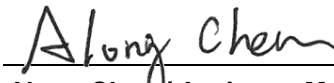


# FCC Test Report

**FCC ID** : 2AQ68-GME840U-915U  
**Equipment** : Wireless Gateway  
**Model No.** : GME840U-915U  
**Multiple Listing** : Refer to item 1.1.1 for more details.  
**Applicant** : HON LIN TECHNOLOGY CO., LTD.  
**Address** : 11F, No.32, Jihu Rd., Neihu Dist., Taipei  
City,Taiwan 114  
**Standard** : 47 CFR FCC Part 15.247  
**Received Date** : Sep. 04, 2020  
**Tested Date** : Sep. 30 ~ Oct. 23, 2020

We, International Certification Corp., 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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## Release Record

Report No.	Version	Description	Issued Date
FR970401-04AC	Rev. 01	Initial issue	Nov. 10, 2020

## Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.428MHz 43.46 (Margin -3.83dB) - AV	Pass
15.247(d) 15.209	Radiated Emissions	[dBuV/m at 3m]: 2483.50MHz 72.01 (Margin -1.99dB) - PK	Pass
15.247(b)(3)	Maximum Output Power	Max Power [dBm]: 20.23	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 Product Details

The following models are provided to this EUT.

Model Name	Description	Remark
GME840U-915U	without LTE function	PCB is identical to each model. Difference between both models is only certified LTE module (FCC ID: ZMOL850GL) is embed or not.
GML840U-915U	with LTE function	

### 1.1.2 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]	1	6-54 Mbps
2400-2483.5	n (HT20)	2412-2462	1-11 [11]	1	MCS 0-7
2400-2483.5	n (HT40)	2422-2452	3-9 [7]	1	MCS 0-7

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.

### 1.1.3 Antenna Details

Ant. No.	Model	Type	Connector	Gain (dBi)
1	ANTP2M2-CZZ08-EH	PIFA	IPEX	2.75

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

Power Supply Type 1 (PoE)	I/P: 100-240Vac, 50/60Hz, 1.5A max. O/P: 50Vdc, 1.2A
Power Supply Type 2 (DC power source)	I/P: 11-57Vdc O/P: 10.8Vdc, 2.36A

### 1.1.5 Accessories

Accessories		
No.	Equipment	Description
1	POE	Brand: Gospell Model: G0566-500-120 Power Rating: I/P: 100-240Vac, 50/60Hz, 1.5A max. O/P: 50Vdc, 1.2A Power Line: 0.67m non-shielded without core
2	Ground cable	1m non-shielded without core
3	Jumper cable for Lora	0.609m non-shielded without core
4	GPS Antenna	Brand: INPAQ Model: GPSGLONASS08H-S6-1510

### 1.1.6 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	---	---

### 1.1.7 Test Tool and Duty Cycle

Test Tool	Putty command, V0.6		
Duty Cycle and Duty Factor	Mode	Duty Cycle (%)	Duty Factor (dB)
	11b	99.31%	0.03
	11g	92.75%	0.33
	HT20	91.43%	0.39
	HT40	82.39%	0.84

