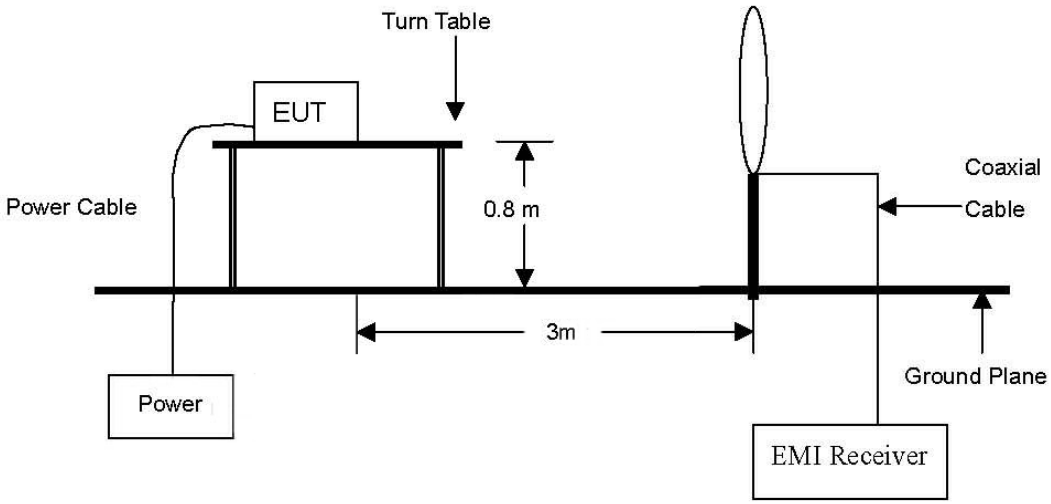
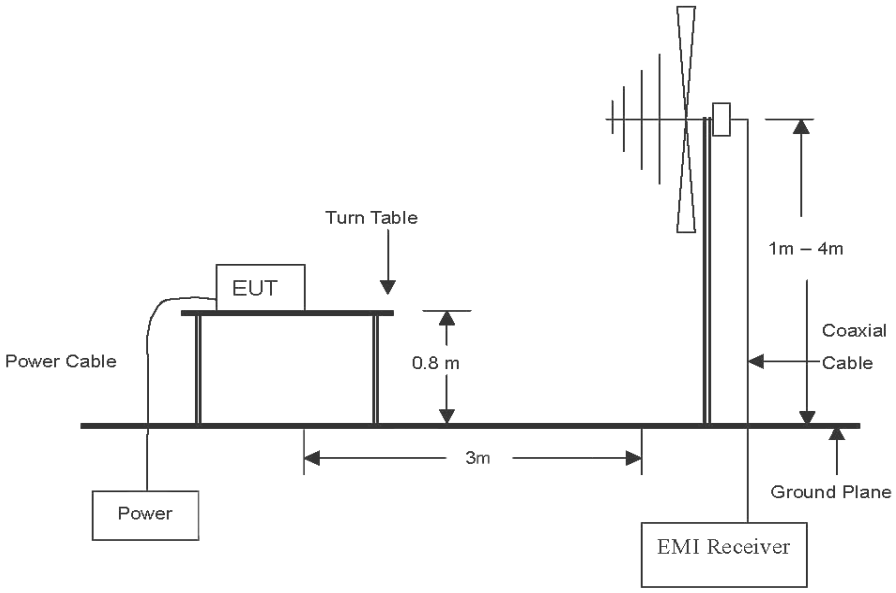
3.4. Radiated restricted band and emissions

Test setup

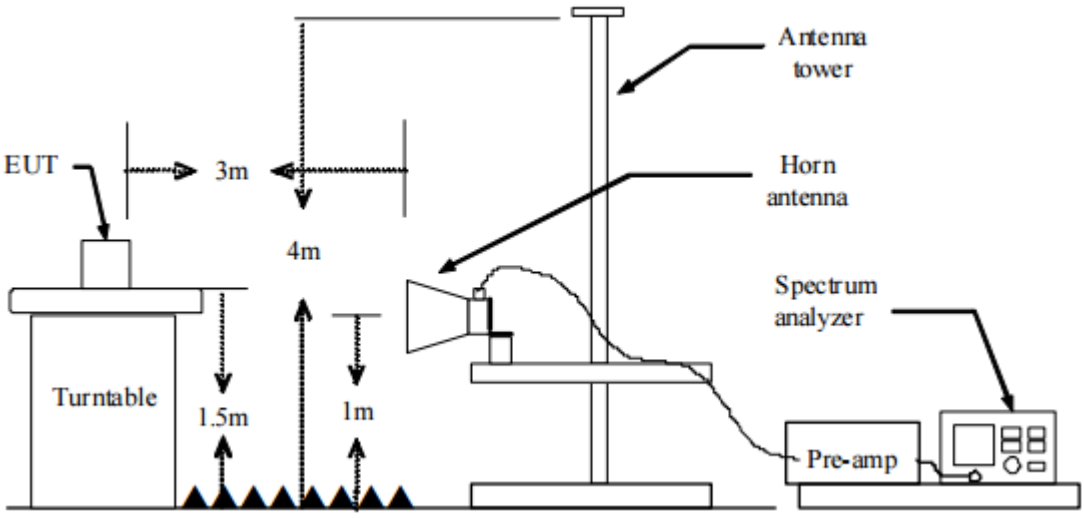
The diagram below shows the test setup that is utilized to make the measurements for emission from 9 ㎑ to 30 ㎒ Emissions.



The diagram below shows the test setup that is utilized to make the measurements for emission from 30 ㎒ to 1 ㎓ emissions.



The diagram below shows the test setup that is utilized to make the measurements for emission from 1 ㎓ to the tenth harmonic of the highest fundamental frequency or to 40 ㎓ emissions, whichever is lower.



Test procedure below 30 ㎒

1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter anechoic chamber test site. The table was rotated 360 degrees to determine the position of the highest radiation.
2. Then antenna is a loop antenna is fixed at one meter above the ground to determine the maximum value of the field strength. Both parallel and perpendicular of the antenna are set to make the measurement.
3. For each suspected emission, the EUT was arranged to its worst case and then the table was turned from 0 degrees to 360 degrees to find the maximum reading.
4. The test-receiver system was set to average or quasi peak detect function and Specified Bandwidth with Maximum hold mode.

Test procedure above 30 ㎒

1. Spectrum analyzer settings for f < 1 ㎓:
   ① Span = wide enough to fully capture the emission being measured
   ② RBW = 100 ㎑
   ③ VBW ≥ RBW
   ④ Detector = quasi peak
   ⑤ Sweep time = auto
   ⑥ Trace = max hold
2. Spectrum analyzer settings for f ≥1 ㎓: Peak
   ① Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
   ② RBW = 1 ㎒
   ③ VBW ≥ 3 ㎒
   ④ Detector = peak
   ⑤ Sweep time = auto
   ⑥ Trace = max hold
   ⑦ Trace was allowed to stabilize

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3. Spectrum analyzer settings for f ≥1 ㎓: Average
   ① Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
   ② RBW = 1 ㎒
   ③ VBW ≥ 3 × RBW
   ④ Detector = RMS, if span/(# of points in sweep) ≤ (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.
   ⑤ 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 ㏈ averaging shall not be used.
   ⑥ Sweep = auto
   ⑦ Trace = max hold
   ⑧ Perform a trace average of at least 100 traces.
   ⑨ 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 ⑤, 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 ⑤, 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.

1. f <30 ㎒, extrapolation factor of 40 ㏈/decade of distance. $F_d = 40\log(D_m/Ds)$
   f ≥30 ㎒, extrapolation factor of 20 ㏈/decade of distance. $F_d = 20\log(D_m/Ds)$
   Where:
   F_d = Distance factor in ㏈
   D_m = Measurement distance in meters
   D_s = Specification distance in meters
3. CF(Correction factors(㏈)) = Antenna factor(㏈/m) + Cable loss(㏈) + or Amp. gain(㏈) + or F_d(㏈)
4. Field strength(㏈㎶/m) = Level(㏈㎶) + CF (㏈) + or DCF(㏈)
5. Margin(㏈) = Limit(㏈㎶/m) - Field strength(㏈㎶/m)
6. Emissions below 18 ㎓ were measured at a 3 meter test distance while emissions above 18 ㎓ were measured at a 1 meter test distance with the application of a distance correction factor.
7. The fundamental of the EUT was investigated in three orthogonal orientations X, Y and Z, it was determined that **X orientation** was worst-case orientation; therefore, all final radiated testing was performed with the EUT in **X orientation.**
8. The worst-case emissions are reported however emissions whose levels were not within 20 ㏈ of respective limits were not reported.
9. All channels, modes (e.g. 802.11b/g/n (20 ㎒ BW)), and modulations/data rates were investigated among DTS band. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

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10. According to exploratory test no any obvious emission were detected from 9 ㎑ to 30 ㎒. Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

Limit

According to 15.209(a), for an intentional radiator devices, the general required of field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values：

Frequency (㎒)	Distance (Meters)	Radiated (㎶/m)
0.009 ~ 0.490	300	2400/F(㎑)
0.490 ~ 1.705	30	24000/F(㎑)
1.705 ~ 30.0	30	30
30 ~ 88	3	100**
88 ~ 216	3	150**
216 ~ 960	3	200**
Above 960	3	500

**Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54 ~ 72 ㎒, 76 ~ 88 ㎒, 174 ~ 216 ㎒ or 470 ~ 806 ㎒. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

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Duty cycle

Regarding to KDB 558074 D01_v04, 6.0, the maximum duty cycles of all modes were investigated and set the spectrum analyzer as below.

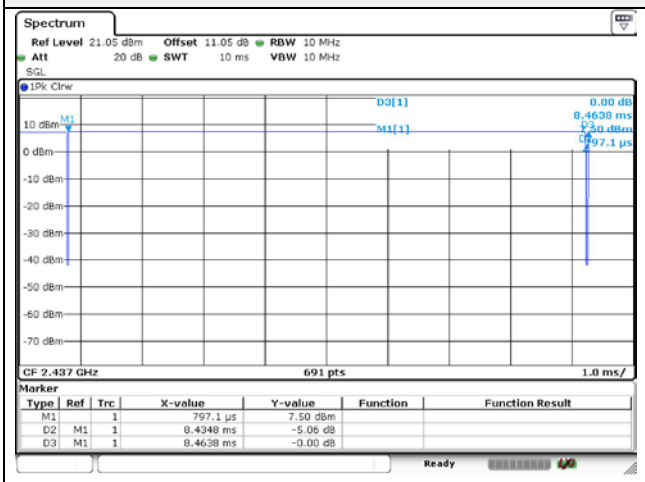
Set RBW ≥ OBW if possible; otherwise, set RBW to the largest available value. Set detector = peak or average. The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T and the number of sweep points across duration T exceeds 100.

Test mode	T_{on} time (ms)	Period (ms)	Duty cycle (Linear)	Duty cycle (%)	Duty cycle correction factor (dB)
802.11b	8.434 8	8.463 8	0.996 6	99.66	0.01
802.11g	0.173 9	0.217 4	0.799 9	79.99	0.97
802.11n(HT20)	0.159 4	0.202 9	0.785 6	78.56	1.05

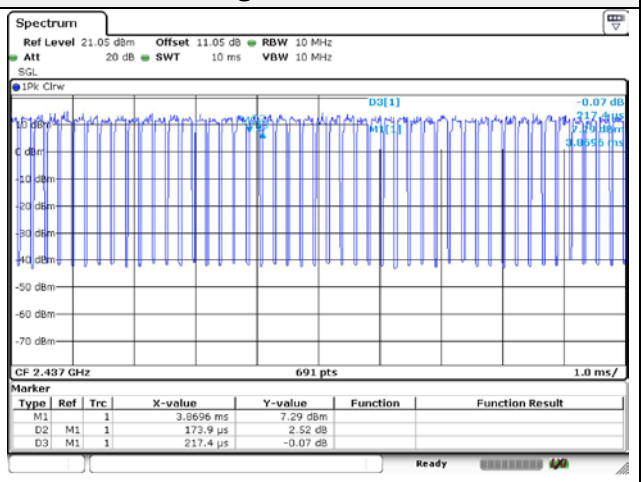
Duty cycle (Linear) = T_{on} time/Period

DCF(Duty cycle correction factor (dB)) = 10log(1/duty cycle)

