. All detected emissions shall comply with the applicable limits.

The measurement frequency range is from 30 MHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented.

The power of the EUT transmitting frequency should be ignored.

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured

RBW = 1 MHz for $f \geq 1$ GHz, 100 kHz for $f < 1$ GHz

VBW \geq RBW

Sweep = auto

Detector function = peak

Trace = max hold

5.7.4 Test Result

Note 1: The symbol of "--" in the table which means not application.

Note 2: For the test data above 1 GHz, According the ANSI C63.10-2013, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

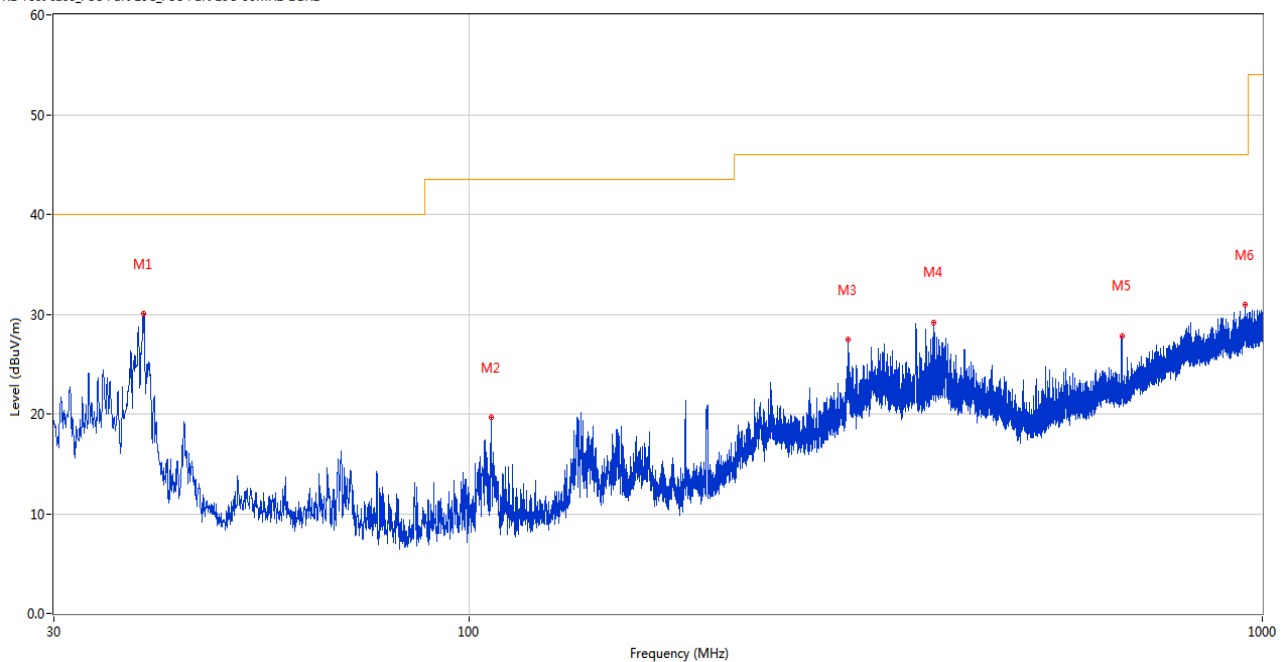
Note 3: The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.

Note 4: The EUT was tested in Link mode and the charging.

Test Data and Plots

30 MHz to 1 GHz, ANT H

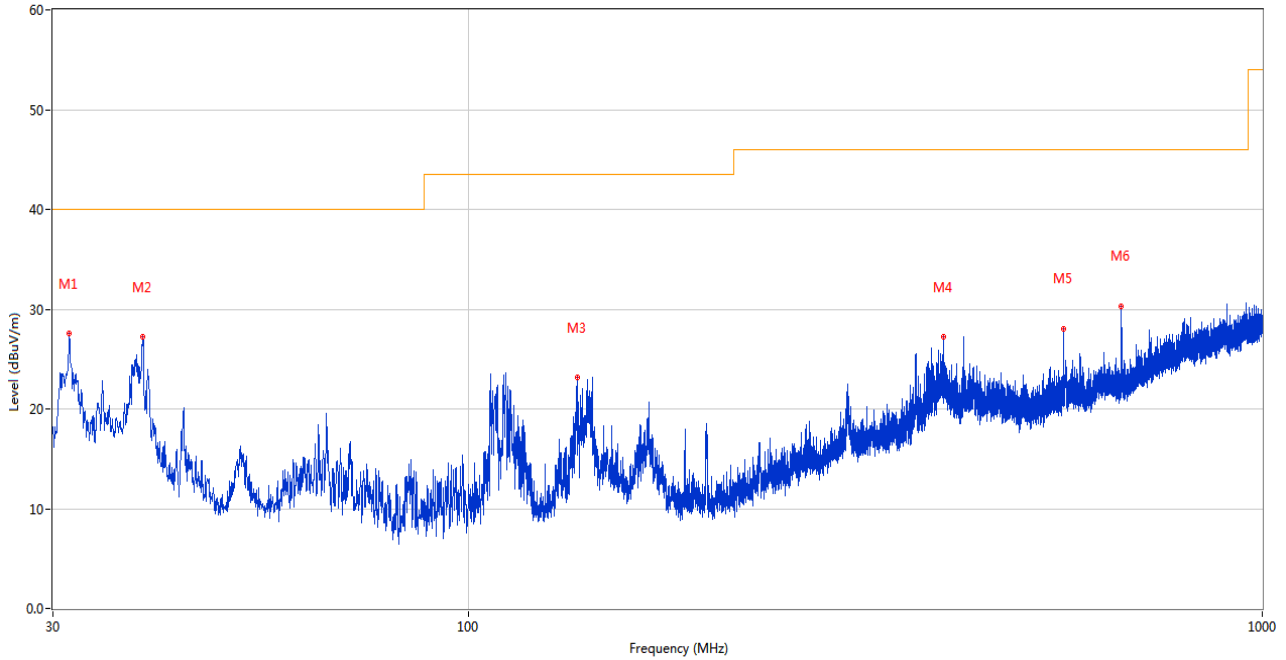
RE Test case_FCC Part 15C_FCC Part 15C-30MHz-1GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	38.972	30.07	-26.84	40.0	9.93	Peak	0.00	100	Horizontal	Pass
2	106.678	19.61	-29.46	43.5	23.89	Peak	42.00	100	Horizontal	Pass
3	300.970	27.48	-24.64	46.0	18.52	Peak	346.00	100	Horizontal	Pass
4	385.699	29.18	-21.93	46.0	16.82	Peak	337.00	100	Horizontal	Pass
5	666.514	27.79	-15.59	46.0	18.21	Peak	360.00	200	Horizontal	Pass
6	952.227	30.94	-9.81	46.0	15.06	Peak	121.00	100	Horizontal	Pass
6*	959.987	30.63	-10.77	35.5	4.87	QP	142.00	110	Horizontal	Pass

30 MHz to 1 GHz, ANT V

RE Test case_FCC Part 15C_FCC Part 15C-30MHz-1GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	31.455	27.59	-27.49	40.0	12.41	Peak	225.00	200	Vertical	Pass
2	38.972	27.23	-26.84	40.0	12.77	Peak	133.00	100	Vertical	Pass
3	137.185	23.18	-26.37	43.5	20.32	Peak	214.00	100	Vertical	Pass
4	396.563	27.18	-21.30	46.0	18.82	Peak	273.00	100	Vertical	Pass
5	562.578	28.06	-17.24	46.0	17.94	Peak	261.00	200	Vertical	Pass
6	664.380	30.25	-15.60	46.0	15.75	Peak	203.00	100	Vertical	Pass

Note 1: The marked spikes near 2400 MHz with circle should be ignored because they are Fundamental signal.

Note 2: The spurious above 18G is noise only, do not show on the report.

