5.6 Spurious Emission, Band Edge And Restricted Bands

5.6.1 Regulation

According to §15.407(b)(1) For transmitters operating in the 5.15–5.25 ㎓ band: all emissions outside of the 5.15–5.35 ㎓ band shall not exceed an EIRP of -27 ㏈m/㎒.

According to §15.407(b) (2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

According to §15.407(b) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

According to §15.407(b) (4) For transmitters operating in the 5.725-5.85 ㎓ band: All emissions within the frequency range from the band edge to 10 ㎒ above or below the band edge shall not exceed an e.i.r.p. of −17 dBm/㎒; for frequencies 10 ㎒ or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of −27 dBm/㎒.

According to §15.407(b)(6) Unwanted emissions below 1 ㎓ must comply with the general field strength limits set forth in §15.209.

According to §15.209(a), Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall notexceed the field strength levels specified in the following table:

Frequency (㎒)	Field strength (μV/m)	Measurement distance (m)
0.009 - 0.490	2400/F(㎑)	300
0.490 -1.705	24000/F(㎑)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

** The emission limits shown in the above table are based on measurement instrumentation employing a CISPR quasi-peak detector and above 1000 ㎒ are based on the average value of measured emissions.

According to §15.407(b)(7) The provisions of §15.205 apply to intentional radiators operating under this section. (8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency block edges as the design of the equipment permits.

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5.6.2 Measurement Procedure

These test measurement settings are specified in section G of 789033 D02 General UNII Test Procedures New Rules v01.

For all radiated emissions tests, measurements must correspond to the direction of maximum emission level for each measured emission (see ANSI C63.10 for guidance).

5.6.2.1 Unwanted Emissions in the Restricted Bands & Outside of the Restricted Bands

(1) For all measurements, follow the requirements in section II.G.3.,
   "General Requirements for Unwanted Emissions Measurements".

(2) At frequencies below 1000 ㎒, use the procedure described in section II.G.4.,
   "Procedure for Unwanted Emissions Measurements Below 1000 ㎒".

(3) At frequencies above 1000 ㎒, measurements performed using the peak and average measurement procedures described in sections II.G.5. and II.G.6, respectively, must satisfy the respective peak and average limits. If all peak measurements satisfy the average limit, then average measurements are not required.

(4) Unwanted Emissions that fall Outside of the Restricted Bands

As specified in § 15.407(b), emissions above 1000 ㎒ that are outside of the restricted bands are subject to a maximum emission limit of -27 ㏈m/㎒ (or -17 ㏈m/㎒ as specified in § 15.407(b)(4)).

However, an out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 ㏈m/㎒ or -17 ㏈m/㎒ maximum emission limit.

a) If radiated measurements are performed, field strength is then converted to EIRP as follows:
   (i) EIRP = ((E*d)^2) / 30
      where: • E is the field strength in V/m; • d is the measurement distance in meters;
            • EIRP is the equivalent isotropically radiated power in watts.
   (ii) Working in ㏈ units, the above equation is equivalent to:
      $\text{EIRP[㏈m]} = \text{E[㏈μV/m]} + 20 \log(\text{d[meters]}) - 104.77$
   (iii) Or, if d is 3 meters:
      $\text{EIRP[㏈m]} = \text{E[㏈μV/m]} - 95.2$

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5.6.2.2 Spurious Radiated Emissions:

1. The preliminary and final rdiated measurements were performed to determine the frequency producing the maximum emissions in at a 10m anechoic chamber. The EUT was tested at a distance 3 meters.
2. The EUT was placed on the top of the 0.8-meter height, 1×1.5 meter non-metallic table. To find the maximum emission levels, the height of a measuring antenna was changed and the turntable was rotated 360˚.
3. The antenna polarization was also changed from vertical to horizontal. The spectrum was scanned from 9 ㎑ to 30 ㎒ using the loop antenna, and from 30 to 1000 ㎒ using the TRILOG broadband antenna, and from 1 000 ㎒ to 40 000 ㎒ using the horn antenna.
4. Each frequency found during preliminary measurements was re-examined and investigated. The test-receiver system was set up to average, peak, and quasi-peak detector function with specified bandwidth.

Note
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 ㎑ for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1 ㎓.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 ㎒ for Peak detection and frequency above 1 ㎓.
   The resolution bandwidth of test receiver/spectrum analyzer is 1 ㎒ and the video bandwidth is 1 ㎑($\geq$1/T) for Average detection (AV) at frequency above 1 ㎓. (where T = pulse width)

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5.6.3 Test Result

 -complied

1. Band-edge & Conducted Spurious Emissions was shown in figure 3.
   Note: We took the insertion loss of the cable into consideration within the measuring instrument.
2. Measured value of the Field strength of spurious Emissions (Radiated)

* Below 1 ㎓ data (Worst-case: 5 475 Band_Low channel)

802.11an HT20_MIMO (ANT 1+2) (5 745 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(µV)]	Factor [dB]	Result [dB(µV/m)]	Limit [dB(µV/m)]	Margin [dB]
Quasi-Peak DATA. Emissions below 30 ㎒ (3m Distance)							
below 30 ㎒	**Not Detected**	-	-	-	-	-	-
Quasi-Peak DATA. Emissions below 1 ㎓							
34.97	120	V	41.4	-16.0	25.4	40.0	14.6
57.52	120	V	35.3	-14.0	21.3	40.0	18.7
71.83	120	V	39.1	-18.2	20.9	40.0	19.1
86.02	120	V	39.0	-18.4	20.6	40.0	19.4
117.06	120	H	41.3	-16.2	25.1	43.5	18.4
269.95	120	H	37.4	-12.4	25.0	46.0	21.0
479.96	120	H	41.1	-7.5	33.6	46.0	12.4
Above 5 ㎓	Not Detected	-	-	-	-	-	-

* Above 1 ㎓ data_5 150 Band

802.11a (5 180 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
*5 146.31	1 000	H	45.5	8.3	53.8	74.0	20.2
Above 6 ㎓	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
*5 146.31	1 000	H	38.8	8.3	47.1	54.0	6.9
Above 6 ㎓	Not Detected	-	-	-	-	-	-

* This asterisk means restricted band.

