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.: KR24-SRF0066 Page(1) of (73)	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 : 2024-04-02

2. Use of Report : Certification

3. Name of Product / Model : Smart Wearable / SM-L310

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

5. FCC ID : A3LSML310

6. Date of Test : 2024-04-12 to 2024-04-22

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 : Kwonse Kim (Signature)	Name : Harim Lee (Signature)

2024-04-26

Eurofins KCTL Co.,Ltd.

REPORT REVISION HISTORY

Date	Revision	Page No
2024-04-26	Originally issued	-

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**

CONTENTS

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 1	:	AG TECH CO.,LTD
Address 1	:	Lot G3, Que Vo Industrial Park(Expanded Area), Nam son Ward, Bac Ninh Province, Vietnam
Factory 2	:	ALMUS VINA
Address 2	:	Lot CN07A, Phu Ha Industrial Park, Ha Thach Commune, Phu Tho Town, Phu Tho Province, 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

.	:	Smart Wearable
Model	:	SM-L310
Modulation technique	:	WIFI(802.11a/n) : OFDM
Number of channels	:	UNII 1 : 4 ch (20 ㎒) UNII 2A : 4 ch (20 ㎒) UNII 2C : 12 ch (20 ㎒) UNII 3 : 5 ch (20 ㎒)
Power source	:	DC 3.88 V
Antenna specification	:	LDS Antenna
Antenna gain	:	UNII 1 : -9.2 dBi UNII 2A : -9.2 dBi UNII 2C : -8.2 dBi UNII 3 : -7.7 dBi
Frequency range	:	UNII-1 : 5 180 ㎒ ~ 5 240 ㎒ (802.11a/n_HT20) UNII-2A : 5 260 ㎒ ~ 5 320 ㎒ (802.11a/n_HT20) UNII-2C : 5 500 ㎒ ~ 5 720 ㎒ (802.11a/n_HT20) UNII-3 : 5 745 ㎒ ~ 5 825 ㎒ (802.11a/n_HT20)
Software version	:	L310.001
Hardware version	:	REV1.0
Test device serial No.	:	Conducted : R3AX3015GJE Radiated : R3AX3015HMD, R3AX3015HGKN
Operation temperature	:	0 ℃ ~ 35 ℃

2.1. Accessory information

Equipment	Manufacturer	Model	Serial No.	Power source	FCC ID & IC
Wireless charger	RF TECH	EP-OL300	-	5.0 V, 3.0 A	FCC ID : A3LEPOL300 IC : 649E-EPOL300

2.2. Frequency/channel operations

This device contains the following capabilities:
WLAN (11a/n)

UNII 1		UNII 2A		UNII 2C		UNII 3	
Ch.	Frequency (㎒)	Ch.	Frequency (㎒)	Ch.	Frequency (㎒)	Ch.	Frequency (㎒)
36	5 180	52	5 260	100	5 500	149	5 745
40	5 200	56	5 280	120	5 600	157	5 785
48	5 240	64	5 320	140	5 700	165	5 825
				144	5 720		

Table 2.2-1. 802.11a/n HT20 mode

Notes:

1. The device supports DFS bands between UNII 2A and UNII 2C and operates as a slave device controlled by master

2.3. Simultaneous Tx Condition

The device supports simultaneous transmission operation, which allows for two channels to operate independent of one another in the Bluetooth low energy, 5 ㎓ bands simultaneously.

Simultaneous Tx condition – not RSDB

Mode	# of TX	WLAN 5 ㎓	Bluetooth Low Energy
Bluetooth Low Energy + 5G WLAN	2	O	O

Notes.

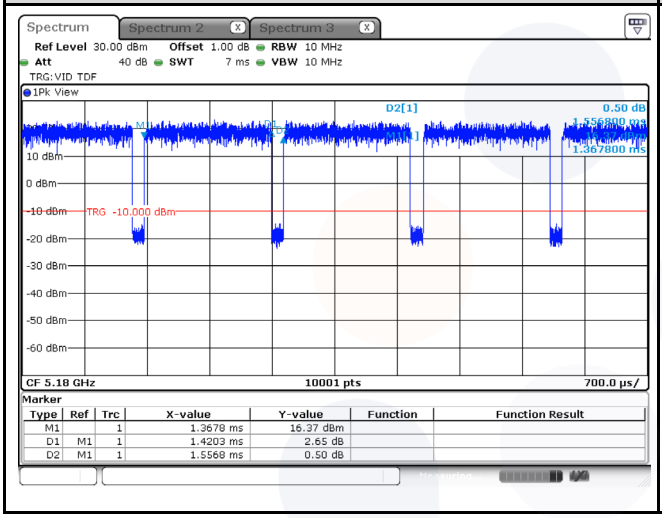
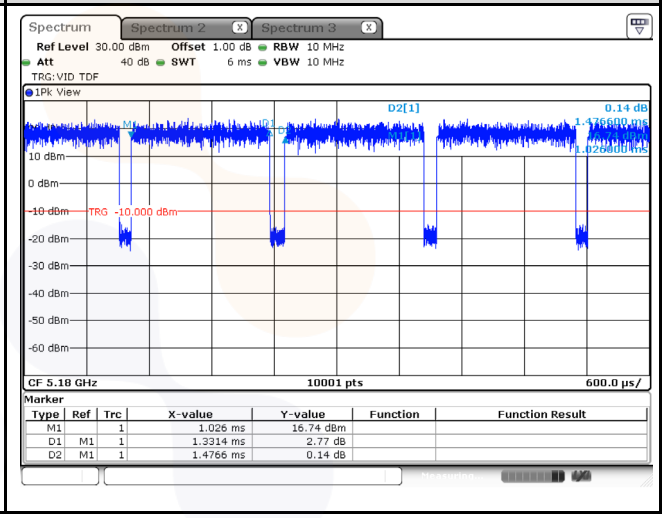
Simultaneous condition was performed as a worst case which is configured as a combination of lowest margin for each mode during radiated spurious emission.

2.4. Duty Cycle Factor

Test mode	Period (ms)	Ton time (ms)	Duty cycle		Duty cycle factor (dB)
			(Linear)	(%)	
802.11a	1.557	1.420	0.912 0	91.20	0.40
802.11n_HT20	1.477	1.331	0.901 2	90.12	0.45

Notes.

1. Duty cycle (Linear) = Ton 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%

802.11a	802.11n_HT20
	

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 LDS Antenna (Internal antenna) on board.
- The E.U.T Complies with the requirement of §15.203, §15.407.

4. Summary of tests

FCC Part section(s)	Parameter	Test Condition	Test results
15.407(a)	Maximum conducted output power	Conducted	Pass
15.407(a)	Maximum power spectral density		Pass
15.407(a)	26 dB Channel Bandwidth		Pass
15.407(e)	6 dB Channel Bandwidth		Pass
-	Occupied Bandwidth		Pass
15.207(a)	AC Conducted Emissions		Pass
15.407(h)	DFS -Channel closing transmission time -Channel move time -Non occupied period		Pass
15.407(b) 15.205(a) 15.209(a)	Spurious emission	Radiated	Pass
	Band-edge, restricted band		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. The fundamental of the EUT was investigated in three orthogonal orientations X, Y and Z and all of the radiated tests have been performed with the accessories as below. It was determined that below orientation was worst case orientation for each band
4. All configurations have been performed (Stand-alone, Stand-alone with TA and Strap).

Band	Strap	With charger	Without charger		
		X-axis	X-axis	Y-axis	Z-axis
UNII-1	With strap	-	-	-	O
	Without strap	-	-	-	-
UNII-2A	With strap	-	-	-	O
	Without strap	-	-	-	-
UNII-2C	With strap	-	-	-	O
	Without strap	-	-	-	-
UNII-3	With strap	-	-	-	O
	Without strap	-	-	-	-

5. The device does not support radar detection feature.
6. The test procedure(s) in this report were performed in accordance as following.
   - ANSI C63.10-2013
   - KDB 789033 D02 v02r01
   - KDB 905462 D02 UNII DFS compliance procedure new rules.
   - KDB 905462 D03 UNII client without radar detection new rules.
7. Based on the baseline scan, the worst-case data rates were:
   802.11a mode: 6Mbps, 802.11n HT20 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	1.9 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 ㎑	2.8 dB
	150 ㎑ ~ 30 ㎒	2.8 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.

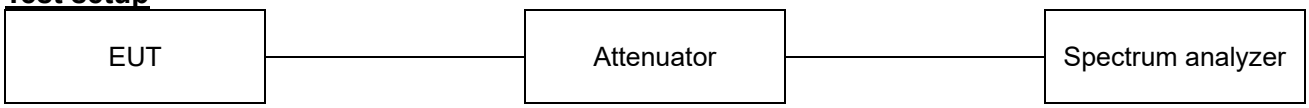
Frequency (㎒)	Factor(㏈)	Frequency (㎒)	Factor(㏈)
30	9.74	9 000	12.81
50	10.14	10 000	12.69
100	10.19	11 000	13.21
200	10.23	12 000	12.34
300	10.40	13 000	13.31
400	10.41	14 000	13.71
500	10.47	15 000	12.91
600	10.43	16 000	14.63
700	10.50	17 000	12.93
800	10.49	18 000	13.78
900	10.65	19 000	14.55
1 000	10.68	20 000	14.46
2 000	11.12	21 000	14.59
3 000	11.44	22 000	14.57
4 000	11.69	23 000	15.06
5 000	12.03	24 000	14.77
6 000	12.31	25 000	14.68
7 000	12.11	26 000	15.25
8 000	12.36	26 500	15.09

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

7. Test results

7.1. Maximum conducted output power

Test setup



Limit

According to §15.407(a),

Band	EUT category		Conducted output power limit
UNII-1		Outdoor access point	1 W (30 dBm)
		Indoor access point	
		Fixed point-to-point access point	
	√	Client device	250 mW (23.98 dBm)
UNII-2A	√		250 mW or 11 dBm + 10logB[1)]
UNII-2C	√		250 mW or 11 dBm + 10logB[1)]
UNII-3	√		1 W (30 dBm)

Note:

1) Limit B is the 26 dB emission bandwidth.

