

TEST REPORT



CTK Co., Ltd.
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Report No.:
CTK-2017-01298
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1. Client

- Name : Samsung Electronics Co., Ltd.
- Address : 129, Samsung-ro Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea, 16677
- Date of Receipt : 2017-06-10

2. Manufacturer

- Name : Samsung Electronics Co., Ltd.
- Address : 129, Samsung-ro Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea, 16677

3. Use of Report : For FCC / ISED Certification

4. Test Sample / Model: WLAN Access Point / WEA524i



5. Date of Test : 2017-06-16 to 2017-06-24

6. Test Standard(method) used : FCC 47 CFR part 15 subpart C 15.247 ISED RSS-247

7. Testing Environment: Temp.: (27 ± 5) °C, Humidity: (45 ± 3) % R.H.

8. Test Results : Compliance

The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This Test Report cannot be reproduced, except in full.

Affirmation	Tested by  Ji-Hye Kim: (Signature)	Technical Manager  Won-Jae, Hwang: (Signature)
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2017-07-07

Republic of KOREA **CTK Co., Ltd.**



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REPORT REVISION HISTORY

Date	Revision	Page No
2017-07-07	Issued (CTK-2017-01298)	all

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1.0 General Product Description





FCC ID	A3LWEA524I		
Certification Number ISED	649E-WEA524I		
Equipment model name	WEA524i		
Serial number	Prototype		
EUT condition	Pre-production, not damaged		
Frequency Range	802.11b/g/n_HT20 : 2 412 MHz – 2 462 MHz		
RF output power :			
Mode	802.11b	802.11g	802.11n_20
Frequency Range(MHz)	2 412-2 462		
	RF output power (dBm)		
ANT0(SISO)	17.86	14.85	13.68
ANT1(SISO)	18.06	-	13.85
ANT2(SISO)	17.89	-	13.72
ANT3(SISO)	18.01	-	13.72
ANT0+ANT1(MIMO)	-	17.90	16.78
ANT0+ANT1+ANT2(MIMO)	-	19.64	18.52
ANT0+ANT1+ANT2+ANT3 (MIMO)	-	20.93	19.75
Number of channels	802.11b/g/n_HT20 : 11		
Transfer Rate	802.11b : 11 / 5.5 / 2 / 1 Mbps 802.11g : 54 / 48 / 36 / 24 / 18 / 12 / 9 / 6 Mbps 802.11n : up to 288.8 Mbps		
Type of Modulation	802.11b : DSSS 802.11g/n : OFDM		
Power Source	DC 48 V(Adaptor,PoE)		
Duty Cycle	802.11b : 99.5 % 802.11g : 97.4 % 802.11n_HT20 : 98.6 %		
Antenna Type	ANT 0 : IFA Antenna ANT 1, 2, 3 : Dipole Antenna		
Antenna Gain	ANT 0 : 3.2 dBi ANT 1, 2, 3 : 5.6 dBi		
Hardware Rev	PCS01B		
Software Rev	0.9.8.T		

2.0 Facility and Accreditations

2.1 Test Facility

The measurement facility is located at (Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea. The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

2.2 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Registration Number	Logo
USA	FCC	FCC Part 15 & 18 EMI (Electromagnetic Interference / Emission)	805871	
CANADA	ISED	ISED EMI (3/10m test site)	8737A-2	
JAPAN	VCCI	VCCI V-3 EMI (Electromagnetic Interference / Emission)	C-986 T-1843 R-3627 G-387	
KOREA	MSIP	EMI (Electromagnetic Interference / Emission) EMS (Electromagnetic Susceptibility / Immunity)	KR0025	

2.3 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less. All test equipment calibrations are traceable to the Korea Research Institute of Standards and Science (KRISS), therefore, all test data recorded in this report is traceable to KRISS.



3.0 Test Specifications

3.1 Standards

FCC Part Section(s)	Requirement(s)	Limit	Status (Note 1)	Test Condition
15.247(a)	6 dB Bandwidth	> 500 kHz	C	Conducted
15.247(b)	Maximum Output Power	< 1 Watt	C	
15.247(d)	Conducted Spurious emission	> 30 dBc	C	
15.247(d)	Band Edge	> 30 dBc	C	
15.247(e)	Transmitter Power Spectral Density	< 8 dBm @ 3 kHz	C	
15.209	Field Strength of Harmonics	15.209(a)	C	Radiated
15.207	AC Conducted Emissions	15.207(a)	C	Line Conducted
<i>Note 1:</i> C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable				
<i>Note 2:</i> The data in this test report are traceable to the national or international standards.				

ISED Part Section(s)	Requirement(s)	Limit	Status (Note 1)	Test Condition
RSS-Gen 4.6.1	6 dB Bandwidth	NA	C	Conducted
RSS-247 5.4(d)	Maximum Output Power	< 1 Watt	C	
RSS-Gen 6.13	Conducted Spurious emission	RSS-247 5.5	C	
RSS-Gen 6.13	Band Edge	RSS-247 5.5	C	
RSS-247 5.2(b)	Transmitter Power Spectral Density	< 8 dBm @ 3 kHz	C	
RSS-Gen 6.13	Field Strength of Harmonics	RSS-247 5.5	C	Radiated
RSS-Gen 5	Receiver Spurious Emissions	RSS-Gen 7.1.2	C	
RSS-Gen 8.8	AC Conducted Emissions	RSS-Gen 8.8	C	Line Conducted
<i>Note 1:</i> C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable				
<i>Note 2:</i> The data in this test report are traceable to the national or international standards.				

The sample was tested according to the following specification:
 FCC Part 15.247, ANSI C63.10-2013, RSS-247 Issue 2

The tests were performed according to the method of measurements prescribed in
 KDB No.558074.



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3.2 Mode of operation during the test

The EUT is operated in a manner representative of the typical of the equipments.
During at testing, system components were manipulated within the confines of typical usage to maximize each emission.

For WLAN function, the engineering test program was provided and enabled to make EUT continuous transmit/receive.

All modulation modes were tests. The results are only attached worst cases.

Test mode

Test Item	Modulation	Data Rate
6 dB Bandwidth Maximum Output Power Conducted Spurious emission Band Edge	802.11b	1 Mbps
Power Spectral Density Radiated Emissions Above 1GHz	802.11g	6 Mbps
Radiated Emissions Below 1GHz AC Conducted Emissions	802.11n	MCS 0
	Nomal Mode	Auto

Test Frequency

- 802.11b, 802.11g, 802.11n_HT20

Lowest channel	Middle channel	Highest channel
2 412 MHz	2 437 MHz	2 462 MHz

3.3 Device Modifications

The following modifications were necessary for compliance:

Not applicable



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3.4 Peripheral Devices

Device	Manufacturer	Model No.	Serial No.
Note Computer	Samsung Electronics Co., Ltd.	NT-R540	ZW3B93AZ900402F
AC/DC Adapter	Tech-Power Electric Co., Ltd.	NT01	-
PoE switch	NETGEAR	GS110TP	3R724357004DA
PoE Adapter	Dongguan Leader Electronics Inc.	NU660-F480125-I1NN	-
AC/DC Adapter	SoluM Co., Ltd.	A2448N_NT	-

3.5 Maximum Measurement Uncertainty

The value of the measurement uncertainty for the measurement of each parameter.
Coverage factor $k = 2$, Confidence levels of 95 %

Description	Uncertainty
Conducted RF Output Power	± 1.5 dB
Power Spectral Density	± 1.5 dB
Occupied Bandwidth	± 0.1 MHz
Unwanted Emission(conducted)	± 3.0 dB
Radiated Emissions ($f \leq 1$ GHz)	± 4.0 dB
Radiated Emissions ($f > 1$ GHz)	± 5.0 dB

3.6 Test Software

Conducted Test	Ics Pro Ver. 6.0.3
Radiated Test	TOYO EMI software EP5RE Ver. 5.1.0
Line Conducted Test	ESCI7, ESCI3 : EMC32 Ver. 8.50.0 ESR7 : EMC32 Ver. 8.53.0



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4.0 Technical Characteristic Test

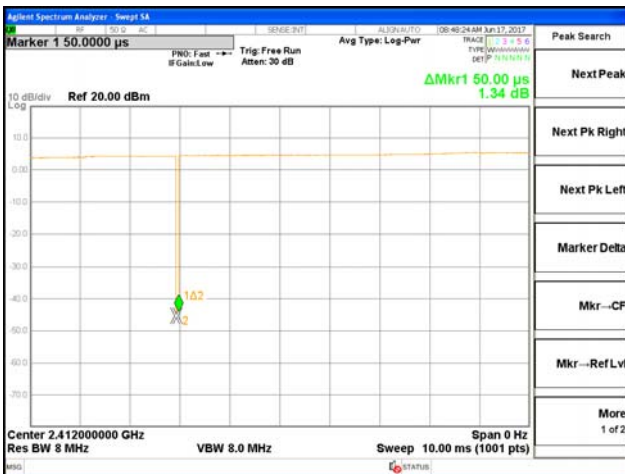
4.1 ON Time, Duty Cycle

Test Procedures

KDB 558074 Zero-Span Spectrum Analyzer Method.

Test Data:

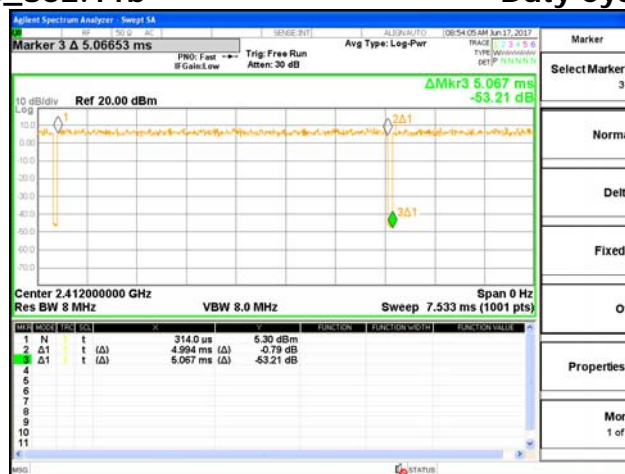
	ON Time (ms)	Period (ms)	TX OFF (ms)	Duty Cycle (linear)	Duty Cycle (%)
802.11b	9.950	10.000	0.050	0.995	99.5
802.11g	2.064	2.121	0.057	0.974	97.4
802.11n_HT20	4.994	5.067	0.073	0.986	98.6



Duty Cycle_802.11b



Duty Cycle_802.11g



Duty Cycle_802.11n_HT20



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4.2 6dB Bandwidth

Test Procedures (ANSI C63.10-2013 6.9.2)

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 dB relative to the maximum level measured in the fundamental emission.

Test Procedures (ANSI C63.10-2013 6.9.3)

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission.

Use the 99% power bandwidth function of the instrument and report the measured bandwidth.

Test Settings :

Center frequency = the highest, middle and the lowest channels

- a) RBW = 100 kHz
- b) VBW $\geq 3 \times$ RBW
- c) Detector = peak
- d) Trace mode = Max hold
- e) Sweep = auto couple
- f) Allow trace to fully stabilize
- g) 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 dB relative to the maximum level measured in the fundamental emission.

Minimum Standard:

6 dB Bandwidth > 500kHz



Test Data:

Ant 0

Frequency	6 dB Bandwidth and 99% Bandwidth (MHz)					
	2 412 MHz		2 437 MHz		2 462 MHz	
	6dB	99%	6dB	99%	6dB	99%
802.11b	8.12	12.98	8.12	12.97	8.11	12.98
802.11g	16.07	16.35	16.14	16.36	15.95	16.35
802.11n HT20	16.58	17.56	16.93	17.55	16.39	17.56

Ant 1

Frequency	6 dB Bandwidth and 99% Bandwidth (MHz)					
	2 412 MHz		2 437 MHz		2 462 MHz	
	6dB	99%	6dB	99%	6dB	99%
802.11b	8.13	12.96	8.13	13.01	8.13	12.99
802.11g	15.99	16.35	15.83	16.35	16.09	16.36
802.11n HT20	16.68	17.56	16.61	17.55	16.56	17.56

Ant 2

Frequency	6 dB Bandwidth and 99% Bandwidth (MHz)					
	2 412 MHz		2 437 MHz		2 462 MHz	
	6dB	99%	6dB	99%	6dB	99%
802.11b	8.13	12.89	8.12	12.91	8.12	12.92
802.11g	16.01	16.35	16.29	16.34	16.06	16.35
802.11n HT20	16.39	17.56	16.33	17.55	16.90	17.56

Ant 3

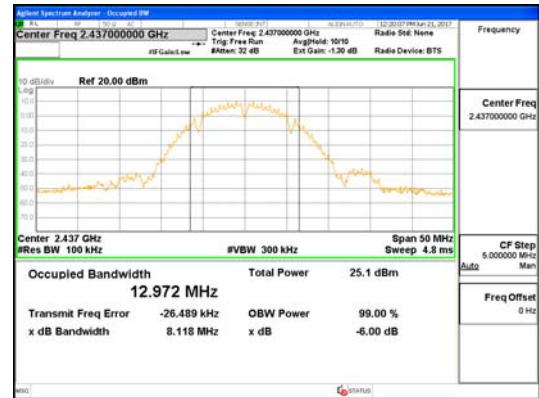
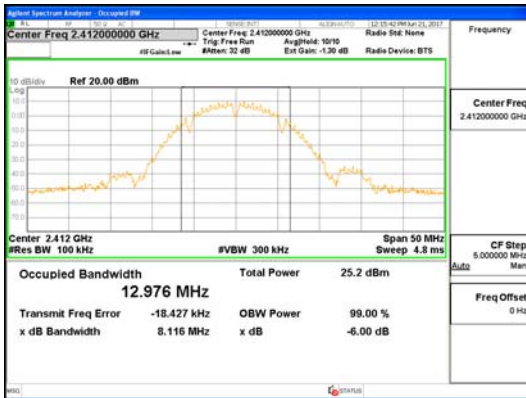
Frequency	6 dB Bandwidth and 99% Bandwidth (MHz)					
	2 412 MHz		2 437 MHz		2 462 MHz	
	6dB	99%	6dB	99%	6dB	99%
802.11b	8.12	12.88	8.12	12.89	8.12	12.88
802.11g	16.06	16.34	15.74	16.34	16.07	16.34
802.11n HT20	16.33	17.55	16.38	17.56	16.64	17.55

See next pages for actual measured spectrum plots.