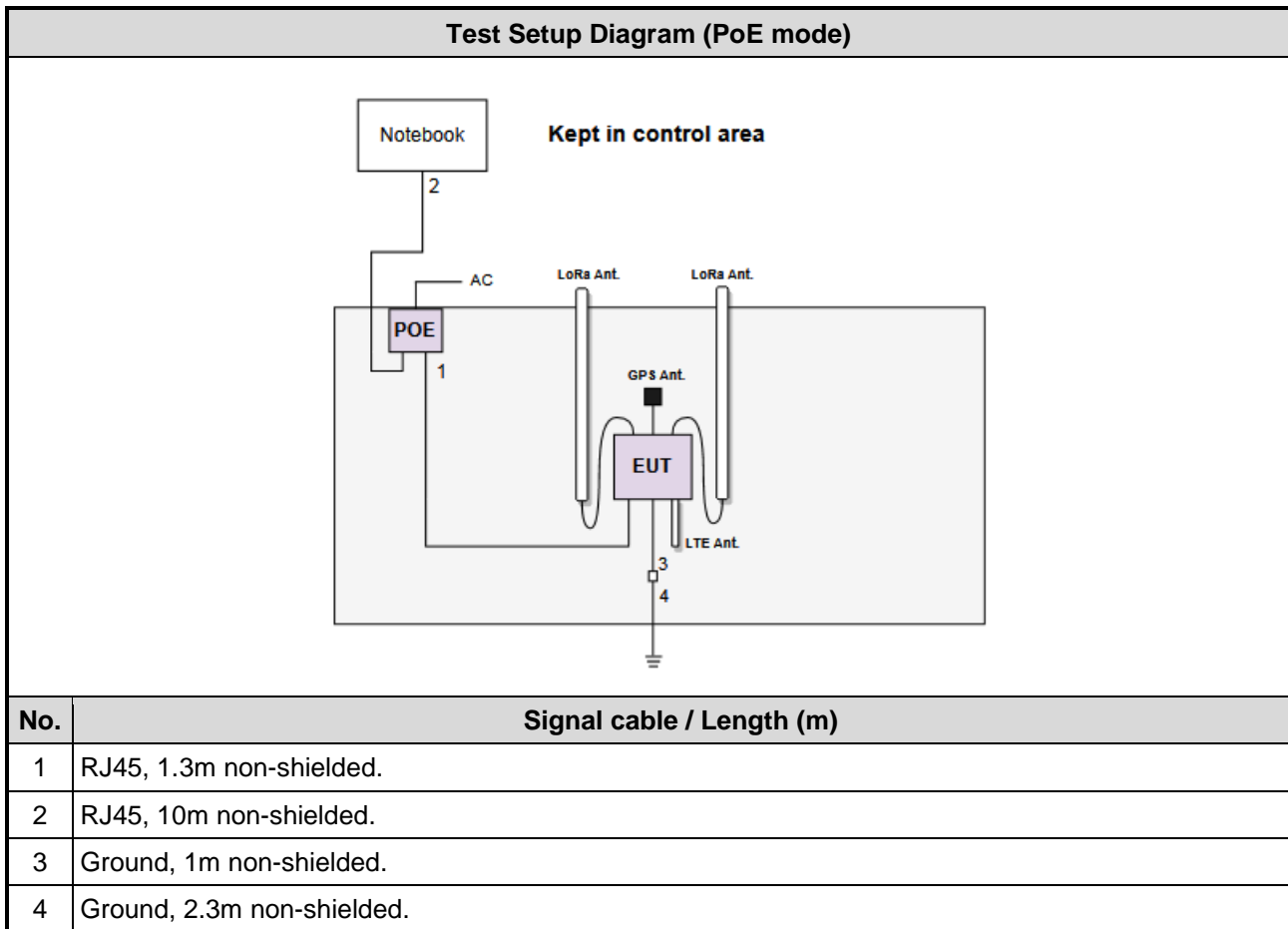
### 1.1.8 Power Index of Test Tool

Modulation Mode	Test Frequency (MHz)	Power Index
11b	2412	20000
11b	2437	20000
11b	2462	20000
11g	2412	20000
11g	2437	20000
11g	2462	20000
HT20	2412	20000
HT20	2437	20000
HT20	2462	20000
HT40	2422	20000
HT40	2437	20000
HT40	2452	20000

