

FCC RF Test Report

APPLICANT : Motorola Mobility LLC
EQUIPMENT : Mobile Cellular Phone
BRAND NAME : Motorola
MODEL NAME : 9836
FCC ID : IHDT56VE1
STANDARD : FCC Part 15 Subpart E §15.407
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure

The product was received on Oct. 12, 2016 and testing was completed on Nov. 02, 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.



Prepared by: James Huang / Manager



Approved by: Jones Tsai / Manager

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



TABLE OF CONTENTS

1	GENERAL DESCRIPTION	5
1.1	Applicant	5
1.2	Manufacturer	5
1.3	Product Feature of Equipment Under Test.....	5
1.4	Product Specification of Equipment Under Test.....	6
1.5	Specification of Accessory	7
1.6	Modification of EUT	7
1.7	Testing Location	8
1.8	Applicable Standards.....	8
2	TEST CONFIGURATION OF EQUIPMENT UNDER TEST	9
2.1	Carrier Frequency Channel	9
2.2	Pre-Scanned RF Power	10
2.3	Test Mode	12
2.4	Connection Diagram of Test System.....	14
2.5	Support Unit used in test configuration and system	15
2.6	EUT Operation Test Setup	15
2.7	Measurement Results Explanation Example.....	16
3	TEST RESULT	17
3.1	26dB & 99% Occupied Bandwidth Measurement	17
3.2	Maximum Conducted Output Power Measurement	20
3.3	Power Spectral Density Measurement	24
3.4	Unwanted Radiated Emission Measurement	27
3.5	AC Conducted Emission Measurement.....	32
3.6	Frequency Stability Measurement.....	36
3.7	Automatically Discontinue Transmission	37
3.8	Antenna Requirements	38
4	LIST OF MEASURING EQUIPMENTS.....	39
5	UNCERTAINTY OF EVALUATION	40
APPENDIX A. CONDUCTED TEST RESULTS		
APPENDIX B. RADIATED SPURIOUS EMISSION		
APPENDIX C. DUTY CYCLE PLOTS		
APPENDIX D. SETUP PHOTOGRAPHS		



REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR601212D	Rev. 01	Initial issue of report	Nov. 08, 2016

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	2.1049 15.403(i)	26dB & 99% Bandwidth	-	Pass	-
3.2	15.407(a)	Maximum Conducted Output Power	FCC ≤ 24 dBm (depend on band)	Pass	-
3.3	15.407(a)	Power Spectral Density	FCC ≤ 11 dBm (depend on band)	Pass	-
3.4	15.407(b)	Unwanted Emissions	≤ -17, -27 dBm (depend on band)&15.209(a)	Pass	Under limit 3.09 dB at 5350.500 MHz
3.5	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 7.38 dB at 0.471 MHz
3.6	15.407(g)	Frequency Stability	Within Operation Band	Pass	-
3.7	15.407(c)	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.8	15.203 & 15.407(a)	Antenna Requirement	N/A	Pass	-



1 General Description

1.1 Applicant

Motorola Mobility LLC

222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

1.2 Manufacturer

Motorola Mobility LLC

222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Cellular Phone
Brand Name	Motorola
Model Name	9836
FCC ID	IHDT56VE1
EUT supports Radios application	CDMA/EV-DO/GSM/GPRS/EGPRS/WCDMA/HSPA/ HSPA+(16QAM uplink is not supported)/DC-HSDPA/LTE/ WLAN2.4GHz 802.11b/g/n HT20/ WLAN5GHz 802.11a/n HT20/HT40/ Bluetooth v3.0 + EDR/Bluetooth v4.0 LE Bluetooth v4.2 LE
IMEI Code	Conducted: 351856080011521 Conduction/Radiation: 351856080012693
HW Version	DVT2
SW Version	NPN25.89_1063
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 ~ 5720 MHz
Maximum Output Power to Antenna	<5180 MHz ~ 5240 MHz> 802.11a : 14.29 dBm / 0.0269 W 802.11n HT20 : 14.32 dBm / 0.0270 W 802.11n HT40 : 12.39 dBm / 0.0173 W <5260 MHz ~ 5320 MHz> 802.11a : 14.09 dBm / 0.0256 W 802.11n HT20 : 14.12 dBm / 0.0258 W 802.11n HT40 : 12.31 dBm / 0.0170 W <5500 MHz ~ 5720 MHz > 802.11a : 15.29 dBm / 0.0338 W 802.11n HT20 : 15.36 dBm / 0.0344 W 802.11n HT40 : 11.71 dBm / 0.0148 W
Maximum Output Power to Antenna for Straddle Channel	802.11a : 14.39 dBm / 0.0275 W 802.11n HT20 : 14.55 dBm / 0.0285 W 802.11n HT40 : 11.26 dBm / 0.0134 W
99% Occupied Bandwidth	<5180 MHz ~ 5240 MHz> 802.11a : 19.53 MHz 802.11n HT20 : 20.58 MHz 802.11n HT40 : 37.06 MHz <5260 MHz ~ 5320 MHz> 802.11a : 19.73 MHz 802.11n HT20 : 19.83 MHz 802.11n HT40 : 36.86 MHz <5500 MHz ~ 5720 MHz > 802.11a : 19.38 MHz 802.11n HT20 : 19.93 MHz 802.11n HT40 : 36.76 MHz
99% Occupied Bandwidth for Straddle Channel	802.11a : 19.13 MHz 802.11n HT20 : 19.83 MHz 802.11n HT40 : 36.86 MHz
Antenna Gain / Gain	<5180 MHz ~ 5240 MHz > PIFA Antenna with gain -0.80 dBi <5260 MHz ~ 5320 MHz > PIFA Antenna with gain -0.80 dBi <5500 MHz ~ 5720 MHz > PIFA Antenna with gain 0.20 dBi
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)

1.5 Specification of Accessory

Specification of Accessory				
AC Adapter	Brand Name	Motorola(Salom)	Model Name	SSW-2680US
	Power Rating	I/P: 100-240 Vac, 500mA, O/P: 5 Vdc,1600mA or 9Vdc,1600mA or 12Vdc,1200mA		
Battery	Brand Name	Motorola (Amperex)	Model Name	HG40
	Power Rating	3.8Vdc,2810/ 3000mAh (Min/Typ)	Type	Li-ion
Earphone	Brand Name	Motorola(Jiangxi Lianchuang)	Model Name	MEMD1532B080008
	Signal Line Type	1.2 meter, non-shielded cable, without ferrite core		
USB Cable	Brand Name	Motorola	Model Name	SKN6461A
	Signal Line Type	1.0 meter, non-shielded cable, without ferrite 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 (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.			FCC Registration No.
	TH01-KS	CO01-KS	03CH03-KS	306251

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 v01r03
- ANSI C63.10-2013

Remark:

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

2 Test Configuration of Equipment Under Test

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

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
	-	-	-	-

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



Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
TDWR Channel	120	5600	126*	5630
	-	-	128	5640
	124	5620	-	-

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
Straddle Channel	-	-	144	5720
	142*	5710	-	-

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

2.2 Pre-Scanned RF Power

Preliminary tests were performed in different data rate and data rate associated with the highest power were chosen for full test in the following tables. Final Output Power equals to Measured Output Power adds the duty factor.

WLAN 5GHz 802.11a Average Power (dBm)									
Power vs. Channel		Power vs. Data Rate							
Channel	Frequency (MHz)	6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
CH 36	5180	14.29	14.24	13.84	13.31	12.76	12.56	11.99	11.54
CH 44	5220	13.45	13.40	12.94	12.47	12.08	11.52	11.07	10.72
CH 48	5240	14.07	14.05	13.63	13.14	12.59	12.28	11.68	11.25
CH 52	5260	14.09	14.06	13.68	13.12	12.62	12.23	11.67	12.23
CH 60	5300	13.36	13.25	12.73	12.28	11.92	11.44	10.84	10.54
CH 64	5320	13.65	13.62	13.00	12.61	12.10	11.57	11.22	10.90
CH 100	5500	14.92	14.86	14.50	14.11	13.53	13.16	12.67	11.93
CH 116	5580	15.29	15.26	14.84	14.45	13.95	13.62	13.12	12.74
CH 140	5700	14.35	14.29	13.89	13.52	13.05	12.69	12.23	11.59

WLAN 5GHz 802.11n-HT20 Average Power (dBm)									
Power vs. Channel		Power vs. Data Rate							
Channel	Frequency (MHz)	MCS 0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 36	5180	14.32	13.86	13.40	12.86	12.25	12.11	11.46	10.66
CH 44	5220	13.46	13.12	12.51	12.03	11.54	11.28	10.83	9.82
CH 48	5240	13.92	13.69	13.24	12.75	12.17	11.91	11.17	10.33
CH 52	5260	14.12	13.75	13.20	12.79	12.12	11.84	11.45	10.27
CH 60	5300	13.27	12.94	12.37	11.76	11.34	10.89	10.54	9.42
CH 64	5320	13.62	13.27	12.69	12.05	11.65	11.21	10.90	9.83
CH 100	5500	14.72	14.38	14.12	13.68	13.22	12.79	12.31	11.33
CH 116	5580	15.36	15.00	14.49	14.03	13.57	13.16	12.78	11.86
CH 140	5700	14.36	14.09	13.64	13.09	12.71	12.27	11.76	10.76



WLAN 5GHz 802.11n-HT40 Average Power (dBm)									
Power vs. Channel		Power vs. Data Rate							
Channel	Frequency (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 38	5190	12.29	11.75	11.43	10.82	10.40	9.88	9.34	8.44
CH 46	5230	12.39	11.77	11.48	10.76	10.51	10.01	9.59	8.49
CH 54	5270	12.31	11.83	11.29	10.97	10.42	9.89	9.39	8.37
CH 62	5310	11.83	11.50	10.96	10.21	9.84	9.42	8.90	7.95
CH 102	5510	11.49	11.39	10.86	10.22	9.96	9.20	8.60	7.76
CH 110	5550	11.40	11.06	10.70	9.85	9.62	9.04	8.67	7.58
CH 134	5670	11.71	11.29	10.58	10.12	9.46	9.12	8.55	7.76

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

AC Conducted Emission	Mode 1 : GSM850 Idle + Bluetooth Link + WLAN Link (5G) + USB Cable (Charging from Adapter 9V) + Earphone
	Mode 2 : GSM850 Idle + Bluetooth Link + WLAN Link (5G) + USB Cable (Charging from Adapter 5V) + Earphone
Remark: 1. For Radiated TCs, the tests were performed with Adapter, Earphone, and USB Cable. 2. The worst case of conducted emission is mode 2; only the test data of it was reported.	