Test procedure

ANSI C63.10-2013-Section 12.3.2.4 or 12.3.3.1
KDB 789033 D02 v02r01 - Section E.2.d)

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

Conducted Output Power

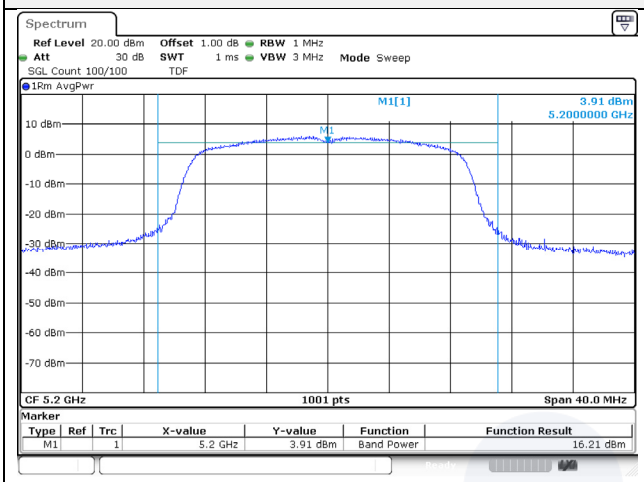
Test mode	Band	Frequency (㎒)	Measured output power (dBm)			Limit (dBm)
			Reading (dBm)	DCF (dB)	Result (dBm)	
802.11a	UNII 1	5 180	15.99	0.40	16.39	23.98
		5 200	16.24		16.64	
		5 240	16.11		16.51	
	UNII 2A	5 260	16.31		16.71	23.98
		5 280	16.42		16.82	
		5 320	16.46		16.86	
	UNII 2C	5 500	16.42		16.82	23.98
		5 600	16.45		16.85	
		5 700	16.50		16.90	
	UNII 3	5 745	16.57		16.97	30.00
		5 785	16.22		16.62	
		5 825	15.85		16.25	
802.11n HT20	UNII 1	5 180	15.88	0.45	16.33	23.98
		5 200	16.21		16.66	
		5 240	16.13		16.58	
	UNII 2A	5 260	16.25		16.70	23.98
		5 280	16.36		16.81	
		5 320	16.34		16.79	
	UNII 2C	5 500	16.37		16.82	23.98
		5 600	16.29		16.74	
		5 700	16.15		16.60	
	UNII 3	5 745	15.97		16.42	30.00
		5 785	15.94		16.39	
		5 825	15.68		16.13	

Note:

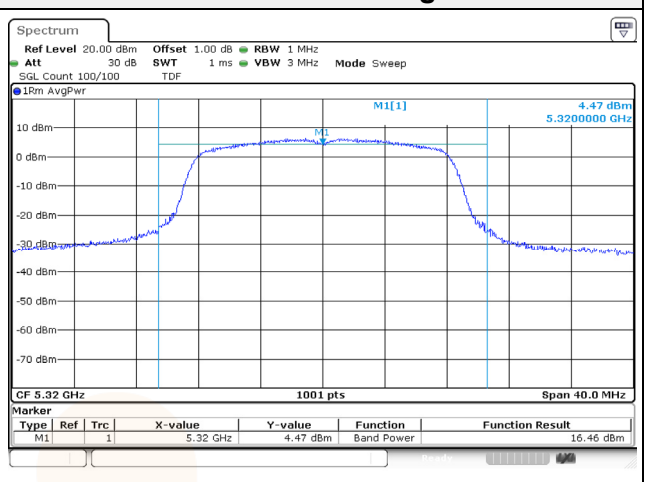
1. Result (dBm) = Reading (dBm) + D.C.F (dB)

In order to simplify the report, attached plots were the worst case per bandwidth

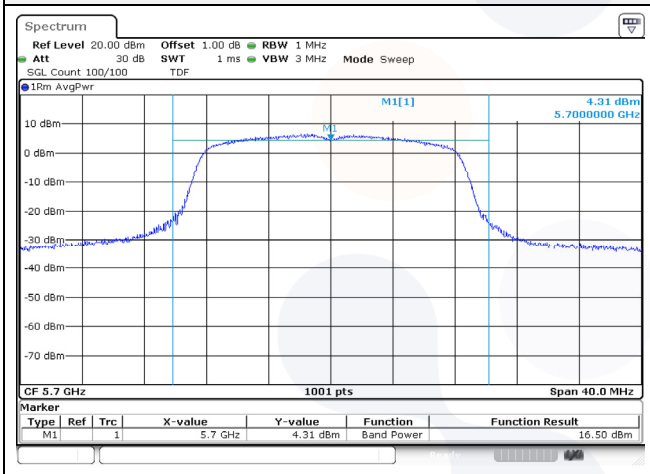
UNII 1 / 802.11n HT20 / Mid ch.



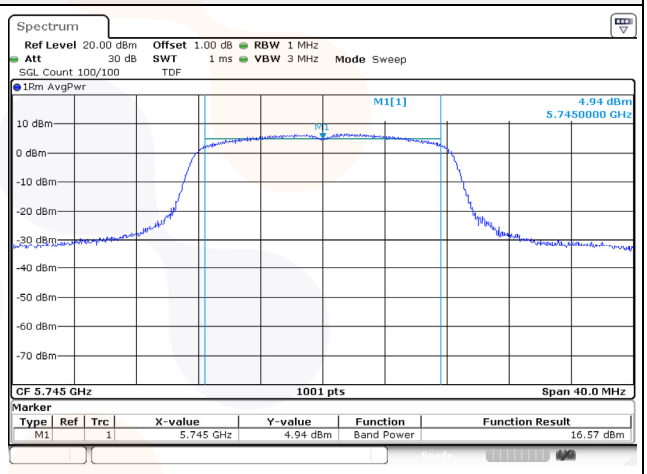
UNII 2A / 802.11a / High ch.



UNII 2C / 802.11a / High ch.

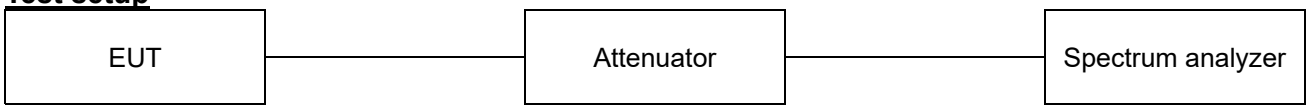


UNII 3 / 802.11a / Low ch.



7.2. Maximum Power Spectral Density

Test setup



Limit

According to §15.407(a),

Band	EUT category		Limit
UNII-1		Outdoor access point	17 dBm /㎒
		Indoor access point	
		Fixed point-to-point access point	
	√	Client device	11 dBm /㎒
UNII-2A	√		11 dBm /㎒
UNII-2C	√		11 dBm /㎒
UNII-3	√		30 dBm /500 ㎑

Notes:

If transmitting antennas of directional gain greater than 6 dBi are used, both the peak transmit power And the peak power spectral density shall be reduced by the amount in dB that the directional gain if the antenna exceed 6 dBi

Test procedure

ANSI C63.10-2013 Section 12.3.2.4
KDB 789033 D02 v02r01 - 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㎒ reference bandwidth
5. For devices operating in the bands 5.15-5.25 ㎓, 5.25-5.35 ㎓, and 5.47-5.725 ㎓, the preceding procedures make use of 1 ㎒ RBW to satisfy directly the 1 ㎒ reference bandwidth specified in Section 15.407(a)(5). For devices operating in the band 5.725-5.85 ㎓, the rules

specify a measurement bandwidth of 500 ㎑. Many spectrum analyzers do not have 500 ㎑ RBW, thus a narrower RBW may need to be used. The rules permit the use of RBWs less than 1㎒, or 500 ㎑, "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 ㎒, or 500 ㎑). If measurements are performed using a reduced resolution bandwidth (< 1 ㎒, or < 500 ㎑) and integrated over 1 ㎒, or 500 ㎑ 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:

1. 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.
2. Method SA-2 is used.

Test results

Power spectral density

Test mode	Band	Frequency (㎒)	Measured PSD (dBm/㎒)	DCF (dB)	Maximum PSD (dB m/㎒)	Limit (dBm/㎒)
802.11a	UNII 1	5 180	6.42	0.40	6.82	11.00
		5 200	6.76		7.16	
		5 240	6.41		6.81	
	UNII 2A	5 260	6.34		6.74	11.00
		5 280	6.63		7.03	
		5 320	6.57		6.97	
	UNII 2C	5 500	6.49		6.89	11.00
		5 600	6.99		7.39	
		5 700	6.16		6.56	
802.11n HT20	UNII 1	5 180	6.38	0.45	6.83	11.00
		5 200	6.25		6.70	
		5 240	6.15		6.60	
	UNII 2A	5 260	6.41		6.86	11.00
		5 280	6.58		7.03	
		5 320	6.42		6.87	
	UNII 2C	5 500	6.22		6.67	11.00
		5 600	6.69		7.14	
		5 700	5.90		6.35	

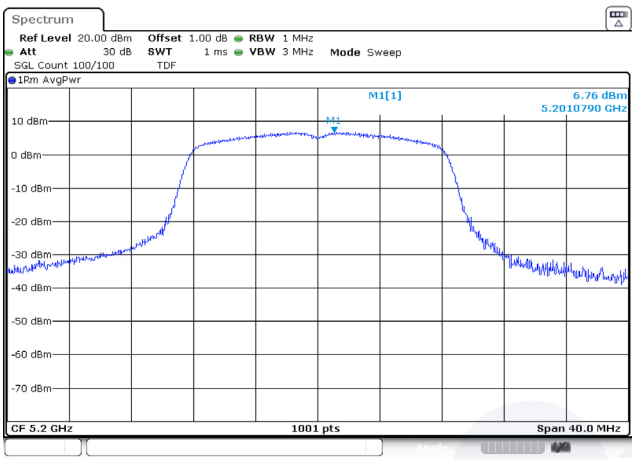
Test mode	Band	Frequency (㎒)	Measured PSD (dBm /500 ㎑)	DCF (dB)	Maximum PSD (dBm /500 ㎑)	Limit (dBm /500 ㎑)
802.11a	UNII 3	5 745	4.58	0.40	4.98	30.00
		5 785	4.27		4.67	
		5 825	3.65		4.05	
802.11n HT20		5 745	3.85	0.45	4.30	
		5 785	3.37		3.82	
		5 825	3.60		4.05	

Notes:

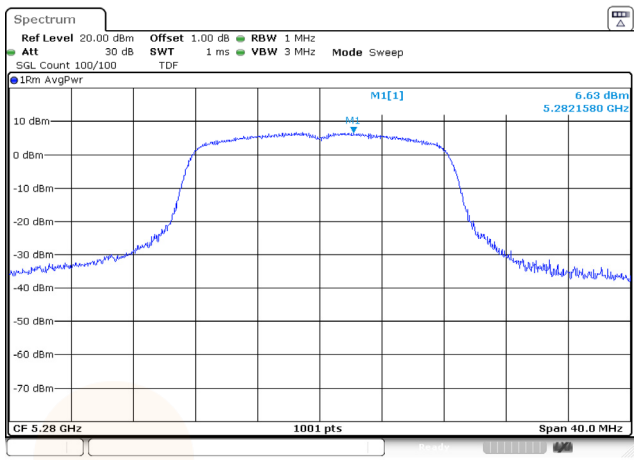
1. Maximum PSD(dBm/500 ㎑) = Reading (dBm/500 ㎑) + D.C.F(dB)

In order to simplify the report, attached plots were the worst case per bandwidth

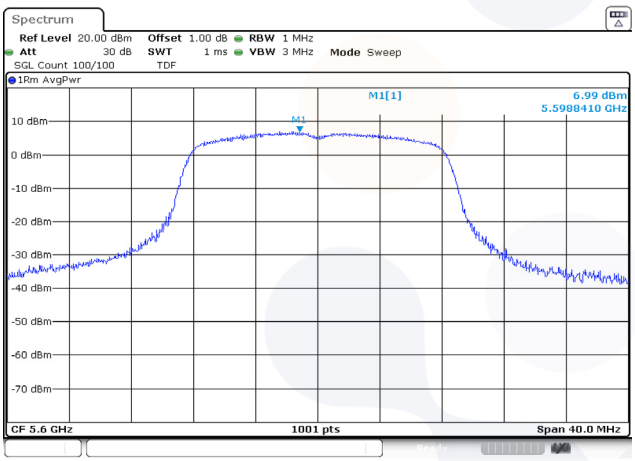
UNII 1 / 802.11a / Mid ch.