## 1.2 Local Support Equipment List

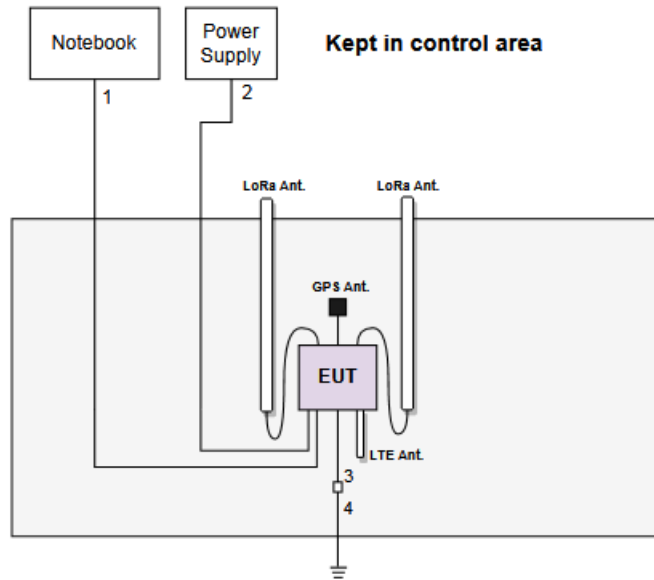
Support Equipment List					
No.	Equipment	Brand	Model	FCC ID	Remarks
1	Notebook	DELL	Latitude E5420	DoC	---

## 1.3 Test Setup Chart





### Test Setup Diagram (DC mode)



No.	Signal cable / Length (m)
1	RJ45, 10m non-shielded.
2	DC, 10m non-shielded.
3	Ground, 1m non-shielded.
4	Ground, 2.3m non-shielded.

## 1.4 The Equipment List

<b>Test Item</b>	Conducted Emission				
<b>Test Site</b>	Conduction room 1 / (CO01-WS)				
<b>Tested Date</b>	Oct. 23, 2020				
<b>Instrument</b>	<b>Manufacturer</b>	<b>Model No.</b>	<b>Serial No.</b>	<b>Calibration Date</b>	<b>Calibration Until</b>
Receiver	R&S	ESR3	101658	Dec. 12, 2019	Dec. 11, 2020
LISN	R&S	ENV216	101579	Mar. 12, 2020	Mar. 11, 2021
RF Cable-CON	Woken	CFD200-NL	CFD200-NL-001	Oct. 21, 2020	Oct. 20, 2021
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 chamber3 / (03CH03-WS)				
<b>Tested Date</b>	Sep. 30, 2020				
<b>Instrument</b>	<b>Manufacturer</b>	<b>Model No.</b>	<b>Serial No.</b>	<b>Calibration Date</b>	<b>Calibration Until</b>
Spectrum Analyzer	R&S	FSV40	101499	Jan. 09, 2020	Jan. 08, 2021
Receiver	R&S	ESR3	101657	Feb. 14, 2020	Feb. 13, 2021
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-685	Apr. 29, 2020	Apr. 28, 2021
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1206	Dec. 27, 2019	Dec. 26, 2020
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 15, 2019	Nov. 14, 2020
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 13, 2019	Nov. 12, 2020
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Oct. 07, 2019	Oct. 06, 2020
Preamplifier	EMC	EMC02325	980187	Aug. 05, 2020	Aug. 04, 2021
Preamplifier	Agilent	83017A	MY39501309	Sep. 02, 2020	Sep. 01, 2021
Preamplifier	EMC	EMC184045B	980192	Jul. 21, 2020	Jul. 20, 2021
RF cable-3M	HUBER+SUHNER	SUCOFLEX104	MY22620/4	Sep. 26, 2020	Sep. 25, 2021
RF cable-8M	EMC	EMC104-SM-SM-8000	181107	Sep. 26, 2020	Sep. 25, 2021
RF cable-1M	HUBER+SUHNER	SUCOFLEX104	MY22624/4	Sep. 26, 2020	Sep. 25, 2021
LF cable-0.8M	EMC	EMC8D-NM-NM-800	EMC8D-NM-NM-800-001	Sep. 26, 2020	Sep. 25, 2021
LF cable-3M	EMC	EMC8D-NM-NM-3000	131103	Sep. 26, 2020	Sep. 25, 2021
LF cable-13M	EMC	EMC8D-NM-NM-13000	131104	Sep. 26, 2020	Sep. 25, 2021
Measurement Software	AUDIX	e3	6.120210g	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