802.11a (5 200 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11a (5 240 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11an HT20 (5 180 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
*5 149.75	1 000	H	52.6	8.3	60.9	74.0	13.1
Above 6 ㎓	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
*5 149.75	1 000	H	35.4	8.3	43.7	54.0	10.3
Above 6 ㎓	Not Detected	-	-	-	-	-	-

* This asterisk means restricted band.

802.11an HT20 (5 200 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11an HT20 (5 240 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

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802.11an HT20_MIMO (ANT 1+2) (5 180 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(µV)]	Factor [dB]	Result [dB(µV/m)]	Limit [dB(µV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
*5 147.69	1 000	H	47.6	8.7	56.3	74.0	17.7
Above 6 ㎓	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
*5 147.69	1 000	H	41.6	8.7	50.3	54.0	3.7
Above 6 ㎓	Not Detected	-	-	-	-	-	-

* This asterisk means restricted band.

802.11an HT20_MIMO (ANT 1+2) (5 200 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(µV)]	Factor [dB]	Result [dB(µV/m)]	Limit [dB(µV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11an HT20_MIMO (ANT 1+2) (5 240 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(µV)]	Factor [dB]	Result [dB(µV/m)]	Limit [dB(µV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

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802.11an HT40 (5 190 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
*5 417.00	1 000	H	62.0	8.7	70.7	74.0	3.3
Above 6 ㎓	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
*5 417.00	1 000	H	40.3	8.7	49.0	54.0	5.0
Above 6 ㎓	Not Detected	-	-	-	-	-	-

* This asterisk means restricted band.

802.11an HT40 (5 230 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11an HT40_MIMO (ANT 1+2) (5 190 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
*5 147.69	1 000	H	58.6	8.7	67.3	74.0	6.7
Above 6 ㎓	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
*5 147.69	1 000	H	39.6	8.7	48.3	54.0	5.7
Above 6 ㎓	Not Detected	-	-	-	-	-	-

* This asterisk means restricted band.

802.11an HT40_ MIMO (ANT 1+2) (5 230 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

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* Above 1 ㎓ data_5 250 Band

802.11a (5 260 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	**Not Detected**	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11a (5 280 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11a (5 320 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
*5 350.20	1 000	H	52.9	9.0	61.9	74.0	12.1
Above 6 ㎓	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
*5 350.20	1 000	H	36.6	9.0	45.6	54.0	8.4
Above 6 ㎓	Not Detected	-	-	-	-	-	-

* This asterisk means restricted band.

802.11an HT20 (5 260 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11an HT20 (5 280 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11an HT20 (5 320 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
*5 353.25	1 000	H	49.6	9.0	58.6	74.0	15.4
Above 6 ㎓	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
*5 353.25	1 000	H	34.6	9.0	43.6	54.0	10.4
Above 6 ㎓	Not Detected	-	-	-	-	-	-

* This asterisk means restricted band.

802.11an HT20_MIMO (ANT 1+2) (5 260 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11an HT20_MIMO (ANT 1+2) (5 280 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11an HT20_MIMO (ANT 1+2) (5 320 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
*5 350.50	1 000	H	53.7	9.0	62.7	74.0	11.3
Above 6 ㎓	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
*5 350.50	1 000	H	38.4	9.0	47.4	54.0	6.6
Above 6 ㎓	Not Detected	-	-	-	-	-	-

* This asterisk means restricted band.

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802.11an HT40 (5 270 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-.	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11an HT40 (5 310 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
*5 350.50	1 000	H	57.3	9.0	66.3	74.0	7.7
Above 6 ㎓	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
*5 350.50	1 000	H	41.3	9.0	50.3	54.0	3.7
Above 6 ㎓	Not Detected	-	-	-	-	-	-

* This asterisk means restricted band.

802.11an HT40_MIMO (ANT 1+2) (5 270 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11an HT40_ MIMO (ANT 1+2) (5 310 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
*5 353.25	1 000	H	61.3	9.0	70.3	74.0	3.7
Above 6 ㎓	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
*5 353.25	1 000	H	39.2	9.0	48.2	54.0	5.8
Above 6 ㎓	Not Detected	-	-	-	-	-	-

* This asterisk means restricted band.

* Above 1 ㎓ data_5 470 Band

802.11a (5 500 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 469.99	1 000	H	39.5	9.3	48.8	68.2	19.4
Above 6 ㎓	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

802.11a (5 580 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11a (5 700 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 725.88	1 000	H	53.3	10.2	63.5	68.2	4.7
Above 6 ㎓	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

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802.11an HT20 (5 500 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 469.69	1 000	H	51.4	9.3	60.7	68.2	7.5
Above 6 ㎓	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

802.11an HT20 (5 580 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11an HT20 (5 700 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 725.88	1 000	H	54.4	10.2	64.6	68.2	3.6
Above 6 ㎓	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

802.11an HT20_MIMO (ANT 1+2) (5 500 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 469.44	1 000	H	55.7	9.3	65	68.2	3.2
Above 6 ㎓	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

802.11an HT20_MIMO (ANT 1+2) (5 580 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11an HT20_MIMO (ANT 1+2) (5 700 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 725.19	1 000	H	54.7	10.2	64.9	68.2	3.3
Above 6 ㎓	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

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802.11an HT40 (5 510 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 469.44	1 000	H	55.8	9.3	65.1	68.2	3.1
Above 6 ㎓	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

\# This hash means out of band.