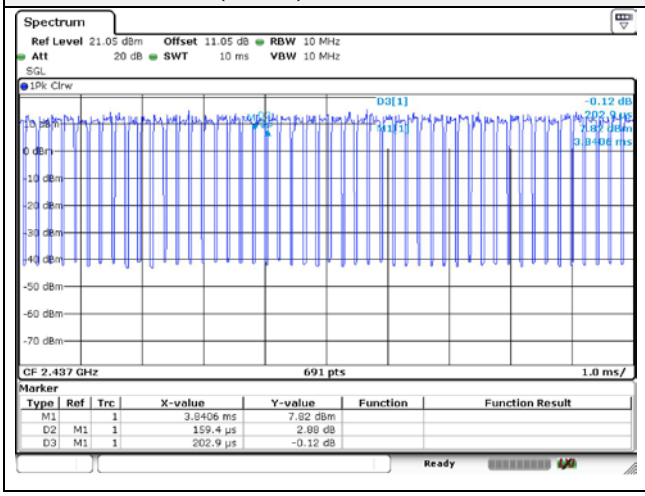
802.11b // Middle channel



802.11g // Middle channel



802.11n(HT20) // Middle channel



Blank

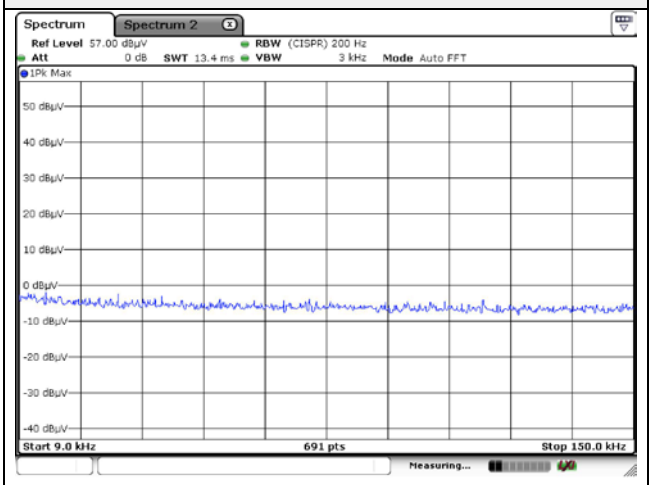
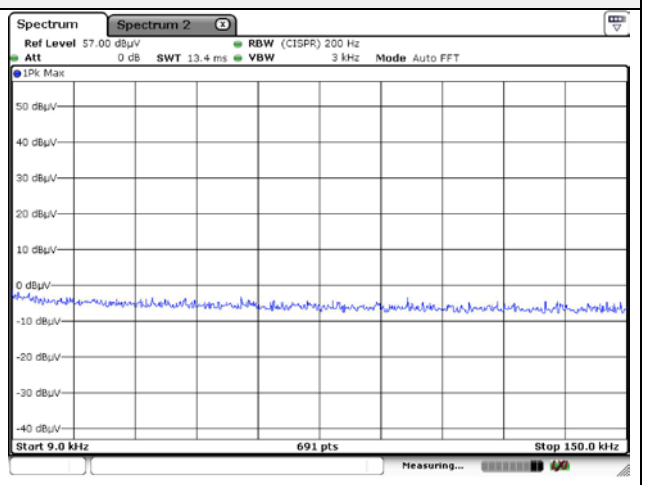
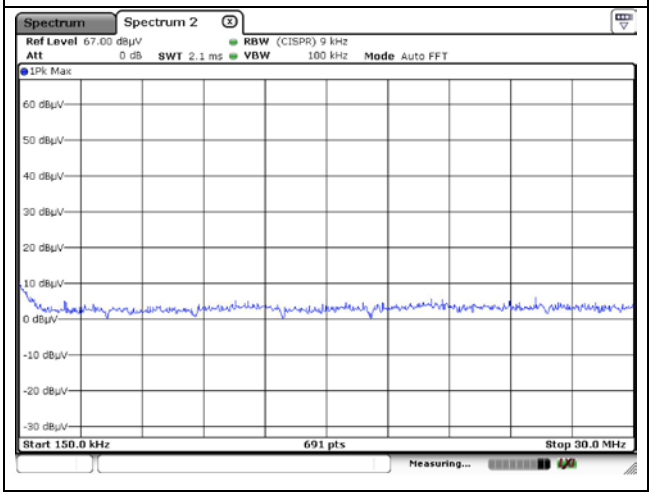
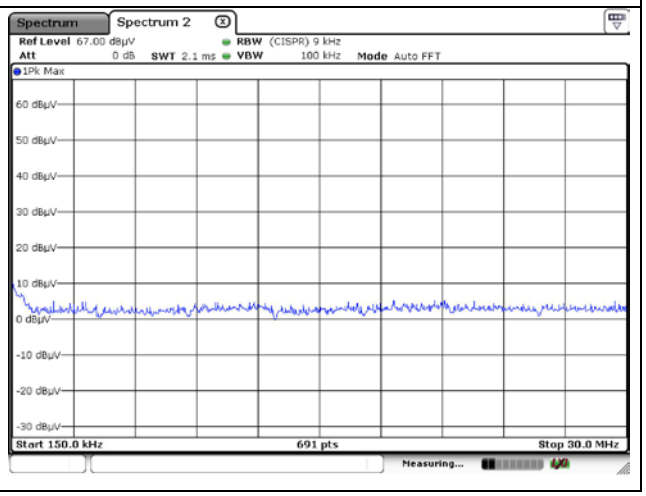
Test results (Below 30 ㎒)

Mode: 802.11g

Distance of measurement: 3 meter

Channel: 06 (Worst case)

Frequency (㎒)	Level (dBμV)	Ant. Pol. (H/V)	CF (dB)	F_d (dB)	Field strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
No spurious emissions were detected within 20 ㏈ of the limit							

Horizontal	Vertical
	
	

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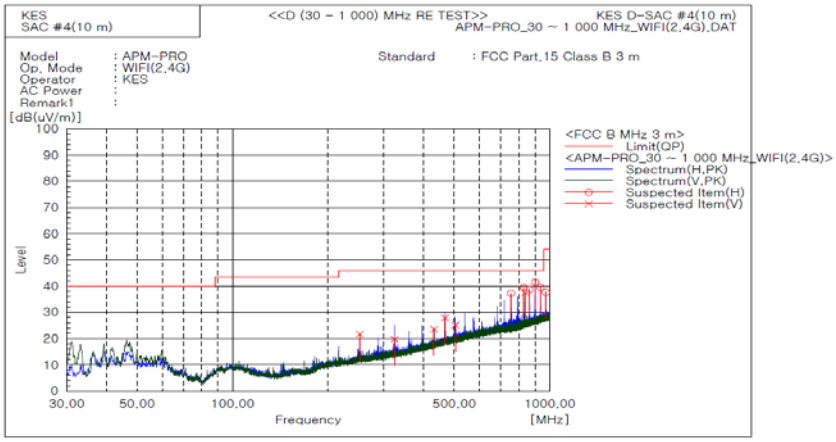
Test results (Below 1 000 ㎒) – Worst case

Mode:	802.11g
Distance of measurement:	3 meter
Channel:	06 (Worst case)

Horizontal // Vertical



No.	Frequency [MHz]	(P)	Reading [dB(uV)]	c.f [dB(1/m)]	Result PK [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Remark
1	756.045	H	50.6	-13.3	37.3	46.0	8.7	
2	828.068	H	51.6	-12.1	39.5	46.0	6.5	
3	864.079	H	50.0	-11.3	38.7	46.0	7.3	
4	899.969	H	52.1	-10.6	41.5	46.0	4.5	
5	936.101	H	49.5	-10.0	39.5	46.0	6.5	
6	971.991	H	47.0	-9.4	37.6	54.0	16.4	
7	252.009	V	47.8	-26.0	21.8	46.0	24.2	
8	324.031	V	43.4	-23.6	19.8	46.0	26.2	
9	431.944	V	43.5	-19.9	23.6	46.0	22.4	
10	467.955	V	46.7	-18.8	27.9	46.0	18.1	
11	503.966	V	42.8	-17.7	25.1	46.0	20.9	
12	837.768	V	49.2	-11.8	37.4	46.0	8.6	

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Test results (Above 1 000 ㎒)

Mode: 802.11b

Distance of measurement: 3 meter

Channel: 01

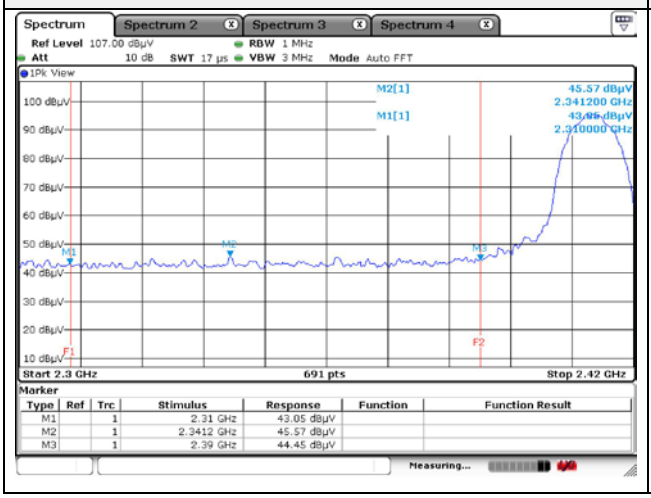
- **Spurious**

Frequency (㎒)	Level (dB㎶)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
1 817.70	45.99	Peak	H	-2.89	-	43.10	74.00	30.90
1 835.00	46.24	Peak	V	-2.71	-	43.53	74.00	30.47
2 162.10	48.48	Peak	V	-0.65	-	47.83	74.00	26.17

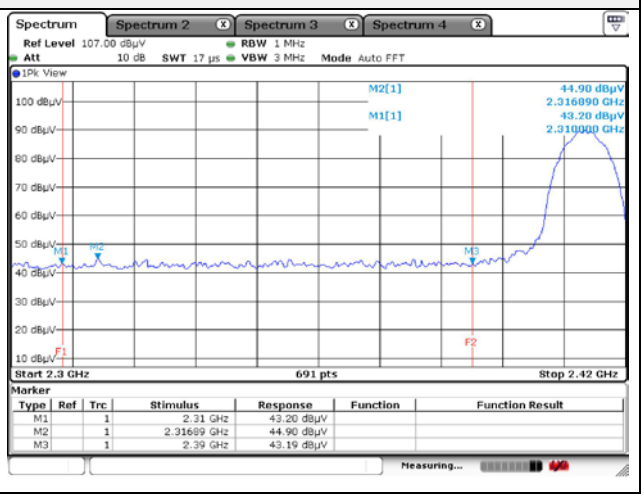
- **Band edge**

Frequency (㎒)	Level (dB㎶)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
2 341.20	45.57	Peak	H	-0.31	-	45.26	74.00	28.74
2 316.89	44.90	Peak	V	-0.36	-	44.54	74.00	29.46

Restricted band // Horizontal // Peak



Restricted band // Vertical // Peak



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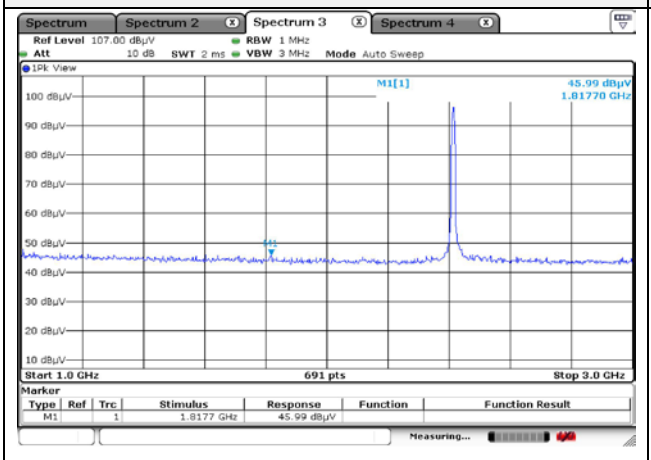
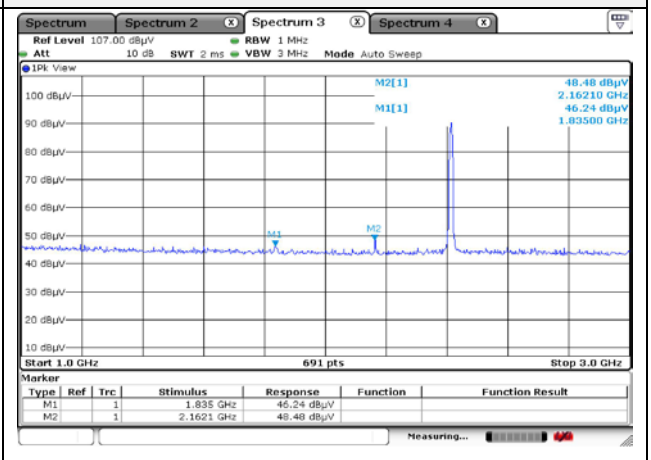
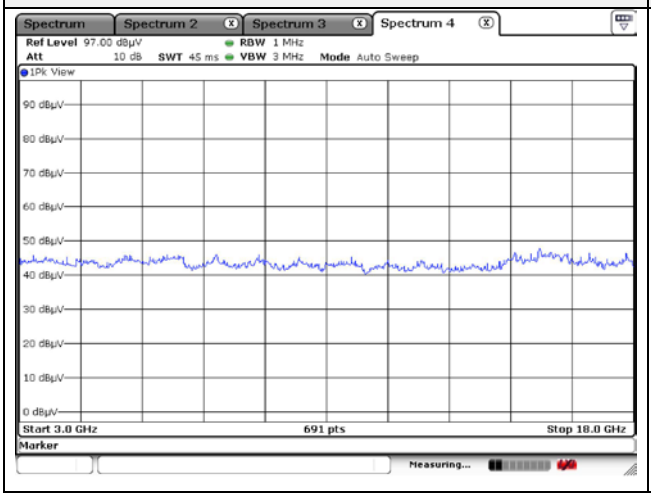
Horizontal // Peak for 1 ㎓ to 3 ㎓



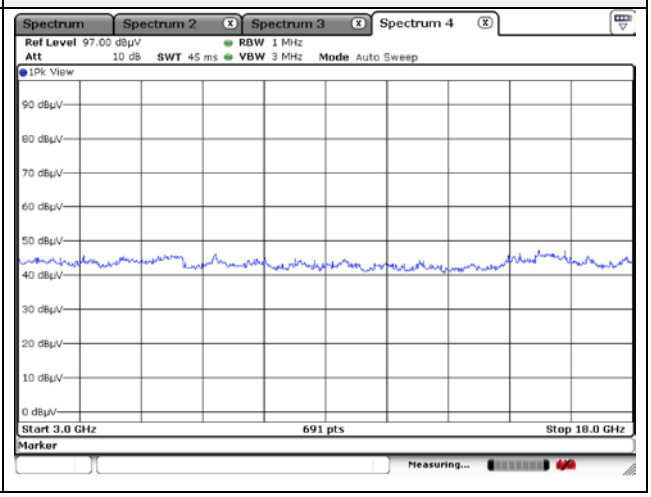
Vertical // Peak for 1 ㎓ to 3 ㎓



Horizontal // Peak for 3 ㎓ to 18 ㎓



Vertical // Peak for 3 ㎓ to 18 ㎓



Note.
1. No spurious emission were detected above 3 ㎓.
2. Average test would be performed if the peak result were greater than the average limit.

