



# FCC RF Test Report

**APPLICANT** : Lenovo (Shanghai) Electronics Technology Co., Ltd.  
**EQUIPMENT** : Portable Tablet Computer  
**BRAND NAME** : Lenovo  
**MODEL NAME** : Lenovo YT3-X90L  
**FCC ID** : O57YT3X90L  
**STANDARD** : FCC Part 15 Subpart E §15.407  
**CLASSIFICATION** : (NII) Unlicensed National Information Infrastructure

The product was received on Jan. 22, 2016 and testing was completed on Mar. 14, 2016. We, SPORTON INTERNATIONAL (KUNSHAN) INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL (KUNSHAN) INC., the test report shall not be reproduced except in full.

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**SPORTON INTERNATIONAL (KUNSHAN) INC.**  
**No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. China**



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## SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	2.1049 15.403(j)	RSS-247 Section 6	26dB & 99% Bandwidth	-	Pass	-
3.2	15.407(a)	RSS-247 Section 6	Maximum Conducted Output Power	FCC ≤24 dBm (depend on band) IC RSS-247 Section 6 Limit	Pass	-
3.3	15.407(a)	RSS-247 Section 6	Power Spectral Density	FCC ≤11 dBm (depend on band) IC RSS-247 Section 6 Limit	Pass	-
3.4	15.407(b)	RSS-247 Section 6	Unwanted Emissions	≤ -17, -27 dBm (depend on band)&15.209(a)	Pass	Under limit 4.33 dB at 5149.750 MHz
3.5	15.207	RSS-Gen 8.8	AC Conducted Emission	15.207(a)	Pass	Under limit 11.21 dB at 0.590 MHz
3.6	15.407(g)	-	Frequency Stability	Within Operation Band	Pass	-
3.7	15.407(c)	RSS-247 6.4(2)	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.8	15.203 & 15.407(a)	N/A	Antenna Requirement	N/A	Pass	-



# 1 General Description

## 1.1 Applicant

Lenovo (Shanghai) Electronics Technology Co., Ltd.

NO.68 BUILDING, 199 FENJU RD, China (Shanghai) Pilot Free Trade Zone, 200131, CHINA

## 1.2 Manufacturer

Lenovo PC HK Limited

23/F, Lincoln House, Taikoo Place 979 King's Road, Quarry Bay, Hong Kong

## 1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Portable Tablet Computer
Brand Name	Lenovo
Model Name	Lenovo YT3-X90L
FCC ID	O57YT3X90L
EUT supports Radios application	GPRS/EGPRS/WCDMA/HSPA/DC-HSDPA/ HSPA+(16QAM uplink is not supported)/LTE/ WLAN2.4GHz 802.11b/g/n HT20/ WLAN 5GHz 802.11a/n HT20/HT40/ WLAN 5GHz 802.11ac VHT20/VHT40/VHT80/ Bluetooth v3.0+EDR/Bluetooth v4.1 LE
IMEI Code	Conducted: 867232020006749 Radiation: 867232020170255 Conduction: 867232020169935
HW Version	Lenovo YT3-X90L
SW Version	YT3-X90L_151230
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.



### 1.4 Product Specification of Equipment Under Test

Product Specification subjective to this standard	
<b>Tx/Rx Frequency Range</b>	5180 MHz ~ 5240 MHz 5260 MHz ~ 5320 MHz 5500 MHz ~ 5700 MHz
<b>Maximum Output Power to Antenna</b>	<p><b>&lt;5180 MHz ~ 5240 MHz&gt;</b>  802.11a : 13.28 dBm / 0.0213 W  802.11n HT20 : 14.30 dBm / 0.0269 W  802.11n HT40 : 13.62 dBm / 0.0230 W  802.11ac VHT20 : 13.42 dBm / 0.0220 W  802.11ac VHT40 : 13.74 dBm / 0.0237 W  802.11ac VHT80 : 13.39 dBm / 0.0218 W</p> <p><b>&lt;5260 MHz ~ 5320 MHz&gt;</b>  802.11a : 13.26 dBm / 0.0212 W  802.11n HT20 : 14.28 dBm / 0.0268 W  802.11n HT40 : 13.55 dBm / 0.0226 W  802.11ac VHT20 : 13.37 dBm / 0.0217 W  802.11ac VHT40 : 13.58 dBm / 0.0228 W  802.11ac VHT80 : 13.30 dBm / 0.0214 W</p> <p><b>&lt;5500 MHz ~ 5700 MHz&gt;</b>  802.11a : 10.83 dBm / 0.0121 W  802.11n HT20 : 13.44 dBm / 0.0221 W  802.11n HT40 : 12.84 dBm / 0.0192 W  802.11ac VHT20 : 12.44 dBm / 0.0175 W  802.11ac VHT40 : 12.85 dBm / 0.0193 W  802.11ac VHT80 : 12.45 dBm / 0.0176 W</p>
<b>99% Occupied Bandwidth</b>	<p><b>&lt;5180 MHz ~ 5240 MHz&gt;</b>  802.11a : 18.53 MHz  802.11n HT20 : 19.33 MHz  802.11n HT40 : 36.86 MHz  802.11ac VHT20: 19.38 MHz  802.11ac VHT40 : 36.96 MHz  802.11ac VHT80 : 75.88 MHz</p> <p><b>&lt;5260 MHz ~ 5320 MHz&gt;</b>  802.11a : 18.63 MHz  802.11n HT20 : 19.33 MHz  802.11n HT40 : 36.86 MHz  802.11ac VHT20: 19.28 MHz  802.11ac VHT40 : 36.86 MHz  802.11ac VHT80 : 76.00 MHz</p> <p><b>&lt;5500 MHz ~ 5700 MHz&gt;</b>  802.11a : 18.63 MHz  802.11n HT20 : 19.38 MHz  802.11n HT40 : 36.76 MHz  802.11ac VHT20: 19.33 MHz  802.11ac VHT40 : 36.86 MHz  802.11ac VHT80 : 75.88 MHz</p>



<b>Antenna Type</b>	PIFA Antenna		
<b>Antenna Gain</b>	<p>&lt;5180 MHz ~ 5240 MHz&gt;:            Chain Port 1 : -1.80 dBi            Chain Port 2 : 0.80 dBi            &lt;5260 MHz ~ 5320 MHz&gt;:            Chain Port 1 : -1.60 dBi            Chain Port 2 : 0.80 dBi            &lt;5500 MHz ~ 5700 MHz&gt;:            Chain Port 1 : 0.10 dBi            Chain Port 2 : 1.20 dBi</p>		
<b>Type of Modulation</b>	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)		
<b>Antenna Function Description</b>		<b>Chain Port 1</b>	<b>Chain Port 2</b>
	802.11a	V	V
	802.11n/ac SISO	V	V
	802.11n/ac MIMO	V	V



### 1.5 Modification of EUT

No modifications are made to the EUT during all test items.

### 1.6 Testing Location

<b>Test Site</b>	SPORTON INTERNATIONAL (KUNSHAN) INC.			
<b>Test Site Location</b>	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. China TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958			
<b>Test Site No.</b>	<b>Sporton Site No.</b>			<b>FCC/IC Registration No.</b>
	TH01-KS	CO01-KS	03CH03-KS	306251/4086E

**Note:** The test site complies with ANSI C63.4 2014 requirement.

### 1.7 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart E
- FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r01
- FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- FCC KDB 644545 D03 Guidance for IEEE 802 11ac New Rules v01
- ANSI C63.10-2013

**Remark:**

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.





## 2 Test Configuration of Equipment Under Test

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conducted emission (150 kHz to 30 MHz) and radiated emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X plane) were recorded in this report.

The final configuration from all the combinations and the worst-case data rates were investigated by measuring the maximum power across all the data rates and modulation modes under section 2.2.

Based on the worst configuration found above, the RF power setting is set individually to meet FCC compliance limit for the final conducted and radiated tests shown in section 2.3.

### 2.1 Carrier Frequency Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5180- 5240 MHz Band 1 (U-NII-1)	36	5180	44	5220
	<b>38</b>	<b>5190</b>	<b>46</b>	<b>5230</b>
	40	5200	48	5240
	42	5210		

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5260-5320 MHz Band 2 (U-NII-2A)	52	5260	60	5300
	<b>54</b>	<b>5270</b>	<b>62</b>	<b>5310</b>
	56	5280	64	5320
	58	5290		

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5500-5700 MHz Band 3 (U-NII-2C)	100	5500	112	5560
	<b>102</b>	<b>5510</b>	116	5580
	104	5520	132	5660
	106	5530	<b>134</b>	<b>5670</b>
	108	5540	136	5680
	<b>110</b>	<b>5550</b>	140	5700

**Note:** The above Frequency and Channel in boldface were 802.11n HT40.



### 2.2 Pre-Scanned RF Power

Preliminary tests were performed in different data rate and data rate associated with the highest power were chosen for full test in the following tables.

WLAN 5GHz 802.11a Average Power (dBm)											
Power vs. Channel				Power vs. Data Rate							
Channel	Frequency (MHz)	Chain Port	Data Rate	Channel	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
			6Mbps								
CH 36	5180	1	11.36	CH 48	11.43	11.38	11.42	11.44	11.45	11.47	11.41
CH 44	5220	1	11.31								
CH 48	5240	1	11.49								
CH 52	5260	1	11.37								
CH 60	5300	1	11.28								
CH 64	5320	1	11.15								
CH 100	5500	1	10.25								
CH 116	5580	1	9.72								
CH 140	5700	1	9.61								
CH 36	5180	2	13.21	CH 52	13.08	13.15	13.19	13.20	13.23	13.24	13.21
CH 44	5220	2	13.16								
CH 48	5240	2	13.28								
CH 52	5260	2	13.26								
CH 60	5300	2	13.12								
CH 64	5320	2	13.21								
CH 100	5500	2	10.72								
CH 116	5580	2	10.83								
CH 140	5700	2	10.68								
CH 36	5180	2	13.21	CH 116	10.64	10.69	10.57	10.67	10.78	10.81	10.76
CH 44	5220	2	13.16								
CH 48	5240	2	13.28								
CH 52	5260	2	13.26								
CH 60	5300	2	13.12								
CH 64	5320	2	13.21								
CH 100	5500	2	10.72								
CH 116	5580	2	10.83								
CH 140	5700	2	10.68								



WLAN 5GHz 802.11n-HT20 Average Power (dBm)											
Power vs. Channel				Power vs. Data Rate							
Channel	Frequency (MHz)	Chain Port	MCS Index	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
			MCS0								
CH 36	5180	1	11.44	CH 48	11.28	11.30	11.44	11.45	11.46	11.48	11.47
CH 44	5220	1	11.37								
CH 48	5240	1	11.49								
CH 52	5260	1	11.32								
CH 60	5300	1	11.11								
CH 64	5320	1	11.24								
CH 100	5500	1	9.82								
CH 116	5580	1	9.20								
CH 140	5700	1	9.71								
CH 36	5180	2	12.23	CH 48	12.37	12.22	12.53	12.56	12.59	12.62	12.63
CH 44	5220	2	12.41								
CH 48	5240	2	12.65								
CH 52	5260	2	12.58								
CH 60	5300	2	12.53								
CH 64	5320	2	12.15								
CH 100	5500	2	10.68								
CH 116	5580	2	10.30								
CH 140	5700	2	10.21								
Channel	Frequency (MHz)	Chain Port	MCS Index	Channel	MCS9	MCS10	MCS11	MCS12	MCS13	MCS14	MCS15
			MCS8								
CH 36	5180	1+2(1)	11.17	CH 48	11.17	11.12	11.30	11.36	11.31	11.33	11.25
CH 44	5220	1+2(1)	11.01								
CH 48	5240	1+2(1)	11.37								
CH 52	5260	1+2(1)	11.21								
CH 60	5300	1+2(1)	10.90								
CH 64	5320	1+2(1)	10.81								
CH 100	5500	1+2(1)	10.10								
CH 116	5580	1+2(1)	9.40								
CH 140	5700	1+2(1)	9.49								
CH 36	5180	1+2(2)	11.00	CH 48	10.89	10.88	11.18	11.14	11.12	11.17	11.08
CH 44	5220	1+2(2)	10.92								
CH 48	5240	1+2(2)	11.20								
CH 52	5260	1+2(2)	11.33								
CH 60	5300	1+2(2)	11.09								
CH 64	5320	1+2(2)	11.18								
CH 100	5500	1+2(2)	10.73								
CH 116	5580	1+2(2)	10.45								
CH 140	5700	1+2(2)	10.24								
CH 36	5180	1+2	14.10	CH 48	14.04	14.01	14.25	14.27	14.22	14.26	14.18
CH 44	5220	1+2	13.98								
CH 48	5240	1+2	14.30								
CH 52	5260	1+2	14.28								
CH 60	5300	1+2	14.01								
CH 64	5320	1+2	14.01								
CH 100	5500	1+2	13.44								
CH 116	5580	1+2	12.97								
CH 140	5700	1+2	12.89								
CH 36	5180	1+2	14.10	CH 52	13.95	13.97	14.18	14.23	14.20	14.23	14.18
CH 44	5220	1+2	13.98								
CH 48	5240	1+2	14.30								
CH 52	5260	1+2	14.28								
CH 60	5300	1+2	14.01								
CH 64	5320	1+2	14.01								
CH 100	5500	1+2	13.44								
CH 116	5580	1+2	12.97								
CH 140	5700	1+2	12.89								
CH 36	5180	1+2	14.10	CH 100	13.14	13.17	13.41	13.41	13.38	13.38	13.41
CH 44	5220	1+2	13.98								
CH 48	5240	1+2	14.30								
CH 52	5260	1+2	14.28								
CH 60	5300	1+2	14.01								
CH 64	5320	1+2	14.01								
CH 100	5500	1+2	13.44								
CH 116	5580	1+2	12.97								
CH 140	5700	1+2	12.89								



WLAN 5GHz 802.11n-HT40 Average Power (dBm)											
Power vs. Channel				Power vs. Data Rate							
Channel	Frequency (MHz)	Chain Port	MCS Index	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
			MCS0								
CH 38	5190	1	10.87	CH 38	10.67	10.81	10.82	10.83	10.64	10.84	10.86
CH 46	5230	1	10.58								
CH 54	5270	1	10.41	CH 54	10.34	10.25	10.40	10.37	10.31	10.33	10.35
CH 62	5310	1	9.86								
CH 102	5510	1	9.22	CH 102	8.94	8.99	9.06	9.17	9.18	9.19	9.16
CH 110	5550	1	8.98								
CH 134	5670	1	8.30								
CH 38	5190	2	11.76	CH 46	11.74	11.77	11.91	11.79	11.85	11.87	11.88
CH 46	5230	2	11.95								
CH 54	5270	2	11.97	CH 54	11.87	11.74	11.94	11.95	11.83	11.88	11.93
CH 62	5310	2	11.73								
CH 102	5510	2	10.26	CH 102	10.05	10.03	10.20	10.16	10.15	10.17	10.24
CH 110	5550	2	10.17								
CH 134	5670	2	9.48								
Channel	Frequency (MHz)	Chain Port	MCS Index	Channel	MCS9	MCS10	MCS11	MCS12	MCS13	MCS14	MCS15
			MCS8								
CH 38	5190	1+2(1)	10.52	CH 46	10.46	10.40	10.62	10.63	10.57	10.61	10.54
CH 46	5230	1+2(1)	10.65								
CH 54	5270	1+2(1)	10.36	CH 54	10.16	10.18	10.29	10.35	10.27	10.30	10.33
CH 62	5310	1+2(1)	10.24								
CH 102	5510	1+2(1)	9.15	CH 102	9.13	9.06	9.14	9.12	9.10	9.11	9.07
CH 110	5550	1+2(1)	8.95								
CH 134	5670	1+2(1)	8.16								
CH 38	5190	1+2(2)	10.43	CH 46	10.34	10.32	10.52	10.46	10.47	10.54	10.44
CH 46	5230	1+2(2)	10.57								
CH 54	5270	1+2(2)	10.71	CH 54	10.49	10.51	10.69	10.50	10.54	10.65	10.53
CH 62	5310	1+2(2)	10.62								
CH 102	5510	1+2(2)	10.41	CH 102	10.22	10.21	10.33	10.34	10.16	10.22	10.07
CH 110	5550	1+2(2)	10.30								
CH 134	5670	1+2(2)	9.54								
CH 38	5190	1+2	13.49	CH 46	13.41	13.37	13.58	13.55	13.53	13.59	13.50
CH 46	5230	1+2	13.62								
CH 54	5270	1+2	13.55	CH 54	13.34	13.36	13.51	13.43	13.42	13.49	13.44
CH 62	5310	1+2	13.45								
CH 102	5510	1+2	12.84	CH 102	12.72	12.68	12.79	12.78	12.67	12.71	12.61
CH 110	5550	1+2	12.69								
CH 134	5670	1+2	11.92								



WLAN 5GHz 802.11ac VHT20 Average Power (dBm)												
Power vs. Channel				Power vs. Data Rate								
Channel	Frequency (MHz)	Chain Port	MCS Index	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8
			MCS0									
CH 36	5180	1	10.81	CH 36	10.57	10.41	10.59	10.71	10.67	10.75	10.77	10.72
CH 44	5220	1	10.44									
CH 48	5240	1	10.34									
CH 52	5260	1	10.31									
CH 60	5300	1	9.80									
CH 64	5320	1	9.45									
CH 100	5500	1	9.58									
CH 116	5580	1	9.18									
CH 140	5700	1	9.89									
CH 36	5180	2	11.57	CH 48	11.55	11.52	11.61	11.67	11.69	11.70	11.64	11.62
CH 44	5220	2	11.39									
CH 48	5240	2	11.72									
CH 52	5260	2	11.83									
CH 60	5300	2	11.60									
CH 64	5320	2	11.39									
CH 100	5500	2	10.05									
CH 116	5580	2	9.68									
CH 140	5700	2	9.64									
CH 36	5180	1+2(1)	10.42	CH 52	9.85	9.90	10.18	10.16	10.20	10.19	10.17	10.24
CH 44	5220	1+2(1)	10.27									
CH 48	5240	1+2(1)	10.53									
CH 52	5260	1+2(1)	10.25									
CH 60	5300	1+2(1)	9.91									
CH 64	5320	1+2(1)	9.98									
CH 100	5500	1+2(1)	8.82									
CH 116	5580	1+2(1)	8.18									
CH 140	5700	1+2(1)	8.64									
CH 36	5180	1+2(2)	10.15	CH 100	8.62	8.65	8.72	8.78	8.81	8.79	8.80	8.76
CH 44	5220	1+2(2)	10.10									
CH 48	5240	1+2(2)	10.28									
CH 52	5260	1+2(2)	10.46									
CH 60	5300	1+2(2)	10.13									
CH 64	5320	1+2(2)	10.23									
CH 100	5500	1+2(2)	9.96									
CH 116	5580	1+2(2)	9.55									
CH 140	5700	1+2(2)	9.53									
CH 36	5180	1+2	13.30	CH 48	13.13	13.09	13.22	13.32	13.38	13.27	13.40	13.39
CH 44	5220	1+2	13.20									
CH 48	5240	1+2	13.42									
CH 52	5260	1+2	13.37									
CH 60	5300	1+2	13.03									
CH 64	5320	1+2	13.12									
CH 100	5500	1+2	12.44									
CH 116	5580	1+2	11.93									
CH 140	5700	1+2	12.12									



