TEST REPORT

Eurofins KCTL Co.,Ltd. 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea TEL: 82-70-5008-1021 FAX: 82-505-299-8311 www.kctl.co.kr	Report No.: KR23-SRF0178-B Page (1) of (112)	eurofins | KCTL

1. Client

- Name : Samsung Electronics Co., Ltd.
- Address : 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
- Date of Receipt : 2023-03-14

2. Use of Report : Certification

3. Name of Product / Model : Notebook PC / NP935QNA

4. Manufacturer / Country of Origin : Samsung Electronics Co., Ltd. / Vietnam

5. FCC ID : A3LNP935QNA

6. Date of Test : 2023-04-15 to 2023-05-25

7. Location of Test : ■ Permanent Testing Lab ☐ On Site Testing
(Address:65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea)

8. Test method used : FCC Part 15 Subpart E, 15.407

9. Test Result : Refer to the test result in the test report

	Tested by	Technical Manager
Affirmation	Name : Sunghyun Yoon (Signature)	Name : Seungyong Kim (Signature)

2023-06-05

Eurofins KCTL Co.,Ltd.

REPORT REVISION HISTORY

Date	Revision	Page No
2023-05-26	Originally issued	-
2023-06-01	Updated	4,10,31,73
2023-06-05	Updated	10, 31, 32, 69

Note. The report No. KR23-SRF0178-A is superseded by the report No. KR23-SRF0178-B.

General remarks for test reports

Statement concerning the uncertainty of the measurement systems used for the tests

(may be required by the product standard or client)

☐ **Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:**

Procedure number, issue date and title:

Calculations leading to the reported values are on file with the testing laboratory that conducted the testing.

☒ **Statement not required by the standard or client used for type testing**

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1. General information

Client	:	Samsung Electronics Co., Ltd.
Address	:	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
Manufacturer	:	Samsung Electronics Co., Ltd.
Address	:	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
Factory	:	SAMSUNG ELECTRONICS VIETNAM CO.,LTD.
Address	:	Khu Cong nghiep Ten Phong 1, Yen Trung, Yen Phong, Bac Ning, Vietnam
Laboratory	:	Eurofins KCTL Co.,Ltd.
Address	:	65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea
Accreditations	:	FCC Site Designation No: KR0040, FCC Site Registration No: 687132 VCCI Registration No. : R-20080, G-20078, C-20059, T-20056 CAB Identifier: KR0040 ISED Number: 8035A KOLAS No.: KT231

2. Device information

Equipment under test	:	Notebook PC				
Model	:	NP935QNA				
Modulation technique	:	WIFI (802.11a/ax)	:	OFDM, OFDMA		
Number of channels	:	UNII-5	:	24 ch (20 ㎒), 12 ch (40 ㎒), 6 ch (80 ㎒), 3 ch (160 ㎒)		
		UNII-6	:	5 ch (20 ㎒), 3 ch (40 ㎒), 1 ch (80 ㎒), 1 ch (160 ㎒)		
		UNII-7	:	18 ch (20 ㎒), 8 ch (40 ㎒), 5 ch (80 ㎒), 2 ch (160 ㎒)		
		UNII-8	:	12 ch (20 ㎒), 6 ch (40 ㎒), 2 ch (80 ㎒), 1 ch (160 ㎒)		
Power source	:	DC 11.58 V				
Antenna specification	:	Antenna 1 (Aux)	:	PIFA Antenna		
		Antenna 2 (Main)	:	PIFA Antenna		
Antenna gain	:		Antenna 1 (Aux)			Antenna 2 (Main)
		UNII-5	:	-1.40 dBi	UNII-5	: -3.45 dBi
		UNII-6	:	-3.34 dBi	UNII-6	: -5.54 dBi
		UNII-7	:	-3.52 dBi	UNII-7	: -2.51 dBi
		UNII-8	:	-4.25 dBi	UNII-8	: -2.64 dBi
Frequency range	:	UNII-5	:	5 955 ㎒ ~ 6 415 ㎒		(802.11a/ax_HE20)
		UNII-5	:	5 965 ㎒ ~ 6 405 ㎒		(802.11ax_HE40)
		UNII-5	:	5 985 ㎒ ~ 6 385 ㎒		(802.11ax_HE80)
		UNII-5	:	6 025 ㎒ ~ 6 345 ㎒		(802.11ax_HE160)
		UNII-6	:	6 435 ㎒ ~ 6 515 ㎒		(802.11a/ax_HE20)
		UNII-6	:	6 445 ㎒ ~ 6 525 ㎒		(802.11ax_HE40)
		UNII-6	:	6 465 ㎒		(802.11ax_HE80)
		UNII-6	:	6 505 ㎒		(802.11ax_HE160)
		UNII-7	:	6 535 ㎒ ~ 6 875 ㎒		(802.11a/ax_HE20)
		UNII-7	:	6 565 ㎒ ~ 6 845 ㎒		(802.11ax_HE40)
		UNII-7	:	6 545 ㎒ ~ 6 865 ㎒		(802.11ax_HE80)
		UNII-7	:	6 665 ㎒ ~ 6 825 ㎒		(802.11ax_HE160)
		UNII-8	:	6 895 ㎒ ~ 7 115 ㎒		(802.11a/ax_HE20)
		UNII-8	:	6 885 ㎒ ~ 7 085 ㎒		(802.11ax_HE40)
		UNII-8	:	6 945 ㎒ ~ 7 025 ㎒		(802.11ax_HE80)
		UNII-8	:	6 985 ㎒		(802.11ax_HE160)
Software version	:	NP930QNA.001				
Hardware version	:	REV0.1				
Test device serial No.	:	Conducted	:	KQZZ930W300135V		
	:	Radiated	:	KQZZ930W300364Z, KQZZ930W300219W		
Operation temperature	:	10 ℃ ~ 35 ℃				

Notes.

- This device does not support SISO mode in UNII band.

2.1. Frequency/channel operations

This device contains the following capabilities:
WLAN (11a/b/g/n/ac/ax), Bluetooth (BDR/EDR/BLE)

UNII-5		UNII-6		UNII-7		UNII-8	
Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	Ch.	Frequency (MHz)
1	5 955	97	6 435	117	6 535	189	6 895
45	6 175	105	6 475	149	6 695	209	6 995
93	6 415	113	6 515	185	6 875	233	7 115

Table 2.1.1. 802.11a, ax_HE20 mode

UNII-5		UNII-6		UNII-7		UNII-8	
Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	Ch.	Frequency (MHz)
3	5 965	99	6 445	123	6 565	187	6 885
43	6 165	107	6 485	147	6 685	211	7 005
91	6 405	115	6 525	179	6 845	227	7 085

Table 2.1.2. 802.11ax_HE40 mode

UNII-5		UNII-6		UNII-7		UNII-8	
Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	Ch.	Frequency (MHz)
7	5 985	103	6 465	119	6 545	199	6 945
39	6 145			151	6 705	215	7 025
87	6 385			183	6 865		

Table 2.1.3. 802.11ax_HE80 mode

UNII-5		UNII-6		UNII-7		UNII-8	
Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	Ch.	Frequency (MHz)
15	6 025	111	6 505	143	6 665	207	6 985
47	6 185			175	6 825		
79	6 345						

Table 2.1.4. 802.11ax_HE160 mode

2.2. Simultaneous Tx Condition

The device supports simultaneous transmission operation, which allows for two channels to operate independent of one another in the Bluetooth, 5 ㎓, or 6 ㎓ bands simultaneously on each antenna.

Simultaneous Tx condition – not RSDB

Mode	# of TX	WLAN 5 ㎓		WLAN 6 ㎓		Bluetooth	Report
		ANT 1	ANT 2	ANT 1	ANT 2	ANT 1	
Bluetooth + WLAN	2	O	O	-	-	O	
	2	-	-	O	O	O	√

Notes.
Simultaneous condition was performed as a worst case which is configured as a combination of lowest margin for each mode during radiated spurious emission.

2.3. Test RU offset for tones in each modes

BW (㎒)	Tones (T)	RU offset	Test RU offset		
			Low	Mid	High
20	26	0 ~ 8	0	4	8
	52	37 ~ 40	37	38	40
	106	53 ~ 54	53	-	54
	242	61 / SU	-	61 / -	-
40	26	0 ~ 17	0	9	17
	52	37 ~ 44	37	41	44
	106	53 ~ 56	53	54	56
	242	61 ~ 62	61	-	62
	484	65 / SU	-	65 / -	-
80	26	0 ~ 36	0	18	36
	52	37 ~ 52	37	45	52
	106	53 ~ 60	53	57	60
	242	61 ~ 64	61	62	64
	484	65 ~ 66	65	-	66
	996	67 / SU	-	67 / -	-
160[Note]	26	0 ~ 36	0L	0U	36U
	52	37 ~ 52	37L	37U	52U
	106	53 ~ 60	53L	53U	60U
	242	61 ~ 64	61L	61U	64U
	484	65 ~ 66	65L	65U	66U
	996	67	67L	-	67U
	2x996	68 / SU	-	68 / -	-

Notes.
1. HE160 = HE80(L) + HE80(H)
   Measurement RU offset for HE80(L) and HE80(U) was investigated then worst RU offset of testing offset (L/M/H) was reported.

2.4. Duty Cycle Factor

Test mode		ANT	Tone	Period (ms)	T_{on} time (ms)	Duty cycle		Duty cycle factor (dB)
						(Linear)	(%)	
11a	6Mbps	MIMO	-	1.581	1.464	0.926 0	92.60	0.33
11ax	HE20	MIMO	26T	5.196	5.083	0.978 3	97.83	0.10
			52T	5.182	5.066	0.977 6	97.76	0.10
			106T	2.870	2.767	0.964 1	96.41	0.16
			242T	1.360	1.247	0.916 9	91.69	0.38
			SU	1.247	1.148	0.920 6	92.06	0.36
	HE40	MIMO	26T	5.203	5.041	0.968 9	96.89	0.14
			52T	5.171	5.024	0.971 6	97.16	0.13
			106T	2.871	2.750	0.957 9	95.79	0.19
			242T	1.346	1.246	0.925 7	92.57	0.34
			484T	0.757	0.658	0.869 2	86.92	0.61
			SU	0.706	0.608	0.861 2	86.12	0.65
	HE80	MIMO	26T	5.186	5.050	0.973 8	97.38	0.12
			52T	5.194	5.022	0.966 9	96.69	0.15
			106T	2.887	2.740	0.949 1	94.91	0.23
			242T	1.352	1.240	0.917 2	91.72	0.38
			484T	0.765	0.659	0.861 4	86.14	0.65
			996T	0.722	0.622	0.861 5	86.15	0.65
			SU	0.427	0.327	0.765 8	76.58	1.16
	HE160	MIMO	26T	5.190	5.050	0.973 0	97.30	0.12
			52T	5.186	5.037	0.971 3	97.13	0.13
			106T	2.863	2.732	0.954 2	95.42	0.20
			242T	1.360	1.231	0.905 1	90.51	0.43
			484T	0.760	0.658	0.865 8	86.58	0.63
			996T	0.724	0.622	0.859 1	85.91	0.66
			2x996T	0.430	0.331	0.769 8	76.98	1.14
			SU	0.697	0.598	0.858 0	85.80	0.67

Notes.

1. Duty cycle (Linear) = T_{on} time / Period
2. DCF(Duty cycle factor) = 10log(1/duty cycle)
3. DCF is not compensated to average result if duty cycle is more than 98%
4. Please refer to Appendix B for plots,

3. Antenna requirement

Requirement of FCC part section 15.203

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

- The transmitter has permanently attached PIFA Antenna (Internal antenna) on board.
- The E.U.T Complies with the requirement of §15.203, §15.407.

3.1 Antenna information

Mode	CDD	MIMO
	ANT 1 + 2	ANT 1 + 2
802.11a	√	√
802.11ax HE20	√	√
802.11ax HE40	√	√
802.11ax HE80	√	√
802.11ax HE160	√	√

√ = Support, ✕ = Not support

3.2 Directional Gain Calculations

According to clause F), 2), d), (i) of KDB 662911 D01 Multiple Transmitter Output, Directional gain may be calculated by using the formulas as below.

Directional Antenna Gain

Band	ANT 1 Gain (dBi)	ANT 2 Gain (dBi)	Directional Gain (dBi)
UNII 5	-1.40	-3.45	0.65
UNII 6	-3.34	-5.54	-1.36
UNII 7	-3.52	-2.51	0.01
UNII 8	-4.25	-2.64	-0.40

Note.

Unequal antenna gains, with equal transmit powers. For antenna gains given by G_1, G_2, …, G_N dBi

Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2 / N_{ANT}]$ dBi

Sample calculation

In case of UNII 5, directional gain = $10 \log[(10^{-1.40/20} + 10^{-3.45/20})^2 / 2] = 0.65$ dBi

4. Summary of tests

FCC Part section(s)	Parameter	Test Condition	Test results
15.407(a)(8)	Maximum e.i.r.p.	Conducted	Pass
15.407(a)(8)	Maximum e.i.r.p. spectral density		Pass
15.407(a)(10)	26 dB Bandwidth & 99% Occupied Bandwidth		Pass
15.407(d)(6)	Contention Based Protocol		Pass
15.407(b)(7)	In-Band Emissions		Pass
15.407(b)(9)	AC Conducted Emissions		Pass
15.407(b)(6)	Undesirable Emissions	Radiated	Pass
15.205(a), 15.209(a)	General Field Strength Limits (Restricted Bands and Radiated Emission Limits		Pass

Notes:

1. All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst case emissions.
2. According to exploratory test no any obvious emission were detected from 9 ㎑ to 30 ㎒. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30 m open field 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.
3. All the radiated tests have been performed two modes (Notebook and Tablet mode) and the fundamental of the EUT was investigated in three orthogonal orientations X, Y and Z.
   Worst case: Tablet mode, Z axis
4. All configurations have been performed (stand-alone, stand-alone with TA, with accessories) and the worst case is Stand-alone with TA.
5. The test procedure(s) in this report were performed in accordance as following.
   - ANSI C63.10-2013
   - KDB 662911 D01 v02r01
   - KDB 789033 D02 v02r01
   - KDB 987594 D02 v01r01
6. Based on the baseline scan, the worst-case data rates were:
   802.11a mode: 6Mbps
   802.11ax HE20 mode: MCS0
   802.11ax HE40 mode: MCS0
   802.11ax HE80 mode: MCS0
   802.11ax HE160 mode: MCS0

5. Measurement uncertainty

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.10-2013.

All measurement uncertainty values are shown with a coverage factor of k=2 to indicated a 95 % level of confidence. The measurement data shown herein meets of exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and thus, can be compared directly to specified limits to determine compliance.

Parameter	Expanded uncertainty (±)	
Conducted RF power	0.9 dB	
Conducted spurious emissions	1.3 dB	
Radiated spurious emissions	Below 30 ㎒:	2.3 dB
	30 ㎒ ~ 1 000 ㎒	2.5 dB
	1 000 ㎒ ~ 18 000 ㎒	4.7 dB
	Above 18 000 ㎒	4.8 dB
Conducted emissions	9 ㎑ ~ 150 ㎑	2.7 dB
	150 ㎑ ~ 30 ㎒	2.7 dB

6. Measurement results explanation example

The offset level is set in the spectrum analyzer to compensate the RF cable loss factor between EUT conducted output port and spectrum analyzer.
With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

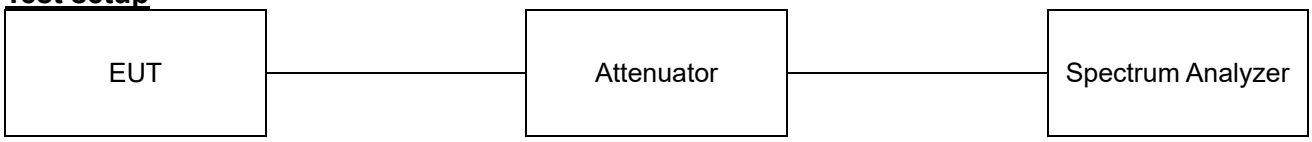
Frequency (㎒)	Factor(㏈)	Frequency (㎒)	Factor(㏈)
30	10.21	9 000	12.52
50	10.29	10 000	12.74
100	10.37	11 000	12.91
200	10.47	12 000	12.55
300	10.59	13 000	12.97
400	10.65	14 000	12.45
500	10.65	15 000	12.80
600	10.72	16 000	12.97
700	10.74	17 000	13.18
800	10.77	18 000	13.15
900	10.83	19 000	13.68
1 000	10.79	20 000	13.23
2 000	11.15	21 000	13.22
3 000	10.99	22 000	13.18
4 000	10.75	23 000	13.81
5 000	11.63	24 000	13.35
6 000	11.79	25 000	13.53
7 000	12.51	26 000	13.65
8 000	12.79	26 500	14.18

Notes:
Offset(㏈) = RF cable loss(㏈) + Attenuator(㏈)

7. Test results

7.1. Maximum e.i.r.p.

Test setup



Limit

According to §15.407(a)(8)

Band	Maximum e.i.r.p. limit
UNII-5, 6, 7, 8	< 24 dBm

Test procedure

ANSI C63.10-2013-Section 12.3.2.4 or 12.3.3.1
KDB 789033 D02 v02r01 - Section E.2.d) or E.3.a)
KDB 662911 D01 v02r01 – Section E).1) and Section F)

Test settings

Used test method is Section E.2.d).

◆ **KDB 789033 D02 v02r01**

Section E.2.d)

Method SA-2 (trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction):

(i) Measure the duty cycle, x, of the transmitter output signal as described in II.B..
(ii) Set span to encompass the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal.
(iii) Set RBW = 1 ㎒
(iv) Set RBW ≥ 3 ㎒
(v) Number of points in sweep ≥ 2×span/RBW. (This ensures that bin-to-bin spacing is ≤ RBW/2, so that narrowband signals are not lost between frequency bins.)
(vi) Sweep time = auto.
(vii) Detector = power averaging (rms), if available. Otherwise use sample detector mode.
(viii) Do not use sweep triggering. Allow the sweep to “free run.”
(ix) Trace average at least 100 traces in power averaging (rms) mode; however, the number of traces to be averaged shall be increased above 100 as needed to ensure that the average accurately represents the true average over the on and off periods of the transmitter.
(x) Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument’s band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at 1 ㎒ intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal.
(xi) Add 10 log (1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission). For example, add 10 log(1/0,25) = 6 ㏈ if the duty cycle is 25%.

Test results

802.11a in the UNII-5 band

Channel	Frequency (㎒)	Average power ANT 1 (dBm)	Average power ANT 2 (dBm)	Average power MIMO (dBm)	Directional ANT gain (dBi)	Max e.i.r.p. (dBm)	Limit (dBm)
1	5 955	-2.47	-0.46	1.99	0.65	2.64	24
45	6 175	-1.34	-1.90	1.73	0.65	2.38	
93	6 415	-3.34	-0.21	1.84	0.65	2.49	

802.11a in the UNII-6 band

Channel	Frequency (㎒)	Average power ANT 1 (dBm)	Average power ANT 2 (dBm)	Average power MIMO (dBm)	Directional ANT gain (dBi)	Max e.i.r.p. (dBm)	Limit (dBm)
97	6 435	-3.28	-0.16	1.89	-1.36	0.53	24
105	6 475	-3.33	-0.62	1.57	-1.36	0.21	
113	6 515	-2.86	-0.80	1.63	-1.36	0.27	

802.11a in the UNII-7 band

Channel	Frequency (㎒)	Average power ANT 1 (dBm)	Average power ANT 2 (dBm)	Average power MIMO (dBm)	Directional ANT gain (dBi)	Max e.i.r.p. (dBm)	Limit (dBm)
117	6 535	-2.20	-0.87	1.86	0.01	1.87	24
149	6 695	-1.26	-2.27	1.60	0.01	1.61	
185	6 875	-1.07	-2.60	1.57	0.01	1.58	

802.11a in the UNII-8 band

Channel	Frequency (㎒)	Average power ANT 1 (dBm)	Average power ANT 2 (dBm)	Average power MIMO (dBm)	Directional ANT gain (dBi)	Max e.i.r.p. (dBm)	Limit (dBm)
189	6 895	-1.32	-1.40	1.98	-0.40	1.58	24
209	6 995	-1.90	-0.58	2.15	-0.40	1.75	
233	7 115	-1.37	-0.94	2.19	-0.40	1.79	

Notes:

1. Average power_MIMO(㏈m) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (㏈m) + DCF(㏈)
2. e.i.r.p. Calculation: e.i.r.p. (㏈m) = Average power_MIMO (㏈m) + Antenna gain (㏈i)

802.11ax HE20 in the UNII-5 band

Channel	Frequency (㎒)	Tones	RU offset	Average power ANT 1 (dBm)	Average power ANT 2 (dBm)	Average power MIMO (dBm)	Directional ANT gain (dBi)	Max e.i.r.p. (dBm)	Limit (dBm)
1	5 955	26T	0	-11.28	-9.29	-7.06	0.65	-6.41	24
			4	-11.97	-9.68	-7.57	0.65	-6.92	
			8	-11.48	-9.24	-7.11	0.65	-6.46	
		52T	37	-8.47	-6.37	-4.18	0.65	-3.53	
			38	-8.69	-6.55	-4.38	0.65	-3.73	
			40	-8.59	-6.34	-4.21	0.65	-3.56	
		106T	53	-4.52	-2.39	-0.16	0.65	0.49	
			54	-4.61	-2.39	-0.19	0.65	0.46	
		242T	61	-2.82	-0.83	1.68	0.65	2.33	
		SU	-	4.75	4.51	8.00	0.65	8.65	
45	6 175	26T	0	-10.22	-10.87	-7.42	0.65	-6.77	
			4	-10.73	-11.27	-7.88	0.65	-7.23	
			8	-10.26	-10.90	-7.46	0.65	-6.81	
		52T	37	-7.48	-7.99	-4.62	0.65	-3.97	
			38	-7.64	-8.07	-4.74	0.65	-4.09	
			40	-7.42	-8.00	-4.59	0.65	-3.94	
		106T	53	-3.61	-3.97	-0.62	0.65	0.03	
			54	-3.57	-4.06	-0.64	0.65	0.01	
		242T	61	-1.74	-2.15	1.45	0.65	2.10	
		SU	-	5.05	4.83	8.31	0.65	8.96	
93	6 415	26T	0	-11.86	-8.56	-6.79	0.65	-6.14	
			4	-12.72	-9.18	-7.49	0.65	-6.84	
			8	-12.62	-8.92	-7.28	0.65	-6.63	
		52T	37	-9.07	-5.74	-3.98	0.65	-3.33	
			38	-9.55	-6.04	-4.34	0.65	-3.69	
			40	-9.62	-6.04	-4.36	0.65	-3.71	
		106T	53	-5.48	-2.57	-0.62	0.65	0.03	
			54	-5.82	-2.75	-0.85	0.65	-0.20	
		242T	61	-3.59	-0.38	1.70	0.65	2.35	
		SU	-	4.05	4.52	7.66	0.65	8.31	

Notes:

1. Average power_MIMO(㏈m) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (㏈m) + DCF(㏈)
2. e.i.r.p. Calculation: e.i.r.p. (㏈m) = Average power_MIMO (㏈m) + Antenna gain (㏈i)

802.11ax HE20 in the UNII-6 band

Channel	Frequency (㎒)	Tones	RU offset	Average power ANT 1 (dBm)	Average power ANT 2 (dBm)	Average power MIMO (dBm)	Directional ANT gain (dBi)	Max e.i.r.p. (dBm)	Limit (dBm)
97	6 435	26T	0	-12.23	-8.40	-6.80	-1.36	-8.16	24
			4	-12.91	-9.02	-7.43	-1.36	-8.79	
			8	-12.58	-8.79	-7.17	-1.36	-8.53	
		52T	37	-9.40	-5.58	-3.97	-1.36	-5.33	
			38	-9.85	-5.91	-4.34	-1.36	-5.70	
			40	-9.71	-5.94	-4.32	-1.36	-5.68	
		106T	53	-5.52	-2.00	-0.24	-1.36	-1.60	
			54	-5.68	-2.24	-0.46	-1.36	-1.82	
		242T	61	-3.75	-0.27	1.72	-1.36	0.36	
		SU	-	4.17	4.87	7.90	-1.36	6.54	
105	6 475	26T	0	-12.15	-9.21	-7.33	-1.36	-8.69	
			4	-12.65	-9.75	-7.85	-1.36	-9.21	
			8	-12.37	-9.47	-7.57	-1.36	-8.93	
		52T	37	-9.11	-6.39	-4.43	-1.36	-5.79	
			38	-9.44	-6.65	-4.71	-1.36	-6.07	
			40	-9.45	-6.61	-4.69	-1.36	-6.05	
		106T	53	-5.35	-2.44	-0.49	-1.36	-1.85	
			54	-5.56	-2.60	-0.66	-1.36	-2.02	
		242T	61	-3.61	-0.73	1.45	-1.36	0.09	
		SU	-	4.41	5.01	8.09	-1.36	6.73	
113	6 515	26T	0	-11.82	-9.25	-7.24	-1.36	-8.60	
			4	-12.29	-9.99	-7.88	-1.36	-9.24	
			8	-11.69	-9.67	-7.45	-1.36	-8.81	
		52T	37	-8.94	-6.46	-4.42	-1.36	-5.78	
			38	-9.20	-6.80	-4.73	-1.36	-6.09	
			40	-8.85	-6.78	-4.58	-1.36	-5.94	
		106T	53	-5.12	-2.54	-0.47	-1.36	-1.83	
			54	-5.02	-2.86	-0.64	-1.36	-2.00	
		242T	61	-3.24	-0.93	1.46	-1.36	0.10	
		SU	-	4.91	4.93	8.29	-1.36	6.93	

Notes:

1. Average power_MIMO(㏈m) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (㏈m) + DCF(㏈)
2. e.i.r.p. Calculation: e.i.r.p. (㏈m) = Average power_MIMO (㏈m) + Antenna gain (㏈i)

802.11ax HE20 in the UNII-7 band

Channel	Frequency (㎒)	Tones	RU offset	Average power ANT 1 (dBm)	Average power ANT 2 (dBm)	Average power MIMO (dBm)	Directional ANT gain (dBi)	Max e.i.r.p. (dBm)	Limit (dBm)
117	6 535	26T	0	-11.30	-9.86	-7.41	0.01	-7.40	24
			4	-11.65	-10.33	-7.83	0.01	-7.82	
			8	-11.18	-9.89	-7.38	0.01	-7.37	
		52T	37	-8.42	-7.04	-4.57	0.01	-4.56	
			38	-8.59	-7.28	-4.78	0.01	-4.77	
			40	-8.30	-7.02	-4.50	0.01	-4.49	
		106T	53	-4.57	-3.10	-0.60	0.01	-0.59	
			54	-4.49	-3.09	-0.56	0.01	-0.55	
		242T	61	-2.68	-1.33	1.44	0.01	1.45	
		SU	-	4.97	4.64	8.18	0.01	8.19	
149	6 695	26T	0	-9.12	-10.15	-6.49	0.01	-6.48	
			4	-9.57	-10.52	-6.91	0.01	-6.90	
			8	-9.20	-10.18	-6.55	0.01	-6.54	
		52T	37	-6.28	-7.33	-3.66	0.01	-3.65	
			38	-6.47	-7.47	-3.83	0.01	-3.82	
			40	-6.37	-7.32	-3.71	0.01	-3.70	
		106T	53	-2.34	-3.36	0.35	0.01	0.36	
			54	-2.44	-3.40	0.28	0.01	0.29	
		242T	61	-1.55	-2.55	1.37	0.01	1.38	
		SU	-	5.02	4.58	8.18	0.01	8.19	
185	6 875	26T	0	-8.80	-10.41	-6.42	0.01	-6.41	
			4	-9.48	-10.81	-6.98	0.01	-6.97	
			8	-9.22	-10.25	-6.59	0.01	-6.58	
		52T	37	-6.11	-7.54	-3.66	0.01	-3.65	
			38	-6.47	-7.64	-3.91	0.01	-3.90	
			40	-6.43	-7.38	-3.77	0.01	-3.76	
		106T	53	-2.23	-3.54	0.33	0.01	0.34	
			54	-2.44	-3.52	0.22	0.01	0.23	
		242T	61	-1.50	-2.74	1.31	0.01	1.32	
		SU	-	5.09	3.72	7.83	0.01	7.84	

Notes:

1. Average power_MIMO(㏈m) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (㏈m) + DCF(㏈)
2. e.i.r.p. Calculation: e.i.r.p. (㏈m) = Average power_MIMO (㏈m) + Antenna gain (㏈i)

802.11ax HE20 in the UNII-8 band

Channel	Frequency (㎒)	Tones	RU offset	Average power ANT 1 (dBm)	Average power ANT 2 (dBm)	Average power MIMO (dBm)	Directional ANT gain (dBi)	Max e.i.r.p. (dBm)	Limit (dBm)
189	6 895	26T	0	-9.99	-10.57	-7.16	-0.40	-7.56	24
			4	-10.60	-10.84	-7.61	-0.40	-8.01	
			8	-10.26	-10.11	-7.07	-0.40	-7.47	
		52T	37	-7.39	-7.61	-4.39	-0.40	-4.79	
			38	-7.67	-7.62	-4.53	-0.40	-4.93	
			40	-7.49	-7.25	-4.26	-0.40	-4.66	
		106T	53	-3.42	-3.56	-0.32	-0.40	-0.72	
			54	-3.58	-3.37	-0.30	-0.40	-0.70	
		242T	61	-1.70	-1.63	1.73	-0.40	1.33	
		SU	-	5.12	3.81	7.88	-0.40	7.48	
209	6 995	26T	0	-10.78	-9.43	-6.94	-0.40	-7.34	
			4	-11.28	-10.01	-7.49	-0.40	-7.89	
			8	-11.11	-9.51	-7.13	-0.40	-7.53	
		52T	37	-8.01	-6.61	-4.14	-0.40	-4.54	
			38	-8.47	-6.76	-4.42	-0.40	-4.82	
			40	-8.37	-6.66	-4.32	-0.40	-4.72	
		106T	53	-4.18	-2.64	-0.17	-0.40	-0.57	
			54	-4.37	-2.77	-0.33	-0.40	-0.73	
		242T	61	-2.44	-0.88	1.80	-0.40	1.40	
		SU	-	4.50	5.43	8.36	-0.40	7.96	
233	7 115	26T	0	-9.90	-9.70	-6.69	-0.40	-7.09	
			4	-10.52	-10.24	-7.27	-0.40	-7.67	
			8	-10.07	-9.76	-6.80	-0.40	-7.20	
		52T	37	-7.25	-6.87	-3.95	-0.40	-4.35	
			38	-7.67	-7.06	-4.24	-0.40	-4.64	
			40	-7.32	-6.91	-4.00	-0.40	-4.40	
		106T	53	-3.33	-2.92	0.05	-0.40	-0.35	
			54	-3.30	-2.98	0.03	-0.40	-0.37	
		242T	61	-1.61	-1.15	2.02	-0.40	1.62	
		SU	-	5.47	4.44	8.36	-0.40	7.96	

Notes:

1. Average power_MIMO(dBm) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (dBm) + DCF(dB)
2. e.i.r.p. Calculation: e.i.r.p. (dBm) = Average power_MIMO (dBm) + Antenna gain (dBi)

802.11ax HE40 in the UNII-5 band

Channel	Frequency (㎒)	Tones	RU offset	Average power ANT 1 (dBm)	Average power ANT 2 (dBm)	Average power MIMO (dBm)	Directional ANT gain (dBi)	Max e.i.r.p. (dBm)	Limit (dBm)
3	5 965	26T	0	-11.44	-9.99	-7.50	0.65	-6.85	24
			9	-11.81	-10.26	-7.82	0.65	-7.17	
			17	-11.41	-10.22	-7.62	0.65	-6.97	
		52T	37	-8.32	-6.96	-4.45	0.65	-3.80	
			41	-8.67	-7.16	-4.71	0.65	-4.06	
			44	-8.34	-7.09	-4.53	0.65	-3.88	
		106T	53	-4.39	-2.97	-0.42	0.65	0.23	
			54	-4.60	-3.13	-0.60	0.65	0.05	
			56	-4.47	-3.14	-0.55	0.65	0.10	
		242T	61	-2.80	-1.53	1.23	0.65	1.88	
			62	-2.85	-1.67	1.13	0.65	1.78	
		484T	65	-3.00	-1.78	1.27	0.65	1.92	
		SU	-	4.39	4.15	7.93	0.65	8.58	
43	6 165	26T	0	-10.26	-10.68	-7.31	0.65	-6.66	
			9	-10.74	-10.81	-7.62	0.65	-6.97	
			17	-10.45	-10.66	-7.40	0.65	-6.75	
		52T	37	-6.28	-6.69	-3.34	0.65	-2.69	
			41	-6.70	-6.74	-3.58	0.65	-2.93	
			44	-6.47	-6.55	-3.37	0.65	-2.72	
		106T	53	-3.35	-3.63	-0.29	0.65	0.36	
			54	-3.67	-3.67	-0.47	0.65	0.18	
			56	-3.58	-3.62	-0.40	0.65	0.25	
		242T	61	-1.68	-1.82	1.60	0.65	2.25	
			62	-1.85	-1.81	1.52	0.65	2.17	
		484T	65	-1.90	-2.00	1.67	0.65	2.32	
		SU	-	4.76	4.28	8.19	0.65	8.84	
91	6 405	26T	0	-11.26	-8.66	-6.62	0.65	-5.97	
			9	-11.78	-9.11	-7.09	0.65	-6.44	
			17	-12.21	-9.25	-7.33	0.65	-6.68	
		52T	37	-8.29	-5.70	-3.66	0.65	-3.01	
			41	-8.66	-6.07	-4.03	0.65	-3.38	
			44	-9.03	-6.12	-4.20	0.65	-3.55	
		106T	53	-5.20	-2.16	-0.22	0.65	0.43	
			54	-5.38	-2.51	-0.51	0.65	0.14	
			56	-5.58	-2.67	-0.69	0.65	-0.04	
		242T	61	-2.80	-0.15	2.07	0.65	2.72	
			62	-3.20	-0.41	1.77	0.65	2.42	
		484T	65	-3.20	-0.44	2.02	0.65	2.67	
		SU	-	3.71	4.14	7.59	0.65	8.24	