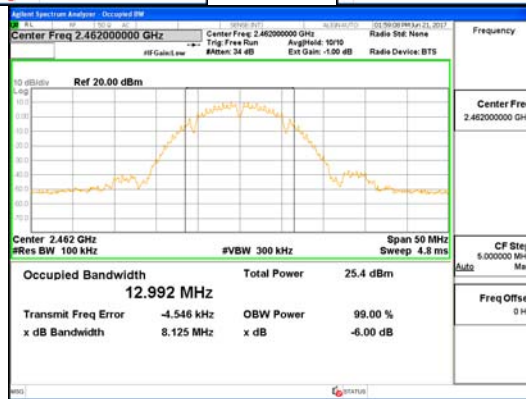
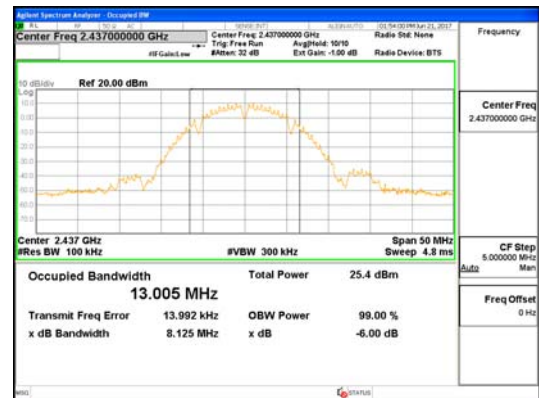


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Ant 0_802.11b

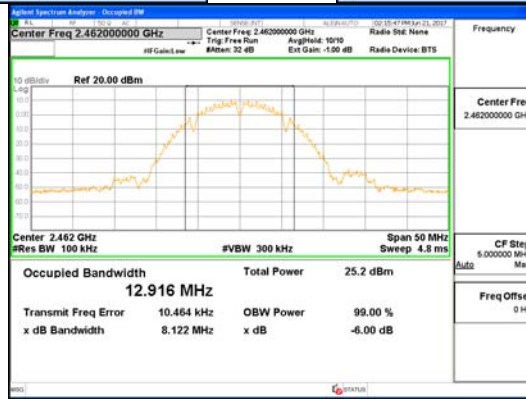
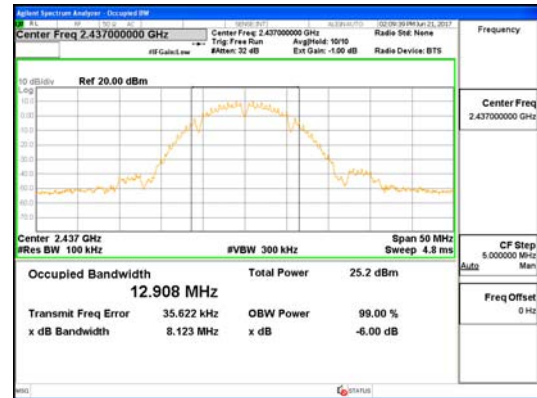


Ant 1_802.11b

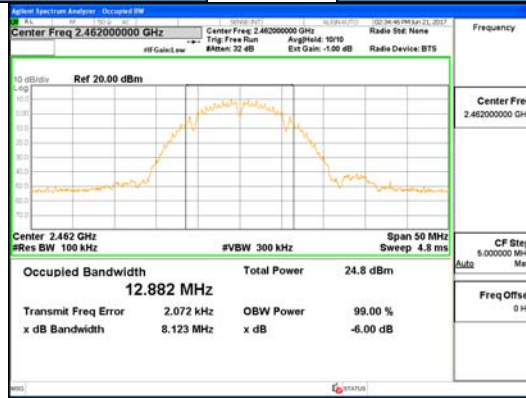
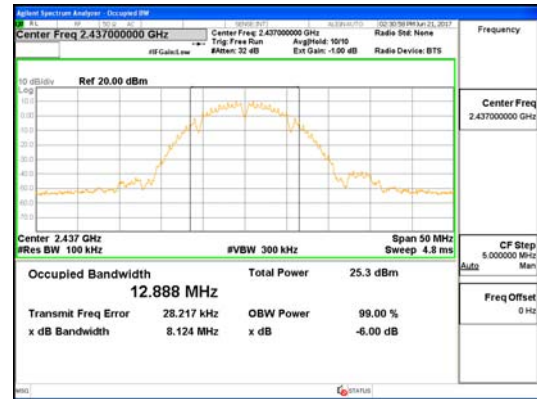
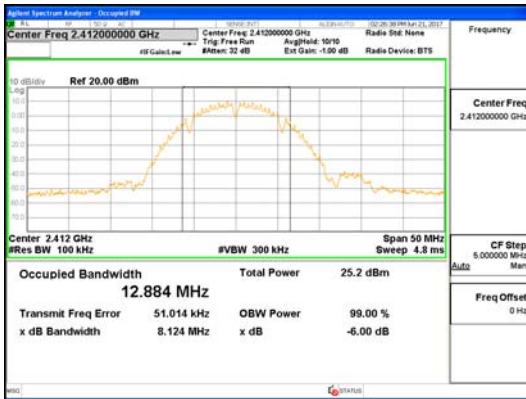


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Ant 2_802.11b

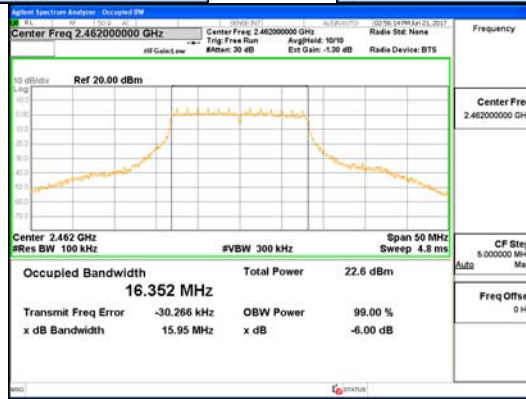
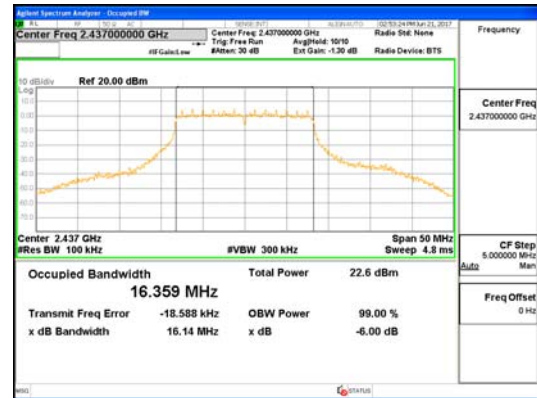


Ant 3_802.11b

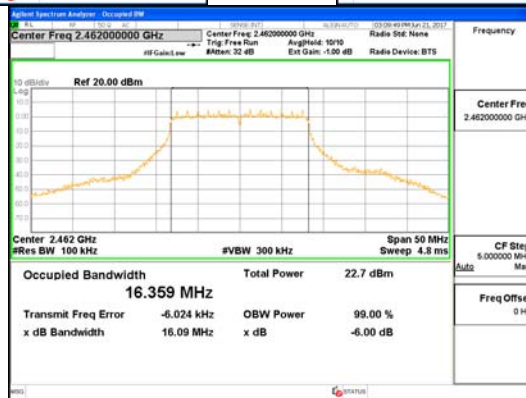
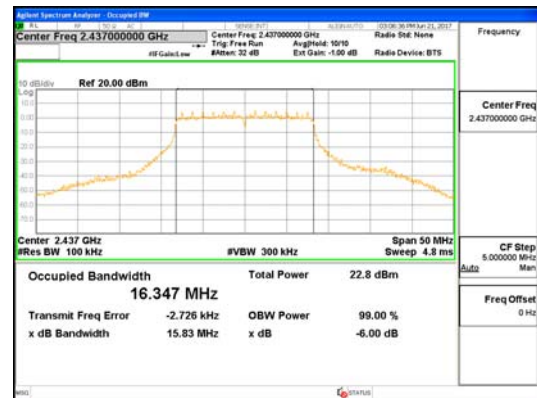


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Ant 0_802.11g

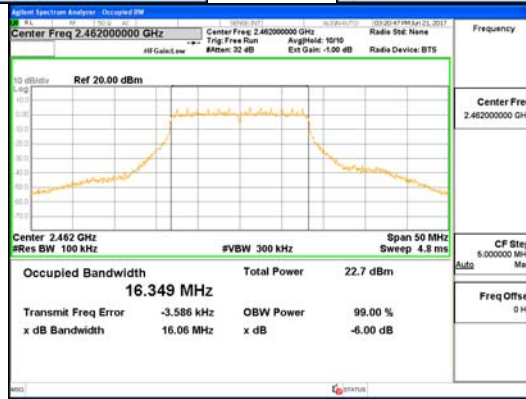
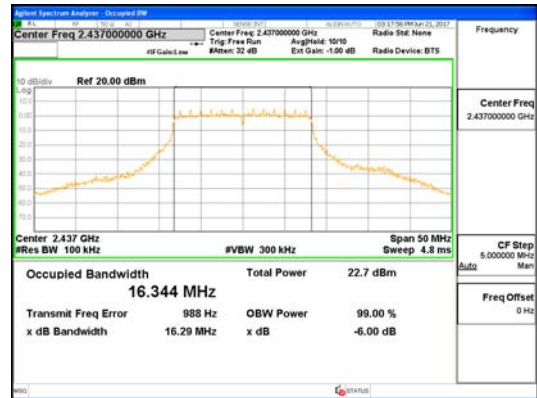


Ant 1_802.11g

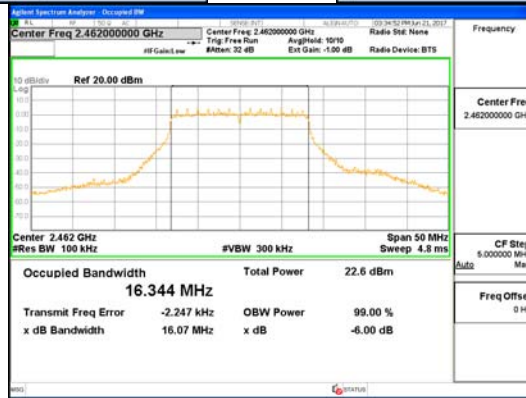
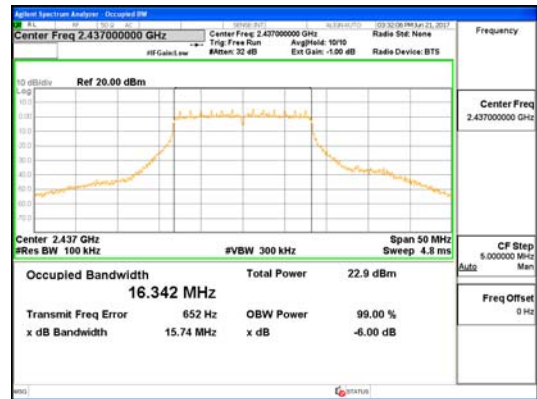


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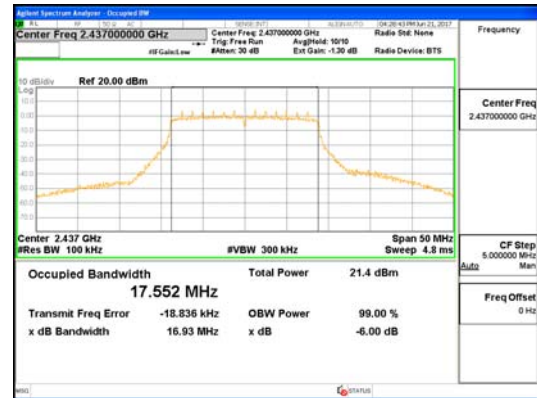
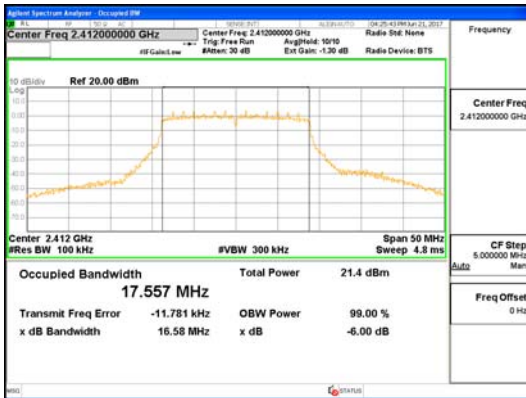
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Ant 2_802.11g



Ant 3_802.11g



Ant 0_802.11n_HT20

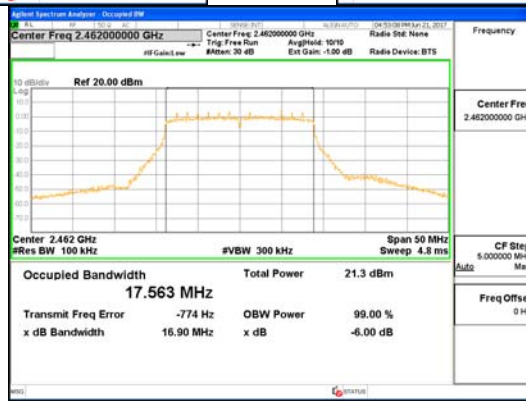


Ant 1_802.11n_HT20

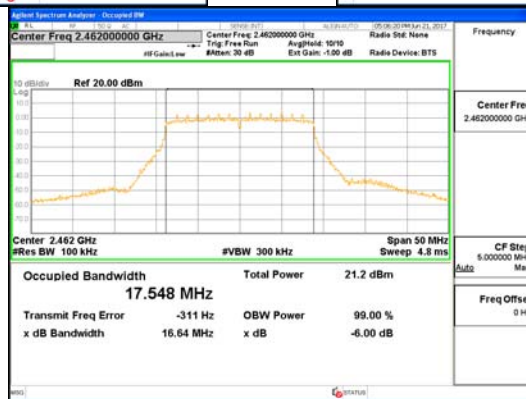


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Ant 2_802.11n_HT20



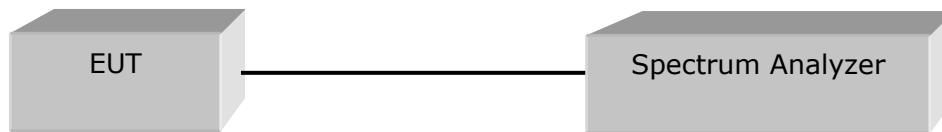
Ant 3_802.11n_HT20

4.3 OUTPUT POWER

Test Procedures

Average Power(Procedure 9.2.2.2 in KDB 558074, Method AVGSA-1)

The transmitter output is connected to a spectrum analyzer and the analyzer's internal channel power integration function is used to integrate the power over a bandwidth greater than or equal to the 99% bandwidth.



