TEST REPORT

Applicant:	JUKI CORPORATION
Address of Applicant:	2-11-1 Tsurumaki, Tama-shi, Tokyo, Japan
Manufacturer/Factory:	1. SHANGHAI JUKI SEWING MACHINE CO., LTD. 2. JUKI(VIETNAM) CO., LTD.
Address of Manufacturer/Factory:	1. 580 Dong Xue Road Yuyangbang Cun Donging Town Song Jiang 201619 Shanghai, China 2. TAN THUAN EXPORT PROCESSING ZONE, TAN THUAN DONG WARD, DISTRIC 7, HO CHI MINH CITY, Vietnam

Equipment Under Test (EUT)

Product Name:	Sewing Machine
Model No.:	HC501-01, HC501-11
Trade Mark:	JUKI
FCC ID:	CXJ-HC501X1
IC:	26520-HC501X1
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.247 RSS-Gen Issue 5 RSS-247 Issue 2
Date of sample receipt:	Aug. 19, 2020
Date of Test:	Aug. 19, 2020~Sep. 07, 2020
Date of report issued:	Sep. 08, 2020
Test Result :	PASS *

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Robinson Lo
Laboratory Manager

2 Version

Version No.	Date	Description
00	*Sep. 08, 2020*	*Original*

Prepared By: ***Date:*** *Sep. 08, 2020*

Project Engineer

Check By: ***Date:*** *Sep. 08, 2020*

Reviewer

3 Contents

4 Test Summary

Test Item	Section	Result
Antenna requirement	FCC part 15.203/15.247 (c) RSS-Gen Section 6.8	Pass
AC Power Line Conducted Emission	FCC part 15.207 RSS-Gen Section 8.8	Pass
Conducted Peak Output Power	FCC part 15.247 (b)(3) RSS-247 Section 5.4(d)	Pass
Channel Bandwidth & 99% OCB	FCC part 15.247 (a)(2) RSS-247 Section 5.2(a) & 6.7	Pass
Power Spectral Density	FCC part 15.247 (e) RSS-247 Section 5.2(b)	Pass
Band Edge	FCC part 15.247(d) RSS-247 Section 5.5	Pass
Spurious Emission	FCC part 15.205/15.209 RSS-Gen Section 3.3 & 8.9 & 8.10	Pass
Frequency stability	RSS-Gen Section 6.11& Section 8.11	PASS

Remark: Test according to ANSI C63.10:2013 and RSS-Gen

Pass: The EUT complies with the essential requirements in the standard.

Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	30MHz-200MHz	3.8039dB	(1)
Radiated Emission	200MHz-1GHz	3.9679dB	(1)
Radiated Emission	1GHz-18GHz	4.29dB	(1)
Radiated Emission	18GHz-40GHz	3.30dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	3.44dB	(1)
Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.			

5 General Information

5.1 General Description of EUT

Product Name:	Sewing Machine
Model No.:	HC501-01
Serial No.:	HC501-11
Hardware version:	N/A
Software version:	N/A
Test sample(s) ID:	GTS202008000224-01
Sample(s) Status	Engineer sample
Channel numbers:	802.11b/802.11g /802.11n(HT20): 11
Channel separation:	5MHz
Modulation technology:	802.11b: Direct Sequence Spread Spectrum (DSSS) 802.11g/802.11n(HT20): Orthogonal Frequency Division Multiplexing (OFDM)
Antenna Type:	Integral antenna
Antenna gain:	3dBi(declare by applicant)
Power supply:	INPUT: 100-240V~ 50/60Hz 0.6A Max OUTPUT: DC 12V 2000mA

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
3	2422MHz	6	2437MHz	9	2452MHz		

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Test channel	**Frequency (MHz)**
	802.11b/802.11g/802.11n(HT20)
Lowest channel	2412MHz
Middle channel	2437MHz
Highest channel	2462MHz

5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode

Remark: During the test, the dutycycle >98%, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data. New battery is used during all test.

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Pre-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.

Mode	802.11b	802.11g	802.11n(HT20)
Data rate	1Mbps	6Mbps	6.5Mbps

5.3 Description of Support Units

Manufacturer	Description	Model	Serial Number
-	-	-	-

5.4 Deviation from Standards

None.

5.5 Abnormalities from Standard Conditions

None.

5.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **FCC —Registration No.: 381383**

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 381383.

● **IC —Registration No.: 9079A**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A

● **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). LAB CODE:600179-0

5.7 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.
Address: No. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102
Tel: 0755-27798480
Fax: 0755-27798960

5.8 Additional Instructions

Test Software	Ampak RFTestTool (provided by manufacturer)
Power level setup	Default

6 Test Instruments list

Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July. 02 2020	July. 01 2025
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June. 25 2020	June. 24 2021
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 25 2020	June. 24 2021
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June. 25 2020	June. 24 2021
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 25 2020	June. 24 2021
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 25 2020	June. 24 2021
9	Coaxial Cable	GTS	N/A	GTS211	June. 25 2020	June. 24 2021
10	Coaxial cable	GTS	N/A	GTS210	June. 25 2020	June. 24 2021
11	Coaxial Cable	GTS	N/A	GTS212	June. 25 2020	June. 24 2021
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 25 2020	June. 24 2021
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June. 25 2020	June. 24 2021
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 25 2020	June. 24 2021
15	Band filter	Amindeon	82346	GTS219	June. 25 2020	June. 24 2021
16	Power Meter	Anritsu	ML2495A	GTS540	June. 25 2020	June. 24 2021
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 25 2020	June. 24 2021
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June. 25 2020	June. 24 2021
19	Splitter	Agilent	11636B	GTS237	June. 25 2020	June. 24 2021
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 25 2020	June. 24 2021
21	Breitband hornantenne	SCHWARZBECK	BBHA 9170	GTS579	Oct. 19 2019	Oct. 18 2020
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 19 2019	Oct. 18 2020
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 19 2019	Oct. 18 2020
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June. 25 2020	June. 24 2021

Conducted Emission						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May.15 2019	May.14 2022
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 25 2020	June. 24 2021
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June. 25 2020	June. 24 2021
4	ENV216 2-L-V-NETZNACHB.DE	ROHDE&SCHWARZ	ENV216	GTS226	June. 25 2020	June. 24 2021
5	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Thermo meter	KTJ	TA328	GTS233	June. 25 2020	June. 24 2021
8	Absorbing clamp	Elektronik-Feinmechanik	MDS21	GTS229	June. 25 2020	June. 24 2021
9	ISN	SCHWARZBECK	NTFM 8158	GTD565	June. 25 2020	June. 24 2021

RF Conducted Test:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	MXA Signal Analyzer	Agilent	N9020A	GTS566	June. 25 2020	June. 24 2021
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 25 2020	June. 24 2021
3	Spectrum Analyzer	Agilent	E4440A	GTS533	June. 25 2020	June. 24 2021
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	June. 25 2020	June. 24 2021
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	June. 25 2020	June. 24 2021
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	June. 25 2020	June. 24 2021
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	June. 25 2020	June. 24 2021
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	June. 25 2020	June. 24 2021

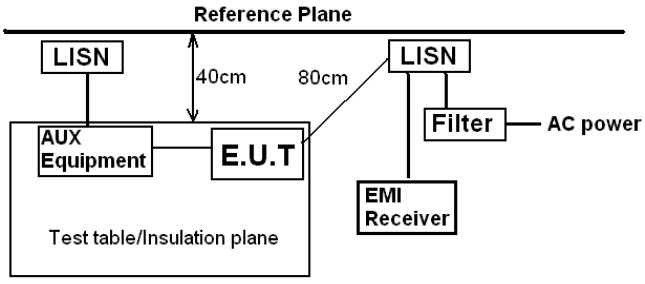
General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	June. 25 2020	June. 24 2021
2	Barometer	ChangChun	DYM3	GTS255	June. 25 2020	June. 24 2021

7 Test results and Measurement Data

7.1 Antenna requirement

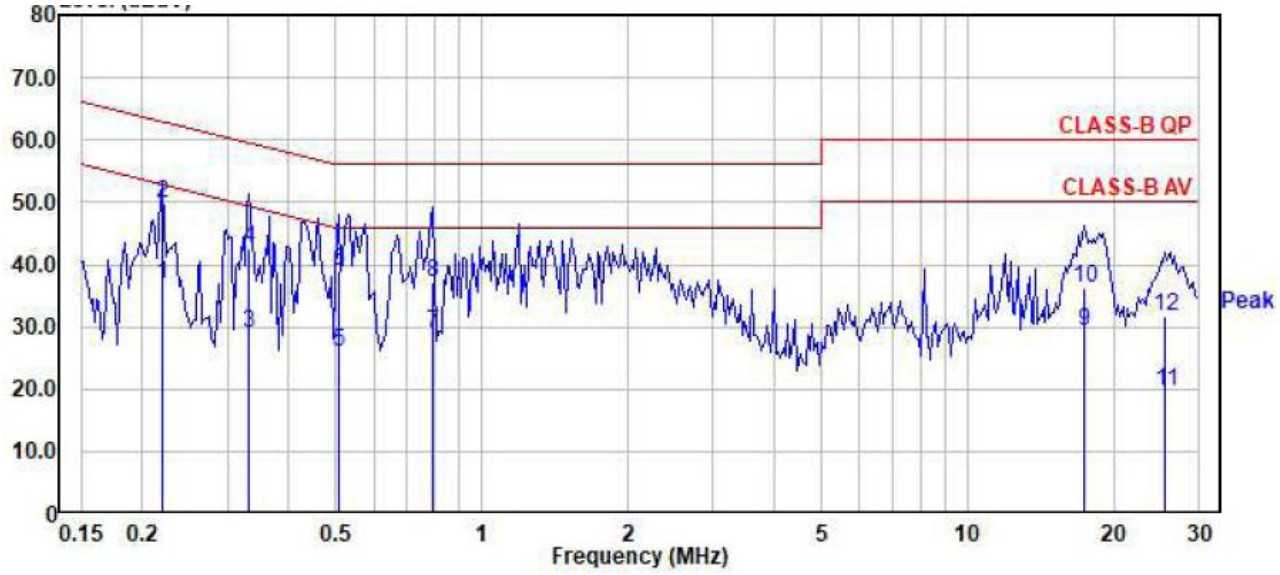
Standard requirement:	FCC Part15 C Section 15.203 /247(c)
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. **15.247(c) (1)(i) requirement:** (i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.	
Standard requirement:	RSS-Gen Section 6.8
A transmitter can only be sold or operated with antennas with which it was approved. When a measurement at the antenna connector is used to determine RF output power, the effective gain of the device's antenna shall be stated, based on measurement or on data from the antenna manufacturer. For transmitters of RF output power of 10 milliwatts or less, only the portion of the antenna gain that is in excess of 6 dBi (6 dB above isotropic gain) shall be added to the measured RF output power to demonstrate compliance with the radiated power limits specified in the applicable standard. For transmitters of output power greater than 10 milliwatts, the total antenna gain shall be added to the measured RF output power to demonstrate compliance to the specified radiated power	
EUT Antenna:	
The antenna is Integral antenna, the best case gain of the antenna is 3dBi, reference to the appendix II for details	

7.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207 RSS-Gen Section 8.8
Test Method:	ANSI C63.10:2013
Test Frequency Range:	150KHz to 30MHz
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto
Limit:	Frequency range (MHz) / Limit (dBuV): Quasi-peak / Average 0.15-0.5: 66 to 56* / 56 to 46* 0.5-5: 56 / 46 5-30: 60 / 50 * Decreases with the logarithm of the frequency.
Test setup:	 *Remark* *E.U.T: Equipment Under Test* *LISN: Line Impedence Stabilization Network* *Test table height=0.8m*
Test procedure:	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2013 on conducted measurement.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test environment:	Temp.: 25 °C / Humid.: 52% / Press.: 1012mbar
Test voltage:	AC 120V 60Hz
Test results:	Pass