Notes:

1. Average power_MIMO(㏈m) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (㏈m) + DCF(㏈)
2. e.i.r.p. Calculation: e.i.r.p. (㏈m) = Average power_MIMO (㏈m) + Antenna gain (㏈i)

802.11ax HE40 in the UNII-6 band

Channel	Frequency (㎒)	Tones	RU offset	Average power ANT 1 (dBm)	Average power ANT 2 (dBm)	Average power MIMO (dBm)	Directional ANT gain (dBi)	Max e.i.r.p. (dBm)	Limit (dBm)
99	6 445	26T	0	-11.69	-8.10	-6.38	-1.36	-7.74	24
			9	-12.11	-8.72	-6.94	-1.36	-8.30	
			17	-11.76	-8.63	-6.77	-1.36	-8.13	
		52T	37	-8.58	-4.96	-3.26	-1.36	-4.62	
			41	-8.91	-5.58	-3.79	-1.36	-5.15	
			44	-8.61	-5.56	-3.68	-1.36	-5.04	
		106T	53	-4.70	-1.37	0.48	-1.36	-0.88	
			54	-4.94	-1.73	0.16	-1.36	-1.20	
			56	-4.66	-1.87	0.16	-1.36	-1.20	
		242T	61	-4.10	-0.74	1.25	-1.36	-0.11	
			62	-4.08	-1.09	1.02	-1.36	-0.34	
		484T	65	-4.24	-1.19	1.17	-1.36	-0.19	
		SU	-	3.67	4.33	7.67	-1.36	6.31	
107	6 485	26T	0	-11.60	-8.66	-6.74	-1.36	-8.10	
			9	-12.15	-9.30	-7.34	-1.36	-8.70	
			17	-12.38	-9.60	-7.62	-1.36	-8.98	
		52T	37	-8.54	-5.71	-3.76	-1.36	-5.12	
			41	-9.06	-6.25	-4.29	-1.36	-5.65	
			44	-9.23	-6.47	-4.49	-1.36	-5.85	
		106T	53	-4.60	-1.99	0.10	-1.36	-1.26	
			54	-4.90	-2.30	-0.21	-1.36	-1.57	
			56	-5.21	-2.77	-0.62	-1.36	-1.98	
		242T	61	-3.00	-0.41	1.84	-1.36	0.48	
			62	-3.41	-0.93	1.35	-1.36	-0.01	
		484T	65	-3.32	-0.83	1.72	-1.36	0.36	
		SU	-	4.52	4.58	8.21	-1.36	6.85	
115	6 525	26T	0	-11.29	-8.82	-6.73	-1.36	-8.09	
			9	-11.35	-9.45	-7.15	-1.36	-8.51	
			17	-10.92	-9.31	-6.89	-1.36	-8.25	
		52T	37	-8.22	-5.87	-3.75	-1.36	-5.11	
			41	-8.21	-6.36	-4.05	-1.36	-5.41	
			44	-7.80	-6.20	-3.79	-1.36	-5.15	
		106T	53	-4.46	-1.97	0.16	-1.36	-1.20	
			54	-4.47	-2.35	-0.08	-1.36	-1.44	
			56	-3.99	-2.27	0.15	-1.36	-1.21	
		242T	61	-2.67	-0.39	1.97	-1.36	0.61	
			62	-2.40	-0.58	1.95	-1.36	0.59	
		484T	65	-2.72	-0.74	2.00	-1.36	0.64	
		SU	-	4.56	4.46	8.17	-1.36	6.81	

Notes:

1. Average power_MIMO(dBm) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (dBm) + DCF(dB)
2. e.i.r.p. Calculation: e.i.r.p. (dBm) = Average power_MIMO (dBm) + Antenna gain (dBi)

802.11ax HE40 in the UNII-7 band

Channel	Frequency (㎒)	Tones	RU offset	Average power ANT 1 (dBm)	Average power ANT 2 (dBm)	Average power MIMO (dBm)	Directional ANT gain (dBi)	Max e.i.r.p. (dBm)	Limit (dBm)
123	6 565	26T	0	-10.56	-9.58	-6.89	0.01	-6.88	24
			9	-11.16	-10.25	-7.53	0.01	-7.52	
			17	-11.03	-10.57	-7.64	0.01	-7.63	
		52T	37	-7.53	-6.39	-3.78	0.01	-3.77	
			41	-8.07	-7.13	-4.43	0.01	-4.42	
			44	-7.99	-7.40	-4.54	0.01	-4.53	
		106T	53	-3.75	-2.48	0.13	0.01	0.14	
			54	-4.07	-2.91	-0.25	0.01	-0.24	
			56	-4.23	-3.40	-0.59	0.01	-0.58	
		242T	61	-2.07	-1.00	1.85	0.01	1.86	
			62	-2.41	-1.59	1.37	0.01	1.38	
		484T	65	-2.42	-1.53	1.67	0.01	1.68	
		SU	-	4.79	4.41	8.26	0.01	8.27	
147	6 685	26T	0	-10.08	-10.95	-7.34	0.01	-7.33	
			9	-9.89	-10.94	-7.23	0.01	-7.22	
			17	-9.82	-10.70	-7.09	0.01	-7.08	
		52T	37	-6.95	-7.99	-4.30	0.01	-4.29	
			41	-6.80	-7.89	-4.17	0.01	-4.16	
			44	-6.73	-7.57	-3.99	0.01	-3.98	
		106T	53	-2.92	-3.96	-0.21	0.01	-0.20	
			54	-2.85	-3.92	-0.15	0.01	-0.14	
			56	-2.77	-3.68	0.00	0.01	0.01	
		242T	61	-2.22	-3.13	0.70	0.01	0.71	
			62	-2.11	-2.90	0.86	0.01	0.87	
		484T	65	-2.36	-3.32	0.81	0.01	0.82	
		SU	-	4.62	4.68	8.31	0.01	8.32	
179	6 845	26T	0	-8.91	-10.57	-6.51	0.01	-6.50	
			9	-9.14	-10.55	-6.64	0.01	-6.63	
			17	-9.12	-10.44	-6.58	0.01	-6.57	
		52T	37	-5.85	-7.47	-3.44	0.01	-3.43	
			41	-6.05	-7.52	-3.58	0.01	-3.57	
			44	-6.10	-7.39	-3.56	0.01	-3.55	
		106T	53	-1.93	-3.44	0.58	0.01	0.59	
			54	-2.13	-3.44	0.46	0.01	0.47	
			56	-2.17	-3.52	0.41	0.01	0.42	
		242T	61	-1.20	-2.62	1.50	0.01	1.51	
			62	-1.37	-2.68	1.37	0.01	1.38	
		484T	65	-1.44	-2.84	1.54	0.01	1.55	
		SU	-	4.88	3.30	7.82	0.01	7.83	

Notes:

1. Average power_MIMO(㏈m) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (㏈m) + DCF(㏈)
2. e.i.r.p. Calculation: e.i.r.p. (㏈m) = Average power_MIMO (㏈m) + Antenna gain (㏈i)

802.11ax HE40 in the UNII-8 band

Channel	Frequency (㎒)	Tones	RU offset	Average power ANT 1 (dBm)	Average power ANT 2 (dBm)	Average power MIMO (dBm)	Directional ANT gain (dBi)	Max e.i.r.p. (dBm)	Limit (dBm)
187	6 885	26T	0	-8.56	-10.79	-6.38	-0.40	-6.78	24
			9	-9.14	-11.06	-6.84	-0.40	-7.24	
			17	-9.31	-10.36	-6.65	-0.40	-7.05	
		52T	37	-5.63	-7.75	-3.42	-0.40	-3.82	
			41	-6.14	-7.90	-3.79	-0.40	-4.19	
			44	-6.25	-7.28	-3.59	-0.40	-3.99	
		106T	53	-1.65	-3.75	0.63	-0.40	0.23	
			54	-1.98	-3.87	0.38	-0.40	-0.02	
			56	-2.09	-3.45	0.48	-0.40	0.08	
		242T	61	-1.00	-2.97	1.48	-0.40	1.08	
			62	-1.37	-2.78	1.33	-0.40	0.93	
		484T	65	-1.31	-3.08	1.51	-0.40	1.11	
		SU	-	4.74	3.41	7.79	-0.40	7.39	
203	6 965	26T	0	-9.86	-9.89	-6.72	-0.40	-7.12	
			9	-10.37	-9.82	-6.94	-0.40	-7.34	
			17	-10.49	-9.52	-6.83	-0.40	-7.23	
		52T	37	-6.90	-6.74	-3.68	-0.40	-4.08	
			41	-7.34	-6.70	-3.87	-0.40	-4.27	
			44	-7.41	-6.35	-3.71	-0.40	-4.11	
		106T	53	-3.14	-2.12	0.60	-0.40	0.20	
			54	-3.47	-2.11	0.46	-0.40	0.06	
			56	-3.39	-1.85	0.65	-0.40	0.25	
		242T	61	-2.40	-1.89	1.21	-0.40	0.81	
			62	-2.53	-1.73	1.24	-0.40	0.84	
		484T	65	-2.61	-2.00	1.33	-0.40	0.93	
		SU	-	4.33	4.53	8.09	-0.40	7.69	
227	7 085	26T	0	-9.66	-9.99	-6.67	-0.40	-7.07	
			9	-10.37	-10.19	-7.13	-0.40	-7.53	
			17	-10.61	-9.99	-7.14	-0.40	-7.54	
		52T	37	-6.72	-6.74	-3.59	-0.40	-3.99	
			41	-7.20	-6.95	-3.93	-0.40	-4.33	
			44	-7.52	-6.99	-4.11	-0.40	-4.51	
		106T	53	-3.33	-2.60	0.25	-0.40	-0.15	
			54	-3.72	-2.79	-0.03	-0.40	-0.43	
			56	-3.99	-2.71	-0.10	-0.40	-0.50	
		242T	61	-1.79	-0.91	2.02	-0.40	1.62	
			62	-2.22	-1.02	1.77	-0.40	1.37	
		484T	65	-2.18	-1.20	1.96	-0.40	1.56	
		SU	-	5.57	4.68	8.81	-0.40	8.41	

Notes:

1. Average power_MIMO(dBm) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (dBm) + DCF(dB)
2. e.i.r.p. Calculation: e.i.r.p. (dBm) = Average power_MIMO (dBm) + Antenna gain (dBi)

802.11ax HE80 in the UNII-5 band

Channel	Frequency (㎒)	Tones	RU offset	Average power ANT 1 (dBm)	Average power ANT 2 (dBm)	Average power MIMO (dBm)	Directional ANT gain (dBi)	Max e.i.r.p. (dBm)	Limit (dBm)
7	5 985	26T	0	-10.65	-9.90	-7.13	0.65	-6.48	24
			18	-10.15	-9.03	-6.42	0.65	-5.77	
			36	-9.97	-8.79	-6.21	0.65	-5.56	
		52T	37	-7.83	-6.94	-4.20	0.65	-3.55	
			45	-6.93	-5.83	-3.18	0.65	-2.53	
			52	-6.91	-5.82	-3.17	0.65	-2.52	
		106T	53	-3.79	-3.80	-0.55	0.65	0.10	
			57	-3.66	-3.20	-0.18	0.65	0.47	
			60	-3.49	-3.19	-0.10	0.65	0.55	
		242T	61	-2.66	-0.99	1.65	0.65	2.30	
			62	-2.31	-1.15	1.70	0.65	2.35	
			64	-2.23	-1.38	1.61	0.65	2.26	
		484T	65	-2.42	-1.77	1.58	0.65	2.23	
			66	-2.44	-1.69	1.61	0.65	2.26	
		996T	67	-2.06	-1.52	1.88	0.65	2.53	
		SU	-	4.28	4.80	8.72	0.65	9.37	
39	6 145	26T	0	-9.17	-9.93	-6.40	0.65	-5.75	
			18	-9.54	-10.63	-6.92	0.65	-6.27	
			36	-9.63	-10.27	-6.81	0.65	-6.16	
		52T	37	-6.11	-6.98	-3.36	0.65	-2.71	
			45	-6.53	-7.62	-3.88	0.65	-3.23	
			52	-6.49	-7.23	-3.68	0.65	-3.03	
		106T	53	-2.74	-3.92	-0.05	0.65	0.60	
			57	-3.06	-4.42	-0.45	0.65	0.20	
			60	-3.28	-4.03	-0.40	0.65	0.25	
		242T	61	-1.26	-2.46	1.57	0.65	2.22	
			62	-1.38	-2.82	1.35	0.65	2.00	
			64	-1.68	-2.55	1.30	0.65	1.95	
		484T	65	-1.59	-2.89	1.47	0.65	2.12	
			66	-1.99	-2.92	1.23	0.65	1.88	
		996T	67	-1.78	-2.95	1.33	0.65	1.98	
		SU	-	3.22	2.73	7.15	0.65	7.80	
87	6 385	26T	0	-10.55	-8.85	-6.49	0.65	-5.84	
			18	-11.38	-9.38	-7.14	0.65	-6.49	
			36	-11.68	-9.67	-7.43	0.65	-6.78	
		52T	37	-7.72	-5.69	-3.43	0.65	-2.78	
			45	-8.53	-6.29	-4.11	0.65	-3.46	
			52	-8.63	-6.53	-4.29	0.65	-3.64	
		106T	53	-3.88	-1.78	0.54	0.65	1.19	
			57	-4.77	-2.38	-0.17	0.65	0.48	
			60	-4.56	-2.58	-0.22	0.65	0.43	
		242T	61	-1.95	-0.16	2.43	0.65	3.08	
			62	-2.27	-0.40	2.16	0.65	2.81	
			64	-2.81	-0.82	1.69	0.65	2.34	
		484T	65	-2.34	-0.56	2.30	0.65	2.95	
			66	-3.10	-1.01	1.73	0.65	2.38	
		996T	67	-2.66	-0.81	2.02	0.65	2.67	
		SU	-	3.37	3.81	7.77	0.65	8.42	

Notes:

1. Average power_MIMO(dBm) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (dBm) + DCF(dB)
2. e.i.r.p. Calculation: e.i.r.p. (dBm) = Average power_MIMO (dBm) + Antenna gain (dBi)

802.11ax HE80 in the UNII-6 band

Channel	Frequency (㎒)	Tones	RU offset	Average power ANT 1 (dBm)	Average power ANT 2 (dBm)	Average power MIMO (dBm)	Directional ANT gain (dBi)	Max e.i.r.p. (dBm)	Limit (dBm)
103	6 465	26T	0	-11.01	-9.27	-6.92	-1.36	-8.28	24
			18	-11.47	-9.21	-7.06	-1.36	-8.42	
			36	-11.03	-9.40	-7.01	-1.36	-8.37	
		52T	37	-8.09	-6.29	-3.94	-1.36	-5.30	
			45	-8.35	-6.22	-4.00	-1.36	-5.36	
			52	-7.87	-6.33	-3.87	-1.36	-5.23	
		106T	53	-4.22	-2.35	0.06	-1.36	-1.30	
			57	-4.38	-2.36	-0.01	-1.36	-1.37	
			60	-3.83	-2.31	0.24	-1.36	-1.12	
		242T	61	-2.50	-0.62	1.93	-1.36	0.57	
			62	-3.22	-1.11	1.35	-1.36	-0.01	
			64	-3.04	-1.60	1.13	-1.36	-0.23	
		484T	65	-3.18	-1.19	1.59	-1.36	0.23	
			66	-3.58	-1.84	1.04	-1.36	-0.32	
		996T	67	-3.43	-1.49	1.31	-1.36	-0.05	
		SU	-	2.88	3.74	7.50	-1.36	6.14	

Notes:

1. Average power_MIMO(dBm) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (dBm) + DCF(dB)
2. e.i.r.p. Calculation: e.i.r.p. (dBm) = Average power_MIMO (dBm) + Antenna gain (dBi)

802.11ax HE80 in the UNII-7 band

Channel	Frequency (㎒)	Tones	RU offset	Average power ANT 1 (dBm)	Average power ANT 2 (dBm)	Average power MIMO (dBm)	Directional ANT gain (dBi)	Max e.i.r.p. (dBm)	Limit (dBm)
119	6 545	26T	0	-10.75	-9.24	-6.80	0.01	-6.79	24
			18	-11.51	-10.31	-7.74	0.01	-7.73	
			36	-11.01	-10.42	-7.57	0.01	-7.56	
		52T	37	-7.77	-6.19	-3.75	0.01	-3.74	
			45	-8.48	-7.37	-4.73	0.01	-4.72	
			52	-7.95	-7.46	-4.54	0.01	-4.53	
		106T	53	-4.06	-2.31	0.14	0.01	0.15	
			57	-4.70	-3.39	-0.76	0.01	-0.75	
			60	-4.18	-3.59	-0.63	0.01	-0.62	
		242T	61	-2.32	-0.62	2.00	0.01	2.01	
			62	-2.71	-1.18	1.51	0.01	1.52	
			64	-2.42	-1.79	1.30	0.01	1.31	
		484T	65	-2.80	-1.30	1.67	0.01	1.68	
			66	-2.86	-2.12	1.19	0.01	1.20	
		996T	67	-2.90	-1.66	1.42	0.01	1.43	
		SU	-	3.41	3.42	7.59	0.01	7.60	
151	6 705	26T	0	-10.01	-10.70	-7.21	0.01	-7.20	
			18	-10.06	-10.96	-7.36	0.01	-7.35	
			36	-9.65	-11.16	-7.21	0.01	-7.20	
		52T	37	-7.05	-7.81	-4.25	0.01	-4.24	
			45	-7.13	-8.14	-4.45	0.01	-4.44	
			52	-6.69	-8.26	-4.24	0.01	-4.23	
		106T	53	-3.03	-3.77	-0.14	0.01	-0.13	
			57	-3.13	-4.17	-0.38	0.01	-0.37	
			60	-2.86	-4.38	-0.31	0.01	-0.30	
		242T	61	-2.23	-2.84	0.87	0.01	0.88	
			62	-2.26	-2.90	0.82	0.01	0.83	
			64	-2.18	-3.57	0.57	0.01	0.58	
		484T	65	-2.56	-3.13	0.82	0.01	0.83	
			66	-2.57	-3.72	0.55	0.01	0.56	
		996T	67	-2.65	-3.46	0.62	0.01	0.63	
		SU	-	3.20	3.07	7.31	0.01	7.32	
183	6 865	26T	0	-8.99	-11.94	-7.09	0.01	-7.08	
			18	-9.38	-12.19	-7.43	0.01	-7.42	
			36	-10.19	-11.47	-7.65	0.01	-7.64	
		52T	37	-6.26	-8.83	-4.20	0.01	-4.19	
			45	-6.85	-9.22	-4.71	0.01	-4.70	
			52	-7.22	-8.45	-4.63	0.01	-4.62	
		106T	53	-2.39	-4.77	-0.18	0.01	-0.17	
			57	-3.00	-5.22	-0.73	0.01	-0.72	
			60	-3.29	-4.74	-0.71	0.01	-0.70	
		242T	61	-0.69	-3.18	1.63	0.01	1.64	
			62	-1.05	-3.44	1.31	0.01	1.32	
			64	-1.13	-3.04	1.41	0.01	1.42	
		484T	65	-1.14	-3.67	1.44	0.01	1.45	
			66	-1.28	-3.47	1.42	0.01	1.43	
		996T	67	-1.05	-3.40	1.59	0.01	1.60	
		SU	-	4.40	3.01	7.93	0.01	7.94	

Notes:

1. Average power_MIMO(dBm) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (dBm) + DCF(dB)
2. e.i.r.p. Calculation: e.i.r.p. (dBm) = Average power_MIMO (dBm) + Antenna gain (dBi)

802.11ax HE80 in the UNII-8 band

Channel	Frequency (㎒)	Tones	RU offset	Average power ANT 1 (dBm)	Average power ANT 2 (dBm)	Average power MIMO (dBm)	Directional ANT gain (dBi)	Max e.i.r.p. (dBm)	Limit (dBm)
199	6 945	26T	0	-9.87	-10.17	-6.89	-0.40	-7.29	24
			18	-10.64	-11.08	-7.72	-0.40	-8.12	
			36	-11.01	-10.56	-7.65	-0.40	-8.05	
		52T	37	-6.98	-7.09	-3.87	-0.40	-4.27	
			45	-7.96	-8.01	-4.82	-0.40	-5.22	
			52	-8.24	-7.46	-4.67	-0.40	-5.07	
		106T	53	-3.20	-3.11	0.09	-0.40	-0.31	
			57	-4.24	-3.82	-0.78	-0.40	-1.18	
			60	-4.34	-3.43	-0.62	-0.40	-1.02	
		242T	61	-1.99	-1.60	1.60	-0.40	1.20	
			62	-2.20	-1.94	1.32	-0.40	0.92	
			64	-2.48	-1.41	1.48	-0.40	1.08	
		484T	65	-2.30	-1.89	1.57	-0.40	1.17	
			66	-2.85	-1.78	1.38	-0.40	0.98	
		996T	67	-2.61	-1.84	1.45	-0.40	1.05	
		SU	-	2.69	3.77	7.43	-0.40	7.03	
215	7 025	26T	0	-10.33	-10.05	-7.06	-0.40	-7.46	
			18	-10.44	-9.48	-6.80	-0.40	-7.20	
			36	-10.91	-10.13	-7.37	-0.40	-7.77	
		52T	37	-7.69	-7.13	-4.24	-0.40	-4.64	
			45	-7.53	-6.34	-3.73	-0.40	-4.13	
			52	-7.89	-6.99	-4.26	-0.40	-4.66	
		106T	53	-4.06	-3.21	-0.37	-0.40	-0.77	
			57	-3.90	-2.41	0.15	-0.40	-0.25	
			60	-3.88	-3.10	-0.23	-0.40	-0.63	
		242T	61	-2.17	-1.86	1.38	-0.40	0.98	
			62	-2.67	-1.62	1.28	-0.40	0.88	
			64	-2.92	-2.25	0.82	-0.40	0.42	
		484T	65	-1.78	-1.25	2.15	-0.40	1.75	
			66	-3.02	-2.27	1.03	-0.40	0.63	
		996T	67	-3.06	-1.90	1.22	-0.40	0.82	
		SU	-	3.10	3.57	7.51	-0.40	7.11	

Notes:

1. Average power_MIMO(㏈m) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (㏈m) + DCF(㏈)
2. e.i.r.p. Calculation: e.i.r.p. (㏈m) = Average power_MIMO (㏈m) + Antenna gain (㏈i)

802.11ax HE160 in the UNII-5 band

Channel	Frequency (㎒)	Tones	RU offset	Average power ANT 1 (dBm)	Average power ANT 2 (dBm)	Average power MIMO (dBm)	Directional ANT gain (dBi)	Max e.i.r.p. (dBm)	Limit (dBm)
15	6 025	26T	0L	-9.58	-11.66	-7.37	0.65	-6.72	24
			0U	-8.85	-11.14	-6.72	0.65	-6.07	
			36U	-9.45	-11.66	-7.29	0.65	-6.64	
		52T	37L	-6.65	-8.59	-4.37	0.65	-3.72	
			37U	-5.90	-8.20	-3.76	0.65	-3.11	
			52U	-6.45	-8.64	-4.27	0.65	-3.62	
		106T	53L	-2.73	-4.44	-0.29	0.65	0.36	
			53U	-2.12	-4.22	0.17	0.65	0.82	
			60U	-2.60	-4.77	-0.34	0.65	0.31	
		242T	61L	-1.74	-3.37	0.96	0.65	1.61	
			61U	-1.30	-3.43	1.20	0.65	1.85	
			64U	-1.56	-3.75	0.92	0.65	1.57	
		484T	65L	-1.83	-3.70	0.98	0.65	1.63	
			65U	-1.52	-3.84	1.11	0.65	1.76	
			66U	-1.63	-4.18	0.92	0.65	1.57	
		996T	67L	-1.27	-3.51	1.42	0.65	2.07	
			67U	-1.27	-3.76	1.33	0.65	1.98	
		2X996T	-	-2.07	-4.09	1.19	0.65	1.84	
		SU	-	7.73	6.52	10.85	0.65	11.50	
47	6 185	26T	0L	-9.02	-10.69	-6.64	0.65	-5.99	
			0U	-8.96	-10.27	-6.44	0.65	-5.79	
			36U	-10.20	-10.96	-7.43	0.65	-6.78	
		52T	37L	-6.06	-7.67	-3.65	0.65	-3.00	
			37U	-6.14	-7.25	-3.52	0.65	-2.87	
			52U	-7.23	-7.90	-4.41	0.65	-3.76	
		106T	53L	-2.07	-3.66	0.42	0.65	1.07	
			53U	-2.21	-3.27	0.50	0.65	1.15	
			60U	-3.39	-3.87	-0.41	0.65	0.24	
		242T	61L	-1.14	-2.72	1.58	0.65	2.23	
			61U	-1.37	-2.52	1.53	0.65	2.18	
			64U	-1.53	-1.85	1.75	0.65	2.40	
		484T	65L	-1.33	-2.97	1.57	0.65	2.22	
			65U	-1.63	-3.05	1.36	0.65	2.01	
			66U	-2.41	-3.14	0.88	0.65	1.53	
		996T	67L	-1.05	-3.12	1.71	0.65	2.36	
			67U	-1.67	-3.22	1.29	0.65	1.94	
		2X996T	-	-2.12	-3.59	1.36	0.65	2.01	
		SU	-	7.16	7.37	10.95	0.65	11.60	
79	6 345	26T	0L	-10.40	-10.80	-7.47	0.65	-6.82	
			0U	-10.87	-10.30	-7.45	0.65	-6.80	
			36U	-10.71	-9.89	-7.15	0.65	-6.50	
		52T	37L	-7.42	-7.82	-4.48	0.65	-3.83	
			37U	-8.02	-7.41	-4.56	0.65	-3.91	
			52U	-7.93	-6.90	-4.24	0.65	-3.59	
		106T	53L	-2.83	-2.88	0.36	0.65	1.01	
			53U	-3.81	-2.53	0.09	0.65	0.74	
			60U	-3.87	-2.85	-0.12	0.65	0.53	
		242T	61L	-1.96	-1.88	1.52	0.65	2.17	
			61U	-1.81	-0.90	2.11	0.65	2.76	
			64U	-2.72	-1.99	1.10	0.65	1.75	
		484T	65L	-2.28	-2.11	1.45	0.65	2.10	
			65U	-2.19	-1.33	1.90	0.65	2.55	
			66U	-2.76	-1.96	1.30	0.65	1.95	
		996T	67L	-2.08	-1.78	1.74	0.65	2.39	
			67U	-3.06	-2.24	1.04	0.65	1.69	
		2X996T	-	-3.34	-2.67	1.16	0.65	1.81	
		SU	-	6.87	8.03	11.17	0.65	11.82	

Notes:

1. Average power_MIMO(㏈m) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (㏈m) + DCF(㏈)
2. e.i.r.p. Calculation: e.i.r.p. (㏈m) = Average power_MIMO (㏈m) + Antenna gain (㏈i)
3. HE160 = HE80L + HE80U

802.11ax HE160 in the UNII-6 band

Channel	Frequency (㎒)	Tones	RU offset	Average power ANT 1 (dBm)	Average power ANT 2 (dBm)	Average power MIMO (dBm)	Directional ANT gain (dBi)	Max e.i.r.p. (dBm)	Limit (dBm)
111	6 505	26T	0L	-10.73	-8.66	-6.44	-1.36	-7.80	24
			0U	-10.92	-9.25	-6.87	-1.36	-8.23	
			36U	-10.51	-9.90	-7.06	-1.36	-8.42	
		52T	37L	-7.72	-5.63	-3.41	-1.36	-4.77	
			37U	-7.96	-6.33	-3.93	-1.36	-5.29	
			52U	-7.59	-6.97	-4.13	-1.36	-5.49	
		106T	53L	-3.68	-1.89	0.52	-1.36	-0.84	
			53U	-3.89	-2.50	0.07	-1.36	-1.29	
			60U	-3.41	-3.28	-0.13	-1.36	-1.49	
		242T	61L	-2.74	-0.88	1.73	-1.36	0.37	
			61U	-3.09	-1.73	1.08	-1.36	-0.28	
			64U	-2.49	-2.14	1.13	-1.36	-0.23	
		484T	65L	-3.20	-1.13	1.60	-1.36	0.24	
			65U	-3.57	-2.22	0.80	-1.36	-0.56	
			66U	-2.76	-2.12	1.21	-1.36	-0.15	
		996T	67L	-3.13	-1.24	1.59	-1.36	0.23	
			67U	-3.39	-2.46	0.77	-1.36	-0.59	
		2X996T	-	-4.03	-2.54	0.93	-1.36	-0.43	
		SU	-	6.90	7.09	10.68	-1.36	9.32	

Notes:

1. Average power_MIMO(dBm) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (dBm) + DCF(dB)
2. e.i.r.p. Calculation: e.i.r.p. (dBm) = Average power_MIMO (dBm) + Antenna gain (dBi)
3. HE160 = HE80L + HE80U

802.11ax HE160 in the UNII-7 band

Channel	Frequency (㎒)	Tones	RU offset	Average power ANT 1 (dBm)	Average power ANT 2 (dBm)	Average power MIMO (dBm)	Directional ANT gain (dBi)	Max e.i.r.p. (dBm)	Limit (dBm)
143	6 665	26T	0L	-11.94	-9.21	-7.23	0.01	-7.22	24
			0U	-10.88	-9.54	-7.03	0.01	-7.02	
			36U	-10.39	-9.74	-6.92	0.01	-6.91	
		52T	37L	-8.54	-6.23	-4.09	0.01	-4.08	
			37U	-8.05	-6.65	-4.15	0.01	-4.14	
			52U	-7.40	-6.74	-3.92	0.01	-3.91	
		106T	53L	-3.65	-1.19	0.96	0.01	0.97	
			53U	-3.13	-1.77	0.81	0.01	0.82	
			60U	-3.48	-2.77	0.10	0.01	0.11	
		242T	61L	-2.75	-0.08	2.23	0.01	2.24	
			61U	-2.45	-1.05	1.75	0.01	1.76	
			64U	-1.40	-0.79	2.36	0.01	2.37	
		484T	65L	-3.04	-0.63	1.97	0.01	1.98	
			65U	-2.79	-1.61	1.48	0.01	1.49	
			66U	-1.70	-0.99	2.31	0.01	2.32	
		996T	67L	-2.70	-0.72	2.07	0.01	2.08	
			67U	-2.66	-1.65	1.54	0.01	1.55	
		2X996T	-	-3.44	-1.97	1.51	0.01	1.52	
		SU	-	7.03	6.96	10.68	0.01	10.69	
175	6 825	26T	0L	-9.06	-10.75	-6.69	0.01	-6.68	
			0U	-8.77	-10.46	-6.40	0.01	-6.39	
			36U	-9.34	-9.93	-6.49	0.01	-6.48	
		52T	37L	-6.17	-7.70	-3.73	0.01	-3.72	
			37U	-5.88	-7.44	-3.45	0.01	-3.44	
			52U	-6.37	-6.94	-3.51	0.01	-3.50	
		106T	53L	-2.28	-3.75	0.26	0.01	0.27	
			53U	-2.11	-3.55	0.44	0.01	0.45	
			60U	-2.42	-2.98	0.52	0.01	0.53	
		242T	61L	-1.27	-2.65	1.53	0.01	1.54	
			61U	-1.34	-2.75	1.45	0.01	1.46	
			64U	-2.32	-2.94	0.82	0.01	0.83	
		484T	65L	-1.43	-3.00	1.50	0.01	1.51	
			65U	-1.66	-3.12	1.31	0.01	1.32	
			66U	-2.35	-3.11	0.93	0.01	0.94	
		996T	67L	-2.18	-3.76	0.77	0.01	0.78	
			67U	-2.33	-3.42	0.83	0.01	0.84	
		2X996T	-	-2.29	-3.60	1.25	0.01	1.26	
		SU	-	8.35	7.07	11.44	0.01	11.45	

Notes:

1. Average power_MIMO(dBm) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (dBm) + DCF(dB)
2. e.i.r.p. Calculation: e.i.r.p. (dBm) = Average power_MIMO (dBm) + Antenna gain (dBi)
3. HE160 = HE80L + HE80U

802.11ax HE160 in the UNII-8 band

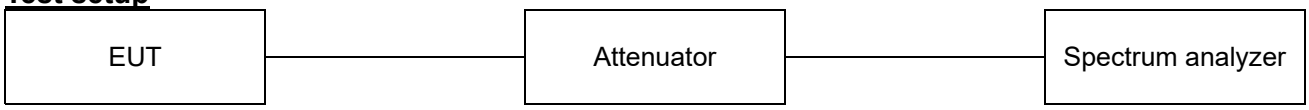
Channel	Frequency (㎒)	Tones	RU offset	Average power ANT 1 (dBm)	Average power ANT 2 (dBm)	Average power MIMO (dBm)	Directional ANT gain (dBi)	Max e.i.r.p. (dBm)	Limit (dBm)
207	6 985	26T	0L	-9.31	-9.90	-6.46	-0.40	-6.86	24
			0U	-9.36	-9.35	-6.22	-0.40	-6.62	
			36U	-11.36	-10.49	-7.77	-0.40	-8.17	
		52T	37L	-6.42	-6.85	-3.49	-0.40	-3.89	
			37U	-6.51	-6.34	-3.28	-0.40	-3.68	
			52U	-7.78	-6.64	-4.03	-0.40	-4.43	
		106T	53L	-2.60	-2.81	0.51	-0.40	0.11	
			53U	-2.80	-2.54	0.54	-0.40	0.14	
			60U	-4.16	-3.48	-0.60	-0.40	-1.00	
		242T	61L	-1.52	-1.80	1.78	-0.40	1.38	
			61U	-1.95	-1.73	1.60	-0.40	1.20	
			64U	-2.29	-1.42	1.61	-0.40	1.21	
		484T	65L	-1.68	-2.08	1.76	-0.40	1.36	
			65U	-2.32	-2.04	1.46	-0.40	1.06	
			66U	-2.15	-1.40	1.88	-0.40	1.48	
		996T	67L	-1.69	-1.57	2.04	-0.40	1.64	
			67U	-2.47	-1.77	1.56	-0.40	1.16	
		2X996T	-	-1.94	-1.55	2.41	-0.40	2.01	
		SU	-	8.01	8.01	11.69	-0.40	11.29	

Notes:

1. Average power_MIMO(dBm) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (dBm) + DCF(dB)
2. e.i.r.p. Calculation: e.i.r.p. (dBm) = Average power_MIMO (dBm) + Antenna gain (dBi)
3. HE160 = HE80L + HE80U

7.2. Maximum e.i.r.p. Spectral Density

Test setup



Limit

According to §15.407(a)(8)

Band	Maximum e.i.r.p. Spectral Density limit
UNII-5, 6, 7, 8	< -1 dBm/MHz

Test procedure

ANSI C63.10-2013 Section 12.3.2.2, 14.3.2.2
KDB 789033 D02 v02r01 - Section E and F
KDB 662911 D01 v02r01 - Section E). 2) and Section F)

Test settings

Section F

The rules requires “maximum power spectral density” measurements where the intent is to measure the maximum value of the time average of the power spectral density measured during a period of continuous transmission. Refer to III.A for additional guidance for devices that use channel aggregation.

