



Variant FCC RF Test Report

APPLICANT : Motorola Mobility LLC
EQUIPMENT : Mobile Cellular Phone
BRAND NAME : Motorola
MODEL NAME : 9370, 9842
FCC ID : IHDT56VE2
STANDARD : FCC Part 15 Subpart E §15.407
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure

This is a variant report which is only valid together with the original report. The product testing was completed on Dec. 23, 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.

James Huang

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	Test Mode	10
2.3	Connection Diagram of Test System.....	12
2.4	EUT Operation Test Setup	13
2.5	Measurement Results Explanation Example.....	13
3	TEST RESULT	14
3.1	26dB & 99% Occupied Bandwidth Measurement	14
3.2	Maximum Conducted Output Power Measurement	17
3.3	Power Spectral Density Measurement	20
3.4	Unwanted Radiated Emission Measurement	23
3.5	Frequency Stability Measurement.....	28
3.6	Automatically Discontinue Transmission	29
3.7	Antenna Requirements	30
4	LIST OF MEASURING EQUIPMENTS.....	31
5	UNCERTAINTY OF EVALUATION	32
APPENDIX A. CONDUCTED TEST RESULTS		
APPENDIX B. RADIATED SPURIOUS EMISSION		
APPENDIX C. DUTY CYCLE PLOTS		
APPENDIX D. SETUP PHOTOGRAPHS		
APPENDIX E. PRODUCT EQUALITY DECLARATION		
APPENDIX F. ORIGINAL REPORT		



REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR6O1212-11D	Rev. 01	This is a variant report for 9370, 9842. The product equality declaration could be referred to Appendix E. Based on the similarity between current and previous, only reduce the Conducted Power of band2 (11n40) and band3 (11a and 11an20), these band retest the Conducted item and full test of Radiated Spurious Emission from original test report (Sporton Report Number FR6O1212-02E) were verified for the differences.	Jan. 13, 2017

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	$\leq -17, -27$ dBm (depend on band)&15.209(a)	Pass	Under limit 3.31 dB at 5725.000 MHz
3.5	15.407(g)	Frequency Stability	Within Operation Band	Pass	-
3.6	15.407(c)	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.7	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	9370, 9842
FCC ID	IHDT56VE2
EUT supports Radios application	GSM/GPRS/EGPRS/WCDMA/HSPA/DC-HSDPA/ HSPA+(16QAM uplink is not supported)/LTE/NFC/ 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: 351857080038050/351857080038068 Radiation: 351857080038217/351857080038225
HW Version	DVT2
SW Version	potter_oem_userdebug_7.0_NPN25.124_1787_intcfg-test-keys_oem
EUT Stage	Identical Prototype

Remark:

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. There are two types of EUT sample 1 and sample 2, the differences between two samples are only for SIM slot, sample 1 is dual SIM slot, sample 2 is single SIM slot. According to the difference, the sample 1 to perform full RF test.



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	<5260 MHz ~ 5320 MHz> 802.11n HT40 : 11.29 dBm / 0.0135 W <5500 MHz ~ 5720 MHz > 802.11a : 12.03 dBm / 0.0160 W 802.11n HT20 : 11.19 dBm / 0.0132 W
Maximum Output Power to Antenna for Straddle Channel	802.11a : 11.13 dBm / 0.0130 W 802.11n HT20 : 10.21 dBm / 0.0105 W
99% Occupied Bandwidth	<5260 MHz ~ 5320 MHz> 802.11n HT40 : 37.16 MHz <5500 MHz ~ 5720 MHz > 802.11a : 18.78 MHz 802.11n HT20 : 19.33 MHz
99% Occupied Bandwidth for Straddle Channel	802.11a : 19.38 MHz 802.11n HT20 : 18.68 MHz
Antenna Gain / Gain	<5180 MHz ~ 5240 MHz > Loop Antenna with gain 0.80 dBi <5260 MHz ~ 5320 MHz > Loop Antenna with gain 0.80 dBi <5500 MHz ~ 5720 MHz > Loop Antenna with gain 0.90 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/SSW-2680UK/ SSW-2680EU/SSW-2680MX/ SSW-2680AR
	Power Rating	I/P: 100-240 Vac, 500mA, O/P: 5 Vdc,1600mA or 9Vdc,1600mA or 12Vdc,1200mA		
Battery 1	Brand Name	motorola(SUNWODA)	Model Name	HG40
	Power Rating	3.8Vdc,2810/3000mAh (Min/Typ)	Type	Li-ion
Battery 2	Brand Name	motorola(AmpereX)	Model Name	HG40
	Power Rating	3.8Vdc,2810/3000mAh (Min/Typ)	Type	Li-ion
USB Cable	Brand Name	Motorola	Model Name	SKN6461A
	Signal Line Type	1.0 meter, non-shielded cable, without ferrite core		
Earphone	Brand Name	Motorola(Jiangxi Lianchuang)	Model Name	MEMD1532B080008
	Signal Line Type	1.2 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	03CH02-KS	418269

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: 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 Test Mode

Final test mode of conducted test items and radiated spurious emissions are considering the modulation and worse data rates as below table.

Modulation	Data Rate
802.11a	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0



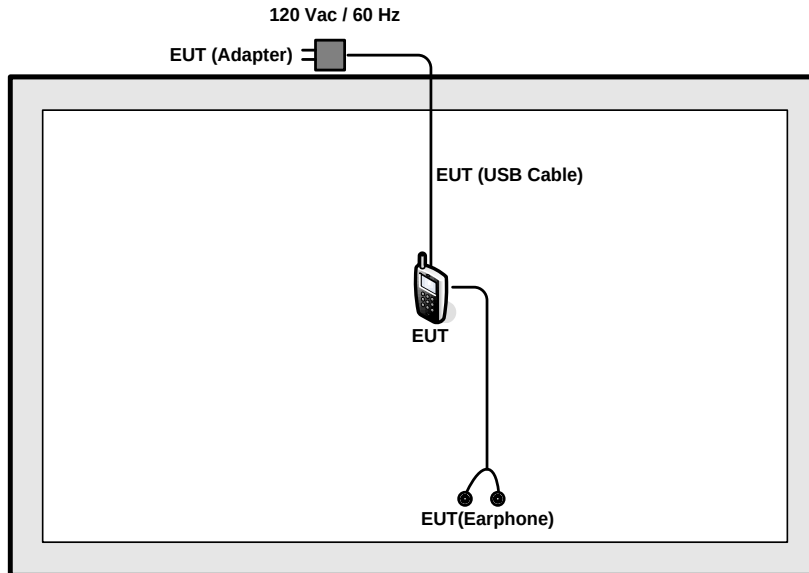
Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5720MHz
		802.11a	802.11a	802.11a
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140
Straddle		-	-	144

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

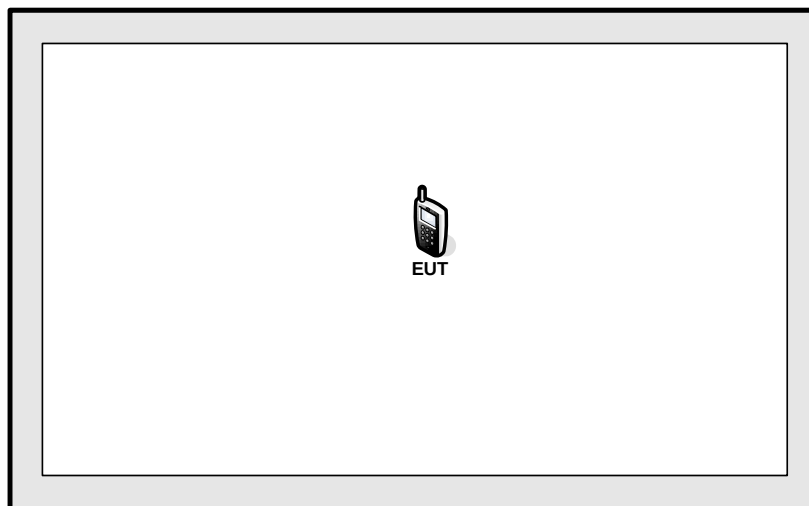
Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5720MHz
		802.11n HT40	802.11n HT40	802.11n HT40
L	Low	38	54	102
M	Middle	-	-	110
H	High	46	62	134
Straddle		-	-	142

2.3 Connection Diagram of Test System

<WLAN 802.11a Tx Mode>



<WLAN 802.11n HT20/HT40 Tx Mode>





2.4 EUT Operation Test Setup

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

2.5 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.