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Mode: 802.11b

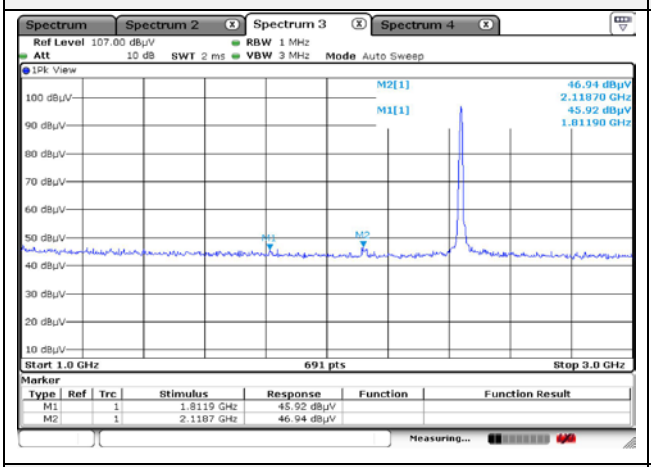
Distance of measurement: 3 meter

Channel: 06

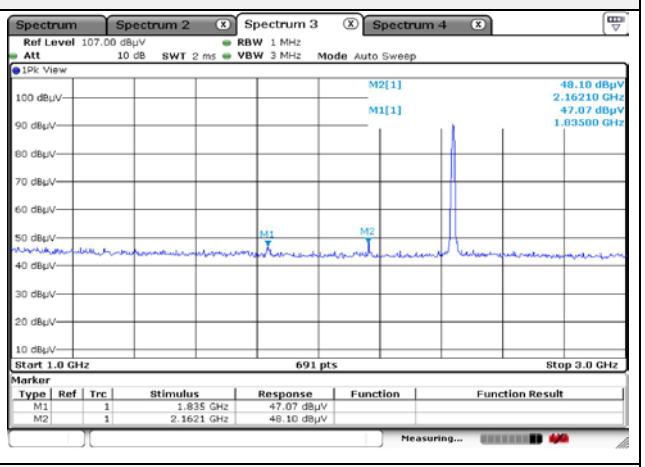
- **Spurious**

Frequency (㎒)	Level (dB㎶)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
1 811.90	45.92	Peak	H	-2.95	-	42.97	74.00	31.03
2 118.70	46.94	Peak	H	-0.74	-	46.20	74.00	27.80
1 835.00	47.07	Peak	V	-2.71	-	44.36	74.00	29.64
2 162.10	48.10	Peak	V	-0.65	-	47.45	74.00	26.55

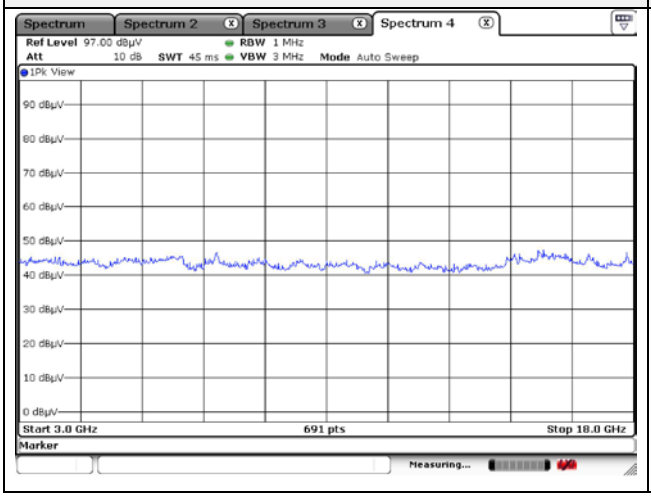
Horizontal // Peak for 1 ㎓ to 3 ㎓



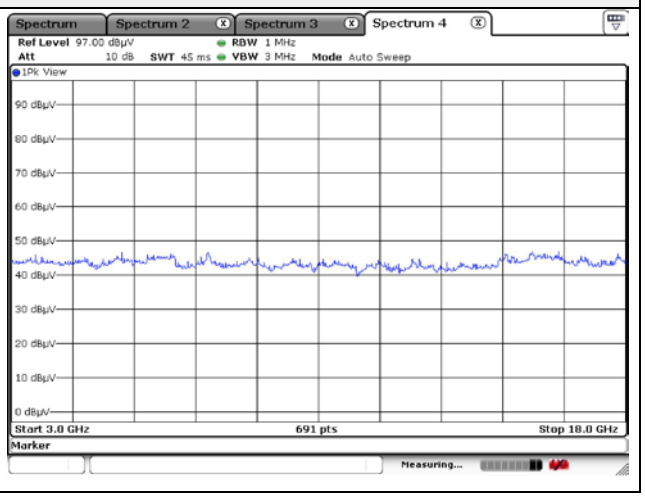
Vertical // Peak for 1 ㎓ to 3 ㎓



Horizontal // Peak for 3 ㎓ to 18 ㎓



Vertical // Peak for 3 ㎓ to 18 ㎓



Note.
1. No spurious emission were detected above 3 ㎓.
2. Average test would be performed if the peak result were greater than the average limit.

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Mode: 802.11b

Distance of measurement: 3 meter

Channel: 11

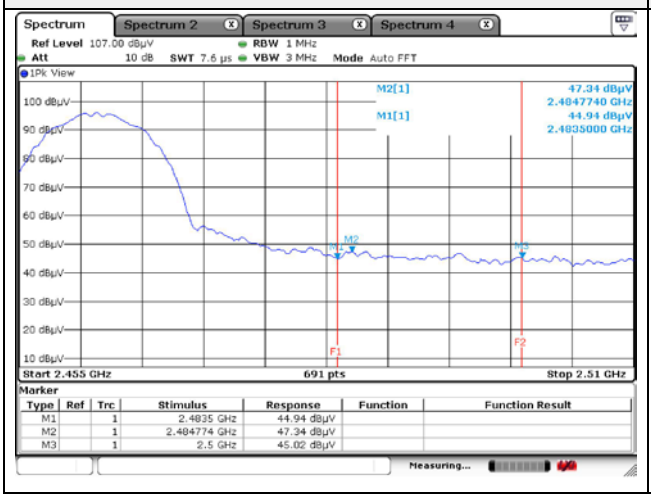
- **Spurious**

Frequency (MHz)	Level (dBμV)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2 124.50	46.06	Peak	H	-0.72	-	45.34	74.00	28.66
1 835.00	46.42	Peak	V	-2.71	-	43.71	74.00	30.29
2 165.00	48.90	Peak	V	-0.64	-	48.26	74.00	25.74

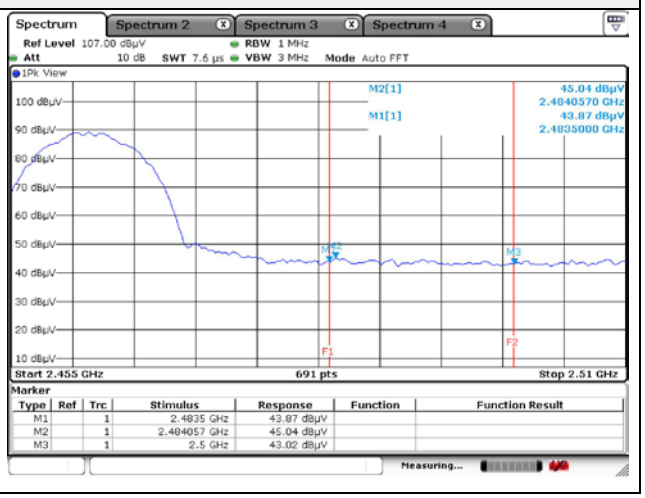
- **Band edge**

Frequency (MHz)	Level (dBμV)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2 484.77	47.34	Peak	H	-0.04	-	47.30	74.00	26.70
2 484.06	45.04	Peak	V	-0.04	-	45.00	74.00	29.00

Restricted band // Horizontal // Peak



Restricted band // Vertical // Peak



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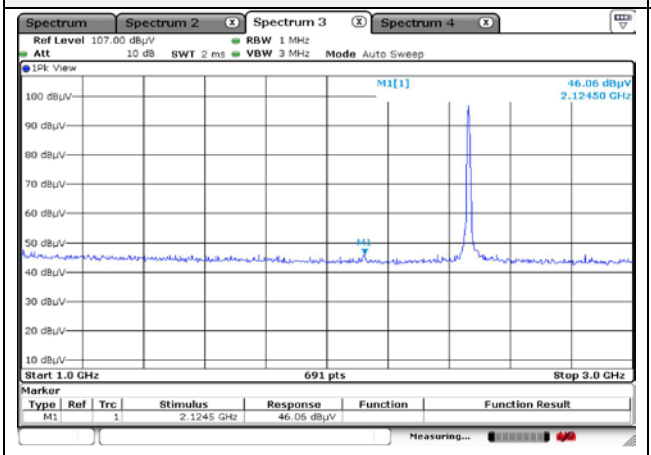
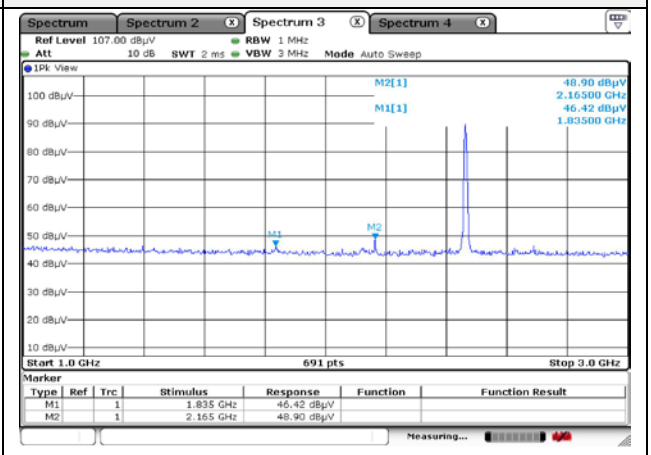
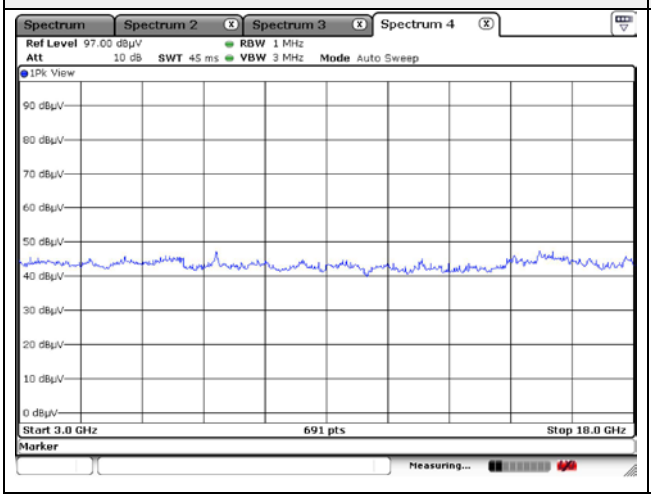
Horizontal // Peak for 1 ㎓ to 3 ㎓



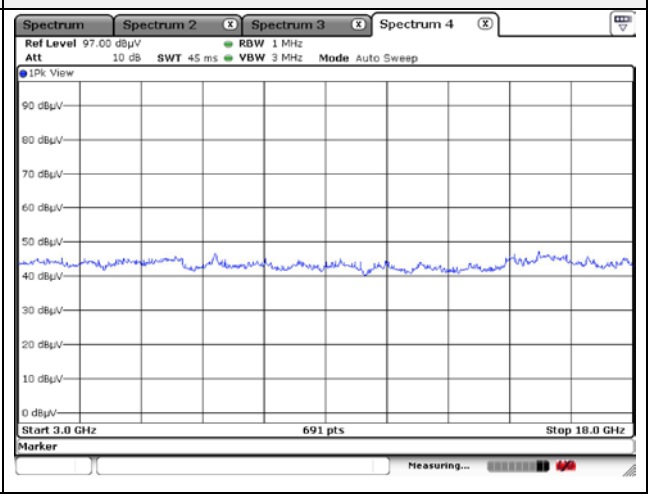
Vertical // Peak for 1 ㎓ to 3 ㎓



Horizontal // Peak for 3 ㎓ to 18 ㎓



Vertical // Peak for 3 ㎓ to 18 ㎓



Note.
1. No spurious emission were detected above 3 ㎓.
2. Average test would be performed if the peak result were greater than the average limit.

