

# FCC Test Report

**FCC ID** : P27ADC-W115C-INT  
**Equipment** : Alarm.com Smart Chime  
**Model No.** : ADC-W115C-INT  
**Brand Name** : ALARM.COM  
**Applicant** : Sercomm Corporation  
**Address** : 8F, No. 3-1, YuanQu St., NanKang, Taipei 115,  
Taiwan, R.O.C.  
**Standard** : 47 CFR FCC Part 15.247  
**Received Date** : Nov. 04, 2021  
**Tested Date** : Nov. 08 ~ Nov. 12, 2021

We, International Certification Corporation, would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It may be duplicated completely for legal use with the approval of the applicant. It shall not be reproduced except in full without the written approval of our laboratory.

Reviewed by:

  
Along Chen / Assistant Manager

Approved by:

  
Gary Chang / Manager



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## Table of Contents

<b>1</b>	<b>GENERAL DESCRIPTION .....</b>	<b>5</b>
1.1	Information.....	5
1.2	Local Support Equipment List .....	8
1.3	Test Setup Chart .....	8
1.4	The Equipment List .....	9
1.5	Test Standards .....	10
1.6	Reference Guidance .....	10
1.7	Deviation from Test Standard and Measurement Procedure.....	10
1.8	Measurement Uncertainty .....	10
<b>2</b>	<b>TEST CONFIGURATION .....</b>	<b>11</b>
2.1	Testing Facility.....	11
2.2	The Worst Test Modes and Channel Details .....	11
<b>3</b>	<b>TRANSMITTER TEST RESULTS.....</b>	<b>12</b>
3.1	Conducted Emissions.....	12
3.2	6dB and Occupied Bandwidth .....	15
3.3	RF Output Power .....	21
3.4	Power Spectral Density .....	24
3.5	Unwanted Emissions into Restricted Frequency Bands .....	30
3.6	Emissions in Non-Restricted Frequency Bands.....	58
<b>4</b>	<b>TEST LABORATORY INFORMATION .....</b>	<b>63</b>

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## Release Record

Report No.	Version	Description	Issued Date
FR1N0403	Rev. 01	Initial issue	Dec. 07, 2021

## Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.428MHz 36.53 (Margin -10.76dB) - AV	Pass
15.247(d) 15.209	Radiated Emissions	[dBuV/m at 3m]: 2483.50MHz 53.75 (Margin -0.25dB) - AV	Pass
15.247(b)(3)	Maximum Output Power	Max Power [dBm]: 26.92	Pass
15.247(a)(2)	6dB Bandwidth	Meet the requirement of limit	Pass
15.247(e)	Power Spectral Density	Meet the requirement of limit	Pass
15.203	Antenna Requirement	Meet the requirement of limit	Pass

### Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

### Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

# 1 General Description

## 1.1 Information

### 1.1.1 Specification of the Equipment under Test (EUT)

RF General Information					
Frequency Range (MHz)	IEEE Std. 802.11	Ch. Freq. (MHz)	Channel Number	Transmit Chains (N <sub>TX</sub> )	Data Rate / MCS
2400-2483.5	b	2412-2462	1-11 [11]	1	1-11 Mbps
2400-2483.5	g	2412-2462	1-11 [11]	2	6-54 Mbps
2400-2483.5	n (HT20)	2412-2462	1-11 [11]	2	MCS 0-15
2400-2483.5	n (HT40)	2422-2452	3-9 [7]	2	MCS 0-15

Note 1: RF output power specifies that Maximum Peak Conducted Output Power.  
 Note 2: 802.11b uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.  
 Note 3: 802.11g/n uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.  
 Note 4: 802.11b can be transmitted by antenna 1 only.

### 1.1.2 Antenna Details

Ant. No.	Model	Type	Connector	Gain (dBi)
1	SERCOMM	Dipole	I-PEX	2.3
2	SERCOMM	Dipole	I-PEX	2.7

### 1.1.3 Power Supply Type of Equipment under Test (EUT)

<b>Power Supply Type</b>	12Vdc from adapter
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### 1.1.4 Accessories

Accessories		
No.	Equipment	Description
1	AC adapter	Brand: APD Model: WB-12G12R Power Rating: I/P: 100-240V~, 50-60Hz, 0.3A Max. O/P: 12.0Vdc, 1.0A Power Line: 0.6m non-shielded without core
2	Extension power cord	1.5m non-shielded without core

### 1.1.5 Channel List

Frequency band (MHz)		2400~2483.5	
802.11 b / g / n HT20		802.11n HT40	
Channel	Frequency(MHz)	Channel	Frequency(MHz)
1	2412	3	2422
2	2417	4	2427
3	2422	5	2432
4	2427	6	2437
5	2432	7	2442
6	2437	8	2447
7	2442	9	2452
8	2447	---	---
9	2452	---	---
10	2457	---	---
11	2462	---	---

### 1.1.6 Test Tool and Duty Cycle

Test Tool	MT7620 QA, V1.0.6.0		
Duty Cycle and Duty Factor	Mode	Duty Cycle (%)	Duty Factor (dB)
	11b	100.00%	0.00
	11g	89.33%	0.49
	HT20	88.32%	0.54
	HT40	78.00%	1.08

### 1.1.7 Power Index of Test Tool

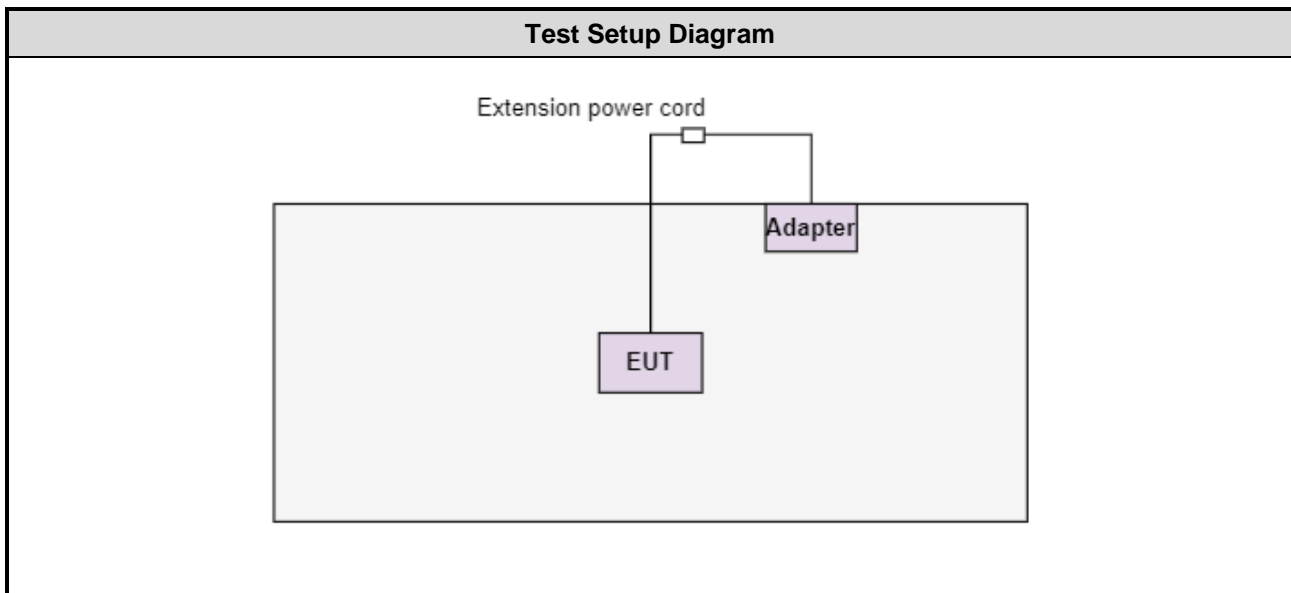
Modulation Mode	Test Frequency (MHz)	Power Index
11b	2412	0B
11b	2437	0C
11b	2462	0C
11g	2412	09/0C
11g	2437	0D/10
11g	2462	05/08
HT20	2412	07/0A
HT20	2437	0D/10
HT20	2462	03/06
HT40	2422	03/06
HT40	2437	09/0C
HT40	2452	00/02

## 1.2 Local Support Equipment List

Support Equipment List					
No.	Equipment	Brand	Model	FCC ID	Remarks
1	Notebook	DELL	Latitude E5470	DoC	---
2	RJ45 cable	ICC	RJ45-1.3m	---	---
3	Micro USB to LAN cable	---	---	---	Provided by applicant.

Note: The above support units, were disconnected from EUT and were removed from testing table after sending command to EUT to transmit continuously.

## 1.3 Test Setup Chart





## 1.4 The Equipment List

<b>Test Item</b>	Conducted Emission				
<b>Test Site</b>	Conduction room 1 / (CO01-WS)				
<b>Tested Date</b>	Nov. 11, 2021				
<b>Instrument</b>	<b>Brand</b>	<b>Model No.</b>	<b>Serial No.</b>	<b>Calibration Date</b>	<b>Calibration Until</b>
Receiver	R&S	ESR3	101658	Feb. 08, 2021	Feb. 07, 2022
LISN	R&S	ENV216	101579	Mar. 17, 2021	Mar. 16, 2022
LISN (Support Unit)	SCHWARZBECK	Schwarzbeck 8127	8127-666	Dec. 29, 2020	Dec. 28, 2021
RF Cable-CON	Woken	CFD200-NL	CFD200-NL-001	Oct. 19, 2021	Oct. 18, 2022
50 ohm terminal (Support Unit)	NA	50	04	May 25, 2021	May 24, 2022
Measurement Software	AUDIX	e3	6.120210k	NA	NA

Note: Calibration Interval of instruments listed above is one year.

<b>Test Item</b>	Radiated Emission				
<b>Test Site</b>	966 chamber1 / (03CH01-WS)				
<b>Tested Date</b>	Nov. 08 ~ Nov. 10, 2021				
<b>Instrument</b>	<b>Brand</b>	<b>Model No.</b>	<b>Serial No.</b>	<b>Calibration Date</b>	<b>Calibration Until</b>
Receiver	R&S	ESR3	101657	Mar. 12, 2021	Mar. 11, 2022
Spectrum Analyzer	R&S	FSV40	101498	Dec. 04, 2020	Dec. 03, 2021
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 17, 2020	Nov. 16, 2021
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Jun. 30, 2021	Jun. 29, 2022
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 11, 2020	Dec. 10, 2021
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170508	Dec. 31, 2020	Dec. 30, 2021
Preamplifier	EMC	EMC02325	980225	Jun. 29, 2021	Jun. 28, 2022
Preamplifier	Agilent	83017A	MY39501308	Sep. 28, 2021	Sep. 27, 2022
Preamplifier	EMC	EMC184045B	980192	Jul. 14, 2021	Jul. 13, 2022
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Oct. 05, 2021	Oct. 04, 2022
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Oct. 05, 2021	Oct. 04, 2022
LF cable 11M	EMC	EMCCFD400-NW-N W-11000	200801	Oct. 05, 2021	Oct. 04, 2022
LF cable 1M	EMC	EMCCFD400-NM-N M-1000	160502	Oct. 05, 2021	Oct. 04, 2022
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Oct. 05, 2021	Oct. 04, 2022
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Oct. 05, 2021	Oct. 04, 2022
Measurement Software	AUDIX	e3	6.120210g	NA	NA

Note: Calibration Interval of instruments listed above is one year.

<b>Test Item</b>	RF Conducted				
<b>Test Site</b>	(TH01-WS)				
<b>Tested Date</b>	Nov. 12, 2021				
<b>Instrument</b>	<b>Brand</b>	<b>Model No.</b>	<b>Serial No.</b>	<b>Calibration Date</b>	<b>Calibration Until</b>
Spectrum Analyzer	R&S	FSV40	101498	Dec. 04, 2020	Dec. 03, 2021
Power Meter	Anritsu	ML2495A	1218007	Jan. 26, 2021	Jan. 25, 2022
Power Sensor	Anritsu	MA2411B	1207367	Jan. 26, 2021	Jan. 25, 2022
Measurement Software	Sporton	SENSE-15247_DTS	V5.10	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

## 1.5 Test Standards

47 CFR FCC Part 15.247  
ANSI C63.10-2013

## 1.6 Reference Guidance

FCC KDB 558074 D01 15.247 Meas Guidance v05r02  
FCC KDB 662911 D01 Multiple Transmitter Output v02r01

## 1.7 Deviation from Test Standard and Measurement Procedure

None

## 1.8 Measurement Uncertainty

The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)).

Measurement Uncertainty	
Parameters	Uncertainty
Bandwidth	±34.130 Hz
Conducted power	±0.808 dB
Power density	±0.583 dB
Conducted emission	±2.715 dB
AC conducted emission	±2.92 dB
Radiated emission ≤ 1GHz	±3.41 dB
Radiated emission > 1GHz	±4.59 dB

## 2 Test Configuration

### 2.1 Testing Facility

<b>Test Laboratory</b>	International Certification Corporation
<b>Test Site</b>	CO01-WS, 03CH01-WS, TH01-WS
<b>Address of Test Site</b>	No.3-1, Lane 6, Wen San 3rd St., Kwei Shan Dist., Tao Yuan City 33381, Taiwan (R.O.C.)

- FCC Designation No.: TW2732
- FCC site registration No.: 181692
- ISED#: 10807A
- CAB identifier: TW2732

### 2.2 The Worst Test Modes and Channel Details

Test item	Modulation Mode	Test Frequency (MHz)	Data Rate	Test Configuration
Conducted Emissions	11g	2437	6 Mbps	---
Radiated Emissions ≤1GHz	11g	2437	6 Mbps	---
Radiated Emissions >1GHz	11b	2412 / 2437 / 2462	1 Mbps	---
Maximum Output Power	11g	2412 / 2437 / 2462	6 Mbps	
6dB bandwidth	HT20	2412 / 2437 / 2462	MCS 0	
Power spectral density	HT40	2422 / 2437 / 2452	MCS 0	

**NOTE:**

1. The EUT was pretested with 2 orientations placed on the table for the radiated emission measurement – X and Z-plane. The **X-plane** results were found as the worst case and were shown in this report.

## 3 Transmitter Test Results

### 3.1 Conducted Emissions

#### 3.1.1 Limit of Conducted Emissions

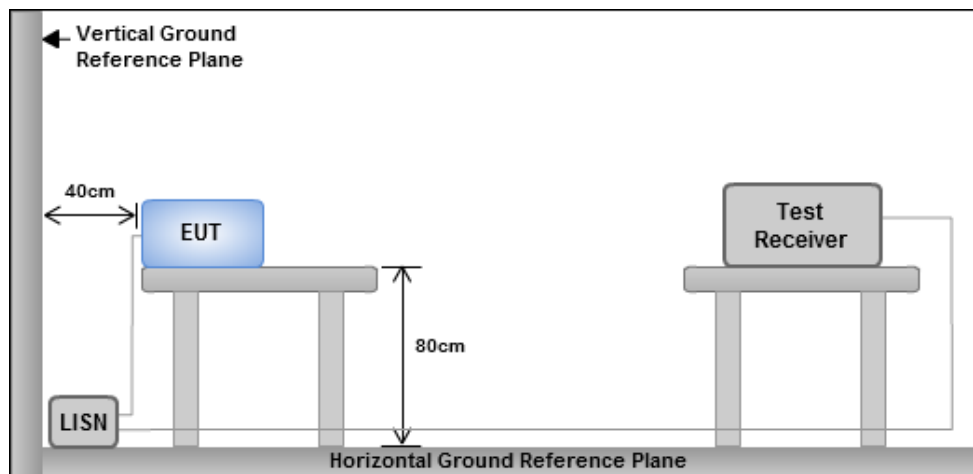
Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

Note 1: \* Decreases with the logarithm of the frequency.

#### 3.1.2 Test Procedures

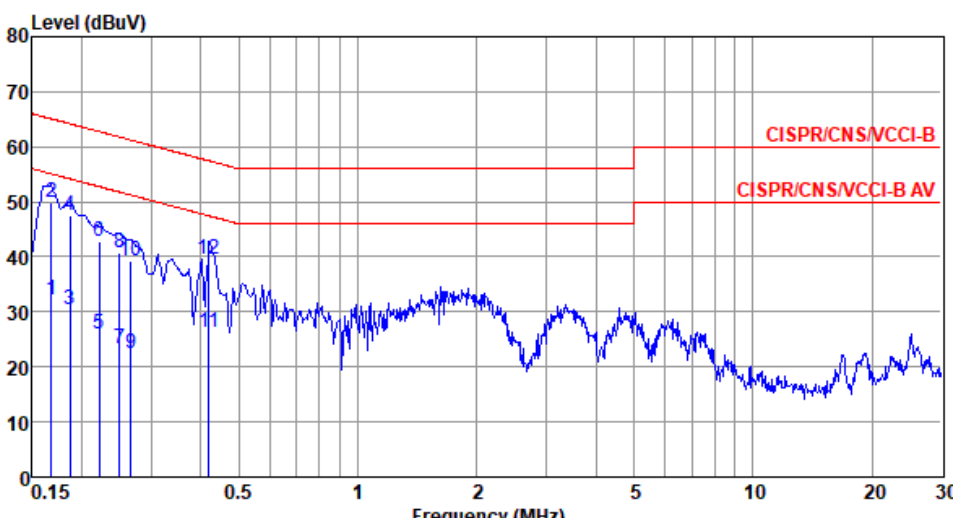
1. The device is placed on a test table, raised 80 cm above the reference ground plane. The vertical conducting plane is located 40 cm to the rear of the device.
2. The device is connected to line impedance stabilization network (LISN) and other accessories are connected to other LISN. Measured levels of AC power line conducted emission are across the 50  $\Omega$  LISN port.
3. AC conducted emission measurements is made over frequency range from 150 kHz to 30 MHz.
4. This measurement was performed with AC 120V / 60Hz.