1. Create an average power spectrum for the EUT operating mode being tested by following the instructions in II.E.2. for measuring maximum conducted output power using a spectrum analyzer or EMI receiver: select the appropriate test method (SA-1, SA-2, SA-3, or alternatives to each) and apply it up to, but not including, the step labeled, “Compute power….” (This procedure is required even if the maximum conducted output power measurement was performed using a power meter, method PM.)
2. Search function on the instrument to find the peak of the spectrum and record its value.
3. Adjustments to the peak value of the spectrum, if applicable:

   a) If Method SA-2 or SA-2 Alternative was used, add 10 log (1/x), where x is the duty cycle, to the peak of the spectrum.
   b) If Method SA-3 Alternative was used and the linear mode was used in II.E.2.g) (viii), add 1 dB to the final result to compensate for the difference between linear averaging and power averaging.
4. The result is the Maximum PSD over 1 MHz reference bandwidth
5. For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the preceding procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in Section 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of RBWs less than 1 MHz, or 500 kHz, “provided that the measured power is integrated over the full reference bandwidth” to show the total power over the specified measurement bandwidth(i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 kHz bandwidth, the following adjustments to the procedures apply:

a) Set RBW≥1/T, where T is defined in II.B.I.a).
b) Set VBW≥3 RBW.
c) If measurement bandwidth of Maximum PSD is specified in 500 ㎑, add 10 log (500 ㎑ /RBW) to the measured result, whereas RBW (<500 ㎑) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
d) If measurement bandwidth of Maximum PSD is specified in 1 ㎒, add 10 log (1㎒/RBW) to the measured result, whereas RBW (< 1 ㎒) is the reduced resolution bandwidth of spectrum analyzer set during measurement.
e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

Note.

- As a practical matter, it is recommended to use reduced RBW of 100 ㎑ for the II.F.5.c) and II.F.5.d), since RBW=100 ㎑ is available on nearly all spectrum analyzers.
- Method SA-2 is used.
- Please refer to Appendix B for plots.

Test results

802.11a in the UNII-5 band

Channel	Frequency (㎒)	Measured PSD ANT 1 (dBm/㎒)	Measured PSD ANT 2 (dBm/㎒)	PSD MIMO (dBm/㎒)	Directional ANT gain (dBi)	PSD e.i.r.p. (dBm/㎒)	Limit (dBm/㎒)
1	5 955	-13.77	-11.74	-9.30	0.65	-8.65	-1
45	6 175	-12.68	-13.17	-9.58	0.65	-8.93	
93	6 415	-14.66	-11.47	-9.44	0.65	-8.79	

802.11a in the UNII-6 band

Channel	Frequency (㎒)	Measured PSD ANT 1 (dBm/㎒)	Measured PSD ANT 2 (dBm/㎒)	PSD MIMO (dBm/㎒)	Directional ANT gain (dBi)	PSD e.i.r.p. (dBm/㎒)	Limit (dBm/㎒)
97	6 435	-14.44	-11.50	-9.39	-1.36	-10.75	-1
105	6 475	-14.61	-11.96	-9.75	-1.36	-11.11	
113	6 515	-14.14	-12.15	-9.69	-1.36	-11.05	

802.11a in the UNII-7 band

Channel	Frequency (㎒)	Measured PSD ANT 1 (dBm/㎒)	Measured PSD ANT 2 (dBm/㎒)	PSD MIMO (dBm/㎒)	Directional ANT gain (dBi)	PSD e.i.r.p. (dBm/㎒)	Limit (dBm/㎒)
117	6 535	-13.51	-12.07	-9.39	0.01	-9.38	-1
149	6 695	-12.62	-13.55	-9.72	0.01	-9.71	
185	6 875	-12.32	-13.79	-9.65	0.01	-9.64	

802.11a in the UNII-8 band

Channel	Frequency (㎒)	Measured PSD ANT 1 (dBm/㎒)	Measured PSD ANT 2 (dBm/㎒)	PSD MIMO (dBm/㎒)	Directional ANT gain (dBi)	PSD e.i.r.p. (dBm/㎒)	Limit (dBm/㎒)
189	6 895	-12.56	-12.59	-9.23	-0.40	-9.63	-1
209	6 995	-13.39	-12.01	-9.31	-0.40	-9.71	
233	7 115	-12.80	-12.39	-9.25	-0.40	-9.65	

Notes:

1. PSD MIMO(㏈m) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (㏈m) + DCF(㏈)
2. PSD e.i.r.p. Calculation: PSD e.i.r.p. (㏈m) = PSD MIMO (㏈m) + Antenna gain (㏈i)

802.11ax HE20 in the UNII-5 band

Channel	Frequency (㎒)	Tones	RU offset	Measured PSD ANT 1 (dBm/㎒)	Measured PSD ANT 2 (dBm/㎒)	PSD MIMO (dBm/㎒)	Directional ANT gain (dBi)	PSD e.i.r.p. (dBm/㎒)	Limit (dBm/㎒)
1	5 955	26T	0	-14.18	-12.04	-9.87	0.65	-9.22	-1
			4	-15.91	-13.48	-11.42	0.65	-10.77	
			8	-14.29	-12.07	-9.93	0.65	-9.28	
		52T	37	-14.13	-12.07	-9.87	0.65	-9.22	
			38	-14.35	-12.25	-10.06	0.65	-9.41	
			40	-14.22	-12.03	-9.88	0.65	-9.23	
		106T	53	-13.20	-11.14	-8.88	0.65	-8.23	
			54	-13.21	-11.01	-8.80	0.65	-8.15	
		242T	61	-14.91	-12.94	-10.42	0.65	-9.77	
		SU	-	-6.93	-7.20	-3.69	0.65	-3.04	
45	6 175	26T	0	-13.10	-13.72	-10.29	0.65	-9.64	
			4	-14.63	-15.09	-11.74	0.65	-11.09	
			8	-13.09	-13.69	-10.27	0.65	-9.62	
		52T	37	-13.13	-13.71	-10.30	0.65	-9.65	
			38	-13.32	-13.72	-10.41	0.65	-9.76	
			40	-13.13	-13.64	-10.27	0.65	-9.62	
		106T	53	-12.33	-12.72	-9.35	0.65	-8.70	
			54	-12.23	-12.68	-9.28	0.65	-8.63	
		242T	61	-13.83	-14.32	-10.68	0.65	-10.03	
		SU	-	-6.37	-7.02	-3.31	0.65	-2.66	
93	6 415	26T	0	-14.71	-11.44	-9.66	0.65	-9.01	
			4	-16.54	-13.10	-11.38	0.65	-10.73	
			8	-15.44	-11.71	-10.08	0.65	-9.43	
		52T	37	-14.71	-11.40	-9.64	0.65	-8.99	
			38	-15.25	-11.68	-10.00	0.65	-9.35	
			40	-15.40	-11.70	-10.06	0.65	-9.41	
		106T	53	-13.96	-11.20	-9.19	0.65	-8.54	
			54	-14.51	-11.46	-9.55	0.65	-8.90	
		242T	61	-15.43	-12.45	-10.30	0.65	-9.65	
		SU	-	-7.69	-7.21	-4.07	0.65	-3.42	

Notes:

1. PSD MIMO(dBm) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (dBm) + DCF(dB)
2. PSD e.i.r.p. Calculation: PSD e.i.r.p. (dBm) = PSD MIMO (dBm) + Antenna gain (dBi)

802.11ax HE20 in the UNII-6 band

Channel	Frequency (㎒)	Tones	RU offset	Measured PSD ANT 1 (dBm/㎒)	Measured PSD ANT 2 (dBm/㎒)	PSD MIMO (dBm/㎒)	Directional ANT gain (dBi)	PSD e.i.r.p. (dBm/㎒)	Limit (dBm/㎒)
97	6 435	26T	0	-14.99	-11.24	-9.61	-1.36	-10.97	-1
			4	-16.79	-12.94	-11.34	-1.36	-12.70	
			8	-15.41	-11.58	-9.98	-1.36	-11.34	
		52T	37	-15.04	-11.23	-9.62	-1.36	-10.98	
			38	-15.49	-11.52	-9.96	-1.36	-11.32	
			40	-15.42	-11.57	-9.97	-1.36	-11.33	
		106T	53	-14.02	-10.61	-8.82	-1.36	-10.18	
			54	-14.45	-10.97	-9.20	-1.36	-10.56	
		242T	61	-15.77	-12.28	-10.29	-1.36	-11.65	
		SU	-	-7.64	-6.89	-3.88	-1.36	-5.24	
105	6 475	26T	0	-15.02	-12.03	-10.16	-1.36	-11.52	
			4	-16.52	-13.76	-11.81	-1.36	-13.17	
			8	-15.18	-12.33	-10.41	-1.36	-11.77	
		52T	37	-14.75	-12.02	-10.06	-1.36	-11.42	
			38	-15.09	-12.37	-10.41	-1.36	-11.77	
			40	-15.15	-12.34	-10.41	-1.36	-11.77	
		106T	53	-13.95	-11.08	-9.11	-1.36	-10.47	
			54	-14.32	-11.31	-9.39	-1.36	-10.75	
		242T	61	-15.65	-12.83	-10.62	-1.36	-11.98	
		SU	-	-7.34	-6.83	-3.71	-1.36	-5.07	
113	6 515	26T	0	-14.64	-12.12	-10.09	-1.36	-11.45	
			4	-16.16	-13.92	-11.79	-1.36	-13.15	
			8	-14.46	-12.58	-10.31	-1.36	-11.67	
		52T	37	-14.62	-12.05	-10.04	-1.36	-11.40	
			38	-14.84	-12.42	-10.35	-1.36	-11.71	
			40	-14.52	-12.52	-10.30	-1.36	-11.66	
		106T	53	-13.74	-11.09	-9.05	-1.36	-10.41	
			54	-13.70	-11.50	-9.29	-1.36	-10.65	
		242T	61	-15.26	-12.99	-10.59	-1.36	-11.95	
		SU	-	-6.92	-6.85	-3.51	-1.36	-4.87	

Notes:

1. PSD MIMO(㏈m) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (㏈m) + DCF(㏈)
2. PSD e.i.r.p. Calculation: PSD e.i.r.p. (㏈m) = PSD MIMO (㏈m) + Antenna gain (㏈i)

802.11ax HE20 in the UNII-7 band

Channel	Frequency (㎒)	Tones	RU offset	Measured PSD ANT 1 (dBm/㎒)	Measured PSD ANT 2 (dBm/㎒)	PSD MIMO (dBm/㎒)	Directional ANT gain (dBi)	PSD e.i.r.p. (dBm/㎒)	Limit (dBm/㎒)
117	6 535	26T	0	-14.19	-12.68	-10.26	0.01	-10.25	-1
			4	-15.51	-14.19	-11.69	0.01	-11.68	
			8	-14.00	-12.76	-10.23	0.01	-10.22	
		52T	37	-14.07	-12.74	-10.24	0.01	-10.23	
			38	-14.24	-12.97	-10.45	0.01	-10.44	
			40	-14.03	-12.69	-10.20	0.01	-10.19	
		106T	53	-13.27	-11.81	-9.31	0.01	-9.30	
			54	-13.14	-11.74	-9.21	0.01	-9.20	
		242T	61	-14.75	-13.49	-10.68	0.01	-10.67	
		SU	-	-6.89	-7.15	-3.65	0.01	-3.64	
149	6 695	26T	0	-12.02	-13.05	-9.39	0.01	-9.38	
			4	-13.42	-14.49	-10.81	0.01	-10.80	
			8	-12.01	-12.98	-9.36	0.01	-9.35	
		52T	37	-11.96	-13.02	-9.35	0.01	-9.34	
			38	-12.18	-13.20	-9.55	0.01	-9.54	
			40	-12.01	-13.01	-9.37	0.01	-9.36	
		106T	53	-10.98	-12.06	-8.32	0.01	-8.31	
			54	-11.10	-12.04	-8.37	0.01	-8.36	
		242T	61	-13.78	-14.67	-10.81	0.01	-10.80	
		SU	-	-6.65	-7.22	-3.56	0.01	-3.55	
185	6 875	26T	0	-11.62	-13.29	-9.26	0.01	-9.25	
			4	-13.29	-14.68	-10.82	0.01	-10.81	
			8	-12.09	-13.13	-9.47	0.01	-9.46	
		52T	37	-11.80	-13.29	-9.37	0.01	-9.36	
			38	-12.16	-13.28	-9.57	0.01	-9.56	
			40	-12.10	-13.07	-9.45	0.01	-9.44	
		106T	53	-10.75	-12.31	-8.29	0.01	-8.28	
			54	-11.07	-12.07	-8.37	0.01	-8.36	
		242T	61	-13.52	-14.83	-10.74	0.01	-10.73	
		SU	-	-6.74	-8.00	-3.95	0.01	-3.94	

Notes:

1. PSD MIMO(㏈m) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (㏈m) + DCF(㏈)
2. PSD e.i.r.p. Calculation: PSD e.i.r.p. (㏈m) = PSD MIMO (㏈m) + Antenna gain (㏈i)

802.11ax HE20 in the UNII-8 band

Channel	Frequency (㎒)	Tones	RU offset	Measured PSD ANT 1 (dBm/㎒)	Measured PSD ANT 2 (dBm/㎒)	PSD MIMO (dBm/㎒)	Directional ANT gain (dBi)	PSD e.i.r.p. (dBm/㎒)	Limit (dBm/㎒)
189	6 895	26T	0	-12.87	-13.41	-10.02	-0.40	-10.42	-1
			4	-14.59	-14.67	-11.52	-0.40	-11.92	
			8	-13.18	-12.98	-9.97	-0.40	-10.37	
		52T	37	-12.98	-13.27	-10.01	-0.40	-10.41	
			38	-13.35	-13.26	-10.19	-0.40	-10.59	
			40	-13.11	-12.84	-9.86	-0.40	-10.26	
		106T	53	-12.01	-12.31	-8.99	-0.40	-9.39	
			54	-12.23	-11.95	-8.92	-0.40	-9.32	
		242T	61	-13.79	-13.70	-10.35	-0.40	-10.75	
		SU	-	-6.69	-7.96	-3.91	-0.40	-4.31	
209	6 995	26T	0	-13.60	-12.36	-9.83	-0.40	-10.23	
			4	-15.18	-14.04	-11.46	-0.40	-11.86	
			8	-14.05	-12.47	-10.08	-0.40	-10.48	
		52T	37	-13.69	-12.36	-9.86	-0.40	-10.26	
			38	-14.18	-12.55	-10.18	-0.40	-10.58	
			40	-14.05	-12.40	-10.04	-0.40	-10.44	
		106T	53	-12.77	-11.39	-8.86	-0.40	-9.26	
			54	-13.16	-11.45	-9.05	-0.40	-9.45	
		242T	61	-14.48	-13.13	-10.36	-0.40	-10.76	
		SU	-	-7.33	-6.33	-3.43	-0.40	-3.83	
233	7 115	26T	0	-12.91	-12.58	-9.63	-0.40	-10.03	
			4	-14.39	-14.15	-11.16	-0.40	-11.56	
			8	-13.00	-12.66	-9.72	-0.40	-10.12	
		52T	37	-12.96	-12.64	-9.69	-0.40	-10.09	
			38	-13.39	-12.72	-9.93	-0.40	-10.33	
			40	-13.06	-12.66	-9.75	-0.40	-10.15	
		106T	53	-11.97	-11.64	-8.63	-0.40	-9.03	
			54	-12.02	-11.66	-8.67	-0.40	-9.07	
		242T	61	-13.78	-13.33	-10.16	-0.40	-10.56	
		SU	-	-6.48	-7.32	-3.51	-0.40	-3.91	

Notes:

1. PSD MIMO(dBm) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (dBm) + DCF(dB)
2. PSD e.i.r.p. Calculation: PSD e.i.r.p. (dBm) = PSD MIMO (dBm) + Antenna gain (dBi)

802.11ax HE40 in the UNII-5 band

Channel	Frequency (㎒)	Tones	RU offset	Measured PSD ANT 1 (dBm/㎒)	Measured PSD ANT 2 (dBm/㎒)	PSD MIMO (dBm/㎒)	Directional ANT gain (dBi)	PSD e.i.r.p. (dBm/㎒)	Limit (dBm/㎒)
3	5 965	26T	0	-14.29	-12.93	-10.41	0.65	-9.76	-1
			9	-14.68	-13.11	-10.67	0.65	-10.02	
			17	-14.26	-13.08	-10.48	0.65	-9.83	
		52T	37	-14.06	-12.69	-10.18	0.65	-9.53	
			41	-14.40	-12.80	-10.39	0.65	-9.74	
			44	-14.07	-12.81	-10.25	0.65	-9.60	
		106T	53	-13.09	-11.79	-9.19	0.65	-8.54	
			54	-13.35	-11.90	-9.36	0.65	-8.71	
			56	-13.22	-11.89	-9.30	0.65	-8.65	
		242T	61	-15.07	-13.80	-11.04	0.65	-10.39	
			62	-15.01	-13.99	-11.12	0.65	-10.47	
		484T	65	-18.10	-16.90	-13.84	0.65	-13.19	
		SU	-	-10.49	-10.64	-6.90	0.65	-6.25	
43	6 165	26T	0	-13.02	-13.54	-10.12	0.65	-9.47	
			9	-13.55	-13.68	-10.46	0.65	-9.81	
			17	-13.38	-13.55	-10.31	0.65	-9.66	
		52T	37	-11.95	-12.45	-9.05	0.65	-8.40	
			41	-12.49	-12.51	-9.36	0.65	-8.71	
			44	-12.17	-12.26	-9.07	0.65	-8.42	
		106T	53	-12.20	-12.24	-9.02	0.65	-8.37	
			54	-12.37	-12.37	-9.17	0.65	-8.52	
			56	-12.41	-12.32	-9.16	0.65	-8.51	
		242T	61	-13.91	-14.15	-10.68	0.65	-10.03	
			62	-14.16	-14.09	-10.77	0.65	-10.12	
		484T	65	-16.92	-17.20	-13.44	0.65	-12.79	
		SU	-	-9.69	-10.57	-6.45	0.65	-5.80	
91	6 405	26T	0	-14.24	-11.48	-9.49	0.65	-8.84	
			9	-14.65	-12.02	-9.99	0.65	-9.34	
			17	-15.00	-12.07	-10.14	0.65	-9.49	
		52T	37	-14.04	-11.40	-9.38	0.65	-8.73	
			41	-14.29	-11.77	-9.71	0.65	-9.06	
			44	-14.77	-11.77	-9.88	0.65	-9.23	
		106T	53	-13.95	-10.90	-8.96	0.65	-8.31	
			54	-14.01	-11.25	-9.21	0.65	-8.56	
			56	-14.32	-11.44	-9.45	0.65	-8.80	
		242T	61	-14.97	-12.42	-10.16	0.65	-9.51	
			62	-15.40	-12.73	-10.51	0.65	-9.86	
		484T	65	-18.10	-15.52	-13.00	0.65	-12.35	
		SU	-	-11.05	-10.61	-7.16	0.65	-6.51	

Notes:

1. PSD MIMO(dBm) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (dBm) + DCF(dB)
2. PSD e.i.r.p. Calculation: PSD e.i.r.p. (dBm) = PSD MIMO (dBm) + Antenna gain (dBi)

802.11ax HE40 MIMO in the UNII-6 band

Channel	Frequency (㎒)	Tones	RU offset	Measured PSD ANT 1 (dBm/㎒)	Measured PSD ANT 2 (dBm/㎒)	PSD MIMO (dBm/㎒)	Directional ANT gain (dBi)	PSD e.i.r.p. (dBm/㎒)	Limit (dBm/㎒)
99	6 445	26T	0	-14.59	-10.86	-9.19	-1.36	-10.55	-1
			9	-14.91	-11.63	-9.82	-1.36	-11.18	
			17	-14.55	-11.46	-9.59	-1.36	-10.95	
		52T	37	-14.20	-10.58	-8.88	-1.36	-10.24	
			41	-14.57	-11.27	-9.47	-1.36	-10.83	
			44	-14.33	-11.26	-9.39	-1.36	-10.75	
		106T	53	-13.34	-10.08	-8.21	-1.36	-9.57	
			54	-13.73	-10.44	-8.58	-1.36	-9.94	
			56	-13.50	-10.70	-8.68	-1.36	-10.04	
		242T	61	-16.17	-12.92	-10.90	-1.36	-12.26	
			62	-16.30	-13.39	-11.26	-1.36	-12.62	
		484T	65	-19.31	-16.09	-13.79	-1.36	-15.15	
		SU	-	-11.10	-10.31	-7.03	-1.36	-8.39	
107	6 485	26T	0	-14.44	-11.52	-9.59	-1.36	-10.95	
			9	-15.07	-12.20	-10.25	-1.36	-11.61	
			17	-15.28	-12.51	-10.53	-1.36	-11.89	
		52T	37	-14.24	-11.39	-9.44	-1.36	-10.80	
			41	-14.70	-11.95	-9.97	-1.36	-11.33	
			44	-14.97	-12.11	-10.17	-1.36	-11.53	
		106T	53	-13.36	-10.80	-8.69	-1.36	-10.05	
			54	-13.61	-11.08	-8.96	-1.36	-10.32	
			56	-14.02	-11.47	-9.36	-1.36	-10.72	
		242T	61	-15.16	-12.67	-10.39	-1.36	-11.75	
			62	-15.74	-13.18	-10.92	-1.36	-12.28	
		484T	65	-18.25	-15.78	-13.22	-1.36	-14.58	
		SU	-	-10.30	-10.23	-6.60	-1.36	-7.96	
115	6 525	26T	0	-14.11	-11.65	-9.56	-1.36	-10.92	
			9	-14.23	-12.38	-10.06	-1.36	-11.42	
			17	-13.81	-12.17	-9.76	-1.36	-11.12	
		52T	37	-13.99	-11.58	-9.48	-1.36	-10.84	
			41	-13.91	-12.05	-9.74	-1.36	-11.10	
			44	-13.50	-11.95	-9.52	-1.36	-10.88	
		106T	53	-13.24	-10.62	-8.54	-1.36	-9.90	
			54	-13.16	-11.13	-8.83	-1.36	-10.19	
			56	-12.77	-11.07	-8.64	-1.36	-10.00	
		242T	61	-14.91	-12.55	-10.22	-1.36	-11.58	
			62	-14.54	-12.95	-10.32	-1.36	-11.68	
		484T	65	-17.74	-15.66	-12.96	-1.36	-14.32	
		SU	-	-10.19	-10.22	-6.54	-1.36	-7.90	

Notes:

1. PSD MIMO(dBm) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (dBm) + DCF(dB)
2. PSD e.i.r.p. Calculation: PSD e.i.r.p. (dBm) = PSD MIMO (dBm) + Antenna gain (dBi)

802.11ax HE40 in the UNII-7 band

Channel	Frequency (㎒)	Tones	RU offset	Measured PSD ANT 1 (dBm/㎒)	Measured PSD ANT 2 (dBm/㎒)	PSD MIMO (dBm/㎒)	Directional ANT gain (dBi)	PSD e.i.r.p. (dBm/㎒)	Limit (dBm/㎒)
123	6 565	26T	0	-13.42	-12.37	-9.71	0.01	-9.70	-1
			9	-13.97	-13.08	-10.35	0.01	-10.34	
			17	-13.95	-13.42	-10.53	0.01	-10.52	
		52T	37	-13.28	-12.11	-9.52	0.01	-9.51	
			41	-13.82	-12.68	-10.07	0.01	-10.06	
			44	-13.69	-13.16	-10.28	0.01	-10.27	
		106T	53	-12.43	-11.18	-8.56	0.01	-8.55	
			54	-12.87	-11.68	-9.03	0.01	-9.02	
			56	-13.00	-12.21	-9.39	0.01	-9.38	
		242T	61	-14.29	-13.16	-10.34	0.01	-10.33	
			62	-14.72	-13.86	-10.92	0.01	-10.91	
		484T	65	-17.28	-16.26	-13.12	0.01	-13.11	
		SU	-	-9.90	-10.37	-6.47	0.01	-6.46	
147	6 685	26T	0	-12.92	-13.89	-10.23	0.01	-10.22	
			9	-12.74	-13.73	-10.06	0.01	-10.05	
			17	-12.68	-13.59	-9.96	0.01	-9.95	
		52T	37	-12.70	-13.76	-10.06	0.01	-10.05	
			41	-12.48	-13.62	-9.87	0.01	-9.86	
			44	-12.37	-13.32	-9.68	0.01	-9.67	
		106T	53	-11.68	-12.74	-8.98	0.01	-8.97	
			54	-11.64	-12.67	-8.92	0.01	-8.91	
			56	-11.59	-12.52	-8.83	0.01	-8.82	
		242T	61	-14.55	-15.38	-11.59	0.01	-11.58	
			62	-14.41	-15.22	-11.45	0.01	-11.44	
		484T	65	-17.51	-18.36	-14.29	0.01	-14.28	
		SU	-	-9.96	-10.10	-6.37	0.01	-6.36	
179	6 845	26T	0	-11.77	-13.46	-9.38	0.01	-9.37	
			9	-12.00	-13.48	-9.53	0.01	-9.52	
			17	-12.10	-13.38	-9.54	0.01	-9.53	
		52T	37	-11.59	-13.23	-9.19	0.01	-9.18	
			41	-11.77	-13.23	-9.30	0.01	-9.29	
			44	-11.81	-13.10	-9.27	0.01	-9.26	
		106T	53	-10.85	-12.25	-8.29	0.01	-8.28	
			54	-10.92	-12.20	-8.31	0.01	-8.30	
			56	-10.96	-12.30	-8.38	0.01	-8.37	
		242T	61	-13.45	-14.93	-10.78	0.01	-10.77	
			62	-13.63	-14.99	-10.91	0.01	-10.90	
		484T	65	-16.55	-17.95	-13.57	0.01	-13.56	
		SU	-	-9.75	-11.52	-6.89	0.01	-6.88	

Notes:

1. PSD MIMO(dBm) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (dBm) + DCF(dB)
2. PSD e.i.r.p. Calculation: PSD e.i.r.p. (dBm) = PSD MIMO (dBm) + Antenna gain (dBi)

802.11ax HE40 in the UNII-8 band

Channel	Frequency (㎒)	Tones	RU offset	Measured PSD ANT 1 (dBm/㎒)	Measured PSD ANT 2 (dBm/㎒)	PSD MIMO (dBm/㎒)	Directional ANT gain (dBi)	PSD e.i.r.p. (dBm/㎒)	Limit (dBm/㎒)
187	6 885	26T	0	-11.20	-13.70	-9.12	-0.40	-9.52	-1
			9	-11.70	-13.96	-9.53	-0.40	-9.93	
			17	-11.82	-13.27	-9.33	-0.40	-9.73	
		52T	37	-11.13	-13.54	-9.03	-0.40	-9.43	
			41	-11.62	-13.60	-9.36	-0.40	-9.76	
			44	-11.66	-13.01	-9.14	-0.40	-9.54	
		106T	53	-10.28	-12.46	-8.03	-0.40	-8.43	
			54	-10.52	-12.60	-8.24	-0.40	-8.64	
			56	-10.79	-12.13	-8.21	-0.40	-8.61	
		242T	61	-12.87	-15.29	-10.56	-0.40	-10.96	
			62	-13.47	-14.85	-10.76	-0.40	-11.16	
		484T	65	-16.16	-18.03	-13.37	-0.40	-13.77	
		SU	-	-9.85	-11.38	-6.89	-0.40	-7.29	
203	6 965	26T	0	-12.60	-12.80	-9.55	-0.40	-9.95	
			9	-13.16	-12.76	-9.81	-0.40	-10.21	
			17	-13.25	-12.40	-9.65	-0.40	-10.05	
		52T	37	-12.47	-12.52	-9.35	-0.40	-9.75	
			41	-12.90	-12.44	-9.52	-0.40	-9.92	
			44	-13.20	-12.18	-9.52	-0.40	-9.92	
		106T	53	-11.87	-10.93	-8.17	-0.40	-8.57	
			54	-12.18	-10.96	-8.33	-0.40	-8.73	
			56	-12.19	-10.71	-8.19	-0.40	-8.59	
		242T	61	-14.53	-14.31	-11.07	-0.40	-11.47	
			62	-14.84	-14.03	-11.07	-0.40	-11.47	
		484T	65	-17.61	-17.15	-13.75	-0.40	-14.15	
		SU	-	-10.46	-10.16	-6.65	-0.40	-7.05	
227	7 085	26T	0	-12.62	-12.88	-9.60	-0.40	-10.00	
			9	-13.22	-13.07	-9.99	-0.40	-10.39	
			17	-13.54	-12.82	-10.01	-0.40	-10.41	
		52T	37	-12.53	-12.57	-9.41	-0.40	-9.81	
			41	-12.88	-12.73	-9.66	-0.40	-10.06	
			44	-13.31	-12.53	-9.76	-0.40	-10.16	
		106T	53	-12.09	-11.41	-8.54	-0.40	-8.94	
			54	-12.39	-11.58	-8.77	-0.40	-9.17	
			56	-12.75	-11.56	-8.91	-0.40	-9.31	
		242T	61	-13.94	-13.24	-10.23	-0.40	-10.63	
			62	-14.55	-13.41	-10.59	-0.40	-10.99	
		484T	65	-16.96	-16.37	-13.03	-0.40	-13.43	
		SU	-	-9.35	-10.02	-6.01	-0.40	-6.41	

Notes:

1. PSD MIMO(㏈m) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (㏈m) + DCF(㏈)
2. PSD e.i.r.p. Calculation: PSD e.i.r.p. (㏈m) = PSD MIMO (㏈m) + Antenna gain (㏈i)

802.11ax HE80 in the UNII-5 band

Channel	Frequency (㎒)	Tones	RU offset	Measured PSD ANT 1 (dBm/㎒)	Measured PSD ANT 2 (dBm/㎒)	PSD MIMO (dBm/㎒)	Directional ANT gain (dBi)	PSD e.i.r.p. (dBm/㎒)	Limit (dBm/㎒)
7	5 985	26T	0	-13.54	-12.25	-9.72	0.65	-9.07	
			18	-14.00	-13.02	-10.35	0.65	-9.70	
			36	-12.79	-11.68	-9.07	0.65	-8.42	
		52T	37	-13.36	-12.21	-9.59	0.65	-8.94	
			45	-12.62	-11.57	-8.90	0.65	-8.25	
			52	-12.62	-11.52	-8.87	0.65	-8.22	
		106T	53	-12.54	-12.53	-9.29	0.65	-8.64	
			57	-12.48	-11.93	-8.96	0.65	-8.31	
			60	-12.25	-11.95	-8.86	0.65	-8.21	
		242T	61	-14.37	-13.40	-10.47	0.65	-9.82	
			62	-14.64	-13.50	-10.64	0.65	-9.99	
			64	-14.62	-13.70	-10.75	0.65	-10.10	
		484T	65	-17.67	-16.58	-13.43	0.65	-12.78	
			66	-17.87	-16.96	-13.73	0.65	-13.08	
		996T	67	-20.27	-19.64	-16.28	0.65	-15.63	
		SU	-	-13.44	-13.04	-9.07	0.65	-8.42	
39	6 145	26T	0	-12.05	-12.86	-9.31	0.65	-8.66	-1
			18	-13.47	-14.55	-10.85	0.65	-10.20	
			36	-12.47	-13.19	-9.68	0.65	-9.03	
		52T	37	-11.91	-12.77	-9.16	0.65	-8.51	
			45	-12.23	-13.33	-9.58	0.65	-8.93	
			52	-12.12	-12.90	-9.33	0.65	-8.68	
		106T	53	-11.54	-12.65	-8.82	0.65	-8.17	
			57	-11.82	-13.09	-9.17	0.65	-8.52	
			60	-12.12	-12.72	-9.17	0.65	-8.52	
		242T	61	-13.68	-14.77	-10.80	0.65	-10.15	
			62	-13.76	-15.19	-11.03	0.65	-10.38	
			64	-13.99	-14.87	-11.02	0.65	-10.37	
		484T	65	-16.89	-18.05	-13.77	0.65	-13.12	
			66	-17.37	-18.20	-14.10	0.65	-13.45	
		996T	67	-19.79	-21.10	-16.74	0.65	-16.09	
		SU	-	-14.13	-14.95	-10.35	0.65	-9.70	
87	6 385	26T	0	-13.40	-11.67	-9.32	0.65	-8.67	
			18	-15.38	-13.45	-11.18	0.65	-10.53	
			36	-14.49	-12.49	-10.25	0.65	-9.60	
		52T	37	-13.41	-11.41	-9.14	0.65	-8.49	
			45	-14.20	-12.02	-9.81	0.65	-9.16	
			52	-14.39	-12.25	-10.03	0.65	-9.38	
		106T	53	-12.63	-11.32	-8.69	0.65	-8.04	
			57	-13.44	-11.07	-8.85	0.65	-8.20	
			60	-13.31	-11.31	-8.96	0.65	-8.31	
		242T	61	-14.18	-12.41	-9.82	0.65	-9.17	
			62	-14.31	-12.69	-10.03	0.65	-9.38	
			64	-14.96	-13.12	-10.55	0.65	-9.90	
		484T	65	-17.46	-15.69	-12.83	0.65	-12.18	
			66	-18.30	-16.19	-13.46	0.65	-12.81	
		996T	67	-20.40	-18.77	-15.85	0.65	-15.20	
		SU	-	-14.14	-13.72	-9.75	0.65	-9.10	