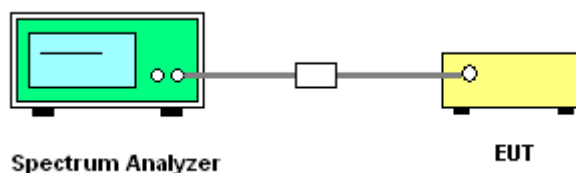
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

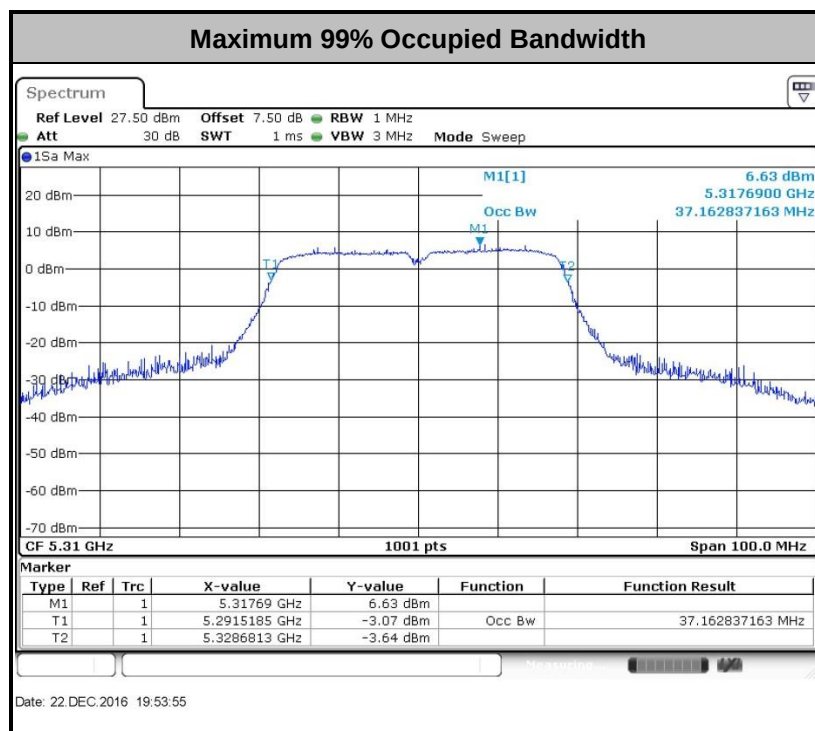
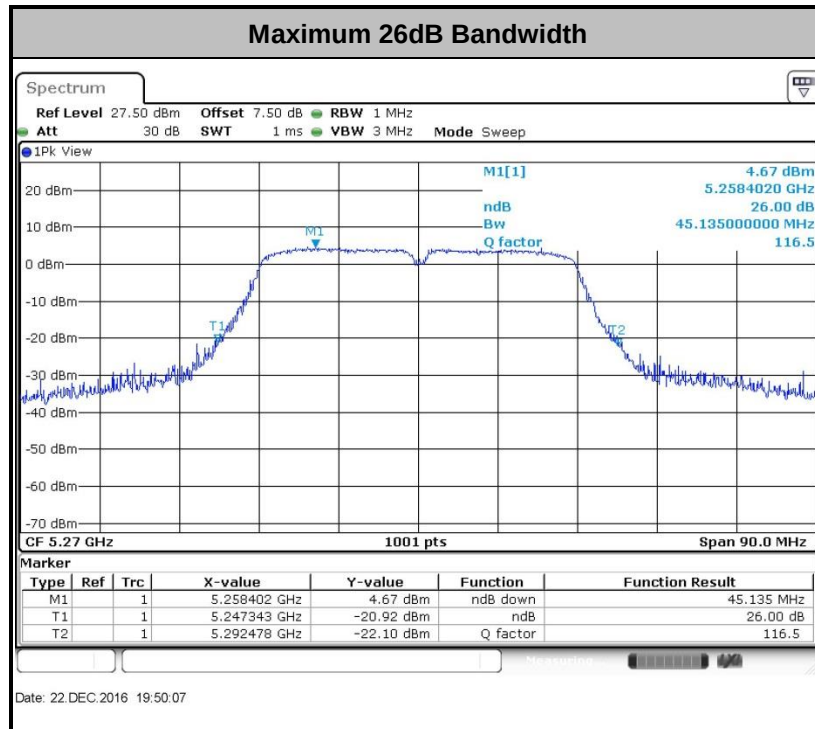
1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r03. Section C) Emission bandwidth
2. Set RBW = approximately 1% of the emission bandwidth.
3. Set the VBW > RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 26 dB 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

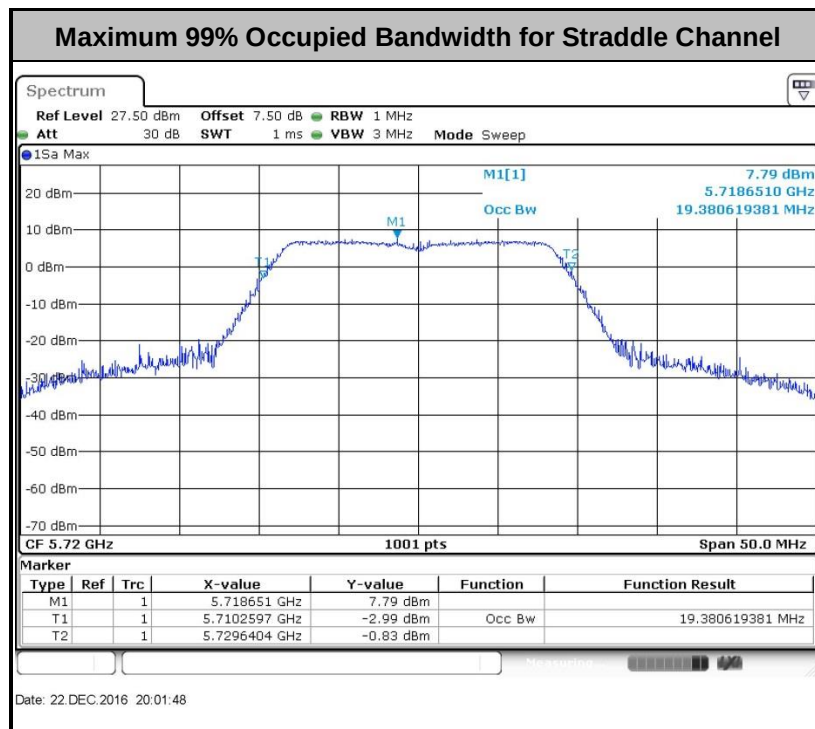
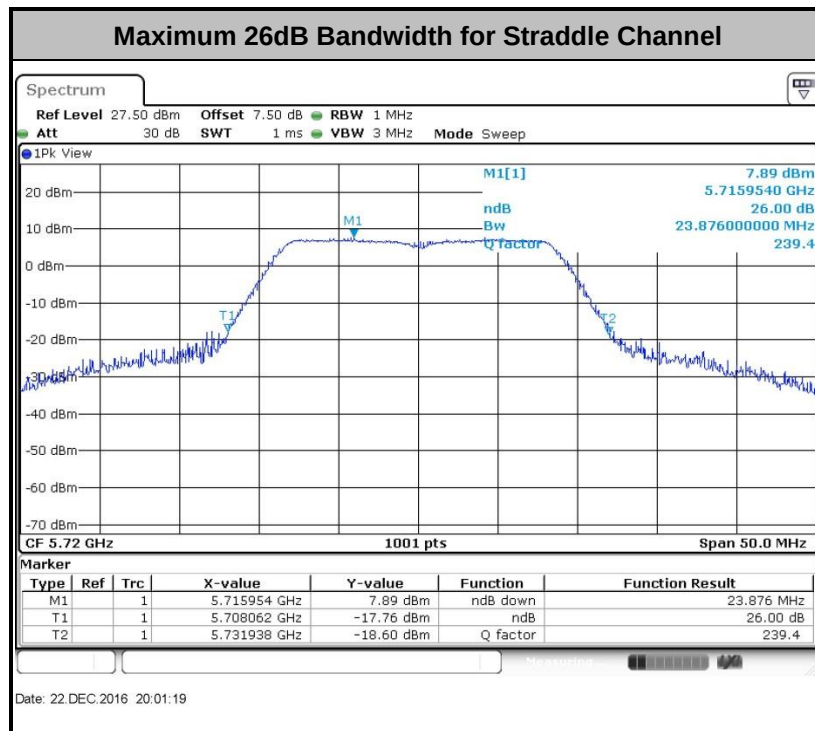


3.1.5 Test Result of 26dB & 99% Occupied Bandwidth Plots

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):

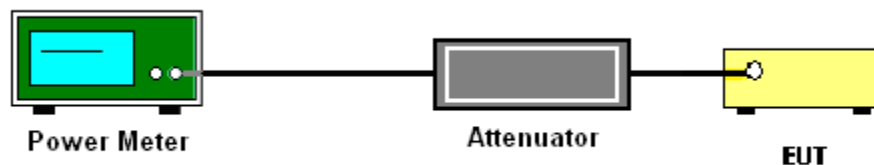
1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit continuously with a consistent duty cycle at its maximum power control level.
3. Measure the average power of the transmitter, and the average power is corrected with duty factor, $10 \log(1/x)$, where x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

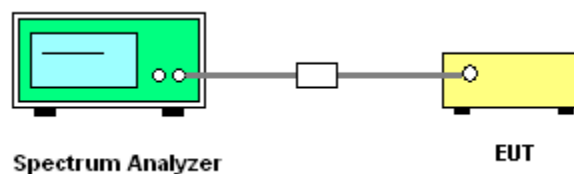
Compute power by integrating the spectrum across the 99% occupied bandwidth of the signal using the instrument's band power measurement function.

