



TEST REPORT

Date: 2015-01-06

Report No.: 60.870.14.021.04F

Applicant: Systech Electronics Ltd.
26/F Lever Tech Centre, 69-71 King Yip Street, Kwun Tong,
Kowloon, Hong Kong.

Description of Samples: Model name: Wireless Scanner Mouse
Brand name: **D + O i**™
Model no.: Zcan Wireless
FCCID: 2ABQ3-SSM003M

Date Samples Received: 2014-11-24

Date Tested: 2014-11-24 to 2015-01-05

Investigation Requested: FCC Part 15 Subpart C, Section 15.247

Conclusions: The submitted product COMPLIED with the requirements of Federal Communications Commission [FCC] Rules and Regulations Part 15. The tests were performed in accordance with the standards described above and on Section 2.2 in this Test Report.

Remarks: ---

Checked by:

Approved by:-

Ray Cheung
Project Engineer
Wireless & Telecom department

Jeff Pong
Manager
Wireless & Telecom department



CONTENT:

Cover	Page 1 of 35
Content	Page 2-3 of 35
<u>1.0 General Details</u>	
1.1 Test Laboratory	Page 4 of 35
1.2 Applicant Details	Page 4 of 35
1.3 Equipment Under Test [EUT]	Page 5 of 35
1.4 Related Submittal(s) Grants	Page 5 of 35
<u>2.0 Technical Details</u>	
2.1 Investigations Requested	Page 6 of 35
2.2 Test Standards and Results Summary	Page 6 of 35
<u>3.0 Test Methodology</u>	
3.1 Radiated Emission	Page 7 of 35
3.2 Field Strength Calculation	Page 7 of 35
3.3 Conducted Emission	Page 7 of 35
<u>4.0 Test Results</u>	
4.1 6dB Bandwidth Measurement	Page 9-14 of 35
4.2 Power Spectral Density	Page 15-21 of 35
4.3 Band Edge Measurement	Page 22-24 of 35
4.4 Maximum Output Power	Page 25-26 of 35
4.5 Out of Band Emissions and Emissions in Restricted Bands	Page 27-33 of 35
4.6 Conducted Emission on AC Mains	Page 34 of 35



5.0 List of Measurement Equipments

Page 35 of 35

Appendix A

Photos of Test Setup

Appendix B

External EUT Photos

Appendix C

Internal EUT Photos



1.0 General Details

1.1 Test Laboratory

STC (Dongguan) Company Ltd.
68 Fumin Nan Rd, Dalang, Dongguan, Guangdong, PRC.

Tested By:

A handwritten signature in blue ink, appearing to read 'John Zhi', written over a horizontal line.

John Zhi

1.2 Applicant Details **Applicant**

Systech Electronics Ltd.
26/F Lever Tech Centre, 69 – 71 King Yip Street, Kwun Tong,
Kowloon, Hong Kong.

Manufacturers

K-Mark Industrial Ltd.
Flat A, 7/F., Mai On Ind. Bldg., 17 – 21, Kung Yip St., Kwai Chung,
Hong Kong.



1.3 Equipment Under Test [EUT]

Description of EUT

Product Description:	Wireless Scanner Mouse
Model No.:	Zcan Wireless
Brand Name:	D+Oi ™
FCCID:	2ABQ3-SSM003M
Rating:	DC 3.7V 650mAh Li-ion battery
Operated Frequency:	2412 – 2462 MHz
No. of Operated Channel:	11 CH / (802.11b/g/n – HT20)
Data Rate:	802.11b: 1, 2, 5.5, 11Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11n: MCS0-7, up to 150Mbps
Modulation:	DSSS (BPSK, QPSK, CCK) and OFDM (BPSK/QPSK/16-QAM/ 64-QAM)
Accessories and Auxiliary Equipments:	ThinkPad Notebook
Antenna Type:	PCB Antenna
Manufacture of Antenna:	---
Antenna Gain:	2 dBi
Antenna Model:	---

General Operation of EUT

The Equipment Under Test (EUT) is a Mouse with scanning function, which include of an 802.11b/g/n module.



Description of Test Modes

The EUT has been tested under operating condition. Software used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

IEEE802.11b: Channel 1(2412MHz), Channel 6(2437MHz) and Channel 11(2462MHz) with 1Mbps data rate (worst case) are chosen for the final testing.

IEEE802.11g: Channel 1(2412MHz), Channel 6(2437MHz) and Channel 11(2462MHz) with 6Mbps data rate (the worst case) are chosen for the final testing.

IEEE802.11n – HT20: Channel 1(2412MHz), Channel 6 (2437MHz) and Channel 11 (2462MHz) with MCS0 (worst case) are chosen for the final testing.

IEEE802.11n – HT40: Channel 3(2422MHz), Channel 6 (2437MHz) and Channel 9 (2452MHz) with MCS0 (worst case) are chosen for the final testing.

1.4 Related Submittal(s) Grants

This is a signal application subject to Certificate Authorization.



2.0 Technical Details

2.1 Investigations Requested

Perform ElectroMagnetic Interference measurement in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15 and ANSI C63.4: 2009

2.2 Test Standards and Results Summary Tables

Test Condition	Test Requirement	Test Result	
		Pass	N/A
Number of Frequency Hopping	Section 15.247 (a1)	☐	☒
6dB Bandwidth Measurement	Section 15.247 (a2)	☒	☐
Power Spectral Density	Section 15.247 (e)	☒	☐
Pseudorandom Hopping Algorithm	Section 15.247 (a1)	☐	☒
Band Edge Measurement	Section 15.247	☒	☐
Maximum Output Power	Section 15.247 (b3)	☒	☐
Out of Band Emission	Section 15.247 (d)	☒	☐
Radiated Emission in Restricted Band	Section 15.247 (d)	☒	☐
Conducted Emission on AC Mains	Section 15.207	☒	☐
RF Exposure	Section 15.247 (i)	☒	☐
Antenna Requirement	Section 15.203	☒ See note 1	☐

Note 1 : The EUT uses a permanently attached antenna, which in accordance to Section 15.203, is considered sufficient to comply with the provisions of this section.

Remark: N/A - Not Applicable



3.0 Test Methodology

3.1 Radiated Emission

The sample was placed 0.8m above the ground plane on a standard emission test site *. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

3.2 Field Strength Calculation

The field strength at 3 m was established by adding the meter reading of the spectrum analyzer to the factors associated with antenna correction factor, cable loss, preamplifiers and filter attenuation.

The equation is expressed as follow:

$FS = R + \text{System Factor}$

$\text{System Factor} = AF + CF + FA - PA$

Where FS = Net Field Strength in dBuV/m at 3 meters.

R = Reading of Spectrum Analyzer / Test Receiver in dBuV.

AF = Antenna Factor in dB.

CF = Cable Attenuation Factor in dB.

FA = Filter Attenuation Factor in dB.

PA = Preamplifier Factor in dB.

FA and PA are only be used for the measuring frequency above 1 GHz.

3.3 Conducted Emissions

The test was performed in accordance with ANSI C63.4: 2003, with the following: initial measurements were performed in peak and average detection modes on the live line of personal computer, any emissions recorded within 30dB of the relevant limit lines were re-measured using quasi-peak and average detection on the live and neutral lines with the worst case recorded in the table of results.

4.0 Test Results

4.1 6 dB Bandwidth Measurement

Test Requirement:	FCC part 15 section 15.247 (a2)
Test Date:	2014-12-16
Mode of Operation:	Transmitting continuously mode
Detector Function:	Max Hold

Result: PASS

Test Setup:

The bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

For 802.11b Mode

Channel	Measured frequency (MHz)	6dB Bandwidth (MHz)
Lowest	2412	11.273
Middle	2437	11.222
Highest	2462	11.072

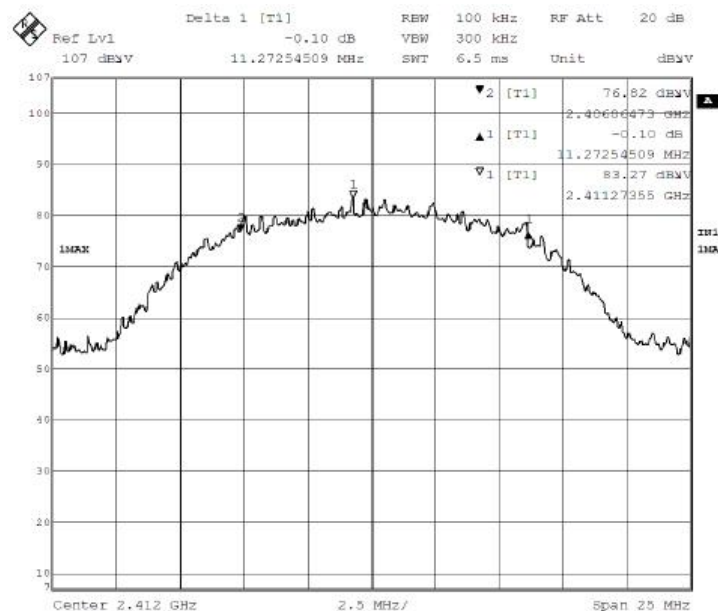
This result is used for checking the systems using digital modulation techniques may operate in the 2400–2483.5 MHz.