UNII 2A / 802.11a / Mid ch.



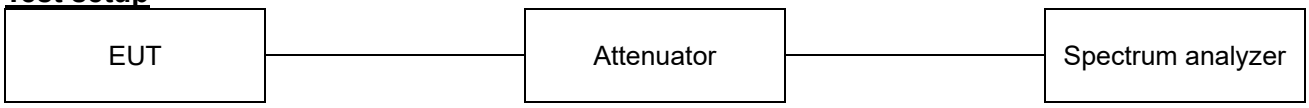
UNII 2C / 802.11a / Mid ch.



UNII 3 / 802.11a / Low ch.

7.3. 26 dB Bandwidth

Test setup



Limit

N/A

Test procedure

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

Test settings

1. 26 dB Bandwidth

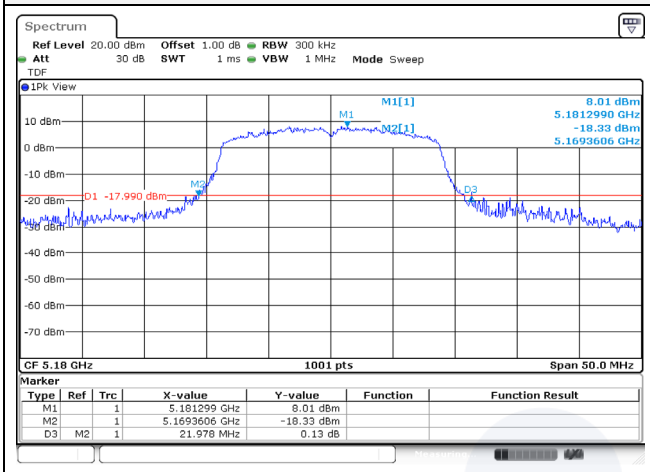
a. Set RBW = approximately 1% of the emission bandwidth.
b. Set the VBW > RBW.
c. Detector = Peak.
d. Trace mode = max hold.
e. Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement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

Test results

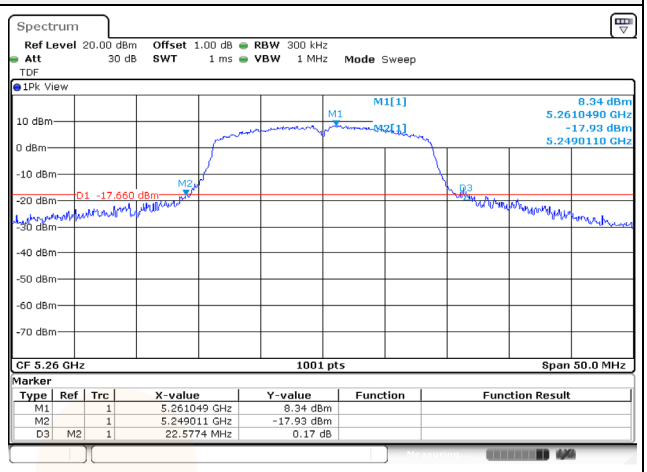
Test mode	Band	Frequency(㎒)	26 ㏈ bandwidth (㎒)
802.11a	UNII 1	5 180	20.68
		5 200	20.48
		5 240	20.38
	UNII 2A	5 260	20.33
		5 280	20.38
		5 320	21.13
	UNII 2C	5 500	20.23
		5 600	20.58
		5 700	20.38
802.11n HT20	UNII 1	5 180	21.98
		5 200	22.18
		5 240	23.03
	UNII 2A	5 260	22.58
		5 280	24.53
		5 320	22.38
	UNII 2C	5 500	21.58
		5 600	22.18
		5 700	21.43

In order to simplify the report, only n mode test plots are attached

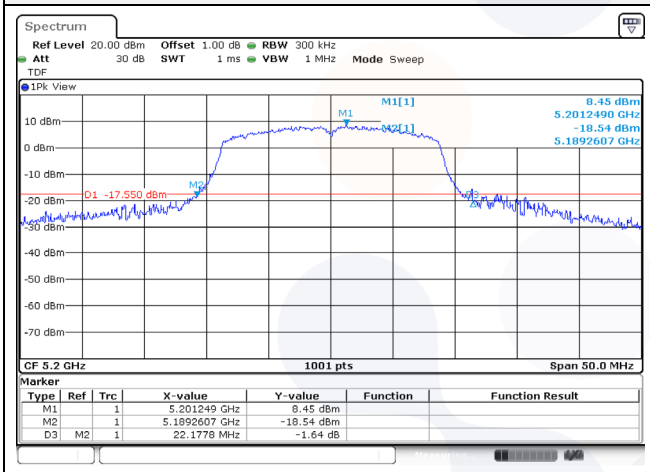
UNII 1 / 802.11n HT20 / Low ch.



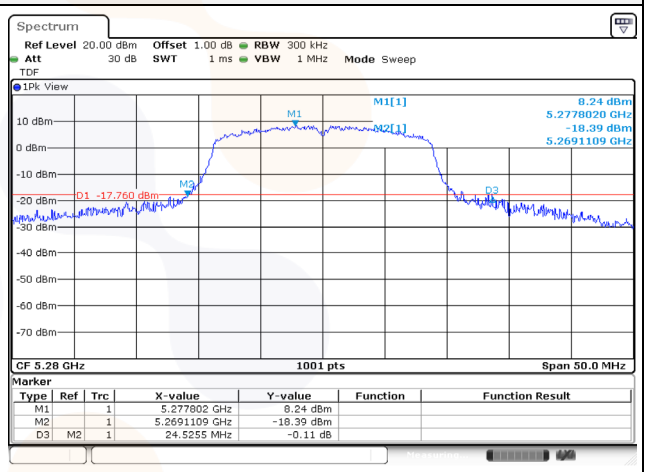
UNII 2A / 802.11n HT20 / Low ch.



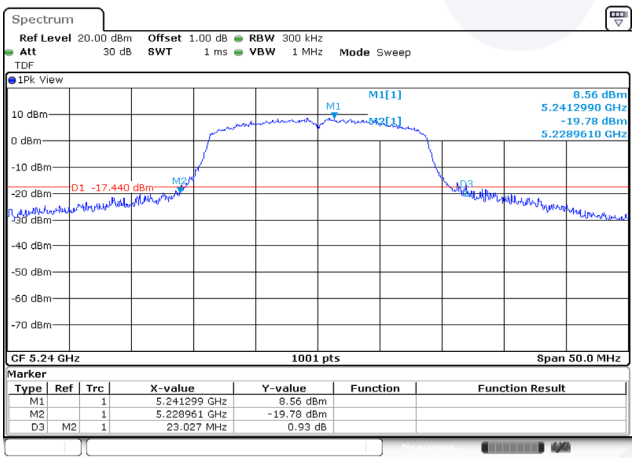
UNII 1 / 802.11n HT20 / Mid ch.



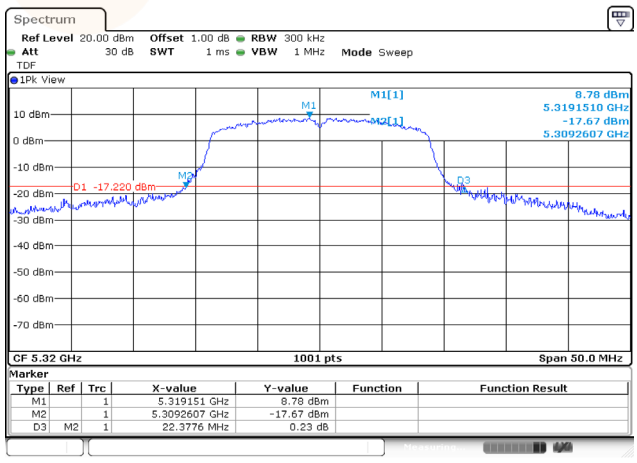
UNII 2A / 802.11n HT20 / Mid ch.

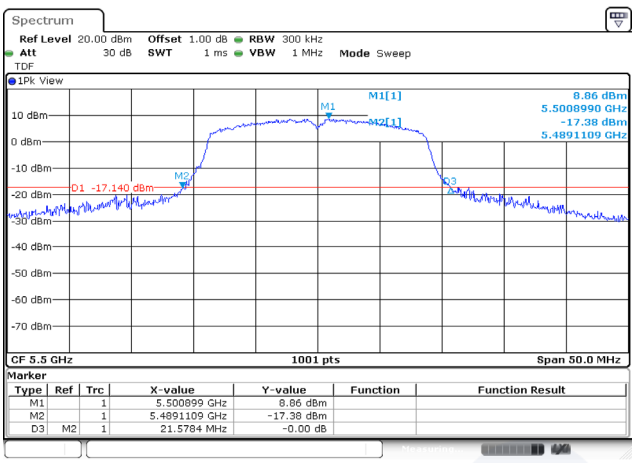
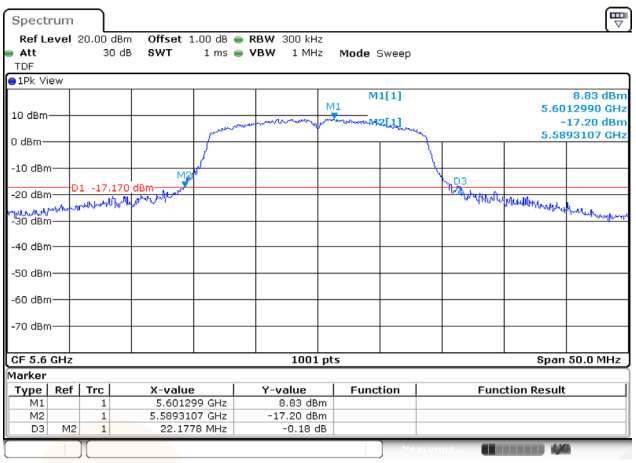
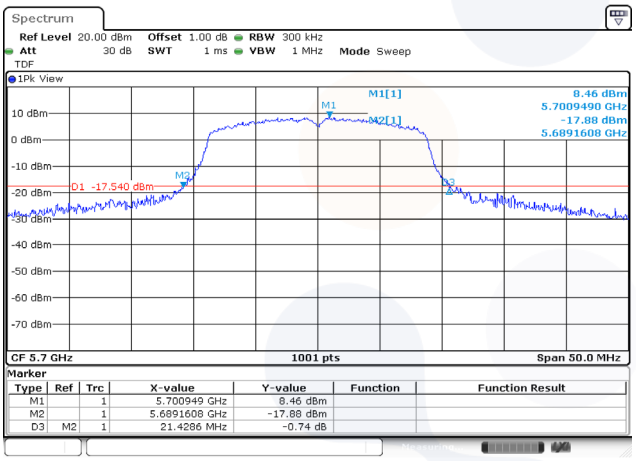


UNII 1 / 802.11n HT20 / High ch.