Notes:

1. PSD MIMO(㏈m) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (㏈m) + DCF(㏈)
2. PSD e.i.r.p. Calculation: PSD e.i.r.p. (㏈m) = PSD MIMO (㏈m) + Antenna gain (㏈i)

802.11ax HE80 in the UNII-6 band

Channel	Frequency (㎒)	Tones	RU offset	Measured PSD ANT 1 (dBm/㎒)	Measured PSD ANT 2 (dBm/㎒)	PSD MIMO (dBm/㎒)	Directional ANT gain (dBi)	PSD e.i.r.p. (dBm/㎒)	Limit (dBm/㎒)
103	6 465	26T	0	-13.90	-12.08	-9.77	-1.36	-11.13	-1
			18	-15.41	-13.11	-10.98	-1.36	-12.34	
			36	-13.86	-12.23	-9.84	-1.36	-11.20	
		52T	37	-13.74	-12.04	-9.65	-1.36	-11.01	
			45	-14.12	-11.93	-9.73	-1.36	-11.09	
			52	-13.67	-12.10	-9.65	-1.36	-11.01	
		106T	53	-12.90	-11.05	-8.64	-1.36	-10.00	
			57	-13.18	-11.11	-8.78	-1.36	-10.14	
			60	-12.58	-11.16	-8.57	-1.36	-9.93	
		242T	61	-14.60	-12.98	-10.32	-1.36	-11.68	
			62	-15.31	-13.19	-10.73	-1.36	-12.09	
			64	-15.30	-13.92	-11.17	-1.36	-12.53	
		484T	65	-17.96	-16.24	-13.36	-1.36	-14.72	
			66	-18.62	-17.22	-14.20	-1.36	-15.56	
		996T	67	-21.12	-19.16	-16.37	-1.36	-17.73	
		SU	-	-14.81	-13.97	-10.20	-1.36	-11.56	

Notes:

1. PSD MIMO(dBm) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (dBm) + DCF(dB)
2. PSD e.i.r.p. Calculation: PSD e.i.r.p. (dBm) = PSD MIMO (dBm) + Antenna gain (dBi)

802.11ax HE80 in the UNII-7 band

Channel	Frequency (㎒)	Tones	RU offset	Measured PSD ANT 1 (dBm/㎒)	Measured PSD ANT 2 (dBm/㎒)	PSD MIMO (dBm/㎒)	Directional ANT gain (dBi)	PSD e.i.r.p. (dBm/㎒)	Limit (dBm/㎒)
119	6 545	26T	0	-13.67	-12.02	-9.64	0.01	-9.63	-1
			18	-15.47	-14.23	-11.68	0.01	-11.67	
			36	-13.73	-13.35	-10.41	0.01	-10.40	
		52T	37	-13.47	-11.86	-9.43	0.01	-9.42	
			45	-14.15	-13.14	-10.46	0.01	-10.45	
			52	-13.71	-13.16	-10.27	0.01	-10.26	
		106T	53	-12.76	-10.99	-8.55	0.01	-8.54	
			57	-13.53	-12.22	-9.59	0.01	-9.58	
			60	-12.96	-12.39	-9.43	0.01	-9.42	
		242T	61	-14.61	-12.93	-10.30	0.01	-10.29	
			62	-14.95	-13.57	-10.82	0.01	-10.81	
			64	-14.67	-14.18	-11.03	0.01	-11.02	
		484T	65	-17.80	-16.17	-13.25	0.01	-13.24	
			66	-18.03	-17.42	-14.05	0.01	-14.04	
		996T	67	-20.88	-19.23	-16.32	0.01	-16.31	
		SU	-	-14.38	-14.17	-10.10	0.01	-10.09	
151	6 705	26T	0	-12.93	-13.57	-10.11	0.01	-10.10	
			18	-14.05	-14.92	-11.33	0.01	-11.32	
			36	-12.54	-14.10	-10.12	0.01	-10.11	
		52T	37	-12.84	-13.57	-10.03	0.01	-10.02	
			45	-12.88	-13.87	-10.19	0.01	-10.18	
			52	-12.49	-14.02	-10.03	0.01	-10.02	
		106T	53	-11.84	-12.53	-8.93	0.01	-8.92	
			57	-11.93	-12.98	-9.18	0.01	-9.17	
			60	-11.60	-13.06	-9.03	0.01	-9.02	
		242T	61	-14.60	-15.15	-11.48	0.01	-11.47	
			62	-14.48	-15.21	-11.44	0.01	-11.43	
			64	-14.48	-15.85	-11.72	0.01	-11.71	
		484T	65	-17.88	-18.42	-14.48	0.01	-14.47	
			66	-17.82	-18.93	-14.68	0.01	-14.67	
		996T	67	-20.91	-21.50	-17.53	0.01	-17.52	
		SU	-	-14.31	-14.50	-10.23	0.01	-10.22	
183	6 865	26T	0	-11.81	-14.74	-9.90	0.01	-9.89	
			18	-13.30	-15.95	-11.30	0.01	-11.29	
			36	-13.01	-14.25	-10.46	0.01	-10.45	
		52T	37	-11.96	-14.55	-9.90	0.01	-9.89	
			45	-12.61	-15.02	-10.49	0.01	-10.48	
			52	-13.00	-14.18	-10.39	0.01	-10.38	
		106T	53	-11.19	-13.40	-8.92	0.01	-8.91	
			57	-11.80	-13.84	-9.46	0.01	-9.45	
			60	-11.99	-13.37	-9.39	0.01	-9.38	
		242T	61	-13.06	-15.50	-10.72	0.01	-10.71	
			62	-13.33	-15.82	-11.01	0.01	-11.00	
			64	-13.42	-15.08	-10.78	0.01	-10.77	
		484T	65	-16.17	-18.78	-13.62	0.01	-13.61	
			66	-16.59	-18.44	-13.76	0.01	-13.75	
		996T	67	-18.97	-21.40	-16.36	0.01	-16.35	
		SU	-	-13.06	-14.79	-9.67	0.01	-9.66	

Notes:

1. PSD MIMO(dBm) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (dBm) + DCF(dB)
2. PSD e.i.r.p. Calculation: PSD e.i.r.p. (dBm) = PSD MIMO (dBm) + Antenna gain (dBi)

802.11ax HE80 in the UNII-8 band

Channel	Frequency (㎒)	Tones	RU offset	Measured PSD ANT 1 (dBm/㎒)	Measured PSD ANT 2 (dBm/㎒)	PSD MIMO (dBm/㎒)	Directional ANT gain (dBi)	PSD e.i.r.p. (dBm/㎒)	Limit (dBm/㎒)
199	6 945	26T	0	-12.76	-13.08	-9.79	-0.40	-10.19	-1
			18	-14.68	-15.08	-11.75	-0.40	-12.15	
			36	-14.00	-13.47	-10.60	-0.40	-11.00	
		52T	37	-12.73	-12.85	-9.63	-0.40	-10.03	
			45	-13.69	-13.74	-10.55	-0.40	-10.95	
			52	-14.05	-13.20	-10.44	-0.40	-10.84	
		106T	53	-11.97	-11.97	-8.73	-0.40	-9.13	
			57	-13.02	-12.69	-9.61	-0.40	-10.01	
			60	-13.10	-12.21	-9.39	-0.40	-9.79	
		242T	61	-14.20	-13.99	-10.70	-0.40	-11.10	
			62	-14.41	-14.27	-10.95	-0.40	-11.35	
			64	-14.86	-13.82	-10.92	-0.40	-11.32	
		484T	65	-17.46	-17.04	-13.58	-0.40	-13.98	
			66	-18.21	-17.06	-13.94	-0.40	-14.34	
		996T	67	-20.49	-20.01	-16.58	-0.40	-16.98	
		SU	-	-15.04	-14.01	-10.32	-0.40	-10.72	
215	7 025	26T	0	-13.29	-13.01	-10.02	-0.40	-10.42	
			18	-14.32	-13.43	-10.72	-0.40	-11.12	
			36	-13.84	-12.99	-10.26	-0.40	-10.66	
		52T	37	-13.41	-12.93	-10.00	-0.40	-10.40	
			45	-13.17	-12.21	-9.50	-0.40	-9.90	
			52	-13.77	-12.84	-10.12	-0.40	-10.52	
		106T	53	-12.78	-12.08	-9.18	-0.40	-9.58	
			57	-12.51	-11.27	-8.61	-0.40	-9.01	
			60	-12.81	-12.05	-9.17	-0.40	-9.57	
		242T	61	-14.28	-14.24	-10.87	-0.40	-11.27	
			62	-14.81	-14.05	-11.02	-0.40	-11.42	
			64	-15.25	-14.68	-11.57	-0.40	-11.97	
		484T	65	-16.58	-16.40	-12.83	-0.40	-13.23	
			66	-18.01	-17.29	-13.97	-0.40	-14.37	
		996T	67	-20.77	-20.02	-16.72	-0.40	-17.12	
		SU	-	-14.70	-14.03	-10.18	-0.40	-10.58	

Notes:

1. PSD MIMO(㏈m) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (㏈m) + DCF(㏈)
2. PSD e.i.r.p. Calculation: PSD e.i.r.p. (㏈m) = PSD MIMO (㏈m) + Antenna gain (㏈i)

802.11ax HE160 in the UNII-5 band

Channel	Frequency (㎒)	Tones	RU offset	Measured PSD ANT 1 (dBm/㎒)	Measured PSD ANT 2 (dBm/㎒)	PSD MIMO (dBm/㎒)	Directional ANT gain (dBi)	PSD e.i.r.p. (dBm/㎒)	Limit (dBm/㎒)
15	6 025	26T	0L	-12.68	-14.57	-10.39	0.65	-9.74	
			0U	-11.76	-14.16	-9.67	0.65	-9.02	
			36U	-12.38	-14.55	-10.20	0.65	-9.55	
		52T	37L	-12.34	-14.23	-10.04	0.65	-9.39	
			37U	-11.69	-14.05	-9.57	0.65	-8.92	
			52U	-12.14	-14.44	-10.00	0.65	-9.35	
		106T	53L	-11.57	-13.12	-9.07	0.65	-8.42	
			53U	-10.97	-13.02	-8.66	0.65	-8.01	
			60U	-11.48	-13.60	-9.20	0.65	-8.55	
		242T	61L	-13.98	-15.55	-11.25	0.65	-10.60	
			61U	-13.75	-15.90	-11.25	0.65	-10.60	
			64U	-13.92	-16.21	-11.48	0.65	-10.83	
		484T	65L	-17.12	-18.94	-14.30	0.65	-13.65	
			65U	-16.88	-19.14	-14.22	0.65	-13.57	
			66U	-16.87	-19.52	-14.36	0.65	-13.71	
		996T	67L	-19.67	-21.94	-16.99	0.65	-16.34	
			67U	-19.73	-22.03	-17.06	0.65	-16.41	
		2X996T	-	-22.75	-24.78	-19.50	0.65	-18.85	
		SU	-	-12.67	-14.07	-9.63	0.65	-8.98	
47	6 185	26T	0L	-11.98	-13.65	-9.60	0.65	-8.95	-1
			0U	-11.90	-13.18	-9.36	0.65	-8.71	
			36U	-13.15	-13.90	-10.38	0.65	-9.73	
		52T	37L	-11.84	-13.42	-9.42	0.65	-8.77	
			37U	-11.95	-13.11	-9.35	0.65	-8.70	
			52U	-13.11	-13.58	-10.20	0.65	-9.55	
		106T	53L	-11.32	-12.89	-8.82	0.65	-8.17	
			53U	-11.87	-12.08	-8.76	0.65	-8.11	
			60U	-12.17	-12.68	-9.21	0.65	-8.56	
		242T	61L	-13.33	-14.99	-10.64	0.65	-9.99	
			61U	-13.76	-14.87	-10.84	0.65	-10.19	
			64U	-13.83	-14.13	-10.54	0.65	-9.89	
		484T	65L	-16.63	-18.34	-13.76	0.65	-13.11	
			65U	-17.04	-18.14	-13.91	0.65	-13.26	
			66U	-17.46	-18.48	-14.30	0.65	-13.65	
		996T	67L	-19.46	-21.34	-16.63	0.65	-15.98	
			67U	-19.84	-21.31	-16.84	0.65	-16.19	
		2X996T	-	-22.63	-24.09	-19.15	0.65	-18.50	
		SU	-	-13.01	-13.18	-9.41	0.65	-8.76	
79	6 345	26T	0L	-13.24	-13.76	-10.36	0.65	-9.71	
			0U	-13.91	-13.29	-10.46	0.65	-9.81	
			36U	-13.52	-12.79	-10.01	0.65	-9.36	
		52T	37L	-13.26	-13.59	-10.28	0.65	-9.63	
			37U	-13.80	-13.20	-10.35	0.65	-9.70	
			52U	-13.68	-12.58	-9.95	0.65	-9.30	
		106T	53L	-12.06	-11.67	-8.65	0.65	-8.00	
			53U	-12.50	-11.29	-8.64	0.65	-7.99	
			60U	-12.42	-11.52	-8.74	0.65	-8.09	
		242T	61L	-14.27	-14.19	-10.79	0.65	-10.14	
			61U	-14.08	-13.33	-10.25	0.65	-9.60	
			64U	-14.84	-14.13	-11.03	0.65	-10.38	
		484T	65L	-17.66	-17.37	-13.87	0.65	-13.22	
			65U	-17.42	-16.60	-13.35	0.65	-12.70	
			66U	-17.86	-17.20	-13.88	0.65	-13.23	
		996T	67L	-20.38	-20.17	-16.60	0.65	-15.95	
			67U	-21.14	-20.51	-17.14	0.65	-16.49	
		2X996T	-	-23.73	-23.25	-19.33	0.65	-18.68	
		SU	-	-13.22	-12.34	-9.08	0.65	-8.43	

Notes:

1. PSD MIMO(㏈m) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (㏈m) + DCF(㏈)
2. PSD e.i.r.p. Calculation: PSD e.i.r.p. (㏈m) = PSD MIMO (㏈m) + Antenna gain (㏈i)
3. HE160 = HE80L + HE80U

802.11ax HE160 in the UNII-6 band

Channel	Frequency (㎒)	Tones	RU offset	Measured PSD ANT 1 (dBm/㎒)	Measured PSD ANT 2 (dBm/㎒)	PSD MIMO (dBm/㎒)	Directional ANT gain (dBi)	PSD e.i.r.p. (dBm/㎒)	Limit (dBm/㎒)
111	6 505	26T	0L	-13.64	-11.55	-9.34	-1.36	-10.70	-1
			0U	-13.82	-12.15	-9.77	-1.36	-11.13	
			36U	-13.53	-12.96	-10.11	-1.36	-11.47	
		52T	37L	-13.48	-11.38	-9.16	-1.36	-10.52	
			37U	-13.75	-12.01	-9.65	-1.36	-11.01	
			52U	-13.38	-12.77	-9.92	-1.36	-11.28	
		106T	53L	-12.49	-10.67	-8.28	-1.36	-9.64	
			53U	-12.63	-11.37	-8.74	-1.36	-10.10	
			60U	-12.15	-12.10	-8.91	-1.36	-10.27	
		242T	61L	-15.01	-13.02	-10.46	-1.36	-11.82	
			61U	-15.42	-14.17	-11.31	-1.36	-12.67	
			64U	-14.84	-14.49	-11.22	-1.36	-12.58	
		484T	65L	-18.41	-16.40	-13.65	-1.36	-15.01	
			65U	-18.80	-17.44	-14.43	-1.36	-15.79	
			66U	-18.23	-17.30	-14.10	-1.36	-15.46	
		996T	67L	-21.35	-19.32	-16.55	-1.36	-17.91	
			67U	-21.66	-20.22	-17.21	-1.36	-18.57	
		2X996T	-	-24.43	-22.92	-19.46	-1.36	-20.82	
		SU	-	-13.59	-13.38	-9.80	-1.36	-11.16	

Notes:

1. PSD MIMO(dBm) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (dBm) + DCF(dB)
2. PSD e.i.r.p. Calculation: PSD e.i.r.p. (dBm) = PSD MIMO (dBm) + Antenna gain (dBi)
3. HE160 = HE80L + HE80U

802.11ax HE160 in the UNII-7 band

Channel	Frequency (㎒)	Tones	RU offset	Measured PSD ANT 1 (dBm/㎒)	Measured PSD ANT 2 (dBm/㎒)	PSD MIMO (dBm/㎒)	Directional ANT gain (dBi)	PSD e.i.r.p. (dBm/㎒)	Limit (dBm/㎒)
143	6 665	26T	0L	-14.38	-12.11	-9.97	0.01	-9.96	-1
			0U	-13.88	-12.59	-10.06	0.01	-10.05	
			36U	-13.41	-12.69	-9.90	0.01	-9.89	
		52T	37L	-14.37	-11.97	-9.87	0.01	-9.86	
			37U	-13.73	-12.44	-9.90	0.01	-9.89	
			52U	-13.22	-12.38	-9.64	0.01	-9.63	
		106T	53L	-12.42	-12.37	-9.18	0.01	-9.17	
			53U	-11.98	-13.85	-9.60	0.01	-9.59	
			60U	-12.18	-11.65	-8.70	0.01	-8.69	
		242T	61L	-14.98	-12.43	-10.08	0.01	-10.07	
			61U	-14.75	-13.39	-10.58	0.01	-10.57	
			64U	-13.82	-13.23	-10.07	0.01	-10.06	
		484T	65L	-18.42	-15.82	-13.29	0.01	-13.28	
			65U	-18.26	-16.78	-13.82	0.01	-13.81	
			66U	-17.01	-16.47	-13.09	0.01	-13.08	
		996T	67L	-21.16	-18.77	-16.13	0.01	-16.12	
			67U	-21.04	-19.57	-16.57	0.01	-16.56	
		2X996T	-	-23.78	-22.35	-18.86	0.01	-18.85	
		SU	-	-13.22	-13.52	-9.69	0.01	-9.68	
175	6 825	26T	0L	-12.06	-13.67	-9.66	0.01	-9.65	
			0U	-11.82	-13.44	-9.42	0.01	-9.41	
			36U	-12.25	-12.79	-9.38	0.01	-9.37	
		52T	37L	-11.90	-13.55	-9.51	0.01	-9.50	
			37U	-11.72	-13.32	-9.31	0.01	-9.30	
			52U	-12.25	-12.70	-9.33	0.01	-9.32	
		106T	53L	-11.04	-12.51	-8.50	0.01	-8.49	
			53U	-10.96	-12.46	-8.44	0.01	-8.43	
			60U	-11.11	-11.86	-8.26	0.01	-8.25	
		242T	61L	-13.57	-15.08	-10.82	0.01	-10.81	
			61U	-13.70	-15.09	-10.90	0.01	-10.89	
			64U	-14.46	-15.29	-11.41	0.01	-11.40	
		484T	65L	-16.75	-18.41	-13.86	0.01	-13.85	
			65U	-17.11	-18.46	-14.09	0.01	-14.08	
			66U	-17.41	-18.42	-14.25	0.01	-14.24	
		996T	67L	-20.52	-21.97	-17.51	0.01	-17.50	
			67U	-21.09	-22.25	-17.96	0.01	-17.95	
		2X996T	-	-22.63	-23.95	-19.09	0.01	-19.08	
		SU	-	-11.93	-13.22	-8.85	0.01	-8.84	

Notes:

1. PSD MIMO(dBm) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (dBm) + DCF(dB)
2. PSD e.i.r.p. Calculation: PSD e.i.r.p. (dBm) = PSD MIMO (dBm) + Antenna gain (dBi)
3. HE160 = HE80L + HE80U

802.11ax HE160 in the UNII-8 band

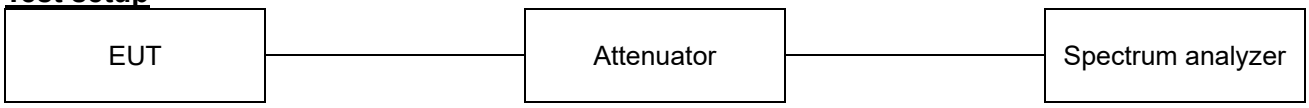
Channel	Frequency (㎒)	Tones	RU offset	Measured PSD ANT 1 (dBm/㎒)	Measured PSD ANT 2 (dBm/㎒)	PSD MIMO (dBm/㎒)	Directional ANT gain (dBi)	PSD e.i.r.p. (dBm/㎒)	Limit (dBm/㎒)
207	6 985	26T	0L	-12.28	-12.87	-9.43	-0.40	-9.83	-1
			0U	-12.31	-12.31	-9.18	-0.40	-9.58	
			36U	-14.25	-13.40	-10.67	-0.40	-11.07	
		52T	37L	-12.23	-12.63	-9.29	-0.40	-9.69	
			37U	-12.25	-12.17	-9.07	-0.40	-9.47	
			52U	-13.29	-12.28	-9.62	-0.40	-10.02	
		106T	53L	-11.41	-11.56	-8.27	-0.40	-8.67	
			53U	-11.52	-11.35	-8.22	-0.40	-8.62	
			60U	-12.79	-12.29	-9.32	-0.40	-9.72	
		242T	61L	-13.76	-14.08	-10.48	-0.40	-10.88	
			61U	-14.26	-14.17	-10.77	-0.40	-11.17	
			64U	-14.37	-13.64	-10.55	-0.40	-10.95	
		484T	65L	-16.91	-17.51	-13.56	-0.40	-13.96	
			65U	-17.64	-17.38	-13.87	-0.40	-14.27	
			66U	-17.11	-16.32	-13.06	-0.40	-13.46	
		996T	67L	-19.86	-19.95	-16.23	-0.40	-16.63	
			67U	-20.44	-20.06	-16.58	-0.40	-16.98	
		2X996T	-	-22.66	-22.01	-18.17	-0.40	-18.57	
		SU	-	-12.61	-12.43	-8.84	-0.40	-9.24	

Notes:

1. PSD MIMO(㏈m) = 10log(10(ANT 1/10) + 10(ANT 2/10)) (㏈m) + DCF(㏈)
2. PSD e.i.r.p. Calculation: PSD e.i.r.p. (㏈m) = PSD MIMO (㏈m) + Antenna gain (㏈i)
3. HE160 = HE80L + HE80U

7.3. 26 dB Bandwidth & 99% Bandwidth

Test setup



Limit

According to §15.407(a)(10)

Band	26 dB Bandwidth & 99% Occupied Bandwidth
UNII-5, 6, 7, 8	< 320 ㎒

Test procedure

ANSI C63.10-2013 Section 12.4
KDB 789033 D02 v02r01 - Section C.1 (26dB bandwidth)
KDB 789033 D02 v02r01 - Section D (99% bandwidth)

Test settings

1. 26 dB Bandwidth

a. Set RBW = approximately 1% of the emission bandwidth.
b. Set the VBW > RBW.
c. Detector = Peak.
d. Trace mode = max hold.
e. Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

2. 99% Occupied Bandwidth

a. Set center frequency to the nominal EUT channel center frequency.
b. Set span = 1.5 times to 5.0 times the OBW.
c. Set RBW = 1% to 5% of the OBW
d. Set VBW ≥ 3 x RBW
e. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
f. Use the 99% power bandwidth function of the instrument (if available).
g. If the instrument does not have a 99% power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

Notes:

1. For the 26 dB Bandwidth and OBW, smallest tone, full tone/single unit for each bandwidth were reported as a representative.
2. Please refer to Appendix B for plots

Test results

Band	Mode	Frequency (㎒)	Tones	RU offset	26 ㏈ bandwidth (㎒)		99% bandwidth (㎒)	
					ANT 1	ANT 2	ANT 1	ANT 2
UNII-5	11a	5 955	-	-	19.58	19.53	16.53	16.43
		6 175	-	-	19.73	19.58	16.43	16.43
		6 415	-	-	20.13	19.53	16.48	16.43
UNII-6	11a	6 435	-	-	19.93	19.53	16.53	16.43
		6 475	-	-	19.73	19.48	16.53	16.43
		6 515	-	-	19.88	19.83	16.53	16.43
UNII-7	11a	6 535	-	-	19.98	19.48	16.48	16.43
		6 695	-	-	19.78	19.53	16.48	16.43
		6 875	-	-	19.68	19.48	16.48	16.43
UNII-8	11a	6 895	-	-	19.63	19.73	16.53	16.43
		6 995	-	-	19.58	19.53	16.48	16.48
		7 115	-	-	19.63	19.63	16.48	16.43

Band	Mode	Frequency (㎒)	Tones	RU offset	26 dB bandwidth (㎒)		99% bandwidth (㎒)	
					ANT 1	ANT 2	ANT 1	ANT 2
UNII-5	11ax HE20	5 955	26T	0	21.33	20.98	19.03	18.78
				4	19.43	18.93	17.63	17.33
				8	21.38	20.93	19.13	18.83
			242T	61	23.28	23.83	19.28	19.33
			SU	-	21.58	21.73	18.98	18.98
		6 175	26T	0	21.08	20.83	18.93	18.73
				4	19.28	18.88	17.48	17.33
				8	21.13	20.93	19.03	18.88
			242T	61	23.33	23.73	19.28	19.33
			SU	-	21.38	21.73	18.98	18.98
		6 415	26T	0	21.18	20.78	19.03	18.83
				4	19.53	18.88	17.58	17.33
				8	21.48	20.93	19.23	18.93
			242T	61	23.53	23.63	19.28	19.28
			SU	-	21.53	21.73	18.93	18.98
UNII-6	11ax HE20	6 435	26T	0	21.48	20.88	18.93	18.68
				4	19.33	18.73	17.53	17.33
				8	21.58	20.93	19.13	18.83
			242T	61	23.48	23.68	19.33	19.28
			SU	-	21.53	21.83	18.93	18.98
		6 475	26T	0	21.28	20.78	18.98	18.78
				4	19.48	18.78	17.63	17.38
				8	21.33	20.93	19.18	18.93
			242T	61	23.43	23.68	19.28	19.33
			SU	-	21.53	21.73	18.98	18.98
		6 515	26T	0	21.58	21.08	18.98	18.78
				4	19.33	18.78	17.58	17.38
				8	21.48	21.28	19.13	18.98
			242T	61	23.58	23.68	19.33	19.33
			SU	-	21.53	21.73	18.93	18.98
UNII-7	11ax HE20	6 535	26T	0	21.33	20.93	18.98	18.78
				4	19.33	18.78	17.53	17.38
				8	21.38	20.98	19.13	18.98
			242T	61	23.38	23.93	19.33	19.33
			SU	-	21.53	21.73	18.93	18.98
		6 695	26T	0	21.18	21.28	19.08	18.98
				4	19.28	18.83	17.53	17.38
				8	21.28	20.83	19.08	18.98
			242T	61	23.43	23.93	19.33	19.33
			SU	-	21.33	21.73	18.93	18.98
		6 875	26T	0	21.13	20.78	18.98	18.88
				4	19.23	18.88	17.53	17.43
				8	21.28	21.08	19.08	19.03
			242T	61	23.28	24.03	19.33	19.33
			SU	-	21.48	21.68	18.88	18.98
UNII-8	11ax HE20	6 895	26T	0	21.23	20.98	19.03	19.03
				4	19.38	18.73	17.68	17.43
				8	21.28	21.08	19.23	19.08
			242T	61	23.53	23.63	19.33	19.28
			SU	-	21.48	21.68	18.93	18.98
		6 995	26T	0	21.13	20.78	19.08	18.78
				4	19.38	18.83	17.53	17.33
				8	21.38	21.33	19.18	18.88
			242T	61	23.63	23.53	19.33	19.28
			SU	-	21.33	21.53	18.93	18.93
		7 115	26T	0	21.38	20.88	19.13	18.88
				4	19.38	18.88	17.63	17.38
				8	21.48	21.18	19.28	18.98
			242T	61	23.78	23.78	19.28	19.33
			SU	-	21.58	21.68	18.93	18.93

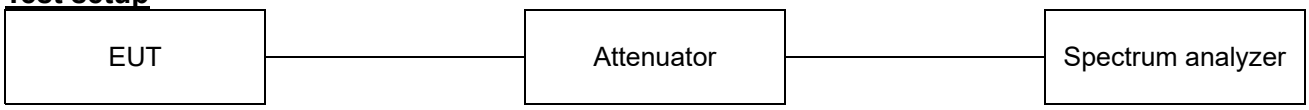
Band	Mode	Frequency (㎒)	Tones	RU offset	26 dB bandwidth (㎒)		99% bandwidth (㎒)	
					ANT 1	ANT 2	ANT 1	ANT 2
UNII-5	11ax HE40	5 965	26T	0	40.86	40.86	38.66	38.26
				9	38.56	38.36	36.66	36.46
				17	40.86	40.86	38.56	38.36
			484T	65	45.15	44.26	38.26	38.16
			SU	-	41.06	41.16	37.76	37.76
		6 165	26T	0	40.86	41.16	38.36	38.36
				9	38.46	38.36	36.66	36.56
				17	40.86	40.66	38.46	38.36
			484T	65	44.96	44.36	38.26	38.16
			SU	-	41.36	41.26	37.76	37.76
		6 405	26T	0	40.76	40.86	38.36	38.46
				9	38.46	38.36	36.46	36.46
				17	40.86	40.76	38.56	38.56
			484T	65	45.05	44.06	38.26	38.16
			SU	-	41.16	41.36	37.76	37.76
UNII-6	11ax HE40	6 445	26T	0	41.06	40.86	38.56	38.26
				9	38.46	38.36	36.56	36.46
				17	40.86	40.86	38.56	38.46
			484T	65	45.65	44.16	38.26	38.06
			SU	-	41.36	41.06	37.76	37.76
		6 485	26T	0	41.26	41.06	38.36	38.26
				9	38.46	38.36	36.66	36.46
				17	41.16	40.86	38.56	38.36
			484T	65	44.96	44.16	38.26	38.06
			SU	-	41.16	41.16	37.76	37.76
		6 525	26T	0	41.06	40.86	38.76	38.56
				9	38.36	38.36	36.56	36.56
				17	40.86	40.76	38.56	38.56
			484T	65	45.35	44.46	38.26	38.36
			SU	-	41.36	41.26	37.76	37.76
UNII-7	11ax HE40	6 565	26T	0	40.96	40.76	38.36	38.46
				9	38.46	38.36	36.66	36.46
				17	40.86	40.76	38.56	38.56
			484T	65	45.05	44.06	38.26	38.16
			SU	-	41.36	41.36	37.76	37.76
		6 685	26T	0	40.96	40.76	38.46	38.46
				9	38.36	38.36	36.46	36.36
				17	41.06	40.76	38.56	38.36
			484T	65	45.05	44.46	38.16	38.06
			SU	-	41.16	41.16	37.76	37.76
		6 845	26T	0	40.76	41.06	38.46	38.56
				9	38.36	38.36	36.56	36.46
				17	40.76	40.86	38.46	38.66
			484T	65	45.05	44.16	38.26	38.06
			SU	-	41.16	41.36	37.76	37.86
UNII-8	11ax HE40	6 885	26T	0	40.96	40.86	38.46	38.46
				9	38.46	38.36	36.56	36.56
				17	40.86	40.86	38.66	38.56
			484T	65	44.96	44.56	38.26	38.16
			SU	-	40.96	41.16	37.66	37.76
		6 965	26T	0	40.96	40.86	38.46	38.36
				9	38.36	38.26	36.56	36.36
				17	40.86	40.56	38.56	38.26
			484T	65	45.25	44.26	38.16	38.06
			SU	-	41.26	40.86	37.76	37.76
		7 085	26T	0	40.66	40.76	38.36	38.36
				9	38.36	38.26	36.46	36.46
				17	40.86	40.66	38.46	38.36
			484T	65	44.96	44.46	38.16	38.36
			SU	-	41.16	41.16	37.76	37.76

Band	Mode	Frequency (㎒)	Tones	RU offset	26 dB bandwidth (㎒)		99% bandwidth (㎒)	
					ANT 1	ANT 2	ANT 1	ANT 2
UNII-5	11ax HE80	5 985	26T	0	83.20	82.72	79.72	79.36
				18	79.24	78.76	75.64	75.40
				36	82.00	81.88	79.00	78.64
			996T	67	91.35	90.39	78.04	78.04
			SU	-	83.56	83.08	77.32	77.20
		6 145	26T	0	82.84	82.84	79.12	79.36
				18	79.00	78.64	75.52	75.40
				36	82.00	81.64	79.00	78.64
			996T	67	91.59	89.67	78.04	78.04
			SU	-	82.84	83.44	77.20	77.20
		6 385	26T	0	82.96	82.60	79.36	79.48
				18	79.24	78.52	75.52	75.28
				36	82.36	82.24	79.00	78.76
			996T	67	92.91	90.15	78.04	77.92
			SU	-	82.96	83.44	77.20	77.20
UNII-6	11ax HE80	6 465	26T	0	82.72	82.60	79.48	79.00
				18	79.36	78.76	75.64	75.28
				36	82.00	82.24	79.00	78.76
			996T	67	92.91	89.91	77.92	78.04
			SU	-	82.96	83.68	77.20	77.20
UNII-7	11ax HE80	6 545	26T	0	83.56	82.60	79.48	79.12
				18	79.12	78.76	75.40	75.04
				36	82.12	81.88	79.36	78.88
			996T	67	92.67	89.91	78.04	78.04
			SU	-	83.20	83.44	77.20	77.08
		6 705	26T	0	82.84	82.00	79.36	78.88
				18	79.00	78.64	75.52	75.04
				36	81.88	82.12	78.88	79.00
			996T	67	91.23	90.03	77.92	78.16
			SU	-	82.36	83.20	77.08	77.20
		6 865	26T	0	82.84	82.84	79.24	79.60
				18	79.00	78.76	75.40	75.64
				36	82.00	81.76	79.00	78.88
			996T	67	91.59	90.15	78.04	78.04
			SU	-	83.08	83.20	77.08	77.20
UNII-8	11ax HE80	6 945	26T	0	82.96	82.84	79.36	79.48
				18	79.12	78.52	75.52	75.40
				36	81.76	81.64	79.00	78.76
			996T	67	91.83	89.43	78.04	78.04
			SU	-	82.96	83.44	77.32	77.32
		7 025	26T	0	83.20	82.84	79.24	79.36
				18	79.00	78.28	75.40	75.04
				36	81.88	81.64	79.24	78.76
			996T	67	92.07	88.83	78.04	77.92
			SU	-	82.84	83.20	77.08	77.32

Band	Mode	Frequency (㎒)	Tones	RU offset	26 dB bandwidth (㎒)		99% bandwidth (㎒)	
					ANT 1	ANT 2	ANT 1	ANT 2
UNII-5	11ax HE160	6 025	26T	0L	165.59	164.32	159.20	159.52
				0U	158.24	159.20	152.81	154.41
				36U	164.32	164.32	159.20	158.88
			2x996T	-	165.91	165.91	156.00	156.32
			SU	-	166.55	166.23	156.00	156.00
		6 185	26T	0L	165.91	164.32	159.84	159.84
				0U	159.20	159.20	154.09	154.73
				36U	164.32	164.32	159.84	159.84
			2x996T	-	167.19	166.23	156.00	156.32
			SU	-	166.23	165.59	155.68	156.00
		6 345	26T	0L	164.64	164.64	159.52	159.20
				0U	159.20	158.88	154.09	153.77
				36U	164.64	164.00	159.84	159.52
			2x996T	-	165.91	165.27	156.32	156.00
			SU	-	165.91	165.91	156.00	156.00
UNII-6	11ax HE160	6 505	26T	0L	165.27	164.64	159.52	159.20
				0U	159.84	158.88	154.73	154.09
				36U	164.64	165.27	159.20	159.84
			2x996T	-	167.51	166.23	156.32	156.00
			SU	-	166.55	165.59	155.68	155.68
UNII-7	11ax HE160	6 665	26T	0L	165.59	165.59	159.84	159.84
				0U	159.20	158.56	154.41	154.41
				36U	164.32	164.32	159.20	159.84
			2x996T	-	167.19	166.23	156.32	156.32
			SU	-	166.23	165.91	156.00	155.68
		6 825	26T	0L	165.59	165.91	158.56	159.84
				0U	158.88	159.20	154.09	155.04
				36U	164.32	163.68	159.52	159.84
			2x996T	-	165.91	166.87	156.00	156.00
			SU	-	165.91	166.23	155.68	156.00
UNII-8	11ax HE160	6 985	26T	0L	165.27	164.96	159.20	159.52
				0U	158.88	158.88	153.45	153.45
				36U	164.64	163.68	159.84	159.52
			2x996T	-	165.59	166.23	156.00	155.68
			SU	-	166.55	165.59	155.68	155.36

7.4. In-Band Emission

Test setup



Limit

According to §15.407(b)(7),

For transmitters operating within the 5.925-7.125 ㎓ bands: Power spectral density must be suppressed by 20 ㏈ at 1 ㎒ outside of channel edge, by 28 ㏈ at one channel bandwidth from the channel center, and by 40 ㏈ at one- and one-half times the channel bandwidth away from channel center. At frequencies between one megahertz outside an unlicensed device's channel edge and one channel bandwidth from the center of the channel, the limits must be linearly interpolated between 20 ㏈ and 28 ㏈ suppression, and at frequencies between one and one- and one-half times an unlicensed device's channel bandwidth, the limits must be linearly interpolated between 28 ㏈ and 40 dB suppression. Emissions removed from the channel center by more than one- and one-half times the channel bandwidth must be suppressed by at least 40 ㏈.