Test Settings:

Center frequency = the highest, middle and the lowest channels

- a) span $\geq 1.5 \times$ OBW
- b) RBW = 1 MHz
- c) VBW $\geq 3 \times$ RBW
- d) Sweep time = auto
- e) Detector = RMS
- f) average at least 100

Limit

Operating Mode	Mode	ANT Configuration	ANT Gain (dBi)	Limit (dBm)	
				FCC	IC
SISO	802.11b/g/n	ANT0	3.2	30	36
SISO	802.11b/n	ANT1	5.6	30	36
SISO	802.11b/n	ANT2	5.6	30	36
SISO	802.11b/n	ANT3	5.6	30	36
MIMO (2Tx)	802.11g/n	ANT0 + ANT1	7.49	28.51	34.51
MIMO (3Tx)	802.11g/n	ANT0 + ANT1 + ANT2	9.64	26.36	32.36
MIMO (4Tx)	802.11g/n	ANT0 + ANT1 + ANT2 + ANT3	11.08	24.92	30.92



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Test Data

Ant 0

	Measured Output Power (dBm)		
Frequency	2 412 MHz	2 437 MHz	2 462 MHz
802.11b	17.86	17.80	17.80
802.11g	14.85	14.76	14.73
802.11n HT20	13.68	13.55	13.63

Ant 1

	Measured Output Power (dBm)		
Frequency	2 412 MHz	2 437 MHz	2 462 MHz
802.11b	18.05	18.06	18.06
802.11n HT20	13.85	13.81	13.80

Ant 2

	Measured Output Power (dBm)		
Frequency	2 412 MHz	2 437 MHz	2 462 MHz
802.11b	17.83	17.88	17.89
802.11n HT20	13.72	13.69	13.68

Ant 3

	Measured Output Power (dBm)		
Frequency	2 412 MHz	2 437 MHz	2 462 MHz
802.11b	17.90	18.01	17.45
802.11n HT20	13.66	13.72	13.42



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Ant 0 + Ant 1

Frequency	Measured Output Power (dBm)		
	2 412 MHz	2 437 MHz	2 462 MHz
802.11g	17.90	17.90	17.82
802.11n HT20	16.78	16.69	16.73

Ant 0 + Ant 1 + Ant 2

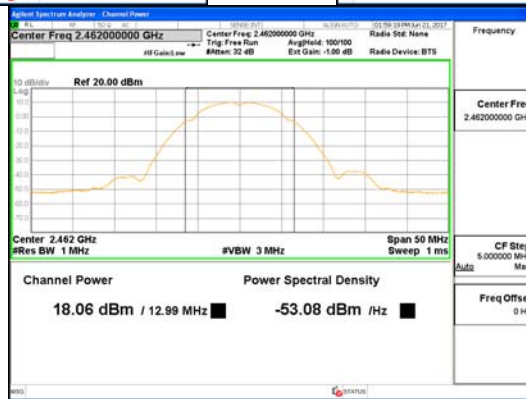
Frequency	Measured Output Power (dBm)		
	2 412 MHz	2 437 MHz	2 462 MHz
802.11g	19.64	19.64	19.60
802.11n HT20	18.52	18.46	18.48

Ant 0 + Ant 1 + Ant 2 + Ant 3

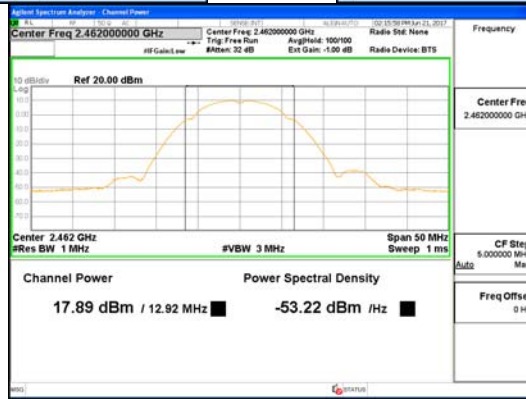
Frequency	Measured Output Power (dBm)		
	2 412 MHz	2 437 MHz	2 462 MHz
802.11g	20.93	20.93	20.83
802.11n HT20	19.75	19.71	19.66



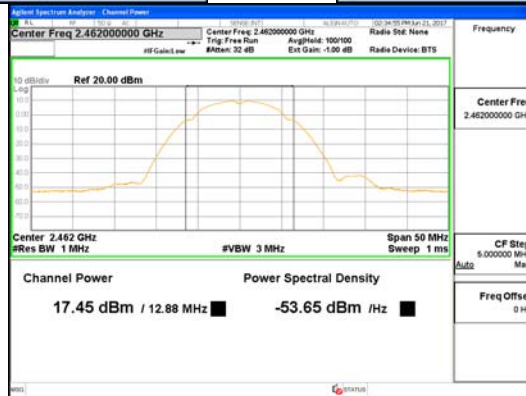
Ant 0_802.11b



Ant 1_802.11b



Ant 2_802.11b

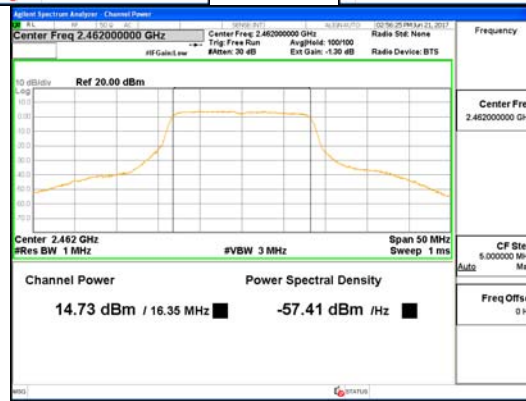
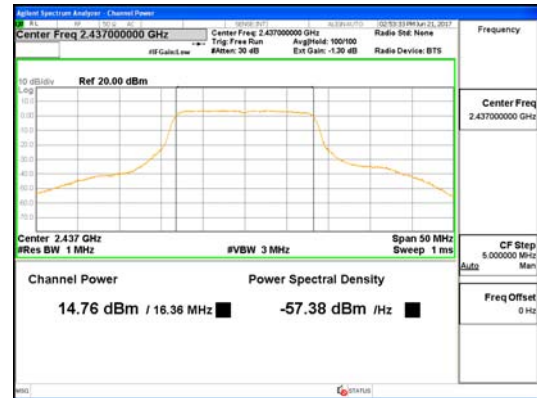


Ant 3_802.11b

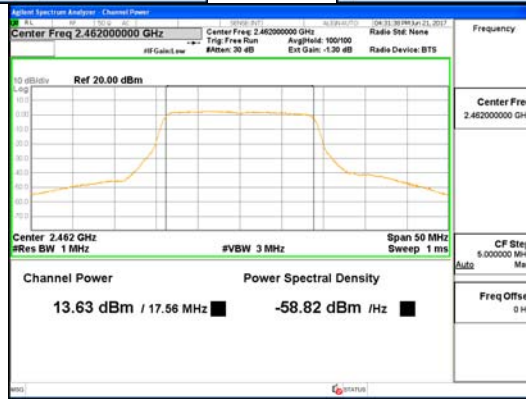
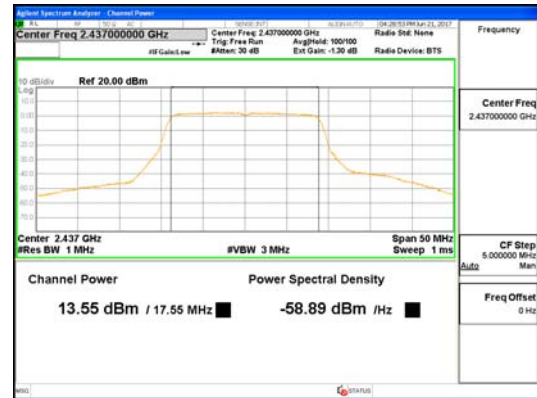


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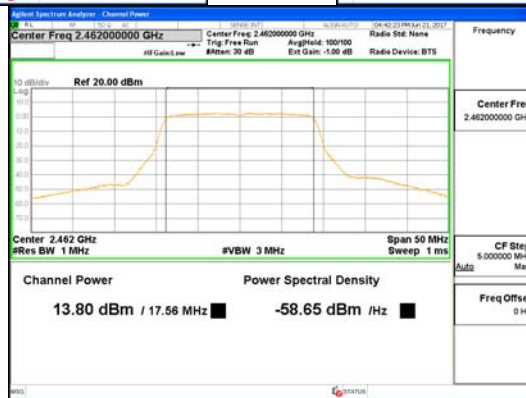
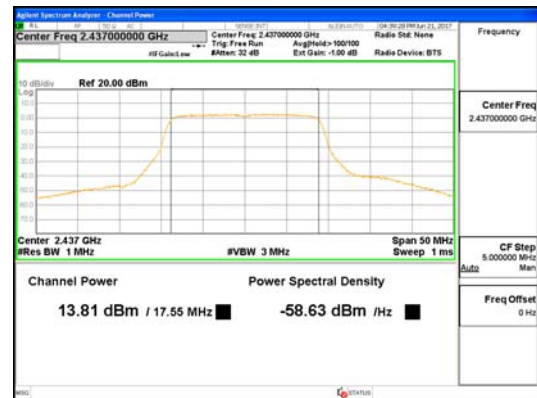
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Ant 0_802.11g



Ant 0_802.11n_HT20

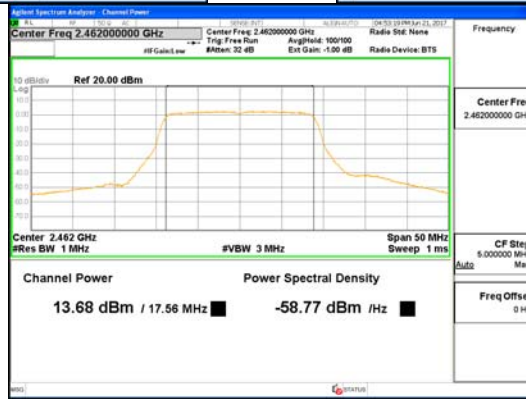
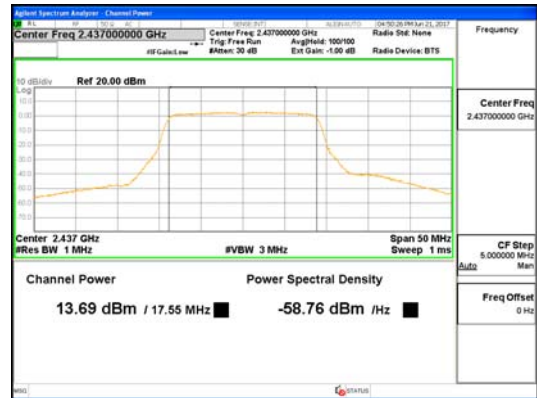
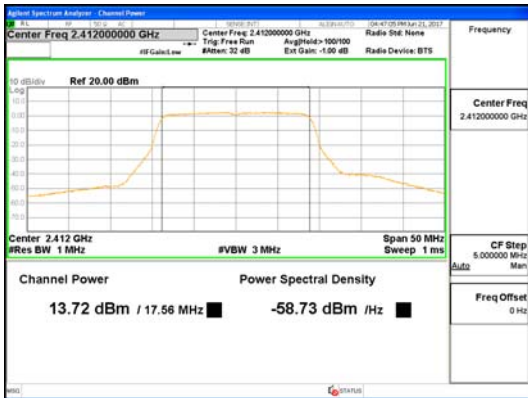


Ant 1_802.11n_HT20

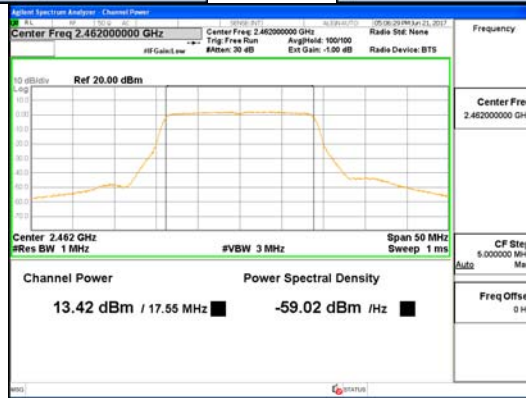
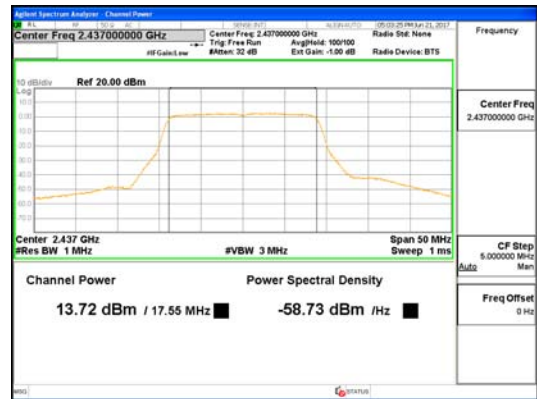


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Ant 2_802.11n_HT20



Ant 3_802.11n_HT20

4.4 Power Spectral Density

Test Procedures

Procedure 10.2 in KDB 558074, Method Peak PSD

The peak power density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating in transmission mode at the appropriate frequencies.

Test Settings:

Center frequency = the highest, middle and the lowest channels

- a) RBW : $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$
- b) VBW $\geq 3 \times \text{RBW}$
- c) span $\geq 1.5 \times \text{DTS bandwidth}$
- d) Sweep time = auto couple
- e) Detector = peak
- f) Trace mode= max hold
- g) Allow trace to fully stabilize
- h) Use the peak marker function to determine the maximum amplitude level within the RBW.

Limit

Operating Mode	Mode	ANT Configuration	ANT Gain (dBi)	Limit (dBm)	
				FCC	IC
SISO	802.11b/g/n	ANT0	3.2	8	8
SISO	802.11b/n	ANT1	5.6	8	8
SISO	802.11b/n	ANT2	5.6	8	8
SISO	802.11b/n	ANT3	5.6	8	8
MIMO (2Tx)	802.11g/n	ANT0 + ANT1	7.49	6.51	6.51
MIMO (3Tx)	802.11g/n	ANT0 + ANT1 + ANT2	9.64	4.36	4.36
MIMO (4Tx)	802.11g/n	ANT0 + ANT1 + ANT2 + ANT3	11.08	2.92	2.92



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Test Data

Ant 0

Frequency	Measured Power Density (dBm)		
	2 412 MHz	2 437 MHz	2 462 MHz
802.11b	-5.93	-7.69	-6.29
802.11g	-11.98	-11.91	-12.11
802.11n HT20	-13.32	-12.70	-13.21

Ant 1

Frequency	Measured Power Density (dBm)		
	2 412 MHz	2 437 MHz	2 462 MHz
802.11b	-4.35	-6.32	-6.10
802.11n HT20	-11.04	-12.53	-12.48

Ant 2

Frequency	Measured Power Density (dBm)		
	2 412 MHz	2 437 MHz	2 462 MHz
802.11b	-6.68	-8.27	-6.83
802.11n HT20	-13.30	-13.16	-12.65

Ant 3

Frequency	Measured Power Density (dBm)		
	2 412 MHz	2 437 MHz	2 462 MHz
802.11b	-7.11	-7.91	-6.66
802.11n HT20	-12.64	-12.85	13.62



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Ant 0 + Ant 1

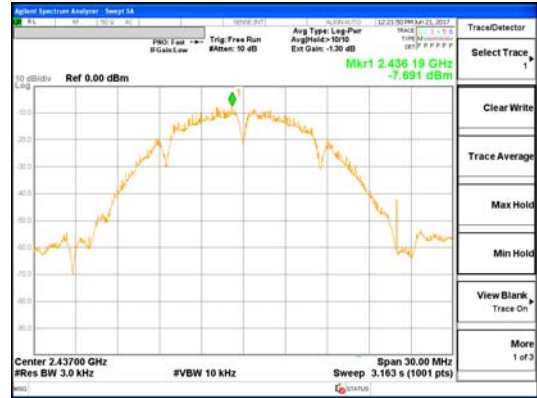
	Measured Power Density (dBm)		
Frequency	2 412 MHz	2 437 MHz	2 462 MHz
802.11g	-9.26	-8.62	-9.16
802.11n HT20	-9.02	-9.60	-9.82