802.11an HT40 (5 590 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11an HT40 (5 670 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 727.94	1 000	H	53.3	10.2	63.5	68.2	4.7
Above 6 ㎓	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

\# This hash means out of band.

802.11an HT40_MIMO (ANT 1+2) (5 510 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 467.38	1 000	H	55.7	9.3	65	68.2	3.2
Above 6 ㎓	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

\# This hash means out of band.

802.11an HT40_ MIMO (ANT 1+2) (5 590 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11an HT40_ MIMO (ANT 1+2) (5 670 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 727.94	1 000	H	47.1	10.2	57.3	68.2	10.9
Above 6 ㎓	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

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* Above 1 ㎓ data_5 745 Band

802.11a (5 745 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 724.50	1 000	H	55	10.2	65.2	78.2	13
Above 6 ㎓	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

802.11a (5 785 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11a (5 825 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 853.06	1 000	H	54.7	10.7	65.4	78.2	12.8
Above 6 ㎓	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

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802.11an HT20 (5 745 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(µV)]	Factor [dB]	Result [dB(µV/m)]	Limit [dB(µV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 853.06	1 000	H	54.6	10.2	64.8	78.2	3.4
Above 6 ㎓	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

802.11an HT20 (5 785 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(µV)]	Factor [dB]	Result [dB(µV/m)]	Limit [dB(µV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11an HT20 (5 825 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(µV)]	Factor [dB]	Result [dB(µV/m)]	Limit [dB(µV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 850.31	1 000	H	41.6	10.7	52.3	78.2	25.9
Above 6 ㎓	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

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802.11an HT20_MIMO (ANT 1+2) (5 745 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 724.50	1 000	H	62.7	10.2	72.9	78.2	5.3
Above 6 ㎓	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

802.11an HT20_MIMO (ANT 1+2) (5 785 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

802.11an HT20_MIMO (ANT 1+2) (5 825 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 853.06	1 000	H	44.9	10.7	55.6	78.2	22.6
Above 6 ㎓	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

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802.11an HT40 (5 755 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 721.06	1 000	H	48.1	10.2	58.3	78.2	19.9
Above 6 ㎓	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

802.11an HT40 (5 795 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 850.31	1 000	H	48.1	10.7	58.8	78.2	19.4
Above 6 ㎓	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

802.11an HT40_MIMO (ANT 1+2) (5 755 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 724.50	1 000	H	48.7	10.2	58.9	78.2	19.3
Above 6 ㎓	Not Detected						
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

802.11an HT40_ MIMO (ANT 1+2) (5 795 ㎒)

Frequency [㎒]	Receiver Bandwidth [㎑]	Pol. [V/H]	Reading [dB(μV)]	Factor [dB]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
Peak DATA. Emissions above 1 ㎓							
#5 850.21	1 000	H	48.7	10.7	59.4	78.2	18.8
Above 6 ㎓	Not Detected	-	-	-	-	-	-
Average DATA. Emissions above 1 ㎓							
-	Not Detected	-	-	-	-	-	-

This hash means out of band.

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5.7 Frequency Stability

5.7.1 Regulation

According to §15.407 (g) Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

5.7.2 Measurement Procedure

The frequency stability of the carrier frequency of the intentional radiator shall be maintained all conditions of normal operation as specified in the users manual. The frequency stability shall be maintained over a temperature variation of specified in the users manual at normal supply voltage, and over a variation in the primary supply voltage of specified in the users manual of the rated supply voltage at a temperature of 20 °C. For equipment that is capable only of operating from a battery, the frequency stability tests shall be performed using a new battery without any further requirement to vary supply voltage.

1. The EUT was placed inside the environmental test chamber.
2. The temperature was incremented by 10 °C intervals from lowest temperature.
3. Each increase step of temperature measured the frequency.
4. The test temperature was set 20°C and the supply voltage was then adjusted on the EUT from 85 % to 115% and the frequency record.

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5.7.3 Test Result

-complied

* 802.11an HT20_5 150 ㎒

− 5 180 ㎒

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (㎐)	Frequency Error (㎐)	Frequency Error (%)
100		20	5 179 960 000	40 000	0.000 8
100		0	5 180 080 000	-80 000	-0.001 5
100		10	5 180 000 000	0	0.000 0
100	12.0	20	5 179 960 000	40 000	0.000 8
100		30	5 179 980 000	20 000	0.000 4
100		40	5 179 940 000	60 000	0.001 2
100		50	5 180 020 000	-20 000	-0.000 4
100		60	5 179 980 000	20 000	0.000 4
85	10.2	20	5 179 960 000	40 000	0.000 8
115	13.8	20	5 179 980 000	20 000	0.000 4

* 802.11an HT20_5 260 ㎒

− 5 260 ㎒

Voltage (%)	Power (V$_{DC}$)	Temp. (°C)	Reading Frequency (㎐)	Frequency Error (㎐)	Frequency Error (%)
100		20	5 259 940 000	60 000	0.001 1
100		0	5 260 000 000	0	0.000 0
100		10	5 260 020 000	-20 000	-0.000 4
100	12.0	20	5 259 940 000	60 000	0.001 1
100		30	5 259 940 000	60 000	0.001 1
100		40	5 260 020 000	-20 000	-0.000 4
100		50	5 259 960 000	40 000	0.000 8
100		60	5 259 940 000	60 000	0.001 1
85	10.2	20	5 259 900 000	100 000	0.001 9
115	13.8	20	5 259 960 000	40 000	0.000 8