3.2.4 Test Setup

For normal channel:



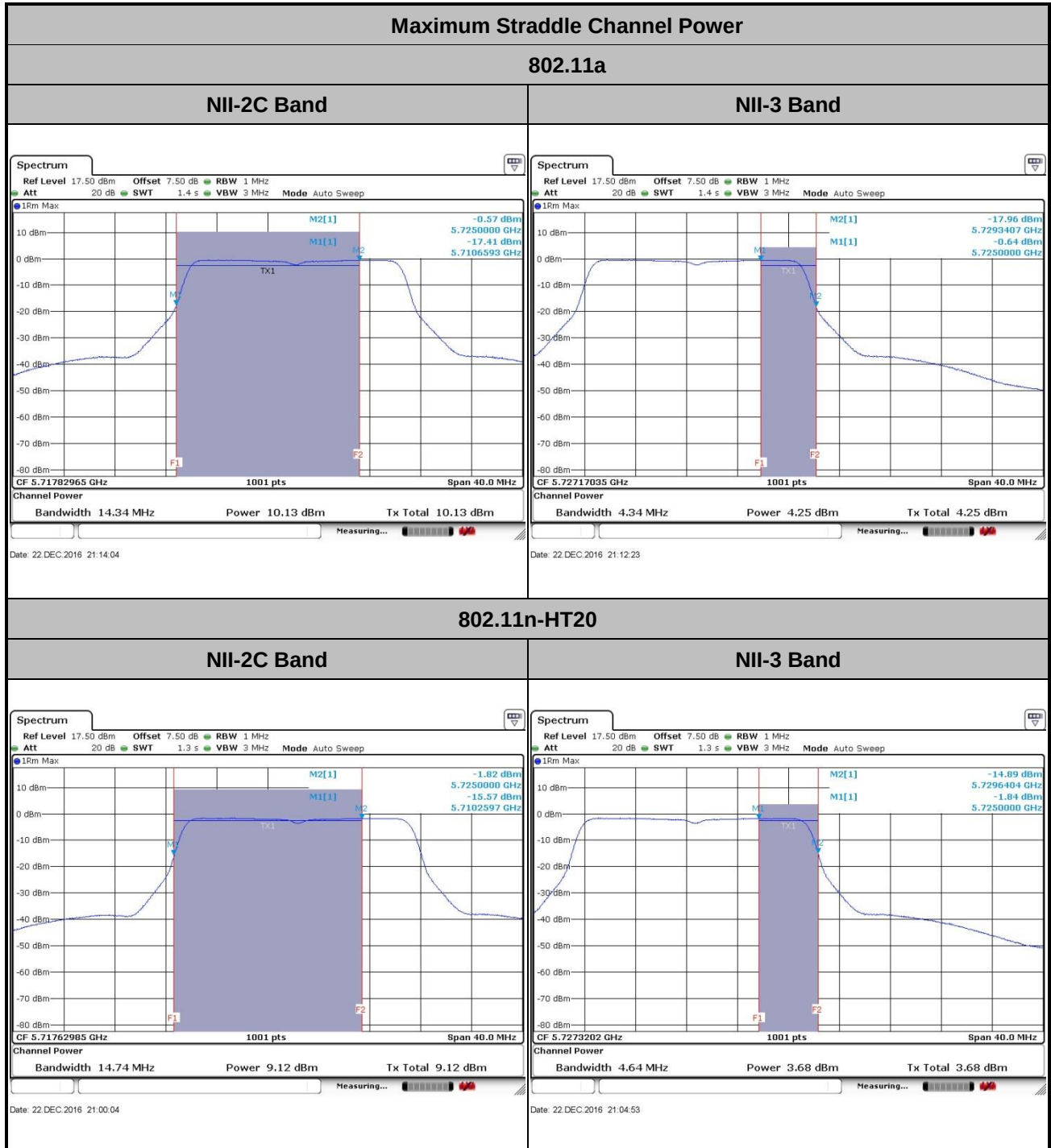
For straddle channel:





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.

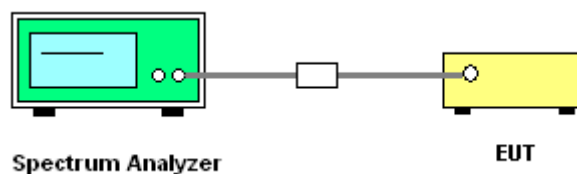
Section F) Maximum power spectral density.

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.

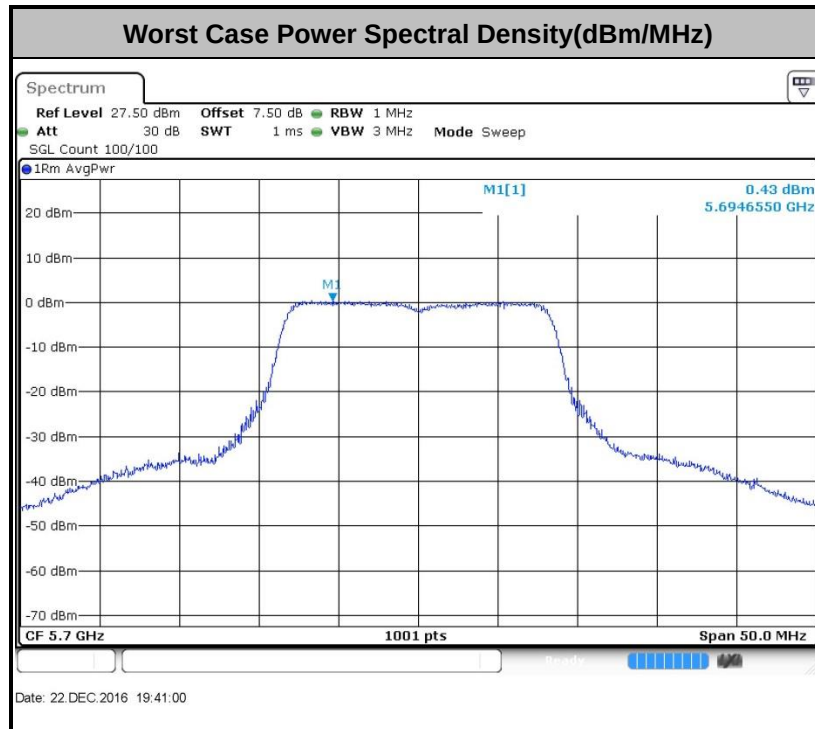
3.3.4 Test Setup





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 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 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.

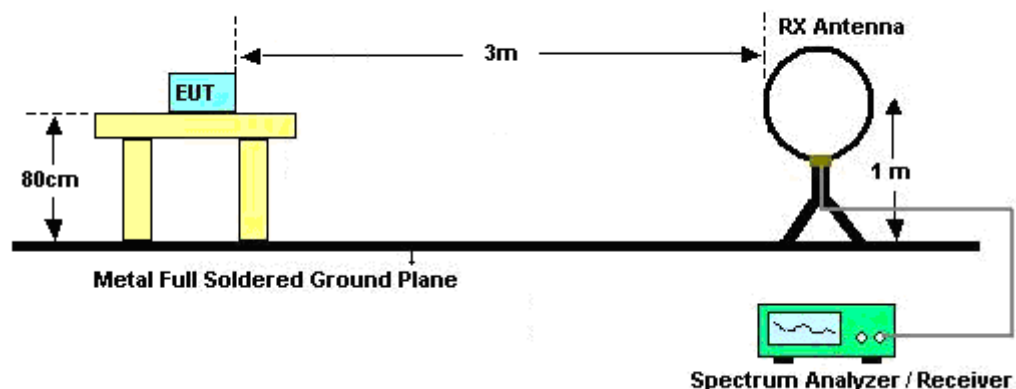
3.4.3 Test Procedures

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 ≥ 3 MHz
 - Detector = Peak
 - Sweep time = auto
 - Trace mode = max hold
 - (3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz
 - RBW = 1 MHz
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

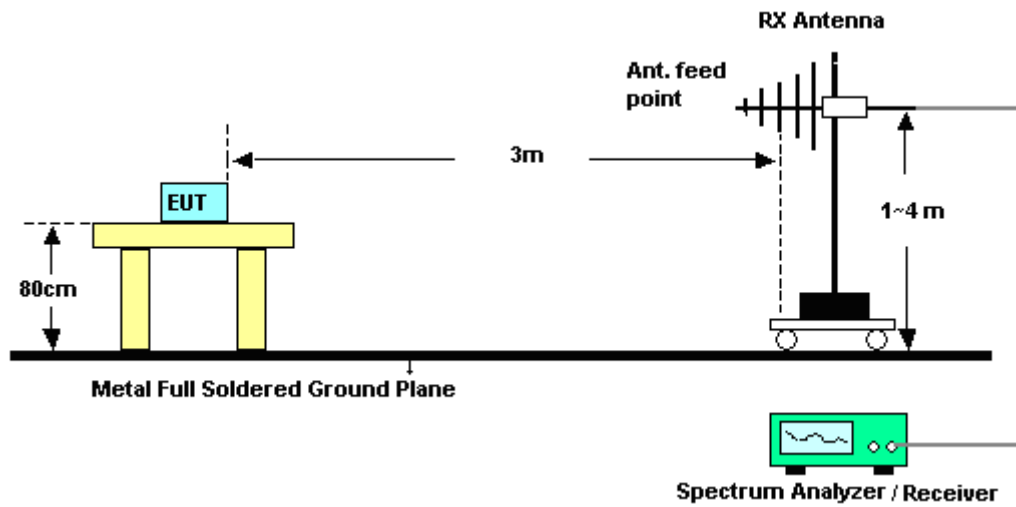
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband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