Ant 0 + Ant 1 + Ant 2

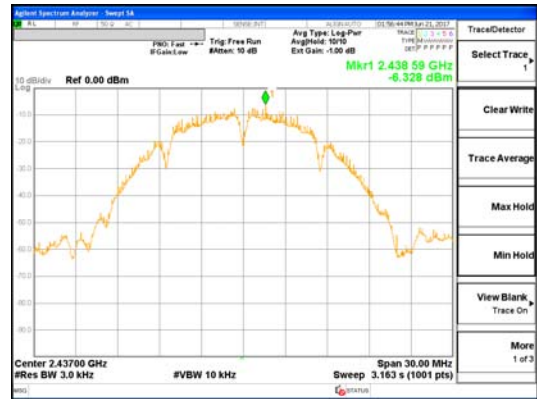
	Measured Power Density (dBm)		
Frequency	2 412 MHz	2 437 MHz	2 462 MHz
802.11g	-7.50	-7.07	-7.43
802.11n HT20	-7.64	-8.02	-8.00

Ant 0 + Ant 1 + Ant 2 + Ant 3

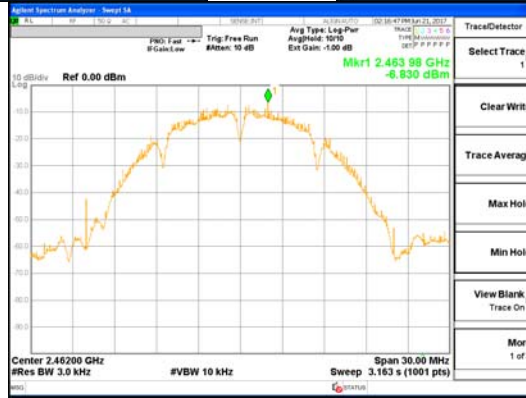
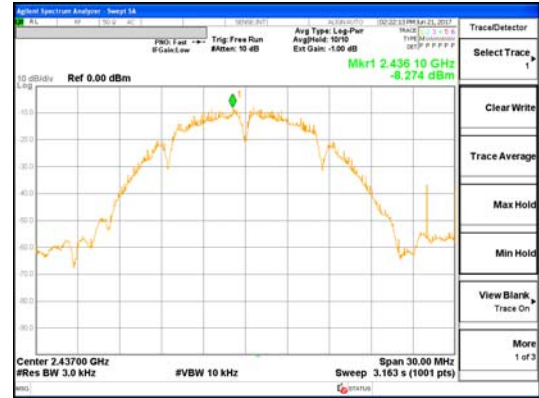
	Measured Power Density (dBm)		
Frequency	2 412 MHz	2 437 MHz	2 462 MHz
802.11g	-6.32	-5.90	-6.26
802.11n HT20	-6.45	-6.78	13.65



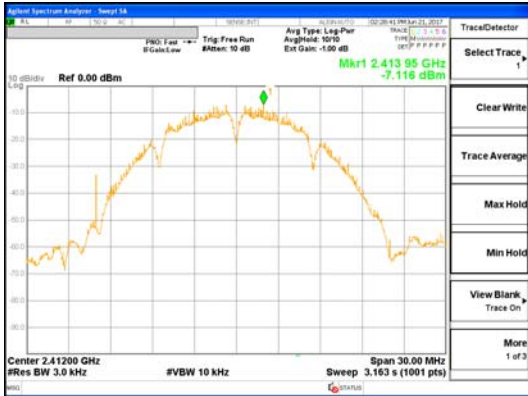
Ant 0_802.11b



Ant 1_802.11b



Ant 2_802.11b

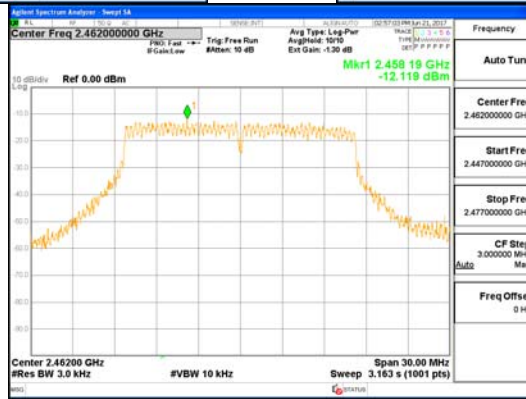
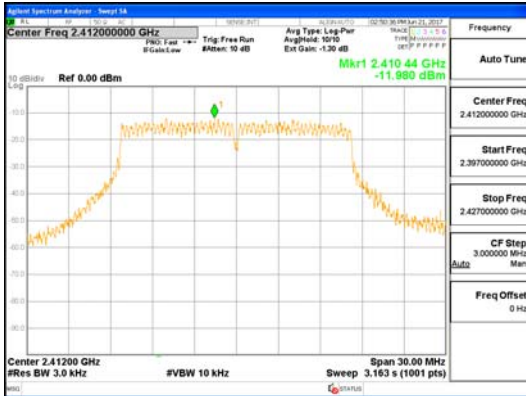


Ant 3_802.11b



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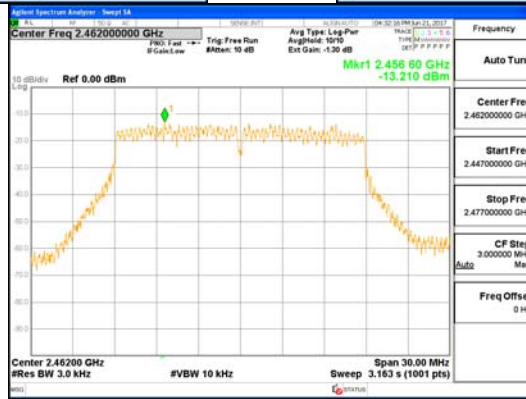
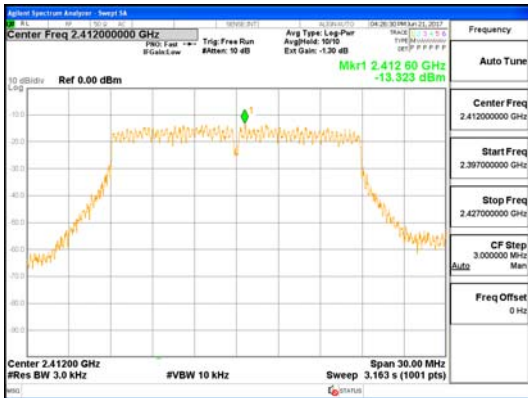


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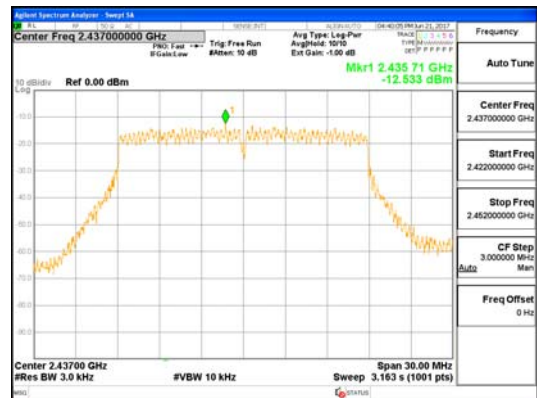
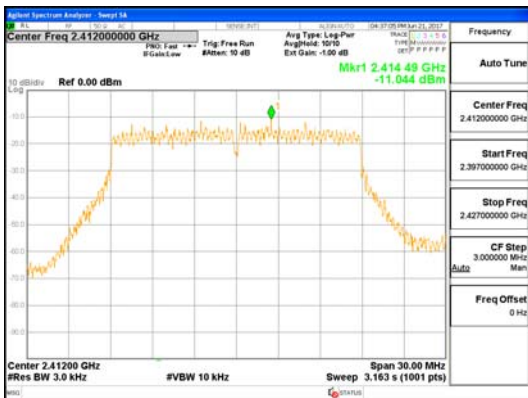


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Ant 0_802.11n_HT20

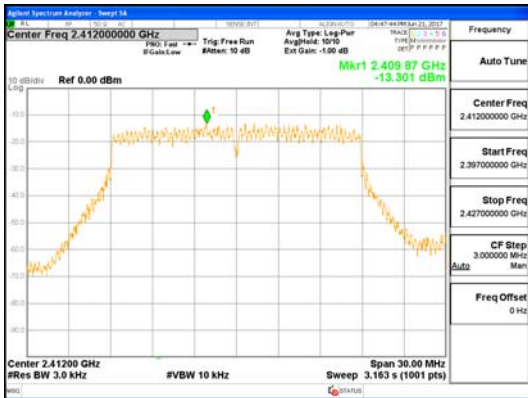


Ant 1_802.11n_HT20



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Ant 2_802.11n_HT20



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4.5 Band - edge

Test Procedures

The bandwidth at 20dB down from the highest inband spectral density is measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate frequencies.

After the trace being stable, Use the marker-to-peak function to measure 20 dB down both sides of the intentional emission.

Test Settings:

Center frequency = the highest, middle and the lowest channels

- a) RBW = 100 kHz
- b) VBW $\geq 3 \times$ RBW
- c) Detector = peak
- d) Sweep time = auto couple
- e) Trace mode= max hold
- f) Allow trace to fully stabilize
- g) Use the peak marker function to determine the maximum amplitude level.

Limit :

Emission level < 30 dBc

Test Data: Complies

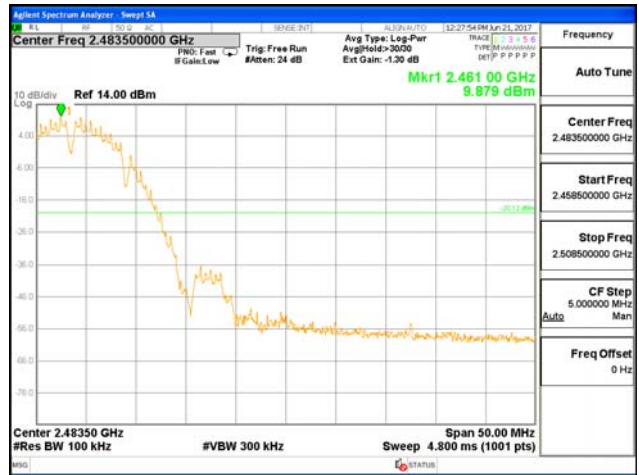
- All conducted emission in any 100 kHz bandwidth outside of the spread spectrum band was at least 30dB lower than the highest inband spectral density. Therefore the applying equipment meets the requirement.

See next pages for actual measured spectrum plots.



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Ant 0_802.11b



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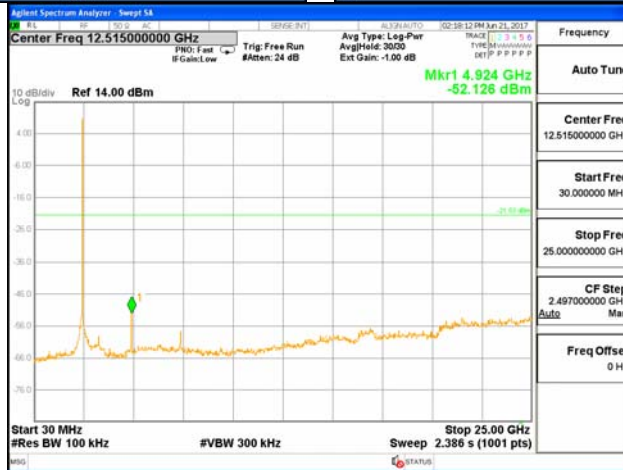
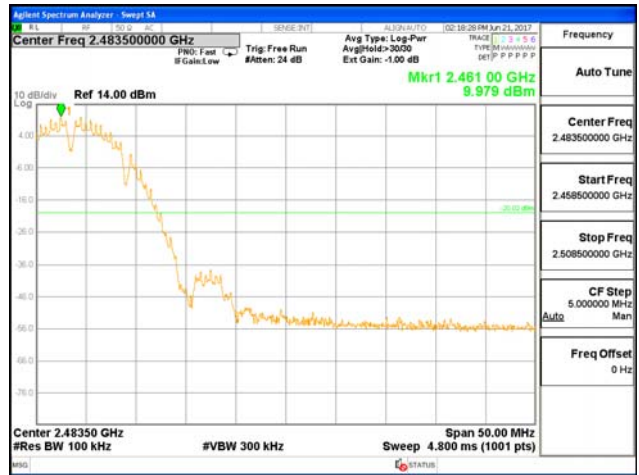


Ant 1_802.11b



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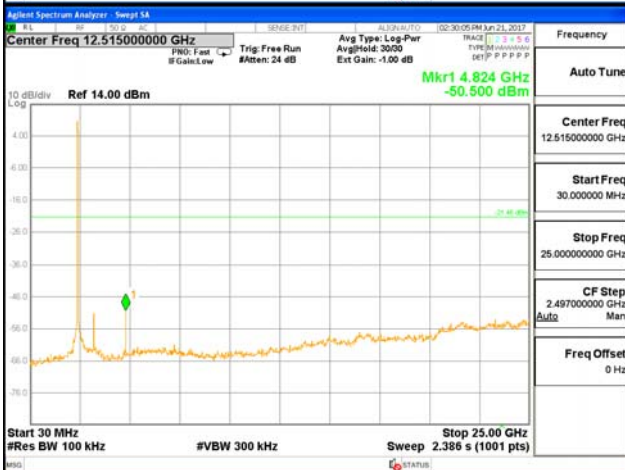


Ant 2_802.11b



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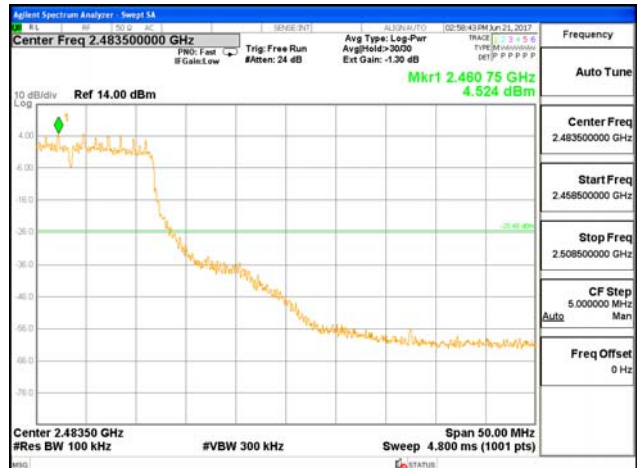
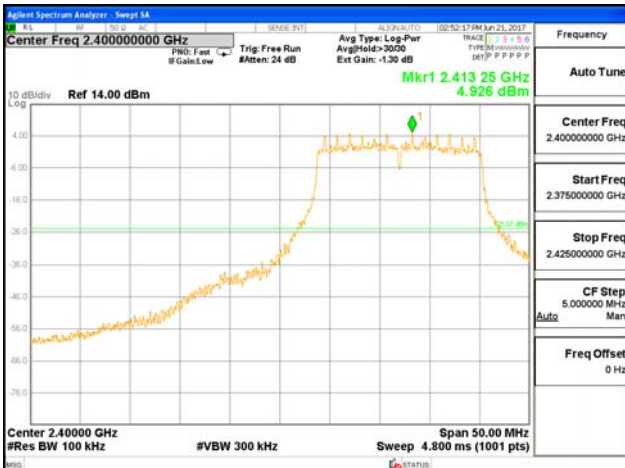