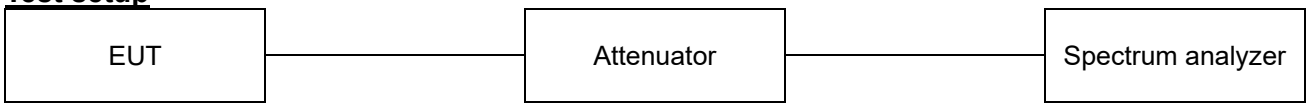
UNII 2A / 802.11n HT20 / High ch.



UNII 2C / 802.11n HT20 / Low ch.	UNII 2C / 802.11n HT20 / Mid ch.
	
UNII 2C / 802.11n HT20 / High ch.	**-**
	Blank

7.4. 6 dB Bandwidth

Test setup



Limit

According to §15.407(e),

Within the 5.725-5.850 ㎓ bands, the minimum 6 ㏈ bandwidth of U-NII devices shall be at least 500㎑.

Test procedure

ANSI C63.10-2013 Section 6.9.2
KDB 789033 D02 v02r01 - Section C.2

Test settings

Minimum Emission Bandwidth for the band 5.725−5.85 ㎓.

Section 15.407(e) specifies the minimum 6 ㏈ emission bandwidth of at least 500 ㎑ for the 5.725−5.85 ㎓ band. The following procedure shall be used for measuring this Bandwidth:

1. Set RBW = 100 ㎑.
2. Set the video bandwidth (VBW) ≥ 3 RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 ㏈ relative to the maximum level measured in the fundamental emission.

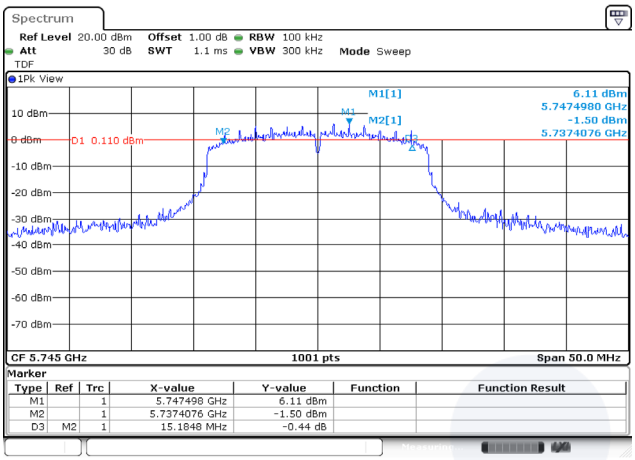
Test results

Test mode	Band	Frequency (㎒)	6㏈ bandwidth (㎒)	Limit (㎒)
802.11a	UNII 3	5 745	15.18	0.50
		5 785	14.54	
		5 825	15.18	
802.11n HT20	UNII 3	5 745	15.18	
		5 785	15.13	
		5 825	15.18	

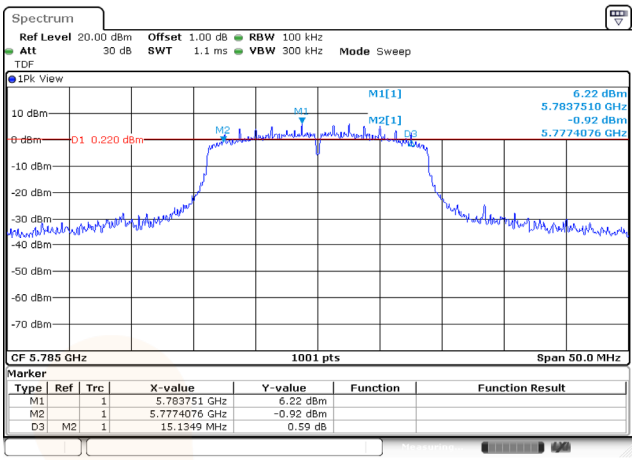
In order to simplify the report, only n mode test plots are attached

6 dB bandwidth

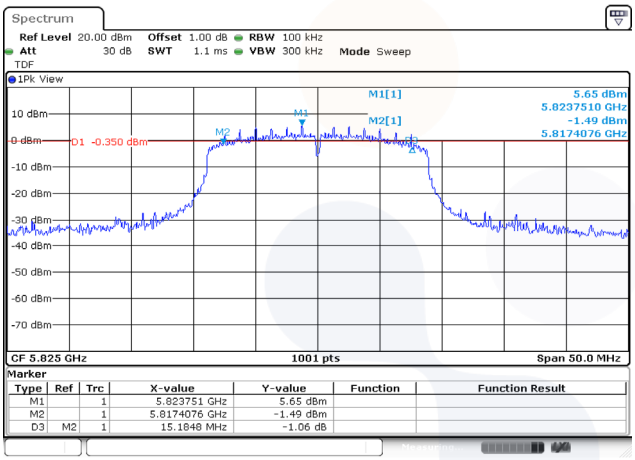
UNII 3 / 802.11n 20 / Low ch.



UNII 3 / 802.11n 20 / Mid ch.



UNII 3 / 802.11n 20 / High ch.



-

Blank

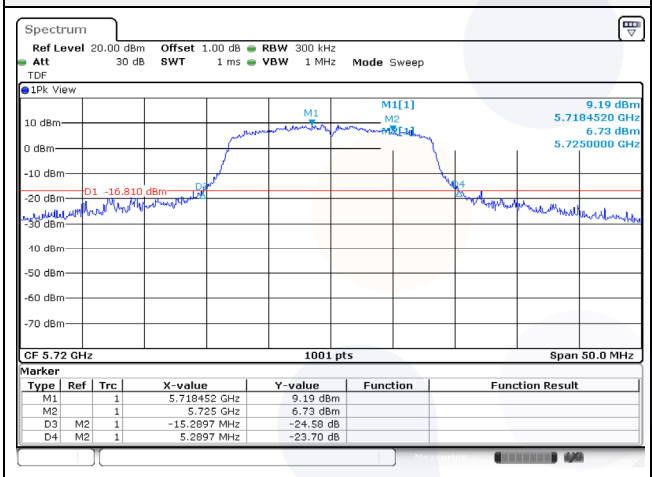
7.5. Straddle channel

26dB bandwidth

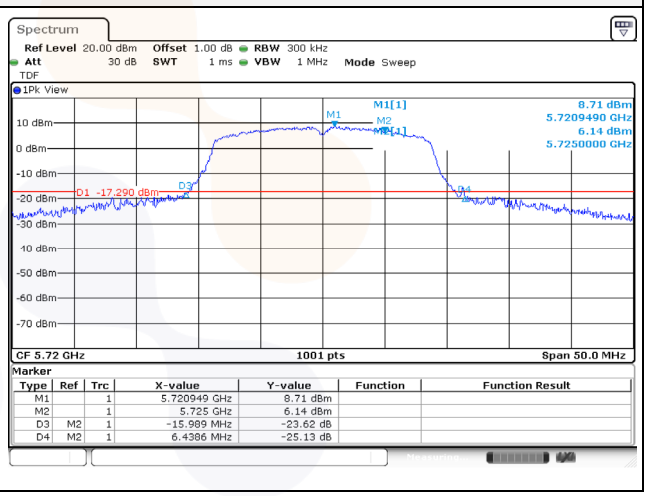
Test mode	Band	Frequency (MHz)	26dB Bandwidth (MHz)
802.11a	UNII 2C	5 720	15.29
802.11n HT20			15.99
802.11a	UNII 3	5 720	5.29
802.11n HT20			6.44

26dB bandwidth

802.11a

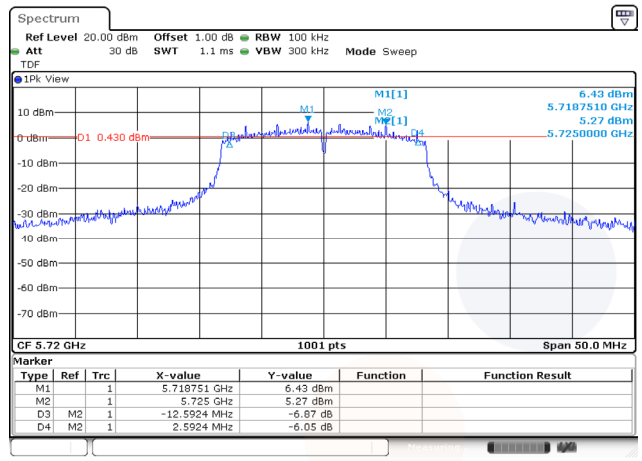
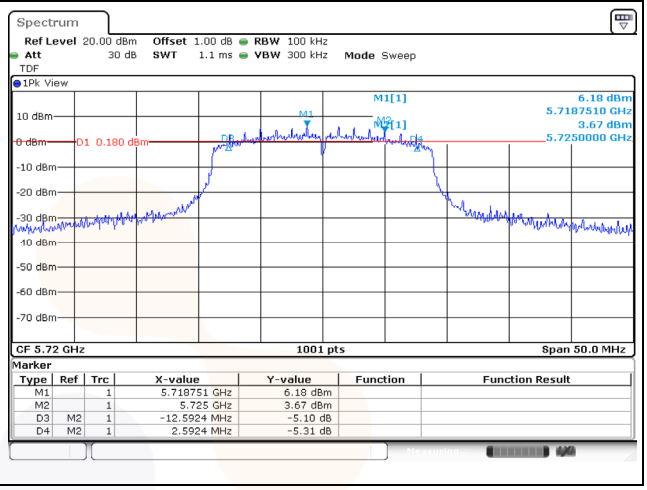


802.11n HT20



6dB bandwidth

Test mode	Band	Frequency (㎒)	6dB Bandwidth (㎒)	Limit (㎒)
802.11a	UNII 3	5 720	2.59	0.50
802.11n HT20			2.59	0.50

