TEST REPORT

Applicant:	Broan-NuTone LLC
Address of Applicant:	926 West State Street, Hartford, Wisconsin 53027, United States
Manufacturer /Factory:	Computime Electronics (Shenzhen) Company Limited
Address of Manufacturer/Factory:	Yuekenguangyu Industrial Park,Kangqiao Road 88#, Danzhutou Community, Nanwan Street office,Longgang District, Shenzhen, China

Equipment Under Test (EUT)

Product Name:	Smart Plug
Model No.:	1103436
Trade Mark:	Broan-NuTone
FCC ID:	2ADLL-1103436
IC:	2143B-1103436
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:	November 04, 2020
Date of Test:	November 05-13, 2020
Date of report issued:	November 16, 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	*November 16, 2020*	*Original*

Prepared By: *Date:* *November 16, 2020*

Project Engineer

Check By: *Date:* *November 16, 2020*

Reviewer

3 Contents

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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) & RSS-Gen 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-Gen 8.10 & RSS-247 5.5	Pass
Spurious Emission	FCC part 15.205/15.209 RSS-Gen Section 8.9 & 8.10	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	9kHz ~ 30MHz	± 4.34dB	(1)
Radiated Emission	30MHz ~ 1000MHz	± 4.24dB	(1)
Radiated Emission	1GHz ~ 26.5GHz	± 4.68dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	± 3.45dB	(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:	Smart Plug
Model No.:	1103436
Test sample(s) ID:	GTS202011000032-1
Sample(s) Status	Engineer sample
Serial No.:	N/A
Hardware version:	REV3.0
Software version:	ESP v 0.2.5
Channel numbers:	802.11b/802.11g /802.11n(HT20): 11 802.11n(HT40):7
Channel separation:	5MHz
Modulation technology:	802.11b: Direct Sequence Spread Spectrum (DSSS) 802.11g/802.11n(HT20)/802.11n(HT40): Orthogonal Frequency Division Multiplexing (OFDM)
Antenna Type:	Integral Antenna
Antenna gain:	1.52dBi(declare by applicant)
Power supply:	AC 120V/60Hz

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)	802.11n(HT40)
Lowest channel	2412MHz	2422MHz
Middle channel	2437MHz	2437MHz
Highest channel	2462MHz	2452MHz

5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode (dutycycle>98%)

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)	802.11n(HT40)
Data rate	1Mbps	6Mbps	6.5Mbps	13Mbps

5.3 Description of Support Units

None.

5.4 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

5.5 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

5.6 Additional Instructions

Test Software	Test sosftware provide 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. 18 2020	Oct. 17 2021
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 18 2020	Oct. 17 2021
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 18 2020	Oct. 17 2021
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

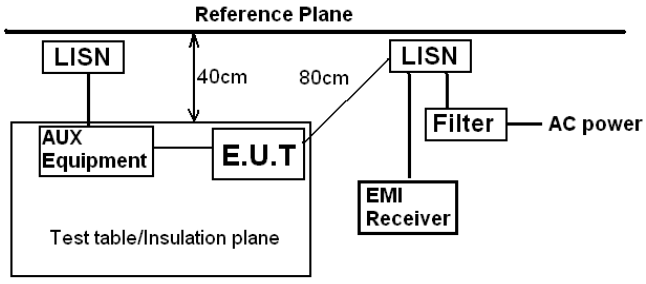
General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	June. 25 2020	June. 24 2021
2	Barometer	ChangChun	DYM3	GTS255	June. 25 2020	June. 24 2021

7 Test results and Measurement Data

7.1 Antenna requirement

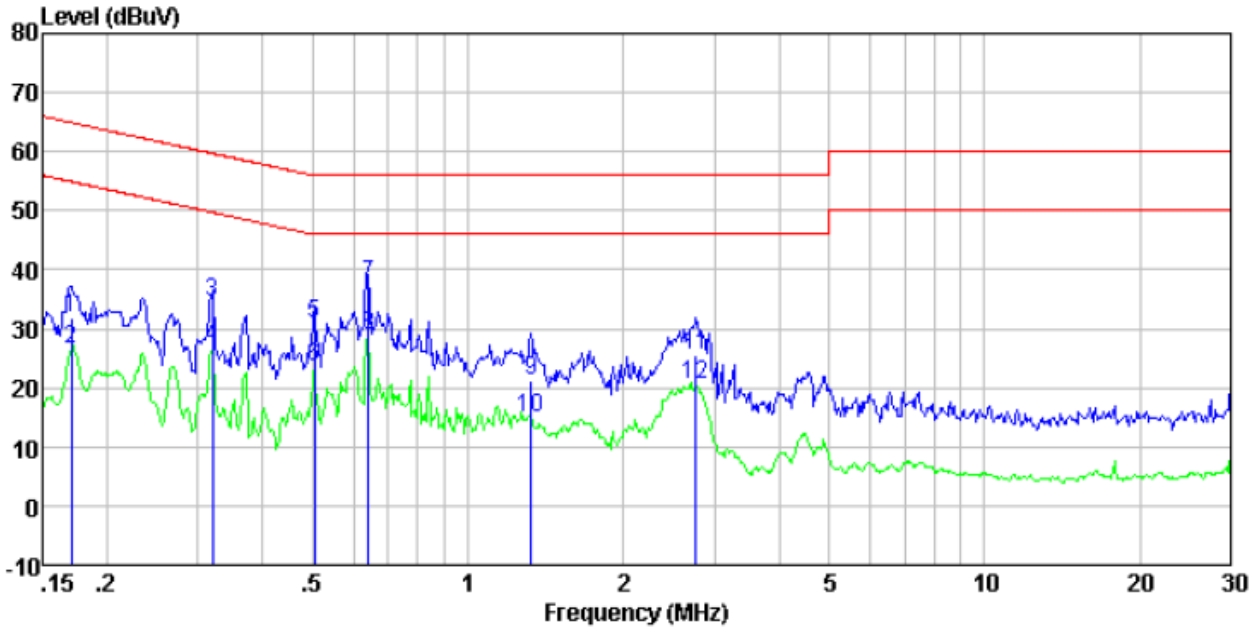
Standard requirement:	FCC Part15 C Section 15.203 /247(c)
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique 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 ANT is 1.52dBi, reference to the appendix II for details	

7.2 Conducted Emissions

<table>
<tr><td>Test Requirement:</td><td colspan="5">FCC Part15 C Section 15.207
RSS-Gen Section 8.8</td></tr>
<tr><td>Test Method:</td><td colspan="5">ANSI C63.10:2013</td></tr>
<tr><td>Test Frequency Range:</td><td colspan="5">150KHz to 30MHz</td></tr>
<tr><td>Receiver setup:</td><td colspan="5">RBW=9KHz, VBW=30KHz, Sweep time=auto</td></tr>
<tr><td>Limit:</td><td colspan="5"><table><tr><td rowspan="2">Frequency range (MHz)</td><td colspan="2">Limit (dBuV)</td></tr><tr><td>Quasi-peak</td><td>Average</td></tr><tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr><tr><td>0.5-5</td><td>56</td><td>46</td></tr><tr><td>5-30</td><td>60</td><td>50</td></tr></table>* Decreases with the logarithm of the frequency.</td></tr>
<tr><td>Test setup:</td><td colspan="5"> 

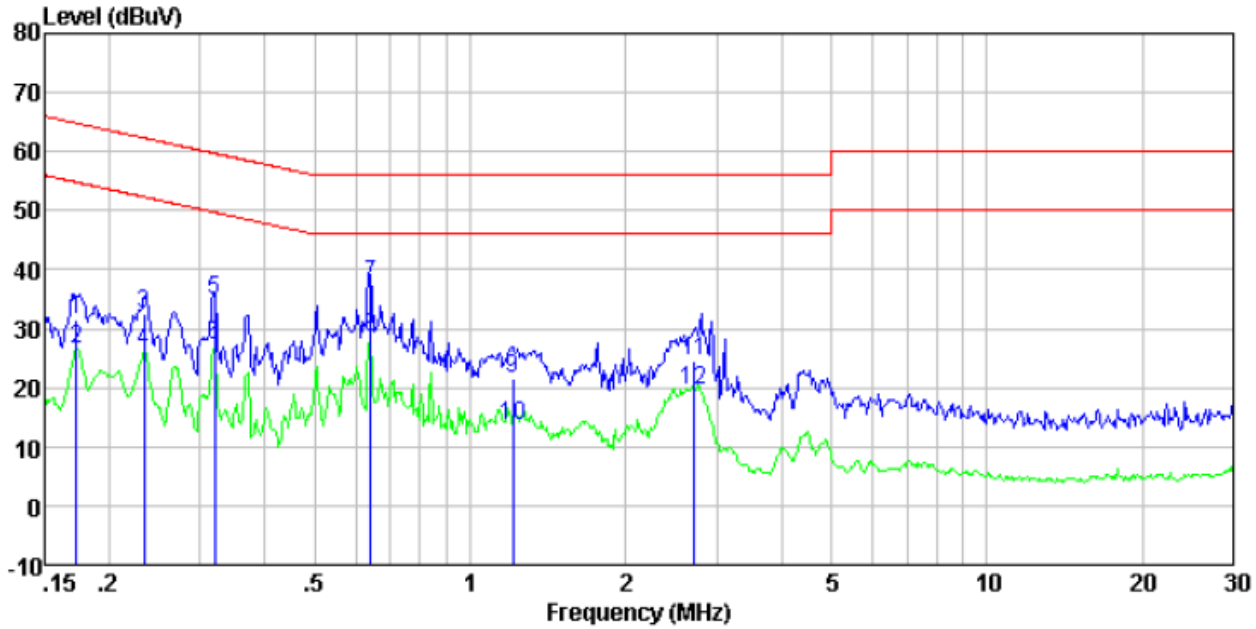
Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m</td></tr>
<tr><td>Test procedure:</td><td colspan="5">1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH 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.</td></tr>
<tr><td>Test Instruments:</td><td colspan="5">Refer to section 6.0 for details</td></tr>
<tr><td>Test mode:</td><td colspan="5">AC 120V 60Hz</td></tr>
<tr><td>Test environment:</td><td>Temp.:</td><td>25 °C</td><td>Humid.:</td><td>52%</td><td>Press.:</td><td>1012mbar</td></tr>
<tr><td>Test results:</td><td colspan="5">Pass</td></tr>
</table>

Measurement data
Line:



Freq MHz	Reading level dBuV	LISN/ISN factor dB/m	Cable loss dB	Level dBuV	Limit level dBuV	Over limit dB	Remark
0.17	11.37	20.40	0.09	31.86	64.94	-33.08	QP
0.17	6.18	20.40	0.09	26.67	54.94	-28.27	Average
0.32	13.92	20.39	0.10	34.41	59.71	-25.30	QP
0.32	6.32	20.39	0.10	26.81	49.71	-22.90	Average
0.50	10.29	20.31	0.11	30.71	56.00	-25.29	QP
0.50	3.16	20.31	0.11	23.58	46.00	-22.42	Average
0.64	17.18	20.27	0.12	37.57	56.00	-18.43	QP
0.64	8.46	20.27	0.12	28.85	46.00	-17.15	Average
1.32	0.91	20.20	0.16	21.27	56.00	-34.73	QP
1.32	-5.38	20.20	0.16	14.98	46.00	-31.02	Average
2.76	5.01	20.20	0.19	25.40	56.00	-30.60	QP
2.76	0.26	20.20	0.19	20.65	46.00	-25.35	Average

Neutral:

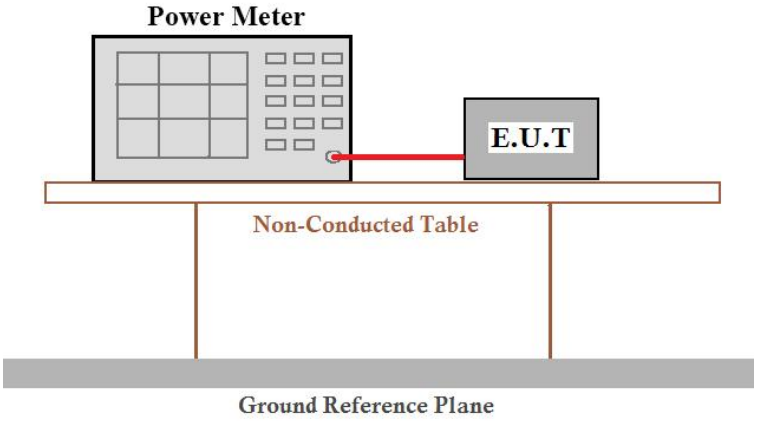


Freq MHz	Reading level dBuV	LISN/ISN factor dB/m	Cable loss dB	Level dBuV	Limit level dBuV	Over limit dB	Remark
0.17	11.06	20.40	0.09	31.55	64.81	-33.26	QP
0.17	6.12	20.40	0.09	26.61	54.81	-28.20	Average
0.23	12.03	20.40	0.11	32.54	62.30	-29.76	QP
0.23	5.65	20.40	0.11	26.16	52.30	-26.14	Average
0.32	14.22	20.39	0.10	34.71	59.71	-25.00	QP
0.32	6.69	20.39	0.10	27.18	49.71	-22.53	Average
0.64	17.17	20.27	0.12	37.56	56.00	-18.44	QP
0.64	8.26	20.27	0.12	28.65	46.00	-17.35	Average
1.21	1.23	20.20	0.16	21.59	56.00	-34.41	QP
1.21	-6.83	20.20	0.16	13.53	46.00	-32.47	Average
2.72	4.19	20.20	0.19	24.58	56.00	-31.42	QP
2.72	-0.85	20.20	0.19	19.54	46.00	-26.46	Average

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

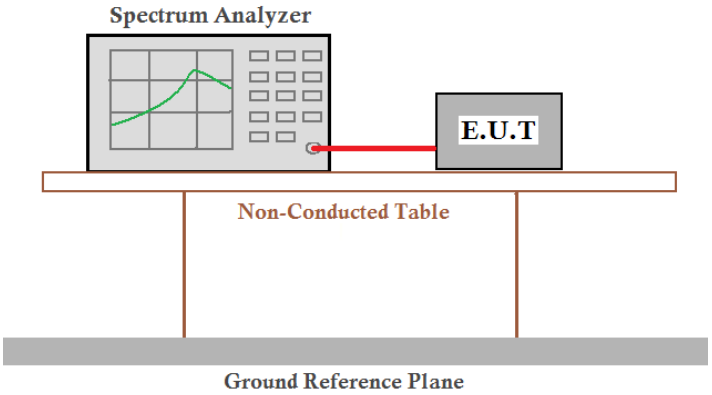
Test Requirement :	FCC Part15 C Section 15.247 (b)(3) RSS-247 Section 5.4(d)
Test Method :	KDB558074 D01 15.247 Meas Guidance v05r02 ANSI C63.10:2013 and RSS-Gen
Limit:	30dBm 36dBm(4W for e.i.r.p)
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details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

Measurement Data

Test CH	Peak Output Power (dBm)				Limit(dBm)	Result
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)		
Lowest	18.74	17.51	17.58	17.08	30.00	Pass
Middle	17.61	16.23	16.24	16.13		
Highest	13.02	15.64	15.74	15.99		

Test CH	e.i.r.p (dBm)				Limit(dBm)	Result
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)		
Lowest	20.26	19.03	19.10	18.60	36	Pass
Middle	19.13	17.75	17.76	17.65		
Highest	14.54	17.16	17.26	17.51		

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 15.247 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