Ant 3_802.11b



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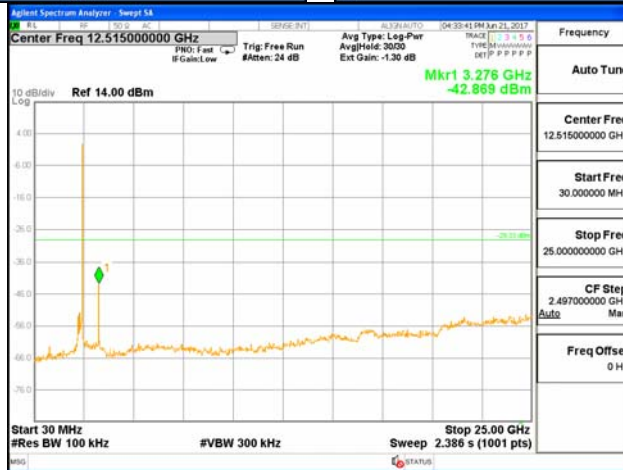


Ant 0_802.11g



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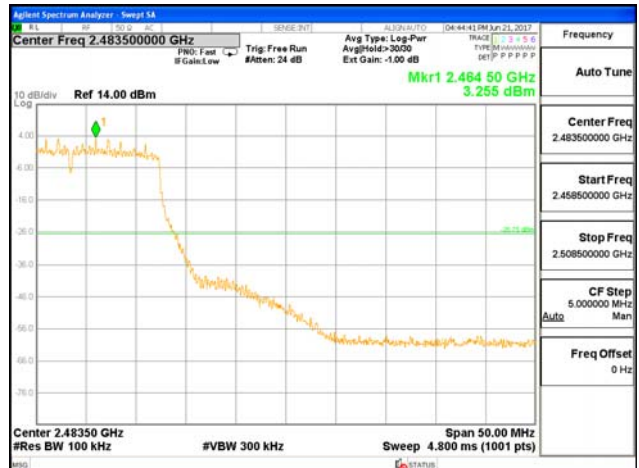


Ant 0_802.11n_HT20



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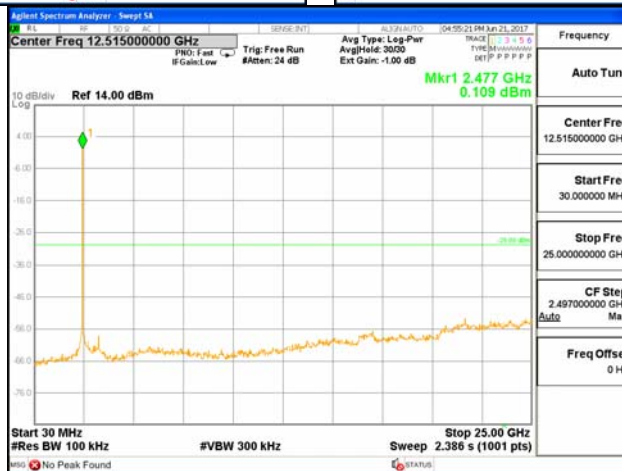


Ant 1_802.11n_HT20



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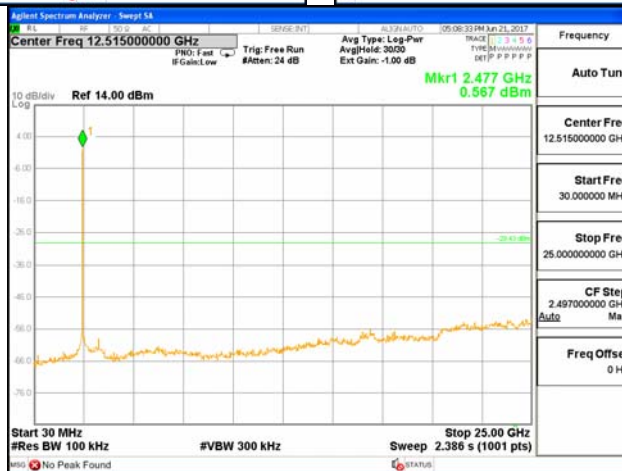
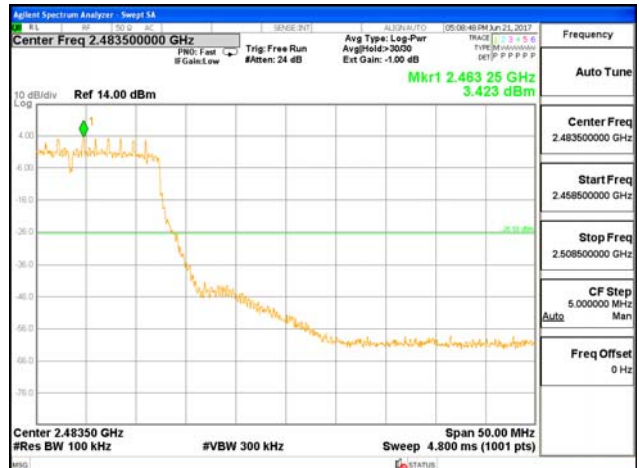


Ant 2_802.11n_HT20



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Ant 3_802.11n_HT20



4.6 Field Strength of Emissions

Test Location

- 10 m SAC (test distance : 10 m, 3 m)
 3 m SAC (test distance : 3 m)

Test Procedures

- 1) In the frequency range of 9 kHz to 30 MHz, magnetic field is measured with Loop Antenna. The Test Antenna is positioned with its plane vertical at 1m distance from the EUT. The center of the Loop Test Antenna is 1m above the ground. During the measurement the Loop Test Antenna rotates about its vertical axis for maximum response at each azimuth about the EUT.
- 2) In the frequency range above 30 MHz, Bi-Log Test Antenna(30 MHz to 1 GHz) and Horn Test Antenna(above 1 GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is carried from 1m to 4m above the ground to determine the maximum value of the field strength. The emissions levels at both horizontal and vertical polarizations should be tested.

Test Settings:

Frequency Range = 9 kHz ~ 25 GHz (2.4 GHz 10th harmonic)

- a) RBW = 1 MHz for $f \geq 1$ GHz, 100 kHz for $f < 1$ GHz, 9 kHz for $f < 30$ MHz
- b) VBW \geq RBW
- c) Sweep time = auto couple

Limit

- 15.209(a)

Frequency(MHz)	Field Strength uV/m@3m	Field Strength dBuV/m@3m	Deasurement Distance (meters)
0.009-0.490	2 400/F(kHz)	-	300
0.490-1.705	24 000/F(kHz)	-	30
1.705-30	30	-	30
30-88	100**	40	3
88-216	150**	43.5	3
216-960	200**	46	3
Above 960	500	54	3

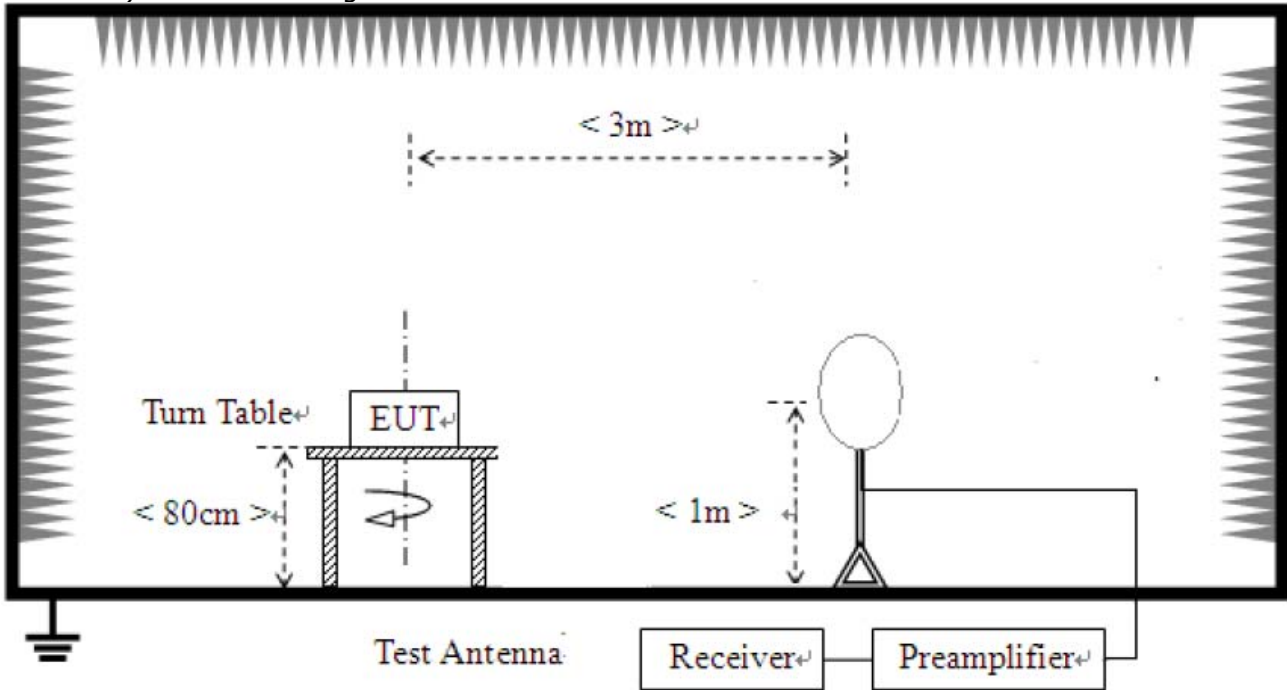
** Except as provided in 15.209(g).fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72MHz, 76-88MHz, 174-216MHz, 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g.15.231 and 15.241.

Note :

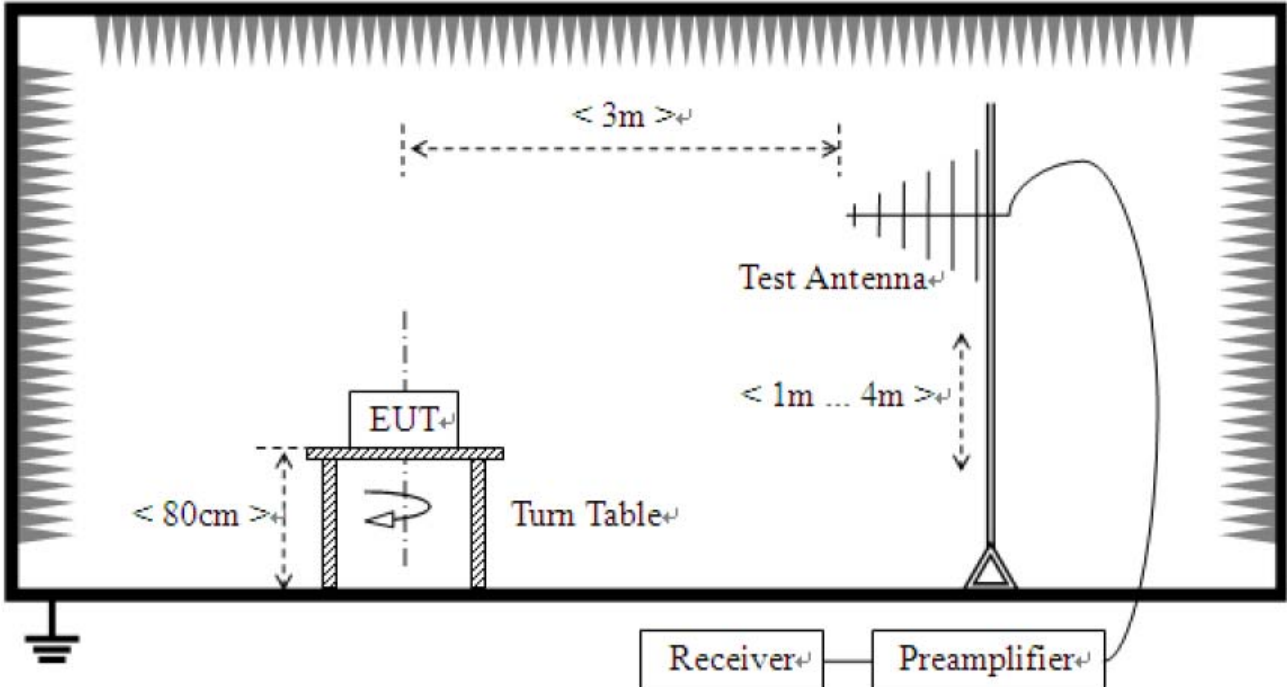
- 1) For above 1 GHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.
- 2) For above 1 GHz, limit field strength of harmonics : 54 dBuV/m@3m (AV) and 74 dBuV/m@3m (PK)

Test Setup:

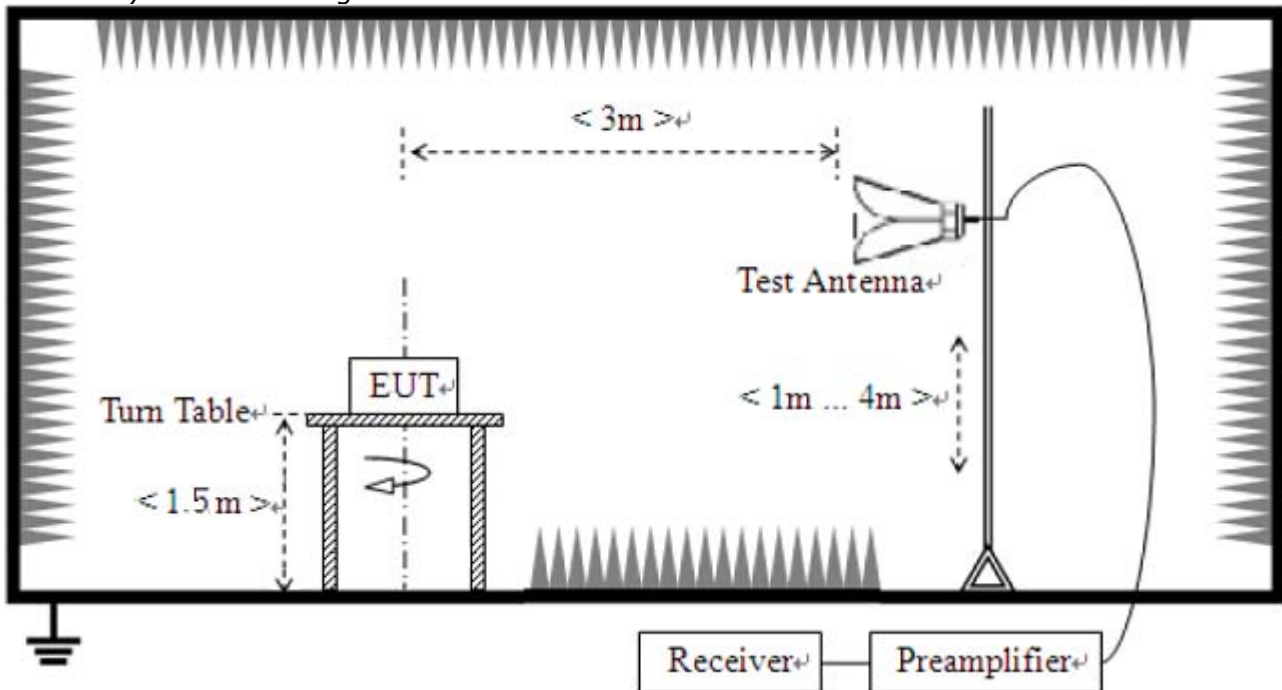
- 1) For field strength of emissions from 9 kHz to 30 MHz



- 2) For field strength of emissions from 30 MHz to 1 GHz



3) For field strength of emissions above 1 GHz



Test Mode

We have done all test mode.