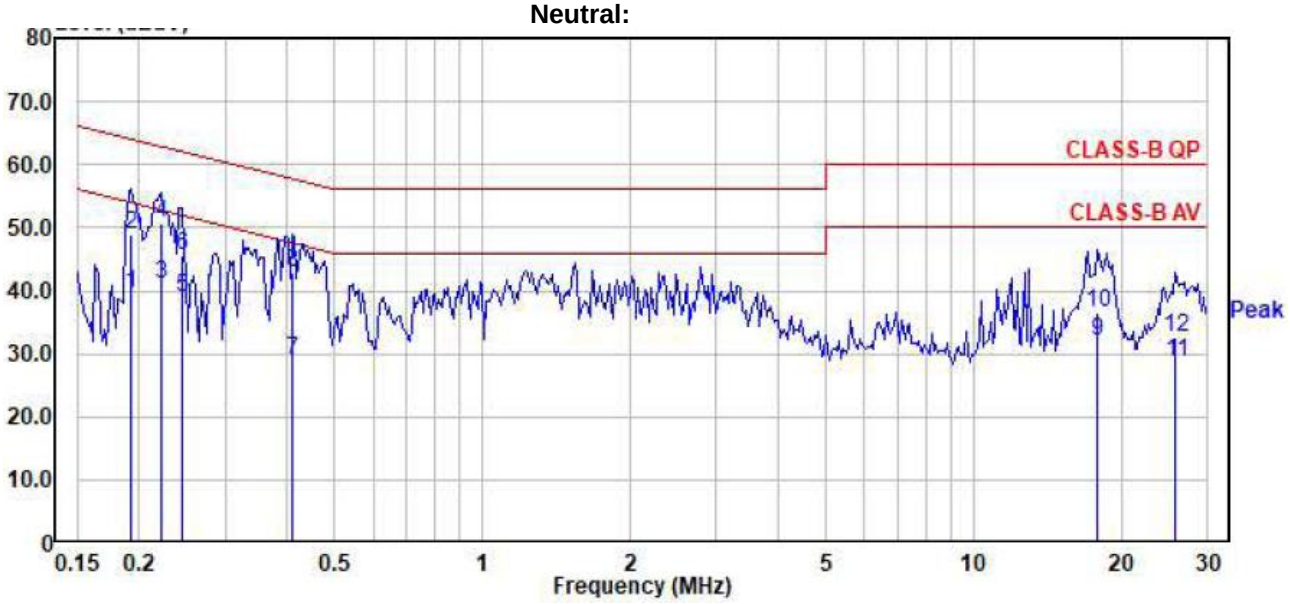
Measurement data

Line:



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.220	35.94	0.81	36.75	52.83	-16.08	Average
2	0.220	49.14	0.81	49.95	62.83	-12.88	QP
3	0.332	28.13	0.81	28.94	49.40	-20.46	Average
4	0.332	41.74	0.81	42.55	59.40	-16.85	QP
5	0.507	25.29	0.82	26.11	46.00	-19.89	Average
6	0.507	38.10	0.82	38.92	56.00	-17.08	QP
7	0.792	28.13	0.84	28.97	46.00	-17.03	Average
8	0.792	36.24	0.84	37.08	56.00	-18.92	QP
9	17.475	28.14	1.06	29.20	50.00	-20.80	Average
10	17.475	35.09	1.06	36.15	60.00	-23.85	QP
11	25.591	17.91	1.62	19.53	50.00	-30.47	Average
12	25.591	29.98	1.62	31.60	60.00	-28.40	QP

Neutral:

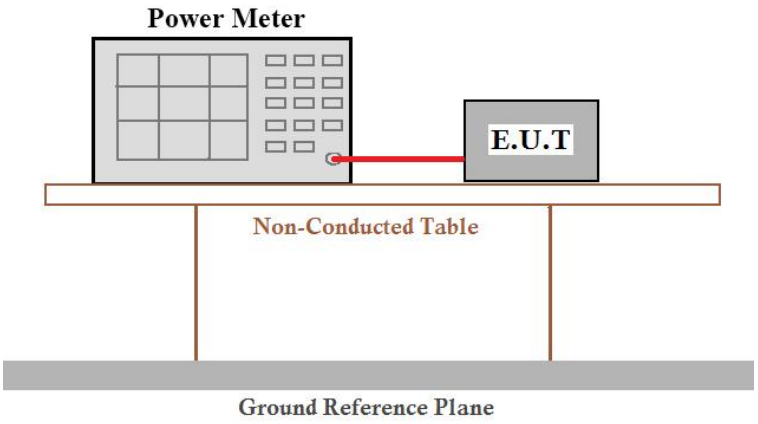


	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.193	38.77	0.82	39.59	53.89	-14.30	Average
2	0.193	48.00	0.82	48.82	63.89	-15.07	QP
3	0.222	40.13	0.82	40.95	52.74	-11.79	Average
4	0.222	49.86	0.82	50.68	62.74	-12.06	QP
5	0.244	38.13	0.82	38.95	51.95	-13.00	Average
6	0.244	44.92	0.82	45.74	61.95	-16.21	QP
7	0.410	28.17	0.81	28.98	47.64	-18.66	Average
8	0.410	42.00	0.81	42.81	57.64	-14.83	QP
9	17.849	31.18	0.96	32.14	50.00	-17.86	Average
10	17.849	35.70	0.96	36.66	60.00	-23.34	QP
11	25.864	27.44	1.34	28.78	50.00	-21.22	Average
12	25.864	31.36	1.34	32.70	60.00	-27.30	QP

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level =Receiver Read level + LISN Factor + Cable Loss
4. *If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.*

7.3 Conducted Peak Output Power

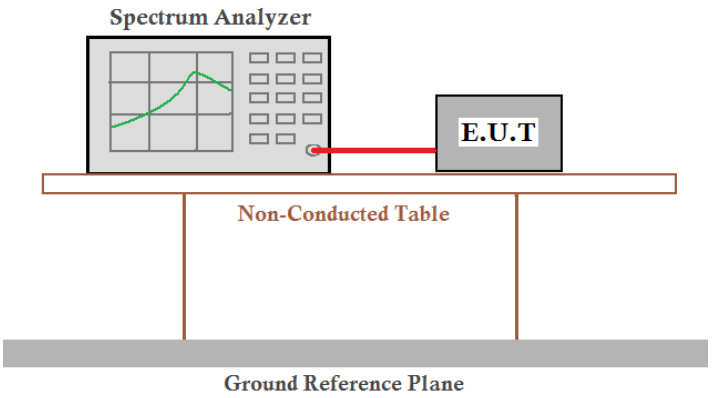
Test Requirement :	FCC Part15 C Section 15.247 (b)(3) RSS-247 Section 5.4(d)
Test Method :	KDB558074 D01 DTS Meas Guidance v05r02 ANSI C63.10:2013 and RSS-Gen
Limit:	30dBm 36dBm(4W for e.i.r.p)
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

Test CH	Peak Output Power (dBm)			Limit(dBm)	Result
	802.11b	802.11g	802.11n(HT20)		
Lowest	13.69	11.37	10.73	30.00	Pass
Middle	13.11	11.09	10.45		
Highest	12.74	10.63	10.31		

Test CH	e.i.r.p (dBm)			Limit(dBm)	Result
	802.11b	802.11g	802.11n(HT20)		
Lowest	16.69	14.37	13.73	36.00	Pass
Middle	16.11	14.09	13.45		
Highest	15.74	13.63	13.31		

7.4 Channel Bandwidth & 99% Occupy Bandwidth

Test Requirement :	FCC Part15 C Section 15.247 (a)(2) RSS-Gen Section 6.7 & RSS-247 Section 5.2(a)
Test Method :	KDB558074 D01 DTS Meas Guidance v05r02 ANSI C63.10:2013 and RSS-Gen
Limit:	>500KHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

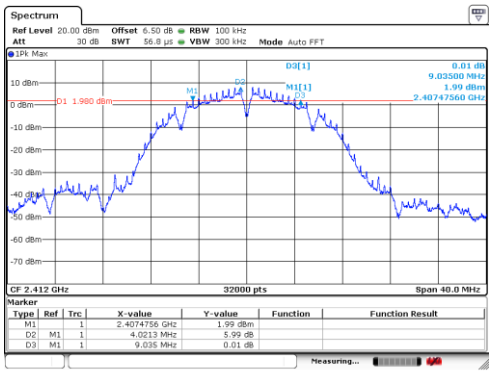
Test CH	Channel Bandwidth (MHz)			Limit(KHz)	Result
	802.11b	802.11g	802.11n(HT20)		
Lowest	9.0350	15.1213	15.1100	>500	Pass
Middle	9.0375	15.1225	15.1100		
Highest	9.0325	15.1138	15.1125		

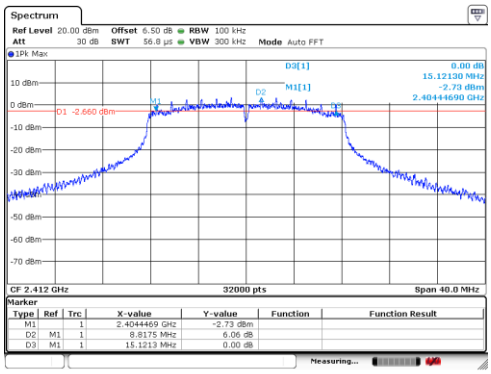
Test CH	99% Occupy Bandwidth (MHz)			Limit(KHz)	Result
	802.11b	802.11g	802.11n(HT20)		
Lowest	14.01625	16.50750	17.53375	>500	Pass
Middle	14.01750	16.49125	17.57000		
Highest	14.04875	16.51625	17.54625		

Test plot as follows:

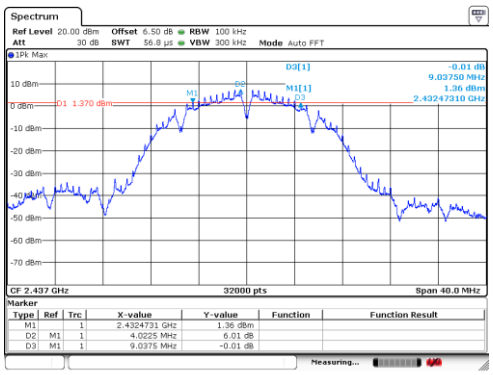
-6dB BW:

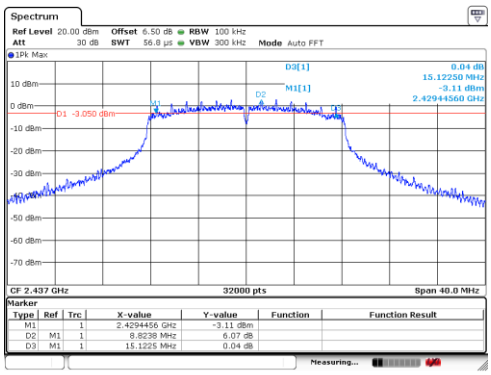
Test mode:	802.11b	Test mode:	802.11g



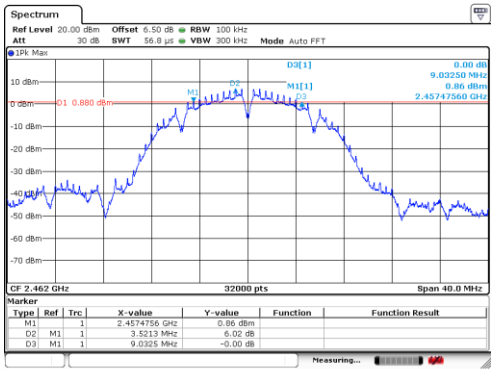


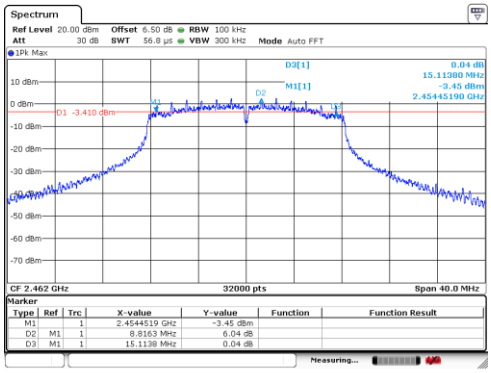
Lowest channel





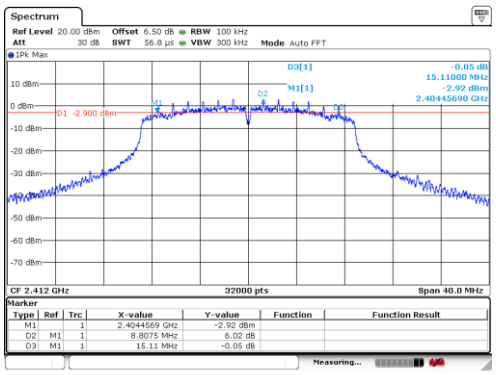
Middle channel



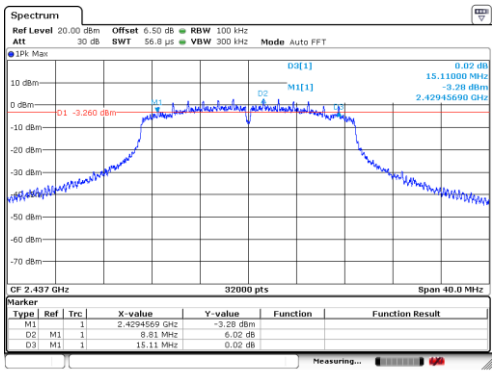


Highest channel

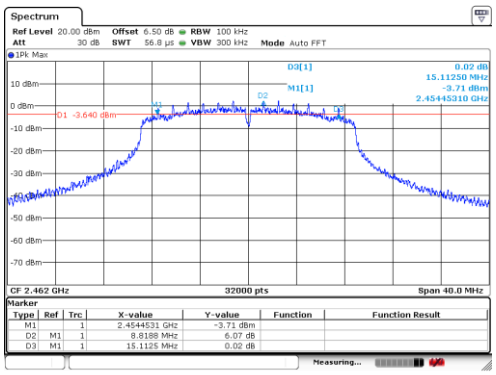
Test mode:	802.11n(HT20)



Lowest channel



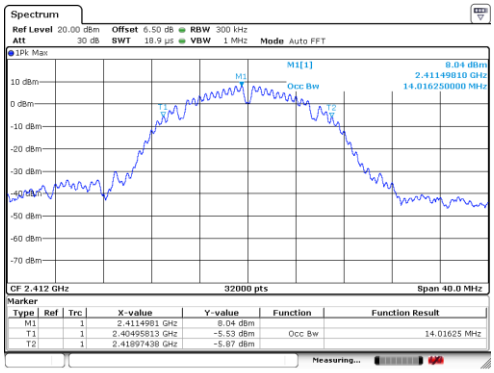
Middle channel

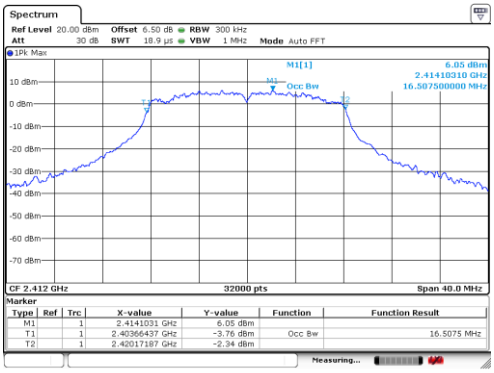


Highest channel

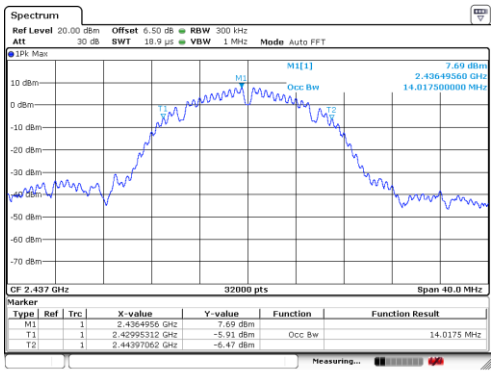
99% BW:

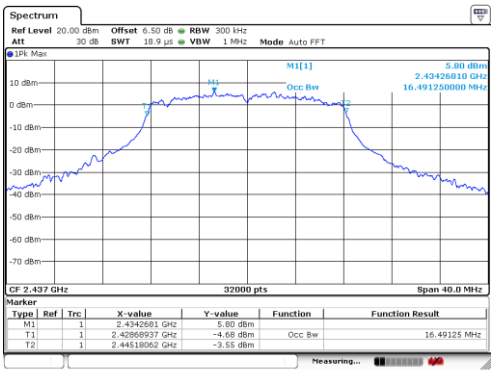
Test mode:	802.11b	Test mode:	802.11g



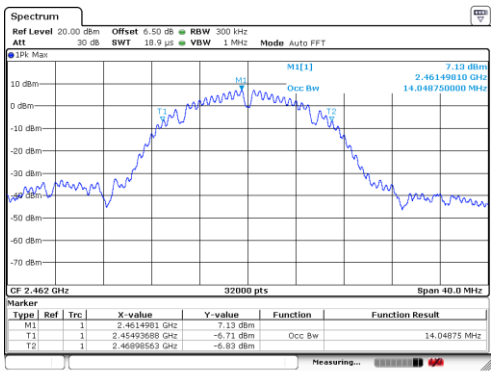


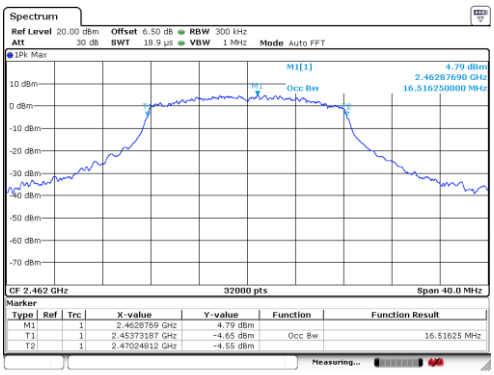
Lowest channel





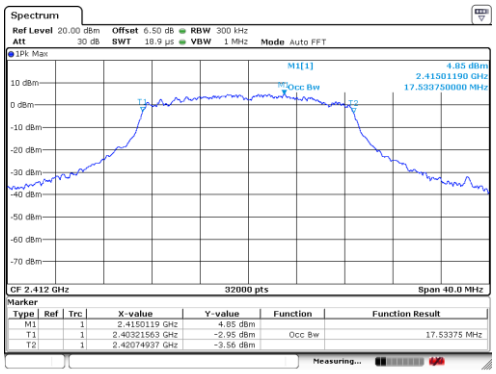
Middle channel



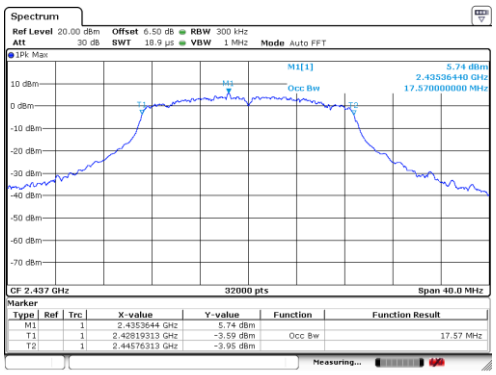


Highest channel

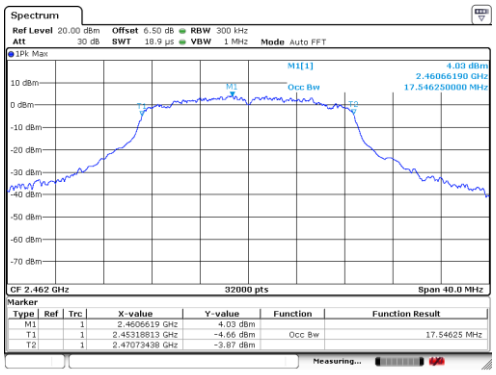
Test mode:	802.11n(HT20)



Lowest channel

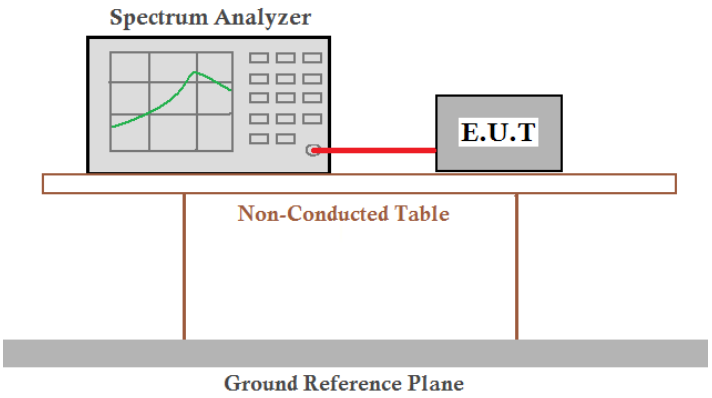


Middle channel



Highest channel

7.5 Power Spectral Density

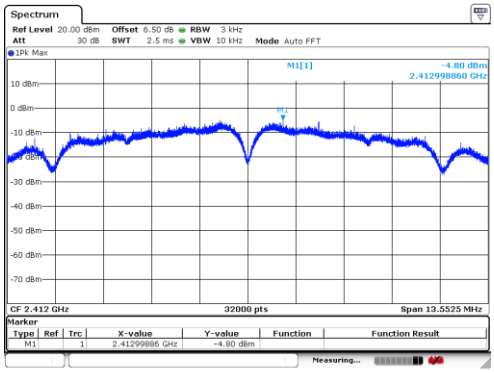
Test Requirement:	FCC Part15 C Section 15.247 (e) RSS-247 Section 5.2(b)
Test Method:	KDB558074 D01 DTS Meas Guidance v05r02 ANSI C63.10:2013 and RSS-Gen
Limit:	8dBm/3kHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

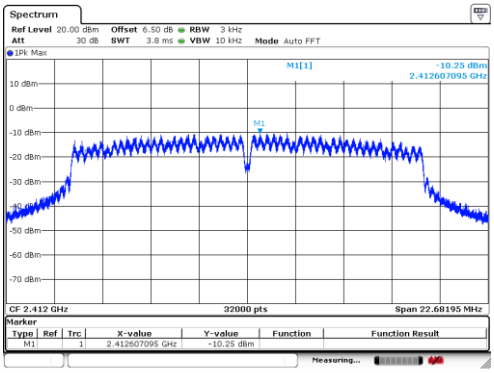
Measurement Data

Test CH	Power Spectral Density (dBm/3kHz)			Limit (dBm/3kHz)	Result
	802.11b	802.11g	802.11n(HT20)		
Lowest	-4.80	-10.25	-10.50	8.00	Pass
Middle	-4.82	-10.24	-10.61		
Highest	-5.39	-10.84	--11.01		

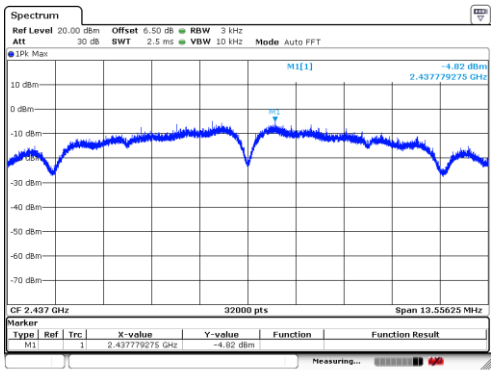
Test plot as follows:

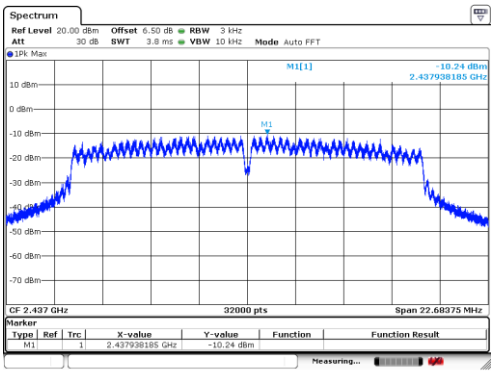
Test mode:	802.11b	Test mode:	802.11g



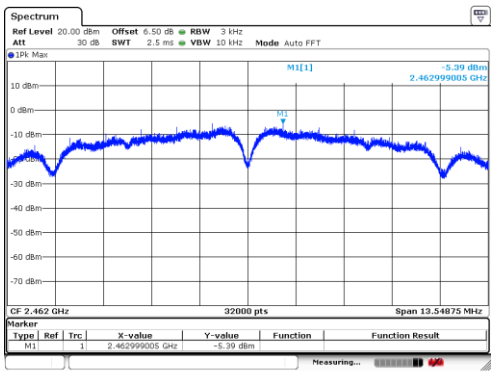


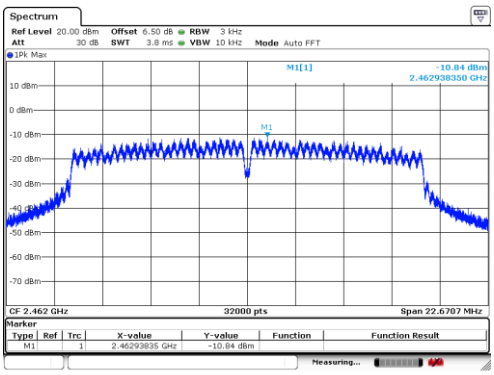
Lowest channel





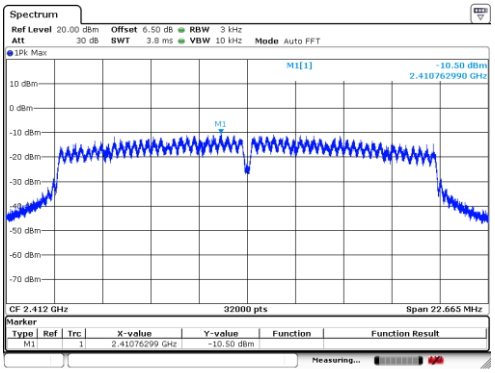
Middle channel



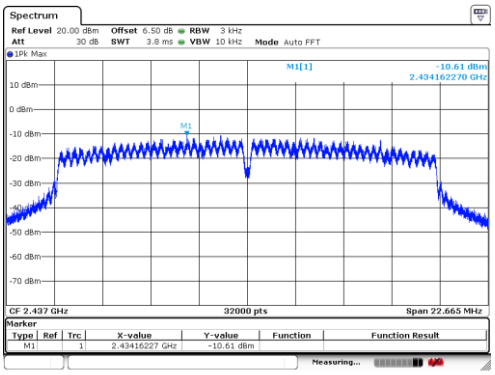


Highest channel

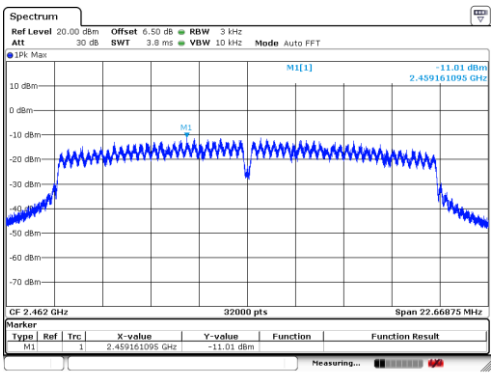
Test mode:	802.11n(HT20)



Lowest channel



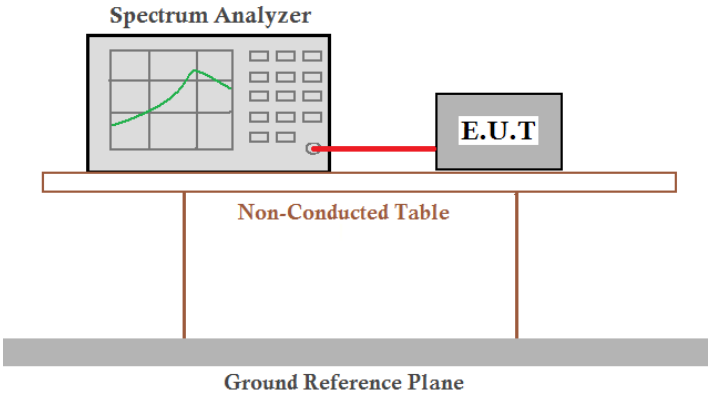
Middle channel



Highest channel

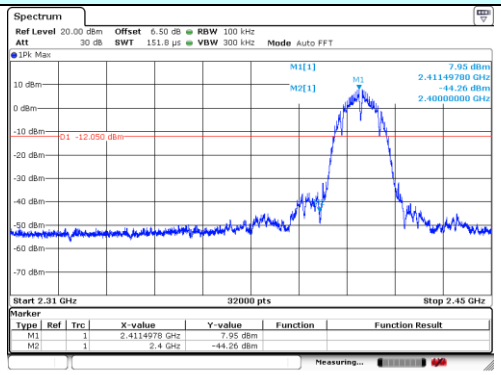
7.6 Band edges

7.6.1 Conducted Emission Method

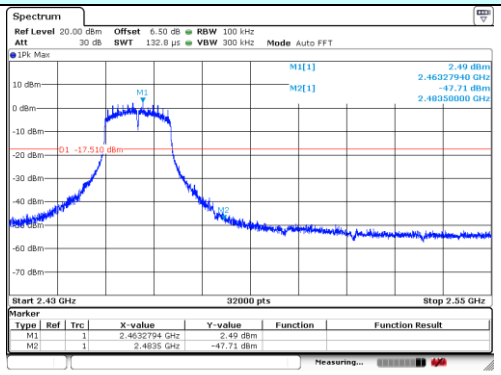
Test Requirement:	FCC Part15 C Section 15.247 (d) RSS-247 Section 5.5
Test Method:	KDB558074 D01 DTS Meas Guidance v05r02 ANSI C63.10:2013 & RSS-Gen
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Test plot as follows:

Test mode:	802.11b

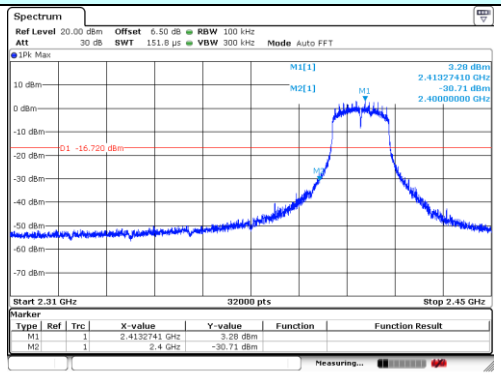


Lowest channel

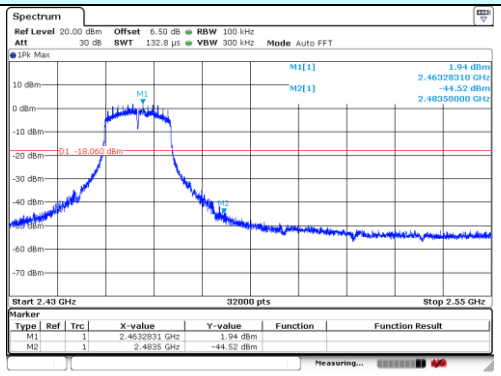


Highest channel

Test mode:	802.11g

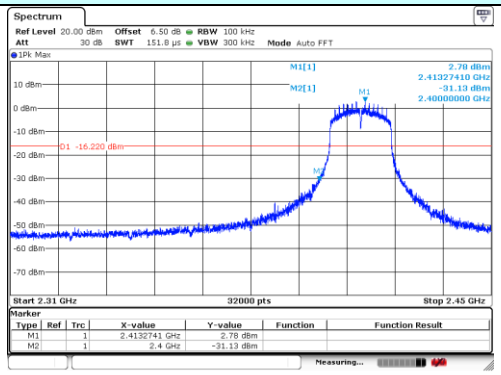


Lowest channel

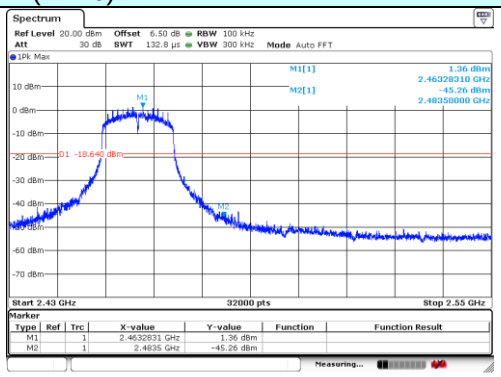


Highest channel

Test mode:	802.11n(HT20)

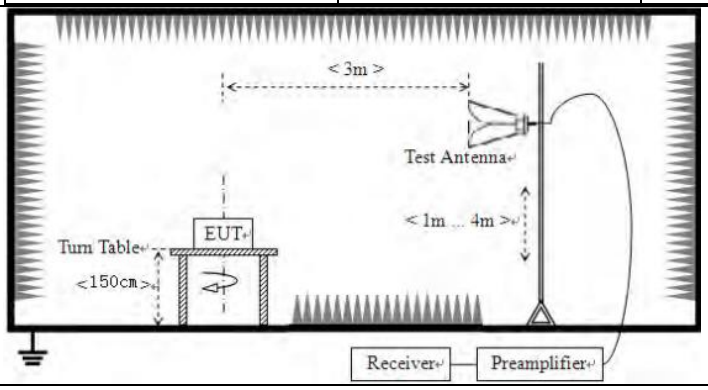


Lowest channel



Highest channel

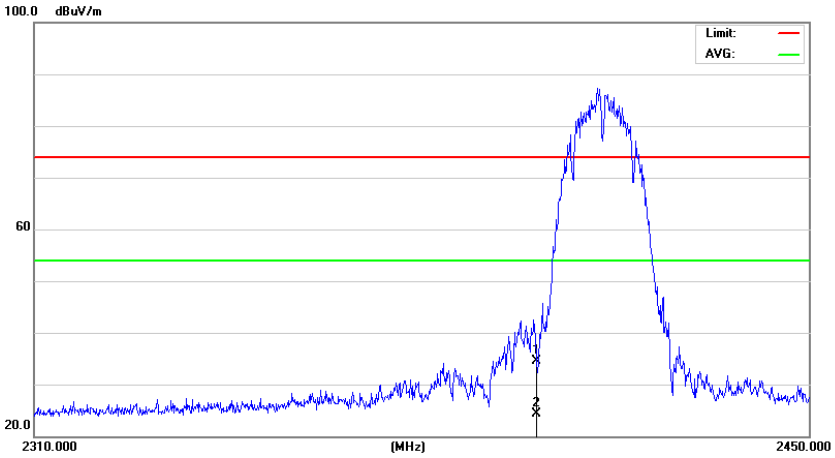
7.6.2 Radiated Emission Method

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209 and 15.205
RSS-247 3.3 & RSS-Gen Section 8.9</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10: 2013 & RSS-Gen</td></tr>
<tr><td>Test Frequency Range:</td><td>All of the restrict bands were tested, only the worst band’s (2310MHz to 2500MHz) data was showed.</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak</td></tr>
<tr><td>Average</td><td>1MHz</td><td>3MHz</td><td>Average</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><td>Frequency</td><td>Limit (dBuV/m @3m)</td><td>Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>54.00</td><td>Average</td></tr>
<tr><td>74.00</td><td>Peak</td></tr>
</table>
</td></tr>
<tr><td>Test setup:</td><td> 
</td></tr>
<tr><td>Test Procedure:</td><td>1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
7. The radiation measurements are performed in X, Y, Z axis positioning. And found the Y axis positioning which it is worse case, only the test worst case mode is recorded in the report.</td></tr>
<tr><td>Test Instruments:</td><td>Refer to section 6.0 for details</td></tr>
<tr><td>Test mode:</td><td>Refer to section 5.2 for details</td></tr>
<tr><td>Test results:</td><td>Pass</td></tr>
</table>