Limits for 6 dB bandwidth [Section 15.247 (a2)]:

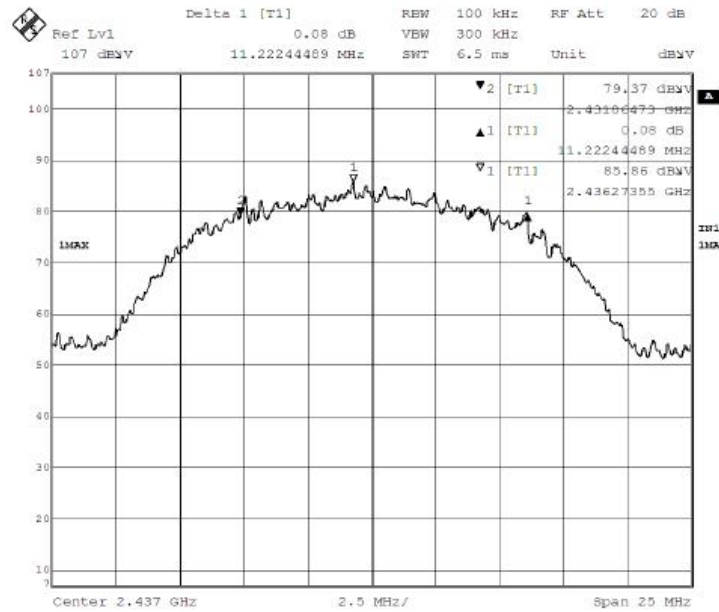
The minimum 6 dB bandwidth shall be at least 500 kHz.

For 802.11b Mode

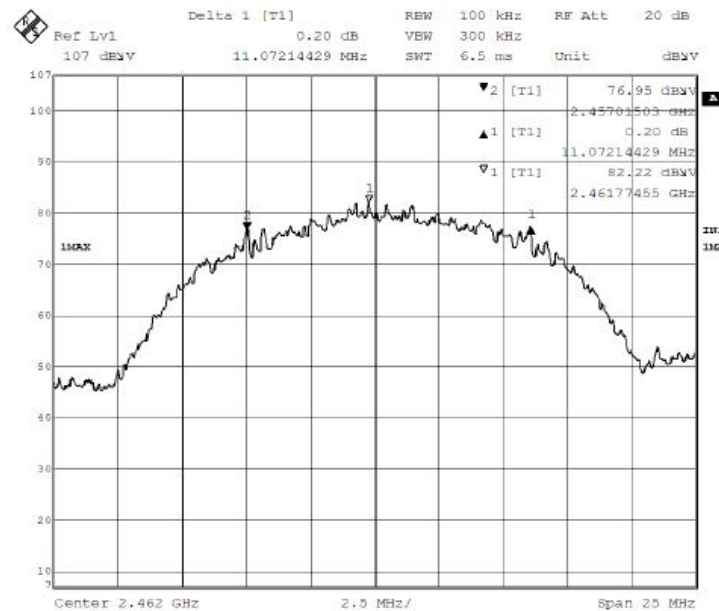
Result data graph shows 6 dB bandwidth, CF = 2.412GHz, BW = 11.273 MHz



Result data graph shows 6 dB bandwidth, CF = 2.437GHz, BW = 11.222 MHz

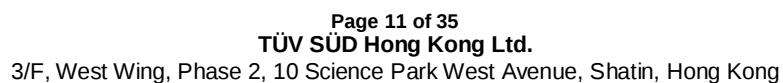


Result data graph shows 6 dB bandwidth, CF = 2.462GHz, BW = 11.072 MHz

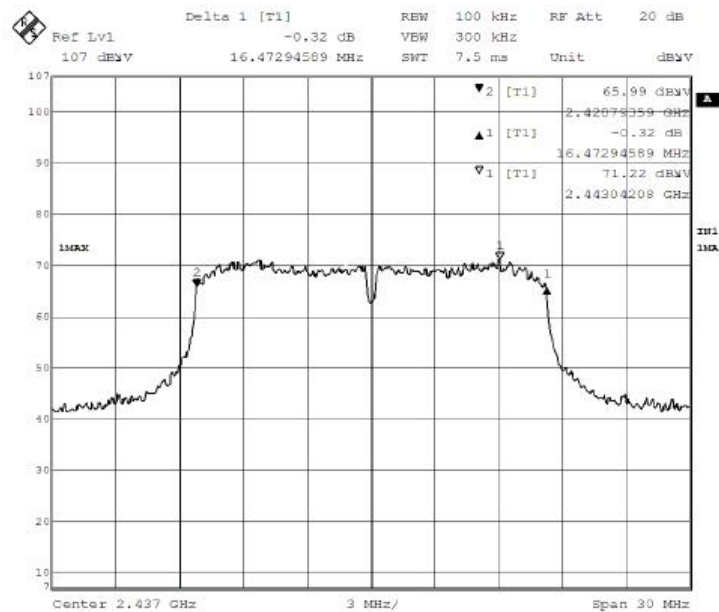


Channel	Measured frequency (MHz)	6dB Bandwidth (MHz)
Lowest	2412	16.473
Middle	2437	16.473
Highest	2462	16.353

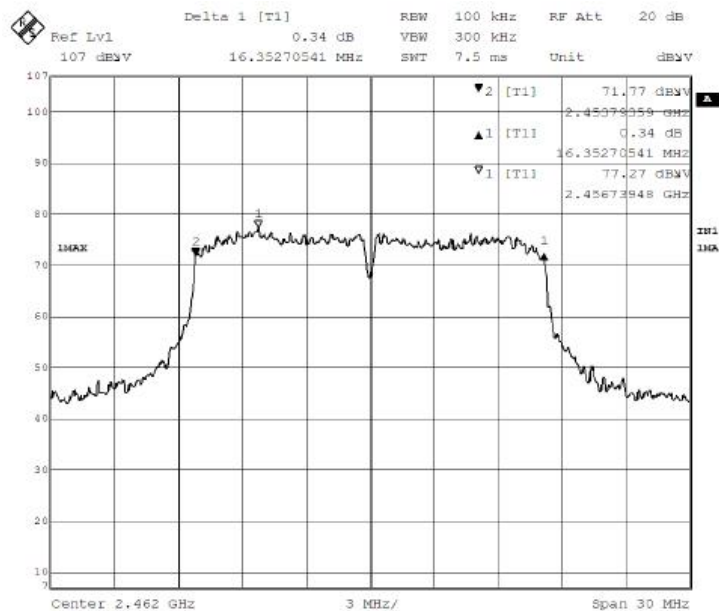
Result data graph shows 6 dB bandwidth, CF = 2.412GHz, BW = 16.473 MHz



Result data graph shows 6 dB bandwidth, CF = 2.437GHz, BW = 16.473 MHz



Result data graph shows 6 dB bandwidth, CF = 2.462GHz, BW = 16.353 MHz



For 802.11n – HT20 Mode

Channel	Measured frequency (MHz)	6dB Bandwidth (MHz)
Lowest	2412	16.533
Middle	2437	16.834
Highest	2462	16.994