The worst-case antenna configuration are determined to be as follows for each mode.

802.11b mode : ANT0, ANT3 (SISO)

802.11g mode : ANT0 + ANT1 + ANT2 + ANT3

802.11n HT20 mode : ANT0 + ANT1 + ANT2 + ANT3

This EUT is supported the AC/DC Adapter and PoE. We have done all test mode. Worst case is PoE. So the worst data of PoE are shown.



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Test Results

1) 9 kHz to 30 MHz

EUT	WLAN Access Point	Measurement Detail	
Model	WEA524i	Frequency Range	9 kHz - 30 MHz
Test mode	802.11b,802.11g, 802.11n_HT20(Worst case)	Detector function	Quasi-Peak

The requirements are:

Complies

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
-	-	-	See note

Note :

The amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB)

2) 30 MHz to 1 GHz

Test mode : 802.11b(Worst Case)

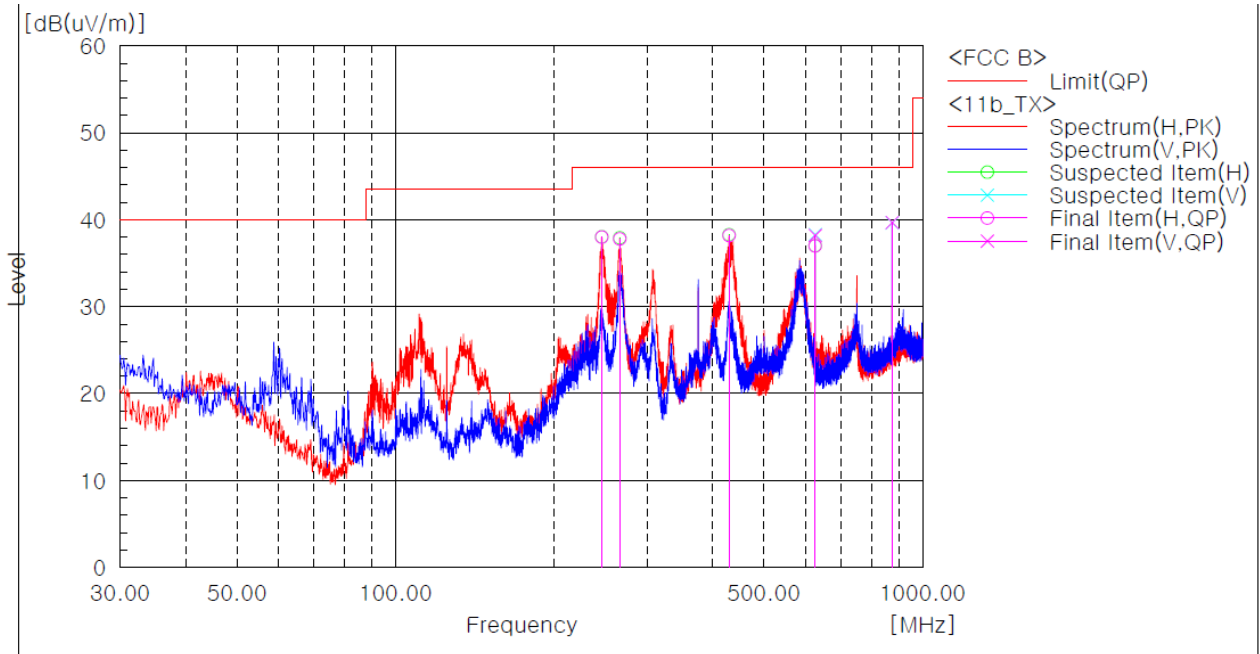
EUT	WLAN Access Point	Measurement Detail	
Model	WEA524i	Frequency Range	Below 1 000 MHz
Configuration	802.11b	Detector function	Quasi-Peak

The requirements are:

Complies

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
874.976	39.7	6.3	Quasi-peak

Test Data



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Angle [deg]	Remark
1	245.973	H	51.2	-13.2	38.0	46.0	8.0	182.8	
2	266.225	H	50.5	-12.7	37.8	46.0	8.2	358.8	
3	428.962	H	48.8	-10.6	38.2	46.0	7.8	21.4	
4	625.048	V	46.0	-7.8	38.2	46.0	7.8	146.6	
5	625.048	H	44.8	-7.8	37.0	46.0	9.0	310.0	
6	874.976	V	44.5	-4.8	39.7	46.0	6.3	3.5	

Remark :

1. The field strength of spurious emission was measured in the following position: EUT and antenna stand-up position(Z axis), lie-down position(X,Y axis). The worst emission was found in stand-up position(Z axis) and the worst case was recorded.



Test mode : 802.11g(Worst Case)

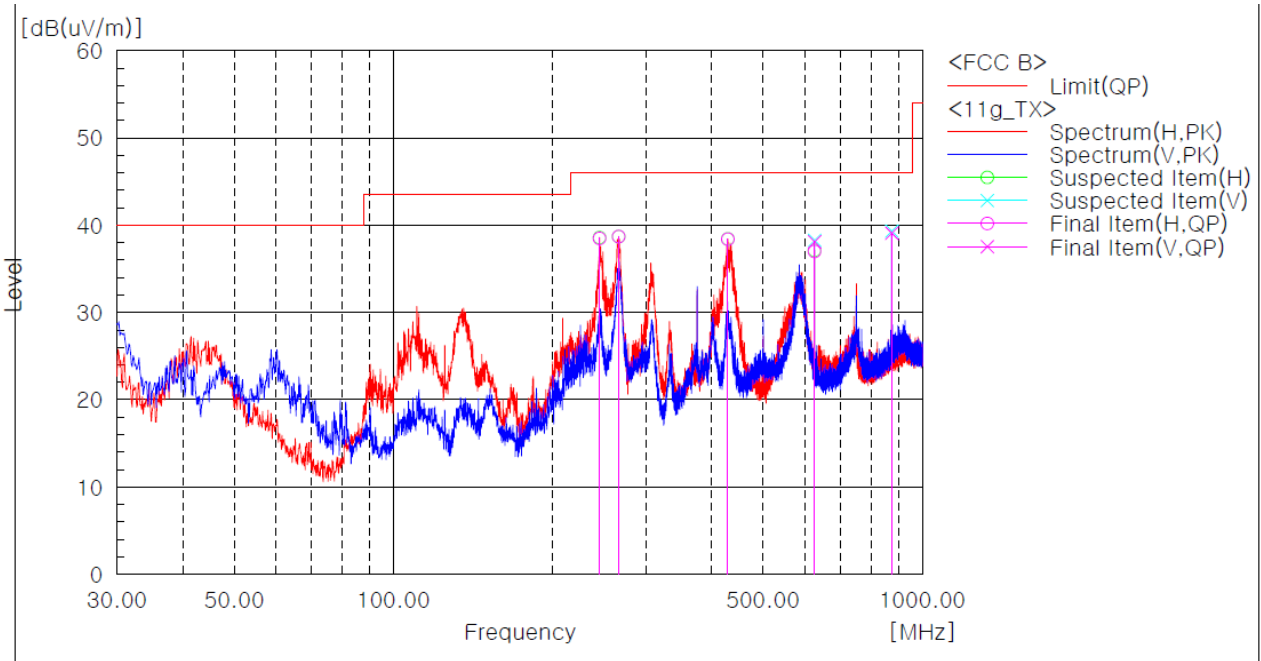
EUT	WLAN Access Point	Measurement Detail	
Model	WEA524i	Frequency Range	Below 1 000 MHz
Configuration	802.11g	Detector function	Quasi-Peak

The requirements are:

Complies

Frequency (MHz)	Measured Data (dBUV/m)	Margin (dB)	Remark
874.976	39.1	6.9	Quasi-peak

Test Data



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Angle [deg]	Remark
1	245.124	H	51.7	-13.2	38.5	46.0	7.5	206.2	
2	266.588	H	51.4	-12.7	38.7	46.0	7.3	355.9	
3	428.477	H	49.0	-10.6	38.4	46.0	7.6	25.7	
4	625.048	V	45.9	-7.8	38.1	46.0	7.9	157.6	
5	625.048	H	44.8	-7.8	37.0	46.0	9.0	9.9	
6	874.976	V	43.9	-4.8	39.1	46.0	6.9	3.2	

Remark :

1. The field strength of spurious emission was measured in the following position: EUT and antenna stand-up position(Z axis), lie-down position(X,Y axis). The worst emission was found in stand-up position(Z axis) and the worst case was recorded.



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Test mode : 802.11n_HT20(Worst Case)

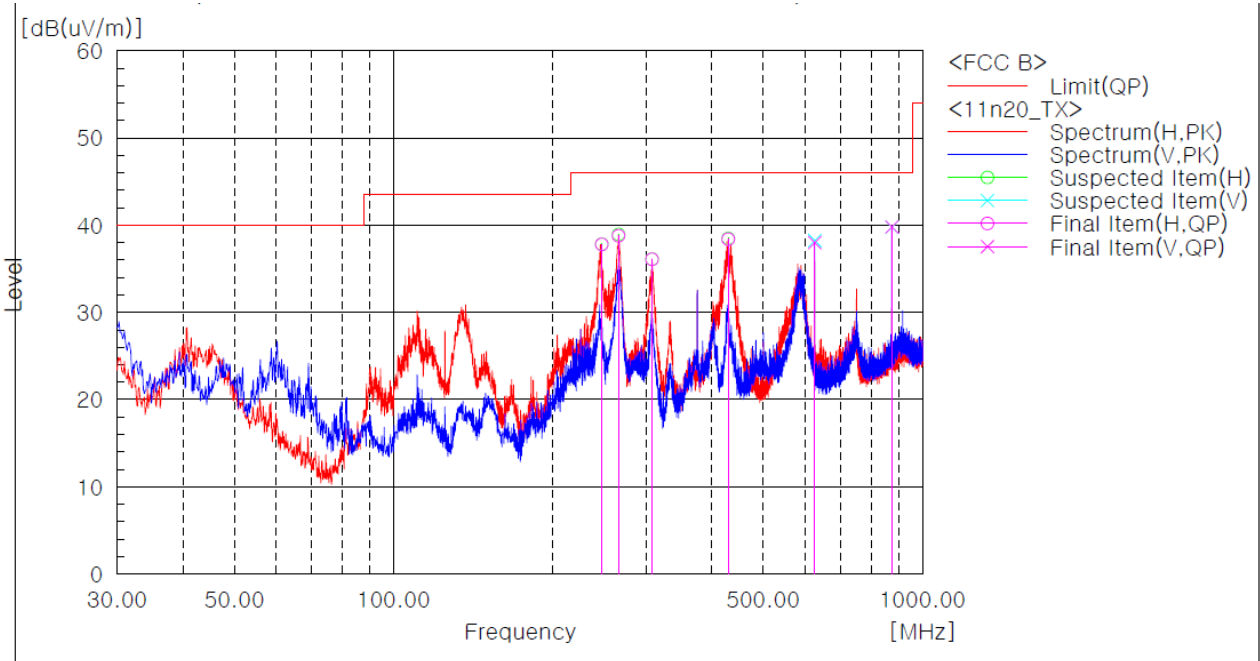
EUT	WLAN Access Point	Measurement Detail	
Model	WEA524i	Frequency Range	Below 1 000 MHz
Configuration	802.11n_HT20	Detector function	Quasi-Peak

The requirements are:

Complies

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
874.976	39.8	6.2	Quasi-peak

Test Data



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Angle [deg]	Remark
1	247.428	H	50.9	-13.1	37.8	46.0	8.2	185.3	
2	266.346	H	51.5	-12.7	38.8	46.0	7.2	2.5	
3	308.182	H	48.2	-12.1	36.1	46.0	9.9	72.1	
4	429.326	H	49.0	-10.6	38.4	46.0	7.6	14.2	
5	625.048	V	45.8	-7.8	38.0	46.0	8.0	154.5	
6	874.976	V	44.6	-4.8	39.8	46.0	6.2	1.7	

Remark :

1. The field strength of spurious emission was measured in the following position: EUT and antenna stand-up position(Z axis), lie-down position(X,Y axis). The worst emission was found in stand-up position(Z axis) and the worst case was recorded.



Test mode : Receiver_802.11b(Worst Case)

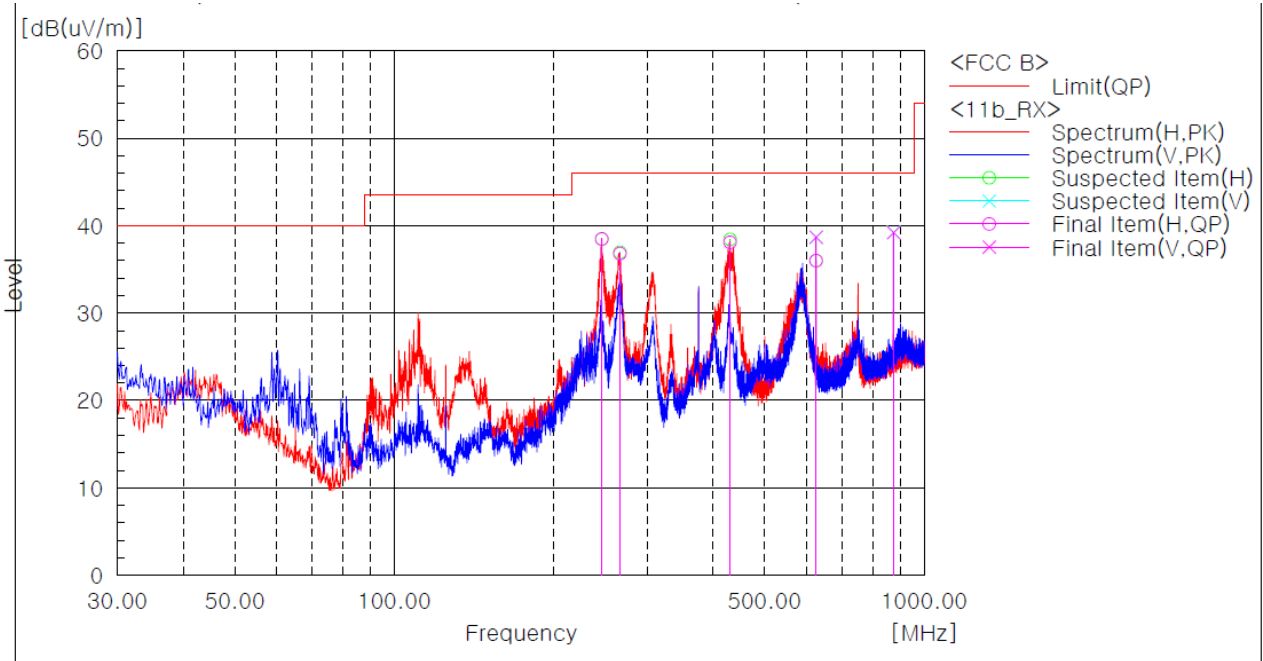
EUT	WLAN Access Point	Measurement Detail	
Model	WEA524i	Frequency Range	Below 1 000 MHz
Configuration	Receiver_802.11b	Detector function	Quasi-Peak

The requirements are:

Complies

Frequency (MHz)	Measured Data (dBUV/m)	Margin (dB)	Remark
874.976	39.2	6.8	Quasi-peak

Test Data



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Angle [deg]	Remark
1	246.216	H	51.7	-13.2	38.5	46.0	7.5	180.0	
2	266.467	H	49.5	-12.7	36.8	46.0	9.2	358.3	
3	430.054	H	48.7	-10.6	38.1	46.0	7.9	15.5	
4	625.048	V	46.5	-7.8	38.7	46.0	7.3	153.5	
5	625.048	H	43.8	-7.8	36.0	46.0	10.0	161.6	
6	874.976	V	44.0	-4.8	39.2	46.0	6.8	1.6	

Remark :

1. The field strength of spurious emission was measured in the following position: EUT and antenna stand-up position(Z axis), lie-down position(X,Y axis). The worst emission was found in stand-up position(Z axis) and the worst case was recorded.