802.11a	802.11n HT20
	

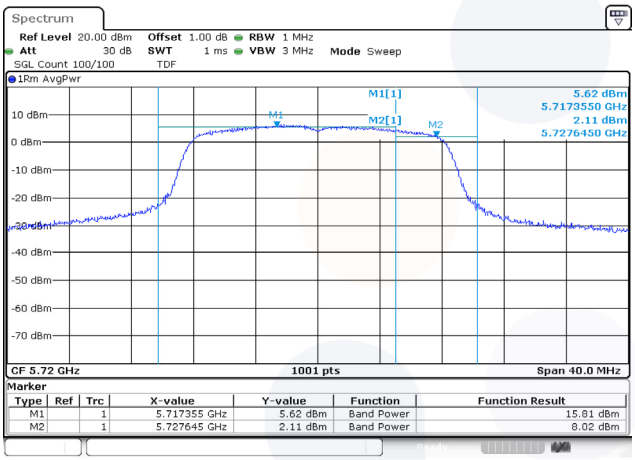
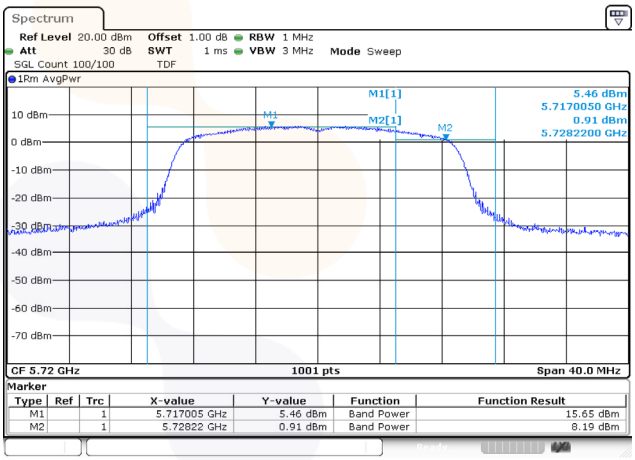
Output Power

Conducted output power

Test mode	Band	Frequency (㎒)	Measured output power (dBm)			Limit (dBm)
			Reading (dBm)	DCF (dB)	Result (dBm)	
802.11a	UNII 2C	5 720	15.81	0.40	16.21	22.84
802.11n HT20			15.65	0.45	16.10	23.04
802.11a	UNII 3	5 720	8.02	0.40	8.42	30.00
802.11n HT20			8.19	0.45	8.64	30.00

Notes:

1. Result (dBm) = Reading (dBm) + D.C.F (dB)

802.11a	802.11n HT20
	

Power Spectral Density

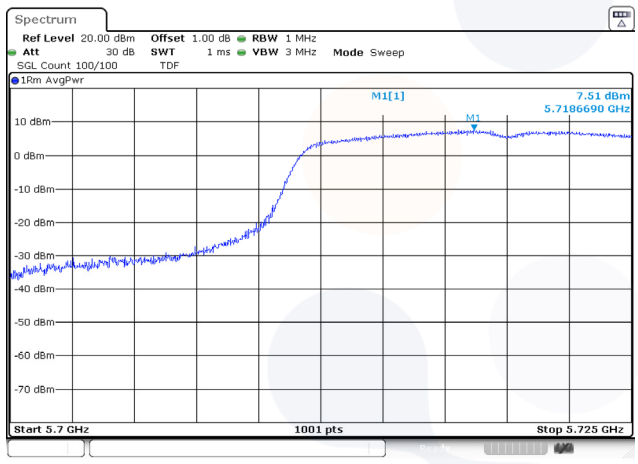
Test mode	Band	Frequency (㎒)	Measured PSD (dBm/㎒)	DCF (dB)	Maximum PSD (dB m/㎒)	Limit (dBm/㎒)
802.11a	UNII 2C	5 720	7.51	0.40	7.91	11.00
802.11n HT20			7.06	0.45	7.51	

Test mode	Band	Frequency (㎒)	Measured PSD (dBm/㎒)	DCF (dB)	Maximum PSD (dB m /500 ㎑)	Limit (dBm /500 ㎑)
802.11a	UNII 3	5 720	2.82	0.40	3.22	30.00
802.11n HT20			2.48	0.45	2.93	

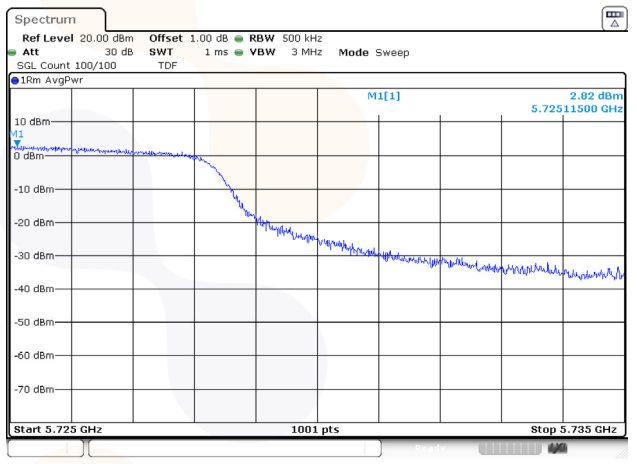
Notes:

1. Maximum PSD(dB m/㎒) = Reading (dB m/㎒) + D.C.F(dB)

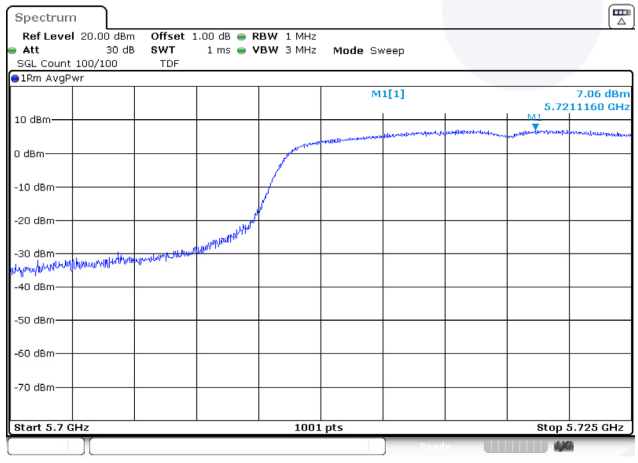
UNII 2C / 802.11a



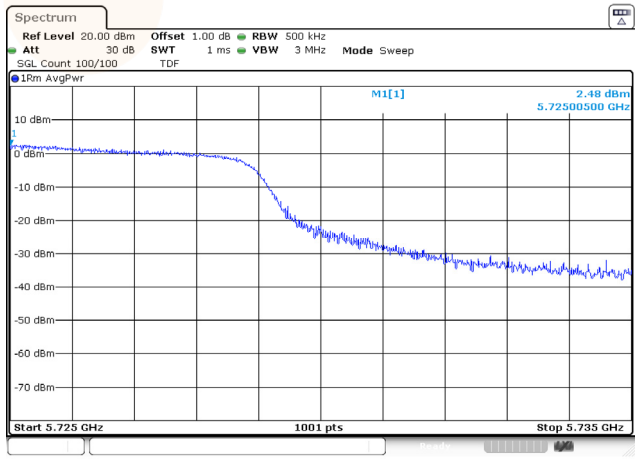
UNII 3 / 802.11a



UNII 2C / 802.11n HT20



UNII 3 / 802.11n HT20



7.6. DFS (Dynamic Frequency Selection)

Test description

- Applicability of DFS requirements prior to use of a channel

Requirement	Operational Mode		
	Master	Client (without radar detection)	Client (with radar detection)
Non-Occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
U-NII Detection Bandwidth	Yes	Not required	Yes

- Applicability of DFS requirements during normal operation

Requirement	Operational Mode	
	Master Device or Client with Radar Detection	Client Without Radar Detection
DFS Detection Threshold	Yes	Not required
Channel Closing Transmission Time	Yes	Yes
Channel Move Time	Yes	Yes
Bandwidth	Yes	Not required

Additional requirements for devices with multiple bandwidth modes	Master Device or Client with Radar Detection	Client Without Radar Detection
U-NII Detection Bandwidth and Statistical Performance Check	All BW modes must be tested	Not required
Channel Move Time and Channel Closing Transmission Time	Test using widest BW mode available	Test using the widest BW mode available for the link
All other tests	Any single BW mode	Not required

Note: Frequencies selected for statistical performance check (Section 7.8.4) should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices it is suggested to select frequencies in each of the bonded 20 ㎒ channels and the channel center frequency.

- Requirements of client devices

a) A Client Device will not transmit before having received appropriate control signals from a Master Device.
b) A Client Device will stop all its transmissions whenever instructed by a Master Device to which it is associated and will meet the Channel Move Time and Channel Closing Transmission Time requirements. The Client Device will not resume any transmissions until it has again received control signals from a Master Device.
c) If a Client Device is performing In-Service Monitoring and detects a Radar Waveform above the DFS Detection Threshold, it will inform the Master Device. This is equivalent to the Master Device detecting the Radar Waveform and d) through f) of section 5.1.1 apply.
d) Irrespective of Client Device or Master Device detection the Channel Move Time and Channel Closing Transmission Time requirements remain the same.
e) The client test frequency must be monitored to ensure no transmission of any type has occurred for 30 minutes. Note: If the client moves with the master, the device is considered compliant if nothing appears in the client non-occupancy

- DFS Response requirement values

Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds See Note 1.
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
Note 1: Channel Move Time and the Channel Closing Transmission Time should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst. Note 2: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.	

- Interference Threshold values, Master or Client incorporating In-Service Monitoring

Maximum Transmit Power	Value (see note)
≥ 200 milliwatt	-64 dBm
< 200 milliwatt power spectral density < 10 dBm/MHz	-62 dBm
EIRP < 200 milliwatt that do not meet the power spectral density requirement	-64 dBm
Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response. Note3: EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.	

- Radar test waveforms

Type	Pulse Width (μsec)	PRI (μsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Number of Trials
0	1	1428	18	See Note 1	See Note 1
1	1	Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 5a	$\text{Roundup}\left\{\left(\frac{1}{360}\right)\cdot\left(\frac{19\cdot10^6}{PRI_{\mu sec}}\right)\right\}$	60%	30
		Test B: 15 unique PRI values randomly selected within the range of 518-3066 μsec, with a minimum increment of 1 μsec, excluding PRI values selected in Test A			
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120
Note 1: Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel move time, and channel closing time tests. Note 2: This report was applied Short Pulse Radar Type 0.					

*Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (μs)	Chirp Width (㎒)	PRI (μs)	Number of Pulses per Burst	Number of Bursts	Minimum percentage of Successful Detection	Minimum Number of Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

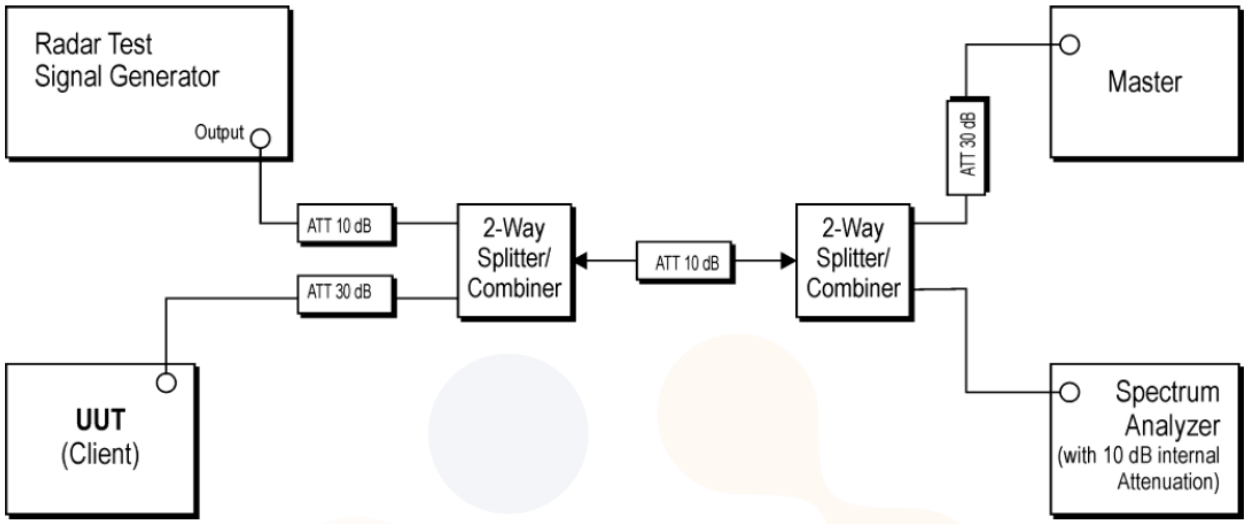
*Long Pulse Radar Test Waveform

Radar Waveform	Pulse Width (μsec)	PRI (μsec)	Pulses per Hop	Hopping Rate (㎑)	Hopping Sequence Length (μs)	Minimum Percentage of Successful Detection	Minimum Trials
6	1	333	9	0.333	300	70%	30

*Frequency Hopping Radar Test Waveform

Test setup

- Setup for Client with injection at the Master



- Spectrum analyzer setting parameter

This setting parameter is shown below and it according to the 905462 D02 UNII DFS Compliance Procedures New Rules.

1) RBW/VBW ≥ 3 ㎒
2) Detector = peak
3) Span = zero span

- Conducted test procedure

1) One frequency will be chosen from the Operating Channels of the UUT within the 5 250-5 350 ㎒ or 5 470-5 725 ㎒ bands.
2) The Client Device (EUT) is set up the above diagram and communications between the Master device and the Client is established.
3) Stream the channel loading test file from the Master Device to the Client Device on the test Channel for the entire period of the test.
4) An additional 1 ㏈ is added to the radar test signal to ensure it is at or above the DFS Detection Threshold, accounting for equipment variations/errors.
5) Observe the transmissions of the UUT at the end of the Burst on the Operating Channel for duration greater than 12 seconds for Radar Type 0 to ensure detection occurs.
6) After the initial radar burst the channel is monitored for 30 minutes to ensure no transmissions or beacons occur. A second monitoring setup is used to verify that the Master and Client have both moved to different channels.

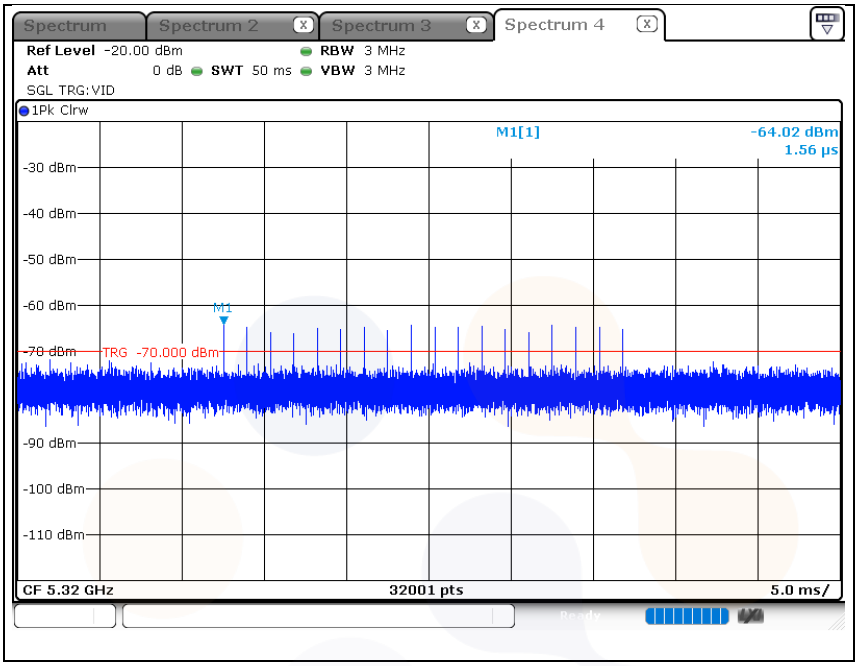
- Master device information

Equipment Name	Manufacturer	Model No.	Serial No.	FCC ID
Access Point	ASUSTeK Computer Inc	RT-AXE11000	M6IAJF203393	MSQ-RTAXJF00