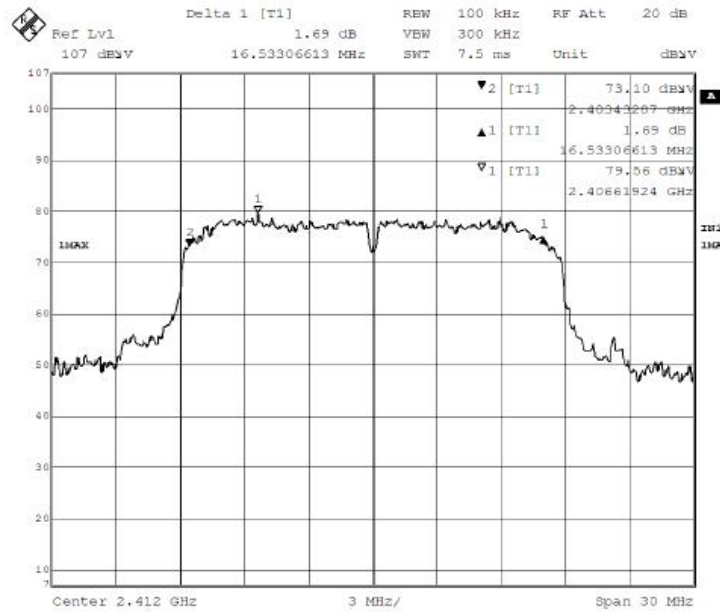
This result is used for checking the systems using digital modulation techniques may operate in the 2400–2483.5 MHz.

Limits for 6 dB bandwidth [Section 15.247 (a2)]:

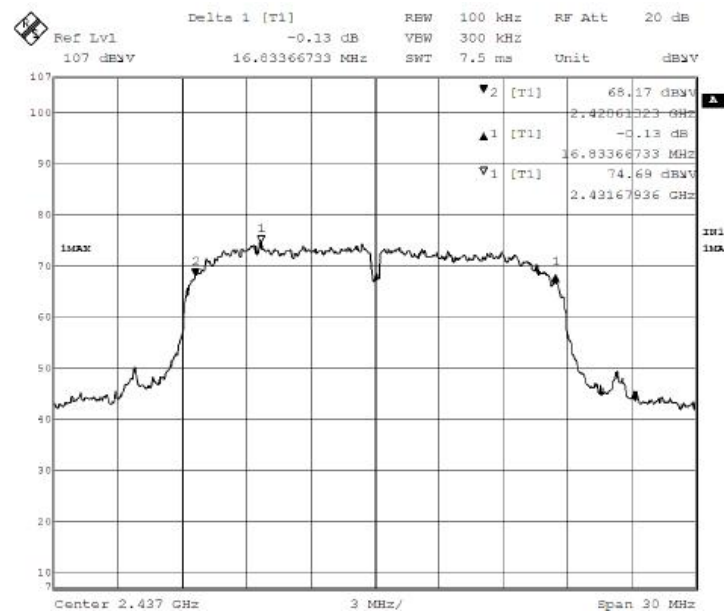
The minimum 6 dB bandwidth shall be at least 500 kHz.

For 802.11n – HT20 Mode

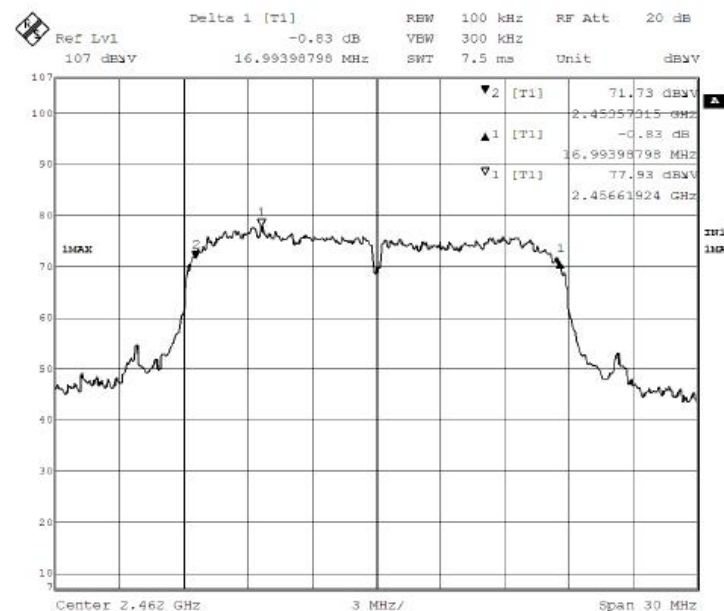
Result data graph shows 6 dB bandwidth, CF = 2.412GHz, BW = 16.533 MHz



Result data graph shows 6 dB bandwidth, CF = 2.437GHz, BW = 16.834 MHz



Result data graph shows 6 dB bandwidth, CF = 2.462GHz, BW = 16.994 MHz



4.2 Power Spectral Density

Test Requirement:	FCC part 15 section 15.247 (e)
Test Date:	2014-12-16
Mode of Operation:	Transmitting continuously mode
Detector Function:	Peak

Result : PASS

Measured Result :

Test mode	Test channel	Reading (dBm)	Limit (dBm)
802.11b	Low channel (2412MHz)	-17.99	8
	Middle channel (2437MHz)	-18.94	8
	High channel (2462MHz)	-17.71	8
802.11g	Low channel (2412MHz)	-26.03	8
	Middle channel (2437MHz)	-25.64	8
	High channel (2462MHz)	-25.01	8
802.11n-HT20	Low channel (2412MHz)	-27.32	8
	Middle channel (2437MHz)	-27.24	8
	High channel (2462MHz)	-26.99	8

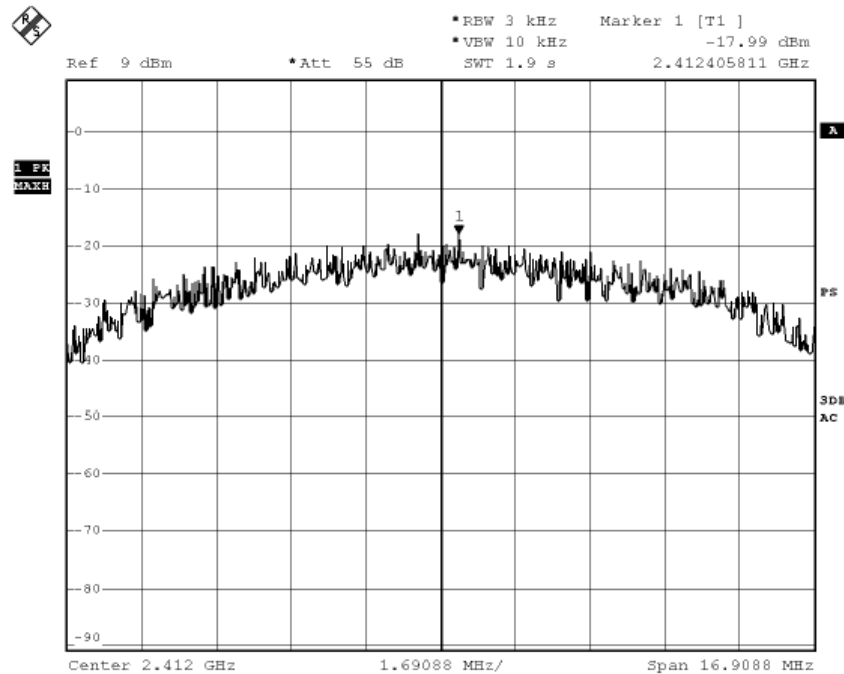
Note: 1. Above testing data has been considered with 0.2dB cable loss which between antenna port and spectrum.