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Mode: 802.11g

Distance of measurement: 3 meter

Channel: 01

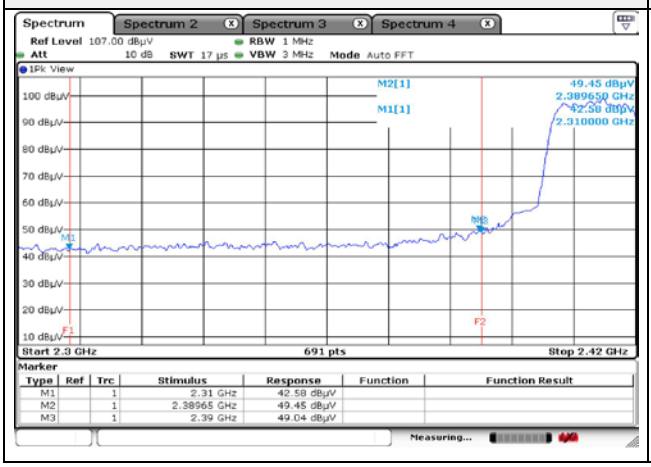
- **Spurious**

Frequency (MHz)	Level (dBμV)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
1 947.90	45.75	Peak	H	-1.52	-	44.23	74.00	29.77
2 118.70	48.25	Peak	H	-0.74	-	47.51	74.00	26.49
2 486.30	48.56	Peak	H	-0.04	-	48.52	74.00	25.48
2 567.30	48.87	Peak	H	0.23	-	49.10	74.00	24.90
2 162.10	48.32	Peak	V	-0.65	-	47.67	74.00	26.33

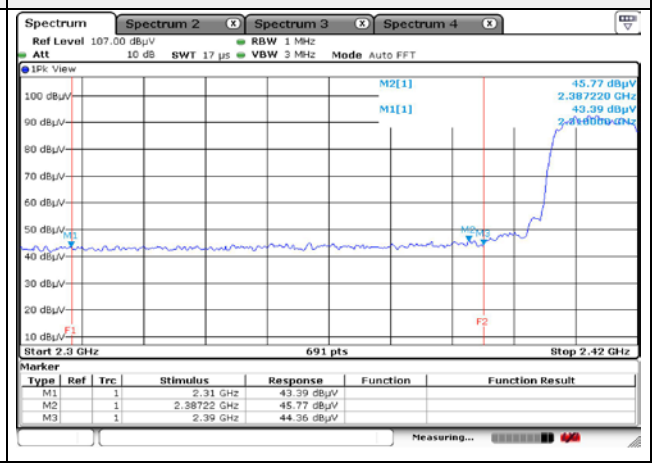
- **Band edge**

Frequency (MHz)	Level (dBμV)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2 389.65	49.45	Peak	H	-0.22	-	49.23	74.00	24.77
2 387.22	45.77	Peak	V	-0.23	-	45.54	74.00	28.46

Restricted band // Horizontal // Peak



Restricted band // Vertical // Peak



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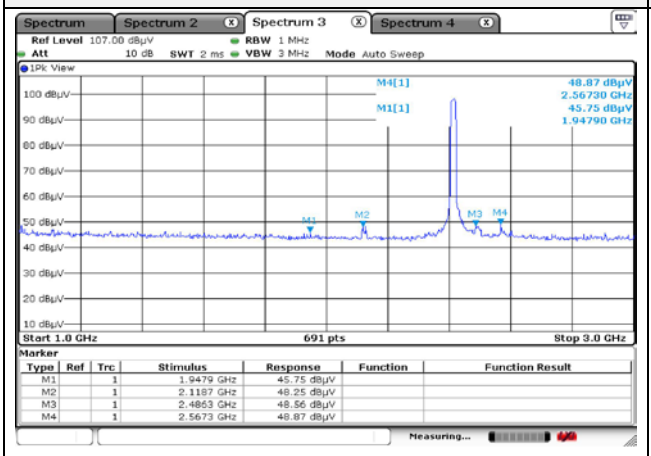
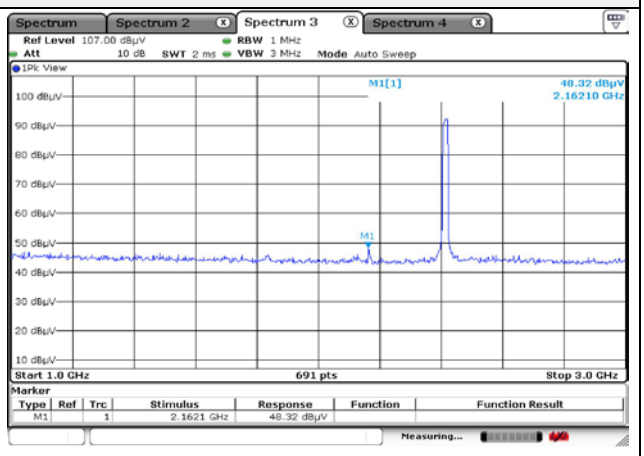
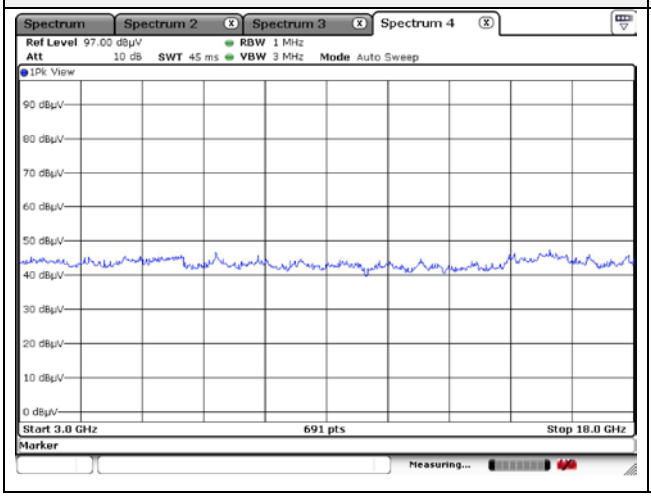
Horizontal // Peak for 1 ㎓ to 3 ㎓



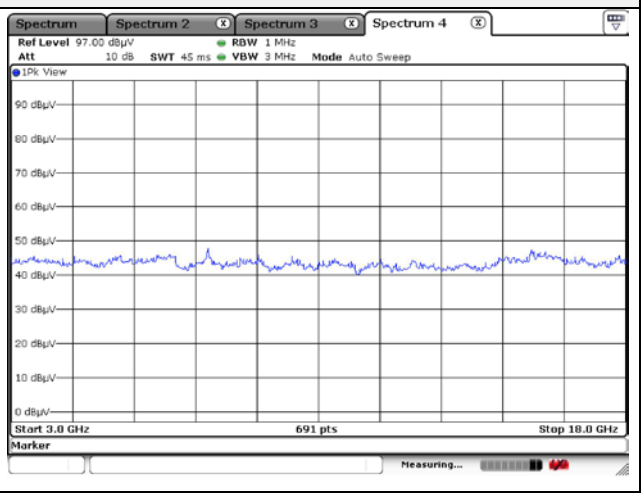
Vertical // Peak for 1 ㎓ to 3 ㎓



Horizontal // Peak for 3 ㎓ to 18 ㎓



Vertical // Peak for 3 ㎓ to 18 ㎓



Note.
1. No spurious emission were detected above 3 ㎓.
2. Average test would be performed if the peak result were greater than the average limit.

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Mode: 802.11g

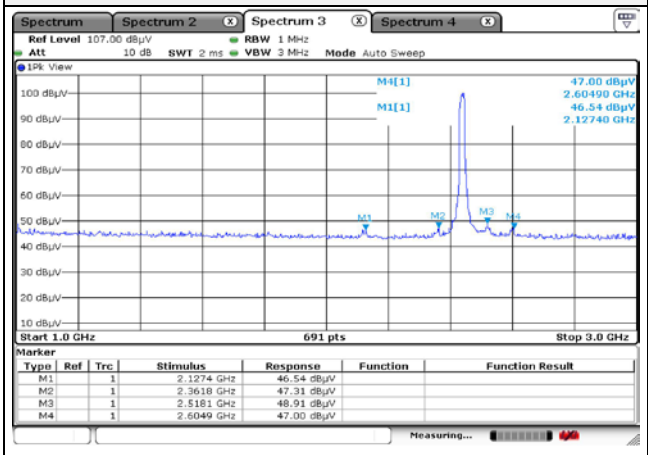
Distance of measurement: 3 meter

Channel: 06

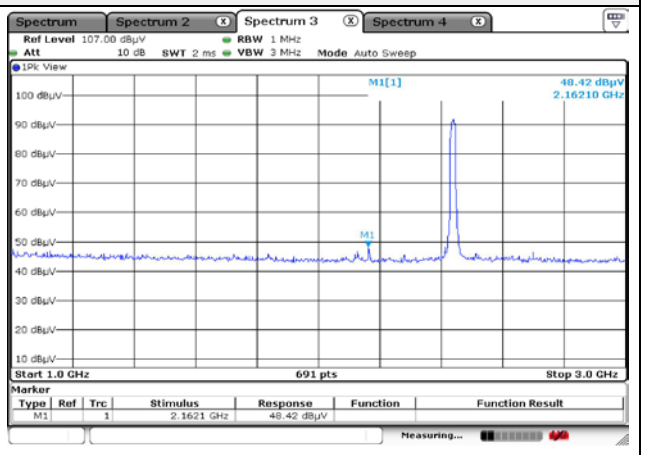
- **Spurious**

Frequency (㎒)	Level (dBμV)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2 127.40	46.54	Peak	H	-0.72	-	45.82	74.00	28.18
2 361.80	47.31	Peak	H	-0.27	-	47.04	74.00	26.96
2 518.10	48.91	Peak	H	0.05	-	48.96	74.00	25.04
2 604.90	47.00	Peak	H	0.37	-	47.37	74.00	26.63
2 162.10	48.42	Peak	V	-0.65	-	47.77	74.00	26.23

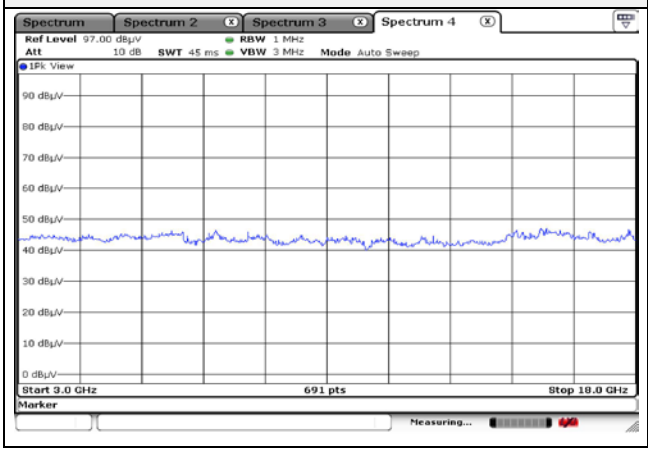
Horizontal // Peak for 1 ㎓ to 3 ㎓



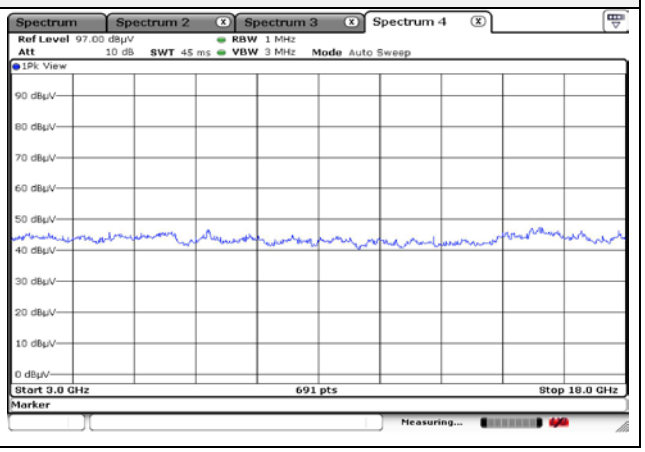
Vertical // Peak for 1 ㎓ to 3 ㎓



Horizontal // Peak for 3 ㎓ to 18 ㎓



Vertical // Peak for 3 ㎓ to 18 ㎓



Note.
1. No spurious emission were detected above 3 ㎓.
2. Average test would be performed if the peak result were greater than the average limit.