WLAN 5GHz 802.11ac VHT40 Average Power (dBm)													
Power vs. Channel				Power vs. Data Rate									
Channel	Frequency (MHz)	Chain Port	MCS Index MCS0	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
CH 38	5190	1	10.99	CH 38	10.87	10.96	10.95	10.97	10.95	10.98	10.98	10.93	10.95
CH 46	5230	1	10.68										
CH 54	5270	1	10.59										
CH 62	5310	1	10.01										
CH 102	5510	1	9.19	CH 54	10.50	10.42	10.53	10.51	10.48	10.54	10.49	10.52	10.57
CH 110	5550	1	9.04										
CH 134	5670	1	8.23										
CH 38	5190	2	11.81										
CH 46	5230	2	12.01	CH 102	9.10	9.09	9.13	9.15	9.07	9.12	9.18	9.17	9.11
CH 54	5270	2	11.87										
CH 62	5310	2	12.05										
CH 102	5510	2	10.18										
CH 110	5550	2	10.11	CH 46	11.77	11.80	11.92	11.99	11.81	11.94	11.79	11.78	11.88
CH 134	5670	2	9.56										
CH 46	5230	2	11.87										
CH 54	5270	2	11.87										
CH 62	5310	2	12.05	CH 62	11.78	11.86	11.83	12.00	11.82	11.93	11.78	12.02	11.97
CH 102	5510	2	10.18										
CH 110	5550	2	10.11										
CH 134	5670	2	9.56										
CH 38	5190	1+2(1)	10.56	CH 102	10.08	10.06	10.10	10.16	10.14	10.11	10.08	10.13	10.15
CH 46	5230	1+2(1)	10.81										
CH 54	5270	1+2(1)	10.48										
CH 62	5310	1+2(1)	10.27										
CH 102	5510	1+2(1)	9.22	CH 46	10.61	10.68	10.74	10.78	10.71	10.62	10.55	10.63	10.70
CH 110	5550	1+2(1)	9.01										
CH 134	5670	1+2(1)	8.41										
CH 38	5190	1+2(2)	10.52										
CH 46	5230	1+2(2)	10.65	CH 54	10.15	10.13	10.38	10.33	10.47	10.42	10.30	10.44	10.45
CH 54	5270	1+2(2)	10.66										
CH 62	5310	1+2(2)	10.49										
CH 102	5510	1+2(2)	10.38										
CH 110	5550	1+2(2)	10.25	CH 102	9.09	9.00	9.15	9.17	9.18	9.14	9.06	9.16	9.20
CH 134	5670	1+2(2)	9.50										
CH 38	5190	1+2(2)	10.52										
CH 46	5230	1+2(2)	10.65										
CH 54	5270	1+2(2)	10.66	CH 46	10.48	10.33	10.59	10.43	10.56	10.54	10.64	10.55	10.63
CH 62	5310	1+2(2)	10.49										
CH 102	5510	1+2(2)	10.38										
CH 110	5550	1+2(2)	10.25										
CH 134	5670	1+2(2)	9.50	CH 54	10.57	10.49	10.47	10.51	10.62	10.59	10.63	10.60	10.64
CH 38	5190	1+2	13.55										
CH 46	5230	1+2	13.74										
CH 54	5270	1+2	13.58										
CH 62	5310	1+2	13.39	CH 102	10.20	10.22	10.33	10.19	10.25	10.27	10.35	10.27	10.31
CH 102	5510	1+2	12.85										
CH 110	5550	1+2	12.68										
CH 134	5670	1+2	12.00										
CH 38	5190	1+2	13.55	CH 46	13.56	13.52	13.67	13.62	13.65	13.59	13.61	13.60	13.67
CH 46	5230	1+2	13.74										
CH 54	5270	1+2	13.58										
CH 62	5310	1+2	13.39										
CH 102	5510	1+2	12.85	CH 54	13.37	13.32	13.43	13.43	13.56	13.52	13.48	13.53	13.55
CH 110	5550	1+2	12.68										
CH 134	5670	1+2	12.00										
CH 38	5190	1+2	13.55										
CH 46	5230	1+2	13.74	CH 102	12.69	12.66	12.79	12.72	12.76	12.75	12.77	12.76	12.80
CH 54	5270	1+2	13.58										
CH 62	5310	1+2	13.39										
CH 102	5510	1+2	12.85										
CH 110	5550	1+2	12.68										
CH 134	5670	1+2	12.00										



WLAN 5GHz 802.11ac VHT80 Average Power (dBm)													
Power vs. Channel				Power vs. Data Rate									
Channel	Frequency (MHz)	Chain Port	MCS Index	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
			MCS0										
CH 42	5210	1	10.53	CH 42	10.35	10.39	10.43	10.46	10.45	10.50	10.51	10.45	10.52
CH 58	5290	1	9.99	CH 58	9.82	9.80	9.88	9.94	9.92	9.97	9.95	9.96	9.93
CH 106	5530	1	8.82	CH 106	8.69	8.60	8.74	8.81	8.78	8.80	8.76	8.77	8.77
CH 122	5610	1	8.22										
CH 42	5210	2	12.43	CH 42	12.16	12.22	12.34	12.37	12.33	12.39	12.41	12.38	12.40
CH 58	5290	2	11.68	CH 58	11.33	11.46	11.54	11.61	11.66	11.59	11.58	11.57	11.62
CH 106	5530	2	10.10	CH 106	9.78	9.85	10.02	10.07	9.94	9.91	10.08	10.08	10.05
CH 122	5610	2	9.56										
CH 42	5210	1+2(1)	10.41	CH 42	10.05	10.23	10.25	10.30	10.37	10.38	10.32	10.39	10.40
CH 58	5290	1+2(1)	10.14	CH 58	9.77	9.82	9.89	9.93	10.01	10.08	10.10	10.12	10.09
CH 106	5530	1+2(1)	8.83	CH 106	8.53	8.52	8.73	8.76	8.77	8.81	8.74	8.78	8.79
CH 122	5610	1+2(1)	7.97										
CH 42	5210	1+2(2)	10.35	CH 42	9.92	9.98	10.19	10.22	10.21	10.25	10.28	10.32	10.34
CH 58	5290	1+2(2)	10.43	CH 58	9.93	9.96	10.30	10.33	10.35	10.37	10.41	10.29	10.31
CH 106	5530	1+2(2)	9.98	CH 106	9.62	9.83	9.84	9.87	9.93	9.89	9.85	9.96	9.94
CH 122	5610	1+2(2)	9.55										
CH 42	5210	1+2	13.39	CH 42	13.00	13.12	13.23	13.27	13.30	13.32	13.31	13.36	13.38
CH 58	5290	1+2	13.30	CH 58	12.86	12.90	13.11	13.15	13.19	13.23	13.27	13.21	13.21
CH 106	5530	1+2	12.45	CH 106	12.12	12.23	12.33	12.36	12.40	12.39	12.34	12.42	12.41
CH 122	5610	1+2	11.84										

**Note:** Chain Port 1+2 is a calculated result from sum of the power Chain Port 1+2(1) and Chain Port 1+2(2).



### 2.3 Test Mode

Final test mode of conducted test items and radiated spurious emissions are considering the modulation and worse data rates from the power table described in section 2.2.

Modulation	Data Rate
802.11a	6 Mbps
802.11n HT20	MCS0/MCS8
802.11n HT40	MCS0/MCS8
802.11ac VHT20	MCS0
802.11ac VHT40	MCS0
802.11ac VHT80	MCS0

Test Cases	
<b>AC Conducted Emission</b>	Mode 1 : GSM850 Idle + Bluetooth Link + WLAN (5GHz) Link + Earphone + USB Cable (Charging from Adapter 12V) + Battery Mode 2 : <b>GSM850 Idle + Bluetooth Link + WLAN (5GHz) Link + Earphone + USB Cable (Charging from Adapter 5.2V) + Battery</b>
<b>Remark:</b> 1. For Radiated TCs, the tests were performed with adapter, earphone, Battery and USB cable. 2. The worst case of conducted emission is mode 2; only the test data of it was reported.	





Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5700MHz
		802.11a	802.11a	802.11a
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140

Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5700MHz
		802.11n HT20	802.11n HT20	802.11n HT20
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140

Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5700MHz
		802.11n HT40	802.11n HT40	802.11n HT40
L	Low	38	54	102
M	Middle	-	-	110
H	High	46	62	134

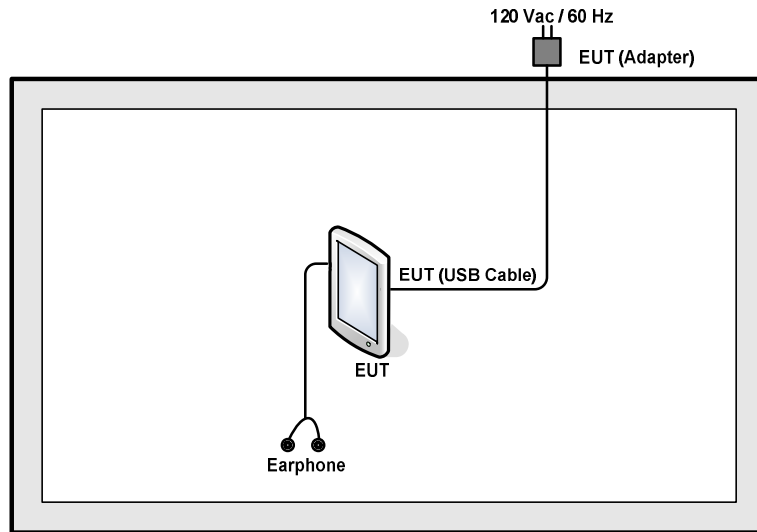
Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5700MHz
		802.11ac VHT20	802.11ac VHT20	802.11ac VHT20
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140

Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5700MHz
		802.11ac VHT40	802.11ac VHT40	802.11ac VHT40
L	Low	38	54	102
M	Middle	-	-	110
H	High	46	62	134

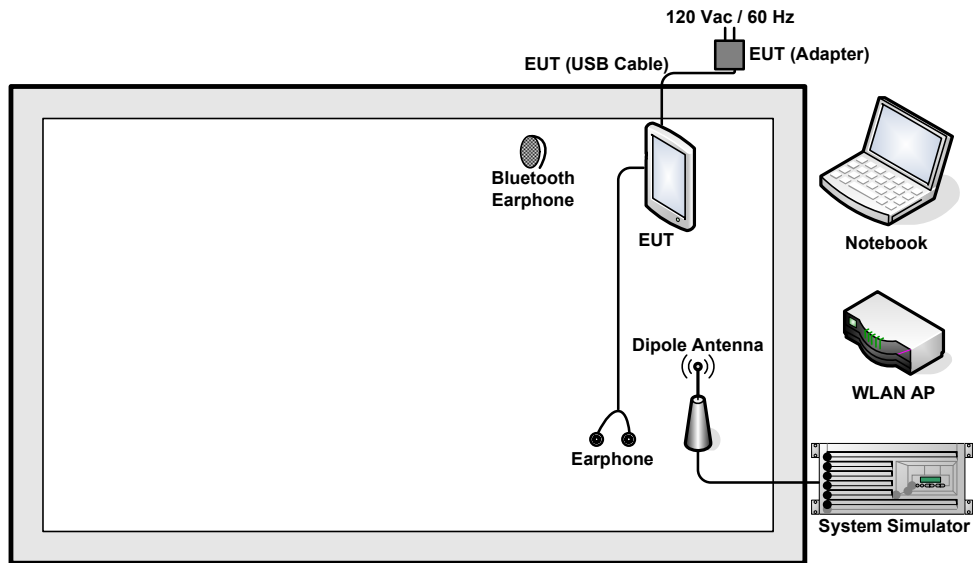
Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5700MHz
		802.11ac VHT80	802.11ac VHT80	802.11ac VHT80
L	Low	-	-	106
M	Middle	42	58	-
H	High	-	-	122

## 2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>





## 2.5 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Notebook	Lenovo	G480	N/A	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
2.	WLAN AP	LINKSYS	WRT600N	Q87-WRT600NV11	N/A	Unshielded, 1.8 m
3.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
4.	Bluetooth Earphone	Lenovo	LBH 505	FCC DoC	N/A	N/A
5.	DC Power Supply	GW INSTEK	GPD-2303S	N/A	N/A	Unshielded, 1.8 m
6.	Earphone	Lenovo	LH102	N/A	Unshielded,1.2m	N/A
7.	Earphone	Lenovo	LH100	N/A	Unshielded,1.2m	N/A

## 2.6 EUT Operation Test Setup

For WLAN RF test items, an engineering test program was provided and enabled to make EUT continuously transmit/receive.

For AC power line conducted emissions, the EUT was set to connect with the Notebook under large package sizes transmission.

## 2.7 Measurement Results Explanation Example

**For all conducted test items:**

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

Example:

The spectrum analyzer offset is derived from RF cable loss.

Offset = RF cable loss.

Following shows an offset computation example with cable loss 7.0 dB.

$$\begin{aligned} \text{Offset (dB)} &= \text{RF cable loss(dB)}. \\ &= 7.0 \text{ (dB)} \end{aligned}$$

### 3 Test Result

#### 3.1 26dB & 99% Occupied Bandwidth Measurement

##### 3.1.1 Description of 26dB & 99% Occupied Bandwidth

This section is for reporting purpose only.

There is no restriction limits for bandwidth.

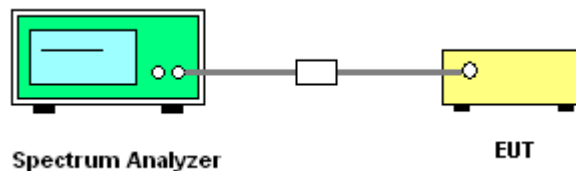
##### 3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

##### 3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r01. Section C) Emission bandwidth
2. Set RBW = approximately 1% of the emission bandwidth.
3. Set the VBW > RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 26 dB down from the peak 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%.
7. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1MHz and set the Video bandwidth (VBW)  $\geq 3 * RBW$ .
8. Measure and record the results in the test report.

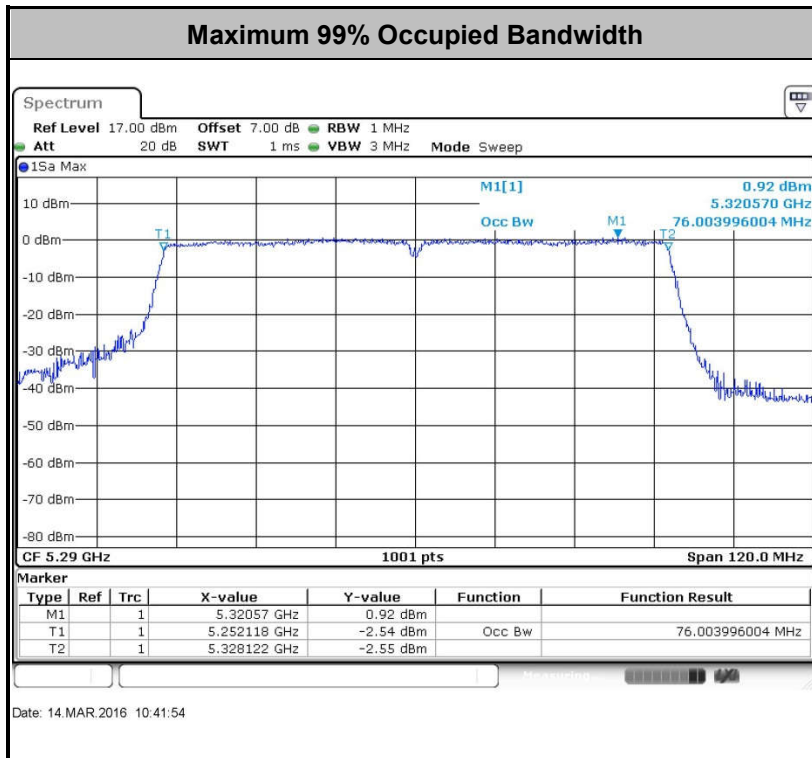
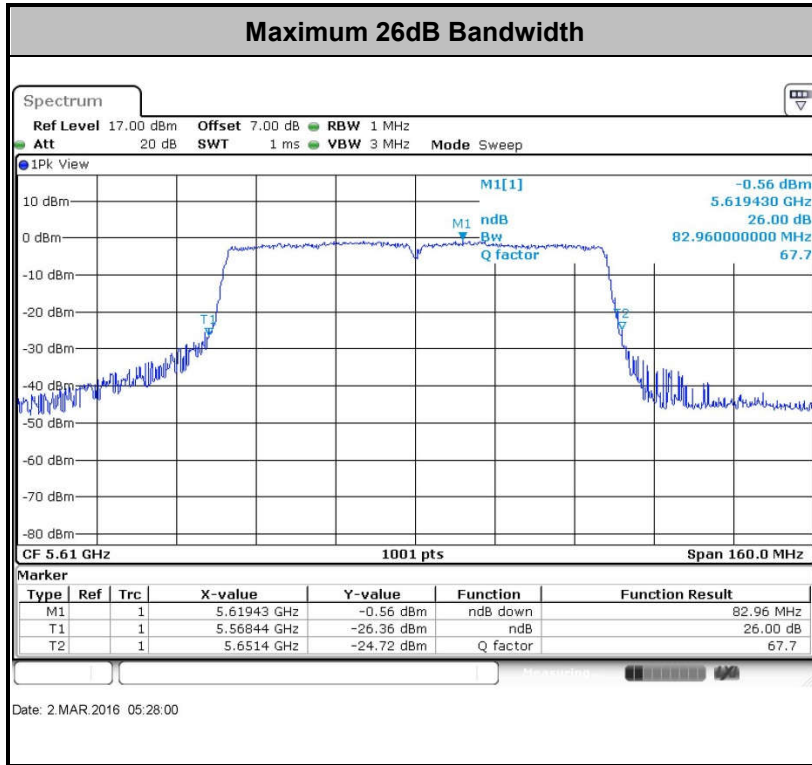
##### 3.1.4 Test Setup





### 3.1.5 Test Result of 26dB & 99% Occupied Bandwidth Plots

Please refer to Appendix A.



Note : The occupied channel bandwidth is maintained within the band of operation for all of the modulations.



## 3.2 Maximum Conducted Output Power Measurement

### 3.2.1 Limit of Maximum Conducted Output Power

<FCC 14-30 CFR 15.407>

For mobile and portable client devices in the 5.15–5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW.

For the 5.25–5.35 GHz and 5.47–5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or  $11 \text{ dBm} + 10 \log B$ , where B is the 26 dB emission bandwidth in megahertz.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Note that U-NII-2 band, devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

### 3.2.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

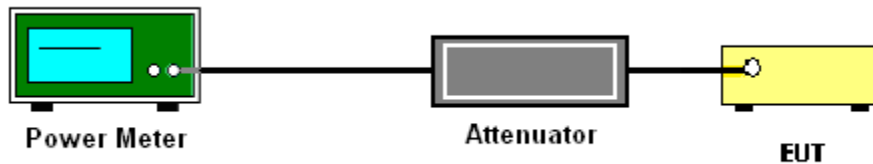
### 3.2.3 Test Procedures

The testing follows Method PM of FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r01.

Method PM (Measurement using an RF average power meter):

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit continuously with a consistent duty cycle at its maximum power control level.
3. Measure the average power of the transmitter, and the average power is corrected with duty factor,  $10 \log(1/x)$ , where  $x$  is the duty cycle.