<b>Test Item</b>	Radiated Emission				
<b>Test Site</b>	966 chamber3 / (03CH03-WS)				
<b>Tested Date</b>	Oct. 21, 2020				
<b>Instrument</b>	<b>Manufacturer</b>	<b>Model No.</b>	<b>Serial No.</b>	<b>Calibration Date</b>	<b>Calibration Until</b>
Spectrum Analyzer	R&S	FSV40	101499	Jan. 09, 2020	Jan. 08, 2021
Receiver	R&S	ESR3	101657	Feb. 14, 2020	Feb. 13, 2021
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-685	Apr. 29, 2020	Apr. 28, 2021
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1206	Dec. 27, 2019	Dec. 26, 2020
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 15, 2019	Nov. 14, 2020
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 13, 2019	Nov. 12, 2020
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Oct. 06, 2020	Oct. 05, 2021
Preamplifier	EMC	EMC02325	980187	Aug. 05, 2020	Aug. 04, 2021
Preamplifier	Agilent	83017A	MY39501309	Sep. 02, 2020	Sep. 01, 2021
Preamplifier	EMC	EMC184045B	980192	Jul. 21, 2020	Jul. 20, 2021
RF cable-3M	HUBER+SUHNER	SUCOFLEX104	MY22620/4	Sep. 26, 2020	Sep. 25, 2021
RF cable-8M	EMC	EMC104-SM-SM-80 00	181107	Sep. 26, 2020	Sep. 25, 2021
RF cable-1M	HUBER+SUHNER	SUCOFLEX104	MY22624/4	Sep. 26, 2020	Sep. 25, 2021
LF cable-0.8M	EMC	EMC8D-NM-NM-800	EMC8D-NM-NM-800 -001	Sep. 26, 2020	Sep. 25, 2021
LF cable-3M	EMC	EMC8D-NM-NM-300 0	131103	Sep. 26, 2020	Sep. 25, 2021
LF cable-13M	EMC	EMC8D-NM-NM-130 00	131104	Sep. 26, 2020	Sep. 25, 2021
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>	Oct. 21, 2020				
<b>Instrument</b>	<b>Manufacturer</b>	<b>Model No.</b>	<b>Serial No.</b>	<b>Calibration Date</b>	<b>Calibration Until</b>
Spectrum Analyzer	R&S	FSV40	101063	Apr. 30, 2020	Apr. 29, 2021
Power Meter	Anritsu	ML2495A	1241002	Oct. 23, 2019	Oct. 22, 2020
Power Sensor	Anritsu	MA2411B	1207366	Oct. 23, 2019	Oct. 22, 2020
DC POWER SOURCE	GW INSTEK	GPC-6030D	GES855395	Oct. 29, 2019	Oct. 28, 2020
AC POWER SOURCE	APC	AFC-500W	F312060012	Dec. 02, 2019	Dec. 01, 2020
Measurement Software	ICC	SENSE-15247_DTS	V5.10.7	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

## 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	$\pm 34.130$ Hz
Conducted power	$\pm 0.808$ dB
Power density	$\pm 0.583$ dB
Conducted emission	$\pm 2.715$ dB
AC conducted emission	$\pm 2.92$ dB
Radiated emission $\leq 1$ GHz	$\pm 3.96$ dB
Radiated emission $> 1$ GHz	$\pm 4.51$ dB

## 2 Test Configuration

### 2.1 Testing Facility

<b>Test Laboratory</b>	International Certification Corp.
<b>Test Site</b>	CO01-WS, TH01-WS
<b>Address of Test Site</b>	No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan, R.O.C.
<b>Test Site</b>	03CH03-WS
<b>Address of Test Site</b>	No. 14-1, Lane 19, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan, R.O.C.