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Mode: 802.11g

Distance of measurement: 3 meter

Channel: 11

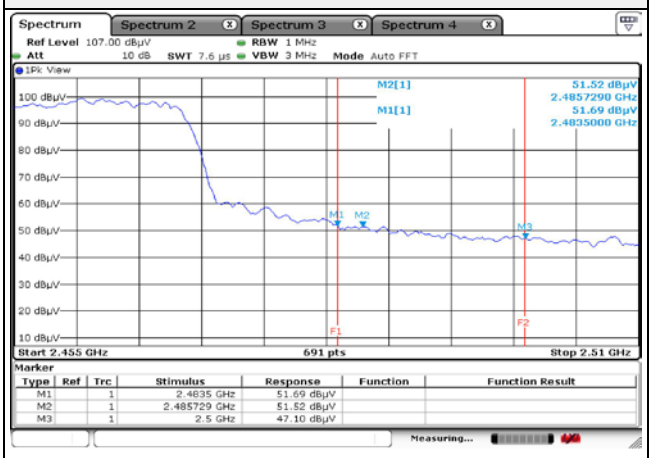
- **Spurious**

Frequency (MHz)	Level (dBμV)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2 127.40	47.89	Peak	H	-0.72	-	47.17	74.00	26.83
2 162.10	49.93	Peak	V	-0.65	-	49.28	74.00	24.72

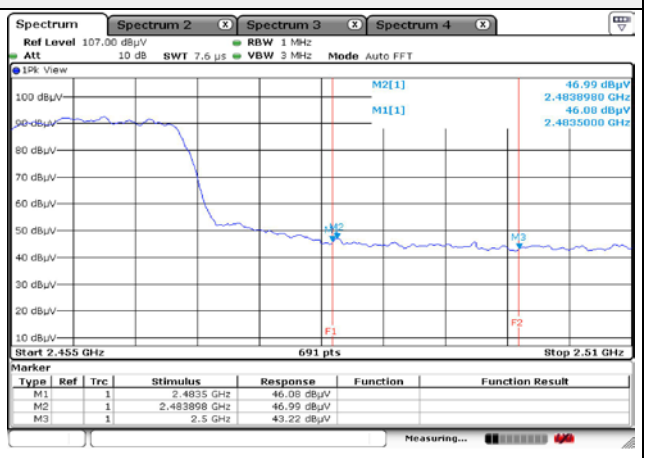
- **Band edge**

Frequency (MHz)	Level (dBμV)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2 485.73	51.52	Peak	H	-0.04	-	51.48	74.00	22.52
2 483.90	46.99	Peak	V	-0.05	-	46.94	74.00	27.06

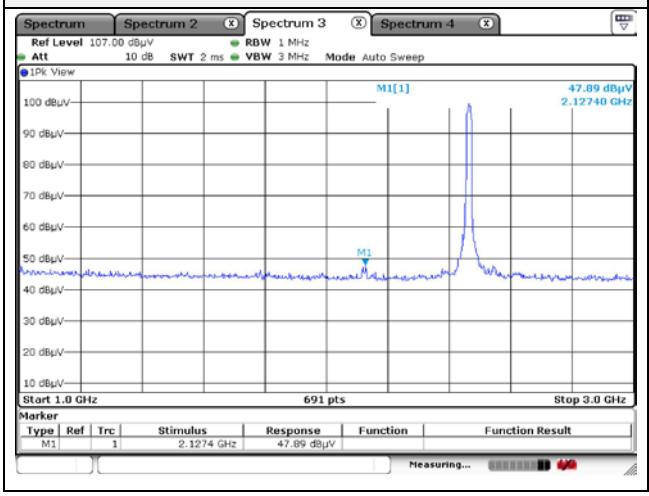
Restricted band // Horizontal // Peak



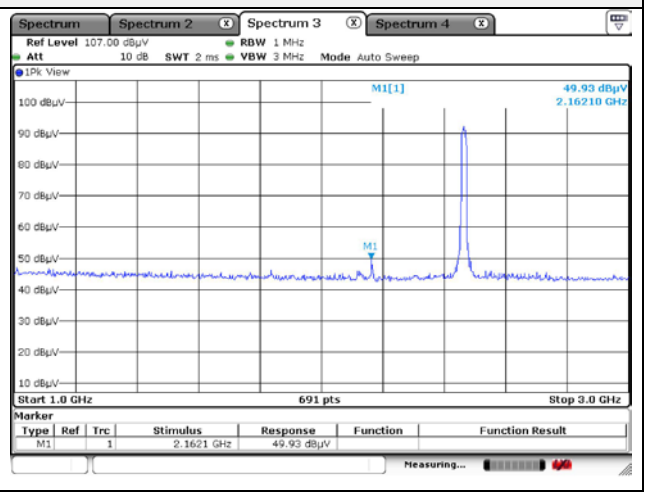
Restricted band // Vertical // Peak



Horizontal // Peak for 1 GHz to 3 GHz



Vertical // Peak for 1 GHz to 3 GHz



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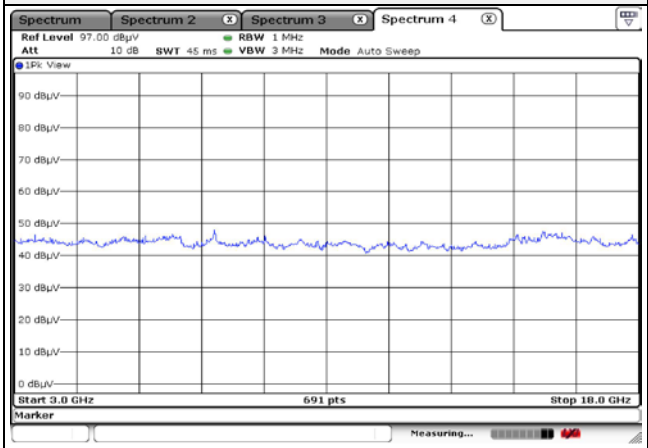
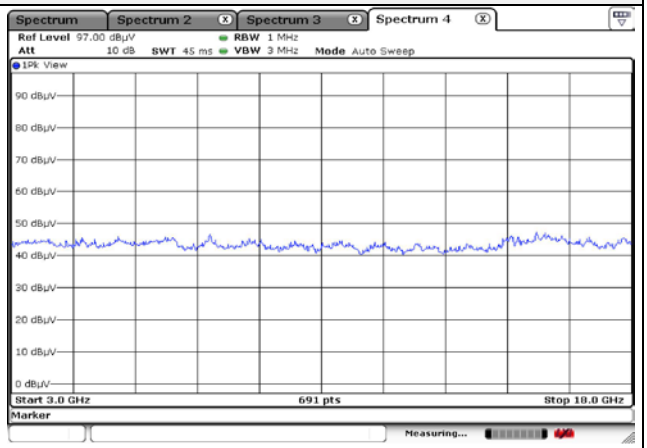
Horizontal // Peak for 3 ㎓ to 18 ㎓	Vertical // Peak for 3 ㎓ to 18 ㎓
	

Note.
1. No spurious emission were detected above 3 ㎓.
2. Average test would be performed if the peak result were greater than the average limit.

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Mode: 802.11n(HT20)

Distance of measurement: 3 meter

Channel: 01

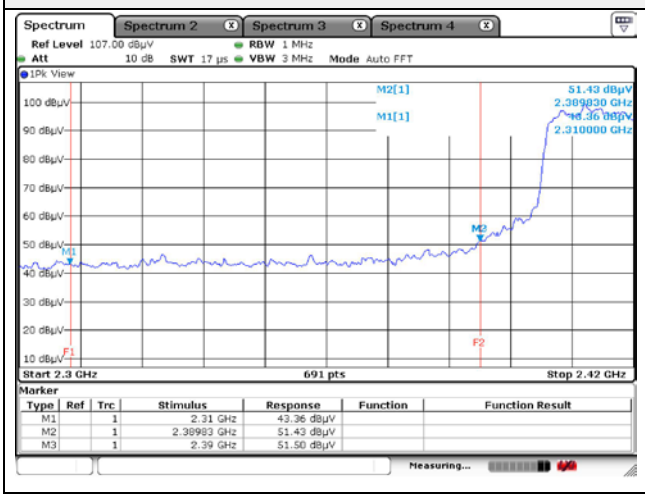
- **Spurious**

Frequency (MHz)	Level (dBμV)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2 127.40	47.92	Peak	H	-0.72	-	47.20	74.00	26.80
2 489.10	49.19	Peak	H	-0.04	-	49.15	74.00	24.85
2 118.70	46.85	Peak	V	-0.74	-	46.11	74.00	27.89
2 162.10	48.68	Peak	V	-0.65	-	48.03	74.00	25.97
2 576.00	47.76	Peak	V	0.26	-	48.02	74.00	25.98

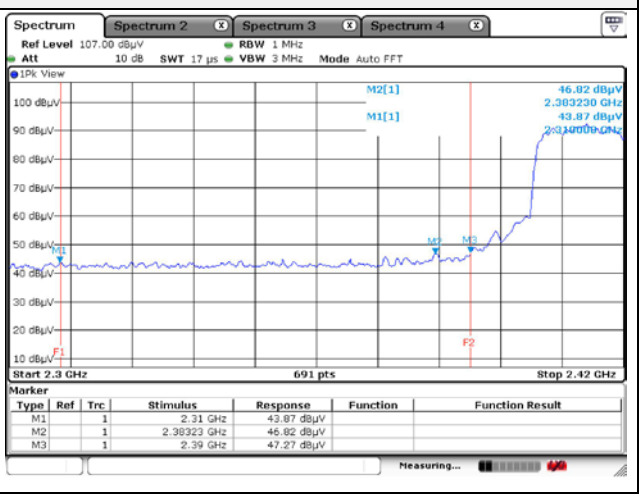
- **Band edge**

Frequency (MHz)	Level (dBμV)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2 390.00	51.50	Peak	H	-0.22	-	51.28	74.00	22.72
2 390.00	47.27	Peak	V	-0.22	-	47.05	74.00	26.95

Restricted band // Horizontal // Peak



Restricted band // Vertical // Peak



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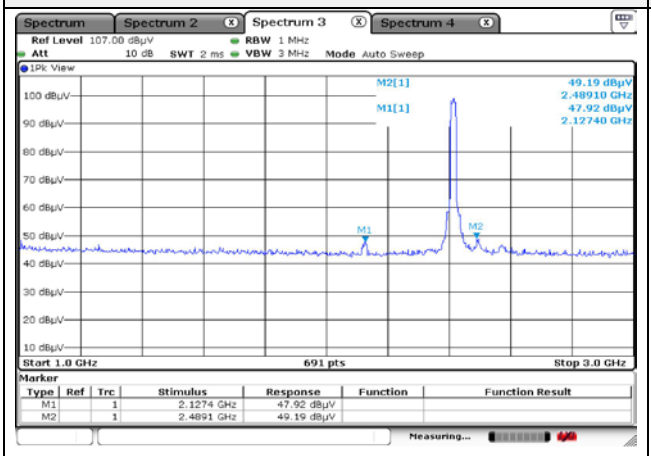
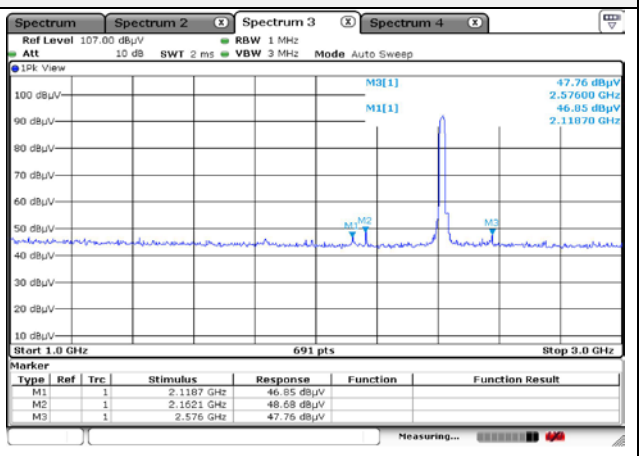
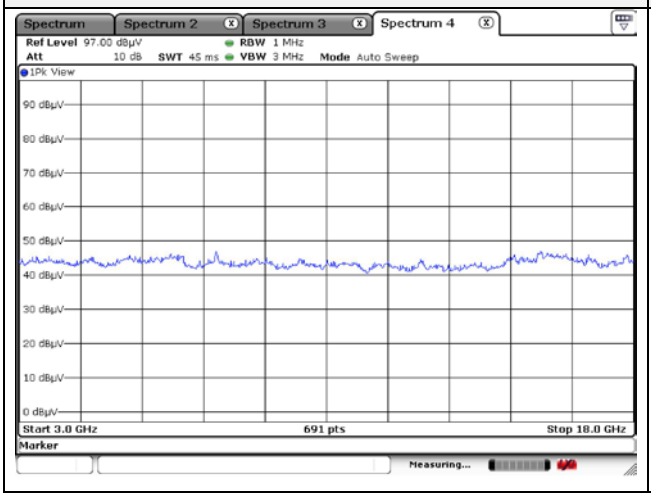
Horizontal // Peak for 1 ㎓ to 3 ㎓



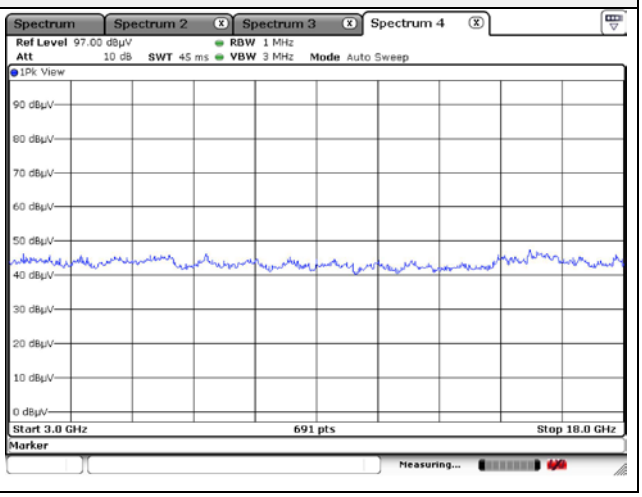
Vertical // Peak for 1 ㎓ to 3 ㎓



Horizontal // Peak for 3 ㎓ to 18 ㎓



Vertical // Peak for 3 ㎓ to 18 ㎓



Note.
1. No spurious emission were detected above 3 ㎓.
2. Average test would be performed if the peak result were greater than the average limit.

