



FCC RF Test Report

APPLICANT : BlackBerry Ltd.
EQUIPMENT : GSM Quad-band/HSPA-UMTS Penta-band/ LTE
Deca-band mobile phone
BRAND NAME : BlackBerry
MODEL NAME : BBA100-1
MARKETING NAME : DTEK60
FCC ID : L6ABBA1001
STANDARD : FCC Part 15 Subpart E §15.407
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure

The product was received on Jul. 20, 2016 and testing was completed on Aug. 17, 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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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR672002E	Rev. 01	Initial issue of report	Aug. 23, 2016



SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	2.1049 15.403(i)	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	$\leq -17, -27$ dBm (depend on band)&15.209(a)	Pass	Under limit 0.65 dB at 5470.000 MHz
3.5	15.207	RSS-Gen 8.8	AC Conducted Emission	15.207(a)	Pass	Under limit 3.91 dB at 0.529 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

BlackBerry Ltd.

2200 University Ave E., Waterloo, ON, CAN. N2K0A7

1.2 Manufacturer

TCL Communication Ltd.

5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area Shanghai, P.R. China. 201203

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	GSM Quad-band/HSPA-UMTS Penta-band/ LTE Deca-band mobile phone
Brand Name	BlackBerry
Model Name	BBA100-1
Marketing Name	DTEK60
FCC ID	L6ABBA1001
EUT supports Radios application	GSM/GPRS/EGPRS/WCDMA/HSPA/DC-HSDPA/ HSPA+(16QAM uplink is not supported)/LTE/NFC/ WLAN 2.4GHz 802.11b/g/n HT20/ WLAN 5GHz 802.11a/n HT20/HT40/ WLAN 5GHz 802.11ac VHT20/VHT40/VHT80/ Bluetooth v3.0+EDR/ Bluetooth v4.0 LE/ Bluetooth v4.2 LE
IMEI Code	Conducted: 004402243144338 Radiation: 004402243143843/004402243144411 Conduction: 004402243144106/004402243144346
HW Version	PIO
SW Version	AAF884
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

Standards-related Product Specification	
Tx/Rx Frequency Range	5180 MHz ~ 5240 MHz 5260 MHz ~ 5320 MHz 5500 MHz ~ 5700 MHz
Maximum Output Power to Antenna	<5180 MHz ~ 5240 MHz> 802.11a : 14.26 dBm / 0.0267 W 802.11n HT20 : 14.03 dBm / 0.0253 W 802.11n HT40 : 14.45 dBm / 0.0279 W 802.11ac VHT20 : 14.07 dBm / 0.0255 W 802.11ac VHT40 : 14.46 dBm / 0.0279 W 802.11ac VHT80 : 14.34 dBm / 0.0272 W <5260 MHz ~ 5320 MHz> 802.11a : 14.74 dBm / 0.0298 W 802.11n HT20 : 14.41 dBm / 0.0276 W 802.11n HT40 : 14.85 dBm / 0.0305 W 802.11ac VHT20 : 14.46 dBm / 0.0279 W 802.11ac VHT40 : 14.89 dBm / 0.0308 W 802.11ac VHT80 : 14.50 dBm / 0.0282 W <5500 MHz ~ 5700 MHz > 802.11a : 16.10 dBm / 0.0407 W 802.11n HT20 : 15.95 dBm / 0.0394 W 802.11n HT40 : 16.09 dBm / 0.0406 W 802.11ac VHT20 : 15.95 dBm / 0.0394 W 802.11ac VHT40 : 16.01 dBm / 0.0399 W 802.11ac VHT80 : 15.38 dBm / 0.0345 W
99% Occupied Bandwidth	<5180 MHz ~ 5240 MHz> 802.11a : 16.73 MHz 802.11n HT20 : 17.73 MHz 802.11n HT40 : 35.96 MHz 802.11ac VHT20: 17.73 MHz 802.11ac VHT40 : 35.96 MHz 802.11ac VHT80 : 74.93 MHz <5260 MHz ~ 5320 MHz> 802.11a : 16.78 MHz 802.11n HT20 : 17.73 MHz 802.11n HT40 : 36.06 MHz 802.11ac VHT20: 17.73 MHz 802.11ac VHT40 : 36.06 MHz 802.11ac VHT80 : 74.81 MHz <5500 MHz ~ 5700 MHz> 802.11a : 16.78 MHz 802.11n HT20 : 17.73 MHz 802.11n HT40 : 36.06 MHz 802.11ac VHT20: 17.73 MHz 802.11ac VHT40 : 36.06 MHz 802.11ac VHT80 : 74.81 MHz
Antenna Type	LDS Antenna
Antenna Gain	<5180 MHz ~ 5240 MHz> : 0.40 dBi <5260 MHz ~ 5320 MHz> : 0.40 dBi <5500 MHz ~ 5700 MHz> : 0.40 dBi
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)

	802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)
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1.5 Specification of Accessory

Specification of Accessory				
AC Adapter 1	Brand Name	N/A	Model Name	QC10US
	Power Rating	I/P: 100-240Vac, 500mA, O/P: 5Vdc, 2000mA/9Vdc, 1670mA		
	Manufacturer	BYD	S/N	CBA0060AGHC1
AC Adapter 2	Brand Name	N/A	Model Name	QC10EU
	Power Rating	I/P: 100-240Vac, 500mA, O/P: 5Vdc, 2000mA/9Vdc, 1670mA		
	Manufacturer	BYD	S/N	CBA0060AAHC1
AC Adapter 3	Brand Name	N/A	Model Name	QC10UK
	Power Rating	I/P: 100-240Vac, 500mA, O/P: 5Vdc, 2000mA/9Vdc, 1670mA		
	Manufacturer	BYD	S/N	CBA0060ABHC1
AC Adapter 4	Brand Name	N/A	Model Name	QC10AU
	Power Rating	I/P: 100-240Vac, 500mA, O/P: 5Vdc, 2000mA/9Vdc, 1670mA		
	Manufacturer	BYD	S/N	CBA0060ACHC1
Battery 1	Brand Name	N/A	Model Name	TLp030F2
	Power Rating	3.84Vdc, 3000mAh		
	Manufacturer	SCUD	S/N	CAC3000027C2
Battery 2	Brand Name	N/A	Model Name	TLp030F1
	Power Rating	3.84Vdc, 3000mAh		
	Manufacturer	BYD	S/N	CAC3000026C1
USB Cable	Brand Name	N/A	Model Name	CDA0000078CF
	Signal Line Type	1.00m shielded without core		
Earphone	Brand Name	N/A	Model Name	CCB0045A16C3
	Signal Line Type	1.24m non-shielded without core		

1.6 Modification of EUT

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

1.7 Testing Location

Test Site	SPORTON INTERNATIONAL INC.	
Test Site Location	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C. TEL: +886-3-3273456 FAX: +886-3-3284978	
Test Site No.	Sporton Site No.	FCC/IC Registration No.
	03CH10-HY	TW1098/4086H

Test Site	SPORTON INTERNATIONAL (KUNSHAN) INC.	
Test Site Location	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. China TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958	
Test Site No.	Sporton Site No.	
	TH01-KS	CO01-KS

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

1.8 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 v01r02
- FCC KDB 644545 D03 Guidance for IEEE 802 11ac New Rules v01
- ANSI C63.10-2013
- IC RSS-247 Issued 1
- IC RSS-Gen Issue 4

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 (Z plane) were recorded in this report.

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
	38*	5190	46*	5230
	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
	54*	5270	62*	5310
	56	5280	64	5320
	58 [#]	5290		

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5500-5700 MHz Band 3 (U-NII-2C)	100	5500	120	5600
	102*	5510	122	5610
	104	5520	124	5620
	106 [#]	5530	126*	5630
	108	5540	128	5640
	110*	5550	132	5660
	112	5560	134*	5670
	116	5580	136	5680
	118*	5590	140	5700



Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
TDWR Channel	120	5600	126*	5630
	122 [#]	5610	128	5640
	124	5620		

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
Straddle Channel	138 [#]	5690	144	5720
	142*	5710		

Note:

1. The above Frequency and Channel in "*" were 802.11n HT40 and 802.11ac VHT40.
2. The above Frequency and Channel in "[#]" were 802.11ac VHT80.



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)	Data Rate 6Mbps	Channel	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
CH 36	5180	14.10	CH 48	14.06	14.05	14.14	14.08	14.18	14.15	12.26
CH 44	5220	14.05					14.02			
CH 48	5240	14.26					14.24			
CH 52	5260	14.59	CH 64	14.61	14.64	14.62	14.58	14.68	14.71	12.82
CH 60	5300	14.64					14.63			
CH 64	5320	14.74					14.73			
CH 100	5500	15.73	CH 140	15.80	15.79	15.84	15.69	15.94	15.95	14.11
CH 116	5580	15.43					15.29			
CH 140	5700	16.10					16.05			

WLAN 5GHz 802.11n-HT20 Average Power (dBm)										
Power vs. Channel			Power vs. Data Rate							
Channel	Frequency (MHz)	MCS Index MCS0	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 36	5180	13.87	CH 48	13.73	13.75	14.00	13.85	13.99	12.51	11.40
CH 44	5220	13.83					13.81			
CH 48	5240	14.03					13.98			
CH 52	5260	14.30	CH 64	13.98	14.18	14.31	14.22	14.23	12.73	11.71
CH 60	5300	14.31					14.30			
CH 64	5320	14.41					14.35			
CH 100	5500	15.46	CH 140	15.62	15.74	15.88	15.43	15.87	14.36	13.50
CH 116	5580	15.31					15.25			
CH 140	5700	15.95					15.88			

WLAN 5GHz 802.11n-HT40 Average Power (dBm)										
Power vs. Channel			Power vs. Data Rate							
Channel	Frequency (MHz)	MCS Index MCS0	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 38	5190	14.45	CH 38	14.37	14.38	14.40	14.44	14.30	12.58	11.43
CH 46	5230	14.32					14.19			
CH 54	5270	14.85	CH 54	14.81	14.79	14.83	14.76	14.72	12.79	11.91
CH 62	5310	14.78					14.73			
CH 102	5510	16.09	CH 102	15.90	15.89	16.03	16.04	15.86	13.88	12.89
CH 110	5550	15.81					15.79			
CH 134	5670	15.98					15.95			



WLAN 5GHz 802.11ac VHT20 Average Power (dBm)											
Power vs. Channel			Power vs. Data Rate								
Channel	Frequency (MHz)	MCS Index MCS0	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8
CH 36	5180	13.98	CH 48	13.68	13.81	14.05	13.91	14.02	12.61	11.55	10.84
CH 44	5220	14.03					13.90				
CH 48	5240	14.07					14.04				
CH 52	5260	14.39	CH 64	14.14	14.28	14.38	14.32	14.42	12.77	11.94	11.07
CH 60	5300	14.32					14.31				
CH 64	5320	14.46					14.43				
CH 100	5500	15.58	CH 140	15.70	15.86	15.88	15.53	15.94	14.17	13.18	12.30
CH 116	5580	15.35					15.33				
CH 140	5700	15.95					15.91				

WLAN 5GHz 802.11ac VHT40 Average Power (dBm)												
Power vs. Channel			Power vs. Data Rate									
Channel	Frequency (MHz)	MCS Index MCS0	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
CH 38	5190	14.46	CH 38	14.31	14.46	14.30	14.37	14.38	12.52	11.58	10.41	10.36
CH 46	5230	14.39						14.31				
CH 54	5270	14.89	CH 54	14.75	14.84	14.76	14.80	14.74	12.83	12.03	10.92	10.79
CH 62	5310	14.77						14.71				
CH 102	5510	16.01	CH 102	15.96	15.91	15.88	15.84	15.93	13.88	13.08	11.89	11.89
CH 110	5550	15.65						15.61				
CH 134	5670	15.90						15.85				

WLAN 5GHz 802.11ac VHT80 Average Power (dBm)												
Power vs. Channel			Power vs. Data Rate									
Channel	Frequency (MHz)	MCS Index MCS0	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
CH 42	5210	14.34	CH 42	14.29	14.26	14.33	14.32	14.30	12.64	11.52	10.63	10.54
CH 58	5290	14.50	CH 58	14.46	14.48	14.43	14.45	14.46	12.67	11.67	10.66	10.65
CH 106	5530	14.53	CH 122	15.34	15.35	15.31	15.33	15.28	13.51	12.53	11.62	11.59
CH 122	5610	15.38										

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
802.11n HT40	MCS0
802.11ac VHT20	MCS0
802.11ac VHT40	MCS0
802.11ac VHT80	MCS0

Test Cases	
AC Conducted Emission	Mode 1 : GSM850 Idle + Bluetooth Link + WLAN (5GHz) Link + Earphone + USB Cable (Charging from Adapter) + Battery 1 Mode 2 : GSM850 Idle + Bluetooth Link + WLAN (5GHz) Link + Earphone + USB Cable (Charging from Adapter) + Battery 2
Remark: - For Radiated TCs, the tests were performed with Adapter, Earphone, Battery 1 and USB Cable, only the worst mode need to verify Battery 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
Straddle Channel		-	-	144

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
Straddle Channel		-	-	144

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
Straddle Channel		-	-	142

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
Straddle Channel		-	-	144

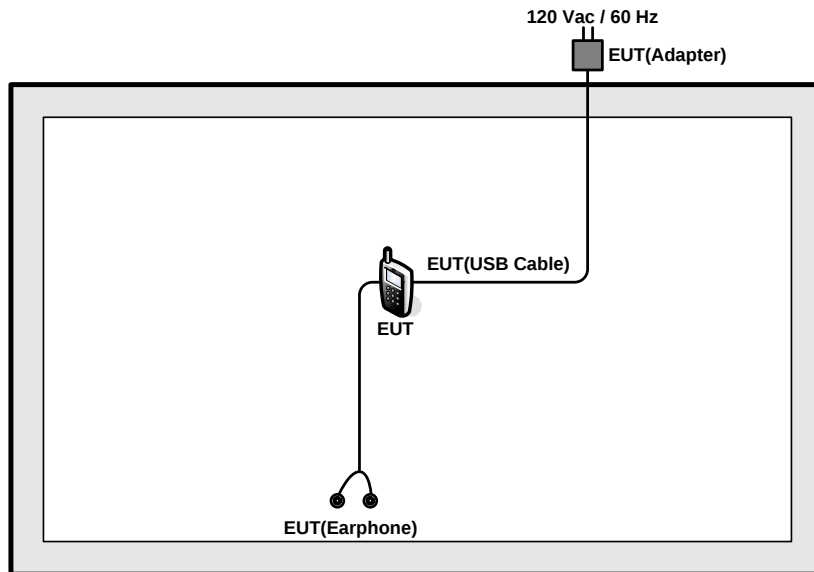


Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5700MHz
		802.11ac VHT40	802.11ac VHT40	802.11ac VHT40
L	Low	38	54	102
M	Middle	-	-	110
H	High	46	62	134
Straddle Channel		-	-	142

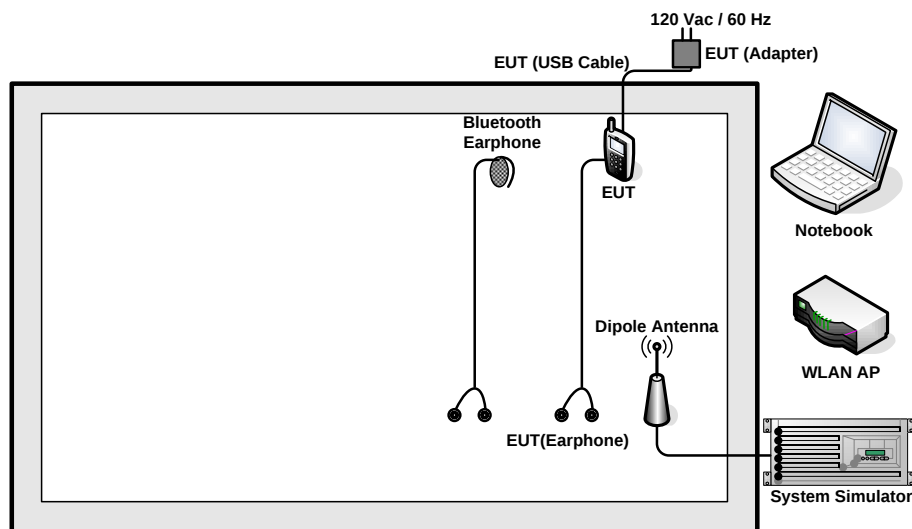
Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5700MHz
		802.11ac VHT80	802.11ac VHT80	802.11ac VHT80
L	Low	-	-	106
M	Middle	42	58	-
H	High	-	-	122
Straddle Channel		-	-	138

2.4 Connection Diagram of Test System

< Radiated Emission 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.	System Simulator	Anritus	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	WLAN AP	LINKSYS	WRT600N	Q87-WRT600NV11	N/A	Unshielded, 1.8 m
3.	Notebook	Lenovo	G480	N/A	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
4.	Bluetooth Earphone	Nokia	BH-102	PYAHS-107W	N/A	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.

Offset (dB) = RF cable loss(dB).

= 7.0 (dB)

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.

For Straddle Channel, U-NII procedures were applied for operations in the frequency band in accordance with FCC KDB 644545 D03.