Limits for power spectral density [Section 15.247 (e)]:

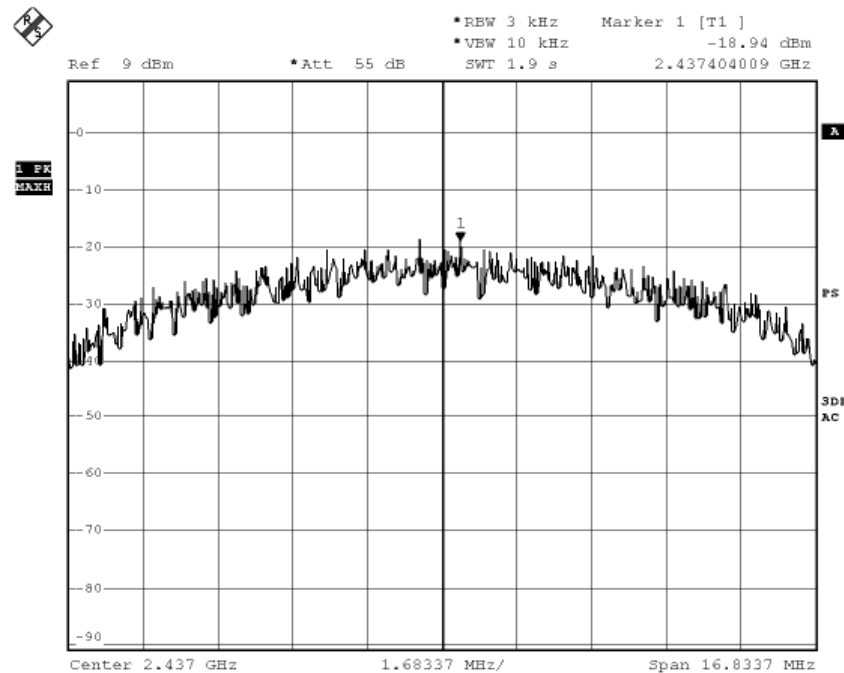
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

For 802.11b Mode

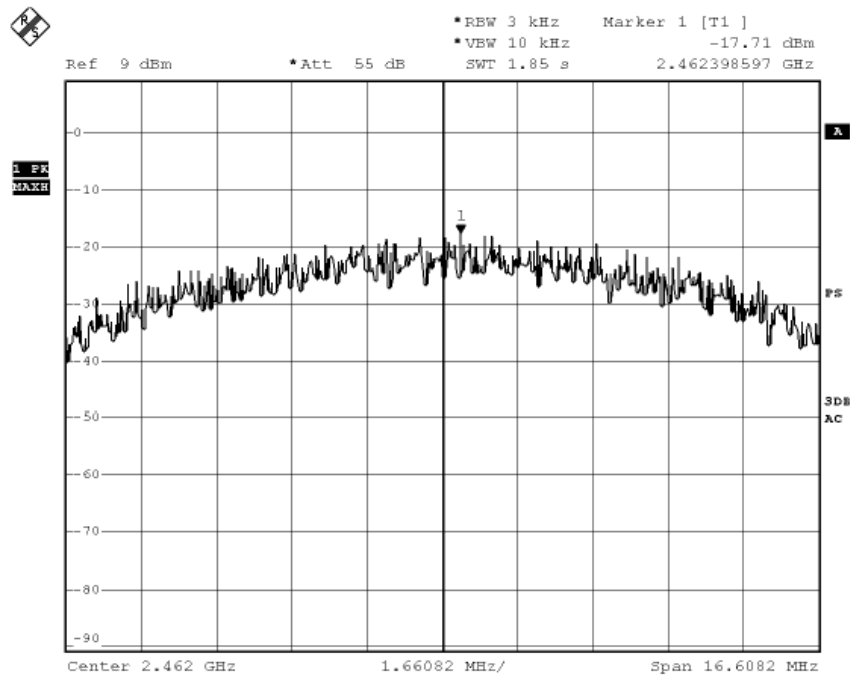
Result data graph shows Low channel power spectrum density is -17.99 dBm



Result data graph shows middle channel power spectrum density is -18.94 dBm

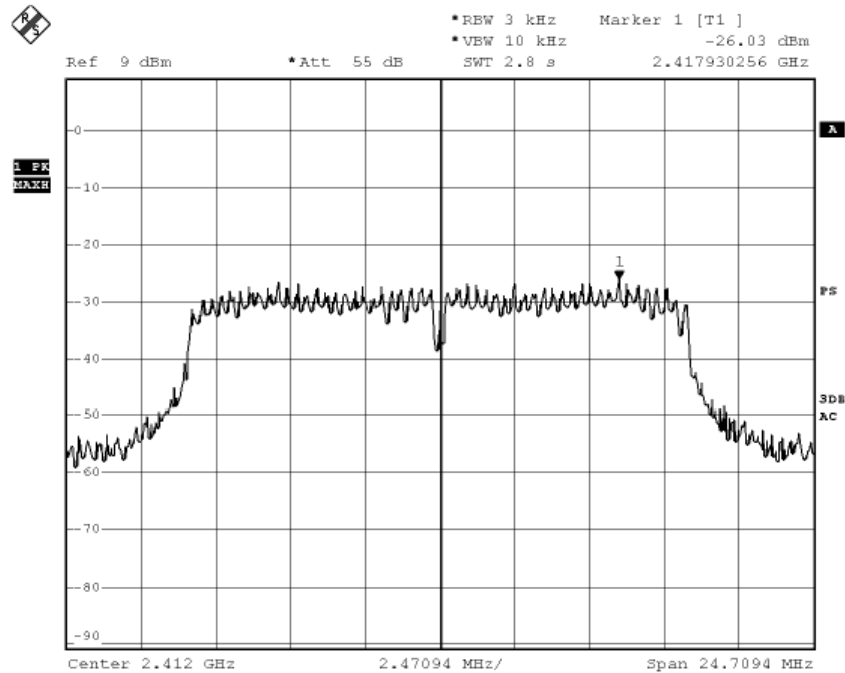


Result data graph shows high channel power spectrum density is -17.71 dBm

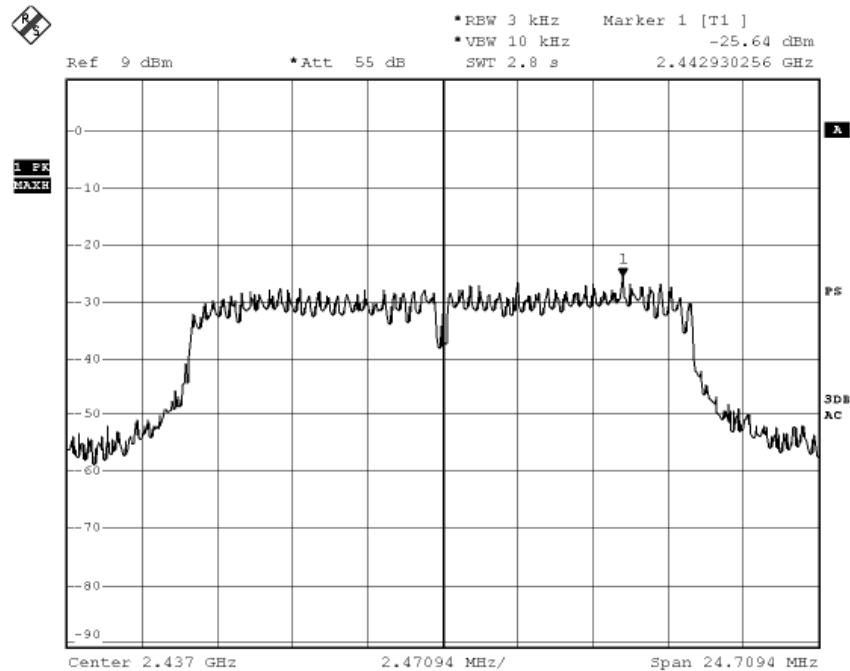


For 802.11g Mode

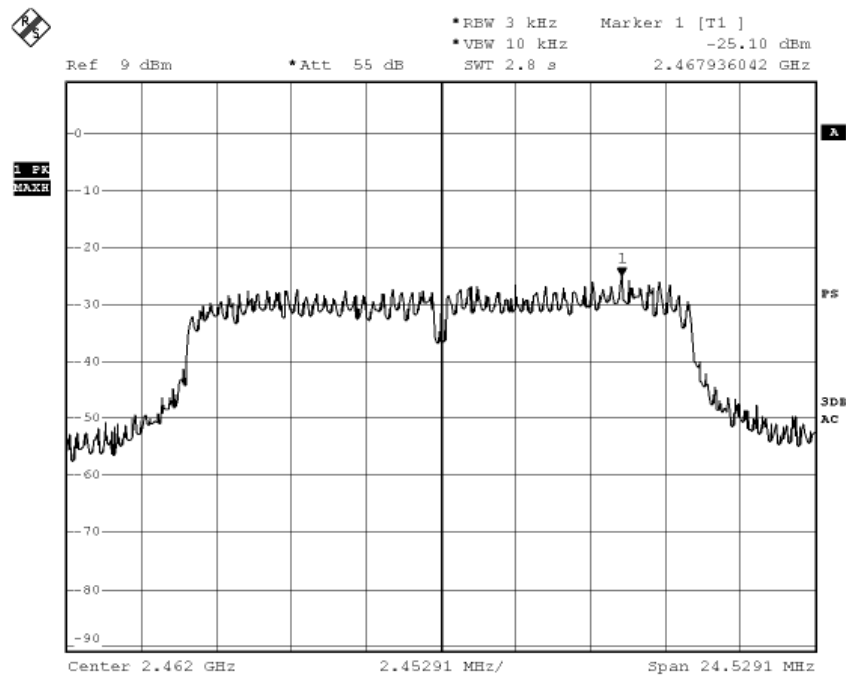
Result data graph shows Low channel power spectrum density is -26.03 dBm