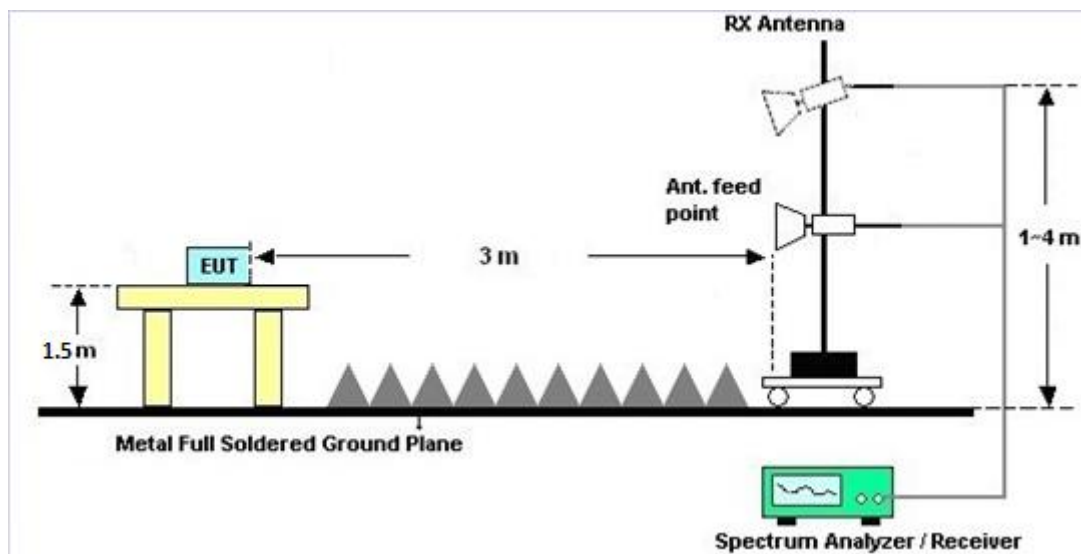
For radiated emissions below 30MHz



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 Frequency Stability Measurement

3.5.1 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.

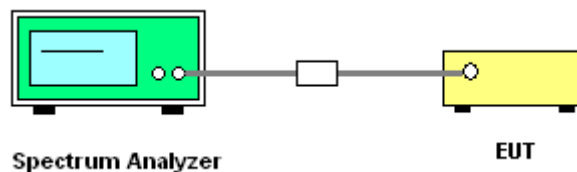
3.5.2 Measuring Instruments

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

3.5.3 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.

3.5.4 Test Setup



3.5.5 Test Result of Frequency Stability

Please refer to Appendix A.



3.6 Automatically Discontinue Transmission

3.6.1 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.

3.6.2 Measuring Instruments

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

3.6.3 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.



3.7 Antenna Requirements

3.7.1 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.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 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	Dec. 22, 2016	Aug. 08, 2017	Conducted (TH01-KS)
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Oct. 13, 2016	Dec. 22, 2016	Oct. 12, 2017	Conducted (TH01-KS)
Pulse Power Sensor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 20, 2016	Dec. 22, 2016	Jan. 19, 2017	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 20, 2016	Dec. 22, 2016	Jan. 19, 2017	Conducted (TH01-KS)
Thermal Chamber	Ten Billion	TTC-B3S	TBN-960502	-40~+150°C	Oct. 13, 2016	Dec. 22, 2016	Oct. 12, 2017	Conducted (TH01-KS)
EMI Test Receiver	R&S	ESR7	101403	9kHz~7GHz; Max 30dBm	Aug. 09, 2016	Dec. 23, 2016	Aug. 08, 2017	Radiation (03CH02-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150208	10Hz~44GHz, MAX 30dB	Apr. 22, 2016	Dec. 23, 2016	Apr. 21, 2017	Radiation (03CH02-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Nov. 23, 2016	Dec. 23, 2016	Nov. 22, 2017	Radiation (03CH02-KS)
Bilog Antenna	TeseQ	CBL6112D	37879	30MHz~2GHz	Aug. 20, 2016	Dec. 23, 2016	Aug. 19, 2017	Radiation (03CH02-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75957	1GHz~18GHz	Oct. 22, 2016	Dec. 23, 2016	Oct. 21, 2017	Radiation (03CH02-KS)
high gain Amplifier	MITEQ	AMF-7D-0010 1800-30-10P	1943529	1GHz~18GHz	Jan. 20, 2016	Dec. 23, 2016	Jan. 19, 2017	Radiation (03CH02-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15GHz~40GHz	Mar. 03, 2016	Dec. 23, 2016	Mar. 02, 2017	Radiation (03CH02-KS)
Amplifier	com-power	PA-103A	161069	1kHz~1000MHz / 32 dB	Apr. 22, 2016	Dec. 23, 2016	Apr. 21, 2017	Radiation (03CH02-KS)
Amplifier	Agilent	8449B	3008A02384	1GHz~26.5GHz	Oct. 13, 2016	Dec. 23, 2016	Oct. 12, 2017	Radiation (03CH02-KS)
Amplifier	MITEQ	TTA1840-35-H G	1887435	18GHz~40GHz	Jan. 20, 2016	Dec. 23, 2016	Jan. 19, 2017	Radiation (03CH02-KS)
AC Power Source	Chroma	61601	6160100024 73	N/A	NCR	Dec. 23, 2016	NCR	Radiation (03CH02-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	Dec. 23, 2016	NCR	Radiation (03CH02-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	Dec. 23, 2016	NCR	Radiation (03CH02-KS)

NCR: No Calibration Required

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.1dB
--	-------

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% ($U = 2Uc(y)$)	5.1dB
--	-------



Appendix A. Conducted Test Results

Report Number : FR6O1212-11D

Test Engineer:	Jacky Huang	Temperature:	21~25	°C
Test Date:	2016/12/22	Relative Humidity:	51~54	%

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
HT40	MCS 0	1	54	5270	36.56	45.14	23.98	30.00	23.98	
HT40	MCS 0	1	62	5310	37.16	44.42	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
HT40	MCS 0	1	54	5270	0.68	10.46	23.98	0.80	26.99	Pass
HT40	MCS 0	1	62	5310	0.68	11.29	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
HT40	MCS 0	1	54	5270	0.68	-3.60	11.00	0.80		Pass
HT40	MCS 0	1	62	5310	0.68	-2.02	11.00	0.80		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	18.63	23.73	23.70	29.70	23.98	
11a	6M bps	1	116	5580	18.58	23.48	23.69	29.69	23.98	
11a	6M bps	1	140	5700	18.78	23.78	23.74	29.74	23.98	
HT20	MCS 0	1	100	5500	19.23	23.83	23.84	29.84	23.98	
HT20	MCS 0	1	116	5580	19.33	23.83	23.86	29.86	23.98	
HT20	MCS 0	1	140	5700	19.33	24.13	23.86	29.86	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	11.28	23.98	0.90	26.99	Pass
11a	6M bps	1	116	5580	0.59	10.95	23.98	0.90	26.99	Pass
11a	6M bps	1	140	5700	0.59	12.03	23.98	0.90	26.99	Pass
HT20	MCS 0	1	100	5500	0.63	10.24	23.98	0.90	26.99	Pass
HT20	MCS 0	1	116	5580	0.63	9.95	23.98	0.90	26.99	Pass
HT20	MCS 0	1	140	5700	0.63	11.19	23.98	0.90	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	0.73	11.00	0.90		Pass
11a	6M bps	1	116	5580	0.59	0.58	11.00	0.90		Pass
11a	6M bps	1	140	5700	0.59	1.02	11.00	0.90		Pass
HT20	MCS 0	1	100	5500	0.63	-0.37	11.00	0.90		Pass
HT20	MCS 0	1	116	5580	0.63	-0.81	11.00	0.90		Pass
HT20	MCS 0	1	140	5700	0.63	-0.09	11.00	0.90		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	19.38	23.58	16.32	-	-	-	
				NII-2C	14.7403	16.738	13.172	22.69	28.69	22.20	
				NII-3	4.6404	6.838	3.152	30.00	36.02	-	
HT20	MCS0	1	144	5720	18.68	23.88	17.56	-	-	-	
				NII-2C	14.3407	16.938	13.791	22.57	28.57	22.40	
				NII-3	4.3407	6.938	3.771	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	11.13	-	0.90		Pass
				NII-2C	0.59	10.13	28.69	0.90		Pass
				NII-3	0.59	4.25	30.00	0.90		Pass
HT20	MCS0	1	144	5720	0.63	10.21	-	0.90		Pass
				NII-2C	0.63	9.12	28.57	0.90		Pass
				NII-3	0.63	3.68	30.00	0.90		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	0.68	11.00	0.90		Pass
				NII-3	0.59	0.68	30.00	0.90		Pass
HT20	MCS0	1	144	NII-2C	0.63	-0.40	11.00	0.90		Pass
				NII-3	0.63	-0.40	30.00	0.90		Pass