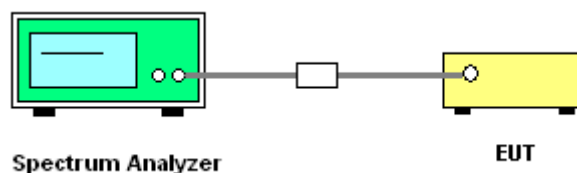
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

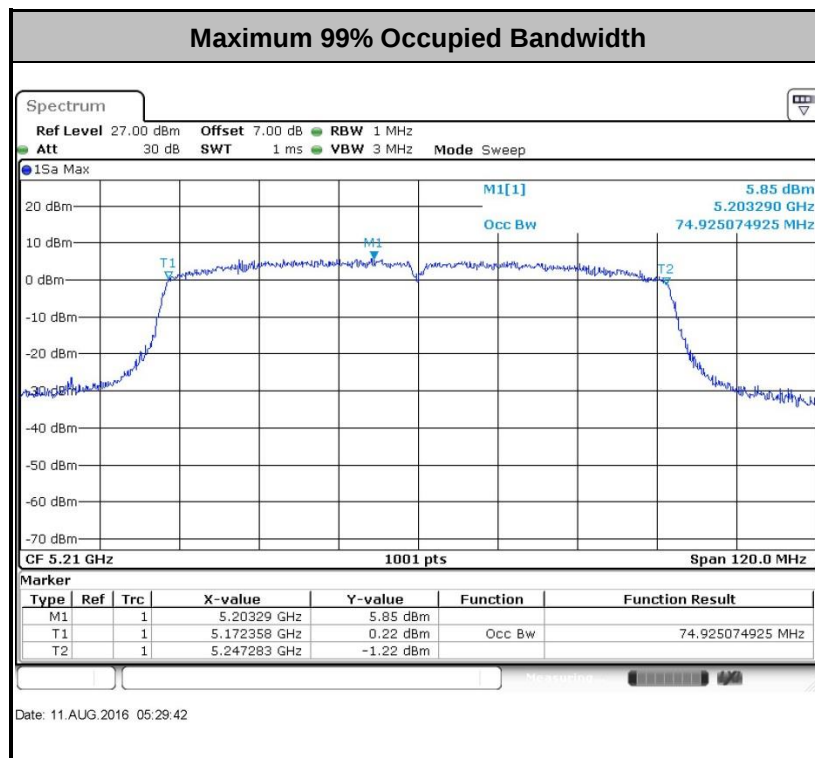
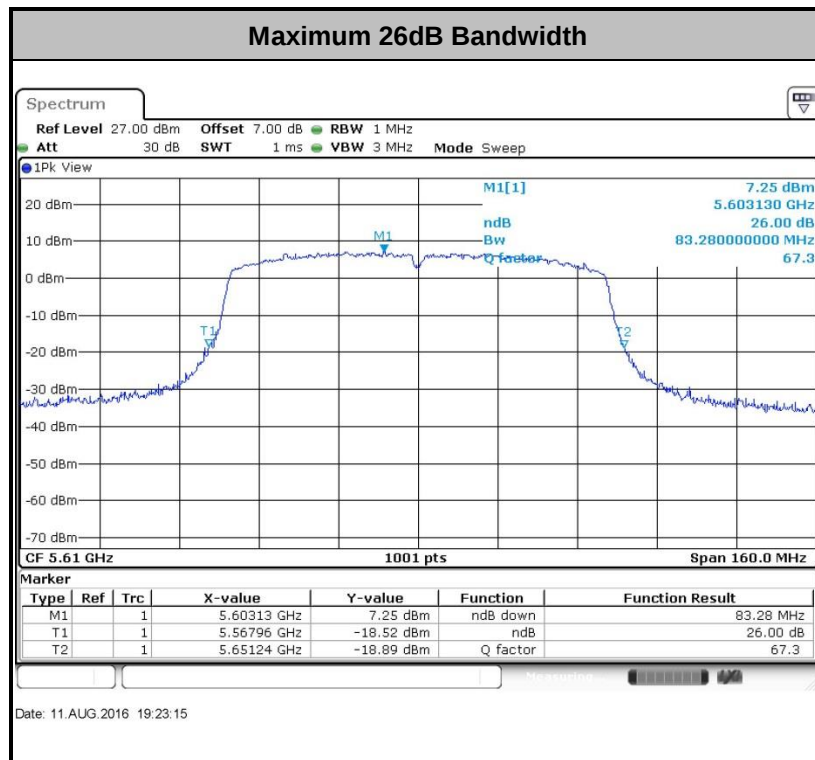
1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r02. Section C) Emission bandwidth
2. Set RBW = approximately 1% of the emission bandwidth.
3. Set the VBW > RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 26 dB 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 5.25–5.725 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.

For Straddle Channel, U-NII procedures and limits were applied for operations in the frequency band in accordance with FCC KDB 644545 D03.

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 v01r02.

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

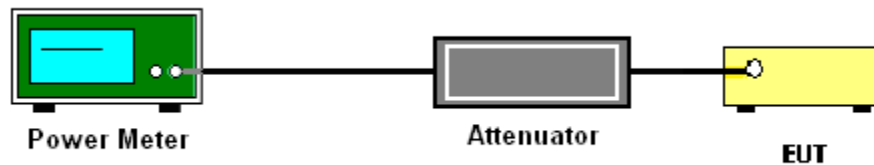
1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit continuously with a consistent duty cycle at its maximum power control level.
3. Measure the average power of the transmitter, and the average power is corrected with duty factor, $10 \log(1/x)$, where x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

For straddle channel, the testing follows Method SA-3 (RMS detection with max hold) of FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r02.

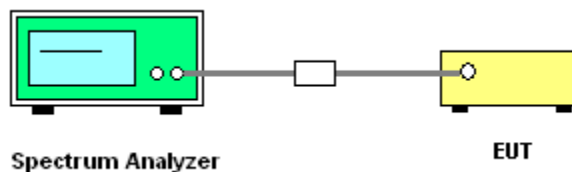
Compute power by integrating the spectrum across the 99% occupied bandwidth of the signal using the instrument's band power measurement function.

3.2.4 Test Setup

For normal channel:



For straddle channel:





3.2.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.

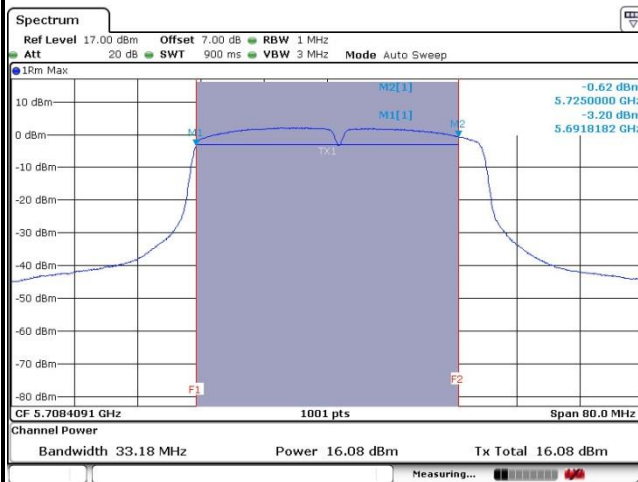




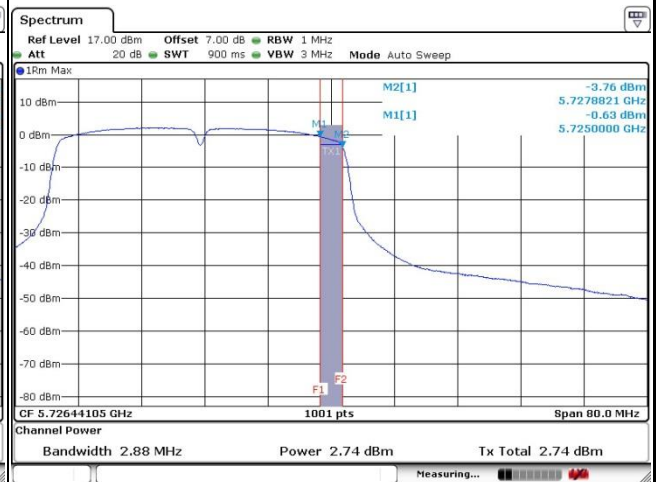
Maximum Straddle Channel Power

802.11n-HT40

NII-2C Band

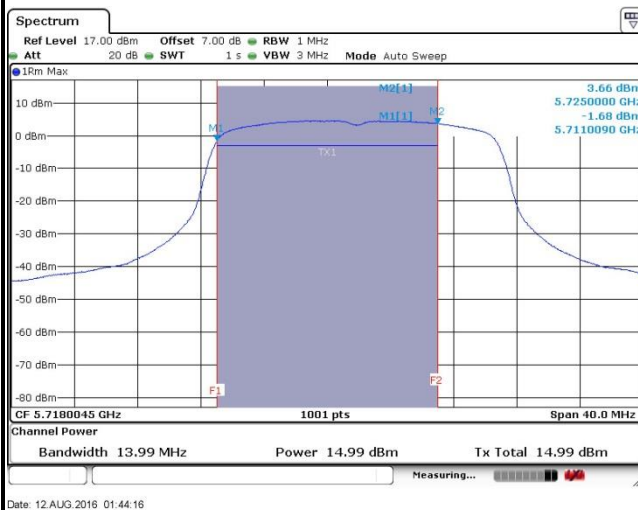


NII-3 Band

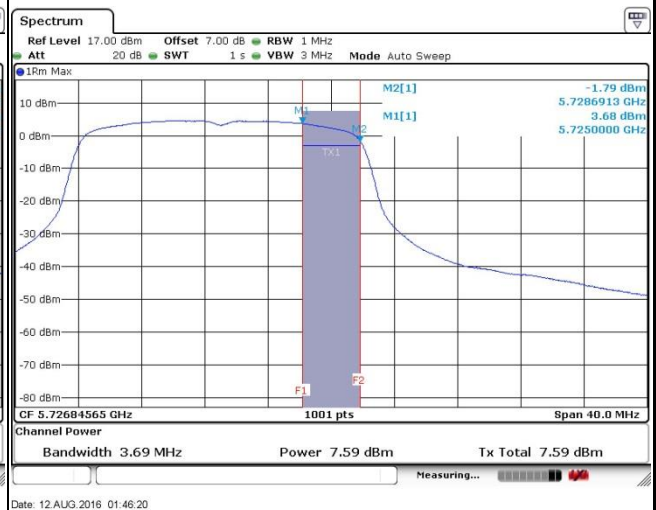


802.11ac VHT20

NII-2C Band



NII-3 Band

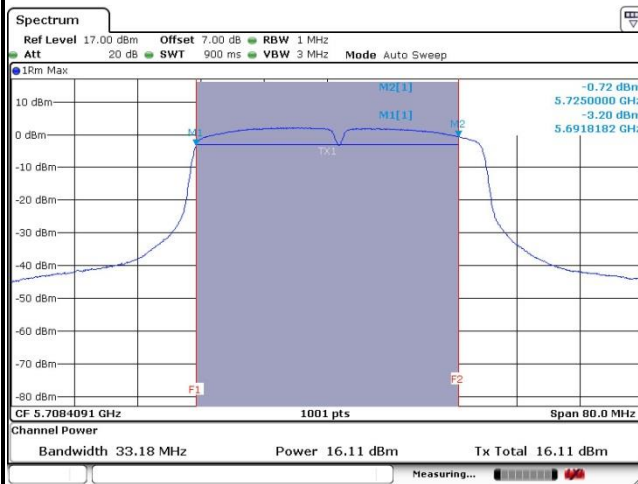




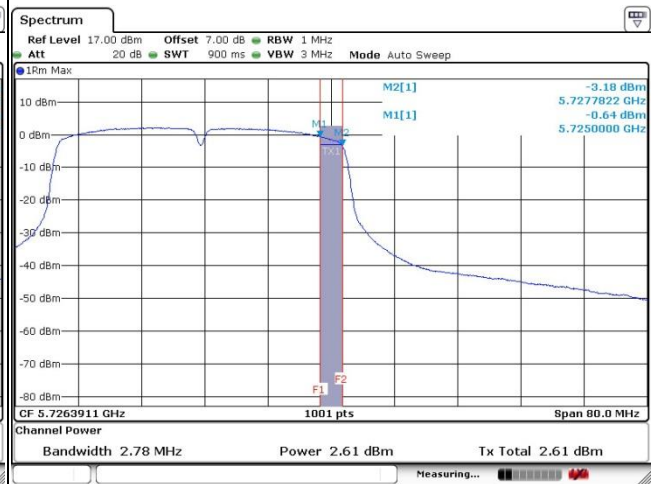
Maximum Straddle Channel Power

802.11ac VHT40

NII-2C Band

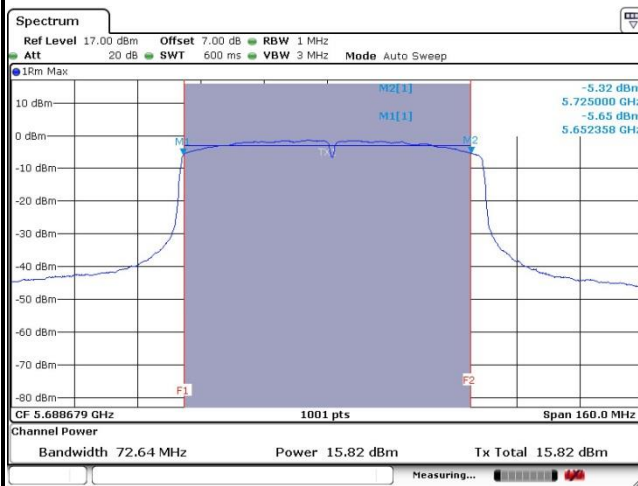


NII-3 Band

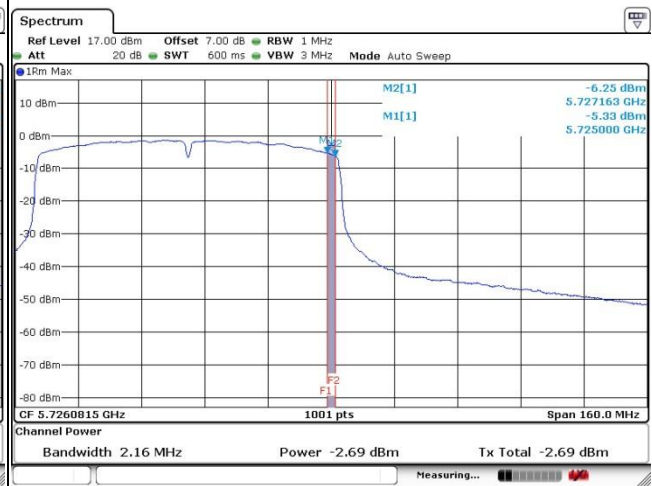


802.11ac VHT80

NII-2C Band



NII-3 Band





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

For Straddle Channel, U-NII procedures and limits were applied for operations in the frequency band in accordance with FCC KDB 644545 D03.

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 v01r02.

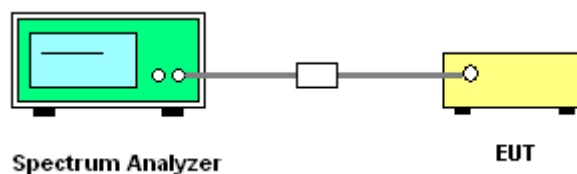
Section F) Maximum power spectral density.

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 v01r02.
 - 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.

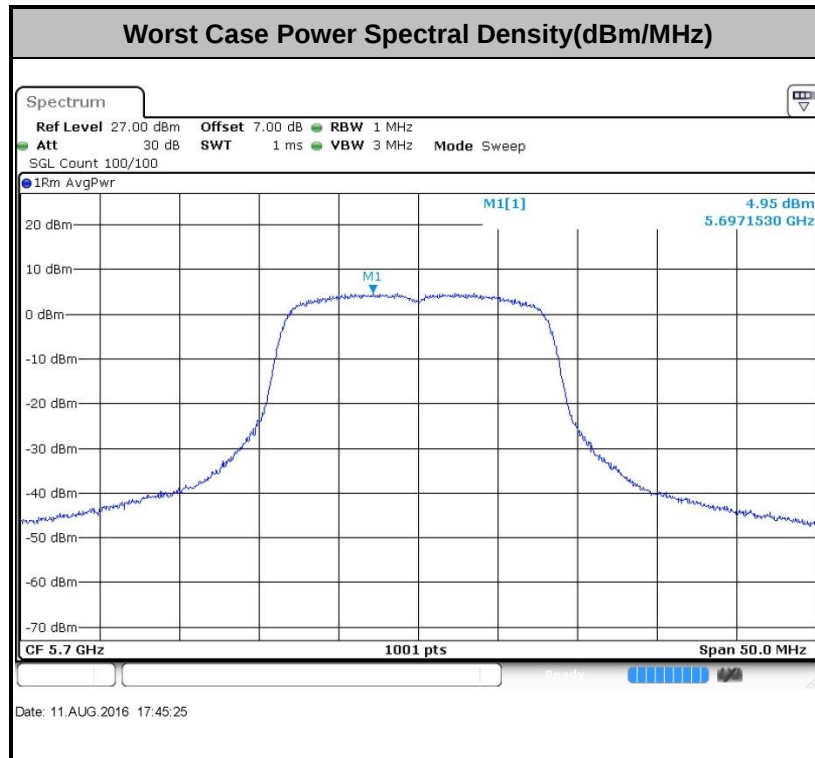
3.3.4 Test Setup





3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.



Note: Average Power Density (dB) = Measured value+ Duty Factor

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 5470-5725MHz band: all emissions outside of the 5470-5725MHz 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.

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



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

- (3) KDB789033 D02 v01r02 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

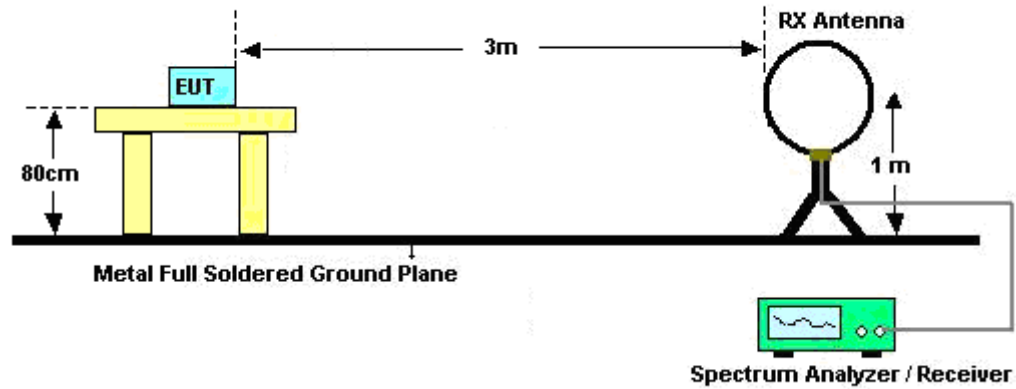
1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r02. Section G) Unwanted emissions measurement.
 - (1) Procedure for Unwanted Emissions Measurements Below 1000MHz
 - RBW = 120 kHz
 - VBW = 300 kHz
 - Detector = Peak
 - Trace mode = max hold
 - (2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz
 - RBW = 1 MHz
 - VBW $\geq$ 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 $\geq$ 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.