Test procedure

ANSI C63.10-2013 Section 12.3.2.2

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Test settings

1. Connect output of the antenna port to a spectrum analyzer or EMI receiver, with appropriate attenuation, as to not damage the instrumentation.
2. Set the reference level of the measuring equipment in accordance with procedure 4.1.5.2 of ANSI C63.10-2013.
3. Measure the 26 dB EBW using the test procedure 12.4.1 of ANSI C63.10-2013. (This will be used to determine the channel edge.)
4. Measure the power spectral density (which will be used for emissions mask reference) using the following procedure:
   a) Set the span to encompass the entire 26 dB EBW of the signal.
   b) Set RBW = same RBW used for 26 dB EBW measurement.
   c) Set VBW ≥ 3 X RBW
   d) Number of points in sweep ≥ [2 X span / RBW].
   e) Sweep time = auto.
   f) Detector = RMS (i.e., power averaging)
   g) Trace average at least 100 traces in power averaging (rms) mode.
   h) Use the peak search function on the instrument to find the peak of the spectrum.
5. For the purposes of developing the emission mask, the channel bandwidth is defined as the 26 dB EBW.
6. Using the measuring equipment limit line function, develop the emissions mask based on the following requirements. The emissions power spectral density must be reduced below the peak power spectral density (in dB) as follows:
   a). Suppressed by 20 dB at 1 ㎒ outside of the channel edge. (The channel edge is defined as the 26-dB point on either side of the carrier center frequency.)
   b). Suppressed by 28 dB at one channel bandwidth from the channel center.
   c). Suppressed by 40 dB at one- and one-half times the channel bandwidth from the channel center.
7. Adjust the span to encompass the entire mask as necessary.
8. Clear trace.
9. Trace average at least 100 traces in power averaging (rms) mode.
10. Adjust the reference level as necessary so that the crest of the channel touches the top of the emission mask.

Test results

Please refer to Appendix B for plots

Notes:

1. For in-band emission, the measurement for smallest tone, full tone or single unit for each bandwidth were reported as a representative.

7.5. Contention Based Protocol

Test Overview and Limit

According to §15.407(d)(6),
Indoor access points, subordinate devices and client devices operating in the 5.925-7.125 ㎓ band (herein referred to as unlicensed devices) are required to use technologies that include a contention-based protocol to avoid co-channel interference with incumbent devices sharing the band. To ensure incumbent co-channel operations are detected in a technology-agnostic manner, unlicensed devices are required to detect co-channel radio frequency energy (energy detect) and avoid simultaneous transmission.

Unlicensed low-power indoor devices must detect co-channel radio frequency power that is at least -62 ㏈m or lower. Upon detection of energy in the band, unlicensed low power indoor devices must vacate the channel (in which incumbent signal is transmitted) and stay off the incumbent channel as long as detected radio frequency power is equal to or greater than the threshold (-62 ㏈m). The -62 ㏈m (or lower) threshold is referenced to a 0 dBi antenna gain.

To ensure incumbent operations are reliably detected in the band, low power indoor devices must detect RF energy throughout their intended operating channel. For example, an 802.11 device that plans to transmit a 40 ㎒- wide signal (on a primary 20 MHz channel and a secondary 20 MHz channel) must detect energy throughout the entire 40 MHz channel. Additionally, low-power indoor devices must detect co-channel energy with 90% or greater certainty.

Test Procedure

A. Simulating Incumbent Signal

The incumbent signal is assumed to be noise-like. One example of such transmission could be Digital Video Broadcasting (DVB) systems that use Orthogonal Frequency Division Multiplexing (OFDM). Incumbent systems may also use different bandwidths for their transmissions. A 10 MHz-wide additive white Gaussian noise (AWGN) signal is selected to simulate and represent incumbent transmission.

B. Required number of tests

Incumbent and EUT (access point, subordinate or client) signals may occupy different portions of the channel. Depending on the EUT transmission bandwidth and incumbent signal center frequency (simulated by a 10 ㎒-wide AWGN signal), the center frequency of the EUT signal f_{c1} may fall within the incumbent's occupied bandwidth (Figure 1.a), or outside of it (Figure 1.b).

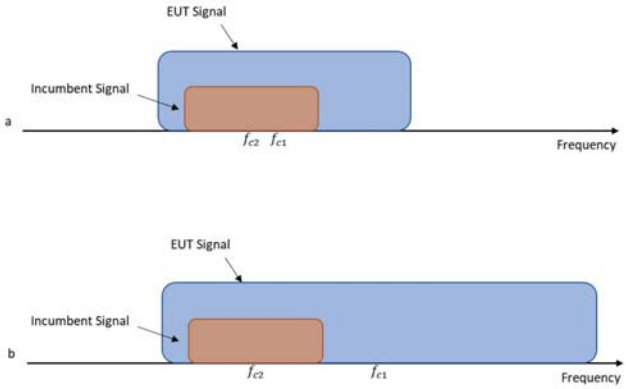


Figure 1. Two possible scenarios where a) center frequency of EUT transmission falls within incumbent's bandwidth, or b) outside of it

To ensure EUT reliably detects an incumbent signal in both scenarios shown in Figure 1, the detection threshold test may be repeated more than once with the incumbent signal (having center frequency f_{c2}) tuned to different center frequencies within the UT transmission bandwidth. The criteria specified in Table 1 determines how many times the detection threshold test must be performed;

Table 1. Criteria to determine number of times detection threshold test may be performed

If	Number of Tests	Placement of Incumbent Transmission
$BW_{EUT} \leq BW_{Inc}$	Once	Tune incumbent and EUT transmissions ($f_{c1} = f_{c2}$)
$BW_{Inc} \leq BW_{EUT} \leq 2BW_{Inc}$	Once	Incumbent transmission is contained within BW_{EUT}
$2BW_{Inc} \leq BW_{EUT} \leq 4BW_{Inc}$	Twice. Incumbent transmission is contained within BW_{EUT}	Incumbent transmission is located as closely as possible to the lower edge and upper edge, respectively, of the EUT channel
$BW_{EUT} > 4BW_{Inc}$	Three times	Incumbent transmission is located as closely as possible to the lower edge of the EUT channel, in the middle of EUT channel, and as closely as possible to the upper edge of the EUT channel

where:
BW_{EUT}: Transmission bandwidth of EUT signal
BW_{Inc}: Transmission bandwidth of the simulated incumbent signal (10 ㎒ wide AWGN signal)
f_{c1}: Center frequency of EUT transmission
f_{c2}: Center frequency of simulated incumbent signal

C. Test Setup

To ensure the EUT is capable of detecting co-channel energy, the first step is to configure the EUT to transmit with a constant duty cycle.2 To simulate an incumbent signal, a signal generator (or similar source) that is capable of generating band-limited additive white Gaussian noise (AWGN) is required. Depending on the EUT antenna configuration, the AWGN signal can be provided to the EUT receiver via a conducted method (Figure 2) or a radiated method (Figure 3). Figure 2 shows the conducted test setup where a band-limited AWGN signal is generated at a very low power level and injected into the EUT's antenna port. The AWGN signal power level is then incrementally increased while the EUT transmission is monitored on a signal analyzer 2 to verify if the EUT can sense the AWGN signal and can subsequently cease its transmission. A triggered measurement, as shown in Figure 2, is optional, and assists with determining the time it takes the EUT to cease transmission (or vacate the channel) upon detecting RF energy. If the EUT has only one antenna port, then an AWGN signal source can be connected to the same antenna port.

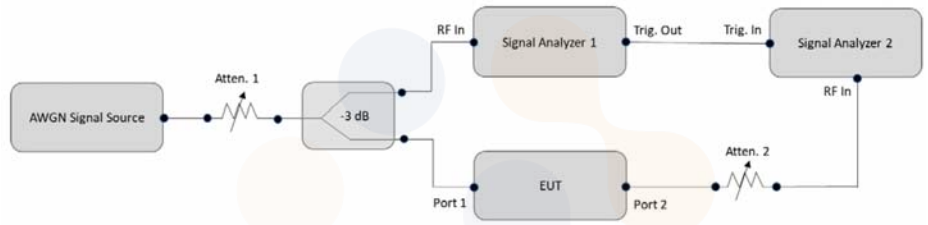


Figure 2. Contention-based protocol test setup, conducted method Step-by-Step Procedure, Conducted Setup

1) Configure the EUT to transmit with a constant duty cycle.
2) Set the operating parameters of the EUT including power level, operating frequency, modulation and bandwidth.
3) Set the signal analyzer center frequency to the nominal EUT channel center frequency. The span range of the signal analyzer shall be between two times and five times the OBW of the EUT. Connect the output port of the EUT to the signal analyzer 2, as shown in Figure 2. Ensure that the attenuator 2 provides enough attenuation to not overload the signal analyzer 2 receiver.
4) Monitoring the signal analyzer 2, verify the EUT is operating and transmitting with the parameters set at step two.
5) Using an AWGN signal source, generate (but do not transmit, i.e., RF OFF) a 10 ㎒-wide AWGN signal. Use Table 1 to determine the center frequency of the 10 ㎒ AWGN signal relative to the EUT's channel bandwidth and center frequency.
6) Set the AWGN signal power to an extremely low level (more than 20 dB below the -62 ㏈m threshold). Connect the AWGN signal source, via a 3-㏈ splitter, to the signal analyzer 1 and the EUT as shown in Figure 2.
7) Transmit the AWGN signal (RF ON) and verify its characteristics on the signal analyzer 1.
8) Monitor the signal analyzer 2 to verify if the AWGN signal has been detected and the EUT has ceased transmission. If the EUT continues to transmit, then incrementally increase the AWGN signal power level until the EUT stops transmitting.
9) (Including all losses in the RF paths) Determine and record the AWGN signal power level (at the EUT's antenna port) at which the EUT ceased transmission. Repeat the procedure at least 10 times to verify the EUT can detect an AWGN signal with 90% (or better) level of certainty.

10) Refer to Table 1 to determine number of times the detection threshold testing needs to be repeated. If testing is required more than once, then go back to step 5, choose a different center frequency for the AWGN signal and repeat the process.

Note.

1) KDB 987594 D02, contention based protocol was tested using an AWGN signal with a bandwidth of 10 ㎒. The amplitude of the signal was increased until detected by the EUT, signaled by the ceasing of transmission, marker indicates the point at which the AWGN signal is introduced.

2) Lowest antenna gain information

- Lowest antenna gain of both antennas was adjusted to injected power (AWGN signal).

Band	Lowest Gain (dBi)	
	ANT1	ANT2
UNII-5	-1.40	-3.45
UNII-6	-3.34	-5.54
UNII-7	-3.52	-2.51
UNII-8	-4.25	-2.64

3) Supported Equipment

Equipment	Manufacturer	Model	FCC ID
Access Point	ASUSTek Computer Inc.	GT-AXE11000	MSQ-RTAXJF00

Test result

Band	BW [㎒]	Channel Freq. [㎒]	Incumbent Freq. [㎒]	Injected (AWGN) Power (dBm)	Antenna Gain (dBi)	Adjusted Power (dBm)	Detection Limit (dBm)	EUT TX Status
UNII 5	20	6 175	6 175	-75.00	-3.45	-71.55	-62.00	Normal
				-72.00	-3.45	-68.55	-62.00	Minimal
				-71.70	-3.45	-68.25	-62.00	Ceased
	160	6 185	6 110	-83.00	-3.45	-79.55	-62.00	Normal
				-76.00	-3.45	-72.55	-62.00	Minimal
				-75.60	-3.45	-72.15	-62.00	Ceased
			6 185	-78.00	-3.45	-74.55	-62.00	Normal
				-72.70	-3.45	-69.25	-62.00	Minimal
				-72.30	-3.45	-68.85	-62.00	Ceased
			6 260	-83.00	-3.45	-79.55	-62.00	Normal
				-75.30	-3.45	-71.85	-62.00	Minimal
				-74.90	-3.45	-71.45	-62.00	Ceased
UNII 6	20	6 475	6 475	-75.00	-5.54	-69.46	-62.00	Normal
				-73.00	-5.54	-67.46	-62.00	Minimal
				-72.70	-5.54	-67.16	-62.00	Ceased
	160	6 505	6 430	-86.00	-5.54	-80.46	-62.00	Normal
				-74.90	-5.54	-69.36	-62.00	Minimal
				-74.50	-5.54	-68.96	-62.00	Ceased
			6 505	-77.00	-5.54	-71.46	-62.00	Normal
				-73.60	-5.54	-68.06	-62.00	Minimal
				-73.20	-5.54	-67.66	-62.00	Ceased
			6 580	-86.00	-5.54	-80.46	-62.00	Normal
				-76.40	-5.54	-70.86	-62.00	Minimal
				-75.90	-5.54	-70.36	-62.00	Ceased
UNII 7	20	6 695	6 695	-80.00	-3.52	-76.48	-62.00	Normal
				-75.70	-3.52	-72.18	-62.00	Minimal
				-75.00	-3.52	-71.48	-62.00	Ceased
	160	6 665	6 590	-86.00	-3.52	-82.48	-62.00	Normal
				-77.00	-3.52	-73.48	-62.00	Minimal
				-76.50	-3.52	-72.98	-62.00	Ceased
			6 665	-77.00	-3.52	-73.48	-62.00	Normal
				-73.20	-3.52	-69.68	-62.00	Minimal
				-72.70	-3.52	-69.18	-62.00	Ceased
			6 740	-92.00	-3.52	-88.48	-62.00	Normal
				-72.60	-3.52	-69.08	-62.00	Minimal
				-72.20	-3.52	-68.68	-62.00	Ceased

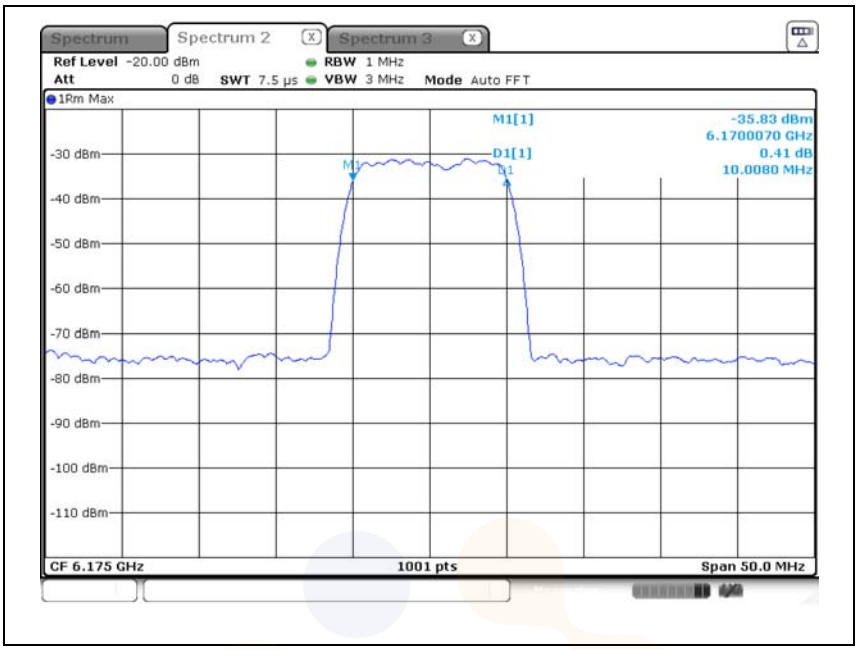
Band	BW [㎒]	Channel Freq. [㎒]	Incumbent Freq. [㎒]	Injected (AWGN) Power (dBm)	Antenna Gain (dBi)	Adjusted Power (dBm)	Detection Limit (dBm)	EUT TX Status
UNII 8	20	6 995	6 995	-83.00	-4.25	-78.75	-62.00	Normal
				-75.00	-4.25	-70.75	-62.00	Minimal
				-74.50	-4.25	-70.25	-62.00	Ceased
	160	6 985	6 910	-83.00	-4.25	-78.75	-62.00	Normal
				-72.00	-4.25	-67.75	-62.00	Minimal
				-71.50	-4.25	-67.25	-62.00	Ceased
			6 985	-78.00	-4.25	-73.75	-62.00	Normal
				-74.20	-4.25	-69.95	-62.00	Minimal
				-73.70	-4.25	-69.45	-62.00	Ceased
			7 060	-82.00	-4.25	-77.75	-62.00	Normal
				-71.60	-4.25	-67.35	-62.00	Minimal
				-71.00	-4.25	-66.75	-62.00	Ceased

Band	BW [㎒]	Channel Freq. [㎒]	Incumbent Freq. [㎒]	Adjusted Power (dBm)	1	2	3	4	5	6	7	8	9	10	AWGN Detection Probability (%)	Limit Probability (%)
UNII 5	20	6 175	6 175	-68.25	√	√	√	√	√	√	√	√	√	√	100	90
	160	6 185	6 110	-72.15	√	√	√	√	√	√	√	√	√	√	100	90
			6 185	-68.85	√	√	√	√	√	√	√	√	√	√	100	90
			6 260	-71.45	√	√	√	√	√	√	√	√	√	√	100	90
UNII 6	20	6 475	6 475	-67.16	√	√	√	√	√	√	√	√	√	√	100	90
	160	6 505	6 430	-68.96	√	√	√	√	√	√	√	√	√	√	100	90
			6 505	-67.66	√	√	√	√	√	√	√	√	√	√	100	90
			6 580	-70.36	√	√	√	√	√	√	√	√	√	√	100	90
UNII 7	20	6 695	6 695	-71.48	√	√	√	√	√	√	√	√	√	√	100	90
	160	6 665	6 590	-72.98	√	√	√	√	√	√	√	√	√	√	100	90
			6 665	-69.18	√	√	√	√	√	√	√	√	√	√	100	90
			6 740	-68.68	√	√	√	√	√	√	√	√	√	√	100	90
UNII 8	20	6 995	6 995	-70.25	√	√	√	√	√	√	√	√	√	√	100	90
	160	6 985	6 910	-67.25	√	√	√	√	√	√	√	√	√	√	100	90
			6 985	-69.45	√	√	√	√	√	√	√	√	√	√	100	90
			7 060	-66.75	√	√	√	√	√	√	√	√	√	√	100	90

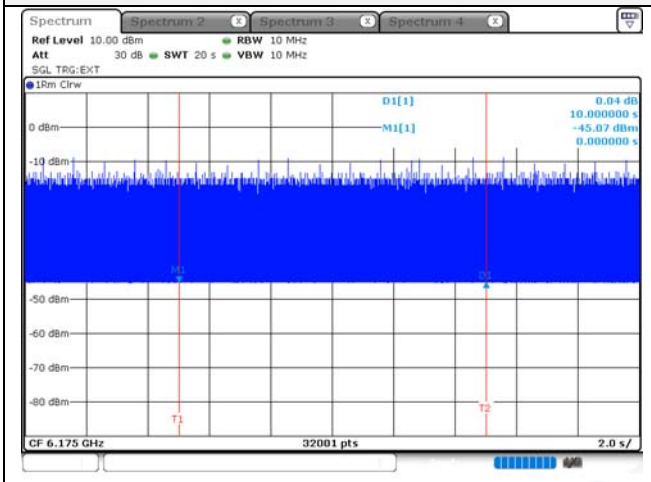
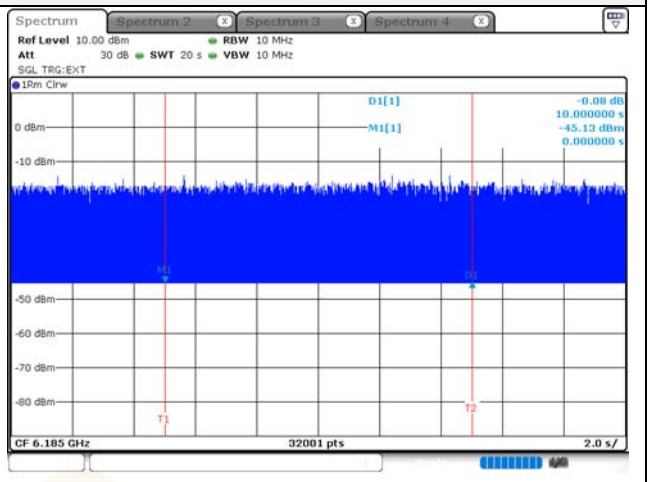
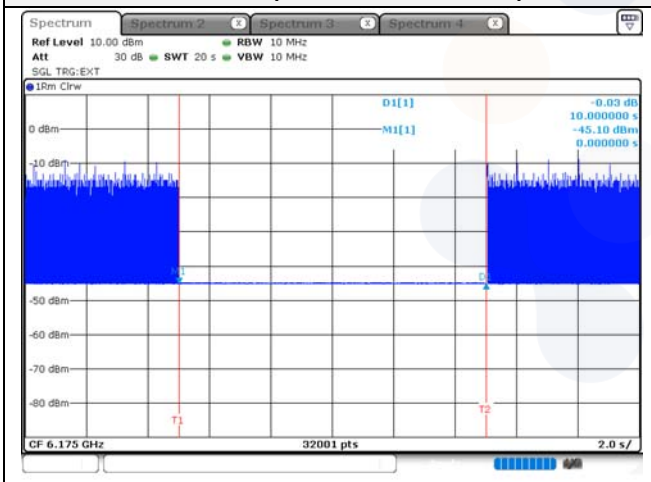
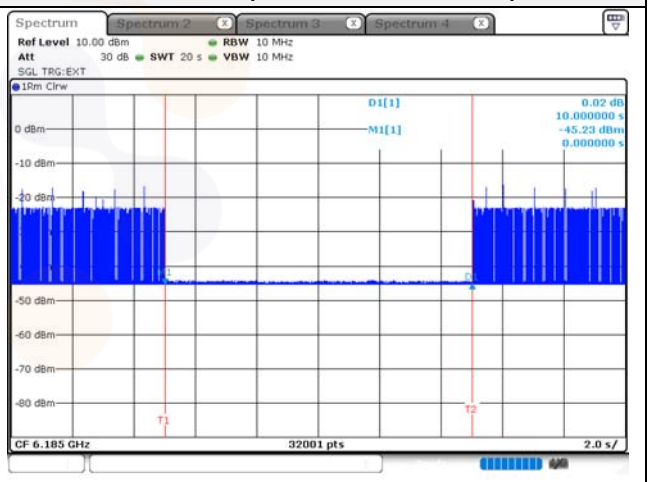
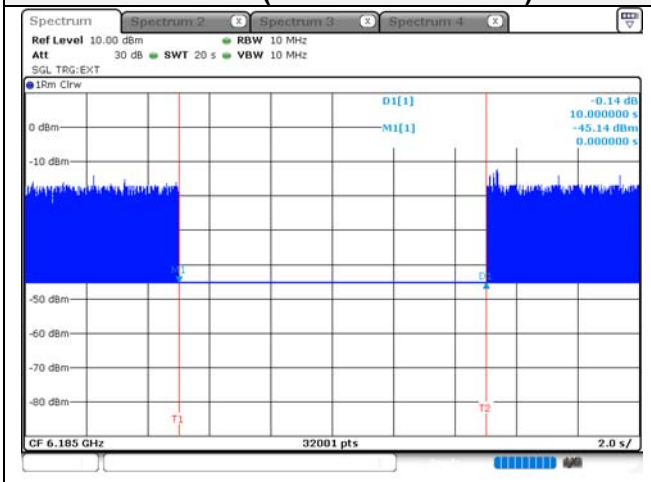
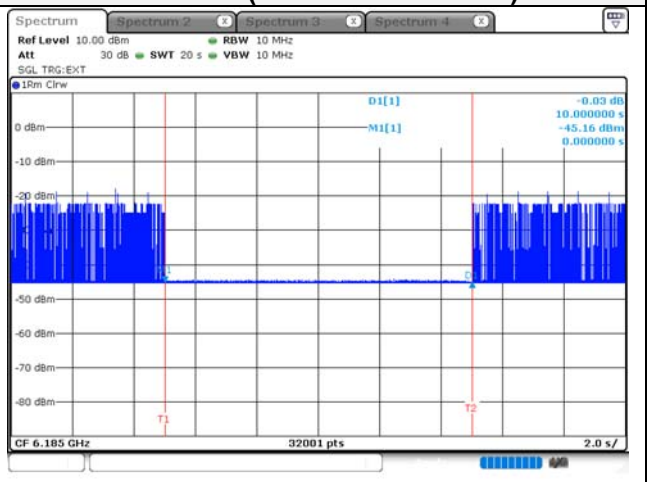
Notes:

1. EUT TX Status
   1) Ceased: AWGN level at which no transmission is detected, consistently for a minimum period of 10 seconds.
   2) Minimal: AWGN level at which the system begins to trigger the transmission switch off, albeit not being kept off consistently.
   3) Normal: AWGN level at which no impact on the transmission is detected, consistently for a minimum period of 10 seconds.
2. Injected AWGN Power [dBm] = Actual power of AWGN [dBm] + Path Loss [dB]
3. Adjusted Power [dBm] = Injected AWGN Power [dBm] - Antenna Gain [dBi]

Plot of AWGN Signal



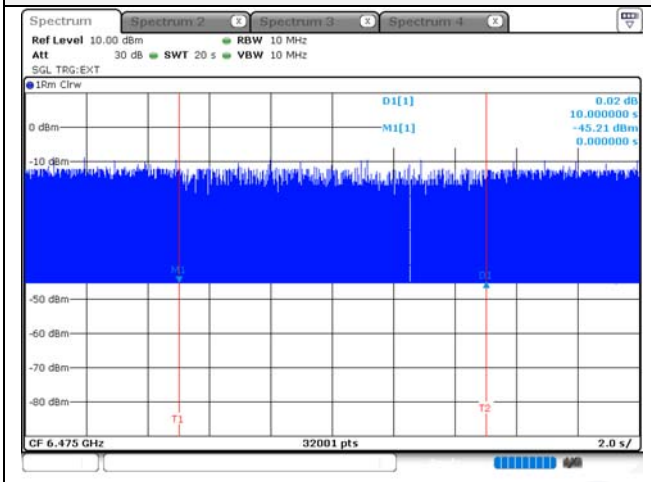
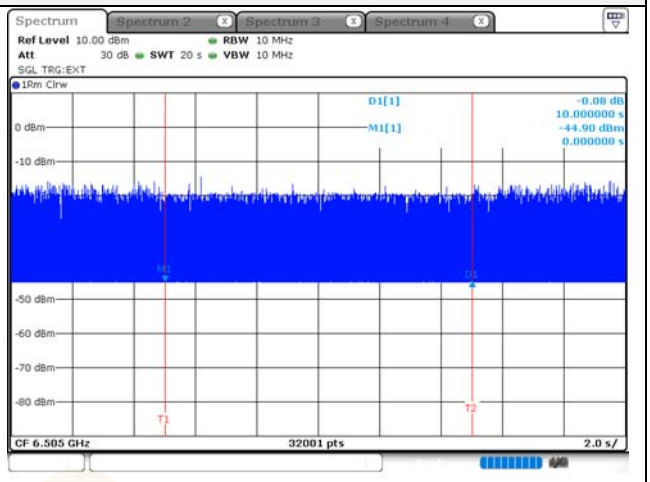
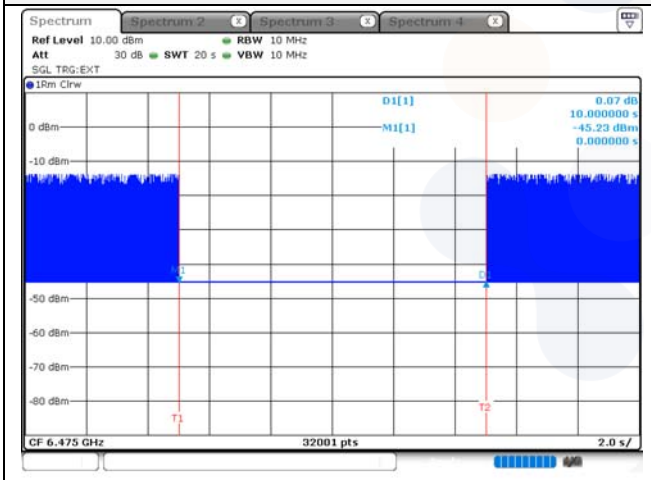
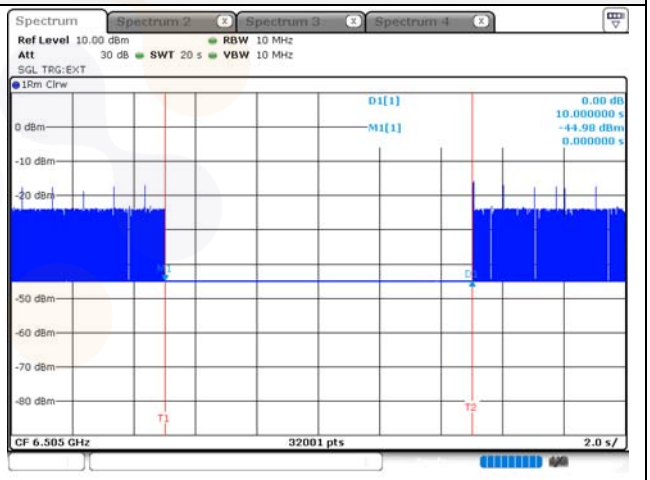
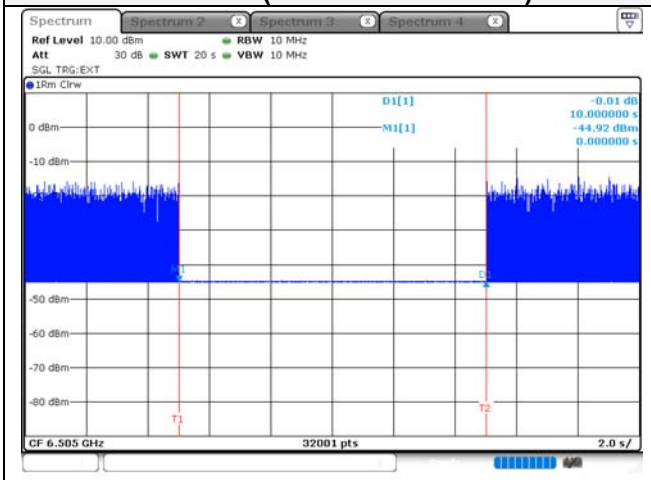
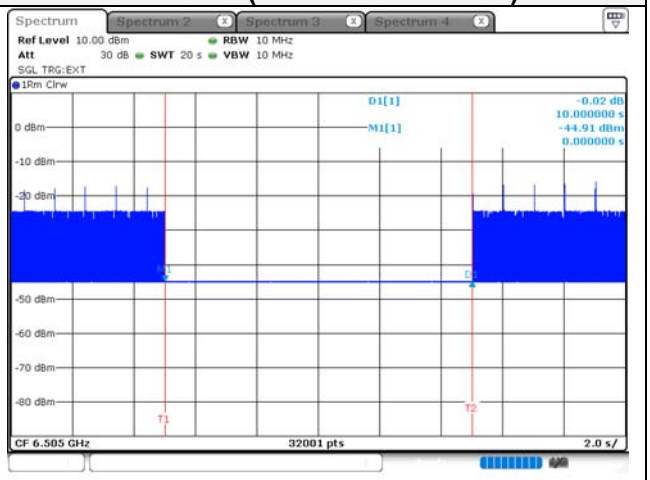
UNII-5

EUT Transmission	
6 175 ㎒ (20 ㎒ bandwidth)	**6 185 ㎒ (160 ㎒ bandwidth)**
	
Injected Incumbent Signal	
6 175 ㎒ (20 ㎒ bandwidth)	**6 110 ㎒ (160 ㎒ bandwidth)**
	
6 185 ㎒ (160 ㎒ bandwidth)	**6 260 ㎒ (160 ㎒ bandwidth)**
	

Note.