TEST RESULTS DATA
Frequency Stability

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	5500.000	0.000	0.00	-30	3.82	
11a	6Mbps	1	100	5500	5500.000	0.000	0.00	20	4.4	
11a	6Mbps	1	100	5500	5500.000	0.000	0.00	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		5149.28	57.35	-16.65	74	49.19	31.65	7.02	30.51	100	112	P	H
		5150	46.13	-7.87	54	37.97	31.65	7.02	30.51	100	112	A	H
	*	5178	100.6	-	-	92.46	31.67	7.06	30.59	100	112	P	H
	*	5178	93.54	-	-	85.4	31.67	7.06	30.59	100	112	A	H
		5147.36	57.7	-16.3	74	49.54	31.65	7.02	30.51	119	102	P	V
		5149.76	46.33	-7.67	54	38.17	31.65	7.02	30.51	119	102	A	V
	*	5178	100.89	-	-	92.75	31.67	7.06	30.59	119	102	P	V
	*	5178	93.87	-	-	85.73	31.67	7.06	30.59	119	102	A	V
802.11a CH 44 5220MHz		5121.6	55.03	-18.97	74	46.84	31.63	6.98	30.42	100	120	P	H
		5128.64	46.54	-7.46	54	38.36	31.64	7	30.46	100	120	A	H
	*	5214	100.16	-	-	91.98	31.68	7.11	30.61	100	120	P	H
	*	5214	92.91	-	-	84.73	31.68	7.11	30.61	100	120	A	H
		5364.54	48.68	-25.32	74	40.01	31.73	7.32	30.38	100	120	P	H
		5371.02	39.53	-14.47	54	30.86	31.73	7.32	30.38	100	120	A	H
		5126.56	54.69	-19.31	74	46.51	31.64	7	30.46	176	108	P	V
		5130.56	46.76	-7.24	54	38.58	31.64	7	30.46	176	108	A	V
	*	5224	99.5	-	-	91.32	31.68	7.11	30.61	176	108	P	V
	*	5224	91.58	-	-	83.4	31.68	7.11	30.61	176	108	A	V
		5383.26	48.09	-25.91	74	39.36	31.74	7.34	30.35	176	108	P	V
		5358.06	39.34	-14.66	54	30.71	31.73	7.3	30.4	176	108	A	V



802.11a CH 48 5240MHz		5389.2	48.33	-25.67	74	39.6	31.74	7.34	30.35	100	121	P	H
		5389.2	39.95	-14.05	54	31.22	31.74	7.34	30.35	100	121	A	H
	*	5246	100.92	-	-	92.63	31.69	7.16	30.56	100	121	P	H
	*	5246	93.59	-	-	85.3	31.69	7.16	30.56	100	121	A	H
		5388.84	48.97	-25.03	74	40.24	31.74	7.34	30.35	140	102	P	V
		5385.78	39.81	-14.19	54	31.08	31.74	7.34	30.35	140	102	A	V
	*	5246	100.76	-	-	92.47	31.69	7.16	30.56	140	102	P	V
	*	5246	93.34	-	-	85.05	31.69	7.16	30.56	140	102	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	43.42	-30.58	74	52.01	38.76	9.9	57.25	100	360	P	H
CH 36 5180MHz		10360	43.1	-30.9	74	51.69	38.76	9.9	57.25	100	360	P	V
802.11a		10440	44.87	-29.13	74	53.17	38.88	9.94	57.12	100	360	P	H
CH 44 5220MHz		10440	45.3	-28.7	74	53.6	38.88	9.94	57.12	100	360	P	V
802.11a		10480	44.23	-29.77	74	52.32	38.96	9.97	57.02	100	360	P	H
CH 48 5240MHz		10480	44.15	-29.85	74	52.24	38.96	9.97	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		5148	59.75	-14.25	74	48.31	34.93	7.02	30.51	108	300	P	H
		5149.92	48.92	-5.08	54	37.48	34.93	7.02	30.51	108	300	A	H
	*	5174	102.57	-	-	91.14	34.96	7.06	30.59	108	300	P	H
	*	5174	94.81	-	-	83.38	34.96	7.06	30.59	108	300	A	H
		5145.28	54.75	-19.25	74	43.31	34.93	7.02	30.51	313	80	P	V
		5138.88	44.19	-9.81	54	32.74	34.91	7	30.46	313	80	A	V
	*	5172	91.86	-	-	80.42	34.95	7.04	30.55	313	80	P	V
	*	5172	84.54	-	-	73.1	34.95	7.04	30.55	313	80	A	V
802.11n HT20 CH 44 5220MHz		5127.04	58.15	-15.85	74	46.7	34.91	7	30.46	108	301	P	H
		5118.24	49.5	-4.5	54	38.04	34.9	6.98	30.42	108	301	A	H
	*	5214	101.12	-	-	89.63	34.99	7.11	30.61	108	301	P	H
	*	5214	94.14	-	-	82.65	34.99	7.11	30.61	108	301	A	H
		5382.18	52.84	-21.16	74	40.69	35.16	7.34	30.35	108	301	P	H
		5356.98	42.72	-11.28	54	30.7	35.12	7.3	30.4	108	301	A	H
		5127.52	56.56	-17.44	74	45.11	34.91	7	30.46	286	287	P	V
		5131.68	47.09	-6.91	54	35.64	34.91	7	30.46	286	287	A	V
	*	5224	99.13	-	-	87.64	34.99	7.11	30.61	286	287	P	V
	*	5224	92.32	-	-	80.83	34.99	7.11	30.61	286	287	A	V
		5395.14	51.48	-22.52	74	39.26	35.17	7.37	30.32	286	287	P	V
		5390.28	42.54	-11.46	54	30.39	35.16	7.34	30.35	286	287	A	V



802.11n HT20 CH 48 5240MHz		5366.88	51.98	-22.02	74	39.9	35.14	7.32	30.38	100	303	P	H
		5382.36	42.86	-11.14	54	30.71	35.16	7.34	30.35	100	303	A	H
	*	5234	101.45	-	-	89.89	35.01	7.13	30.58	100	303	P	H
	*	5234	94.28	-	-	82.72	35.01	7.13	30.58	100	303	A	H
		5356.8	51.38	-22.62	74	39.36	35.12	7.3	30.4	292	286	P	V
		5388.3	42.87	-11.13	54	30.72	35.16	7.34	30.35	292	286	A	V
	*	5234	100.22	-	-	88.66	35.01	7.13	30.58	292	286	P	V
	*	5234	92.76	-	-	81.2	35.01	7.13	30.58	292	286	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	43.57	-30.43	74	52.32	38.6	9.9	57.25	100	360	P	H
		10360	43.03	-30.97	74	51.78	38.6	9.9	57.25	100	360	P	V
802.11n HT20 CH 44 5220MHz		10440	43.67	-30.33	74	52.2	38.65	9.94	57.12	100	360	P	H
		10440	43.5	-30.5	74	52.03	38.65	9.94	57.12	100	360	P	V
802.11n HT20 CH 48 5240MHz		10480	44.53	-29.47	74	52.89	38.69	9.97	57.02	100	360	P	H
		10480	43.54	-30.46	74	51.9	38.69	9.97	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		5149.92	60.3	-13.7	74	48.86	34.93	7.02	30.51	100	121	P	H
		5149.92	49.39	-4.61	54	37.95	34.93	7.02	30.51	100	121	A	H
	*	5194	95.38	-	-	83.95	34.98	7.09	30.64	100	121	P	H
	*	5194	88.18	-	-	76.75	34.98	7.09	30.64	100	121	A	H
		5391.5	52.64	-21.36	74	40.49	35.16	7.34	30.35	100	121	P	H
		5394.6	42.87	-11.13	54	30.65	35.17	7.37	30.32	100	121	A	H
		5148.8	61.8	-12.2	74	50.36	34.93	7.02	30.51	144	75	P	V
		5149.92	50.09	-3.91	54	38.65	34.93	7.02	30.51	144	75	A	V
	*	5178	95.99	-	-	84.56	34.96	7.06	30.59	144	75	P	V
	*	5178	88.82	-	-	77.39	34.96	7.06	30.59	144	75	A	V
		5390.9	51.39	-22.61	74	39.24	35.16	7.34	30.35	144	75	P	V
		5388.3	42.79	-11.21	54	30.64	35.16	7.34	30.35	144	75	A	V
802.11n HT40 CH 46 5230MHz		5140.8	55.78	-18.22	74	44.34	34.93	7.02	30.51	101	115	P	H
		5129.12	45.73	-8.27	54	34.28	34.91	7	30.46	101	115	A	H
	*	5240	95.71	-	-	84.15	35.01	7.13	30.58	101	115	P	H
	*	5240	88.77	-	-	77.21	35.01	7.13	30.58	101	115	A	H
		5363.28	51.72	-22.28	74	39.64	35.14	7.32	30.38	101	115	P	H
		5392.08	42.82	-11.18	54	30.67	35.16	7.34	30.35	101	115	A	H
		5136.16	54.16	-19.84	74	42.71	34.91	7	30.46	179	103	P	V
		5122.56	45.79	-8.21	54	34.34	34.91	7	30.46	179	103	A	V
	*	5238	95.53	-	-	83.97	35.01	7.13	30.58	179	103	P	V
	*	5238	87.97	-	-	76.41	35.01	7.13	30.58	179	103	A	V
		5376.96	51.75	-22.25	74	39.67	35.14	7.32	30.38	179	103	P	V
		5399.82	42.76	-11.24	54	30.54	35.17	7.37	30.32	179	103	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	42.6	-31.4	74	51.3	38.61	9.91	57.22	100	360	P	H
		10380	42.79	-31.21	74	51.49	38.61	9.91	57.22	100	360	P	V
802.11n HT40 CH 46 5230MHz		10460	42.25	-31.75	74	50.72	38.66	9.95	57.08	100	360	P	H
		10460	44.06	-29.94	74	52.53	38.66	9.95	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		5120.16	49.8	-24.2	74	41.61	31.63	6.98	30.42	100	114	P	H
		5120	40.99	-13.01	54	32.8	31.63	6.98	30.42	100	114	A	H
	*	5268	100.96	-	-	92.61	31.7	7.18	30.53	100	114	P	H
	*	5268	93.77	-	-	85.42	31.7	7.18	30.53	100	114	A	H
		5124.96	51.16	-22.84	74	42.98	31.64	7	30.46	112	101	P	V
		5121.28	41.3	-12.7	54	33.11	31.63	6.98	30.42	112	101	A	V
	*	5264	100.8	-	-	92.45	31.7	7.18	30.53	112	101	P	V
	*	5264	93.18	-	-	84.83	31.7	7.18	30.53	112	101	A	V
802.11a CH 60 5300MHz		5111.68	50.5	-23.5	74	42.31	31.63	6.98	30.42	100	115	P	H
		5107.2	41.36	-12.64	54	33.17	31.63	6.98	30.42	100	115	A	H
	*	5306	99.21	-	-	90.75	31.71	7.23	30.48	100	115	P	H
	*	5306	92.11	-	-	83.65	31.71	7.23	30.48	100	115	A	H
		5397.6	54.05	-19.95	74	45.26	31.74	7.37	30.32	100	115	P	H
		5400	45.82	-8.18	54	37.03	31.74	7.37	30.32	100	115	A	H
		5130.24	50.35	-23.65	74	42.17	31.64	7	30.46	150	96	P	V
		5102.08	41.59	-12.41	54	33.4	31.61	6.95	30.37	150	96	A	V
	*	5296	99.47	-	-	91.01	31.71	7.23	30.48	150	96	P	V
	*	5296	92.01	-	-	83.55	31.71	7.23	30.48	150	96	A	V
		5393.3	53.39	-20.61	74	44.66	31.74	7.34	30.35	150	96	P	V
		5391.4	45.39	-8.61	54	36.66	31.74	7.34	30.35	150	96	A	V