1 GHz to 18 GHz, ANT H 802.11b Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1328.700	45.53	74.0	28.47	Peak	183.00	300	Horizontal	Pass
1**	1328.700	36.86	54.0	17.14	AV	183.00	300	Horizontal	Pass
2	2410.800	92.53	74.0	-18.53	Peak	161.00	150	Horizontal	N/A
2**	2410.800	89.56	54.0	-35.56	AV	161.00	150	Horizontal	N/A
3	4824.500	51.30	74.0	22.70	Peak	76.00	200	Horizontal	Pass
3**	4824.500	47.12	54.0	6.88	AV	76.00	200	Horizontal	Pass
4	6918.250	53.53	74.0	20.47	Peak	35.00	100	Horizontal	Pass
4**	6918.250	44.14	54.0	9.86	AV	35.00	100	Horizontal	Pass
5	13078.388	53.86	74.0	20.14	Peak	360.00	100	Horizontal	Pass
5**	13078.388	45.30	54.0	8.70	AV	360.00	100	Horizontal	Pass
6	17106.975	56.14	74.0	17.86	Peak	225.00	200	Horizontal	Pass
6**	17106.975	46.33	54.0	7.67	AV	225.00	200	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11b Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1332.500	44.42	74.0	29.58	Peak	121.00	200	Vertical	Pass
1**	1332.500	34.08	54.0	19.92	AV	121.00	200	Vertical	Pass
2	2410.800	104.22	74.0	-30.22	Peak	214.00	200	Vertical	N/A
2**	2410.800	101.33	54.0	-47.33	AV	214.00	200	Vertical	N/A
3	4823.750	52.86	74.0	21.14	Peak	205.00	200	Vertical	Pass
3**	4823.750	47.36	54.0	6.64	AV	205.00	200	Vertical	Pass
4	4824.250	52.49	74.0	21.51	Peak	205.00	100	Vertical	Pass
4**	4824.250	49.98	54.0	4.02	AV	205.00	100	Vertical	Pass
5	6878.500	53.57	74.0	20.43	Peak	308.00	100	Vertical	Pass
5**	6878.500	44.41	54.0	9.59	AV	308.00	100	Vertical	Pass
6	17389.687	55.16	74.0	18.84	Peak	91.00	200	Vertical	Pass
6**	17389.687	45.13	54.0	8.87	AV	91.00	200	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11b Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1327.500	45.52	74.0	28.48	Peak	217.00	300	Horizontal	Pass
1**	1327.500	37.78	54.0	16.22	AV	217.00	300	Horizontal	Pass
2	2438.400	92.25	74.0	-18.25	Peak	161.00	100	Horizontal	N/A
2**	2438.400	89.36	54.0	-35.36	AV	161.00	100	Horizontal	N/A
3	4874.000	50.00	74.0	24.00	Peak	81.00	100	Horizontal	Pass
3**	4874.000	46.93	54.0	7.07	AV	81.00	100	Horizontal	Pass
4	4874.250	51.32	74.0	22.68	Peak	60.00	200	Horizontal	Pass
4**	4874.250	46.28	54.0	7.72	AV	60.00	200	Horizontal	Pass
5	7601.250	53.77	74.0	20.23	Peak	360.00	400	Horizontal	Pass
5**	7601.250	44.08	54.0	9.92	AV	360.00	400	Horizontal	Pass
6	17098.838	55.12	74.0	18.88	Peak	28.00	300	Horizontal	Pass
6**	17098.838	47.61	54.0	6.39	AV	28.00	300	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11b Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1332.100	44.55	74.0	29.45	Peak	127.00	300	Vertical	Pass
1**	1332.100	34.80	54.0	19.20	AV	127.00	300	Vertical	Pass
2	2438.400	102.47	74.0	-28.47	Peak	215.00	100	Vertical	N/A
2**	2438.400	99.59	54.0	-45.59	AV	215.00	100	Vertical	N/A
3	4874.000	52.61	74.0	21.39	Peak	203.00	150	Vertical	Pass
3**	4874.000	48.23	54.0	5.77	AV	203.00	150	Vertical	Pass
4	4874.250	52.09	74.0	21.91	Peak	225.00	100	Vertical	Pass
4**	4874.250	48.75	54.0	5.25	AV	225.00	100	Vertical	Pass
5	6893.500	53.95	74.0	20.05	Peak	203.00	200	Vertical	Pass
5**	6893.500	46.17	54.0	7.83	AV	203.00	200	Vertical	Pass
6	17155.012	55.90	74.0	18.10	Peak	198.00	100	Vertical	Pass
6**	17155.012	46.33	54.0	7.67	AV	198.00	100	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11b High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1332.300	44.20	74.0	29.80	Peak	11.00	200	Horizontal	Pass
1**	1332.300	36.27	54.0	17.73	AV	11.00	200	Horizontal	Pass
2	2460.900	91.99	74.0	-17.99	Peak	166.00	200	Horizontal	N/A
2**	2460.900	89.09	54.0	-35.09	AV	166.00	200	Horizontal	N/A
3	4923.500	52.30	74.0	21.70	Peak	74.00	200	Horizontal	Pass
3**	4923.500	42.85	54.0	11.15	AV	74.00	200	Horizontal	Pass
4	4924.250	50.66	74.0	23.34	Peak	74.00	100	Horizontal	Pass
4**	4924.250	48.52	54.0	5.48	AV	74.00	100	Horizontal	Pass
5	6881.750	54.27	74.0	19.73	Peak	155.00	300	Horizontal	Pass
5**	6881.750	44.73	54.0	9.27	AV	155.00	300	Horizontal	Pass
6	16863.113	55.64	74.0	18.36	Peak	86.00	100	Horizontal	Pass
6**	16863.113	46.53	54.0	7.47	AV	86.00	100	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11b High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1327.300	45.64	74.0	28.36	Peak	125.00	200	Vertical	Pass
1**	1327.300	36.74	54.0	17.26	AV	125.00	200	Vertical	Pass
2	2460.900	102.70	74.0	-28.70	Peak	90.00	200	Vertical	N/A
2**	2460.900	99.87	54.0	-45.87	AV	90.00	200	Vertical	N/A
3	4924.250	53.41	74.0	20.59	Peak	217.00	100	Vertical	Pass
3**	4924.250	50.81	54.0	3.19	AV	217.00	100	Vertical	Pass
4	6917.000	54.22	74.0	19.78	Peak	356.00	300	Vertical	Pass
4**	6917.000	44.28	54.0	9.72	AV	356.00	300	Vertical	Pass
5	12513.925	53.59	74.0	20.41	Peak	360.00	100	Vertical	Pass
5**	12513.925	44.57	54.0	9.43	AV	360.00	100	Vertical	Pass
6	14710.088	55.98	74.0	18.02	Peak	169.00	200	Vertical	Pass
6**	14710.088	45.48	54.0	8.52	AV	169.00	200	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11g Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1450.400	47.62	74.0	26.38	Peak	297.00	400	Horizontal	Pass
1**	1450.400	38.94	54.0	15.06	AV	297.00	400	Horizontal	Pass
2	2410.500	99.07	74.0	-25.07	Peak	157.00	150	Horizontal	N/A
2**	2410.500	91.45	54.0	-37.45	AV	157.00	150	Horizontal	N/A
3	4824.250	50.66	74.0	23.34	Peak	360.00	100	Horizontal	Pass
3**	4824.250	47.22	54.0	6.78	AV	360.00	100	Horizontal	Pass
4	4825.750	53.67	74.0	20.33	Peak	81.00	200	Horizontal	Pass
4**	4825.750	46.21	54.0	7.79	AV	81.00	200	Horizontal	Pass
5	6894.000	53.78	74.0	20.22	Peak	0.00	400	Horizontal	Pass
5**	6894.000	45.53	54.0	8.47	AV	0.00	400	Horizontal	Pass
6	16875.975	55.58	74.0	18.42	Peak	89.00	400	Horizontal	Pass
6**	16875.975	46.03	54.0	7.97	AV	89.00	400	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11g Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1447.900	44.13	74.0	29.87	Peak	196.00	300	Vertical	Pass
1**	1447.900	36.38	54.0	17.62	AV	196.00	300	Vertical	Pass
2	2410.500	109.68	74.0	-35.68	Peak	91.00	100	Vertical	N/A
2**	2410.500	102.80	54.0	-48.80	AV	91.00	100	Vertical	N/A
3	4823.750	57.52	74.0	16.48	Peak	193.00	200	Vertical	Pass
3**	4823.750	48.16	54.0	5.84	AV	193.00	200	Vertical	Pass
4	4824.000	54.38	74.0	19.62	Peak	193.00	100	Vertical	Pass
4**	4824.000	51.11	54.0	2.89	AV	193.00	100	Vertical	Pass
5	6891.500	53.44	74.0	20.56	Peak	154.00	100	Vertical	Pass
5**	6891.500	45.43	54.0	8.57	AV	154.00	100	Vertical	Pass
6	14451.262	55.66	74.0	18.34	Peak	253.00	100	Vertical	Pass
6**	14451.262	46.84	54.0	7.16	AV	253.00	100	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11g Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1463.100	49.06	74.0	24.94	Peak	155.00	100	Horizontal	Pass
1**	1463.100	42.36	54.0	11.64	AV	155.00	100	Horizontal	Pass
2	2438.300	99.90	74.0	-25.90	Peak	145.00	150	Horizontal	N/A
2**	2438.300	92.44	54.0	-38.44	AV	145.00	150	Horizontal	N/A
3	4874.750	54.04	74.0	19.96	Peak	75.00	200	Horizontal	Pass
3**	4874.750	45.60	54.0	8.40	AV	75.00	200	Horizontal	Pass
4	4876.750	51.24	74.0	22.76	Peak	55.00	100	Horizontal	Pass
4**	4876.750	47.50	54.0	6.50	AV	55.00	100	Horizontal	Pass
5	7960.750	53.91	74.0	20.09	Peak	201.00	200	Horizontal	Pass
5**	7960.750	44.45	54.0	9.55	AV	201.00	200	Horizontal	Pass
6	14453.625	55.62	74.0	18.38	Peak	228.00	300	Horizontal	Pass
6**	14453.625	46.29	54.0	7.71	AV	228.00	300	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11g Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1329.400	45.02	74.0	28.98	Peak	158.00	100	Vertical	Pass
1**	1329.400	36.63	54.0	17.37	AV	158.00	100	Vertical	Pass
2	2437.900	111.15	74.0	-37.15	Peak	139.00	100	Vertical	N/A
2**	2437.900	104.17	54.0	-50.17	AV	139.00	100	Vertical	N/A
3	4874.250	56.42	74.0	17.58	Peak	198.00	100	Vertical	Pass
3**	4874.250	50.49	54.0	3.51	AV	198.00	100	Vertical	Pass
4	4876.250	57.13	74.0	16.87	Peak	198.00	200	Vertical	Pass
4**	4876.250	49.07	54.0	4.93	AV	198.00	200	Vertical	Pass
5	5324.250	55.64	74.0	18.36	Peak	198.00	300	Vertical	Pass
5**	5324.250	42.13	54.0	11.87	AV	198.00	300	Vertical	Pass
6	5324.500	49.29	74.0	24.71	Peak	75.00	100	Vertical	Pass
6**	5324.500	46.55	54.0	7.45	AV	75.00	100	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11g High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1478.600	49.66	74.0	24.34	Peak	292.00	400	Horizontal	Pass
1**	1478.600	42.12	54.0	11.88	AV	292.00	400	Horizontal	Pass
2	2463.300	101.01	74.0	-27.01	Peak	160.00	150	Horizontal	N/A
2**	2463.300	94.34	54.0	-40.34	AV	160.00	150	Horizontal	N/A
3	4921.750	55.04	74.0	18.96	Peak	81.00	100	Horizontal	Pass
3**	4921.750	46.25	54.0	7.75	AV	81.00	100	Horizontal	Pass
4	4922.000	50.29	74.0	23.71	Peak	81.00	100	Horizontal	Pass
4**	4922.000	47.46	54.0	6.54	AV	81.00	100	Horizontal	Pass
5	6963.500	53.59	74.0	20.41	Peak	230.00	200	Horizontal	Pass
5**	6963.500	44.71	54.0	9.29	AV	230.00	200	Horizontal	Pass
6	17218.537	56.40	74.0	17.60	Peak	2.00	200	Horizontal	Pass
6**	17218.537	47.22	54.0	6.78	AV	2.00	200	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11g High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1401.100	45.16	74.0	28.84	Peak	97.00	400	Vertical	Pass
1**	1401.100	36.14	54.0	17.86	AV	97.00	400	Vertical	Pass
2	2460.700	109.56	74.0	-35.56	Peak	88.00	100	Vertical	N/A
2**	2460.700	102.89	54.0	-48.89	AV	88.00	100	Vertical	N/A
3	4920.000	54.82	74.0	19.18	Peak	206.00	100	Vertical	Pass
3**	4920.000	48.83	54.0	5.17	AV	206.00	100	Vertical	Pass
4	4924.500	55.90	74.0	18.10	Peak	206.00	100	Vertical	Pass
4**	4924.500	48.03	54.0	5.97	AV	206.00	100	Vertical	Pass
5	6899.250	54.05	74.0	19.95	Peak	249.00	400	Vertical	Pass
5**	6899.250	44.25	54.0	9.75	AV	249.00	400	Vertical	Pass
6	16851.300	56.01	74.0	17.99	Peak	176.00	400	Vertical	Pass
6**	16851.300	45.94	54.0	8.06	AV	176.00	400	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11n20 Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1445.200	48.10	74.0	25.90	Peak	266.00	200	Horizontal	Pass
1**	1445.200	40.22	54.0	13.78	AV	266.00	200	Horizontal	Pass
2	2409.800	99.70	74.0	-25.70	Peak	158.00	100	Horizontal	N/A
2**	2409.800	91.85	54.0	-37.85	AV	158.00	100	Horizontal	N/A
3	4824.000	51.42	74.0	22.58	Peak	77.00	100	Horizontal	Pass
3**	4824.000	47.23	54.0	6.77	AV	77.00	100	Horizontal	Pass
4	4828.500	53.72	74.0	20.28	Peak	77.00	200	Horizontal	Pass
4**	4828.500	44.07	54.0	9.93	AV	77.00	200	Horizontal	Pass
5	6889.250	53.91	74.0	20.09	Peak	360.00	400	Horizontal	Pass
5**	6889.250	45.02	54.0	8.98	AV	360.00	400	Horizontal	Pass
6	14457.825	56.14	74.0	17.86	Peak	147.00	300	Horizontal	Pass
6**	14457.825	45.91	54.0	8.09	AV	147.00	300	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11n20 Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1438.700	45.33	74.0	28.67	Peak	146.00	400	Vertical	Pass
1**	1438.700	35.07	54.0	18.93	AV	146.00	400	Vertical	Pass
2	2408.400	110.21	74.0	-36.21	Peak	219.00	100	Vertical	N/A
2**	2408.400	102.14	54.0	-48.14	AV	219.00	100	Vertical	N/A
3	4823.500	55.21	74.0	18.79	Peak	217.00	100	Vertical	Pass
3**	4823.500	50.73	54.0	3.27	AV	217.00	100	Vertical	Pass
4	4825.250	57.47	74.0	16.53	Peak	196.00	150	Vertical	Pass
4**	4825.250	49.37	54.0	4.63	AV	196.00	150	Vertical	Pass
5	6893.500	53.45	74.0	20.55	Peak	176.00	200	Vertical	Pass
5**	6893.500	45.24	54.0	8.76	AV	176.00	200	Vertical	Pass
6	17129.551	55.70	74.0	18.30	Peak	245.00	100	Vertical	Pass
6**	17129.551	45.81	54.0	8.19	AV	245.00	100	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11n20 Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1463.800	48.85	74.0	25.15	Peak	264.00	300	Horizontal	Pass
1**	1463.800	41.07	54.0	12.93	AV	264.00	300	Horizontal	Pass
2	2438.500	101.92	74.0	-27.92	Peak	163.00	200	Horizontal	N/A
2**	2438.500	93.97	54.0	-39.97	AV	163.00	200	Horizontal	N/A
3	4873.750	52.88	74.0	21.12	Peak	64.00	100	Horizontal	Pass
3**	4873.750	47.55	54.0	6.45	AV	64.00	100	Horizontal	Pass
4	4874.250	56.45	74.0	17.55	Peak	64.00	150	Horizontal	Pass
4**	4874.250	45.50	54.0	8.50	AV	64.00	150	Horizontal	Pass
5	6912.250	53.85	74.0	20.15	Peak	360.00	200	Horizontal	Pass
5**	6912.250	44.66	54.0	9.34	AV	360.00	200	Horizontal	Pass
6	14455.463	55.64	74.0	18.36	Peak	190.00	400	Horizontal	Pass
6**	14455.463	46.40	54.0	7.60	AV	190.00	400	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11n20 Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1397.700	44.43	74.0	29.57	Peak	117.00	400	Vertical	Pass
1**	1397.700	36.03	54.0	17.97	AV	117.00	400	Vertical	Pass
2	2439.200	109.94	74.0	-35.94	Peak	79.00	150	Vertical	N/A
2**	2439.200	102.89	54.0	-48.89	AV	79.00	150	Vertical	N/A
3	4874.250	57.42	74.0	16.58	Peak	220.00	150	Vertical	Pass
3**	4874.250	48.78	54.0	5.22	AV	220.00	150	Vertical	Pass
4	4874.500	53.91	74.0	20.09	Peak	220.00	100	Vertical	Pass
4**	4874.500	49.85	54.0	4.15	AV	220.00	100	Vertical	Pass
5	6906.000	54.08	74.0	19.92	Peak	220.00	400	Vertical	Pass
5**	6906.000	44.57	54.0	9.43	AV	220.00	400	Vertical	Pass
6	14422.651	55.30	74.0	18.70	Peak	60.00	400	Vertical	Pass
6**	14422.651	45.32	54.0	8.68	AV	60.00	400	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11n20 High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1404.700	48.43	74.0	25.57	Peak	235.00	400	Horizontal	Pass
1**	1404.700	36.93	54.0	17.07	AV	235.00	400	Horizontal	Pass
2	2460.300	100.49	74.0	-26.49	Peak	162.00	150	Horizontal	N/A
2**	2460.300	92.69	54.0	-38.69	AV	162.00	150	Horizontal	N/A
3	4923.000	52.41	74.0	21.59	Peak	74.00	150	Horizontal	Pass
3**	4923.000	43.34	54.0	10.66	AV	74.00	150	Horizontal	Pass
4	4923.500	50.51	74.0	23.49	Peak	290.00	100	Horizontal	Pass
4**	4923.500	45.83	54.0	8.17	AV	290.00	100	Horizontal	Pass
5	7965.500	54.08	74.0	19.92	Peak	134.00	200	Horizontal	Pass
5**	7965.500	45.21	54.0	8.79	AV	134.00	200	Horizontal	Pass
6	17050.537	55.42	74.0	18.58	Peak	244.00	400	Horizontal	Pass
6**	17050.537	45.65	54.0	8.35	AV	244.00	400	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11n20 High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1426.000	45.25	74.0	28.75	Peak	103.00	200	Vertical	Pass
1**	1426.000	35.15	54.0	18.85	AV	103.00	200	Vertical	Pass
2	2463.300	109.60	74.0	-35.60	Peak	84.00	200	Vertical	N/A
2**	2463.300	102.35	54.0	-48.35	AV	84.00	200	Vertical	N/A
3	4923.750	52.19	74.0	21.81	Peak	217.00	100	Vertical	Pass
3**	4923.750	48.59	54.0	5.41	AV	217.00	100	Vertical	Pass
4	4924.500	56.00	74.0	18.00	Peak	217.00	100	Vertical	Pass
4**	4924.500	47.15	54.0	6.85	AV	217.00	100	Vertical	Pass
5	6894.000	53.42	74.0	20.58	Peak	173.00	100	Vertical	Pass
5**	6894.000	45.87	54.0	8.13	AV	173.00	100	Vertical	Pass
6	17443.762	55.18	74.0	18.82	Peak	65.00	200	Vertical	Pass
6**	17443.762	45.84	54.0	8.16	AV	65.00	200	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11n40 Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1328.900	47.26	74.0	26.74	Peak	225.00	200	Horizontal	Pass
1**	1328.900	38.87	54.0	15.13	AV	225.00	200	Horizontal	Pass
2	2423.600	98.90	74.0	-24.90	Peak	161.00	100	Horizontal	N/A
2**	2423.600	91.27	54.0	-37.27	AV	161.00	100	Horizontal	N/A
3	4847.250	52.14	74.0	21.86	Peak	57.00	100	Horizontal	Pass
3**	4847.250	46.32	54.0	7.68	AV	57.00	100	Horizontal	Pass
4	4852.750	53.78	74.0	20.22	Peak	81.00	150	Horizontal	Pass
4**	4852.750	43.48	54.0	10.52	AV	81.00	150	Horizontal	Pass
5	7947.250	54.02	74.0	19.98	Peak	360.00	400	Horizontal	Pass
5**	7947.250	44.44	54.0	9.56	AV	360.00	400	Horizontal	Pass
6	17105.926	55.33	74.0	18.67	Peak	273.00	300	Horizontal	Pass
6**	17105.926	46.02	54.0	7.98	AV	273.00	300	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11n40 Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1331.200	46.02	74.0	27.98	Peak	128.00	300	Vertical	Pass
1**	1331.200	38.11	54.0	15.89	AV	128.00	300	Vertical	Pass
2	2419.400	108.13	74.0	-34.13	Peak	72.00	200	Vertical	N/A
2**	2419.400	101.05	54.0	-47.05	AV	72.00	200	Vertical	N/A
3	4843.250	57.30	74.0	16.70	Peak	208.00	200	Vertical	Pass
3**	4843.250	47.13	54.0	6.87	AV	208.00	200	Vertical	Pass
4	4844.500	52.14	74.0	21.86	Peak	208.00	100	Vertical	Pass
4**	4844.500	48.96	54.0	5.04	AV	208.00	100	Vertical	Pass
5	7976.500	53.39	74.0	20.61	Peak	0.00	300	Vertical	Pass
5**	7976.500	44.25	54.0	9.75	AV	0.00	300	Vertical	Pass
6	14446.800	55.25	74.0	18.75	Peak	360.00	200	Vertical	Pass
6**	14446.800	45.74	54.0	8.26	AV	360.00	200	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11n40 Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1459.000	47.12	74.0	26.88	Peak	288.00	400	Horizontal	Pass
1**	1459.000	38.58	54.0	15.42	AV	288.00	400	Horizontal	Pass
2	2439.000	100.43	74.0	-26.43	Peak	161.00	100	Horizontal	N/A
2**	2439.000	93.16	54.0	-39.16	AV	161.00	100	Horizontal	N/A
3	4875.750	53.54	74.0	20.46	Peak	57.00	200	Horizontal	Pass
3**	4875.750	44.23	54.0	9.77	AV	57.00	200	Horizontal	Pass
4	4876.000	52.53	74.0	21.47	Peak	57.00	100	Horizontal	Pass
4**	4876.000	47.20	54.0	6.80	AV	57.00	100	Horizontal	Pass
5	7925.250	53.66	74.0	20.34	Peak	359.00	100	Horizontal	Pass
5**	7925.250	43.95	54.0	10.05	AV	359.00	100	Horizontal	Pass
6	14453.363	55.51	74.0	18.49	Peak	259.00	200	Horizontal	Pass
6**	14453.363	45.61	54.0	8.39	AV	259.00	200	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11n40 Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1423.100	46.25	74.0	27.75	Peak	166.00	200	Vertical	Pass
1**	1423.100	36.02	54.0	17.98	AV	166.00	200	Vertical	Pass
2	2438.500	108.70	74.0	-34.70	Peak	210.00	150	Vertical	N/A
2**	2438.500	102.16	54.0	-48.16	AV	210.00	150	Vertical	N/A
3	4873.750	54.09	74.0	19.91	Peak	207.00	100	Vertical	Pass
3**	4873.750	48.56	54.0	5.44	AV	207.00	100	Vertical	Pass
4	4874.500	55.61	74.0	18.39	Peak	207.00	150	Vertical	Pass
4**	4874.500	48.00	54.0	6.00	AV	207.00	150	Vertical	Pass
5	7423.250	53.78	74.0	20.22	Peak	59.00	100	Vertical	Pass
5**	7423.250	44.05	54.0	9.95	AV	59.00	100	Vertical	Pass
6	17135.062	55.16	74.0	18.84	Peak	295.00	400	Vertical	Pass
6**	17135.062	45.65	54.0	8.35	AV	295.00	400	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11n40 High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1470.000	48.08	74.0	25.92	Peak	269.00	300	Horizontal	Pass
1**	1470.000	40.43	54.0	13.57	AV	269.00	300	Horizontal	Pass
2	2448.500	100.07	74.0	-26.07	Peak	163.00	100	Horizontal	N/A
2**	2448.500	91.90	54.0	-37.90	AV	163.00	100	Horizontal	N/A
3	4894.250	50.06	74.0	23.94	Peak	79.00	100	Horizontal	Pass
3**	4894.250	45.91	54.0	8.09	AV	79.00	100	Horizontal	Pass
4	4898.000	52.79	74.0	21.21	Peak	79.00	100	Horizontal	Pass
4**	4898.000	44.55	54.0	9.45	AV	79.00	100	Horizontal	Pass
5	6892.750	54.17	74.0	19.83	Peak	291.00	100	Horizontal	Pass
5**	6892.750	44.90	54.0	9.10	AV	291.00	100	Horizontal	Pass
6	15197.550	55.38	74.0	18.62	Peak	256.00	200	Horizontal	Pass
6**	15197.550	46.22	54.0	7.78	AV	256.00	200	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11n40 High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1415.900	43.03	74.0	30.97	Peak	117.00	400	Vertical	Pass
1**	1415.900	35.34	54.0	18.66	AV	117.00	400	Vertical	Pass
2	2450.700	108.54	74.0	-34.54	Peak	208.00	150	Vertical	N/A
2**	2450.700	100.55	54.0	-46.55	AV	208.00	150	Vertical	N/A
3	4900.000	52.20	74.0	21.80	Peak	208.00	100	Vertical	Pass
3**	4900.000	49.23	54.0	4.77	AV	208.00	100	Vertical	Pass
4	4910.500	56.23	74.0	17.77	Peak	208.00	200	Vertical	Pass
4**	4910.500	45.61	54.0	8.39	AV	208.00	200	Vertical	Pass
5	5311.500	47.89	74.0	26.11	Peak	0.00	100	Vertical	Pass
5**	5311.500	46.26	54.0	7.74	AV	0.00	100	Vertical	Pass
6	6894.250	53.56	74.0	20.44	Peak	184.00	100	Vertical	Pass
6**	6894.250	44.67	54.0	9.33	AV	184.00	100	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11ax20(SU) Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1449.400	49.25	74.0	24.75	Peak	268.00	100	Horizontal	Pass
1**	1449.400	40.54	54.0	13.46	AV	268.00	100	Horizontal	Pass
2	2409.700	100.34	74.0	-26.34	Peak	162.00	150	Horizontal	N/A
2**	2409.700	92.66	54.0	-38.66	AV	162.00	150	Horizontal	N/A
3	4819.500	55.48	74.0	18.52	Peak	76.00	200	Horizontal	Pass
3**	4819.500	45.58	54.0	8.42	AV	76.00	200	Horizontal	Pass
4	4823.750	54.21	74.0	19.79	Peak	76.00	100	Horizontal	Pass
4**	4823.750	47.91	54.0	6.09	AV	76.00	100	Horizontal	Pass
5	6907.250	53.52	74.0	20.48	Peak	174.00	100	Horizontal	Pass
5**	6907.250	44.46	54.0	9.54	AV	174.00	100	Horizontal	Pass
6	17004.599	55.62	74.0	18.38	Peak	168.00	200	Horizontal	Pass
6**	17004.599	46.56	54.0	7.44	AV	168.00	200	Horizontal	Pass