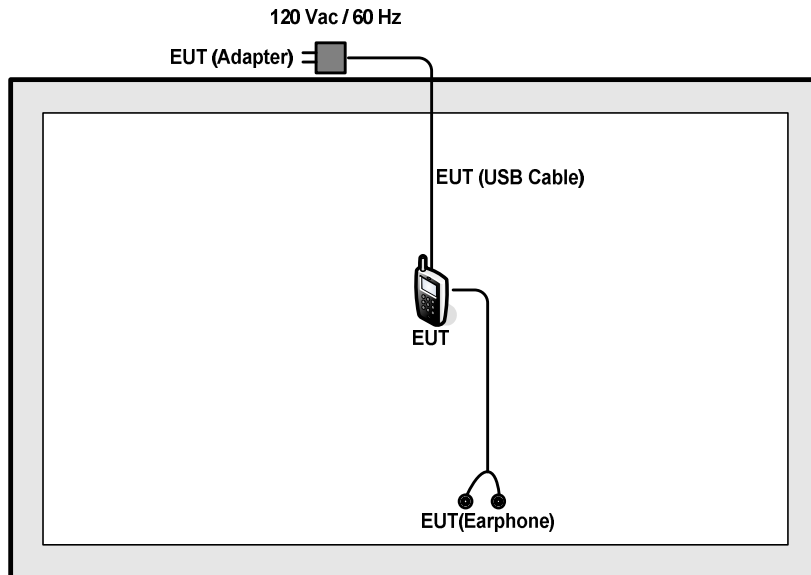
Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5720MHz
		802.11a	802.11a	802.11a
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140
Straddle		-	-	144

Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5720MHz
		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		-	-	144

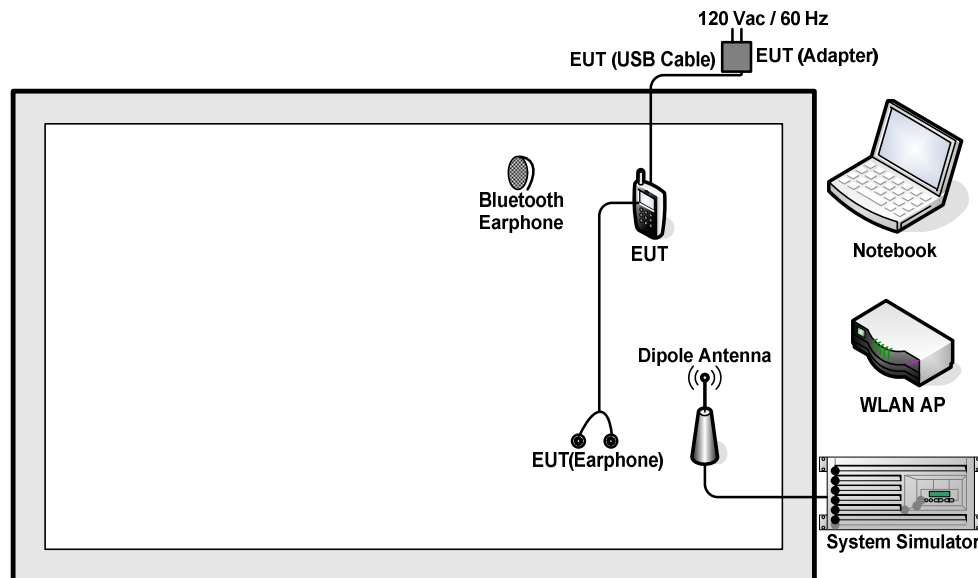
Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5720MHz
		802.11n HT40	802.11n HT40	802.11n HT40
L	Low	38	54	102
M	Middle	-	-	110
H	High	46	62	134
Straddle		-	-	142

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.5 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	WLAN AP	D-link	DIR-855	KA2DIR855A2	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	Lenovo	LBH308	N/A	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 7.5 dB.

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

= 7.5 (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 and limits were applied for operations in the frequency band in accordance with FCC KDB 644545 D03.

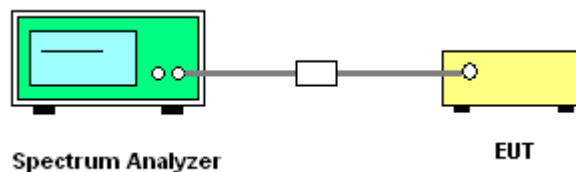
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

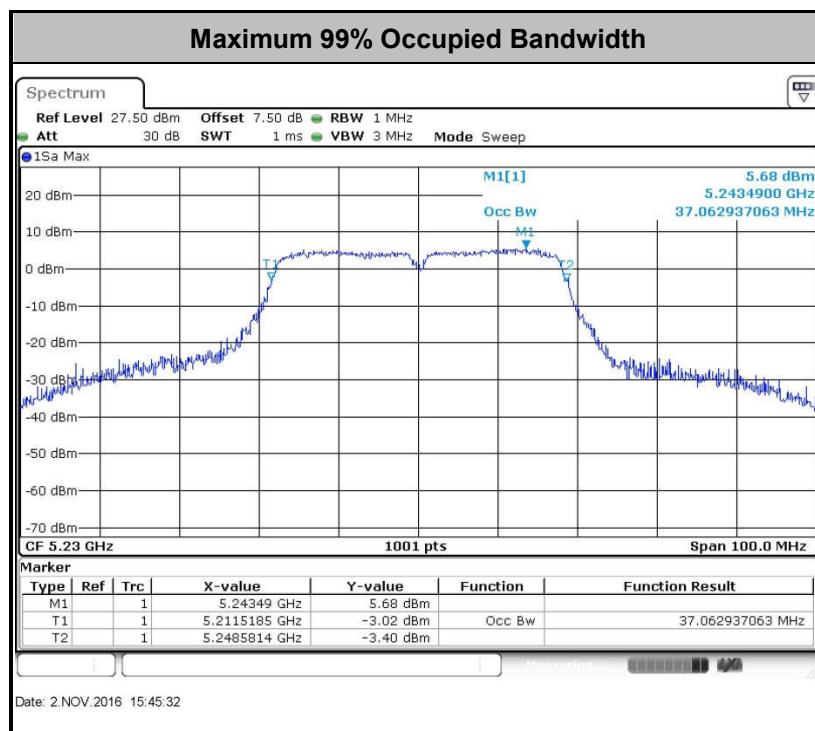
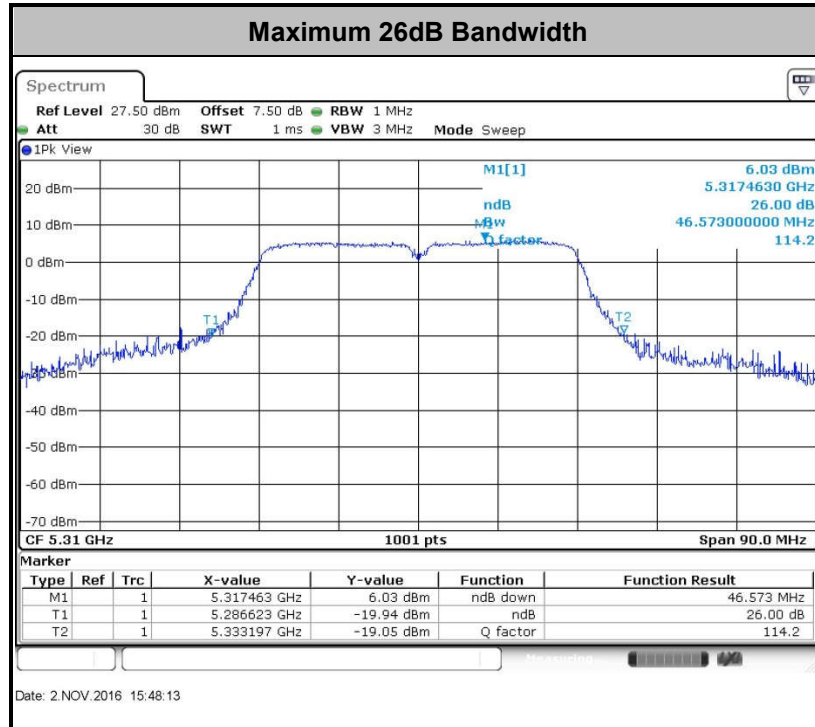
1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r03.
Section C) Emission bandwidth
2. Set RBW = approximately 1% of the emission bandwidth.
3. Set the VBW > RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 26 dB 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) $\geq 3 * \text{RBW}$.
8. Measure and record the results in the test report.

3.1.4 Test Setup

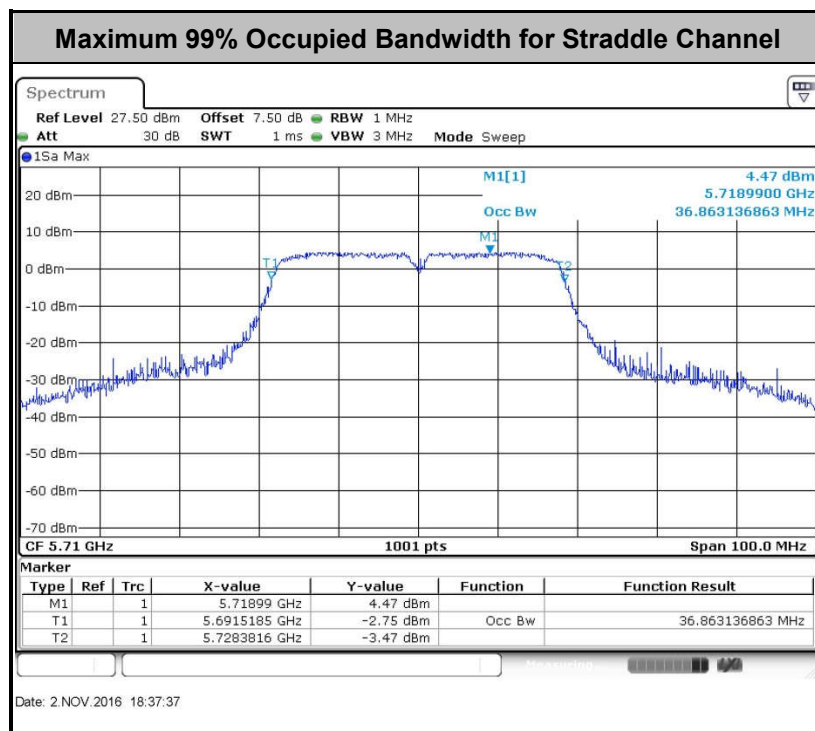
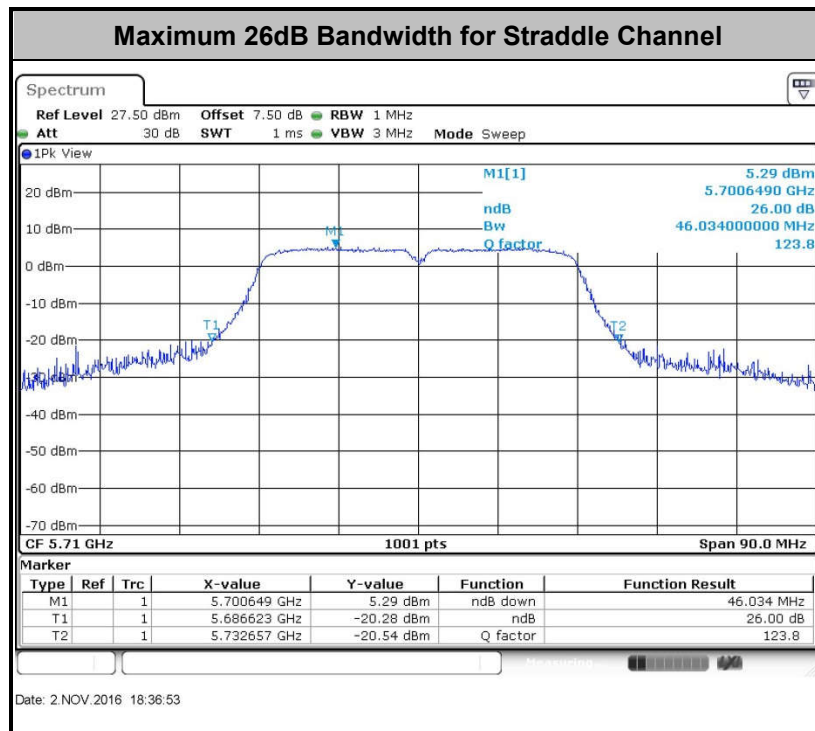


3.1.5 Test Result of 26dB & 99% Occupied Bandwidth Plots

Please refer to Appendix A.



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



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 v01r03.

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

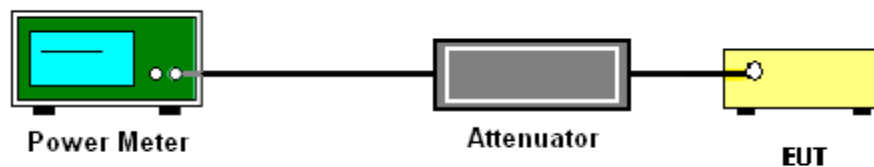
1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit continuously with a consistent duty cycle at its maximum power control level.
3. Measure the average power of the transmitter, and the average power is corrected with duty factor, $10 \log(1/x)$, where x 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 v01r03.

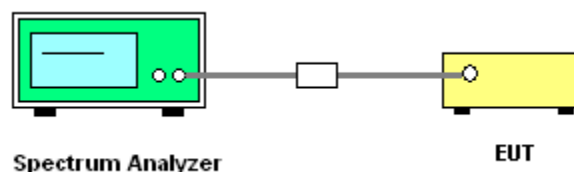
Compute power by integrating the spectrum across the 99% occupied bandwidth of the signal using the instrument's band power measurement function.