- FCC Designation No.: TW0009
- FCC site registration No.: 207696
- 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	1, 2
Radiated Emissions ≤1GHz	11g	2437	6 Mbps	1, 2
Radiated Emissions >1GHz	11b	2412 / 2437 / 2462	1 Mbps	1
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. This device consumes power from **POE or DC power source**. Each power supply was selected for final testing as below configuration.  
 Test configurations are listed as below:
  - 1) Test Configuration 1: POE mode
  - 2) Test Configuration 2: DC mode

## 3 Transmitter Test Results

### 3.1 Conducted Emissions

#### 3.1.1 Limit of Conducted Emissions

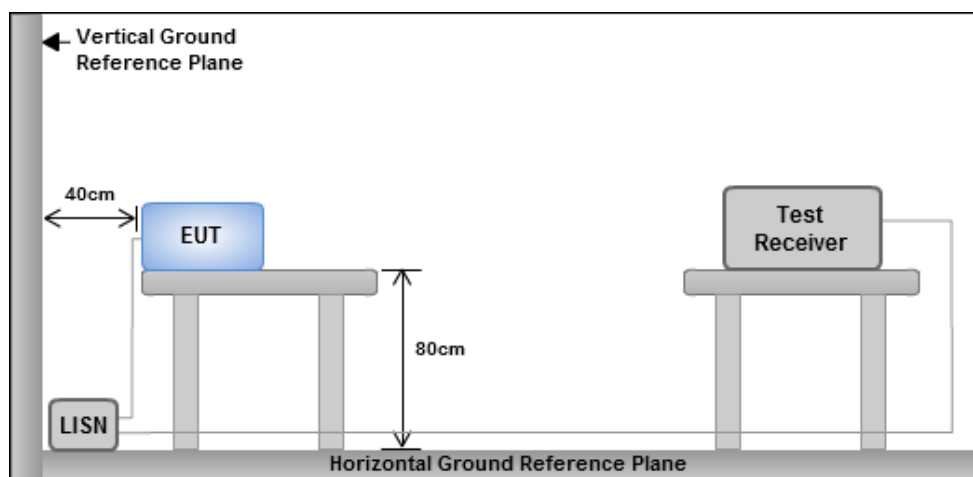
Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

