FCC RF Test Report

APPLICANT	:	Motorola Solutions Inc.
EQUIPMENT	:	WAVE Two-Way Mobile Radio
BRAND NAME	:	Motorola Solutions
MODEL NAME	:	TLK 150
MODEL NUMBER	:	HK2131A
FCC ID	:	AZ492FT7127
STANDARD	:	FCC Part 15 Subpart E §15.407
CLASSIFICATION	:	(NII) Unlicensed National Information Infrastructure

The product was received on Nov. 04, 2019 and testing was completed on Jan. 15, 2020. 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.

Jason Jia

Reviewed by: Jason Jia / Supervisor

James Huang

Approved by: James Huang / Manager

ACCREDITED
Cert #5145.02

Sporton International (Kunshan) Inc.
No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR9N0421D	Rev. 01	Initial issue of report	Jan. 22, 2020
FR9N0421D	Rev. 02	Update the equipment name.	Mar. 10, 2020

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	≤ 24 dBm	Pass	-
3.3	15.407(a)	Power Spectral Density	≤ 11 dBm	Pass	-
3.4	15.407(b)	Unwanted Emissions	15.407(b) & 15.209(a)	Pass	Under limit 4.14 dB at 5149.92 MHz
–	15.207	AC Conducted Emission	15.207(a)	Not Required	-
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	-
Remark: Not required means after assessing, the test item is not necessary to carry out.					

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

1 General Description

1.1 Applicant

Motorola Solutions Inc.
8000 West Sunrise Boulevard, Fort Lauderdale, Florida

1.2 Manufacturer

Motorola Solutions Malaysia Sdn. Bhd.
Plot 2A, Medan Bayan Lepas, Mukim 12, S.W.D. 11900 Bayan Lepas, Penang, Malaysia.

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	WAVE Two-Way Mobile Radio
Brand Name	Motorola Solutions
Model Name	TLK 150
Model Number	HK2131A
FCC ID	AZ492FT7127
EUT supports Radios application	WCDMA/LTE/GNSS WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 5GHz 802.11 a/n HT20/HT40 Bluetooth BR/EDR/LE
IMEI Code	Conducted: 352704110003325 Radiation: N/A
HW Version	P2
SW Version	TLK150_BASE_ENG_D03.00.32_APPS_D03.00.36
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 : 14.42 dBm / 0.0277 W 802.11n HT20 : 12.26 dBm / 0.0168 W 802.11n HT40 : 11.72 dBm / 0.0149 W **<5260 MHz ~ 5320 MHz>** 802.11a : 14.38 dBm / 0.0274 W 802.11n HT20 : 12.24 dBm / 0.0167 W 802.11n HT40 : 11.66 dBm / 0.0147 W **<5500 MHz ~ 5720 MHz >** 802.11a : 14.30 dBm / 0.0269 W 802.11n HT20 : 12.25 dBm / 0.0168 W 802.11n HT40 : 11.73 dBm / 0.0149 W
99% Occupied Bandwidth	**<5180 MHz ~ 5240 MHz>** 802.11a : 16.78 MHz 802.11n HT20 : 17.78 MHz 802.11n HT40 : 35.96 MHz **<5260 MHz ~ 5320 MHz>** 802.11a : 16.78 MHz 802.11n HT20 : 17.73 MHz 802.11n HT40 : 36.06 MHz **<5500 MHz ~ 5720 MHz >** 802.11a : 16.83 MHz 802.11n HT20 : 17.73 MHz 802.11n HT40 : 36.06 MHz
Antenna Type / Gain	**<5180 MHz ~ 5240 MHz >** Chip Antenna with gain 1.9 dBi **<5260 MHz ~ 5320 MHz >** Chip Antenna with gain 1.8 dBi **<5500 MHz ~ 5720 MHz >** Chip Antenna with gain 0.9 dBi
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)

1.5 Modification of EUT

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

1.6 Testing Location

Sporton International (Kunshan) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Test Firm	Sporton International (Kunshan) Inc.		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	03CH06-KS TH01-KS	CN1257	314309

1.7 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH06-KS	AUDIX	E3	6.2009-8-24al

1.8 Applicable Standards

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

- 47 CFR Part 15 Subpart E
- FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- 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

a. 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: radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X plane) were recorded in this report.

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5150-5250 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)
5250-5350 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)
5470-5725 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	118*	5590	124	5620
	120	5600	126*	5630
	-	-	128	5640

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 modes 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**
Remark: test mode: DC power supply + EUT + TC1 **TC1:** External speaker(AC000240A01)+ External Mic (PMMN4129A)+ Footswitch (RLN4836AR)+ Footswitch (RLN4856A)+ Ignition Sense Cable with Housing Connector(HKN9327BR)	

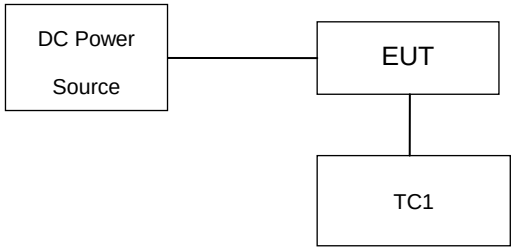
Co-location
WLAN + WWAN: WLAN 802. 11n HT40_Ch38 + WWAN LTE B7 QPSK 20M(BW)
Remark: Co-location test mode choose the worst RSE link mode of WWAN (GSM/WCDMA/LTE) and the worst RSE link mode of WLAN (2.4G/5G) to perform the combination testing

Ch. #		Band I：5150-5250 MHz	Band II：5250-5350 MHz	Band III：5470-5725MHz
		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：5150-5250 MHz	Band II：5250-5350 MHz	Band III：5470-5725MHz
		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：5150-5250 MHz	Band II：5250-5350 MHz	Band III：5470-5725MHz
		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



This example is connection diagram of EUT test configurations.

. For detail, please refer to test mode configuration and setup photographs for each test item.

2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	DC Power Supply	GW	GPS-3030D	N/A	N/A	Unshielded, 1.8 m

2.5 EUT Operation Test Setup

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

2.6 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor 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 and attenuator factor.

Offset = RF cable loss + attenuator factor.

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

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

= 7.0 (dB)

3 Test Result

3.1 26dB & 99% Occupied Bandwidth Measurement

3.1.1 Description of 26dB & 99% Occupied Bandwidth

This section is for reporting purpose only.

There is no restriction limits for bandwidth.

For Straddle Channel, According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01, If the power and PSD of the devices are uniform and comply with the lower limits specified for the U-NII-2 bands, a single measurement over the entire emission bandwidth can be performed to show compliance.

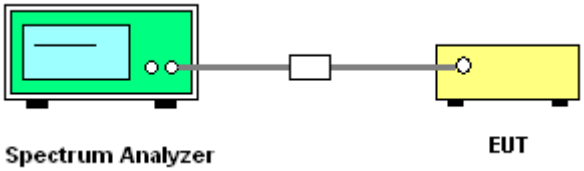
3.1.2 Measuring Instruments

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 v02r01. 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) ≥ 3 * RBW.
8. Measure and record the results in the test report.