3.2.4 Test Setup

For normal channel:



For straddle channel:

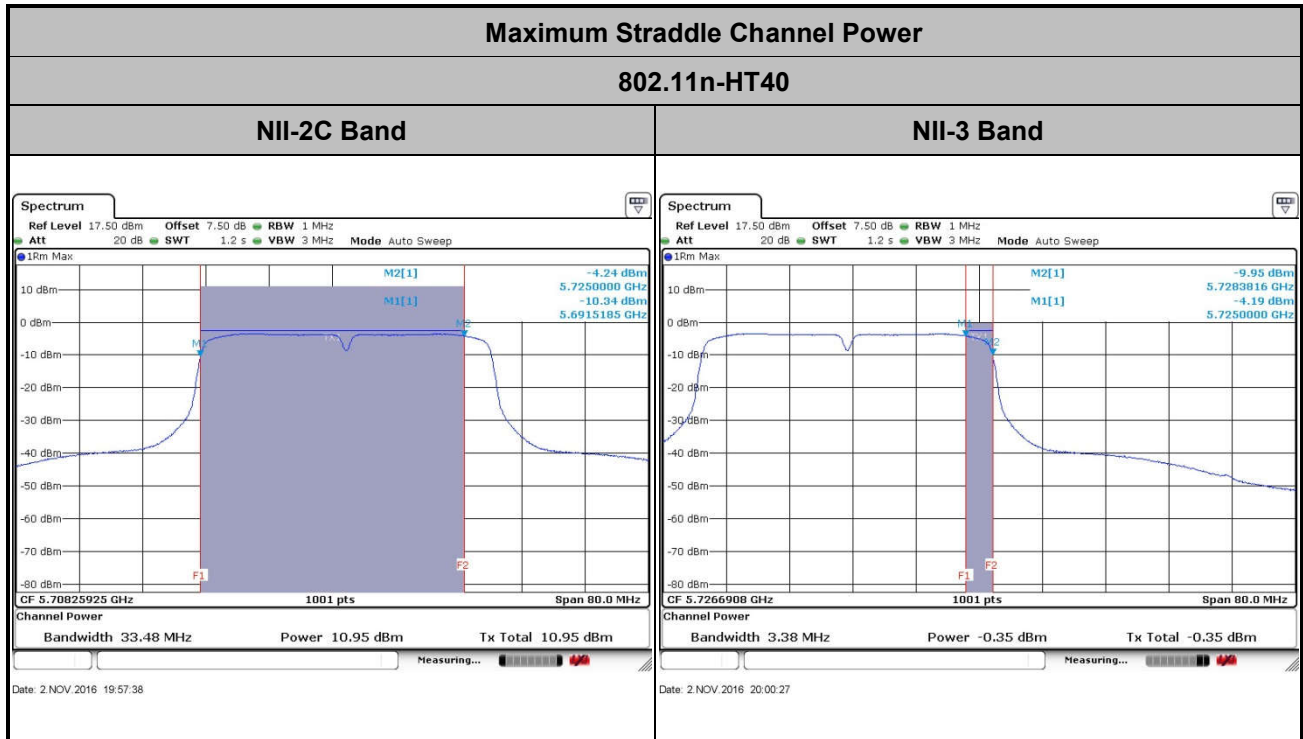




3.2.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.







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 v01r03.

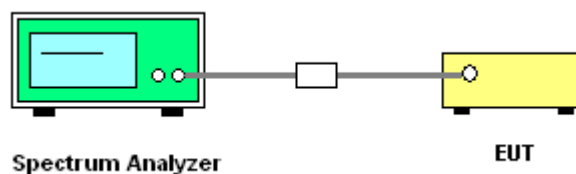
Section F) Maximum power spectral density.

Method SA-2

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

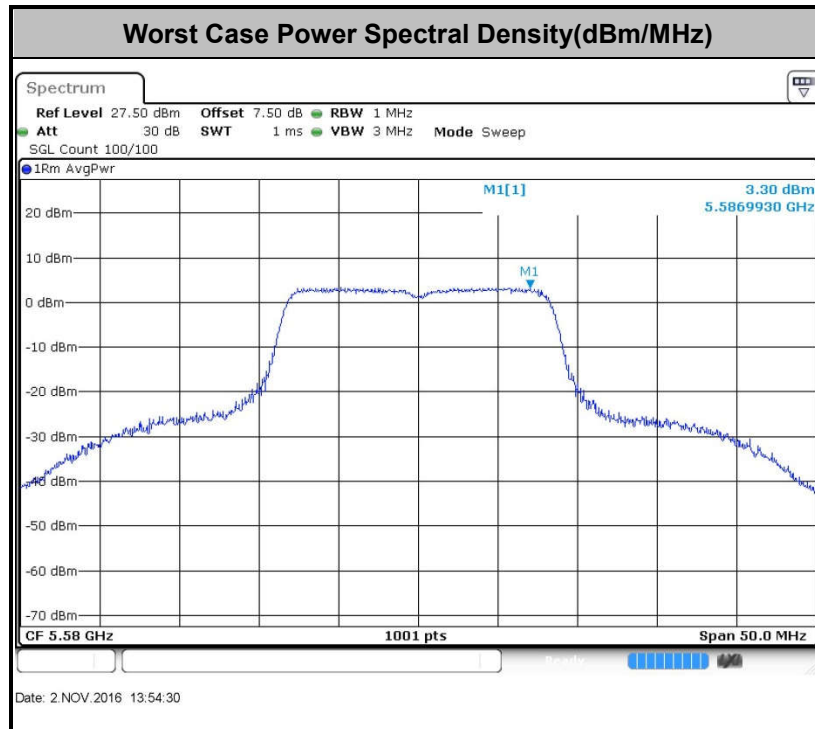
1. The testing follows Method SA-2 of FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r03.
 - Measure the duty cycle.
 - Set span to encompass the entire emission bandwidth (EBW) of the signal.
 - Set RBW = 1 MHz.
 - Set VBW $\geq$ 3 MHz.
 - Number of points in sweep $\geq$ 2 Span / RBW.
 - 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 Part 15.205.

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 Part 15.205 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.

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

EIRP (dBm)	Field Strength at 3m (dB μ V/m)
-17	78.3
- 27	68.3

- (3) KDB789033 D01 v01r03 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.

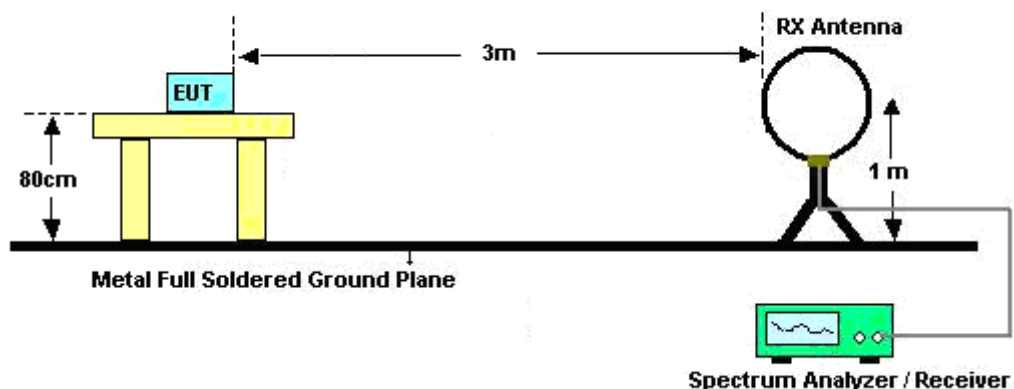
3.4.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r03. 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.

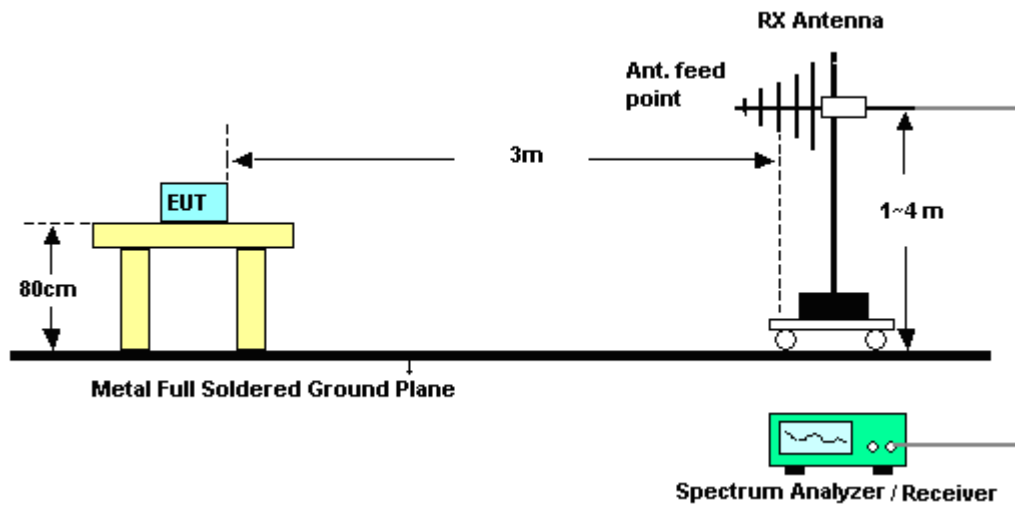
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband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

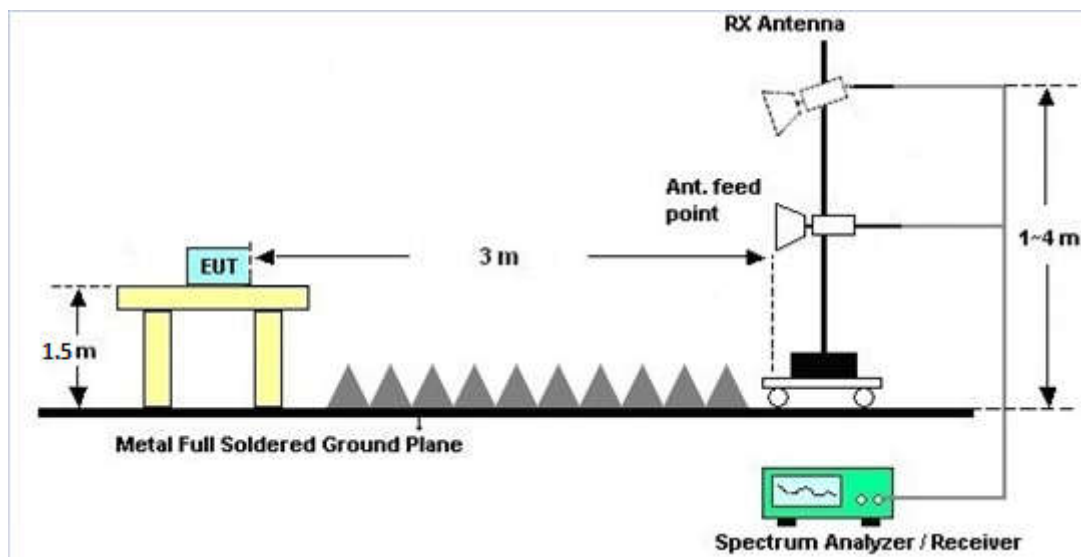
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz





3.4.5 Test Results of Radiated Spurious 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 Spurious at Band Edges

Please refer to Appendix B.

3.4.7 Duty Cycle

Please refer to Appendix C.