Result data graph shows middle channel power spectrum density is -25.64 dBm

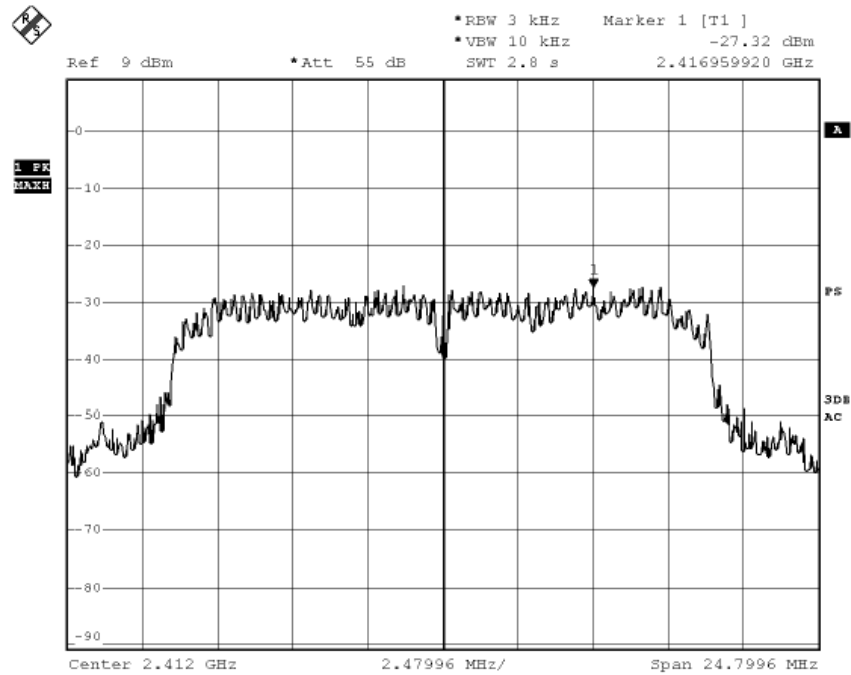


Result data graph shows high channel power spectrum density is -25.10 dBm

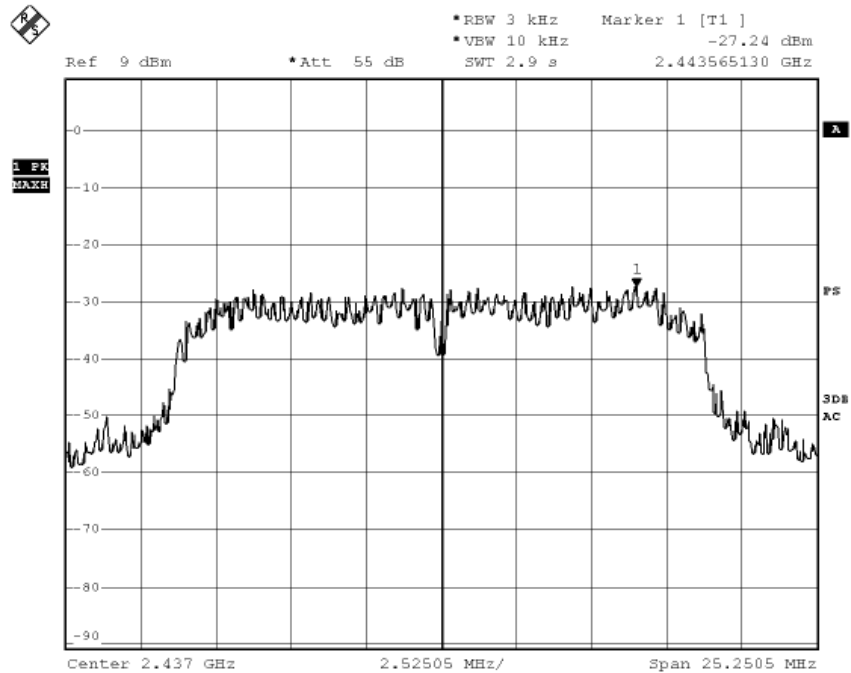


For 802.11n-HT20 Mode

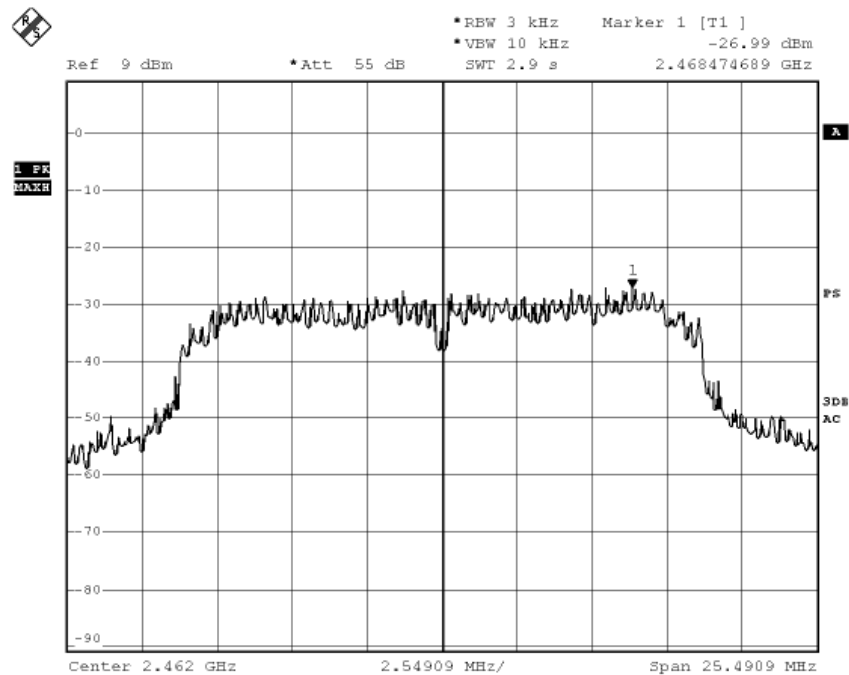
Result data graph shows Low channel power spectrum density is -27.32 dBm



Result data graph shows middle channel power spectrum density is -27.24 dBm



Result data graph shows high channel power spectrum density is -26.99 dBm



4.3 Band Edge Measurement

Test Requirement:	FCC part 15 section 15.247
Test Date:	2014-12-13
Mode of Operation:	Transmitting continuously mode.
Detector Function:	Max Hold

Result: PASS

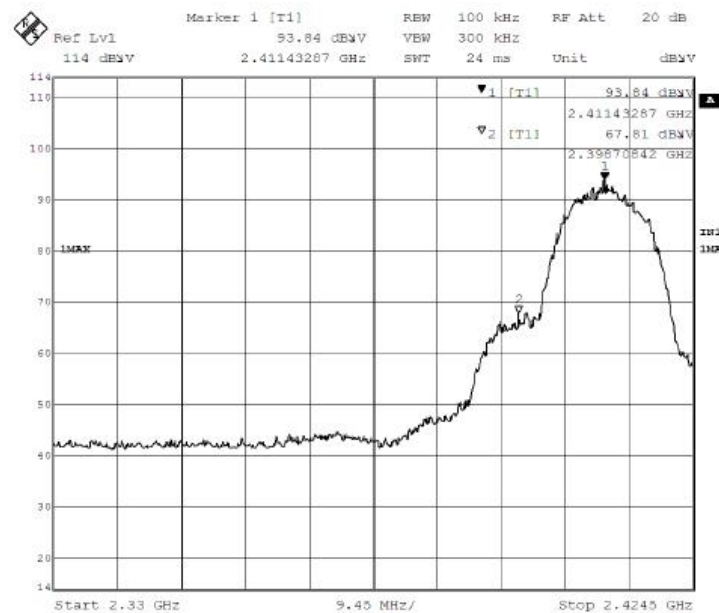
Measured Result :

Refer to the figure, it shows the frequency of lower band edge and upper band edge separately.