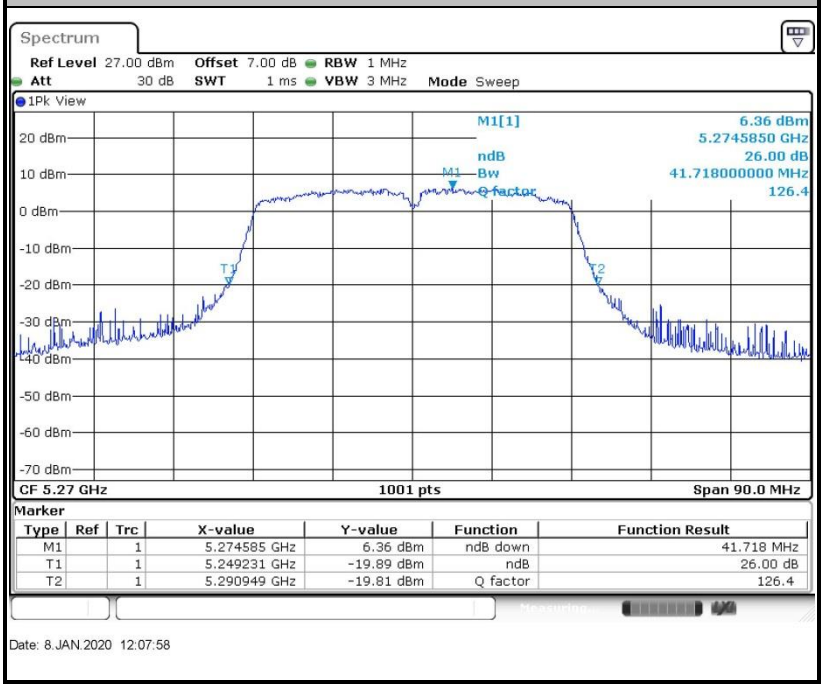
3.1.4 Test Setup



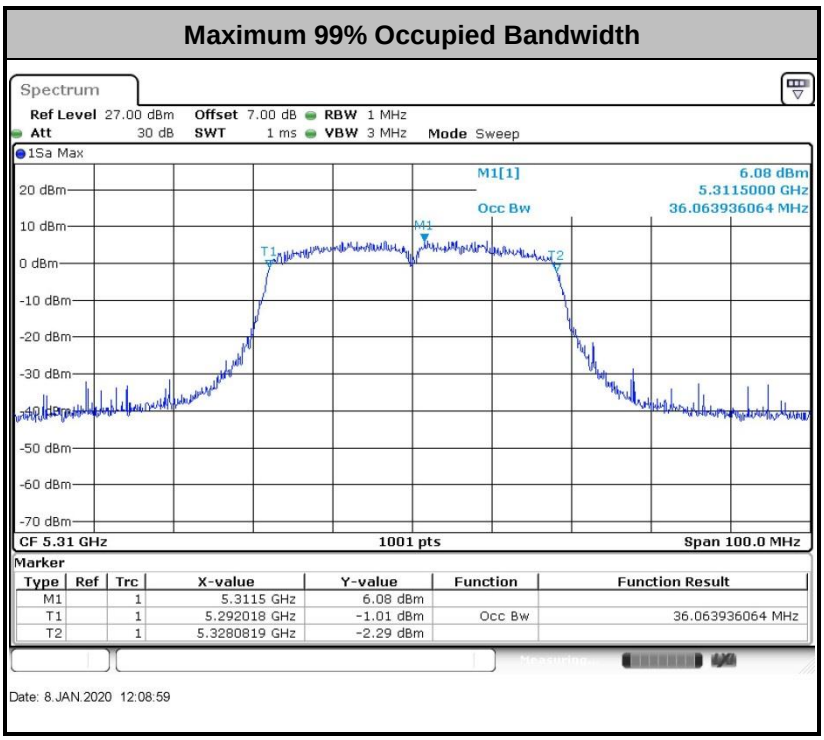
3.1.5 Test Result of 26dB & 99% Occupied Bandwidth

Please refer to Appendix A.

Maximum 26dB Bandwidth



Maximum 99% Occupied Bandwidth



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 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz.

For Straddle Channel, According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01, If the power and PSD of the devices are uniform and comply with the lower limits specified for the U-NII-2 bands, a single measurement over the entire emission bandwidth can be performed to show compliance.

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

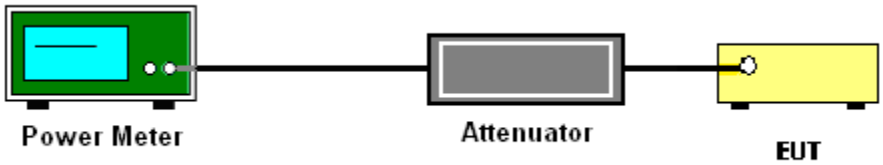
The testing follows Method PM of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

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, According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01, If the power and PSD of the devices are uniform and comply with the lower limits specified for the U-NII-2 bands, a single measurement over the entire emission bandwidth can be performed to show compliance.

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

<FCC 14-30 CFR 15.407>

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

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

For Straddle Channel, According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01, If the power and PSD of the devices are uniform and comply with the lower limits specified for the U-NII-2 bands, a single measurement over the entire emission bandwidth can be performed to show compliance.

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 v02r01. Section F) Maximum power spectral density.

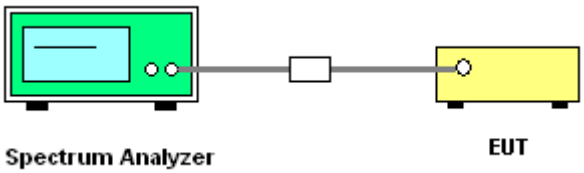
 # Method SA-2 #

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

- Measure the duty cycle.
- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 1 MHz.
- Set VBW ≥ 3 MHz.
- Number of points in sweep ≥ 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.

1. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
2. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.

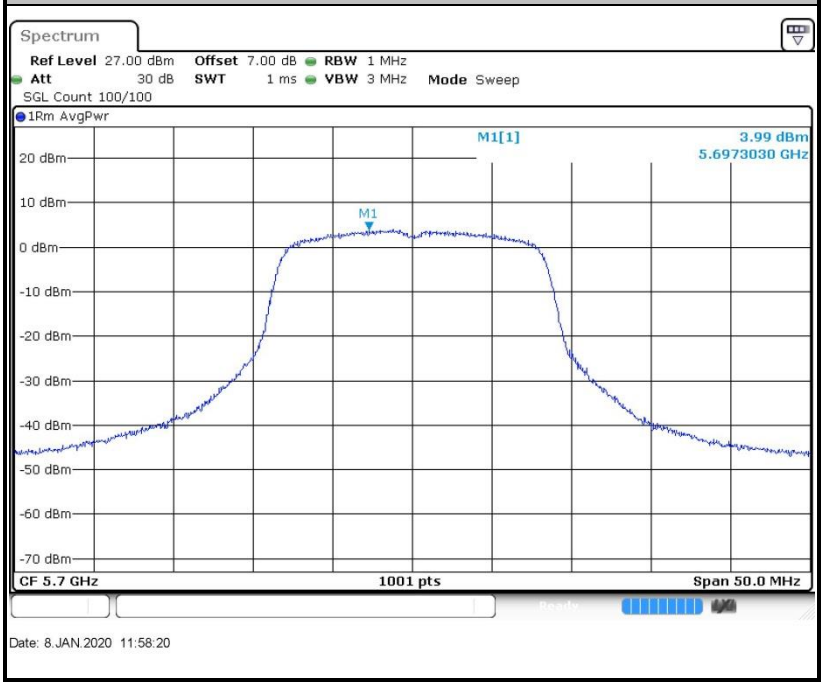
3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

Worst Case Power Density (dBm/MHz)



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

3.4 Unwanted Emissions Measurement

This section is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement.

3.4.1 Limit of Unwanted Emissions

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

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

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

(2) Unwanted spurious emissions fallen in restricted bands shall comply with the general field strength limits 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

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

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

$$EIRP = E_{Meas} + 20\log(d_{Meas}) - 104.77$$

where

EIRP is the equivalent isotropically radiated power, in dBm

E_{Meas} is the field strength of the emission at the measurement distance, in dBμV/m

d_{Meas} is the measurement distance, in m

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 v02r01. Section G) Unwanted emissions measurement.