1 GHz to 18 GHz, ANT V802.11ax20(SU) Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1411.900	47.86	74.0	26.14	Peak	117.00	300	Vertical	Pass
1**	1411.900	36.40	54.0	17.60	AV	117.00	300	Vertical	Pass
2	2410.900	112.29	74.0	-38.29	Peak	300.00	100	Vertical	N/A
2**	2410.900	103.25	54.0	-49.25	AV	300.00	100	Vertical	N/A
3	4818.250	57.93	74.0	16.07	Peak	203.00	100	Vertical	Pass
3**	4818.250	49.16	54.0	4.84	AV	203.00	100	Vertical	Pass
4	4823.750	57.35	74.0	16.65	Peak	203.00	100	Vertical	Pass
4**	4823.750	50.95	54.0	3.05	AV	203.00	100	Vertical	Pass
5	7985.500	54.28	74.0	19.72	Peak	99.00	200	Vertical	Pass
5**	7985.500	44.02	54.0	9.98	AV	99.00	200	Vertical	Pass
6	17099.099	55.23	74.0	18.77	Peak	319.00	200	Vertical	Pass
6**	17099.099	46.18	54.0	7.82	AV	319.00	200	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11ax20(SU) Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1464.900	49.71	74.0	24.29	Peak	266.00	400	Horizontal	Pass
1**	1464.900	40.89	54.0	13.11	AV	266.00	400	Horizontal	Pass
2	2435.200	102.71	74.0	-28.71	Peak	161.00	100	Horizontal	N/A
2**	2435.200	94.44	54.0	-40.44	AV	161.00	100	Horizontal	N/A
3	4873.750	55.55	74.0	18.45	Peak	62.00	100	Horizontal	Pass
3**	4873.750	45.29	54.0	8.71	AV	62.00	100	Horizontal	Pass
4	4874.000	51.30	74.0	22.70	Peak	360.00	100	Horizontal	Pass
4**	4874.000	47.15	54.0	6.85	AV	360.00	100	Horizontal	Pass
5	6885.000	53.63	74.0	20.37	Peak	360.00	100	Horizontal	Pass
5**	6885.000	44.08	54.0	9.92	AV	360.00	100	Horizontal	Pass
6	17039.250	55.55	74.0	18.45	Peak	54.00	300	Horizontal	Pass
6**	17039.250	46.80	54.0	7.20	AV	54.00	300	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11ax20(SU) Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1452.100	44.29	74.0	29.71	Peak	171.00	400	Vertical	Pass
1**	1452.100	33.44	54.0	20.56	AV	171.00	400	Vertical	Pass
2	2438.000	112.49	74.0	-38.49	Peak	213.00	100	Vertical	N/A
2**	2438.000	103.33	54.0	-49.33	AV	213.00	100	Vertical	N/A
3	4874.000	57.44	74.0	16.56	Peak	200.00	150	Vertical	Pass
3**	4874.000	48.60	54.0	5.40	AV	200.00	150	Vertical	Pass
4	5326.500	50.29	74.0	23.71	Peak	16.00	100	Vertical	Pass
4**	5326.500	47.59	54.0	6.41	AV	16.00	100	Vertical	Pass
5	5326.750	54.11	74.0	19.89	Peak	16.00	100	Vertical	Pass
5**	5326.750	42.24	54.0	11.76	AV	16.00	100	Vertical	Pass
6	14443.912	55.04	74.0	18.96	Peak	213.00	100	Vertical	Pass
6**	14443.912	46.63	54.0	7.37	AV	213.00	100	Vertical	Pass

1 GHz to 18 GHz, ANT H802.11ax20(SU) High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1472.700	48.34	74.0	25.66	Peak	259.00	400	Horizontal	Pass
1**	1472.700	39.58	54.0	14.42	AV	259.00	400	Horizontal	Pass
2	2462.200	100.35	74.0	-26.35	Peak	164.00	100	Horizontal	N/A
2**	2462.200	91.52	54.0	-37.52	AV	164.00	100	Horizontal	N/A
3	4923.750	54.19	74.0	19.81	Peak	71.00	150	Horizontal	Pass
3**	4923.750	44.86	54.0	9.14	AV	71.00	150	Horizontal	Pass
4	4924.000	49.16	74.0	24.84	Peak	0.00	100	Horizontal	Pass
4**	4924.000	46.80	54.0	7.20	AV	0.00	100	Horizontal	Pass
5	6888.250	53.62	74.0	20.38	Peak	71.00	200	Horizontal	Pass
5**	6888.250	45.29	54.0	8.71	AV	71.00	200	Horizontal	Pass
6	14443.912	56.05	74.0	17.95	Peak	322.00	100	Horizontal	Pass
6**	14443.912	46.59	54.0	7.41	AV	322.00	100	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11ax20(SU) High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1474.900	43.68	74.0	30.32	Peak	193.00	400	Vertical	Pass
1**	1474.900	35.29	54.0	18.71	AV	193.00	400	Vertical	Pass
2	2459.100	110.91	74.0	-36.91	Peak	100.00	200	Vertical	N/A
2**	2459.100	102.05	54.0	-48.05	AV	100.00	200	Vertical	N/A
3	3787.250	43.82	74.0	30.18	Peak	217.00	100	Vertical	Pass
3**	3787.250	43.00	54.0	11.00	AV	217.00	100	Vertical	Pass
4	4923.500	51.62	74.0	22.38	Peak	217.00	100	Vertical	Pass
4**	4923.500	47.59	54.0	6.41	AV	217.00	100	Vertical	Pass
5	4924.750	55.21	74.0	18.79	Peak	217.00	100	Vertical	Pass
5**	4924.750	47.26	54.0	6.74	AV	217.00	100	Vertical	Pass
6	6880.750	54.04	74.0	19.96	Peak	115.00	300	Vertical	Pass
6**	6880.750	44.22	54.0	9.78	AV	115.00	300	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11ax40(SU) Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1458.100	47.99	74.0	26.01	Peak	268.00	300	Horizontal	Pass
1**	1458.100	38.33	54.0	15.67	AV	268.00	300	Horizontal	Pass
2	2424.500	101.09	74.0	-27.09	Peak	157.00	200	Horizontal	N/A
2**	2424.500	92.39	54.0	-38.39	AV	157.00	200	Horizontal	N/A
3	4840.500	55.91	74.0	18.09	Peak	74.00	100	Horizontal	Pass
3**	4840.500	44.79	54.0	9.21	AV	74.00	100	Horizontal	Pass
4	4854.500	52.36	74.0	21.64	Peak	74.00	100	Horizontal	Pass
4**	4854.500	47.69	54.0	6.31	AV	74.00	100	Horizontal	Pass
5	7420.250	53.25	74.0	20.75	Peak	195.00	200	Horizontal	Pass
5**	7420.250	44.59	54.0	9.41	AV	195.00	200	Horizontal	Pass
6	17029.537	55.72	74.0	18.28	Peak	293.00	200	Horizontal	Pass
6**	17029.537	46.18	54.0	7.82	AV	293.00	200	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11ax40(SU) Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1453.300	43.83	74.0	30.17	Peak	152.00	200	Vertical	Pass
1**	1453.300	34.50	54.0	19.50	AV	152.00	200	Vertical	Pass
2	2420.600	111.89	74.0	-37.89	Peak	87.00	200	Vertical	N/A
2**	2420.600	101.99	54.0	-47.99	AV	87.00	200	Vertical	N/A
3	4843.000	55.79	74.0	18.21	Peak	220.00	100	Vertical	Pass
3**	4843.000	50.88	54.0	3.12	AV	220.00	100	Vertical	Pass
4	4847.750	55.82	74.0	18.18	Peak	200.00	200	Vertical	Pass
4**	4847.750	46.00	54.0	8.00	AV	200.00	200	Vertical	Pass
5	6893.250	54.12	74.0	19.88	Peak	302.00	400	Vertical	Pass
5**	6893.250	44.70	54.0	9.30	AV	302.00	400	Vertical	Pass
6	17104.088	55.69	74.0	18.31	Peak	281.00	400	Vertical	Pass
6**	17104.088	48.19	54.0	5.81	AV	281.00	400	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11ax40(SU) Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1329.500	47.27	74.0	26.73	Peak	33.00	300	Horizontal	Pass
1**	1329.500	38.87	54.0	15.13	AV	33.00	300	Horizontal	Pass
2	2440.000	99.60	74.0	-25.60	Peak	162.00	100	Horizontal	N/A
2**	2440.000	90.87	54.0	-36.87	AV	162.00	100	Horizontal	N/A
3	4869.500	51.26	74.0	22.74	Peak	77.00	100	Horizontal	Pass
3**	4869.500	46.40	54.0	7.60	AV	77.00	100	Horizontal	Pass
4	4878.250	54.14	74.0	19.86	Peak	77.00	150	Horizontal	Pass
4**	4878.250	44.04	54.0	9.96	AV	77.00	150	Horizontal	Pass
5	6883.500	53.67	74.0	20.33	Peak	161.00	400	Horizontal	Pass
5**	6883.500	44.46	54.0	9.54	AV	161.00	400	Horizontal	Pass
6	14417.925	55.59	74.0	18.41	Peak	280.00	400	Horizontal	Pass
6**	14417.925	45.73	54.0	8.27	AV	280.00	400	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11ax40(SU) Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1426.900	44.65	74.0	29.35	Peak	151.00	200	Vertical	Pass
1**	1426.900	32.97	54.0	21.03	AV	151.00	200	Vertical	Pass
2	2438.400	111.12	74.0	-37.12	Peak	356.00	100	Vertical	N/A
2**	2438.400	100.78	54.0	-46.78	AV	356.00	100	Vertical	N/A
3	4868.500	54.78	74.0	19.22	Peak	208.00	100	Vertical	Pass
3**	4868.500	48.36	54.0	5.64	AV	208.00	100	Vertical	Pass
4	4874.000	55.76	74.0	18.24	Peak	208.00	100	Vertical	Pass
4**	4874.000	46.64	54.0	7.36	AV	208.00	100	Vertical	Pass
5	7984.250	53.30	74.0	20.70	Peak	274.00	300	Vertical	Pass
5**	7984.250	44.25	54.0	9.75	AV	274.00	300	Vertical	Pass
6	17148.713	55.60	74.0	18.40	Peak	229.00	100	Vertical	Pass
6**	17148.713	45.70	54.0	8.30	AV	229.00	100	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11ax40(SU) High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1409.000	48.63	74.0	25.37	Peak	240.00	100	Horizontal	Pass
1**	1409.000	35.42	54.0	18.58	AV	240.00	100	Horizontal	Pass
2	2449.700	98.82	74.0	-24.82	Peak	167.00	100	Horizontal	N/A
2**	2449.700	91.22	54.0	-37.22	AV	167.00	100	Horizontal	N/A
3	4892.500	52.63	74.0	21.37	Peak	174.00	150	Horizontal	Pass
3**	4892.500	42.87	54.0	11.13	AV	174.00	150	Horizontal	Pass
4	4902.500	50.35	74.0	23.65	Peak	298.00	100	Horizontal	Pass
4**	4902.500	45.24	54.0	8.76	AV	298.00	100	Horizontal	Pass
5	7965.750	53.44	74.0	20.56	Peak	360.00	200	Horizontal	Pass
5**	7965.750	44.53	54.0	9.47	AV	360.00	200	Horizontal	Pass
6	17005.125	55.29	74.0	18.71	Peak	55.00	100	Horizontal	Pass
6**	17005.125	46.64	54.0	7.36	AV	55.00	100	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11ax40(SU) High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1397.700	46.83	74.0	27.17	Peak	120.00	300	Vertical	Pass
1**	1397.700	37.12	54.0	16.88	AV	120.00	300	Vertical	Pass
2	2450.000	109.33	74.0	-35.33	Peak	93.00	100	Vertical	N/A
2**	2450.000	100.59	54.0	-46.59	AV	93.00	100	Vertical	N/A
3	4887.500	53.31	74.0	20.69	Peak	210.00	100	Vertical	Pass
3**	4887.500	43.63	54.0	10.37	AV	210.00	100	Vertical	Pass
4	4902.250	49.28	74.0	24.72	Peak	210.00	100	Vertical	Pass
4**	4902.250	47.25	54.0	6.75	AV	210.00	100	Vertical	Pass
5	7965.500	53.38	74.0	20.62	Peak	188.00	300	Vertical	Pass
5**	7965.500	45.09	54.0	8.91	AV	188.00	300	Vertical	Pass
6	17450.850	55.42	74.0	18.58	Peak	168.00	200	Vertical	Pass
6**	17450.850	45.87	54.0	8.13	AV	168.00	200	Vertical	Pass