Measurement data:

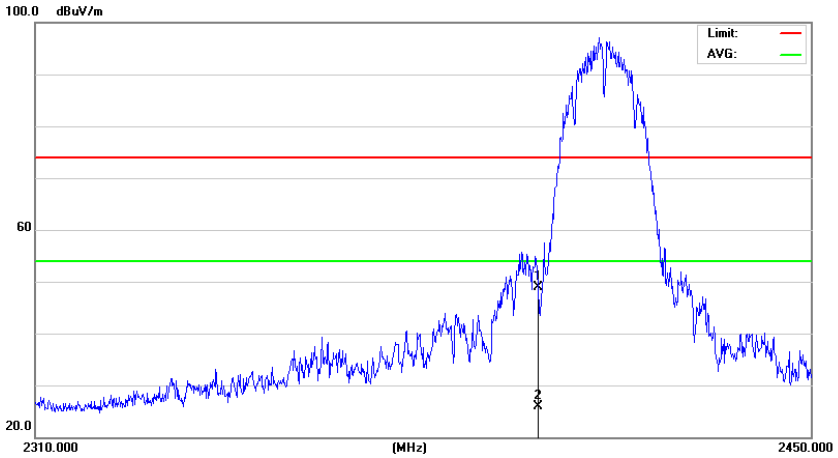
Test mode:	802.11b	Test channel:	Lowest

Vertical：



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2400.000	40.17	-5.70	34.47	74.00	-39.53	peak
2	*	2400.000	30.02	-5.70	24.32	54.00	-29.68	AVG

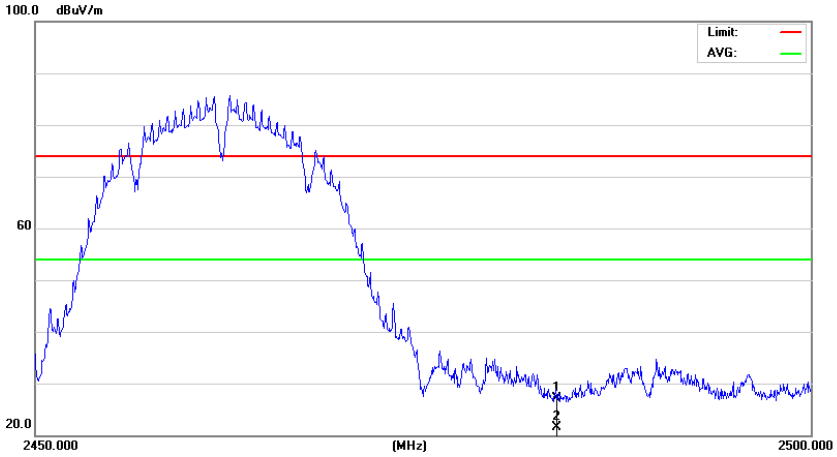
Horizontal：



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	2400.000	54.60	-5.70	48.90	74.00	-25.10	peak
2		2400.000	31.69	-5.70	25.99	54.00	-28.01	AVG

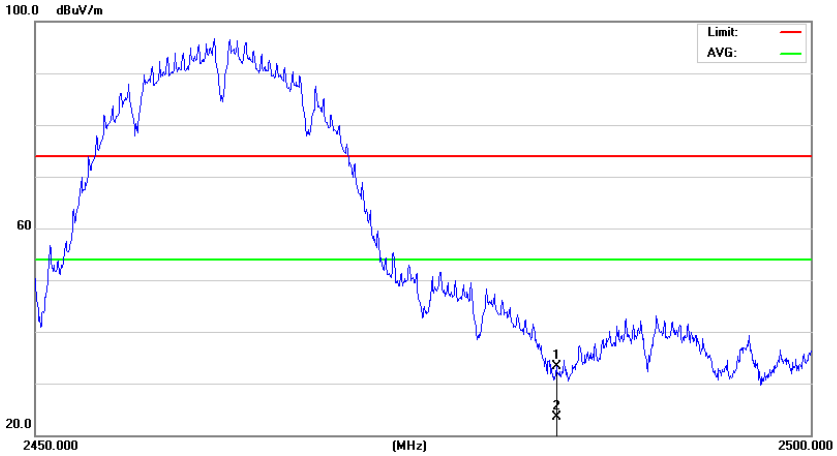
Test mode:	802.11b	Test channel:	Highest

Vertical：



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2483.500	32.09	-4.98	27.11	74.00	-46.89	peak
2	*	2483.500	26.43	-4.98	21.45	54.00	-32.55	AVG

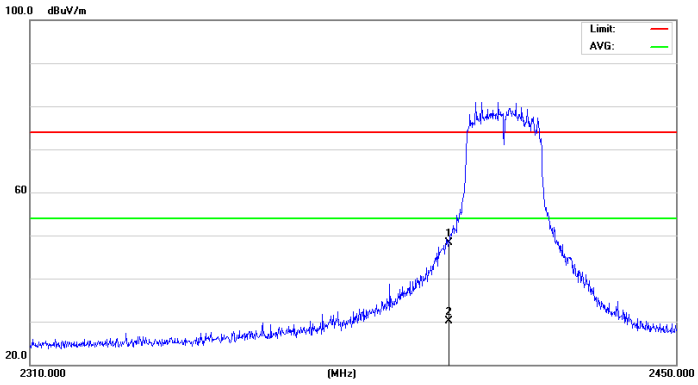
Horizontal：



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2483.500	38.26	-4.98	33.28	74.00	-40.72	peak
2	*	2483.500	28.49	-4.98	23.51	54.00	-30.49	AVG

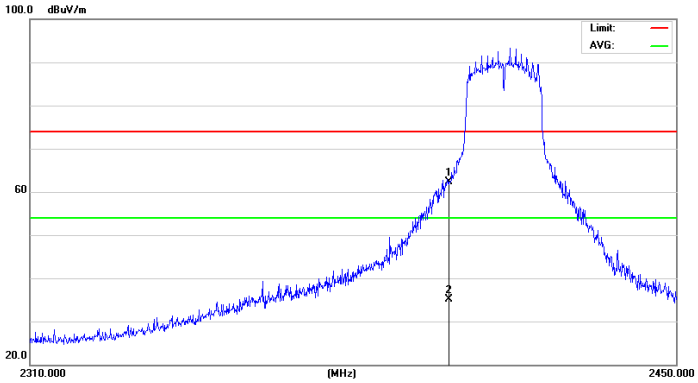
Test mode:	802.11g	Test channel:	Lowest

Vertical：



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2400.000	54.02	-5.70	48.32	74.00	-25.68	peak
2	*	2400.000	35.74	-5.70	30.04	54.00	-23.96	AVG

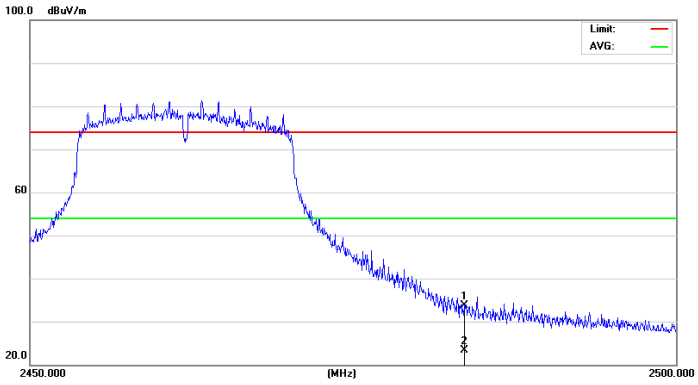
Horizontal：



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	2400.000	67.93	-5.70	62.23	74.00	-11.77	peak
2		2400.000	40.82	-5.70	35.12	54.00	-18.88	AVG

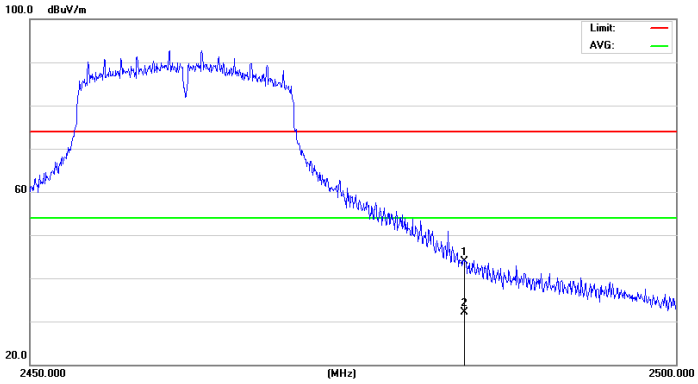
Test mode:	802.11g	Test channel:	Highest

Vertical：



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2483.500	38.62	-4.98	33.64	74.00	-40.36	peak
2	*	2483.500	28.38	-4.98	23.40	54.00	-30.60	AVG

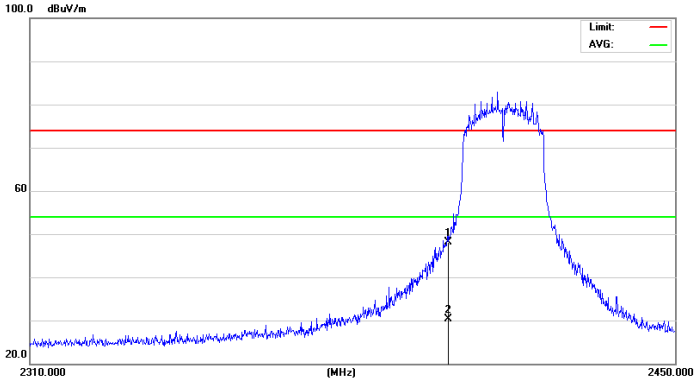
Horizontal：



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	2483.500	48.82	-4.98	43.84	74.00	-30.16	peak
2		2483.500	37.03	-4.98	32.05	54.00	-21.95	AVG

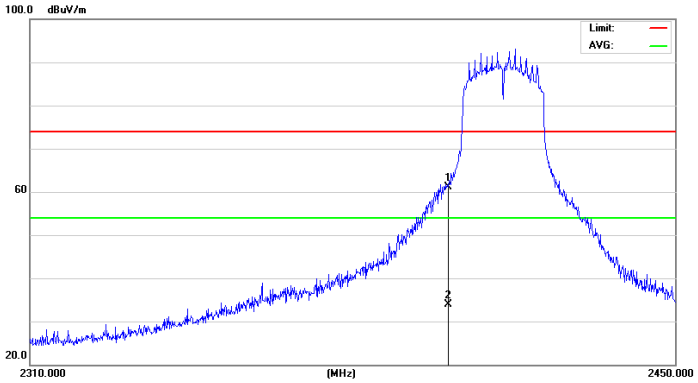
Test mode:	802.11n(HT20)	Test channel:	Lowest

Vertical：



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	2400.000	53.90	-5.70	48.20	74.00	-25.80	peak
2		2400.000	35.96	-5.70	30.26	54.00	-23.74	AVG

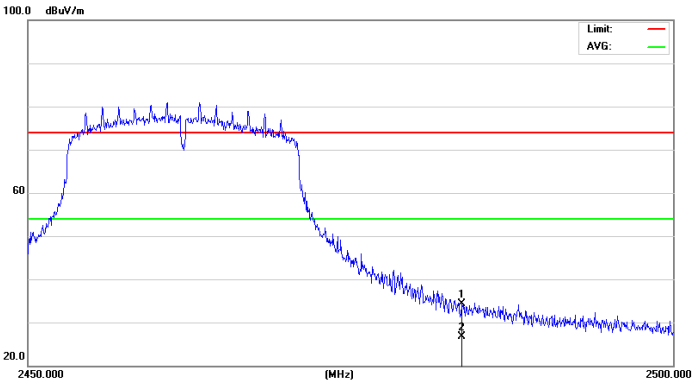
Horizontal：



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	2400.000	66.78	-5.70	61.08	74.00	-12.92	peak
2		2400.000	39.52	-5.70	33.82	54.00	-20.18	AVG