### 3.2.4 Test Setup



### 3.2.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.



### 3.3 Power Spectral Density Measurement

#### 3.3.1 Limit of Power Spectral Density

<FCC 14-30 CFR 15.407>

For mobile and portable client devices in the 5.15–5.25 GHz band, the maximum power spectral density shall not exceed 11dBm in any 1 megahertz band.

For the 5.25–5.35 GHz and 5.47–5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### 3.3.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.



### 3.3.3 Test Procedures

The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r01.  
Section F) Maximum power spectral density.

#### # Method SA-2 #

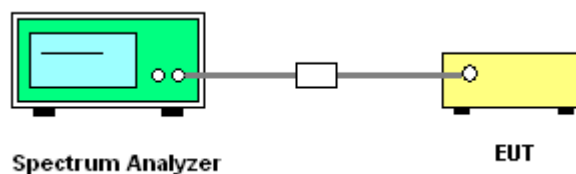
(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

1. The testing follows Method SA-2 of FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r01.
  - Measure the duty cycle.
  - Set span to encompass the entire emission bandwidth (EBW) of the signal.
  - Set RBW = 1 MHz.
  - Set VBW  $\geq$  3 MHz.
  - Number of points in sweep  $\geq$  2 Span / RBW.
  - Sweep time = auto.
  - Detector = RMS
  - Trace average at least 100 traces in power averaging mode.
  - 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. For example, add  $10 \log(1/0.25) = 6$  dB if the duty cycle is 25 percent.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.
4. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

Method (1): Measure and sum the spectra across the outputs.

The total final Power Spectral Density is from a device with 2 transmitter outputs. The spectrum measurements of the individual outputs are all performed with the same span and number of points, the spectrum value in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 to obtain the value for the first frequency bin of the summed spectrum.

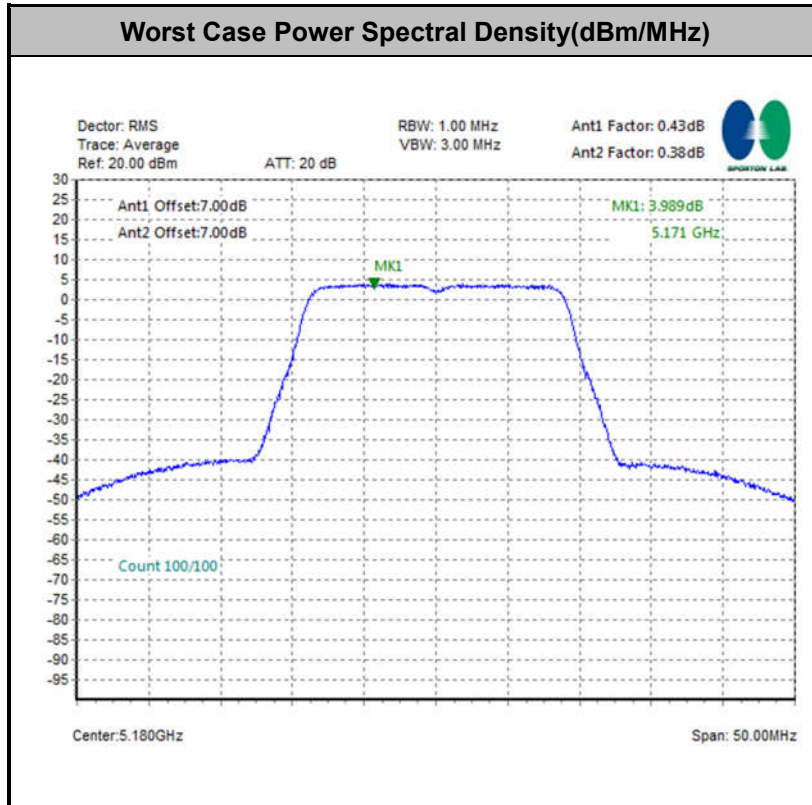
### 3.3.4 Test Setup





### 3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.





### 3.4 Unwanted Radiated Emission Measurement

This section as specified in FCC Part 15.407(b) is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement. The unwanted emissions shall comply with 15.407(b)(1) to (6), and restricted bands per FCC Part15.205.

#### 3.4.1 Limit of Unwanted Emissions

(1) For transmitters operating in the 5150-5250 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of -27dBm/MHz.

For transmitters operating in the 5250-5350 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5250-5350 MHz band that generate emissions in the 5150-5250 MHz band must meet all applicable technical requirements for operation in the 5150-5250 MHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5150-5250 MHz band.

For transmitters operating in the 5470-5600 MHz and 5650-5725MHz band: all emissions outside of the 5470-5600 MHz and 5650-5725MHz band shall not exceed an EIRP of -27 dBm/MHz.

(2) Unwanted spurious emissions fallen in restricted bands per FCC Part15.205 shall comply with the general field strength limits set forth in § 15.209 as below table

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

**Note:** The following formula is used to convert the EIRP to field strength.

$$E = \frac{1000000\sqrt{30P}}{3} \mu\text{V/m, where P is the eirp (Watts)}$$



EIRP (dBm)	Field Strength at 3m (dBµV/m)
-17	78.3
- 27	68.3

(3) KDB789033 D02 v01r01 G)2)c) As specified in 15.407(b), emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz (or -17 dBm/MHz as specified in 15.407(b)(4)). However, an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit.

### 3.4.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

### 3.4.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01. Section G) Unwanted emissions measurement.

(1) Procedure for Unwanted Emissions Measurements Below 1000MHz

- RBW = 120 kHz
- VBW = 300 kHz
- Detector = Peak
- Trace mode = max hold

(2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz

- RBW = 1 MHz
- VBW ≥ 3 MHz
- Detector = Peak
- Sweep time = auto
- Trace mode = max hold

(3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz

- RBW = 1 MHz
- VBW = 10 Hz, when duty cycle is no less than 98 percent.
- VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

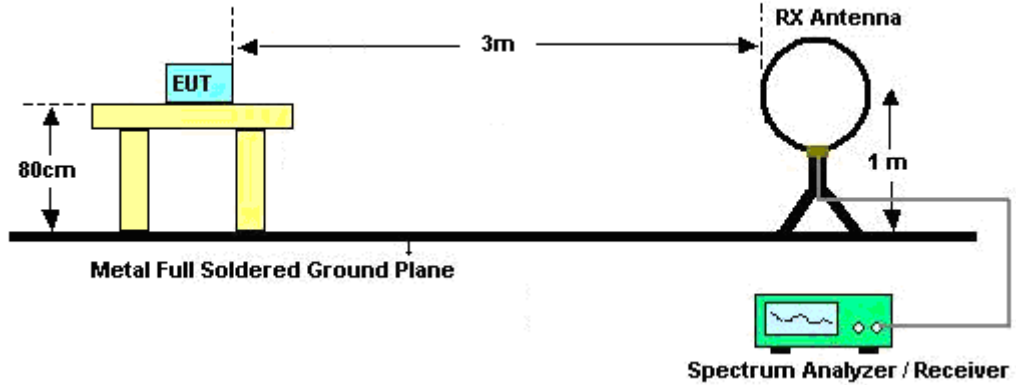


Antenna	Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
1	802.11a	93.377	1.438	0.695	1kHz
2	802.11a	93.464	1.430	0.699	1kHz
1+2	802.11n HT20	91.544	0.996	1.004	3kHz
1+2	802.11n HT40	83.333	0.500	2.000	3kHz
1+2	802.11ac VHT20	87.282	0.700	1.429	3kHz
1+2	802.11ac VHT40	78.696	0.362	2.762	3kHz
1+2	802.11ac VHT80	65.753	0.192	5.208	10kHz

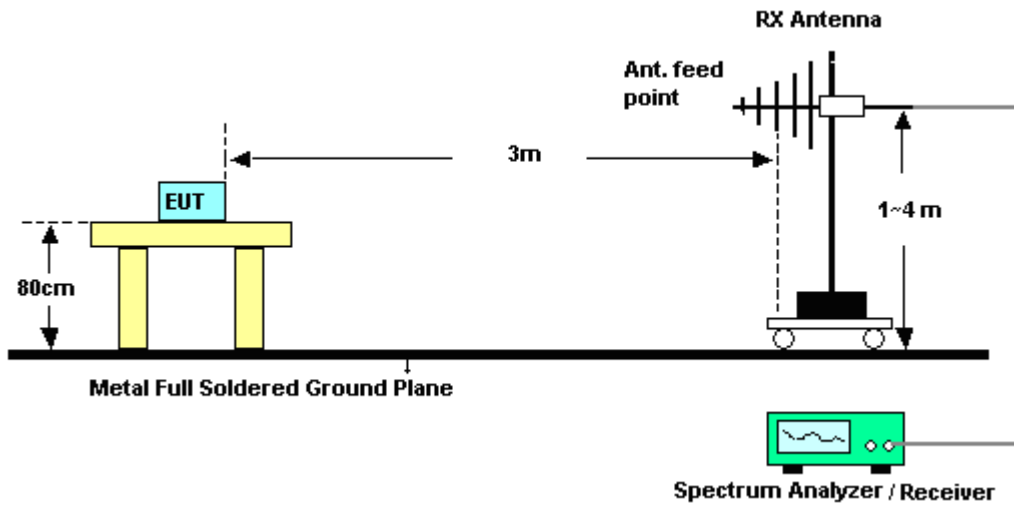
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

### 3.4.4 Test Setup

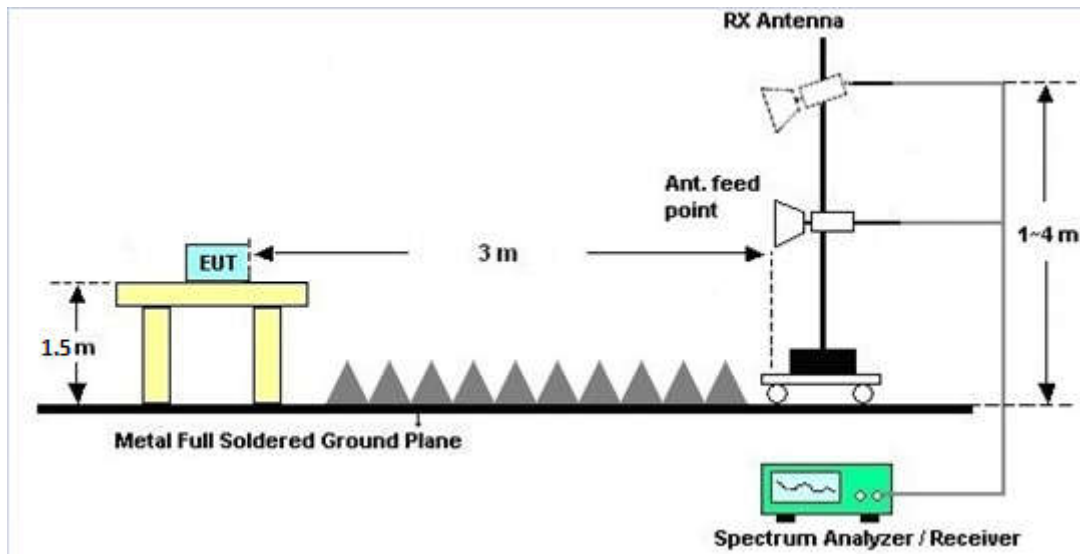
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



### 3.4.5 Test Results of Radiated Emissions (9 kHz ~ 30 MHz)

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

### 3.4.6 Test Result of Radiated Band Edges

Please refer to Appendix B.

### 3.4.7 Test Result of Unwanted Radiated Emission (30MHz ~ 10th Harmonic)

Please refer to Appendix B.



### 3.5 AC Conducted Emission Measurement

#### 3.5.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of emission (MHz)	Conducted limit (dB $\mu$ V)	
	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.

#### 3.5.2 Measuring Instruments

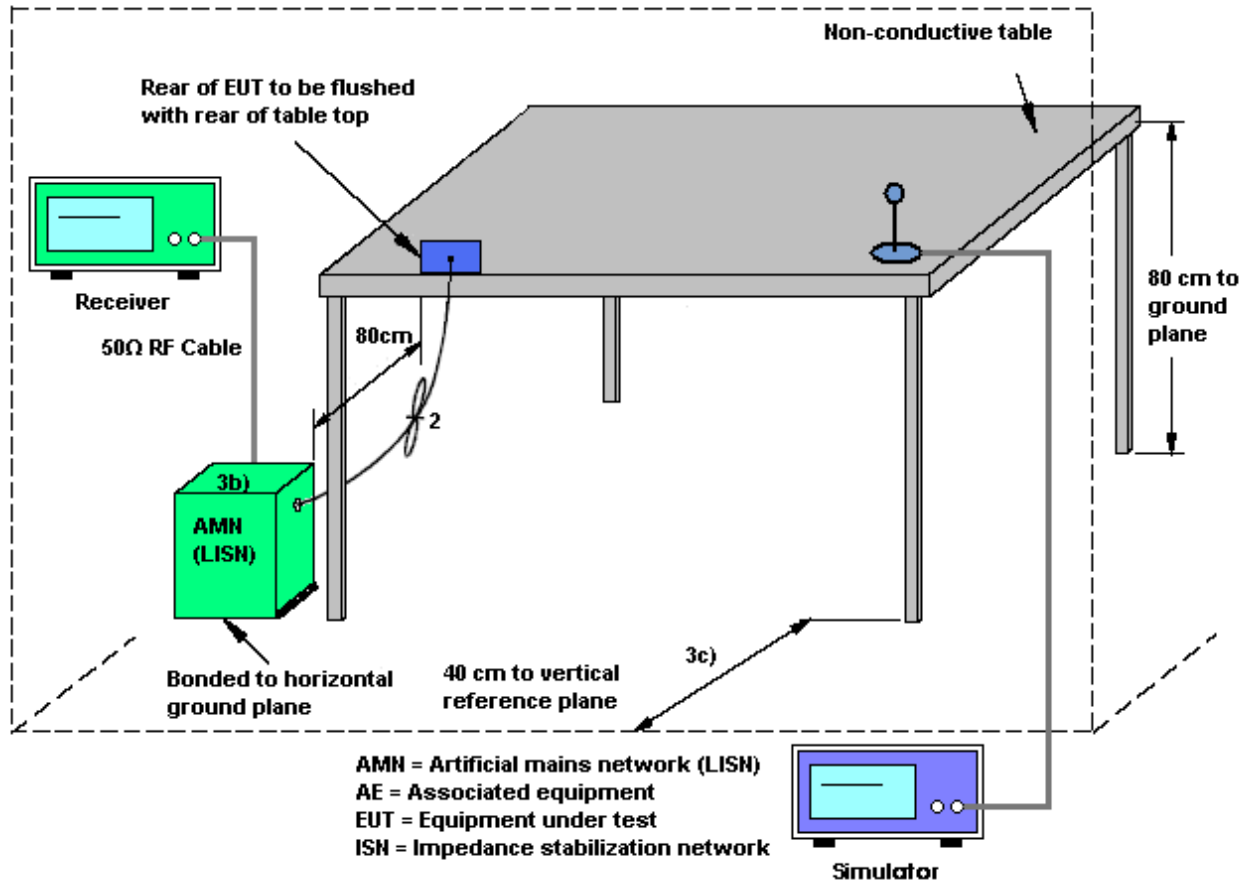
The measuring equipment is listed in the section 4 of this test report.

#### 3.5.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.



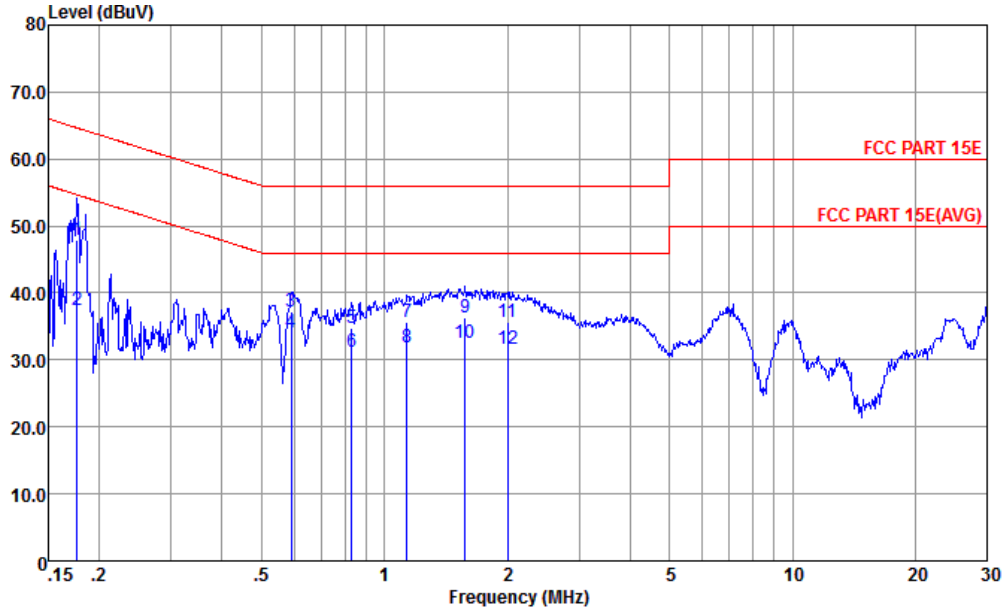
### 3.5.4 Test Setup





3.5.5 Test Result of AC Conducted Emission

Test Mode :	Mode 2	Temperature :	22~24°C
Test Engineer :	Amos Zhang	Relative Humidity :	44~46%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM850 Idle + Bluetooth Link + WLAN (5GHz) Link + Earphone + USB Cable (Charging from Adapter 5.2V) + Battery		

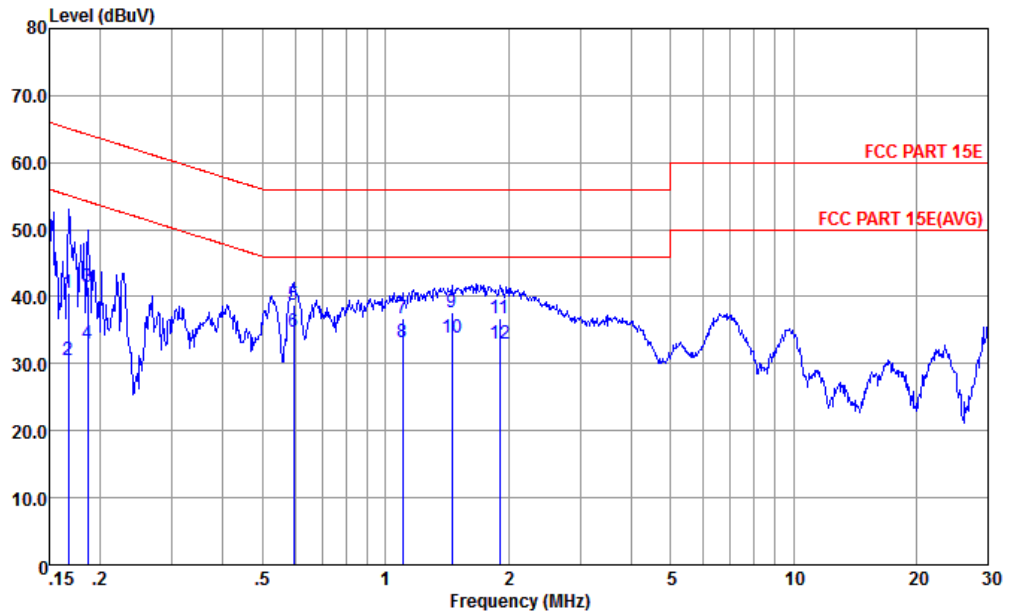


Site : CO01-KS  
 Condition : FCC PART 15E LISN-L-20151024 LINE  
 mode : Mode 2  
 : 867232020169935

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.18	47.97	-16.67	64.64	37.50	0.35	10.12	QP
2	0.18	37.37	-17.27	54.64	26.90	0.35	10.12	Average
3	0.59	37.19	-18.81	56.00	26.80	0.23	10.16	QP
4 *	0.59	34.19	-11.81	46.00	23.80	0.23	10.16	Average
5	0.83	34.69	-21.31	56.00	24.31	0.24	10.14	QP
6	0.83	31.29	-14.71	46.00	20.91	0.24	10.14	Average
7	1.14	35.67	-20.33	56.00	25.29	0.24	10.14	QP
8	1.14	31.87	-14.13	46.00	21.49	0.24	10.14	Average
9	1.58	36.24	-19.76	56.00	25.90	0.20	10.14	QP
10	1.58	32.54	-13.46	46.00	22.20	0.20	10.14	Average
11	2.00	35.62	-20.38	56.00	25.30	0.18	10.14	QP
12	2.00	31.62	-14.38	46.00	21.30	0.18	10.14	Average



Test Mode :	Mode 2	Temperature :	22~24°C
Test Engineer :	Amos Zhang	Relative Humidity :	44~46%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM850 Idle + Bluetooth Link + WLAN (5GHz) Link + Earphone + USB Cable (Charging from Adapter 5.2V) + Battery		



Site : CO01-KS  
 Condition : FCC PART 15E LISN-N-20151024 NEUTRAL  
 mode : Mode 2  
 : 867232020169935 ...