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

#### 3.1.2 Test Procedures

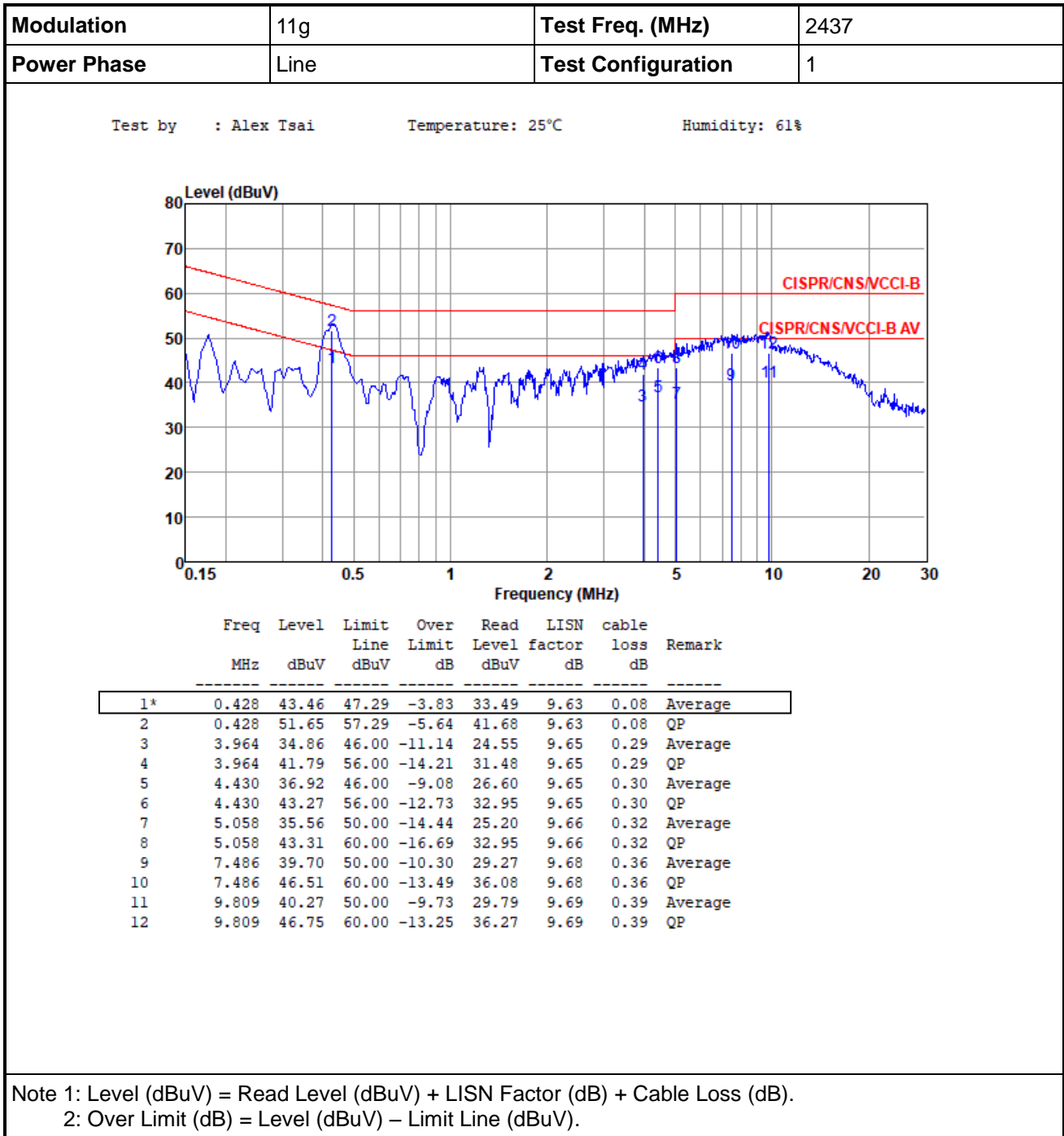
1. The device is placed on a test table, raised 80 cm above the reference ground plane. The vertical conducting plane is located 40 cm to the rear of the device.
2. The device is connected to line impedance stabilization network (LISN) and other accessories are connected to other LISN. Measured levels 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



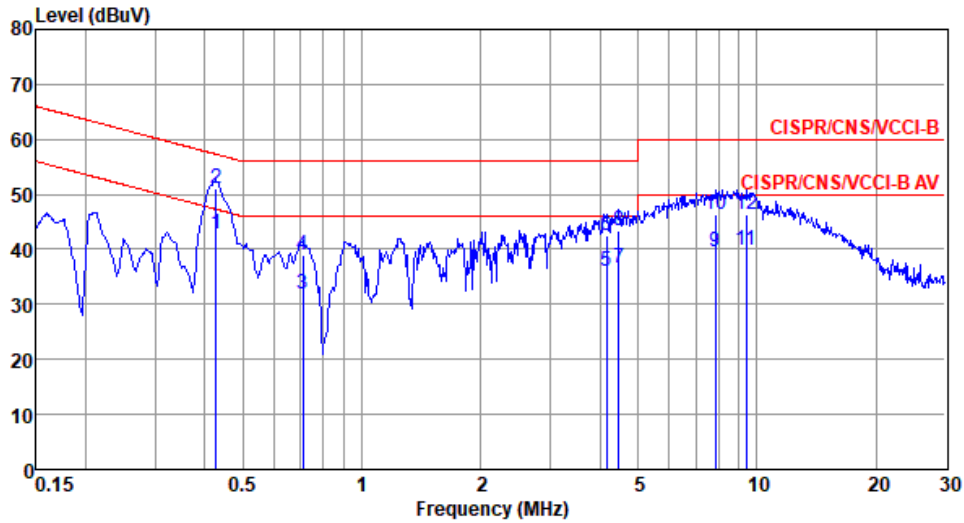
- Note: 1. Support units were connected to second LISN.  
 2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