- M1: Injection of AWGN signal, D2: Removal of AWGN signal.

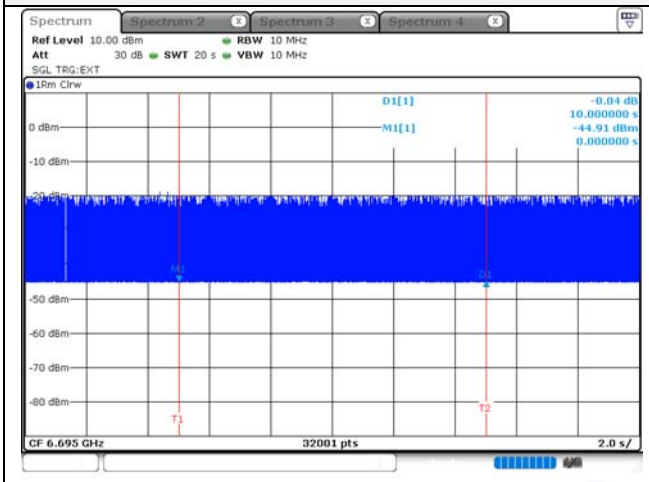
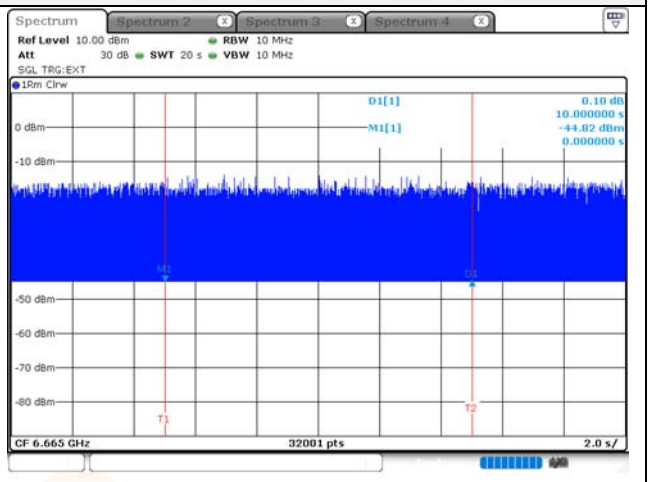
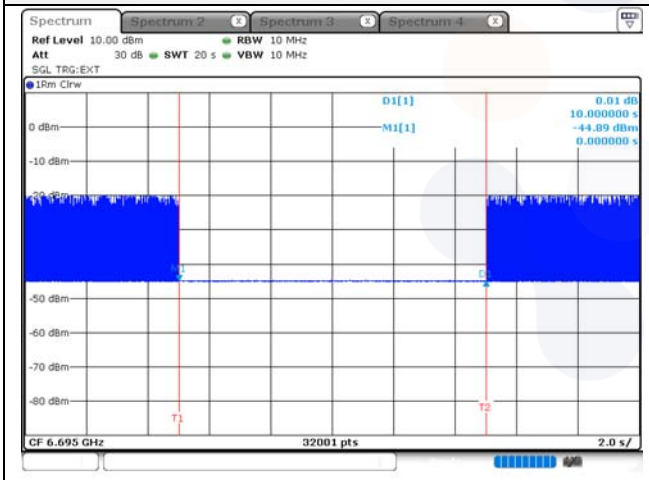
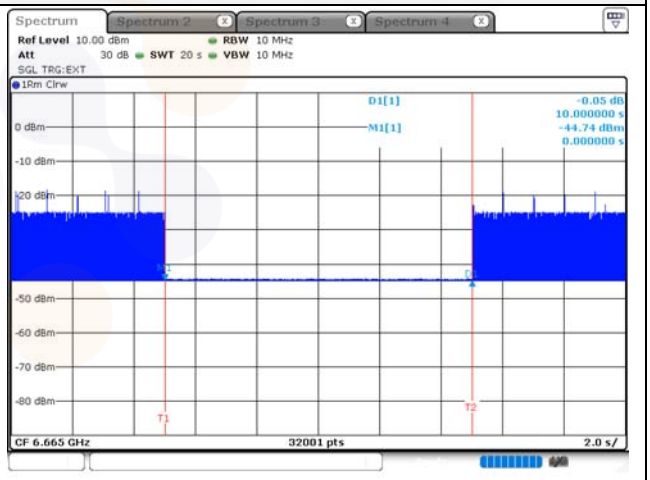
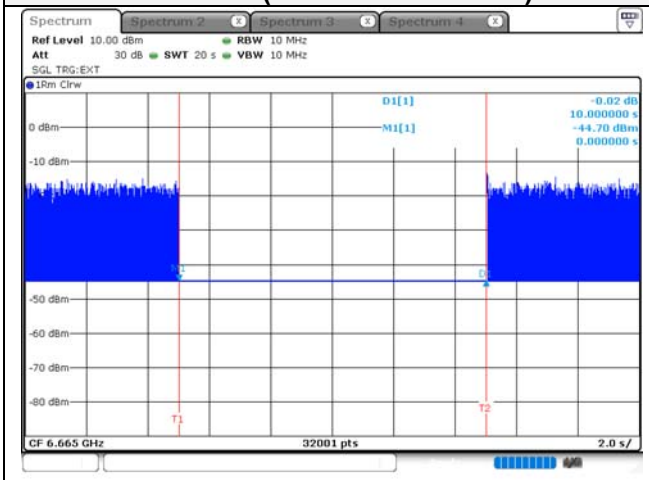
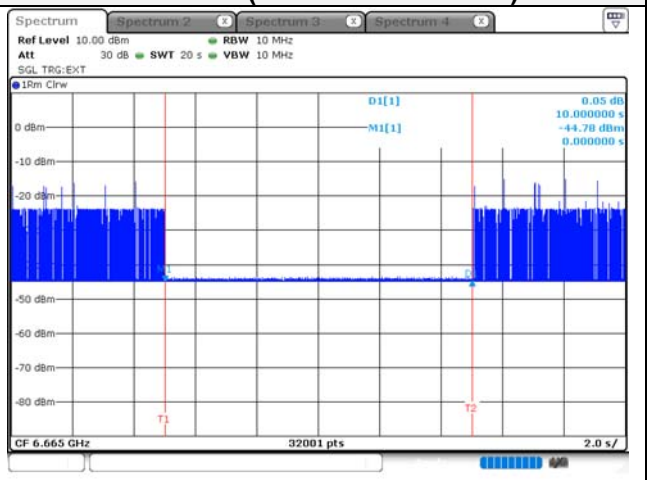
UNII-6

EUT Transmission	
6 475 ㎒ (20 ㎒ bandwidth)	**6 505 ㎒ (160 ㎒ bandwidth)**
	
Injected Incumbent Signal	
6 475 ㎒ (20 ㎒ bandwidth)	**6 430 ㎒ (160 ㎒ bandwidth)**
	
6 505 ㎒ (160 ㎒ bandwidth)	**6 580 ㎒ (160 ㎒ bandwidth)**
	

Note.

- M1: Injection of AWGN signal, D2: Removal of AWGN signal.

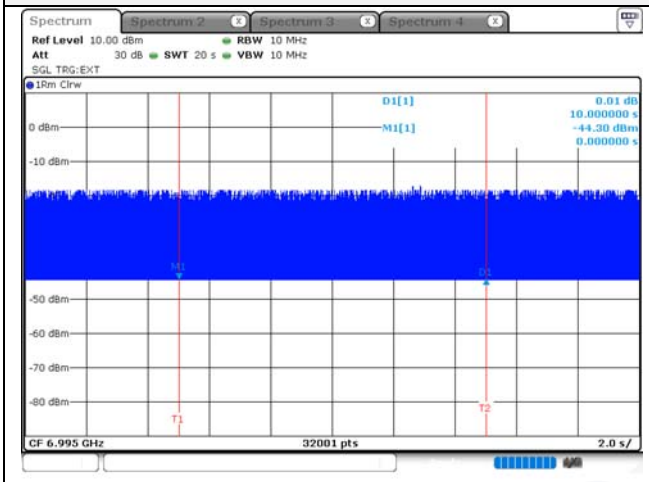
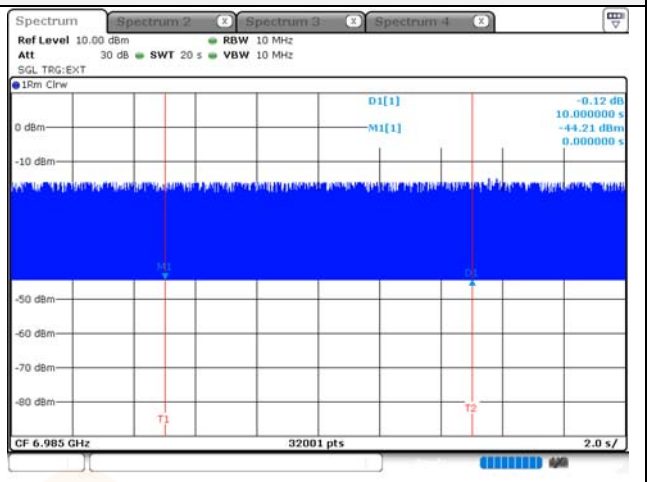
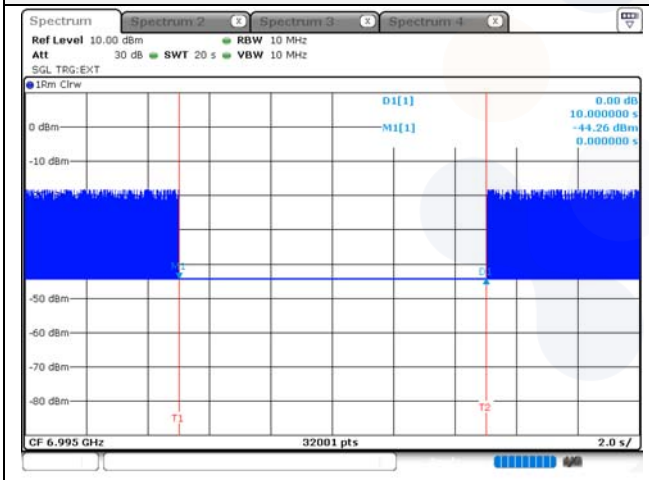
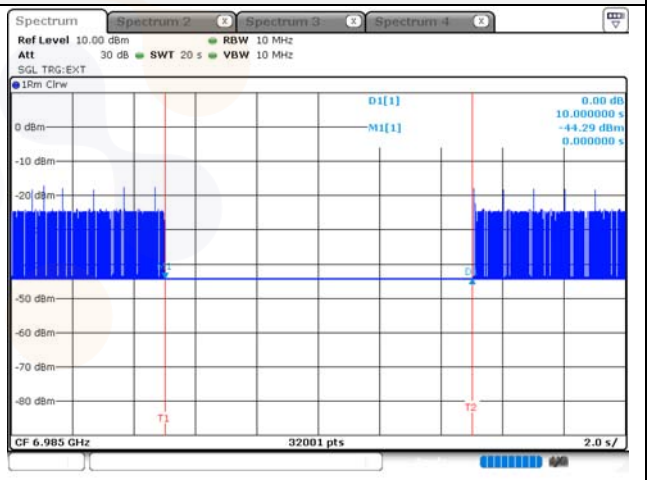
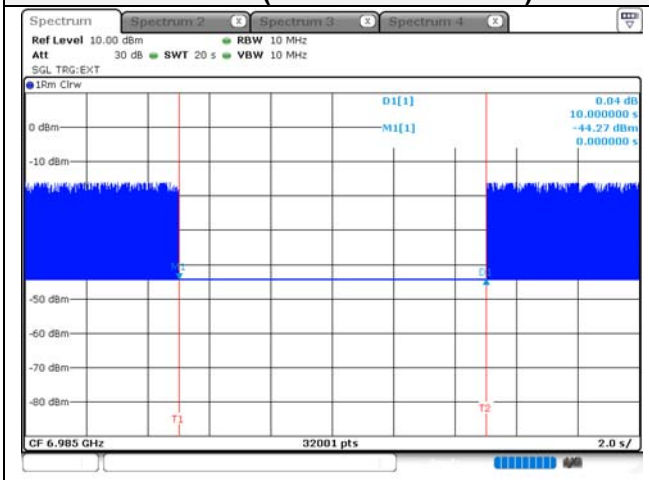
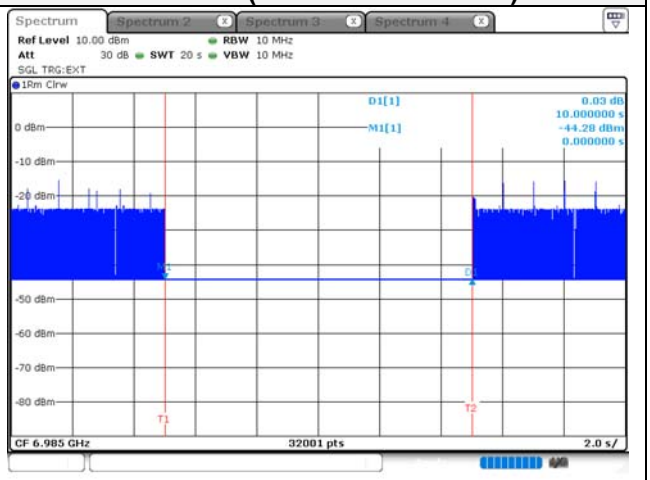
UNII-7

EUT Transmission	
6 695 ㎒ (20 ㎒ bandwidth)	**6 665 ㎒ (160 ㎒ bandwidth)**
	
Injected Incumbent Signal	
6 695 ㎒ (20 ㎒ bandwidth)	**6 590 ㎒ (160 ㎒ bandwidth)**
	
6 665 ㎒ (160 ㎒ bandwidth)	**6 740 ㎒ (160 ㎒ bandwidth)**
	

Note.

- M1: Injection of AWGN signal, D2: Removal of AWGN signal.

UNII-8

EUT Transmission	
6 995 ㎒ (20 ㎒ bandwidth)	**6 985 ㎒ (160 ㎒ bandwidth)**
	
Injected Incumbent Signal	
6 995 ㎒ (20 ㎒ bandwidth)	**6 910 ㎒ (160 ㎒ bandwidth)**
	
6 985 ㎒ (160 ㎒ bandwidth)	**7 060 ㎒ (160 ㎒ bandwidth)**
	

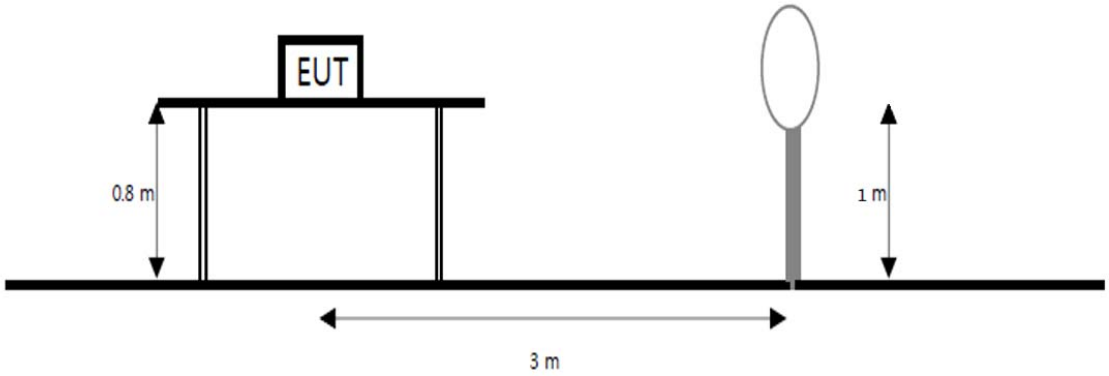
Note.

- M1: Injection of AWGN signal, D2: Removal of AWGN signal.

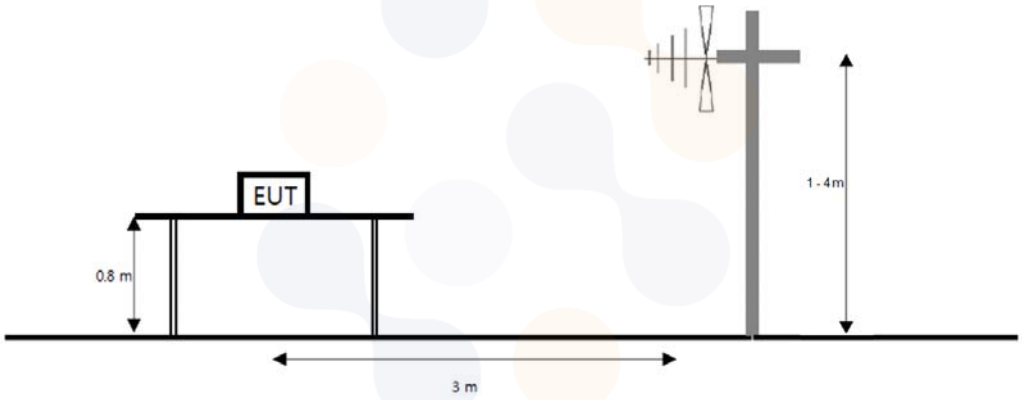
7.6. Spurious Emission, Band Edge and Restricted bands

Test setup

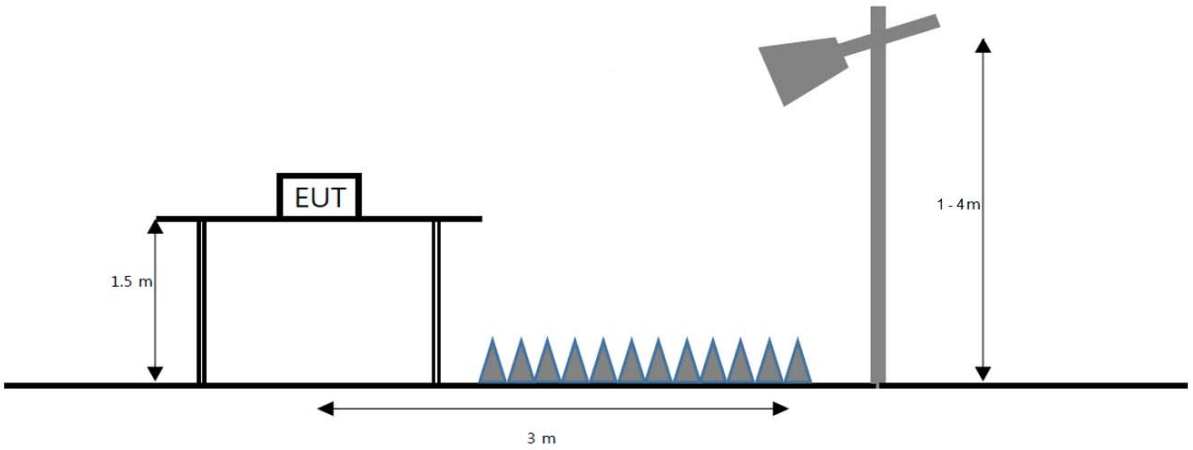
The diagram below shows the test setup that is utilized to make the measurements for emission from 9 ㎑ to 30 ㎒ Emissions



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.



Limit

According to section 15.407(b)(6), For transmitters operating within the 5.925-7.125 ㎓ band: Any emissions outside of the 5.925-7.125 ㎓ band must not exceed an e.i.r.p. of −27 ㏈m/㎒.

According to section 15.209(a) except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (㎒)	Field strength (㎶/m)	Measurement distance (m)
0.009 - 0.490	2 400/F(㎑)	300
0.490 - 1.705	24 000/F(㎑)	30
1.705 - 30	30	30
30 - 88	100**	3
88 - 216	150**	3
216 - 960	200**	3
Above 960	500	3

**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., Section15.231 and 15.241.

According to section 15.205(a) and (b) only spurious emissions are permitted in any of the frequency bands listed below:

㎒	㎒	㎒	㎓
0.009 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
0.495 - 0.505	16.694 75 - 16.695 25	608 - 614	5.35 - 5.46
2.173 5 - 2.190 5	16.804 25 - 16.804 75	960 – 1 240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1 300 – 1 427	8.025 - 8.5
4.177 25 - 4.177 75	37.5 - 38.25	1 435 – 1 626.5	9.0 - 9.2
4.207 25 - 4.207 75	73 - 74.6	1 645.5 – 1 646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1 660 – 1 710	10.6 - 12.7
6.267 75 - 6.268 25	108 - 121.94	1 718.8 – 1 722.2	13.25 - 13.4
6.311 75 - 6.312 25	123 - 138	2 200 – 2 300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2 310 – 2 390	15.35 - 16.2
8.362 - 8.366	156.524 75 - 156.525	2 483.5 – 2 500	17.7 - 21.4
8.376 25 - 8.386 75	25	2 690 – 2 900	22.01 - 23.12
8.414 25 - 8.414 75	156.7 - 156.9	3 260 – 3 267	23.6 - 24.0
12.29 - 12.293	162.012 5 - 167.17	3 332 – 3 339	31.2 - 31.8
12.519 75 - 12.520 25	167.72 - 173.2	3 345.8 – 3 358	36.43 - 36.5
12.576 75 - 12.577 25	240 - 285	3 600 – 4 400	Above 38.6
13.36 - 13.41	322 - 335.4		

The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in section 15.209. At frequencies equal to or less than 1 000 ㎒, compliance with the limits in section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1 000 ㎒, compliance with the emission limits in section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in section 15.35 apply to these measurements.

Test procedure

ANSI C63.10-2013 Section 12.7.7.2, 12.7.5, 12.7.6
KDB 789033 D02 v02r01 – Section G

Test settings

Peak field strength measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = as specified in table
3. VBW ≥ (3×RBW)
4. Detector = peak
5. Sweep time = auto
6. Trace mode = max hold
7. Allow sweeps to continue until the trace stabilizes

Table. RBW as a function of frequency

Frequency	RBW
9 ㎑ to 150 ㎑	200 ㎐ to 300 ㎐
0.15 ㎒ to 30 ㎒	9 ㎑ to 10 ㎑
30 ㎒ to 1 000 ㎒	100 ㎑ to 120 ㎑
> 1 000 ㎒	1 ㎒

Average field strength measurements

Trace averaging with continuous EUT transmission at full power

If the EUT can be configured or modified to transmit continuously (D ≥ 98%), then the average emission levels shall be measured using the following method (with EUT transmitting continuously):

1. RBW = 1 ㎒ (unless otherwise specified).
2. VBW ≥ (3×RBW).
3. Detector = RMS (power averaging), 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.
4. 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 to use linear voltage averaging. Log or ㏈ averaging shall not be used.
5. Sweep time = auto.
6. Perform a trace average of at least 100 traces.

Trace averaging across ON and OFF times of the EUT transmissions followed by duty cycle correction

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

1. The EUT shall be configured to operate at the maximum achievable duty cycle.
2. Measure the duty cycle D of the transmitter output signal as described in 11.6.
3. RBW = 1 ㎒ (unless otherwise specified).
4. VBW ≥ [3 × RBW].
5. Detector = RMS (power averaging), 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.
6. 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 to use linear voltage averaging. Log or dB averaging shall not be used.

7. Sweep time = auto.
8. Perform a trace average of at least 100 traces.
9. A correction factor shall be added to the measurement results prior to comparing with the emission limit to compute the emission level that would have been measured had the test been performed at 100% 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 / D)], where D is the duty cycle.
   2) If linear voltage averaging mode was used in step f), then the applicable correction factor is [20 log (1 / D)], where D is the duty cycle.
   3) If a specific emission is demonstrated to be continuous (D ≥ 98%) rather than turning ON and OFF with with the transmit cycle, then no duty cycle correction is required for that emission.

Band edge measurements

Integration Method

For maximum emissions measurements, follow the procedures described in II.G.5., “Procedures for unwanted maximum Emissions Measurements above 1000 ㎒. Except for the following changes:

1. Set RBW = 100 ㎑
2. Set VBW ≥ 3 × RBW
3. Perform a band-power integration across the 1 ㎒ bandwidth in which the band edge emission level is to be measured. CAUTION: you must ensure that the spectrum analyzer or EMI receiver is set for peak detection and max-hold for this measurement.

For average emissions measurements, follow the procedures described in II.G.6., “Procedures for average unwanted Emissions Measurements above 1000 ㎒. Except for the following changes:

1. Set RBW = 100 ㎑
2. Set VBW ≥ 3 × RBW
3. Perform a band-power integration across the 1 ㎒ bandwidth in which the band edge emission level is to be measured.

Notes:

1. f <30 ㎒, extrapolation factor of 40 ㏈/decade of distance. $F_d = 40\log(D_m/D_s)$
   f ≥30 ㎒, extrapolation factor of 20 ㏈/decade of distance. $F_d = 20\log(D_m/D_s)$
   Where:
   F_d= Distance factor in ㏈
   D_m= Measurement distance in meters
   D_s= Specification distance in meters
2. Factors(㏈) = Antenna factor(㏈/m) + Cable loss(㏈) + or Amp. gain(㏈) + or F_d(㏈)
3. The worst-case emissions are reported however emissions whose levels were not within 20 ㏈ of respective limits were not reported.
4. Average test would be performed if the peak result were greater than the average limit.
5. 1) means restricted band.
6. Below 30 ㎒ frequency range, In order to search for the worst result, all orientations about parallel, perpendicular, and ground-parallel were investigated then reported. when the emission level was higher than 20 ㏈ of the limit, then the following statement shall be made: “No spurious emissions were detected within 20 ㏈ of the limit.”

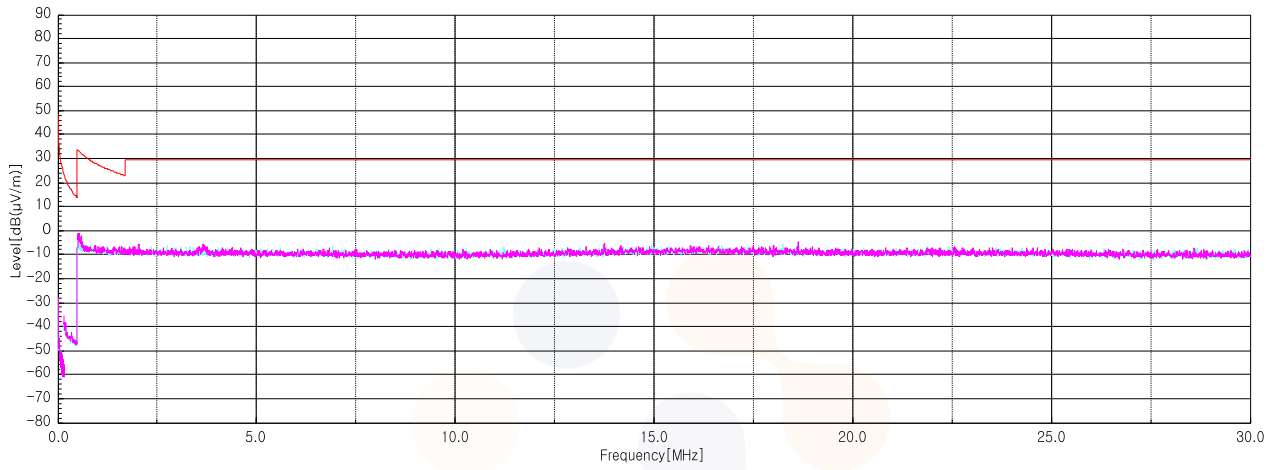
7. For above 1 ㎓ pre-scan to detect harmonic and spurious emissions, the resolution bandwidth is set to 1 ㎒; the video bandwidth is set to 30 ㎑ for peak measurements.
8. Measurement configuration for 11ax RU allocations
   1) For the radiated band-edge test, it was tested at 11ax RU allocations near the band edge.
- The target power of the RU tone is the same for each bandwidth (20/40/80/160 ㎒), Therefore, it was tested as a representative at 20 ㎒ bandwidth and additional full tone cases were tested for the remaining bandwidth.
   2) The pre-scan was performed for all modes, and then only the RU allocation with actual highest output power considering each bandwidth was reported as a representative.
9. Above 1 ㎓ the worst results between two antenna polarizations (H and V) were documented in the test report.

Test Result (Below 30 ㎒)

Worst Case: UNII 5_802.11ax_HE160 SU mode (SU)_Highest Channel (6 345 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
No spurious emissions were detected within 20 ㏈ of the limit.								