#### 3.1.3 Test Setup



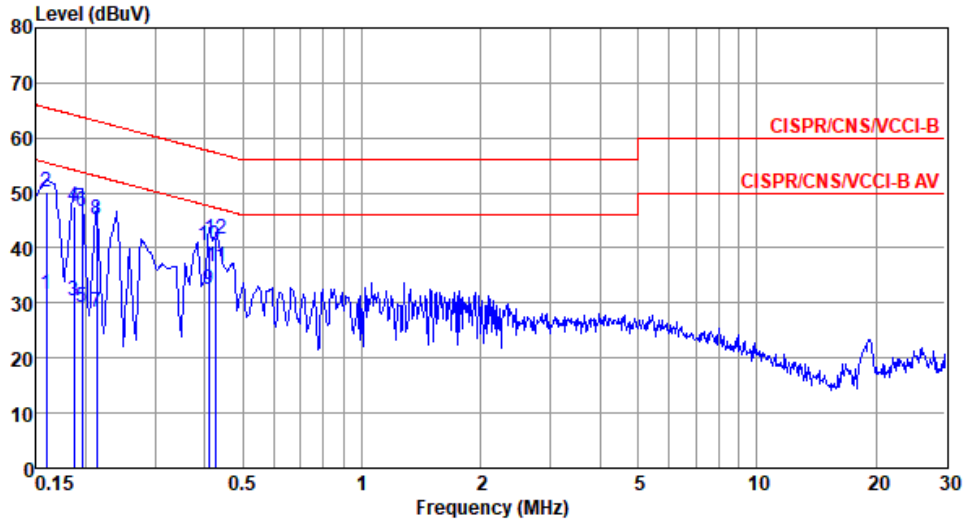
- Note: 1. Support units were connected to second LISN.  
 2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

### 3.1.4 Test Result of Conducted Emissions

<b>Modulation</b>	11g	<b>Test Freq. (MHz)</b>	2437																																																																																																																																		
<b>Power Phase</b>	Line																																																																																																																																				
<p>Test by : Joe Liao      Temperature: 23°C      Humidity: 68%</p>																																																																																																																																					
																																																																																																																																					
<table border="1"> <thead> <tr> <th></th> <th>Freq MHz</th> <th>Level dBuV</th> <th>Limit Line dBuV</th> <th>Over Limit dB</th> <th>Read Level dBuV</th> <th>Factor dB</th> <th>Cable loss dB</th> <th>Aux dB</th> <th>Remark</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0.168</td> <td>32.32</td> <td>55.08</td> <td>-22.76</td> <td>22.37</td> <td>9.66</td> <td>0.08</td> <td>0.21</td> <td>Average</td> </tr> <tr> <td>2*</td> <td>0.168</td> <td>49.90</td> <td>65.08</td> <td>-15.18</td> <td>39.95</td> <td>9.66</td> <td>0.08</td> <td>0.21</td> <td>QP</td> </tr> <tr> <td>3</td> <td>0.186</td> <td>30.30</td> <td>54.20</td> <td>-23.90</td> <td>20.36</td> <td>9.65</td> <td>0.08</td> <td>0.21</td> <td>Average</td> </tr> <tr> <td>4</td> <td>0.186</td> <td>47.44</td> <td>64.20</td> <td>-16.76</td> <td>37.50</td> <td>9.65</td> <td>0.08</td> <td>0.21</td> <td>QP</td> </tr> <tr> <td>5</td> <td>0.222</td> <td>26.03</td> <td>52.74</td> <td>-26.71</td> <td>16.06</td> <td>9.65</td> <td>0.08</td> <td>0.24</td> <td>Average</td> </tr> <tr> <td>6</td> <td>0.222</td> <td>42.73</td> <td>62.74</td> <td>-20.01</td> <td>32.76</td> <td>9.65</td> <td>0.08</td> <td>0.24</td> <td>QP</td> </tr> <tr> <td>7</td> <td>0.249</td> <td>23.39</td> <td>51.78</td> <td>-28.39</td> <td>13.40</td> <td>9.65</td> <td>0.08</td> <td>0.26</td> <td>Average</td> </tr> <tr> <td>8</td> <td>0.249</td> <td>40.61</td> <td>61.78</td> <td>-21.17</td> <td>30.62</td> <td>9.65</td> <td>0.08</td> <td>0.26</td> <td>QP</td> </tr> <tr> <td>9</td> <td>0.266</td> <td>22.29</td> <td>51.25</td> <td>-28.96</td> <td>12.28</td> <td>9.65</td> <td>0.08</td> <td>0.28</td> <td>Average</td> </tr> <tr> <td>10</td> <td>0.266</td> <td>39.28</td> <td>61.25</td> <td>-21.97</td> <td>29.27</td> <td>9.65</td> <td>0.08</td> <td>0.28</td> <td>QP</td> </tr> <tr> <td>11</td> <td>0.419</td> <td>26.23</td> <td>47.46</td> <td>-21.23</td> <td>16.15</td> <td>9.64</td> <td>0.08</td> <td>0.36</td> <td>Average</td> </tr> <tr> <td>12</td> <td>0.419</td> <td>39.66</td> <td>57.46</td> <td>-17.80</td> <td>29.58</td> <td>9.64</td> <td>0.08</td> <td>0.36</td> <td>QP</td> </tr> </tbody> </table>					Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	Factor dB	Cable loss dB	Aux dB	Remark	1	0.168	32.32	55.08	-22.76	22.37	9.66	0.08	0.21	Average	2*	0.168	49.90	65.08	-15.18	39.95	9.66	0.08	0.21	QP	3	0.186	30.30	54.20	-23.90	20.36	9.65	0.08	0.21	Average	4	0.186	47.44	64.20	-16.76	37.50	9.65	0.08	0.21	QP	5	0.222	26.03	52.74	-26.71	16.06	9.65	0.08	0.24	Average	6	0.222	42.73	62.74	-20.01	32.76	9.65	0.08	0.24	QP	7	0.249	23.39	51.78	-28.39	13.40	9.65	0.08	0.26	Average	8	0.249	40.61	61.78	-21.17	30.62	9.65	0.08	0.26	QP	9	0.266	22.29	51.25	-28.96	12.28	9.65	0.08	0.28	Average	10	0.266	39.28	61.25	-21.97	29.27	9.65	0.08	0.28	QP	11	0.419	26.23	47.46	-21.23	16.15	9.64	0.08	0.36	Average	12	0.419	39.66	57.46	-17.80	29.58	9.64	0.08	0.36	QP
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<p>Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB) + Aux (dB).            2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).</p>																																																																																																																																					

<b>Modulation</b>	11g	<b>Test Freq. (MHz)</b>	2437
<b>Power Phase</b>	Neutral		

Test by : Joe Liao      Temperature: 23°C      Humidity: 68%



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	Factor dB	Cable loss dB	Aux dB	Remark
1	0.159	31.65	55.52	-23.87	21.72	9.69	0.08	0.16	Average
2	0.159	50.26	65.52	-15.26	40.33	9.69	0.08	0.16	QP
3	0.186	30.27	54.20	-23.93	20.34	9.68	0.08	0.17	Average
4	0.186	47.60	64.20	-16.60	37.67	9.68	0.08	0.17	QP
5	0.195	29.22	53.80	-24.58	19.28	9.68	0.08	0.18	Average
6	0.195	46.56	63.80	-17.24	36.62	9.68	0.08	0.18	QP
7	0.213	28.33	53.10	-24.77	18.39	9.68	0.08	0.18	Average
8	0.213	45.11	63.10	-17.99	35.17	9.68	0.08	0.18	QP
9	0.410	32.37	47.64	-15.27	22.43	9.67	0.08	0.19	Average
10	0.410	40.38	57.64	-17.26	30.44	9.67	0.08	0.19	QP
11*	0.428	36.53	47.29	-10.76	26.57	9.67	0.09	0.20	Average
12	0.428	41.70	57.29	-15.59	31.74	9.67	0.09	0.20	QP

Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB) + Aux (dB).  
 Note 2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).

## 3.2 6dB and Occupied Bandwidth

### 3.2.1 Limit of 6dB Bandwidth

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

### 3.2.2 Test Procedures

#### 6dB Bandwidth

1. Set resolution bandwidth (RBW) = 100 kHz, Video bandwidth = 300 kHz.
2. Detector = Peak, Trace mode = max hold.
3. Sweep = auto couple, Allow the trace to stabilize.
4. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6dB relative to the maximum level measured in the fundamental emission.

#### Occupied Bandwidth

1. Set resolution bandwidth (RBW) = 1% ~ 5 % of OBW, Video bandwidth = 3 x RBW
2. Detector = Sample, Trace mode = max hold.
3. Sweep = auto couple, Allow the trace to stabilize.
4. Use the OBW measurement function of spectrum analyzer to measure the occupied bandwidth.

### 3.2.3 Test Setup



### 3.2.4 Test Result of 6dB and Occupied Bandwidth

<b>Ambient Condition</b>	21°C / 66%	<b>Tested By</b>	Aska Huang
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#### Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	10.145M	12.301M	12M3G1D	10.072M	12.229M
802.11g_Nss1,(6Mbps)_2TX	16.377M	16.932M	16M9D1D	16.377M	16.643M
802.11n HT20_Nss1,(MCS0)_2TX	17.536M	17.8M	17M8D1D	17.101M	17.583M
802.11n HT40_Nss1,(MCS0)_2TX	36.377M	36.469M	36M5D1D	35.797M	36.324M

**Max-N dB** = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;  
**Min-N dB** = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

#### Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-	-
2412MHz	Pass	500k	10.145M	12.301M	-	-
2437MHz	Pass	500k	10.072M	12.229M	-	-
2462MHz	Pass	500k	10.072M	12.229M	-	-
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	16.377M	16.715M	16.377M	16.787M
2437MHz	Pass	500k	16.377M	16.643M	16.377M	16.932M
2462MHz	Pass	500k	16.377M	16.715M	16.377M	16.715M
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	17.536M	17.656M	17.319M	17.656M
2437MHz	Pass	500k	17.536M	17.656M	17.319M	17.8M
2462MHz	Pass	500k	17.319M	17.583M	17.101M	17.583M
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	500k	36.377M	36.324M	35.942M	36.469M
2437MHz	Pass	500k	35.942M	36.469M	36.232M	36.469M
2452MHz	Pass	500k	35.797M	36.469M	36.232M	36.324M

**Port X-N dB** = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

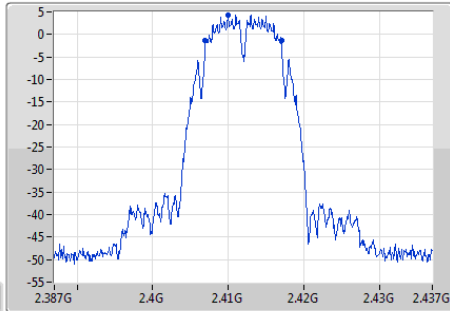


### 802.11b\_Nss1,(1Mbps)\_1TX

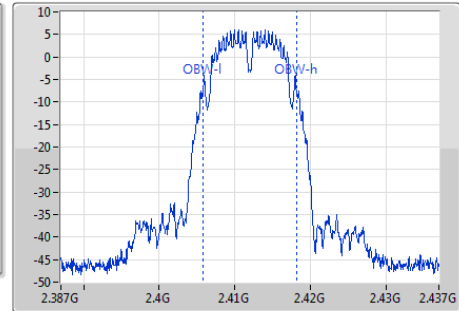
EBW

2412MHz

CF  
2.412GHz  
Span  
50MHz  
RBW  
100kHz  
VBW  
300kHz  
Sweep Time  
1.08ms  
Detector Type  
Peak  
Port 1



CF  
2.412GHz  
Span  
50MHz  
RBW  
200kHz  
VBW  
1MHz  
Sweep Time  
1.02ms  
Detector Type  
Sample



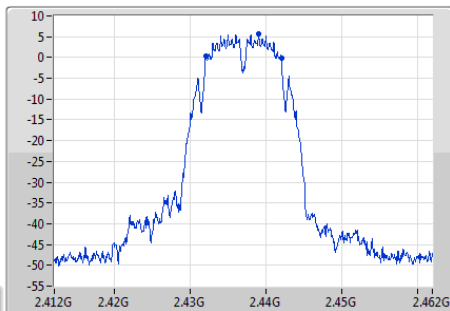
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
10.145M	2.406928G	2.417072G	12.301M	2.405849G	2.418151G	500k	1

### 802.11b\_Nss1,(1Mbps)\_1TX

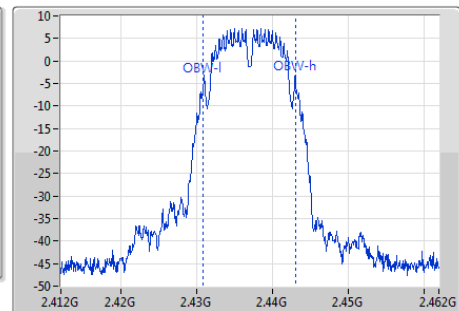
EBW

2437MHz

CF  
2.437GHz  
Span  
50MHz  
RBW  
100kHz  
VBW  
300kHz  
Sweep Time  
1.08ms  
Detector Type  
Peak  
Port 1



CF  
2.437GHz  
Span  
50MHz  
RBW  
200kHz  
VBW  
1MHz  
Sweep Time  
1.02ms  
Detector Type  
Sample



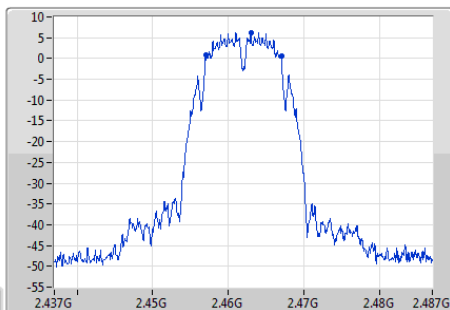
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
10.072M	2.432G	2.442072G	12.229M	2.430849G	2.443078G	500k	1

### 802.11b\_Nss1,(1Mbps)\_1TX

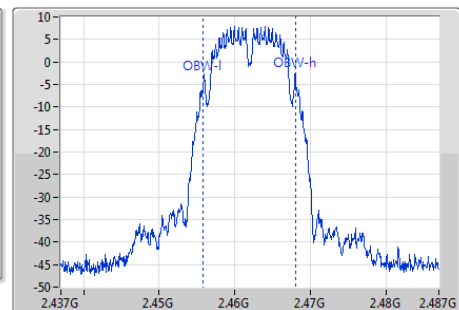
EBW

2462MHz

CF  
2.462GHz  
Span  
50MHz  
RBW  
100kHz  
VBW  
300kHz  
Sweep Time  
1.08ms  
Detector Type  
Peak  
Port 1



CF  
2.462GHz  
Span  
50MHz  
RBW  
200kHz  
VBW  
1MHz  
Sweep Time  
1.02ms  
Detector Type  
Sample

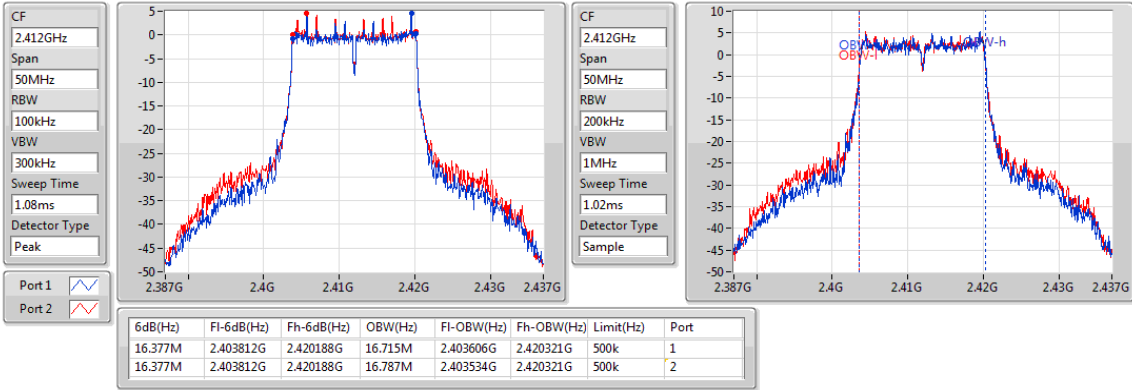


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
10.072M	2.457G	2.467072G	12.229M	2.455849G	2.468078G	500k	1