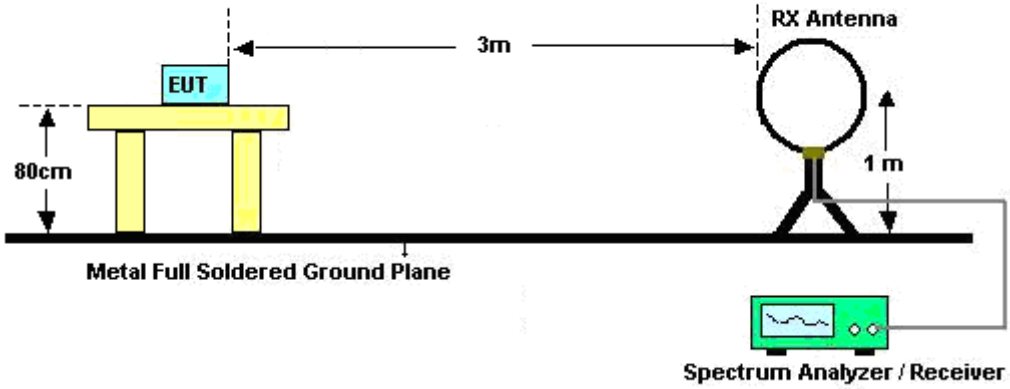
   (1) Procedure for Unwanted Emissions Measurements Below 1000MHz
   - RBW = 120 kHz
   - VBW = 300 kHz
   - Detector = Peak
   - Trace mode = max hold

   (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

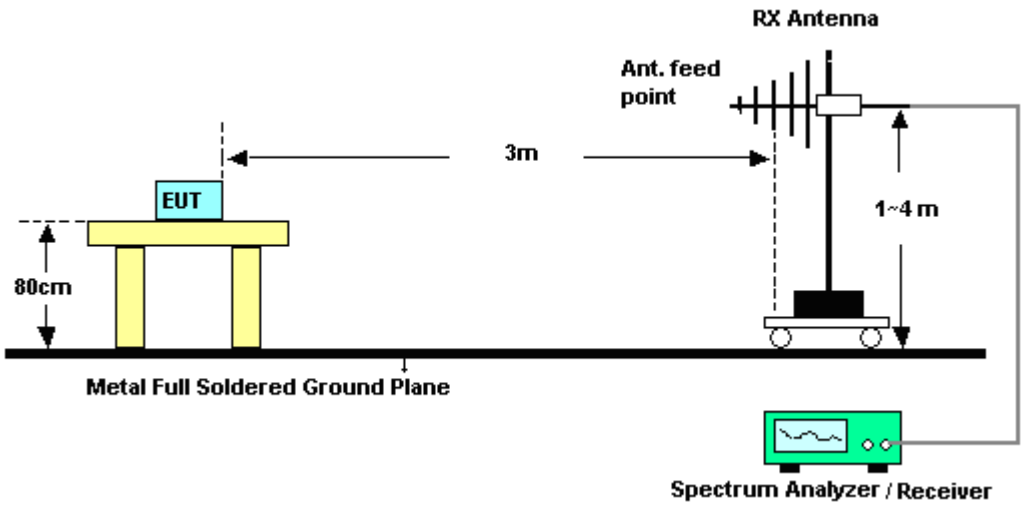
   (3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz
   - RBW = 1 MHz
   - VBW = 10 Hz, when duty cycle is no less than 98 percent.
   - VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting 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

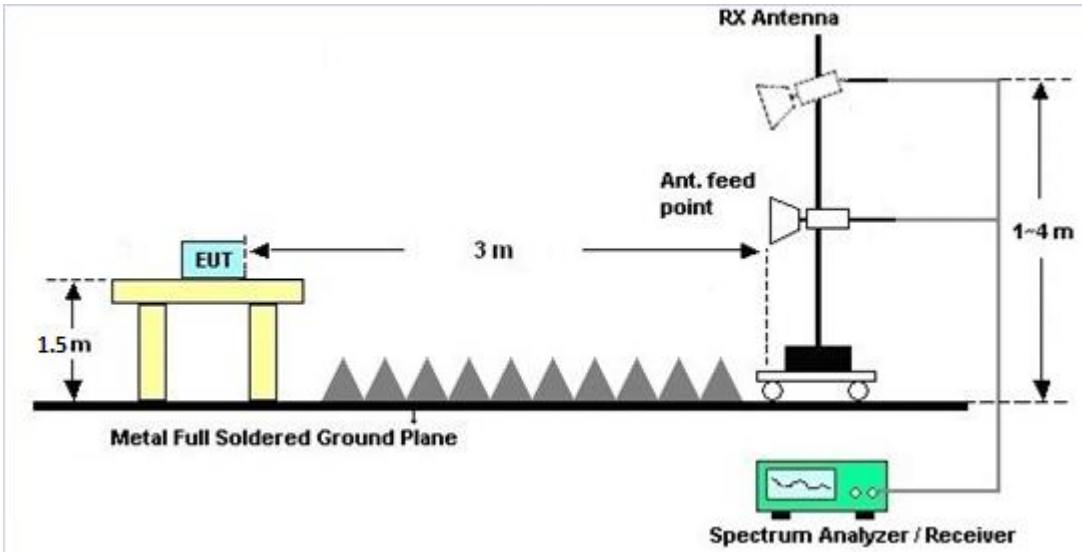
For radiated emissions below 30MHz



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 was not reported.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

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.

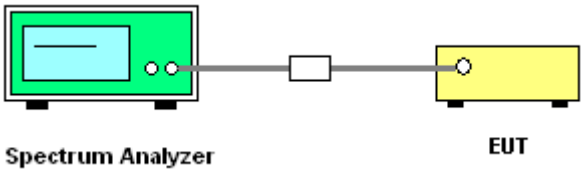
3.5.2 Measuring Instruments

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

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

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Aug. 07, 2019	Jan. 08, 2020	Aug. 06, 2020	Conducted (TH01-KS)
Pulse Power Senor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 14, 2019	Jan. 08, 2020	Jan. 13, 2020	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 14, 2019	Jan. 08, 2020	Jan. 13, 2020	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150208	10Hz-44GHz	Apr. 16, 2019	Jan. 15, 2020	Apr. 18, 2020	Radiation (03CH06-KS)
Bilog Antenna	TeseQ	CBL6111D	49921	30MHz-1GHz	May 30, 2019	Jan. 15, 2020	May 29, 2020	Radiation (03CH06-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75959	1GHz~18GHz	Jan. 27, 2019	Jan. 15, 2020	Jan. 26, 2020	Radiation (03CH06-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 08, 2020	Jan. 15, 2020	Jan. 07, 2021	Radiation (03CH06-KS)
Amplifier	SONOMA	310N	187289	9KHz ~1GHZ	Aug. 06, 2019	Jan. 15, 2020	Aug. 05, 2020	Radiation (03CH06-KS)
high gain Amplifier	MITEQ	AMF-7D-00101800-30-10P	2025788	1Ghz-18Ghz	Apr. 17. 2019	Jan. 15, 2020	Apr. 16, 2020	Radiation (03CH06-KS)
Amplifier	MITEQ	TTA1840-35-HG	2014749	18~40GHz	Jan. 14, 2020	Jan. 15, 2020	Jan. 13, 2021	Radiation (03CH06-KS)
Amplifier	Keysight	83017A	MY53270203	500MHz~26.5GHz	Apr. 15, 2019	Jan. 15, 2020	Apr. 14. 2020	Radiation (03CH06-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Jan. 15, 2020	NCR	Radiation (03CH06-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Jan. 15, 2020	NCR	Radiation (03CH06-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Jan. 15, 2020	NCR	Radiation (03CH06-KS)

NCR: No Calibration Required.