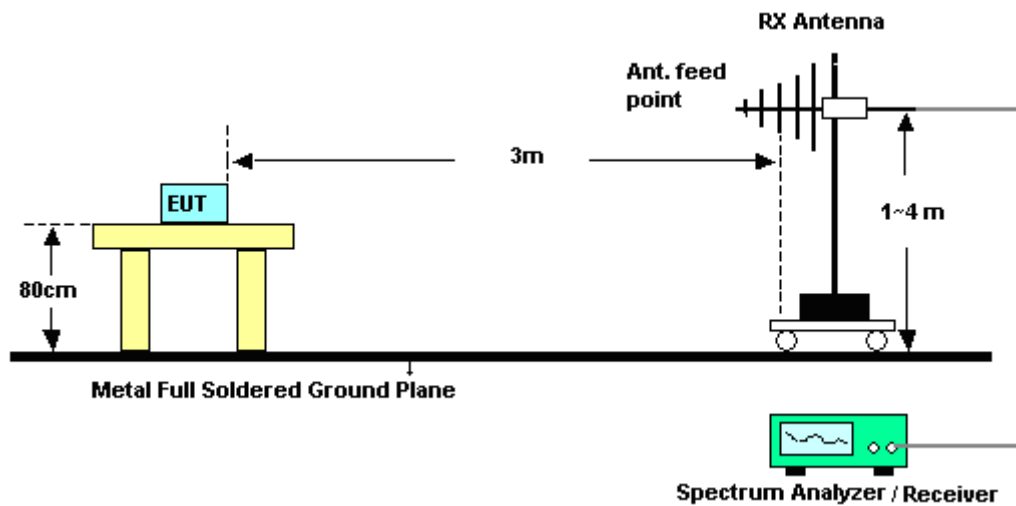
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband 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

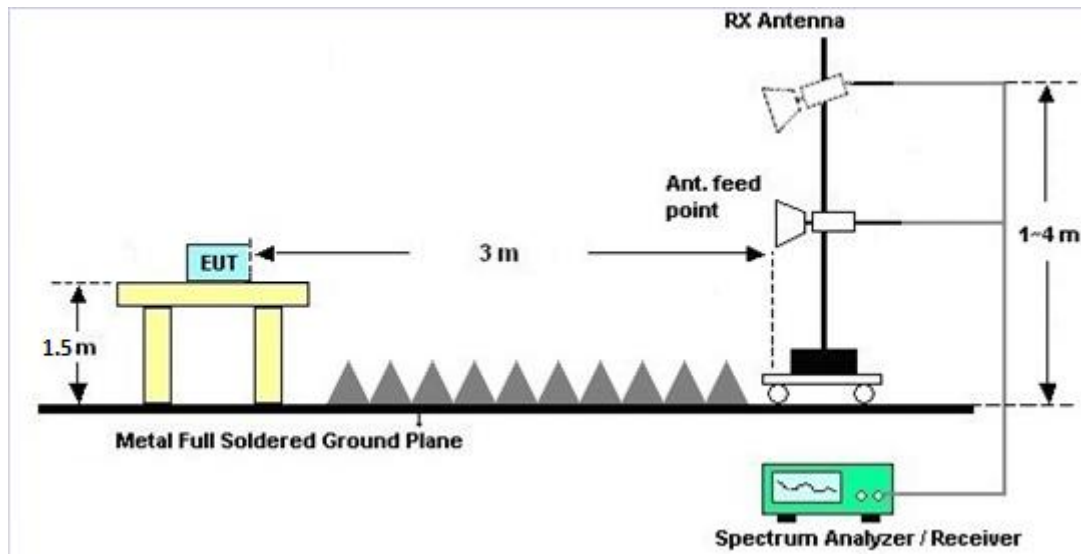
For radiated emissions below 30MHz



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 Duty Cycle

Please refer to Appendix C.

3.4.8 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 μ 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.

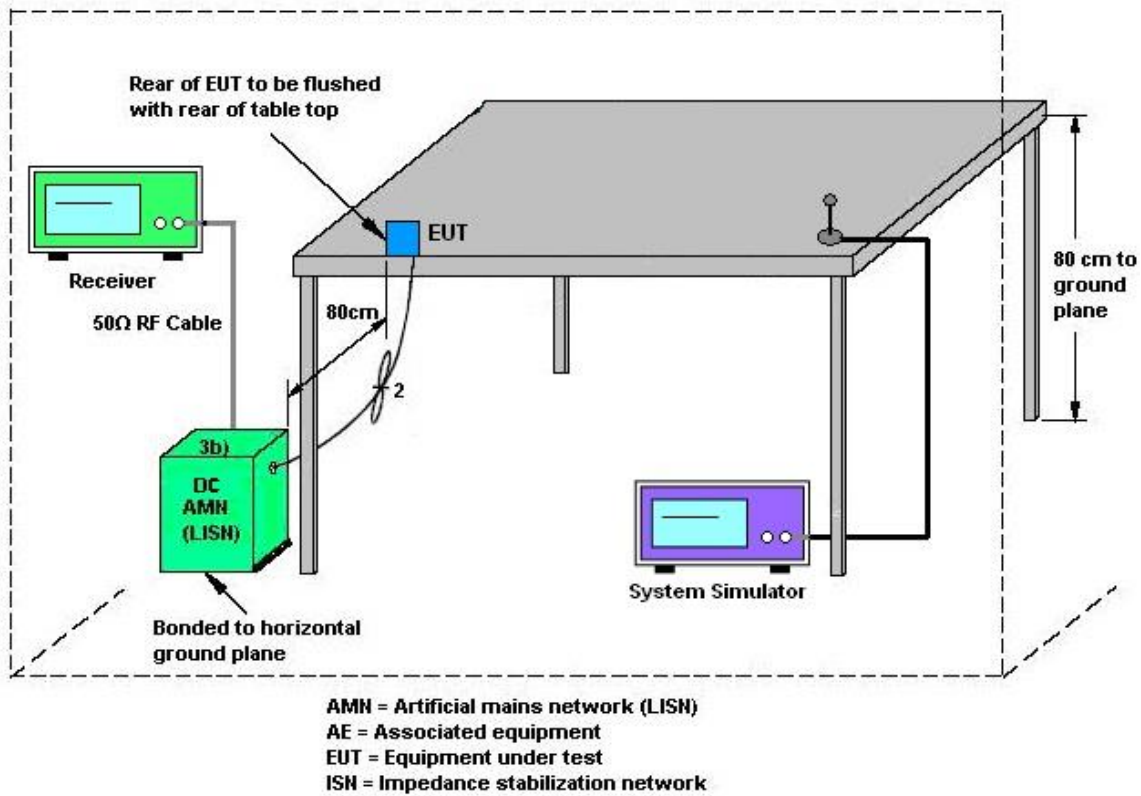
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

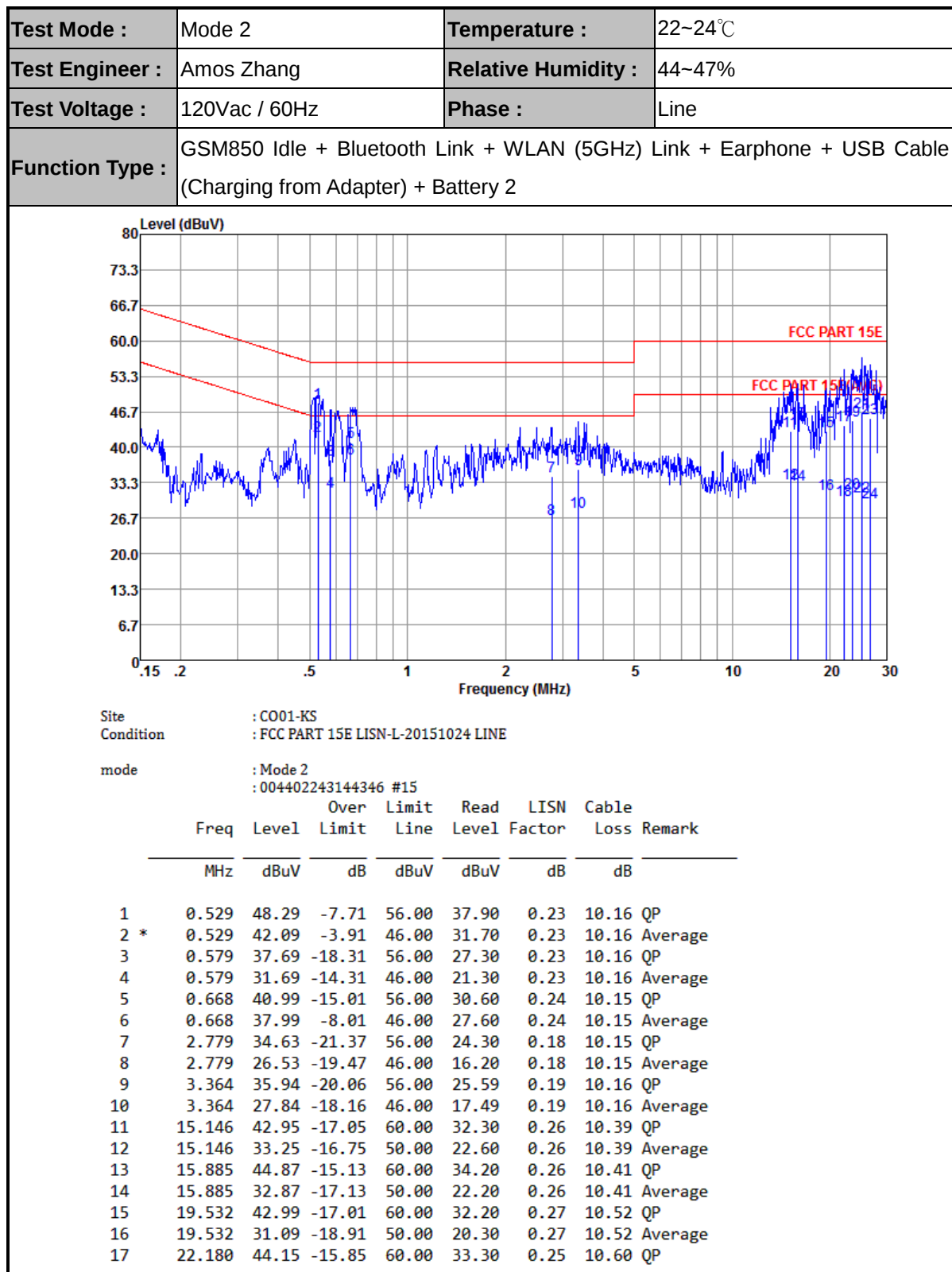
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
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



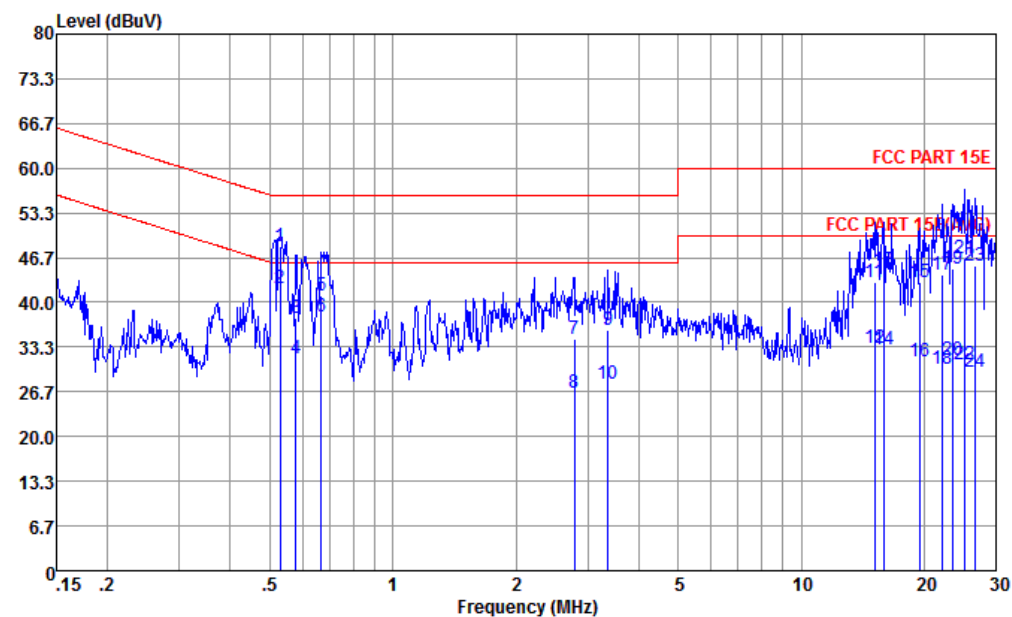


3.5.5 Test Result of AC Conducted Emission





Test Mode :	Mode 2	Temperature :	22~24°C
Test Engineer :	Amos Zhang	Relative Humidity :	44~47%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM850 Idle + Bluetooth Link + WLAN (5GHz) Link + Earphone + USB Cable (Charging from Adapter) + Battery 2		



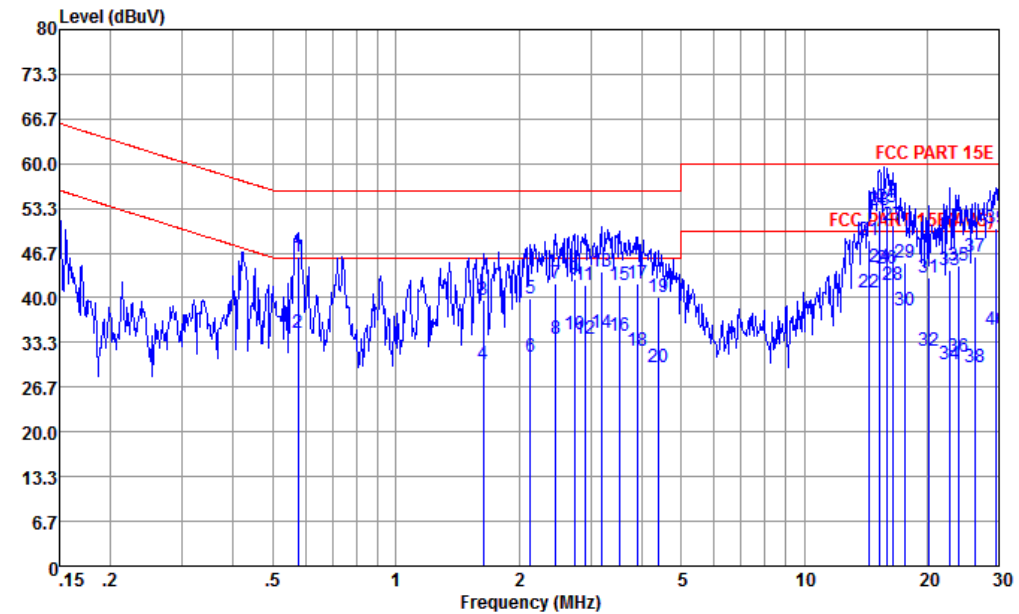
Site : CO01-KS
Condition : FCC PART 15E LISN-L-20151024 LINE

mode : Mode 2
: 004402243144346 #15

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
18	22.180	30.15	-19.85	50.00	19.30	0.25	10.60	Average
19	23.511	45.08	-14.92	60.00	34.21	0.23	10.64	QP
20	23.511	31.48	-18.52	50.00	20.61	0.23	10.64	Average
21	25.055	46.51	-13.49	60.00	35.60	0.22	10.69	QP
22	25.055	30.81	-19.19	50.00	19.90	0.22	10.69	Average
23	26.558	45.57	-14.43	60.00	34.61	0.22	10.74	QP
24	26.558	29.57	-20.43	50.00	18.61	0.22	10.74	Average



Test Mode :	Mode 2	Temperature :	22~24℃
Test Engineer :	Amos Zhang	Relative Humidity :	44~47%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM850 Idle + Bluetooth Link + WLAN (5GHz) Link + Earphone + USB Cable (Charging from Adapter) + Battery 2		



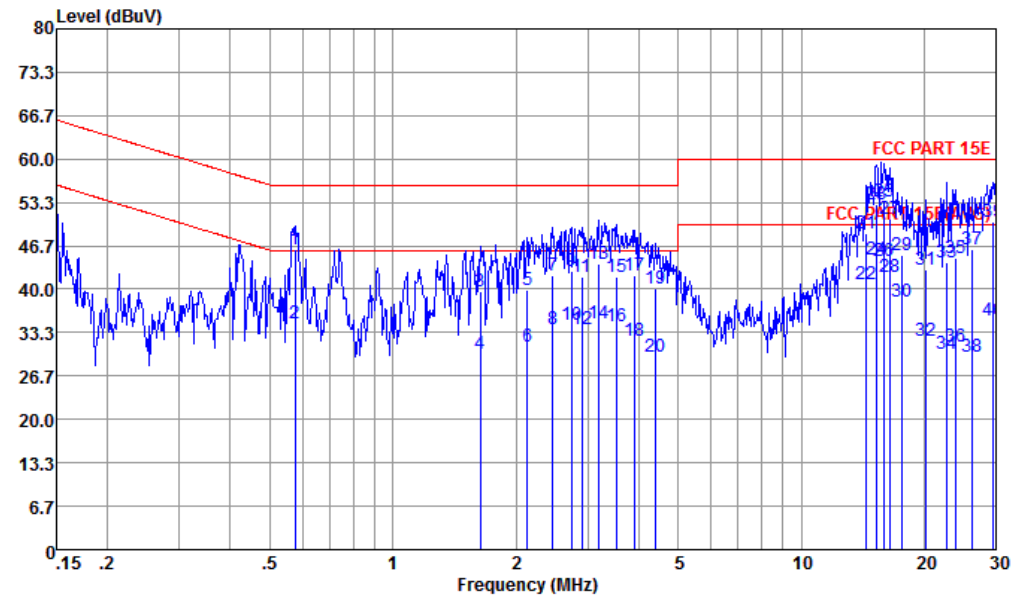
Site : CO01-KS
Condition : FCC PART 15E LISN-N-20151024 NEUTRAL

mode : Mode 2
: 004402243144346 #15

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.576	46.09	-9.91	56.00	35.60	0.33	10.16	QP
2	0.576	34.79	-11.21	46.00	24.30	0.33	10.16	Average
3	1.636	39.72	-16.28	56.00	29.20	0.38	10.14	QP
4	1.636	30.12	-15.88	46.00	19.60	0.38	10.14	Average
5	2.133	39.82	-16.18	56.00	29.30	0.38	10.14	QP
6	2.133	31.12	-14.88	46.00	20.60	0.38	10.14	Average
7	2.461	42.12	-13.88	56.00	31.59	0.38	10.15	QP
8	2.461	33.82	-12.18	46.00	23.29	0.38	10.15	Average
9	2.736	42.82	-13.18	56.00	32.30	0.37	10.15	QP
10	2.736	34.62	-11.38	46.00	24.10	0.37	10.15	Average
11	2.900	41.82	-14.18	56.00	31.30	0.37	10.15	QP
12	2.900	33.82	-12.18	46.00	23.30	0.37	10.15	Average
13	3.190	43.83	-12.17	56.00	33.30	0.37	10.16	QP
14	3.190	34.73	-11.27	46.00	24.20	0.37	10.16	Average
15	3.528	41.83	-14.17	56.00	31.30	0.37	10.16	QP
16	3.528	34.43	-11.57	46.00	23.90	0.37	10.16	Average
17	3.922	42.13	-13.87	56.00	31.60	0.37	10.16	QP