3.4.8 Test Result of Radiated Spurious Emissions (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.

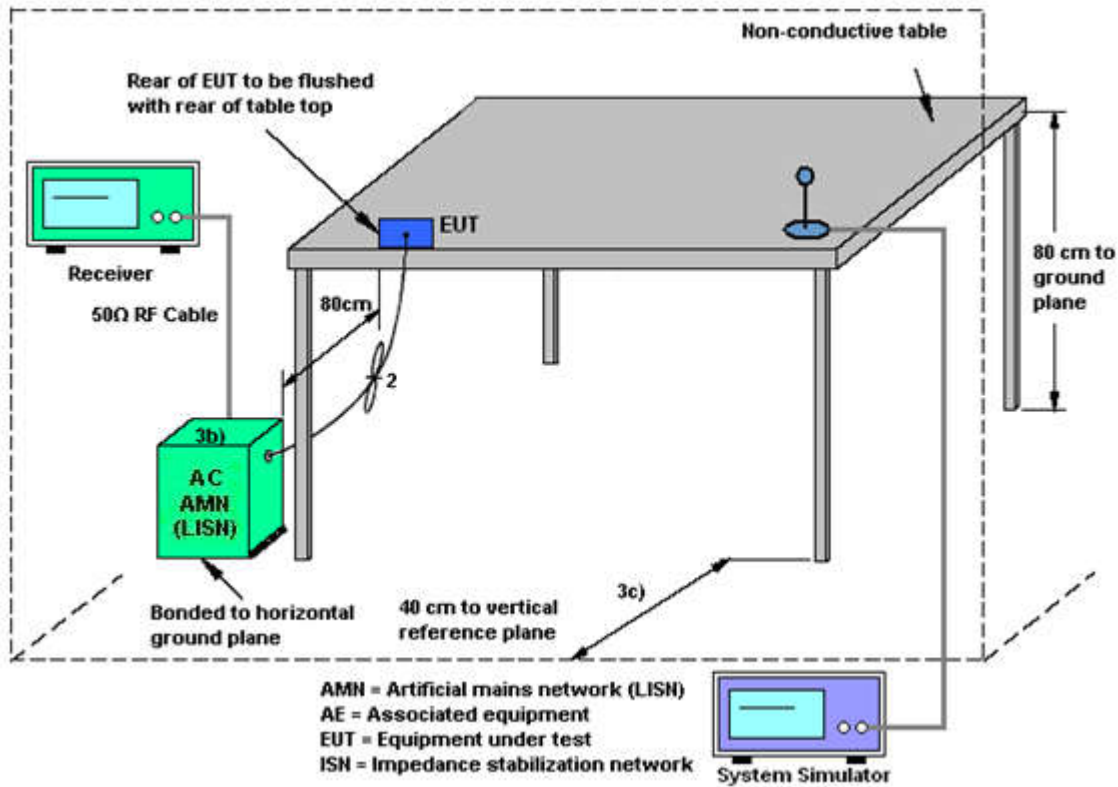
3.5.2 Measuring Instruments

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.

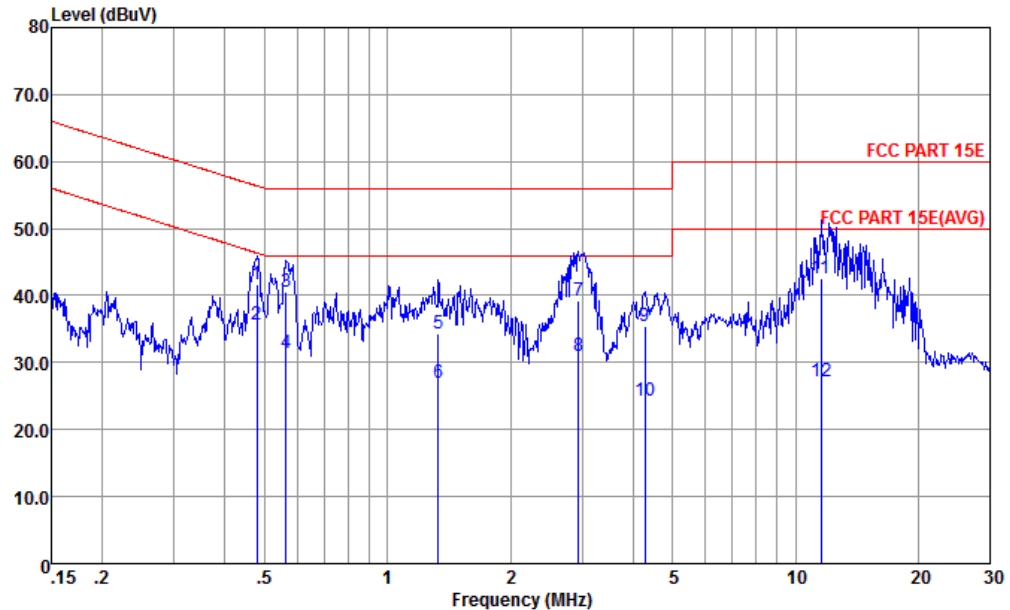
3.5.4 Test Setup





3.5.5 Test Result of AC Conducted Emission

Test Mode :	Mode 2	Temperature :	22~24℃
Test Engineer :	Eligah Wang	Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link (5G) + USB Cable (Charging from Adapter 5V) + Earphone		



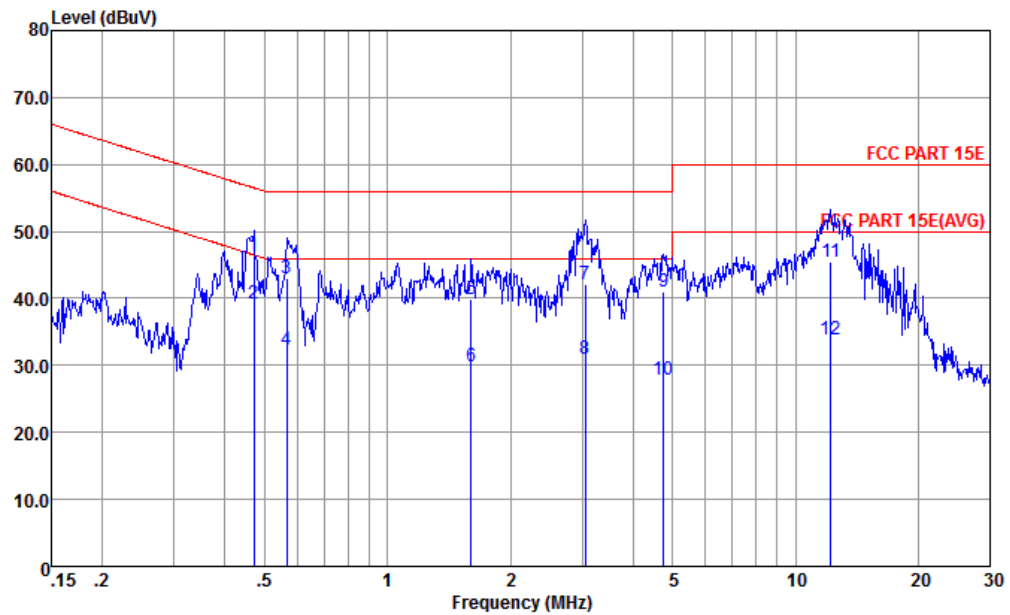
Site : CO01-KS
Condition : FCC PART 15E LISN-L-20151024 LINE

mode : Mode 2
IMEI : 351856080012693

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.479	41.72	-14.64	56.36	31.30	0.23	10.19	QP
2 *	0.479	35.72	-10.64	46.36	25.30	0.23	10.19	Average
3	0.564	40.62	-15.38	56.00	30.21	0.23	10.18	QP
4	0.564	31.52	-14.48	46.00	21.11	0.23	10.18	Average
5	1.331	34.21	-21.79	56.00	23.80	0.22	10.19	QP
6	1.331	27.01	-18.99	46.00	16.60	0.22	10.19	Average
7	2.946	39.30	-16.70	56.00	28.90	0.18	10.22	QP
8	2.946	31.00	-15.00	46.00	20.60	0.18	10.22	Average
9	4.269	35.53	-20.47	56.00	25.10	0.19	10.24	QP
10	4.269	24.33	-21.67	46.00	13.90	0.19	10.24	Average
11	11.559	42.53	-17.47	60.00	31.91	0.25	10.37	QP
12	11.559	27.23	-22.77	50.00	16.61	0.25	10.37	Average



Test Mode :	Mode 2	Temperature :	22~24℃
Test Engineer :	Eligah Wang	Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link (5G) + USB Cable (Charging from Adapter 5V) + Earphone		



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

mode : Mode 2
IMEI : 351856080012693

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.471	46.41	-10.08	56.49	35.90	0.32	10.19	QP
2 *	0.471	39.11	-7.38	46.49	28.60	0.32	10.19	Average
3	0.567	43.11	-12.89	56.00	32.60	0.33	10.18	QP
4	0.567	32.41	-13.59	46.00	21.90	0.33	10.18	Average
5	1.602	39.86	-16.14	56.00	29.29	0.38	10.19	QP
6	1.602	29.86	-16.14	46.00	19.29	0.38	10.19	Average
7	3.058	42.19	-13.81	56.00	31.60	0.37	10.22	QP
8	3.058	30.89	-15.11	46.00	20.30	0.37	10.22	Average
9	4.746	40.90	-15.10	56.00	30.30	0.36	10.24	QP
10	4.746	27.90	-18.10	46.00	17.30	0.36	10.24	Average
11	12.188	45.46	-14.54	60.00	34.79	0.28	10.39	QP
12	12.188	33.96	-16.04	50.00	23.29	0.28	10.39	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.

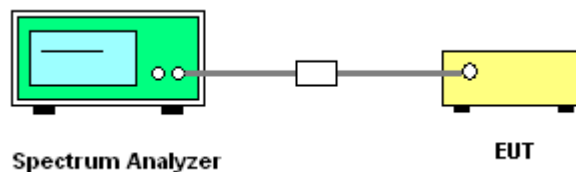
3.6.2 Measuring Instruments

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	Aug. 09, 2016	Oct. 19, 2016~ Nov. 02, 2016	Aug. 08, 2017	Conducted (TH01-KS)
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Oct. 13, 2016	Oct. 19, 2016~ Nov. 02, 2016	Oct. 12, 2017	Conducted (TH01-KS)
Pulse Power Sensor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 20, 2016	Oct. 19, 2016~ Nov. 02, 2016	Jan. 19, 2017	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 20, 2016	Oct. 19, 2016~ Nov. 02, 2016	Jan. 19, 2017	Conducted (TH01-KS)
Thermal Chamber	Ten Billion	TTC-B3S	TBN-960502	-40~+150°C	Oct. 13, 2016	Oct. 19, 2016~ Nov. 02, 2016	Oct. 12, 2017	Conducted (TH01-KS)
EMI Test Receiver	R&S	ESR7	101403	9kHz~7GHz; Max 30dBm	Aug. 09, 2016	Oct. 19, 2016~ Nov. 02, 2016	Aug. 08, 2017	Radiation (03CH03-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150244	10Hz~44GHz	Apr. 22, 2016	Oct. 19, 2016~ Nov. 02, 2016	Apr. 21, 2017	Radiation (03CH03-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Nov. 07, 2015	Oct. 19, 2016~ Nov. 02, 2016	Nov. 06, 2016	Radiation (03CH03-KS)
Bilog Antenna	TeseQ	CBL6112D	35406	25MHz~2GHz	Apr. 16, 2016	Oct. 19, 2016~ Nov. 02, 2016	Apr. 15, 2017	Radiation (03CH03-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1356	1GHz~18GHz	Apr. 16, 2016	Oct. 19, 2016~ Nov. 02, 2016	Apr. 15, 2017	Radiation (03CH03-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15GHz ~40GHz	Mar. 03, 2016	Oct. 19, 2016~ Nov. 02, 2016	Mar. 02, 2017	Radiation (03CH03-KS)
Amplifier	SONOMA	310N	187289	9kHz~1GHz	Aug. 09, 2016	Oct. 19, 2016~ Nov. 02, 2016	Aug. 08, 2017	Radiation (03CH03-KS)
Amplifier	Keysight	83017A	MY53270103	0.5GHz~26.5GHz	Aug. 09, 2016	Oct. 19, 2016~ Nov. 02, 2016	Aug. 08, 2017	Radiation (03CH03-KS)
Amplifier	MITEQ	TTA1840-35-HG	1887435	18GHz~40GHz	Jan. 20, 2016	Oct. 19, 2016~ Nov. 02, 2016	Jan. 19, 2017	Radiation (03CH03-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Oct. 19, 2016~ Nov. 02, 2016	NCR	Radiation (03CH03-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Oct. 19, 2016~ Nov. 02, 2016	NCR	Radiation (03CH03-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Oct. 19, 2016~ Nov. 02, 2016	NCR	Radiation (03CH03-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz;	Apr. 29, 2016	Oct. 22, 2016	Apr. 28, 2017	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060103	9kHz~30MHz	Oct. 13, 2016	Oct. 22, 2016	Oct. 12, 2017	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060105	9kHz~30MHz	Oct. 13, 2016	Oct. 22, 2016	Oct. 12, 2017	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Oct. 13, 2016	Oct. 22, 2016	Oct. 12, 2017	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
---	-------

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.5dB
---	-------

Uncertainty of Radiated Emission Measurement (1GHz ~ 18GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.5dB
---	-------

Uncertainty of Radiated Emission Measurement (18GHz ~ 40GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.6dB
---	-------