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* 802.11an HT20_5 470 Band

− 5 500 ㎒

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (㎐)	Frequency Error (㎐)	Frequency Error (%)
100		20	5 499 960 000	40 000	0.000 7
100		0	5 500 060 000	-60 000	-0.001 1
100		10	5 500 060 000	-60 000	-0.001 1
100	12.0	20	5 499 960 000	40 000	0.000 7
100		30	5 499 940 000	60 000	0.001 1
100		40	5 499 980 000	20 000	0.000 4
100		50	5 499 960 000	40 000	0.000 7
100		60	5 499 940 000	60 000	0.001 1
85	10.2	20	5 499 980 000	20 000	0.000 4
115	13.8	20	5 500 020 000	-20 000	-0.000 4

* 802.11an HT20_5 725 Band

− 5 745 ㎒

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (㎐)	Frequency Error (㎐)	Frequency Error (%)
100		20	5 744 980 000	20 000	0.000 3
100		0	5 745 060 000	-60 000	-0.001 0
100		10	5 745 040 000	-40 000	-0.000 7
100	12.0	20	5 744 980 000	20 000	0.000 3
100		30	5 744 980 000	20 000	0.000 3
100		40	5 744 960 000	40 000	0.000 7
100		50	5 745 000 000	0	0.000 0
100		60	5 744 940 000	60 000	0.001 0
85	10.2	20	5 745 060 000	-60 000	-0.001 0
115	13.8	20	5 745 000 000	0	0.000 0

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* 802.11an HT40_5 150 Band

_5 190 Band

Voltage (%)	Power (V_DC)	Temp. (°C)	Reading Frequency (㎐)	Frequency Error (㎐)	Frequency Error (%)
100		20	5 190 040 000	-40 000	-0.000 8
100		0	5 190 080 000	-80 000	-0.001 5
100		10	5 190 120 000	-120 000	-0.002 3
100	12.0	20	5 190 040 000	-40 000	-0.000 8
100		30	5 190 040 000	-40 000	-0.000 8
100		40	5 190 040 000	-40 000	-0.000 8
100		50	5 190 040 000	-40 000	-0.000 8
100		60	5 190 040 000	-40 000	-0.000 8
85	10.2	20	5 190 000 000	0	0.000 0
115	13.8	20	5 189 960 000	40 000	0.000 8

* 802.11an HT40_5 250 Band

_5 270 Band

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (㎐)	Frequency Error (㎐)	Frequency Error (%)
100		20	5 269 960 000	40 000	0.000 8
100		0	5 270 080 000	-80 000	-0.001 5
100		10	5 270 000 000	0	0.000 0
100	12.0	20	5 269 960 000	40 000	0.000 8
100		30	5 269 960 000	40 000	0.000 8
100		40	5 269 960 000	40 000	0.000 8
100		50	5 269 960 000	40 000	0.000 8
100		60	5 269 920 000	80 000	0.001 5
85	10.2	20	5 269 960 000	40 000	0.000 8
115	13.8	20	5 269 880 000	120 000	0.002 3

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* 802.11an HT40_5 470 Band

- 5 510 Band

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (Hz)	Frequency Error (Hz)	Frequency Error (%)
100		20	5 509 960 000	40 000	0.000 7
100		0	5 510 040 000	-40 000	-0.000 7
100		10	5 510 000 000	0	0.000 0
100		20	5 509 960 000	40 000	0.000 7
100	12.0	30	5 509 960 000	40 000	0.000 7
100		40	5 510 040 000	-40 000	-0.000 7
100		50	5 510 000 000	0	0.000 0
100		60	5 509 960 000	40 000	0.000 7
85	10.2	20	5 510 000 000	0	0.000 0
115	13.8	20	5 509 960 000	40 000	0.000 7

* 802.11an HT40_5 725 Band

- 5 755 Band

Voltage (%)	Power (VDC)	Temp. (°C)	Reading Frequency (Hz)	Frequency Error (Hz)	Frequency Error (%)
100		20	5 755 040 000	-40 000	-0.000 7
100		0	5 755 080 000	-80 000	-0.001 4
100		10	5 755 080 000	-80 000	-0.001 4
100		20	5 755 040 000	-40 000	-0.000 7
100	12.0	30	5 755 000 000	0	0.000 0
100		40	5 754 960 000	40 000	0.000 7
100		50	5 755 000 000	0	0.000 0
100		60	5 754 960 000	40 000	0.000 7
85	10.2	20	5 754 960 000	40 000	0.000 7
115	13.8	20	5 754 960 000	40 000	0.000 7

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5.8 DFS(Dynamic Frequency Selection)

5.8.1 Regulation

Transmit Power Control (TPC) and Dynamic Frequency Selection (DFS).

(1) Transmit power control (TPC). U-NII devices operating in the 5.25-5.35 ㎓ band and the 5.47-5.725 ㎓ band shall employ a TPC mechanism. The U-NII device is required to have the capability to operate at least 6 ㏈ below the mean EIRP value of 30 ㏈m. A TPC mechanism is not required for systems with an e.i.r.p. of less than 500 ㎽.

(2) Radar Detection Function of Dynamic Frequency Selection (DFS). U-NII devices operating with any part of its 26 dB emission bandwidth in the 5.25-5.35 ㎓ and 5.47-5.725 ㎓ bands shall employ a DFS radar detection mechanism to detect the presence of radar systems and to avoid co-channel operation with radar systems. Operators shall only use equipment with a DFS mechanism that is turned on when operating in these bands. The device must sense for radar signals at 100 percent of its emission bandwidth. The minimum DFS detection threshold for devices with a maximum e.i.r.p. of 200 ㎽ to 1 ㏔ is −64 ㏈m. For devices that operate with less than 200 ㎽ e.i.r.p. and a power spectral density of less than 10 ㏈m in a 1 MHz band, the minimum detection threshold is −62 ㏈m. The detection threshold is the received power averaged over 1 microsecond referenced to a 0 ㏈i antenna. For the initial channel setting, the manufacturers shall be permitted to provide for either random channel selection or manual channel selection.