### 802.11g\_Nss1,(6Mbps)\_2TX

EBW

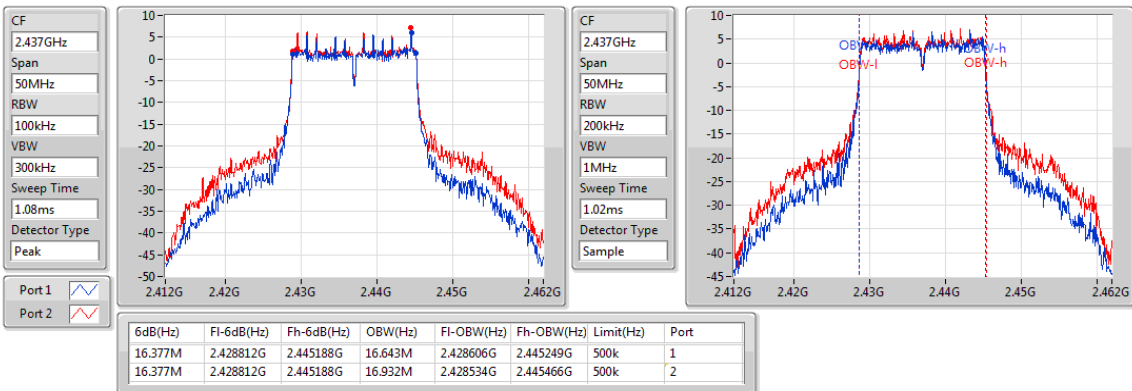
2412MHz



### 802.11g\_Nss1,(6Mbps)\_2TX

EBW

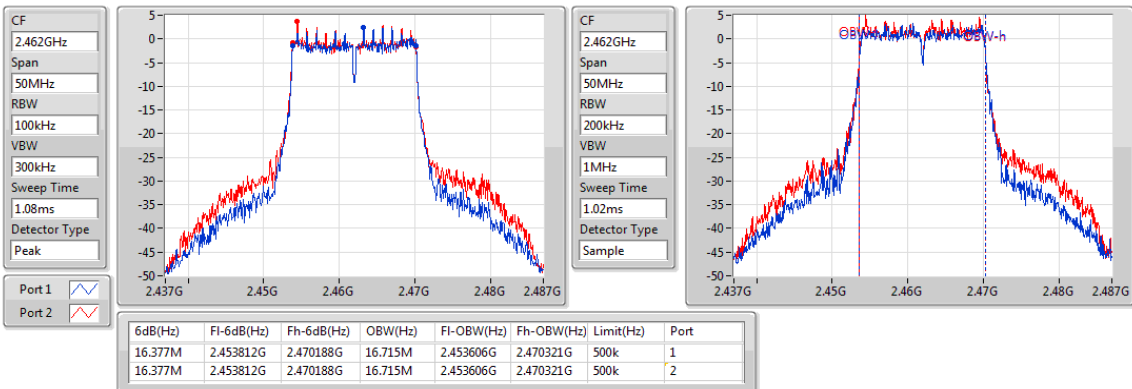
2437MHz



### 802.11g\_Nss1,(6Mbps)\_2TX

EBW

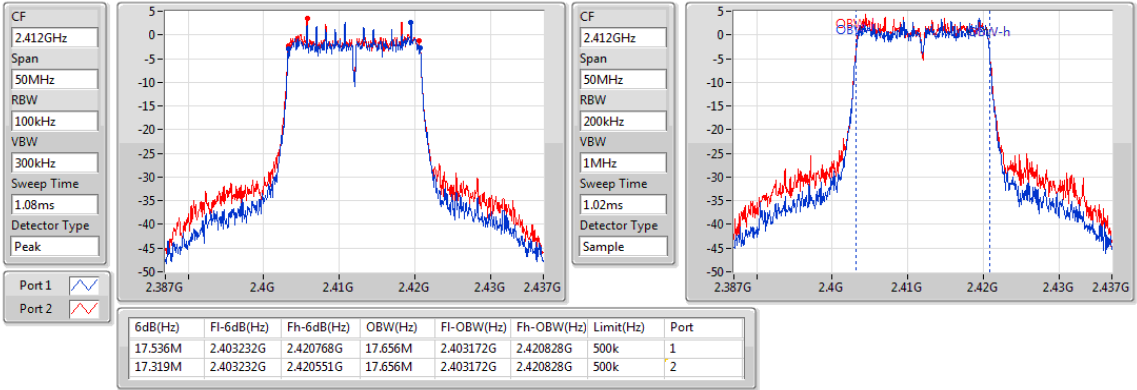
2462MHz



### 802.11n HT20\_Nss1,(MCS0)\_2TX

EBW

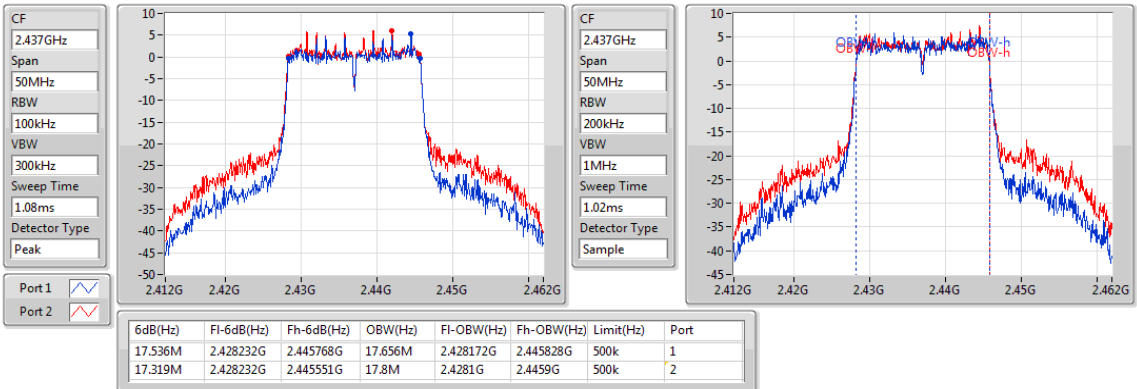
2412MHz



### 802.11n HT20\_Nss1,(MCS0)\_2TX

EBW

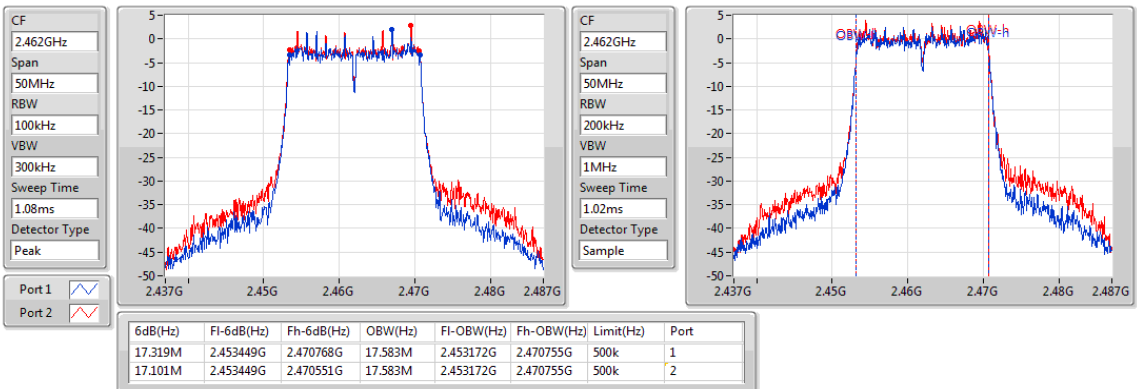
2437MHz



### 802.11n HT20\_Nss1,(MCS0)\_2TX

EBW

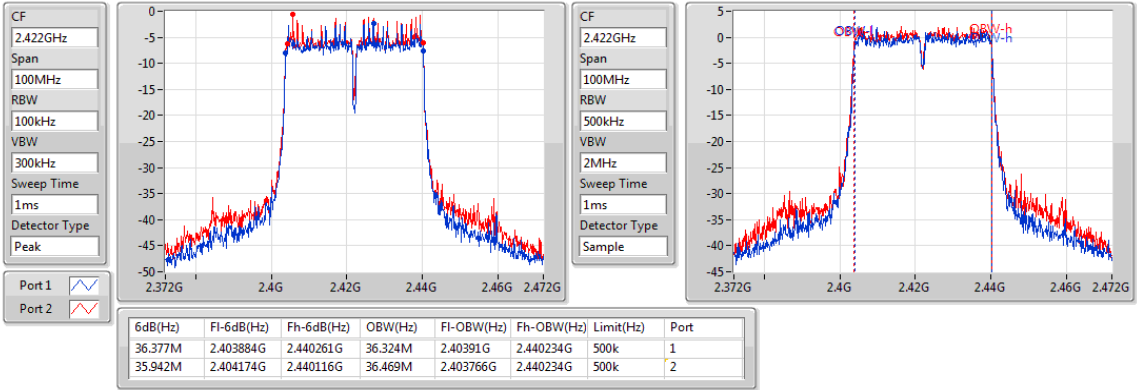
2462MHz



### 802.11n HT40\_Nss1,(MCS0)\_2TX

EBW

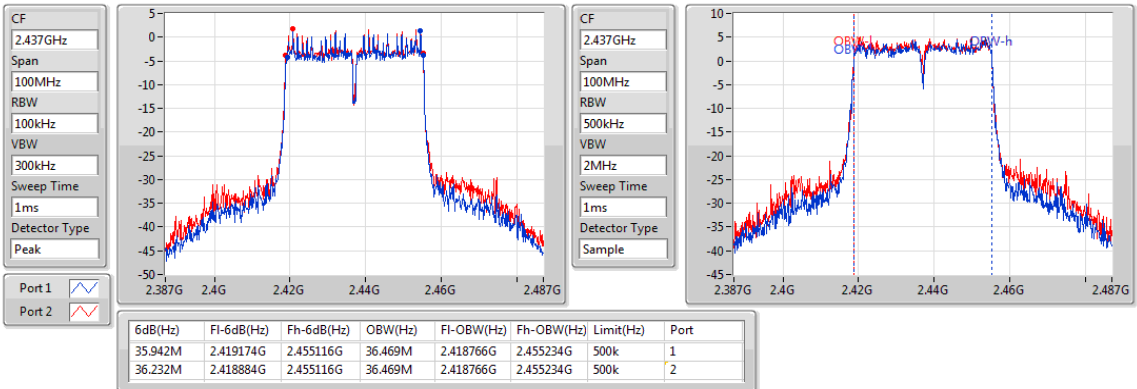
2422MHz



### 802.11n HT40\_Nss1,(MCS0)\_2TX

EBW

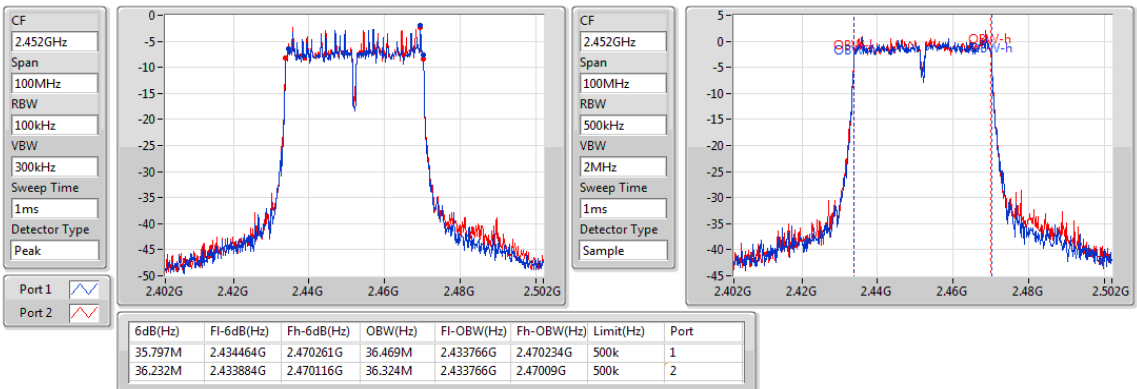
2437MHz



### 802.11n HT40\_Nss1,(MCS0)\_2TX

EBW

2452MHz



### 3.3 RF Output Power

#### 3.3.1 Limit of RF Output Power

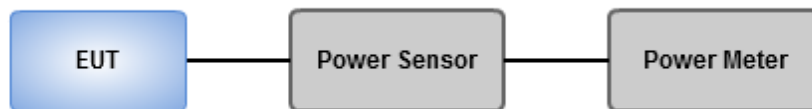
Conducted power shall not exceed 1Watt.

Antenna gain  $\leq 6\text{dBi}$ , no any corresponding reduction is in output power limit.

#### 3.3.2 Test Procedures

A broadband RF power meter is used for output power measurement. The video bandwidth of power meter is greater than DTS bandwidth of EUT. If duty cycle of test signal is not 100 %, trigger and gating function of power meter will be enabled to capture transmission burst for measuring output power.

#### 3.3.3 Test Setup



### 3.3.4 Test Result of Maximum Output Power

<b>Ambient Condition</b>	21°C / 66%	<b>Tested By</b>	Aska Huang
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#### Summary of Peak Conducted Output Power

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_1TX	20.41	0.10990
802.11g_Nss1,(6Mbps)_2TX	26.92	0.49204
802.11n HT20_Nss1,(MCS0)_2TX	26.76	0.47424
802.11n HT40_Nss1,(MCS0)_2TX	25.47	0.35237

#### Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-	-	-	-
2412MHz	Pass	2.30	18.58	-	18.58	30.00	20.88	36.00
2437MHz	Pass	2.30	19.89	-	19.89	30.00	22.19	36.00
2462MHz	Pass	2.30	20.41	-	20.41	30.00	22.71	36.00
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-	-
2412MHz	Pass	2.70	22.92	23.11	26.03	30.00	28.73	36.00
2437MHz	Pass	2.70	24.32	23.45	26.92	30.00	29.62	36.00
2462MHz	Pass	2.70	22.79	21.92	25.39	30.00	28.09	36.00
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
2412MHz	Pass	2.70	22.43	22.57	25.51	30.00	28.21	36.00
2437MHz	Pass	2.70	24.11	23.36	26.76	30.00	29.46	36.00
2462MHz	Pass	2.70	21.38	21.36	24.38	30.00	27.08	36.00
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
2422MHz	Pass	2.70	20.12	20.37	23.26	30.00	25.96	36.00
2437MHz	Pass	2.70	22.56	22.36	25.47	30.00	28.17	36.00
2452MHz	Pass	2.70	19.45	19.46	22.47	30.00	25.17	36.00

**DG** = Directional Gain; **Port X** = Port X output power

### Summary of Conducted (Average) Output Power

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_1TX	16.87	0.04864
802.11g_Nss1,(6Mbps)_2TX	20.26	0.10617
802.11n HT20_Nss1,(MCS0)_2TX	19.73	0.09397
802.11n HT40_Nss1,(MCS0)_2TX	18.00	0.06310

### Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-	-	-	-
2412MHz	Pass	2.30	15.17	-	15.17	-	17.47	-
2437MHz	Pass	2.30	16.32	-	16.32	-	18.62	-
2462MHz	Pass	2.30	16.87	-	16.87	-	19.17	-
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-	-
2412MHz	Pass	2.70	15.32	15.65	18.50	-	21.20	-
2437MHz	Pass	2.70	17.05	17.45	20.26	-	22.96	-
2462MHz	Pass	2.70	14.43	14.49	17.47	-	20.17	-
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
2412MHz	Pass	2.70	13.95	14.29	17.13	-	19.83	-
2437MHz	Pass	2.70	16.58	16.85	19.73	-	22.43	-
2462MHz	Pass	2.70	13.02	13.22	16.13	-	18.83	-
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
2422MHz	Pass	2.70	12.01	12.37	15.20	-	17.90	-
2437MHz	Pass	2.70	14.85	15.12	18.00	-	20.70	-
2452MHz	Pass	2.70	11.12	11.16	14.15	-	16.85	-

**DG** = Directional Gain; **Port X** = Port X output power

**Note : Conducted average output power is for reference only**

## 3.4 Power Spectral Density

### 3.4.1 Limit of Power Spectral Density

Power spectral density shall not be greater than 8 dBm in any 3 kHz band.

### 3.4.2 Test Procedures

#### Peak PSD

1. Set the RBW = 3 kHz, VBW = 10 kHz.
2. Detector = Peak, Sweep time = auto couple.
3. Trace mode = max hold, allow trace to fully stabilize.
4. Use the peak marker function to determine the maximum amplitude level.

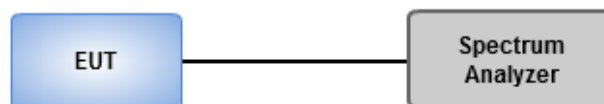
#### Average PSD, duty cycle $\geq 98\%$

1. Set the RBW = 30 kHz, VBW = 100 kHz.
2. Detector = RMS, Sweep time = auto couple.
3. Sweep time = auto couple.
4. Employ trace averaging (RMS) mode over a minimum of 100 traces.
5. Use the peak marker function to determine the maximum amplitude level.

#### Average PSD, duty cycle $< 98\%$

1. Set the RBW = 30 kHz, VBW = 100 kHz. Detector = RMS.
2. Set the sweep time to:  $\geq 10$  (number of measurement points in sweep) x (total on/off period of the transmitted signal).
3. Perform the measurement over a single sweep.
4. Use the peak marker function to determine the maximum amplitude level.
5. Add  $10 \log (1/x)$ , where x is the duty cycle.

### 3.4.3 Test Setup





### 3.4.4 Test Result of Power Spectral Density

<b>Ambient Condition</b>	21°C / 66%	<b>Tested By</b>	Aska Huang
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#### Summary

Mode	PD (dBm/3kHz)
2.4-2.4835GHz	-
802.11b_Nss1,(1Mbps)_1TX	-11.97
802.11g_Nss1,(6Mbps)_2TX	-7.31
802.11n HT20_Nss1,(MCS0)_2TX	-7.94
802.11n HT40_Nss1,(MCS0)_2TX	-11.96

#### Result

Mode	Result	DG (dBi)	Port 1 (dBm/3kHz)	Port 2 (dBm/3kHz)	PD (dBm/3kHz)	PD Limit (dBm/3kHz)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-	-
2412MHz	Pass	2.30	-14.11	-	-14.11	8.00
2437MHz	Pass	2.30	-12.83	-	-12.83	8.00
2462MHz	Pass	2.30	-11.97	-	-11.97	8.00
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	5.51	-12.61	-11.54	-9.10	8.00
2437MHz	Pass	5.51	-9.93	-9.28	-7.31	8.00
2462MHz	Pass	5.51	-12.55	-11.16	-9.45	8.00
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	5.51	-11.00	-12.92	-9.55	8.00
2437MHz	Pass	5.51	-9.87	-9.25	-7.94	8.00
2462MHz	Pass	5.51	-14.73	-14.67	-11.96	8.00
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	5.51	-18.12	-17.52	-14.94	8.00
2437MHz	Pass	5.51	-15.23	-14.10	-11.96	8.00
2452MHz	Pass	5.51	-18.24	-17.89	-15.59	8.00

DG = Directional Gain

For 2TX

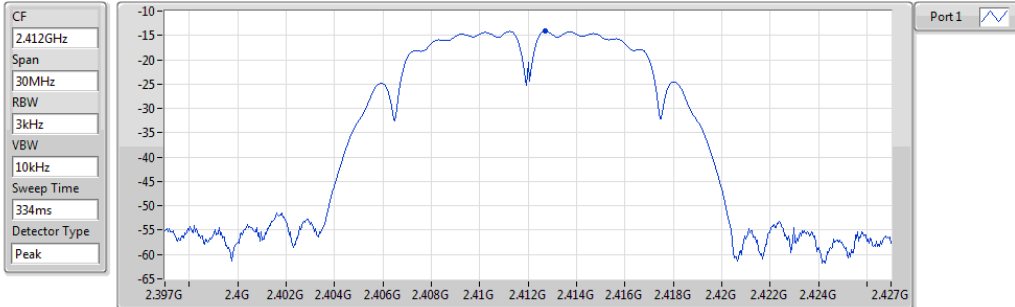
Directional gain =  $10 * \log((10^{2.3/20} + 10^{2.7/20})^2 / 2) = 5.51$  dBi

PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port X power density;