Test mode : Receiver_802.11g(Worst Case)

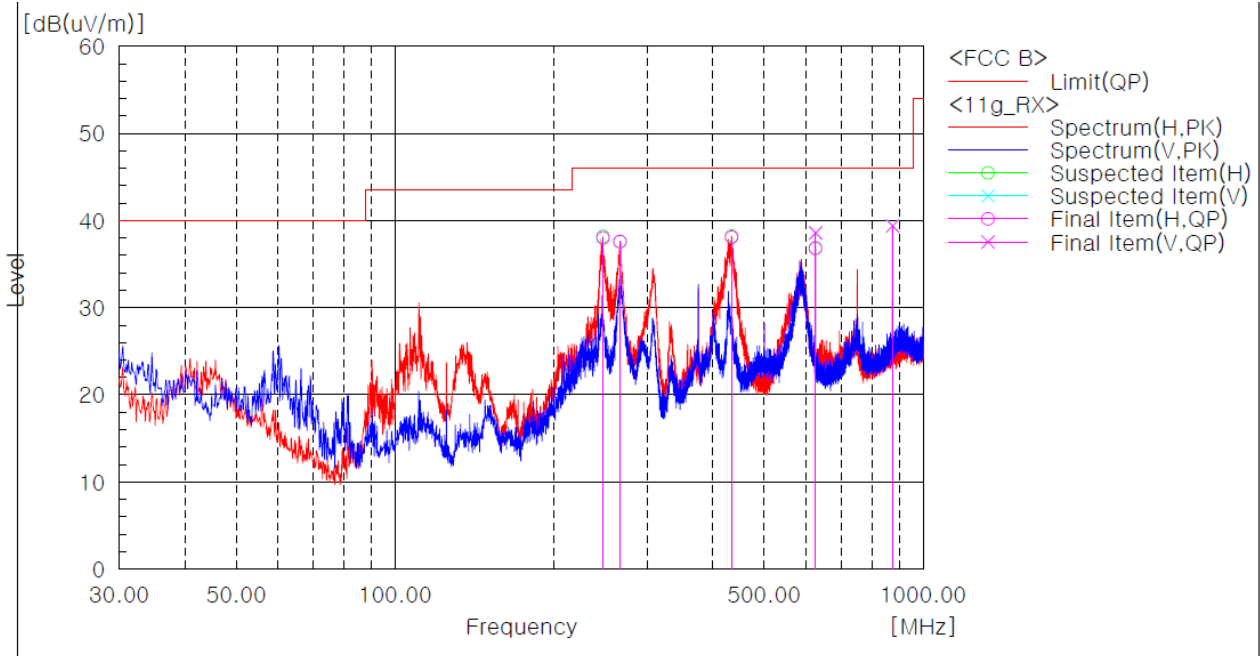
EUT	WLAN Access Point	Measurement Detail	
Model	WEA524i	Frequency Range	Below 1 000 MHz
Configuration	Receiver_802.11g	Detector function	Quasi-Peak

The requirements are:

Complies

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
874.976	39.4	6.6	Quasi-peak

Test Data



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Angle [deg]	Remark
1	247.428	H	51.1	-13.1	38.0	46.0	8.0	185.7	
2	266.588	H	50.3	-12.7	37.6	46.0	8.4	355.3	
3	433.813	H	48.7	-10.6	38.1	46.0	7.9	355.3	
4	625.048	V	46.4	-7.8	38.6	46.0	7.4	133.5	
5	625.048	H	44.6	-7.8	36.8	46.0	9.2	171.7	
6	874.976	V	44.2	-4.8	39.4	46.0	6.6	11.4	

Remark :

1. The field strength of spurious emission was measured in the following position: EUT and antenna stand-up position(Z axis), lie-down position(X,Y axis). The worst emission was found in stand-up position(Z axis) and the worst case was recorded.



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Test mode : Receiver_802.11n_HT20(Worst Case)

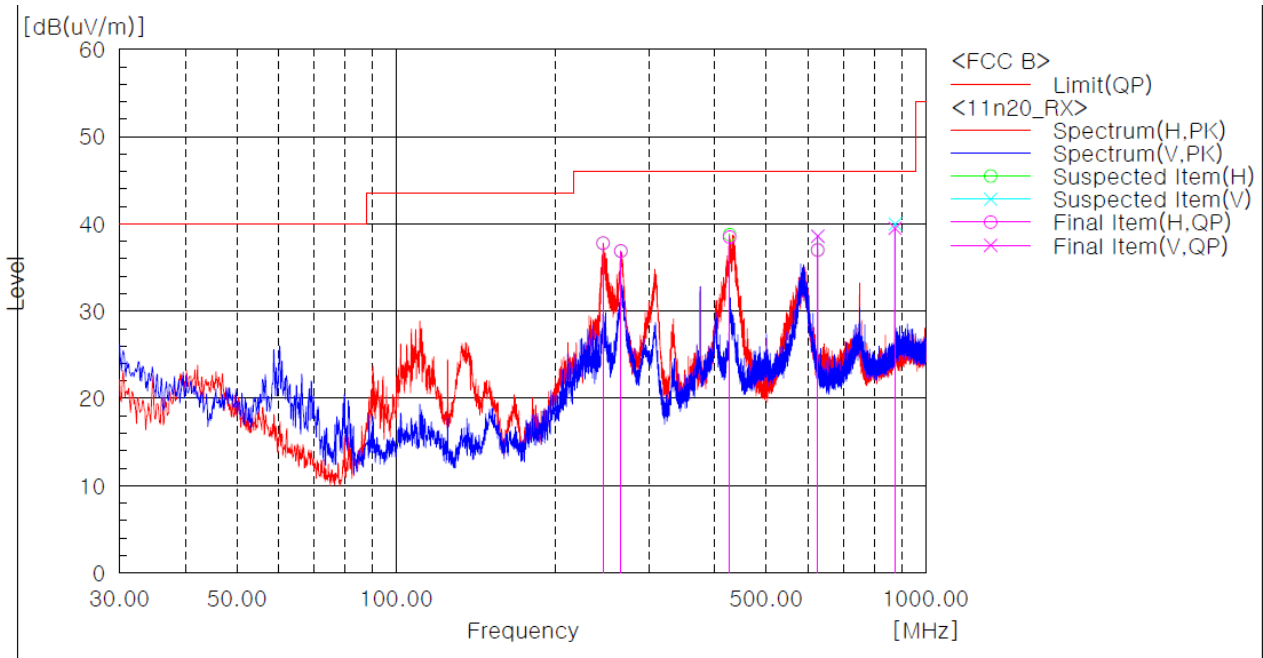
EUT	WLAN Access Point	Measurement Detail	
Model	WEA524i	Frequency Range	Below 1 000 MHz
Configuration	Receiver_802.11n_HT20	Detector function	Quasi-Peak

The requirements are:

Complies

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
874.976	39.5	6.5	Quasi-peak

Test Data



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Angle [deg]	Remark
1	245.852	H	51.0	-13.2	37.8	46.0	8.2	215.4	
2	265.497	H	49.6	-12.7	36.9	46.0	9.1	358.8	
3	426.416	H	49.2	-10.7	38.5	46.0	7.5	4.3	
4	625.048	V	46.4	-7.8	38.6	46.0	7.4	149.2	
5	625.048	H	44.8	-7.8	37.0	46.0	9.0	22.1	
6	874.976	V	44.3	-4.8	39.5	46.0	6.5	2.3	

Remark :

1. The field strength of spurious emission was measured in the following position: EUT and antenna stand-up position(Z axis), lie-down position(X,Y axis). The worst emission was found in stand-up position(Z axis) and the worst case was recorded.



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3) above 1 GHz

Test mode : 802.11b_ANT 0

EUT	WLAN Access Point	Measurement Detail	
Model	WEA524i	Frequency Range	1-25 GHz
Mode	802.11b_ANT 0	Detector function	Average / Peak

Remarks

We have tested three mode (X, Y, Z). The worst mode (Z axis) for final test.

The requirements are:

Complies

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
3 216.00	48.55	5.45	Average

Ch.1(2 412 MHz)

Frequency [MHz]	(P)	Limit AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Level AV [dB(uV/m)]	Level PK [dB(uV/m)]	Margin AV [dB]	Margin PK [dB]
1 125.00	H	54.00	74.00	36.36	43.84	17.64	30.16
1 125.00	V	54.00	74.00	35.68	42.33	18.32	31.67
3 216.00	H	54.00	74.00	47.80	50.27	6.20	23.73
3 216.00	V	54.00	74.00	48.55	51.13	5.45	22.87
4 824.00	H	54.00	74.00	41.19	48.01	12.81	26.00
4 824.00	V	54.00	74.00	40.38	46.83	13.62	27.17
2 390.00	H	54.00	74.00	40.20	61.99	13.81	12.01
2 390.00	V	54.00	74.00	38.68	60.38	15.32	13.62

Ch.6(2 437 MHz)

Frequency [MHz]	(P)	Limit AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Level AV [dB(uV/m)]	Level PK [dB(uV/m)]	Margin AV [dB]	Margin PK [dB]
1 125.00	H	54.00	74.00	36.33	43.36	17.67	30.64
1 125.00	V	54.00	74.00	35.46	41.42	18.54	32.58
3 249.00	H	54.00	74.00	46.33	49.48	7.67	24.52
3 249.00	V	54.00	74.00	46.54	49.23	7.46	24.77
4 874.00	H	54.00	74.00	42.88	48.77	11.12	25.23
4 874.00	V	54.00	74.00	42.50	48.11	11.50	25.89
2 390.00	H	54.00	74.00	40.22	60.70	13.78	13.30
2 390.00	V	54.00	74.00	38.98	57.66	15.02	16.34



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Ch.11(2 462 MHz)

Frequency [MHz]	(P)	Limit AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Level AV [dB(uV/m)]	Level PK [dB(uV/m)]	Margin AV [dB]	Margin PK [dB]
1 125.00	H	54.00	74.00	37.30	44.31	16.70	29.69
1 125.00	V	54.00	74.00	35.77	42.75	18.23	31.25
3 282.00	H	54.00	74.00	46.81	49.33	7.19	24.67
3 282.00	V	54.00	74.00	45.51	48.35	8.49	25.65
4 924.00	H	54.00	74.00	42.81	48.63	11.19	25.37
4 924.00	V	54.00	74.00	42.30	47.56	11.71	26.44
2 390.00	H	54.00	74.00	39.77	58.93	14.23	15.07
2 390.00	V	54.00	74.00	37.76	56.59	16.24	17.41
2 483.50	H	54.00	74.00	36.50	58.42	17.50	15.58
2 483.50	V	54.00	74.00	36.63	57.31	17.37	16.69



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Test mode : 802.11b_ANT 3

EUT	WLAN Access Point	Measurement Detail	
Model	WEA524i	Frequency Range	1-25 GHz
Mode	802.11b_ANT 3	Detector function	Average / Peak

Remarks

We have tested three mode (X, Y, Z). The worst mode (Z axis) for final test.

The requirements are:

Complies

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
3 216.00	50.59	3.41	Average

Ch.1(2 412 MHz)

Frequency [MHz]	(P)	Limit AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Level AV [dB(uV/m)]	Level PK [dB(uV/m)]	Margin AV [dB]	Margin PK [dB]
1 125.00	H	54.00	74.00	36.59	43.99	17.41	30.01
1 125.00	V	54.00	74.00	35.22	42.19	18.78	31.82
3 216.00	H	54.00	74.00	46.97	50.13	7.03	23.87
3 216.00	V	54.00	74.00	50.59	53.10	3.41	20.91
4 824.00	H	54.00	74.00	41.36	47.28	12.65	26.72
4 824.00	V	54.00	74.00	50.40	53.23	3.60	20.77
2 390.00	H	54.00	74.00	35.67	51.36	18.33	22.64
2 390.00	V	54.00	74.00	37.12	54.77	16.88	19.23

Ch.6(2 437 MHz)

Frequency [MHz]	(P)	Limit AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Level AV [dB(uV/m)]	Level PK [dB(uV/m)]	Margin AV [dB]	Margin PK [dB]
1 125.00	H	54.00	74.00	36.62	44.06	17.39	29.94
1 125.00	V	54.00	74.00	35.23	42.22	18.77	31.78
3 249.00	H	54.00	74.00	44.02	48.16	9.98	25.84
3 249.00	V	54.00	74.00	46.88	49.61	7.13	24.39
4 874.00	H	54.00	74.00	39.25	46.28	14.75	27.72
4 874.00	V	54.00	74.00	44.87	49.79	9.13	24.22
2 390.00	H	54.00	74.00	34.47	50.10	19.53	23.90
2 390.00	V	54.00	74.00	36.74	53.43	17.26	20.57



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Ch.11(2 462 MHz)

Frequency [MHz]	(P)	Limit AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Level AV [dB(uV/m)]	Level PK [dB(uV/m)]	Margin AV [dB]	Margin PK [dB]
1 125.00	H	54.00	74.00	36.52	43.87	17.48	30.13
1 125.00	V	54.00	74.00	35.25	42.65	18.75	31.35
3 282.00	H	54.00	74.00	43.50	47.56	10.50	26.44
3 282.00	V	54.00	74.00	42.97	46.78	11.03	27.22
4 924.00	H	54.00	74.00	42.61	47.78	11.39	26.22
4 924.00	V	54.00	74.00	41.53	47.78	12.47	26.22
2 390.00	H	54.00	74.00	34.25	48.40	19.75	25.60
2 390.00	V	54.00	74.00	36.48	53.25	17.52	20.76
2 483.50	H	54.00	74.00	38.31	58.03	15.69	15.97
2 483.50	V	54.00	74.00	43.13	62.69	10.87	11.31



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Test mode : 802.11g

EUT	WLAN Access Point	Measurement Detail	
Model	WEA524i	Frequency Range	1-25 GHz
Mode	802.11g	Detector function	Average / Peak

Remarks

We have tested three mode (X, Y, Z). The worst mode (Z axis) for final test.