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.17	40.52	-24.60	65.12	30.10	0.30	10.12	QP
2	0.17	30.62	-24.50	55.12	20.20	0.30	10.12	Average
3	0.19	41.53	-22.67	64.20	31.10	0.31	10.12	QP
4	0.19	33.03	-21.17	54.20	22.60	0.31	10.12	Average
5	0.59	38.69	-17.31	56.00	28.20	0.33	10.16	QP
6 *	0.59	34.79	-11.21	46.00	24.30	0.33	10.16	Average
7	1.10	36.81	-19.19	56.00	26.30	0.37	10.14	QP
8	1.10	33.11	-12.89	46.00	22.60	0.37	10.14	Average
9	1.46	37.71	-18.29	56.00	27.19	0.38	10.14	QP
10	1.46	33.81	-12.19	46.00	23.29	0.38	10.14	Average
11	1.91	36.72	-19.28	56.00	26.20	0.38	10.14	QP
12	1.91	33.02	-12.98	46.00	22.50	0.38	10.14	Average

## 3.6 Frequency Stability Measurement

### 3.6.1 Limit of Frequency Stability

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

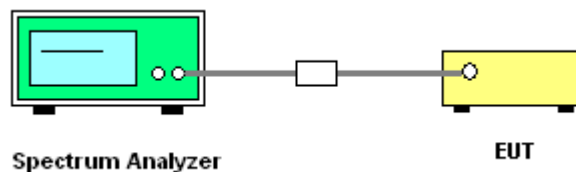
### 3.6.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

### 3.6.3 Test Procedures

1. To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.
2. The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10dB lower than the measured peak value.
3. The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

### 3.6.4 Test Setup



### 3.6.5 Test Result of Frequency Stability

Please refer to Appendix A.



## **3.7 Automatically Discontinue Transmission**

### **3.7.1 Limit of Automatically Discontinue Transmission**

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.

### **3.7.2 Measuring Instruments**

The measuring equipment is listed in the section 4 of this test report.

### **3.7.3 Test Result of Automatically Discontinue Transmission**

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.



### 3.8 Antenna Requirements

#### 3.8.1 Standard Applicable

According to FCC 47 CFR Section 15.407(a)(1)(2) ,if transmitting antenna directional gain is greater than 6 dBi, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### 3.8.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

#### 3.8.3 Antenna Gain

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

Directional gain =  $G_{ANT}$  + Array Gain, where Array Gain is as follows.

For power spectral density (PSD) measurements on all devices,

Array Gain =  $10 \log(N_{ANT}/N_{SS}=1)$  dB.

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for  $N_{ANT} \leq 4$ .

Directional gain may be calculated by using the formulas applicable to equal gain antennas with  $G_{ANT}$  set equal to the gain of the antenna having the highest gain;

The EUT supports CDD mode.

The power and PSD limit should be modified if the directional gain of EUT is over 6 dBi,

The directional gain "DG" is calculated as following table.

	Ant 1 (dBi)	Ant 2 (dBi)	DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
Band I	-1.80	0.80	0.80	2.61	0.00	0.00
Band II	-1.60	0.80	0.80	2.69	0.00	0.00
Band III	0.10	1.20	1.20	3.68	0.00	0.00

$Power\ Limit\ Reduction = DG(Power) - 6dBi, (min = 0)$

$PSD\ Limit\ Reduction = DG(PSD) - 6dBi, (min = 0)$



## 4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV30	101338	9kHz~30GHz	May 04, 2015	Mar. 02, 2016~ Mar. 14, 2016	May 03, 2016	Conducted (TH01-KS)
Pulse Power Sensor	Anritsu	MA2411B	0917070	30MHz~40GHz	Jan. 20, 2016	Mar. 02, 2016~ Mar. 14, 2016	Jan. 19, 2017	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 20, 2016	Mar. 02, 2016~ Mar. 14, 2016	Jan. 19, 2017	Conducted (TH01-KS)
Thermal Chamber	Ten Billion	TTC-B3S	TBN-960502	-40~+150°C	Oct. 24, 2015	Mar. 02, 2016~ Mar. 14, 2016	Oct. 23, 2016	Conducted (TH01-KS)
EMI Test Receiver	R&S	ESR7	101403	9kHz~7GHz; Max 30dBm	Sep. 10, 2015	Mar. 08, 2016	Sep. 09, 2016	Radiation (03CH03-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150244	10Hz-44GHz	Jun. 05, 2015	Mar. 08, 2016	Jun. 04, 2016	Radiation (03CH03-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Nov. 07, 2015	Mar. 08, 2016	Nov. 06, 2016	Radiation (03CH03-KS)
Bilog Antenna	TeseQ	CBL6112D	23182	25MHz-2GHz	Jan. 16, 2016	Mar. 08, 2016	Jan. 15, 2017	Radiation (03CH03-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1356	1GHz~18GHz	Jun. 25, 2015	Mar. 08, 2016	Jun. 24, 2016	Radiation (03CH03-KS)
SHF-EHF Horn	com-power	AH-840	101070	18Ghz-40Ghz	Oct. 10, 2015	Mar. 08, 2016	Oct. 09, 2016	Radiation (03CH03-KS)
Amplifier	Burgeon	BPA-530	102212	0.01MHz-3000M Hz	Aug. 10, 2015	Mar. 08, 2016	Aug. 09, 2016	Radiation (03CH03-KS)
Amplifier	Agilent	8449B	3008A02370	1GHz~26.5GHz	Oct. 24, 2015	Mar. 08, 2016	Oct. 23, 2016	Radiation (03CH03-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Mar. 08, 2016	NCR	Radiation (03CH03-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Mar. 08, 2016	NCR	Radiation (03CH03-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Mar. 08, 2016	NCR	Radiation (03CH03-KS)
EMI Receiver	R&S	ESC17	100768	9kHz~7GHz	May 04, 2015	Jan. 27, 2016	May 03, 2016	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060103	9kHz~30MHz	Oct. 24, 2015	Jan. 27, 2016	Oct. 23, 2016	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060105	9kHz~30MHz	Oct. 24, 2015	Jan. 27, 2016	Oct. 23, 2016	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Oct. 24, 2015	Jan. 27, 2016	Oct. 23, 2016	Conduction (CO01-KS)

NCR: No Calibration Required



## 5 Uncertainty of Evaluation

### Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	2.3 dB
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### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	4.5 dB
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## **Appendix A. Conducted Test Results**

Test Engineer:	Issac Song	Temperature:	24~25	°C
Test Date:	2016/3/2~2016/3/14	Relative Humidity:	49~51	%

**TEST RESULTS DATA**  
**26dB and 99% OBW**

Band I													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)		26 dB Bandwidth (MHz)		IC 99% Bandwidth Power Limit (dBm)		IC 99% Bandwidth EIRP Limit (dBm)		Note
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	36	5180	18.53	18.48	22.68	22.78	-	-	22.68	22.67	
11a	6Mbps	1	44	5220	18.53	18.53	22.88	22.88	-	-	22.68	22.68	
11a	6Mbps	1	48	5240	17.23	17.33	19.88	20.03	-	-	22.36	22.39	
HT20	MCS0	1	36	5180	19.13	19.33	22.93	22.88	-	-	22.82	22.86	
HT20	MCS0	1	44	5220	19.33	19.23	23.03	22.88	-	-	22.86	22.84	
HT20	MCS0	1	48	5240	17.78	17.78	20.38	20.33	-	-	22.50	22.50	
HT40	MCS0	1	38	5190	36.76	36.66	41.09	41.09	-	-	23.01	23.01	
HT40	MCS0	1	46	5230	36.66	36.86	41.00	41.00	-	-	23.01	23.01	
VHT20	MCS0	1	36	5180	19.18	19.23	22.88	22.98	-	-	22.83	22.84	
VHT20	MCS0	1	44	5220	19.33	19.38	23.18	22.98	-	-	22.86	22.87	
VHT20	MCS0	1	48	5240	17.78	17.83	20.38	20.23	-	-	22.50	22.51	
VHT40	MCS0	1	38	5190	36.66	36.66	41.27	40.82	-	-	23.01	23.01	
VHT40	MCS0	1	46	5230	36.66	36.76	40.82	41.09	-	-	23.01	23.01	
VHT80	MCS0	1	42	5210	75.88	75.76	82.16	82.00	-	-	23.01	23.01	
HT20	MCS8	2	36	5180	19.13	18.88	22.68	22.73	-	-	22.76		
HT20	MCS8	2	44	5220	19.13	18.93	22.98	22.88	-	-	22.77		
HT20	MCS8	2	48	5240	17.73	17.83	20.28	20.23	-	-	22.49		
HT40	MCS8	2	38	5190	36.56	36.66	41.09	40.91	-	-	23.01		
HT40	MCS8	2	46	5230	36.76	36.66	41.09	40.82	-	-	23.01		
VHT20	MCS0	2	36	5180	19.23	18.88	22.83	22.73	-	-	22.76		
VHT20	MCS0	2	44	5220	19.28	18.93	23.13	22.73	-	-	22.77		
VHT20	MCS0	2	48	5240	17.78	17.83	20.38	20.23	-	-	22.50		
VHT40	MCS0	2	38	5190	36.66	36.66	41.00	40.82	-	-	23.01		
VHT40	MCS0	2	46	5230	36.96	36.76	41.18	40.73	-	-	23.01		
VHT80	MCS0	2	42	5210	75.76	75.76	82.16	82.16	-	-	23.01		

**TEST RESULTS DATA**  
**Average Power Table**

FCC Band I														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	36	5180	0.30	0.29	11.36	13.21		24.00	24.00	-1.80	0.80	Pass
11a	6Mbps	1	44	5220	0.30	0.29	11.31	13.16		24.00	24.00	-1.80	0.80	Pass
11a	6Mbps	1	48	5240	0.30	0.29	11.49	13.28		24.00	24.00	-1.80	0.80	Pass
HT20	MCS0	1	36	5180	0.23	0.22	11.44	12.23		24.00	24.00	-1.80	0.80	Pass
HT20	MCS0	1	44	5220	0.23	0.22	11.37	12.41		24.00	24.00	-1.80	0.80	Pass
HT20	MCS0	1	48	5240	0.23	0.22	11.49	12.65		24.00	24.00	-1.80	0.80	Pass
HT40	MCS0	1	38	5190	0.44	0.44	10.87	11.76		24.00	24.00	-1.80	0.80	Pass
HT40	MCS0	1	46	5230	0.44	0.44	10.58	11.95		24.00	24.00	-1.80	0.80	Pass
VHT20	MCS0	1	36	5180	0.22	0.22	10.81	11.57		24.00	24.00	-1.80	0.80	Pass
VHT20	MCS0	1	44	5220	0.22	0.22	10.44	11.39		24.00	24.00	-1.80	0.80	Pass
VHT20	MCS0	1	48	5240	0.22	0.22	10.34	11.72		24.00	24.00	-1.80	0.80	Pass
VHT40	MCS0	1	38	5190	0.60	0.60	10.99	11.81		24.00	24.00	-1.80	0.80	Pass
VHT40	MCS0	1	46	5230	0.60	0.60	10.68	12.01		24.00	24.00	-1.80	0.80	Pass
VHT80	MCS0	1	42	5210	1.14	1.14	10.53	12.43		24.00	24.00	-1.80	0.80	Pass
HT20	MCS8	2	36	5180	0.43	0.38	11.17	11.00	14.10	24.00		0.80		Pass
HT20	MCS8	2	44	5220	0.43	0.38	11.01	10.92	13.98	24.00		0.80		Pass
HT20	MCS8	2	48	5240	0.43	0.38	11.37	11.20	14.30	24.00		0.80		Pass
HT40	MCS8	2	38	5190	0.79	0.79	10.52	10.43	13.49	24.00		0.80		Pass
HT40	MCS8	2	46	5230	0.79	0.79	10.65	10.57	13.62	24.00		0.80		Pass
VHT20	MCS0	2	36	5180	0.59	0.60	10.42	10.15	13.30	24.00		0.80		Pass
VHT20	MCS0	2	44	5220	0.59	0.60	10.27	10.10	13.20	24.00		0.80		Pass
VHT20	MCS0	2	48	5240	0.59	0.60	10.53	10.28	13.42	24.00		0.80		Pass
VHT40	MCS0	2	38	5190	1.06	1.04	10.56	10.52	13.55	24.00		0.80		Pass
VHT40	MCS0	2	46	5230	1.06	1.04	10.81	10.65	13.74	24.00		0.80		Pass
VHT80	MCS0	2	42	5210	1.82	1.87	10.41	10.35	13.39	24.00		0.80		Pass

**TEST RESULTS DATA**  
**Power Spectral Density**

FCC Band I														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Power Density (dBm/MHz)			Average PSD Limit (dBm/MHz)		DG (dBi)		Pass /Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	36	5180	0.30	0.29	-	2.21	-	11.00	11.00	-1.80	0.80	Pass
11a	6Mbps	1	44	5220	0.30	0.29	-	2.38	-	11.00	11.00	-1.80	0.80	Pass
11a	6Mbps	1	48	5240	0.30	0.29	-	2.61	-	11.00	11.00	-1.80	0.80	Pass
HT20	MCS0	1	36	5180	0.23	0.22	-	0.94	-	11.00	11.00	-1.80	0.80	Pass
HT20	MCS0	1	44	5220	0.23	0.22	-	0.98	-	11.00	11.00	-1.80	0.80	Pass
HT20	MCS0	1	48	5240	0.23	0.22	-	1.31	-	11.00	11.00	-1.80	0.80	Pass
HT40	MCS0	1	38	5190	0.44	0.44	-	-2.80	-	11.00	11.00	-1.80	0.80	Pass
HT40	MCS0	1	46	5230	0.44	0.44	-	-2.68	-	11.00	11.00	-1.80	0.80	Pass
VHT20	MCS0	1	36	5180	0.22	0.22	-	-0.10	-	11.00	11.00	-1.80	0.80	Pass
VHT20	MCS0	1	44	5220	0.22	0.22	-	0.21	-	11.00	11.00	-1.80	0.80	Pass
VHT20	MCS0	1	48	5240	0.22	0.22	-	0.33	-	11.00	11.00	-1.80	0.80	Pass
VHT40	MCS0	1	38	5190	0.60	0.60	-	-2.59	-	11.00	11.00	-1.80	0.80	Pass
VHT40	MCS0	1	46	5230	0.60	0.60	-	-2.19	-	11.00	11.00	-1.80	0.80	Pass
VHT80	MCS0	1	42	5210	1.14	1.14	-	-4.61	-	11.00	11.00	-1.80	0.80	Pass
HT20	MCS8	2	36	5180	0.43	0.38	-	-	3.99	11.00	11.00	-1.80	0.80	Pass
HT20	MCS8	2	44	5220	0.43	0.38	-	-	3.97	11.00	11.00	-1.80	0.80	Pass
HT20	MCS8	2	48	5240	0.43	0.38	-	-	3.95	11.00	11.00	-1.80	0.80	Pass
HT40	MCS8	2	38	5190	0.79	0.79	-	-	0.31	11.00	11.00	-1.80	0.80	Pass
HT40	MCS8	2	46	5230	0.79	0.79	-	-	0.52	11.00	11.00	-1.80	0.80	Pass
VHT20	MCS0	2	36	5180	0.59	0.60	-	-	3.05	11.00	11.00	-1.80	0.80	Pass
VHT20	MCS0	2	44	5220	0.59	0.60	-	-	3.16	11.00	11.00	-1.80	0.80	Pass
VHT20	MCS0	2	48	5240	0.59	0.60	-	-	2.87	11.00	11.00	-1.80	0.80	Pass
VHT40	MCS0	2	38	5190	1.06	1.04	-	-	0.80	11.00	11.00	-1.80	0.80	Pass
VHT40	MCS0	2	46	5230	1.06	1.04	-	-	0.36	11.00	11.00	-1.80	0.80	Pass
VHT80	MCS0	2	42	5210	1.82	1.87	-	-	-2.53	11.00	11.00	-1.80	0.80	Pass

**TEST RESULTS DATA**  
**26dB and 99% OBW**

Band II															
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)		26 dB Bandwidth (MHz)		IC 99% Bandwidth Power Limit (dBm)		IC 99% Bandwidth EIRP Limit (dBm)		FCC 26dB Bandwidth Power Limit (dBm)		Note
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	52	5260	17.28	17.23	20.08	20.08	23.38	23.36	29.38	29.36	23.98	23.98	
11a	6Mbps	1	60	5300	18.48	18.58	22.88	22.83	23.67	23.69	29.67	29.69	23.98	23.98	
11a	6Mbps	1	64	5320	18.43	18.63	22.78	22.83	23.66	23.70	29.66	29.70	23.98	23.98	
HT20	MCS0	1	52	5260	17.83	17.73	20.43	20.33	23.51	23.49	29.51	29.49	23.98	23.98	
HT20	MCS0	1	60	5300	19.33	19.23	22.93	23.03	23.86	23.84	29.86	29.84	23.98	23.98	
HT20	MCS0	1	64	5320	19.28	19.28	23.08	22.93	23.85	23.85	29.85	29.85	23.98	23.98	
HT40	MCS0	1	54	5270	36.56	36.66	41.18	41.00	23.98	23.98	30.00	30.00	23.98	23.98	
HT40	MCS0	1	62	5310	36.76	36.76	41.27	41.00	23.98	23.98	30.00	30.00	23.98	23.98	
VHT20	MCS0	1	52	5260	17.83	17.78	20.38	20.33	23.51	23.50	29.51	29.50	23.98	23.98	
VHT20	MCS0	1	60	5300	19.28	19.18	22.93	23.08	23.85	23.83	29.85	29.83	23.98	23.98	
VHT20	MCS0	1	64	5320	19.28	19.28	23.03	22.93	23.85	23.85	29.85	29.85	23.98	23.98	
VHT40	MCS0	1	54	5270	36.66	36.76	41.00	41.18	23.98	23.98	30.00	30.00	23.98	23.98	
VHT40	MCS0	1	62	5310	36.76	36.76	41.18	41.00	23.98	23.98	30.00	30.00	23.98	23.98	
VHT80	MCS0	1	58	5290	76.00	75.76	82.96	82.32	23.98	23.98	30.00	30.00	23.98	23.98	
HT20	MCS8	2	52	5260	17.78	17.83	20.28	20.13	23.50		29.50		23.98		
HT20	MCS8	2	60	5300	19.23	18.93	22.78	22.83	23.77		29.77		23.98		
HT20	MCS8	2	64	5320	19.18	19.03	22.78	22.83	23.79		29.79		23.98		
HT40	MCS8	2	54	5270	36.66	36.56	40.91	40.64	23.98		30.00		23.98		
HT40	MCS8	2	62	5310	36.86	36.56	40.91	40.82	23.98		30.00		23.98		
VHT20	MCS0	2	52	5260	17.78	17.83	20.38	20.28	23.50		29.50		23.98		
VHT20	MCS0	2	60	5300	19.18	18.93	23.18	22.78	23.77		29.77		23.98		
VHT20	MCS0	2	64	5320	19.28	18.78	22.78	22.83	23.74		29.74		23.98		
VHT40	MCS0	2	54	5270	36.66	36.56	41.09	40.82	23.98		30.00		23.98		
VHT40	MCS0	2	62	5310	36.86	36.66	41.09	41.00	23.98		30.00		23.98		
VHT80	MCS0	2	58	5290	75.88	75.76	82.48	81.84	23.98		30.00		23.98		