### 802.11b\_Nss1,(1Mbps)\_1TX

PSD

2412MHz

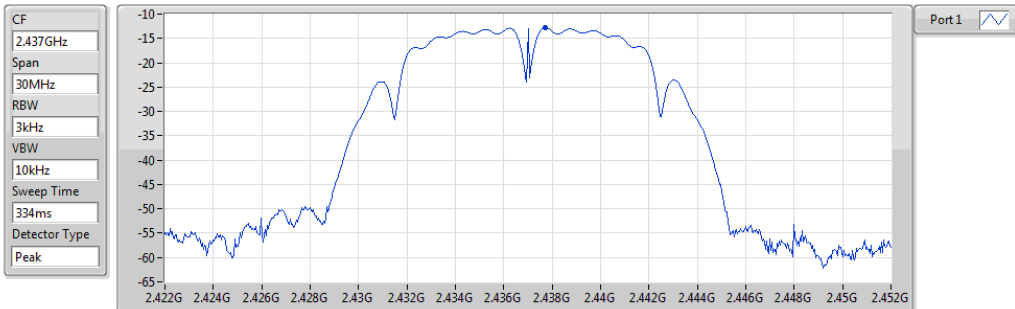


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-14.11	-14.11	-14.11

### 802.11b\_Nss1,(1Mbps)\_1TX

PSD

2437MHz

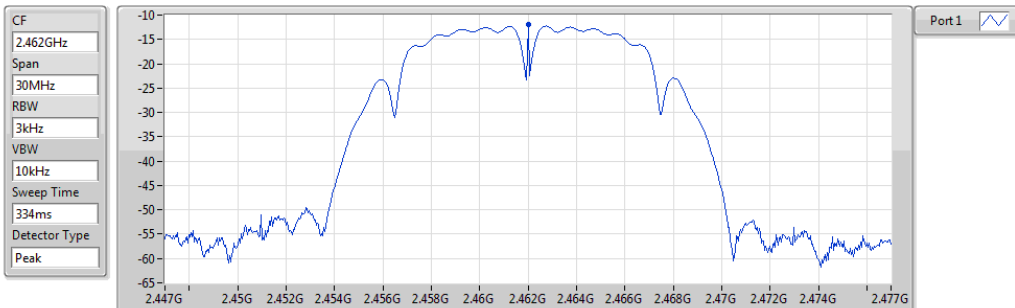


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-12.83	-12.83	-12.83

### 802.11b\_Nss1,(1Mbps)\_1TX

PSD

2462MHz

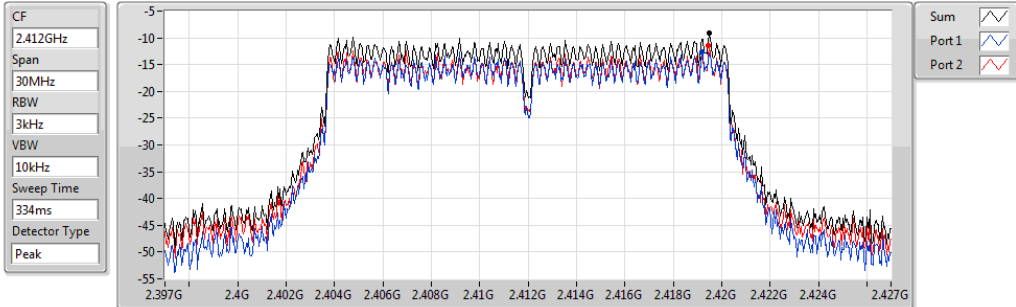


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-11.97	-11.97	-11.97

### 802.11g\_Nss1,(6Mbps)\_2TX

PSD

2412MHz

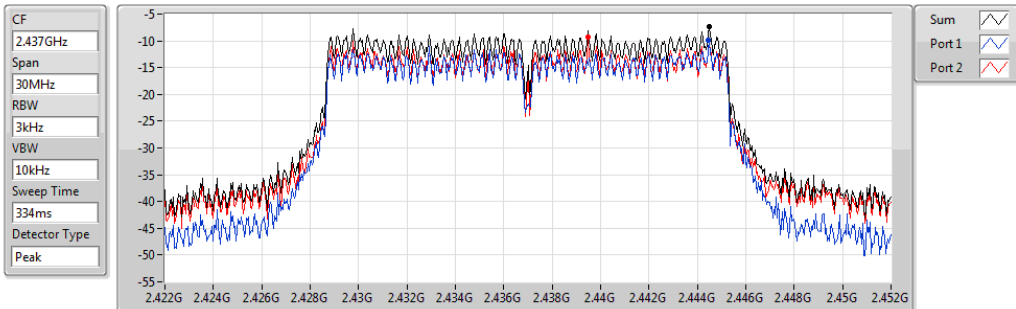


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-9.10	-9.10	-12.61	-11.54

### 802.11g\_Nss1,(6Mbps)\_2TX

PSD

2437MHz

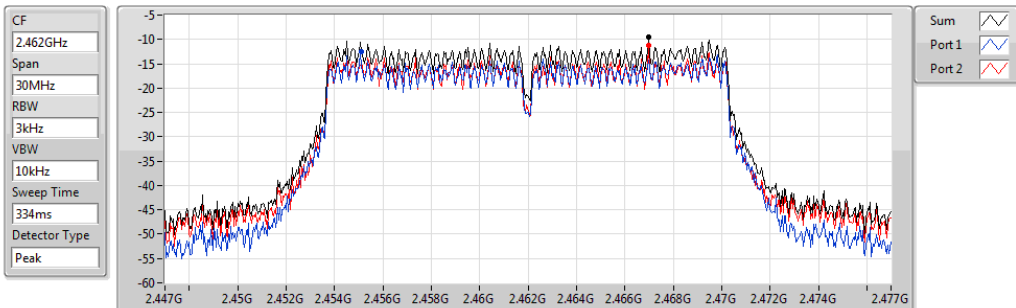


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-7.31	-7.31	-9.93	-9.28

### 802.11g\_Nss1,(6Mbps)\_2TX

PSD

2462MHz

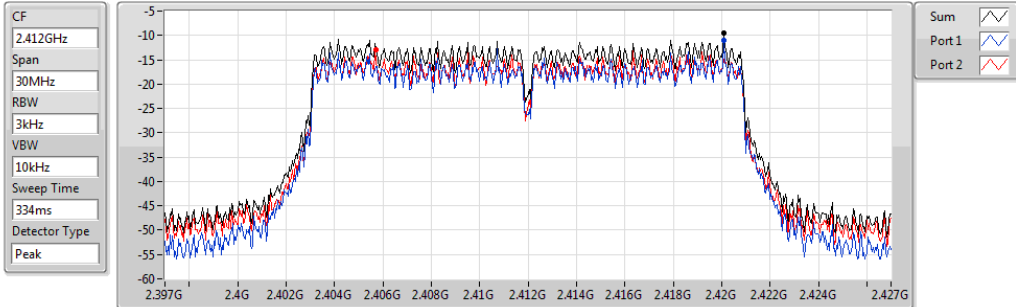


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-9.45	-9.45	-12.55	-11.16

### 802.11n HT20\_Nss1,(MCS0)\_2TX

PSD

2412MHz

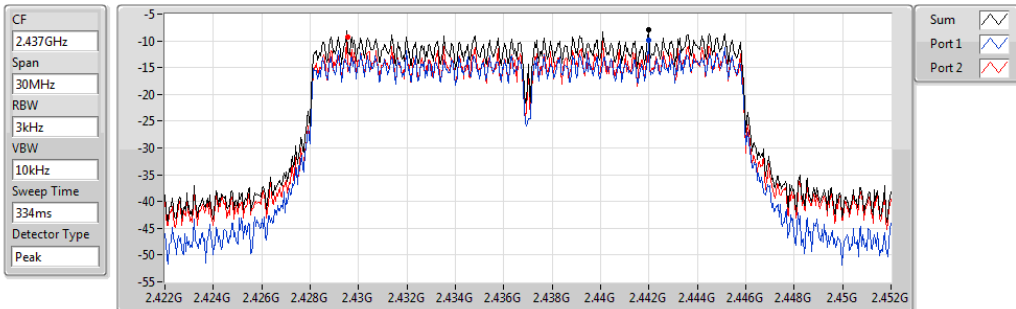


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-9.55	-9.55	-11.00	-12.92

### 802.11n HT20\_Nss1,(MCS0)\_2TX

PSD

2437MHz

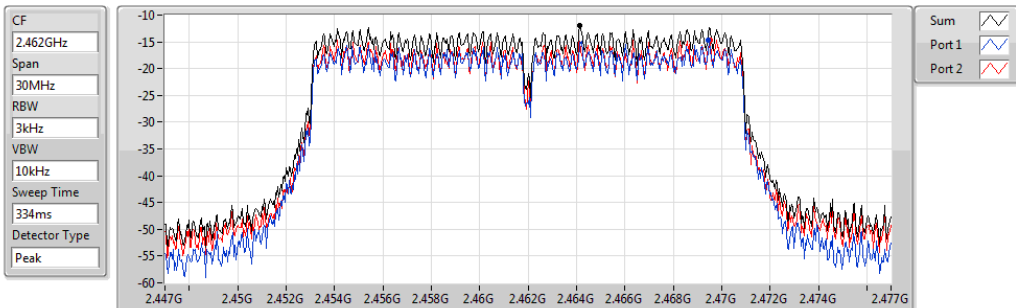


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-7.94	-7.94	-9.87	-9.25

### 802.11n HT20\_Nss1,(MCS0)\_2TX

PSD

2462MHz

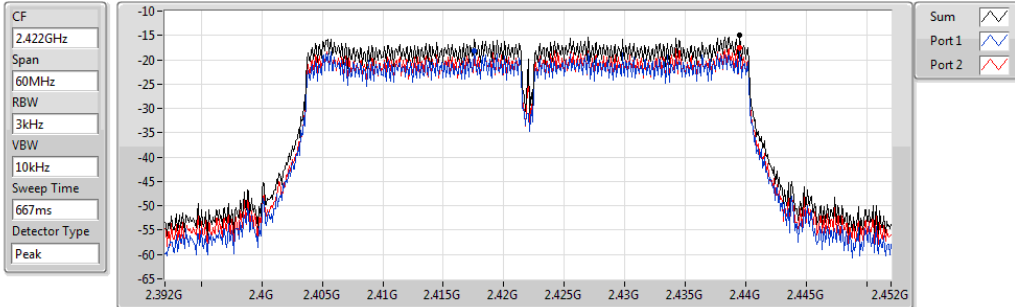


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-11.96	-11.96	-14.73	-14.67

### 802.11n HT40\_Nss1,(MCS0)\_2TX

PSD

2422MHz

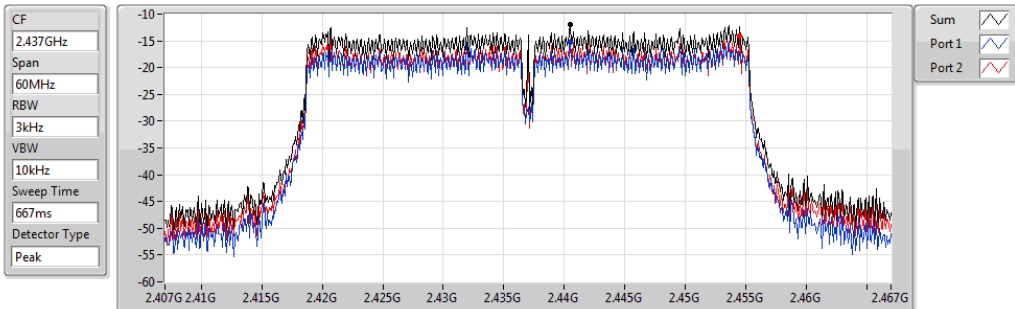


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-14.94	-14.94	-18.12	-17.52

### 802.11n HT40\_Nss1,(MCS0)\_2TX

PSD

2437MHz

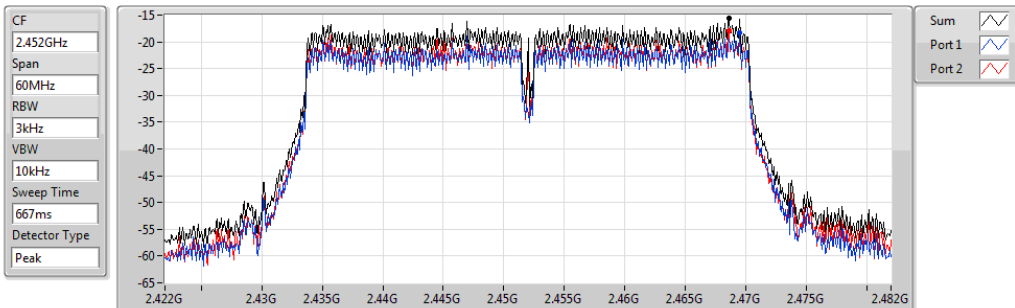


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-11.96	-11.96	-15.23	-14.10

### 802.11n HT40\_Nss1,(MCS0)\_2TX

PSD

2452MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-15.59	-15.59	-18.24	-17.89

## 3.5 Unwanted Emissions into Restricted Frequency Bands

### 3.5.1 Limit of Unwanted Emissions into Restricted Frequency Bands

Restricted Band Emissions Limit			
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

**Note 1:**  
Quasi-Peak value is measured for frequency below 1GHz except for 9–90 kHz, 110–490 kHz frequency band. Peak and average value are measured for frequency above 1GHz. The limit on average radio frequency emission is as above table. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit

**Note 2:**  
Measurements may be performed at a distance other than what is specified provided. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor as below, Frequency at or above 30 MHz: 20 dB/decade Frequency below 30 MHz: 40 dB/decade.

### 3.5.2 Test Procedures

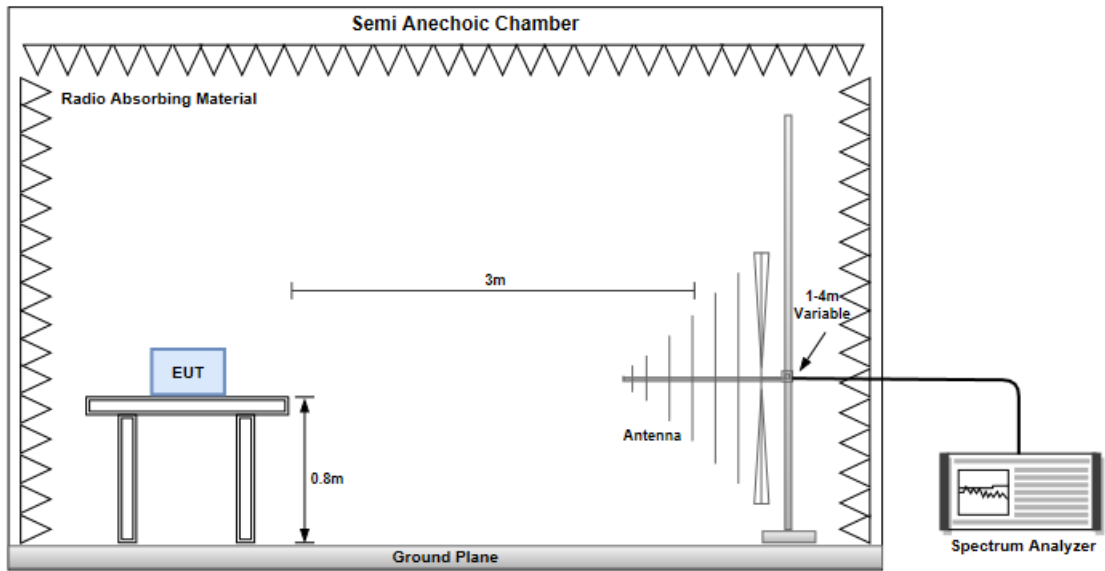
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission frequency. The EUT is placed at test table. For emissions testing at or below 1 GHz, the table height is 80 cm above the reference ground plane. For emission measurements above 1 GHz, the table height is 1.5 m
2. Measurement is made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna is varied in height (1m ~ 4m) above the reference ground plane to obtain the maximum signal strength. Distance between EUT and antenna is 3 m.
3. This investigation is performed with the EUT rotated 360°, the antenna height scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations.

Note:

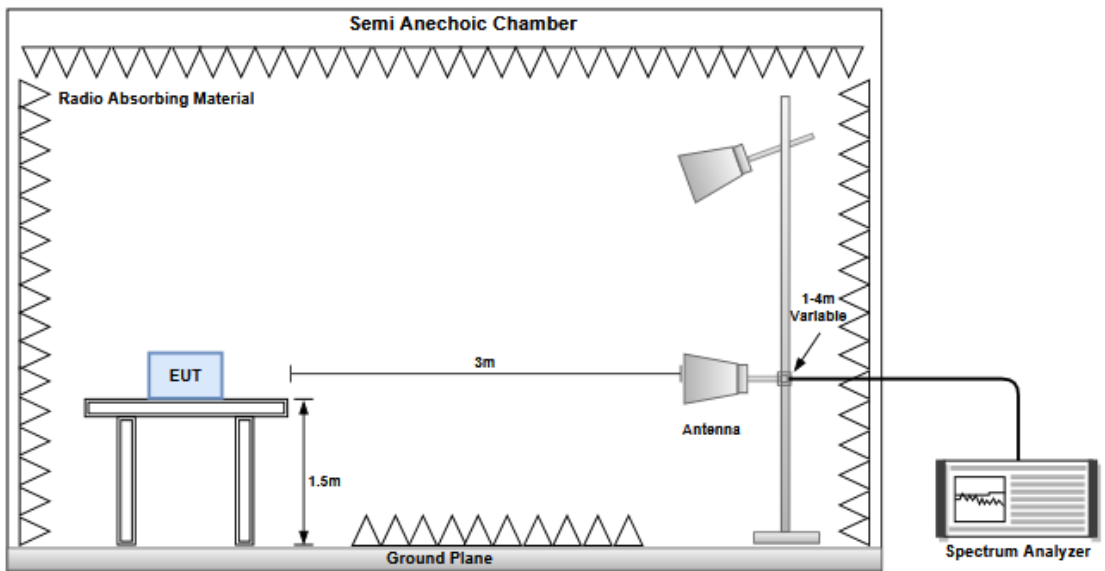
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above 1GHz.

### 3.5.3 Test Setup

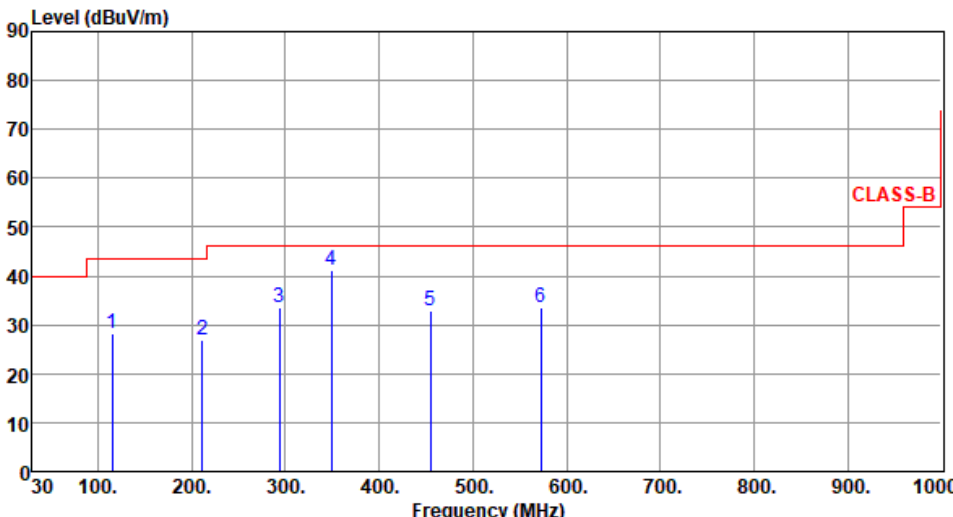
#### Radiated Emissions below 1 GHz



#### Radiated Emissions above 1 GHz



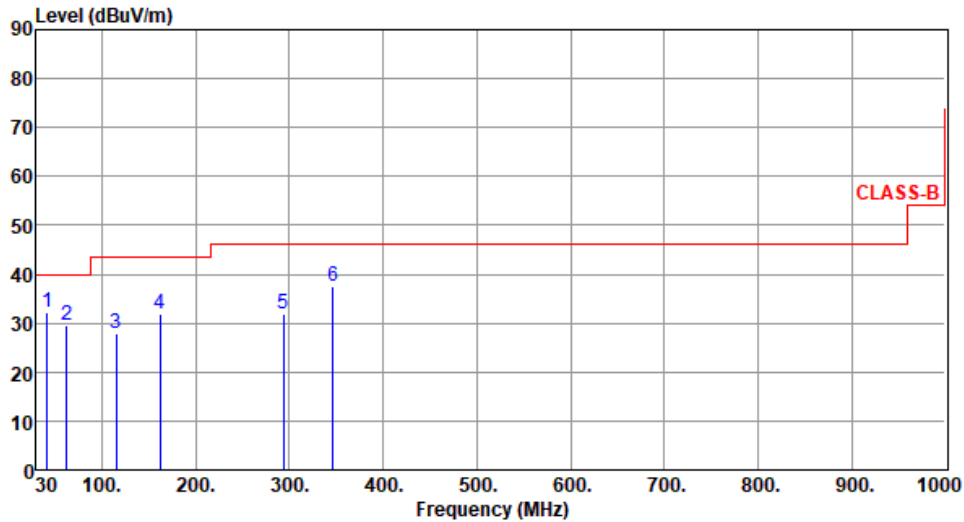
### 3.5.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

<b>Modulation</b>	11g	<b>Test Freq. (MHz)</b>	2437						
<b>Polarization</b>	Horizontal								
Test By : Roger Lu      Temperature(°C):22      Humidity(%):67									
 <p>The graph displays the radiated unwanted emissions for a Class-B transmitter. The y-axis represents the emission level in dBuV/m, ranging from 0 to 90. The x-axis represents the frequency in MHz, ranging from 30 to 1000. A red line indicates the Class-B limit, which is constant at 40 dBuV/m from 30 MHz to 100 MHz, then steps up to 43.5 dBuV/m from 100 MHz to 300 MHz, and finally to 46.0 dBuV/m from 300 MHz to 1000 MHz. Six specific emission peaks are identified and labeled with numbers 1 through 6. Peak 1 is at 115.36 MHz, peak 2 at 211.39 MHz, peak 3 at 293.84 MHz, peak 4 at 349.13 MHz, peak 5 at 454.86 MHz, and peak 6 at 572.23 MHz. The emission levels for these peaks are 28.11, 26.80, 33.58, 41.32, 32.84, and 33.49 dBuV/m, respectively. The margins relative to the Class-B limit are -15.39, -16.70, -12.42, -4.68, -13.16, and -12.51 dB.</p>									
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	115.36	28.11	43.50	-15.39	39.23	-11.12	Peak	---	---
2	211.39	26.80	43.50	-16.70	38.75	-11.95	Peak	---	---
3	293.84	33.58	46.00	-12.42	41.84	-8.26	Peak	---	---
4	349.13	41.32	46.00	-4.68	48.43	-7.11	Peak	---	---
5	454.86	32.84	46.00	-13.16	36.97	-4.13	Peak	---	---
6	572.23	33.49	46.00	-12.51	35.34	-1.85	Peak	---	---
<p>Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)          *Factor includes antenna factor , cable loss and amplifier gain          Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).          Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.</p>									



<b>Modulation</b>	11g	<b>Test Freq. (MHz)</b>	2437
<b>Polarization</b>	Vertical		

Test By :Roger Lu      Temperature(°C):22      Humidity(%):67



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	41.64	32.31	40.00	-7.69	40.89	-8.58	Peak	---	---
2	62.01	29.54	40.00	-10.46	39.19	-9.65	Peak	---	---
3	115.36	27.87	43.50	-15.63	38.99	-11.12	Peak	---	---
4	161.92	31.76	43.50	-11.74	40.45	-8.69	Peak	---	---
5	293.84	31.75	46.00	-14.25	40.01	-8.26	Peak	---	---
6	346.22	37.62	46.00	-8.38	44.80	-7.18	Peak	---	---