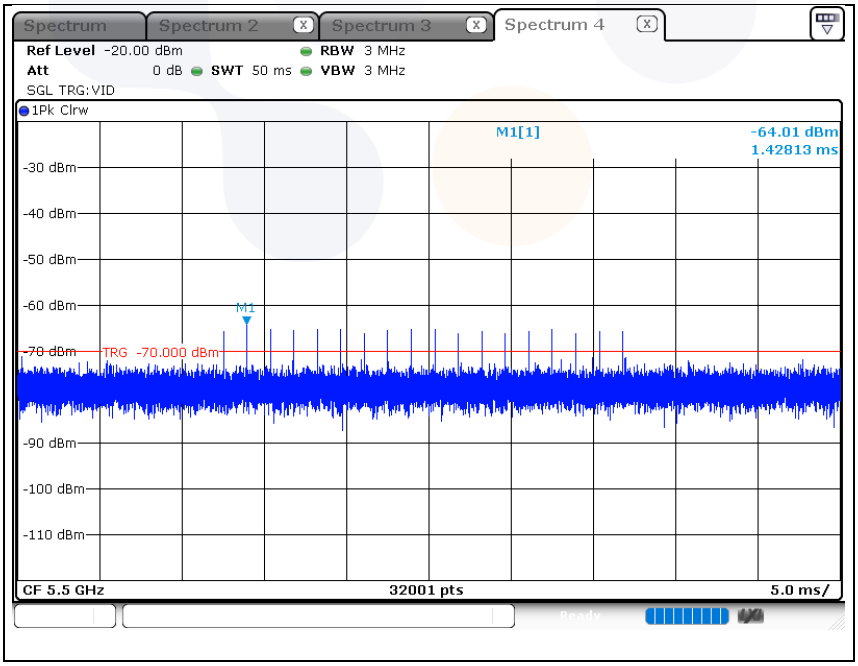
Test result

Plot of radar waveform

5 320 ㎒

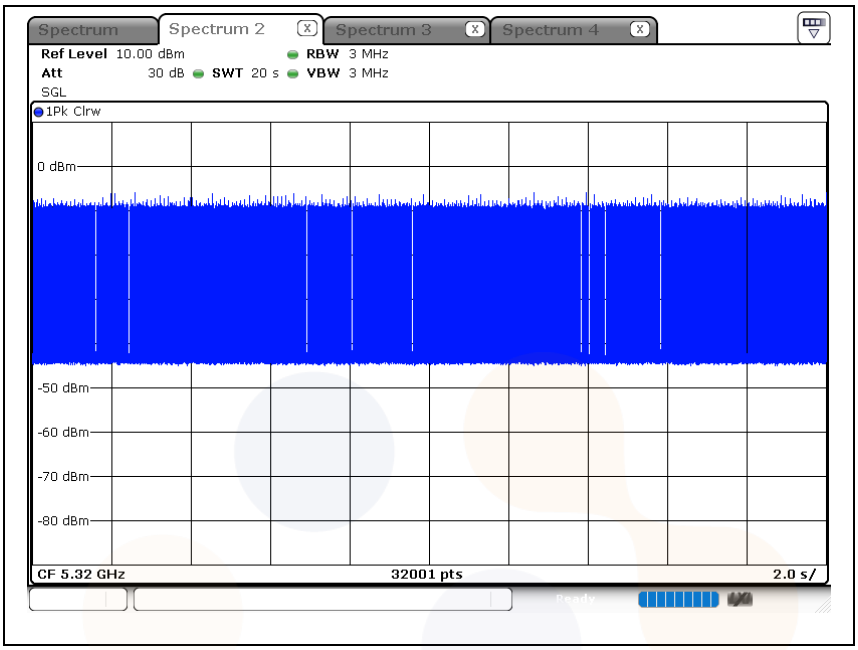


5 500 ㎒

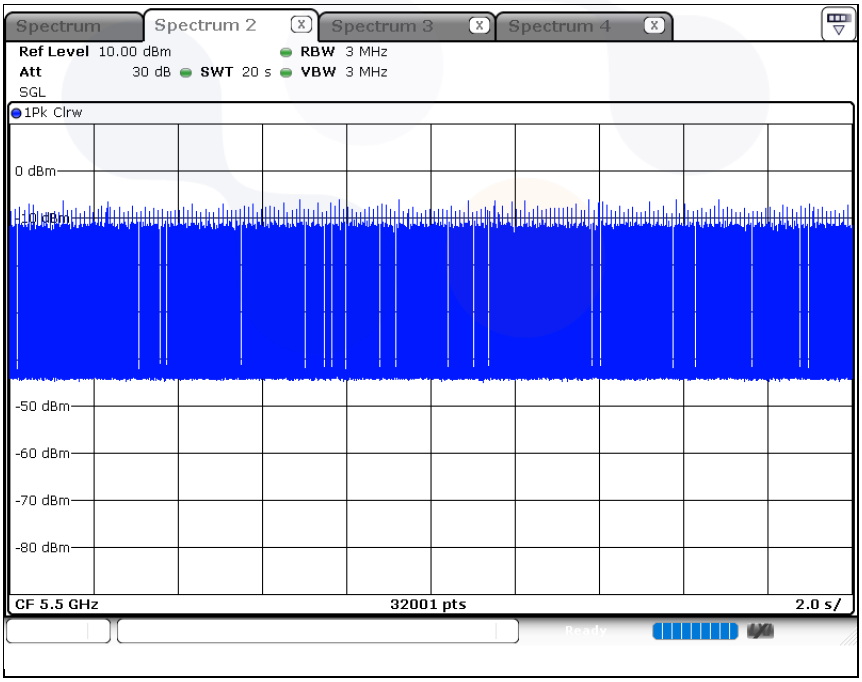


Plot of LAN traffic

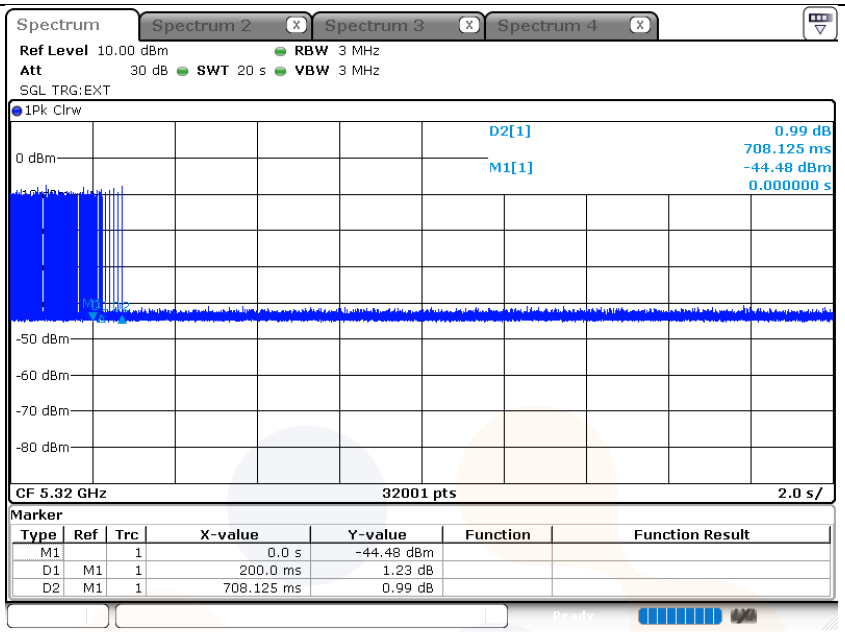
5 320 ㎒



5 500 ㎒

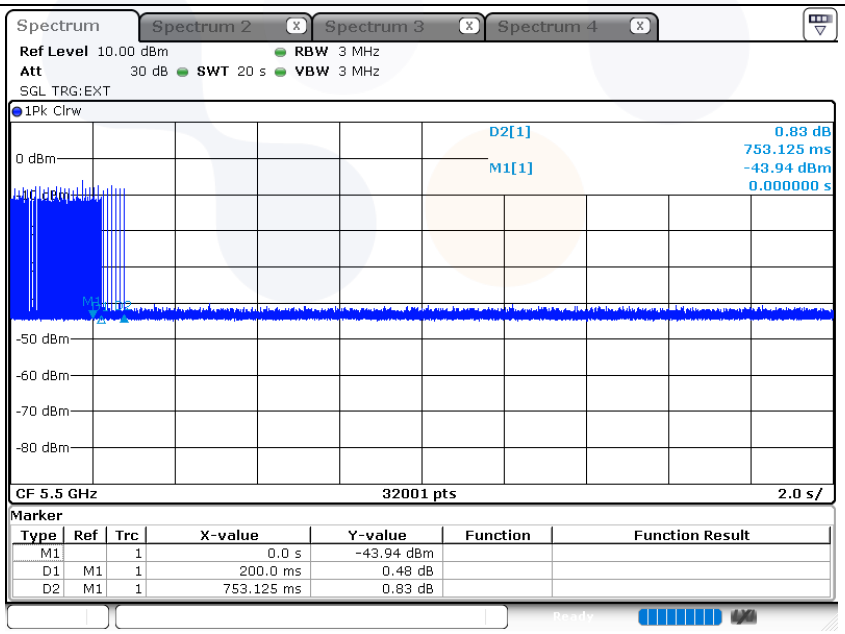


Plot of channel move time and aggregate time



Channel move time = 0.708 125 s
Closing time = 0.000 625 s x 9 = 0.005 625 s
(Closing time : Burst unit time(20 s / 32 001 points) * Number of burst(between 2 markers))

UNII 2A: 802.11 a, 5 320 ㎒

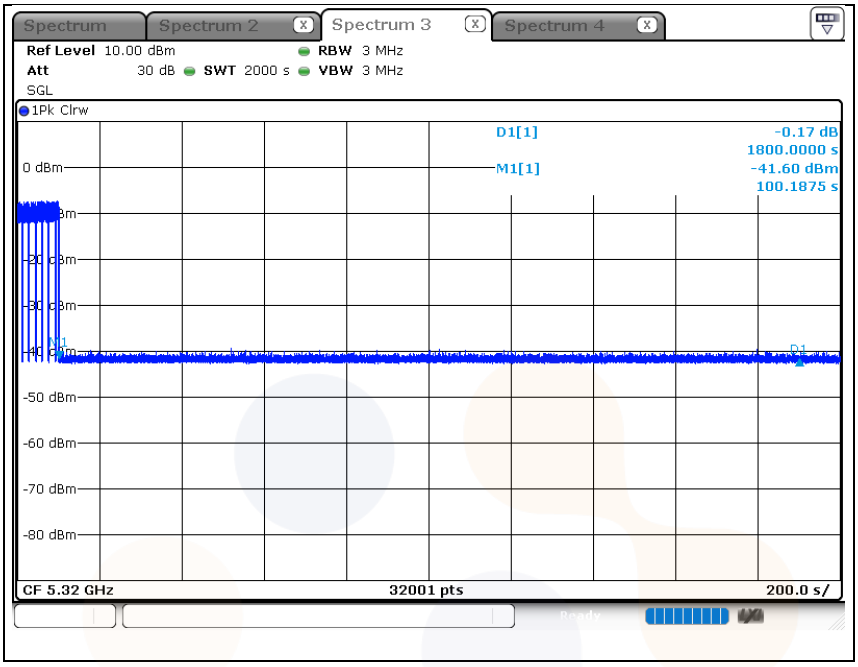


Channel move time = 0.753 125 s
Closing time = 0.000 625 s x 9 = 0.005 625 s
(Closing time : Burst unit time(20 s / 32 001 points) * Number of burst(between 2 markers))

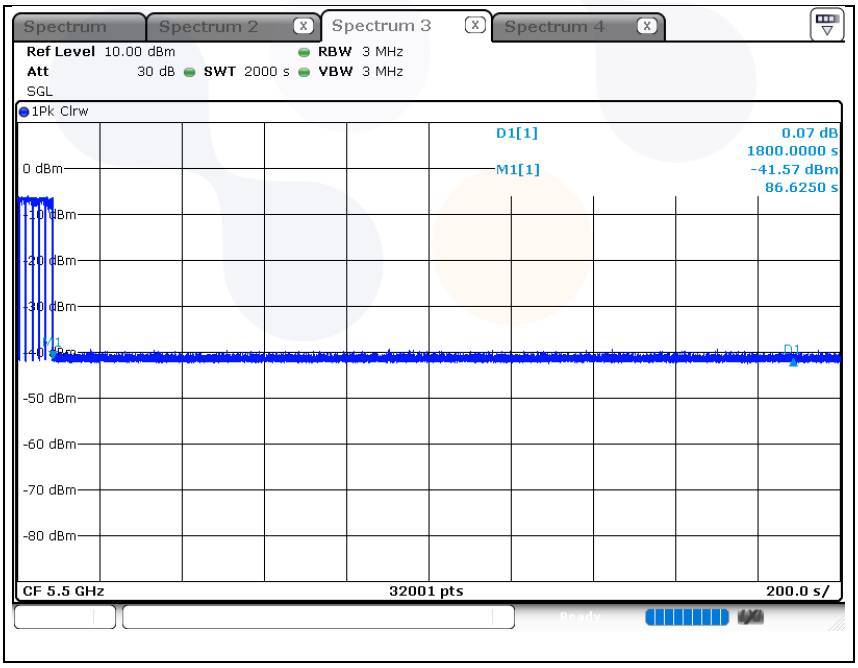
UNII 2C: 802.11 a, 5 500 ㎒

Plot of Non-occupancy period

5 320 ㎒



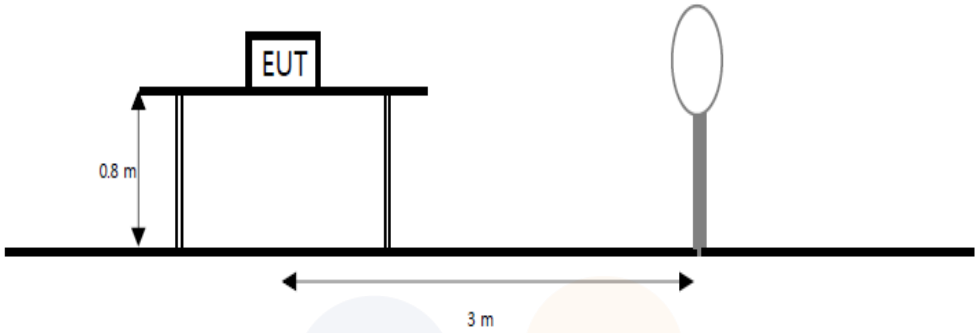
5 500 ㎒



7.7. Spurious Emission, Band Edge and Restricted bands

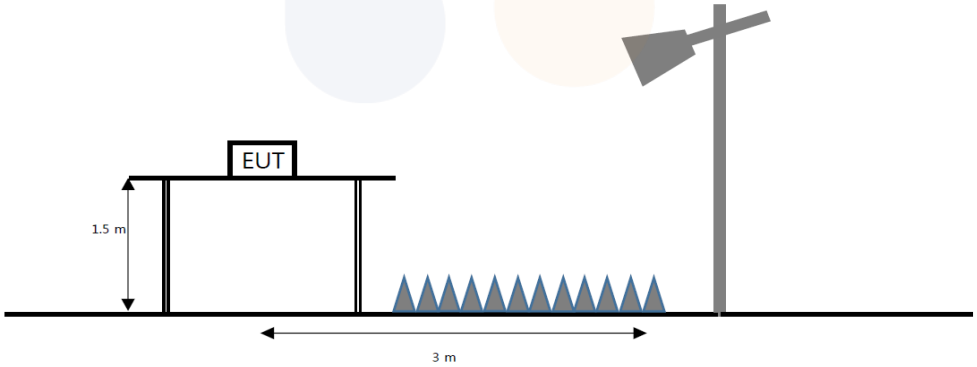
Test setup

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 15.209(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 25	2 483.5 – 2 500	17.7 - 21.4
8.376 25 - 8.386 75	156.7 - 156.9	2 690 – 2 900	22.01 - 23.12
8.414 25 - 8.414 75	162.012 5 - 167.17	3 260 – 3 267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3 332 – 3 339	31.2 - 31.8
12.519 75 - 12.520 25	240 - 285	3 345.8 – 3 358	36.43 - 36.5
12.576 75 - 12.577 25	322 - 335.4	3 600 – 4 400	Above 38.6
13.36 - 13.41			

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.