802.11a CH 64 5320MHz	*	5316	100.56	-	-	92.04	31.72	7.25	30.45	100	109	P	H
	*	5316	93.11	-	-	84.59	31.72	7.25	30.45	100	109	A	H
		5350.1	57.16	-16.84	74	48.53	31.73	7.3	30.4	100	109	P	H
		5350.1	46.17	-7.83	54	37.54	31.73	7.3	30.4	100	109	A	H
	*	5316	99.74	-	-	91.22	31.72	7.25	30.45	150	78	P	V
	*	5316	92.4	-	-	83.88	31.72	7.25	30.45	150	78	A	V
		5350.3	57.58	-16.42	74	48.95	31.73	7.3	30.4	150	78	P	V
		5350.2	45.87	-8.13	54	37.24	31.73	7.3	30.4	150	78	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		10520	43.83	-30.17	74	51.77	39.01	10	56.95	100	360	P	H
CH 52 5260MHz		10520	43.92	-30.08	74	51.86	39.01	10	56.95	100	360	P	V
802.11a		10600	45.05	-28.95	74	52.68	39.1	10.05	56.78	100	360	P	H
CH 60 5300MHz		10600	45.09	-28.91	74	52.72	39.1	10.05	56.78	100	360	P	V
802.11a		10640	44.97	-29.03	74	52.47	39.14	10.07	56.71	100	360	P	H
CH 64 5320MHz		10640	44.24	-29.76	74	51.74	39.14	10.07	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		5119.52	53.34	-20.66	74	41.88	34.9	6.98	30.42	100	298	P	H
		5120.32	44.42	-9.58	54	32.96	34.9	6.98	30.42	100	298	A	H
	*	5256	102.34	-	-	90.71	35.03	7.16	30.56	100	298	P	H
	*	5256	94.82	-	-	83.19	35.03	7.16	30.56	100	298	A	H
		5114.4	53.28	-20.72	74	41.82	34.9	6.98	30.42	311	284	P	V
		5122.24	44.1	-9.9	54	32.64	34.9	6.98	30.42	311	284	A	V
	*	5268	100.7	-	-	89.01	35.04	7.18	30.53	311	284	P	V
	*	5268	93.34	-	-	81.65	35.04	7.18	30.53	311	284	A	V
802.11n HT20 CH 60 5300MHz		5103.2	50.92	-23.08	74	42.73	31.61	6.95	30.37	100	120	P	H
		5102.08	42.06	-11.94	54	33.87	31.61	6.95	30.37	100	120	A	H
	*	5298	101.21	-	-	92.75	31.71	7.23	30.48	100	120	P	H
	*	5298	94.05	-	-	85.59	31.71	7.23	30.48	100	120	A	H
		5393	54.83	-19.17	74	46.1	31.74	7.34	30.35	100	120	P	H
		5388.2	46.59	-7.41	54	37.86	31.74	7.34	30.35	100	120	A	H
		5100.96	49.8	-24.2	74	41.61	31.61	6.95	30.37	350	103	P	V
		5106.24	41.23	-12.77	54	33.04	31.63	6.98	30.42	350	103	A	V
	*	5304	99.39	-	-	90.93	31.71	7.23	30.48	350	103	P	V
	*	5304	92.12	-	-	83.66	31.71	7.23	30.48	350	103	A	V
		5392.2	53.31	-20.69	74	44.58	31.74	7.34	30.35	350	103	P	V
		5392.3	44.96	-9.04	54	36.23	31.74	7.34	30.35	350	103	A	V



802.11n HT20 CH 64 5320MHz	*	5324	101.32	-	-	92.8	31.72	7.25	30.45	110	121	P	H
	*	5324	93.69	-	-	85.17	31.72	7.25	30.45	110	121	A	H
		5353.6	63.58	-10.42	74	54.95	31.73	7.3	30.4	110	121	P	H
		5350.2	48.7	-5.3	54	40.07	31.73	7.3	30.4	110	121	A	H
	*	5314	99.59	-	-	91.07	31.72	7.25	30.45	353	105	P	V
	*	5314	92.11	-	-	83.59	31.72	7.25	30.45	353	105	A	V
		5350.1	58.73	-15.27	74	50.1	31.73	7.3	30.4	353	105	P	V
		5350.5	46.19	-7.81	54	37.56	31.73	7.3	30.4	353	105	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	44.58	-29.42	74	52.81	38.72	10	56.95	100	360	P	H
		10520	43.68	-30.32	74	51.91	38.72	10	56.95	100	360	P	V
802.11n HT20 CH 60 5300MHz		10600	43.44	-30.56	74	51.38	38.79	10.05	56.78	100	360	P	H
		10600	42.35	-31.65	74	50.29	38.79	10.05	56.78	100	360	P	V
802.11n HT20 CH 64 5320MHz		10640	42.54	-31.46	74	50.37	38.81	10.07	56.71	100	360	P	H
		10640	43.85	-30.15	74	51.68	38.81	10.07	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		5128.64	53.19	-20.81	74	41.74	34.91	7	30.46	100	117	P	H
		5128.32	43.86	-10.14	54	32.41	34.91	7	30.46	100	117	A	H
	*	5272	95.98	-	-	84.29	35.04	7.18	30.53	100	117	P	H
	*	5272	88.25	-	-	76.56	35.04	7.18	30.53	100	117	A	H
		5368.5	52.95	-21.05	74	40.87	35.14	7.32	30.38	100	117	P	H
		5377.1	44.67	-9.33	54	32.59	35.14	7.32	30.38	100	117	A	H
		5106.72	53.01	-20.99	74	41.55	34.9	6.98	30.42	122	99	P	V
		5142.72	43.92	-10.08	54	32.48	34.93	7.02	30.51	122	99	A	V
	*	5272	95.33	-	-	83.64	35.04	7.18	30.53	122	99	P	V
	*	5272	87.41	-	-	75.72	35.04	7.18	30.53	122	99	A	V
		5368.8	53.8	-20.2	74	41.72	35.14	7.32	30.38	122	99	P	V
		5374.9	44.11	-9.89	54	32.03	35.14	7.32	30.38	122	99	A	V
802.11n HT40 CH 62 5310MHz		5101.28	53.5	-20.5	74	42.04	34.88	6.95	30.37	100	119	P	H
		5114.72	43.95	-10.05	54	32.49	34.9	6.98	30.42	100	119	A	H
	*	5322	96.76	-	-	84.87	35.09	7.25	30.45	100	119	P	H
	*	5322	88.96	-	-	77.07	35.09	7.25	30.45	100	119	A	H
		5350.5	60.21	-13.79	74	48.19	35.12	7.3	30.4	100	119	P	H
		5350.7	50.06	-3.94	54	38.04	35.12	7.3	30.4	100	119	A	H
		5126.88	53.24	-20.76	74	41.79	34.91	7	30.46	100	99	P	V
		5103.2	43.96	-10.04	54	32.5	34.88	6.95	30.37	100	99	A	V
	*	5314	94.15	-	-	82.26	35.09	7.25	30.45	100	99	P	V
	*	5314	86.96	-	-	75.07	35.09	7.25	30.45	100	99	A	V
		5350.4	58.58	-15.42	74	46.56	35.12	7.3	30.4	100	99	P	V
		5350	48.27	-5.73	54	36.25	35.12	7.3	30.4	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 802.11n 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	43.89	-30.11	74	52.07	38.73	10.01	56.92	100	360	P	H
		10540	44.03	-29.97	74	52.21	38.73	10.01	56.92	100	360	P	V
802.11n HT40 CH 62 5310MHz		10620	43.54	-30.46	74	51.43	38.8	10.06	56.75	100	360	P	H
		10620	43.48	-30.52	74	51.37	38.8	10.06	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		5410.16	56.29	-17.71	74	44.07	35.17	7.37	30.32	100	111	P	H
		5410.8	48.18	-5.82	54	35.96	35.17	7.37	30.32	100	111	A	H
	*	5494	100.31	-	-	88.13	35.25	7.37	30.44	100	111	P	H
	*	5494	93.33	-	-	81.15	35.25	7.37	30.44	100	111	A	H
		5401.84	55.3	-18.7	74	43.08	35.17	7.37	30.32	122	106	P	V
		5400.56	46.75	-7.25	54	34.53	35.17	7.37	30.32	122	106	A	V
	*	5498	97.71	-	-	85.54	35.27	7.37	30.47	122	106	P	V
	*	5498	90.66	-	-	78.49	35.27	7.37	30.47	122	106	A	V
802.11a CH 116 5580MHz		5455.6	52.86	-21.14	74	40.66	35.22	7.37	30.39	117	111	P	H
		5391.44	43.54	-10.46	54	31.39	35.16	7.34	30.35	117	111	A	H
	*	5574	102.23	-	-	90.09	35.34	7.36	30.56	117	111	P	H
	*	5574	94.79	-	-	82.65	35.34	7.36	30.56	117	111	A	H
		5756.52	53.72	-20.28	74	41.33	35.24	7.56	30.41	117	111	P	H
		5755	43.81	-10.19	54	31.42	35.24	7.56	30.41	117	111	A	H
		5409.84	52.35	-21.65	74	40.13	35.17	7.37	30.32	114	97	P	V
		5459.6	43.36	-10.64	54	31.16	35.22	7.37	30.39	114	97	A	V
	*	5574	99.98	-	-	87.84	35.34	7.36	30.56	114	97	P	V
	*	5574	92.56	-	-	80.42	35.34	7.36	30.56	114	97	A	V
		5738.76	52.19	-21.81	74	39.82	35.26	7.54	30.43	114	97	P	V
		5729.8	43.82	-10.18	54	31.47	35.28	7.52	30.45	114	97	A	V