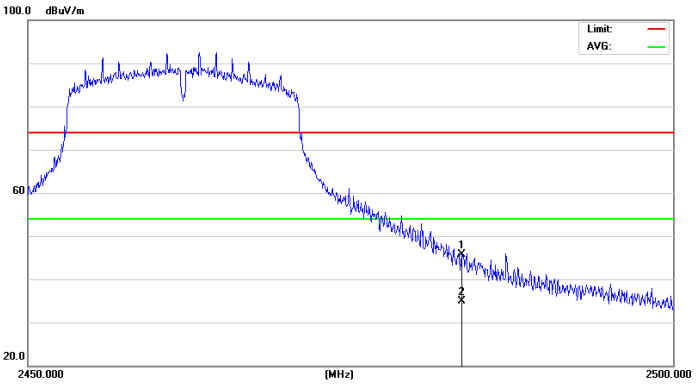
Test mode:	802.11n(HT20)	Test channel:	Highest

Vertical：



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2483.500	39.27	-4.98	34.29	74.00	-39.71	peak
2	*	2483.500	31.66	-4.98	26.68	54.00	-27.32	AVG

Horizontal：



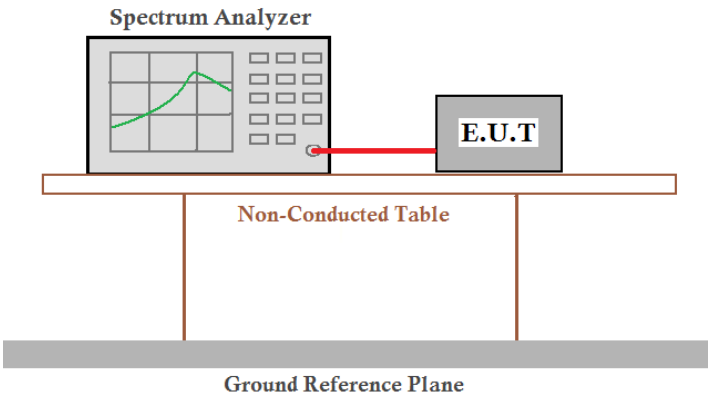
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2483.500	50.67	-4.98	45.69	74.00	-28.31	peak
2	*	2483.500	39.84	-4.98	34.86	54.00	-19.14	AVG

Remarks:

1. *Only the worst case Main Antenna test data.*
2. *The pre-test were performed on lowest, middle and highest frequencies, only the worst case's (lowest and highest frequencies) data was showed.*
3. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
4. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

7.7 Spurious Emission

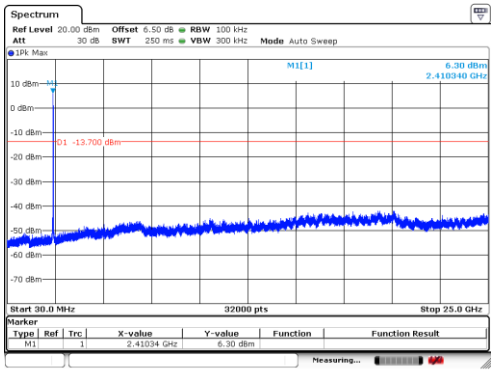
7.7.1 Conducted Emission Method

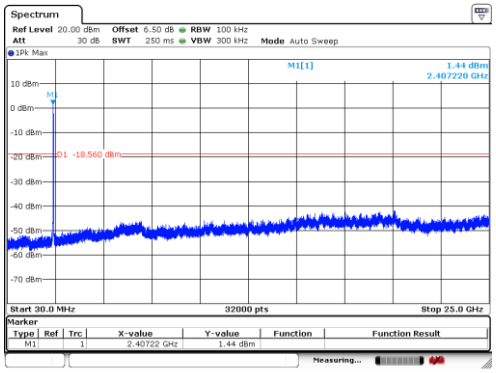
Test Requirement:	FCC Part15 C Section 15.247 (d) RSS-247 Section 5.5
Test Method:	KDB558074 D01 DTS Meas Guidance v05r02 ANSI C63.10:2013 & RSS-Gen
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Test plot as follows:

Test mode:	802.11b	Test mode:	802.11g

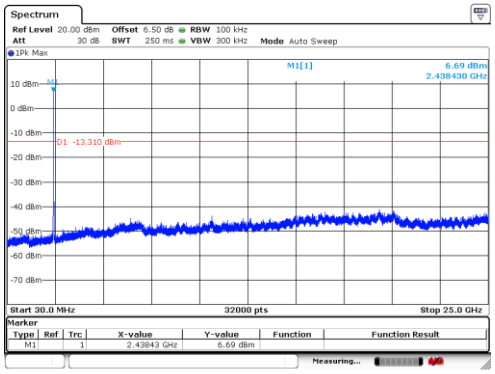
Lowest channel

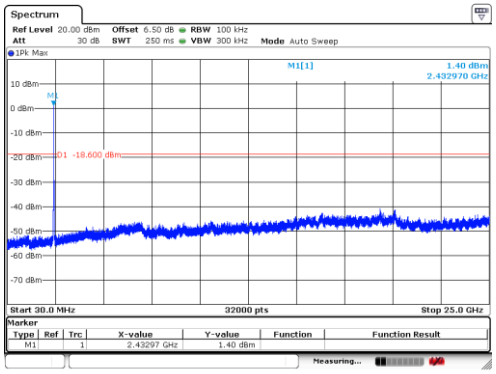




30MHz~25GHz

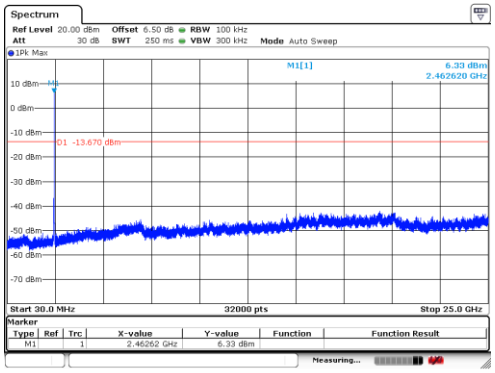
Middle channel

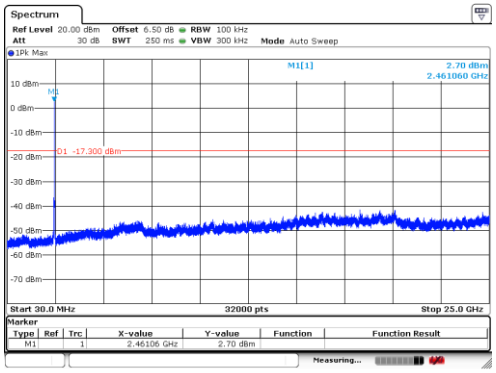




30MHz~25GHz

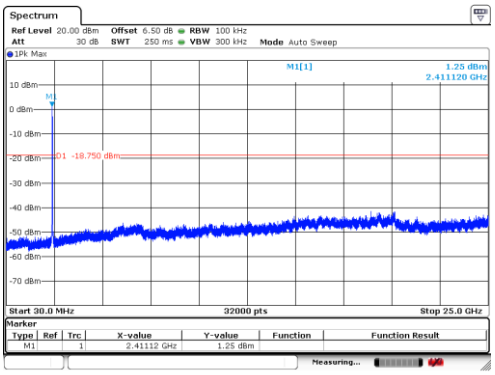
Highest channel



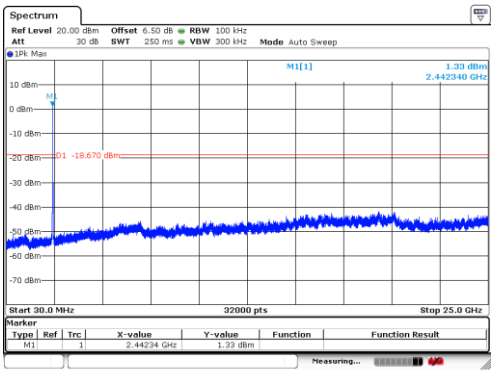


30MHz~25GHz

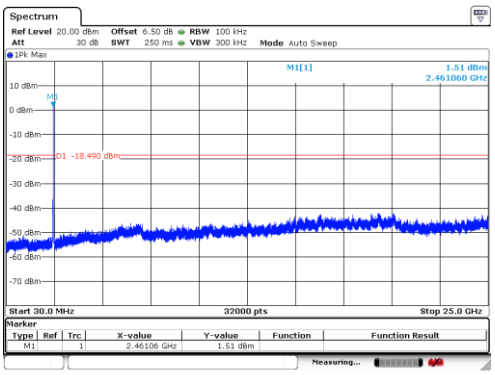
Test mode:	802.11n(HT20)



Lowest channel

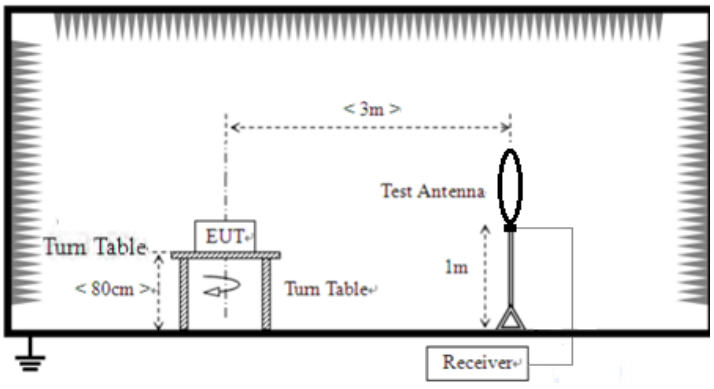


Middle channel

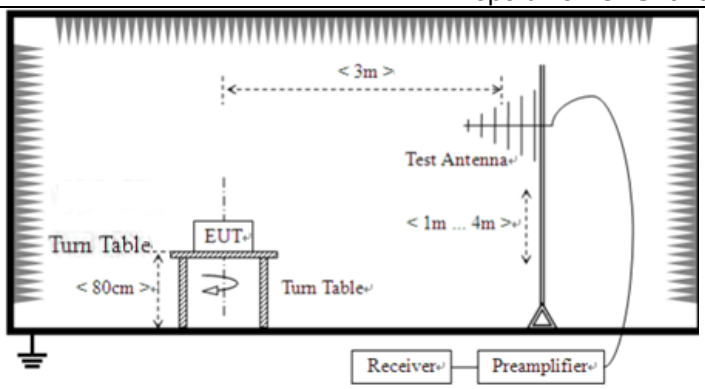


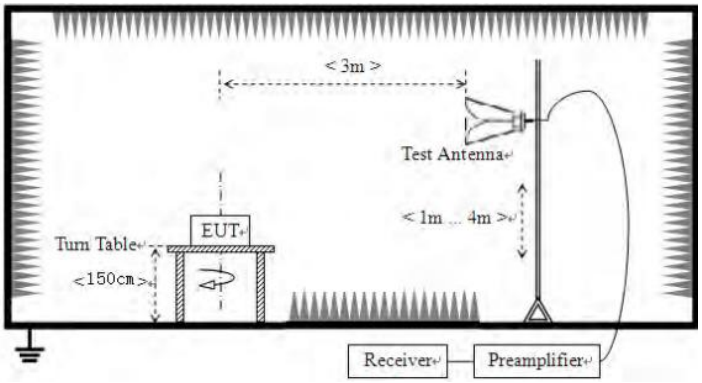
Highest channel

7.7.2 Radiated Emission Method

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209
RSS-247 Section 3.3 & RSS-Gen Section 8.9</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10: 2013 & RSS-Gen</td></tr>
<tr><td>Test Frequency Range:</td><td>9kHz to 25GHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Value</th></tr>
<tr><td>9KHz-150KHz</td><td>Quasi-peak</td><td>200Hz</td><td>600Hz</td><td>Quasi-peak</td></tr>
<tr><td>150KHz-30MHz</td><td>Quasi-peak</td><td>9KHz</td><td>30KHz</td><td>Quasi-peak</td></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>120KHz</td><td>300KHz</td><td>Quasi-peak</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak</td></tr>
<tr><td>Peak</td><td>1MHz</td><td>10Hz</td><td>Average</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><th>Frequency</th><th>Limit (uV/m)</th><th>Value</th><th>Measurement Distance</th></tr>
<tr><td>0.009MHz-0.490MHz</td><td>2400/F(KHz)</td><td>QP</td><td>300m</td></tr>
<tr><td>0.490MHz-1.705MHz</td><td>24000/F(KHz)</td><td>QP</td><td>30m</td></tr>
<tr><td>1.705MHz-30MHz</td><td>30</td><td>QP</td><td>30m</td></tr>
<tr><td>30MHz-88MHz</td><td>100</td><td>QP</td><td rowspan="7">3m</td></tr>
<tr><td>88MHz-216MHz</td><td>150</td><td>QP</td></tr>
<tr><td>216MHz-960MHz</td><td>200</td><td>QP</td></tr>
<tr><td>960MHz-1GHz</td><td>500</td><td>QP</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>500</td><td>Average</td></tr>
<tr><td>5000</td><td>Peak</td></tr>
</table>
</td></tr>
<tr><td>Test setup:</td><td>For radiated emissions from 9kHz to 30MHz
 