5.8 Band Edge (Restricted-band band-edge)

5.8.1 Limit

FCC §15.209&15.247(d)

Radiated emission outside the frequency band attenuation below the general limits specified in FCC section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in FCC section 15.205(a), must also comply with the radiated emission limits specified in FCC section 15.209(a).

5.8.2 Test Setup

See section 4.5.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX A.

5.8.3 Test Procedure

The measurement frequency range is from 9 kHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented.

The power of the EUT transmitting frequency should be ignored.

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured

RBW = 1 MHz for $f \geq 1$ GHz, 100 kHz for $f < 1$ GHz

VBW \geq RBW

Sweep = auto

Detector function = peak

Trace = max hold

For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported, Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

For transmitters operating above 1 GHz repeat the measurement with an average detector.

5.8.4 Test Result

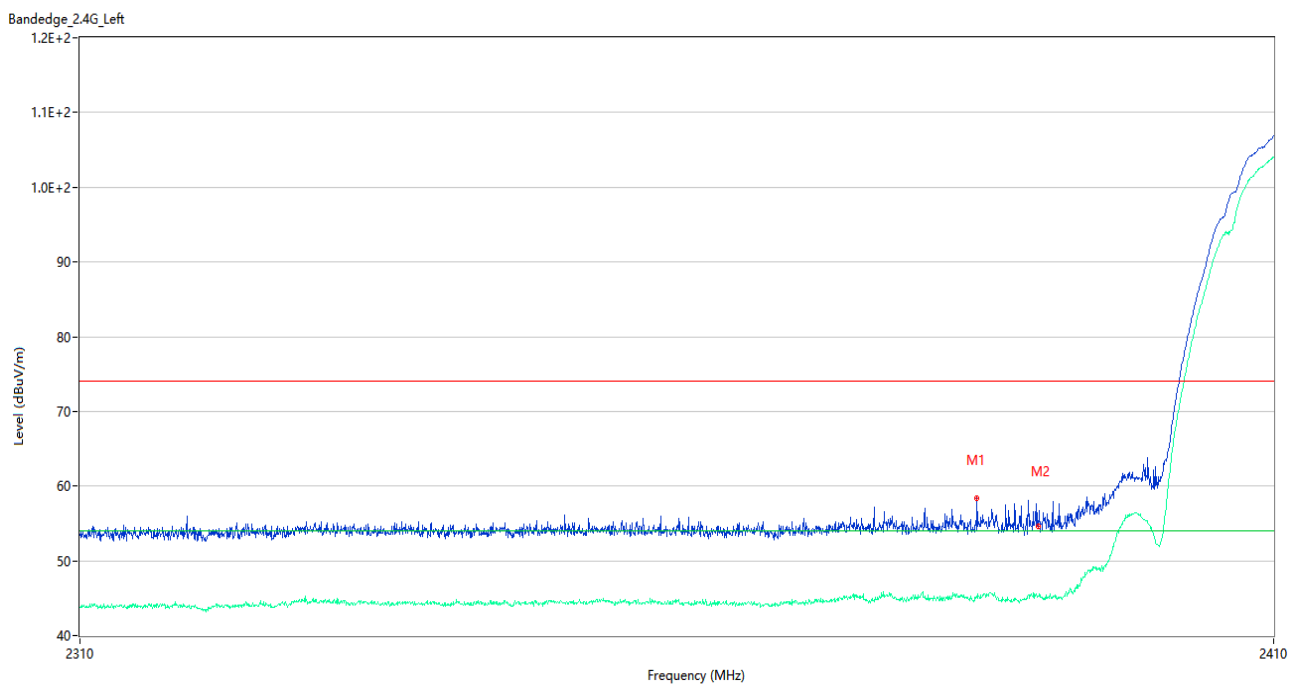
Note 1: The lowest and highest channels are tested to verify the band edge emissions. Please refer to the following the plots for emissions values.

Note 2: The test data all are tested in the vertical and horizontal antenna which the trace is max hold. So these plots have shown the worst case.

Note 3: According the ANSI C63.10-2013, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

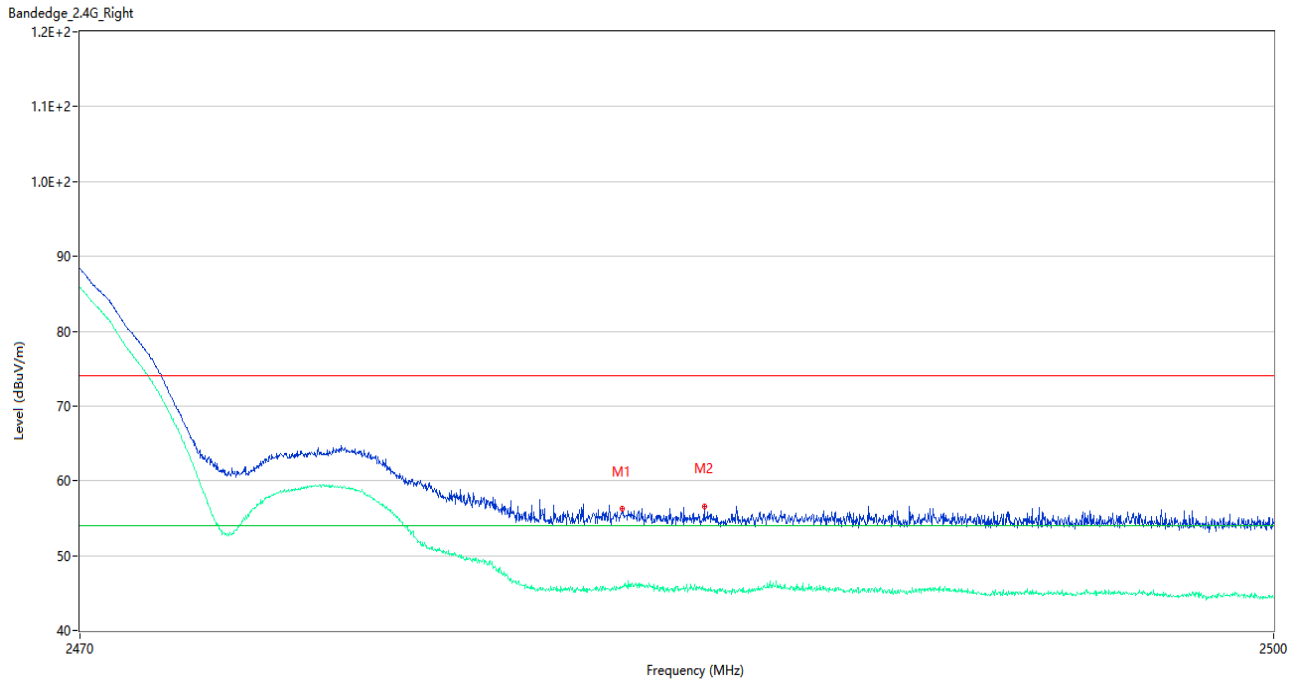
Test Data and Plots

802.11b LOW CHANNEL



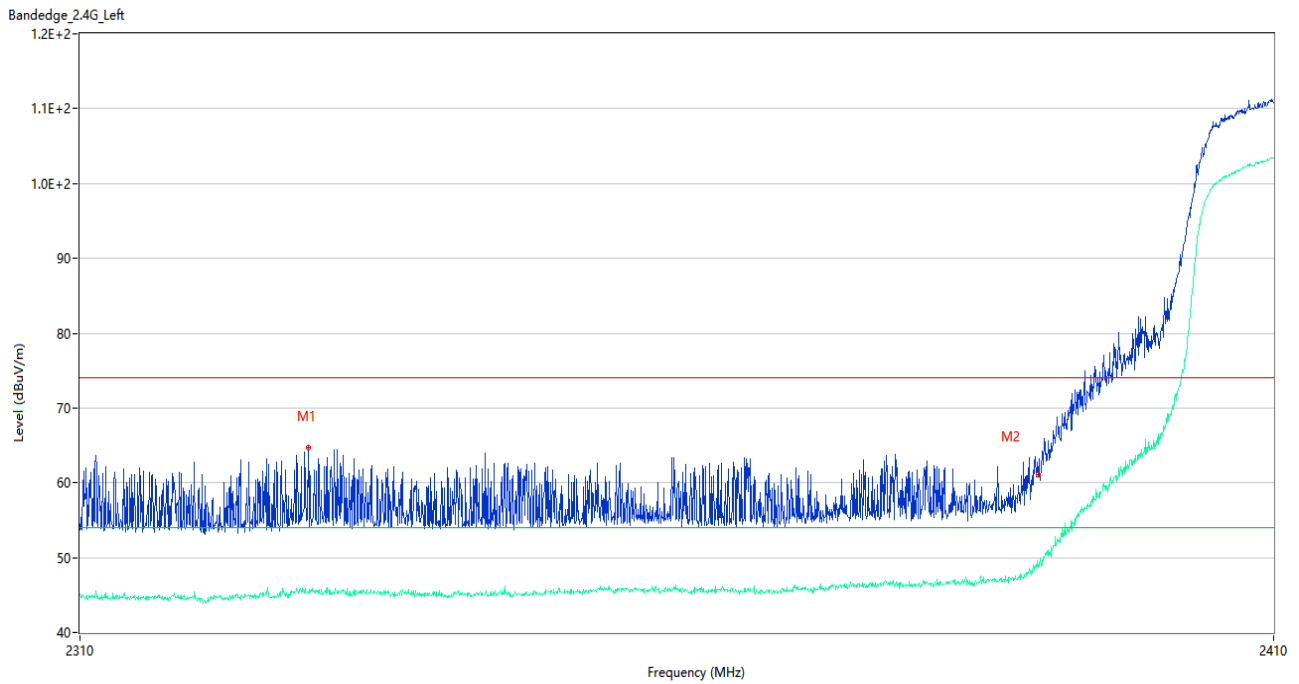
No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2384.750	58.44	74.0	15.56	Peak	227.00	200	Vertical	Pass
1**	2384.750	45.05	54.0	8.95	AV	227.00	200	Vertical	Pass
2	2389.950	54.59	74.0	19.41	Peak	360.00	200	Vertical	Pass
2**	2389.950	45.31	54.0	8.69	AV	360.00	200	Vertical	Pass