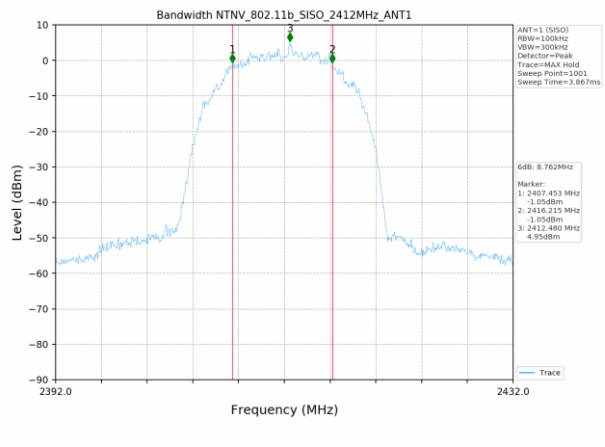
Test CH	Channel Bandwidth (MHz)				Limit(KHz)	Result
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)		
Lowest	8.762	16.366	17.590	36.356	>500	Pass
Middle	8.713	16.365	17.334	36.364		
Highest	9.448	16.359	17.570	36.366		

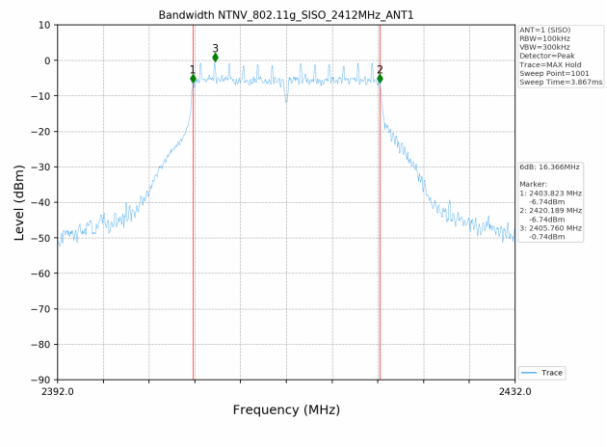
Test CH	99% Occupy Bandwidth (MHz)				Result
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)	
Lowest	12.915	17.375	18.313	38.347	Pass
Middle	12.930	17.400	18.307	38.410	
Highest	13.150	17.352	18.298	38.442	

Test plot as follows:

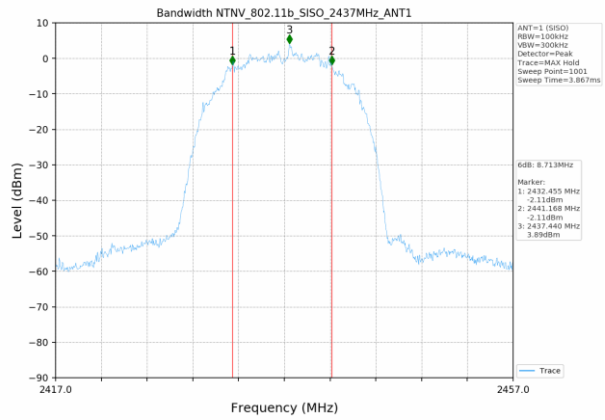
-6dB BW:

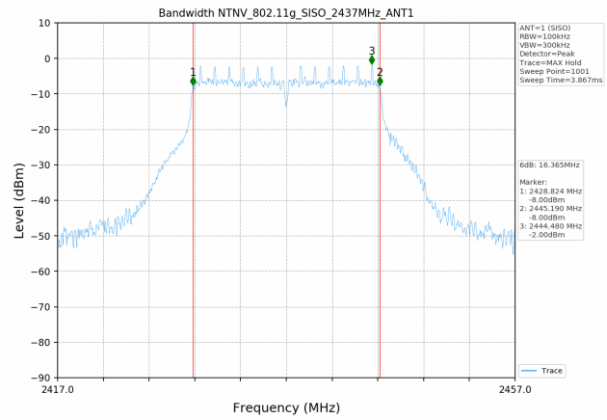
Test mode:	802.11b	Test mode:	802.11g



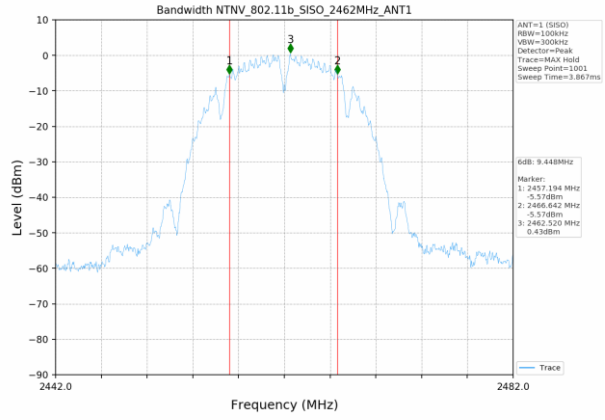


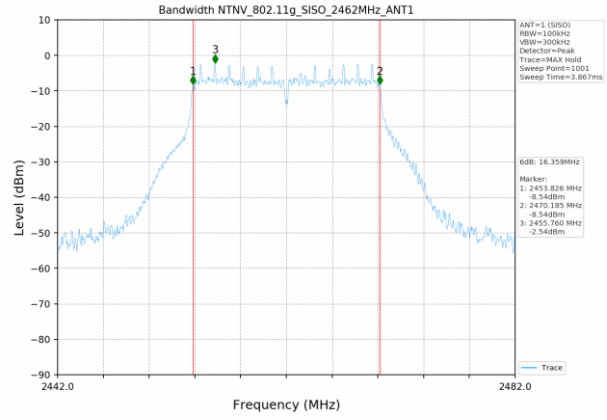
Lowest channel





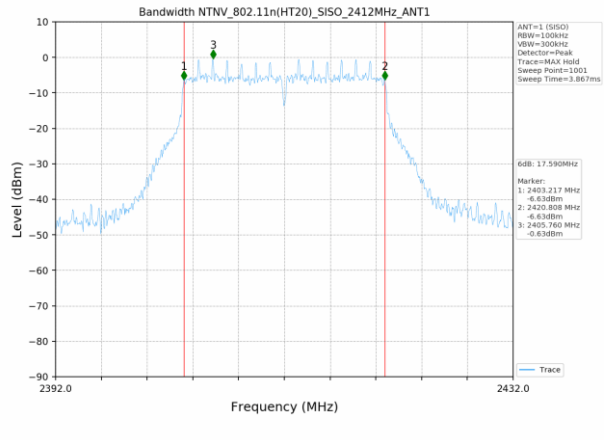
Middle channel

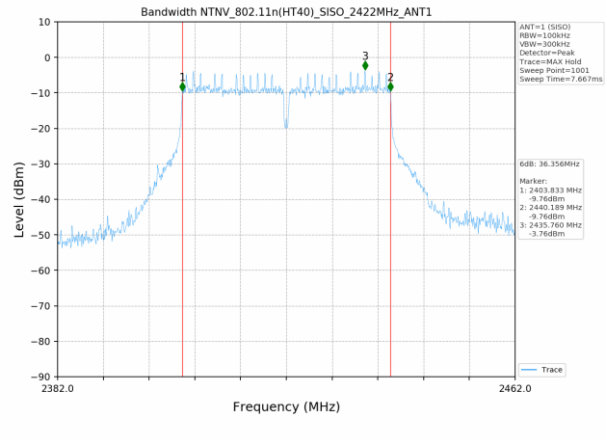




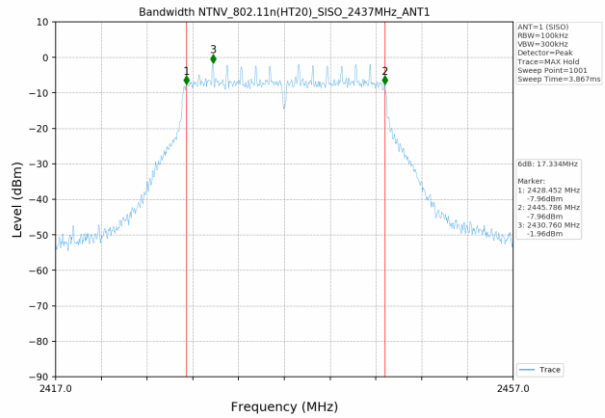
Highest channel

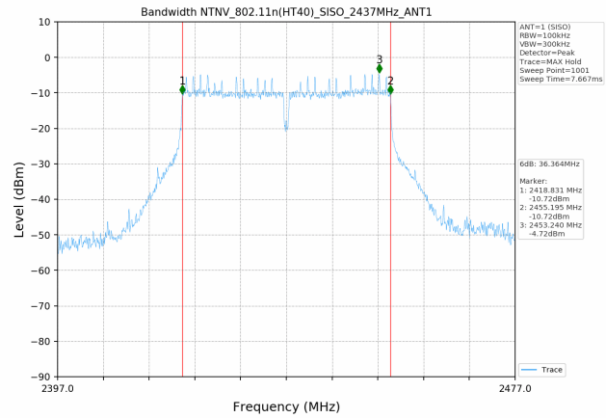
Test mode:	802.11n(HT20)	Test mode:	802.11n(HT40)



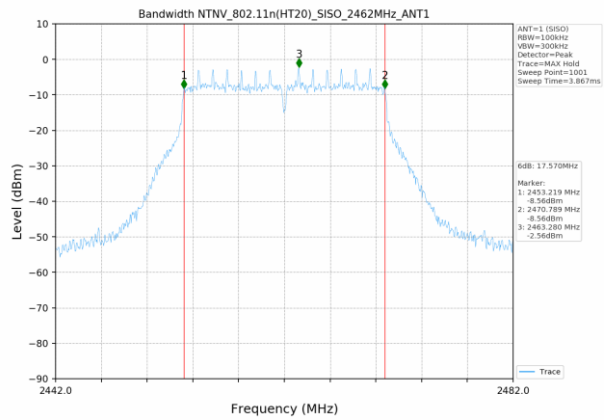


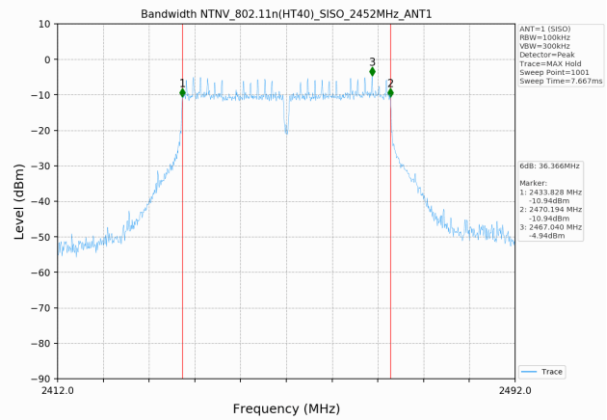
Lowest channel





Middle channel

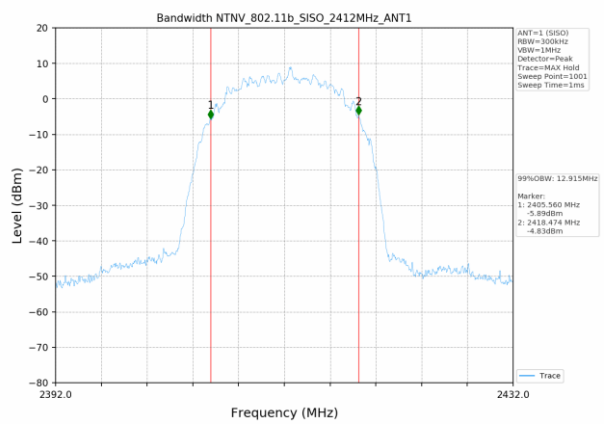


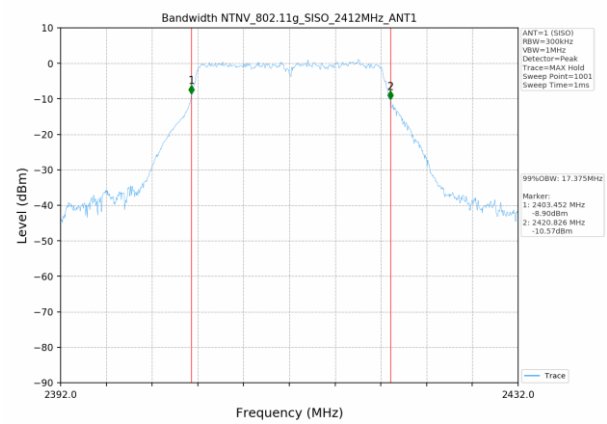


Highest channel

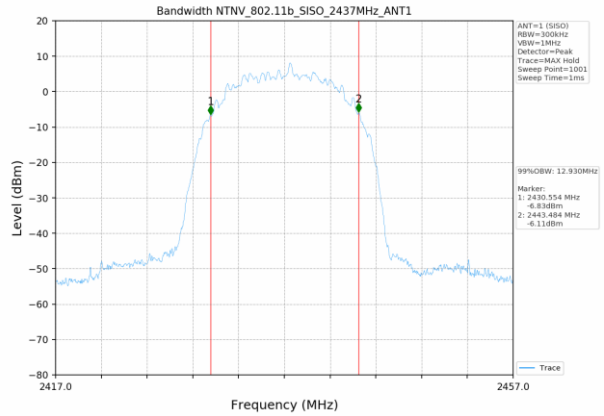
99% BW:

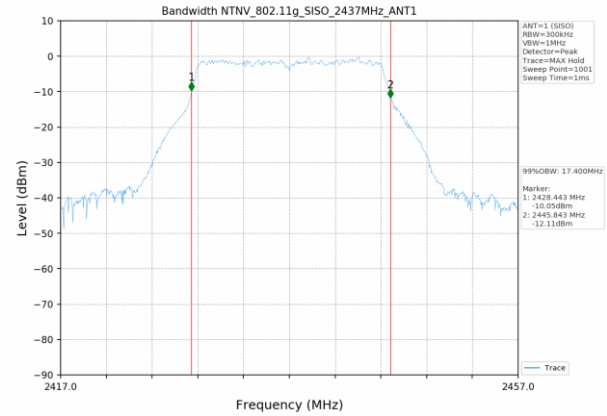
Test mode:	802.11b	Test mode:	802.11g



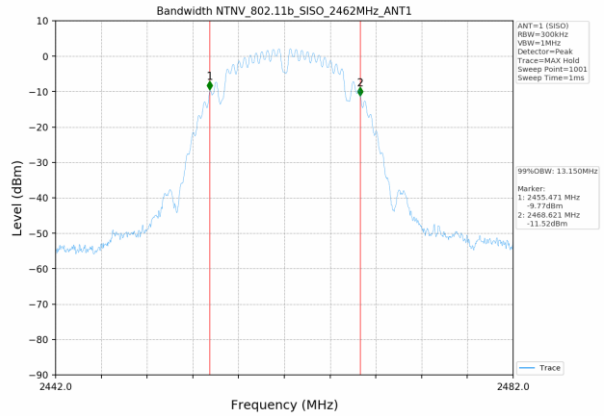


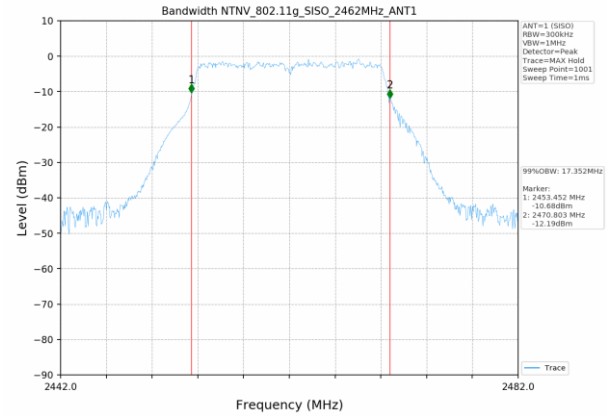
Lowest channel





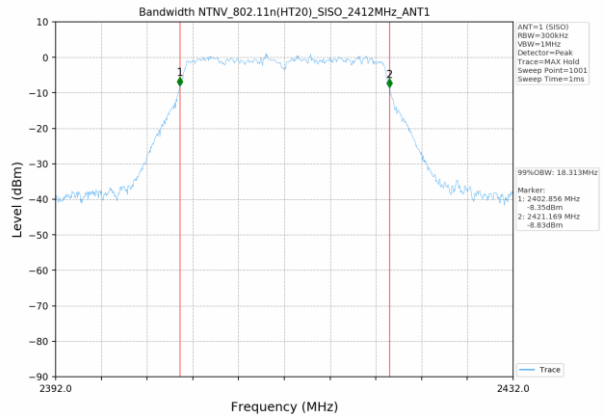
Middle channel

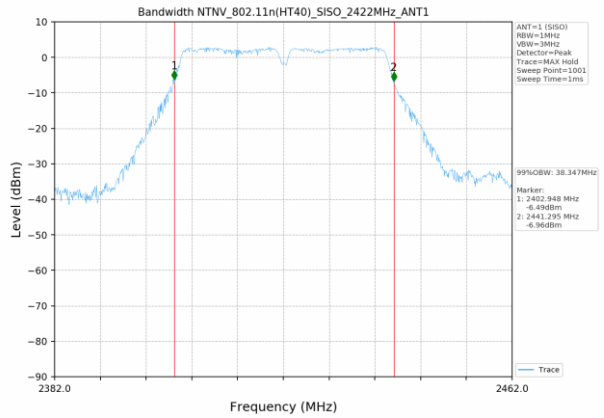




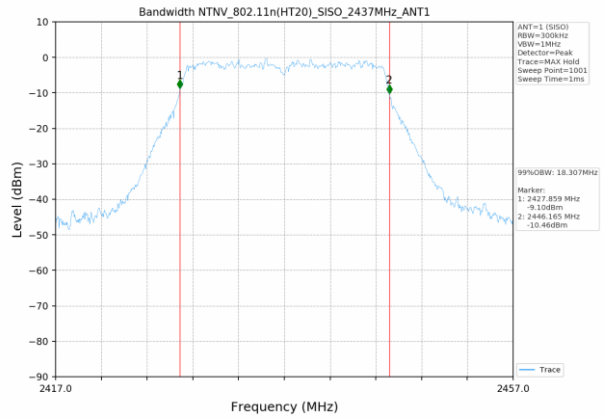
Highest channel

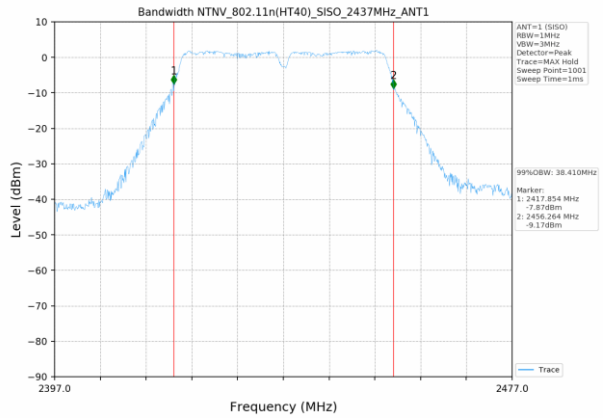
Test mode:	802.11n(HT20)	Test mode:	802.11n(HT40)



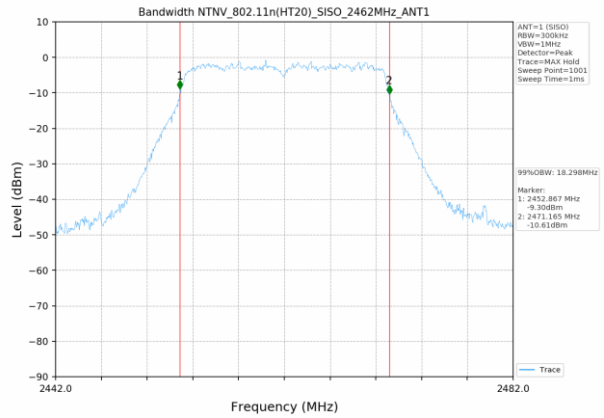


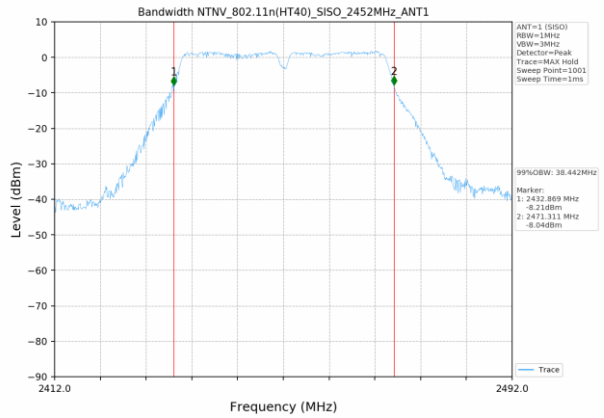
Lowest channel





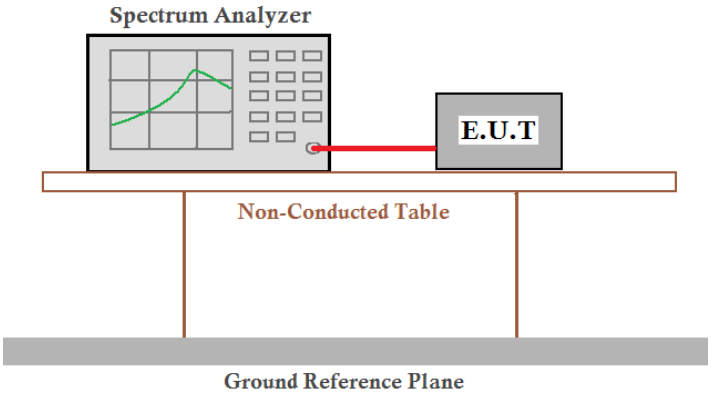
Middle channel





Highest channel

7.5 Power Spectral Density

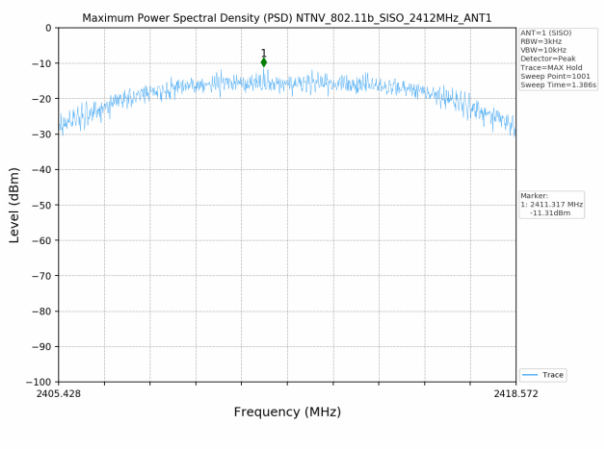
Test Requirement:	FCC Part15 C Section 15.247 (e) RSS-247 Section 5.2(b)
Test Method:	KDB558074 D01 15.247 Meas Guidance v05r02 ANSI C63.10:2013 and RSS-Gen
Limit:	8dBm/3kHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

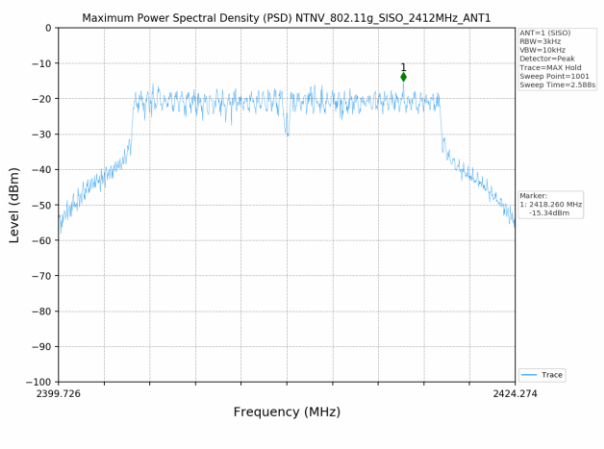
Measurement Data

Test CH	Power Spectral Density (dBm/3kHz)				Limit (dBm/3kHz)	Result
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)		
Lowest	-11.31	-15.34	-15.77	-18.45	8.00	Pass
Middle	-10.35	-17.14	-16.96	-19.64		
Highest	-11.43	-17.86	-17.67	-19.64		

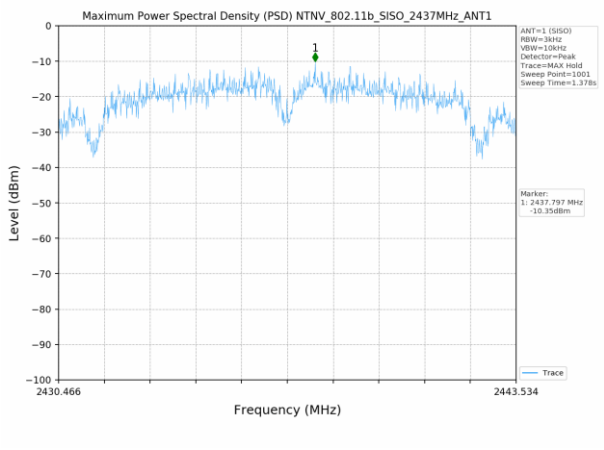
Test plot as follows:

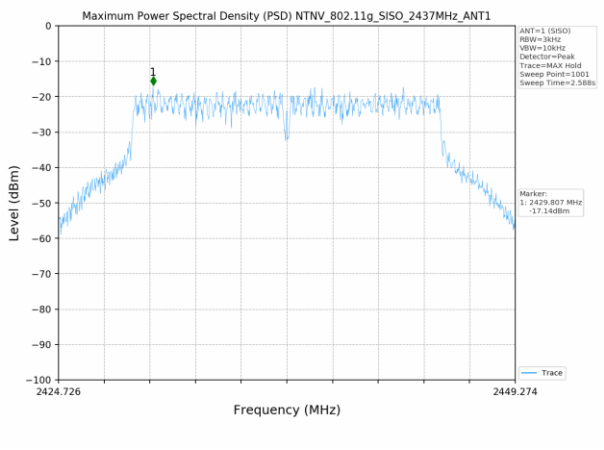
Test mode:	802.11b	Test mode:	802.11g



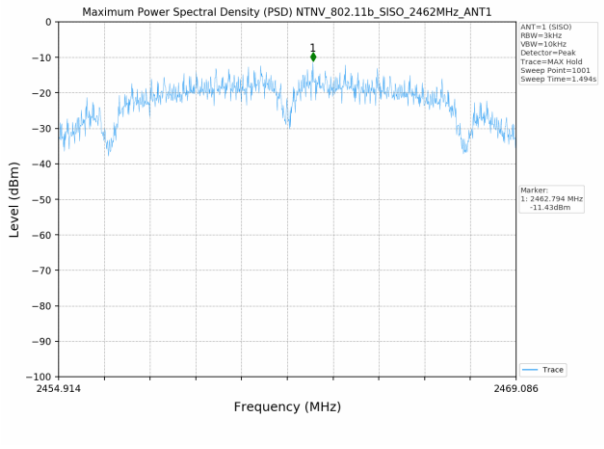


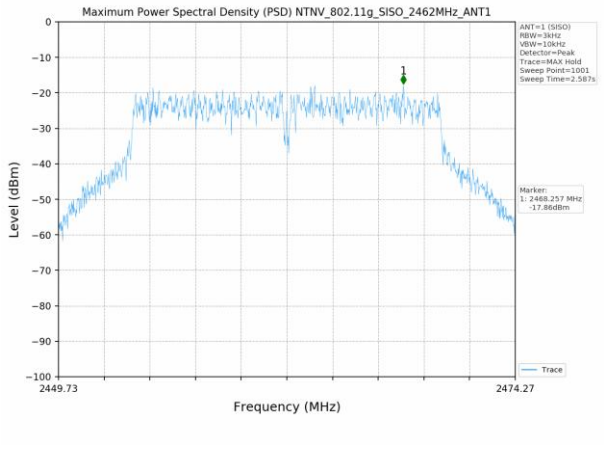
Lowest channel





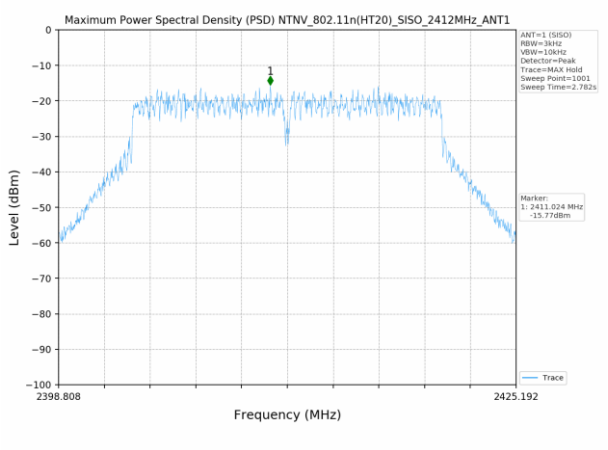
Middle channel

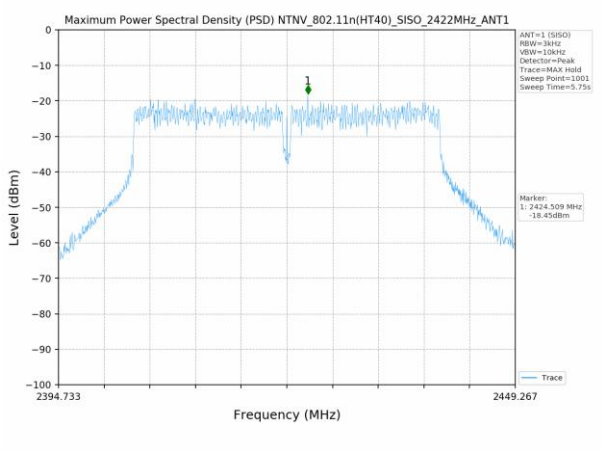




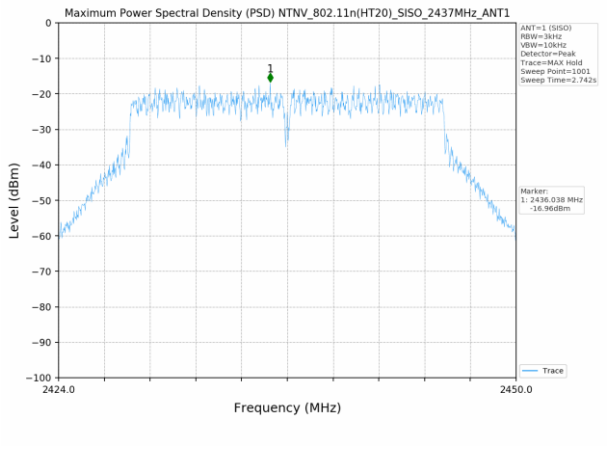
Highest channel

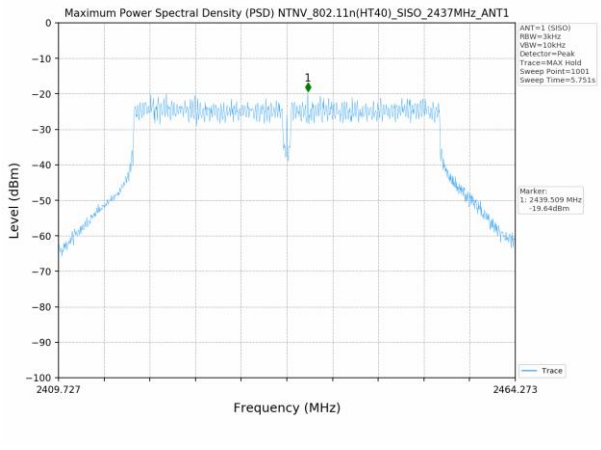
Test mode:	802.11n(HT20)	Test mode:	802.11n(HT40)