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Mode: 802.11n(HT20)

Distance of measurement: 3 meter

Channel: 06

- **Spurious**

Frequency (MHz)	Level (dBμV)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2 127.40	47.34	Peak	H	-0.72	-	46.62	74.00	27.38
2 523.90	48.25	Peak	H	0.07	-	48.32	74.00	25.68
2 596.20	48.69	Peak	H	0.33	-	49.02	74.00	24.98
1 670.00	46.04	Peak	V	-4.32	-	41.72	74.00	32.28
1 837.90	47.20	Peak	V	-2.68	-	44.52	74.00	29.48
2 118.70	47.62	Peak	V	-0.74	-	46.88	74.00	27.12
2 165.00	49.23	Peak	V	-0.64	-	48.59	74.00	25.41

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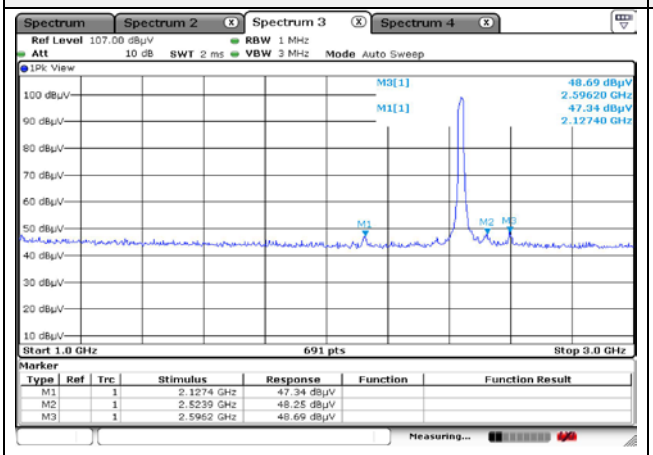
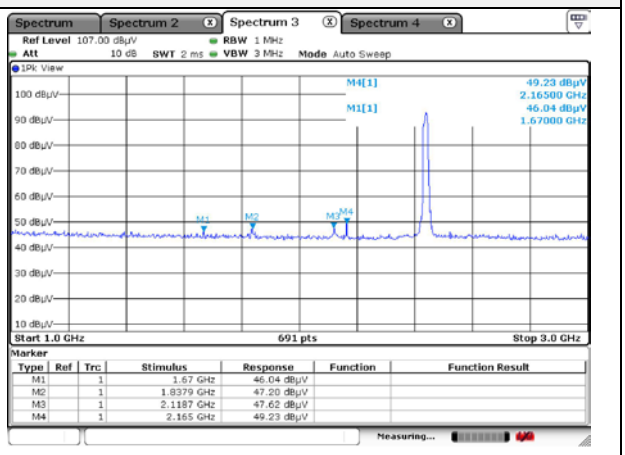
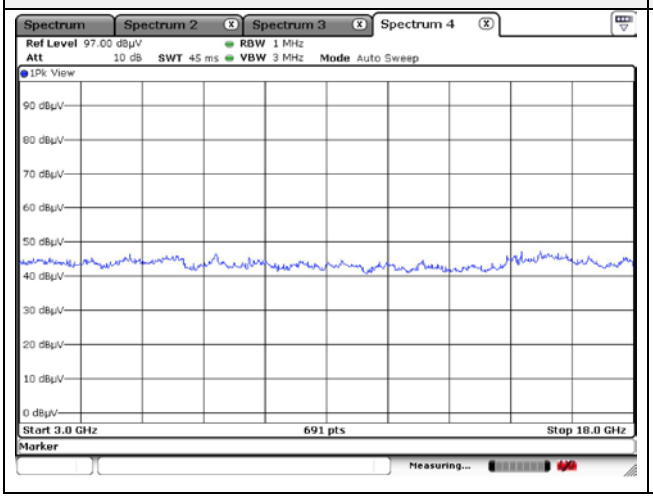
Horizontal // Peak for 1 ㎓ to 3 ㎓



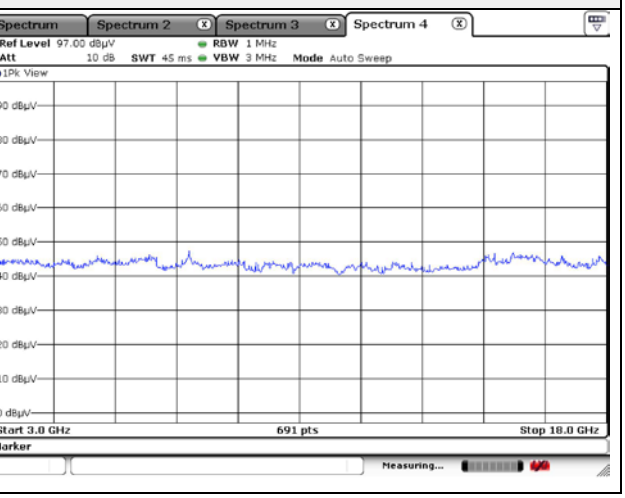
Vertical // Peak for 1 ㎓ to 3 ㎓



Horizontal // Peak for 3 ㎓ to 18 ㎓



Vertical // Peak for 3 ㎓ to 18 ㎓



Note.
1. No spurious emission were detected above 3 ㎓.
2. Average test would be performed if the peak result were greater than the average limit.

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Mode: 802.11n(HT20)

Distance of measurement: 3 meter

Channel: 11

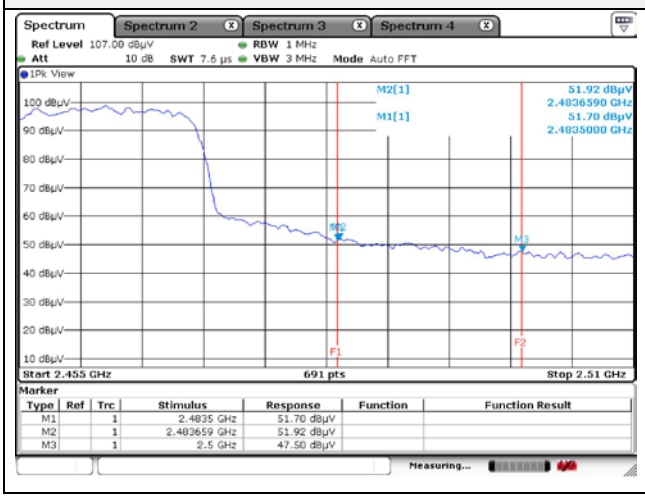
- **Spurious**

Frequency (MHz)	Level (dBμV)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2 127.40	47.56	Peak	H	-0.72	-	46.84	74.00	27.16
2 547.00	48.73	Peak	H	0.16	-	48.89	74.00	25.11
2 619.40	48.16	Peak	H	0.42	-	48.58	74.00	25.42
2 121.60	46.99	Peak	V	-0.73	-	46.26	74.00	27.74
2 162.10	49.85	Peak	V	-0.65	-	49.20	74.00	24.80

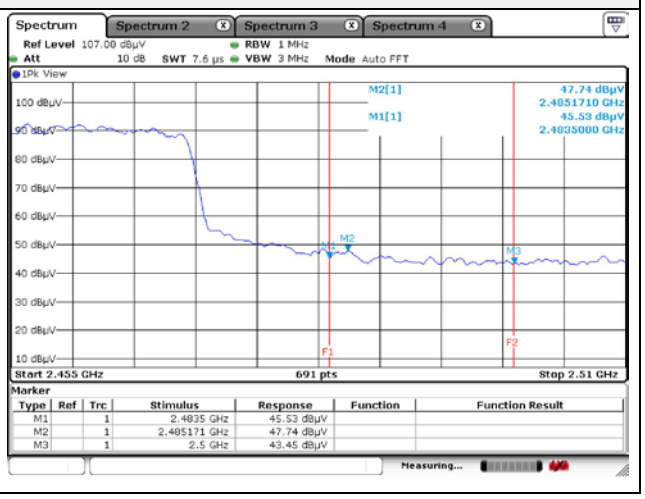
- **Band edge**

Frequency (MHz)	Level (dBμV)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2 483.66	51.92	Peak	H	-0.05	-	51.87	74.00	22.13
2 485.17	47.74	Peak	V	-0.04	-	47.70	74.00	26.30

Restricted band // Horizontal // Peak



Restricted band // Vertical // Peak



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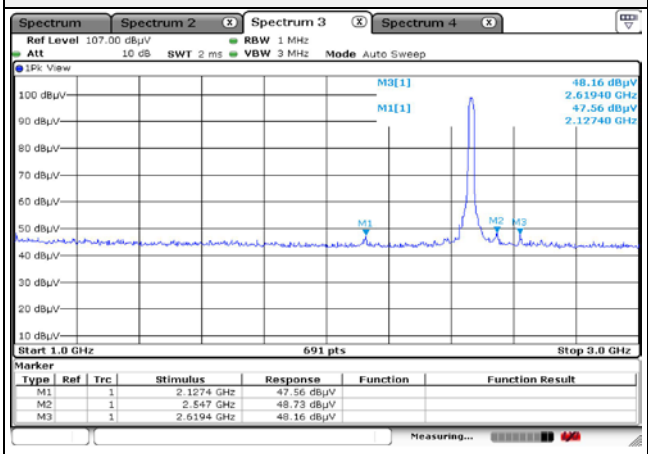
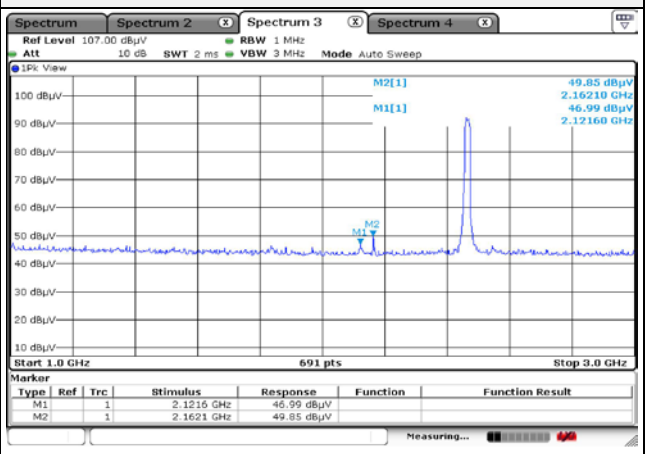
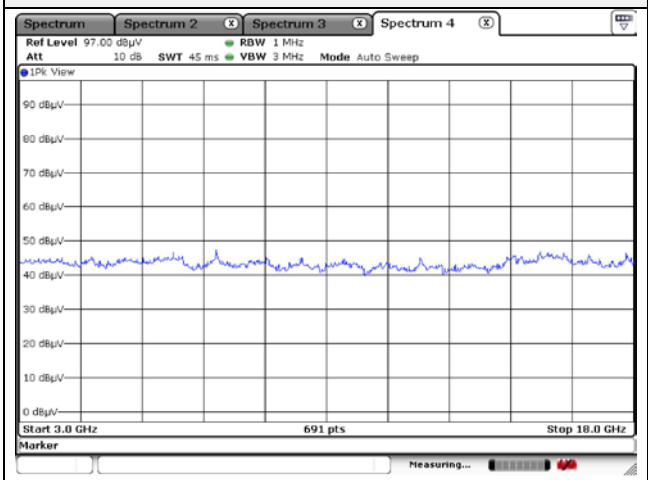
Horizontal // Peak for 1 ㎓ to 3 ㎓



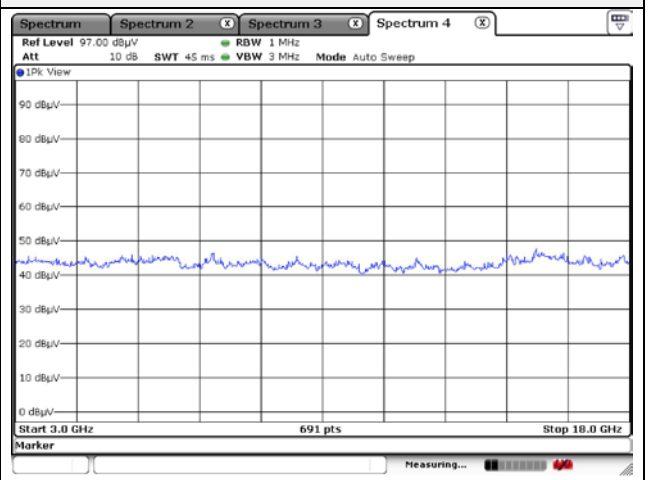
Vertical // Peak for 1 ㎓ to 3 ㎓



Horizontal // Peak for 3 ㎓ to 18 ㎓



Vertical // Peak for 3 ㎓ to 18 ㎓



Note.
1. No spurious emission were detected above 3 ㎓.
2. Average test would be performed if the peak result were greater than the average limit.

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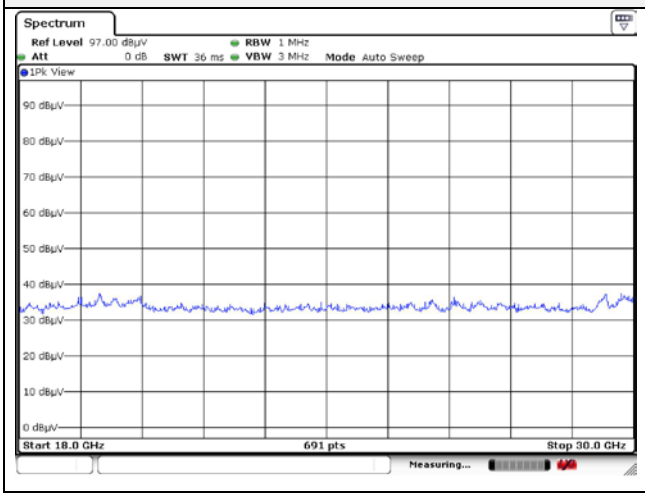
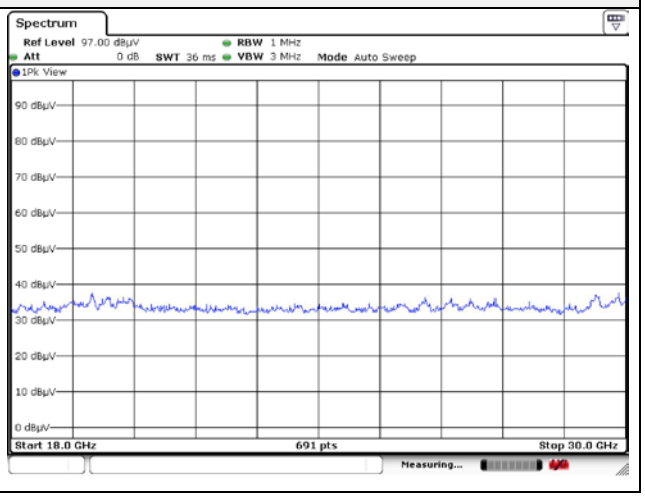
Test results (18 ㎓ to 30 ㎓) – Worst case

Mode:	802.11g
Distance of measurement:	3 meter
Channel:	06 (Worst case)

Horizontal	Vertical
	

Note.
1. No spurious emission were detected above 18 ㎓.