802.11b HIGH CHANNEL



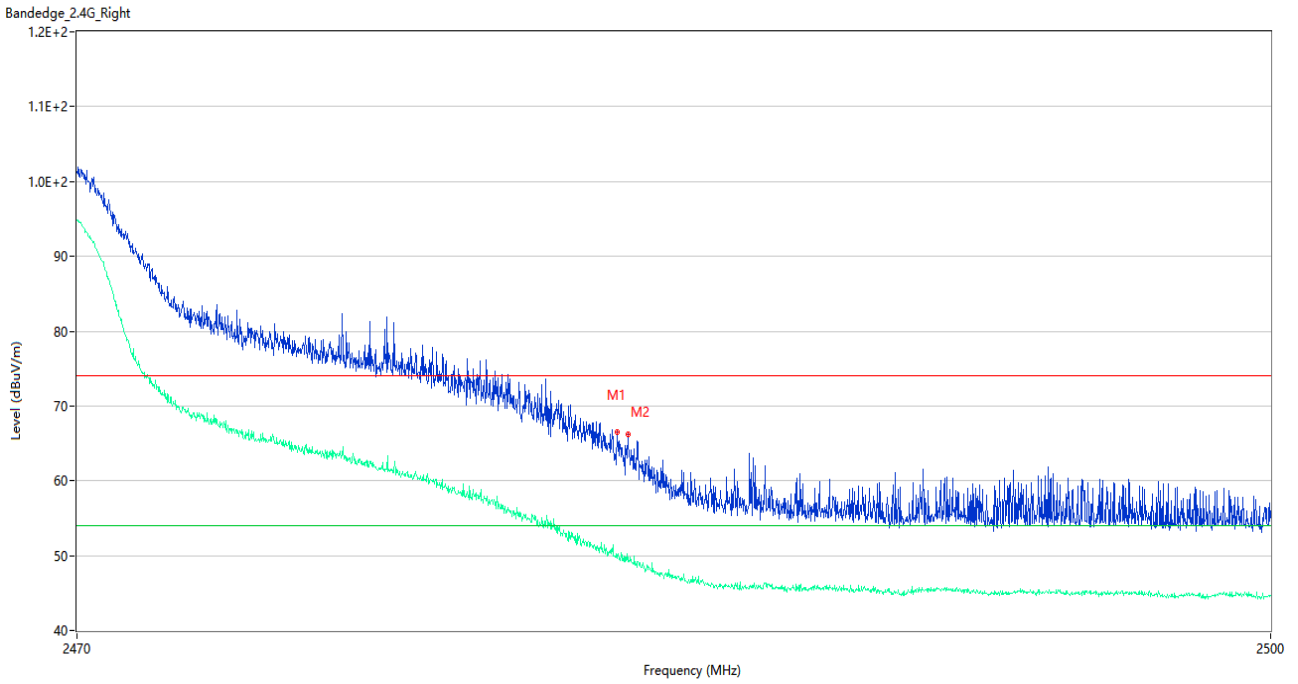
No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.590	56.27	74.0	17.73	Peak	47.00	150	Vertical	Pass
1**	2483.590	45.69	54.0	8.31	AV	47.00	150	Vertical	Pass
2	2485.645	56.63	74.0	17.37	Peak	215.00	150	Vertical	Pass
2**	2485.645	45.50	54.0	8.50	AV	215.00	150	Vertical	Pass

802.11g LOW CHANNEL



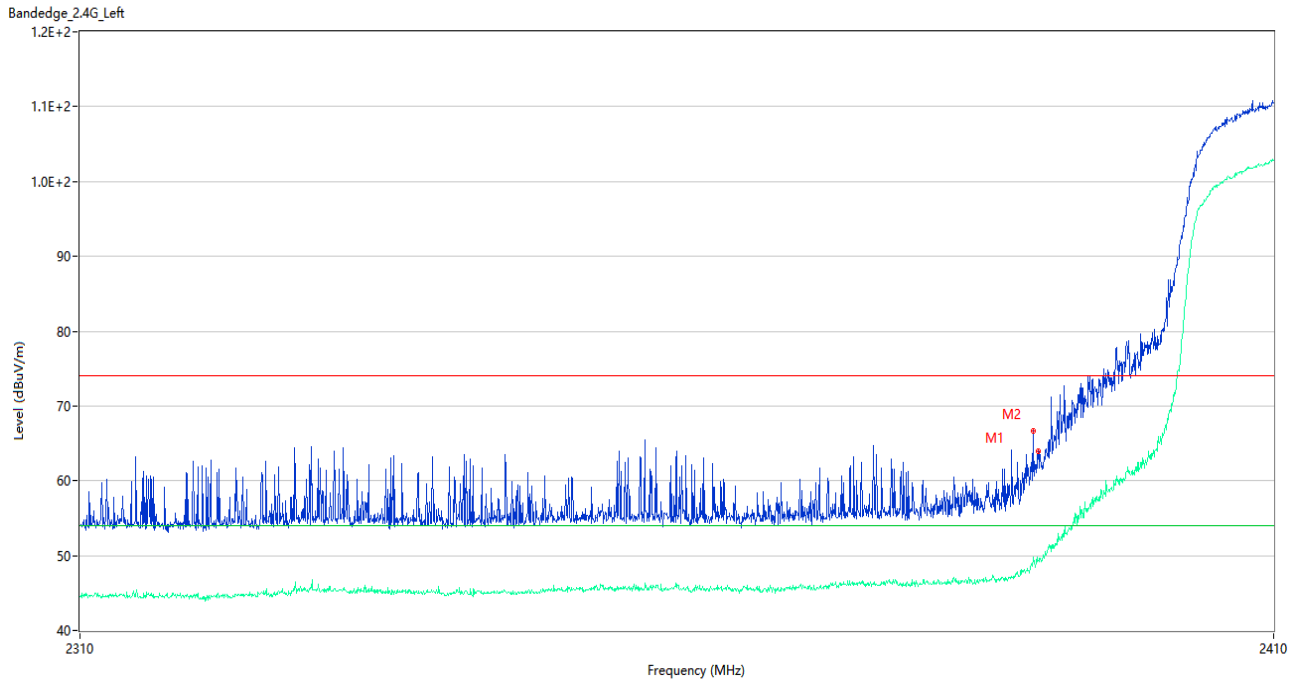
No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2328.800	64.66	74.0	9.34	Peak	225.00	200	Vertical	Pass
1**	2328.800	45.35	54.0	8.65	AV	225.00	200	Vertical	Pass
2	2389.950	61.11	74.0	12.89	Peak	218.00	200	Vertical	Pass
2**	2389.950	48.68	54.0	5.32	AV	218.00	200	Vertical	Pass

802.11g HIGH CHANNEL



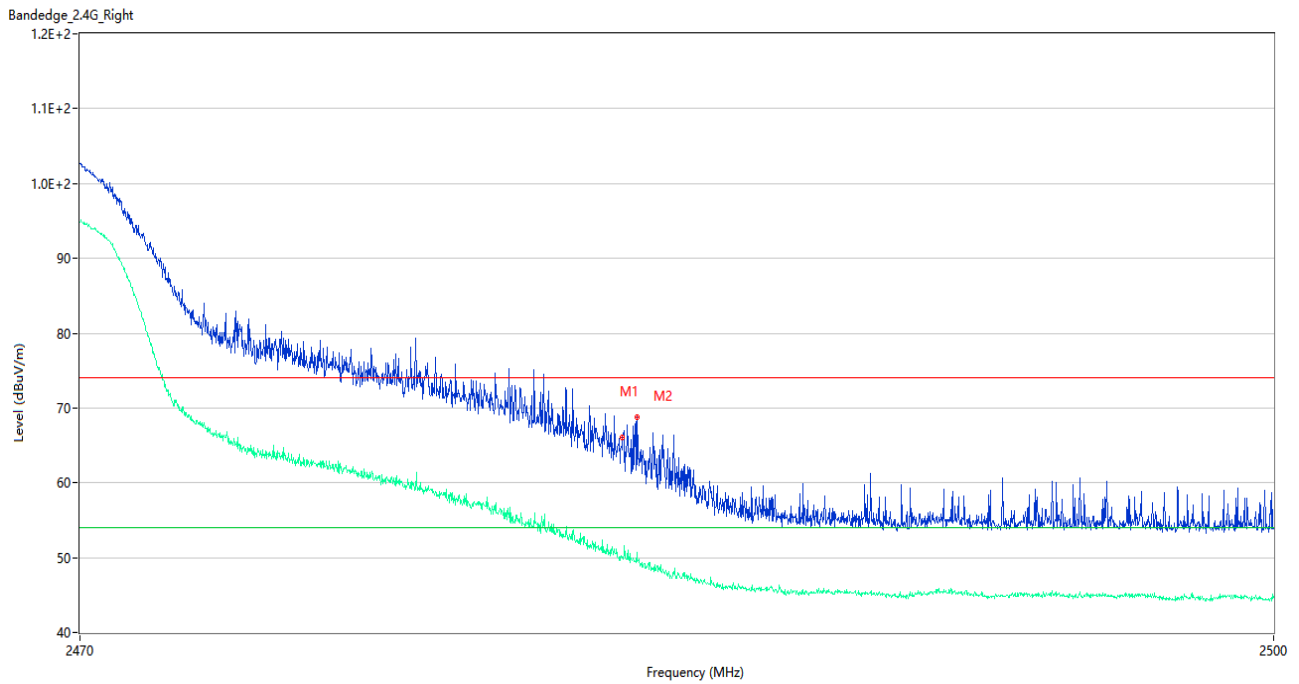
No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.545	66.54	74.0	7.46	Peak	83.00	100	Vertical	Pass
1**	2483.545	50.04	54.0	3.96	AV	83.00	100	Vertical	Pass
2	2483.800	66.21	74.0	7.79	Peak	219.00	200	Vertical	Pass
2**	2483.800	49.26	54.0	4.74	AV	219.00	200	Vertical	Pass

802.11n20 LOW CHANNEL



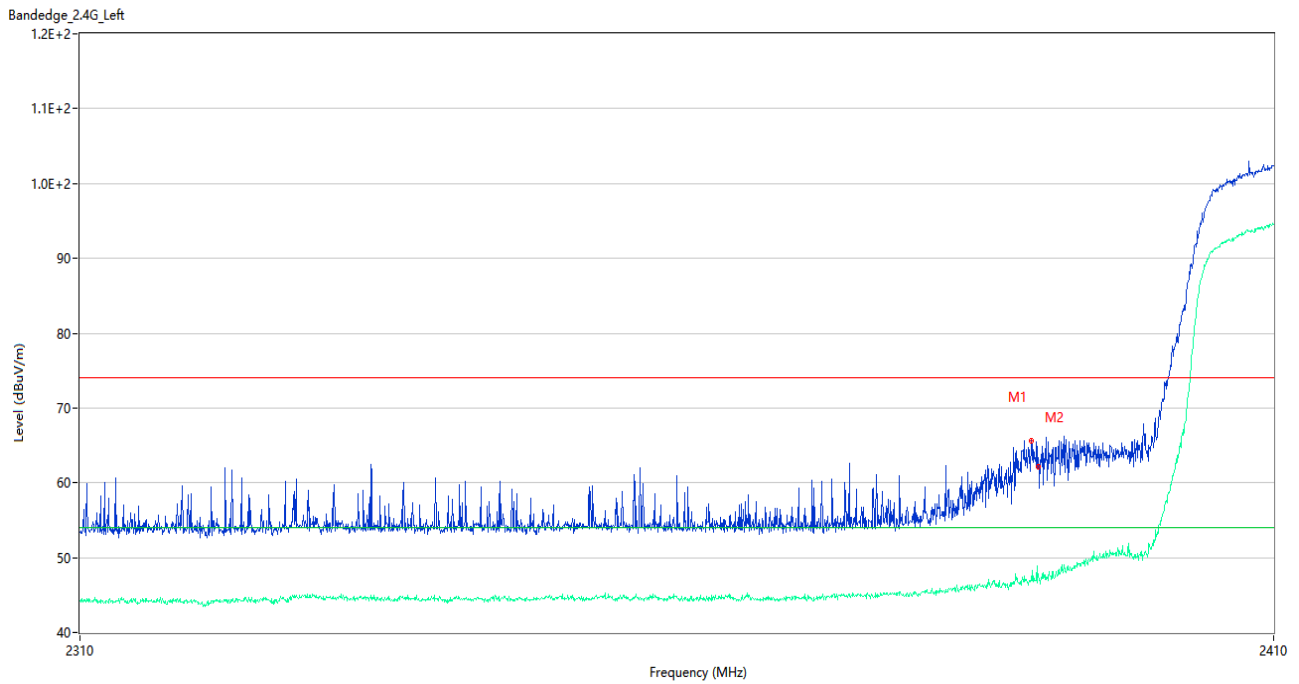
No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2389.500	66.60	74.0	7.40	Peak	1.00	200	Vertical	Pass
1**	2389.500	49.46	54.0	4.54	AV	1.00	200	Vertical	Pass
2	2389.950	64.01	74.0	9.99	Peak	84.00	100	Vertical	Pass
2**	2389.950	49.39	54.0	4.61	AV	84.00	100	Vertical	Pass

802.11n20 HIGH CHANNEL



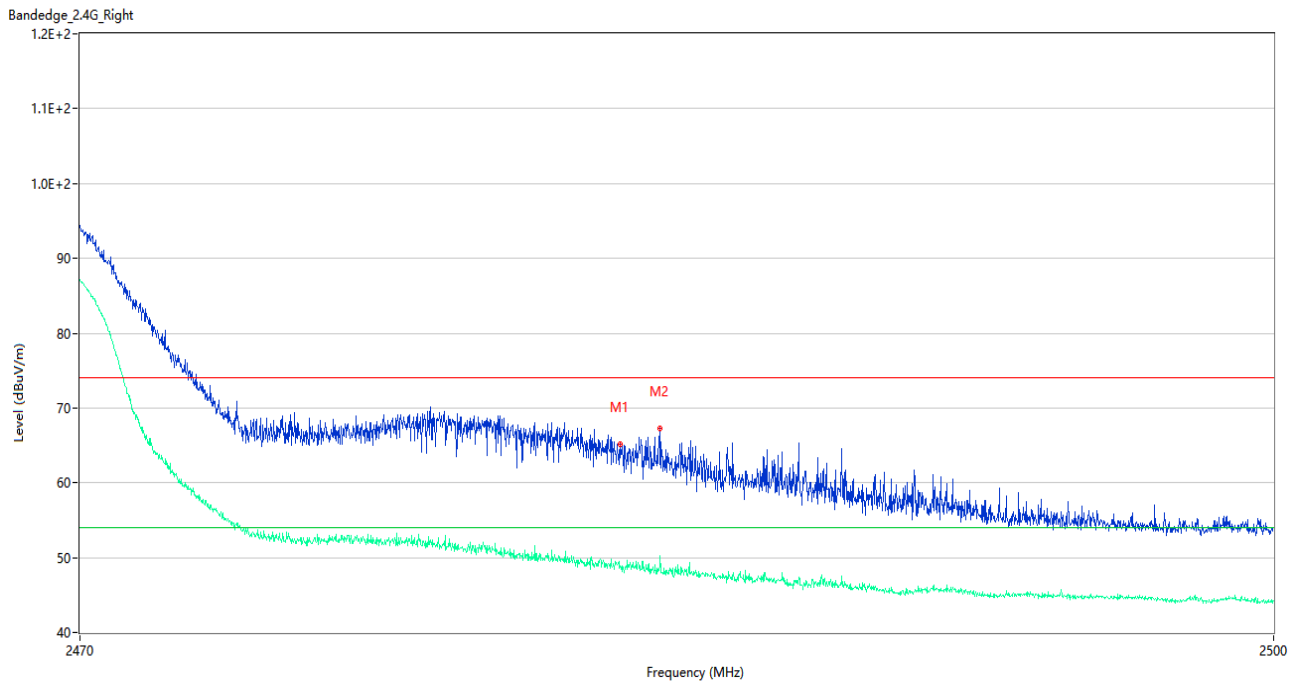
No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.590	66.08	74.0	7.92	Peak	208.00	200	Vertical	Pass
1**	2483.590	49.89	54.0	4.11	AV	208.00	200	Vertical	Pass
2	2483.965	68.71	74.0	5.29	Peak	79.00	200	Vertical	Pass
2**	2483.965	49.52	54.0	4.48	AV	79.00	200	Vertical	Pass