For radiated emissions from 30MHz to1GHz</td></tr>
</table>

<table>
<tr><td></td><td> 

For radiated emissions above 1GHz

</td></tr>
<tr><td>Test Procedure:</td><td>1. The EUT was placed on the top of a rotating table (0.8m for below 1G and 1.5m for above 1G) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</td></tr>
<tr><td>Test Instruments:</td><td>Refer to section 6.0 for details</td></tr>
</table>

Test mode:	Refer to section 5.2 for details					
Test voltage:	AC120V 60Hz					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar
Test voltage:	AC 120V, 60Hz					
Test results:	Pass					

Remarks:

1. *Only the worst case Main Antenna test data.*
2. *Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.*

Measurement data:

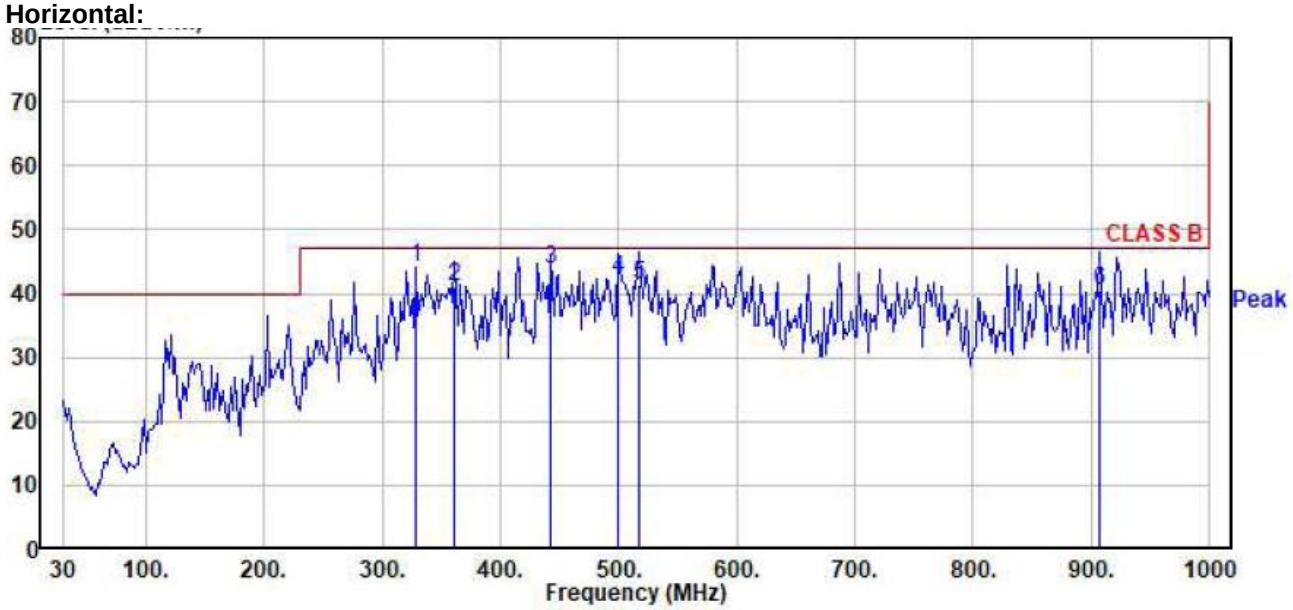
■ **9kHz~30MHz**

The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o) & RSS-Gen 6.13, the test result no need to reported.

■ **Below 1GHz**

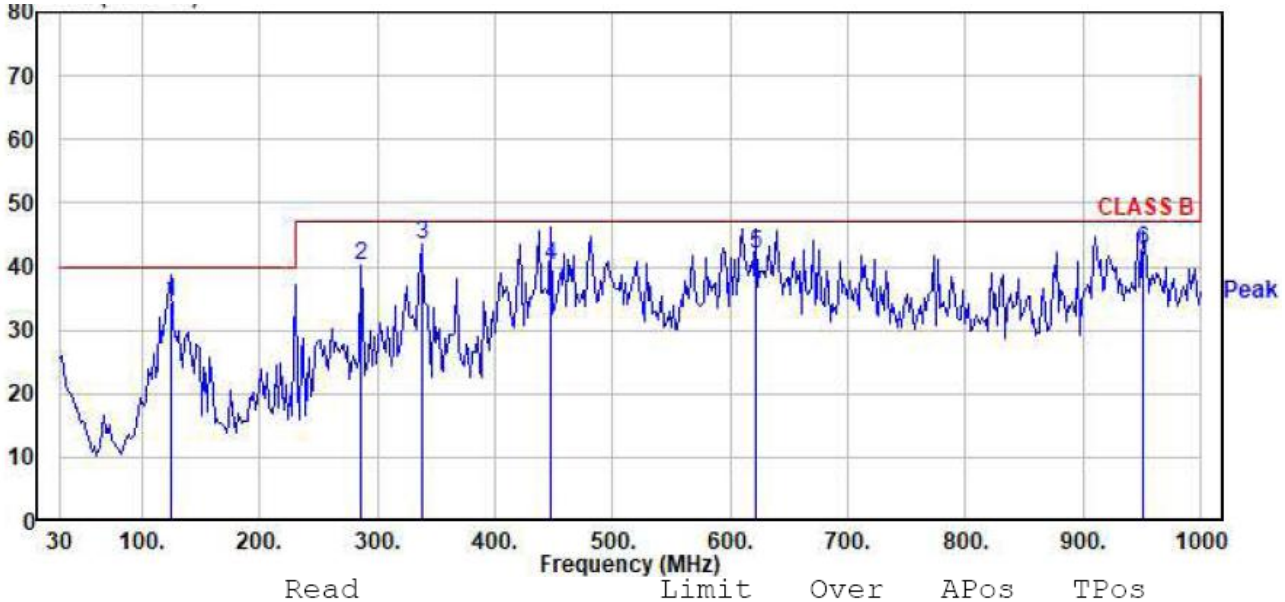
Pre-scan all test modes, found worst case at 802.11b 2462MHz, and so only show the test result of 802.11b 2462MHz

Horizontal:



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	deg	
1	328.760	53.81	-9.71	44.10	47.00	-2.90	100	321	Peak
2	361.740	49.65	-8.64	41.01	47.00	-5.99	100	321	QP
3	443.220	50.57	-6.81	43.76	47.00	-3.24	200	0	QP
4	499.480	47.77	-5.49	42.28	47.00	-4.72	200	0	QP
5	516.940	46.66	-5.17	41.49	47.00	-5.51	200	2	QP
6	906.880	40.07	0.28	40.35	47.00	-6.65	100	148	QP

Vertical:



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	deg	
1	125.060	46.20	-11.65	34.55	40.00	-5.45	100	140	QP
2	286.080	50.95	-10.65	40.30	47.00	-6.70	200	74	Peak
3	338.460	52.77	-9.19	43.58	47.00	-3.42	200	139	Peak
4	447.100	46.84	-6.78	40.06	47.00	-6.94	100	126	QP
5	621.700	45.46	-3.52	41.94	47.00	-5.06	200	53	QP
6	951.500	40.99	1.65	42.64	47.00	-4.36	100	112	QP

■ **Above 1GHz**

Test mode:	802.11b	Test channel:	Lowest

Vertical：

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1087.434	60.15	-10.83	49.32	74.00	-24.68	peak
1185.936	65.07	-10.64	54.43	74.00	-19.57	peak
1185.936	61.58	-10.64	50.94	54.00	-3.06	AVG
1978.082	53.20	-9.17	44.03	74.00	-29.97	peak
2435.701	49.13	-5.39	43.74	74.00	-30.26	peak
4354.454	44.58	4.44	49.02	74.00	-24.98	peak
5075.317	43.04	5.02	48.06	74.00	-25.94	peak

Horizontal：

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1087.434	52.63	-10.83	41.80	74.00	-32.20	peak
1185.936	59.07	-10.64	48.43	74.00	-25.57	peak
1978.082	53.19	-9.17	44.02	74.00	-29.98	peak
2456.913	41.75	-5.21	36.54	74.00	-37.46	peak
4367.058	42.76	4.46	47.22	74.00	-26.78	peak
4902.300	43.20	5.16	48.36	74.00	-25.64	peak

Test mode:	802.11b	Test channel:	Middle

Vertical：

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1087.434	57.22	-10.83	46.39	74.00	-27.61	peak
1185.936	65.30	-10.64	54.66	74.00	-19.34	peak
1185.936	61.45	-10.64	50.81	54.00	-3.19	AVG
1978.082	51.97	-9.17	42.80	74.00	-31.20	peak
3177.671	41.66	-1.26	40.40	74.00	-33.60	peak
4367.058	44.43	4.46	48.89	74.00	-25.11	peak
8713.630	41.73	11.02	52.75	74.00	-21.25	peak

Horizontal：

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1087.434	54.93	-10.83	44.10	74.00	-29.90	peak
1185.936	58.59	-10.64	47.95	74.00	-26.05	peak
1978.082	51.16	-9.17	41.99	74.00	-32.01	peak
2435.701	43.85	-5.39	38.46	74.00	-35.54	peak
4367.058	44.10	4.46	48.56	74.00	-25.44	peak
5119.517	43.42	4.88	48.30	74.00	-25.70	peak

Test mode:	802.11b	Test channel:	Highest

Vertical：

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1087.434	57.55	-10.83	46.72	74.00	-27.28	peak
1185.936	65.63	-10.64	54.99	74.00	-19.01	peak
1185.936	61.51	-10.64	50.87	54.00	-3.13	AVG
1583.392	40.88	-9.88	31.00	74.00	-43.00	peak
1978.082	52.30	-9.17	43.13	74.00	-30.87	peak
3415.787	42.09	-0.84	41.25	74.00	-32.75	peak
6036.421	42.25	4.17	46.42	74.00	-27.58	peak

Horizontal：

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1087.434	55.66	-10.83	44.83	74.00	-29.17	peak
1185.936	59.32	-10.64	48.68	74.00	-25.32	peak
1787.762	42.36	-9.38	32.98	74.00	-41.02	peak
3214.623	42.05	-1.18	40.87	74.00	-33.13	peak
4367.058	44.83	4.46	49.29	74.00	-24.71	peak
6776.265	43.14	6.03	49.17	74.00	-24.83	peak