### 3.1.4 Test Result of Conducted Emissions



<b>Modulation</b>	11g	<b>Test Freq. (MHz)</b>	2437
<b>Power Phase</b>	Neutral	<b>Test Configuration</b>	1

Test by : Alex Tsai      Temperature: 25°C      Humidity: 61%



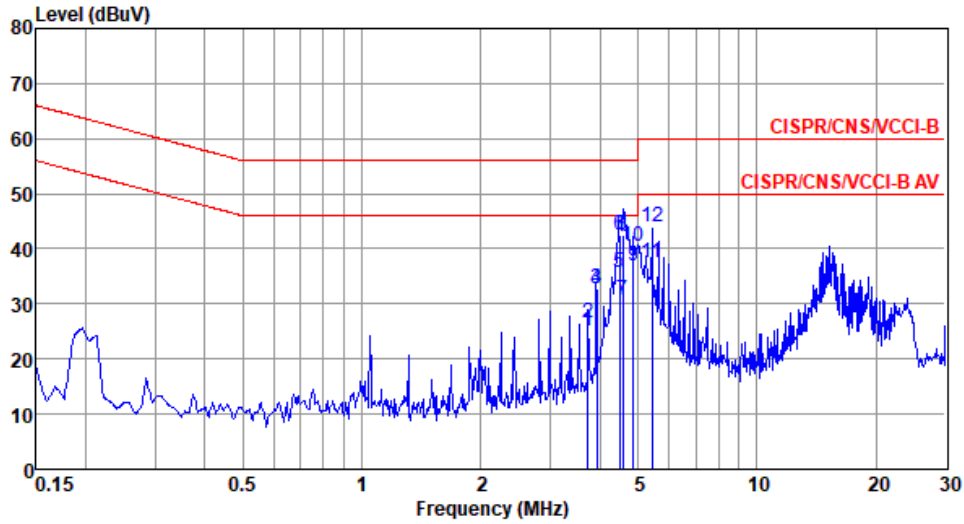
	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1*	0.428	42.73	47.29	-4.56	32.83	9.65	0.08	Average
2	0.428	51.06	57.29	-6.23	41.16	9.65	0.08	QP
3	0.708	31.79	46.00	-14.21	21.85	9.65	0.10	Average
4	0.708	38.94	56.00	-17.06	29.00	9.65	0.10	QP
5	4.158	35.93	46.00	-10.07	25.71	9.67	0.29	Average
6	4.158	42.38	56.00	-13.62	32.16	9.67	0.29	QP
7	4.478	36.75	46.00	-9.25	26.50	9.68	0.30	Average
8	4.478	43.37	56.00	-12.63	33.12	9.68	0.30	QP
9	7.852	39.49	50.00	-10.51	29.11	9.71	0.36	Average
10	7.852	46.27	60.00	-13.73	35.89	9.71	0.36	QP
11	9.401	39.80	50.00	-10.20	29.36	9.73	0.38	Average
12	9.401	46.40	60.00	-13.60	35.96	9.73	0.38	QP

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



<b>Modulation</b>	11g	<b>Test Freq. (MHz)</b>	2437
<b>Power Phase</b>	Line	<b>Test Configuration</b>	2