802.11n40 LOW CHANNEL



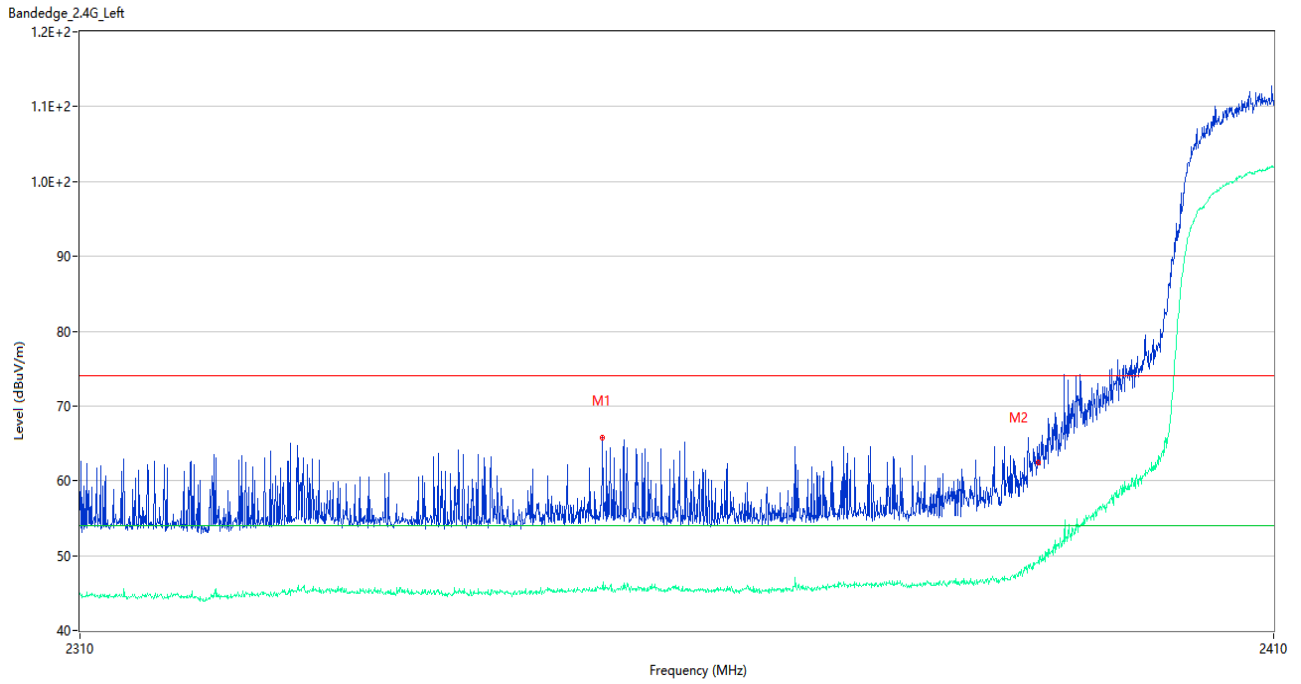
No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2389.350	65.66	74.0	8.34	Peak	217.00	100	Vertical	Pass
1**	2389.350	46.98	54.0	7.02	AV	217.00	100	Vertical	Pass
2	2389.950	62.17	74.0	11.83	Peak	308.00	150	Vertical	Pass
2**	2389.950	47.89	54.0	6.11	AV	308.00	150	Vertical	Pass

802.11n40 HIGH CHANNEL



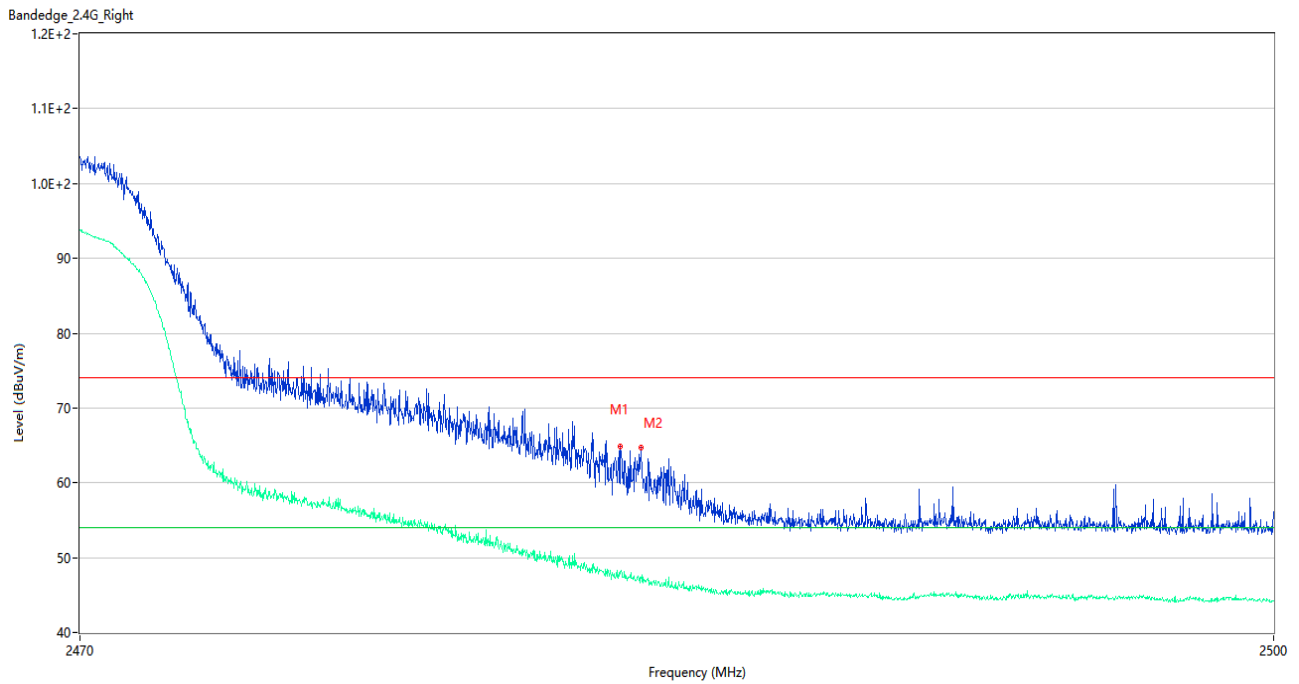
No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.530	65.12	74.0	8.88	Peak	217.00	200	Vertical	Pass
1**	2483.530	48.72	54.0	5.28	AV	217.00	200	Vertical	Pass
2	2484.520	67.29	74.0	6.71	Peak	217.00	100	Vertical	Pass
2**	2484.520	49.03	54.0	4.97	AV	217.00	100	Vertical	Pass

802.11ax20(SU) LOW CHANNEL



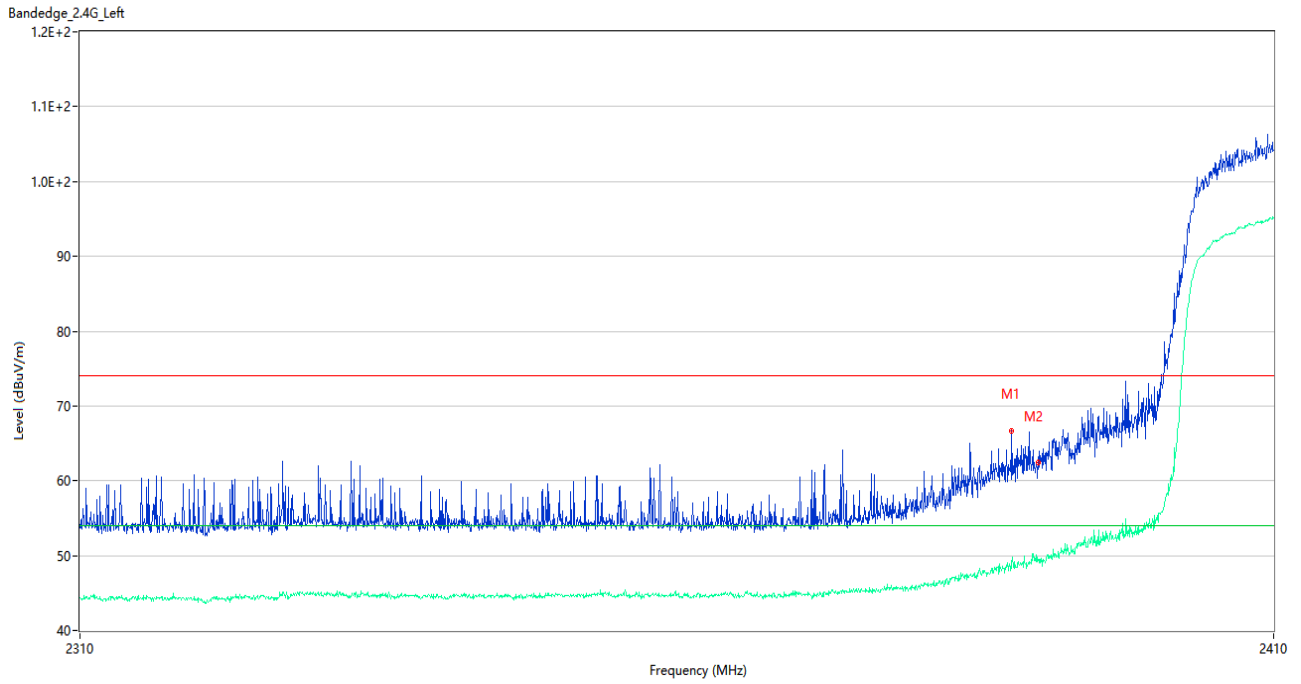
No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2353.250	65.78	74.0	8.22	Peak	350.00	150	Vertical	Pass
1**	2353.250	45.68	54.0	8.32	AV	350.00	150	Vertical	Pass
2	2389.950	62.38	74.0	11.62	Peak	325.00	200	Vertical	Pass
2**	2389.950	49.07	54.0	4.93	AV	325.00	200	Vertical	Pass

802.11 ax20(SU) HIGH CHANNEL



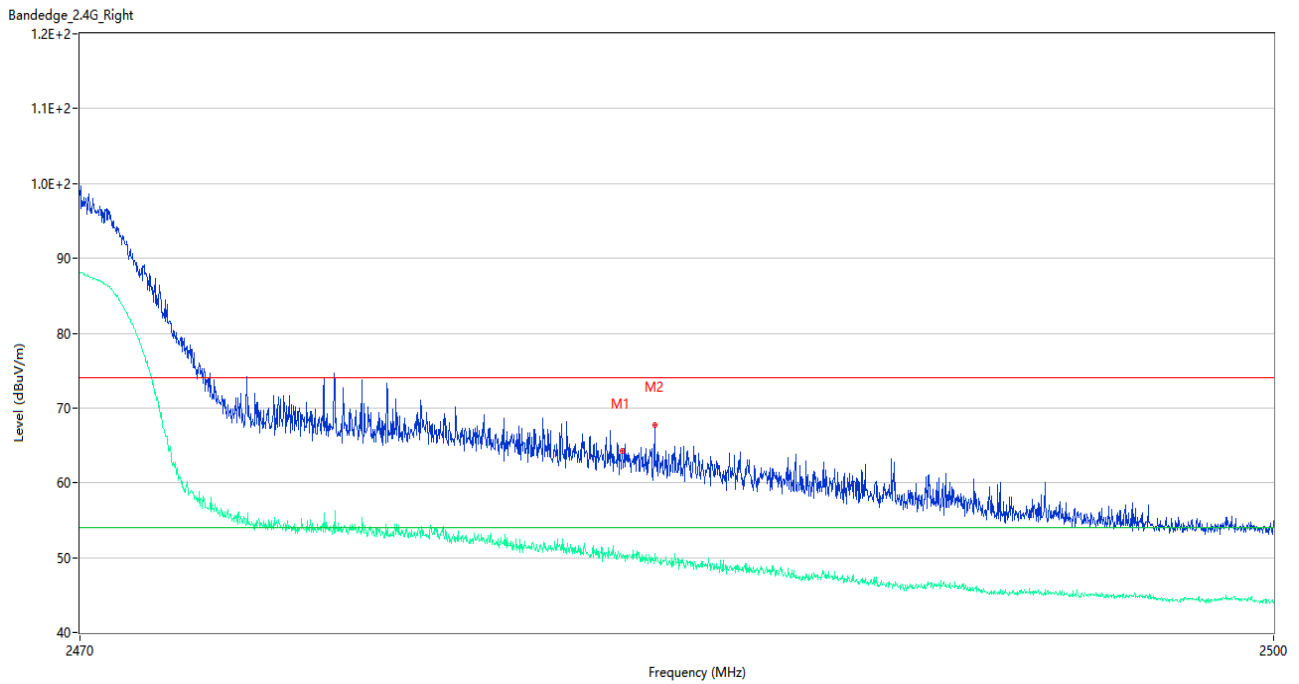
No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.545	64.83	74.0	9.17	Peak	99.00	100	Vertical	Pass
1**	2483.545	48.03	54.0	5.97	AV	99.00	100	Vertical	Pass
2	2484.055	64.64	74.0	9.36	Peak	225.00	150	Vertical	Pass
2**	2484.055	47.26	54.0	6.74	AV	225.00	150	Vertical	Pass

802.11ax40(SU) LOW CHANNEL



No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2387.700	66.62	74.0	7.38	Peak	89.00	150	Vertical	Pass
1**	2387.700	48.92	54.0	5.08	AV	89.00	150	Vertical	Pass
2	2389.950	62.43	74.0	11.57	Peak	313.00	150	Vertical	Pass
2**	2389.950	49.51	54.0	4.49	AV	313.00	150	Vertical	Pass

802.11 ax40(SU) HIGH CHANNEL



No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	2483.590	64.29	74.0	9.71	Peak	42.00	200	Vertical	Pass
1**	2483.590	50.17	54.0	3.83	AV	42.00	200	Vertical	Pass
2	2484.400	67.79	74.0	6.21	Peak	225.00	150	Vertical	Pass
2**	2484.400	49.69	54.0	4.31	AV	225.00	150	Vertical	Pass

5.9 Power Spectral density (PSD)

5.9.1 Limit

FCC §15.247(e)

The same method of determining the conducted output power shall be used to determine the power spectral density. If a peak output power is measured, then a peak power spectral density measurement is required. If an average output power is measured, then an average power spectral density measurement should be used.