5 Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.10-2013. All the measurement uncertainty value were shown with a coverage K=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.0dB**

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.0dB**

Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.0dB**

Appendix A. Conducted Test Results

Test Engineer:	Aly Cao	Temperature:	21~25	°C
Test Date:	2020/1/8	Relative Humidity:	51~54	%

Report Number : FR9N0421D

TEST RESULTS DATA
26dB and 99% OBW

Band I										
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)		
11a	6Mbps	1	36	5180	16.78	20.63	-	22.25		
11a	6Mbps	1	44	5220	16.73	20.83	-	22.24		
11a	6Mbps	1	48	5240	16.68	20.78	-	22.22		
HT20	MCS0	1	36	5180	17.78	21.53	-	22.50		
HT20	MCS0	1	44	5220	17.73	21.38	-	22.49		
HT20	MCS0	1	48	5240	17.68	21.38	-	22.48		
HT40	MCS0	1	38	5190	35.96	41.63	-	23.01		
HT40	MCS0	1	46	5230	35.96	41.27	-	23.01		

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TEST RESULTS DATA
Average Power Table

FCC Band I										
Mod.	Data Rate	N_{TX}	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)		Pass/Fail
11a	6Mbps	1	36	5180	95.00	14.42	24.00	1.90		Pass
11a	6Mbps	1	44	5220	95.00	14.37	24.00	1.90		Pass
11a	6Mbps	1	48	5240	95.00	14.34	24.00	1.90		Pass
HT20	MCS0	1	36	5180	94.66	12.26	24.00	1.90		Pass
HT20	MCS0	1	44	5220	94.66	12.15	24.00	1.90		Pass
HT20	MCS0	1	48	5240	94.66	12.25	24.00	1.90		Pass
HT40	MCS0	1	38	5190	89.12	11.72	24.00	1.90		Pass
HT40	MCS0	1	46	5230	89.12	11.69	24.00	1.90		Pass

Report Number : FR9N0421D

TEST RESULTS DATA
Power Spectral Density

FCC Band I										
Mod.	Data Rate	N_{TX}	CH.	Freq. (MHz)	Duty Factor (dB)	Average Power Density (dBm/MHz)	Average PSD Limit (dBm/MHz)	DG (dBi)	-	Pass/Fail
11a	6Mbps	1	36	5180	0.22	4.03	11.00	1.90		Pass
11a	6Mbps	1	44	5220	0.22	4.16	11.00	1.90		Pass
11a	6Mbps	1	48	5240	0.22	4.20	11.00	1.90		Pass
HT20	MCS0	1	36	5180	0.24	2.13	11.00	1.90		Pass
HT20	MCS0	1	44	5220	0.24	2.34	11.00	1.90		Pass
HT20	MCS0	1	48	5240	0.24	2.38	11.00	1.90		Pass
HT40	MCS0	1	38	5190	0.50	-1.82	11.00	1.90		Pass
HT40	MCS0	1	46	5230	0.50	-1.68	11.00	1.90		Pass

TEST RESULTS DATA
26dB and 99% OBW

Band II										
Mod.	Data Rate	N_{TX}	CH.	Freq. (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)	IC 99% Bandwidth Power Limit (dBm)	IC 99% Bandwidth EIRP Limit (dBm)	FCC 26dB Bandwidth Power Limit (dBm)	Note
11a	6M bps	1	52	5260	16.78	20.68	23.25	29.25	23.98	
11a	6M bps	1	60	5300	16.73	20.88	23.24	29.24	23.98	
11a	6M bps	1	64	5320	16.68	20.88	23.22	29.22	23.98	
HT20	MCS 0	1	52	5260	17.73	21.58	23.49	29.49	23.98	
HT20	MCS 0	1	60	5300	17.68	21.68	23.48	29.48	23.98	
HT20	MCS 0	1	64	5320	17.68	21.58	23.48	29.48	23.98	
HT40	MCS 0	1	54	5270	35.96	41.72	23.98	30.00	23.98	
HT40	MCS 0	1	62	5310	36.06	41.27	23.98	30.00	23.98	

Report Number : FR9N0421D

TEST RESULTS DATA
Average Power Table

FCC Band II										
Mod.	Data Rate	N_{TX}	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)	EIRP Power Limit (dBm)	Pass/Fail
11a	6M bps	1	52	5260	95.00	14.36	23.98	1.80	26.99	Pass
11a	6M bps	1	60	5300	95.00	14.38	23.98	1.80	26.99	Pass
11a	6M bps	1	64	5320	95.00	14.23	23.98	1.80	26.99	Pass
HT20	MCS 0	1	52	5260	94.66	12.24	23.98	1.80	26.99	Pass
HT20	MCS 0	1	60	5300	94.66	12.19	23.98	1.80	26.99	Pass
HT20	MCS 0	1	64	5320	94.66	12.05	23.98	1.80	26.99	Pass
HT40	MCS 0	1	54	5270	89.12	11.61	23.98	1.80	26.99	Pass
HT40	MCS 0	1	62	5310	89.12	11.66	23.98	1.80	26.99	Pass

Report Number : FR9N0421D

TEST RESULTS DATA
Power Spectral Density

Band II										
Mod.	Data Rate	N_{TX}	CH.	Freq. (MHz)	Duty Factor (dB)	Average Power Density (dBm/MHz)	Average PSD Limit (dBm/MHz)	DG (dBi)		Pass/Fail
11a	6M bps	1	52	5260	0.22	3.68	11.00	1.80		Pass
11a	6M bps	1	60	5300	0.22	3.68	11.00	1.80		Pass
11a	6M bps	1	64	5320	0.22	4.19	11.00	1.80		Pass
HT20	MCS 0	1	52	5260	0.24	2.04	11.00	1.80		Pass
HT20	MCS 0	1	60	5300	0.24	1.91	11.00	1.80		Pass
HT20	MCS 0	1	64	5320	0.24	1.95	11.00	1.80		Pass
HT40	MCS 0	1	54	5270	0.50	-1.82	11.00	1.80		Pass
HT40	MCS 0	1	62	5310	0.50	-1.63	11.00	1.80		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	16.83	21.08	23.26	29.26	23.98	
11a	6M bps	1	116	5580	16.73	21.03	23.24	29.24	23.98	
11a	6M bps	1	140	5700	16.78	20.78	23.25	29.25	23.98	
11a	6Mbps	1	144	5720	16.68	20.63	23.22	29.22	23.98	
HT20	MCS 0	1	100	5500	17.73	21.58	23.49	29.49	23.98	
HT20	MCS 0	1	116	5580	17.68	21.68	23.48	29.48	23.98	
HT20	MCS 0	1	140	5700	17.73	21.63	23.49	29.49	23.98	
HT20	MCS0	1	144	5720	14.73	21.48	22.68	28.68	23.98	
HT40	MCS 0	1	102	5510	35.96	41.63	23.98	30.00	23.98	
HT40	MCS 0	1	110	5550	36.06	41.63	23.98	30.00	23.98	
HT40	MCS 0	1	134	5670	35.96	41.63	41.00	30.00	23.98	
HT40	MCS0	1	142	5710	36.06	41.72	41.00	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	95.00	14.25	23.98	0.90	26.99	Pass
11a	6M bps	1	116	5580	95.00	14.26	23.98	0.90	26.99	Pass
11a	6M bps	1	140	5700	95.00	14.28	23.98	0.90	26.99	Pass
11a	6Mbps	1	144	5720	95.00	14.30	23.98	0.90	26.99	Pass
HT20	MCS 0	1	100	5500	94.66	12.07	23.98	0.90	26.99	Pass
HT20	MCS 0	1	116	5580	94.66	12.25	23.98	0.90	26.99	Pass
HT20	MCS 0	1	140	5700	94.66	12.12	23.98	0.90	26.99	Pass
HT20	MCS0	1	144	5720	94.66	12.17	23.98	0.90	26.99	Pass
HT40	MCS 0	1	102	5510	89.12	11.58	23.98	0.90	26.99	Pass
HT40	MCS 0	1	110	5550	89.12	11.47	23.98	0.90	26.99	Pass
HT40	MCS 0	1	134	5670	89.12	11.73	23.98	0.90	26.99	Pass
HT40	MCS0	1	142	5710	89.12	11.65	23.98	0.90	26.99	Pass