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3.5 Conducted spurious emissions & band edge

Test setup

EUT	Attenuator	Spectrum analyzer

Test procedure

Band edge

KDB 558074 D01 v04 – Section 11.3

1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW = 100 ㎑
4. VBW = 300 ㎑
5. Detector = Peak
6. Trace mode = max hold
7. Sweep time = auto
8. The trace was allowed to stabilize

Out of band emissions

KDB 558074 D01 v04 – Section 11.3

1. Start frequency was set to 30 ㎒ and stop frequency was set to 25 ㎓ for 2.4 ㎓ frequencies and 40 ㎓ for 5 ㎓ frequencies
2. RBW = 100 ㎑
3. VBW = 300 ㎑
4. Detector = Peak
5. Trace mode = max hold
6. Sweep time = auto couple
7. The trace was allowed to stabilize

Limit

According to 15.247(d), in any 100 ㎑ 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 ㏈ below that in the 100 ㎑ 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 ㏈ instead of 20 ㏈. Attenuation below the general limits specified in section 15.209(a) is not required. In addition, radiated emission which in the restricted band, as define in section 15.205(a), must also comply the radiated emission limits specified in section 15.209(a) (see section 15.205(c))

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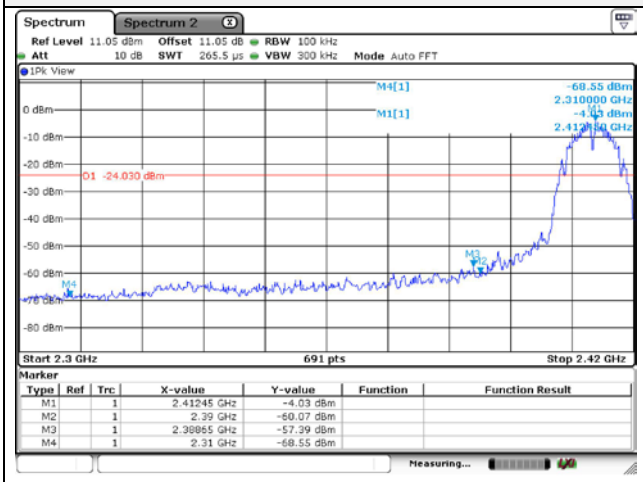
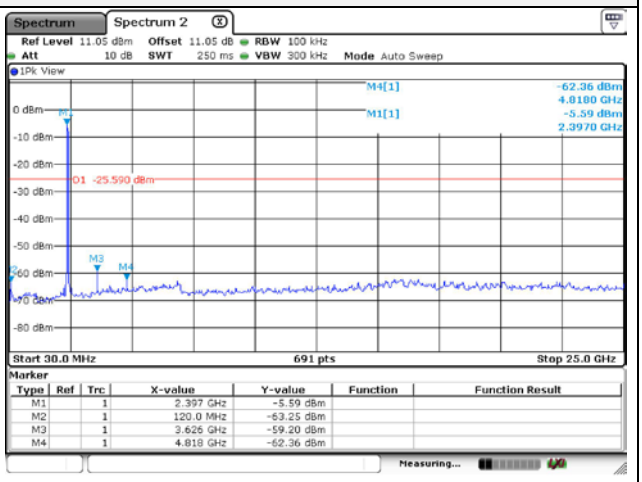
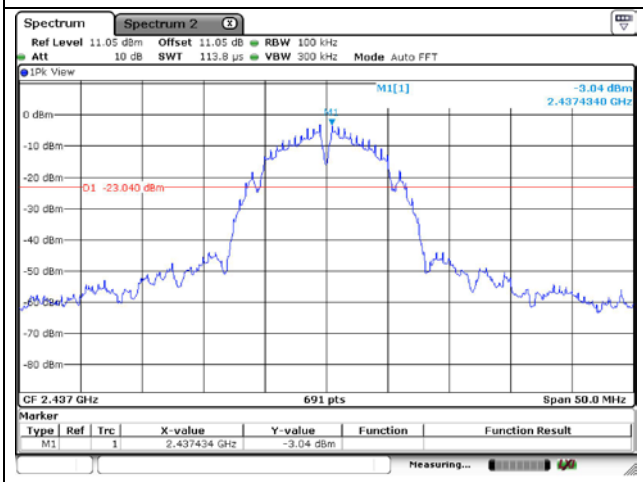
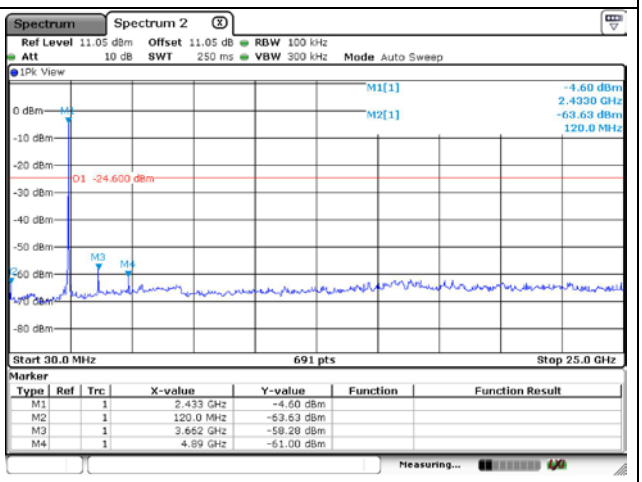
Test results

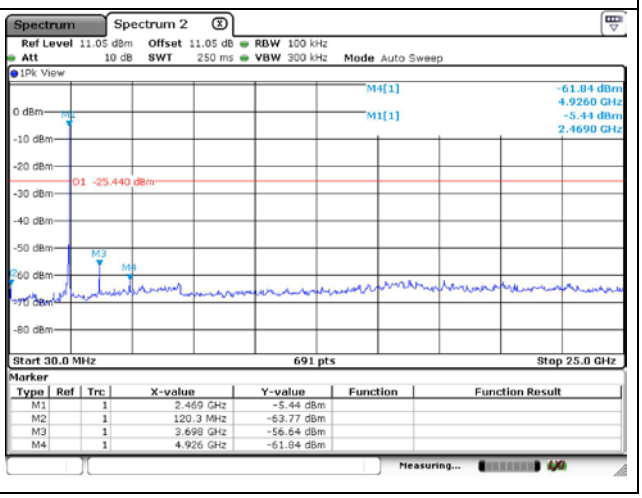
802.11b











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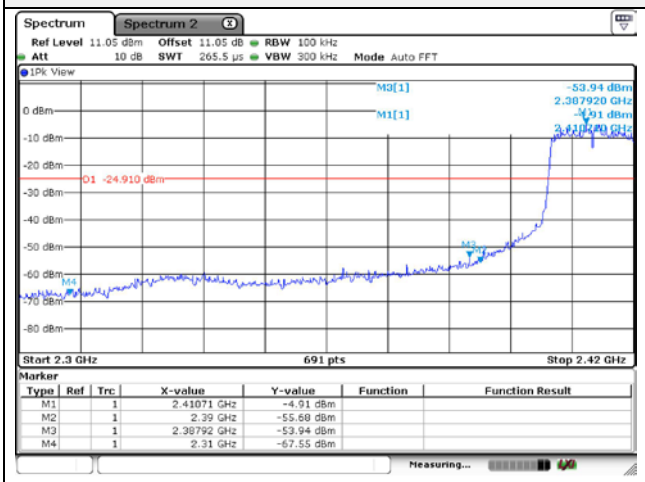
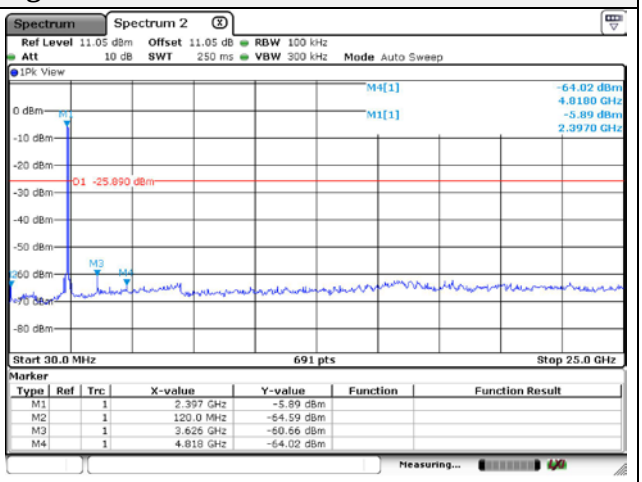
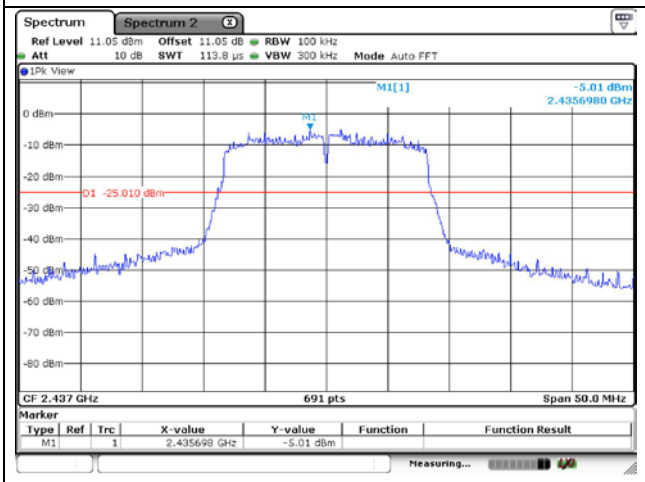
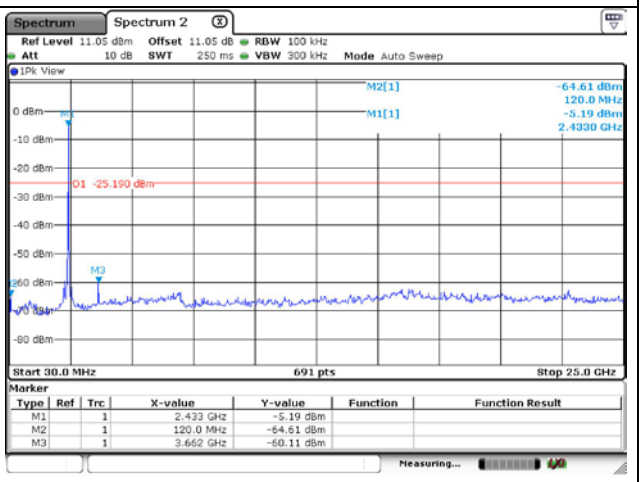
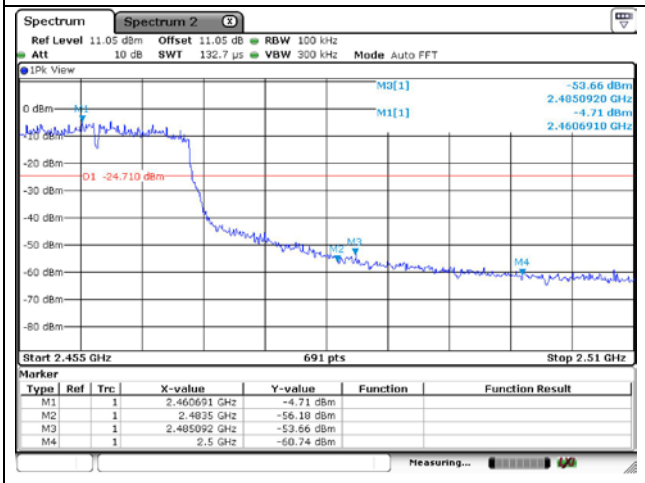
802.11g