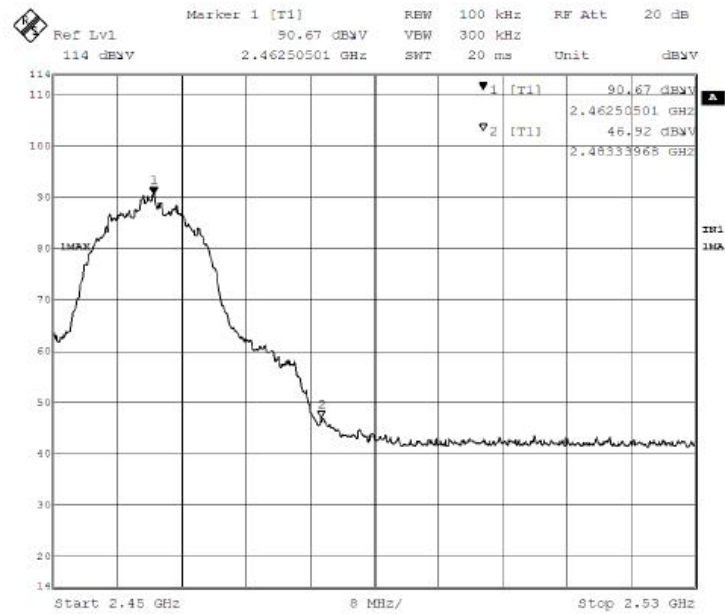
Limits of Band Edge for Carrier Frequencies Operated within the Bands [Section 15.247]:

The carrier frequencies should operate within 2400-2483.5MHz.

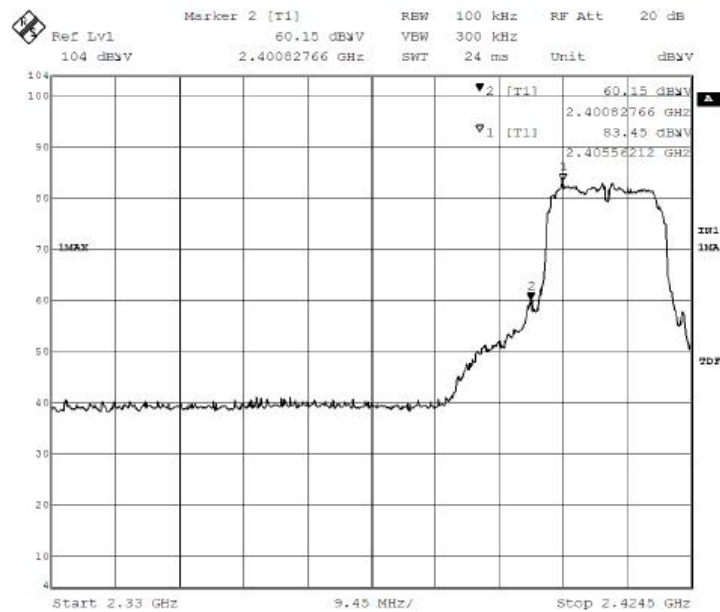
**Result data graph shows the frequency of lowest channel.
For 802.11b Low Channel Mode (Worst Case)**



For 802.11b High Channel Mode (Worst Case)

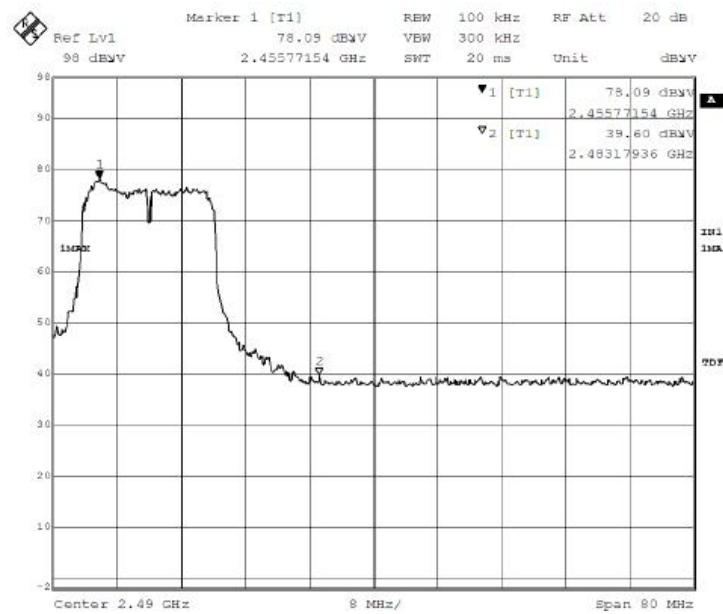


For 802.11n – HT40 Low Channel Mode (Worst Case)





For 802.11n – HT40 High Channel Mode (Worst Case)





4.4 Maximum Output Power

Test Requirement:	FCC part 15 section 15.247 (b3)
Test Method:	ANSI C63.4:2009
Test Date:	2015-01-05
Mode of Operation:	Transmitting continuously mode
Detector Function:	Peak
Measurement BW:	RBW 1MHz ; VBW 3MHz

Test Procedure :

According to section 15.247(b)-power output of the EUT, the measurement procedure PK2 was used, the following is the measurement procedure.

1. Set the span $\geq 1.5 \times$ DTS bandwidth (6dB bandwidth).
2. Set RBW = 1 MHz, Set VBW =3 MHz.
3. Detector = peak; sweep time =auto couple.
4. Trace mode = max hold; allow the trace to fully stabilize.
5. Use the instrument's band/channel power measurement function with the band limits set equal to the DTS bandwidth edges (for some instruments, this may require a manual override to select peak detector). If the instrument does not have a band power function, sum the spectrum levels (in linear power units) at intervals equal to the RBW extending across the DTS bandwidth.



Result : PASS

Transmitting Mode: Transmits continuously

Test mode	Frequency MHz	Output Power dBm	Output Power mW	Limit mW
802.11b	2412	8.90	7.762	1000
	2437	8.95	7.860	1000
	2462	8.74	7.482	1000
802.11g	2412	7.81	6.039	1000
	2437	7.89	6.152	1000
	2462	7.84	6.081	1000
802.11n – HT20	2412	7.29	5.358	1000
	2437	7.20	5.249	1000
	2462	7.19	5.236	1000

Note: Above testing data is base on the cable loss which between antenna port and spectrum is 0.2dB

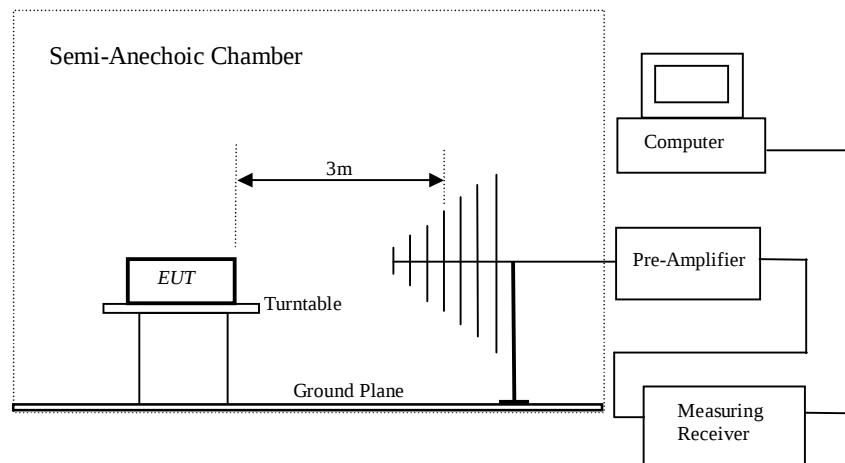
Limits for Maximum Output Power [Section 15.247 (b3)]:

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt.