Appendix A. Conducted Test Results

Test Engineer:	Lion Yang	Temperature:	24~25	°C
Test Date:	2016/10/19 ~ 2016/11/2	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	18.88	24.23	-	22.76		
11a	6Mbps	1	44	5220	19.53	26.97	-	22.91		
11a	6Mbps	1	48	5240	19.53	28.67	-	22.91		
HT20	MCS0	1	36	5180	19.93	26.77	-	23.00		
HT20	MCS0	1	44	5220	20.58	28.87	-	23.01		
HT20	MCS0	1	48	5240	20.58	28.02	-	23.01		
HT40	MCS0	1	38	5190	36.66	44.42	-	23.01		
HT40	MCS0	1	46	5230	37.06	45.05	-	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	0.59	14.29	24.00	-0.80		Pass
11a	6Mbps	1	44	5220	0.59	13.45	24.00	-0.80		Pass
11a	6Mbps	1	48	5240	0.59	14.07	24.00	-0.80		Pass
HT20	MCS0	1	36	5180	0.60	14.32	24.00	-0.80		Pass
HT20	MCS0	1	44	5220	0.60	13.46	24.00	-0.80		Pass
HT20	MCS0	1	48	5240	0.60	13.92	24.00	-0.80		Pass
HT40	MCS0	1	38	5190	0.67	12.29	24.00	-0.80		Pass
HT40	MCS0	1	46	5230	0.67	12.39	24.00	-0.80		Pass

TEST RESULTS DATA
Power Spectral Density

FCC Band I										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)	Average Power Density (dBm/MHz)	Average PSD Limit (dBm/MHz)	DG (dBi)	-	Pass/Fail
11a	6Mbps	1	36	5180	0.59	2.48	11.00	-0.80		Pass
11a	6Mbps	1	44	5220	0.59	1.73	11.00	-0.80		Pass
11a	6Mbps	1	48	5240	0.59	2.74	11.00	-0.80		Pass
HT20	MCS0	1	36	5180	0.60	2.28	11.00	-0.80		Pass
HT20	MCS0	1	44	5220	0.60	1.58	11.00	-0.80		Pass
HT20	MCS0	1	48	5240	0.60	2.16	11.00	-0.80		Pass
HT40	MCS0	1	38	5190	0.67	-2.02	11.00	-0.80		Pass
HT40	MCS0	1	46	5230	0.67	-2.17	11.00	-0.80		Pass

TEST RESULTS DATA
26dB and 99% OBW

Band II										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)	IC 99% Bandwidth Power Limit (dBm)	IC 99% Bandwidth EIRP Limit (dBm)	FCC 26dB Bandwidth Power Limit (dBm)	Note
11a	6M bps	1	52	5260	19.73	24.88	23.95	29.95	23.98	
11a	6M bps	1	60	5300	19.23	25.52	23.84	29.84	23.98	
11a	6M bps	1	64	5320	19.18	26.02	23.83	29.83	23.98	
HT20	MCS 0	1	52	5260	19.63	26.17	23.93	29.93	23.98	
HT20	MCS 0	1	60	5300	19.78	27.07	23.96	29.96	23.98	
HT20	MCS 0	1	64	5320	19.83	27.07	23.97	29.97	23.98	
HT40	MCS 0	1	54	5270	36.86	44.60	23.98	30.00	23.98	
HT40	MCS 0	1	62	5310	36.86	46.57	23.98	30.00	23.98	

TEST RESULTS DATA
Average Power Table

FCC Band II										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)	EIRP Power Limit (dBm)	Pass/Fail
11a	6M bps	1	52	5260	0.59	14.09	23.98	-0.80	26.99	Pass
11a	6M bps	1	60	5300	0.59	13.36	23.98	-0.80	26.99	Pass
11a	6M bps	1	64	5320	0.59	13.65	23.98	-0.80	26.99	Pass
HT20	MCS 0	1	52	5260	0.60	14.12	23.98	-0.80	26.99	Pass
HT20	MCS 0	1	60	5300	0.60	13.27	23.98	-0.80	26.99	Pass
HT20	MCS 0	1	64	5320	0.60	13.62	23.98	-0.80	26.99	Pass
HT40	MCS 0	1	54	5270	0.67	12.31	23.98	-0.80	26.99	Pass
HT40	MCS 0	1	62	5310	0.67	11.83	23.98	-0.80	26.99	Pass

TEST RESULTS DATA
Power Spectral Density

Band II										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)	Average Power Density (dBm/MHz)	Average PSD Limit (dBm/MHz)	DG (dBi)		Pass/Fail
11a	6M bps	1	52	5260	0.59	2.45	11.00	-0.80		Pass
11a	6M bps	1	60	5300	0.59	1.44	11.00	-0.80		Pass
11a	6M bps	1	64	5320	0.59	1.78	11.00	-0.80		Pass
HT20	MCS 0	1	52	5260	0.60	2.26	11.00	-0.80		Pass
HT20	MCS 0	1	60	5300	0.60	1.24	11.00	-0.80		Pass
HT20	MCS 0	1	64	5320	0.60	1.41	11.00	-0.80		Pass
HT40	MCS 0	1	54	5270	0.67	-1.74	11.00	-0.80		Pass
HT40	MCS 0	1	62	5310	0.67	-2.01	11.00	-0.80		Pass

TEST RESULTS DATA
26dB and 99% OBW

Band III										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)	IC 99% Bandwidth Power Limit (dBm)	IC 99% Bandwidth EIRP Limit (dBm)	FCC 26dB Bandwidth Power Limit (dBm)	Note
11a	6M bps	1	100	5500	18.88	27.77	23.76	29.76	23.98	
11a	6M bps	1	116	5580	19.38	30.27	23.87	29.87	23.98	
11a	6M bps	1	140	5700	19.08	26.12	23.81	29.81	23.98	
HT20	MCS 0	1	100	5500	19.58	27.47	23.92	29.92	23.98	
HT20	MCS 0	1	116	5580	19.93	36.31	23.98	30.00	23.98	
HT20	MCS 0	1	140	5700	19.73	30.82	23.95	29.95	23.98	
HT40	MCS 0	1	102	5510	36.66	45.14	23.98	30.00	23.98	
HT40	MCS 0	1	110	5550	36.76	44.96	23.98	30.00	23.98	
HT40	MCS 0	1	134	5670	36.76	45.41	23.98	30.00	23.98	

TEST RESULTS DATA
Average Power Table

FCC Band III										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)	EIRP Power Limit (dBm)	Pass/Fail
11a	6M bps	1	100	5500	0.59	14.92	23.98	0.20	26.99	Pass
11a	6M bps	1	116	5580	0.59	15.29	23.98	0.20	26.99	Pass
11a	6M bps	1	140	5700	0.59	14.35	23.98	0.20	26.99	Pass
HT20	MCS 0	1	100	5500	0.60	14.72	23.98	0.20	26.99	Pass
HT20	MCS 0	1	116	5580	0.60	15.36	23.98	0.20	26.99	Pass
HT20	MCS 0	1	140	5700	0.60	14.36	23.98	0.20	26.99	Pass
HT40	MCS 0	1	102	5510	0.67	11.49	23.98	0.20	26.99	Pass
HT40	MCS 0	1	110	5550	0.67	11.40	23.98	0.20	26.99	Pass
HT40	MCS 0	1	134	5670	0.67	11.71	23.98	0.20	26.99	Pass

TEST RESULTS DATA
Power Spectral Density

Band III										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)	Average Power Density (dBm/MHz)	Average PSD Limit (dBm/MHz)	DG (dBi)		Pass/Fail
11a	6M bps	1	100	5500	0.59	3.45	11.00	0.20		Pass
11a	6M bps	1	116	5580	0.59	3.89	11.00	0.20		Pass
11a	6M bps	1	140	5700	0.59	3.11	11.00	0.20		Pass
HT20	MCS 0	1	100	5500	0.60	3.61	11.00	0.20		Pass
HT20	MCS 0	1	116	5580	0.60	3.81	11.00	0.20		Pass
HT20	MCS 0	1	140	5700	0.60	2.90	11.00	0.20		Pass
HT40	MCS 0	1	102	5510	0.67	-2.24	11.00	0.20		Pass
HT40	MCS 0	1	110	5550	0.67	-2.58	11.00	0.20		Pass
HT40	MCS 0	1	134	5670	0.67	-2.78	11.00	0.20		Pass

TEST RESULTS DATA
26dB and 99% OBW

Straddle Channel											
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	99% Bandwidth (MHz)	26dB Emission Bandwidth (MHz)	6dB 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	19.13	26.07	16.34	-	-	-	
				NII-2C	14.6903	18.786	13.172	22.67	28.67	22.20	
				NII-3	4.4406	7.288	3.172	30.00	36.02	-	
HT20	MCS0	1	144	5720	19.83	27.37	17.58	-	-	-	
				NII-2C	14.99	18.237	13.791	22.76	28.76	22.40	
				NII-3	4.8402	9.136	3.791	30.00	36.02	-	
HT40	MCS0	1	142	5710	36.86	46.03	35.33	-	-	-	
				NII-2C	33.4815	38.377	32.742	23.98	30.00	23.98	
				NII-3	3.3816	7.657	2.583	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	0.59	14.39	-	0.20		Pass
				NII-2C	0.59	13.42	22.20	0.20		Pass
				NII-3	0.59	7.41	30.00	0.20		Pass
HT20	MCS0	1	144	5720	0.60	14.55	-	0.20		Pass
				NII-2C	0.60	13.46	22.40	0.20		Pass
				NII-3	0.60	8.00	30.00	0.20		Pass
HT40	MCS0	1	142	5710	0.67	11.26	-	0.20		Pass
				NII-2C	0.67	10.95	23.98	0.20		Pass
				NII-3	0.67	-0.35	30.00	0.20		Pass

TEST RESULTS DATA
Power Spectral Density

Straddle Channel										
Mod.	Data Rate	NTX	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	0.59	3.71	11.00	0.20		Pass
				NII-3	0.59	3.71	30.00	0.20		Pass
HT20	MCS0	1	144	NII-2C	0.60	3.29	11.00	0.20		Pass
				NII-3	0.60	3.29	30.00	0.20		Pass
HT40	MCS0	1	142	NII-2C	0.67	-2.87	11.00	0.20		Pass
				NII-3	0.67	-2.87	30.00	0.20		Pass

TEST RESULTS DATA
Frequency Stability

Band I										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stability (ppm)	Temperature (°C)	Voltage (V)	Note
11a	6Mbps	1	36	5180	5180.000	0.000	0.00	50	3.82	
11a	6Mbps	1	36	5180	5180.000	0.000	0.00	-30	3.82	
11a	6Mbps	1	36	5180	5180.000	0.000	0.00	20	4.4	
11a	6Mbps	1	36	5180	5180.025	0.025	4.83	20	3.65	
11a	6Mbps	1	36	5180	5180.000	0.000	0.00	20	3.82	

Band II										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stability (ppm)	Temperature (°C)	Voltage (V)	Note
11a	6Mbps	1	64	5320	5320.000	0.000	0.00	50	3.82	
11a	6Mbps	1	64	5320	5320.000	0.000	0.00	-30	3.82	
11a	6Mbps	1	64	5320	5320.050	0.050	9.40	20	4.4	
11a	6Mbps	1	64	5320	5320.050	0.050	9.40	20	3.65	
11a	6Mbps	1	64	5320	5320.000	0.000	0.00	20	3.82	

Band III										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stability (ppm)	Temperature (°C)	Voltage (V)	Note
11a	6Mbps	1	100	5500	5500.000	0.000	0.00	50	3.82	
11a	6Mbps	1	100	5500	5500.025	0.025	4.55	-30	3.82	
11a	6Mbps	1	100	5500	5500.000	0.000	0.00	20	4.4	
11a	6Mbps	1	100	5500	5500.025	0.025	4.55	20	3.65	
11a	6Mbps	1	100	5500	5500.000	0.000	0.00	20	3.82	