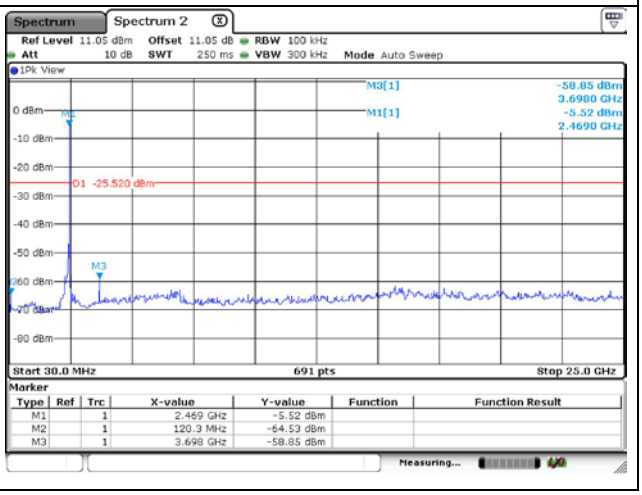












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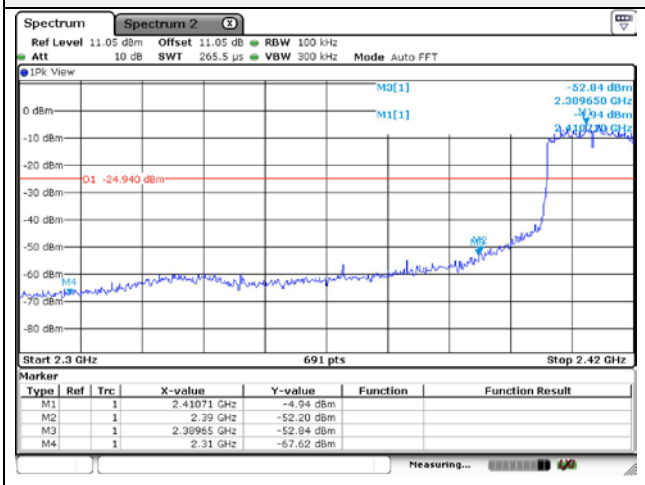
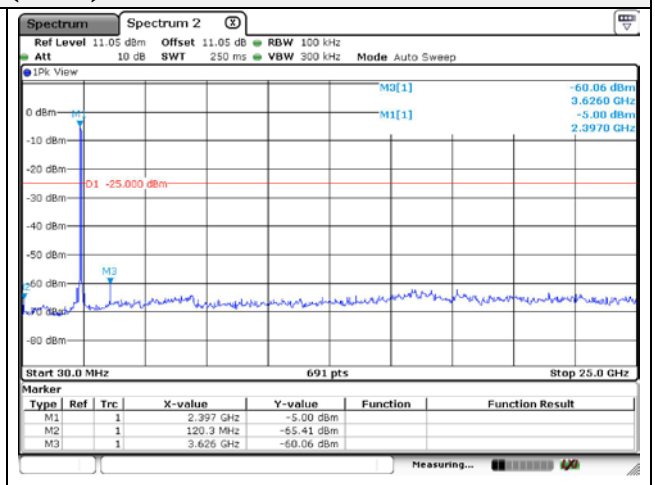
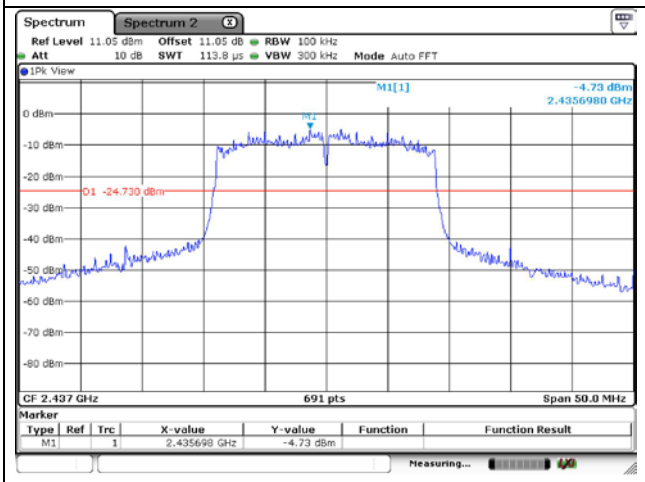
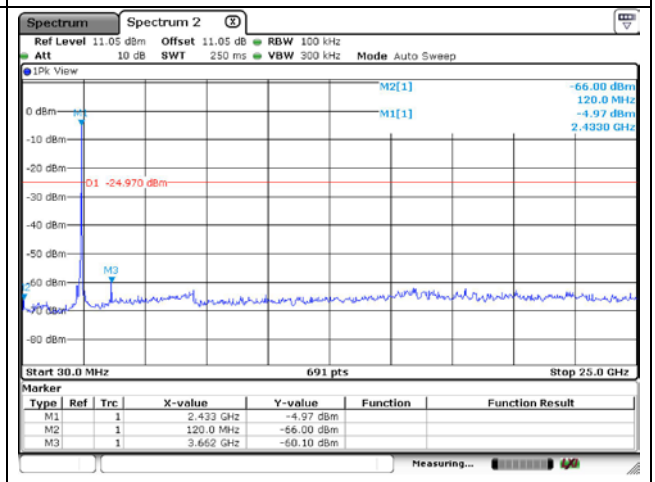
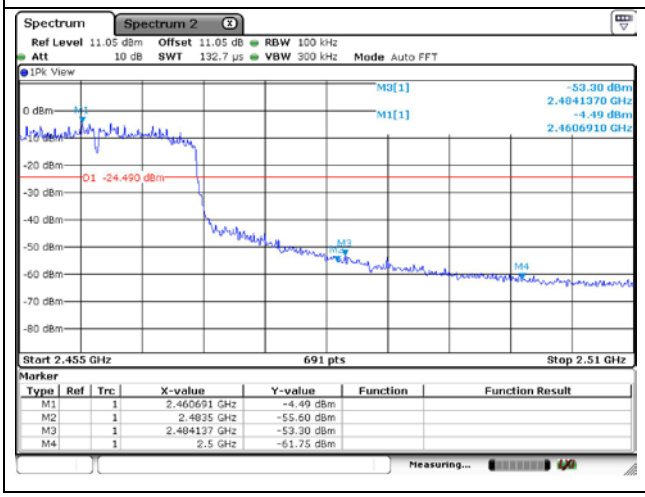
802.11n(HT20)

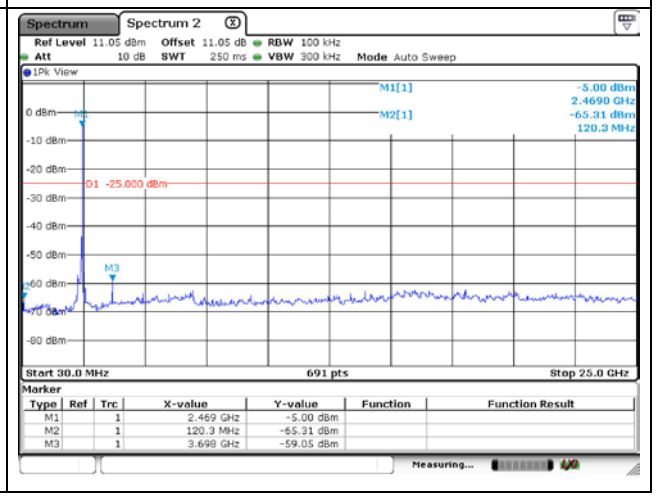












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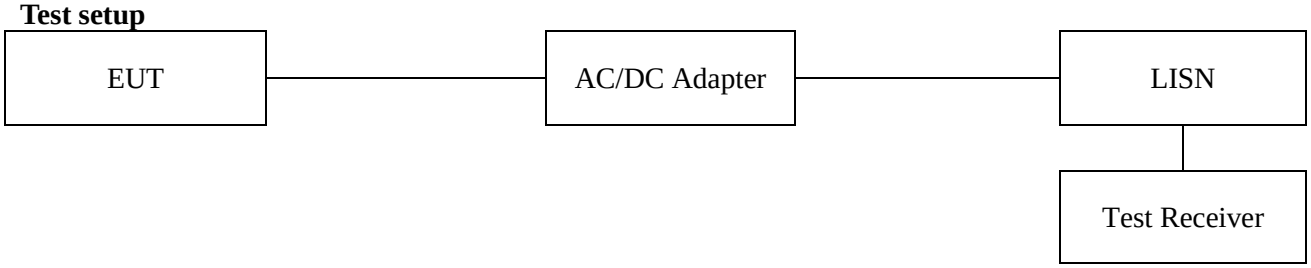
3.6 AC conducted emissions

Test setup



Limit

According to 15.207(a), for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 ㎑ to 30 ㎒, shall not exceed the limits in the following table, as measured using a 50uH/50 ohm line impedance stabilization network (LISN). Compliance with the provision of this paragraph shall on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower applies at the boundary between the frequencies ranges.

Frequency of Emission (㎒)	Conducted limit (dBμV/m)	
	Quasi-peak	Average
0.15 – 0.50	66 - 56*	56 - 46*
0.50 – 5.00	56	46
5.00 – 30.0	60	50

Note:

1. All AC line conducted spurious emission are measured with a receiver connected to a grounded LISN while the EUT is operating at its maximum duty cycle, at maximum power, and the appropriate frequencies. All data rates and modes were investigated for conducted spurious emission. Only the conducted emissions of the configuration that produced the worst case emissions are reported in this section.
2. Both Cable loss and LISN factor are included in measurement level(QP Level or AV Level).

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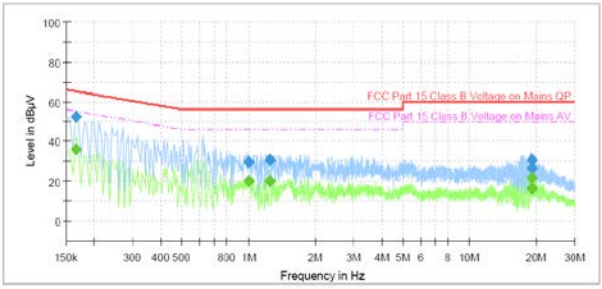
Test results

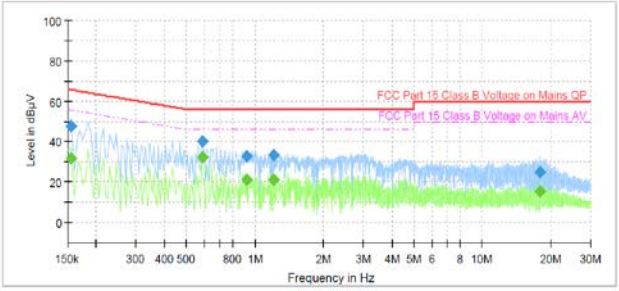
Hot Line



Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.165000	---	36.01	55.21	19.20	1000.0	9.000	N	19.4
0.165000	52.22	---	65.21	12.99	1000.0	9.000	N	19.4
1.005000	---	20.14	46.00	25.86	1000.0	9.000	N	19.8
1.005000	29.91	---	56.00	26.09	1000.0	9.000	N	19.8
1.255000	---	20.11	46.00	25.89	1000.0	9.000	N	19.9
1.255000	30.80	---	56.00	25.20	1000.0	9.000	N	19.9
19.135000	---	16.66	50.00	33.34	1000.0	9.000	N	20.1
19.135000	26.25	---	60.00	33.75	1000.0	9.000	N	20.1
19.140000	---	21.93	50.00	28.07	1000.0	9.000	N	20.1
19.140000	30.61	---	60.00	29.39	1000.0	9.000	N	20.1

Neutral Line



Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.155000	---	31.67	55.73	24.06	1000.0	9.000	L1	19.4
0.155000	47.38	---	65.73	18.35	1000.0	9.000	L1	19.4
0.585000	---	32.28	46.00	13.72	1000.0	9.000	L1	19.6
0.585000	40.49	---	56.00	15.51	1000.0	9.000	L1	19.6
0.915000	---	21.19	46.00	24.81	1000.0	9.000	L1	19.8
0.915000	32.89	---	56.00	23.11	1000.0	9.000	L1	19.8
1.205000	---	20.99	46.00	25.01	1000.0	9.000	L1	19.8
1.205000	33.35	---	56.00	22.65	1000.0	9.000	L1	19.8
17.985000	---	15.42	50.00	34.58	1000.0	9.000	L1	20.2
17.985000	24.87	---	60.00	35.13	1000.0	9.000	L1	20.2

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Appendix A. Measurement equipment

Equipment	Manufacturer	Model	Serial No.	Calibration interval	Calibration date	Calibration due.
Spectrum Analyzer	R&S	FSV30	101389	1 year	2017.01.23	2018.01.23
Spectrum Analyzer	R&S	FSV40	101002	1 year	2017.07.04	2018.07.04
8360B Series Swept Signal Generator	HP	83630B	3844A00786	1 year	2017.01.23	2018.01.23
Power Meter	Anritsu	ML2495A	1438001	1 year	2017.01.23	2018.01.23
Pulse Power Sensor	Anritsu	MA2411B	1339205	1 year	2017.01.23	2018.01.23
Attenuator	Agilent	8493C	51401	1 year	2017.07.04	2018.07.04
Loop Antenna	Schwarzbeck	FMZB1513	225	2 years	2018.05.10	2019.05.10
Trilog-broadband antenna	SCHWARZBECK	VULB 9163	9168-714	2 years	2017.11.28	2018.11.28
Horn Antenna	A.H	SAS-571	414	2 years	2018.02.15	2019.02.15
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA 9170550	2 years	2018.02.15	2019.02.15
High Pass Filter	Wainwright Instrument Gmbh	WHJS3000-10TT	1	1 year	2017.07.03	2018.07.03
Low Pass Filter	Wainwright Instrument Gmbh	WLK1.0/18 G-10TT	1	1 year	2017.07.03	2018.07.03
Preamplifier	R&S	SCU01	100603	1 year	2017.11.27	2018.11.27
Preamplifier	AGILENT	8449B	3008A01742	1 year	2018.01.11	2019.01.11
EMI Test Receiver	R&S	ESR3	101781	1 year	2017.04.27	2018.04.27
EMI Test Receiver	R&S	ESU26	100552	1 year	2017.04.19	2018.04.19
Pulse Limiter	R&S	ESH3-Z2	101915	1 year	2016.12.13	2017.12.13
					2017.11.27	2018.11.27
LISN	R&S	ENV216	101787	1 year	2017.01.11	2018.01.11
					2018.01.05	2019.01.15

Peripheral devices

Device	Manufacturer	Model No.	Serial No.
-	-	-	-

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