4.5 Out of Band Emissions and Emissions in Restricted Bands

Test Requirement:	FCC part 15 section 15.247 (d)
Test Method:	ANSI C63.4:2009
Test Date:	2014-12-20
Mode of Operation:	Transmitting continuously mode
Detector Function:	Peak
Measurement BW:	RBW 100KHz ; VBW 300KHz

Test Setup:



Result : PASS

Out of Frequency Band Emissions:

For out of band emissions that are close to or exceed 20dB attenuation requirement, and emission falls into restricted band, radiated emission was performed in order to show compliance with the general radiated emission requirement.

Result Summary:

Refer to the emission data graph, result shows that the significant emissions detected are with more than 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.

Limits for Out of Frequency Band Emission [Section 15.247 (d)]:

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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 100kHz bandwidth within the band that contains the highest level of the desired power. Attenuation below the general limits specified in Section 15.209(a) is not required.

Limit for Radiated Emission Falling in Restricted Bands [Section 15.209]:

Frequency (MHz)	Field Strength [$\mu\text{V/m}$]	Field Strength [dB $\mu\text{V/m}$]
30-88	100	40.0
88-216	150	43.5
216-960	200	46.0
Above 960	500	54.0

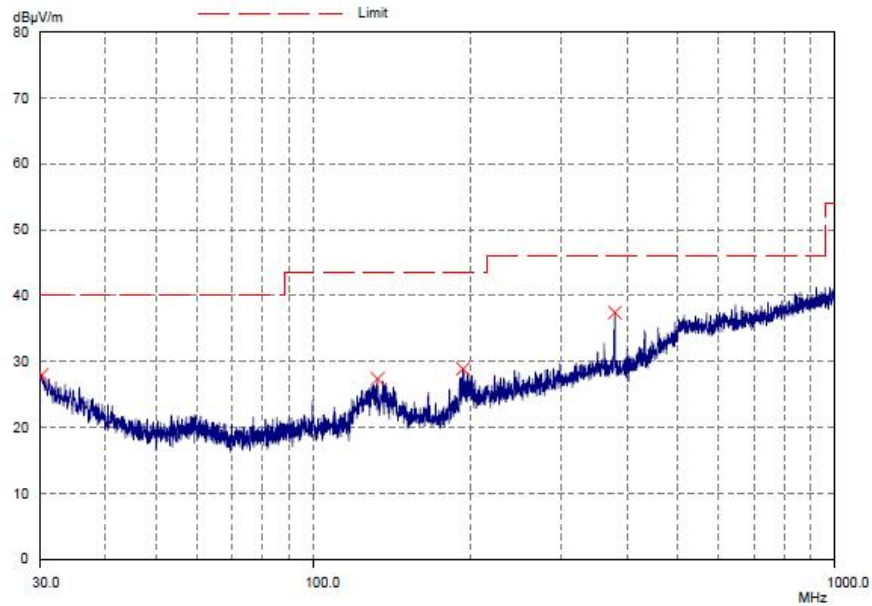
Radiated emissions, which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209.

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

Result : PASS

All Emission and Emissions Fall into Restricted Band were recorded as below:

Below 1GHz emissions
Vertical Polarity



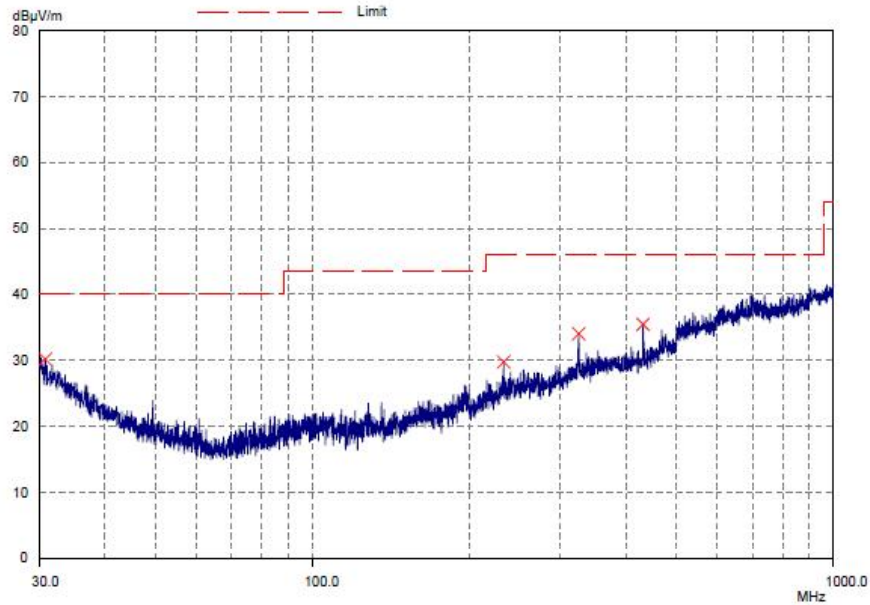
Radiated Emissions					
	Emissions Frequency	E-Field Polarity	Field strength at 3m	Limit	Delta to Limit
	MHz		dBuV/m	dBuV/m	dBuV/m
QP	30.19	V	27.97	40.00	-12.03
QP	132.88	V	27.37	43.50	-16.13
QP	193.88	V	28.89	43.50	-14.61
QP	378.94	V	37.42	46.00	-8.58

Calculated measurement uncertainty: $\pm 3.8\text{dB}$

Result : PASS

All Emission and Emissions Fall into Restricted Band were recorded as below:

Below 1GHz emissions
Horizontal Polarity



Radiated Emissions					
	Emissions Frequency	E-Field Polarity	Field strength at 3m	Limit	Delta to Limit
	MHz		dBuV/m	dBuV/m	dBuV/m
QP	30.75	H	30.19	40.00	-9.81
QP	233.13	H	29.76	46.00	-16.24
QP	324.75	H	34.04	46.00	-11.96
QP	431.63	H	35.47	46.00	-10.53

Calculated measurement uncertainty: $\pm 3.8\text{dB}$

Result : PASS

All Emission and Emissions Fall into Restricted Band were recorded as below:

Above 1GHz Emission test data
802.11b

Channel	Value	Emissions Frequency MHz	E-Field Polarity	System Factor dB	Reading dBμV/m	Field Strength at 3m dBμV/m	Limit dBμV/m	Delta to Limit dBμV/m
2412	PK	4842.00	V	41.50	14.70	56.20	74.00	-17.80
	AV			41.50	1.90	43.40	54.00	-10.60
	PK	4842.00	H	42.40	13.30	55.70	74.00	-18.30
	AV			42.40	-0.40	42.00	54.00	-12.00
	PK	7326.00	V	45.10	10.50	55.60	74.00	-18.40
	AV			45.10	-2.60	42.50	54.00	-11.50
	PK	7326.00	H	46.20	8.40	54.60	74.00	-19.40
	AV			46.20	-4.50	41.70	54.00	-12.30
2437	PK	4874.00	V	41.60	15.90	57.50	74.00	-16.50
	AV			41.60	1.50	43.10	54.00	-10.90
	PK	4874.00	H	42.50	13.90	56.40	74.00	-17.60
	AV			41.90	0.30	42.20	54.00	-11.80
	PK	7311.00	V	45.20	10.50	55.70	74.00	-18.30
	AV			45.20	-3.30	41.90	54.00	-12.10
	PK	7311.00	H	46.30	9.30	55.60	74.00	-18.40
	AV			46.30	-5.00	41.30	54.00	-12.70
2462	PK	4924.00	V	41.40	14.70	56.10	74.00	-17.90
	AV			41.40	1.20	42.60	54.00	-11.40
	PK	4924.00	H	42.70	12.80	55.50	74.00	-18.50
	AV			42.70	-0.70	42.00	54.00	-12.00
	PK	7386.00	V	45.60	9.00	54.60	74.00	-19.40
	AV			45.60	-4.30	41.30	54.00	-12.70
	PK	7386.00	H	46.50	8.00	54.50	74.00	-19.50
	AV			46.50	-5.00	41.50	54.00	-12.50

Remark: Only background noise was measured from 7.5GHz-26GHz.