Appendix B. Radiated Spurious Emission

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		5148.96	51.65	-22.35	74	48.42	31.84	7.92	36.53	100	37	P	H
		5150	40.53	-13.47	54	37.3	31.84	7.92	36.53	100	37	A	H
	*	5184	95.39	-	-	92.11	31.85	7.94	36.51	100	37	P	H
	*	5184	88.04	-	-	84.76	31.85	7.94	36.51	100	37	A	H
		5148.96	52.53	-21.47	74	49.3	31.84	7.92	36.53	333	10	P	V
		5150	42.31	-11.69	54	39.08	31.84	7.92	36.53	333	10	A	V
	*	5188	97.64	-	-	94.36	31.85	7.94	36.51	333	10	P	V
	*	5188	90.48	-	-	87.2	31.85	7.94	36.51	333	10	A	V
802.11a CH 44 5220MHz		5106.72	46.25	-27.75	74	43.06	31.83	7.91	36.55	100	38	P	H
		5119.52	36.79	-17.21	54	33.6	31.83	7.91	36.55	100	38	A	H
	*	5214	96.03	-	-	92.68	31.86	7.99	36.5	100	38	P	H
	*	5214	89.68	-	-	86.33	31.86	7.99	36.5	100	38	A	H
		5366.52	44.48	-29.52	74	40.68	31.91	8.39	36.5	100	38	P	H
		5398.02	36.08	-17.92	54	32.18	31.92	8.48	36.5	100	38	A	H
		5126.24	46.3	-27.7	74	43.09	31.84	7.91	36.54	379	3	P	V
		5123.68	37.49	-16.51	54	34.28	31.84	7.91	36.54	379	3	A	V
	*	5228	99.73	-	-	96.32	31.87	8.04	36.5	379	3	P	V
	*	5228	93.24	-	-	89.83	31.87	8.04	36.5	379	3	A	V
		5383.08	45.13	-28.87	74	41.28	31.92	8.43	36.5	379	3	P	V
		5399.28	36.21	-17.79	54	32.31	31.92	8.48	36.5	379	3	A	V



802.11a CH 48 5240MHz		5388.3	45.09	-28.91	74	41.24	31.92	8.43	36.5	100	38	P	H
		5385.78	36.09	-17.91	54	32.24	31.92	8.43	36.5	100	38	A	H
	*	5238	95.88	-	-	92.47	31.87	8.04	36.5	100	38	P	H
	*	5238	88.16	-	-	84.75	31.87	8.04	36.5	100	38	A	H
		5374.8	45.58	-28.42	74	41.78	31.91	8.39	36.5	235	0	P	V
		5395.86	36.12	-17.88	54	32.22	31.92	8.48	36.5	235	0	A	V
	*	5236	98.38	-	-	94.97	31.87	8.04	36.5	235	0	P	V
	*	5236	90.76	-	-	87.35	31.87	8.04	36.5	235	0	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		10360	43.58	-30.42	74	50.97	38.02	11.84	57.25	100	0	P	H
CH 36 5180MHz		10360	44.12	-29.88	74	51.51	38.02	11.84	57.25	100	0	P	V
802.11a		10440	43.98	-30.02	74	51.15	38.06	11.89	57.12	100	360	P	H
CH 44 5220MHz		10440	44.47	-29.53	74	51.64	38.06	11.89	57.12	100	360	P	V
802.11a		10480	45.12	-28.88	74	52.13	38.09	11.92	57.02	100	360	P	H
CH 48 5240MHz		10480	44.13	-29.87	74	51.14	38.09	11.92	57.02	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz

WIFI 802.11n HT20 (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)
802.11n HT20 CH 36 5180MHz		5149.12	57.25	-16.75	74	54.02	31.84	7.92	36.53	297	59	P	H
		5150	45.49	-8.51	54	42.26	31.84	7.92	36.53	297	59	A	H
	*	5184	100.9	-	-	97.62	31.85	7.94	36.51	297	59	P	H
	*	5184	93.3	-	-	90.02	31.85	7.94	36.51	297	59	A	H
		5149.76	51.5	-22.5	74	48.27	31.84	7.92	36.53	100	88	P	V
		5150	41.47	-12.53	54	38.24	31.84	7.92	36.53	100	88	A	V
	*	5176	95.26	-	-	91.98	31.85	7.94	36.51	100	88	P	V
	*	5176	87.93	-	-	84.65	31.85	7.94	36.51	100	88	A	V
802.11n HT20 CH 44 5220MHz		5130.08	46.28	-27.72	74	43.07	31.84	7.91	36.54	305	55	P	H
		5116.48	37.59	-16.41	54	34.4	31.83	7.91	36.55	305	55	A	H
	*	5228	99.93	-	-	96.52	31.87	8.04	36.5	305	55	P	H
	*	5228	93.05	-	-	89.64	31.87	8.04	36.5	305	55	A	H
		5354.82	44.92	-29.08	74	41.17	31.91	8.34	36.5	305	55	P	H
		5366.52	36.12	-17.88	54	32.32	31.91	8.39	36.5	305	55	A	H
		5126.56	45.69	-28.31	74	42.48	31.84	7.91	36.54	100	89	P	V
		5129.28	36.66	-17.34	54	33.45	31.84	7.91	36.54	100	89	A	V
	*	5224	95.22	-	-	91.87	31.86	7.99	36.5	100	89	P	V
	*	5224	87.95	-	-	84.6	31.86	7.99	36.5	100	89	A	V
		5361.3	44.47	-29.53	74	40.67	31.91	8.39	36.5	100	89	P	V
		5398.02	36.06	-17.94	54	32.16	31.92	8.48	36.5	100	89	A	V



802.11n HT20 CH 48 5240MHz		5390.28	44.32	-29.68	74	40.47	31.92	8.43	36.5	299	68	P	H
		5385.42	36.33	-17.67	54	32.48	31.92	8.43	36.5	299	68	A	H
	*	5236	101.12	-	-	97.71	31.87	8.04	36.5	299	68	P	H
	*	5236	92.97	-	-	89.56	31.87	8.04	36.5	299	68	A	H
		5375.52	45.17	-28.83	74	41.37	31.91	8.39	36.5	100	91	P	V
		5399.46	36.15	-17.85	54	32.25	31.92	8.48	36.5	100	91	A	V
	*	5232	95.81	-	-	92.4	31.87	8.04	36.5	100	91	P	V
	*	5232	84.93	-	-	81.52	31.87	8.04	36.5	100	91	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz
WIFI 802.11n HT20 (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)
802.11n HT20 CH 36 5180MHz		10360	43.63	-30.37	74	51.02	38.02	11.84	57.25	100	360	P	H
		10360	44.04	-29.96	74	51.43	38.02	11.84	57.25	100	360	P	V
802.11n HT20 CH 44 5220MHz		10440	44.33	-29.67	74	51.5	38.06	11.89	57.12	100	360	P	H
		10440	43.7	-30.3	74	50.87	38.06	11.89	57.12	100	360	P	V
802.11n HT20 CH 48 5240MHz		10480	43.95	-30.05	74	50.96	38.09	11.92	57.02	100	360	P	H
		10480	43.79	-30.21	74	50.8	38.09	11.92	57.02	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz
WIFI 802.11n HT40 (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)
802.11n HT40 CH 38 5190MHz		5148.32	59.14	-14.86	74	55.91	31.84	7.92	36.53	280	64	P	H
		5148	50.45	-3.55	54	47.22	31.84	7.92	36.53	280	64	A	H
	*	5202	94.84	-	-	91.53	31.86	7.95	36.5	280	64	P	H
	*	5202	87.7	-	-	84.39	31.86	7.95	36.5	280	64	A	H
		5389.74	45.74	-28.26	74	41.89	31.92	8.43	36.5	280	64	P	H
		5372.28	36.69	-17.31	54	32.89	31.91	8.39	36.5	280	64	A	H
		5146.24	57.06	-16.94	74	53.83	31.84	7.92	36.53	100	85	P	V
		5150	45.24	-8.76	54	42.01	31.84	7.92	36.53	100	85	A	V
	*	5202	90.7	-	-	87.39	31.86	7.95	36.5	100	85	P	V
	*	5202	84.13	-	-	80.82	31.86	7.95	36.5	100	85	A	V
		5359.32	44.88	-29.12	74	41.13	31.91	8.34	36.5	100	85	P	V
		5366.34	37.12	-16.88	54	33.32	31.91	8.39	36.5	100	85	A	V
802.11n HT40 CH 46 5230MHz		5114.24	47.02	-26.98	74	43.83	31.83	7.91	36.55	279	65	P	H
		5126.72	37.92	-16.08	54	34.71	31.84	7.91	36.54	279	65	A	H
	*	5244	95.67	-	-	92.21	31.88	8.08	36.5	279	65	P	H
	*	5244	88.74	-	-	85.28	31.88	8.08	36.5	279	65	A	H
		5398.2	45.22	-28.78	74	41.32	31.92	8.48	36.5	279	65	P	H
		5385.78	36.51	-17.49	54	32.66	31.92	8.43	36.5	279	65	A	H
		5116.64	45.58	-28.42	74	42.39	31.83	7.91	36.55	100	85	P	V
		5141.12	37.26	-16.74	54	34.03	31.84	7.92	36.53	100	85	A	V
	*	5218	90.95	-	-	87.6	31.86	7.99	36.5	100	85	P	V
	*	5218	83.92	-	-	80.57	31.86	7.99	36.5	100	85	A	V
		5372.64	44.73	-29.27	74	40.93	31.91	8.39	36.5	100	85	P	V
		5388.48	36.47	-17.53	54	32.62	31.92	8.43	36.5	100	85	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz
WIFI 802.11n HT40 (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)
802.11n HT40 CH 38 5190MHz		10380	42.54	-31.46	74	49.88	38.03	11.85	57.22	100	360	P	H
		10380	42.85	-31.15	74	50.19	38.03	11.85	57.22	100	360	P	V
802.11n HT40 CH 46 5230MHz		10460	43.91	-30.09	74	51.02	38.07	11.9	57.08	100	360	P	H
		10460	43.85	-30.15	74	50.96	38.07	11.9	57.08	100	360	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		5114.56	45.79	-28.21	74	42.6	31.83	7.91	36.55	100	38	P	H
		5103.04	37	-17	54	33.83	31.83	7.9	36.56	100	38	A	H
	*	5264	95.64	-	-	92.14	31.88	8.12	36.5	100	38	P	H
	*	5264	88.36	-	-	84.86	31.88	8.12	36.5	100	38	A	H
		5109.28	46.25	-27.75	74	43.06	31.83	7.91	36.55	373	16	P	V
		5106.72	36.7	-17.3	54	33.51	31.83	7.91	36.55	373	16	A	V
	*	5264	97.87	-	-	94.37	31.88	8.12	36.5	373	16	P	V
	*	5264	90.73	-	-	87.23	31.88	8.12	36.5	373	16	A	V
802.11a CH 60 5300MHz		5150	46.23	-27.77	74	43	31.84	7.92	36.53	100	38	P	H
		5109.92	36.72	-17.28	54	33.53	31.83	7.91	36.55	100	38	A	H
	*	5296	94.33	-	-	90.73	31.89	8.21	36.5	100	38	P	H
	*	5296	87.16	-	-	83.56	31.89	8.21	36.5	100	38	A	H
		5395.7	46.15	-27.85	74	42.25	31.92	8.48	36.5	100	38	P	H
		5352.7	37.51	-16.49	54	33.76	31.91	8.34	36.5	100	38	A	H
		5104	47.41	-26.59	74	44.24	31.83	7.9	36.56	368	13	P	V
		5101.12	36.78	-17.22	54	33.61	31.83	7.9	36.56	368	13	A	V
	*	5298	97.18	-	-	93.58	31.89	8.21	36.5	368	13	P	V
	*	5298	89.92	-	-	86.32	31.89	8.21	36.5	368	13	A	V
		5353.8	45.54	-28.46	74	41.79	31.91	8.34	36.5	368	13	P	V
		5352.4	38.04	-15.96	54	34.29	31.91	8.34	36.5	368	13	A	V



802.11a CH 64 5320MHz	*	5316	94.45	-	-	90.79	31.9	8.26	36.5	100	36	P	H
	*	5316	87.09	-	-	83.43	31.9	8.26	36.5	100	36	A	H
		5350.5	48.58	-25.42	74	44.83	31.91	8.34	36.5	100	36	P	H
		5350.3	38.86	-15.14	54	35.11	31.91	8.34	36.5	100	36	A	H
	*	5314	96.38	-	-	92.72	31.9	8.26	36.5	225	24	P	V
	*	5314	88.89	-	-	85.23	31.9	8.26	36.5	225	24	A	V
		5350.8	49.51	-24.49	74	45.76	31.91	8.34	36.5	225	24	P	V
		5350	39.81	-14.19	54	36.06	31.91	8.34	36.5	225	24	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	43.33	-30.67	74	50.23	38.11	11.94	56.95	100	360	P	H
		10520	43.59	-30.41	74	50.49	38.11	11.94	56.95	100	360	P	V
802.11a CH 60 5300MHz		10600	43.37	-30.63	74	49.99	38.16	12	56.78	100	0	P	H
		10600	43.64	-30.36	74	50.26	38.16	12	56.78	100	225	P	V
802.11a CH 64 5320MHz		10640	44.06	-29.94	74	50.57	38.18	12.02	56.71	100	360	P	H
		10640	44.3	-29.7	74	50.81	38.18	12.02	56.71	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