802.11a CH 140 5700MHz		5731.16	62.87	-11.13	74	50.52	35.28	7.52	30.45	100	114	P	H
		5725.4	50.41	-3.59	54	38.06	35.28	7.52	30.45	100	114	A	H
	*	5694	103.57	-	-	91.27	35.33	7.47	30.5	100	114	P	H
	*	5694	96.04	-	-	83.74	35.33	7.47	30.5	100	114	A	H
		5727	59.6	-14.4	74	47.25	35.28	7.52	30.45	100	105	P	V
		5725	48.87	-5.13	54	36.52	35.28	7.52	30.45	100	105	A	V
	*	5704	102.71	-	-	90.39	35.31	7.49	30.48	100	105	P	V
	*	5704	94.65	-	-	82.33	35.31	7.49	30.48	100	105	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		11000	44.78	-29.22	74	51.37	39.1	10.31	56	100	360	P	H
CH 100 5500MHz		11000	43.72	-30.28	74	50.31	39.1	10.31	56	100	360	P	V
802.11a		11160	44.42	-29.58	74	51.11	39.23	10.42	56.34	100	360	P	H
CH 116 5580MHz		11160	47.61	-26.39	74	54.3	39.23	10.42	56.34	100	360	P	V
802.11a		11400	42.87	-31.13	74	49.69	39.42	10.57	56.81	100	360	P	H
CH 140 5700MHz		11400	43.18	-30.82	74	50	39.42	10.57	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		5402.48	56.11	-17.89	74	43.89	35.17	7.37	30.32	100	302	P	H
		5399.76	47.51	-6.49	54	35.29	35.17	7.37	30.32	100	302	A	H
	*	5506	99.29	-	-	87.12	35.27	7.37	30.47	100	302	P	H
	*	5506	92.12	-	-	79.95	35.27	7.37	30.47	100	302	A	H
		5402.8	54.57	-19.43	74	42.35	35.17	7.37	30.32	346	281	P	V
		5411.92	45.8	-8.2	54	33.59	35.19	7.37	30.35	346	281	A	V
	*	5494	98.58	-	-	86.4	35.25	7.37	30.44	346	281	P	V
	*	5494	90.83	-	-	78.65	35.25	7.37	30.44	346	281	A	V
802.11n HT20 CH 116 5580MHz		5458.96	52.78	-21.22	74	40.58	35.22	7.37	30.39	125	306	P	H
		5391.12	43.39	-10.61	54	31.24	35.16	7.34	30.35	125	306	A	H
	*	5584	100.51	-	-	88.39	35.35	7.36	30.59	125	306	P	H
	*	5584	93.21	-	-	81.09	35.35	7.36	30.59	125	306	A	H
		5743.72	53.09	-20.91	74	40.72	35.26	7.54	30.43	125	306	P	H
		5754.04	43.83	-10.17	54	31.44	35.24	7.56	30.41	125	306	A	H
		5440.24	52.64	-21.36	74	40.43	35.21	7.37	30.37	338	281	P	V
		5464.72	43.25	-10.75	54	31.06	35.24	7.37	30.42	338	281	A	V
	*	5586	100.09	-	-	87.97	35.35	7.36	30.59	338	281	P	V
	*	5586	92.79	-	-	80.67	35.35	7.36	30.59	338	281	A	V
		5734.04	53.34	-20.66	74	40.99	35.28	7.52	30.45	338	281	P	V
		5754.36	43.85	-10.15	54	31.46	35.24	7.56	30.41	338	281	A	V



802.11n HT20 CH 140 5700MHz		5726.12	63.57	-10.43	74	51.22	35.28	7.52	30.45	100	117	P	H
		5725	50.69	-3.31	54	38.34	35.28	7.52	30.45	100	117	A	H
	*	5704	102.37	-	-	90.05	35.31	7.49	30.48	100	117	P	H
	*	5704	94.38	-	-	82.06	35.31	7.49	30.48	100	117	A	H
		5731.4	60.91	-13.09	74	48.56	35.28	7.52	30.45	356	105	P	V
		5725	49.25	-4.75	54	36.9	35.28	7.52	30.45	356	105	A	V
	*	5706	100.38	-	-	88.06	35.31	7.49	30.48	356	105	P	V
	*	5706	92.48	-	-	80.16	35.31	7.49	30.48	356	105	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	46.16	-27.84	74	52.75	39.1	10.31	56	150	360	P	H
		11000	44.82	-29.18	74	51.41	39.1	10.31	56	150	360	P	V
802.11n HT20 CH 116 5580MHz		11160	45.63	-28.37	74	52.32	39.23	10.42	56.34	150	360	P	H
		11160	45.9	-28.1	74	52.59	39.23	10.42	56.34	150	360	P	V
802.11n HT20 CH 140 5700MHz		11400	42.88	-31.12	74	49.7	39.42	10.57	56.81	100	360	P	H
		11400	43.42	-30.58	74	50.24	39.42	10.57	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		5467.44	57.35	-16.65	74	45.16	35.24	7.37	30.42	101	114	P	H
		5470	49.26	-4.74	54	37.07	35.24	7.37	30.42	101	114	A	H
	*	5524	96.96	-	-	84.79	35.29	7.37	30.49	101	114	P	H
	*	5524	89.7	-	-	77.53	35.29	7.37	30.49	101	114	A	H
		5734.04	53.42	-20.58	74	41.07	35.28	7.52	30.45	101	114	P	H
		5745.96	43.88	-10.12	54	31.51	35.26	7.54	30.43	101	114	A	H
		5464.72	58.05	-15.95	74	45.86	35.24	7.37	30.42	100	109	P	V
		5469.68	48.44	-5.56	54	36.25	35.24	7.37	30.42	100	109	A	V
	*	5500	96.23	-	-	84.06	35.27	7.37	30.47	100	109	P	V
	*	5500	88.96	-	-	76.79	35.27	7.37	30.47	100	109	A	V
		5754.84	53.21	-20.79	74	40.82	35.24	7.56	30.41	100	109	P	V
		5753.56	43.83	-10.17	54	31.44	35.24	7.56	30.41	100	109	A	V
802.11n HT40 CH 110 5550MHz		5467.44	55.14	-18.86	74	42.95	35.24	7.37	30.42	120	114	P	H
		5463.28	46.33	-7.67	54	34.14	35.24	7.37	30.42	120	114	A	H
	*	5554	97.56	-	-	85.42	35.32	7.36	30.54	120	114	P	H
	*	5554	90.57	-	-	78.43	35.32	7.36	30.54	120	114	A	H
		5745.56	52.95	-21.05	74	40.58	35.26	7.54	30.43	120	114	P	H
		5748.6	43.93	-10.07	54	31.56	35.26	7.54	30.43	120	114	A	H
		5440.4	54.36	-19.64	74	42.15	35.21	7.37	30.37	205	107	P	V
		5465.68	45.05	-8.95	54	32.86	35.24	7.37	30.42	205	107	A	V
	*	5564	94.95	-	-	82.81	35.32	7.36	30.54	205	107	P	V
	*	5564	88.01	-	-	75.87	35.32	7.36	30.54	205	107	A	V
		5738.68	53.67	-20.33	74	41.3	35.26	7.54	30.43	205	107	P	V
		5747.48	43.83	-10.17	54	31.46	35.26	7.54	30.43	205	107	A	V