**TEST RESULTS DATA**  
**Average Power Table**

FCC Band II														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	52	5260	0.30	0.29	11.37	13.26		23.98	23.98	-1.60	0.80	Pass
11a	6Mbps	1	60	5300	0.30	0.29	11.28	13.12		23.98	23.98	-1.60	0.80	Pass
11a	6Mbps	1	64	5320	0.30	0.29	11.15	13.21		23.98	23.98	-1.60	0.80	Pass
HT20	MCS0	1	52	5260	0.23	0.22	11.32	12.58		23.98	23.98	-1.60	0.80	Pass
HT20	MCS0	1	60	5300	0.23	0.22	11.11	12.53		23.98	23.98	-1.60	0.80	Pass
HT20	MCS0	1	64	5320	0.23	0.22	11.24	12.15		23.98	23.98	-1.60	0.80	Pass
HT40	MCS0	1	54	5270	0.44	0.44	10.41	11.97		23.98	23.98	-1.60	0.80	Pass
HT40	MCS0	1	62	5310	0.44	0.44	9.86	11.73		23.98	23.98	-1.60	0.80	Pass
VHT20	MCS0	1	52	5260	0.22	0.22	10.31	11.83		23.98	23.98	-1.60	0.80	Pass
VHT20	MCS0	1	60	5300	0.22	0.22	9.80	11.60		23.98	23.98	-1.60	0.80	Pass
VHT20	MCS0	1	64	5320	0.22	0.22	9.45	11.39		23.98	23.98	-1.60	0.80	Pass
VHT40	MCS0	1	54	5270	0.60	0.60	10.59	11.87		23.98	23.98	-1.60	0.80	Pass
VHT40	MCS0	1	62	5310	0.60	0.60	10.01	12.05		23.98	23.98	-1.60	0.80	Pass
VHT80	MCS0	1	58	5290	1.14	1.14	9.99	11.68		23.98	23.98	-1.60	0.80	Pass
HT20	MCS8	2	52	5260	0.43	0.38	11.21	11.33	14.28	23.98		0.80		Pass
HT20	MCS8	2	60	5300	0.43	0.38	10.90	11.09	14.01	23.98		0.80		Pass
HT20	MCS8	2	64	5320	0.43	0.38	10.81	11.18	14.01	23.98		0.80		Pass
HT40	MCS8	2	54	5270	0.79	0.79	10.36	10.71	13.55	23.98		0.80		Pass
HT40	MCS8	2	62	5310	0.79	0.79	10.24	10.62	13.45	23.98		0.80		Pass
VHT20	MCS0	2	52	5260	0.59	0.60	10.25	10.46	13.37	23.98		0.80		Pass
VHT20	MCS0	2	60	5300	0.59	0.60	9.91	10.13	13.03	23.98		0.80		Pass
VHT20	MCS0	2	64	5320	0.59	0.60	9.98	10.23	13.12	23.98		0.80		Pass
VHT40	MCS0	2	54	5270	1.06	1.04	10.48	10.66	13.58	23.98		0.80		Pass
VHT40	MCS0	2	62	5310	1.06	1.04	10.27	10.49	13.39	23.98		0.80		Pass
VHT80	MCS0	2	58	5290	1.82	1.87	10.14	10.43	13.30	23.98		0.80		Pass

**TEST RESULTS DATA**  
**Power Spectral Density**

Band II														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Power Density (dBm/MHz)			Average PSD Limit (dBm/MHz)		DG (dBi)		Pass /Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	52	5260	0.30	0.29	-	2.61	-	11.00	11.00	-1.60	0.80	Pass
11a	6Mbps	1	60	5300	0.30	0.29	-	2.67	-	11.00	11.00	-1.60	0.80	Pass
11a	6Mbps	1	64	5320	0.30	0.29	-	2.37	-	11.00	11.00	-1.60	0.80	Pass
HT20	MCS0	1	52	5260	0.23	0.22	-	1.16	-	11.00	11.00	-1.60	0.80	Pass
HT20	MCS0	1	60	5300	0.23	0.22	-	1.17	-	11.00	11.00	-1.60	0.80	Pass
HT20	MCS0	1	64	5320	0.23	0.22	-	1.02	-	11.00	11.00	-1.60	0.80	Pass
HT40	MCS0	1	54	5270	0.44	0.44	-	-2.42	-	11.00	11.00	-1.60	0.80	Pass
HT40	MCS0	1	62	5310	0.44	0.44	-	-2.28	-	11.00	11.00	-1.60	0.80	Pass
VHT20	MCS0	1	52	5260	0.22	0.22	-	0.35	-	11.00	11.00	-1.60	0.80	Pass
VHT20	MCS0	1	60	5300	0.22	0.22	-	0.30	-	11.00	11.00	-1.60	0.80	Pass
VHT20	MCS0	1	64	5320	0.22	0.22	-	0.14	-	11.00	11.00	-1.60	0.80	Pass
VHT40	MCS0	1	54	5270	0.60	0.60	-	-2.18	-	11.00	11.00	-1.60	0.80	Pass
VHT40	MCS0	1	62	5310	0.60	0.60	-	-2.26	-	11.00	11.00	-1.60	0.80	Pass
VHT80	MCS0	1	58	5290	1.14	1.14	-	-5.08	-	11.00	11.00	-1.60	0.80	Pass
HT20	MCS8	2	52	5260	0.43	0.38	-	-	3.77	11.00	11.00	2.69	Pass	
HT20	MCS8	2	60	5300	0.43	0.38	-	-	3.85	11.00	11.00	2.69	Pass	
HT20	MCS8	2	64	5320	0.43	0.38	-	-	3.70	11.00	11.00	2.69	Pass	
HT40	MCS8	2	54	5270	0.79	0.79	-	-	0.37	11.00	11.00	2.69	Pass	
HT40	MCS8	2	62	5310	0.79	0.79	-	-	0.36	11.00	11.00	2.69	Pass	
VHT20	MCS0	2	52	5260	0.59	0.60	-	-	3.16	11.00	11.00	2.69	Pass	
VHT20	MCS0	2	60	5300	0.59	0.60	-	-	2.65	11.00	11.00	2.69	Pass	
VHT20	MCS0	2	64	5320	0.59	0.60	-	-	2.73	11.00	11.00	2.69	Pass	
VHT40	MCS0	2	54	5270	1.06	1.04	-	-	0.45	11.00	11.00	2.69	Pass	
VHT40	MCS0	2	62	5310	1.06	1.04	-	-	0.69	11.00	11.00	2.69	Pass	
VHT80	MCS0	2	58	5290	1.82	1.87	-	-	-2.52	11.00	11.00	2.69	Pass	



**TEST RESULTS DATA**  
**26dB and 99% OBW**

Band III															
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)		26 dB Bandwidth (MHz)		IC 99% Bandwidth Power Limit (dBm)		IC 99% Bandwidth EIRP Limit (dBm)		FCC 26dB Bandwidth Power Limit (dBm)		Note
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	100	5500	18.53	18.63	22.78	22.88	23.68	23.70	29.68	29.70	23.98	23.98	
11a	6Mbps	1	116	5580	17.28	17.23	20.13	20.13	23.38	23.36	29.38	29.36	23.98	23.98	
11a	6Mbps	1	140	5700	18.53	18.63	22.88	22.78	23.68	23.70	29.68	29.70	23.98	23.98	
HT20	MCS0	1	100	5500	19.23	19.33	22.93	23.03	23.84	23.86	29.84	29.86	23.98	23.98	
HT20	MCS0	1	116	5580	17.83	17.78	20.38	20.38	23.51	23.50	29.51	29.50	23.98	23.98	
HT20	MCS0	1	140	5700	19.38	19.18	22.93	22.83	23.87	23.83	29.87	29.83	23.98	23.98	
HT40	MCS0	1	102	5510	36.76	36.76	41.00	40.91	23.98	23.98	30.00	30.00	23.98	23.98	
HT40	MCS0	1	110	5550	36.66	36.76	41.00	41.09	23.98	23.98	30.00	30.00	23.98	23.98	
HT40	MCS0	1	134	5670	36.76	36.76	41.09	41.00	23.98	23.98	30.00	30.00	23.98	23.98	
VHT20	MCS0	1	100	5500	19.18	19.23	23.03	23.13	23.83	23.84	29.83	29.84	23.98	23.98	
VHT20	MCS0	1	116	5580	17.78	17.73	20.23	20.33	23.50	23.49	29.50	29.49	23.98	23.98	
VHT20	MCS0	1	140	5700	19.28	19.28	22.93	23.03	23.85	23.85	29.85	29.85	23.98	23.98	
VHT40	MCS0	1	102	5510	36.76	36.66	41.00	41.00	23.98	23.98	30.00	30.00	23.98	23.98	
VHT40	MCS0	1	110	5550	36.66	36.76	40.91	41.18	23.98	23.98	30.00	30.00	23.98	23.98	
VHT40	MCS0	1	134	5670	36.66	36.76	40.91	41.18	23.98	23.98	30.00	30.00	23.98	23.98	
VHT80	MCS0	1	106	5530	75.88	75.88	82.16	82.00	23.98	23.98	30.00	30.00	23.98	23.98	
VHT80	MCS0	1	122	5610	75.88	75.76	81.84	81.84	23.98	23.98	30.00	30.00	23.98	23.98	
HT20	MCS8	2	100	5500	19.18	18.93	23.18	22.73	23.77	23.77	29.77	29.77	23.98	23.98	
HT20	MCS8	2	116	5580	17.78	17.83	20.38	20.28	23.50	23.50	29.50	29.50	23.98	23.98	
HT20	MCS8	2	140	5700	19.33	18.93	22.93	22.78	23.77	23.77	29.77	29.77	23.98	23.98	
HT40	MCS8	2	102	5510	36.56	36.66	41.09	40.64	23.98	23.98	30.00	30.00	23.98	23.98	
HT40	MCS8	2	110	5550	36.66	36.66	41.18	40.73	23.98	23.98	30.00	30.00	23.98	23.98	
HT40	MCS8	2	134	5670	36.66	36.66	41.00	41.00	23.98	23.98	30.00	30.00	23.98	23.98	
VHT20	MCS0	2	100	5500	19.33	18.93	22.98	22.93	23.77	23.77	29.77	29.77	23.98	23.98	
VHT20	MCS0	2	116	5580	17.73	17.83	20.38	20.18	23.49	23.49	29.49	29.49	23.98	23.98	
VHT20	MCS0	2	140	5700	19.33	18.83	23.08	22.73	23.75	23.75	29.75	29.75	23.98	23.98	
VHT40	MCS0	2	102	5510	36.76	36.56	41.00	40.73	23.98	23.98	30.00	30.00	23.98	23.98	
VHT40	MCS0	2	110	5550	36.86	36.56	41.00	40.91	23.98	23.98	30.00	30.00	23.98	23.98	
VHT40	MCS0	2	134	5670	36.76	36.66	41.27	40.73	23.98	23.98	30.00	30.00	23.98	23.98	
VHT80	MCS0	2	106	5530	75.76	75.64	82.00	81.20	23.98	23.98	30.00	30.00	23.98	23.98	
VHT80	MCS0	2	122	5610	75.88	75.64	82.96	81.84	23.98	23.98	30.00	30.00	23.98	23.98	

**TEST RESULTS DATA**  
**Average Power Table**

FCC Band III														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	100	5500	0.30	0.29	10.25	10.72		23.98	23.98	0.10	1.20	Pass
11a	6Mbps	1	116	5580	0.30	0.29	9.72	10.83		23.98	23.98	0.10	1.20	Pass
11a	6Mbps	1	140	5700	0.30	0.29	9.61	10.68		23.98	23.98	0.10	1.20	Pass
HT20	MCS0	1	100	5500	0.23	0.22	9.82	10.68		23.98	23.98	0.10	1.20	Pass
HT20	MCS0	1	116	5580	0.23	0.22	9.20	10.30		23.98	23.98	0.10	1.20	Pass
HT20	MCS0	1	140	5700	0.23	0.22	9.71	10.21		23.98	23.98	0.10	1.20	Pass
HT40	MCS0	1	102	5510	0.44	0.44	9.22	10.26		23.98	23.98	0.10	1.20	Pass
HT40	MCS0	1	110	5550	0.44	0.44	8.98	10.17		23.98	23.98	0.10	1.20	Pass
HT40	MCS0	1	134	5670	0.44	0.44	8.30	9.48	-	23.98	23.98	0.10	1.20	Pass
VHT20	MCS0	1	100	5500	0.22	0.22	9.58	10.05		23.98	23.98	0.10	1.20	Pass
VHT20	MCS0	1	116	5580	0.22	0.22	9.18	9.68		23.98	23.98	0.10	1.20	Pass
VHT20	MCS0	1	140	5700	0.22	0.22	9.89	9.64		23.98	23.98	0.10	1.20	Pass
VHT40	MCS0	1	102	5510	0.60	0.60	9.19	10.18		23.98	23.98	0.10	1.20	Pass
VHT40	MCS0	1	110	5550	0.60	0.60	9.04	10.11		23.98	23.98	0.10	1.20	Pass
VHT40	MCS0	1	134	5670	0.60	0.60	8.23	9.56		23.98	23.98	0.10	1.20	Pass
VHT80	MCS0	1	106	5530	1.14	1.14	8.82	10.10		23.98	23.98	0.10	1.20	Pass
VHT80	MCS0	1	122	5610	1.14	1.14	8.22	9.56		23.98	23.98	0.10	1.20	Pass
HT20	MCS8	2	100	5500	0.43	0.38	10.10	10.73	13.44	23.98		1.20		Pass
HT20	MCS8	2	116	5580	0.43	0.38	9.40	10.45	12.97	23.98		1.20		Pass
HT20	MCS8	2	140	5700	0.43	0.38	9.49	10.24	12.89	23.98		1.20		Pass
HT40	MCS8	2	102	5510	0.79	0.79	9.15	10.41	12.84	23.98		1.20		Pass
HT40	MCS8	2	110	5550	0.79	0.79	8.95	10.30	12.69	23.98		1.20		Pass
HT40	MCS8	2	134	5670	0.79	0.79	8.16	9.54	11.92	23.98		1.20		Pass
VHT20	MCS0	2	100	5500	0.59	0.60	8.82	9.96	12.44	23.98		1.20		Pass
VHT20	MCS0	2	116	5580	0.59	0.60	8.18	9.55	11.93	23.98		1.20		Pass
VHT20	MCS0	2	140	5700	0.59	0.60	8.64	9.53	12.12	23.98		1.20		Pass
VHT40	MCS0	2	102	5510	1.06	1.04	9.22	10.38	12.85	23.98		1.20		Pass
VHT40	MCS0	2	110	5550	1.06	1.04	9.01	10.25	12.68	23.98		1.20		Pass
VHT40	MCS0	2	134	5670	1.06	1.04	8.41	9.50	12.00	23.98		1.20		Pass
VHT80	MCS0	2	106	5530	1.82	1.87	8.83	9.98	12.45	23.98		1.20		Pass
VHT80	MCS0	2	122	5610	1.82	1.87	7.97	9.55	11.84	23.98		1.20		Pass

**TEST RESULTS DATA**  
**Power Spectral Density**

Band III														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Power Density (dBm/MHz)			Average PSD Limit (dBm/MHz)		DG (dBi)		Pass /Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	1	100	5500	0.30	0.29	-	-0.26	-	11.00	11.00	0.10	1.20	Pass
11a	6Mbps	1	116	5580	0.30	0.29	-	-0.27	-	11.00	11.00	0.10	1.20	Pass
11a	6Mbps	1	140	5700	0.30	0.29	-	-0.57	-	11.00	11.00	0.10	1.20	Pass
HT20	MCS0	1	100	5500	0.23	0.22	-	-0.44	-	11.00	11.00	0.10	1.20	Pass
HT20	MCS0	1	116	5580	0.23	0.22	-	-0.79	-	11.00	11.00	0.10	1.20	Pass
HT20	MCS0	1	140	5700	0.23	0.22	-	-0.85	-	11.00	11.00	0.10	1.20	Pass
HT40	MCS0	1	102	5510	0.44	0.44	-	-4.10	-	11.00	11.00	0.10	1.20	Pass
HT40	MCS0	1	110	5550	0.44	0.44	-	-3.88	-	11.00	11.00	0.10	1.20	Pass
HT40	MCS0	1	134	5670	0.44	0.44	-	-4.87	-	11.00	11.00	0.10	1.20	Pass
VHT20	MCS0	1	100	5500	0.22	0.22	-	-1.57	-	11.00	11.00	0.10	1.20	Pass
VHT20	MCS0	1	116	5580	0.22	0.22	-	-1.34	-	11.00	11.00	0.10	1.20	Pass
VHT20	MCS0	1	140	5700	0.22	0.22	-	-1.32	-	11.00	11.00	0.10	1.20	Pass
VHT40	MCS0	1	102	5510	0.60	0.60	-	-3.69	-	11.00	11.00	0.10	1.20	Pass
VHT40	MCS0	1	110	5550	0.60	0.60	-	-3.73	-	11.00	11.00	0.10	1.20	Pass
VHT40	MCS0	1	134	5670	0.60	0.60	-	-4.32	-	11.00	11.00	0.10	1.20	Pass
VHT80	MCS0	1	106	5530	1.14	1.14	-	-6.60	-	11.00	11.00	0.10	1.20	Pass
VHT80	MCS0	1	122	5610	1.14	1.14	-	-7.08	-	11.00	11.00	0.10	1.20	Pass
HT20	MCS8	2	100	5500	0.43	0.38	-	-	1.83	11.00	11.00	3.68	Pass	
HT20	MCS8	2	116	5580	0.43	0.38	-	-	1.72	11.00	11.00	3.68	Pass	
HT20	MCS8	2	140	5700	0.43	0.38	-	-	1.60	11.00	11.00	3.68	Pass	
HT40	MCS8	2	102	5510	0.79	0.79	-	-	-1.47	11.00	11.00	3.68	Pass	
HT40	MCS8	2	110	5550	0.79	0.79	-	-	-1.42	11.00	11.00	3.68	Pass	
HT40	MCS8	2	134	5670	0.79	0.79	-	-	-1.84	11.00	11.00	3.68	Pass	
VHT20	MCS0	2	100	5500	0.59	0.60	-	-	0.93	11.00	11.00	3.68	Pass	
VHT20	MCS0	2	116	5580	0.59	0.60	-	-	0.72	11.00	11.00	3.68	Pass	
VHT20	MCS0	2	140	5700	0.59	0.60	-	-	0.64	11.00	11.00	3.68	Pass	
VHT40	MCS0	2	102	5510	1.06	1.04	-	-	-1.62	11.00	11.00	3.68	Pass	
VHT40	MCS0	2	110	5550	1.06	1.04	-	-	-1.61	11.00	11.00	3.68	Pass	
VHT40	MCS0	2	134	5670	1.06	1.04	-	-	-2.38	11.00	11.00	3.68	Pass	
VHT80	MCS0	2	106	5530	1.82	1.87	-	-	-4.55	11.00	11.00	3.68	Pass	
VHT80	MCS0	2	122	5610	1.82	1.87	-	-	-4.97	11.00	11.00	3.68	Pass	