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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	0.22	3.67	11.00	0.90		Pass
11a	6M bps	1	116	5580	0.22	3.98	11.00	0.90		Pass
11a	6M bps	1	140	5700	0.22	4.21	11.00	0.90		Pass
11a	6Mbps	1	144	5720	0.22	3.63	11.00	0.90		Pass
HT20	MCS 0	1	100	5500	0.24	1.89	11.00	0.90		Pass
HT20	MCS 0	1	116	5580	0.24	1.94	11.00	0.90		Pass
HT20	MCS 0	1	140	5700	0.24	2.02	11.00	0.90		Pass
HT20	MCS0	1	144	5720	0.24	1.78	11.00	0.90		Pass
HT40	MCS 0	1	102	5510	0.50	-2.16	11.00	0.90		Pass
HT40	MCS 0	1	110	5550	0.50	-1.88	11.00	0.90		Pass
HT40	MCS 0	1	134	5670	0.50	-1.86	11.00	0.90		Pass
HT40	MCS0	1	142	5710	0.50	-2.72	11.00	0.90		Pass

TEST RESULTS DATA
Frequency Stability

Band I										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stablility (ppm)	Temperature (˚C)	Voltage (V)	Note
11a	6Mbps	1	36	5180	5180.000	0.000	0.00	60	13.2	
11a	6Mbps	1	36	5180	5180.025	0.025	4.83	-20	13.2	
11a	6Mbps	1	36	5180	5180.000	0.000	0.00	25	33.1	
11a	6Mbps	1	36	5180	5180.000	0.000	0.00	25	10.5	
11a	6Mbps	1	36	5180	5180.000	0.000	0.00	25	13.2	

Band II										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stablility (ppm)	Temperature (˚C)	Voltage (V)	Note
11a	6Mbps	1	64	5320	5320.025	0.025	4.70	60	13.2	
11a	6Mbps	1	64	5320	5320.025	0.025	4.70	-20	13.2	
11a	6Mbps	1	64	5320	5320.000	0.000	0.00	25	33.1	
11a	6Mbps	1	64	5320	5320.025	0.025	4.70	25	10.5	
11a	6Mbps	1	64	5320	5320.025	0.025	4.70	25	13.2	

Band III										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stablility (ppm)	Temperature (˚C)	Voltage (V)	Note
11a	6Mbps	1	100	5500	5500.025	0.025	4.55	60	13.2	
11a	6Mbps	1	100	5500	5500.025	0.025	4.55	-20	13.2	
11a	6Mbps	1	100	5500	5500.025	0.025	4.55	25	33.1	
11a	6Mbps	1	100	5500	5500.025	0.025	4.55	25	10.5	
11a	6Mbps	1	100	5500	5500.025	0.025	4.55	25	13.2	