Result : PASS

All Emission and Emissions Fall into Restricted Band were recorded as below:

Above 1GHz Emission test data
802.11g

Channel	Value	Emissions Frequency	E-Field Polarity	System Factor	Reading	Field Strength at 3m	Limit	Delta to Limit
		MHz		dB	dBμV/m	dBμV/m	dBμV/m	dBμV/m
2412	PK	4842.00	V	41.50	15.20	56.70	74.00	-17.30
	AV			41.50	1.90	43.40	54.00	-10.60
	PK	4842.00	H	42.40	13.10	55.50	74.00	-18.50
	AV			42.40	-1.10	41.30	54.00	-12.70
	PK	7326.00	V	45.10	10.50	55.60	74.00	-18.40
	AV			45.10	-2.60	42.50	54.00	-11.50
	PK	7326.00	H	46.20	8.10	54.30	74.00	-19.70
	AV			46.20	-4.40	41.80	54.00	-12.20
2437	PK	4874.00	V	41.60	15.90	57.50	74.00	-16.50
	AV			41.60	2.10	43.70	54.00	-10.30
	PK	4874.00	H	42.50	14.00	56.50	74.00	-17.50
	AV			42.50	0.10	42.60	54.00	-11.40
	PK	7311.00	V	45.20	10.60	55.80	74.00	-18.20
	AV			45.20	-3.30	41.90	54.00	-12.10
	PK	7311.00	H	46.30	9.30	55.60	74.00	-18.40
	AV			46.30	-4.80	41.50	54.00	-12.50
2462	PK	4924.00	V	41.40	14.90	56.30	74.00	-17.70
	AV			41.40	1.60	43.00	54.00	-11.00
	PK	4924.00	H	42.70	12.80	55.50	74.00	-18.50
	AV			42.70	-0.20	42.50	54.00	-11.50
	PK	7386.00	V	45.60	8.80	54.40	74.00	-19.60
	AV			45.60	-4.20	41.40	54.00	-12.60
	PK	7386.00	H	46.50	7.80	54.30	74.00	-19.70
	AV			36.50	5.00	41.50	54.00	-12.50

Remark: Only background noise was measured from 7.5GHz-26GHz.

Result : PASS

All Emission and Emissions Fall into Restricted Band were recorded as below:

Above 1GHz Emission test data
802.11n (HT20)

Channel	Value	Emissions Frequency	E-Field Polarity	System Factor	Reading	Field Strength at 3m	Limit	Delta to Limit
		MHz		dB	dBμV/m	dBμV/m	dBμV/m	dBμV/m
2412	PK	4842.00	V	41.50	14.50	56.00	74.00	-18.00
	AV			41.50	2.00	43.50	54.00	-10.50
	PK	4842.00	H	42.40	13.90	56.30	74.00	-17.70
	AV			42.40	-0.40	42.00	54.00	-12.00
	PK	7326.00	V	45.10	11.00	56.10	74.00	-17.90
	AV			45.10	-2.40	42.70	54.00	-11.30
	PK	7326.00	H	46.20	8.20	54.40	74.00	-19.60
	AV			46.20	-4.40	41.80	54.00	-12.20
2437	PK	4874.00	V	41.60	15.80	57.40	74.00	-16.60
	AV			41.60	2.10	43.70	54.00	-10.30
	PK	4874.00	H	42.50	13.90	56.40	74.00	-17.60
	AV			42.50	0.10	42.60	54.00	-11.40
	PK	7311.00	V	45.20	10.50	55.70	74.00	-18.30
	AV			45.20	-3.80	41.40	54.00	-12.60
	PK	7311.00	H	46.30	9.20	55.50	74.00	-18.50
	AV			46.30	-4.70	41.60	54.00	-12.40
2462	PK	4924.00	V	41.40	14.90	56.30	74.00	-17.70
	AV			41.40	1.60	43.00	54.00	-11.00
	PK	4924.00	H	42.70	12.80	55.50	74.00	-18.50
	AV			42.70	-0.20	42.50	54.00	-11.50
	PK	7386.00	V	45.60	9.00	54.60	74.00	-19.40
	AV			45.60	-4.10	41.50	54.00	-12.50
	PK	7386.00	H	46.50	7.90	54.40	74.00	-19.60
	AV			46.50	-5.30	41.20	54.00	-12.80

Remark: Only background noise was measured from 7.5GHz-26GHz.

Result Summary:

- 1) Communication mode: All other emissions are more than 20dB below FCC part 15.209 limits.
- 2) No further spurious emissions found between 30 MHz and lowest internal used/generated frequency and from 30MHz to 1GHz.
- 3) Test data is base on the worst case highest channel's emission data graph from 30MHz-26GHz.

Remarks:

1. " * " Radiated emissions which fall in the restricted bands as defined in Section 15.205(a).
2. Emission level with more than 20dB below the FCC required limit is not mentioned in table.
3. Delta to Limit = Field strength (dBμV/m) – Limit (dBμV/m).

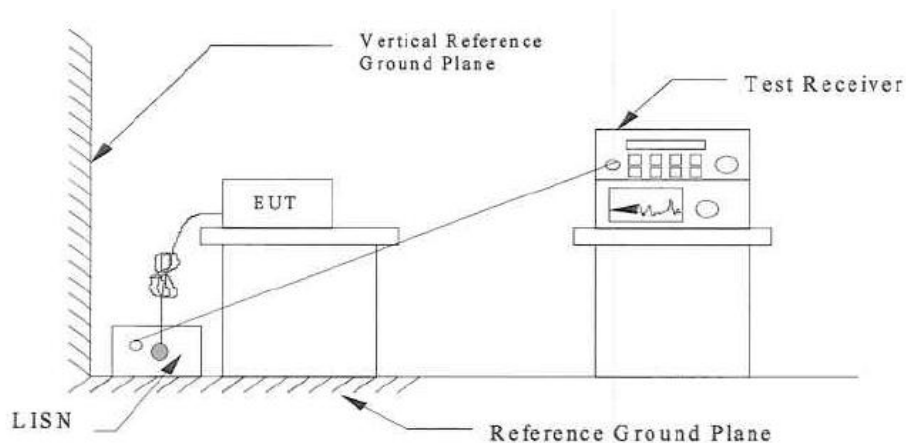
4.6 Conducted Emissions (0.15MHz to 30MHz)

Test Requirement: FCC part 15 Section 15.207 Class B
 Test Method: ANSI C63.4:2009
 Test Date: ---
 Mode of Operation: ---
 Detector Function: Quasi-peak, average
 Measurement BW: 9 kHz

Results : N/A

Remark: This test not applicable for battery operated device.

Test Setup:



Limits for Conducted Emission [Section 15.207]:

Frequency Range [MHz]	Quasi-Peak Limit [dB μ V]	Average Limit [dB μ V]
0.15-0.5	66 to 56*	56 to 46*
0.5-5.0	56	46
5.0-30.0	60	50

* Decreases with the logarithm of the frequency.

Remarks:

Calculated measurement uncertainty: ± 2.0 dB

The result shown the worst case of the connection.

5.0 List of Measurement Equipment

Radiated Emission and Bandwidth Emissions

Manufacturer	Description	Model no.	Serial no.	CAL due
ETS.LINDGREN	FACT-3 EMC CHAMBER	FACT-3	3803N/A	N/A
Agilent	Spectrum Analyzer	E4440A	US41421290	Jul. 16 2015
R&S	EMI Test Receiver	ESIB26	100388	Jun 10, 2015
ETS.LINDGREN	BICONILOG ANTENNA	3142C	00060439	Nov 29, 2015
ETS.LINDGREN	DOUBLE-RIDGEN WAVEGUIDE	3117	00075933	Nov 15 2015
CHENGDU AINFO INC	STANDARD GAIN HORN ANTENNA (18GHz – 26.5GHz)	JXTXLB-42-15-C-KF	J2021100721001	Jan 25, 2015

Conducted Emissions

Manufacturer	Description	Model no.	Serial no.	CAL due
ETS.LINDGREN	SHIELDING ROOM	RFD-100	3802	N/A
R&S	EMI Test Receiver	ESIB26	100388	Jun 10, 2015
R&S	LISN	ESH3-Z5	100102	Mar 21, 2015
R&S	LISN	ENV216	100261	Jun 10, 2015

N/A Not Applicable or Not Available