**TEST RESULTS DATA**  
**Frequency Stability**

Band I										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stability (ppm)	Temperature (°C)	Voltage (V)	Note
11a	6Mbps	1	36	5180	5180.050	0.050	9.65	20	3.6	
11a	6Mbps	1	36	5180	5180.050	0.050	9.65	20	4.35	
11a	6Mbps	1	36	5180	5180.050	0.050	9.65	20	3.8	
11a	6Mbps	1	36	5180	5180.050	0.050	9.65	-30	3.8	
11a	6Mbps	1	36	5180	5180.050	0.050	9.65	50	3.8	

Band II										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stability (ppm)	Temperature (°C)	Voltage (V)	Note
11a	6Mbps	1	64	5320	5320.050	0.050	9.40	20	3.6	
11a	6Mbps	1	64	5320	5320.050	0.050	9.40	20	4.35	
11a	6Mbps	1	64	5320	5320.025	0.025	4.70	20	3.8	
11a	6Mbps	1	64	5320	5320.050	0.050	9.40	-30	3.8	
11a	6Mbps	1	64	5320	5320.050	0.050	9.40	50	3.8	

Band III										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stability (ppm)	Temperature (°C)	Voltage (V)	Note
11a	6Mbps	1	100	5500	5500.050	0.050	9.09	20	3.6	
11a	6Mbps	1	100	5500	5500.025	0.025	4.55	20	4.35	
11a	6Mbps	1	100	5500	5500.050	0.050	9.09	20	3.8	
11a	6Mbps	1	100	5500	5500.050	0.050	9.09	-30	3.8	
11a	6Mbps	1	100	5500	5500.025	0.025	4.55	50	3.8	



## Appendix B. Radiated Test Results

### 15E Band 1 - 5150~5250MHz

#### WIFI 802.11a (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
802.11a CH 36 5180MHz		5144.85	47.36	-26.64	74	43.92	31.84	8.13	36.53	100	276	P	H
		5140.9	37.47	-16.53	54	34.03	31.84	8.13	36.53	100	276	A	H
	*	5182	93.92	-	-	90.41	31.85	8.17	36.51	100	276	P	H
	*	5184	86.92	-	-	83.41	31.85	8.17	36.51	100	276	A	H
		5137.2	47.38	-26.62	74	43.97	31.84	8.11	36.54	294	101	P	V
		5133.45	37.15	-16.85	54	33.74	31.84	8.11	36.54	294	101	A	V
	*	5184	90.98	-	-	87.47	31.85	8.17	36.51	294	101	P	V
	*	5182	83.59	-	-	80.08	31.85	8.17	36.51	294	101	A	V
802.11a CH 44 5220MHz	*	5224	94.68	-	-	91.12	31.86	8.2	36.5	100	270	P	H
	*	5222	87.29	-	-	83.73	31.86	8.2	36.5	100	270	A	H
	*	5226	91.28	-	-	87.7	31.87	8.21	36.5	300	106	P	V
	*	5224	84.49	-	-	80.93	31.86	8.2	36.5	300	106	A	V
802.11a CH 48 5240MHz	*	5236	96.25	-	-	92.67	31.87	8.21	36.5	100	251	P	H
	*	5234	88.63	-	-	85.05	31.87	8.21	36.5	100	251	A	H
		5383.45	46.06	-27.94	74	42.32	31.92	8.32	36.5	100	251	P	H
		5393.15	36.73	-17.27	54	32.99	31.92	8.32	36.5	100	251	A	H
	*	5238	93.15	-	-	89.57	31.87	8.21	36.5	300	85	P	V
	*	5236	85.44	-	-	81.86	31.87	8.21	36.5	300	85	A	V
		5378	45.33	-28.67	74	41.59	31.92	8.32	36.5	300	85	P	V
		5388.25	36.63	-17.37	54	32.89	31.92	8.32	36.5	300	85	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 1 5150~5250MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
802.11a CH 36 5180MHz		10359	46.03	-27.97	74	55.57	38.02	13.54	61.1	100	0	P	H
		10359	44.36	-29.64	74	53.9	38.02	13.54	61.1	100	360	P	V
802.11a CH 44 5220MHz		10440	44.55	-29.45	74	53.98	38.06	13.58	61.07	100	0	P	H
		10440	44.75	-29.25	74	54.18	38.06	13.58	61.07	100	360	P	V
802.11a CH 48 5240MHz		10479	46.32	-27.68	74	55.66	38.09	13.61	61.04	100	0	P	H
		10479	45.07	-28.93	74	54.41	38.09	13.61	61.04	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E Band 2 - 5250~5350MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)
802.11a CH 52 5260MHz		5137.65	47.39	-26.61	74	43.98	31.84	8.11	36.54	100	276	P	H
		5103.55	36.92	-17.08	54	33.57	31.83	8.08	36.56	100	276	A	H
	*	5258	94.23	-	-	90.63	31.88	8.22	36.5	100	276	P	H
	*	5258	86.92	-	-	83.32	31.88	8.22	36.5	100	276	A	H
		5129.05	46.89	-27.11	74	43.48	31.84	8.11	36.54	271	87	P	V
		5129	36.86	-17.14	54	33.45	31.84	8.11	36.54	271	87	A	V
	*	5254	94.26	-	-	90.66	31.88	8.22	36.5	271	87	P	V
	*	5254	86.71	-	-	83.11	31.88	8.22	36.5	271	87	A	V
802.11a CH 60 5300MHz	*	5298	96.77	-	-	93.12	31.89	8.26	36.5	100	270	P	H
	*	5296	89.69	-	-	86.04	31.89	8.26	36.5	100	270	A	H
	*	5304	94.96	-	-	91.31	31.89	8.26	36.5	282	88	P	V
	*	5298	87.9	-	-	84.25	31.89	8.26	36.5	282	88	A	V
802.11a CH 64 5320MHz	*	5318	97.38	-	-	93.71	31.9	8.27	36.5	100	272	P	H
	*	5322	90.09	-	-	86.42	31.9	8.27	36.5	100	272	A	H
		5351.8	47.14	-26.86	74	43.44	31.91	8.29	36.5	100	272	P	H
		5351.7	38.22	-15.78	54	34.52	31.91	8.29	36.5	100	272	A	H
	*	5316	95.41	-	-	91.74	31.9	8.27	36.5	280	88	P	V
	*	5314	87.94	-	-	84.27	31.9	8.27	36.5	280	88	A	V
		5369.75	45.95	-28.05	74	42.23	31.91	8.31	36.5	280	88	P	V
		5350.45	37.12	-16.88	54	33.42	31.91	8.29	36.5	280	88	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 2 5250~5350MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
802.11a CH 52 5260MHz		10521	44.66	-29.34	74	53.95	38.11	13.63	61.03	100	0	P	H
		10521	44.09	-29.91	74	53.38	38.11	13.63	61.03	100	360	P	V
802.11a CH 60 5300MHz		10599	43.99	-30.01	74	53.13	38.16	13.68	60.98	100	0	P	H
		10599	45.48	-28.52	74	54.62	38.16	13.68	60.98	100	360	P	V
802.11a CH 64 5320MHz		10641	45.11	-28.89	74	54.2	38.18	13.7	60.97	100	0	P	H
		10641	43.61	-30.39	74	52.7	38.18	13.7	60.97	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												





15E Band 3 - 5470~5725MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)
802.11a CH 100 5500MHz		5463.92	47.85	-26.15	74	43.92	31.95	8.38	36.4	100	267	P	H
		5469.36	37.56	-16.44	54	33.63	31.95	8.38	36.4	100	267	A	H
	*	5498	93.98	-	-	89.97	31.96	8.4	36.35	100	267	P	H
	*	5498	86.46	-	-	82.45	31.96	8.4	36.35	100	267	A	H
		5425.2	47.64	-26.36	74	43.84	31.93	8.34	36.47	302	92	P	V
		5461.52	37.35	-16.65	54	33.46	31.94	8.37	36.42	302	92	A	V
	*	5498	91.69	-	-	87.68	31.96	8.4	36.35	302	92	P	V
	*	5498	84.51	-	-	80.5	31.96	8.4	36.35	302	92	A	V
802.11a CH 116 5580MHz	*	5588	93.61	-	-	89.39	31.98	8.47	36.23	100	266	P	H
	*	5582	86.04	-	-	81.82	31.98	8.47	36.23	100	266	A	H
	*	5584	92.16	-	-	87.94	31.98	8.47	36.23	285	93	P	V
	*	5586	84.89	-	-	80.67	31.98	8.47	36.23	285	93	A	V
802.11a CH 140 5700MHz	*	5694	96.33	-	-	92.02	32.02	8.54	36.25	100	263	P	H
	*	5694	88.77	-	-	84.46	32.02	8.54	36.25	100	263	A	H
		5730.84	48.42	-25.58	74	44.09	32.04	8.57	36.28	100	263	P	H
		5731.64	38.7	-15.3	54	34.37	32.04	8.57	36.28	100	263	A	H
	*	5696	95.74	-	-	91.43	32.02	8.54	36.25	280	94	P	V
	*	5702	88.26	-	-	83.95	32.03	8.55	36.27	280	94	A	V
		5738.44	47.5	-26.5	74	43.16	32.05	8.58	36.29	280	94	P	V
	5725.56	38.3	-15.7	54	33.97	32.04	8.57	36.28	280	94	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 3 - 5470~5725MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
802.11a		11001	46.32	-27.68	74	54.8	38.4	13.91	60.79	100	0	P	H
CH 100		11001	45.89	-28.11	74	54.37	38.4	13.91	60.79	100	360	P	V
5500MHz		11001	45.89	-28.11	74	54.37	38.4	13.91	60.79	100	360	P	V
802.11a		11160	43.96	-30.04	74	52.19	38.47	14.01	60.71	100	0	P	H
CH 116		11160	44.46	-29.54	74	52.69	38.47	14.01	60.71	100	360	P	V
5580MHz		11160	44.46	-29.54	74	52.69	38.47	14.01	60.71	100	360	P	V
802.11a		11400	43.67	-30.33	74	51.55	38.56	14.15	60.59	100	0	P	H
CH 140		11400	43.6	-30.4	74	51.48	38.56	14.15	60.59	100	360	P	V
5700MHz		11400	43.6	-30.4	74	51.48	38.56	14.15	60.59	100	360	P	V

Remark

- No other spurious found.
- All results are PASS against Peak and Average limit line.



15E Band 1 - 5150~5250MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)
802.11a CH 36 5180MHz		5149.6	50.74	-23.26	74	47.3	31.84	8.13	36.53	100	288	P	H
		5149.7	40.69	-13.31	54	37.25	31.84	8.13	36.53	100	288	A	H
	*	5182	100.71	-	-	97.2	31.85	8.17	36.51	100	288	P	H
	*	5182	92.67	-	-	89.16	31.85	8.17	36.51	100	288	A	H
		5132.85	52.36	-21.64	74	48.95	31.84	8.11	36.54	326	185	P	V
		5131.5	42.44	-11.56	54	39.03	31.84	8.11	36.54	326	185	A	V
	*	5176	102.54	-	-	99.03	31.85	8.17	36.51	326	185	P	V
	*	5172	95.61	-	-	92.13	31.85	8.15	36.52	326	185	A	V
802.11a CH 44 5220MHz	*	5218	100.59	-	-	97.03	31.86	8.2	36.5	100	288	P	H
	*	5222	92.95	-	-	89.39	31.86	8.2	36.5	100	288	A	H
	*	5224	101.29	-	-	97.73	31.86	8.2	36.5	336	186	P	V
	*	5218	94.32	-	-	90.76	31.86	8.2	36.5	336	186	A	V
802.11a CH 48 5240MHz	*	5242	99.12	-	-	95.52	31.88	8.22	36.5	100	289	P	H
	*	5246	91.68	-	-	88.08	31.88	8.22	36.5	100	289	A	H
		5393.15	48.05	-25.95	74	44.31	31.92	8.32	36.5	100	289	P	H
		5395.85	39.84	-14.16	54	36.09	31.92	8.33	36.5	100	289	A	H
	*	5234	100.55	-	-	96.97	31.87	8.21	36.5	299	184	P	V
	*	5234	93.06	-	-	89.48	31.87	8.21	36.5	299	184	A	V
		5389.8	47.83	-26.17	74	44.09	31.92	8.32	36.5	299	184	P	V
		5394.2	39.19	-14.81	54	35.45	31.92	8.32	36.5	299	184	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 1 5150~5250MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
802.11a CH 36		10359	42.83	-31.17	74	52.37	38.02	13.54	61.1	100	0	P	H
5180MHz		10359	42.49	-31.51	74	52.03	38.02	13.54	61.1	100	360	P	V
802.11a CH 44		10440	42.58	-31.42	74	52.01	38.06	13.58	61.07	100	0	P	H
5220MHz		10440	44.07	-29.93	74	53.5	38.06	13.58	61.07	100	360	P	V
802.11a CH 48		10479	43.95	-30.05	74	53.29	38.09	13.61	61.04	100	0	P	H
5240MHz		10479	44.31	-29.69	74	53.65	38.09	13.61	61.04	100	360	P	V

Remark	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> </ol>
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**15E Band 2 - 5250~5350MHz**  
**WIFI 802.11a (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)
802.11a CH 52 5260MHz		5132.25	47.31	-26.69	74	43.9	31.84	8.11	36.54	100	289	P	H
		5103.35	38.15	-15.85	54	34.8	31.83	8.08	36.56	100	289	A	H
	*	5256	98.67	-	-	95.07	31.88	8.22	36.5	100	289	P	H
	*	5266	91.11	-	-	87.5	31.88	8.23	36.5	100	289	A	H
		5103.25	48.13	-25.87	74	44.78	31.83	8.08	36.56	300	188	P	V
		5111.2	38.67	-15.33	54	35.29	31.83	8.1	36.55	300	188	A	V
	*	5258	99.28	-	-	95.68	31.88	8.22	36.5	300	188	P	V
	*	5254	92.02	-	-	88.42	31.88	8.22	36.5	300	188	A	V
802.11a CH 60 5300MHz	*	5302	99.34	-	-	95.69	31.89	8.26	36.5	100	288	P	H
	*	5304	91.61	-	-	87.96	31.89	8.26	36.5	100	288	A	H
	*	5304	99.07	-	-	95.42	31.89	8.26	36.5	311	188	P	V
	*	5302	91.89	-	-	88.24	31.89	8.26	36.5	311	188	A	V
802.11a CH 64 5320MHz	*	5324	98.85	-	-	95.18	31.9	8.27	36.5	100	288	P	H
	*	5324	91.3	-	-	87.63	31.9	8.27	36.5	100	288	A	H
		5350.95	48.46	-25.54	74	44.76	31.91	8.29	36.5	100	288	P	H
		5350	39.08	-14.92	54	35.38	31.91	8.29	36.5	100	288	A	H
	*	5320	98.85	-	-	95.18	31.9	8.27	36.5	325	188	P	V
	*	5318	90.98	-	-	87.31	31.9	8.27	36.5	325	188	A	V
		5350.4	48.28	-25.72	74	44.58	31.91	8.29	36.5	325	188	P	V
		5350.35	38.97	-15.03	54	35.27	31.91	8.29	36.5	325	188	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 2 5250~5350MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
802.11a CH 52 5260MHz		10521	43.05	-30.95	74	52.34	38.11	13.63	61.03	100	0	P	H
		10521	43.82	-30.18	74	53.11	38.11	13.63	61.03	100	360	P	V
802.11a CH 60 5300MHz		10599	41.21	-32.79	74	50.35	38.16	13.68	60.98	100	0	P	H
		10599	42.45	-31.55	74	51.59	38.16	13.68	60.98	100	360	P	V
802.11a CH 64 5320MHz		10641	42.54	-31.46	74	51.63	38.18	13.7	60.97	100	0	P	H
		10641	42.76	-31.24	74	51.85	38.18	13.7	60.97	100	360	P	V

Remark	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> </ol>
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15E Band 3 - 5470~5725MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)
802.11a CH 100 5500MHz		5449.04	48.11	-25.89	74	44.22	31.94	8.37	36.42	100	283	P	H
		5468.56	39	-15	54	35.07	31.95	8.38	36.4	100	283	A	H
	*	5498	98.61	-	-	94.6	31.96	8.4	36.35	100	283	P	H
	*	5494	91.17	-	-	87.21	31.95	8.39	36.38	100	283	A	H
		5458.64	47.09	-26.91	74	43.2	31.94	8.37	36.42	317	190	P	V
		5454.8	38.09	-15.91	54	34.2	31.94	8.37	36.42	317	190	A	V
	*	5504	96.01	-	-	92	31.96	8.4	36.35	317	190	P	V
	*	5498	88.83	-	-	84.82	31.96	8.4	36.35	317	190	A	V
802.11a CH 116 5580MHz	*	5574	99.72	-	-	95.54	31.98	8.45	36.25	100	286	P	H
	*	5582	92.64	-	-	88.42	31.98	8.47	36.23	100	286	A	H
	*	5578	99.35	-	-	95.17	31.98	8.45	36.25	251	263	P	V
	*	5574	92	-	-	87.82	31.98	8.45	36.25	251	263	A	V
802.11a CH 140 5700MHz	*	5702	97.23	-	-	92.92	32.03	8.55	36.27	100	287	P	H
	*	5702	89.44	-	-	85.13	32.03	8.55	36.27	100	287	A	H
		5757.96	48.04	-25.96	74	43.7	32.05	8.59	36.3	100	287	P	H
		5727.64	38.98	-15.02	54	34.65	32.04	8.57	36.28	100	287	A	H
	*	5704	95.06	-	-	90.75	32.03	8.55	36.27	300	188	P	V
	*	5702	87.89	-	-	83.58	32.03	8.55	36.27	300	188	A	V
		5726.2	47.12	-26.88	74	42.79	32.04	8.57	36.28	300	188	P	V
		5726.6	38.26	-15.74	54	33.93	32.04	8.57	36.28	300	188	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 3 - 5470~5725MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
802.11a CH 100 5500MHz		11001	44.94	-29.06	74	53.42	38.4	13.91	60.79	100	0	P	H
		11001	44.23	-29.77	74	52.71	38.4	13.91	60.79	100	360	P	V
802.11a CH 116 5580MHz		11160	43.42	-30.58	74	51.65	38.47	14.01	60.71	100	0	P	H
		11160	42.79	-31.21	74	51.02	38.47	14.01	60.71	100	360	P	V
802.11a CH 140 5700MHz		11400	42.4	-31.6	74	50.28	38.56	14.15	60.59	100	0	P	H
		11400	42.69	-31.31	74	50.57	38.56	14.15	60.59	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												