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		5149.44	59.37	-14.63	74	44.64	34.3	10.89	30.46	279	221	P	H
		5150	48.95	-5.05	54	34.22	34.3	10.89	30.46	279	221	A	H
	*	5176	108.74	-	-	93.88	34.37	10.93	30.44	279	221	P	H
		5176	100.92	-	-	86.06	34.37	10.93	30.44	279	221	A	H
		5136.96	57.67	-16.33	74	43	34.27	10.87	30.47	306	146	P	V
		5150	48.53	-5.47	54	33.8	34.3	10.89	30.46	306	146	A	V
	*	5176	108.02	-	-	93.16	34.37	10.93	30.44	306	146	P	V
		5176	100.46	-	-	85.6	34.37	10.93	30.44	306	146	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 1 5150~5250MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 36 5180MHz		10360	41.28	-27.02	68.3	51.11	37.67	15.07	62.57	300	0	P	H
		10360	41.39	-26.91	68.3	51.22	37.67	15.07	62.57	100	360	P	V
802.11a CH 44 5220MHz		10440	41.48	-26.82	68.3	51.22	37.73	15.12	62.59	300	0	P	H
		10440	42.01	-26.29	68.3	51.75	37.73	15.12	62.59	100	360	P	V
802.11a CH 48 5240MHz		10480	41.22	-27.08	68.3	50.88	37.78	15.16	62.6	300	0	P	H
		10480	42.76	-25.54	68.3	52.42	37.78	15.16	62.6	100	360	P	V
Remark	3. No other spurious found. 4. 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		5149.6	57.2	-16.8	74	42.47	34.3	10.89	30.46	279	220	P	H
		5149.92	47.95	-6.05	54	33.22	34.3	10.89	30.46	279	220	A	H
	*	5176	106.52	-	-	91.66	34.37	10.93	30.44	279	220	P	H
		5176	98.99	-	-	84.13	34.37	10.93	30.44	279	220	A	H
		5105.6	56.87	-17.13	74	42.27	34.23	10.86	30.49	112	179	P	V
		5149.44	47.11	-6.89	54	32.38	34.3	10.89	30.46	112	179	A	V
	*	5182	105.05	-	-	90.19	34.37	10.93	30.44	112	179	P	V
		5182	97.22	-	-	82.36	34.37	10.93	30.44	112	179	A	V
Remark	5. No other spurious found. 6. 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	41.12	-27.18	68.3	50.95	37.67	15.07	62.57	300	0	P	H
		10360	41.52	-26.78	68.3	51.35	37.67	15.07	62.57	100	360	P	V
802.11n HT20 CH 44 5220MHz		10440	41.31	-26.99	68.3	51.05	37.73	15.12	62.59	300	0	P	H
		10440	42.24	-26.06	68.3	51.98	37.73	15.12	62.59	100	360	P	V
802.11n HT20 CH 48 5240MHz		10480	41.77	-26.53	68.3	51.43	37.78	15.16	62.6	300	0	P	H
		10480	42.06	-26.24	68.3	51.72	37.78	15.16	62.6	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		5146.88	59.43	-14.57	74	44.7	34.3	10.89	30.46	274	193	P	H
		5149.92	49.86	-4.14	54	35.13	34.3	10.89	30.46	274	193	A	H
	*	5188	101.06	-	-	86.2	34.37	10.93	30.44	274	193	P	H
		5188	93.89	-	-	79.03	34.37	10.93	30.44	274	193	A	H
		5362.2	55.25	-18.75	74	39.77	34.7	11.13	30.35	274	193	P	H
		5397.84	45.75	-8.25	54	30.21	34.7	11.17	30.33	274	193	A	H
		5144.48	60.85	-13.15	74	46.12	34.3	10.89	30.46	311	145	P	V
		5149.92	49.78	-4.22	54	35.05	34.3	10.89	30.46	311	145	A	V
	*	5188	101.77	-	-	86.91	34.37	10.93	30.44	311	145	P	V
		5188	94.4	-	-	79.54	34.37	10.93	30.44	311	145	A	V
		5395.86	54.95	-19.05	74	39.41	34.7	11.17	30.33	311	145	P	V
		5372.1	45.53	-8.47	54	30.05	34.7	11.13	30.35	311	145	A	V
Remark	7. No other spurious found. 8. 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	42.03	-26.27	68.3	51.85	37.68	15.08	62.58	300	0	P	H
		10380	40.86	-27.44	68.3	50.68	37.68	15.08	62.58	273	2	P	V
802.11n HT40 CH 46 5230MHz		10460	41.62	-26.68	68.3	51.32	37.75	15.14	62.59	300	0	P	H
		10460	41.15	-27.15	68.3	50.85	37.75	15.14	62.59	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 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 64 5320MHz		5350.6	57.46	-16.54	74	42	34.7	11.11	30.35	307	227	P	H
		5350.2	47.57	-6.43	54	32.11	34.7	11.11	30.35	307	227	A	H
		5320	107.3	-	-	91.96	34.63	11.08	30.37	307	227	P	H
		5320	99.51	-	-	84.17	34.63	11.08	30.37	307	227	A	H
		5359	56.26	-17.74	74	40.8	34.7	11.11	30.35	103	112	P	V
		5350.4	48.04	-5.96	54	32.58	34.7	11.11	30.35	103	112	A	V
		5320	107.71	-	-	92.37	34.63	11.08	30.37	103	112	P	V
		5320	100.41	-	-	85.07	34.63	11.08	30.37	103	112	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	41.03	-27.27	68.3	50.63	37.82	15.19	62.61	300	0	P	H
		10520	42.71	-25.59	68.3	52.31	37.82	15.19	62.61	100	360	P	V
802.11a CH 60 5300MHz		10600	42.78	-31.22	74	52.25	37.9	15.26	62.63	300	0	P	H
		10600	41.97	-32.03	74	51.44	37.9	15.26	62.63	100	360	P	V
802.11a CH 64 5320MHz		10640	41.54	-32.46	74	50.99	37.9	15.29	62.64	300	0	P	H
		10640	42.19	-31.81	74	51.64	37.9	15.29	62.64	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 64 5320MHz		5360.7	55.73	-18.27	74	40.25	34.7	11.13	30.35	279	224	P	H
		5350.8	46.8	-7.2	54	31.34	34.7	11.11	30.35	279	224	A	H
	*	5320	104.67	-	-	89.33	34.63	11.08	30.37	279	224	P	H
		5320	96.86	-	-	81.52	34.63	11.08	30.37	279	224	A	H
		5356.2	57.1	-16.9	74	41.64	34.7	11.11	30.35	247	119	P	V
		5350.5	47.49	-6.51	54	32.03	34.7	11.11	30.35	247	119	A	V
	*	5320	106.64	-	-	91.3	34.63	11.08	30.37	247	119	P	V
		5320	98.94	-	-	83.6	34.63	11.08	30.37	247	119	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	43.37	-24.93	68.3	52.97	37.82	15.19	62.61	300	0	P	H
		10520	42.76	-25.54	68.3	52.36	37.82	15.19	62.61	100	360	P	V
802.11n HT20 CH 60 5300MHz		10600	41.41	-32.59	74	50.88	37.9	15.26	62.63	300	0	P	H
		10600.01	41.61	-32.39	74	51.08	37.9	15.26	62.63	100	360	P	V
802.11n HT20 CH 64 5320MHz		10640	41.01	-32.99	74	50.46	37.9	15.29	62.64	300	0	P	H
		10640	42.11	-31.89	74	51.56	37.9	15.29	62.64	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 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)
WIFI 802.11n HT40		5114.4	55.7	-18.3	74	41.1	34.23	10.86	30.49	294	222	P	H
		5112.64	46.76	-7.24	54	32.16	34.23	10.86	30.49	294	222	A	H
	*	5314	100.72	-	-	85.38	34.63	11.08	30.37	294	222	P	H
		5314	93.43	-	-	78.09	34.63	11.08	30.37	294	222	A	H
		5354.6	60.81	-13.19	74	45.35	34.7	11.11	30.35	294	222	P	H
		5350.9	48.34	-5.66	54	32.88	34.7	11.11	30.35	294	222	A	H
802.11n HT40 CH 62 5310MHz		5105.44	55.33	-18.67	74	40.78	34.2	10.84	30.49	277	119	P	V
		5115.36	46.67	-7.33	54	32.07	34.23	10.86	30.49	277	119	A	V
	*	5314	103.79	-	-	88.45	34.63	11.08	30.37	277	119	P	V
		5314	95.87	-	-	80.53	34.63	11.08	30.37	277	119	A	V
		5354.2	63.04	-10.96	74	47.58	34.7	11.11	30.35	277	119	P	V
		5350.8	49.5	-4.5	54	34.04	34.7	11.11	30.35	277	119	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	40.97	-27.33	68.3	50.54	37.83	15.21	62.61	100	360	P	H
		10540	41.55	-26.75	68.3	51.12	37.83	15.21	62.61	100	360	P	V
802.11n HT40 CH 62 5310MHz		10620	39.81	-34.19	74	49.27	37.9	15.27	62.63	100	360	P	H
		10620	42.18	-31.82	74	51.64	37.9	15.27	62.63	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 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 100 5500MHz		5427.6	55.61	-18.39	74	40.02	34.7	11.19	30.3	303	67	P	H
		5468.08	56.27	-12.03	68.3	40.62	34.7	11.24	30.29	303	67	P	H
		5459.12	47.18	-6.82	54	31.55	34.7	11.22	30.29	303	67	A	H
	*	5500	107.3	-	-	91.6	34.7	11.28	30.28	303	67	P	H
		5500	99.43	-	-	83.73	34.7	11.28	30.28	303	67	A	H
		5454.32	56.44	-17.56	74	40.81	34.7	11.22	30.29	108	105	P	V
		5466.64	56.91	-11.39	68.3	41.26	34.7	11.24	30.29	108	105	P	V
		5459.28	47.46	-6.54	54	31.83	34.7	11.22	30.29	108	105	A	V
	*	5500	107.12	-	-	91.42	34.7	11.28	30.28	108	105	P	V
		5500	99.83	-	-	84.13	34.7	11.28	30.28	108	105	A	V
802.11a CH 140 5700MHz		5725.64	58.15	-10.15	68.3	42.04	34.77	11.58	30.24	304	63	P	H
	*	5698	105.53	-	-	89.54	34.7	11.52	30.23	304	63	P	H
		5698	97.77	-	-	81.78	34.7	11.52	30.23	304	63	A	H
		5727.96	60.36	-7.94	68.3	44.25	34.77	11.58	30.24	312	167	P	V
	*	5698	106.9	-	-	90.91	34.7	11.52	30.23	312	167	P	V
		5698	99.7	-	-	83.71	34.7	11.52	30.23	312	167	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	42.12	-31.88	74	51.38	37.9	15.57	62.73	300	0	P	H
		11000	41.91	-32.09	74	51.17	37.9	15.57	62.73	100	360	P	V
802.11a CH 116 5580MHz		11160	41.96	-32.04	74	51.1	37.9	15.73	62.77	300	0	P	H
		11160	41.82	-32.18	74	50.96	37.9	15.73	62.77	100	360	P	V
802.11a CH 140 5700MHz		11400	42.11	-31.89	74	50.99	38	15.95	62.83	300	0	P	H
		11400	41.13	-32.87	74	50.01	38	15.95	62.83	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		5410.48	55.77	-18.23	74	40.22	34.7	11.17	30.32	291	231	P	H
		5463.92	56.44	-11.86	68.3	40.79	34.7	11.24	30.29	291	231	P	H
		5458.16	47.12	-6.88	54	31.49	34.7	11.22	30.29	291	231	A	H
	*	5494	104.8	-	-	89.12	34.7	11.26	30.28	291	231	P	H
		5494	97.18	-	-	81.5	34.7	11.26	30.28	291	231	A	H
		5458.96	56.26	-17.74	74	40.63	34.7	11.22	30.29	106	106	P	V
		5466.64	57.42	-10.88	68.3	41.77	34.7	11.24	30.29	106	106	P	V
		5459.6	47.35	-6.65	54	31.72	34.7	11.22	30.29	106	106	A	V
	*	5506	105.16	-	-	89.44	34.7	11.28	30.26	106	106	P	V
		5506	97.53	-	-	81.81	34.7	11.28	30.26	106	106	A	V
802.11n HT20 CH 140 5700MHz		5729.56	57.41	-10.89	68.3	41.3	34.77	11.58	30.24	275	65	P	H
	*	5698	103.63	-	-	87.64	34.7	11.52	30.23	275	65	P	H
		5698	96.4	-	-	80.41	34.7	11.52	30.23	275	65	A	H
		5725.32	58.79	-9.51	68.3	42.68	34.77	11.58	30.24	303	164	P	V
	*	5698	105.16	-	-	89.17	34.7	11.52	30.23	303	164	P	V
		5698	97.68	-	-	81.69	34.7	11.52	30.23	303	164	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	42.27	-31.73	74	51.53	37.9	15.57	62.73	300	0	P	H
		11000	42.61	-31.39	74	51.87	37.9	15.57	62.73	100	360	P	V
802.11n HT20 CH 116 5580MHz		11600	42.37	-31.63	74	50.7	38.2	16.15	62.68	300	0	P	H
		11600	43.56	-30.44	74	51.89	38.2	16.15	62.68	100	360	P	V
802.11n HT20 CH 140 5700MHz		11400	42.9	-31.1	74	51.78	38	15.95	62.83	300	0	P	H
		11400	42.33	-31.67	74	51.21	38	15.95	62.83	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		5452.08	56.66	-17.34	74	41.03	34.7	11.22	30.29	289	230	P	H
		5465.68	62.5	-5.8	68.3	46.85	34.7	11.24	30.29	289	230	P	H
		5458.8	47.64	-6.36	54	32.01	34.7	11.22	30.29	289	230	A	H
	*	5506	101.04	-	-	85.32	34.7	11.28	30.26	289	230	P	H
		5506	93.9	-	-	78.18	34.7	11.28	30.26	289	230	A	H
		5737.88	56.85	-11.45	68.3	40.7	34.8	11.61	30.26	289	230	P	H
		5456.4	57.56	-16.44	74	41.93	34.7	11.22	30.29	100	109	P	V
		5468.56	60.01	-8.29	68.3	44.36	34.7	11.24	30.29	100	109	P	V
		5457.2	47.94	-6.06	54	32.31	34.7	11.22	30.29	100	109	A	V
	*	5500	101.99	-	-	86.29	34.7	11.28	30.28	100	109	P	V
		5500	94.2	-	-	78.5	34.7	11.28	30.28	100	109	A	V
		5748.44	57.05	-11.25	68.3	40.9	34.8	11.61	30.26	100	109	P	V
802.11n HT40 CH 134 5670MHz		5428.56	56	-18	74	40.4	34.7	11.2	30.3	278	66	P	H
		5466.64	55.83	-12.47	68.3	40.18	34.7	11.24	30.29	278	66	P	H
		5448.08	46.28	-7.72	54	30.66	34.7	11.22	30.3	278	66	A	H
	*	5668	101.33	-	-	85.36	34.7	11.48	30.21	278	66	P	H
		5668	93.44	-	-	77.47	34.7	11.48	30.21	278	66	A	H
		5752.04	57.74	-10.56	68.3	41.53	34.83	11.64	30.26	278	66	P	H
		5390.48	56.68	-17.32	74	41.16	34.7	11.15	30.33	275	164	P	V
		5465.2	54.52	-13.78	68.3	38.87	34.7	11.24	30.29	275	164	P	V
		5457.68	46.32	-7.68	54	30.69	34.7	11.22	30.29	275	164	A	V
	*	5662	102.63	-	-	86.69	34.7	11.45	30.21	275	164	P	V
		5662	95.23	-	-	79.29	34.7	11.45	30.21	275	164	A	V
		5728.84	62.37	-5.93	68.3	46.26	34.77	11.58	30.24	275	164	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 (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	40.91	-33.09	74	50.15	37.9	15.59	62.73	100	360	P	H
		11020	42.04	-31.96	74	51.28	37.9	15.59	62.73	100	360	P	V
802.11n HT40 CH 110 5550MHz		11100	41.86	-32.14	74	51.04	37.9	15.67	62.75	100	360	P	H
		11100	42.03	-31.97	74	51.21	37.9	15.67	62.75	100	360	P	V
802.11n HT40 CH 134 5670MHz		11340	41.6	-32.4	74	50.59	37.93	15.89	62.81	100	360	P	H
		11340	40.45	-33.55	74	49.44	37.93	15.89	62.81	297	32	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 (fundamental @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 144 5720MHz	*	5722	104.87	-	-	88.76	34.77	11.58	30.24	301	76	P	H
		5722	98.28	-	-	82.17	34.77	11.58	30.24	301	76	A	H
	*	5722	106.41	-	-	90.3	34.77	11.58	30.24	316	167	P	V
		5722	99.11	-	-	83	34.77	11.58	30.24	316	167	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 3 - Straddle Channel