According to section 15.407(b),

Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

For transmitters operating in the 5.15-5.25 ㎓ band: All emissions outside of the 5.15-5.35 ㎓ band shall not exceed an e.i.r.p. of −27 ㏈m/㎒

For transmitters operating in the 5.25-5.35 ㎓ band: All emissions outside of the 5.15-5.35 ㎓ band shall not exceed an e.i.r.p. of −27 ㏈m/㎒.

For transmitters operating in the 5.725-5.85 ㎓ band: All emissions shall be limited to a level of -27 ㏈m/㎒ at 75 ㎒ or more above or below the band edge increasing linearly to 10 ㏈m/㎒ at 25 ㎒ above or below the band edge, and form 25 ㎒ above or below the band edge increasing linearly to a level of 15.6 ㏈m/㎒ at 5 ㎒ above or below the band edge, and from 5 ㎒ above or below the band edge increasing linearly to a level of 27 ㏈m/㎒ at the band edge.

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 ㏈ 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 the transmit cycle, then no duty cycle correction is required for that emission.

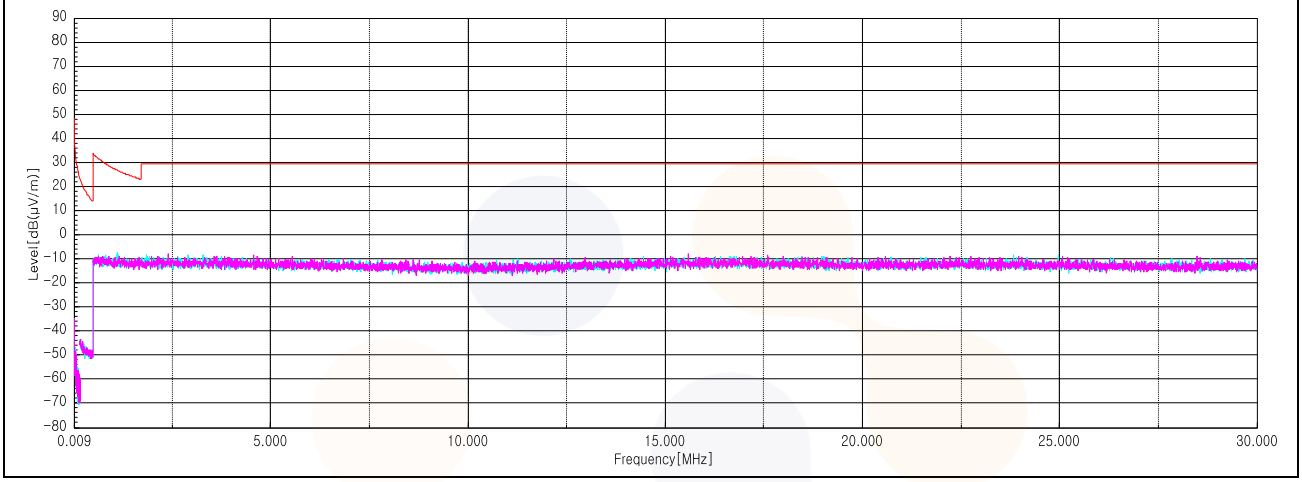
Notes:

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. Above 1 ㎓ the worst results between two antenna polarizations (H and V) were documented in the test report.
8. 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.

Test results (Below 30 ㎒) – Worst case: 802.11a / UNII 3_5 745 ㎒

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

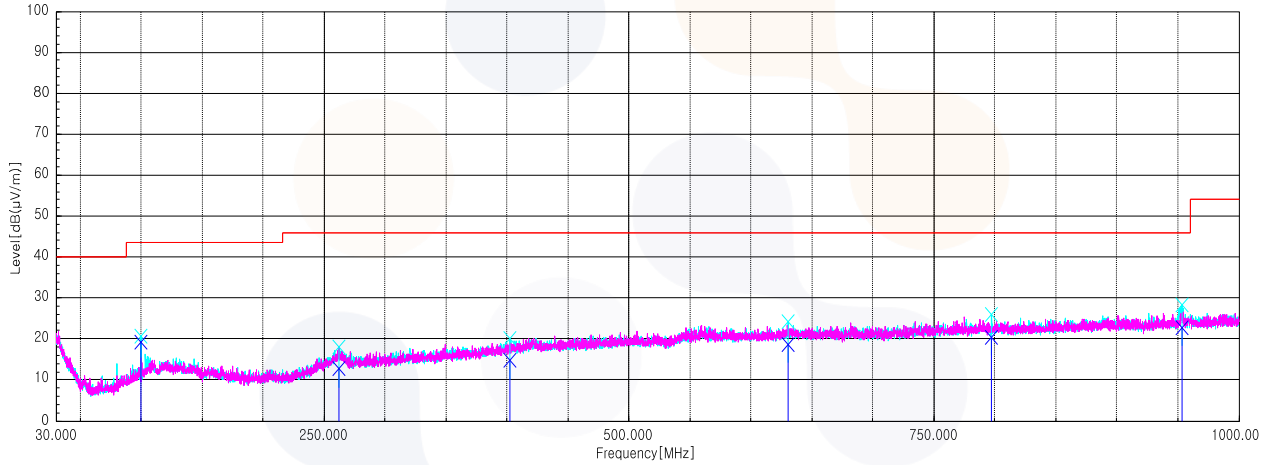
Horizontal/Vertical



Test results (Below 1 000 ㎒) – Worst case: 802.11a / UNII 3_5 745 ㎒

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Quasi peak data								
99.84	V	34.50	16.27	-31.58	-	19.19	43.50	24.31
262.07[1)]	V	23.60	20.10	-30.99	-	12.71	46.00	33.29
401.87[1)]	V	23.70	21.79	-30.75	-	14.74	46.00	31.26
630.79	V	24.20	24.84	-30.33	-	18.71	46.00	27.29
797.27	V	24.40	25.90	-29.90	-	20.40	46.00	25.60
953.08	V	24.40	26.70	-28.35	-	22.75	46.00	23.25

Horizontal/Vertical



Test results (Above 1 000 ㎒)

UNII 1

802.11a_Lowest Channel (5 180 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 145.74[1)]	H	56.30	33.29	-27.27	-	62.32	74.00	11.68
10 358.25	H	55.20	38.88	-44.56	-	49.52	68.20	18.68
15 543.98[1)]	H	53.40	38.21	-42.44	-	49.17	74.00	24.83
Average Data								
5 145.74[1)]	H	38.60	33.29	-27.27	0.40	45.02	54.00	8.98

802.11a_Middle Channel (5 200 ㎒)

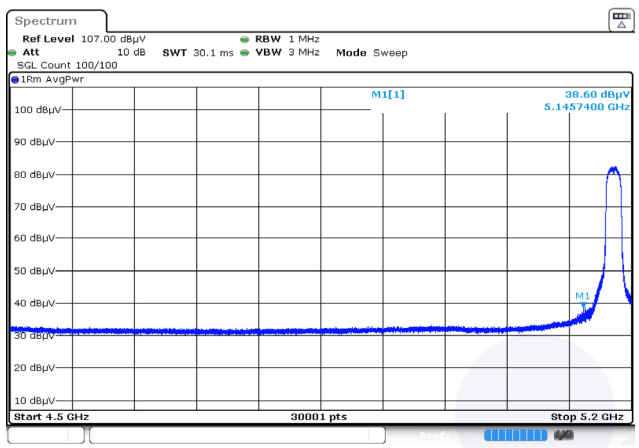
Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 386.62	H	54.70	38.83	-44.55	-	48.98	68.20	19.22
15 589.22[1)]	H	54.20	38.12	-42.43	-	49.89	74.00	24.11
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

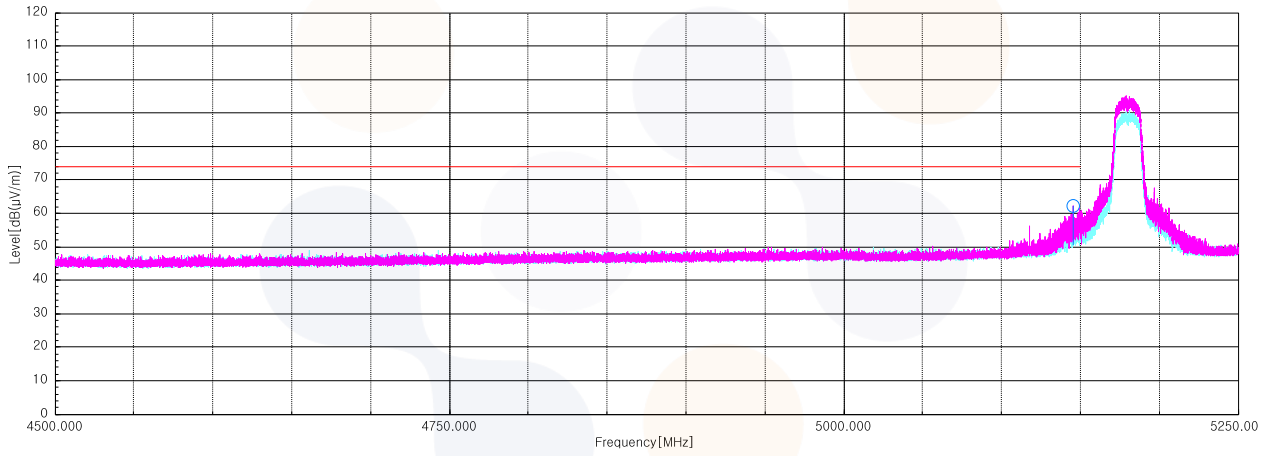
802.11a_Highest Channel (5 240 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 473.63	H	54.40	39.00	-44.51	-	48.89	68.20	19.31
15 719.93[1)]	V	53.60	38.10	-42.42	-	49.28	74.00	24.72
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit.								

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

802.11a_Lowest Channel (5 180 ㎒)

Average data	
	Blank

Horizontal/Vertical for Band-edge


802.11n_HT20_Lowest Channel (5 180 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
5 148.21[1)]	H	56.20	33.30	-27.26	-	62.24	74.00	11.76
10 359.02	H	54.90	38.88	-44.56	-	49.22	68.20	18.98
15 541.30[1)]	H	53.10	38.22	-42.44	-	48.88	74.00	25.12
Average Data								
5 148.21[1)]	H	39.46	33.30	-27.26	0.45	45.95	54.00	8.05

802.11n_HT20_Middle Channel (5 200 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 400.42	H	55.90	39.00	-44.54	-	50.36	68.20	17.84
15 596.88[1)]	H	54.10	38.11	-42.43	-	49.78	74.00	24.22
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								

802.11n_HT20_Highest Channel (5 240 ㎒)

Frequency	Pol.	Reading	Ant. Factor	Amp.+Cable	DCF	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Peak data								
10 479.77	H	54.90	39.00	-44.51	-	49.39	68.20	18.81
15 713.80[1)]	V	53.90	38.10	-42.42	-	49.58	74.00	24.42
Average Data								
No spurious emissions were detected within 20 ㏈ of the limit								