(i) Operational Modes. The DFS requirement applies to the following operational modes:

(A) The requirement for channel availability check time applies in the master operational mode.

(B) The requirement for channel move time applies in both the master and slave operational modes.

(ii) Channel Availability Check Time. A U-NII device shall check if there is a radar system already operating on the channel before it can initiate a transmission on a channel and when it has to move to a new channel. The U-NII device may start using the channel if no radar signal with a power level greater than the interference threshold values listed in paragraph (h)(2) of this section, is detected within 60 seconds.

(iii) Channel Move Time. After a radar's presence is detected, all transmissions shall cease on the operating channel within 10 seconds. Transmissions during this period shall consist of normal traffic for a maximum of 200 ms after detection of the radar signal. In addition, intermittent management and control signals can be sent during the remaining time to facilitate vacating the operating channel.

(iv) Non-occupancy Period. A channel that has been flagged as containing a radar system, either by a channel availability check or in-service monitoring, is subject to a non-occupancy period of at least 30 minutes. The non-occupancy period starts at the time when the radar system is detected.

(i) Device Security. All U-NII devices must contain security features to protect against modification of software by unauthorized parties.

5.8.2 Measurement Procedure

The following table from FCC 06-96 lists the applicable requirements for the DFS testing.
The device evaluated in this report is considered a client device without radar detection capability.

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5.8.3 Support Equipment

Product	Manufacture	Model No.	Serial No.	FCCID.
Cisco Aironet IOS Access Point	Cisco	AIR-AP1252AG-K-K9	FGL1439ZOHS	LDK102056

Note. This device was functioned as a Master device during the DFS test.

5.8.4 Test Result

The UUT is a U-NII Device operating in Client mode without radar detection. The radar test signals are injected into the Master Device.

The highest power level within these bands in 19.42 dBm (87.50 ㎽) EIRP in the 5 250 ~ 5 350 ㎒ band and 20.50 dBm (112.20 ㎽) EIRP in the 5 470 ~ 5 725 ㎒ band.

The gain antenna assembly utilized with the master has a gain of 2.99 dBi.

The calibrated conducted DFS detection threshold level is set to -57.5 dBm.(-62 + 1 + 2.99 = -58.01)

802.11a

5 250 Band

Channel Move Time

Frequency (㎒)	Channel Move Time	Limit
5 280	< 10 s	10 s

Channel Closing Time

Frequency (㎒)	Channel Closing Time	Limit
5 280	< 60 ㎳	60 ㎳

Non occupancy period

Frequency (㎒)	Channel Move Time	Limit
5 280	> 1800 s	1800 s

802.11a

5 470 Band

Channel Move Time

Frequency (㎒)	Channel Move Time	Limit
5 520	< 10 s	10 s

Channel Closing Time

Frequency (㎒)	Channel Closing Time	Limit
5 520	< 60 ㎳	60 ㎳

Non occupancy period

Frequency (㎒)	Non occupancy period	Limit
5 520	> 1800 s	1800 s

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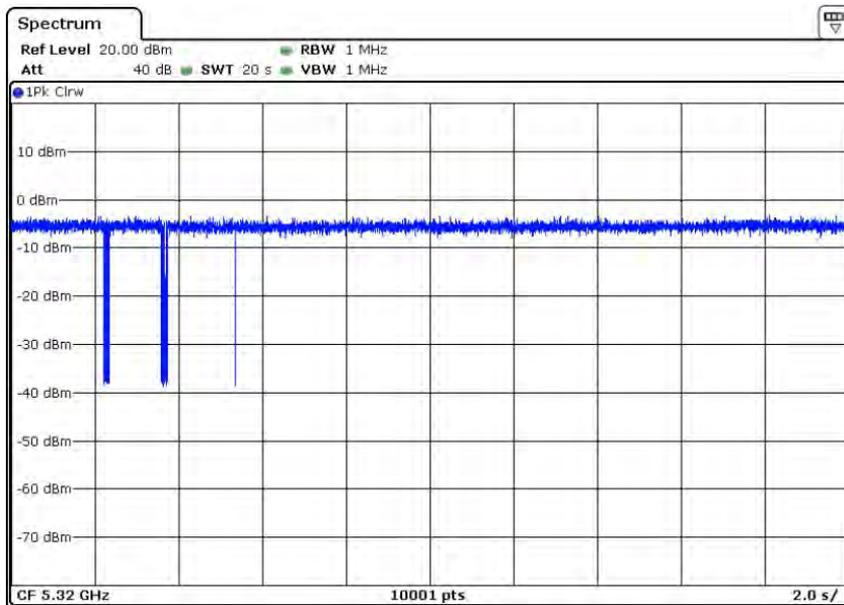
5.8.5 Test Plot