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 144 5720MHz		11440	41.25	-32.75	74	50.06	38.03	15.99	62.83	100	360	P	H
		11440	41.8	-32.2	74	50.61	38.03	15.99	62.83	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 (Fundamental @ 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 144 5720MHz	*	5722	102.97	-	-	86.86	34.77	11.58	30.24	274	74	P	H
		5722	96.34	-	-	80.23	34.77	11.58	30.24	274	74	A	H
	*	5716	103.18	-	-	87.14	34.73	11.55	30.24	287	167	P	V
		5716	96.62	-	-	80.58	34.73	11.55	30.24	287	167	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 CH 144 5720MHz		11440	41.06	-32.94	74	49.87	38.03	15.99	62.83	100	360	P	H
		11440	42.35	-31.65	74	51.16	38.03	15.99	62.83	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 (Fundamental @ 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 142 5710MHz	*	5722	99.53	-	-	83.42	34.77	11.58	30.24	275	74	P	H
		5722	92.42	-	-	76.31	34.77	11.58	30.24	275	74	A	H
	*	5704	100.18	-	-	84.13	34.73	11.55	30.23	287	166	P	V
		5704	93.15	-	-	77.1	34.73	11.55	30.23	287	166	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 CH 142 5710MHz		11420	41.36	-32.64	74	50.2	38.02	15.97	62.83	300	0	P	H
		11420	41.99	-32.01	74	50.83	38.02	15.97	62.83	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Co-location

WIFI + WWAN (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)
802.11n HT40 CH 38 5190MHz + LTE Band7 QPSK 20M(BW)		5148.32	58.23	-15.77	74	44.98	34.07	10.43	31.25	262	4	P	H
		5149.98	47.79	-6.21	54	34.54	34.07	10.43	31.25	262	4	A	H
		5194	98.74	-	-	85.35	34.14	10.51	31.26	262	4	P	H
		5194	90.8	-	-	77.41	34.14	10.51	31.26	262	4	A	H
		5356.44	53.24	-20.76	74	39.48	34.33	10.71	31.28	262	4	P	H
		5372.82	43.89	-10.11	54	30.09	34.35	10.73	31.28	262	4	A	H
		5146.56	57.44	-16.56	74	44.19	34.07	10.43	31.25	137	178	P	V
		5149.98	48.2	-5.8	54	34.95	34.07	10.43	31.25	137	178	A	V
		5194	99.27	-	-	85.88	34.14	10.51	31.26	137	178	P	V
		5194	91.73	-	-	78.34	34.14	10.51	31.26	137	178	A	V
		5351.94	53.73	-20.27	74	39.97	34.33	10.71	31.28	137	178	P	V
		5375.88	44.12	-9.88	54	30.32	34.35	10.73	31.28	137	178	A	V

WIFI + WWAN (Harmonic @ 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)
802.11n HT40 CH 38 5190MHz + LTE Band7 QPSK 20M(BW)		10380	42.03	-26.27	68.3	51.85	37.68	15.08	62.58	300	0	P	H
		10380	40.86	-27.44	68.3	50.68	37.68	15.08	62.58	273	2	P	V
Remark	3. No other spurious found. 4. All results are PASS against Peak and Average limit line.												