The requirements are:

Complies

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
2 483.50	52.82	1.18	Average

Ch.1(2 412 MHz)

Frequency [MHz]	(P)	Limit AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Level AV [dB(uV/m)]	Level PK [dB(uV/m)]	Margin AV [dB]	Margin PK [dB]
1 125.00	H	54.00	74.00	36.61	44.51	17.40	29.49
1 125.00	V	54.00	74.00	35.06	43.08	18.94	30.92
3 216.00	H	54.00	74.00	51.54	53.26	2.46	20.74
3 216.00	V	54.00	74.00	50.01	52.35	3.99	21.65
4 824.00	H	54.00	74.00	33.11	47.43	20.89	26.57
4 824.00	V	54.00	74.00	36.31	49.24	17.69	24.76
2 390.00	H	54.00	74.00	45.44	60.79	8.56	13.21
2 390.00	V	54.00	74.00	47.92	67.28	6.08	6.72

Ch.6(2 437 MHz)

Frequency [MHz]	(P)	Limit AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Level AV [dB(uV/m)]	Level PK [dB(uV/m)]	Margin AV [dB]	Margin PK [dB]
1 125.00	H	54.00	74.00	36.63	45.06	17.37	28.94
1 125.00	V	54.00	74.00	35.11	43.06	18.89	30.94
3 249.00	H	54.00	74.00	47.37	49.86	6.63	24.14
3 249.00	V	54.00	74.00	46.99	49.70	7.01	24.30
4 874.00	H	54.00	74.00	32.97	47.21	21.03	26.80
4 874.00	V	54.00	74.00	35.48	48.55	18.52	25.45
2 390.00	H	54.00	74.00	37.52	57.74	16.48	16.26
2 390.00	V	54.00	74.00	38.67	57.34	15.33	16.66
2 483.50	H	54.00	74.00	37.91	54.64	16.10	19.37
2 483.50	V	54.00	74.00	39.05	56.69	14.95	17.31



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Ch.11(2 462 MHz)

Frequency [MHz]	(P)	Limit AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Level AV [dB(uV/m)]	Level PK [dB(uV/m)]	Margin AV [dB]	Margin PK [dB]
1 125.00	H	54.00	74.00	36.61	43.74	17.39	30.26
1 125.00	V	54.00	74.00	35.16	43.35	18.84	30.65
3 282.00	H	54.00	74.00	45.83	48.76	8.17	25.24
3 282.00	V	54.00	74.00	43.83	47.38	10.17	26.62
2 390.00	H	54.00	74.00	38.52	58.23	15.48	15.77
2 390.00	V	54.00	74.00	39.10	57.88	14.90	16.12
2 483.50	H	54.00	74.00	52.82	68.53	1.18	5.47
2 483.50	V	54.00	74.00	52.07	67.88	1.94	6.12



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Test mode : 802.11n_HT20

EUT	WLAN Access Point	Measurement Detail	
Model	WEA524i	Frequency Range	1-25 GHz
Mode	802.11n_HT20	Detector function	Average / Peak

Remarks

We have tested three mode (X, Y, Z). The worst mode (Z axis) for final test.

The requirements are:

Complies

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
3 216.00	52.03	1.98	Average

Ch.1(2 412 MHz)

Frequency [MHz]	(P)	Limit AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Level AV [dB(uV/m)]	Level PK [dB(uV/m)]	Margin AV [dB]	Margin PK [dB]
1 125.00	H	54.00	74.00	36.68	44.36	17.32	29.64
1 125.00	V	54.00	74.00	35.26	42.59	18.74	31.41
3 216.00	H	54.00	74.00	52.03	53.61	1.98	20.39
3 216.00	V	54.00	74.00	50.58	52.62	3.42	21.38
2 390.00	H	54.00	74.00	43.16	57.14	10.84	16.86
2 390.00	V	54.00	74.00	49.74	65.41	4.26	8.59

Ch.6(2 437 MHz)

Frequency [MHz]	(P)	Limit AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Level AV [dB(uV/m)]	Level PK [dB(uV/m)]	Margin AV [dB]	Margin PK [dB]
1 125.00	H	54.00	74.00	36.13	43.66	17.87	30.34
1 125.00	V	54.00	74.00	35.22	42.79	18.78	31.21
3 249.00	H	54.00	74.00	47.13	49.79	6.87	24.21
3 249.00	V	54.00	74.00	47.75	50.24	6.26	23.77
2 390.00	H	54.00	74.00	38.27	56.91	15.74	17.09
2 390.00	V	54.00	74.00	39.47	58.12	14.53	15.89
2 483.50	H	54.00	74.00	38.97	55.40	15.04	18.60
2 483.50	V	54.00	74.00	39.63	56.45	14.37	17.55



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Ch.11(2 462 MHz)

Frequency [MHz]	(P)	Limit AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Level AV [dB(uV/m)]	Level PK [dB(uV/m)]	Margin AV [dB]	Margin PK [dB]
1 125.00	H	54.00	74.00	36.17	43.65	17.83	30.35
1 125.00	V	54.00	74.00	35.29	43.05	18.71	30.95
3 282.00	H	54.00	74.00	45.94	48.67	8.06	25.33
3 282.00	V	54.00	74.00	44.12	47.66	9.88	26.34
2 390.00	H	54.00	74.00	38.10	55.63	15.91	18.37
2 390.00	V	54.00	74.00	38.59	57.04	15.41	16.96
2 483.50	H	54.00	74.00	50.94	64.53	3.06	9.47
2 483.50	V	54.00	74.00	49.71	64.03	4.29	9.97



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Test mode : Receiver

EUT	WLAN Access Point	Measurement Detail	
Model	WEA524i	Frequency Range	1-25 GHz
Mode	Receiver	Detector function	Average / Peak

Remarks

We have tested three mode (X, Y, Z). The worst mode (Z axis) for final test.

The requirements are:

Complies

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
3 216.00	45.18	8.83	Average

Frequency [MHz]	(P)	Limit AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Level AV [dB(uV/m)]	Level PK [dB(uV/m)]	Margin AV [dB]	Margin PK [dB]
1 125.00	H	54.00	74.00	36.90	44.14	17.10	29.86
1 125.00	V	54.00	74.00	35.73	42.81	18.27	31.19
3 216.00	H	54.00	74.00	45.18	48.55	8.83	25.45
3 216.00	V	54.00	74.00	43.03	47.44	10.97	26.56
3 249.00	H	54.00	74.00	43.86	47.42	10.14	26.58
3 249.00	V	54.00	74.00	41.98	46.88	12.02	27.12
3 282.00	H	54.00	74.00	43.18	47.25	10.82	26.75
3 282.00	V	54.00	74.00	41.29	46.55	12.71	27.45



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4.7 AC Conducted Emissions

Test Location
Shielded Room

Frequency Range of Measurement
150 kHz to 30 MHz

Instrument Settings
IF Band Width: 9 kHz

Test Procedures

The EUT was placed on a non-metallic table 0.8m above the metallic, grounded floor and 0.4m from the reference ground plane wall. The distance to other metallic surfaces was at least 0.8m.

Amplitude measurements were performed with a quasi-peak detector and an average detector.

Limit

- 15.207(a)

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56*	56 to 46*
0.5 ~ 5	56	46
5 ~ 30	60	50

* Decreases with the logarithm of the frequency.

Test Results
The requirements are:

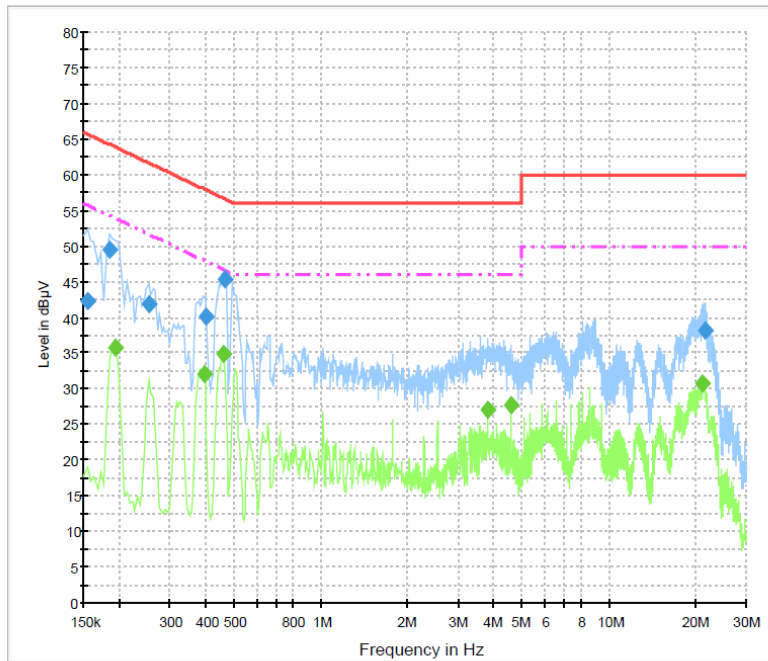
Complies

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
0.460 500	34.9	11.7	Average

Test Data

[LINE]

Class B_L1



Final Result 1

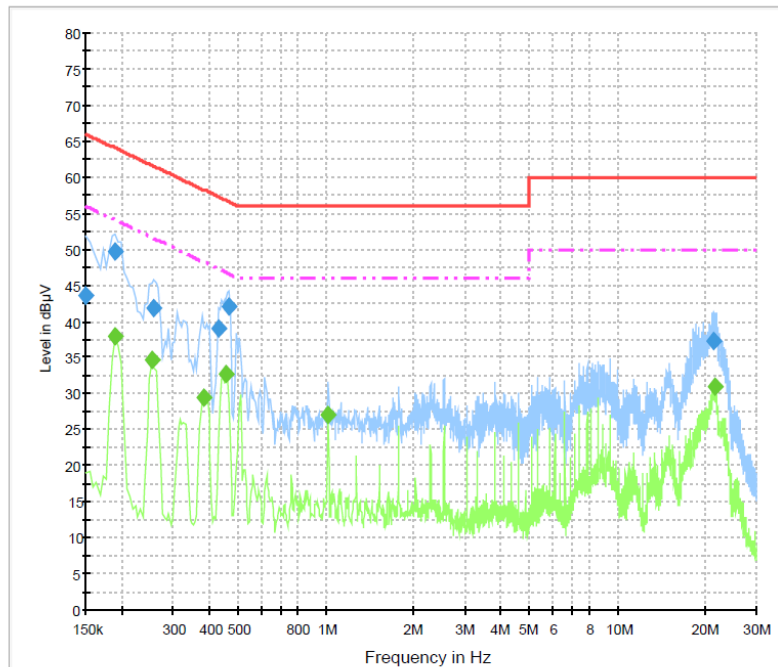
Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.154500	42.2	1000.0	9.000	On	L1	9.7	23.5	65.8
0.186000	49.5	1000.0	9.000	On	L1	9.9	14.7	64.2
0.253500	41.8	1000.0	9.000	On	L1	9.6	19.8	61.6
0.397500	40.1	1000.0	9.000	On	L1	9.9	17.8	57.9
0.465000	45.3	1000.0	9.000	On	L1	9.9	11.3	56.6
21.520500	38.2	1000.0	9.000	On	L1	10.0	21.8	60.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.195000	35.8	1000.0	9.000	On	L1	9.9	18.0	53.8
0.393000	32.0	1000.0	9.000	On	L1	9.9	16.0	48.0
0.460500	34.9	1000.0	9.000	On	L1	9.9	11.7	46.7
3.813000	27.1	1000.0	9.000	On	L1	9.8	18.9	46.0
4.578000	27.6	1000.0	9.000	On	L1	9.8	18.4	46.0
21.052500	30.8	1000.0	9.000	On	L1	10.0	19.2	50.0

[NEUTRAL]

Class B_N



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	43.6	1000.0	9.000	On	N	9.8	22.4	66.0
0.190500	49.8	1000.0	9.000	On	N	9.9	14.2	64.0
0.258000	41.9	1000.0	9.000	On	N	9.6	19.6	61.5
0.429000	39.0	1000.0	9.000	On	N	9.9	18.3	57.3
0.465000	42.1	1000.0	9.000	On	N	9.9	14.5	56.6
21.399000	37.3	1000.0	9.000	On	N	10.1	22.7	60.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.190500	38.0	1000.0	9.000	On	N	9.9	16.0	54.0
0.253500	34.7	1000.0	9.000	On	N	9.6	17.0	51.6
0.379500	29.3	1000.0	9.000	On	N	9.9	19.0	48.3
0.456000	32.7	1000.0	9.000	On	N	9.9	14.1	46.8
1.018500	27.0	1000.0	9.000	On	N	9.8	19.0	46.0
21.556500	30.9	1000.0	9.000	On	N	10.1	19.1	50.0



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APPENDIX A – Test Equipment Used For Tests

	Name of Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	Signal Analyzer	Agilent	N9020A	MY48011598	2016-11-01	2017-11-01
2	Signal Generator	Rohde & Schwarz	SMB100A	175528	2016-11-01	2017-11-01
3	EMI Test Receiver	Rohde & Schwarz	ESCI7	100814	2016-11-01	2017-11-01
4	Bilog Antenna	Schaffner	CBL6111C	2551	2016-05-13	2018-05-13
5	Active Loop Antenna	SCHWARZBECK	FMZB 1513	1513-125	2016-05-16	2018-05-16
6	6dB Attenuator	R&S	DNF	272.4110.50-2	2016-11-01	2017-11-01
7	6dB Attenuator	R&S	DNF	272.4110.50-1	2017-02-03	2018-02-03
8	AMPLIFIER	SONOMA	310	291721	2017-02-02	2018-02-02
9	EMI Test Receiver	Rohde & Schwarz	ESU40	100336	2017-05-12	2018-05-12
10	LISN	Rohde & Schwarz	ENV216	101760	2017-02-03	2018-02-03
11	Preamplifier	Agilent	8449B	3008A02011	2016-12-01	2017-12-01
12	Horn Antenna	ETS-Lindgren	3115	00078894	2015-09-02	2017-09-02
13	Horn Antenna	ETS-Lindgren	3116	00062504	2015-09-04	2017-09-04
14	Horn Antenna	ETS-Lindgren	3117	00154525	2015-09-02	2017-09-02
15	Band Reject Filter	Micro Tronics	BRM50702	G233	2017-02-03	2018-02-03
16	Band Reject Filter	Micro Tronics	BRM50716	G184	2017-02-03	2018-02-03
17	Temp&Humi Chamber	ESPEC CORP.	SH-241	92000872	2017-02-02	2018-02-02