Test Mode :	Mode 2	Temperature :	22~24℃
Test Engineer :	Amos Zhang	Relative Humidity :	44~47%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM850 Idle + Bluetooth Link + WLAN (5GHz) Link + Earphone + USB Cable (Charging from Adapter) + Battery 2		



Site : CO01-KS
Condition : FCC PART 15E LISN-N-20151024 NEUTRAL

mode : Mode 2
: 004402243144346 #15

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
18	3.922	32.03	-13.97	46.00	21.50	0.37	10.16	Average
19	4.407	40.14	-15.86	56.00	29.61	0.36	10.17	QP
20	4.407	29.74	-16.26	46.00	19.21	0.36	10.17	Average
21	14.440	48.54	-11.46	60.00	37.90	0.27	10.37	QP
22	14.440	40.84	-9.16	50.00	30.20	0.27	10.37	Average
23	15.307	52.96	-7.04	60.00	42.29	0.27	10.40	QP
24 *	15.307	44.56	-5.44	50.00	33.89	0.27	10.40	Average
25	15.885	53.58	-6.42	60.00	42.90	0.27	10.41	QP
26	15.885	44.28	-5.72	50.00	33.60	0.27	10.41	Average
27	16.486	50.89	-9.11	60.00	40.20	0.26	10.43	QP
28	16.486	41.99	-8.01	50.00	31.30	0.26	10.43	Average
29	17.661	45.33	-14.67	60.00	34.60	0.26	10.47	QP
30	17.661	38.03	-11.97	50.00	27.30	0.26	10.47	Average
31	20.162	43.09	-16.91	60.00	32.30	0.25	10.54	QP
32	20.162	32.09	-17.91	50.00	21.30	0.25	10.54	Average
33	22.775	44.16	-15.84	60.00	33.30	0.24	10.62	QP
34	22.775	30.16	-19.84	50.00	19.30	0.24	10.62	Average
35	23.888	44.80	-15.20	60.00	33.91	0.24	10.65	QP
36	23.888	31.20	-18.80	50.00	20.31	0.24	10.65	Average
37	26.278	46.17	-13.83	60.00	35.20	0.24	10.73	QP
38	26.278	29.57	-20.43	50.00	18.60	0.24	10.73	Average
39	29.527	50.39	-9.61	60.00	39.30	0.24	10.85	QP
40	29.527	35.19	-14.81	50.00	24.10	0.24	10.85	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.

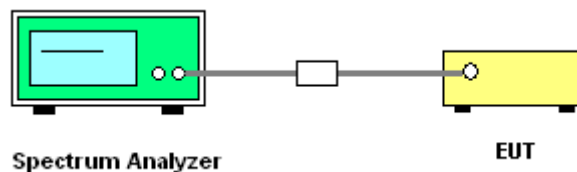
3.6.2 Measuring Instruments

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

The antenna gain is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.



4 List of Measuring Equipments

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Sep. 10, 2015	Aug. 08, 2016~ Aug. 12, 2016	Sep. 09, 2016	Conducted (TH01-KS)
Pulse Power Sensor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 20, 2016	Aug. 08, 2016~ Aug. 12, 2016	Jan. 19, 2017	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 20, 2016	Aug. 08, 2016~ Aug. 12, 2016	Jan. 19, 2017	Conducted (TH01-KS)
Thermal Chamber	Ten Billion	TTC-B3S	TBN-960502	-40~+150°C	Oct. 24, 2015	Aug. 08, 2016~ Aug. 12, 2016	Oct. 23, 2016	Conducted (TH01-KS)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Sep. 02, 2015	Aug. 08, 2016~ Aug. 15, 2016	Sep. 01, 2016	Radiation (03CH10-HY)
Bilog Antenna	TESEQ	CBL 6111D	35413	30MHz~1GHz	Jan. 13, 2016	Aug. 08, 2016~ Aug. 15, 2016	Jan. 12, 2017	Radiation (03CH10-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1325	1GHz ~ 18GHz	Sep. 30, 2015	Aug. 08, 2016~ Aug. 15, 2016	Sep. 29, 2016	Radiation (03CH10-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170576	18GHz ~ 40GHz	Apr. 15, 2016	Aug. 08, 2016~ Aug. 15, 2016	Apr. 14, 2017	Radiation (03CH10-HY)
Amplifier	SONOMA	310N	187311	9kHz~1GHz	Nov. 16, 2015	Aug. 08, 2016~ Aug. 15, 2016	Nov. 15, 2016	Radiation (03CH10-HY)
Preamplifier	Keysight	83017A	MY53270078	1GHz~26.5GHz	Nov. 13, 2015	Aug. 08, 2016~ Aug. 15, 2016	Nov. 12, 2016	Radiation (03CH10-HY)
Preamplifier	MITEQ	TTA0204	1872107	2GHz~40GHz	Feb. 15, 2016	Aug. 08, 2016~ Aug. 15, 2016	Feb. 14, 2017	Radiation (03CH10-HY)
EMI Test Receiver	Keysight	N9038A(MXE)	MY55420170	N/A	Mar. 10, 2016	Aug. 08, 2016~ Aug. 15, 2016	Mar. 09, 2017	Radiation (03CH10-HY)
Spectrum Analyzer	Keysight	N9010A	MY54200485	10Hz ~ 44GHz	Oct. 15, 2015	Aug. 08, 2016~ Aug. 15, 2016	Oct. 14, 2016	Radiation (03CH10-HY)
Controller	EMEC	EM 1000	N/A	Control Turn table & Ant Mast	NCR	Aug. 08, 2016~ Aug. 15, 2016	NCR	Radiation (03CH10-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1~4m	NCR	Aug. 08, 2016~ Aug. 15, 2016	NCR	Radiation (03CH10-HY)
Turn Table	EMEC	TT 2200	N/A	0~360 Degree	NCR	Aug. 08, 2016~ Aug. 15, 2016	NCR	Radiation (03CH10-HY)
EMI Test Receiver	R&S	ESR7	101403	9kHz~7GHz; Max 30dBm	Sep. 10, 2015	Aug. 17, 2016	Sep. 09, 2016	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060103	9kHz~30MHz	Oct. 24, 2015	Aug. 17, 2016	Oct. 23, 2016	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060105	9kHz~30MHz	Oct. 24, 2015	Aug. 17, 2016	Oct. 23, 2016	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Oct. 24, 2015	Aug. 17, 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% ($U = 2Uc(y)$)	2.3dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.6dB
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.9dB
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.2dB
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Appendix A. Conducted Test Results

Test Engineer:	Ivan Chen	Temperature:	24~25	°C
Test Date:	2016/8/8 – 2016/8/12	Relative Humidity:	54~55	%

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)		
11a	6Mbps	1	36	5180	16.73	20.63	-	22.24		
11a	6Mbps	1	44	5220	16.73	20.63	-	22.24		
11a	6Mbps	1	48	5240	16.73	20.63	-	22.24		
HT20	MCS0	1	36	5180	17.68	21.38	-	22.48		
HT20	MCS0	1	44	5220	17.73	21.63	-	22.49		
HT20	MCS0	1	48	5240	17.68	21.68	-	22.48		
HT40	MCS0	1	38	5190	35.96	41.63	-	23.01		
HT40	MCS0	1	46	5230	35.96	41.81	-	23.01		
VHT20	MCS0	1	36	5180	17.73	21.48	-	22.49		
VHT20	MCS0	1	44	5220	17.73	21.63	-	22.49		
VHT20	MCS0	1	48	5240	17.68	21.73	-	22.48		
VHT40	MCS0	1	38	5190	35.96	41.45	-	23.01		
VHT40	MCS0	1	46	5230	35.96	41.72	-	23.01		
VHT80	MCS0	1	42	5210	74.93	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
11a	6Mbps	1	36	5180	0.28	14.10	24.00	0.40		Pass
11a	6Mbps	1	44	5220	0.28	14.05	24.00	0.40		Pass
11a	6Mbps	1	48	5240	0.28	14.26	24.00	0.40		Pass
HT20	MCS0	1	36	5180	0.25	13.87	24.00	0.40		Pass
HT20	MCS0	1	44	5220	0.25	13.83	24.00	0.40		Pass
HT20	MCS0	1	48	5240	0.25	14.03	24.00	0.40		Pass
HT40	MCS0	1	38	5190	0.43	14.45	24.00	0.40		Pass
HT40	MCS0	1	46	5230	0.43	14.32	24.00	0.40		Pass
VHT20	MCS0	1	36	5180	0.24	13.98	24.00	0.40		Pass
VHT20	MCS0	1	44	5220	0.24	14.03	24.00	0.40		Pass
VHT20	MCS0	1	48	5240	0.24	14.07	24.00	0.40		Pass
VHT40	MCS0	1	38	5190	0.44	14.46	24.00	0.40		Pass
VHT40	MCS0	1	46	5230	0.44	14.39	24.00	0.40		Pass
VHT80	MCS0	1	42	5210	0.65	14.34	24.00	0.40		Pass

TEST RESULTS DATA
Power Spectral Density

FCC Band I										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Duty Factor (dB)	Average Power Density (dBm/MHz)	Average PSD Limit (dBm/MHz)	DG (dBi)	-	Pass/Fail
11a	6Mbps	1	36	5180	0.28	3.74	11.00	0.40		Pass
11a	6Mbps	1	44	5220	0.28	3.86	11.00	0.40		Pass
11a	6Mbps	1	48	5240	0.28	3.58	11.00	0.40		Pass
HT20	MCS0	1	36	5180	0.25	3.56	11.00	0.40		Pass
HT20	MCS0	1	44	5220	0.25	3.32	11.00	0.40		Pass
HT20	MCS0	1	48	5240	0.25	3.05	11.00	0.40		Pass
HT40	MCS0	1	38	5190	0.43	0.81	11.00	0.40		Pass
HT40	MCS0	1	46	5230	0.43	0.37	11.00	0.40		Pass
VHT20	MCS0	1	36	5180	0.24	3.10	11.00	0.40		Pass
VHT20	MCS0	1	44	5220	0.24	3.41	11.00	0.40		Pass
VHT20	MCS0	1	48	5240	0.24	3.23	11.00	0.40		Pass
VHT40	MCS0	1	38	5190	0.44	0.80	11.00	0.40		Pass
VHT40	MCS0	1	46	5230	0.44	0.71	11.00	0.40		Pass
VHT80	MCS0	1	42	5210	0.65	-2.56	11.00	0.40		Pass

TEST RESULTS DATA
26dB and 99% OBW

Band II										
Mod.	Data Rate	N _{TX}	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
11a	6M bps	1	52	5260	16.78	20.63	23.25	29.25	23.98	
11a	6M bps	1	60	5300	16.73	20.63	23.24	29.24	23.98	
11a	6M bps	1	64	5320	16.73	20.63	23.24	29.24	23.98	
HT20	MCS 0	1	52	5260	17.73	21.73	23.49	29.49	23.98	
HT20	MCS 0	1	60	5300	17.73	21.53	23.49	29.49	23.98	
HT20	MCS 0	1	64	5320	17.68	21.68	23.48	29.48	23.98	
HT40	MCS 0	1	54	5270	35.96	41.45	23.98	30.00	23.98	
HT40	MCS 0	1	62	5310	36.06	41.81	23.98	30.00	23.98	
VHT20	MCS 0	1	52	5260	17.73	21.68	23.49	29.49	23.98	
VHT20	MCS 0	1	60	5300	17.73	21.38	23.49	29.49	23.98	
VHT20	MCS 0	1	64	5320	17.73	21.58	23.49	29.49	23.98	
VHT40	MCS 0	1	54	5270	35.96	41.63	23.98	30.00	23.98	
VHT40	MCS 0	1	62	5310	36.06	41.63	23.98	30.00	23.98	
VHT80	MCS 0	1	58	5290	74.81	82.80	23.98	30.00	23.98	

TEST RESULTS DATA
Average Power Table

FCC Band II										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)	EIRP Power Limit (dBm)	Pass/Fail
11a	6M bps	1	52	5260	0.28	14.59	23.98	0.40	26.99	Pass
11a	6M bps	1	60	5300	0.28	14.64	23.98	0.40	26.99	Pass
11a	6M bps	1	64	5320	0.28	14.74	23.98	0.40	26.99	Pass
HT20	MCS 0	1	52	5260	0.25	14.30	23.98	0.40	26.99	Pass
HT20	MCS 0	1	60	5300	0.25	14.31	23.98	0.40	26.99	Pass
HT20	MCS 0	1	64	5320	0.25	14.41	23.98	0.40	26.99	Pass
HT40	MCS 0	1	54	5270	0.43	14.85	23.98	0.40	26.99	Pass
HT40	MCS 0	1	62	5310	0.43	14.78	23.98	0.40	26.99	Pass
VHT20	MCS 0	1	52	5260	0.24	14.39	23.98	0.40	26.99	Pass
VHT20	MCS 0	1	60	5300	0.24	14.32	23.98	0.40	26.99	Pass
VHT20	MCS 0	1	64	5320	0.24	14.46	23.98	0.40	26.99	Pass
VHT40	MCS 0	1	54	5270	0.44	14.89	23.98	0.40	26.99	Pass
VHT40	MCS 0	1	62	5310	0.44	14.77	23.98	0.40	26.99	Pass
VHT80	MCS 0	1	58	5290	0.65	14.50	23.98	0.40	26.99	Pass

TEST RESULTS DATA
Power Spectral Density

Band II										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Duty Factor (dB)	Average Power Density (dBm/MHz)	Average PSD Limit (dBm/MHz)	DG (dBi)		Pass/Fail
11a	6M bps	1	52	5260	0.28	4.01	11.00	0.40		Pass
11a	6M bps	1	60	5300	0.28	4.02	11.00	0.40		Pass
11a	6M bps	1	64	5320	0.28	4.18	11.00	0.40		Pass
HT20	MCS 0	1	52	5260	0.25	3.80	11.00	0.40		Pass
HT20	MCS 0	1	60	5300	0.25	3.84	11.00	0.40		Pass
HT20	MCS 0	1	64	5320	0.25	3.54	11.00	0.40		Pass
HT40	MCS 0	1	54	5270	0.43	1.39	11.00	0.40		Pass
HT40	MCS 0	1	62	5310	0.43	1.28	11.00	0.40		Pass
VHT20	MCS 0	1	52	5260	0.24	3.67	11.00	0.40		Pass
VHT20	MCS 0	1	60	5300	0.24	3.67	11.00	0.40		Pass
VHT20	MCS 0	1	64	5320	0.24	3.80	11.00	0.40		Pass
VHT40	MCS 0	1	54	5270	0.44	1.46	11.00	0.40		Pass
VHT40	MCS 0	1	62	5310	0.44	1.65	11.00	0.40		Pass
VHT80	MCS 0	1	58	5290	0.65	-2.25	11.00	0.40		Pass

TEST RESULTS DATA
26dB and 99% OBW

Band III										
Mod.	Data Rate	N _{TX}	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
11a	6M bps	1	100	5500	16.78	20.73	23.25	29.25	23.98	
11a	6M bps	1	116	5580	16.73	20.73	23.24	29.24	23.98	
11a	6M bps	1	140	5700	16.78	20.63	23.25	29.25	23.98	
HT20	MCS 0	1	100	5500	17.68	21.58	23.48	29.48	23.98	
HT20	MCS 0	1	116	5580	17.73	21.58	23.49	29.49	23.98	
HT20	MCS 0	1	140	5700	17.73	21.68	23.49	29.49	23.98	
HT40	MCS 0	1	102	5510	36.06	41.99	23.98	30.00	23.98	
HT40	MCS 0	1	110	5550	36.06	41.54	23.98	30.00	23.98	
HT40	MCS 0	1	134	5670	36.06	41.63	23.98	30.00	23.98	
VHT20	MCS 0	1	100	5500	17.68	21.53	23.48	29.48	23.98	
VHT20	MCS 0	1	116	5580	17.73	21.68	23.49	29.49	23.98	
VHT20	MCS 0	1	140	5700	17.68	21.53	23.48	29.48	23.98	
VHT40	MCS 0	1	102	5510	35.96	41.81	23.98	30.00	23.98	
VHT40	MCS 0	1	110	5550	36.06	41.63	23.98	30.00	23.98	
VHT40	MCS 0	1	134	5670	35.96	41.63	23.98	30.00	23.98	
VHT80	MCS 0	1	106	5530	74.81	82.16	23.98	30.00	23.98	
VHT80	MCS 0	1	122	5610	74.81	83.28	23.98	30.00	23.98	