Figure 4. Plot of the DFS

No traffic signal(master signal)
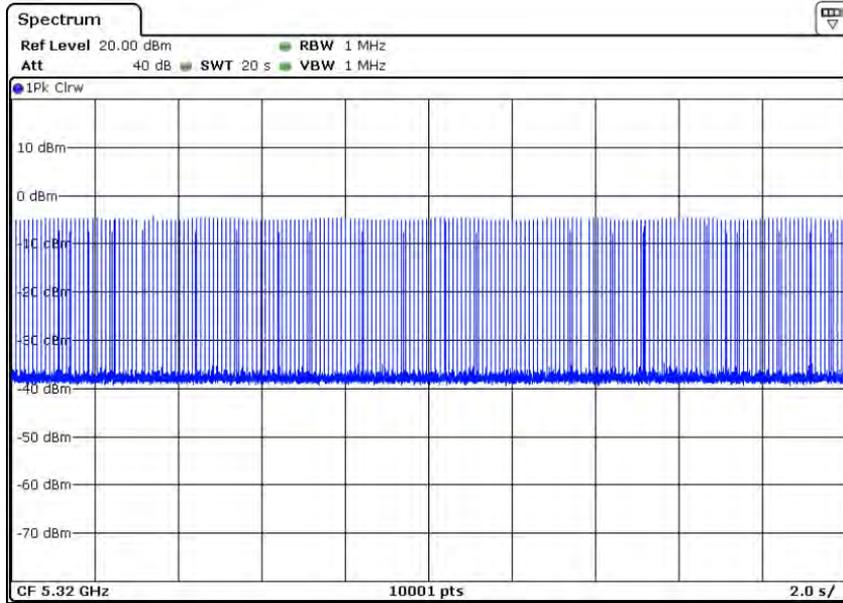
Client(EUT) Data Traffic Signal

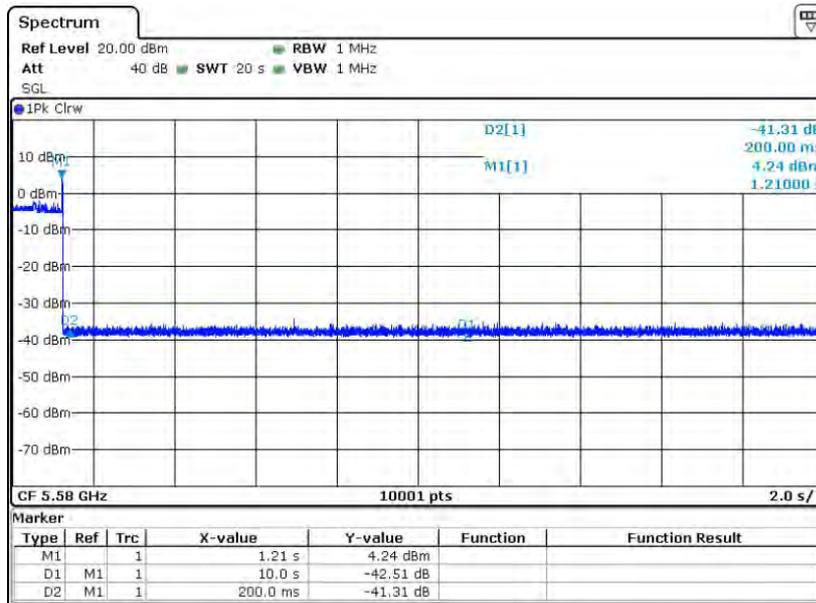**EMC compliance Ltd.**   Page: 178 of 185
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Channel closing time and move time