**15E band 1 5150~5250MHz  
WIFI 802.11n HT20 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
802.11n HT20 CH 36 5180MHz		5135.4	48.74	-25.26	74	45.33	31.84	8.11	36.54	100	277	P	H
		5148.25	40.08	-13.92	54	36.64	31.84	8.13	36.53	100	277	A	H
	*	5178	99.02	-	-	95.51	31.85	8.17	36.51	100	277	P	H
	*	5182	91.52	-	-	88.01	31.85	8.17	36.51	100	277	A	H
		5149.5	50.04	-23.96	74	46.6	31.84	8.13	36.53	300	196	P	V
		5128.75	41.73	-12.27	54	38.32	31.84	8.11	36.54	300	196	A	V
	*	5178	100.17	-	-	96.66	31.85	8.17	36.51	300	196	P	V
	*	5178	92.37	-	-	88.86	31.85	8.17	36.51	300	196	A	V
802.11n HT20 CH 44 5220MHz	*	5216	100.19	-	-	96.63	31.86	8.2	36.5	100	271	P	H
	*	5222	91.12	-	-	87.56	31.86	8.2	36.5	100	271	A	H
	*	5216	100.01	-	-	96.45	31.86	8.2	36.5	300	188	P	V
	*	5222	92.81	-	-	89.25	31.86	8.2	36.5	300	188	A	V
802.11n HT20 CH 48 5240MHz	*	5238	99.8	-	-	96.22	31.87	8.21	36.5	100	285	P	H
	*	5234	91.82	-	-	88.24	31.87	8.21	36.5	100	285	A	H
		5382.35	47	-27	74	43.26	31.92	8.32	36.5	100	285	P	H
		5394	38.77	-15.23	54	35.03	31.92	8.32	36.5	100	285	A	H
	*	5236	100.57	-	-	96.99	31.87	8.21	36.5	300	187	P	V
	*	5238	92.1	-	-	88.52	31.87	8.21	36.5	300	187	A	V
		5395.95	47.13	-26.87	74	43.38	31.92	8.33	36.5	300	187	P	V
	5394.85	39.02	-14.98	54	35.27	31.92	8.33	36.5	300	187	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**15E band 1 5150~5250MHz  
WIFI 802.11n HT20 (Harmonic @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	(dBμV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)
802.11n HT20 CH 36 5180MHz		10359	44.11	-29.89	74	53.65	38.02	13.54	61.1	100	0	P	H
		10359	45.03	-28.97	74	54.57	38.02	13.54	61.1	100	360	P	V
802.11n HT20 CH 44 5220MHz		10440	44.72	-29.28	74	54.15	38.06	13.58	61.07	100	0	P	H
		10440	45.17	-28.83	74	54.6	38.06	13.58	61.07	100	360	P	V
802.11n HT20 CH 48 5240MHz		10479	45.48	-28.52	74	54.82	38.09	13.61	61.04	100	0	P	H
		10479	44.64	-29.36	74	53.98	38.09	13.61	61.04	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**15E band 1 5150~5250MHz  
WIFI 802.11n HT40 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
802.11n HT40 CH 38 5190MHz		5146.65	57.77	-16.23	74	54.33	31.84	8.13	36.53	100	288	P	H
		5150	47.58	-6.42	54	44.14	31.84	8.13	36.53	100	288	A	H
	*	5198	97.4	-	-	93.85	31.86	8.19	36.5	100	288	P	H
	*	5194	89.57	-	-	86.02	31.86	8.19	36.5	100	288	A	H
		5148.2	60.43	-13.57	74	56.99	31.84	8.13	36.53	303	186	P	V
	!	5149.75	49.67	-4.33	54	46.23	31.84	8.13	36.53	303	186	A	V
	*	5182	99.8	-	-	96.29	31.85	8.17	36.51	303	186	P	V
	*	5188	91.15	-	-	87.64	31.85	8.17	36.51	303	186	A	V
802.11n HT40 CH 46 5230MHz	*	5236	98.6	-	-	95.02	31.87	8.21	36.5	100	275	P	H
	*	5232	90.53	-	-	86.95	31.87	8.21	36.5	100	275	A	H
		5389.8	46.16	-27.84	74	42.42	31.92	8.32	36.5	100	275	P	H
		5386	38.25	-15.75	54	34.51	31.92	8.32	36.5	100	275	A	H
	*	5224	98.77	-	-	95.21	31.86	8.2	36.5	315	186	P	V
	*	5224	90.33	-	-	86.77	31.86	8.2	36.5	315	186	A	V
		5395.7	46.74	-27.26	74	42.99	31.92	8.33	36.5	315	186	P	V
	5390.3	38.32	-15.68	54	34.58	31.92	8.32	36.5	315	186	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 1 5150~5250MHz
WIFI 802.11n HT40 (Harmonic @ 3m)

Table with 14 columns: WIFI, Note, Frequency, Level, Over, Limit, Read, Antenna, Cable, Preamp, Ant, Table, Peak, Pol. It contains test results for 802.11n HT40 channels at 10380MHz and 10461MHz.



**15E band 1 5150~5250MHz**  
**WIFI 802.11ac VHT20 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
802.11ac VHT20 CH 36 5180MHz		5120.2	47.97	-26.03	74	44.59	31.83	8.1	36.55	100	269	P	H
		5149.7	39.58	-14.42	54	36.14	31.84	8.13	36.53	100	269	A	H
	*	5182	99.48	-	-	95.97	31.85	8.17	36.51	100	269	P	H
	*	5178	92.14	-	-	88.63	31.85	8.17	36.51	100	269	A	H
		5139.65	50.36	-23.64	74	46.92	31.84	8.13	36.53	339	183	P	V
		5134.3	40.88	-13.12	54	37.47	31.84	8.11	36.54	339	183	A	V
	*	5176	100.62	-	-	97.11	31.85	8.17	36.51	339	183	P	V
	*	5178	93.98	-	-	90.47	31.85	8.17	36.51	339	183	A	V
802.11ac VHT20 CH 44 5220MHz	*	5222	100.51	-	-	96.95	31.86	8.2	36.5	100	286	P	H
	*	5222	92.6	-	-	89.04	31.86	8.2	36.5	100	286	A	H
	*	5218	101.13	-	-	97.57	31.86	8.2	36.5	318	183	P	V
	*	5218	93.32	-	-	89.76	31.86	8.2	36.5	318	183	A	V
802.11ac VHT20 CH 48 5240MHz	*	5236	100.69	-	-	97.11	31.87	8.21	36.5	100	272	P	H
	*	5238	93.14	-	-	89.56	31.87	8.21	36.5	100	272	A	H
		5394.65	46.63	-27.37	74	42.88	31.92	8.33	36.5	100	272	P	H
		5397.5	38.41	-15.59	54	34.66	31.92	8.33	36.5	100	272	A	H
	*	5236	100.41	-	-	96.83	31.87	8.21	36.5	333	183	P	V
	*	5238	92.4	-	-	88.82	31.87	8.21	36.5	333	183	A	V
		5397.7	47.34	-26.66	74	43.59	31.92	8.33	36.5	333	183	P	V
	5392.05	38.43	-15.57	54	34.69	31.92	8.32	36.5	333	183	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 1 5150~5250MHz

WIFI 802.11ac VHT20 (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
802.11ac VHT20 CH 36 5180MHz		10359	41.29	-32.71	74	50.83	38.02	13.54	61.1	100	0	P	H
		10359	39.75	-34.25	74	49.29	38.02	13.54	61.1	100	360	P	V
802.11ac VHT20 CH 44 5220MHz		10440	37.52	-36.48	74	46.95	38.06	13.58	61.07	100	0	P	H
		10440	37.49	-36.51	74	46.92	38.06	13.58	61.07	100	360	P	V
802.11ac VHT20 CH 48 5240MHz		10479	39.55	-34.45	74	48.89	38.09	13.61	61.04	100	0	P	H
		10479	38.7	-35.3	74	48.04	38.09	13.61	61.04	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**15E band 1 5150~5250MHz  
WIFI 802.11ac VHT40 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.	
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.		
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )	
802.11ac VHT40 CH 38 5190MHz		5144.15	58.71	-15.29	74	55.27	31.84	8.13	36.53	107	287	P	H	
	!	5149.55	48.14	-5.86	54	44.7	31.84	8.13	36.53	107	287	A	H	
	*	5186	98.02	-	-	94.51	31.85	8.17	36.51	107	287	P	H	
	*	5182	90.46	-	-	86.95	31.85	8.17	36.51	107	287	A	H	
		5146.55	59.43	-14.57	74	55.99	31.84	8.13	36.53	301	186	P	V	
	!	5149.3	49.3	-4.7	54	45.86	31.84	8.13	36.53	301	186	A	V	
	*	5192	98.76	-	-	95.21	31.86	8.19	36.5	301	186	P	V	
	*	5194	91.18	-	-	87.63	31.86	8.19	36.5	301	186	A	V	
802.11ac VHT40 CH 46 5230MHz		5222	98.5	-	-	94.94	31.86	8.2	36.5	103	289	P	H	
		*	5222	90.22	-	-	86.66	31.86	8.2	36.5	103	289	A	H
		5382.5	47.77	-26.23	74	44.03	31.92	8.32	36.5	103	289	P	H	
		5390.3	38.72	-15.28	54	34.98	31.92	8.32	36.5	103	289	A	H	
		*	5226	97.56	-	-	93.98	31.87	8.21	36.5	316	187	P	V
		*	5214	90.15	-	-	86.59	31.86	8.2	36.5	316	187	A	V
			5378.05	46.98	-27.02	74	43.24	31.92	8.32	36.5	316	187	P	V
		5394.85	38.37	-15.63	54	34.62	31.92	8.33	36.5	316	187	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



15E band 1 5150~5250MHz

WIFI 802.11ac VHT40 (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	(dBμV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)
802.11ac VHT40 CH 38 5190MHz		10380	44.54	-29.46	74	54.06	38.03	13.55	61.1	100	177	P	H
802.11ac VHT40 CH 46 5230MHz		10461	44.5	-29.5	74	53.87	38.08	13.6	61.05	110	173	P	H
		10461	45.71	-28.29	74	55.08	38.08	13.6	61.05	315	288	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												





**15E band 1 5150~5250MHz  
WIFI 802.11ac VHT80 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
<b>802.11ac VHT80 CH 42 5210MHz</b>		5146.9	55.12	-18.88	74	51.68	31.84	8.13	36.53	100	286	P	H
		5149.2	47.28	-6.72	54	43.84	31.84	8.13	36.53	100	286	A	H
	*	5222	93.3	-	-	89.74	31.86	8.2	36.5	100	286	P	H
	*	5194	88.03	-	-	84.48	31.86	8.19	36.5	100	286	A	H
		5382.05	46.68	-27.32	74	42.94	31.92	8.32	36.5	100	286	P	H
		5383.8	39.65	-14.35	54	35.91	31.92	8.32	36.5	100	286	A	H
		5148.15	56.26	-17.74	74	52.82	31.84	8.13	36.53	300	184	P	V
	!	5148.9	48.54	-5.46	54	45.1	31.84	8.13	36.53	300	184	A	V
	*	5192	94.73	-	-	91.18	31.86	8.19	36.5	300	184	P	V
	*	5196	87.99	-	-	84.44	31.86	8.19	36.5	300	184	A	V
	5372.45	46.39	-27.61	74	42.67	31.91	8.31	36.5	300	184	P	V	
	5350.55	39.16	-14.84	54	35.46	31.91	8.29	36.5	300	184	A	V	
<b>Remark</b>	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 1 5150~5250MHz

WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	(dBμV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)
802.11ac VHT80		10419	43.88	-30.12	74	53.34	38.05	13.57	61.08	102	119	P	H
CH 42 5210MHz		10419	44.52	-29.48	74	53.98	38.05	13.57	61.08	302	199	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**15E band 2 5250~5350MHz  
WIFI 802.11n HT20 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
802.11n HT20 CH 52 5260MHz		5109.5	47.33	-26.67	74	43.95	31.83	8.1	36.55	100	282	P	H
		5114.85	37.95	-16.05	54	34.57	31.83	8.1	36.55	100	282	A	H
	*	5266	100.77	-	-	97.16	31.88	8.23	36.5	100	282	P	H
	*	5256	91.53	-	-	87.93	31.88	8.22	36.5	100	282	A	H
		5112.8	47.69	-26.31	74	44.31	31.83	8.1	36.55	300	188	P	V
		5112	38.39	-15.61	54	35.01	31.83	8.1	36.55	300	188	A	V
	*	5262	98.77	-	-	95.16	31.88	8.23	36.5	300	188	P	V
	*	5256	91.21	-	-	87.61	31.88	8.22	36.5	300	188	A	V
802.11n HT20 CH 60 5300MHz	*	5296	100.38	-	-	96.73	31.89	8.26	36.5	100	277	P	H
	*	5296	92.05	-	-	88.4	31.89	8.26	36.5	100	277	A	H
	*	5296	98.33	-	-	94.68	31.89	8.26	36.5	300	183	P	V
	*	5296	89.9	-	-	86.25	31.89	8.26	36.5	300	183	A	V
802.11n HT20 CH 64 5320MHz	*	5326	100.05	-	-	96.38	31.9	8.27	36.5	100	263	P	H
	*	5326	90.96	-	-	87.29	31.9	8.27	36.5	100	263	A	H
		5351.95	47.34	-26.66	74	43.64	31.91	8.29	36.5	100	263	P	H
		5356.7	38.94	-15.06	54	35.24	31.91	8.29	36.5	100	263	A	H
	*	5312	98.11	-	-	94.44	31.9	8.27	36.5	348	183	P	V
	*	5312	90.29	-	-	86.62	31.9	8.27	36.5	348	183	A	V
		5359.65	47.36	-26.64	74	43.66	31.91	8.29	36.5	348	183	P	V
	5351.2	38.32	-15.68	54	34.62	31.91	8.29	36.5	348	183	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 2 5250~5350MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

Table with 14 columns: WIFI, Note, Frequency, Level, Over, Limit, Read, Antenna, Cable, Preamp, Ant, Table, Peak, Pol. It contains test results for three channels (CH 52, CH 60, CH 64) and a Remark section.



**15E band 2 5250~5350MHz  
WIFI 802.11n HT40 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
802.11n HT40 CH 54 5270MHz		5111.3	46.82	-27.18	74	43.44	31.83	8.1	36.55	104	274	P	H
		5147.4	37.89	-16.11	54	34.45	31.84	8.13	36.53	104	274	A	H
	*	5256	98.64	-	-	95.04	31.88	8.22	36.5	104	274	P	H
	*	5274	90.96	-	-	87.35	31.88	8.23	36.5	104	274	A	H
		5122.6	47.35	-26.65	74	43.94	31.84	8.11	36.54	309	184	P	V
		5114.55	38.41	-15.59	54	35.03	31.83	8.1	36.55	309	184	A	V
	*	5282	96.04	-	-	92.4	31.89	8.25	36.5	309	184	P	V
	*	5274	88.92	-	-	85.31	31.88	8.23	36.5	309	184	A	V
802.11n HT40 CH 62 5310MHz	*	5296	98.61	-	-	94.96	31.89	8.26	36.5	103	273	P	H
	*	5296	90.68	-	-	87.03	31.89	8.26	36.5	103	273	A	H
		5352.2	52.61	-21.39	74	48.91	31.91	8.29	36.5	103	273	P	H
		5350.55	44.06	-9.94	54	40.36	31.91	8.29	36.5	103	273	A	H
	*	5322	96.15	-	-	92.48	31.9	8.27	36.5	339	188	P	V
	*	5318	88.31	-	-	84.64	31.9	8.27	36.5	339	188	A	V
		5353.55	51.87	-22.13	74	48.17	31.91	8.29	36.5	339	188	P	V
	5351.1	42.52	-11.48	54	38.82	31.91	8.29	36.5	339	188	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 2 5250~5350MHz
WIFI 802.11n HT40 (Harmonic @ 3m)

Table with 14 columns: WIFI, Note, Frequency, Level, Over, Limit, Read, Antenna, Cable, Preamp, Ant, Table, Peak, Pol. It contains test results for 802.11n HT40 channels 54 and 62 at frequencies 10539 and 10620 MHz.



**15E band 2 5250~5350MHz**  
**WIFI 802.11ac VHT20 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
802.11ac VHT20 CH 52 5260MHz		5140.55	47.74	-26.26	74	44.3	31.84	8.13	36.53	100	286	P	H
		5143	38.38	-15.62	54	34.94	31.84	8.13	36.53	100	286	A	H
	*	5258	99.89	-	-	96.29	31.88	8.22	36.5	100	286	P	H
	*	5262	92.69	-	-	89.08	31.88	8.23	36.5	100	286	A	H
		5109.6	47.93	-26.07	74	44.55	31.83	8.1	36.55	333	181	P	V
		5108.2	38.88	-15.12	54	35.5	31.83	8.1	36.55	333	181	A	V
	*	5256	99.24	-	-	95.64	31.88	8.22	36.5	333	181	P	V
	5252	91.49	-	-	87.89	31.88	8.22	36.5	333	181	A	V	
802.11ac VHT20 CH 60 5300MHz	*	5296	99.82	-	-	96.17	31.89	8.26	36.5	100	275	P	H
	*	5298	92.95	-	-	89.3	31.89	8.26	36.5	100	275	A	H
	*	5298	98.98	-	-	95.33	31.89	8.26	36.5	329	187	P	V
	*	5294	91.26	-	-	87.61	31.89	8.26	36.5	329	187	A	V
802.11ac VHT20 CH 64 5320MHz	*	5322	99.55	-	-	95.88	31.9	8.27	36.5	100	274	P	H
	*	5318	92.98	-	-	89.31	31.9	8.27	36.5	100	274	A	H
		5354.5	48.57	-25.43	74	44.87	31.91	8.29	36.5	100	274	P	H
		5351.45	39.87	-14.13	54	36.17	31.91	8.29	36.5	100	274	A	H
	*	5322	99.2	-	-	95.53	31.9	8.27	36.5	338	188	P	V
	*	5314	91.24	-	-	87.57	31.9	8.27	36.5	338	188	A	V
		5350.7	47.53	-26.47	74	43.83	31.91	8.29	36.5	338	188	P	V
	5350.7	39.23	-14.77	54	35.53	31.91	8.29	36.5	338	188	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 2 5250~5350MHz

WIFI 802.11ac VHT20 (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	(dBμV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)
802.11ac VHT20 CH 52 5260MHz		10521	43.17	-30.83	74	52.46	38.11	13.63	61.03	100	0	P	H
		10521	42.44	-31.56	74	51.73	38.11	13.63	61.03	100	360	P	V
802.11ac VHT20 CH 60 5300MHz		10599	43.84	-30.16	74	52.98	38.16	13.68	60.98	100	0	P	H
		10599	43.16	-30.84	74	52.3	38.16	13.68	60.98	100	360	P	V
802.11ac VHT20 CH 64 5320MHz		10641	38.88	-35.12	74	47.97	38.18	13.7	60.97	100	0	P	H
		10641	37.72	-36.28	74	46.81	38.18	13.7	60.97	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												





**15E band 2 5250~5350MHz**  
**WIFI 802.11ac VHT40 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
802.11ac VHT40 CH 54 5270MHz		5131.9	46.81	-27.19	74	43.4	31.84	8.11	36.54	105	275	P	H
		5115.95	37.69	-16.31	54	34.31	31.83	8.1	36.55	105	275	A	H
	*	5274	97.94	-	-	94.33	31.88	8.23	36.5	105	275	P	H
	*	5278	90.02	-	-	86.38	31.89	8.25	36.5	105	275	A	H
		5127.55	47.65	-26.35	74	44.24	31.84	8.11	36.54	329	172	P	V
		5111.2	38.17	-15.83	54	34.79	31.83	8.1	36.55	329	172	A	V
	*	5284	95.9	-	-	92.26	31.89	8.25	36.5	329	172	P	V
	*	5274	88.55	-	-	84.94	31.88	8.23	36.5	329	172	A	V
802.11ac VHT40 CH 62 5310MHz	*	5306	97.48	-	-	93.83	31.89	8.26	36.5	107	277	P	H
	*	5318	90.08	-	-	86.41	31.9	8.27	36.5	107	277	A	H
		5352.4	51.44	-22.56	74	47.74	31.91	8.29	36.5	107	277	P	H
		5351.4	43.03	-10.97	54	39.33	31.91	8.29	36.5	107	277	A	H
	*	5306	97.02	-	-	93.37	31.89	8.26	36.5	325	183	P	V
	*	5318	88.83	-	-	85.16	31.9	8.27	36.5	325	183	A	V
		5351.8	50	-24	74	46.3	31.91	8.29	36.5	325	183	P	V
	5350	41.21	-12.79	54	37.51	31.91	8.29	36.5	325	183	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 2 5250~5350MHz
WIFI 802.11ac VHT40 (Harmonic @ 3m)

Table with 14 columns: WIFI, Note, Frequency, Level, Over, Limit, Read, Antenna, Cable, Preamp, Ant, Table, Peak, Pol. It contains test results for 802.11ac VHT40 channels 54 and 62.