WIFI 802.11n HT20 (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)
802.11n HT20 CH 52 5260MHz		5111.2	46.95	-27.05	74	43.76	31.83	7.91	36.55	300	62	P	H
		5112.16	36.83	-17.17	54	33.64	31.83	7.91	36.55	300	62	A	H
	*	5268	100.6	-	-	97.1	31.88	8.12	36.5	300	62	P	H
	*	5268	93.13	-	-	89.63	31.88	8.12	36.5	300	62	A	H
		5104	46.65	-27.35	74	43.48	31.83	7.9	36.56	100	85	P	V
		5102.88	36.81	-17.19	54	33.64	31.83	7.9	36.56	100	85	A	V
	*	5264	95.92	-	-	92.42	31.88	8.12	36.5	100	85	P	V
	*	5264	88.08	-	-	84.58	31.88	8.12	36.5	100	85	A	V
802.11n HT20 CH 60 5300MHz		5109.6	45.63	-28.37	74	42.44	31.83	7.91	36.55	300	62	P	H
		5101.92	36.97	-17.03	54	33.8	31.83	7.9	36.56	300	62	A	H
	*	5294	100.12	-	-	96.52	31.89	8.21	36.5	300	62	P	H
	*	5294	92.85	-	-	89.25	31.89	8.21	36.5	300	62	A	H
		5351.8	48.53	-25.47	74	44.78	31.91	8.34	36.5	300	62	P	H
		5351.7	41.14	-12.86	54	37.39	31.91	8.34	36.5	300	62	A	H
		5107.68	45.25	-28.75	74	42.06	31.83	7.91	36.55	100	90	P	V
		5103.84	36.75	-17.25	54	33.58	31.83	7.9	36.56	100	90	A	V
	*	5298	94.48	-	-	90.88	31.89	8.21	36.5	100	90	P	V
	*	5298	87.13	-	-	83.53	31.89	8.21	36.5	100	90	A	V
		5352.1	45.69	-28.31	74	41.94	31.91	8.34	36.5	100	90	P	V
		5352	38.26	-15.74	54	34.51	31.91	8.34	36.5	100	90	A	V



802.11n HT20 CH 64 5320MHz	*	5314	99.8	-	-	96.14	31.9	8.26	36.5	300	64	P	H
	*	5314	92.52	-	-	88.86	31.9	8.26	36.5	300	64	A	H
		5350.3	56.95	-17.05	74	53.2	31.91	8.34	36.5	300	64	P	H
		5350.6	43.8	-10.2	54	40.05	31.91	8.34	36.5	300	64	A	H
	*	5314	94.27	-	-	90.61	31.9	8.26	36.5	100	67	P	V
	*	5314	86.57	-	-	82.91	31.9	8.26	36.5	100	67	A	V
		5351.2	48.37	-25.63	74	44.62	31.91	8.34	36.5	100	67	P	V
		5350.8	39.36	-14.64	54	35.61	31.91	8.34	36.5	100	67	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz
WIFI 802.11n HT20 (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)
802.11n HT20 CH 52 5260MHz		10520	42.93	-31.07	74	49.83	38.11	11.94	56.95	100	360	P	H
		10520	44.54	-29.46	74	51.44	38.11	11.94	56.95	100	360	P	V
802.11n HT20 CH 60 5300MHz		10600	45.08	-28.92	74	51.7	38.16	12	56.78	100	360	P	H
		10600	43.36	-30.64	74	49.98	38.16	12	56.78	100	360	P	V
802.11n HT20 CH 64 5320MHz		10640	43.72	-30.28	74	50.23	38.18	12.02	56.71	100	360	P	H
		10640	42.91	-31.09	74	49.42	38.18	12.02	56.71	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz
WIFI 802.11n HT40 (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)
802.11n HT40 CH 54 5270MHz		5114.08	45.37	-28.63	74	42.18	31.83	7.91	36.55	287	61	P	H
		5108.96	37.34	-16.66	54	34.15	31.83	7.91	36.55	287	61	A	H
	*	5264	95.26	-	-	91.76	31.88	8.12	36.5	287	61	P	H
	*	5264	89.08	-	-	85.58	31.88	8.12	36.5	287	61	A	H
		5361.4	45.17	-28.83	74	41.37	31.91	8.39	36.5	287	61	P	H
		5350.5	38.16	-15.84	54	34.41	31.91	8.34	36.5	287	61	A	H
		5101.6	45.65	-28.35	74	42.48	31.83	7.9	36.56	100	87	P	V
		5112.16	37.04	-16.96	54	33.85	31.83	7.91	36.55	100	87	A	V
	*	5258	89.92	-	-	86.46	31.88	8.08	36.5	100	87	P	V
	*	5258	82.99	-	-	79.53	31.88	8.08	36.5	100	87	A	V
		5380.2	44.23	-29.77	74	40.38	31.92	8.43	36.5	100	87	P	V
		5375.3	37.19	-16.81	54	33.39	31.91	8.39	36.5	100	87	A	V
802.11n HT40 CH 62 5310MHz		5137.76	45.79	-28.21	74	42.58	31.84	7.91	36.54	283	58	P	H
		5101.92	37.23	-16.77	54	34.06	31.83	7.9	36.56	283	58	A	H
	*	5296	94.88	-	-	91.28	31.89	8.21	36.5	283	58	P	H
	*	5296	87.93	-	-	84.33	31.89	8.21	36.5	283	58	A	H
		5350	58.61	-15.39	74	54.86	31.91	8.34	36.5	283	58	P	H
		5350.5	50.91	-3.09	54	47.16	31.91	8.34	36.5	283	58	A	H
		5107.68	45.62	-28.38	74	42.43	31.83	7.91	36.55	100	85	P	V
		5104.64	37.18	-16.82	54	34.01	31.83	7.9	36.56	100	85	A	V
	*	5296	88.96	-	-	85.36	31.89	8.21	36.5	100	85	P	V
	*	5296	82.38	-	-	78.78	31.89	8.21	36.5	100	85	A	V
		5352.1	55	-19	74	51.25	31.91	8.34	36.5	100	85	P	V
		5350	45.25	-8.75	54	41.5	31.91	8.34	36.5	100	85	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz
WIFI 802.11n HT40 (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)
802.11n HT40 CH 54 5270MHz		10540	43.11	-30.89	74	49.96	38.12	11.95	56.92	100	360	P	H
		10540	43.02	-30.98	74	49.87	38.12	11.95	56.92	100	360	P	V
802.11n HT40 CH 62 5310MHz		10620	42.39	-31.61	74	48.96	38.17	12.01	56.75	100	360	P	H
		10620	42.36	-31.64	74	48.93	38.17	12.01	56.75	100	360	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		5468.88	49.15	-24.85	74	45.25	31.95	8.35	36.4	104	30	P	H
		5470	39.46	-14.54	54	35.56	31.95	8.35	36.4	104	30	A	H
	*	5506	92.1	-	-	88.2	31.96	8.29	36.35	104	30	P	H
	*	5506	84.67	-	-	80.77	31.96	8.29	36.35	104	30	A	H
		5467.92	49.62	-24.38	74	45.72	31.95	8.35	36.4	100	8	P	V
		5469.84	41.07	-12.93	54	37.17	31.95	8.35	36.4	100	8	A	V
	*	5504	94.9	-	-	91	31.96	8.29	36.35	100	8	P	V
	*	5504	87.69	-	-	83.79	31.96	8.29	36.35	100	8	A	V
802.11a CH 116 5580MHz		5452.24	45.11	-28.89	74	41.21	31.94	8.38	36.42	105	32	P	H
		5469.68	36.34	-17.66	54	32.44	31.95	8.35	36.4	105	32	A	H
	*	5586	93.06	-	-	89.18	31.98	8.13	36.23	105	32	P	H
	*	5586	86.1	-	-	82.22	31.98	8.13	36.23	105	32	A	H
		5749.72	47	-27	74	42.9	32.05	8.34	36.29	105	32	P	H
		5739	36.58	-17.42	54	32.48	32.05	8.34	36.29	105	32	A	H
		5387.6	46.15	-27.85	74	42.3	31.92	8.43	36.5	138	20	P	V
		5465.36	36.36	-17.64	54	32.46	31.95	8.35	36.4	138	20	A	V
	*	5586	95.53	-	-	91.65	31.98	8.13	36.23	138	20	P	V
	*	5586	88.68	-	-	84.8	31.98	8.13	36.23	138	20	A	V
		5740.84	45.25	-28.75	74	41.15	32.05	8.34	36.29	138	20	P	V
		5746.2	36.77	-17.23	54	32.67	32.05	8.34	36.29	138	20	A	V



802.11a CH 140 5700MHz		5727.48	54.88	-19.12	74	50.81	32.04	8.31	36.28	100	36	P	H
		5725.08	42.64	-11.36	54	38.57	32.04	8.31	36.28	100	36	A	H
	*	5704	93.41	-	-	89.37	32.03	8.28	36.27	100	36	P	H
	*	5704	85.29	-	-	81.25	32.03	8.28	36.27	100	36	A	H
		5725	55.38	-18.62	74	51.31	32.04	8.31	36.28	100	8	P	V
		5725.16	43.66	-10.34	54	39.59	32.04	8.31	36.28	100	8	A	V
	*	5706	95.08	-	-	91.04	32.03	8.28	36.27	100	8	P	V
	*	5706	86.15	-	-	82.11	32.03	8.28	36.27	100	8	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	44.43	-29.57	74	49.78	38.4	12.25	56	100	360	P	H
		11000	45.2	-28.8	74	50.55	38.4	12.25	56	100	360	P	V
802.11a CH 116 5580MHz		11160	44.7	-29.3	74	50.21	38.47	12.36	56.34	100	360	P	H
		11160	43.82	-30.18	74	49.33	38.47	12.36	56.34	100	360	P	V
802.11a CH 140 5700MHz		11400	43.63	-30.37	74	49.36	38.56	12.52	56.81	100	360	P	H
		11400	45.08	-28.92	74	50.81	38.56	12.52	56.81	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
WIFI 802.11n HT20 (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)
802.11n HT20 CH 100 5500MHz		5466.16	54.47	-19.53	74	50.57	31.95	8.35	36.4	215	0	P	H
		5470	43.14	-10.86	54	39.24	31.95	8.35	36.4	215	0	A	H
	*	5494	95.39	-	-	91.5	31.95	8.32	36.38	215	0	P	H
	*	5494	88.14	-	-	84.25	31.95	8.32	36.38	215	0	A	H
		5470	51.72	-22.28	74	47.82	31.95	8.35	36.4	130	90	P	V
		5470	42.74	-11.26	54	38.84	31.95	8.35	36.4	130	90	A	V
	*	5506	95.17	-	-	91.27	31.96	8.29	36.35	130	90	P	V
	*	5506	88.14	-	-	84.24	31.96	8.29	36.35	130	90	A	V
802.11n HT20 CH 116 5580MHz		5451.76	46.2	-27.8	74	42.3	31.94	8.38	36.42	291	51	P	H
		5385.04	36.47	-17.53	54	32.62	31.92	8.43	36.5	291	51	A	H
	*	5588	97.48	-	-	93.6	31.98	8.13	36.23	291	51	P	H
	*	5588	90.06	-	-	86.18	31.98	8.13	36.23	291	51	A	H
		5750.04	45.37	-28.63	74	41.27	32.05	8.34	36.29	291	51	P	H
		5764.2	36.6	-17.4	54	32.48	32.05	8.37	36.3	291	51	A	H
		5462.32	45.19	-28.81	74	41.29	31.94	8.38	36.42	137	89	P	V
		5466	36.34	-17.66	54	32.44	31.95	8.35	36.4	137	89	A	V
	*	5582	95.07	-	-	91.19	31.98	8.13	36.23	137	89	P	V
	*	5582	88.42	-	-	84.54	31.98	8.13	36.23	137	89	A	V
		5729.32	47.46	-26.54	74	43.39	32.04	8.31	36.28	137	89	P	V
		5762.04	36.56	-17.44	54	32.44	32.05	8.37	36.3	137	89	A	V