* 802.11an HT20_5 250 Band
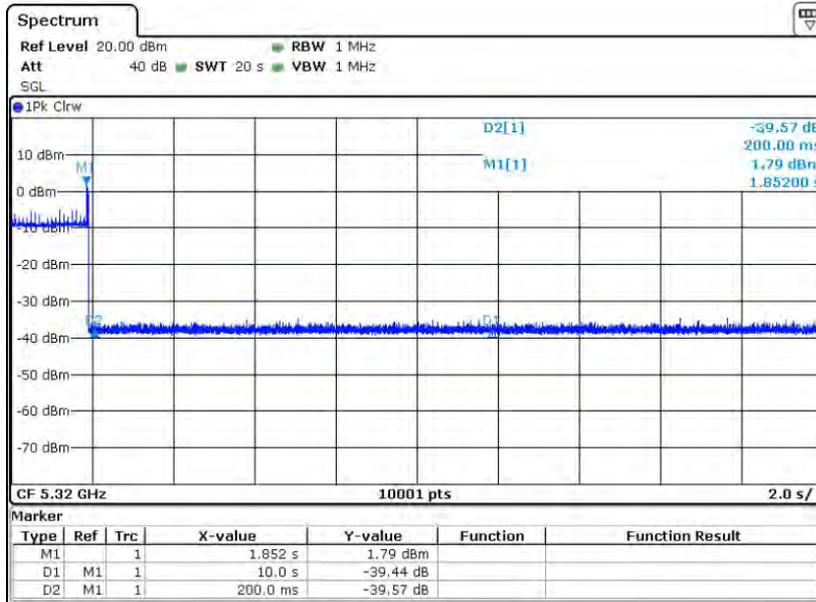
– 5 320 ㎒

* 802.11an HT20_5 470 Band

- 5 580 ㎒

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* 802.11an HT40_5 250 Band

- 5 270 ㎒

* 802.11an HT40_5 470 Band

- 5 510 ㎒

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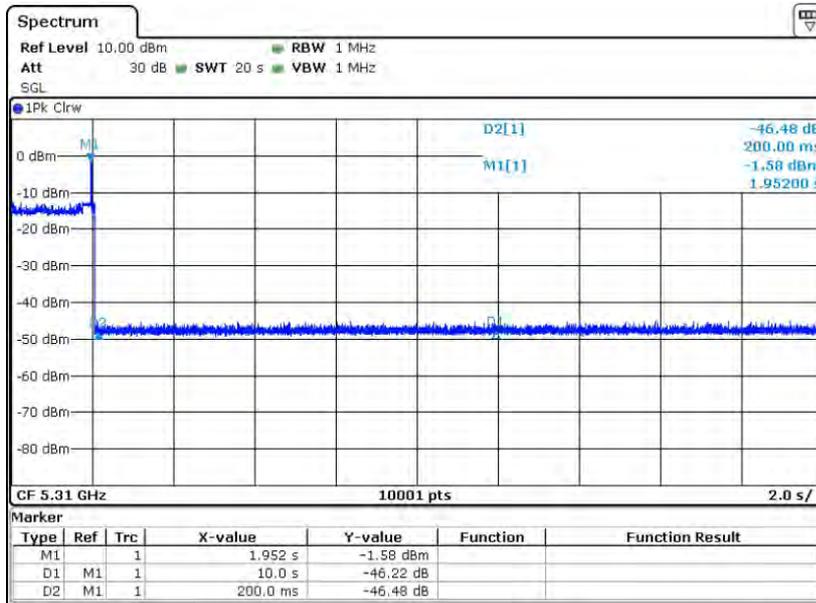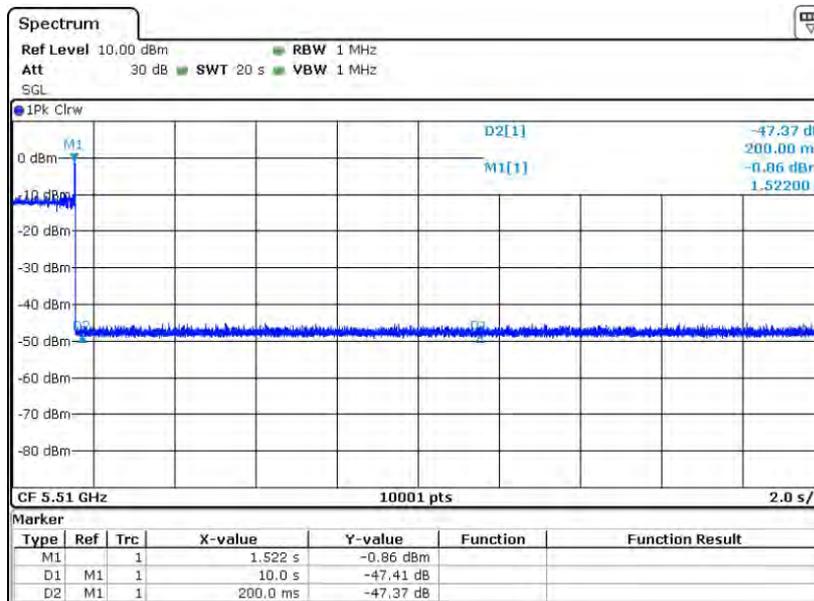
Non occupancy period

* 802.11an HT20_5 250 Band

－ 5 320 ㎒

* 802.11an HT20_5 470 Band

- 5 580 ㎒

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* 802.11an HT40_5 250 Band

– 5 270 ㎒

* 802.11an HT40_5 470 Band

- 5 510 ㎒

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5.9 Conducted Emission

5.9.1 Regulation

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 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency of emission (㎒)	Conducted limit (㏈μV)	
	Qausi-peak	Average
0.15 – 0.5	66 to 56 *	56 to 46 *
0.5 – 5	56	46
5 – 30	60	50

* Decreases with the logarithm of the frequency.

According to §15.107(a), for unintentional device, except for Class A digital devices, line conducted emission limits are the same as the above table.

5.9.2 Measurement Procedure

1. The EUT was placed on a wooden table of size, 1 m by 1.5 m, raised 80 cm in which is located 40 cm away from the vertical wall and 1.5m away from the side wall of the shielded room.
2. Each current-carrying conductor of the EUT power cord was individually connected through a 50Ω/50μH LISN, which is an input transducer to a Spectrum Analyzer or an EMI/Field Intensity Meter, to the input power source.
3. Exploratory measurements were made to identify the frequency of the emission that had the highest amplitude relative to the limit by operating the EUT in a range of typical modes of operation, cable position, and with a typical system equipment configuration and arrangement. Based on the exploratory tests of the EUT, the one EUT cable configuration and arrangement and mode of operation that had produced the emission with the highest amplitude relative to the limit was selected for the final measurement.
4. The final test on all current-carrying conductors of all of the power cords to the equipment that comprises the EUT (but not the cords associated with other non-EUT equipment is the system) was then performed over the frequency range of 0.15 ㎒ to 30 ㎒.
5. The measurements were made with the detector set to PEAK amplitude within a bandwidth of 10 ㎑ or to QUASI-PEAK and AVERAGE within a bandwidth of 9 ㎑. The EUT was in transmitting mode during the measurements.