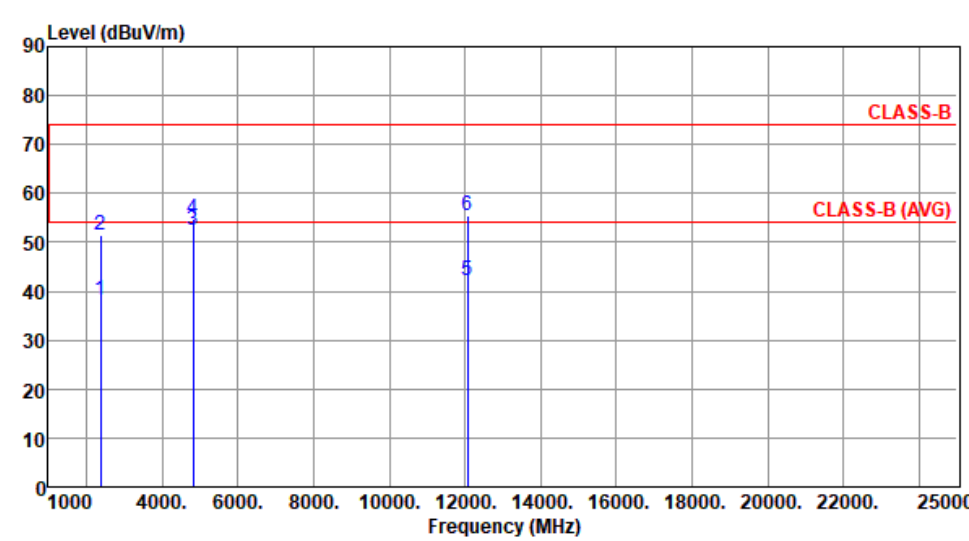
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor\* (dB/m)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

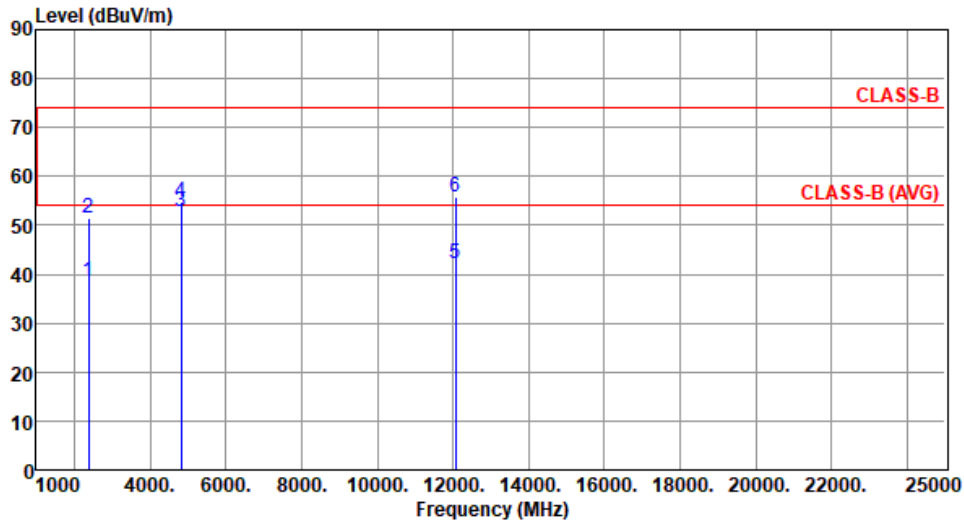
### 3.5.5 Transmitter Radiated Unwanted Emissions (Above 1GHz) for 11b

<b>Modulation</b>	11b	<b>Test Freq. (MHz)</b>	2412						
<b>Polarization</b>	Horizontal								
Test By :Brad Wu      Temperature(°C):22      Humidity(%):65									
									
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	38.19	54.00	-15.81	41.02	-2.83	Average	100	175
2	2390.00	51.42	74.00	-22.58	54.25	-2.83	Peak	100	175
3	4824.00	52.50	54.00	-1.50	49.17	3.33	Average	113	187
4	4824.00	54.79	74.00	-19.21	51.46	3.33	Peak	113	187
5	12060.00	42.23	54.00	-11.77	28.86	13.37	Average	100	24
6	12060.00	55.52	74.00	-18.48	42.15	13.37	Peak	100	24

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor\* (dB/m)  
\*Factor includes antenna factor , cable loss and amplifier gain  
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	11b	<b>Test Freq. (MHz)</b>	2412
<b>Polarization</b>	Vertical		

Test By :Brad Wu      Temperature(°C):22      Humidity(%):65



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	38.39	54.00	-15.61	41.22	-2.83	Average	101	232
2	2390.00	51.64	74.00	-22.36	54.47	-2.83	Peak	101	232
3	4824.00	52.79	54.00	-1.21	49.46	3.33	Average	111	324
4	4824.00	54.88	74.00	-19.12	51.55	3.33	Peak	111	324
5	12060.00	42.33	54.00	-11.67	28.96	13.37	Average	100	14
6	12060.00	55.71	74.00	-18.29	42.34	13.37	Peak	100	14

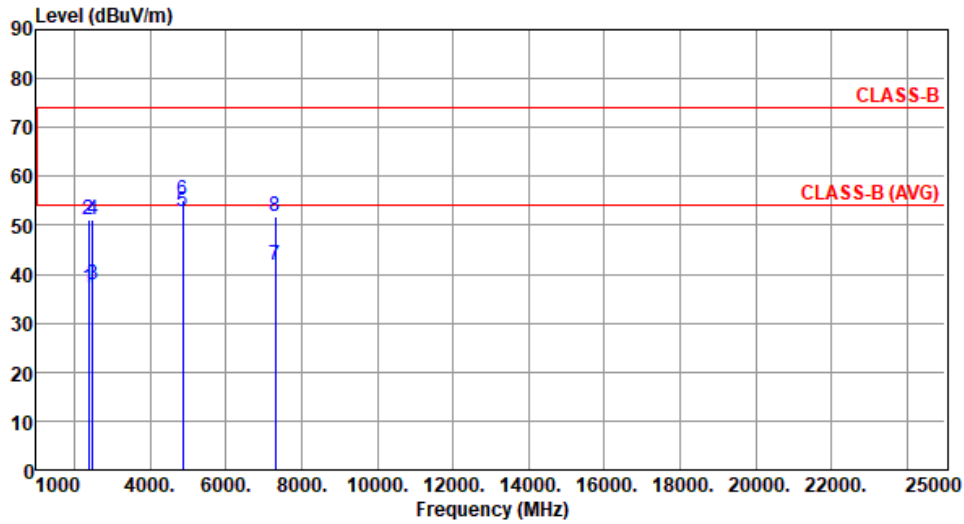
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor\* (dB/m)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	11b	<b>Test Freq. (MHz)</b>	2437
<b>Polarization</b>	Horizontal		

Test By :Brad Wu      Temperature(°C):22      Humidity(%):65

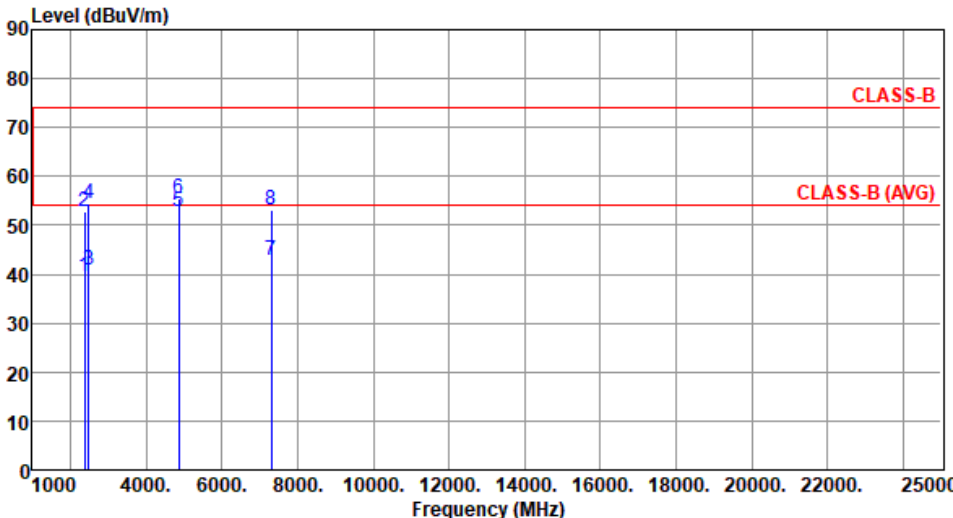


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	37.31	54.00	-16.69	40.14	-2.83	Average	100	171
2	2390.00	50.99	74.00	-23.01	53.82	-2.83	Peak	100	171
3	2483.50	37.81	54.00	-16.19	40.60	-2.79	Average	100	171
4	2483.50	51.07	74.00	-22.93	53.86	-2.79	Peak	100	171
5	4874.00	52.86	54.00	-1.14	49.54	3.32	Average	104	188
6	4874.00	55.25	74.00	-18.75	51.93	3.32	Peak	104	188
7	7311.00	41.94	54.00	-12.06	33.05	8.89	Average	100	72
8	7311.00	51.94	74.00	-22.06	43.05	8.89	Peak	100	72

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor\* (dB/m)

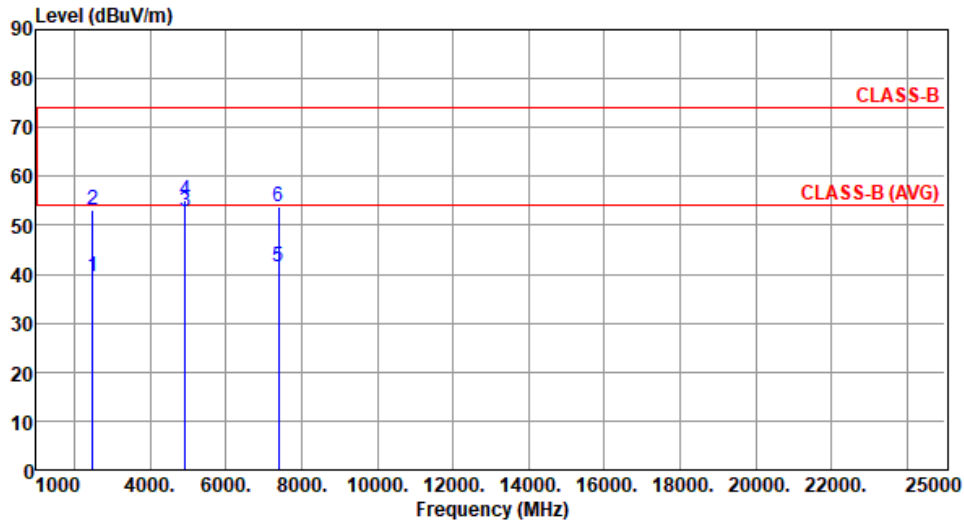
\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	11b	<b>Test Freq. (MHz)</b>	2437						
<b>Polarization</b>	Vertical								
Test By	:Brad Wu	Temperature(°C):22	Humidity(%):65						
									
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	39.46	54.00	-14.54	42.29	-2.83	Average	100	314
2	2390.00	52.85	74.00	-21.15	55.68	-2.83	Peak	100	314
3	2483.50	40.90	54.00	-13.10	43.69	-2.79	Average	100	314
4	2483.50	54.33	74.00	-19.67	57.12	-2.79	Peak	100	314
5	4874.00	52.94	54.00	-1.06	49.62	3.32	Average	106	323
6	4874.00	55.36	74.00	-18.64	52.04	3.32	Peak	106	323
7	7311.00	42.93	54.00	-11.07	34.04	8.89	Average	202	18
8	7311.00	53.15	74.00	-20.85	44.26	8.89	Peak	202	18
<p>Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)  *Factor includes antenna factor , cable loss and amplifier gain  Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).</p>									

<b>Modulation</b>	11b	<b>Test Freq. (MHz)</b>	2462
<b>Polarization</b>	Horizontal		

Test By :Brad Wu      Temperature(°C):22      Humidity(%):65

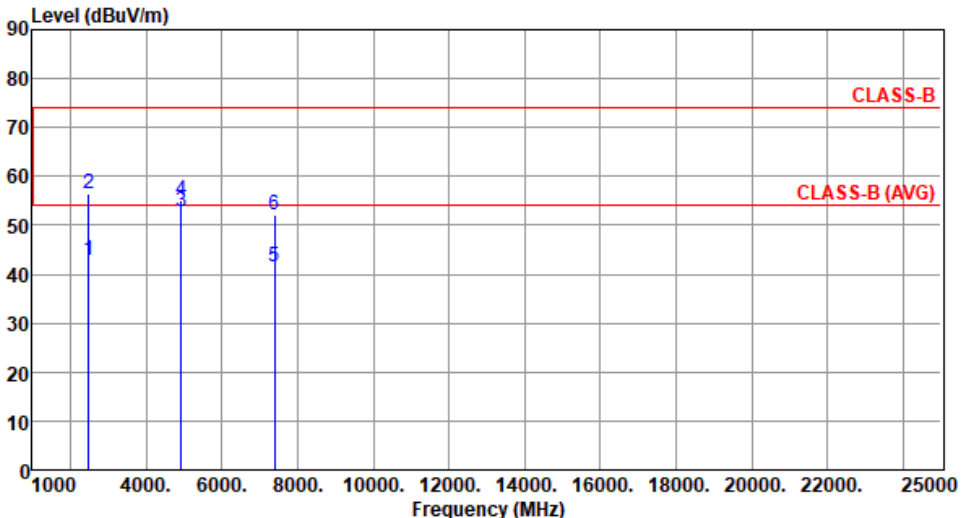


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	39.47	54.00	-14.53	42.26	-2.79	Average	100	170
2	2483.50	53.10	74.00	-20.90	55.89	-2.79	Peak	100	170
3	4924.00	52.74	54.00	-1.26	49.34	3.40	Average	110	189
4	4924.00	55.03	74.00	-18.97	51.63	3.40	Peak	110	189
5	7386.00	41.40	54.00	-12.60	32.52	8.88	Average	100	73
6	7386.00	53.73	74.00	-20.27	44.85	8.88	Peak	100	73

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor\* (dB/m)

\*Factor includes antenna factor , cable loss and amplifier gain

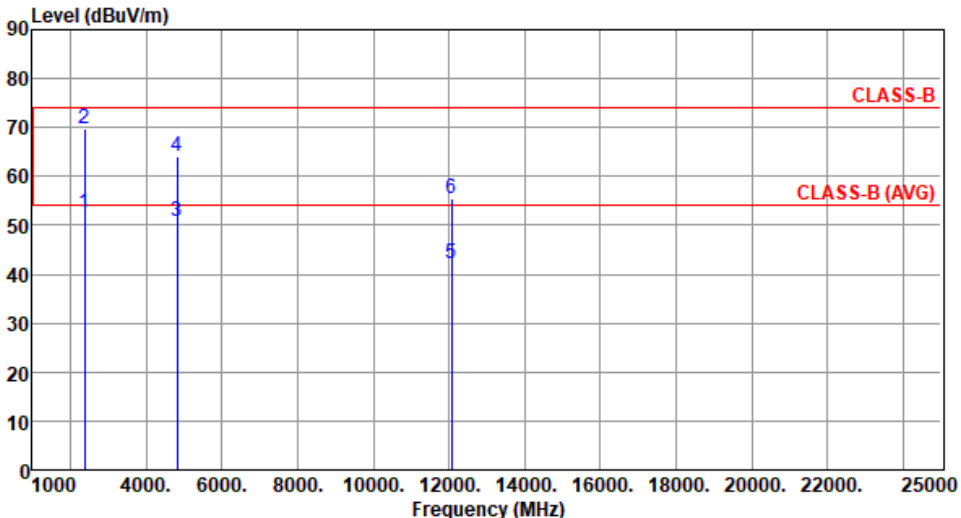
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	11b	<b>Test Freq. (MHz)</b>	2462						
<b>Polarization</b>	Vertical								
Test By :Brad Wu		Temperature(°C):22	Humidity(%):65						
									
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	42.68	54.00	-11.32	45.47	-2.79	Average	141	329
2	2483.50	56.32	74.00	-17.68	59.11	-2.79	Peak	141	329
3	4924.00	52.68	54.00	-1.32	49.28	3.40	Average	105	334
4	4924.00	54.99	74.00	-19.01	51.59	3.40	Peak	105	334
5	7386.00	41.49	54.00	-12.51	32.61	8.88	Average	200	20
6	7386.00	52.09	74.00	-21.91	43.21	8.88	Peak	200	20
<p>Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)  *Factor includes antenna factor , cable loss and amplifier gain  Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).</p>									

### 3.5.6 Transmitter Radiated Unwanted Emissions (Above 1GHz) for 11g

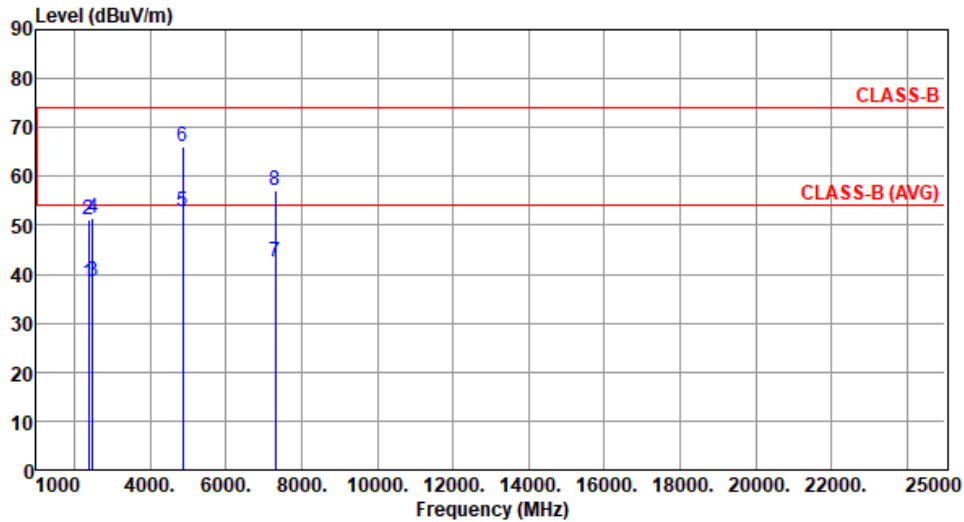
<b>Modulation</b>	11g	<b>Test Freq. (MHz)</b>	2412						
<b>Polarization</b>	Horizontal								
Test By :Brad Wu      Temperature(°C):22      Humidity(%):65									
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		cm	deg
1	2390.00	45.76	54.00	-8.24	48.59	-2.83	Average	100	175
2	2390.00	61.06	74.00	-12.94	63.89	-2.83	Peak	100	175
3	4824.00	50.35	54.00	-3.65	47.02	3.33	Average	100	61
4	4824.00	63.32	74.00	-10.68	59.99	3.33	Peak	100	61
5	12060.00	42.28	54.00	-11.72	28.91	13.37	Average	100	15
6	12060.00	54.89	74.00	-19.11	41.52	13.37	Peak	100	15
<p>Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)          *Factor includes antenna factor , cable loss and amplifier gain          Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).</p>									



<b>Modulation</b>	11g	<b>Test Freq. (MHz)</b>	2412						
<b>Polarization</b>	Vertical								
Test By	:Brad Wu	Temperature(°C):22	Humidity(%):65						
									
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		cm	deg
1	2390.00	52.46	54.00	-1.54	55.29	-2.83	Average	216	339
2	2390.00	69.68	74.00	-4.32	72.51	-2.83	Peak	216	339
3	4824.00	50.72	54.00	-3.28	47.39	3.33	Average	206	283
4	4824.00	64.25	74.00	-9.75	60.92	3.33	Peak	206	283
5	12060.00	42.22	54.00	-11.78	28.85	13.37	Average	100	21
6	12060.00	55.41	74.00	-18.59	42.04	13.37	Peak	100	21
<p>Note 1: Emission Level (dBUV/m) = SA Reading (dBUV) + Factor* (dB/m)  *Factor includes antenna factor , cable loss and amplifier gain  Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).</p>									