Horizontal/Vertical

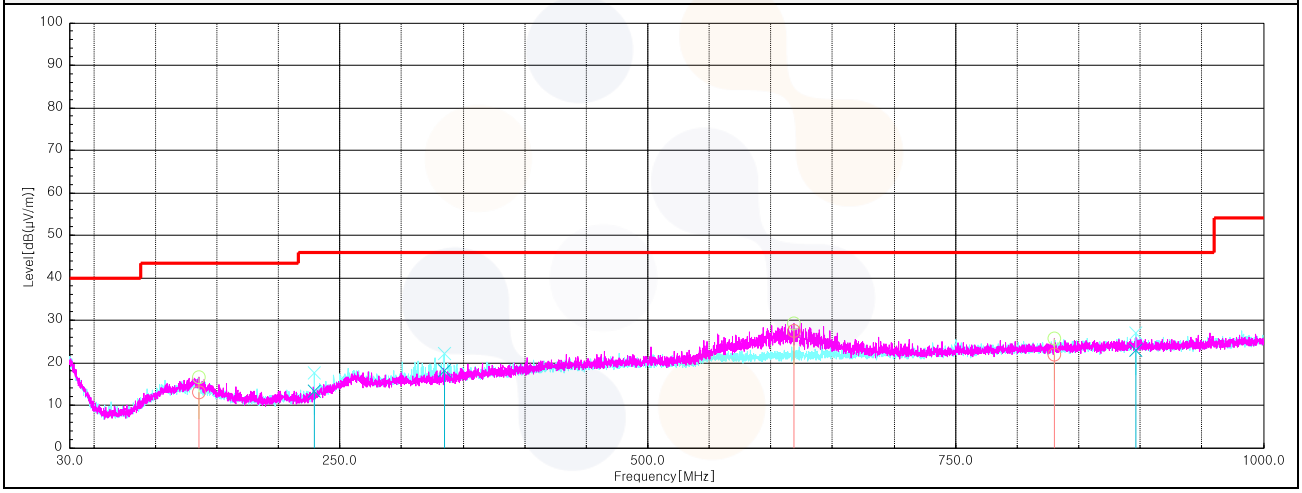


Test Result (Below 1 000 ㎒)

Worst Case: UNII 5_802.11ax_HE160 SU mode (SU)_Highest Channel (6 345 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Quasi peak data								
135.25[1)]	H	25.90	17.68	-30.54	-	13.04	43.50	30.46
228.85	V	27.80	15.89	-30.29	-	13.40	46.00	32.60
334.46[1)]	V	28.40	19.70	-30.13	-	17.97	46.00	28.03
618.91	H	32.30	24.70	-29.60	-	27.40	46.00	18.60
830.13	H	24.90	25.80	-28.88	-	21.82	46.00	24.18
896.09	V	24.80	26.50	-28.52	-	22.78	46.00	23.22

Horizontal/Vertical



Test results (Above 1 000 ㎒)

UNII-5 Band-edge (Lowest Channel)

802.11a mode_Lowest Channel (5 955 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 759.96	V	39.20	33.76	-29.19	-	43.77	88.20	44.43
Average Data								
5 759.96	V	28.28	33.76	-29.19	0.33	33.18	68.20	35.02

802.11ax_HE20 SU mode_Lowest Channel (5 955 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 760.09	V	40.60	33.76	-29.19	-	45.17	88.20	43.03
Average Data								
5 760.09	V	34.29	33.76	-29.19	0.36	39.22	68.20	28.98

802.11ax_HE40 SU mode_Lowest Channel (5 965 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 759.99	H	39.80	33.76	-29.19	-	44.37	88.20	43.83
Average Data								
5 759.99	H	31.17	33.76	-29.19	0.65	36.39	68.20	31.81

802.11ax_HE80 SU mode_Lowest Channel (5 985 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 760.01	H	39.50	33.76	-29.19	-	44.07	88.20	44.13
Average Data								
5 760.01	H	30.30	33.76	-29.19	1.16	36.03	68.20	32.17

802.11ax_HE160 SU mode_Lowest Channel (6 025 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 922.48	H	41.30	34.39	-29.55	-	46.14	88.20	42.06
Average Data								
5 922.48	H	31.33	34.39	-29.55	0.67	36.84	68.20	31.36

802.11ax_HE20 RU mode (26T / RU offset 0)_Lowest Channel (5 955 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 863.94	H	40.50	34.13	-29.52	-	45.11	88.20	43.09
Average Data								
5 863.94	H	28.08	34.13	-29.52	0.10	32.79	68.20	35.41

802.11ax_HE20 RU mode (52T / RU offset 37)_Lowest Channel (5 955 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 886.90	H	39.80	34.17	-29.60	-	44.37	88.20	43.83
Average Data								
5 886.90	H	28.07	34.17	-29.60	0.10	32.74	68.20	35.46

802.11ax_HE20 RU mode (106T / RU offset 53)_Lowest Channel (5 955 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 886.43	H	39.70	34.17	-29.60	-	44.27	88.20	43.93
Average Data								
5 886.43	H	27.99	34.17	-29.60	0.16	32.72	68.20	35.48

802.11ax_HE20 RU mode (242T / RU offset 61)_Lowest Channel (5 955 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 909.61	H	40.00	34.34	-29.61	-	44.73	88.20	43.47
Average Data								
5 909.61	H	28.15	34.34	-29.61	0.38	33.26	68.20	34.94

802.11ax_HE40 RU mode (484T / RU offset 65)_Lowest Channel (5 965 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 838.45	H	38.60	34.23	-29.42	-	43.41	88.20	44.79
Average Data								
5 838.45	H	27.48	34.23	-29.42	0.61	32.90	68.20	35.30

802.11ax_HE80 RU mode (996T / RU offset 67)_Lowest Channel (5 985 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 916.20	H	39.60	34.36	-29.58	-	44.38	88.20	43.82
Average Data								
5 916.20	H	28.14	34.36	-29.58	0.65	33.57	68.20	34.63

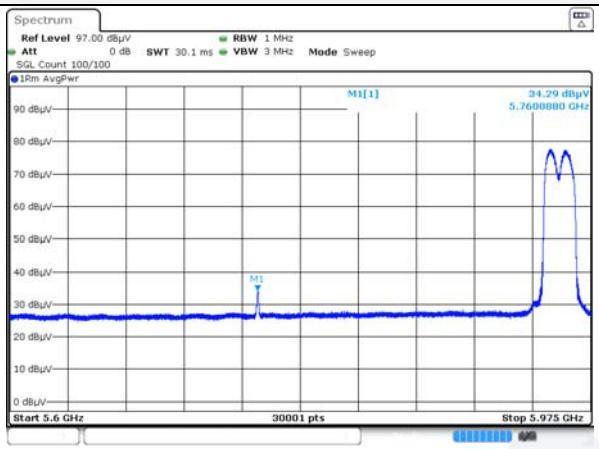
802.11ax_HE160 RU mode (2x996T / RU offset 68)_Lowest Channel (6 025 ㎒)

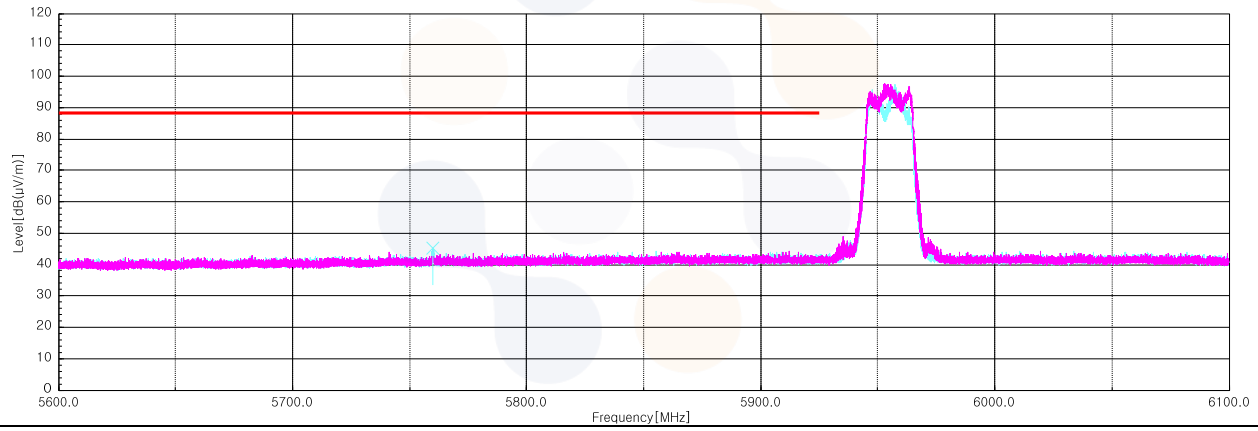
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 922.98	H	39.30	34.39	-29.55	-	44.14	88.20	44.06
Average Data								
5 922.98	H	28.35	34.39	-29.55	1.14	34.33	68.20	33.87

Plot of Band-edge

In order to simplify the report, attached plots were only the lowest margin condition

802.11ax_HE20 SU mode_Lowest Channel (5 955 ㎒)

Average data	-
	Blank

Horizontal/Vertical for Band-edge


UNII-8 Band-edge (Highest Channel)

802.11a mode_Highest Channel (7 115 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
7 125.00	V	52.90	36.65	-28.51	-	61.04	88.20	27.16
7 376.11[1)]	V	38.40	36.75	-28.69	-	46.46	74.00	27.54
Average Data								
7 125.00	V	42.85	36.65	-28.51	0.33	51.32	68.20	16.88

802.11ax_HE20 SU mode_Highest Channel (7 115 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
7 125.50	V	59.01	36.65	-28.51	-	67.15	88.20	21.05
7 126.50	V	50.23	36.66	-28.51	-	58.38	88.20	29.82
7 263.94[1)]	H	38.00	37.03	-28.61	-	46.42	74.00	27.58
Average Data								
7 125.50	V	45.96	36.65	-28.51	0.36	54.46	68.20	13.74
7 126.50	V	37.48	36.66	-28.51	0.36	45.99	68.20	22.21

802.11ax_HE40 SU mode_Highest Channel (7 085 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
7 156.08	V	38.80	36.72	-28.53	-	46.99	88.20	41.21
7 294.40[1)]	H	38.00	37.09	-28.63	-	46.46	74.00	27.54
Average Data								
7 156.08	V	27.23	36.72	-28.53	0.65	36.07	68.20	32.13

802.11ax_HE80 SU mode_Highest Channel (7 025 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
7 140.86	V	36.80	36.75	-28.52	-	45.03	88.20	43.17
7 295.70[1)]	H	36.90	37.09	-28.63	-	45.36	74.00	28.64
Average Data								
7 140.86	V	26.00	36.75	-28.52	1.16	35.39	68.20	32.81

802.11ax_HE160 SU mode_Highest Channel (6 985 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
7 130.86	V	36.70	36.69	-28.51	-	44.88	88.20	43.32
7 266.97[1)]	V	28.14	37.03	-28.61	-	36.56	74.00	37.44
Average Data								
7 130.86	V	26.39	36.69	-28.51	0.67	35.24	68.20	32.96

802.11ax_HE20 RU mode (26T / RU offset 8)_Highest Channel (7 115 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
7 125.50	V	56.01	36.65	-28.51	-	64.15	88.20	24.05
7 126.50	V	48.79	36.66	-28.51	-	56.94	88.20	31.26
7 270.09[1)]	V	37.70	37.04	-28.61	-	46.13	74.00	27.87
Average Data								
7 125.50	V	41.90	36.65	-28.51	0.10	50.14	68.20	18.06
7 126.50	V	35.27	36.66	-28.51	0.10	43.52	68.20	24.68

802.11ax_HE20 RU mode (52T / RU offset 40)_Highest Channel (7 115 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
7 125.50	V	54.00	36.65	-28.51	-	62.14	88.20	26.06
7 126.50	V	48.01	36.66	-28.51	-	56.16	88.20	32.04
7 332.17[1)]	V	37.60	36.84	-28.66	-	45.78	74.00	28.22
Average Data								
7 125.50	V	42.57	36.65	-28.51	0.10	50.81	68.20	17.39
7 126.50	V	35.63	36.66	-28.51	0.10	43.88	68.20	24.32

802.11ax_HE20 RU mode (106T / RU offset 54)_Highest Channel (7 115 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
7 125.50	V	56.84	36.65	-28.51	-	64.98	88.20	23.22
7 126.50	V	49.68	36.66	-28.51	-	57.83	88.20	30.37
7 340.13[1)]	V	37.90	36.82	-28.66	-	46.06	74.00	27.94
Average Data								
7 125.50	V	44.02	36.65	-28.51	0.16	52.32	68.20	15.88
7 126.50	V	36.54	36.66	-28.51	0.16	44.85	68.20	23.35

802.11ax_HE20 RU mode (242T / RU offset 61)_Highest Channel (7 115 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
7 125.50	V	55.25	36.65	-28.51	-	63.39	88.20	24.81
7 126.50	V	48.09	36.66	-28.51	-	56.24	88.20	31.96
7 252.98[1)]	V	37.40	37.01	-28.60	-	45.81	74.00	28.19
Average Data								
7 125.50	V	40.58	36.65	-28.51	0.38	49.10	68.20	19.10
7 126.50	V	34.00	36.66	-28.51	0.38	42.53	68.20	25.67

802.11ax_HE40 RU mode (484T / RU offset 65)_Highest Channel (7 085 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
7 241.60	V	36.80	37.07	-28.59	-	45.28	88.20	42.92
7 375.29[1)]	V	25.93	36.75	-28.69	-	33.99	74.00	40.01
Average Data								
7 241.60	V	26.15	37.07	-28.59	0.61	35.24	68.20	32.96

802.11ax_HE80 RU mode (996T / RU offset 67)_Highest Channel (7 025 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
7 133.82	V	37.40	36.70	-28.52	-	45.58	88.20	42.62
7 252.07[1)]	H	36.80	37.00	-28.60	-	45.20	74.00	28.80
Average Data								
7 133.82	V	26.06	36.70	-28.52	0.65	34.89	68.20	33.31

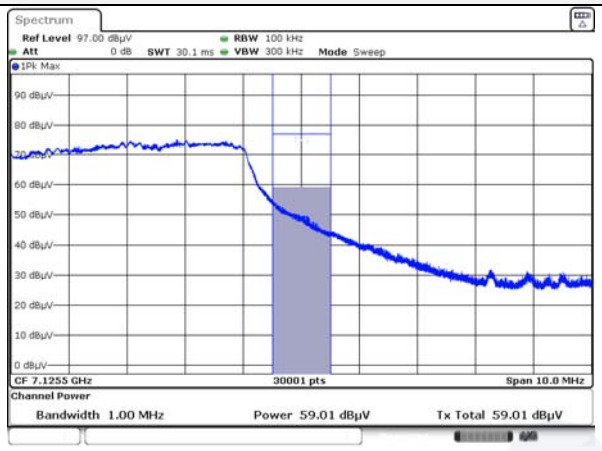
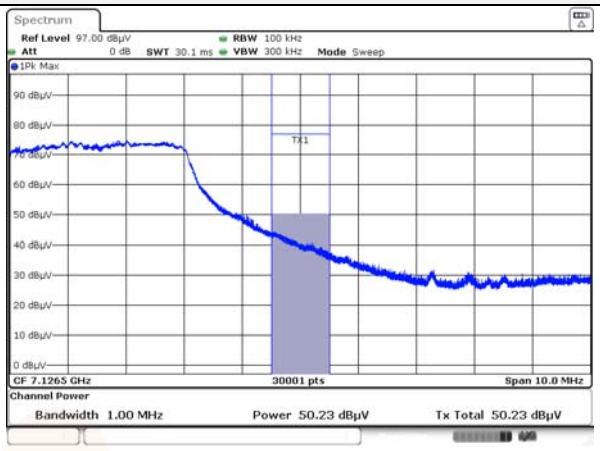
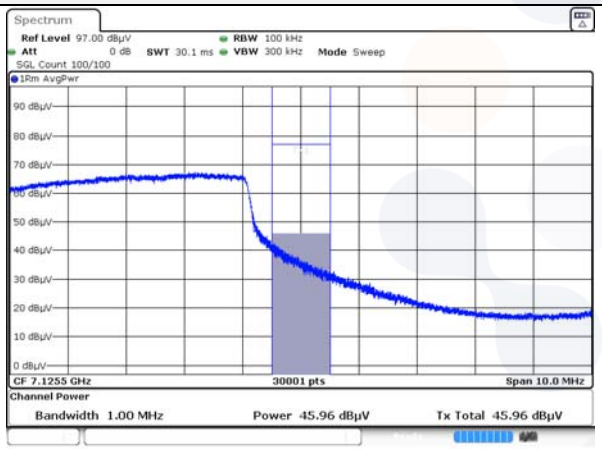
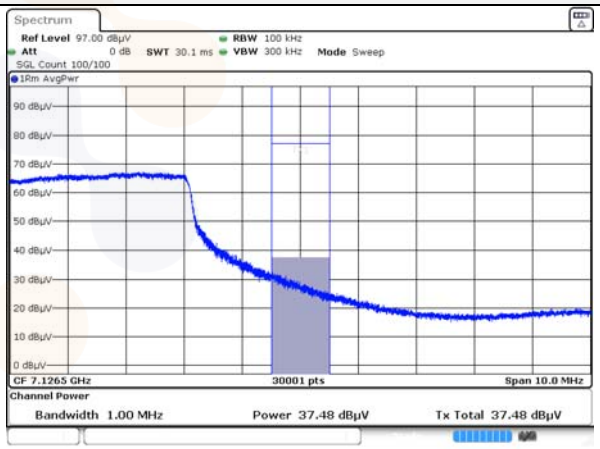
802.11ax_HE160 RU mode (2x996T / RU offset 68)_Highest Channel (6 985 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
7 234.76	V	36.80	37.04	-28.59	-	45.25	88.20	42.95
7 422.52[1)]	V	37.60	36.51	-28.72	-	45.39	74.00	28.61
Average Data								
7 234.76	V	25.85	37.04	-28.59	1.14	35.44	68.20	32.76

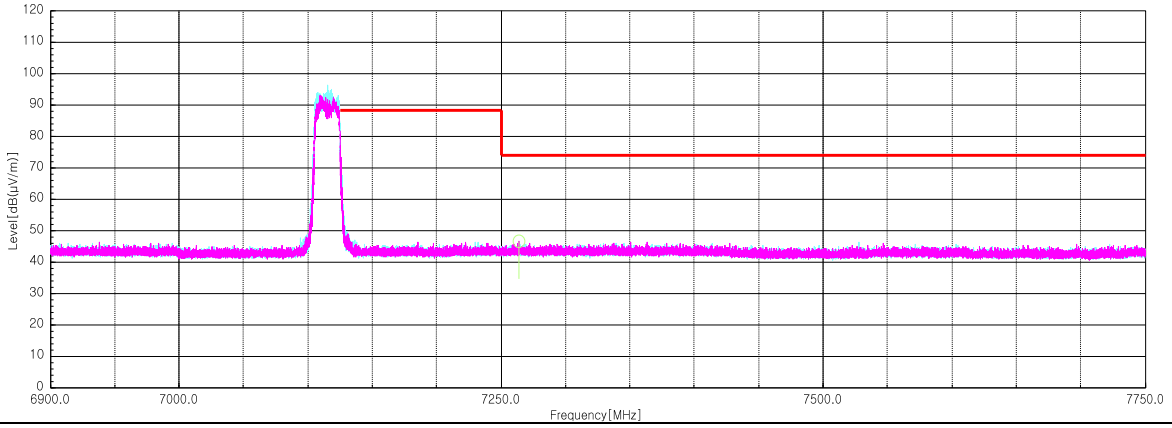
Plot of Band-edge

In order to simplify the report, attached plots were only the lowest margin condition

802.11ax_HE20 SU mode_Highest Channel (7 115 ㎒)

Peak data	Peak data
	
Average data	**Average data**
	

Horizontal/Vertical for Band-edge



UNII-5 Harmonics and Spurious Emissions

802.11a mode_Lowest Channel (5 955 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
11 965.67[1)]	H	52.80	39.13	-44.71	-	47.22	74.00	26.78
17 746.18[1)]	H	56.10	41.38	-43.79	-	53.69	74.00	20.31
Average Data								
17 746.18[1)]	H	45.78	41.38	-43.79	0.33	43.70	54.00	10.30

802.11a mode_Middle Channel (6 175 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
12 413.00[1)]	H	53.40	39.20	-44.47	-	48.13	74.00	25.87
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11a mode_Highest Channel (6 415 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
12 856.33	H	53.00	39.70	-44.40	-	48.30	68.20	19.90
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE20 SU mode_Lowest Channel (5 955 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
11 950.33[1)]	V	52.90	39.10	-44.75	-	47.25	74.00	26.75
17 775.51[1)]	V	55.30	41.40	-43.79	-	52.91	74.00	21.09
Average Data								
17 775.51[1)]	V	45.63	41.40	-43.79	0.36	43.60	54.00	10.40

802.11ax_HE20 SU mode_ Middle Channel (6 175 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
12 311.00[1)]	V	53.00	39.30	-44.50	-	47.80	74.00	26.20
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE20 SU mode_ Highest Channel (6 415 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
12 897.00	V	53.00	39.70	-44.40	-	48.30	68.20	19.90
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE40 SU mode_Lowest Channel (5 965 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
11 959.33[1)]	V	52.70	39.12	-44.73	-	47.09	74.00	26.91
17 910.46[1)]	V	54.10	42.36	-43.80	-	52.66	74.00	21.34
Average Data								
17 910.46[1)]	V	44.18	42.36	-43.80	0.65	43.39	54.00	10.61

802.11ax_HE40 SU mode_ Middle Channel (6 165 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
12 371.00[1)]	H	52.80	39.16	-44.48	-	47.48	74.00	26.52
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE40 SU mode_ Highest Channel (6 405 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
12 824.00	H	52.60	39.70	-44.41	-	47.89	68.20	20.31
Average Data								
No spurious emissions were detected within 20 dB of the limit								

802.11ax_HE80 SU mode_Lowest Channel (5 985 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
12 009.67[1)]	V	53.80	39.22	-44.61	-	48.41	74.00	25.59
17 944.85[1)]	H	55.10	42.57	-43.80	-	53.87	74.00	20.13
Average Data								
17 944.85[1)]	H	45.07	42.57	-43.80	1.16	45.00	54.00	9.00

802.11ax_HE80 SU mode_ Middle Channel (6 145 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
12 258.33[1)]	V	54.00	39.30	-44.52	-	48.78	74.00	25.22
Average Data								
No spurious emissions were detected within 20 dB of the limit								

802.11ax_HE80 SU mode_ Highest Channel (6 385 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
12 715.00	H	53.20	39.63	-44.42	-	48.41	68.20	19.79
Average Data								
No spurious emissions were detected within 20 dB of the limit								

802.11ax_HE160 SU mode_Lowest Channel (6 025 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
12 123.33[1)]	V	53.60	39.35	-44.57	-	48.38	74.00	25.62
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE160 SU mode_ Middle Channel (6 185 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
12 447.00[1)]	H	54.30	39.20	-44.46	-	49.04	74.00	24.96
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE160 SU mode_ Highest Channel (6 345 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
12 580.67[1)]	H	54.10	39.36	-44.43	-	49.03	74.00	24.97
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE20 RU mode (242T / RU offset 61)_Highest Channel (6 415 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
12 946.00	H	52.50	39.70	-44.40	-	47.80	68.20	20.40
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE40 RU mode (242T / RU offset 61)_Highest Channel (6 405 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
12 803.00	V	53.00	39.70	-44.41	-	48.29	68.20	19.91
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE80 RU mode (242T / RU offset 61)_Highest Channel (6 385 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
12 689.33[1)]	V	54.10	39.58	-44.42	-	49.26	74.00	24.74
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE160 RU mode (242T / RU offset 61U)_Highest Channel (6 345 ㎒)

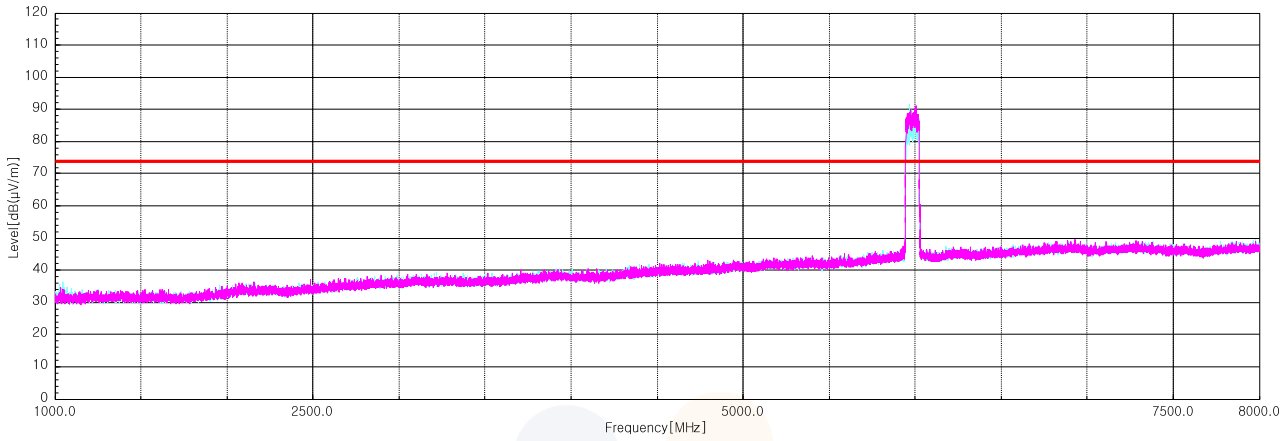
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
12 659.67[1)]	V	53.30	39.52	-44.42	-	48.40	74.00	25.60
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

Plot of Harmonics and Spurious Emissions

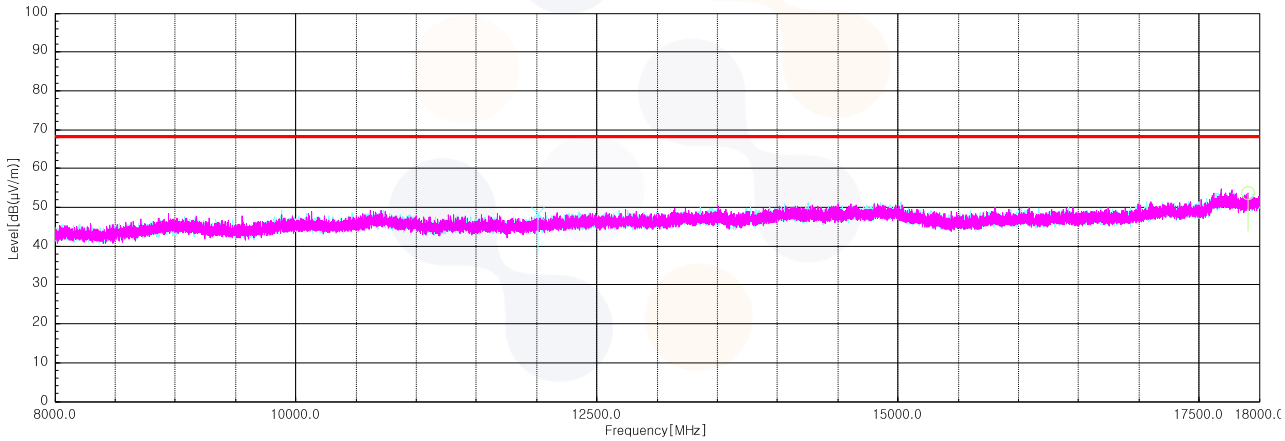
In order to simplify the report, attached plots were only the lowest margin condition

802.11ax_HE80 SU mode_Lowest Channel (5 985 ㎒)

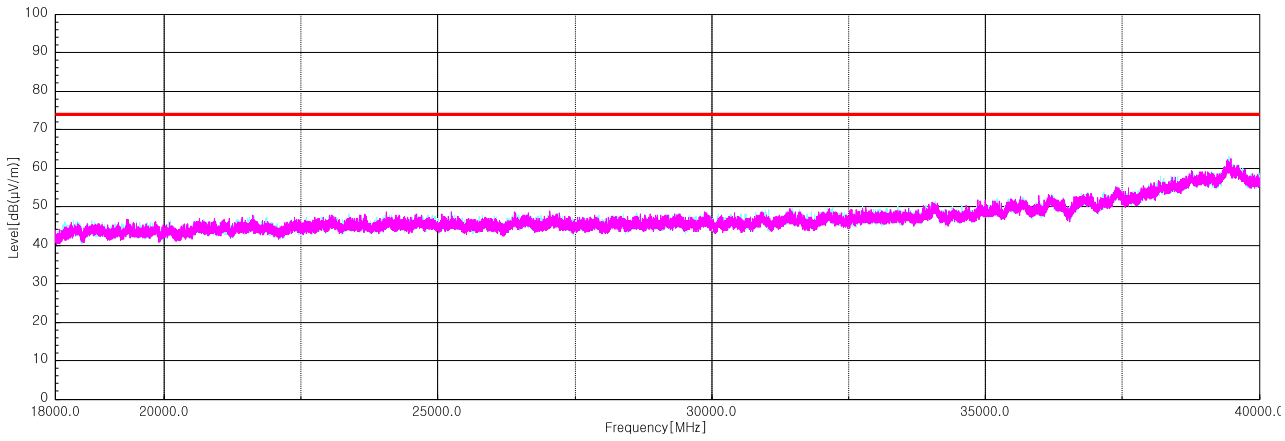
Horizontal/Vertical for 1 ㎓ ~ 8 ㎓



Horizontal/Vertical for 8 ㎓ ~ 18 ㎓



Horizontal/Vertical for 18 ㎓ ~ 40 ㎓



UNII-6 Harmonics and Spurious Emissions

802.11a mode_Lowest Channel (6 435 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
12 881.00	V	52.50	39.70	-44.40	-	47.80	68.20	20.40
Average Data								
No spurious emissions were detected within 20 dB of the limit								

802.11a mode_Middle Channel (6 475 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
12 934.00	H	53.00	39.70	-44.40	-	48.30	68.20	19.90
Average Data								
No spurious emissions were detected within 20 dB of the limit								

802.11a mode_Highest Channel (6 515 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
12 978.33	V	52.40	39.86	-44.39	-	47.87	68.20	20.33
Average Data								
No spurious emissions were detected within 20 dB of the limit								

802.11ax_HE20 SU mode_Lowest Channel (6 435 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
12 910.33	H	52.50	39.70	-44.40	-	47.80	68.20	20.40
Average Data								
No spurious emissions were detected within 20 dB of the limit								

802.11ax_HE20 SU mode_ Middle Channel (6 475 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
12 989.00	H	52.90	39.88	-44.39	-	48.39	68.20	19.81
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE20 SU mode_ Highest Channel (6 515 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
13 017.00	H	52.70	39.67	-44.41	-	47.96	68.20	20.24
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE40 SU mode_Lowest Channel (6 445 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
12 871.00	H	52.80	39.70	-44.40	-	48.10	68.20	20.10
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE40 SU mode_ Middle Channel (6 485 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
13 002.67	H	53.10	39.69	-44.39	-	48.40	68.20	19.80
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE40 SU mode_ Highest Channel (6 525 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
13 033.67	V	52.40	39.63	-44.42	-	47.61	68.20	20.59
Average Data								
No spurious emissions were detected within 20 dB of the limit								

802.11ax_HE80 SU mode_ Middle Channel (6 465 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
13 054.33	V	53.00	39.70	-44.44	-	48.26	68.20	19.94
Average Data								
No spurious emissions were detected within 20 dB of the limit								

802.11ax_HE160 SU mode_Middle Channel (6 505 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
13 097.67	V	53.60	39.70	-44.49	-	48.81	68.20	19.39
Average Data								
No spurious emissions were detected within 20 dB of the limit								

802.11ax_HE20 RU mode (242T / RU offset 61)_Lowest Channel (6 435 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
12 939.33	V	53.80	39.70	-44.40	-	49.10	68.20	19.10
Average Data								
No spurious emissions were detected within 20 dB of the limit								

802.11ax_HE40 RU mode (484T / RU offset 65)_Highest Channel (6 525 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
13 048.33	V	53.70	39.60	-44.44	-	48.86	68.20	19.34
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE80 RU mode (242T / RU offset 61)_Middle Channel (6 465 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
12 924.67	H	52.80	39.70	-44.40	-	48.10	68.20	20.10
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE160 RU mode (242T / RU offset 61L)_Middle Channel (6 505 ㎒)

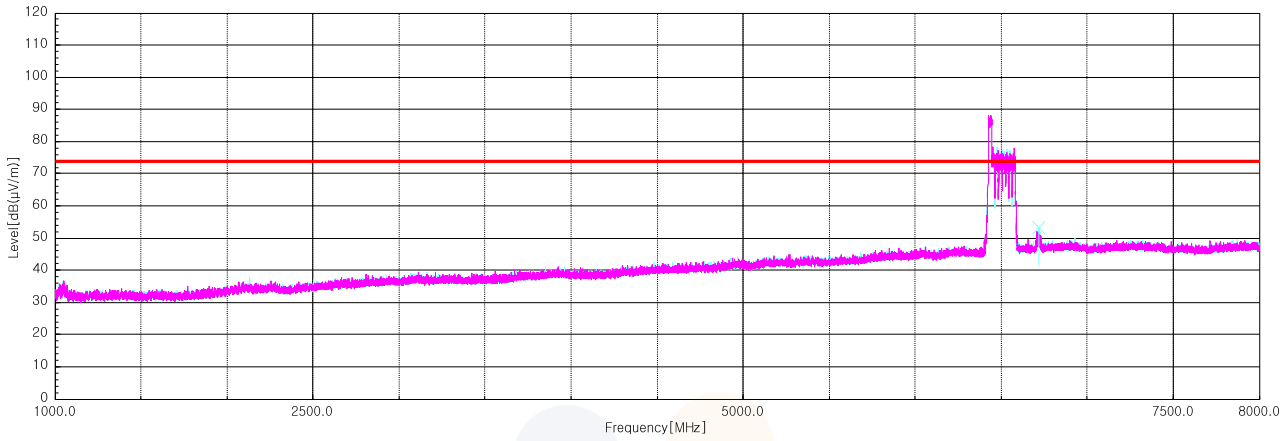
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
6 719.23	V	61.20	36.04	-43.81	-	53.43	68.20	14.77
13 119.67	V	53.20	39.70	-44.51	-	48.39	68.20	19.81
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

Plot of Harmonics and Spurious Emissions

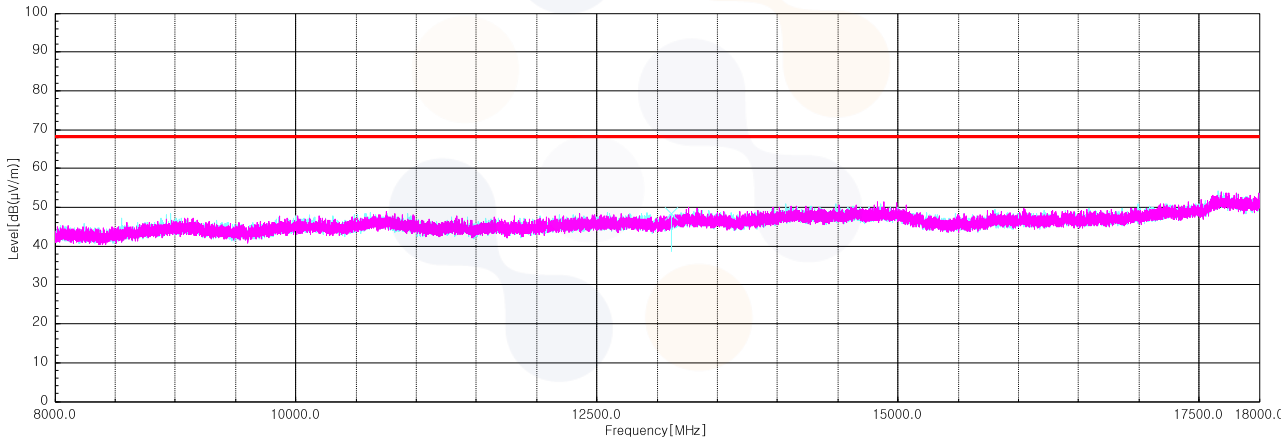
In order to simplify the report, attached plots were only the lowest margin condition

802.11ax_HE160 RU mode (242T / RU offset 61L)_Middle Channel (6 505 ㎒)

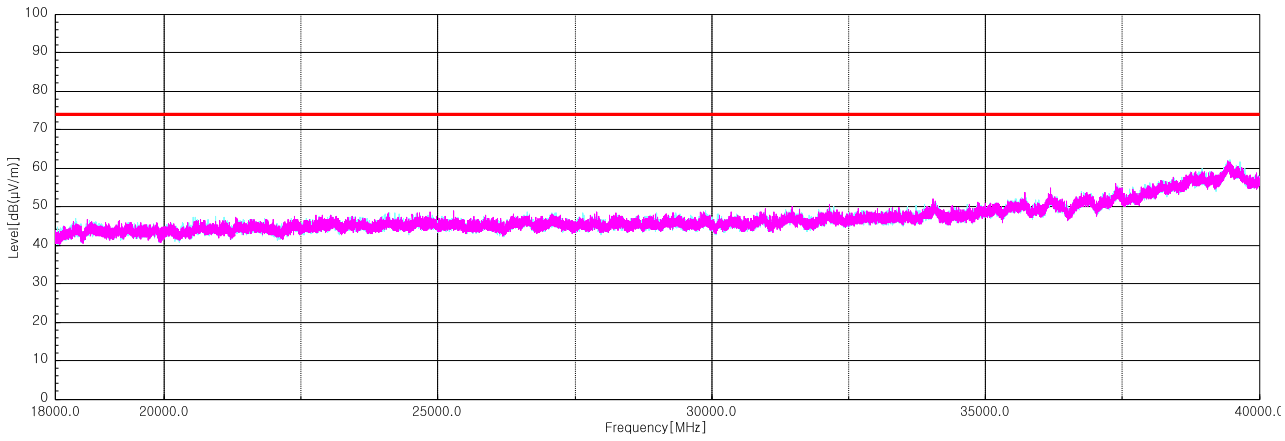
Horizontal/Vertical for 1 ㎓ ~ 8 ㎓



Horizontal/Vertical for 8 ㎓ ~ 18 ㎓



Horizontal/Vertical for 18 ㎓ ~ 40 ㎓



UNII-7 Harmonics and Spurious Emissions

802.11a mode_Lowest Channel (6 535 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
13 168.00	V	53.40	39.70	-44.55	-	48.55	68.20	19.65
Average Data								
No spurious emissions were detected within 20 dB of the limit								