802.11n HT40 CH 134 5670MHz		5469.68	53.08	-20.92	74	40.89	35.24	7.37	30.42	107	114	P	H
		5466.8	44.43	-9.57	54	32.24	35.24	7.37	30.42	107	114	A	H
	*	5680	102.37	-	-	90.09	35.35	7.45	30.52	107	114	P	H
	*	5680	94.87	-	-	82.59	35.35	7.45	30.52	107	114	A	H
		5725.56	61.61	-12.39	74	49.26	35.28	7.52	30.45	107	114	P	H
		5725	50.56	-3.44	54	38.21	35.28	7.52	30.45	107	114	A	H
		5363.44	52.98	-21.02	74	40.9	35.14	7.32	30.38	158	83	P	V
		5463.76	43.82	-10.18	54	31.63	35.24	7.37	30.42	158	83	A	V
	*	5684	99.71	-	-	87.41	35.33	7.47	30.5	158	83	P	V
	*	5684	92.29	-	-	79.99	35.33	7.47	30.5	158	83	A	V
		5728.6	59.54	-14.46	74	47.19	35.28	7.52	30.45	158	83	P	V
		5725.64	48.43	-5.57	54	36.08	35.28	7.52	30.45	158	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 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	44.88	-29.12	74	51.48	39.11	10.32	56.03	100	360	P	H
		11020	44.93	-29.07	74	51.53	39.11	10.32	56.03	100	360	P	V
802.11n HT40 CH 110 5550MHz		11100	44.7	-29.3	74	51.35	39.18	10.37	56.2	100	360	P	H
		11100	44.29	-29.71	74	50.94	39.18	10.37	56.2	100	360	P	V
802.11n HT40 CH 134 5670MHz		11340	44.65	-29.35	74	51.43	39.37	10.53	56.68	100	360	P	H
		11340	45.75	-28.25	74	52.53	39.37	10.53	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 - 5470~5725MHz

Band 3 - Straddle Channel

WIFI 802.11a (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamplifier 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 144 5720MHz	*	5728	105.71	-	-	93.36	35.28	7.52	30.45	100	115	P	H
	*	5728	98.32	-	-	85.97	35.28	7.52	30.45	100	115	A	H
	*	5714	103.7	-	-	91.38	35.31	7.49	30.48	115	95	P	V
	*	5714	95.06	-	-	82.74	35.31	7.49	30.48	115	95	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	44.93	-29.07	74	51.77	39.45	10.59	56.88	150	360	P	H
CH 144 5720MHz		11440	45.18	-28.82	74	52.02	39.45	10.59	56.88	150	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	*	5712	102.35	-	-	90.03	35.31	7.49	30.48	100	120	P	H
HT20	*	5712	94.63	-	-	82.31	35.31	7.49	30.48	100	120	A	H
CH 144	*	5724	103.2	-	-	90.85	35.28	7.52	30.45	303	91	P	V
5720MHz	*	5724	95.09	-	-	82.74	35.28	7.52	30.45	303	91	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		11440	45.46	-28.54	74	52.3	39.45	10.59	56.88	150	360	P	H
HT20													
CH 144		11440	44.16	-29.84	74	51	39.45	10.59	56.88	150	360	P	V
5720MHz													
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	*	5716	101.22	-	-	88.9	35.31	7.49	30.48	103	116	P	H
HT40	*	5716	93.68	-	-	81.36	35.31	7.49	30.48	103	116	A	H
CH 142	*	5720	98.26	-	-	85.91	35.28	7.52	30.45	247	94	P	V
5710MHz	*	5720	90.25	-	-	77.9	35.28	7.52	30.45	247	94	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		11420	44.67	-29.33	74	51.51	39.43	10.58	56.85	100	360	P	H
HT40													
CH 142		11420	44.98	-29.02	74	51.82	39.43	10.58	56.85	100	360	P	V
5710MHz													
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission below 1GHz

WIFI 802.11n HT20 (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 HT20 LF		30.97	28.75	-11.25	40	32.05	26.54	0.65	30.49	-	-	P	H
		85.29	28.44	-11.56	40	40.57	16.6	0.99	29.72	-	-	P	H
		115.36	35.16	-8.34	43.5	43.73	19.57	1.15	29.29	150	360	P	H
		188.11	24.52	-18.98	43.5	34.16	17.38	1.46	28.48	-	-	P	H
		403.45	27.84	-18.16	46	28.6	24.28	2.12	27.16	-	-	P	H
		919.49	32.99	-13.01	46	25.94	29.01	3.2	25.16	-	-	P	H
		30.97	29.57	-10.43	40	32.87	26.54	0.65	30.49	150	0	P	V
		70.74	22.3	-17.7	40	36.39	14.92	0.91	29.92	-	-	P	V
		84.32	23.81	-16.19	40	35.91	16.64	0.99	29.73	-	-	P	V
		115.36	23.94	-19.56	43.5	32.51	19.57	1.15	29.29	-	-	P	V
		663.41	27.81	-18.19	46	25.28	26.03	2.67	26.17	-	-	P	V
		899.12	30.96	-15.04	46	24.44	28.5	3.2	25.18	-	-	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)

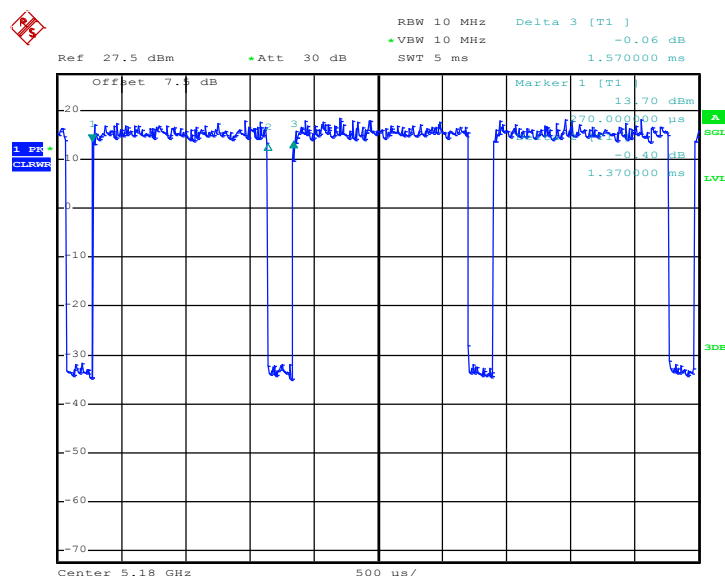
= -10.46(dB)

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

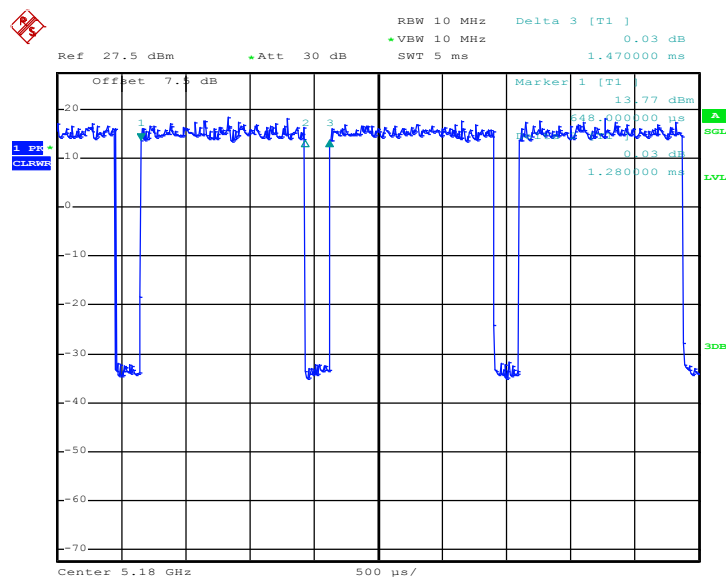
Appendix C. Duty Cycle Plots

Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
802.11a	87.26	1.37	0.73	1kHz
802.11n HT20	87.07	1.28	0.78	1kHz
802.11n HT40	85.73	1.23	0.82	1kHz

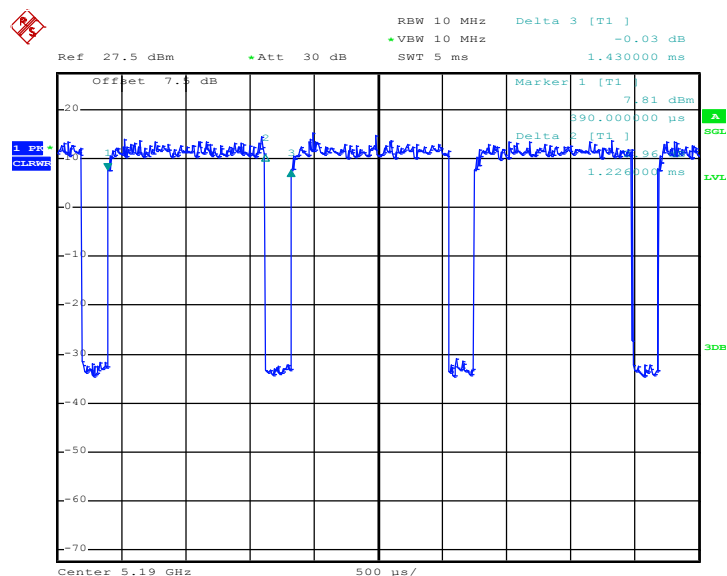
802.11a



802.11n HT20



802.11n HT40





Appendix E. Product Equality Declaration



Appendix F. Original Report

Please refer to Sporton report number FR6O1212-02E which is issued separately.