**15E band 2 5250~5350MHz  
WIFI 802.11ac VHT80 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
<b>802.11ac VHT80 CH 58 5290MHz</b>		5134.25	46.54	-27.46	74	43.13	31.84	8.11	36.54	104	270	P	H
		5140.6	38.94	-15.06	54	35.5	31.84	8.13	36.53	104	270	A	H
	*	5276	94.54	-	-	90.9	31.89	8.25	36.5	104	270	P	H
	*	5274	88.09	-	-	84.48	31.88	8.23	36.5	104	270	A	H
		5385.25	51.43	-22.57	74	47.69	31.92	8.32	36.5	104	270	P	H
		5386.6	45.01	-8.99	54	41.27	31.92	8.32	36.5	104	270	A	H
		5135.9	47.67	-26.33	74	44.26	31.84	8.11	36.54	312	182	P	V
		5106.5	38.99	-15.01	54	35.61	31.83	8.1	36.55	312	182	A	V
	*	5296	92.59	-	-	88.94	31.89	8.26	36.5	312	182	P	V
	*	5274	87.13	-	-	83.52	31.88	8.23	36.5	312	182	A	V
		5376.75	49.62	-24.38	74	45.9	31.91	8.31	36.5	312	182	P	V
		5387.3	43.33	-10.67	54	39.59	31.92	8.32	36.5	312	182	A	V
<b>Remark</b>	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 2 5250~5350MHz

WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	(dBμV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)
802.11ac VHT80		10581	44.76	-29.24	74	53.93	38.15	13.67	60.99	152	137	P	H
CH 58 5290MHz		10581	43.61	-30.39	74	52.78	38.15	13.67	60.99	302	291	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**15E band 3 - 5470~5725MHz  
WIFI 802.11n HT20 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
802.11n HT20 CH 100 5500MHz		5469.68	48.01	-25.99	74	44.08	31.95	8.38	36.4	100	284	P	H
		5469.84	39.33	-14.67	54	35.4	31.95	8.38	36.4	100	284	A	H
	*	5496	97.98	-	-	94.02	31.95	8.39	36.38	100	284	P	H
	*	5496	90.66	-	-	86.7	31.95	8.39	36.38	100	284	A	H
		5461.04	47.9	-26.1	74	44.01	31.94	8.37	36.42	300	185	P	V
		5469.52	39.09	-14.91	54	35.16	31.95	8.38	36.4	300	185	A	V
	*	5496	98.49	-	-	94.53	31.95	8.39	36.38	300	185	P	V
	*	5500	89.71	-	-	85.7	31.96	8.4	36.35	300	185	A	V
802.11n HT20 CH 116 5580MHz	*	5584	98.7	-	-	94.48	31.98	8.47	36.23	100	287	P	H
	*	5582	91.63	-	-	87.41	31.98	8.47	36.23	100	287	A	H
	*	5576	98.42	-	-	94.24	31.98	8.45	36.25	300	261	P	V
	*	5576	90.09	-	-	85.91	31.98	8.45	36.25	300	261	A	V
802.11n HT20 CH 140 5700MHz	*	5706	98.36	-	-	94.05	32.03	8.55	36.27	100	290	P	H
	*	5702	90.74	-	-	86.43	32.03	8.55	36.27	100	290	A	H
		5725.4	47.96	-26.04	74	43.63	32.04	8.57	36.28	100	290	P	H
		5730.52	40.16	-13.84	54	35.83	32.04	8.57	36.28	100	290	A	H
	*	5696	99.19	-	-	94.88	32.02	8.54	36.25	300	179	P	V
	*	5704	90.49	-	-	86.18	32.03	8.55	36.27	300	179	A	V
		5727.72	47.81	-26.19	74	43.48	32.04	8.57	36.28	300	179	P	V
	5725.48	39.95	-14.05	54	35.62	32.04	8.57	36.28	300	179	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 3 - 5470~5725MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

Table with 14 columns: WIFI, Note, Frequency, Level, Over, Limit, Read, Antenna, Cable, Preamp, Ant, Table, Peak, Pol. It contains test results for channels 100, 116, and 140 across various frequencies (11001, 11160, 11400 MHz).



**15E band 3 - 5470~5725MHz  
WIFI 802.11n HT40 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)
802.11n HT40 CH 102 5510MHz		5464.72	51.22	-22.78	74	47.29	31.95	8.38	36.4	100	287	P	H
		5470	42.74	-11.26	54	38.81	31.95	8.38	36.4	100	287	A	H
	*	5514	95.2	-	-	91.15	31.96	8.42	36.33	100	287	P	H
	*	5496	87.53	-	-	83.57	31.95	8.39	36.38	100	287	A	H
		5469.68	51.29	-22.71	74	47.36	31.95	8.38	36.4	303	190	P	V
		5469.68	42.44	-11.56	54	38.51	31.95	8.38	36.4	303	190	A	V
	*	5512	95.32	-	-	91.31	31.96	8.4	36.35	303	190	P	V
	*	5498	87.26	-	-	83.25	31.96	8.4	36.35	303	190	A	V
802.11n HT40 CH 110 5550MHz	*	5538	95.38	-	-	91.28	31.97	8.43	36.3	100	288	P	H
	*	5546	87.96	-	-	83.86	31.97	8.43	36.3	100	288	A	H
	*	5540	94.98	-	-	90.88	31.97	8.43	36.3	303	190	P	V
	*	5538	87.19	-	-	83.09	31.97	8.43	36.3	303	190	A	V
802.11n HT40 CH 134 5670MHz	*	5684	96.3	-	-	91.99	32.02	8.54	36.25	100	287	P	H
	*	5668	87.83	-	-	83.52	32.02	8.53	36.24	100	287	A	H
		5735.64	47.12	-26.88	74	42.78	32.05	8.58	36.29	100	287	P	H
		5728.2	38.79	-15.21	54	34.46	32.04	8.57	36.28	100	287	A	H
	*	5674	95.05	-	-	90.74	32.02	8.53	36.24	306	179	P	V
	*	5678	87.27	-	-	82.96	32.02	8.53	36.24	306	179	A	V
		5728.12	47.2	-26.8	74	42.87	32.04	8.57	36.28	306	179	P	V
	5728.12	38.48	-15.52	54	34.15	32.04	8.57	36.28	306	179	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**15E band 3 - 5470~5725MHz**  
**WIFI 802.11n HT40 (Harmonic @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)
802.11n HT40 CH 102 5510MHz		11019	45.26	-28.74	74	53.71	38.41	13.92	60.78	100	0	P	H
		11019	45.64	-28.36	74	54.09	38.41	13.92	60.78	100	360	P	V
802.11n HT40 CH 110 5550MHz		11100	45.25	-28.75	74	53.58	38.44	13.97	60.74	100	0	P	H
		11100	46.79	-27.21	74	55.12	38.44	13.97	60.74	100	360	P	V
802.11n HT40 CH 134 5670MHz		11340	45.15	-28.85	74	53.13	38.53	14.11	60.62	100	0	P	H
		11340	43.57	-30.43	74	51.55	38.53	14.11	60.62	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												





**15E band 3 - 5470~5725MHz  
WIFI 802.11ac VHT20 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
802.11ac VHT20 CH 100 5500MHz		5463.76	48.79	-25.21	74	44.86	31.95	8.38	36.4	100	290	P	H
		5467.92	38.09	-15.91	54	34.16	31.95	8.38	36.4	100	290	A	H
	*	5496	99.57	-	-	95.61	31.95	8.39	36.38	100	290	P	H
	*	5498	91.86	-	-	87.85	31.96	8.4	36.35	100	290	A	H
		5470	48.34	-25.66	74	44.41	31.95	8.38	36.4	320	193	P	V
		5470	39.92	-14.08	54	35.99	31.95	8.38	36.4	320	193	A	V
	*	5498	98	-	-	93.99	31.96	8.4	36.35	320	193	P	V
	*	5496	91.08	-	-	87.12	31.95	8.39	36.38	320	193	A	V
802.11ac VHT20 CH 116 5580MHz	*	5576	99.39	-	-	95.21	31.98	8.45	36.25	100	288	P	H
	*	5574	92.22	-	-	88.04	31.98	8.45	36.25	100	288	A	H
	*	5584	99.82	-	-	95.6	31.98	8.47	36.23	311	189	P	V
	*	5586	91.67	-	-	87.45	31.98	8.47	36.23	311	189	A	V
802.11ac VHT20 CH 140 5700MHz	*	5696	98.36	-	-	94.05	32.02	8.54	36.25	100	289	P	H
	*	5698	91.03	-	-	86.72	32.02	8.54	36.25	100	289	A	H
		5729.48	48.05	-25.95	74	43.72	32.04	8.57	36.28	100	289	P	H
		5730.28	40.31	-13.69	54	35.98	32.04	8.57	36.28	100	289	A	H
	*	5694	98.62	-	-	94.31	32.02	8.54	36.25	311	179	P	V
	*	5702	91.27	-	-	86.96	32.03	8.55	36.27	311	179	A	V
		5729.4	47.68	-26.32	74	43.35	32.04	8.57	36.28	311	179	P	V
	5730.12	40.05	-13.95	54	35.72	32.04	8.57	36.28	311	179	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 3 - 5470~5725MHz

WIFI 802.11ac VHT20 (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
802.11ac VHT20 CH 100 5500MHz		11001	45.29	-28.71	74	53.77	38.4	13.91	60.79	100	0	P	H
		11001	44.81	-29.19	74	53.29	38.4	13.91	60.79	100	360	P	V
802.11ac VHT20 CH 116 5580MHz		11160	43.73	-30.27	74	51.96	38.47	14.01	60.71	100	0	P	H
		11160	44	-30	74	52.23	38.47	14.01	60.71	100	360	P	V
802.11ac VHT20 CH 140 5700MHz		11400	43.05	-30.95	74	50.93	38.56	14.15	60.59	100	0	P	H
		11400	44.04	-29.96	74	51.92	38.56	14.15	60.59	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**15E band 3 - 5470~5725MHz  
WIFI 802.11ac VHT40 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)
802.11ac VHT40 CH 102 5510MHz		5466.16	50.52	-23.48	74	46.59	31.95	8.38	36.4	100	287	P	H
		5469.36	41.75	-12.25	54	37.82	31.95	8.38	36.4	100	287	A	H
	*	5504	95.24	-	-	91.23	31.96	8.4	36.35	100	287	P	H
	*	5518	87.05	-	-	83	31.96	8.42	36.33	100	287	A	H
		5468.56	50.22	-23.78	74	46.29	31.95	8.38	36.4	297	264	P	V
		5469.2	42.42	-11.58	54	38.49	31.95	8.38	36.4	297	264	A	V
	*	5504	93.7	-	-	89.69	31.96	8.4	36.35	297	264	P	V
	*	5498	86.45	-	-	82.44	31.96	8.4	36.35	297	264	A	V
802.11ac VHT40 CH 110 5550MHz	*	5536	94.13	-	-	90.03	31.97	8.43	36.3	100	293	P	H
	*	5558	87.27	-	-	83.14	31.97	8.44	36.28	100	293	A	H
	*	5560	93.74	-	-	89.61	31.97	8.44	36.28	300	263	P	V
	*	5546	86.45	-	-	82.35	31.97	8.43	36.3	300	263	A	V
802.11ac VHT40 CH 134 5670MHz	*	5674	95.46	-	-	91.15	32.02	8.53	36.24	100	288	P	H
	*	5674	87.6	-	-	83.29	32.02	8.53	36.24	100	288	A	H
		5752.36	46.49	-27.51	74	42.15	32.05	8.59	36.3	100	288	P	H
		5726.2	38.77	-15.23	54	34.44	32.04	8.57	36.28	100	288	A	H
	*	5682	93.56	-	-	89.25	32.02	8.53	36.24	302	194	P	V
	*	5684	86.23	-	-	81.92	32.02	8.54	36.25	302	194	A	V
		5750.44	46.95	-27.05	74	42.61	32.05	8.58	36.29	302	194	P	V
	5726.84	38.28	-15.72	54	33.95	32.04	8.57	36.28	302	194	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 3 - 5470~5725MHz

WIFI 802.11ac VHT40 (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)
802.11ac VHT40 CH 102 5510MHz		11019	44.63	-29.37	74	53.08	38.41	13.92	60.78	104	173	P	H
802.11ac VHT40 CH 110 5550MHz		11100	44.79	-29.21	74	53.12	38.44	13.97	60.74	105	173	P	H
802.11ac VHT40 CH 134 5670MHz		11340	44.36	-29.64	74	52.34	38.53	14.11	60.62	103	173	P	H
802.11ac VHT40 CH 134 5670MHz		11340	44.03	-29.97	74	52.01	38.53	14.11	60.62	337	299	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**15E band 3 5470~5725MHz  
WIFI 802.11ac VHT80 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
802.11ac VHT80 CH 106 5530MHz		5439.6	49.17	-24.83	74	45.33	31.94	8.35	36.45	100	286	P	H
		5448.4	42.31	-11.69	54	38.42	31.94	8.37	36.42	100	286	A	H
	*	5516	91.4	-	-	87.35	31.96	8.42	36.33	100	286	P	H
	*	5518	84.89	-	-	80.84	31.96	8.42	36.33	100	286	A	H
		5739.08	46.46	-27.54	74	42.12	32.05	8.58	36.29	100	286	P	H
		5751.24	38.75	-15.25	54	34.41	32.05	8.58	36.29	100	286	A	H
		5468.4	51.33	-22.67	74	47.4	31.95	8.38	36.4	300	191	P	V
		5454.48	42.42	-11.58	54	38.53	31.94	8.37	36.42	300	191	A	V
	*	5522	91.96	-	-	87.91	31.96	8.42	36.33	300	191	P	V
	*	5520	84.31	-	-	80.26	31.96	8.42	36.33	300	191	A	V
		5752.44	46.76	-27.24	74	42.42	32.05	8.59	36.3	300	191	P	V
	5727.16	38.83	-15.17	54	34.5	32.04	8.57	36.28	300	191	A	V	
802.11ac VHT80 CH 122 5610MHz		5464.56	46.22	-27.78	74	42.29	31.95	8.38	36.4	100	288	P	H
		5458.32	39.15	-14.85	54	35.26	31.94	8.37	36.42	100	288	A	H
	*	5602	92.35	-	-	88.08	31.99	8.48	36.2	100	288	P	H
	*	5596	85.63	-	-	81.41	31.98	8.47	36.23	100	288	A	H
		5726.2	47.74	-26.26	74	43.41	32.04	8.57	36.28	100	288	P	H
		5727	39.45	-14.55	54	35.12	32.04	8.57	36.28	100	288	A	H
		5462.96	46.59	-27.41	74	42.66	31.95	8.38	36.4	300	193	P	V
		5439.92	39.09	-14.91	54	35.25	31.94	8.35	36.45	300	193	A	V
	*	5644	90.96	-	-	86.68	32	8.5	36.22	300	193	P	V
	*	5622	84.39	-	-	80.12	31.99	8.49	36.21	300	193	A	V
		5753.08	46.86	-27.14	74	42.52	32.05	8.59	36.3	300	193	P	V
	5728.84	39.68	-14.32	54	35.35	32.04	8.57	36.28	300	193	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 3 5470~5725MHz

WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	(dBμV)	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)
802.11ac VHT80 CH 106 5530MHz		11061	44.86	-29.14	74	53.24	38.43	13.95	60.76	113	172	P	H
		11061	44.89	-29.11	74	53.27	38.43	13.95	60.76	302	273	P	V
802.11ac VHT80 CH 122 5610MHz		11220	42.69	-31.31	74	50.84	38.49	14.04	60.68	100	217	P	H
		11220	45.28	-28.72	74	53.43	38.49	14.04	60.68	311	237	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E Emission below 1GHz
WIFI 802.11n HT40 (LF @ 3m)

Table with 14 columns: WIFI, Note, Frequency, Level, Over, Limit, Read, Antenna, Cable, Preamp, Ant, Table, Peak, Pol. It contains 12 rows of test data for 802.11n HT40 LF and a Remark section at the bottom.



**Note symbol**

*	<b>Fundamental Frequency</b> which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency per 15.209(c).
!	Test result is <b>over limit</b> line.
P/A	<b>Peak</b> or <b>Average</b>
H/V	<b>Horizontal</b> or <b>Vertical</b>





A calculation example for radiated spurious emission is shown as below:

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
802.11b		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
CH 01		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H
2412MHz													

- Level(dBμV/m) =  
Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
- Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

**For Peak Limit @ 2390MHz:**

- Level(dBμV/m)  
= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)  
= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)  
= 55.45 (dBμV/m)
- Over Limit(dB)  
= Level(dBμV/m) – Limit Line(dBμV/m)  
= 55.45(dBμV/m) – 74(dBμV/m)  
= -18.55(dB)

**For Average Limit @ 2390MHz:**

- Level(dBμV/m)  
= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)  
= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)  
= 43.54 (dBμV/m)
- Over Limit(dB)  
= Level(dBμV/m) – Limit Line(dBμV/m)  
= 43.54(dBμV/m) – 54(dBμV/m)  
= -10.46(dB)

**Both peak and average measured complies with the limit line, so test result is “PASS”.**