<b>Modulation</b>	11g	<b>Test Freq. (MHz)</b>	2437
<b>Polarization</b>	Horizontal		

Test By :Brad Wu      Temperature(°C):22      Humidity(%):65



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	38.12	54.00	-15.88	40.95	-2.83	Average	100	170
2	2390.00	51.26	74.00	-22.74	54.09	-2.83	Peak	100	170
3	2483.50	38.41	54.00	-15.59	41.20	-2.79	Average	100	170
4	2483.50	51.43	74.00	-22.57	54.22	-2.79	Peak	100	170
5	4874.00	52.76	54.00	-1.24	49.44	3.32	Average	100	64
6	4874.00	65.97	74.00	-8.03	62.65	3.32	Peak	100	64
7	7311.00	42.58	54.00	-11.42	33.69	8.89	Average	100	74
8	7311.00	57.13	74.00	-16.87	48.24	8.89	Peak	100	74

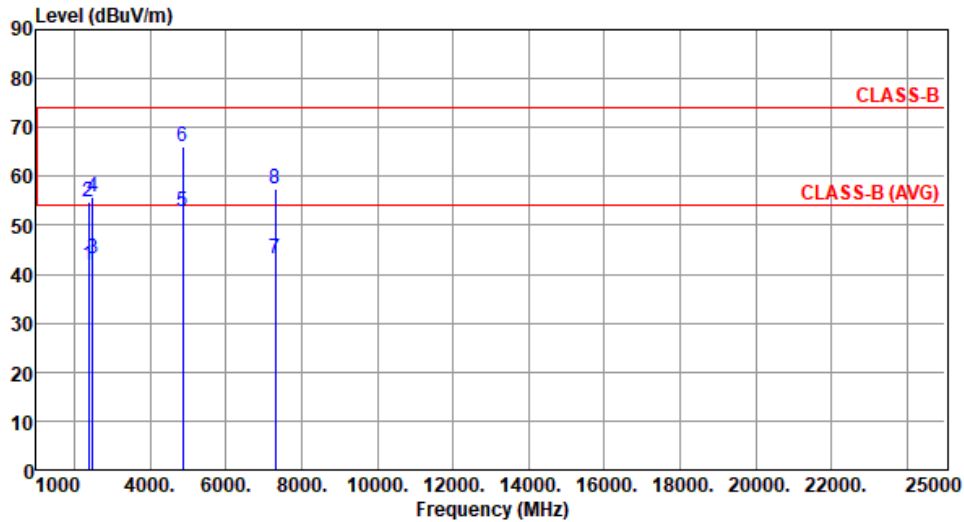
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor\* (dB/m)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	11g	<b>Test Freq. (MHz)</b>	2437
<b>Polarization</b>	Vertical		

Test By :Brad Wu      Temperature(°C):22      Humidity(%):65



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	41.72	54.00	-12.28	44.55	-2.83	Average	222	338
2	2390.00	54.85	74.00	-19.15	57.68	-2.83	Peak	222	338
3	2483.50	43.16	54.00	-10.84	45.95	-2.79	Average	222	338
4	2483.50	55.83	74.00	-18.17	58.62	-2.79	Peak	222	338
5	4874.00	52.87	54.00	-1.13	49.55	3.32	Average	100	200
6	4874.00	66.19	74.00	-7.81	62.87	3.32	Peak	100	200
7	7311.00	43.01	54.00	-10.99	34.12	8.89	Average	196	23
8	7311.00	57.43	74.00	-16.57	48.54	8.89	Peak	196	23

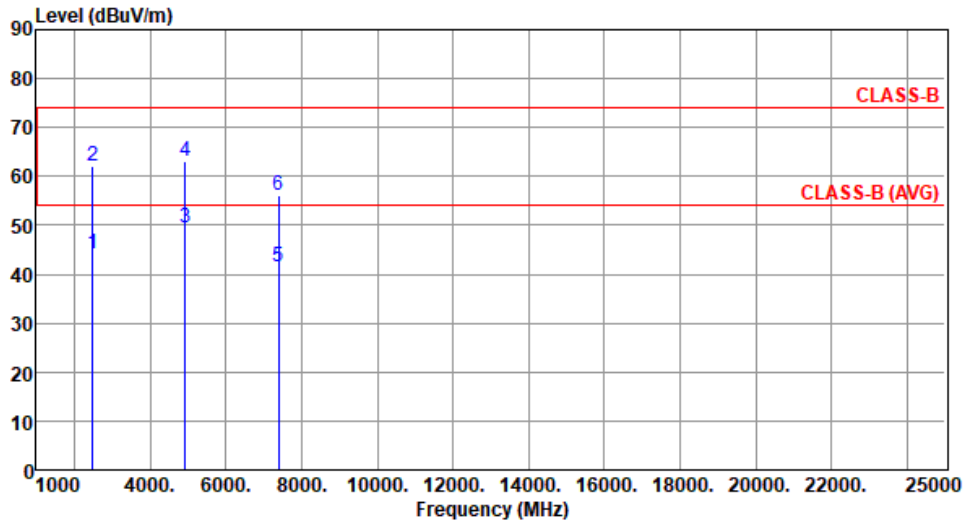
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor\* (dB/m)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	11g	<b>Test Freq. (MHz)</b>	2462
<b>Polarization</b>	Horizontal		

Test By :Brad Wu      Temperature(°C):22      Humidity(%):65



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	44.10	54.00	-9.90	46.89	-2.79	Average	100	185
2	2483.50	62.07	74.00	-11.93	64.86	-2.79	Peak	100	185
3	4924.00	49.51	54.00	-4.49	46.11	3.40	Average	100	63
4	4924.00	62.95	74.00	-11.05	59.55	3.40	Peak	100	63
5	7386.00	41.65	54.00	-12.35	32.77	8.88	Average	100	69
6	7386.00	56.13	74.00	-17.87	47.25	8.88	Peak	100	69

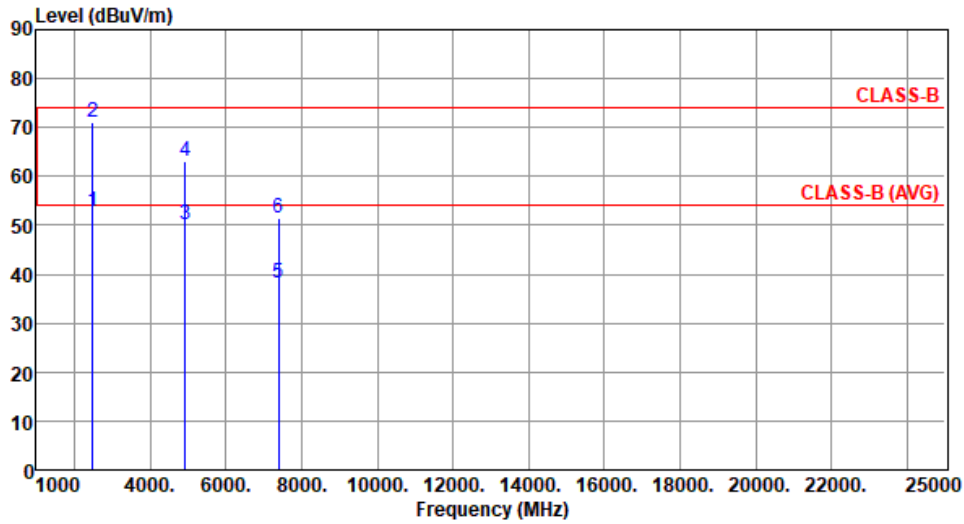
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor\* (dB/m)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	11g	<b>Test Freq. (MHz)</b>	2462
<b>Polarization</b>	Vertical		

Test By :Brad Wu      Temperature(°C):22      Humidity(%):65



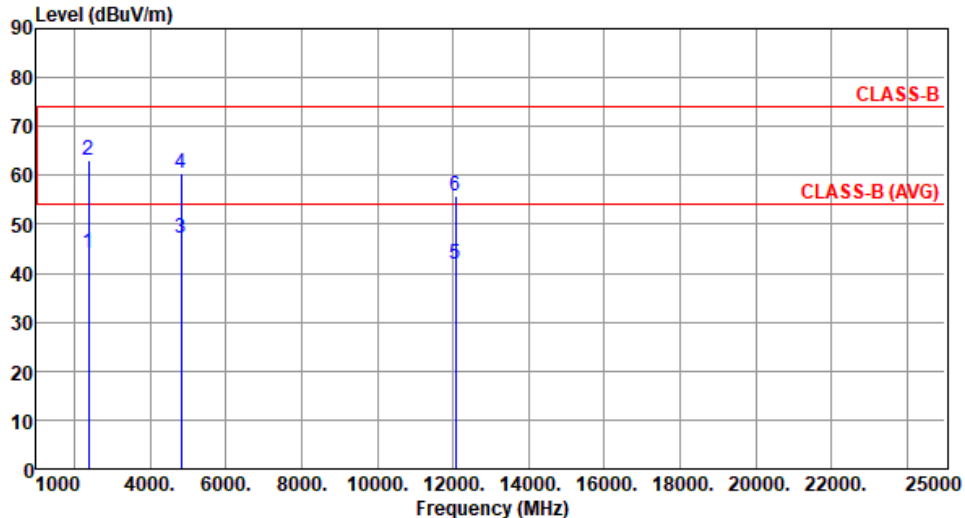
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	52.68	54.00	-1.32	55.47	-2.79	Average	221	342
2	2483.50	71.20	74.00	-2.80	73.99	-2.79	Peak	221	342
3	4924.00	49.99	54.00	-4.01	46.59	3.40	Average	108	202
4	4924.00	63.21	74.00	-10.79	59.81	3.40	Peak	108	202
5	7386.00	38.13	54.00	-15.87	29.25	8.88	Average	199	18
6	7386.00	51.52	74.00	-22.48	42.64	8.88	Peak	199	18

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor\* (dB/m)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

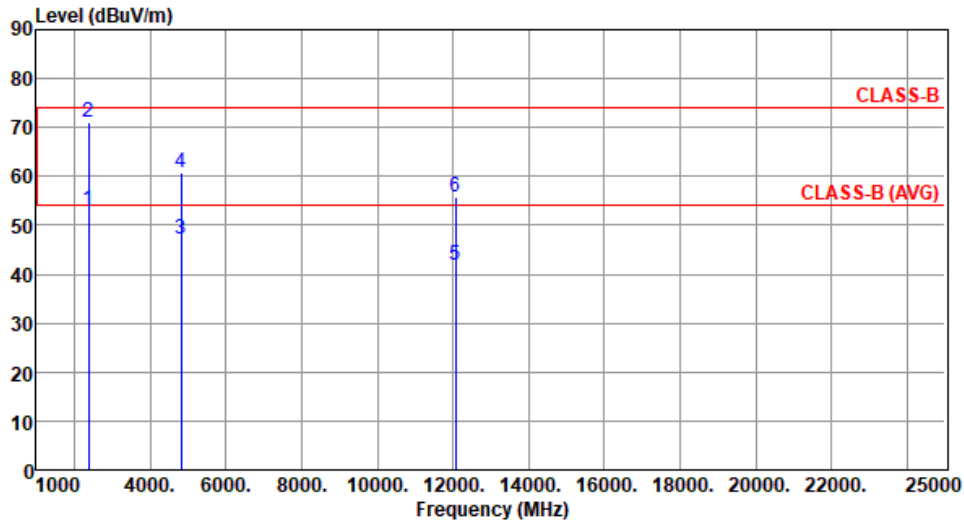
### 3.5.7 Transmitter Radiated Unwanted Emissions (Above 1GHz) for HT20

<b>Modulation</b>	HT20	<b>Test Freq. (MHz)</b>	2412						
<b>Polarization</b>	Horizontal								
Test By :Brad Wu      Temperature(°C):22      Humidity(%):65									
									
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		cm	deg
1	2390.00	44.12	54.00	-9.88	46.95	-2.83	Average	100	183
2	2390.00	63.06	74.00	-10.94	65.89	-2.83	Peak	100	183
3	4824.00	47.08	54.00	-6.92	43.75	3.33	Average	100	68
4	4824.00	60.59	74.00	-13.41	57.26	3.33	Peak	100	68
5	12060.00	41.70	54.00	-12.30	28.33	13.37	Average	100	57
6	12060.00	55.79	74.00	-18.21	42.42	13.37	Peak	100	57

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor\* (dB/m)  
\*Factor includes antenna factor , cable loss and amplifier gain  
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	HT20	<b>Test Freq. (MHz)</b>	2412
<b>Polarization</b>	Vertical		

Test By :Brad Wu      Temperature(°C):22      Humidity(%):65



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	52.99	54.00	-1.01	55.82	-2.83	Average	210	333
2	2390.00	71.24	74.00	-2.76	74.07	-2.83	Peak	210	333
3	4824.00	47.20	54.00	-6.80	43.87	3.33	Average	105	201
4	4824.00	60.86	74.00	-13.14	57.53	3.33	Peak	105	201
5	12060.00	41.88	54.00	-12.12	28.51	13.37	Average	100	203
6	12060.00	55.95	74.00	-18.05	42.58	13.37	Peak	100	203

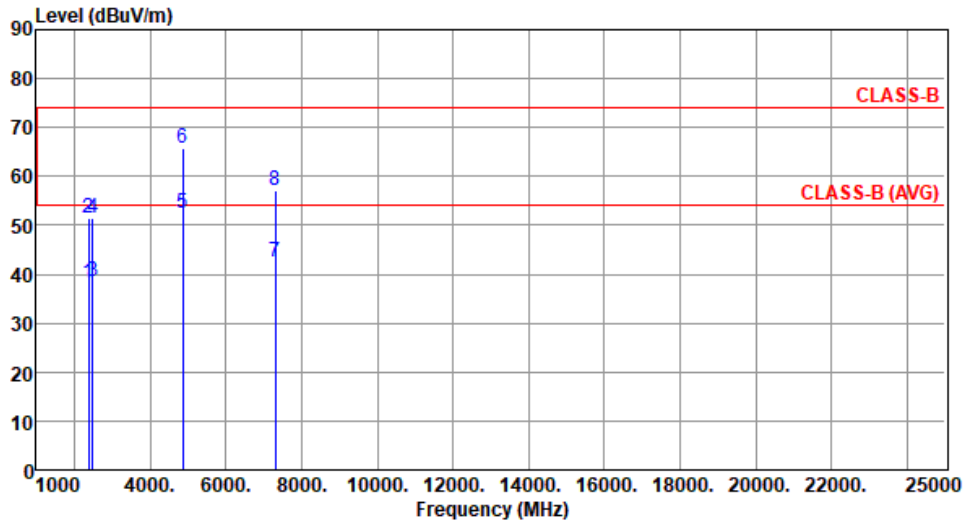
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor\* (dB/m)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	HT20	<b>Test Freq. (MHz)</b>	2437
<b>Polarization</b>	Horizontal		

Test By :Brad Wu      Temperature(°C):22      Humidity(%):65



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	38.15	54.00	-15.85	40.98	-2.83	Average	100	168
2	2390.00	51.32	74.00	-22.68	54.15	-2.83	Peak	100	168
3	2483.50	38.45	54.00	-15.55	41.24	-2.79	Average	100	168
4	2483.50	51.52	74.00	-22.48	54.31	-2.79	Peak	100	168
5	4874.00	52.62	54.00	-1.38	49.30	3.32	Average	100	59
6	4874.00	65.84	74.00	-8.16	62.52	3.32	Peak	100	59
7	7311.00	42.44	54.00	-11.56	33.55	8.89	Average	100	78
8	7311.00	57.06	74.00	-16.94	48.17	8.89	Peak	100	78

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor\* (dB/m)

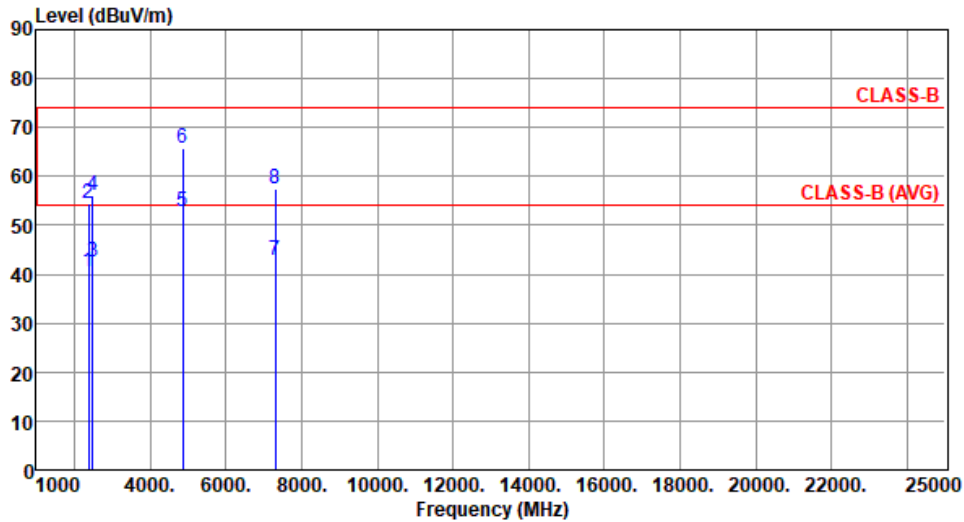
\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



<b>Modulation</b>	HT20	<b>Test Freq. (MHz)</b>	2437
<b>Polarization</b>	Vertical		

Test By :Brad Wu      Temperature(°C):22      Humidity(%):65



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	40.56	54.00	-13.44	43.39	-2.83	Average	220	343
2	2390.00	54.35	74.00	-19.65	57.18	-2.83	Peak	220	343
3	2483.50	42.63	54.00	-11.37	45.42	-2.79	Average	220	343
4	2483.50	56.06	74.00	-17.94	58.85	-2.79	Peak	220	343
5	4874.00	52.77	54.00	-1.23	49.45	3.32	Average	100	198
6	4874.00	65.92	74.00	-8.08	62.60	3.32	Peak	100	198
7	7311.00	42.98	54.00	-11.02	34.09	8.89	Average	194	21
8	7311.00	57.36	74.00	-16.64	48.47	8.89	Peak	194	21

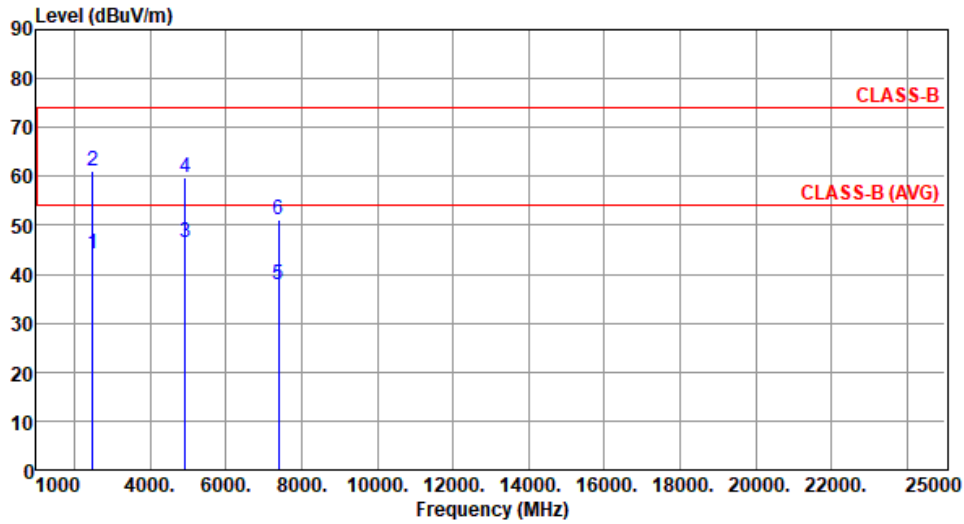
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor\* (dB/m)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	HT20	<b>Test Freq. (MHz)</b>	2462
<b>Polarization</b>	Horizontal		