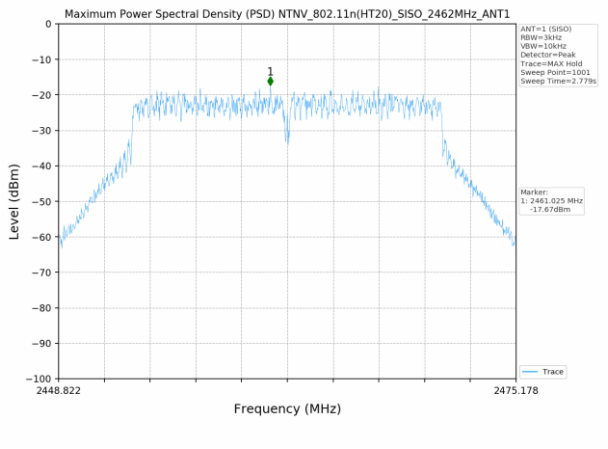


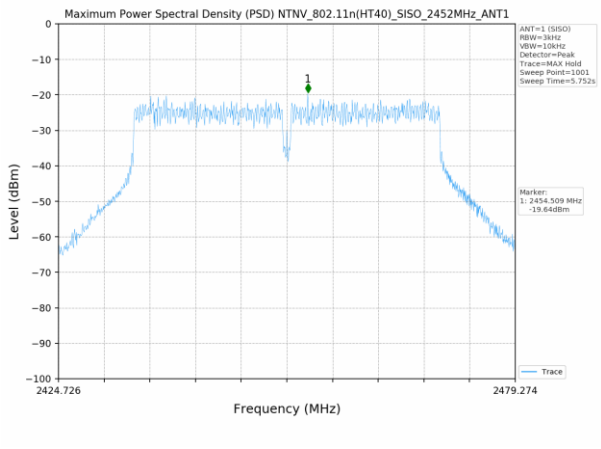
Lowest channel





Middle channel

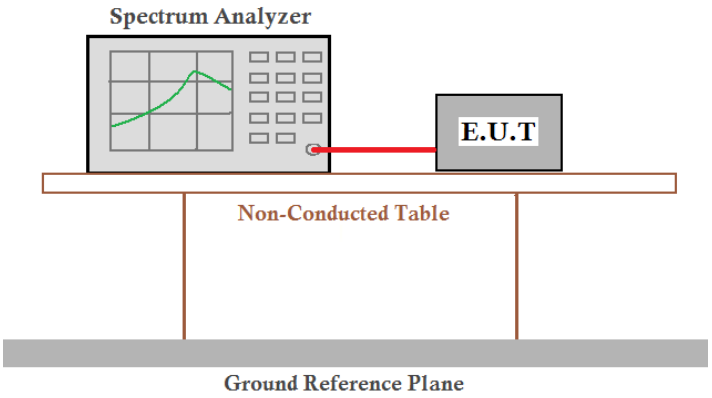




Highest channel

7.6 Spurious Emission in Non-restricted & restricted Bands

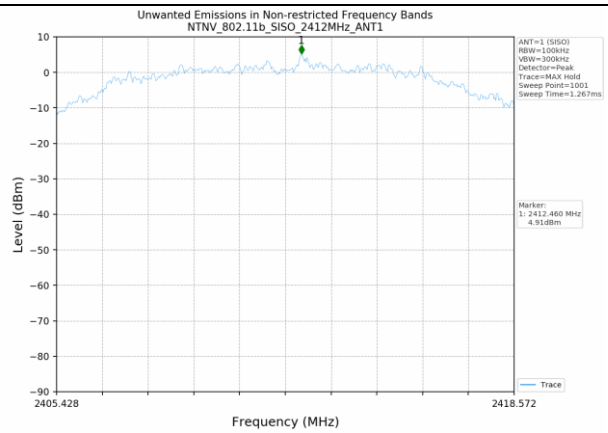
7.6.1 Conducted Emission Method

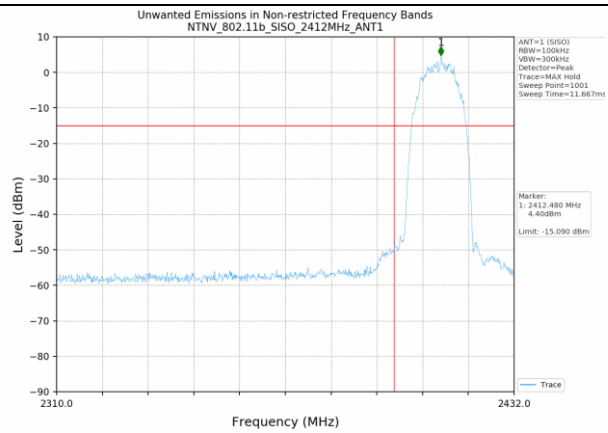
Test Requirement:	FCC Part15 C Section 15.247 (d) RSS-247 Section 5.5
Test Method:	ANSI C63.10:2013 and KDB558074 D01 15.247 Meas Guidance v05r02 & RSS-Gen
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power 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

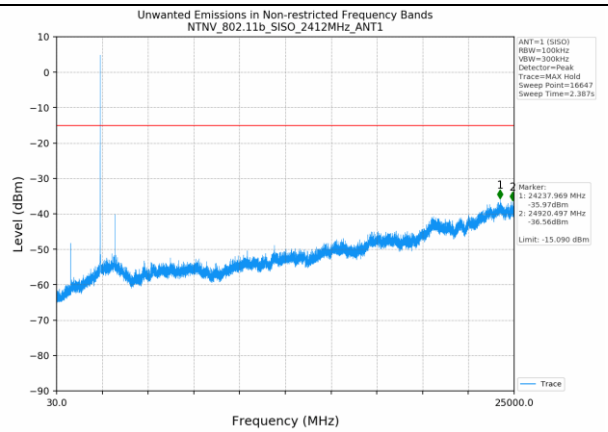
Measurement Data

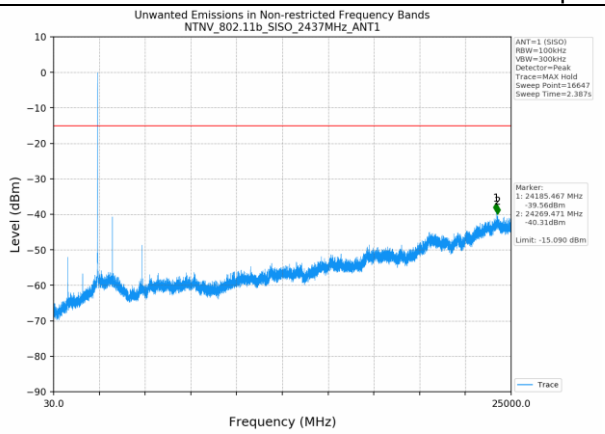
Test Mode	Frequency (MHz)	Spurious Conducted Emission (dBm)	Limits (dBm)	Verdict
802.11b	2412	Refer to test graph	-15.09	PASS
	2437	Refer to test graph	-15.09	PASS
	2462	Refer to test graph	-15.09	PASS
802.11g	2412	Refer to test graph	-20.69	PASS
	2437	Refer to test graph	-20.69	PASS
	2462	Refer to test graph	-20.69	PASS
802.11n(HT20)	2412	Refer to test graph	-20.66	PASS
	2437	Refer to test graph	-20.66	PASS
	2462	Refer to test graph	-20.66	PASS
802.11n(HT40)	2422	Refer to test graph	-23.79	PASS
	2437	Refer to test graph	-23.79	PASS
	2452	Refer to test graph	-23.79	PASS

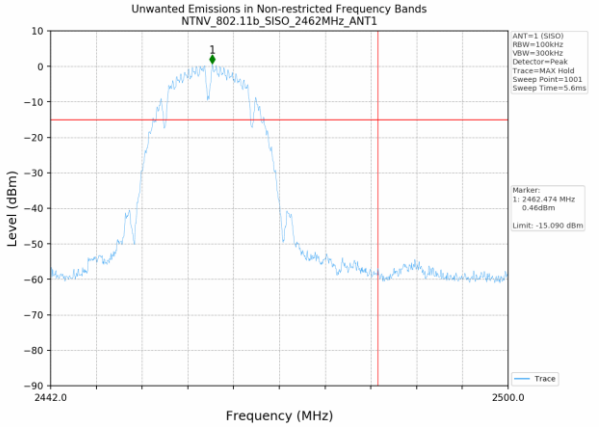
Test plot as follows:

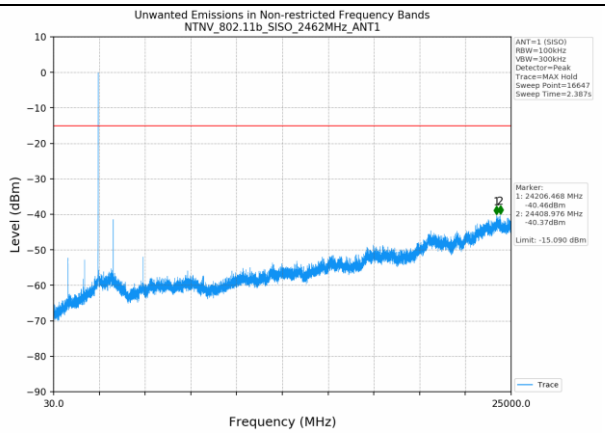


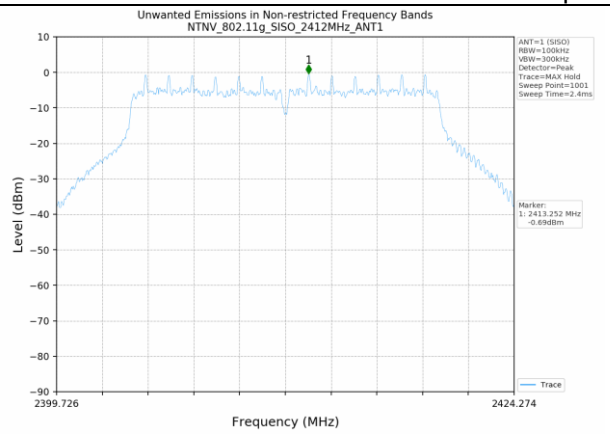


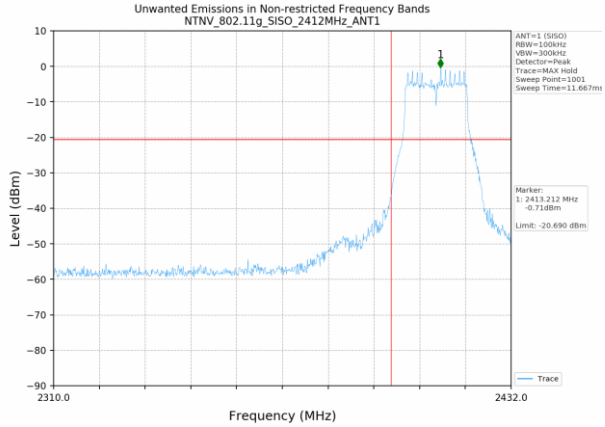


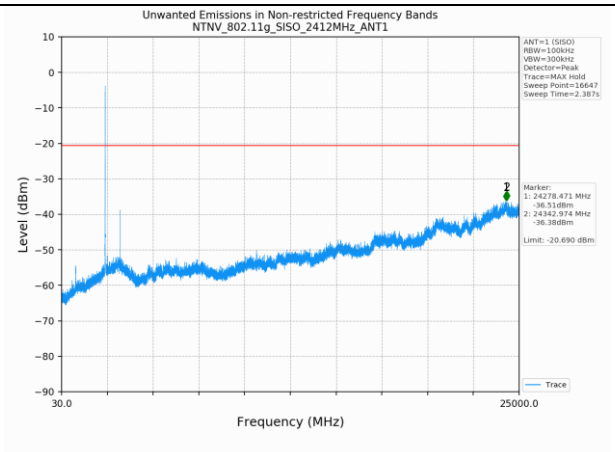

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_802.11b_SISO_2437MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=16647
Sweep Time=2.387s
Marker:
1: 24185.467 MHz
-39.56dBm
2: 24269.471 MHz
-40.31dBm
Limit: -15.090 dBm
Trace
Level (dBm)
Frequency (MHz)
30.0
25000.0

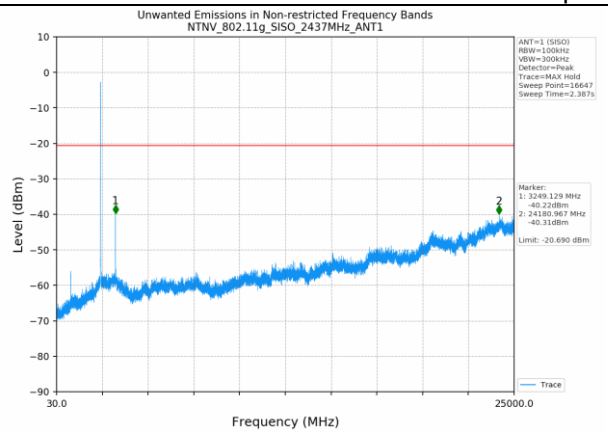

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_802.11b_SISO_2462MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=5.6ms
Marker:
1: 2462.474 MHz
0.46dBm
Limit: -15.090 dBm
Trace
Level (dBm)
Frequency (MHz)
2442.0
2500.0

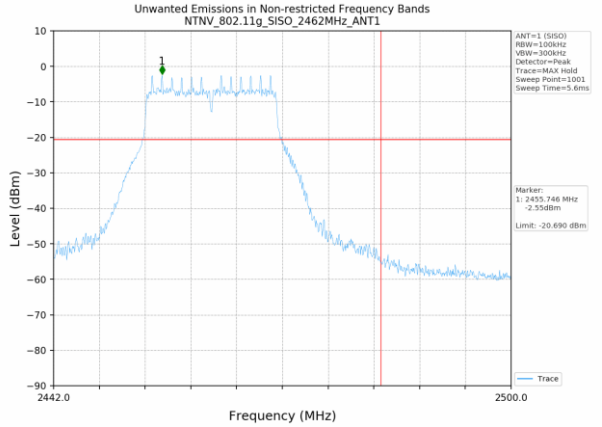

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_802.11b_SISO_2462MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=16647
Sweep Time=2.387s
Marker:
1: 24206.468 MHz
-40.46dBm
2: 24408.976 MHz
-40.37dBm
Limit: -15.090 dBm
Trace
Level (dBm)
Frequency (MHz)
30.0
25000.0