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http://www.emc2000.co.kr

5.9.3 Test Result

Figure 5. Plot of the Conducted Emission

*Conducted worst-case data : Middle Channel (5 250 Band_2 280 ㎒)
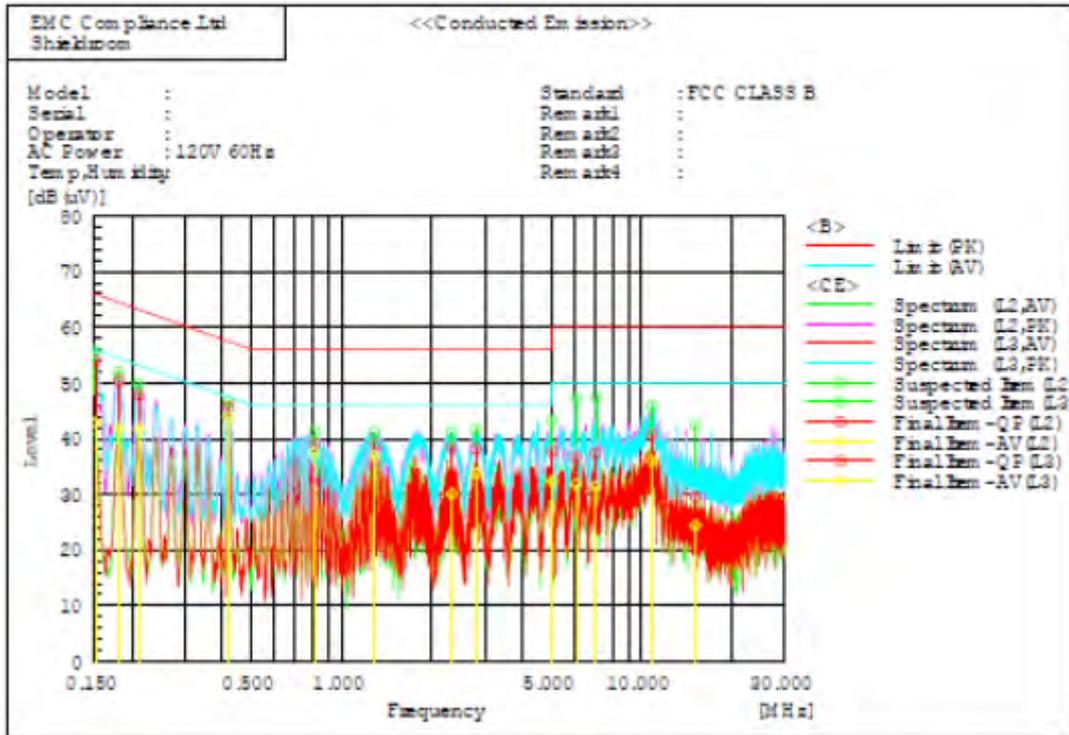
Final Result

--- L2 Phase ---

No.	Frequency [MHz]	Reading QP [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB]	Result QP [dB(uV)]	Result CAV [dB(uV)]	Limit QP [dB(uV)]	Limit AV [dB(uV)]	Margin QP [dB]	Margin CAV [dB]
1	0.15105	43.1	32.0	10.9	54.0	42.9	65.9	55.9	11.9	13.0
2	0.18104	39.7	31.1	10.7	50.4	41.8	64.4	54.4	14.0	12.6
3	0.21081	37.2	31.0	10.7	47.9	41.7	63.2	53.2	15.3	11.5
4	0.81149	28.6	27.0	10.5	39.1	37.5	56.0	46.0	16.9	8.5
5	1.29286	28.8	26.6	10.3	39.1	36.9	56.0	46.0	16.9	9.1
6	2.32723	28.1	19.8	10.3	38.4	30.1	56.0	46.0	17.6	15.9
7	2.79932	27.9	23.5	10.3	38.2	33.8	56.0	46.0	17.8	12.2
8	5.02797	27.1	21.7	10.6	37.7	32.3	60.0	50.0	22.3	17.7
9	6.04077	25.8	21.0	10.8	36.6	31.8	60.0	50.0	23.4	18.2
10	7.04555	26.4	20.5	11.0	37.4	31.5	60.0	50.0	22.6	18.5
11	10.79334	28.8	24.1	12.0	40.8	36.1	60.0	50.0	19.2	13.9
12	15.09251	15.9	10.9	13.5	29.4	24.4	60.0	50.0	30.6	25.6

--- L3 Phase ---

No.	Frequency [MHz]	Reading QP [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB]	Result QP [dB(uV)]	Result CAV [dB(uV)]	Limit QP [dB(uV)]	Limit AV [dB(uV)]	Margin QP [dB]	Margin CAV [dB]
1	0.42038	35.1	33.3	10.5	45.6	43.8	57.4	47.4	11.8	3.6

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6. Test equipment used for test

	Description	Manufacturer	Model No.	Serial No.	Next Cal Date.
■	Temp & humidity chamber	ESPEC CORP.	SH-641	92005476	14.12.23
■	Signal Generator	R&S	SMR40	100007	15.06.10
■	Spectrum Analyzer	R&S	FSV30	100914	15.08.05
■	DC Power Supply	AGILENT	E3632A	MY40004399	15.01.09
■	Vector Signal Generator	R&S	SMBV100A	257566	15.01.07
■	Wideband Power Sensor	R&S	NRP-Z81	100677	15.05.28
■	Horn antenna	SCHWARZBECK	3117	155787	15.02.26
■	Broadband Preamplifier	SCHWARZBECK	BBV9718	233	15.04.22
■	Loop Antenna	R&S	HFH2-Z2	100355	15.06.19
■	Bi-Log Antenna	SCHWARZBECK	VULB9163	552	16.06.14
■	Amplifier	SONOMA INSTRUMENT	310	293004	15.09.25
■	Attenuator	HP	8491A	MY52460424	15.07.23
■	EMI Test Receiver	R&S	ESCI	100001	15.07.14
■	TWO-Line V-Network	R&S	ENV216	101352	15.10.13
■	LINE Impedance Stabilisation Network	Schwarzbeck	NNLK8121	8121-472	15.06.24
■	Horn antenna	ETS.lindgren	3116	86632	15.10.20
■	Broadband Preamplifier	SCHWARZBECK	BBV9721	2	15.05.09
■	Power Divider	Aeroflex/ Weinschel,Inc	1580-1	NX375	15.10.14
■	Power Divider	Aeroflex/ Weinschel,Inc	1580-1	RM986	15.04.08
■	Attenuator	HP	8494A	2631A09825	15.10.14
■	Attenuator	HP	8496A	3308A16640	15.10.14
■	Antenna Mast	Innco Systems	MA4000-EP	N/A	-
■	Turn Table	Innco Systems	DT2000	N/A	-

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