Test By :Brad Wu      Temperature(°C):22      Humidity(%):65

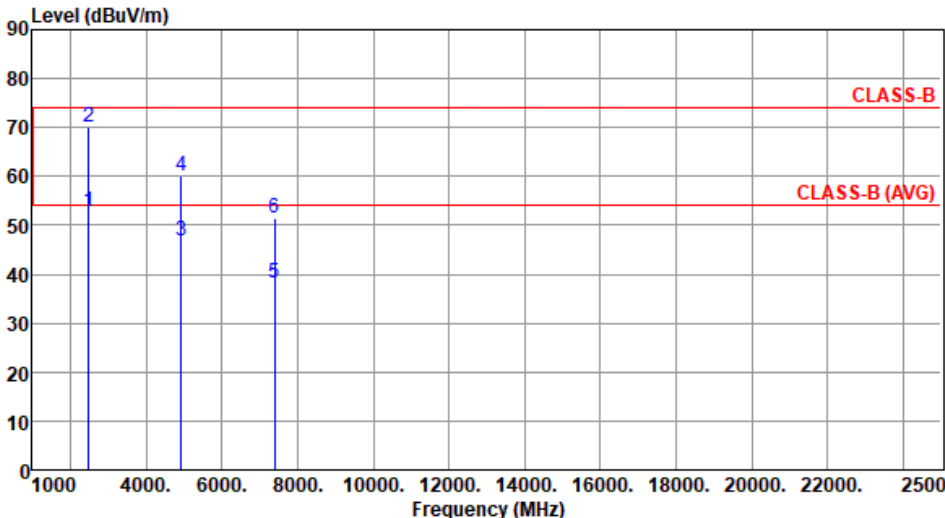


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	44.06	54.00	-9.94	46.85	-2.79	Average	100	181
2	2483.50	61.06	74.00	-12.94	63.85	-2.79	Peak	100	181
3	4924.00	46.65	54.00	-7.35	43.25	3.40	Average	100	67
4	4924.00	59.92	74.00	-14.08	56.52	3.40	Peak	100	67
5	7386.00	37.93	54.00	-16.07	29.05	8.88	Average	100	63
6	7386.00	51.29	74.00	-22.71	42.41	8.88	Peak	100	63

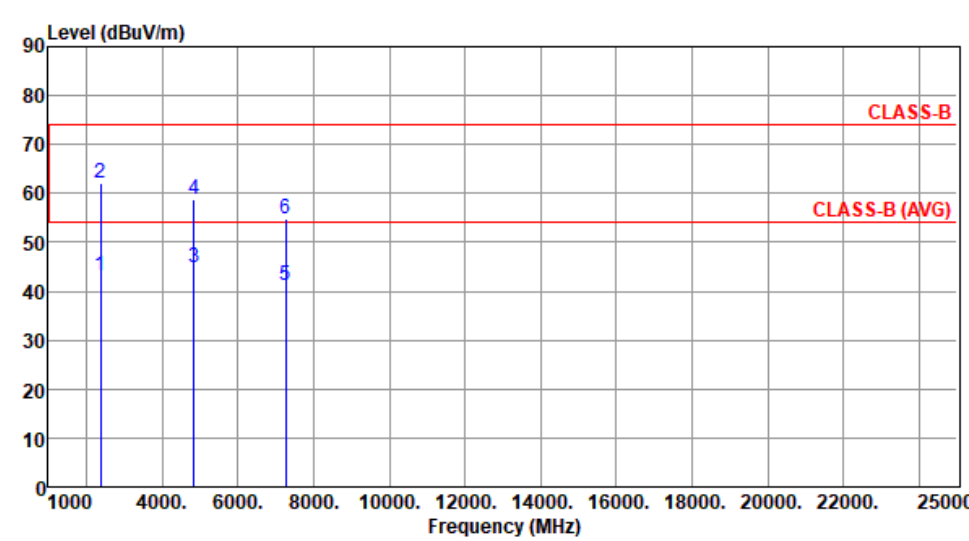
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor\* (dB/m)

\*Factor includes antenna factor , cable loss and amplifier gain

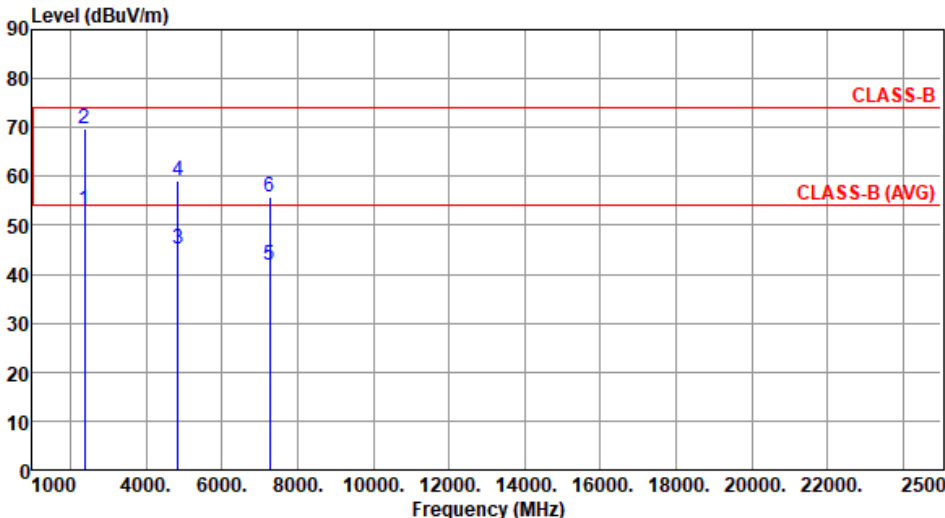
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

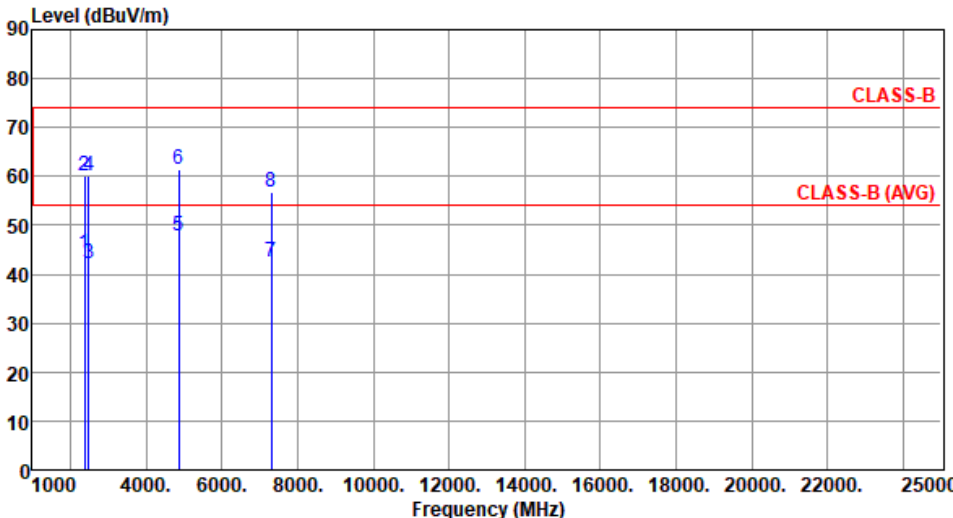
<b>Modulation</b>	HT20	<b>Test Freq. (MHz)</b>	2462						
<b>Polarization</b>	Vertical								
Test By :Brad Wu		Temperature(°C):22	Humidity(%):65						
									
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		cm	deg
1	2483.50	52.65	54.00	-1.35	55.44	-2.79	Average	219	339
2	2483.50	70.06	74.00	-3.94	72.85	-2.79	Peak	219	339
3	4924.00	46.98	54.00	-7.02	43.58	3.40	Average	104	209
4	4924.00	60.25	74.00	-13.75	56.85	3.40	Peak	104	209
5	7386.00	38.03	54.00	-15.97	29.15	8.88	Average	101	205
6	7386.00	51.46	74.00	-22.54	42.58	8.88	Peak	101	205
<p>Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)  *Factor includes antenna factor , cable loss and amplifier gain  Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).</p>									

### 3.5.8 Transmitter Radiated Unwanted Emissions (Above 1GHz) for HT40

<b>Modulation</b>	HT40	<b>Test Freq. (MHz)</b>	2422						
<b>Polarization</b>	Horizontal								
Test By :Brad Wu      Temperature(°C):22      Humidity(%):65									
									
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		cm	deg
1	2390.00	43.12	54.00	-10.88	45.95	-2.83	Average	100	179
2	2390.00	62.06	74.00	-11.94	64.89	-2.83	Peak	100	179
3	4844.00	44.83	54.00	-9.17	41.52	3.31	Average	100	59
4	4844.00	58.75	74.00	-15.25	55.44	3.31	Peak	100	59
5	7266.00	41.13	54.00	-12.87	32.25	8.88	Average	100	60
6	7266.00	54.65	74.00	-19.35	45.77	8.88	Peak	100	60

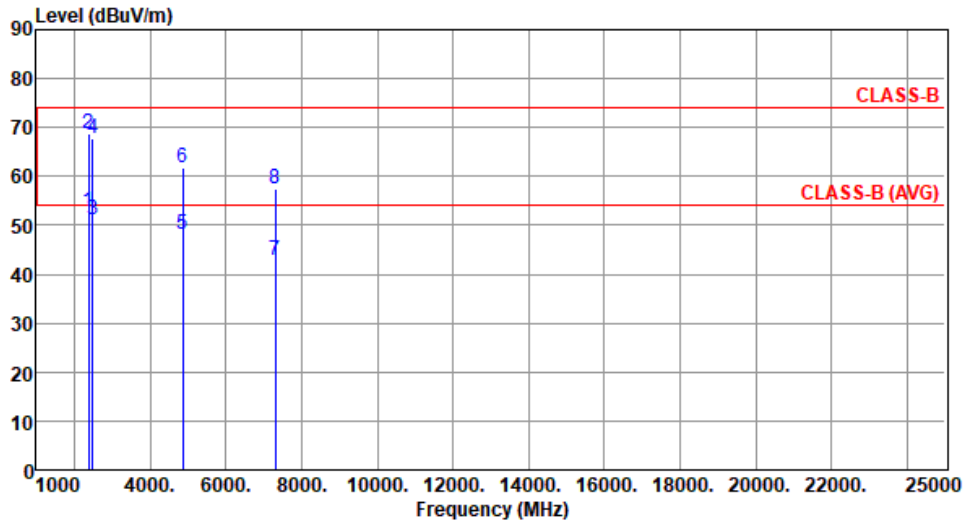
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor\* (dB/m)  
 \*Factor includes antenna factor , cable loss and amplifier gain  
 Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	HT40	<b>Test Freq. (MHz)</b>	2422						
<b>Polarization</b>	Vertical								
Test By	:Brad Wu	Temperature(°C):22	Humidity(%):65						
									
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		cm	deg
1	2390.00	53.22	54.00	-0.78	56.05	-2.83	Average	223	343
2	2390.00	69.79	74.00	-4.21	72.62	-2.83	Peak	223	343
3	4844.00	45.17	54.00	-8.83	41.86	3.31	Average	100	206
4	4844.00	59.16	74.00	-14.84	55.85	3.31	Peak	100	206
5	7266.00	41.74	54.00	-12.26	32.86	8.88	Average	203	20
6	7266.00	55.74	74.00	-18.26	46.86	8.88	Peak	203	20
<p>Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)  *Factor includes antenna factor , cable loss and amplifier gain  Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).</p>									

<b>Modulation</b>	HT40	<b>Test Freq. (MHz)</b>	2437						
<b>Polarization</b>	Horizontal								
Test By	:Brad Wu	Temperature(°C):22	Humidity(%):65						
									
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	44.05	54.00	-9.95	46.88	-2.83	Average	100	178
2	2390.00	60.04	74.00	-13.96	62.87	-2.83	Peak	100	178
3	2483.50	42.17	54.00	-11.83	44.96	-2.79	Average	100	178
4	2483.50	60.08	74.00	-13.92	62.87	-2.79	Peak	100	178
5	4874.00	47.98	54.00	-6.02	44.66	3.32	Average	100	68
6	4874.00	61.35	74.00	-12.65	58.03	3.32	Peak	100	68
7	7311.00	42.52	54.00	-11.48	33.63	8.89	Average	100	59
8	7311.00	56.85	74.00	-17.15	47.96	8.89	Peak	100	59
<p>Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)  *Factor includes antenna factor , cable loss and amplifier gain  Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).</p>									

<b>Modulation</b>	HT40	<b>Test Freq. (MHz)</b>	2437
<b>Polarization</b>	Vertical		

Test By :Brad Wu      Temperature(°C):22      Humidity(%):65



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	52.81	54.00	-1.19	55.64	-2.83	Average	202	339
2	2390.00	68.72	74.00	-5.28	71.55	-2.83	Peak	202	339
3	2483.50	51.12	54.00	-2.88	53.91	-2.79	Average	202	339
4	2483.50	67.70	74.00	-6.30	70.49	-2.79	Peak	202	339
5	4874.00	48.18	54.00	-5.82	44.86	3.32	Average	100	202
6	4874.00	61.70	74.00	-12.30	58.38	3.32	Peak	100	202
7	7311.00	42.95	54.00	-11.05	34.06	8.89	Average	198	24
8	7311.00	57.29	74.00	-16.71	48.40	8.89	Peak	198	24

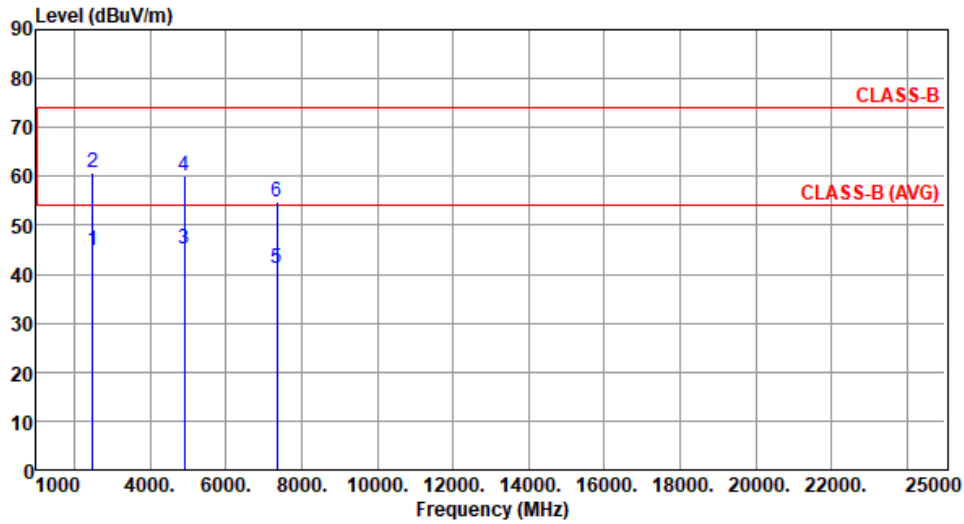
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor\* (dB/m)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

<b>Modulation</b>	HT40	<b>Test Freq. (MHz)</b>	2452
<b>Polarization</b>	Horizontal		

Test By :Brad Wu      Temperature(°C):22      Humidity(%):65



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	44.74	54.00	-9.26	47.53	-2.79	Average	100	186
2	2483.50	60.91	74.00	-13.09	63.70	-2.79	Peak	100	186
3	4904.00	45.32	54.00	-8.68	41.97	3.35	Average	100	69
4	4904.00	60.06	74.00	-13.94	56.71	3.35	Peak	100	69
5	7356.00	41.31	54.00	-12.69	32.36	8.95	Average	100	58
6	7356.00	54.90	74.00	-19.10	45.95	8.95	Peak	100	58

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor\* (dB/m)

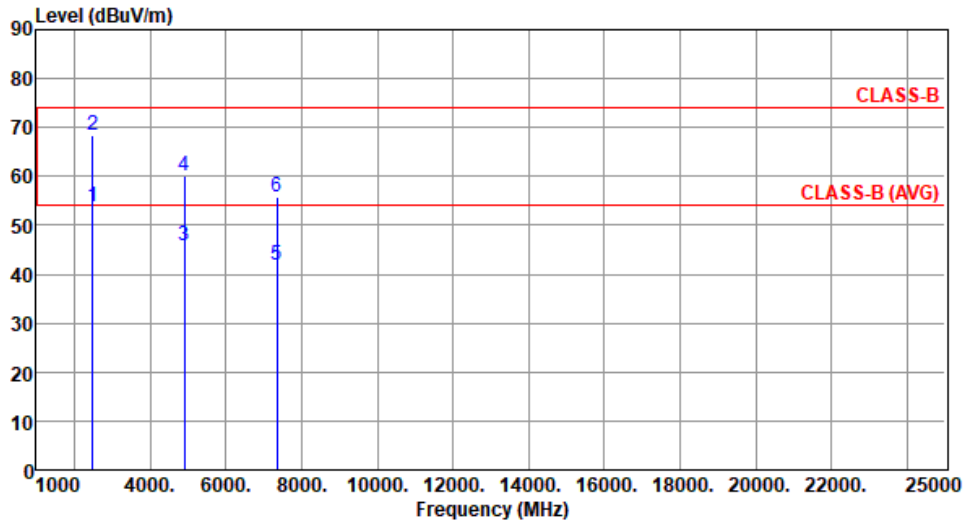
\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



<b>Modulation</b>	HT40	<b>Test Freq. (MHz)</b>	2452
<b>Polarization</b>	Vertical		

Test By :Brad Wu      Temperature(°C):22      Humidity(%):65



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	53.75	54.00	-0.25	56.54	-2.79	Average	222	340
2	2483.50	68.44	74.00	-5.56	71.23	-2.79	Peak	222	340
3	4904.00	45.75	54.00	-8.25	42.40	3.35	Average	100	201
4	4904.00	60.20	74.00	-13.80	56.85	3.35	Peak	100	201
5	7356.00	41.80	54.00	-12.20	32.85	8.95	Average	194	21
6	7356.00	55.80	74.00	-18.20	46.85	8.95	Peak	194	21

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor\* (dB/m)

\*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

## 3.6 Emissions in Non-Restricted Frequency Bands

### 3.6.1 Emissions in Non-Restricted Frequency Bands Limit

Peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz.