TEST RESULTS DATA
Average Power Table

FCC Band III										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)	EIRP Power Limit (dBm)	Pass/Fail
11a	6M bps	1	100	5500	0.28	15.73	23.98	0.40	26.99	Pass
11a	6M bps	1	116	5580	0.28	15.43	23.98	0.40	26.99	Pass
11a	6M bps	1	140	5700	0.28	16.10	23.98	0.40	26.99	Pass
HT20	MCS 0	1	100	5500	0.25	15.46	23.98	0.40	26.99	Pass
HT20	MCS 0	1	116	5580	0.25	15.31	23.98	0.40	26.99	Pass
HT20	MCS 0	1	140	5700	0.25	15.95	23.98	0.40	26.99	Pass
HT40	MCS 0	1	102	5510	0.43	16.09	23.98	0.40	26.99	Pass
HT40	MCS 0	1	110	5550	0.43	15.81	23.98	0.40	26.99	Pass
HT40	MCS 0	1	134	5670	0.43	15.98	23.98	0.40	26.99	Pass
VHT20	MCS 0	1	100	5500	0.24	15.58	23.98	0.40	26.99	Pass
VHT20	MCS 0	1	116	5580	0.24	15.35	23.98	0.40	26.99	Pass
VHT20	MCS 0	1	140	5700	0.24	15.95	23.98	0.40	26.99	Pass
VHT40	MCS 0	1	102	5510	0.44	16.01	23.98	0.40	26.99	Pass
VHT40	MCS 0	1	110	5550	0.44	15.65	23.98	0.40	26.99	Pass
VHT40	MCS 0	1	134	5670	0.44	15.90	23.98	0.40	26.99	Pass
VHT80	MCS 0	1	106	5530	0.65	14.53	23.98	0.40	26.99	Pass
VHT80	MCS 0	1	122	5610	0.65	15.38	23.98	0.40	26.99	Pass

TEST RESULTS DATA
Power Spectral Density

Band III										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Duty Factor (dB)	Average Power Density (dBm/MHz)	Average PSD Limit (dBm/MHz)	DG (dBi)		Pass/Fail
11a	6M bps	1	100	5500	0.28	4.90	11.00	0.40		Pass
11a	6M bps	1	116	5580	0.28	4.45	11.00	0.40		Pass
11a	6M bps	1	140	5700	0.28	5.23	11.00	0.40		Pass
HT20	MCS 0	1	100	5500	0.25	4.52	11.00	0.40		Pass
HT20	MCS 0	1	116	5580	0.25	4.16	11.00	0.40		Pass
HT20	MCS 0	1	140	5700	0.25	4.62	11.00	0.40		Pass
HT40	MCS 0	1	102	5510	0.43	1.97	11.00	0.40		Pass
HT40	MCS 0	1	110	5550	0.43	1.57	11.00	0.40		Pass
HT40	MCS 0	1	134	5670	0.43	1.90	11.00	0.40		Pass
VHT20	MCS 0	1	100	5500	0.24	4.63	11.00	0.40		Pass
VHT20	MCS 0	1	116	5580	0.24	4.31	11.00	0.40		Pass
VHT20	MCS 0	1	140	5700	0.24	4.54	11.00	0.40		Pass
VHT40	MCS 0	1	102	5510	0.44	2.08	11.00	0.40		Pass
VHT40	MCS 0	1	110	5550	0.44	2.12	11.00	0.40		Pass
VHT40	MCS 0	1	134	5670	0.44	2.08	11.00	0.40		Pass
VHT80	MCS 0	1	106	5530	0.65	-1.09	11.00	0.40		Pass
VHT80	MCS 0	1	122	5610	0.65	-1.29	11.00	0.40		Pass

TEST RESULTS DATA
26dB and 99% OBW

Straddle Channel											
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	99% Bandwidth (MHz)	6dB Bandwidth (MHz)	Emission Bandwidth (MHz)	IC 99% Bandwidth Power Limit (dBm)	IC 99% Bandwidth EIRP Limit (dBm)	FCC 26dB Bandwidth Power Limit (dBm)	Note
11a	6Mbps	1	144	5720	16.78	15.31	20.48	-	-	-	
				NII-2C	13.54	12.87	15.44	22.32	28.32	22.89	
				NII-3	3.24	2.43	5.04	30.00	36.02	-	
HT20	MCS0	1	144	5720	17.68	15.13	21.58	-	-	-	
				NII-2C	13.99	12.69	16.039	22.46	28.46	23.05	
				NII-3	3.69	2.43	5.539	30.00	36.02	-	
HT40	MCS0	1	142	5710	36.06	35.09	41.72	-	-	-	
				NII-2C	33.18	32.66	36.039	23.98	30.00	23.98	
				NII-3	2.88	2.42	5.679	30.00	36.02	-	
VHT20	MCS0	1	144	5720	17.68	15.13	21.73	-	-	-	
				NII-2C	13.99	12.69	15.939	22.46	28.46	23.02	
				NII-3	3.69	2.43	5.789	30.00	36.02	-	
VHT40	MCS0	1	142	5710	35.96	35.09	41.81	-	-	-	
				NII-2C	33.18	32.66	36.039	23.98	30.00	23.98	
				NII-3	2.78	2.42	5.769	30.00	36.02	-	
VHT80	MCS0	1	138	5690	74.81	75.05	82.80	-	-	-	
				NII-2C	72.64	72.64	76.56	23.98	30.00	23.98	
				NII-3	2.16	2.40	6.24	30.00	36.02	-	

TEST RESULTS DATA
Average Power Table

FCC Straddle Channel										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)		Pass/Fail
11a	6Mbps	1	144	5720	0.28	15.74	-	0.40		Pass
				NII-2C	0.28	15.06	22.89	0.40		Pass
				NII-3	0.28	7.38	30.00	0.40		Pass
HT20	MCS0	1	144	5720	0.25	15.67	-	0.40		Pass
				NII-2C	0.25	14.94	23.05	0.40		Pass
				NII-3	0.25	7.54	30.00	0.40		Pass
HT40	MCS0	1	142	5710	0.43	16.28	-	0.40		Pass
				NII-2C	0.43	16.08	23.98	0.40		Pass
				NII-3	0.43	2.74	30.00	0.40		Pass
VHT20	MCS0	1	144	5720	0.24	15.72	-	0.40		Pass
				NII-2C	0.24	14.99	23.02	0.40		Pass
				NII-3	0.24	7.59	30.00	0.40		Pass
VHT40	MCS0	1	142	5710	0.44	16.30	-	0.40		Pass
				NII-2C	0.44	16.11	23.98	0.40		Pass
				NII-3	0.44	2.61	30.00	0.40		Pass
VHT80	MCS0	1	138	5690	0.65	15.88	-	0.40		Pass
				NII-2C	0.65	15.82	23.98	0.40		Pass
				NII-3	0.65	-2.69	30.00	0.40		Pass

TEST RESULTS DATA
Power Spectral Density

Straddle Channel										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Duty Factor (dB)	Average Power Density (dBm/MHz)	Average PSD Limit (dBm/MHz)	DG (dBi)		Pass/Fail
11a	6Mbps	1	144	NII-2C	0.28	5.39	11.00	0.40		Pass
				NII-3	0.28	5.39	30.00	0.40		Pass
HT20	MCS0	1	144	NII-2C	0.25	4.64	11.00	0.40		Pass
				NII-3	0.25	4.64	30.00	0.40		Pass
HT40	MCS0	1	142	NII-2C	0.43	2.55	11.00	0.40		Pass
				NII-3	0.43	2.55	30.00	0.40		Pass
VHT20	MCS0	1	144	NII-2C	0.24	4.65	11.00	0.40		Pass
				NII-3	0.24	4.65	30.00	0.40		Pass
VHT40	MCS0	1	142	NII-2C	0.44	2.17	11.00	0.40		Pass
				NII-3	0.44	2.17	30.00	0.40		Pass
VHT80	MCS0	1	138	NII-2C	0.65	-0.98	11.00	0.40		Pass
				NII-3	0.65	-0.98	30.00	0.40		Pass

TEST RESULTS DATA
Frequency Stability

Band I										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stability (ppm)	Temperature (°C)	Voltage (V)	Note
11a	6Mbps	1	36	5180	5179.900	-0.100	-19.31	20	3.6	
11a	6Mbps	1	36	5180	5179.900	-0.100	-19.31	20	4.35	
11a	6Mbps	1	36	5180	5179.875	-0.125	-24.13	20	3.8	
11a	6Mbps	1	36	5180	5179.975	-0.025	-4.83	-30	3.8	
11a	6Mbps	1	36	5180	5179.875	-0.125	-24.13	50	3.8	

Band II										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stability (ppm)	Temperature (°C)	Voltage (V)	Note
11a	6Mbps	1	64	5320	5319.900	-0.100	-18.80	20	3.6	
11a	6Mbps	1	64	5320	5319.900	-0.100	-18.80	20	4.35	
11a	6Mbps	1	64	5320	5319.900	-0.100	-18.80	20	3.8	
11a	6Mbps	1	64	5320	5319.975	-0.025	-4.70	-30	3.8	
11a	6Mbps	1	64	5320	5319.875	-0.125	-23.50	50	3.8	

Band III										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stability (ppm)	Temperature (°C)	Voltage (V)	Note
11a	6Mbps	1	100	5500	5499.825	-0.175	-31.82	20	3.6	
11a	6Mbps	1	100	5500	5499.875	-0.125	-22.73	20	4.35	
11a	6Mbps	1	100	5500	5499.875	-0.125	-22.73	20	3.8	
11a	6Mbps	1	100	5500	5499.975	-0.025	-4.55	-30	3.8	
11a	6Mbps	1	100	5500	5499.875	-0.125	-22.73	50	3.8	



Appendix B. Radiated Spurious Emission

For Battery 1

Band 1 - 5150~5250MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 36 5180MHz		5145.6	51.48	-22.52	74	44.13	31.98	7.94	32.57	100	71	P	H
		5147.16	43.48	-10.52	54	36.13	31.98	7.94	32.57	100	71	A	H
	*	5180	104.5	-	-	97.14	32.02	7.91	32.57	100	71	P	H
	*	5180	97.26	-	-	89.9	32.02	7.91	32.57	100	71	A	H
		5143.78	51.89	-22.11	74	44.54	31.98	7.94	32.57	218	70	P	V
		5146.38	42.96	-11.04	54	35.61	31.98	7.94	32.57	218	70	A	V
	*	5180	104.54	-	-	97.18	32.02	7.91	32.57	218	70	P	V
	*	5180	97.56	-	-	90.2	32.02	7.91	32.57	218	70	A	V
802.11a CH 44 5220MHz		5080.86	48.55	-25.45	74	41.23	31.9	7.99	32.57	100	72	P	H
		5149.5	40.6	-13.4	54	33.25	31.98	7.94	32.57	100	72	A	H
	*	5220	103.97	-	-	96.47	32.06	8.01	32.57	100	72	P	H
	*	5220	97.59	-	-	90.09	32.06	8.01	32.57	100	72	A	H
		5424.48	47.07	-26.93	74	39.05	32.3	8.29	32.57	100	72	P	H
		5350.8	38.72	-15.28	54	30.84	32.22	8.23	32.57	100	72	A	H
		5128.96	49.12	-24.88	74	41.79	31.96	7.94	32.57	217	70	P	V
		5146.38	40.21	-13.79	54	32.86	31.98	7.94	32.57	217	70	A	V
	*	5220	104.94	-	-	97.44	32.06	8.01	32.57	217	70	P	V
	*	5220	97.99	-	-	90.49	32.06	8.01	32.57	217	70	A	V
		5395.44	47.27	-26.73	74	39.27	32.28	8.29	32.57	217	70	P	V
		5353.2	38.82	-15.18	54	30.94	32.22	8.23	32.57	217	70	A	V



802.11a CH 48 5240MHz		5142.48	47.68	-26.32	74	40.33	31.98	7.94	32.57	100	71	P	H
		5146.12	39.78	-14.22	54	32.43	31.98	7.94	32.57	100	71	A	H
	*	5240	104.08	-	-	96.56	32.08	8.01	32.57	100	71	P	H
	*	5240	97.41	-	-	89.89	32.08	8.01	32.57	100	71	A	H
		5360.64	46.82	-27.18	74	38.92	32.24	8.23	32.57	100	71	P	H
		5352.24	38.82	-15.18	54	30.94	32.22	8.23	32.57	100	71	A	H
		5074.36	47.74	-26.26	74	40.42	31.9	7.99	32.57	217	71	P	V
		5140.92	39.67	-14.33	54	32.32	31.98	7.94	32.57	217	71	A	V
	*	5240	105.69	-	-	98.17	32.08	8.01	32.57	217	71	P	V
	*	5240	98.36	-	-	90.84	32.08	8.01	32.57	217	71	A	V
		5403.6	46.94	-27.06	74	38.94	32.28	8.29	32.57	217	71	P	V
		5358.72	39.02	-14.98	54	31.14	32.22	8.23	32.57	217	71	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 36 5180MHz		10360	50.31	-23.69	74	49.56	39.69	11.96	50.9	100	0	P	H
		15540	50.99	-23.01	74	50.1	38.04	14.76	51.91	100	0	P	H
		10360	49.04	-24.96	74	48.29	39.69	11.96	50.9	100	0	P	V
		15540	49.93	-24.07	74	49.04	38.04	14.76	51.91	100	0	P	V
802.11a CH 44 5220MHz		10440	49.98	-24.02	74	49.06	39.79	12.03	50.9	100	0	P	H
		15660	49.41	-24.59	74	48.7	37.85	14.79	51.93	100	0	P	H
		10440	50.22	-23.78	74	49.3	39.79	12.03	50.9	100	0	P	V
		15660	49.2	-24.8	74	48.49	37.85	14.79	51.93	100	0	P	V
802.11a CH 48 5240MHz		10480	50.23	-23.77	74	49.2	39.87	12.06	50.9	100	0	P	H
		15720	49.5	-24.5	74	48.9	37.74	14.81	51.95	100	0	P	H
		10480	49.64	-24.36	74	48.61	39.87	12.06	50.9	100	0	P	V
		15720	49.79	-24.21	74	49.19	37.74	14.81	51.95	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT20 CH 36 5180MHz		5140.4	51.03	-22.97	74	43.68	31.98	7.94	32.57	100	72	P	H
		5146.38	43.29	-10.71	54	35.94	31.98	7.94	32.57	100	72	A	H
	*	5180	104.3	-	-	96.94	32.02	7.91	32.57	100	72	P	H
	*	5180	96.68	-	-	89.32	32.02	7.91	32.57	100	72	A	H
		5146.64	51.09	-22.91	74	43.74	31.98	7.94	32.57	218	71	P	V
		5149.5	42.96	-11.04	54	35.61	31.98	7.94	32.57	218	71	A	V
	*	5180	103.87	-	-	96.51	32.02	7.91	32.57	218	71	P	V
	*	5180	96.96	-	-	89.6	32.02	7.91	32.57	218	71	A	V
802.11ac VHT20 CH 44 5220MHz		5069.42	48.53	-25.47	74	41.23	31.88	7.99	32.57	100	72	P	H
		5148.72	40.12	-13.88	54	32.77	31.98	7.94	32.57	100	72	A	H
	*	5220	103.98	-	-	96.48	32.06	8.01	32.57	100	72	P	H
	*	5220	97.11	-	-	89.61	32.06	8.01	32.57	100	72	A	H
		5413.68	46.79	-27.21	74	38.77	32.3	8.29	32.57	100	72	P	H
		5415.12	38.52	-15.48	54	30.5	32.3	8.29	32.57	100	72	A	H
		5139.36	47.76	-26.24	74	40.43	31.96	7.94	32.57	215	71	P	V
		5150	40.03	-13.97	54	32.68	31.98	7.94	32.57	215	71	A	V
	*	5220	104.03	-	-	96.53	32.06	8.01	32.57	215	71	P	V
	*	5220	97.46	-	-	89.96	32.06	8.01	32.57	215	71	A	V
		5447.04	46.87	-27.13	74	38.81	32.34	8.29	32.57	215	71	P	V
		5356.56	38.72	-15.28	54	30.84	32.22	8.23	32.57	215	71	A	V



802.11ac VHT20 CH 48 5240MHz		5141.18	47.7	-26.3	74	40.35	31.98	7.94	32.57	100	72	P	H
		5147.68	39.75	-14.25	54	32.4	31.98	7.94	32.57	100	72	A	H
	*	5240	103.95	-	-	96.43	32.08	8.01	32.57	100	72	P	H
	*	5240	96.9	-	-	89.38	32.08	8.01	32.57	100	72	A	H
		5351.52	46.82	-27.18	74	38.94	32.22	8.23	32.57	100	72	P	H
		5350.32	38.75	-15.25	54	30.87	32.22	8.23	32.57	100	72	A	H
		5119.34	48.33	-25.67	74	41	31.94	7.96	32.57	215	71	P	V
		5140.14	39.39	-14.61	54	32.04	31.98	7.94	32.57	215	71	A	V
	*	5240	104.38	-	-	96.86	32.08	8.01	32.57	215	71	P	V
	*	5240	97.49	-	-	89.97	32.08	8.01	32.57	215	71	A	V
		5413.92	48.4	-25.6	74	40.38	32.3	8.29	32.57	215	71	P	V
		5350.56	38.92	-15.08	54	31.04	32.22	8.23	32.57	215	71	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz

WIFI 802.11ac VHT20 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac		10360	49.72	-24.28	74	48.97	39.69	11.96	50.9	100	0	P	H
VHT20		15540	50.3	-23.7	74	49.41	38.04	14.76	51.91	100	0	P	H
CH 36		10360	49.78	-24.22	74	49.03	39.69	11.96	50.9	100	0	P	V
5180MHz		15540	50.9	-23.1	74	50.01	38.04	14.76	51.91	100	0	P	V
802.11ac		10440	50.27	-23.73	74	49.35	39.79	12.03	50.9	100	0	P	H
VHT20		15660	49.9	-24.1	74	49.19	37.85	14.79	51.93	100	0	P	H
CH 44		10440	50.09	-23.91	74	49.17	39.79	12.03	50.9	100	0	P	V
5220MHz		15660	50.63	-23.37	74	49.92	37.85	14.79	51.93	100	0	P	V
802.11ac		10480	50.27	-23.73	74	49.24	39.87	12.06	50.9	100	0	P	H
VHT20		15720	50.03	-23.97	74	49.43	37.74	14.81	51.95	100	0	P	H
CH 48		10480	50.17	-23.83	74	49.14	39.87	12.06	50.9	100	0	P	V
5240MHz		15720	49.5	-24.5	74	48.9	37.74	14.81	51.95	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz

WIFI 802.11ac VHT40 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT40 CH 38 5190MHz		5147.68	53.61	-20.39	74	46.26	31.98	7.94	32.57	100	72	P	H
		5150	47.47	-6.53	54	40.12	31.98	7.94	32.57	100	72	A	H
	*	5192	101.96	-	-	94.58	32.04	7.91	32.57	100	72	P	H
	*	5192	94.45	-	-	87.07	32.04	7.91	32.57	100	72	A	H
		5381.76	47.25	-26.75	74	39.27	32.26	8.29	32.57	100	72	P	H
		5356.08	39.73	-14.27	54	31.85	32.22	8.23	32.57	100	72	A	H
		5150	54.8	-19.2	74	47.45	31.98	7.94	32.57	100	100	P	V
		5150	46.48	-7.52	54	39.13	31.98	7.94	32.57	100	100	A	V
	*	5190	101.46	-	-	94.1	32.02	7.91	32.57	100	100	P	V
	*	5190	93.89	-	-	86.53	32.02	7.91	32.57	100	100	A	V
		5351.28	47.62	-26.38	74	39.74	32.22	8.23	32.57	100	100	P	V
		5380.08	39.74	-14.26	54	31.76	32.26	8.29	32.57	100	100	A	V
802.11ac VHT40 CH 46 5230MHz		5149.24	49.55	-24.45	74	42.2	31.98	7.94	32.57	100	73	P	H
		5146.12	41.6	-12.4	54	34.25	31.98	7.94	32.57	100	73	A	H
	*	5232	102.36	-	-	94.84	32.08	8.01	32.57	100	73	P	H
	*	5232	94.39	-	-	86.87	32.08	8.01	32.57	100	73	A	H
		5384.16	48.44	-25.56	74	40.46	32.26	8.29	32.57	100	73	P	H
		5351.52	39.95	-14.05	54	32.07	32.22	8.23	32.57	100	73	A	H
		5142.22	48.61	-25.39	74	41.26	31.98	7.94	32.57	100	101	P	V
		5144.82	41.41	-12.59	54	34.06	31.98	7.94	32.57	100	101	A	V
	*	5232	101.75	-	-	94.23	32.08	8.01	32.57	100	101	P	V
	*	5232	94.16	-	-	86.64	32.08	8.01	32.57	100	101	A	V
		5399.76	50.78	-23.22	74	42.78	32.28	8.29	32.57	100	101	P	V
		5418.24	39.56	-14.44	54	31.54	32.3	8.29	32.57	100	101	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz

WIFI 802.11ac VHT40 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac		10380	50.39	-23.61	74	49.62	39.71	11.96	50.9	100	0	P	H
VHT40		15570	50.59	-23.41	74	49.75	37.99	14.77	51.92	100	0	P	H
CH 38		10380	50.19	-23.81	74	49.42	39.71	11.96	50.9	100	0	P	V
5190MHz		15570	49.38	-24.62	74	48.54	37.99	14.77	51.92	100	0	P	V
802.11ac		10460	50.37	-23.63	74	49.42	39.82	12.03	50.9	100	0	P	H
VHT40		15690	50.57	-23.43	74	49.91	37.8	14.8	51.94	100	0	P	H
CH 46		10460	50.46	-23.54	74	49.51	39.82	12.03	50.9	100	0	P	V
5230MHz		15690	50.83	-23.17	74	50.17	37.8	14.8	51.94	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz

WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT80 CH 42 5210MHz		5143.26	56.19	-17.81	74	48.84	31.98	7.94	32.57	100	72	P	H
		5148.72	48.5	-5.5	54	41.15	31.98	7.94	32.57	100	72	A	H
	*	5210	98.59	-	-	91.09	32.06	8.01	32.57	100	72	P	H
	*	5210	91.29	-	-	83.79	32.06	8.01	32.57	100	72	A	H
		5351.76	49.69	-24.31	74	41.81	32.22	8.23	32.57	100	72	P	H
		5350.08	42.77	-11.23	54	34.89	32.22	8.23	32.57	100	72	A	H
		5141.44	55.37	-18.63	74	48.02	31.98	7.94	32.57	100	99	P	V
		5145.08	48.19	-5.81	54	40.84	31.98	7.94	32.57	100	99	A	V
	*	5210	98.56	-	-	91.06	32.06	8.01	32.57	100	99	P	V
	*	5210	91.26	-	-	83.76	32.06	8.01	32.57	100	99	A	V
		5354.64	48.97	-25.03	74	41.09	32.22	8.23	32.57	100	99	P	V
		5350.8	42.82	-11.18	54	34.94	32.22	8.23	32.57	100	99	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

**Band 1 5150~5250MHz****WIFI 802.11ac VHT80 (Harmonic @ 3m)**

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac		10420	49.35	-24.65	74	48.48	39.77	12	50.9	100	0	P	H
VHT80		15630	49.91	-24.09	74	49.18	37.88	14.78	51.93	100	0	P	H
CH 42		10420	50.27	-23.73	74	49.4	39.77	12	50.9	100	0	P	V
5210MHz		15630	50.19	-23.81	74	49.46	37.88	14.78	51.93	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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		5141.18	48.56	-25.44	74	41.21	31.98	7.94	32.57	100	73	P	H
		5146.9	39.33	-14.67	54	31.98	31.98	7.94	32.57	100	73	A	H
	*	5260	105.28	-	-	97.61	32.12	8.12	32.57	100	73	P	H
	*	5260	97.94	-	-	90.27	32.12	8.12	32.57	100	73	A	H
		5351.04	46.89	-27.11	74	39.01	32.22	8.23	32.57	100	73	P	H
		5350.32	39.26	-14.74	54	31.38	32.22	8.23	32.57	100	73	A	H
		5088.66	47.97	-26.03	74	40.66	31.92	7.96	32.57	228	70	P	V
		5101.14	39.1	-14.9	54	31.79	31.92	7.96	32.57	228	70	A	V
	*	5260	106.05	-	-	98.38	32.12	8.12	32.57	228	70	P	V
	*	5260	98.83	-	-	91.16	32.12	8.12	32.57	228	70	A	V
		5374.56	47.45	-26.55	74	39.49	32.24	8.29	32.57	228	70	P	V
		5355.12	39.21	-14.79	54	31.33	32.22	8.23	32.57	228	70	A	V
802.11a CH 60 5300MHz		5037.96	47.78	-26.22	74	40.47	31.86	8.02	32.57	100	71	P	H
		5092.04	39.19	-14.81	54	31.88	31.92	7.96	32.57	100	71	A	H
	*	5300	103.75	-	-	95.98	32.16	8.18	32.57	100	71	P	H
	*	5300	97.68	-	-	89.91	32.16	8.18	32.57	100	71	A	H
		5351.04	49.51	-24.49	74	41.63	32.22	8.23	32.57	100	71	P	H
		5350.56	41.36	-12.64	54	33.48	32.22	8.23	32.57	100	71	A	H
		5082.94	47.28	-26.72	74	39.99	31.9	7.96	32.57	226	71	P	V
		5099.58	38.95	-15.05	54	31.64	31.92	7.96	32.57	226	71	A	V
	*	5300	104.95	-	-	97.18	32.16	8.18	32.57	226	71	P	V
	*	5300	98.78	-	-	91.01	32.16	8.18	32.57	226	71	A	V
		5351.04	49.46	-24.54	74	41.58	32.22	8.23	32.57	226	71	P	V
		5351.52	41.79	-12.21	54	33.91	32.22	8.23	32.57	226	71	A	V



802.11a CH 64 5320MHz	*	5320	104.25	-	-	96.46	32.18	8.18	32.57	100	72	P	H
	*	5320	97.56	-	-	89.77	32.18	8.18	32.57	100	72	A	H
		5351.04	51.04	-22.96	74	43.16	32.22	8.23	32.57	100	72	P	H
		5352	42.79	-11.21	54	34.91	32.22	8.23	32.57	100	72	A	H
	*	5320	104.87	-	-	97.08	32.18	8.18	32.57	212	71	P	V
	*	5320	98.91	-	-	91.12	32.18	8.18	32.57	212	71	A	V
		5350.24	51.55	-22.45	74	43.67	32.22	8.23	32.57	212	71	P	V
		5353.44	43.58	-10.42	54	35.7	32.22	8.23	32.57	212	71	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 52 5260MHz		10520	50.81	-23.19	74	49.72	39.91	12.08	50.9	100	0	P	H
		15780	48.62	-25.38	74	48.1	37.66	14.82	51.96	100	0	P	H
		10520	49.84	-24.16	74	48.75	39.91	12.08	50.9	100	0	P	V
		15780	48.47	-25.53	74	47.95	37.66	14.82	51.96	100	0	P	V
802.11a CH 60 5300MHz		10600	49.44	-24.56	74	48.27	39.98	12.11	50.92	100	0	P	H
		15900	48.9	-25.1	74	48.56	37.47	14.85	51.98	100	0	P	H
		10600	49.54	-24.46	74	48.37	39.98	12.11	50.92	100	0	P	V
		15900	48.4	-25.6	74	48.06	37.47	14.85	51.98	100	0	P	V
802.11a CH 64 5320MHz		10640	49.98	-24.02	74	48.76	40.01	12.13	50.92	100	0	P	H
		15960	48.58	-25.42	74	48.34	37.36	14.87	51.99	100	0	P	H
		10640	49.05	-24.95	74	47.83	40.01	12.13	50.92	100	0	P	V
		15960	48.88	-25.12	74	48.64	37.36	14.87	51.99	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

WIFI 802.11ac VHT20 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT20 CH 52 5260MHz		5060.58	47.61	-26.39	74	40.31	31.88	7.99	32.57	100	74	P	H
		5141.44	39.12	-14.88	54	31.77	31.98	7.94	32.57	100	74	A	H
	*	5260	104	-	-	96.33	32.12	8.12	32.57	100	74	P	H
	*	5260	97.28	-	-	89.61	32.12	8.12	32.57	100	74	A	H
		5416.8	47.39	-26.61	74	39.37	32.3	8.29	32.57	100	74	P	H
		5352.24	38.98	-15.02	54	31.1	32.22	8.23	32.57	100	74	A	H
		5040.56	47.32	-26.68	74	40.01	31.86	8.02	32.57	226	71	P	V
		5141.96	39.24	-14.76	54	31.89	31.98	7.94	32.57	226	71	A	V
	*	5260	105.65	-	-	97.98	32.12	8.12	32.57	226	71	P	V
	*	5260	98.24	-	-	90.57	32.12	8.12	32.57	226	71	A	V
		5374.08	46.67	-27.33	74	38.71	32.24	8.29	32.57	226	71	P	V
		5351.52	39.41	-14.59	54	31.53	32.22	8.23	32.57	226	71	A	V
802.11ac VHT20 CH 60 5300MHz		5074.88	47.97	-26.03	74	40.65	31.9	7.99	32.57	100	73	P	H
		5067.34	39.02	-14.98	54	31.72	31.88	7.99	32.57	100	73	A	H
	*	5300	103.21	-	-	95.44	32.16	8.18	32.57	100	73	P	H
	*	5300	97.45	-	-	89.68	32.16	8.18	32.57	100	73	A	H
		5356.8	49.47	-24.53	74	41.59	32.22	8.23	32.57	100	73	P	H
		5350.8	41.48	-12.52	54	33.6	32.22	8.23	32.57	100	73	A	H
		5038.48	47.65	-26.35	74	40.34	31.86	8.02	32.57	215	71	P	V
		5066.56	38.96	-15.04	54	31.66	31.88	7.99	32.57	215	71	A	V
	*	5300	105.09	-	-	97.32	32.16	8.18	32.57	215	71	P	V
	*	5300	98.28	-	-	90.51	32.16	8.18	32.57	215	71	A	V
		5350.08	48.97	-25.03	74	41.09	32.22	8.23	32.57	215	71	P	V
		5350.32	41.97	-12.03	54	34.09	32.22	8.23	32.57	215	71	A	V



802.11ac VHT20 CH 64 5320MHz	*	5320	104.03	-	-	96.24	32.18	8.18	32.57	100	73	P	H
	*	5320	97.33	-	-	89.54	32.18	8.18	32.57	100	73	A	H
		5365.12	49.99	-24.01	74	42.03	32.24	8.29	32.57	100	73	P	H
		5350.08	43	-11	54	35.12	32.22	8.23	32.57	100	73	A	H
	*	5320	105.56	-	-	97.77	32.18	8.18	32.57	210	72	P	V
	*	5320	98.47	-	-	90.68	32.18	8.18	32.57	210	72	A	V
		5355.36	50.95	-23.05	74	43.07	32.22	8.23	32.57	210	72	P	V
		5350.88	43.78	-10.22	54	35.9	32.22	8.23	32.57	210	72	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

WIFI 802.11ac VHT20 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac		10520	50.7	-23.3	74	49.61	39.91	12.08	50.9	100	0	P	H
VHT20		15780	50.46	-23.54	74	49.94	37.66	14.82	51.96	100	0	P	H
CH 52		10520	49.87	-24.13	74	48.78	39.91	12.08	50.9	100	0	P	V
5260MHz		15780	50.19	-23.81	74	49.67	37.66	14.82	51.96	100	0	P	V
802.11ac		10600	49.62	-24.38	74	48.45	39.98	12.11	50.92	100	0	P	H
VHT20		15900	48.8	-25.2	74	48.46	37.47	14.85	51.98	100	0	P	H
CH 60		10600	49.74	-24.26	74	48.57	39.98	12.11	50.92	100	0	P	V
5300MHz		15900	48.85	-25.15	74	48.51	37.47	14.85	51.98	100	0	P	V
802.11ac		10640	50.99	-23.01	74	49.77	40.01	12.13	50.92	100	0	P	H
VHT20		15960	49.27	-24.73	74	49.03	37.36	14.87	51.99	100	0	P	H
CH 64		10640	50.73	-23.27	74	49.51	40.01	12.13	50.92	100	0	P	V
5320MHz		15960	49	-25	74	48.76	37.36	14.87	51.99	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT40 CH 54 5270MHz		5139.88	49.24	-24.76	74	41.89	31.98	7.94	32.57	100	73	P	H
		5135.72	40.29	-13.71	54	32.96	31.96	7.94	32.57	100	73	A	H
	*	5268	101.49	-	-	93.82	32.12	8.12	32.57	100	73	P	H
	*	5268	94.69	-	-	87.02	32.12	8.12	32.57	100	73	A	H
		5350.8	48.58	-25.42	74	40.7	32.22	8.23	32.57	100	73	P	H
		5350.32	41.04	-12.96	54	33.16	32.22	8.23	32.57	100	73	A	H
		5146.12	49.98	-24.02	74	42.63	31.98	7.94	32.57	100	100	P	V
		5110.5	40.22	-13.78	54	32.89	31.94	7.96	32.57	100	100	A	V
	*	5270	100.89	-	-	93.22	32.12	8.12	32.57	100	100	P	V
	*	5270	94.51	-	-	86.84	32.12	8.12	32.57	100	100	A	V
		5452.08	49.95	-24.05	74	41.89	32.34	8.29	32.57	100	100	P	V
		5358	41.73	-12.27	54	33.85	32.22	8.23	32.57	100	100	A	V
802.11ac VHT40 CH 62 5310MHz		5124.54	47.74	-26.26	74	40.41	31.96	7.94	32.57	100	71	P	H
		5136.24	40.21	-13.79	54	32.88	31.96	7.94	32.57	100	71	A	H
	*	5308	102.4	-	-	94.63	32.16	8.18	32.57	100	71	P	H
	*	5308	94.75	-	-	86.98	32.16	8.18	32.57	100	71	A	H
		5350.8	51.52	-22.48	74	43.64	32.22	8.23	32.57	100	71	P	H
		5350.8	47.24	-6.76	54	39.36	32.22	8.23	32.57	100	71	A	H
		5092.82	47.99	-26.01	74	40.68	31.92	7.96	32.57	100	99	P	V
		5107.9	39.86	-14.14	54	32.53	31.94	7.96	32.57	100	99	A	V
	*	5312	101.67	-	-	93.88	32.18	8.18	32.57	100	99	P	V
	*	5312	94.69	-	-	86.9	32.18	8.18	32.57	100	99	A	V
		5361.12	55.31	-18.69	74	47.41	32.24	8.23	32.57	100	99	P	V
		5350.56	46.77	-7.23	54	38.89	32.22	8.23	32.57	100	99	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

**Band 2 5250~5350MHz****WIFI 802.11ac VHT40 (Harmonic @ 3m)**

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac		10540	49.97	-24.03	74	48.87	39.93	12.08	50.91	100	0	P	H
VHT40		15810	48.97	-25.03	74	48.5	37.6	14.83	51.96	100	0	P	H
CH 54		10540	50.4	-23.6	74	49.3	39.93	12.08	50.91	100	0	P	V
5270MHz		15810	49.64	-24.36	74	49.17	37.6	14.83	51.96	100	0	P	V
802.11ac		10620	50.63	-23.37	74	49.44	40	12.11	50.92	100	0	P	H
VHT40		15930	49.06	-24.94	74	48.78	37.41	14.86	51.99	100	0	P	H
CH 62		10620	50.65	-23.35	74	49.46	40	12.11	50.92	100	0	P	V
5310MHz		15930	49.13	-24.87	74	48.85	37.41	14.86	51.99	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT80 CH 58 5290MHz		5145.86	50.17	-23.83	74	42.82	31.98	7.94	32.57	100	72	P	H
		5144.82	43.03	-10.97	54	35.68	31.98	7.94	32.57	100	72	A	H
	*	5290	99.45	-	-	91.7	32.14	8.18	32.57	100	72	P	H
	*	5290	91.81	-	-	84.06	32.14	8.18	32.57	100	72	A	H
		5350.08	56.14	-17.86	74	48.26	32.22	8.23	32.57	100	72	P	H
		5350.56	48.41	-5.59	54	40.53	32.22	8.23	32.57	100	72	A	H
		5149.24	50.06	-23.94	74	42.71	31.98	7.94	32.57	100	99	P	V
		5149.24	43.33	-10.67	54	35.98	31.98	7.94	32.57	100	99	A	V
	*	5288	98.97	-	-	91.22	32.14	8.18	32.57	100	99	P	V
	*	5288	91.87	-	-	84.12	32.14	8.18	32.57	100	99	A	V
		5354.64	54.59	-19.41	74	46.71	32.22	8.23	32.57	100	99	P	V
		5350.08	48.22	-5.78	54	40.34	32.22	8.23	32.57	100	99	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