5.9.2 Test Setup

See section 4.5.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX A.

5.9.3 Test Procedure

Set analyzer center frequency to DTS channel center frequency.

Set the 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 $\geq 3 \text{ RBW}$.

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 limit, reduce RBW (no less than 3 kHz) and repeat.

5.9.4 Test Result

Test Data

802.11b Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-13.81	8
Middle	-17.00	8
High	-14.75	8

802.11g Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-9.89	8
Middle	-10.75	8
High	-10.13	8

802.11n-20 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-10.22	8
Middle	-10.87	8
High	-10.42	8

802.11n-40 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-17.41	8
Middle	-12.79	8
High	-16.29	8

802.11ax-20 MHz(SU) Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-10.54	8
Middle	-12.68	8
High	-12.66	8

802.11ax-40 MHz(SU) Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-17.80	8
Middle	-15.09	8
High	-17.51	8

Test Plots

802.11b LOW CHANNEL



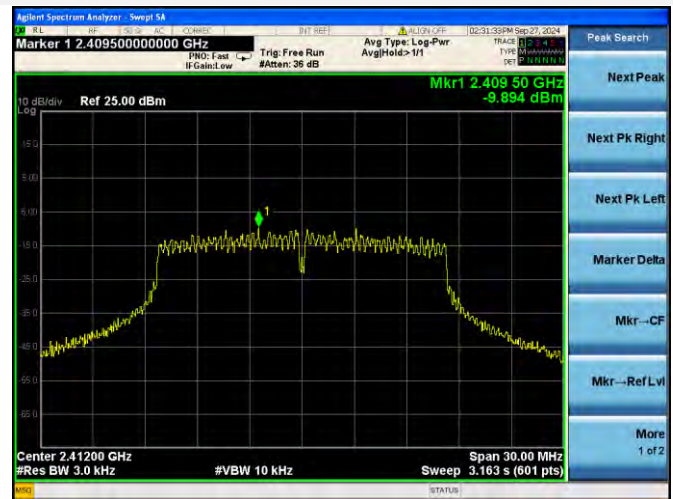
802.11b MIDDLE CHANNEL



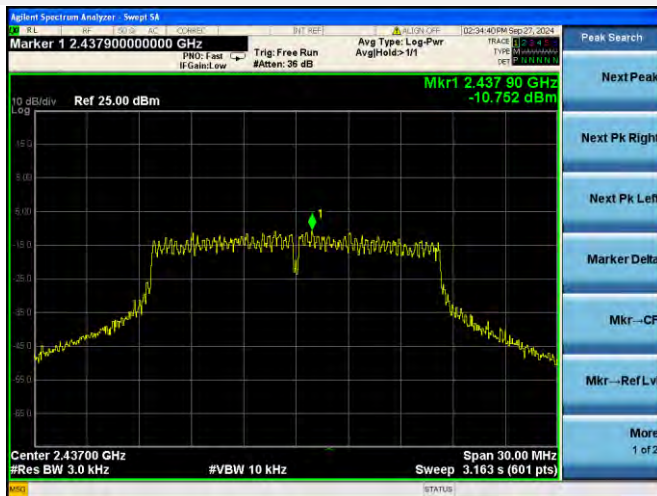
802.11b HIGH CHANNEL



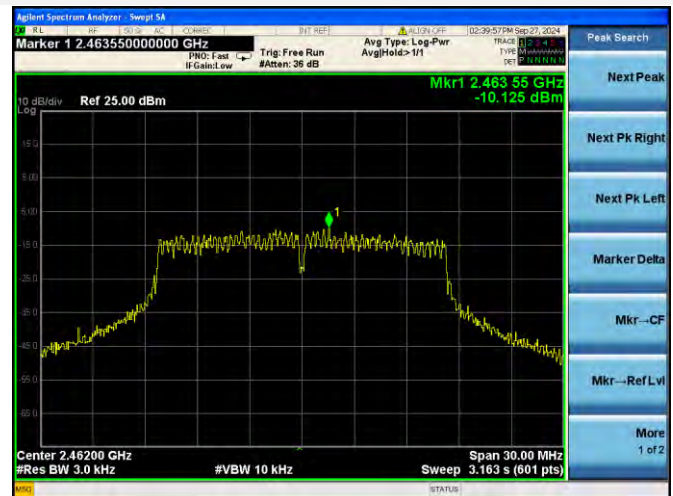
802.11g LOW CHANNEL



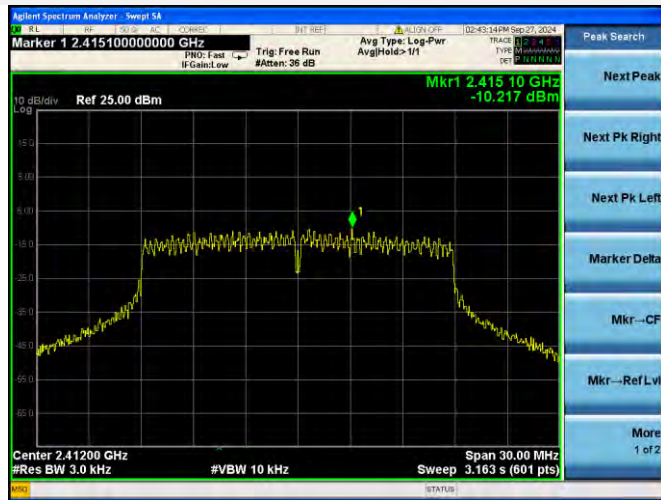
802.11g MIDDLE CHANNEL



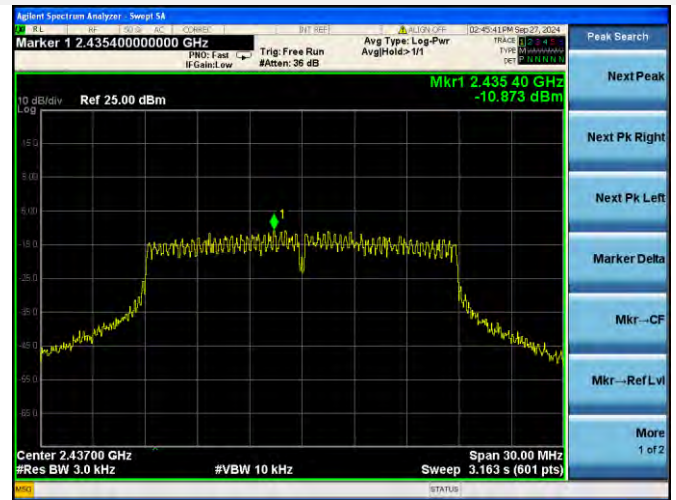
802.11g HIGH CHANNEL



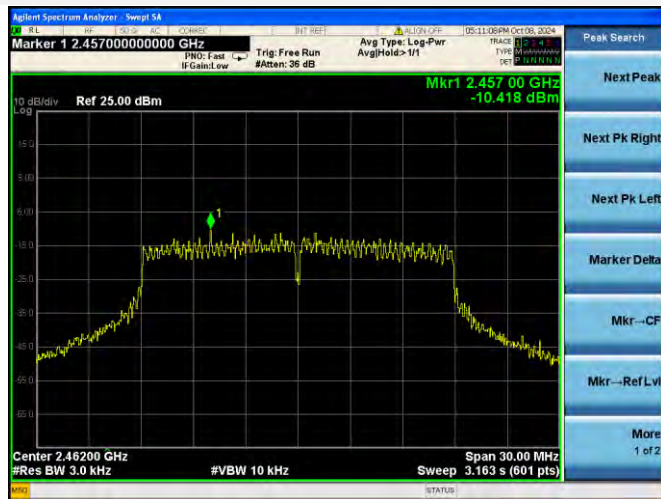