Test mode:	802.11g	Test channel:	lowest

Vertical：

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1087.434	60.06	-10.83	49.23	74.00	-24.77	peak
1185.936	65.21	-10.64	54.57	74.00	-19.43	peak
1188.118	61.36	-10.65	50.71	54.00	-3.29	AVG
1978.082	53.14	-9.17	43.97	74.00	-30.03	peak
2435.701	49.13	-5.39	43.74	74.00	-30.26	peak
3105.037	45.43	-1.43	44.00	74.00	-30.00	peak
3958.309	46.17	3.53	49.70	74.00	-24.30	peak

Horizontal：

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1185.936	59.21	-10.64	48.57	74.00	-25.43	peak
1978.082	53.33	-9.17	44.16	74.00	-29.84	peak
3536.341	45.66	-0.16	45.50	74.00	-28.50	peak
4367.058	43.44	4.46	47.90	74.00	-26.10	peak
5269.649	44.83	4.47	49.30	74.00	-24.70	peak
8440.946	40.24	11.06	51.30	74.00	-22.70	peak

Test mode:	802.11g	Test channel:	Middle

Vertical：

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1087.434	57.24	-10.83	46.41	74.00	-27.59	peak
1185.936	65.36	-10.64	54.72	74.00	-19.28	peak
1185.936	61.59	-10.64	50.95	54.00	-3.05	AVG
1978.082	52.14	-9.17	42.97	74.00	-31.03	peak
2664.019	43.61	-3.81	39.80	74.00	-34.20	peak
4267.237	42.53	4.27	46.80	74.00	-27.20	peak
5002.496	43.55	5.25	48.80	74.00	-25.20	peak

Horizontal：

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1087.434	54.36	-10.83	43.53	74.00	-30.47	peak
1185.936	59.64	-10.64	49.00	74.00	-25.00	peak
1978.082	51.30	-9.17	42.13	74.00	-31.87	peak
2366.308	43.37	-5.97	37.40	74.00	-36.60	peak
3214.623	41.46	-1.18	40.28	74.00	-33.72	peak
4367.058	44.24	4.46	48.70	74.00	-25.30	peak

Test mode:	802.11g	Test channel:	Highest

Vertical：

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1087.434	57.49	-10.83	46.66	74.00	-27.34	peak
1185.936	65.67	-10.64	55.03	74.00	-18.97	peak
1185.936	61.46	-10.64	50.82	54.00	-3.18	AVG
1978.082	52.44	-9.17	43.27	74.00	-30.73	peak
3177.671	42.13	-1.26	40.87	74.00	-33.13	peak
4133.699	42.63	4.04	46.67	74.00	-27.33	peak
4874.043	43.09	5.13	48.22	74.00	-25.78	peak

Horizontal：

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1185.936	59.32	-10.64	48.68	74.00	-25.32	peak
1772.327	46.22	-9.42	36.80	74.00	-37.20	peak
1978.082	51.89	-9.17	42.72	74.00	-31.28	peak
2471.157	43.78	-5.08	38.70	74.00	-35.30	peak
4279.589	44.31	4.29	48.60	74.00	-25.40	peak
5194.041	46.06	4.64	50.70	74.00	-23.30	peak

Test mode:	802.11n(HT20)	Test channel:	Lowest

Vertical：

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1087.434	60.19	-10.83	49.36	74.00	-24.64	peak
1185.936	65.33	-10.64	54.69	74.00	-19.31	peak
1188.118	61.49	-10.65	50.84	54.00	-3.16	AVG
1978.082	53.25	-9.17	44.08	74.00	-29.92	peak
2442.751	50.04	-5.34	44.70	74.00	-29.30	peak
3958.309	43.87	3.53	47.40	74.00	-26.60	peak
5002.496	43.65	5.25	48.90	74.00	-25.10	peak

Horizontal：

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1087.434	52.79	-10.83	41.96	74.00	-32.04	peak
1185.936	59.23	-10.64	48.59	74.00	-25.41	peak
1978.082	53.35	-9.17	44.18	74.00	-29.82	peak
2742.143	43.78	-3.28	40.50	74.00	-33.50	peak
3946.885	43.75	3.45	47.20	74.00	-26.80	peak
4902.300	43.36	5.16	48.52	74.00	-25.48	peak

Test mode:	802.11n(HT20)	Test channel:	Middle

Vertical：

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1087.434	57.49	-10.83	46.66	74.00	-27.34	peak
1185.936	65.36	-10.64	54.72	74.00	-19.28	peak
1185.936	61.50	-10.64	50.86	54.00	-3.14	AVG
1721.834	41.57	-9.57	32.00	74.00	-42.00	peak
1978.082	52.13	-9.17	42.96	74.00	-31.04	peak
2648.664	43.31	-3.91	39.40	74.00	-34.60	peak
4367.058	44.59	4.46	49.05	74.00	-24.95	peak

Horizontal：

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1087.434	55.09	-10.83	44.26	74.00	-29.74	peak
1185.936	58.83	-10.64	48.19	74.00	-25.81	peak
1418.691	43.74	-10.22	33.52	74.00	-40.48	peak
1978.082	51.40	-9.17	42.23	74.00	-31.77	peak
4973.662	43.57	5.23	48.80	74.00	-25.20	peak
6231.427	43.74	5.16	48.90	74.00	-25.10	peak

Test mode:	802.11n(HT20)	Test channel:	High

Vertical：

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1087.434	56.39	-10.83	45.56	74.00	-28.44	peak
1185.936	65.57	-10.64	54.93	74.00	-19.07	peak
1185.936	61.60	-10.64	50.96	54.00	-3.04	AVG
1327.446	42.39	-10.31	32.08	74.00	-41.92	peak
1978.082	52.54	-9.17	43.37	74.00	-30.63	peak
3007.868	41.06	-1.66	39.40	74.00	-34.60	peak
4495.124	44.17	4.83	49.00	74.00	-25.00	peak

Horizontal：

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1087.434	55.49	-10.83	44.66	74.00	-29.34	peak
1185.936	59.36	-10.64	48.72	74.00	-25.28	peak
1978.082	51.57	-9.17	42.40	74.00	-31.60	peak
3060.486	44.86	-1.53	43.33	74.00	-30.67	peak
4600.276	43.42	5.07	48.49	74.00	-25.51	peak
6737.206	43.33	6.00	49.33	74.00	-24.67	peak

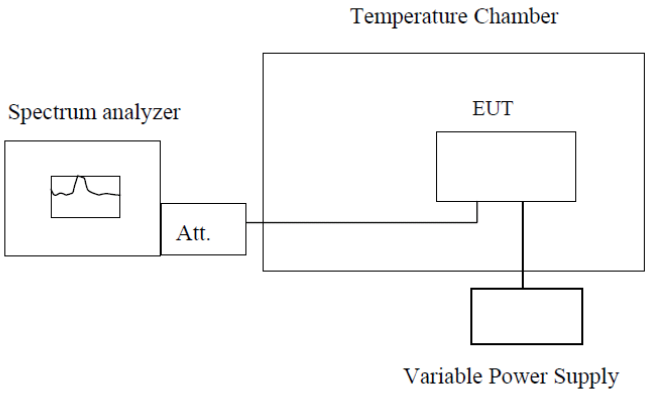
Remark:

1 Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

2 "", means this data is the too weak instrument of signal is unable to test.*

3. The emission levels of other frequencies are very lower than the limit and not show in test report.

7.8 Frequency stability

Test Requirement:	RSS-Gen Section 6.11& Section 8.11
Test Method:	ANSI C63.10: 2013 & RSS-Gen
Limit:	Manufactures of 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
Test Procedure:	The EUT was setup to ANSI C63.10, 2013; tested to 2.1055 for compliance to RSS-Gen requirements.
Test setup:	 **Note :** Measurement setup for testing on Antenna connector
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Remark: Set the EUT transmits at un-modulation mode to test frequency stability.

Measurement data:

Frequency stability versus Temp.						
Power Supply: DC 12V						
Temp. (°C)	Operating Frequency (MHz)	0 minute Measured Frequency (MHz)	2 minute Measured Frequency (MHz)	5 minute Measured Frequency (MHz)	10 minute Measured Frequency (MHz)	Pass /Fail
-30	2412	2411.9314	2412.0054	2412.0261	2412.0636	Pass
	2437	2437.0852	2436.9754	2436.9093	2437.0616	Pass
	2452	2452.0250	2451.9599	2452.0837	2451.9950	Pass
	2462	2462.0415	2461.9168	2461.9021	2462.0491	Pass
-20	2412	2412.0769	2412.0265	2412.1084	2412.1034	Pass
	2437	2436.9148	2436.9845	2437.0380	2436.9129	Pass
	2452	2451.9818	2452.0965	2451.9135	2452.0022	Pass
	2462	2461.9725	2461.9439	2461.9036	2461.9719	Pass
-10	2412	2412.0170	2412.0968	2412.0132	2411.9787	Pass
	2437	2437.0374	2437.0942	2436.9022	2437.0841	Pass
	2452	2452.0020	2451.9127	2451.9189	2452.0388	Pass
	2462	2461.9827	2462.0049	2461.9802	2462.0821	Pass
0	2412	2411.9015	2411.9428	2412.0214	2412.0149	Pass
	2437	2437.0672	2436.9797	2436.9538	2436.8976	Pass
	2452	2451.9479	2452.0027	2452.0139	2452.0343	Pass
	2462	2461.9166	2462.0840	2462.0634	2461.9378	Pass
10	2412	2412.0194	2412.0066	2412.1042	2412.0388	Pass
	2437	2436.9695	2436.9616	2436.9587	2436.9766	Pass
	2452	2452.0681	2451.9912	2452.0375	2451.9344	Pass
	2462	2461.9906	2461.9532	2461.9701	2462.0812	Pass
20	2412	2411.9693	2411.9618	2412.0865	2412.0311	Pass
	2437	2437.0651	2436.9784	2437.0404	2436.9253	Pass
	2452	2452.0867	2452.0779	2452.0291	2452.0952	Pass
	2462	2461.9363	2462.0352	2461.9905	2462.0523	Pass
30	2412	2412.0529	2412.0262	2412.0017	2411.9988	Pass
	2437	2437.0314	2437.0625	2436.9142	2436.9774	Pass
	2452	2452.0163	2452.0801	2451.9843	2452.0598	Pass
	2462	2461.9655	2462.0353	2461.9519	2461.9707	Pass
40	2412	2411.9928	2412.0596	2412.0356	2411.9726	Pass
	2437	2437.0389	2437.0664	2436.8961	2437.0913	Pass
	2452	2451.9998	2451.9129	2451.9358	2452.0121	Pass
	2462	2462.0387	2462.0826	2462.0220	2461.9116	Pass
50	2412	2411.9989	2411.9633	2411.9231	2412.0537	Pass
	2437	2437.0983	2437.0913	2437.0407	2436.9231	Pass
	2452	2452.1123	2452.0229	2452.0144	2452.0960	Pass
	2462	2462.0595	2462.0546	2461.9572	2461.9034	Pass

Frequency stability versus Voltage						
Temperature: 25°C						
Power Supply (VDC)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute	Pass /Fail
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	
10.8	2412	2412.0399	2412.0882	2412.0551	2412.0073	Pass
	2437	2436.9272	2436.9616	2437.0980	2436.9139	Pass
	2452	2451.9427	2452.1191	2452.0549	2452.0170	Pass
	2462	2461.9107	2461.9933	2462.0680	2462.0759	Pass
13.2	2412	2412.0522	2412.0956	2411.9464	2411.9913	Pass
	2437	2437.0118	2436.9762	2437.0692	2437.0983	Pass
	2452	2452.0214	2451.9528	2452.0514	2452.0570	Pass
	2462	2461.9438	2462.0159	2462.0353	2461.9780	Pass

8 Test Setup Photo

Reference to the **appendix I** for details.

9 EUT Constructional Details

Reference to the **appendix II** for details.

------End------