**Band 2 5250~5350MHz****WIFI 802.11ac VHT80 (Harmonic @ 3m)**

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac		10580	49.65	-24.35	74	48.5	39.97	12.1	50.92	100	0	P	H
VHT80		15870	50.02	-23.98	74	49.67	37.49	14.84	51.98	100	0	P	H
CH 58		10580	50.14	-23.86	74	48.99	39.97	12.1	50.92	100	0	P	V
5290MHz		15870	48.62	-25.38	74	48.27	37.49	14.84	51.98	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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		5464.4	50.11	-23.89	74	42.03	32.36	8.29	32.57	214	108	P	H
		5470	42.8	-11.2	54	34.72	32.36	8.29	32.57	214	108	A	H
	*	5500	106.18	-	-	98.06	32.4	8.29	32.57	214	108	P	H
	*	5500	99.4	-	-	91.28	32.4	8.29	32.57	214	108	A	H
		5459.44	51.2	-22.8	74	43.14	32.34	8.29	32.57	228	358	P	V
		5466.32	43.61	-10.39	54	35.53	32.36	8.29	32.57	228	358	A	V
	*	5498	107.93	-	-	99.81	32.4	8.29	32.57	228	358	P	V
	*	5498	100.74	-	-	92.62	32.4	8.29	32.57	228	358	A	V
802.11a CH 116 5580MHz		5350	47.35	-26.65	74	39.47	32.22	8.23	32.57	223	111	P	H
		5465.92	38.89	-15.11	54	30.81	32.36	8.29	32.57	223	111	A	H
	*	5578	106.6	-	-	98.57	32.44	8.2	32.61	223	111	P	H
	*	5578	99.38	-	-	91.35	32.44	8.2	32.61	223	111	A	H
		5746.275	48.2	-25.8	74	40	32.54	8.33	32.67	223	111	P	H
		5730	39.07	-14.93	54	30.87	32.53	8.33	32.66	223	111	A	H
		5447.2	47.85	-26.15	74	39.79	32.34	8.29	32.57	212	356	P	V
		5463.28	39.12	-14.88	54	31.04	32.36	8.29	32.57	212	356	A	V
	*	5578	107.12	-	-	99.09	32.44	8.2	32.61	212	356	P	V
	*	5578	99.89	-	-	91.86	32.44	8.2	32.61	212	356	A	V
		5758.35	48.39	-25.61	74	40.17	32.56	8.33	32.67	212	356	P	V
		5760.1	38.67	-15.33	54	30.45	32.56	8.33	32.67	212	356	A	V



802.11a CH 140 5700MHz	*	5702	107.55	-	-	99.38	32.52	8.3	32.65	221	112	P	H
	*	5702	100.05	-	-	91.88	32.52	8.3	32.65	221	112	A	H
		5725.16	54.64	-19.36	74	46.44	32.53	8.33	32.66	221	112	P	H
		5725.4	45.86	-8.14	54	37.66	32.53	8.33	32.66	221	112	A	H
	*	5702	107.14	-	-	98.97	32.52	8.3	32.65	190	348	P	V
	*	5702	99.7	-	-	91.53	32.52	8.3	32.65	190	348	A	V
		5727	52.04	-21.96	74	43.84	32.53	8.33	32.66	190	348	P	V
		5725.32	44.12	-9.88	54	35.92	32.53	8.33	32.66	190	348	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 100 5500MHz		11000	50.7	-23.3	74	49.1	40.3	12.3	51	100	0	P	H
		16500	50.96	-23.04	74	48.93	38.8	15.23	52	100	0	P	H
		11000	50.93	-23.07	74	49.33	40.3	12.3	51	100	0	P	V
		16500	50.88	-23.12	74	48.85	38.8	15.23	52	100	0	P	V
802.11a CH 116 5580MHz		11160	50.68	-23.32	74	49.15	40.2	12.39	51.06	100	0	P	H
		16740	50.96	-23.04	74	48.14	39.57	15.3	52.05	100	0	P	H
		11160	50.98	-23.02	74	49.45	40.2	12.39	51.06	100	0	P	V
		16740	50.94	-23.06	74	48.12	39.57	15.3	52.05	100	0	P	V
802.11a CH 140 5700MHz		11400	50.8	-23.2	74	49.36	40.06	12.53	51.15	100	0	P	H
		17100	50.92	-23.08	74	46.88	40.68	15.48	52.12	100	0	P	H
		11400	50.54	-23.46	74	49.1	40.06	12.53	51.15	100	0	P	V
		17100	50.97	-23.03	74	46.93	40.68	15.48	52.12	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT20 CH 100 5500MHz		5467.28	49.5	-24.5	74	41.42	32.36	8.29	32.57	229	117	P	H
		5468.56	43.05	-10.95	54	34.97	32.36	8.29	32.57	229	117	A	H
	*	5498	106.25	-	-	98.13	32.4	8.29	32.57	229	117	P	H
	*	5498	98.41	-	-	90.29	32.4	8.29	32.57	229	117	A	H
		5453.04	51.59	-22.41	74	43.53	32.34	8.29	32.57	230	349	P	V
		5467.44	43.8	-10.2	54	35.72	32.36	8.29	32.57	230	349	A	V
	*	5498	107.21	-	-	99.09	32.4	8.29	32.57	230	349	P	V
	*	5498	99.35	-	-	91.23	32.4	8.29	32.57	230	349	A	V
802.11ac VHT20 CH 116 5580MHz		5364.88	46.79	-27.21	74	38.83	32.24	8.29	32.57	226	116	P	H
		5469.52	39.09	-14.91	54	31.01	32.36	8.29	32.57	226	116	A	H
	*	5582	107.71	-	-	99.67	32.45	8.2	32.61	226	116	P	H
	*	5582	99.11	-	-	91.07	32.45	8.2	32.61	226	116	A	H
		5760.45	47.06	-26.94	74	38.84	32.56	8.33	32.67	226	116	P	H
		5728.95	38.97	-15.03	54	30.77	32.53	8.33	32.66	226	116	A	H
		5358.88	47.63	-26.37	74	39.75	32.22	8.23	32.57	232	347	P	V
		5468.8	39.37	-14.63	54	31.29	32.36	8.29	32.57	232	347	A	V
	*	5582	106.8	-	-	98.76	32.45	8.2	32.61	232	347	P	V
	*	5582	99.37	-	-	91.33	32.45	8.2	32.61	232	347	A	V
		5756.6	47.57	-26.43	74	39.35	32.56	8.33	32.67	232	347	P	V
		5727.55	38.74	-15.26	54	30.54	32.53	8.33	32.66	232	347	A	V



802.11ac VHT20 CH 140 5700MHz	*	5698	107.47	-	-	99.31	32.51	8.3	32.65	220	115	P	H
	*	5698	100.39	-	-	92.23	32.51	8.3	32.65	220	115	A	H
		5725.96	56.69	-17.31	74	48.49	32.53	8.33	32.66	220	115	P	H
		5725	45.45	-8.55	54	37.25	32.53	8.33	32.66	220	115	A	H
	*	5698	106.67	-	-	98.51	32.51	8.3	32.65	192	354	P	V
	*	5698	98.68	-	-	90.52	32.51	8.3	32.65	192	354	A	V
		5726.28	51.48	-22.52	74	43.28	32.53	8.33	32.66	192	354	P	V
		5725	43.75	-10.25	54	35.55	32.53	8.33	32.66	192	354	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz

WIFI 802.11ac VHT20 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac		11000	50.97	-23.03	74	49.37	40.3	12.3	51	100	0	P	H
VHT20		16500	50.84	-23.16	74	48.81	38.8	15.23	52	100	0	P	H
CH 100		11000	50.82	-23.18	74	49.22	40.3	12.3	51	100	0	P	V
5500MHz		16500	50.92	-23.08	74	48.89	38.8	15.23	52	100	0	P	V
802.11ac		11160	49.79	-24.21	74	48.26	40.2	12.39	51.06	100	0	P	H
VHT20		16740	50.25	-23.75	74	47.43	39.57	15.3	52.05	100	0	P	H
CH 116		11160	50.1	-23.9	74	48.57	40.2	12.39	51.06	100	0	P	V
5580MHz		16740	50.83	-23.17	74	48.01	39.57	15.3	52.05	100	0	P	V
802.11ac		11400	50.55	-23.45	74	49.11	40.06	12.53	51.15	100	0	P	H
VHT20		17100	50.43	-23.57	74	46.39	40.68	15.48	52.12	100	0	P	H
CH 140		11400	50.75	-23.25	74	49.31	40.06	12.53	51.15	100	0	P	V
5700MHz		17100	50.9	-23.1	74	46.86	40.68	15.48	52.12	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT40 CH 102 5510MHz		5469.76	54.72	-19.28	74	46.64	32.36	8.29	32.57	212	114	P	H
		5470	49.37	-4.63	54	41.29	32.36	8.29	32.57	212	114	A	H
	*	5508	102.49	-	-	94.38	32.4	8.29	32.58	212	114	P	H
	*	5508	96.02	-	-	87.91	32.4	8.29	32.58	212	114	A	H
		5734.375	49.08	-24.92	74	40.89	32.53	8.33	32.67	212	114	P	H
		5744.175	39.44	-14.56	54	31.24	32.54	8.33	32.67	212	114	A	H
		5467.6	56.69	-17.31	74	48.61	32.36	8.29	32.57	212	346	P	V
		5470	51.26	-2.74	54	43.18	32.36	8.29	32.57	212	346	A	V
	*	5512	103.71	-	-	95.6	32.4	8.29	32.58	212	346	P	V
	*	5512	97.4	-	-	89.29	32.4	8.29	32.58	212	346	A	V
		5764.125	47.31	-26.69	74	39.07	32.56	8.35	32.67	212	346	P	V
		5737.175	39.36	-14.64	54	31.16	32.54	8.33	32.67	212	346	A	V
802.11ac VHT40 CH 110 5550MHz		5464.96	48.93	-25.07	74	40.85	32.36	8.29	32.57	219	115	P	H
		5464	41.69	-12.31	54	33.61	32.36	8.29	32.57	219	115	A	H
	*	5552	104.19	-	-	96.12	32.43	8.24	32.6	219	115	P	H
	*	5552	96.4	-	-	88.33	32.43	8.24	32.6	219	115	A	H
		5764.65	48.47	-25.53	74	40.23	32.56	8.35	32.67	219	115	P	H
		5726.85	39.86	-14.14	54	31.66	32.53	8.33	32.66	219	115	A	H
		5399.92	49.47	-24.53	74	41.47	32.28	8.29	32.57	211	6	P	V
		5469.04	42.69	-11.31	54	34.61	32.36	8.29	32.57	211	6	A	V
	*	5552	104.9	-	-	96.83	32.43	8.24	32.6	211	6	P	V
	*	5552	97.05	-	-	88.98	32.43	8.24	32.6	211	6	A	V
		5725.275	50.58	-23.42	74	42.38	32.53	8.33	32.66	211	6	P	V
		5745.05	39.51	-14.49	54	31.31	32.54	8.33	32.67	211	6	A	V



802.11ac VHT40 CH 134 5670MHz		5451.52	48.17	-25.83	74	40.11	32.34	8.29	32.57	229	117	P	H
		5451.04	39.57	-14.43	54	31.51	32.34	8.29	32.57	229	117	A	H
	*	5668	104.82	-	-	96.69	32.5	8.27	32.64	229	117	P	H
	*	5668	97.28	-	-	89.15	32.5	8.27	32.64	229	117	A	H
		5741.025	60.28	-13.72	74	52.08	32.54	8.33	32.67	229	117	P	H
		5726.85	45.94	-8.06	54	37.74	32.53	8.33	32.66	229	117	A	H
		5444.8	48.01	-25.99	74	39.97	32.32	8.29	32.57	100	97	P	V
		5435.92	39.61	-14.39	54	31.57	32.32	8.29	32.57	100	97	A	V
	*	5672	104.14	-	-	96.01	32.5	8.27	32.64	100	97	P	V
	*	5672	97.12	-	-	88.99	32.5	8.27	32.64	100	97	A	V
		5753.975	56.71	-17.29	74	48.49	32.56	8.33	32.67	100	97	P	V
		5728.425	45.01	-8.99	54	36.81	32.53	8.33	32.66	100	97	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
WIFI 802.11ac VHT40 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac		11020	50.36	-23.64	74	48.77	40.29	12.3	51	100	0	P	H
VHT40		16530	50.14	-23.86	74	47.99	38.91	15.24	52	100	0	P	H
CH 102		11020	50.69	-23.31	74	49.1	40.29	12.3	51	100	0	P	V
5510MHz		16530	50.77	-23.23	74	48.62	38.91	15.24	52	100	0	P	V
802.11ac		11100	50.45	-23.55	74	48.89	40.24	12.35	51.03	100	0	P	H
VHT40		16650	50.4	-23.6	74	47.85	39.3	15.28	52.03	100	0	P	H
CH 110		11100	50.73	-23.27	74	49.17	40.24	12.35	51.03	100	0	P	V
5550MHz		16650	50.65	-23.35	74	48.1	39.3	15.28	52.03	100	0	P	V
802.11ac		11340	50.1	-23.9	74	48.65	40.1	12.49	51.14	100	0	P	H
VHT40		17010	50.97	-23.03	74	47.23	40.45	15.39	52.1	100	0	P	H
CH 134		11340	50.1	-23.9	74	48.65	40.1	12.49	51.14	100	0	P	V
5670MHz		17010	50.47	-23.53	74	46.73	40.45	15.39	52.1	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 5470~5725MHz
WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT80 CH 106 5530MHz		5468.8	58.01	-15.99	74	49.93	32.36	8.29	32.57	224	115	P	H
		5470	51.81	-2.19	54	43.73	32.36	8.29	32.57	224	115	A	H
	*	5530	100.09	-	-	92.03	32.41	8.24	32.59	224	115	P	H
	*	5530	92.8	-	-	84.74	32.41	8.24	32.59	224	115	A	H
		5764.125	47.79	-26.21	74	39.55	32.56	8.35	32.67	224	115	P	H
		5729.125	40	-14	54	31.8	32.53	8.33	32.66	224	115	A	H
		5464.48	60.46	-13.54	74	52.38	32.36	8.29	32.57	214	354	P	V
		5470	53.35	-0.65	54	45.27	32.36	8.29	32.57	214	354	A	V
	*	5528	101.89	-	-	93.83	32.41	8.24	32.59	214	354	P	V
	*	5528	94.01	-	-	85.95	32.41	8.24	32.59	214	354	A	V
		5752.4	48.31	-25.69	74	40.09	32.56	8.33	32.67	214	354	P	V
		5738.575	39.64	-14.36	54	31.44	32.54	8.33	32.67	214	354	A	V
802.11ac VHT80 CH 122 5610MHz		5467.84	49.65	-24.35	74	41.57	32.36	8.29	32.57	217	115	P	H
		5469.52	43.32	-10.68	54	35.24	32.36	8.29	32.57	217	115	A	H
	*	5610	100.86	-	-	92.79	32.46	8.23	32.62	217	115	P	H
	*	5610	93.83	-	-	85.76	32.46	8.23	32.62	217	115	A	H
		5725.1	52.34	-21.66	74	44.14	32.53	8.33	32.66	217	115	P	H
		5725.975	44.35	-9.65	54	36.15	32.53	8.33	32.66	217	115	A	H
		5463.52	51.07	-22.93	74	42.99	32.36	8.29	32.57	223	354	P	V
		5468.32	43.74	-10.26	54	35.66	32.36	8.29	32.57	223	354	A	V
	*	5610	100.93	-	-	92.86	32.46	8.23	32.62	223	354	P	V
	*	5610	93.82	-	-	85.75	32.46	8.23	32.62	223	354	A	V
		5727.375	50.92	-23.08	74	42.72	32.53	8.33	32.66	223	354	P	V
		5726.5	42.77	-11.23	54	34.57	32.53	8.33	32.66	223	354	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 5470~5725MHz

WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac		11060	50.79	-23.21	74	49.23	40.26	12.32	51.02	100	0	P	H
VHT80		16590	50.51	-23.49	74	48.19	39.08	15.26	52.02	100	0	P	H
CH 106		11060	50.98	-23.02	74	49.42	40.26	12.32	51.02	100	0	P	V
5530MHz		16590	50.46	-23.54	74	48.14	39.08	15.26	52.02	100	0	P	V
802.11ac		11220	50.47	-23.53	74	48.97	40.17	12.42	51.09	100	0	P	H
VHT80		16830	50.96	-23.04	74	47.84	39.85	15.33	52.06	100	0	P	H
CH 122		11220	50.97	-23.03	74	49.47	40.17	12.42	51.09	100	0	P	V
5610MHz		16830	50.39	-23.61	74	47.27	39.85	15.33	52.06	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - Straddle Channel
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 144 5720MHz	*	5720	108.68	-	-	100.51	32.53	8.3	32.66	235	121	P	H
	*	5720	101.28	-	-	93.11	32.53	8.3	32.66	235	121	A	H
	*	5720	106.49	-	-	98.32	32.53	8.3	32.66	233	114	P	V
	*	5720	99.46	-	-	91.29	32.53	8.3	32.66	233	114	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - Straddle Channel
WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 144 5720MHz		11440	50.33	-23.67	74	48.9	40.04	12.56	51.17	100	0	P	H
		17160	50.76	-23.24	74	46.45	40.87	15.57	52.13	100	0	P	H
		11440	50.98	-23.02	74	49.55	40.04	12.56	51.17	100	0	P	V
		17160	50.77	-23.23	74	46.46	40.87	15.57	52.13	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - Straddle Channel
WIFI 802.11ac VHT20 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac	*	5720	107.05	-	-	98.88	32.53	8.3	32.66	238	121	P	H
VHT20	*	5720	100.67	-	-	92.5	32.53	8.3	32.66	238	121	A	H
CH 144	*	5720	105.95	-	-	97.78	32.53	8.3	32.66	233	114	P	V
5720MHz	*	5720	99.19	-	-	91.02	32.53	8.3	32.66	233	114	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - Straddle Channel
WIFI 802.11ac VHT20 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac		11440	50.94	-23.06	74	49.51	40.04	12.56	51.17	100	0	P	H
VHT20		17160	50.68	-23.32	74	46.37	40.87	15.57	52.13	100	0	P	H
CH 144		11440	50.55	-23.45	74	49.12	40.04	12.56	51.17	100	0	P	V
5720MHz		17160	50.09	-23.91	74	45.78	40.87	15.57	52.13	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - Straddle Channel
WIFI 802.11ac VHT40 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac	*	5710	105.36	-	-	97.2	32.52	8.3	32.66	223	120	P	H
VHT40	*	5710	98.81	-	-	90.65	32.52	8.3	32.66	223	120	A	H
CH 142	*	5710	103.07	-	-	94.91	32.52	8.3	32.66	224	115	P	V
5710MHz	*	5710	96.24	-	-	88.08	32.52	8.3	32.66	224	115	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - Straddle Channel
WIFI 802.11ac VHT40 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac		11420	50.66	-23.34	74	49.25	40.05	12.53	51.17	100	0	P	H
VHT40		17130	50.01	-23.99	74	45.84	40.77	15.52	52.12	100	0	P	H
CH 142		11420	50.63	-23.37	74	49.22	40.05	12.53	51.17	100	0	P	V
5710MHz		17130	50.76	-23.24	74	46.59	40.77	15.52	52.12	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - Straddle Channel
WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac	*	5690	101.63	-	-	93.47	32.51	8.3	32.65	223	120	P	H
VHT80	*	5690	95.47	-	-	87.31	32.51	8.3	32.65	223	120	A	H
CH 138	*	5690	99.89	-	-	91.73	32.51	8.3	32.65	226	113	P	V
5690MHz	*	5690	93.46	-	-	85.3	32.51	8.3	32.65	226	113	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - Straddle Channel
WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac		11380	50.91	-23.09	74	49.48	40.07	12.51	51.15	100	0	P	H
VHT80		17070	50.97	-23.03	74	47.07	40.59	15.43	52.12	100	0	P	H
CH 138		11380	50.1	-23.9	74	48.67	40.07	12.51	51.15	100	0	P	V
5690MHz		17070	50.21	-23.79	74	46.31	40.59	15.43	52.12	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												


Emission below 1GHz
WIFI 802.11n VHT80 (LF @ 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)
802.11n VHT80 LF		32.7	27.59	-12.41	40	35.33	24.42	0.65	32.81	100	35	P	H
		209.82	25.6	-17.9	43.5	40.44	16.27	1.62	32.73	-	-	P	H
		257.61	21.89	-24.11	46	33.26	19.6	1.76	32.73	-	-	P	H
		484.1	24.08	-21.92	46	30.82	23.87	2.3	32.91	-	-	P	H
		686.4	27.08	-18.92	46	31.04	26.22	2.82	33	-	-	P	H
		955.9	31.28	-14.72	46	29.68	30	3.29	31.69	-	-	P	H
		30.54	36.35	-3.65	40	42.98	25.54	0.65	32.82	100	16	P	V
		209.28	23.18	-20.32	43.5	38.02	16.27	1.62	32.73	-	-	P	V
		294.33	19.44	-26.56	46	30.64	19.65	1.88	32.73	-	-	P	V
		493.2	24.36	-21.64	46	30.87	24.07	2.33	32.91	-	-	P	V
		669.6	27.52	-18.48	46	31.73	26.12	2.67	33	-	-	P	V
		947.5	31.67	-14.33	46	30.22	29.95	3.29	31.79	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



For Battery 2

Band 3 5470~5725MHz

WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT80 CH 106 5530MHz		5455.84	58.85	-15.15	74	50.79	32.34	8.29	32.57	225	117	P	H
		5465.2	59.21	-9.09	68.3	51.13	32.36	8.29	32.57	225	117	P	H
		5458.24	52.6	-1.4	54	44.54	32.34	8.29	32.57	225	117	A	H
	*	5532	101.51	-	-	93.44	32.42	8.24	32.59	225	117	P	H
	*	5532	93.98	-	-	85.91	32.42	8.24	32.59	225	117	A	H
		5748.025	48.48	-19.82	68.3	40.28	32.54	8.33	32.67	225	117	P	H
		5458	56.89	-17.11	74	48.83	32.34	8.29	32.57	219	360	P	V
		5469.04	59.41	-8.89	68.3	51.33	32.36	8.29	32.57	219	360	P	V
		5459.68	51.05	-2.95	54	42.99	32.34	8.29	32.57	219	360	A	V
	*	5528	100.01	-	-	91.95	32.41	8.24	32.59	219	360	P	V
	*	5528	92.82	-	-	84.76	32.41	8.24	32.59	219	360	A	V
		5728.425	48.85	-19.45	68.3	40.65	32.53	8.33	32.66	219	360	P	V
Remark	3. No other spurious found. 4. All results are PASS against Peak and Average limit line.												

**Band 3 5470~5725MHz****WIFI 802.11ac VHT80 (Harmonic @ 3m)**

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac		11060	49.16	-24.84	74	47.6	40.26	12.32	51.02	100	0	P	H
VHT80		16590	49.6	-18.7	68.3	47.28	39.08	15.26	52.02	100	0	P	H
CH 106		11060	50.55	-23.45	74	48.99	40.26	12.32	51.02	100	0	P	V
5530MHz		16590	49.77	-18.53	68.3	47.45	39.08	15.26	52.02	100	0	P	V
Remark	3. No other spurious found. 4. All results are PASS against Peak and Average limit line.												



Emission below 1GHz

WIFI 802.11ac VHT80 (LF @ 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)
802.11ac VHT80 LF		30.81	30.39	-9.61	40	37.02	25.54	0.65	32.82	-	-	P	H
		182.55	23.09	-20.41	43.5	38.8	15.52	1.48	32.71	-	-	P	H
		207.39	27.44	-16.06	43.5	42.33	16.22	1.62	32.73	-	-	P	H
		421.8	25.67	-20.33	46	33.62	22.75	2.16	32.86	-	-	P	H
		555.5	37.84	-8.16	46	43.73	24.62	2.47	32.98	100	0	P	H
		703.9	31.67	-14.33	46	35.45	26.39	2.82	32.99	-	-	P	H
		30	36.63	-3.37	40	42.7	26.1	0.65	32.82	100	0	P	V
		38.64	32.38	-7.62	40	43.47	21.06	0.65	32.8	-	-	P	V
		178.77	28.97	-14.53	43.5	44.57	15.63	1.48	32.71	-	-	P	V
		418.3	32.62	-13.38	46	40.63	22.69	2.16	32.86	-	-	P	V
		825	29.82	-16.18	46	31.18	28.31	3.07	32.74	-	-	P	V
		930.7	31.88	-14.12	46	31.04	29.52	3.29	31.97	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



Note symbol

*	Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is over limit line.
P/A	P eak or A verage
H/V	H orizontal or V ertical



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		(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													
2412MHz		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Level(dBμV/m) =

Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

2. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. 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)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. 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)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

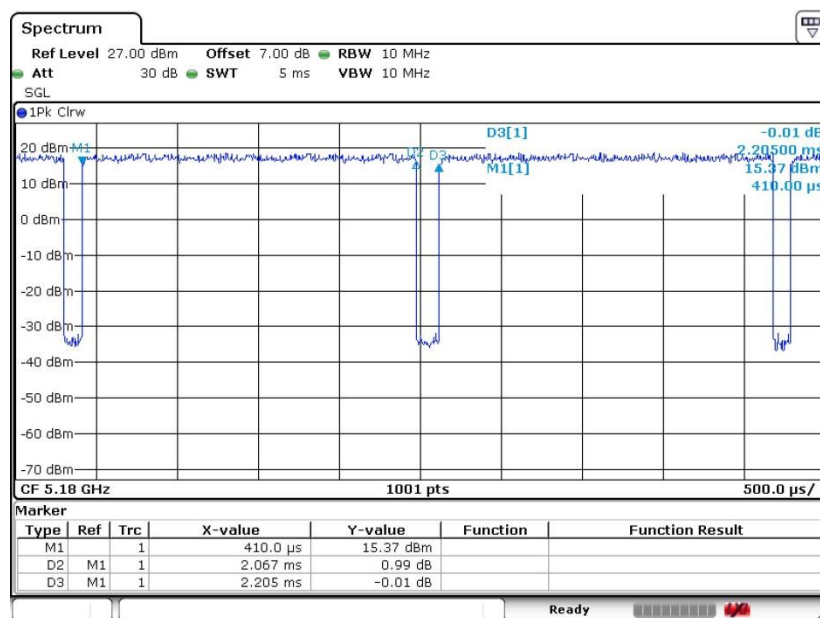
= -10.46(dB)

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

Appendix C. Duty Cycle Plots

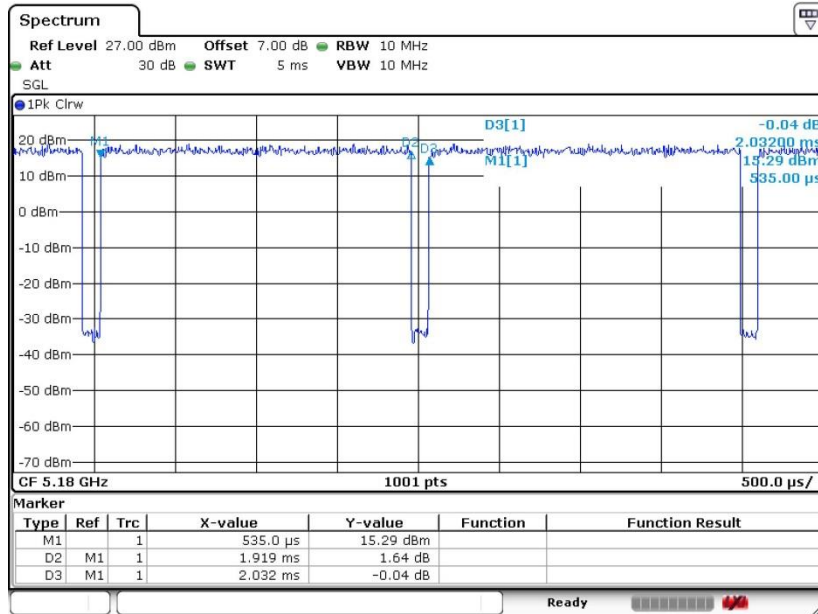
Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
802.11a	93.74	2.07	0.48	1kHz
802.11n HT20	94.44	1.92	0.52	1kHz
802.11n HT40	90.59	0.94	1.06	3kHz
802.11ac VHT20	94.70	1.93	0.52	1kHz
802.11ac VHT40	90.29	0.95	1.05	3kHz
802.11ac VHT80	86.08	0.60	1.67	3kHz

802.11a



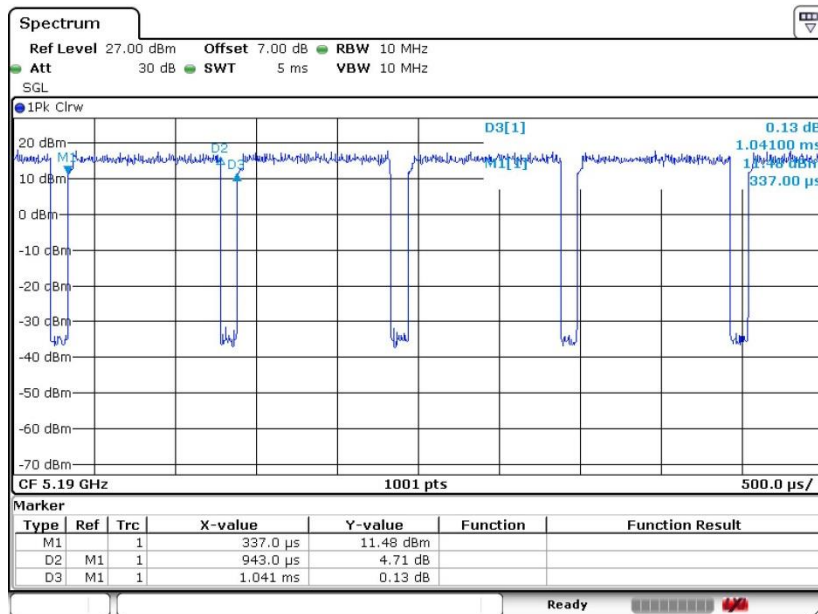
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802.11n HT20



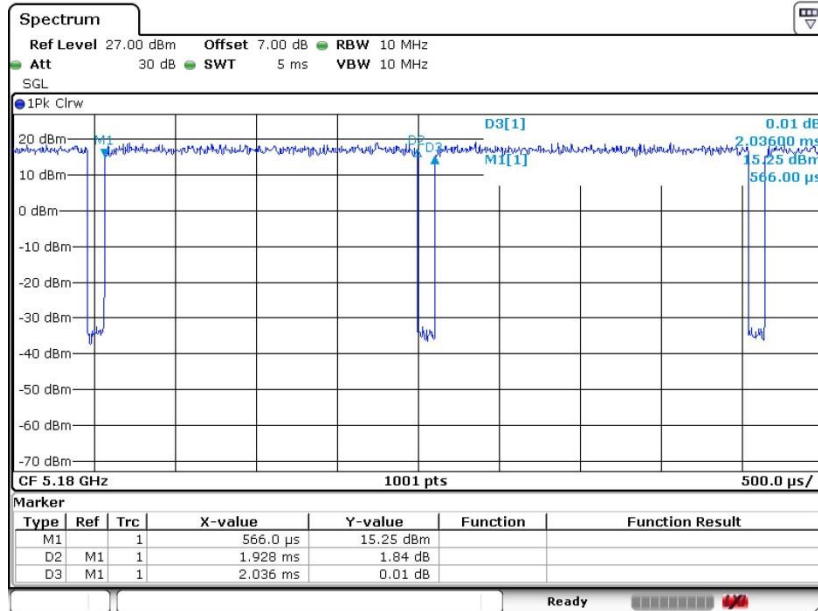
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802.11n HT40



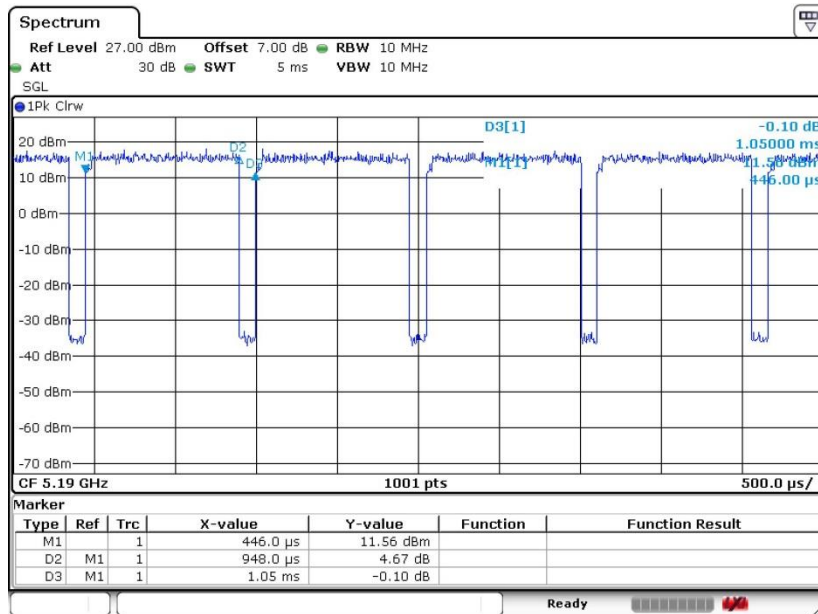
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802.11ac VHT20



Date: 8.AUG.2016 14:47:09

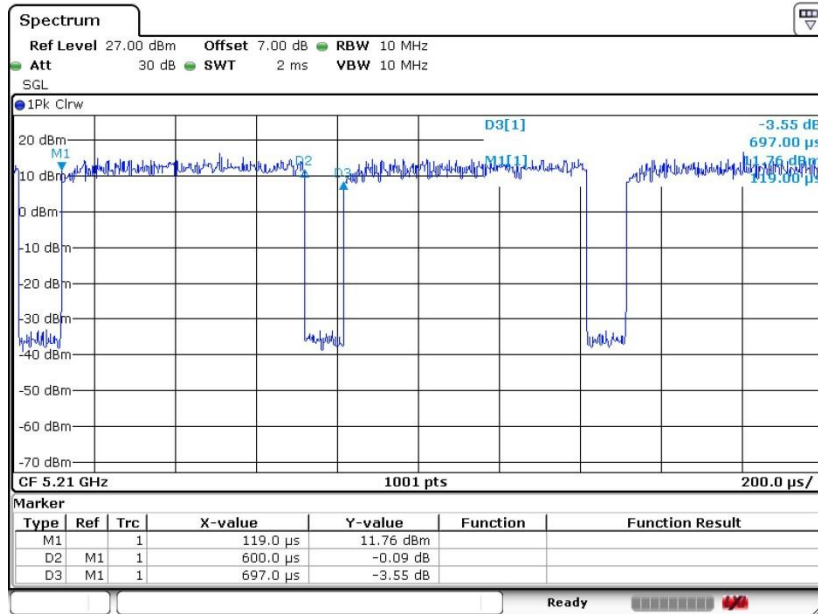
802.11ac VHT40



Date: 8.AUG.2016 15:15:08



802.11ac VHT80



Date: 8.AUG.2016 14:17:14