802.11a mode_Middle Channel (6 695 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
13 377.00[1)]	H	53.40	40.05	-44.76	-	48.69	74.00	25.31
Average Data								
No spurious emissions were detected within 20 dB of the limit								

802.11a mode_Highest Channel (6 875 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
13 731.00	V	54.50	39.84	-44.84	-	49.50	68.20	18.70
Average Data								
No spurious emissions were detected within 20 dB of the limit								

802.11ax_HE20 SU mode_Lowest Channel (6 535 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
13 139.33	H	52.30	39.70	-44.53	-	47.47	68.20	20.73
Average Data								
No spurious emissions were detected within 20 dB of the limit								

802.11ax_HE20 SU mode_ Middle Channel (6 695 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
13 425.00	H	53.00	40.15	-44.81	-	48.34	68.20	19.86
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE20 SU mode_ Highest Channel (6 875 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
13 762.00	H	53.60	39.90	-44.84	-	48.66	68.20	19.54
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE40 SU mode_Lowest Channel (6 565 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
13 232.67	V	52.90	39.87	-44.62	-	48.15	68.20	20.05
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE40 SU mode_ Middle Channel (6 685 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
13 369.33[1)]	H	53.10	40.04	-44.75	-	48.39	74.00	25.61
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE40 SU mode_ Highest Channel (6 845 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
13 693.00	H	53.20	39.91	-44.85	-	48.26	68.20	19.94
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE80 SU mode_ Lowest Channel (6 545 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
13 052.67	H	53.80	39.70	-44.44	-	49.06	68.20	19.14
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE80 SU mode_ Middle Channel (6 705 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
13 487.67	V	53.70	40.10	-44.87	-	48.93	68.20	19.27
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE80 SU mode_ Highest Channel (6 865 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
13 756.00	V	53.70	39.90	-44.84	-	48.76	68.20	19.44
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE160 SU mode_Lowest Channel (6 665 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
13 379.67[1)]	H	53.90	40.06	-44.76	-	49.20	74.00	24.80
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE160 SU mode_Highest Channel (6 825 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
13 750.00	V	53.10	39.90	-44.84	-	48.16	68.20	20.04
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE20 RU mode (242T / RU offset 61)_Lowest Channel (6 535 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
12 990.33	H	53.50	39.88	-44.39	-	48.99	68.20	19.21
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE40 RU mode (242T / RU offset 61)_Lowest Channel (6 565 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
13 174.67	V	53.70	39.70	-44.56	-	48.84	68.20	19.36
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE80 RU mode (242T / RU offset 61)_Lowest Channel (6 545 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
13 164.00	V	52.80	39.70	-44.55	-	47.95	68.20	20.25
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE160 RU mode (242T / RU offset 64U)_Lowest Channel (6 665 ㎒)

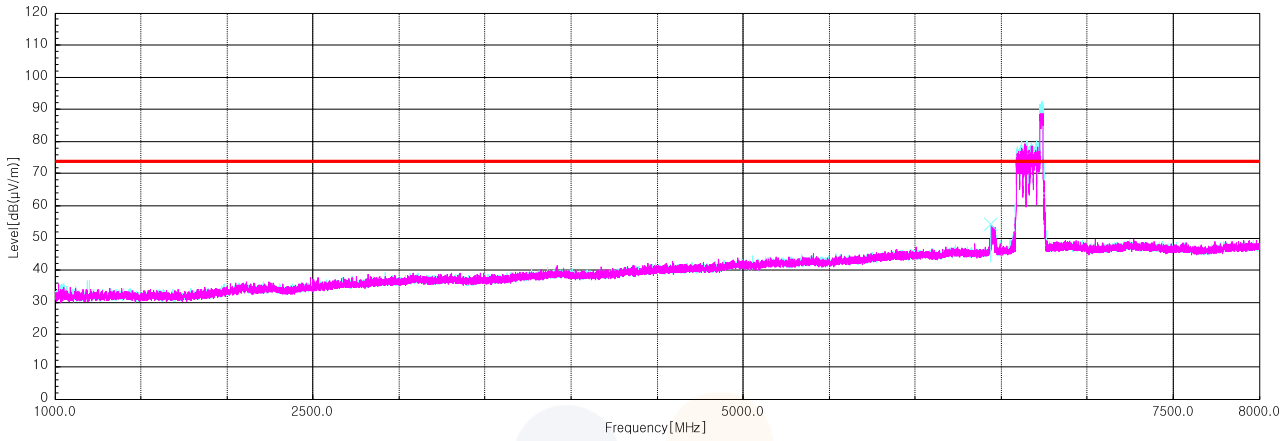
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
6 441.57	V	63.20	34.78	-43.80	-	54.18	68.20	14.02
13 367.67[1)]	V	53.20	40.04	-44.75	-	48.49	74.00	25.51
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

Plot of Harmonics and Spurious Emissions

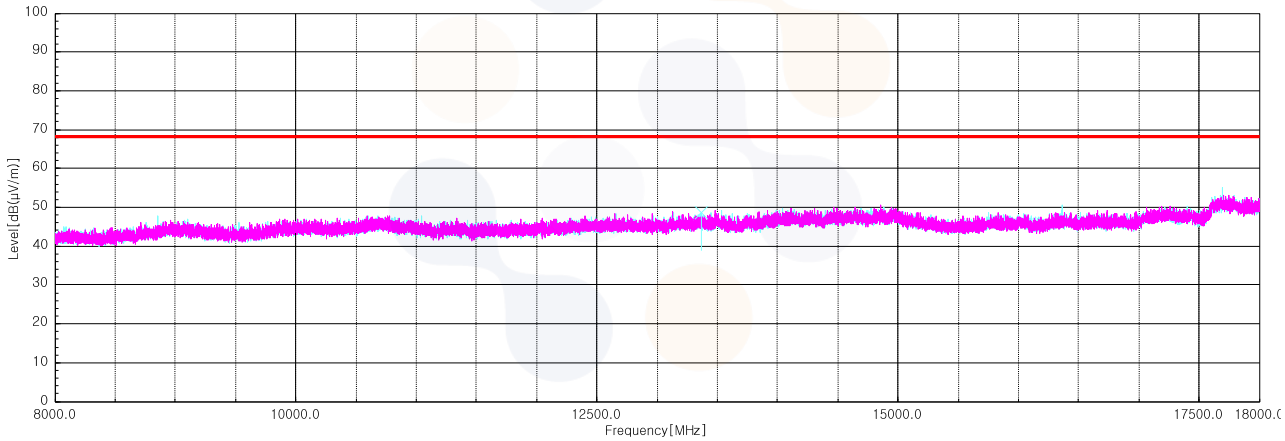
In order to simplify the report, attached plots were only the lowest margin condition

802.11ax_HE160 RU mode (242T / RU offset 64U)_Lowest Channel (6 665 ㎒)

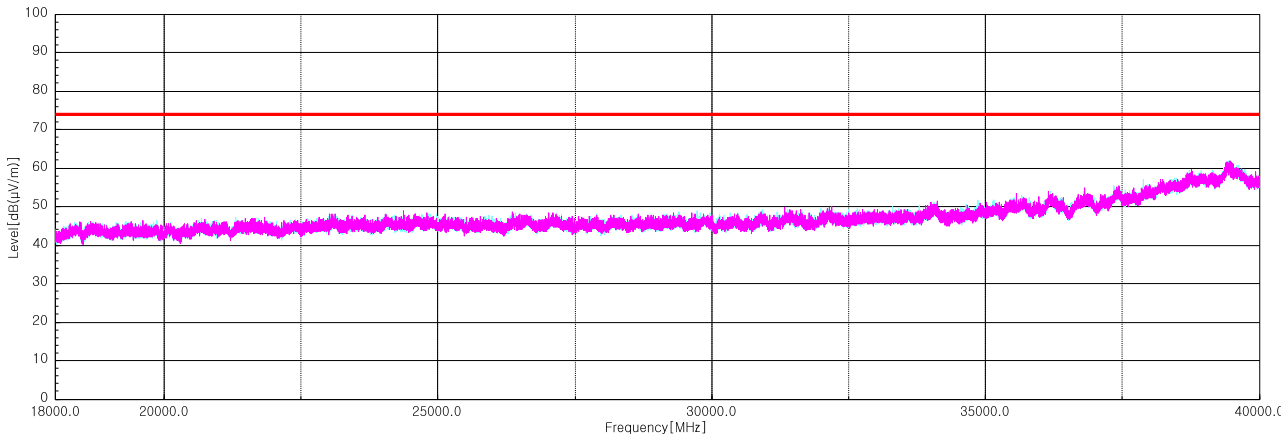
Horizontal/Vertical for 1 ㎓ ~ 8 ㎓



Horizontal/Vertical for 8 ㎓ ~ 18 ㎓



Horizontal/Vertical for 18 ㎓ ~ 40 ㎓



UNII-8 Harmonics and Spurious Emissions

802.11a mode_Lowest Channel (6 895 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
13 906.00	H	54.50	40.00	-44.82	-	49.68	68.20	18.52
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11a mode_Middle Channel (6 995 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
13 981.33	V	53.90	40.16	-44.80	-	49.26	68.20	18.94
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11a mode_Highest Channel (7 115 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
14 286.00	V	53.50	40.50	-44.23	-	49.77	68.20	18.43
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE20 SU mode_Lowest Channel (6 895 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
13 753.67	V	53.10	39.90	-44.84	-	48.16	68.20	20.04
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE20 SU mode_ Middle Channel (6 995 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
14 084.33	V	53.50	40.47	-44.63	-	49.34	68.20	18.86
Average Data								
No spurious emissions were detected within 20 dB of the limit								

802.11ax_HE20 SU mode_ Highest Channel (7 115 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
14 278.33	V	52.90	40.50	-44.25	-	49.15	68.20	19.05
Average Data								
No spurious emissions were detected within 20 dB of the limit								

802.11ax_HE40 SU mode_Lowest Channel (6 885 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
13 847.33	V	53.30	39.90	-44.82	-	48.38	68.20	19.82
Average Data								
No spurious emissions were detected within 20 dB of the limit								

802.11ax_HE40 SU mode_ Middle Channel (6 965 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
14 018.33	V	53.30	40.37	-44.76	-	48.91	68.20	19.29
Average Data								
No spurious emissions were detected within 20 dB of the limit								

802.11ax_HE40 SU mode_ Highest Channel (7 085 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
14 115.00	V	53.10	40.40	-44.57	-	48.93	68.20	19.27
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE80 SU mode_ Lowest Channel (6 945 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
13 946.00	V	54.50	40.00	-44.81	-	49.69	68.20	18.51
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE80 SU mode_ Highest Channel (7 025 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
14 140.33	H	54.40	40.40	-44.52	-	50.28	68.20	17.92
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE160 SU mode_Middle Channel (6 985 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
14 074.67	V	54.40	40.45	-44.65	-	50.20	68.20	18.00
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11ax_HE20 RU mode (242T / RU offset 61)_Highest Channel (7 115 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
14 127.33	V	54.00	40.40	-44.55	-	49.85	68.20	18.35
Average Data								
No spurious emissions were detected within 20 dB of the limit								

802.11ax_HE40 RU mode (242T / RU offset 61)_Highest Channel (7 085 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
14 155.33	H	53.70	40.51	-44.49	-	49.72	68.20	18.48
Average Data								
No spurious emissions were detected within 20 dB of the limit								

802.11ax_HE80 RU mode (484T / RU offset 65)_Highest Channel (7 025 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
14 139.00	H	54.00	40.40	-44.52	-	49.88	68.20	18.32
Average Data								
No spurious emissions were detected within 20 dB of the limit								

802.11ax_HE160 RU mode (2X996T / RU offset 68)_Middle Channel (6 985 ㎒)

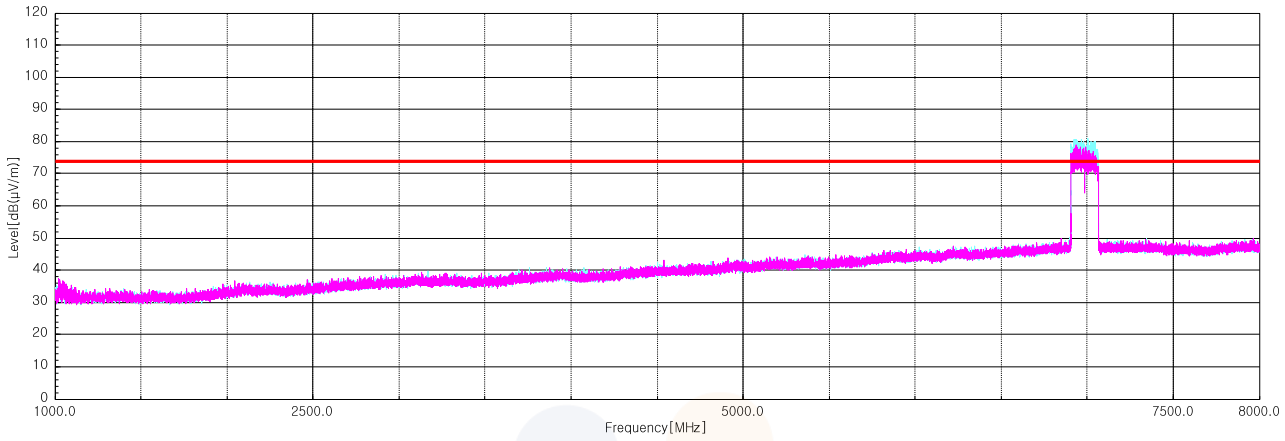
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
14 056.33	V	54.60	40.41	-44.69	-	50.32	68.20	17.88
Average Data								
No spurious emissions were detected within 20 dB of the limit								

Plot of Harmonics and Spurious Emissions

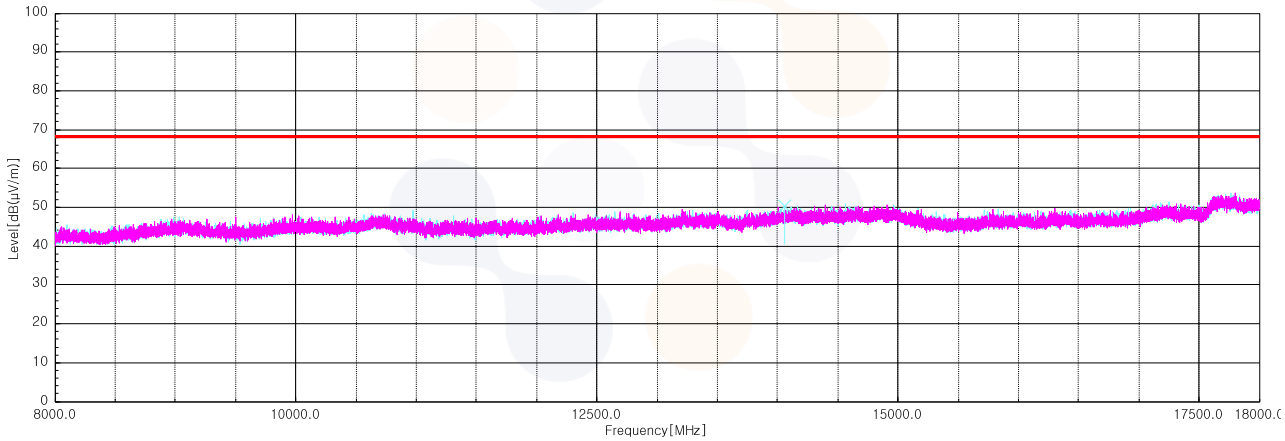
In order to simplify the report, attached plots were only the lowest margin condition

802.11ax_HE160 RU mode (2X996T / RU offet 68)_ Middle Channel (6 985 ㎒)

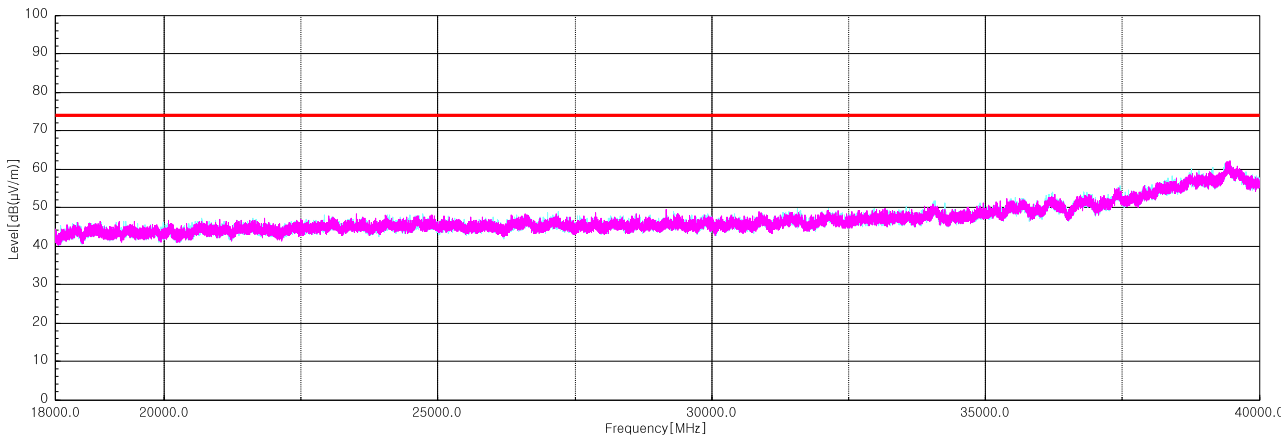
Horizontal/Vertical for 1 ㎓ ~ 8 ㎓



Horizontal/Vertical for 8 ㎓ ~ 18 ㎓



Horizontal/Vertical for 18 ㎓ ~ 40 ㎓



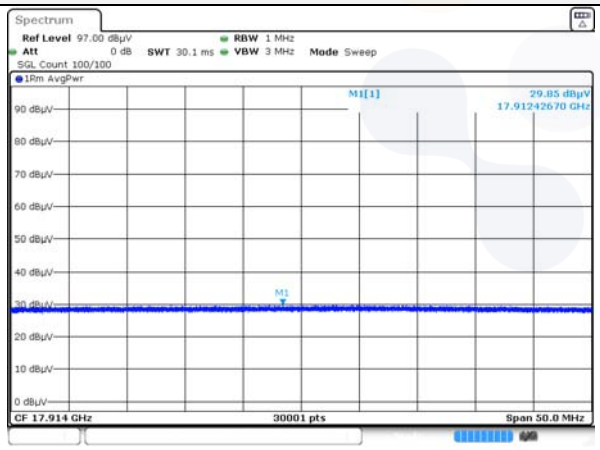
Spurious Emission for Simultaneous Tx Condition

Case	WLAN 6 GHz	Bluetooth
Mode	802.11ax HE80_SU mode	EDR
Channel	7	78
Frequency	5 985 MHz	2 480 MHz
Data Rate	MCS 0	3DH-3

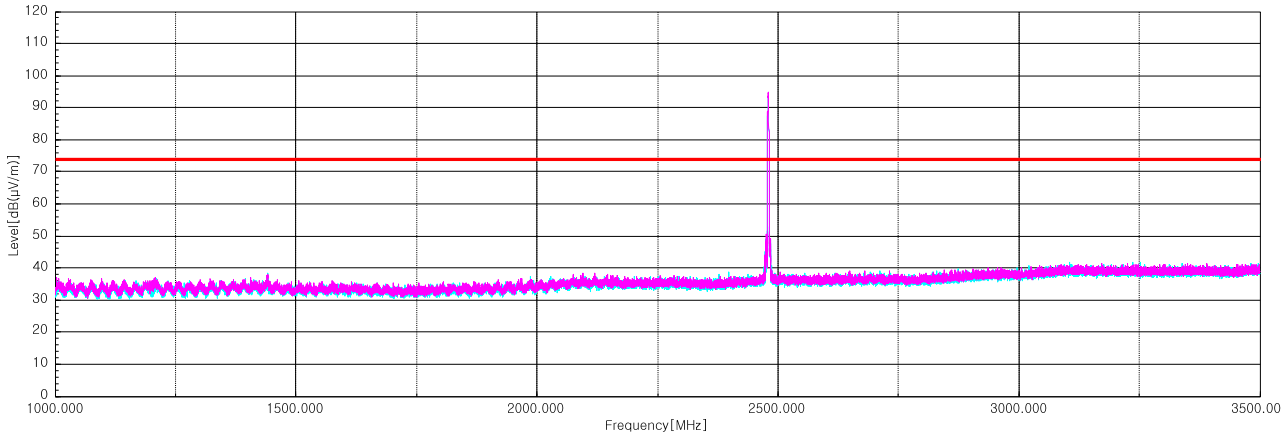
Notes.

The lowest margin condition among the channels and modes were selected for test.

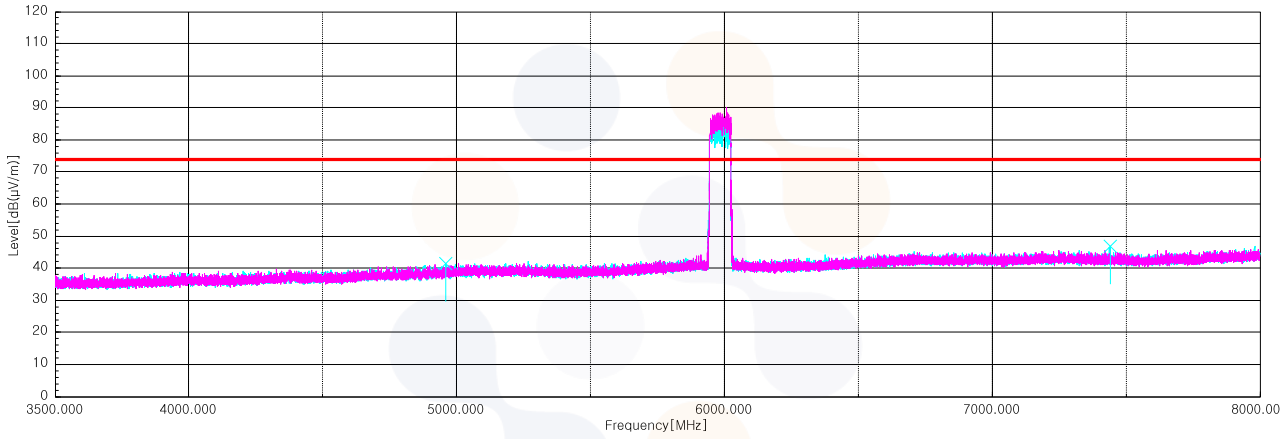
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Peak data								
4 959.95[1)]	V	39.10	32.94	-30.68	-	41.36	74.00	32.64
7 440.20[1)]	V	39.70	36.42	-29.10	-	47.02	74.00	26.98
11 976.00[1)]	H	36.60	38.85	-27.19	-	48.26	74.00	25.74
17 912.43[1)]	V	39.70	41.30	-23.50	-	57.50	74.00	16.50
Average Data								
17 912.43[1)]	V	29.85	41.30	-23.50	1.16	48.81	54.00	5.19

Average data	**-**
	Blank

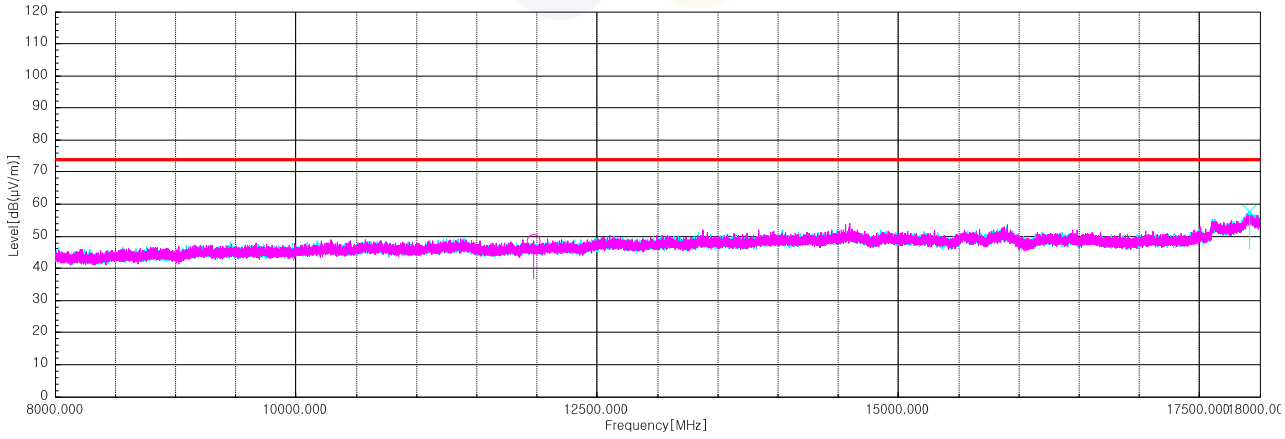
Horizontal/Vertical for 1 ㎓ ~ 3.5 ㎓



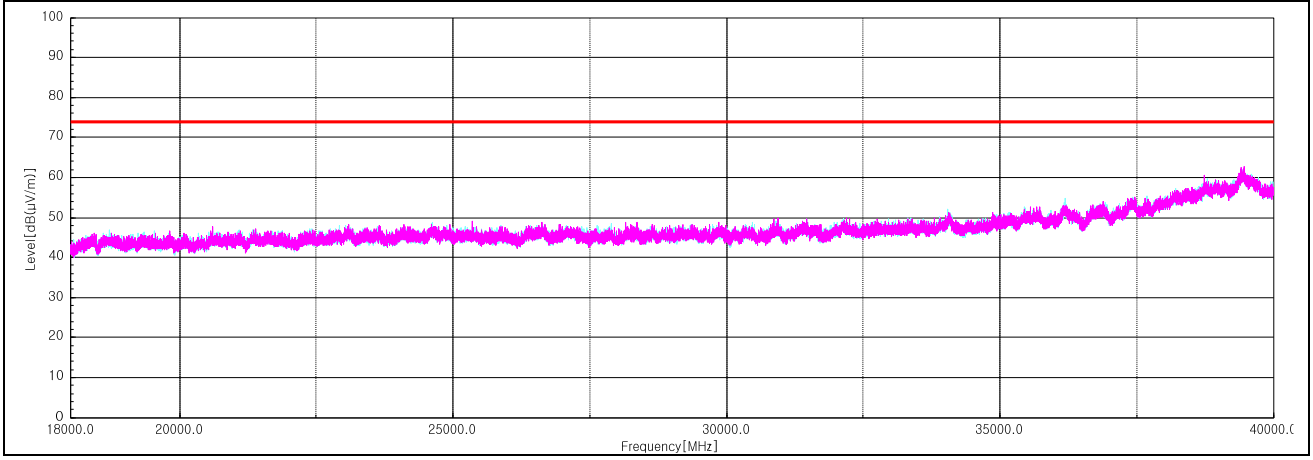
Horizontal/Vertical for 3.5 ㎓ ~ 8 ㎓



Horizontal/Vertical for 8 ㎓ ~ 18 ㎓

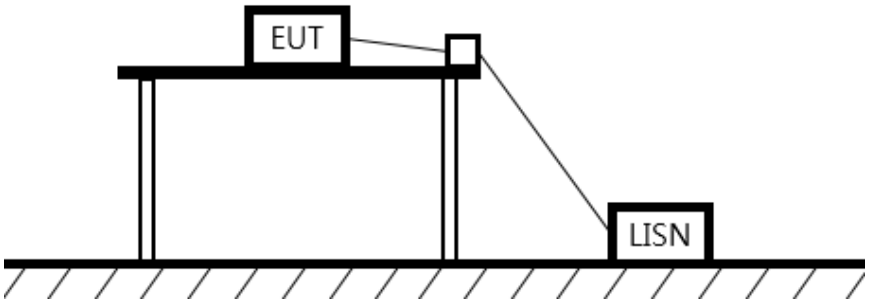


Horizontal/Vertical for 18 ㎓ ~ 40 ㎓



7.7. AC Conducted emission

Test setup



Limit

§15.407

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.

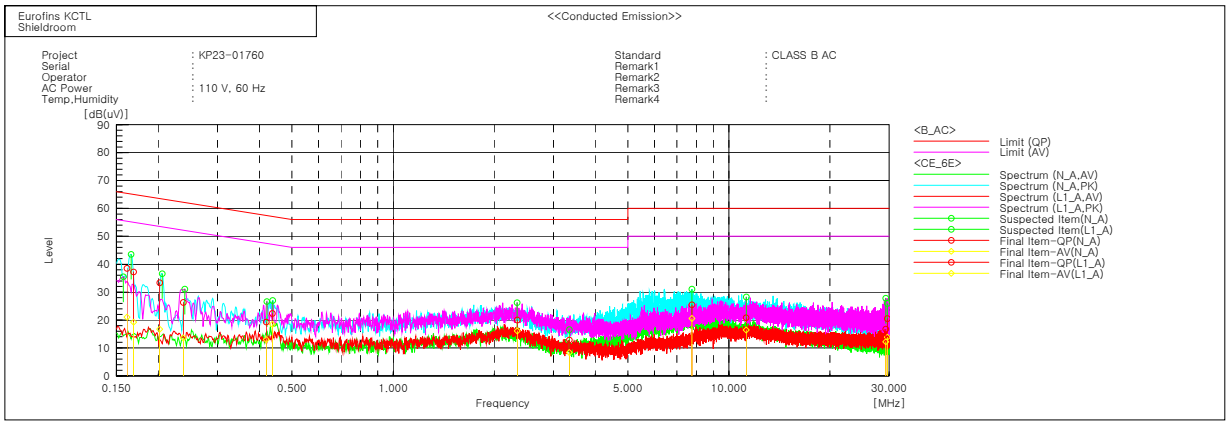
Frequency of Emission (㎒)	Conducted limit (dB㎶/m)	
	Quasi-peak	Average
0.15 – 0.50	66 - 56*	56 - 46*
0.50 – 5.00	56	46
5.00 – 30.0	60	50

Measurement procedure

1. The EUT was placed on a wooden table of size, 1 m by 1.5 m, raised 80 ㎝ in which is located 40 ㎝ 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.

Test results

Worst Case: UNII 5_802.11ax_HE160 SU mode (SU)_Highest Channel (6 345 ㎒)



Final Result

--- N_A 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	0.16878	27.1	9.0	10.2	37.3	19.2	65.0	55.0	27.7	35.8
2	0.20201	23.4	6.7	10.0	33.4	16.7	63.5	53.5	30.1	36.8
3	0.4373	12.3	8.4	10.0	22.3	18.4	57.1	47.1	34.8	28.7
4	7.76185	15.4	10.4	10.1	25.5	20.5	60.0	50.0	34.5	29.5
5	3.34935	3.0	-1.6	9.9	12.9	8.3	56.0	46.0	43.1	37.7
6	29.62064	9.5	2.9	11.0	20.5	13.9	60.0	50.0	39.5	36.1

--- L1_A 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	0.23736	16.5	3.7	9.8	26.3	13.5	62.2	52.2	35.9	38.7
2	0.16141	28.4	10.9	10.1	38.5	21.0	65.4	55.4	26.9	34.4
3	0.4191	9.4	3.1	9.9	19.3	13.0	57.5	47.5	38.2	34.5
4	2.34515	10.2	6.3	9.8	20.0	16.1	56.0	46.0	36.0	29.9
5	11.25783	10.5	6.1	10.3	20.8	16.4	60.0	50.0	39.2	33.6
6	29.3276	5.6	1.1	11.1	16.7	12.2	60.0	50.0	43.3	37.8

8. Measurement equipment

Equipment Name	Manufacturer	Model No.	Serial No.	Next Cal. Date
Spectrum Analyzer	R&S	FSVA40	101578	23.11.28
Attenuator	HUBER+SUHNER	6610_SK-50-1/199_NE	ATT07	24.04.10
DC Power Supply	AGILENT	E3632A	MY40008800	23.07.11
Signal Generator	R&S	SMB100A	176206	24.01.19
Vector Signal Generator	R&S	SMBV100A	257566	23.07.04
Vector Signal Generator	R&S	SMW200A	109480	24.01.25
Splitter	Mini-Circuits	ZX10-2-1252-S+	1633-1	24.01.19
Divider	Marki Microwave, Inc.	PD-0040	D0002	23.08.10
Step Attenuator	HP	8496A	3308A16640	23.07.11
Bluetooth Tester	TESCOM	TC-3000B	3000B640056	24.01.19
Controller	INNCO SYSTEMS	CO3000	1441/54370322/P	-
Antenna Mast	INNCO SYSTEMS	MA4640-XP-ET	-	-
Turn Device	INNCO SYSTEMS	DS1200-S-1t	-	-
Spectrum Analyzer	R&S	FSVA40	101575	23.07.22
PSA Spectrum Analyzer	Agilent	E4440A	MY46186407	24.03.22
Broadband Pre-Amplifier	SCHWARZBECK	BBV9718D	57	24.03.17
Low Noise Amplifier	TESTEK	TK-PA18H	220124-L	23.12.02
Low Noise Amplifier	TESTEK	TK-PA1840H	220133-L	23.12.02
Amplifier	SONOMA INSTRUMENT	310N	421821	23.12.14
Horn Antenna	SCHWARZBECK	BBHA9120D	2763	23.12.06
Horn Antenna	SCHWARZBECK	BBHA9170	1267	23.12.05
Bi-log Antenna	Teseq GmbH	CBL 6112D	63756	24.11.17
Loop Antenna	R&S	HFH2-Z2	100355	24.08.10
High Pass Filter	Qotana	DBHF058004000A	20070100016	23.07.04
TWO-LINE V - Network	R&S	ENV216	101358	23.09.29
EMI Test Receiver	R&S	ESCI3	100001	23.08.18

End of test report