802.11n HT20 CH 140 5700MHz		5725	59.69	-14.31	74	55.62	32.04	8.31	36.28	300	61	P	H
		5725	49.27	-4.73	54	45.2	32.04	8.31	36.28	300	61	A	H
	*	5708	97.79	-	-	93.75	32.03	8.28	36.27	300	61	P	H
	*	5708	90.3	-	-	86.26	32.03	8.28	36.27	300	61	A	H
		5725.4	57.95	-16.05	74	53.88	32.04	8.31	36.28	132	83	P	V
		5725	47.65	-6.35	54	43.58	32.04	8.31	36.28	132	83	A	V
	*	5696	95.58	-	-	91.56	32.02	8.25	36.25	132	83	P	V
	*	5696	88.37	-	-	84.35	32.02	8.25	36.25	132	83	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
WIFI 802.11n HT20 (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)
802.11n HT20 CH 100 5500MHz		11000	43.92	-30.08	74	49.27	38.4	12.25	56	100	360	P	H
		11000	44.33	-29.67	74	49.68	38.4	12.25	56	100	360	P	V
802.11n HT20 CH 116 5580MHz		11160	44.06	-29.94	74	49.57	38.47	12.36	56.34	100	360	P	H
		11160	43.83	-30.17	74	49.34	38.47	12.36	56.34	100	360	P	V
802.11n HT20 CH 140 5700MHz		11400	42.92	-31.08	74	48.65	38.56	12.52	56.81	100	360	P	H
		11400	43.22	-30.78	74	48.95	38.56	12.52	56.81	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
WIFI 802.11n HT40 (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)
802.11n HT40 CH 102 5510MHz		5469.52	58.27	-15.73	74	54.37	31.95	8.35	36.4	324	62	P	H
		5469.84	49.85	-4.15	54	45.95	31.95	8.35	36.4	324	62	A	H
	*	5498	92.76	-	-	88.86	31.96	8.29	36.35	324	62	P	H
	*	5498	82.04	-	-	78.14	31.96	8.29	36.35	324	62	A	H
		5760.84	46.56	-27.44	74	42.44	32.05	8.37	36.3	324	62	P	H
		5737.08	37.22	-16.78	54	33.12	32.05	8.34	36.29	324	62	A	H
		5468.56	55.01	-18.99	74	51.11	31.95	8.35	36.4	104	84	P	V
		5470	46.51	-7.49	54	42.61	31.95	8.35	36.4	104	84	A	V
	*	5518	89.5	-	-	85.61	31.96	8.26	36.33	104	84	P	V
	*	5518	78.97	-	-	75.08	31.96	8.26	36.33	104	84	A	V
		5732.76	46.06	-27.94	74	41.99	32.04	8.31	36.28	104	84	P	V
		5739.8	37.27	-16.73	54	33.17	32.05	8.34	36.29	104	84	A	V
802.11n HT40 CH 110 5550MHz		5456.08	48.82	-25.18	74	44.92	31.94	8.38	36.42	331	63	P	H
		5470	39.15	-14.85	54	35.25	31.95	8.35	36.4	331	63	A	H
	*	5562	95.22	-	-	91.33	31.97	8.2	36.28	331	63	P	H
	*	5562	84.43	-	-	80.54	31.97	8.2	36.28	331	63	A	H
		5733.8	45.78	-28.22	74	41.71	32.04	8.31	36.28	331	63	P	H
		5755.96	37.23	-16.77	54	33.11	32.05	8.37	36.3	331	63	A	H
		5447.12	46.14	-27.86	74	42.24	31.94	8.38	36.42	106	86	P	V
		5467.92	38.27	-15.73	54	34.37	31.95	8.35	36.4	106	86	A	V
	*	5558	92.1	-	-	88.21	31.97	8.2	36.28	106	86	P	V
	*	5558	81.44	-	-	77.55	31.97	8.2	36.28	106	86	A	V
		5733.96	46.4	-27.6	74	42.33	32.04	8.31	36.28	106	86	P	V
		5747.96	37.54	-16.46	54	33.44	32.05	8.34	36.29	106	86	A	V



802.11n HT40 CH 134 5670MHz		5467.76	45.87	-28.13	74	41.97	31.95	8.35	36.4	310	60	P	H
		5468.88	37.36	-16.64	54	33.46	31.95	8.35	36.4	310	60	A	H
	*	5678	95.38	-	-	91.38	32.02	8.22	36.24	310	60	P	H
	*	5678	84.28	-	-	80.28	32.02	8.22	36.24	310	60	A	H
		5728.84	52.53	-21.47	74	48.46	32.04	8.31	36.28	310	60	P	H
		5726.28	44.15	-9.85	54	40.08	32.04	8.31	36.28	310	60	A	H
		5447.76	47.18	-26.82	74	43.28	31.94	8.38	36.42	100	88	P	V
		5466.16	37.27	-16.73	54	33.37	31.95	8.35	36.4	100	88	A	V
	*	5660	92.05	-	-	88.08	32.01	8.19	36.23	100	88	P	V
	*	5660	81.68	-	-	77.71	32.01	8.19	36.23	100	88	A	V
		5726.12	52.55	-21.45	74	48.48	32.04	8.31	36.28	100	88	P	V
		5725.72	42.4	-11.6	54	38.33	32.04	8.31	36.28	100	88	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
WIFI 802.11n HT40 (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)
802.11n HT40 CH 102 5510MHz		11020	43.76	-30.24	74	49.12	38.41	12.26	56.03	100	360	P	H
		11020	44.99	-29.01	74	50.35	38.41	12.26	56.03	100	360	P	V
802.11n HT40 CH 110 5550MHz		11100	44.62	-29.38	74	50.06	38.44	12.32	56.2	100	360	P	H
		11100	44.48	-29.52	74	49.92	38.44	12.32	56.2	100	360	P	V
802.11n HT40 CH 134 5670MHz		11340	43.72	-30.28	74	49.4	38.53	12.47	56.68	100	360	P	H
		11340	43.11	-30.89	74	48.79	38.53	12.47	56.68	100	360	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	*	5726	94.23	-	-	90.16	32.04	8.31	36.28	103	42	P	H
	*	5726	82.62	-	-	78.55	32.04	8.31	36.28	103	42	A	H
	*	5728	95.62	-	-	91.55	32.04	8.31	36.28	113	26	P	V
	*	5728	84.27	-	-	80.2	32.04	8.31	36.28	113	26	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		11440	44.69	-29.31	74	50.46	38.57	12.54	56.88	100	360	P	H
CH 144 5720MHz		11440	43.92	-30.08	74	49.69	38.57	12.54	56.88	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - Straddle Channel
WIFI 802.11n HT20 (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)
802.11n	*	5716	97.88	-	-	93.84	32.03	8.28	36.27	299	62	P	H
HT20	*	5716	86.42	-	-	82.38	32.03	8.28	36.27	299	62	A	H
CH 144	*	5728	95.83	-	-	91.76	32.04	8.31	36.28	100	84	P	V
5720MHz	*	5728	84.31	-	-	80.24	32.04	8.31	36.28	100	84	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - Straddle Channel
WIFI 802.11n HT20 (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)
802.11n HT20		11440	43.17	-30.83	74	48.94	38.57	12.54	56.88	100	360	P	H
CH 144 5720MHz		11440	43.88	-30.12	74	49.65	38.57	12.54	56.88	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - Straddle Channel
WIFI 802.11n HT40 (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)
802.11n	*	5714	94.51	-	-	90.47	32.03	8.28	36.27	301	53	P	H
HT40	*	5714	83.13	-	-	79.09	32.03	8.28	36.27	301	53	A	H
CH 142	*	5724	92.81	-	-	88.74	32.04	8.31	36.28	100	87	P	V
5710MHz	*	5724	81.74	-	-	77.67	32.04	8.31	36.28	100	87	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - Straddle Channel
WIFI 802.11n HT40 (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)
802.11n HT40		11420	43.27	-30.73	74	49.02	38.57	12.53	56.85	100	360	P	H
CH 142 5710MHz		11420	43.07	-30.93	74	48.82	38.57	12.53	56.85	100	360	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 HT40 (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 HT40 LF		42.61	32.62	-7.38	40	42.67	20.55	0.8	31.4	100	215	P	H
		87.23	26.71	-13.29	40	39.92	17.2	1.13	31.54	-	-	P	H
		128.94	24.37	-19.13	43.5	36.19	18.31	1.37	31.5	-	-	P	H
		161.92	24.14	-19.36	43.5	36.73	17.41	1.54	31.54	-	-	P	H
		399.57	25.42	-20.58	46	31.05	23.16	2.47	31.26	-	-	P	H
		837.04	31.5	-14.5	46	30.02	28.72	3.68	30.92	-	-	P	H
		35.82	34.16	-5.84	40	39.95	24.84	0.72	31.35	201	100	P	V
		53.28	32.28	-7.72	40	47.5	15.3	0.88	31.4	-	-	P	V
		77.53	30.59	-9.41	40	45.81	15.2	1.07	31.49	-	-	P	V
		99.84	32.26	-11.24	43.5	43.59	18.9	1.21	31.44	-	-	P	V
		162.89	25.58	-17.92	43.5	38.22	17.36	1.54	31.54	-	-	P	V
		979.63	30.86	-23.14	54	27.99	29.5	4.05	30.68	-	-	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”.

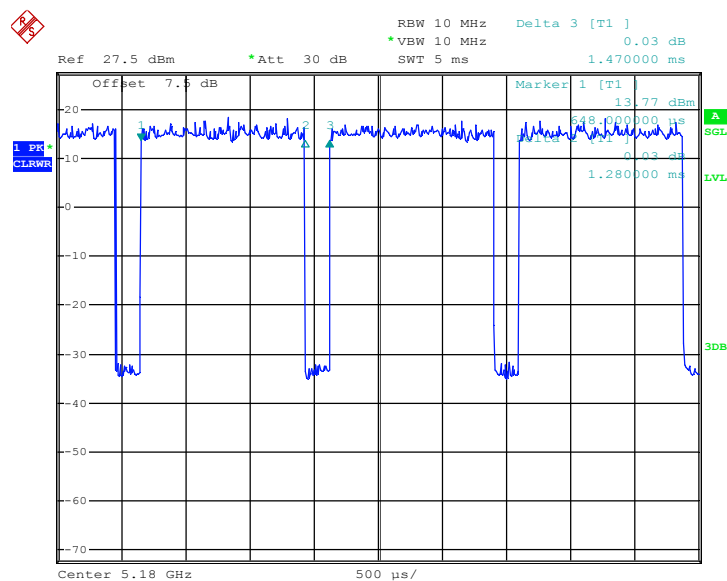


802.11a



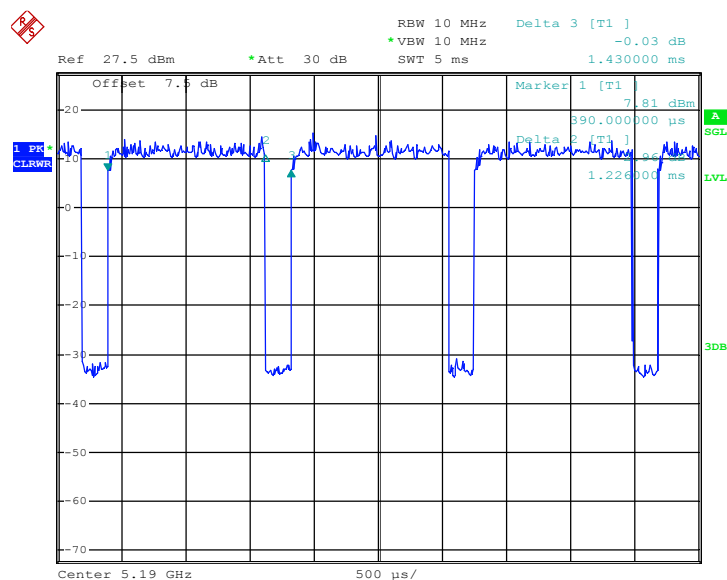


802.11n HT20



Date: 19.OCT.2016 11:54:30

802.11n HT40



Date: 19.OCT.2016 12:04:23