802.11n-20 MHz LOW CHANNEL



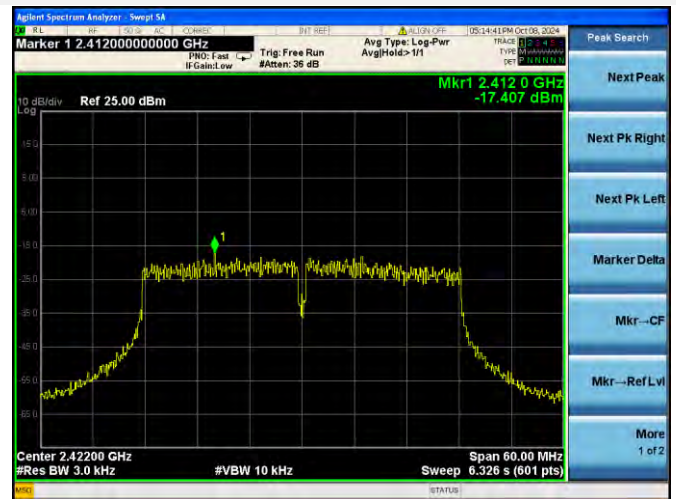
802.11n-20 MHz MIDDLE CHANNEL



802.11n-20 MHz HIGH CHANNEL



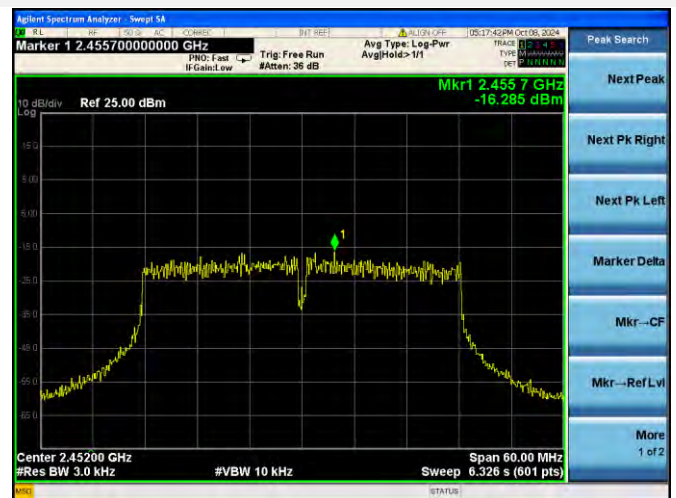
802.11n-40 MHz LOW CHANNEL



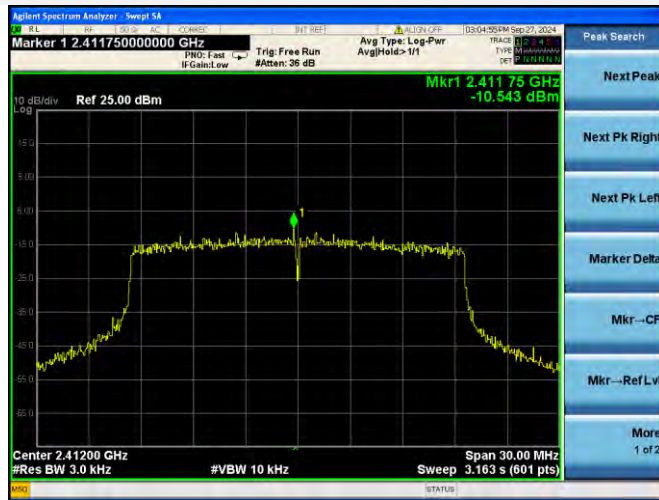
802.11n-40 MHz MIDDLE CHANNEL



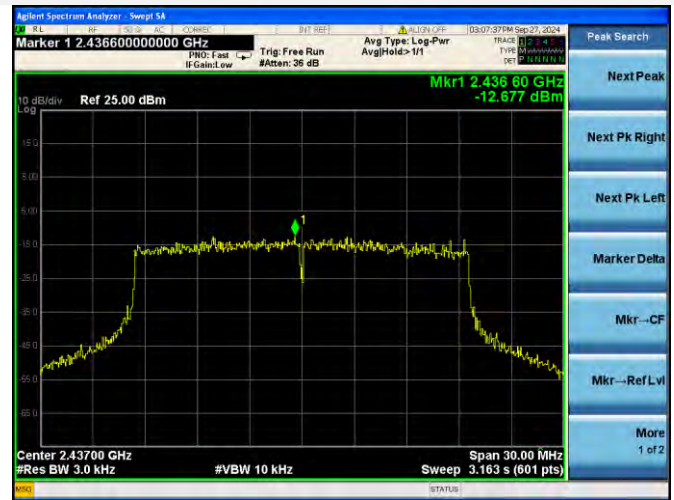
802.11n-40 MHz HIGH CHANNEL



802.11ax-20 MHz(SU) LOW CHANNEL



802.11ax-20 MHz(SU) MIDDLE CHANNEL



802.11ax-20 MHz(SU) HIGH CHANNEL



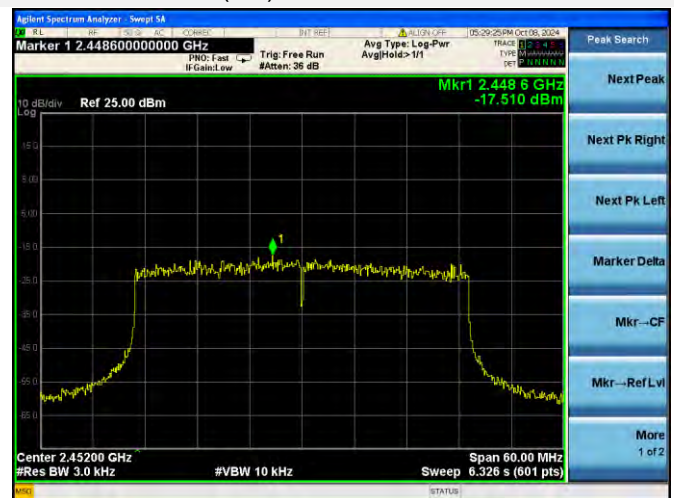
802.11ax-40 MHz(SU) LOW CHANNEL



802.11ax-40 MHz(SU) MIDDLE CHANNEL



802.11ax-40 MHz(SU) HIGH CHANNEL



ANNEX A TEST SETUP PHOTOS

1 Radiated Test Photo

Below 30MHz



Close-up



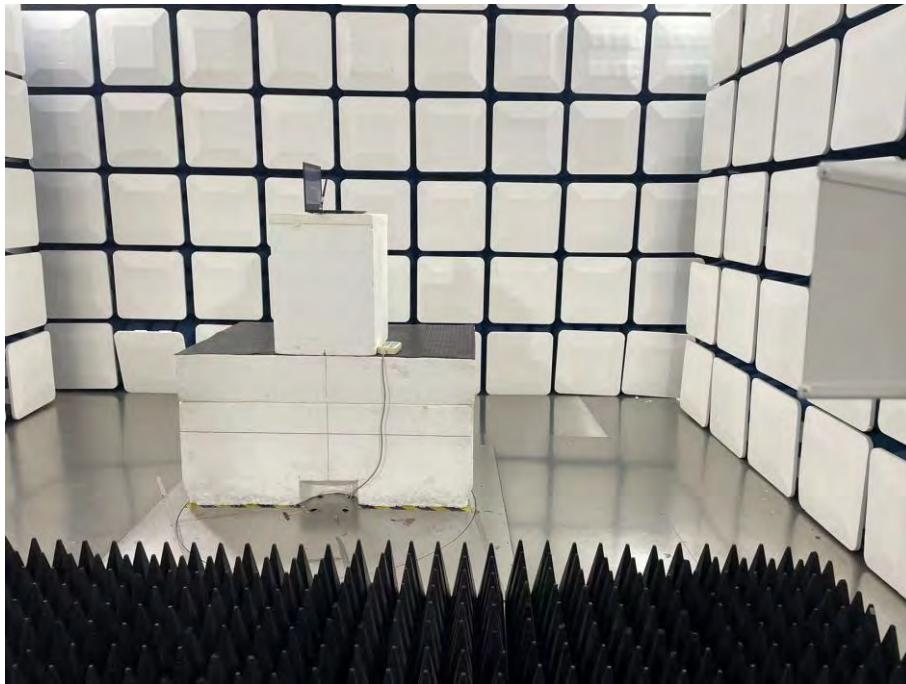
30MHz-1GHz



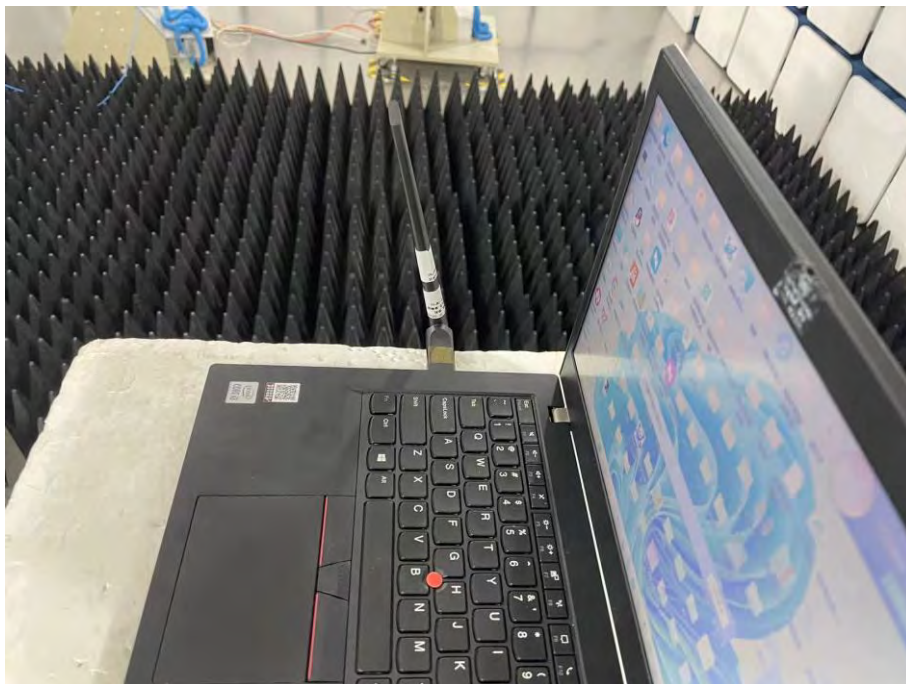
Close-up



Above 1GHz

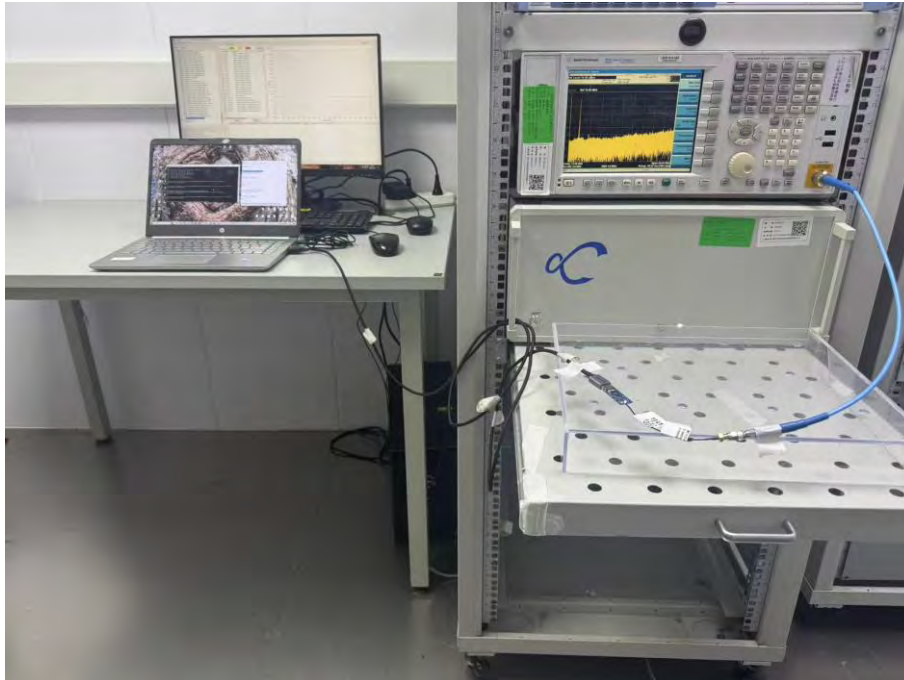


Close-up



2 Conducted Test Photo

Conducted Test

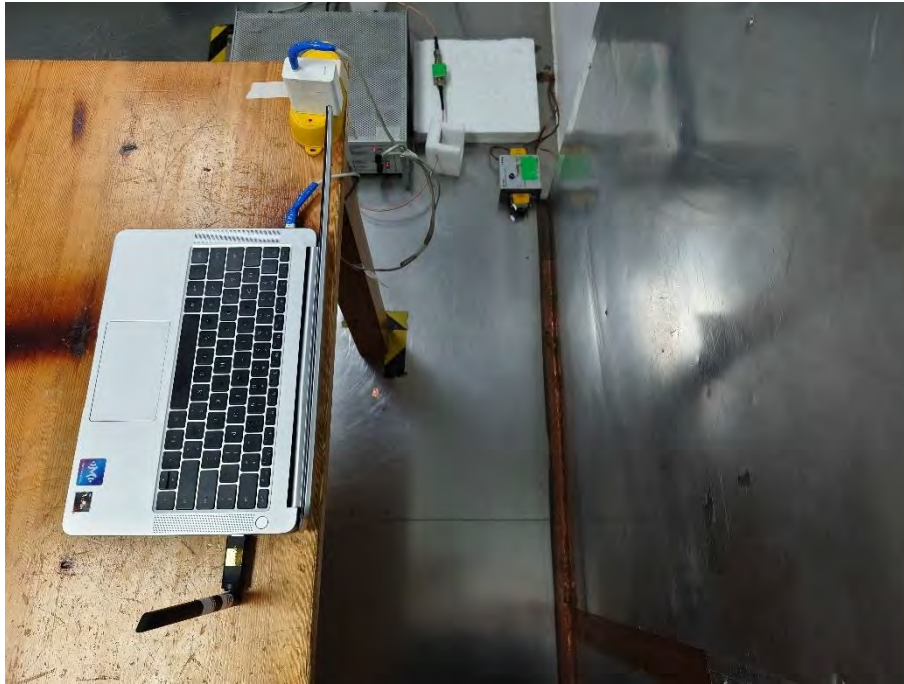


3 Conducted Emissions

Test Photo 1



Test Photo 2



ANNEX B EUT EXTERNAL PHOTOS

FRONT VIEW OF EUT



REAR VIEW OF EUT



LEFT VIEW OF EUT

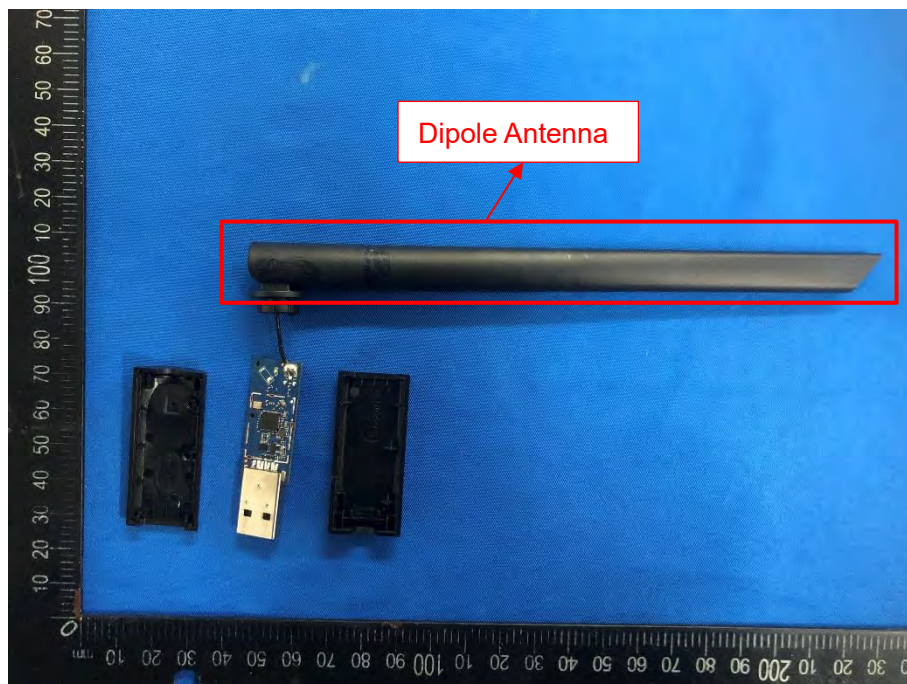


RIGHT VIEW OF EUT

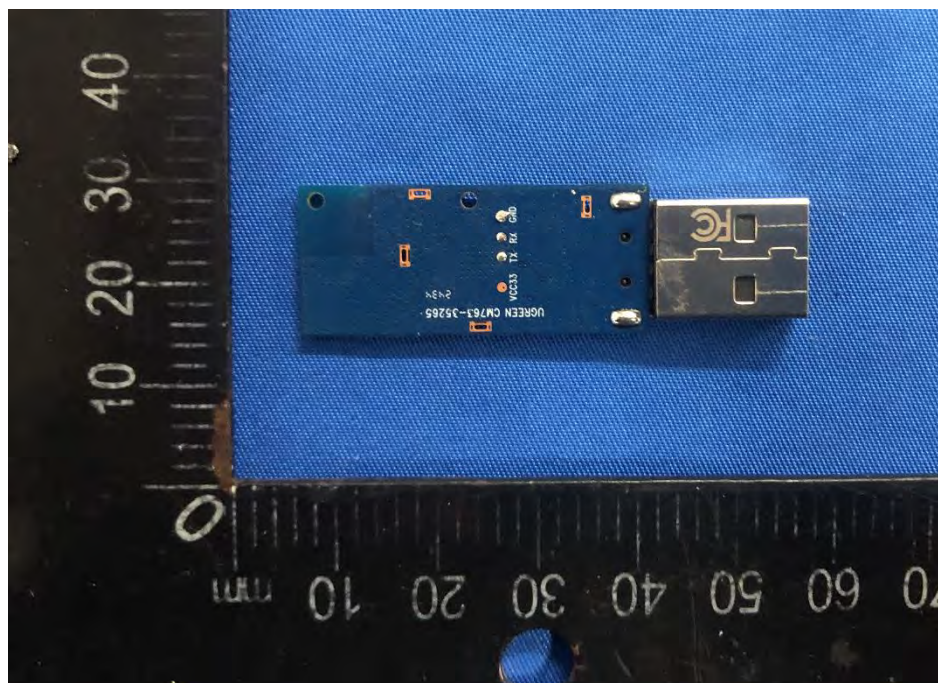


ANNEX C EUT INTERNAL PHOTOS

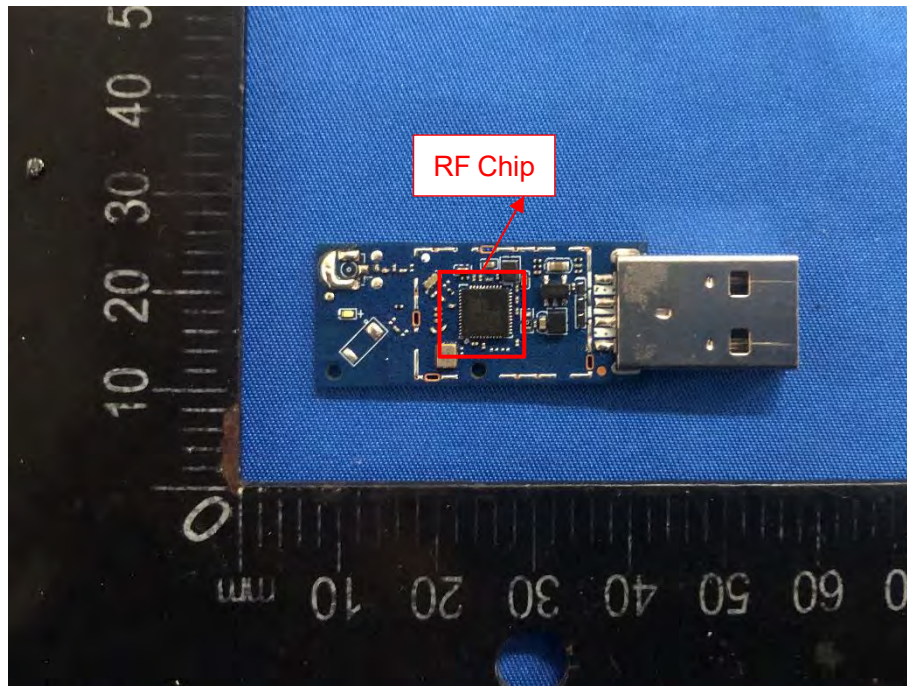
EUT UNCOVER VIEW 1



MAIN BOARD TOP VIEW



MAIN BOARD REAR VIEW



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--END OF REPORT--