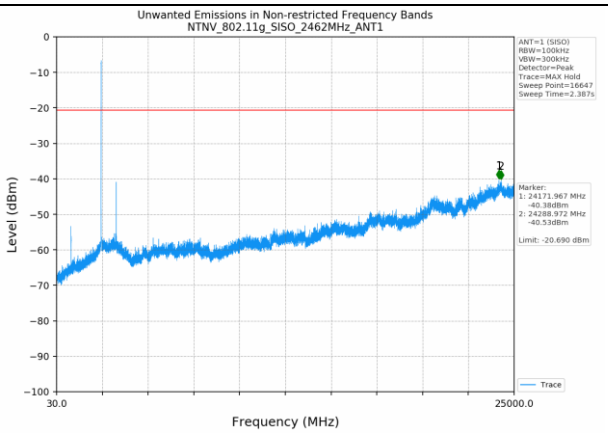

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_802.11g_SISO_2412MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=2.4ms
Marker:
1: 2413.252 MHz
-0.69dBm
Trace
Level (dBm)
Frequency (MHz)
2399.726
2424.274

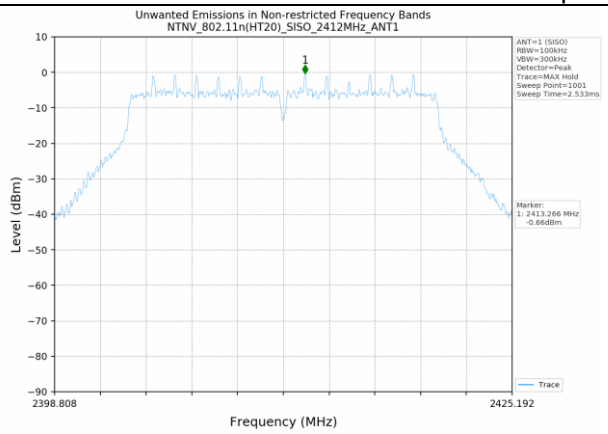

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_802.11g_SISO_2412MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=11.667ms
Marker:
1: 2413.212 MHz
-0.71dBm
Limit: -20.690 dBm
Trace
Level (dBm)
Frequency (MHz)
2310.0
2432.0

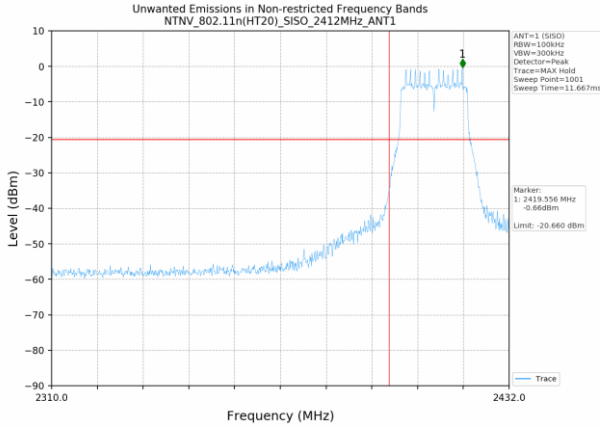

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_802.11g_SISO_2412MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=16647
Sweep Time=2.387s
Marker:
1: 24278.471 MHz
-36.51dBm
2: 24342.974 MHz
-36.38dBm
Limit: -20.690 dBm
Trace
Level (dBm)
Frequency (MHz)
30.0
25000.0

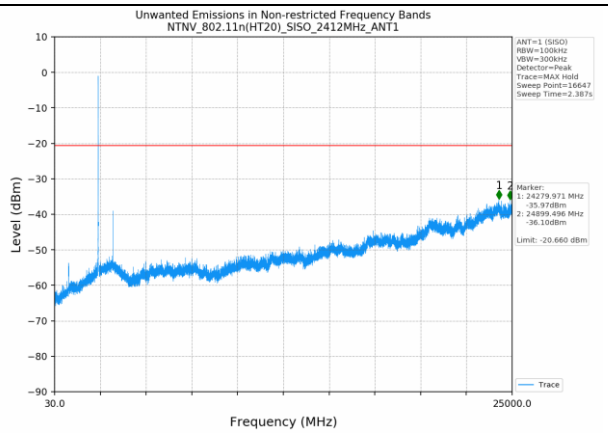

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_802.11g_SISO_2437MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=16647
Sweep Time=2.387s
Marker:
1: 3249.129 MHz
-40.22dBm
2: 24180.967 MHz
-40.31dBm
Limit: -20.690 dBm
Trace
Level (dBm)
Frequency (MHz)
30.0
25000.0

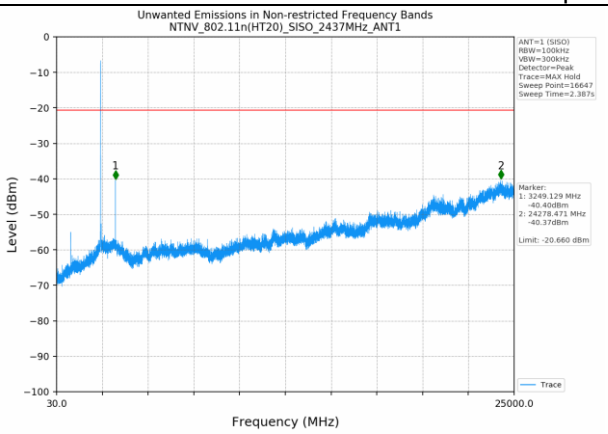

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_802.11g_SISO_2462MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=5.6ms
Marker:
1: 2455.746 MHz
-2.55dBm
Limit: -20.690 dBm
Trace
Level (dBm)
Frequency (MHz)
2442.0
2500.0

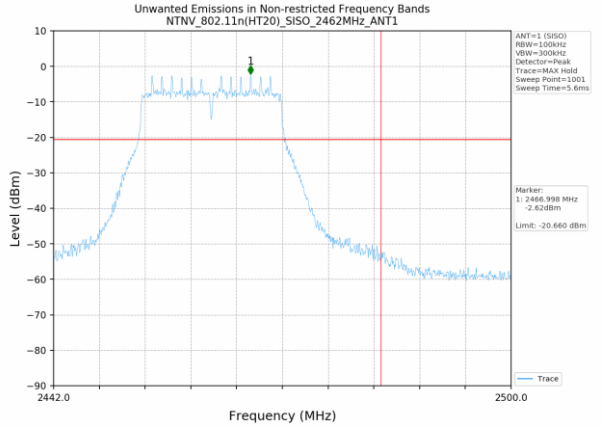

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_802.11g_SISO_2462MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=16647
Sweep Time=2.387s
Marker:
1: 24171.967 MHz
-40.38dBm
2: 24288.972 MHz
-40.53dBm
Limit: -20.690 dBm
Trace
Level (dBm)
Frequency (MHz)
30.0
25000.0

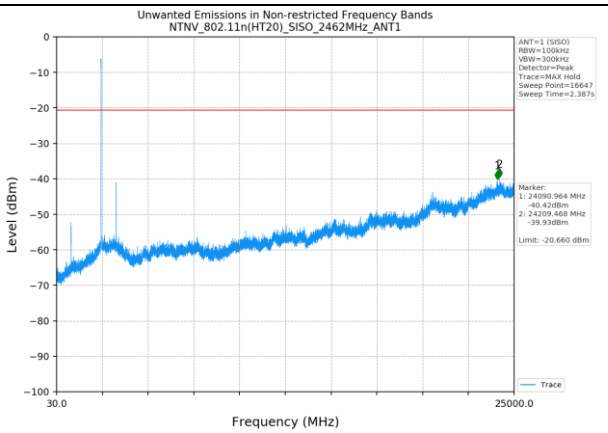

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_802.11n(HT20)_SISO_2412MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=2.533ms
Marker:
1: 2413.266 MHz
-0.66dBm
Trace
Level (dBm)
Frequency (MHz)
2398.808
2425.192

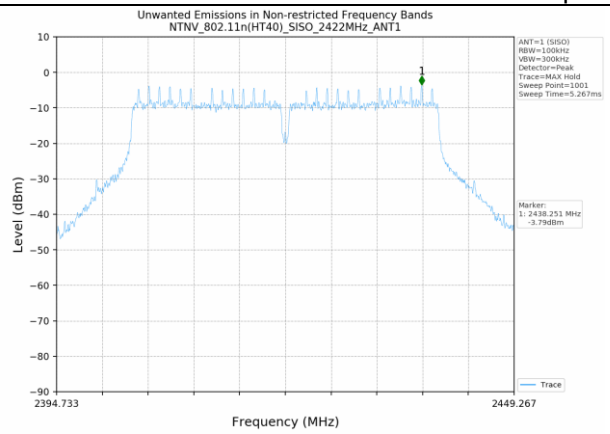

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_802.11n(HT20)_SISO_2412MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=11.667ms
Marker:
1: 2419.556 MHz
-0.66dBm
Limit: -20.660 dBm
Trace
Level (dBm)
Frequency (MHz)
2310.0
2432.0

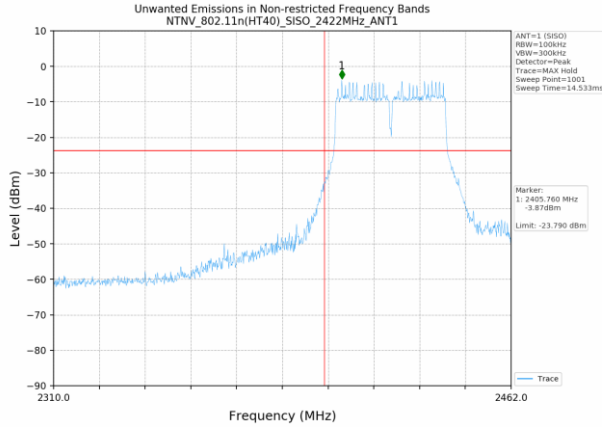

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_802.11n(HT20)_SISO_2412MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=16647
Sweep Time=2.387s
Marker:
1: 24279.971 MHz
-35.97dBm
2: 24899.496 MHz
-36.10dBm
Limit: -20.660 dBm
Trace
Level (dBm)
Frequency (MHz)
30.0
25000.0

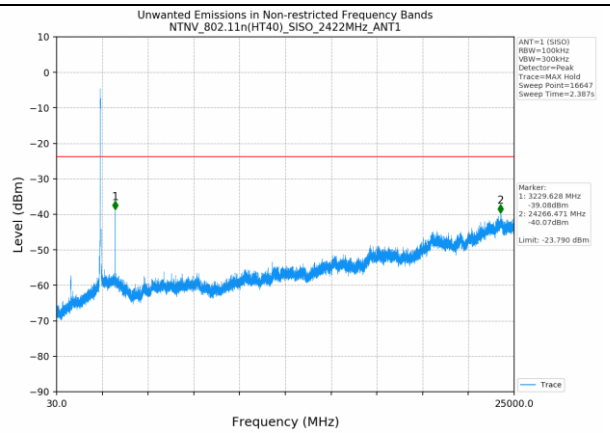

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_802.11n(HT20)_SISO_2437MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=16647
Sweep Time=2.387s
Marker:
1: 3249.129 MHz
-40.40dBm
2: 24278.471 MHz
-40.37dBm
Limit: -20.660 dBm
Trace
Level (dBm)
Frequency (MHz)
30.0
25000.0

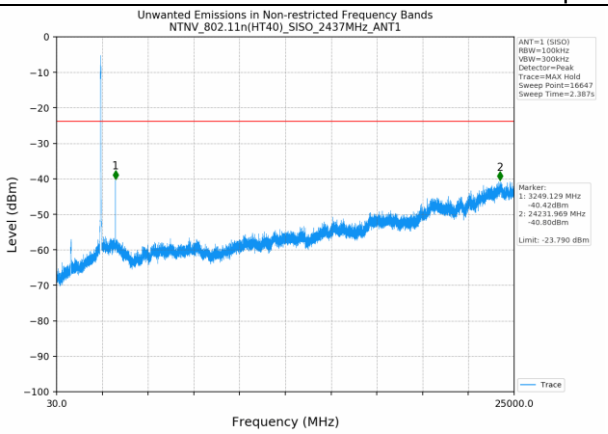

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_802.11n(HT20)_SISO_2462MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=5.6ms
Marker:
1: 2466.998 MHz
-2.62dBm
Limit: -20.660 dBm
Trace
Level (dBm)
Frequency (MHz)
2442.0
2500.0

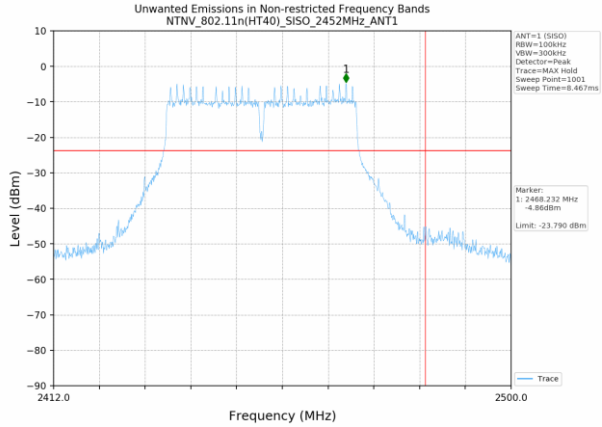

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_802.11n(HT20)_SISO_2462MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=16647
Sweep Time=2.387s
Marker:
1: 24090.964 MHz
-40.42dBm
2: 24209.468 MHz
-39.93dBm
Limit: -20.660 dBm
Trace
Level (dBm)
Frequency (MHz)
30.0
25000.0

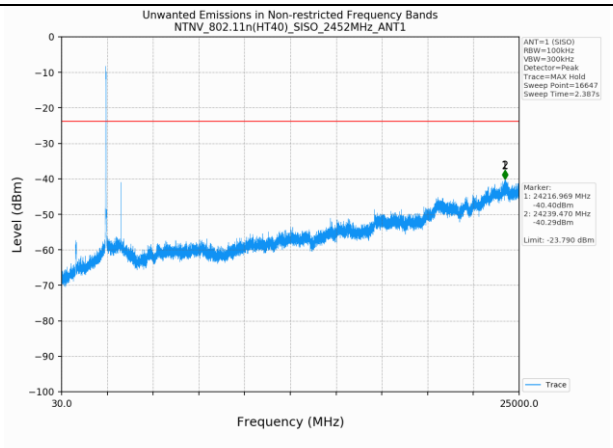

Unwanted Emissions in Non-restricted Frequency Bands
NTNV_802.11n(HT40)_SISO_2422MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=5.267ms
Marker:
1: 2438.251 MHz
-3.79dBm
Trace
Level (dBm)
Frequency (MHz)
2394.733
2449.267


Unwanted Emissions in Non-restricted Frequency Bands
NTNV_802.11n(HT40)_SISO_2422MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=14.533ms
Marker:
1: 2405.760 MHz
-3.87dBm
Limit: -23.790 dBm
Trace
Level (dBm)
Frequency (MHz)
2310.0
2462.0


Unwanted Emissions in Non-restricted Frequency Bands
NTNV_802.11n(HT40)_SISO_2422MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=16647
Sweep Time=2.387s
Marker:
1: 3229.628 MHz
-39.08dBm
2: 24266.471 MHz
-40.07dBm
Limit: -23.790 dBm
Trace
Level (dBm)
Frequency (MHz)
30.0
25000.0