Band 3 - Straddle Channel

Emission below 1GHz

WIFI 802.11n HT40 (LF @ 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)
802.11n HT40 LF		75.59	23.85	-16.15	40	42.63	12.7	1.44	32.92	-	-	P	H
		145.43	31.21	-12.29	43.5	45.36	16.87	1.94	32.96	100	0	P	H
		217.21	31.68	-14.32	46	46.96	15.34	2.32	32.94	-	-	P	H
		256.98	24.32	-21.68	46	35.33	19.46	2.52	32.99	-	-	P	H
		499.48	22.15	-23.85	46	28.47	23.48	3.44	33.24	-	-	P	H
		838.98	24.63	-21.37	46	26.86	26.26	4.19	32.68	-	-	P	H
		45.52	22.35	-17.65	40	38.23	15.9	1.18	32.96	-	-	P	V
		96.93	23.77	-19.73	43.5	38.79	16.27	1.64	32.93	-	-	P	V
		116.33	27.02	-16.48	43.5	40.26	17.95	1.74	32.93	-	-	P	V
		201.69	28.68	-14.82	43.5	43.78	15.57	2.24	32.91	-	-	P	V
		262.8	34.73	-11.27	46	45.51	19.67	2.55	33	100	360	P	V
		615.88	22.26	-23.74	46	27.12	24.65	3.82	33.33	-	-	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 CH 01 2412MHz		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		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)

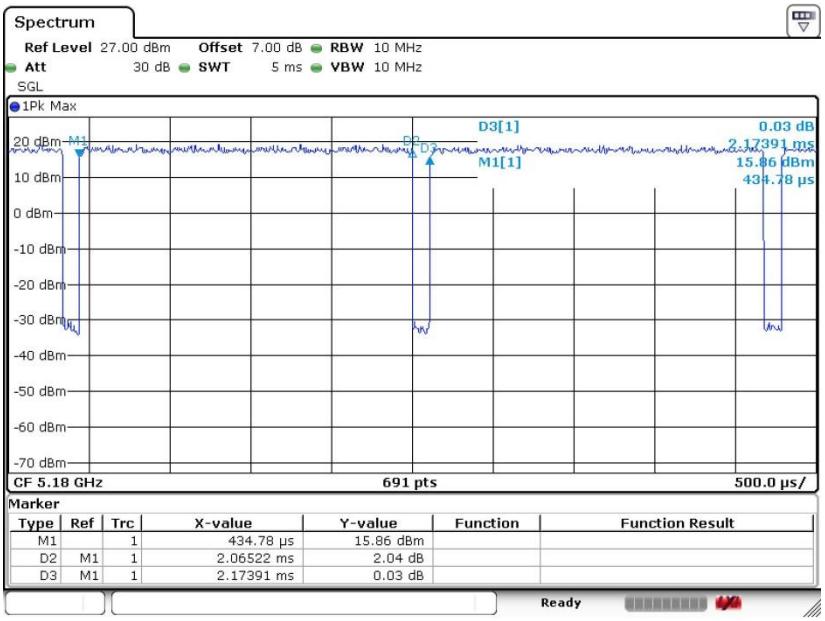
= -10.46(dB)

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

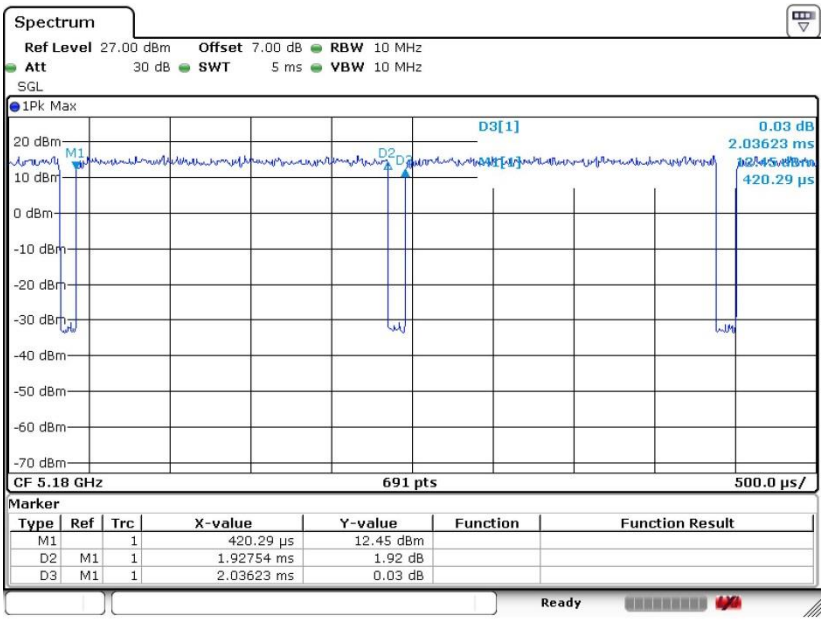
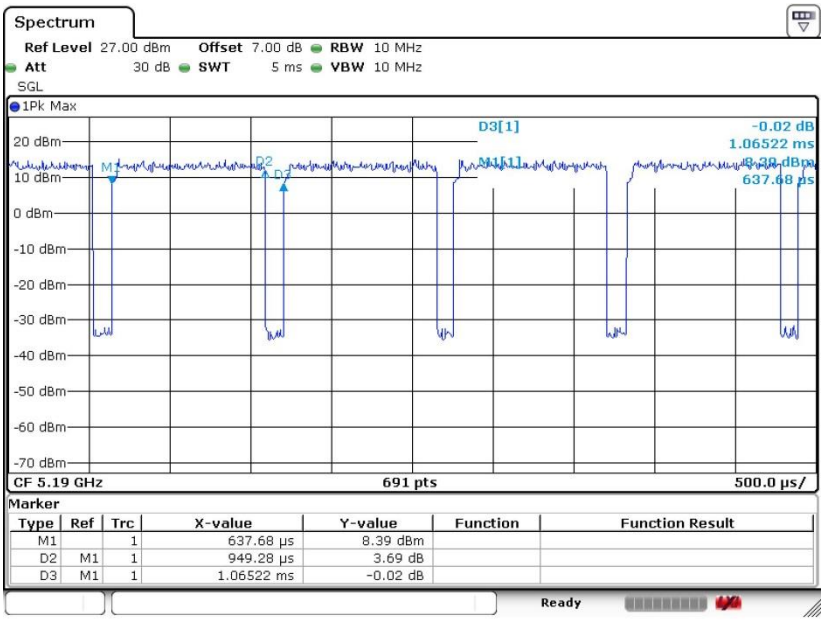
Appendix C. Duty Cycle Plots

Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
802.11a	95.00	2.0652	0.4842	0.51KHz
802.11n HT20	94.66	1.9275	0.5188	0.56KHz
802.11n HT40	89.12	0.9493	1.0534	1.1KHz

802.11a



802.11n HT20



802.11n HT40