### 3.6.2 Test Procedures

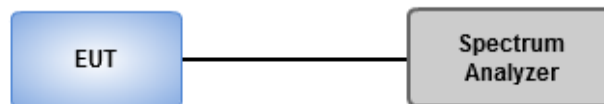
#### Reference level measurement

1. Set RBW=100kHz, VBW = 300kHz , Detector = Peak, Sweep time = Auto
2. Trace = max hold , Allow Trace to fully stabilize
3. Use the peak marker function to determine the maximum PSD level

#### Emission level measurement

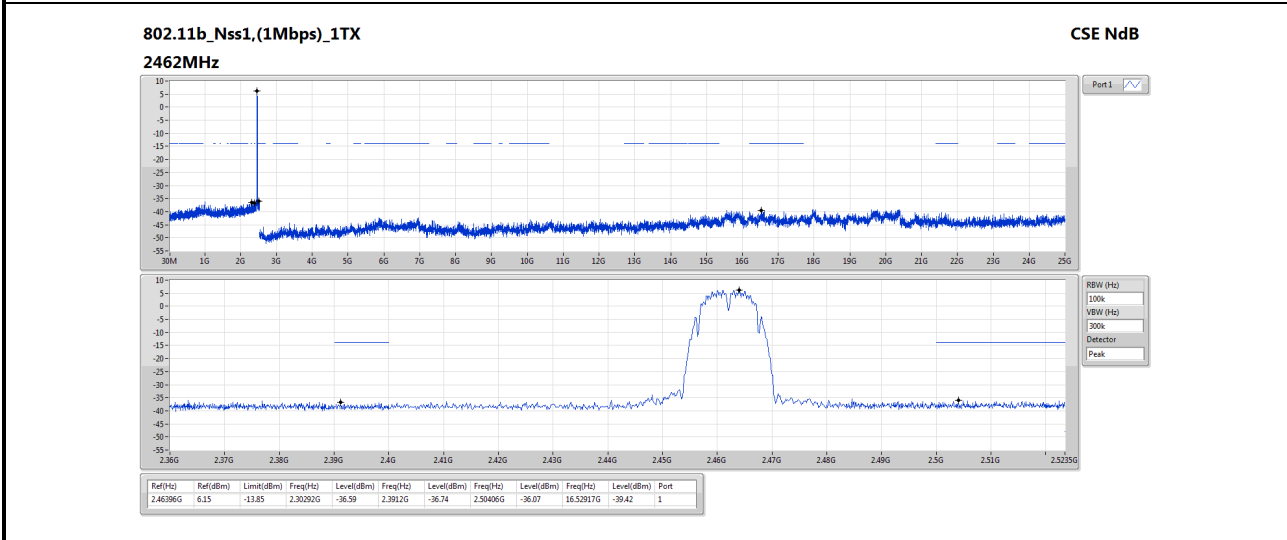
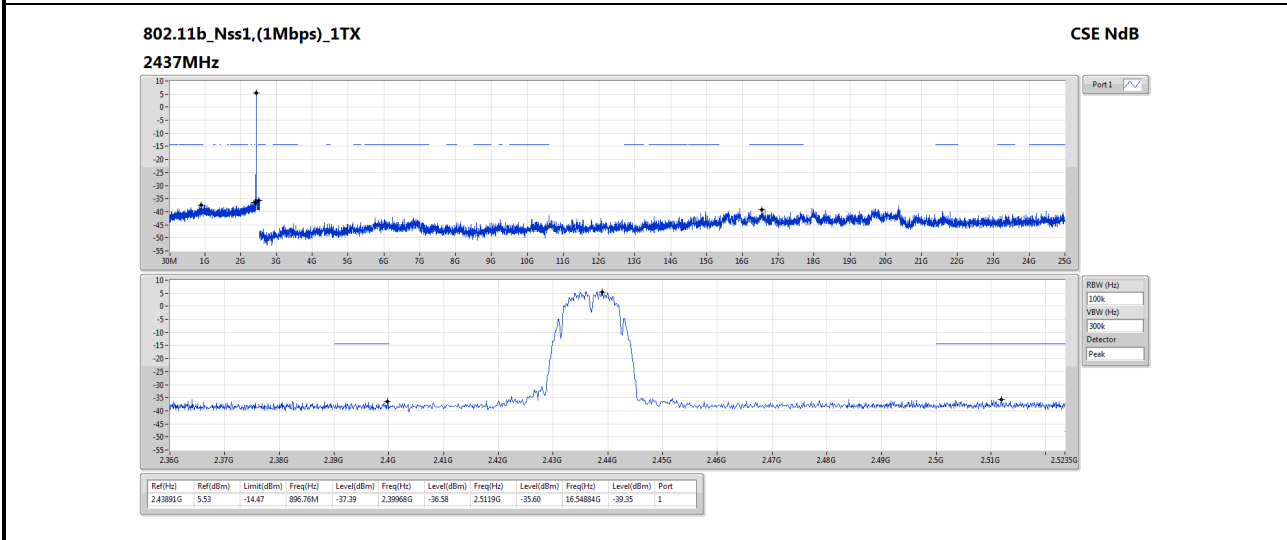
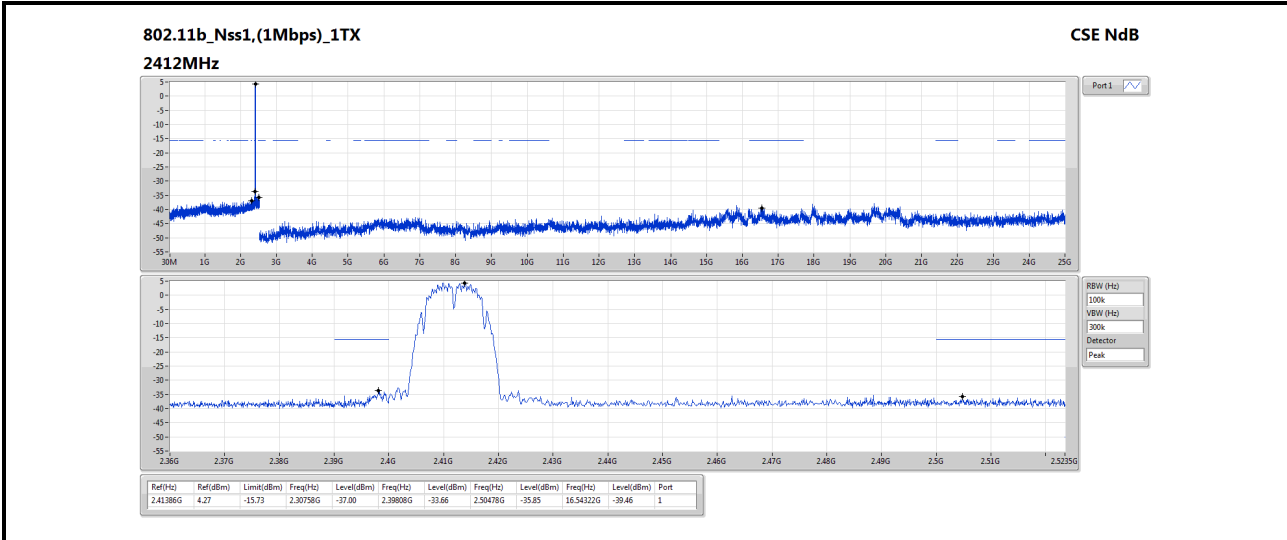
1. Set RBW=100kHz, VBW = 300kHz , Detector = Peak, Sweep time = Auto
2. Trace = max hold , Allow Trace to fully stabilize
3. Scan Frequency range is up to 25GHz
4. Use the peak marker function to determine the maximum amplitude level

### 3.6.3 Test Setup



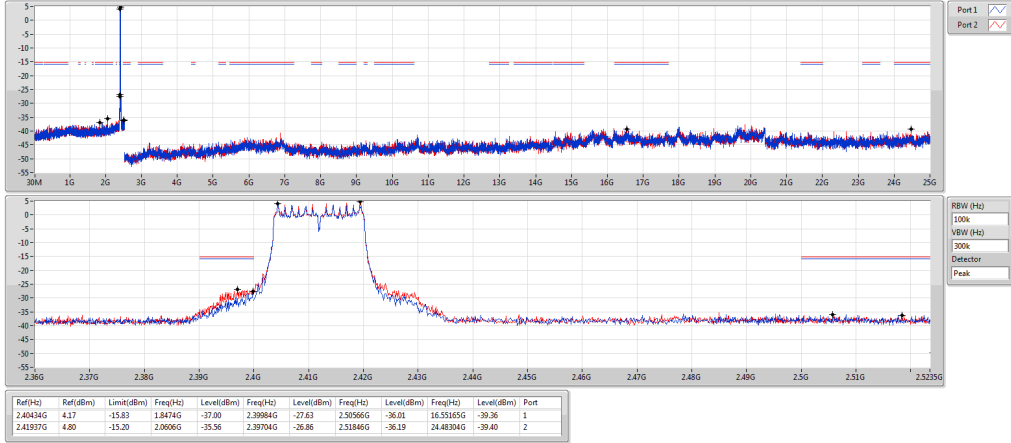
### 3.6.4 Unwanted Emissions into Non-Restricted Frequency Bands

Ambient Condition	21°C / 66%	Tested By	Aska Huang
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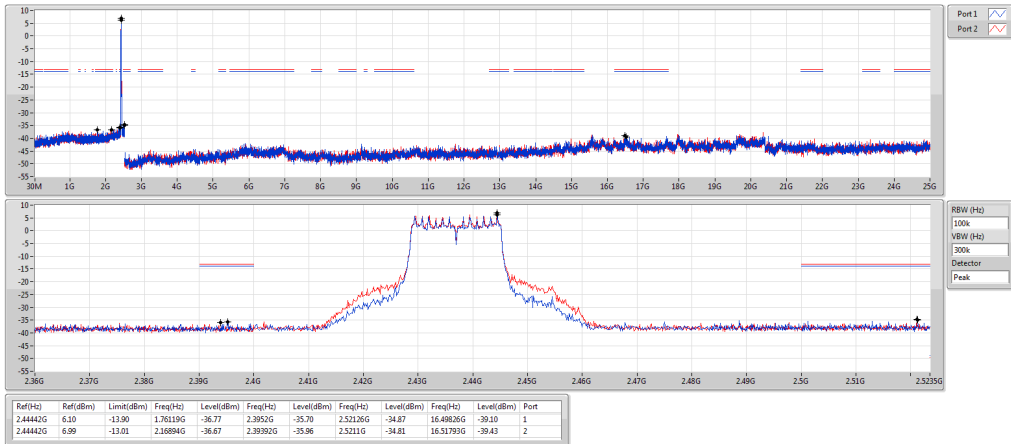
802.11g\_Nss1,(6Mbps)\_2TX  
2412MHz

CSE NdB



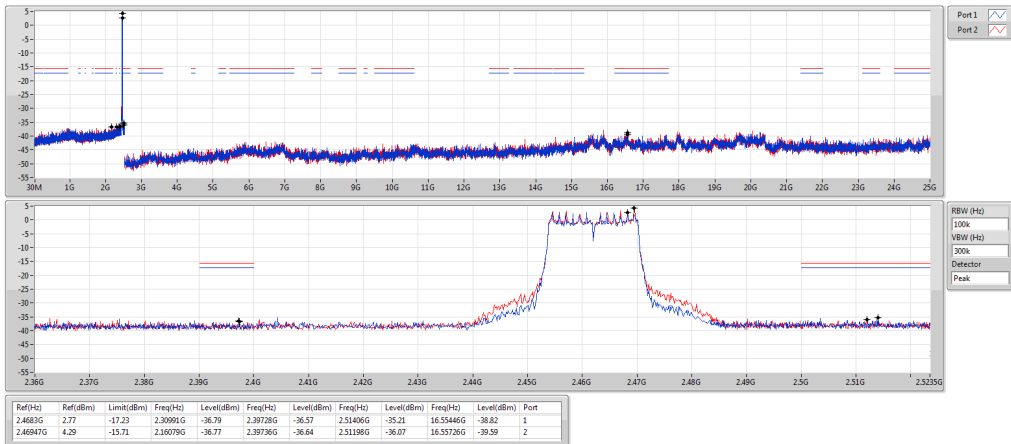
802.11g\_Nss1,(6Mbps)\_2TX  
2437MHz

CSE NdB



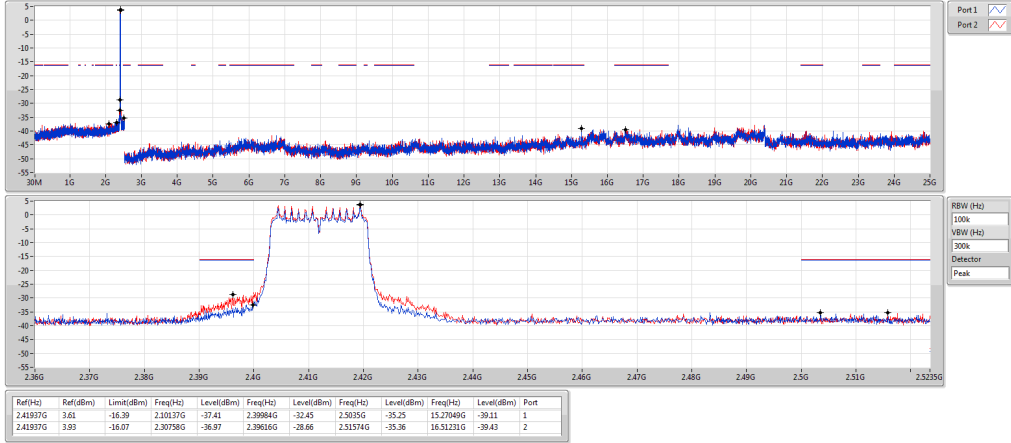
802.11g\_Nss1,(6Mbps)\_2TX  
2462MHz

CSE NdB



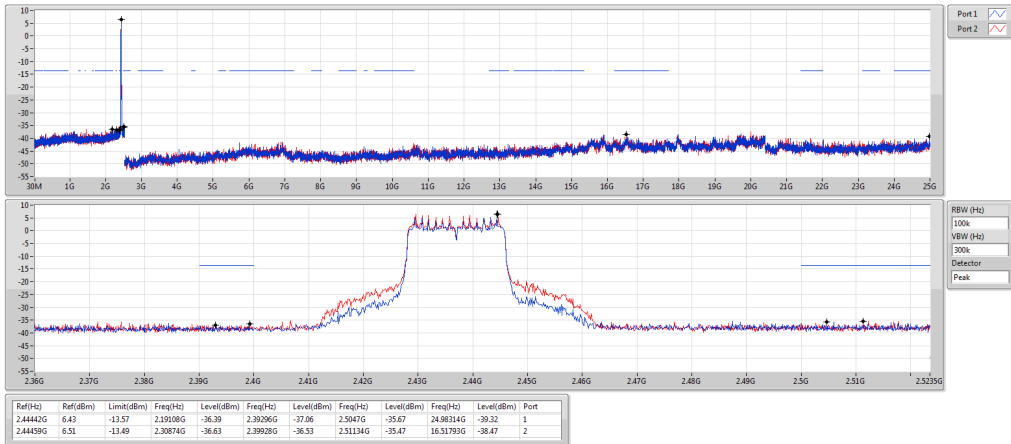
802.11n HT20\_Nss1,(MCS0)\_2TX  
2412MHz

CSE NdB



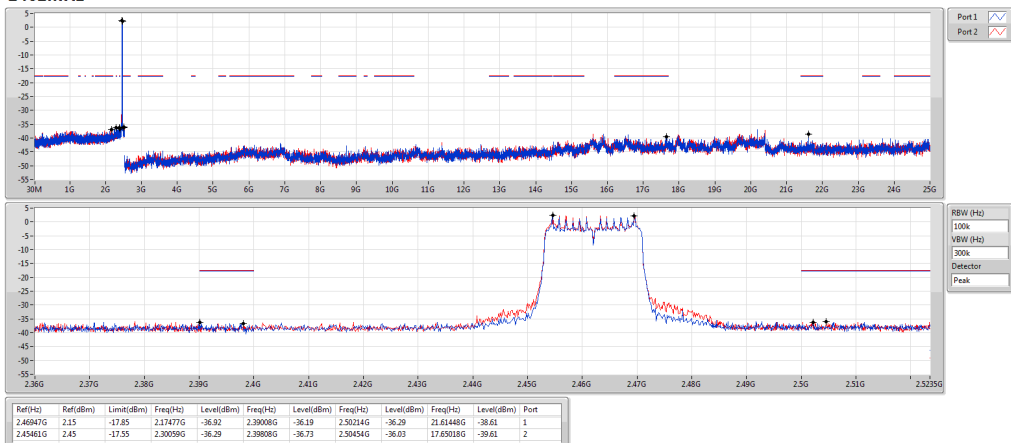
802.11n HT20\_Nss1,(MCS0)\_2TX  
2437MHz

CSE NdB



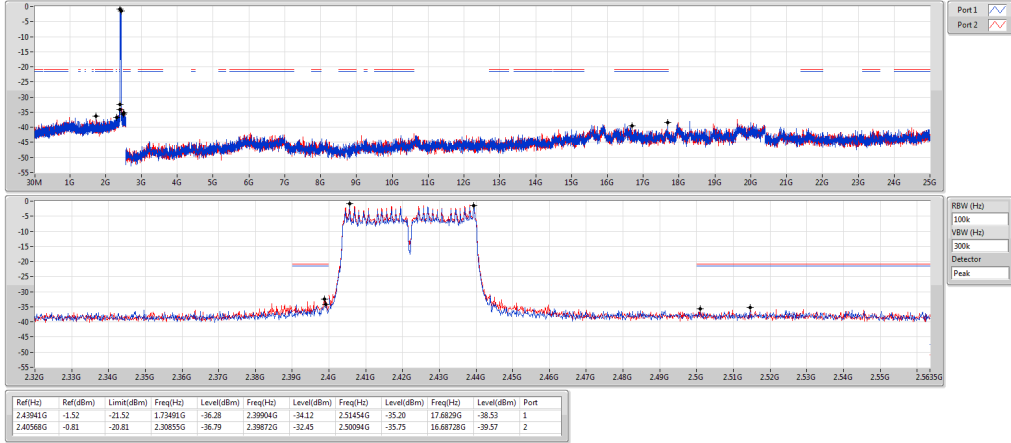
802.11n HT20\_Nss1,(MCS0)\_2TX  
2462MHz

CSE NdB



802.11n HT40\_Nss1,(MCS0)\_2TX  
2422MHz

CSE NdB



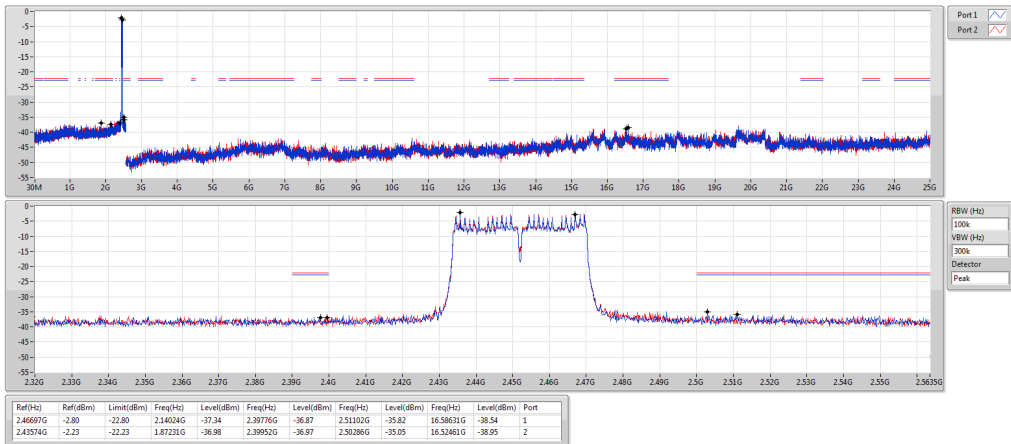
802.11n HT40\_Nss1,(MCS0)\_2TX  
2437MHz

CSE NdB



802.11n HT40\_Nss1,(MCS0)\_2TX  
2452MHz

CSE NdB



## 4 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corporation (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan District. Location map can be found on our website <http://www.icertifi.com.tw>.

### **Linkou**

Tel: 886-2-2601-1640

No.30-2, Ding Fwu Tsuen, Lin Kou District, New Taipei City, Taiwan (R.O.C.)

### **Kwei Shan**

Tel: 886-3-271-8666

No.3-1, Lane 6, Wen San 3rd St., Kwei Shan Dist., Tao Yuan City 33381, Taiwan (R.O.C.)

No.2-1, Lane 6, Wen San 3rd St., Kwei Shan Dist., Tao Yuan City 33381, Taiwan (R.O.C.)

### **Kwei Shan Site II**

Tel: 886-3-271-8640

No.14-1, Lane 19, Wen San 3rd St., Kwei Shan Dist., Tao Yuan City 333, Taiwan (R.O.C.)

If you have any suggestion, please feel free to contact us as below information.

Tel: 886-3-271-8666

Fax: 886-3-318-0345

Email: ICC\_Service@icertifi.com.tw

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