Unwanted Emissions in Non-restricted Frequency Bands
NTNV_802.11n(HT40)_SISO_2437MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=16647
Sweep Time=2.387s
Marker:
1: 3249.129 MHz
-40.42dBm
2: 24231.969 MHz
-40.80dBm
Limit: -23.790 dBm
Trace
Level (dBm)
Frequency (MHz)
30.0
25000.0


Unwanted Emissions in Non-restricted Frequency Bands
NTNV_802.11n(HT40)_SISO_2452MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=1001
Sweep Time=8.467ms
Marker:
1: 2468.232 MHz
-4.86dBm
Limit: -23.790 dBm
Trace
Level (dBm)
Frequency (MHz)
2412.0
2500.0


Unwanted Emissions in Non-restricted Frequency Bands
NTNV_802.11n(HT40)_SISO_2452MHz_ANT1
ANT=1 (SISO)
RBW=100kHz
VBW=300kHz
Detector=Peak
Trace=MAX Hold
Sweep Point=16647
Sweep Time=2.387s
Marker:
1: 24216.969 MHz
-40.40dBm
2: 24239.470 MHz
-40.29dBm
Limit: -23.790 dBm
Trace
Level (dBm)
Frequency (MHz)
30.0
25000.0

7.6.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209 and 15.205 RSS-247 Section 3.3 & RSS-Gen Section 8.9 8.10
Test Method:	ANSI C63.10:2013 & RSS-Gen
Test Frequency Range:	9kHz to 25GHz
Test site:	Measurement Distance: 3m

Receiver setup:

Frequency	Detector	RBW	VBW	Value
9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

FCC Limit:

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

The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

IC Limit:

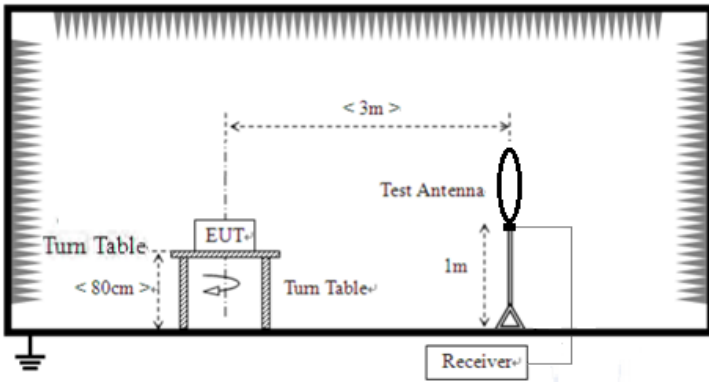
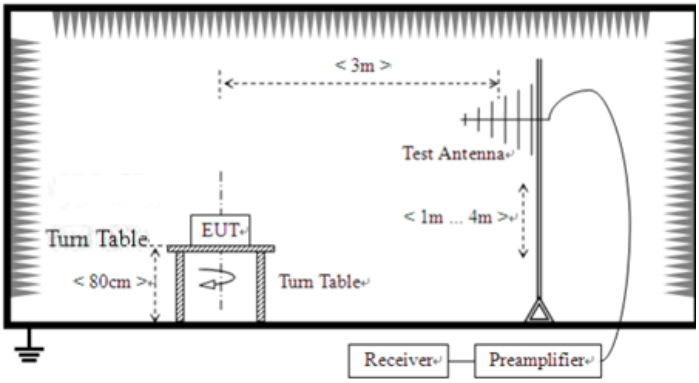
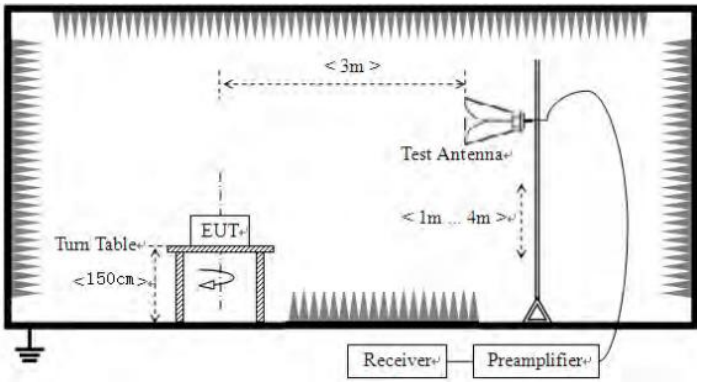
Table 5 – General field strength limits at frequencies above 30 MHz

Frequency (MHz)	Field strength (µV/m at 3 m)
30 – 88	100
88 – 216	150
216 – 960	200
Above 960	500

Table 6 – General field strength limits at frequencies below 30 MHz

Frequency	Magnetic field strength (H-Field) (µA/m)	Measurement distance (m)
9 - 490 kHz [1]	6.37/F (F in kHz)	300
490 - 1705 kHz	63.7/F (F in kHz)	30
1.705 - 30 MHz	0.08	30

Note 1: The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

Test setup:	For radiated emissions from 9kHz to 30MHz  For radiated emissions from 30MHz to1GHz  For radiated emissions above 1GHz 
Test Procedure:	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.					
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 results:	Pass					

Measurement data:

Remark:

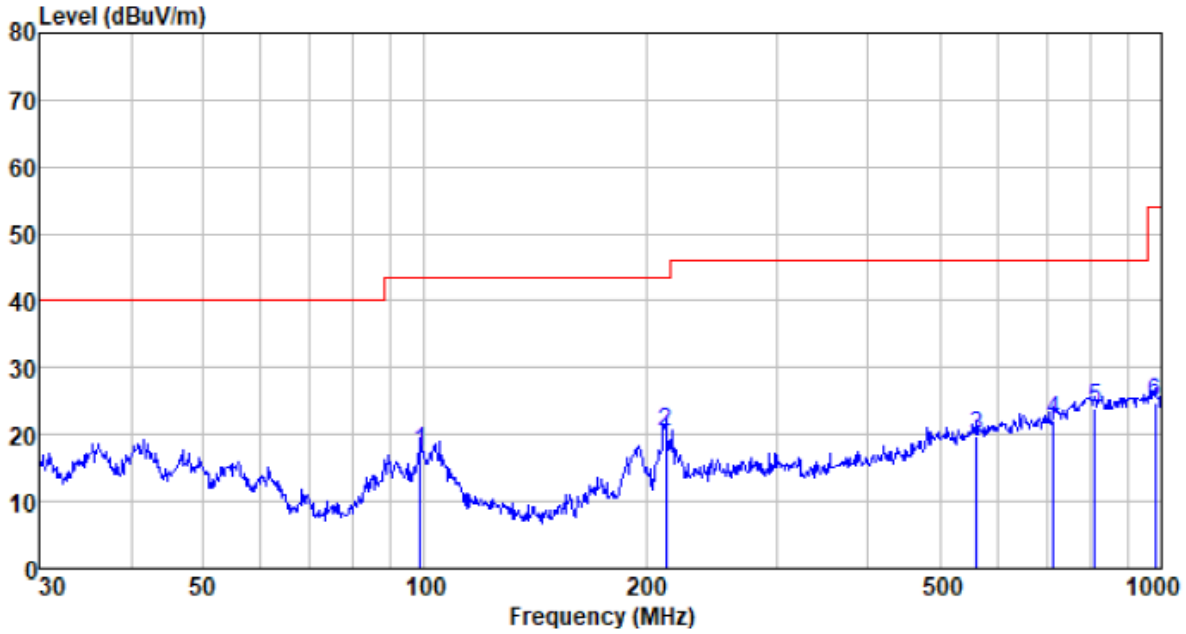
Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case. Only shown the worst case test data. All modulations have been tested,only worse case 802.11b is reported.

■ **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.

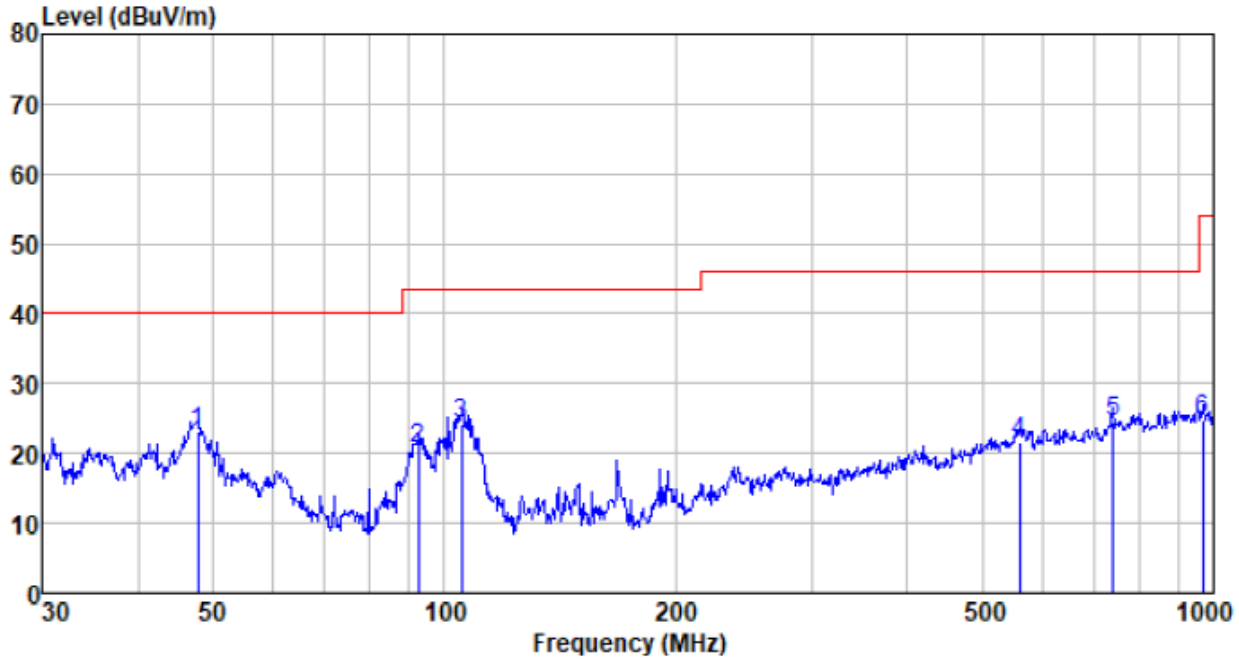
■ **Below 1GHz**

Horizontal:



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
98.833	40.86	12.06	1.18	36.71	17.39	43.50	-26.11	QP
212.270	44.93	10.87	1.91	37.34	20.37	43.50	-23.13	QP
560.693	35.08	18.67	3.56	37.53	19.78	46.00	-26.22	QP
714.173	35.71	19.85	4.14	37.63	22.07	46.00	-23.93	QP
813.112	35.34	21.54	4.51	37.62	23.77	46.00	-22.23	QP
979.180	34.69	22.63	5.14	37.53	24.93	54.00	-29.07	QP

Vertical:

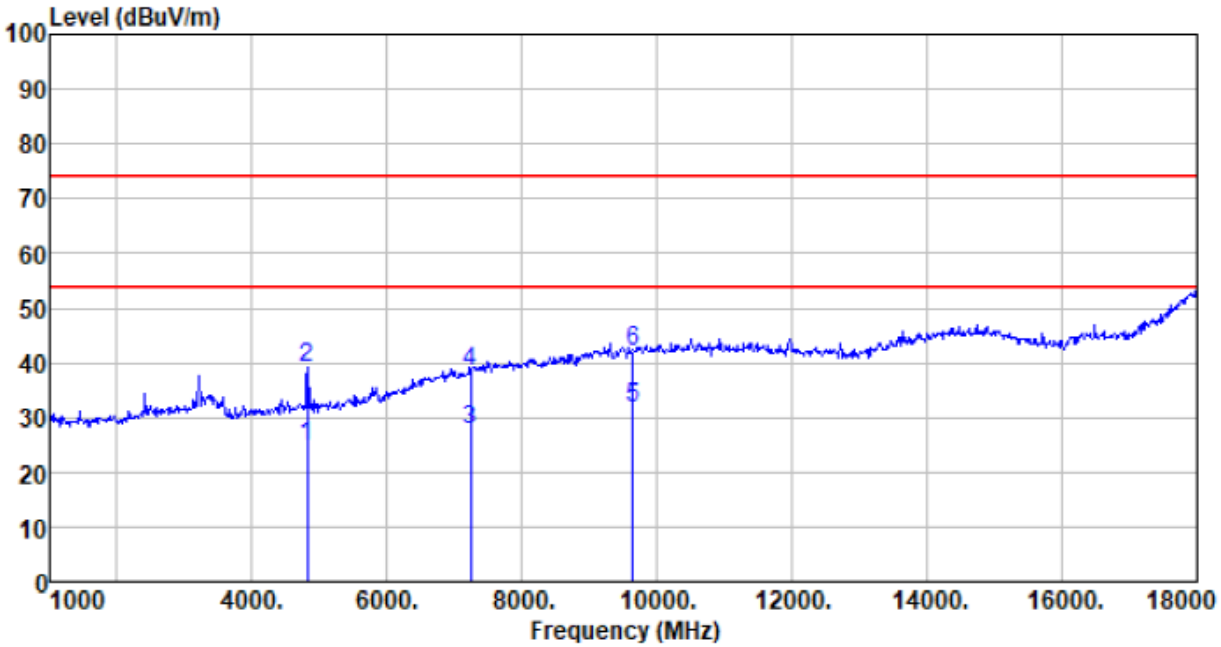


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
47.826	45.93	12.28	0.75	36.08	22.88	40.00	-17.12	QP
92.462	45.17	11.04	1.13	36.66	20.68	43.50	-22.82	QP
105.272	48.18	11.57	1.24	36.77	24.22	43.50	-19.28	QP
558.730	37.04	18.62	3.56	37.53	21.69	46.00	-24.31	QP
739.661	37.53	20.34	4.24	37.63	24.48	46.00	-21.52	QP
968.934	34.72	22.59	5.11	37.54	24.88	54.00	-29.12	QP

- **Above 1GHz**
- **Unwanted Emissions in Restricted Frequency Bands**

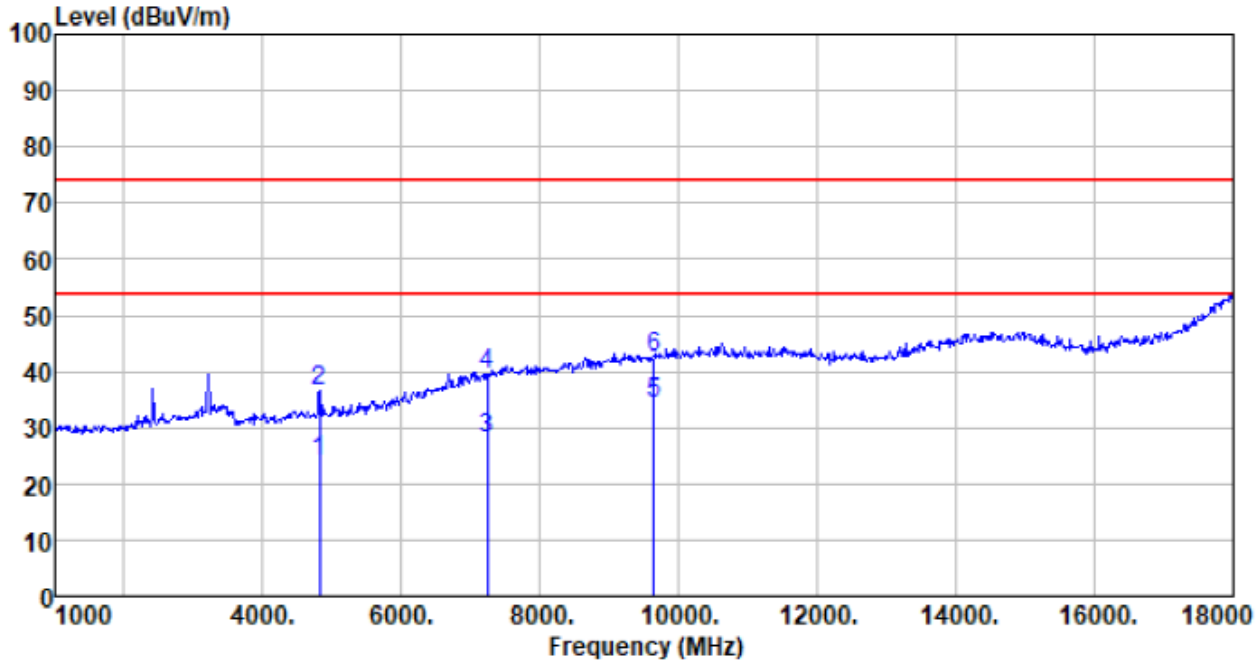
Test mode:	802.11b	Test channel:	Lowest

Horizontal:



Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
4824.000	26.60	31.22	4.63	37.73	24.72	54.00	-29.28	Average
4824.000	40.86	31.22	4.63	37.73	38.98	74.00	-35.02	Peak
7236.000	20.54	36.25	6.52	35.62	27.69	54.00	-26.31	Average
7236.000	31.34	36.25	6.52	35.62	38.49	74.00	-35.51	Peak
9648.000	20.75	37.97	7.99	34.95	31.76	54.00	-22.24	Average
9648.000	31.04	37.97	7.99	34.95	42.05	74.00	-31.95	Peak

Vertical:

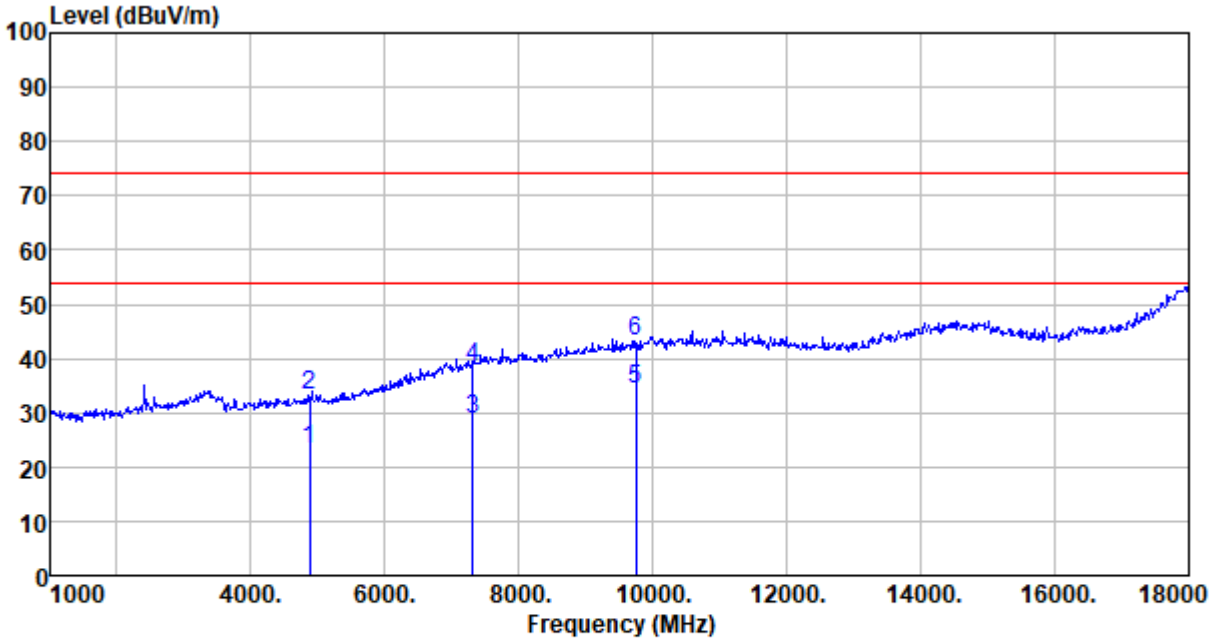


Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
4824.000	25.92	31.22	4.63	37.73	24.04	54.00	-29.96	Average
4824.000	38.25	31.22	4.63	37.73	36.37	74.00	-37.63	Peak
7236.000	21.06	36.25	6.52	35.62	28.21	54.00	-25.79	Average
7236.000	32.25	36.25	6.52	35.62	39.40	74.00	-34.60	Peak
9648.000	23.18	37.97	7.99	34.95	34.19	54.00	-19.81	Average
9648.000	31.44	37.97	7.99	34.95	42.45	74.00	-31.55	Peak

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

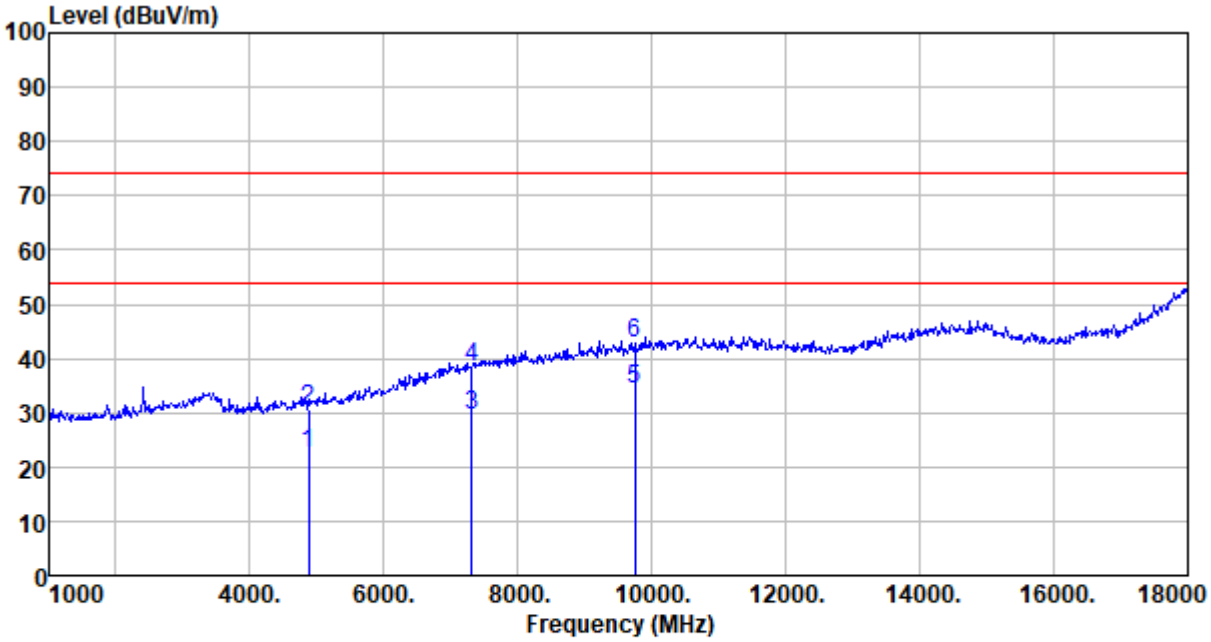
Test mode:	802.11b	Test channel:	Middle

Horizontal:



Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
4874.000	25.00	31.31	4.69	37.75	23.25	54.00	-30.75	Average
4874.000	34.93	31.31	4.69	37.75	33.18	74.00	-40.82	Peak
7311.000	21.27	36.39	6.61	35.60	28.67	54.00	-25.33	Average
7311.000	30.85	36.39	6.61	35.60	38.25	74.00	-35.75	Peak
9748.000	23.18	38.10	8.03	35.03	34.28	54.00	-19.72	Average
9748.000	32.03	38.10	8.03	35.03	43.13	74.00	-30.87	Peak

Vertical:

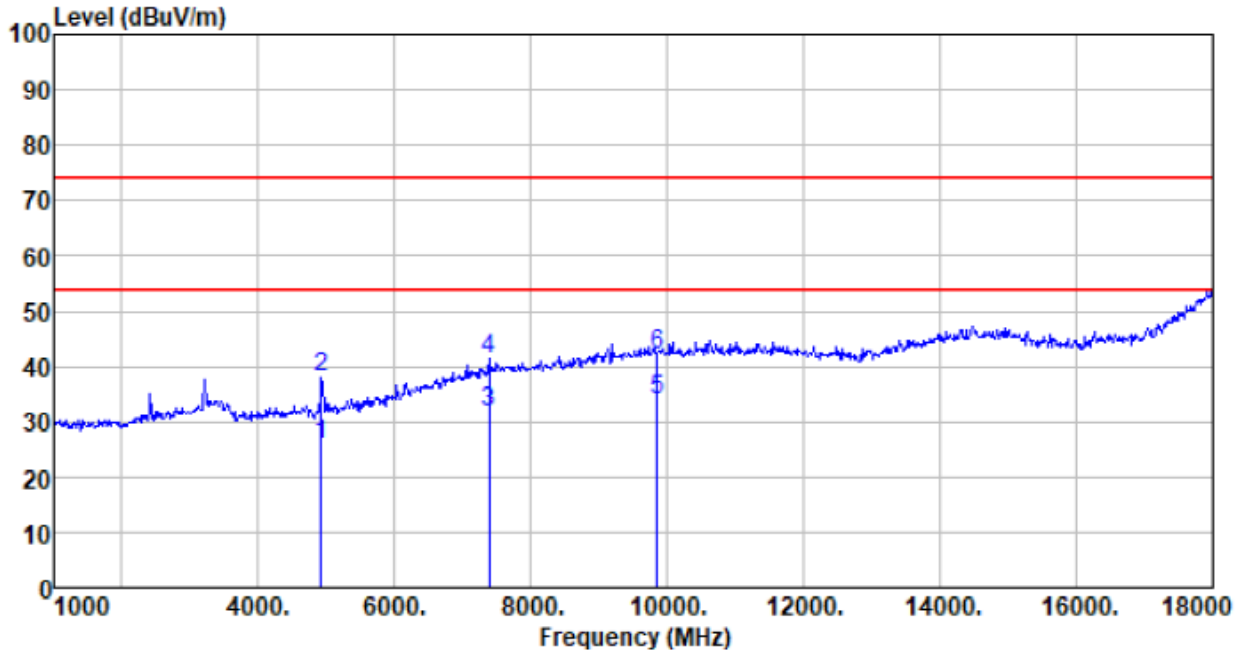


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
4874.000	24.38	31.31	4.69	37.75	22.63	54.00	-31.37	Average
4874.000	32.51	31.31	4.69	37.75	30.76	74.00	-43.24	Peak
7311.000	22.27	36.39	6.61	35.60	29.67	54.00	-24.33	Average
7311.000	30.85	36.39	6.61	35.60	38.25	74.00	-35.75	Peak
9748.000	23.10	38.10	8.03	35.03	34.20	54.00	-19.80	Average
9748.000	31.85	38.10	8.03	35.03	42.95	74.00	-31.05	Peak

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

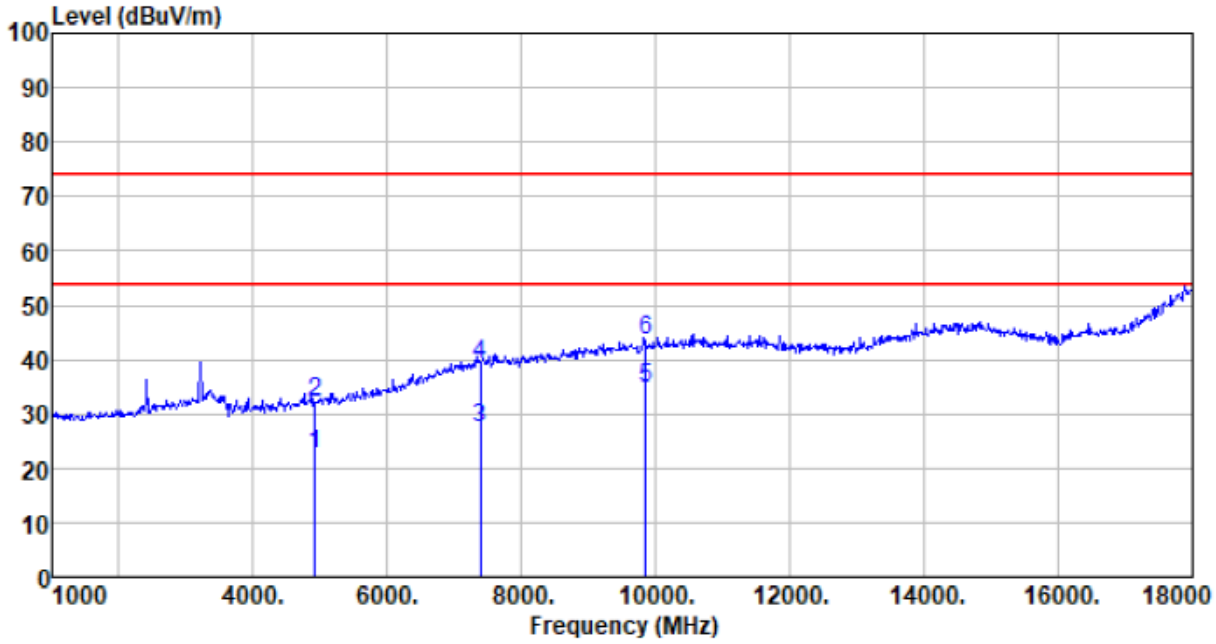
Test mode:	802.11b	Test channel:	Highest

Horizontal:



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
4924.000	27.45	31.39	4.75	37.77	25.82	54.00	-28.18	Average
4924.000	39.64	31.39	4.75	37.77	38.01	74.00	-35.99	Peak
7386.000	23.88	36.57	6.71	35.58	31.58	54.00	-22.42	Average
7386.000	33.76	36.57	6.71	35.58	41.46	74.00	-32.54	Peak
9848.000	22.81	38.20	8.06	35.09	33.98	54.00	-20.02	Average
9848.000	30.98	38.20	8.06	35.09	42.15	74.00	-31.85	Peak

Vertical:



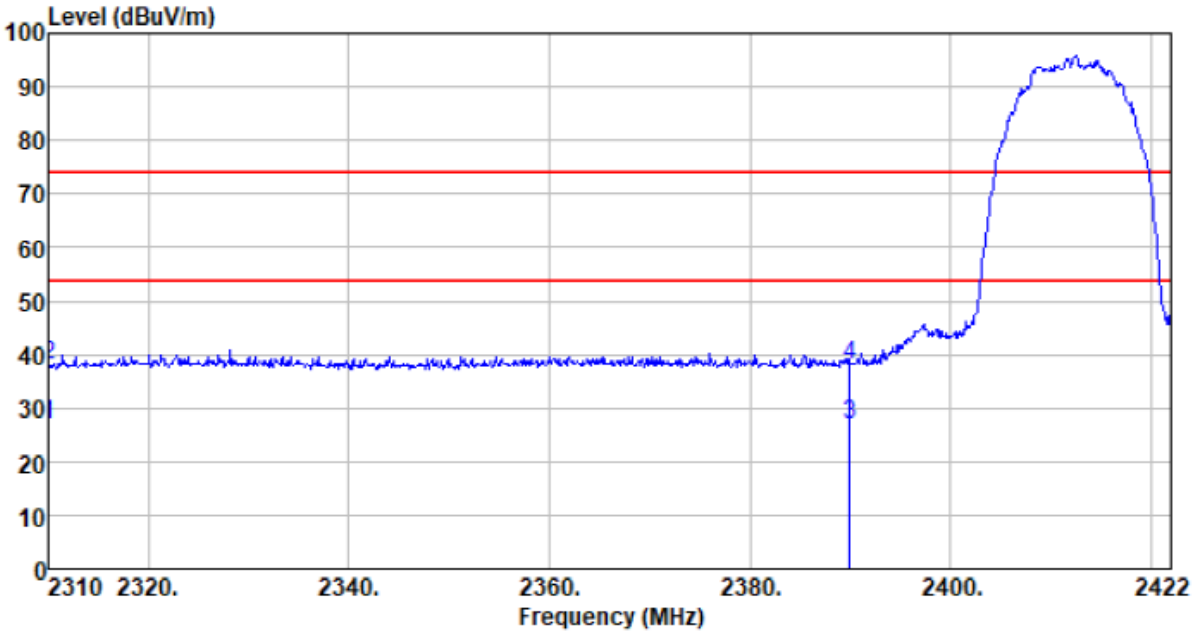
Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
4924.000	24.17	31.39	4.75	37.77	22.54	54.00	-31.46	Average
4924.000	33.62	31.39	4.75	37.77	31.99	74.00	-42.01	Peak
7386.000	19.54	36.57	6.71	35.58	27.24	54.00	-26.76	Average
7386.000	31.33	36.57	6.71	35.58	39.03	74.00	-34.97	Peak
9848.000	23.44	38.20	8.06	35.09	34.61	54.00	-19.39	Average
9848.000	32.31	38.20	8.06	35.09	43.48	74.00	-30.52	Peak

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

■ **Unwanted Emissions in Non-restricted Frequency Bands**

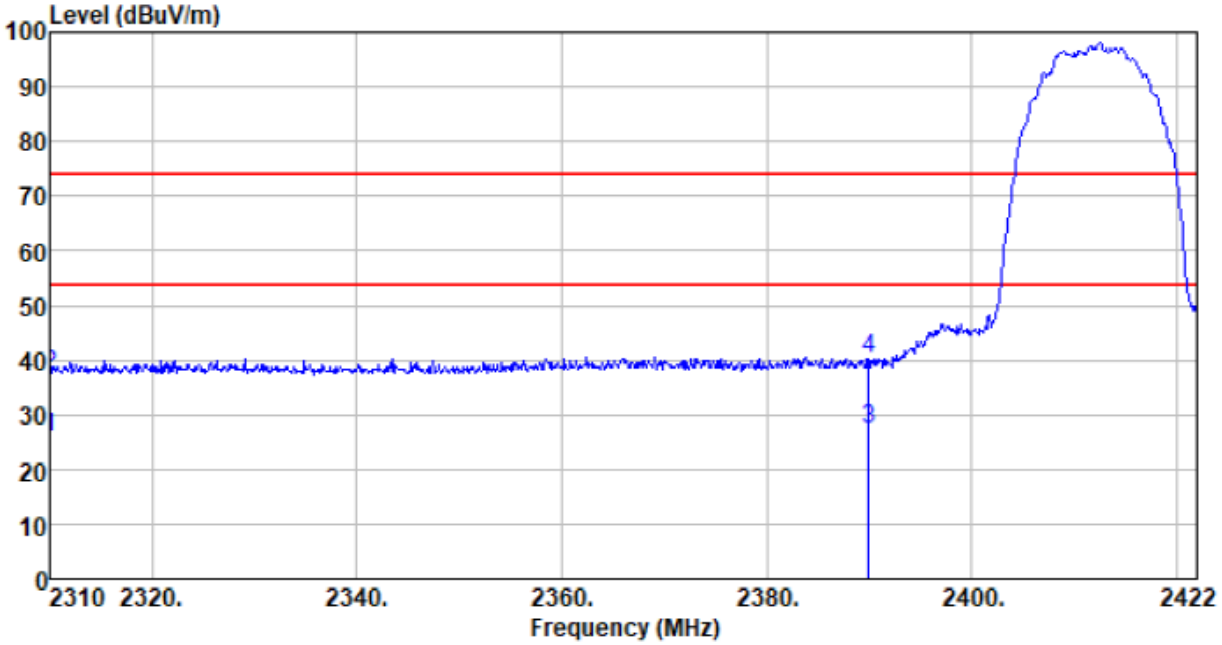
Test mode:	802.11b	Test channel:	Lowest

Horizontal:



Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
2310.000	33.87	27.14	2.81	36.79	27.03	54.00	-26.97	Average
2310.000	44.83	27.14	2.81	36.79	37.99	74.00	-36.01	Peak
2390.000	33.50	27.37	2.91	36.85	26.93	54.00	-27.07	Average
2390.000	44.74	27.37	2.91	36.85	38.17	74.00	-35.83	Peak

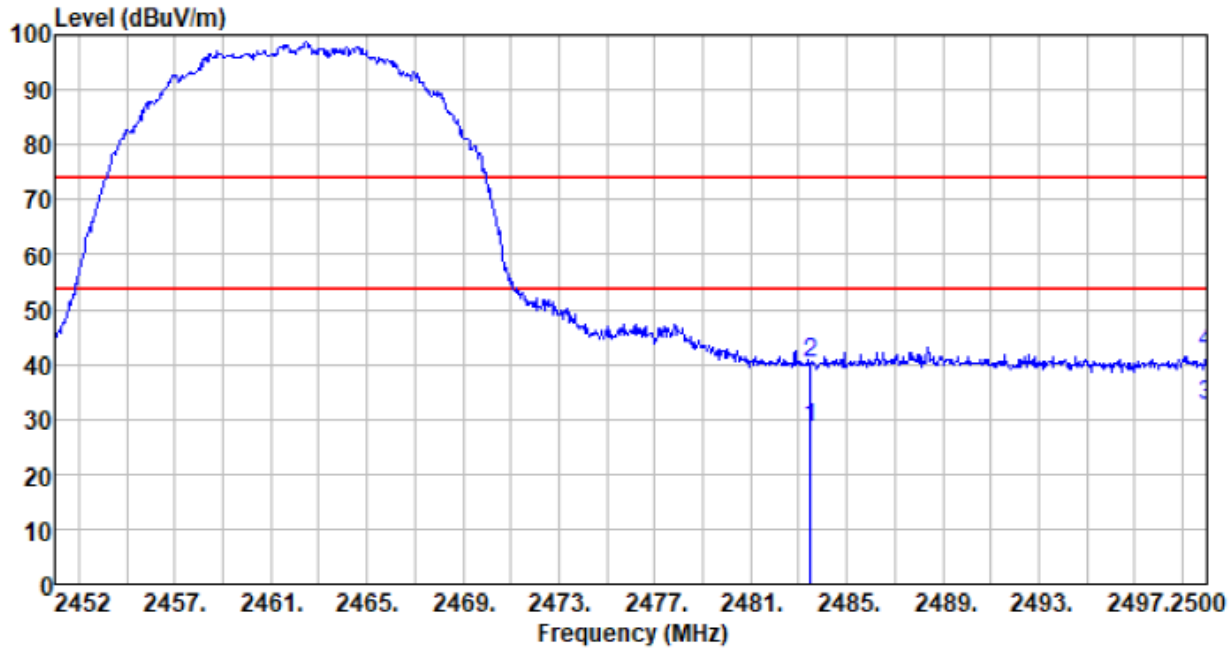
Vertical:



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
2310.000	32.82	27.14	2.81	36.79	25.98	54.00	-28.02	Average
2310.000	44.17	27.14	2.81	36.79	37.33	74.00	-36.67	Peak
2390.000	33.72	27.37	2.91	36.85	27.15	54.00	-26.85	Average
2390.000	46.62	27.37	2.91	36.85	40.05	74.00	-33.95	Peak

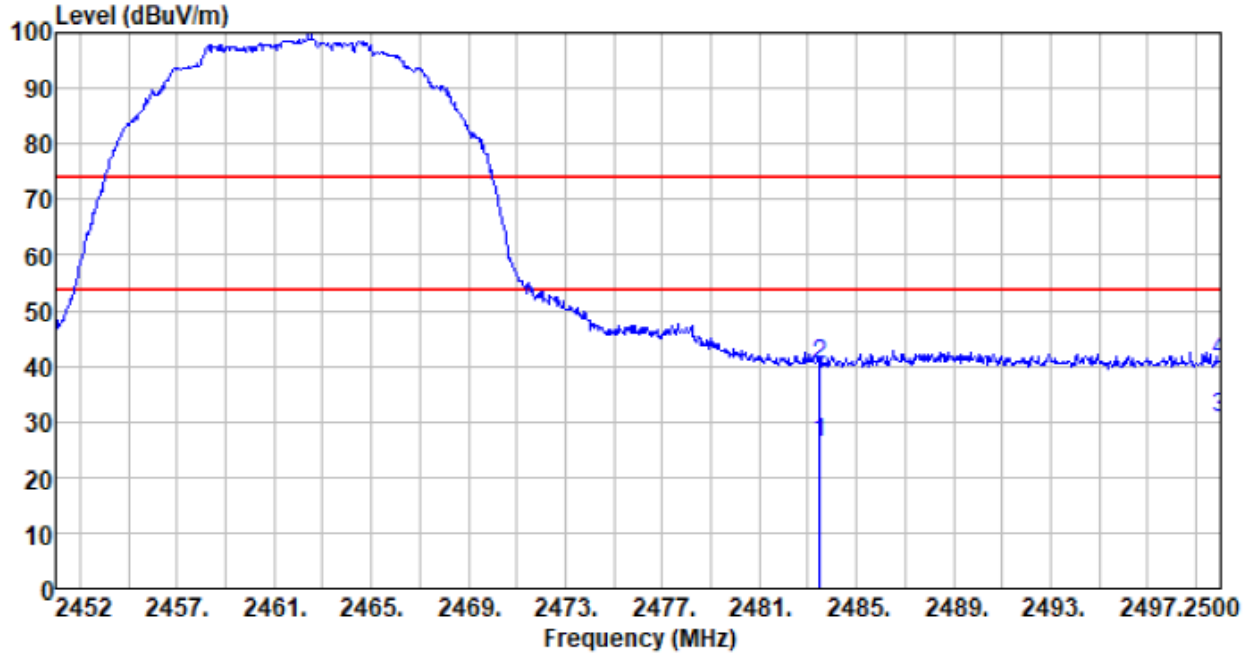
Test mode:	802.11b	Test channel:	Highest

Horizontal:



Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
2483.500	34.52	27.66	2.99	36.93	28.24	54.00	-25.76	Average
2483.500	46.52	27.66	2.99	36.93	40.24	74.00	-33.76	Peak
2500.000	38.71	27.70	3.01	36.94	32.48	54.00	-21.52	Average
2500.000	48.34	27.70	3.01	36.94	42.11	74.00	-31.89	Peak

Vertical:

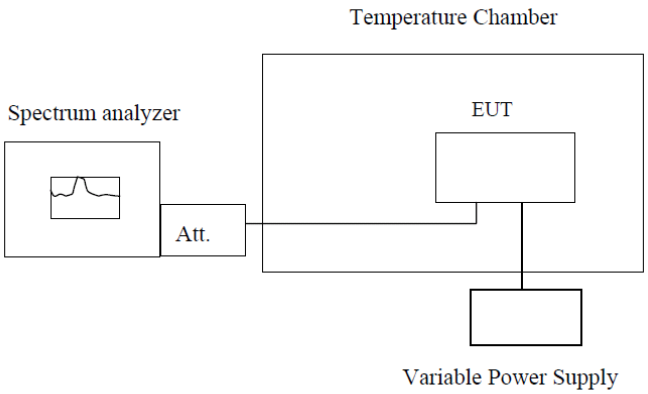


Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
2483.500	32.64	27.66	2.99	36.93	26.36	54.00	-27.64	Average
2483.500	46.64	27.66	2.99	36.93	40.36	74.00	-33.64	Peak
2500.000	36.82	27.70	3.01	36.94	30.59	54.00	-23.41	Average
2500.000	47.26	27.70	3.01	36.94	41.03	74.00	-32.97	Peak

Remarks:

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

7.7 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: AC 120V						
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	2412.30	2412.30	2412.10	2412.05	Pass
	2437	2437.93	2437.68	2437.09	2437.89	Pass
	2452	2452.26	2452.42	2452.29	2452.17	Pass
	2462	2462.80	2462.07	2462.95	2462.48	Pass
-20	2412	2412.30	2412.30	2412.10	2412.05	Pass
	2437	2437.93	2437.68	2437.09	2437.89	Pass
	2452	2452.26	2452.42	2452.29	2452.17	Pass
	2462	2462.80	2462.07	2462.95	2462.48	Pass
-10	2412	2412.30	2412.30	2412.10	2412.05	Pass
	2437	2437.93	2437.68	2437.09	2437.89	Pass
	2452	2452.26	2452.42	2452.29	2452.17	Pass
	2462	2462.80	2462.07	2462.95	2462.48	Pass
0	2412	2412.30	2412.30	2412.10	2412.05	Pass
	2437	2437.93	2437.68	2437.09	2437.89	Pass
	2452	2452.26	2452.42	2452.29	2452.17	Pass
	2462	2462.80	2462.07	2462.95	2462.48	Pass
10	2412	2412.30	2412.30	2412.10	2412.05	Pass
	2437	2437.93	2437.68	2437.09	2437.89	Pass
	2452	2452.26	2452.42	2452.29	2452.17	Pass
	2462	2462.80	2462.07	2462.95	2462.48	Pass
20	2412	2412.30	2412.30	2412.10	2412.05	Pass
	2437	2437.93	2437.68	2437.09	2437.89	Pass
	2452	2452.26	2452.42	2452.29	2452.17	Pass
	2462	2462.80	2462.07	2462.95	2462.48	Pass
30	2412	2412.30	2412.30	2412.10	2412.05	Pass
	2437	2437.93	2437.68	2437.09	2437.89	Pass
	2452	2452.26	2452.42	2452.29	2452.17	Pass
	2462	2462.80	2462.07	2462.95	2462.48	Pass
40	2412	2412.30	2412.30	2412.10	2412.05	Pass
	2437	2437.93	2437.68	2437.09	2437.89	Pass
	2452	2452.26	2452.42	2452.29	2452.17	Pass
	2462	2462.80	2462.07	2462.95	2462.48	Pass
50	2412	2412.30	2412.30	2412.10	2412.05	Pass
	2437	2437.93	2437.68	2437.09	2437.89	Pass
	2452	2452.26	2452.42	2452.29	2452.17	Pass
	2462	2462.80	2462.07	2462.95	2462.48	Pass

Frequency stability versus Voltage						
Temperature: 25°C						
Power Supply (VAC)	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)	
108	2412	2412.97	2412.89	2412.10	2412.82	Pass
	2437	2437.64	2437.25	2437.97	2437.76	Pass
	2452	2452.15	2452.66	2452.63	2452.82	Pass
	2462	2462.51	2462.48	2462.72	2462.41	Pass
132	2412	2412.93	2412.48	2412.01	2412.53	Pass
	2437	2437.36	2437.89	2437.78	2437.60	Pass
	2452	2452.99	2452.22	2452.05	2452.88	Pass
	2462	2462.55	2462.45	2462.35	2462.46	Pass

8 Test Setup Photo

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

9 EUT Constructional Details

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

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