Test by : Alex Tsai      Temperature: 25°C      Humidity: 61%

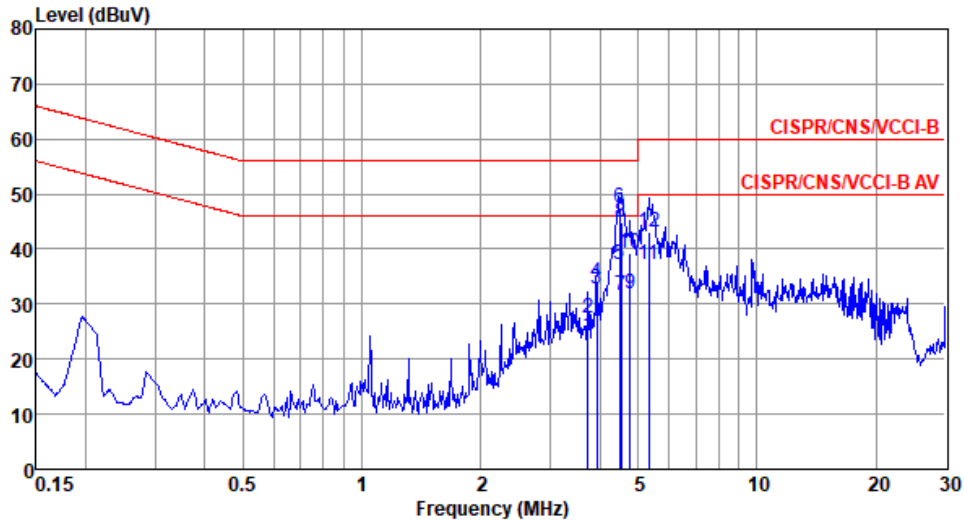


	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	3.740	25.21	46.00	-20.79	15.28	9.65	0.28	Average
2	3.740	26.69	56.00	-29.31	16.76	9.65	0.28	QP
3	3.930	32.86	46.00	-13.14	22.92	9.65	0.29	Average
4	3.930	32.89	56.00	-23.11	22.95	9.65	0.29	QP
5	4.490	35.82	46.00	-10.18	25.86	9.66	0.30	Average
6	4.490	42.50	56.00	-13.50	32.54	9.66	0.30	QP
7	4.574	30.59	46.00	-15.41	20.63	9.66	0.30	Average
8	4.574	42.61	56.00	-13.39	32.65	9.66	0.30	QP
9*	4.866	36.96	46.00	-9.04	26.99	9.66	0.31	Average
10	4.866	40.49	56.00	-15.51	30.52	9.66	0.31	QP
11	5.419	37.60	50.00	-12.40	27.62	9.66	0.32	Average
12	5.419	44.13	60.00	-15.87	34.15	9.66	0.32	QP

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

<b>Modulation</b>	11g	<b>Test Freq. (MHz)</b>	2437
<b>Power Phase</b>	Neutral	<b>Test Configuration</b>	2

Test by : Alex Tsai      Temperature: 25°C      Humidity: 61%



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	3.742	24.12	46.00	-21.88	14.17	9.67	0.28	Average
2	3.742	27.47	56.00	-28.53	17.52	9.67	0.28	QP
3	3.930	32.84	46.00	-13.16	22.88	9.67	0.29	Average
4	3.930	34.07	56.00	-21.93	24.11	9.67	0.29	QP
5	4.493	37.32	46.00	-8.68	27.34	9.68	0.30	Average
6*	4.493	47.44	56.00	-8.56	37.46	9.68	0.30	QP
7	4.525	31.67	46.00	-14.33	21.69	9.68	0.30	Average
8	4.525	44.85	56.00	-11.15	34.87	9.68	0.30	QP
9	4.772	31.90	46.00	-14.10	21.91	9.68	0.31	Average
10	4.772	39.25	56.00	-16.75	29.26	9.68	0.31	QP
11	5.333	37.19	50.00	-12.81	27.18	9.69	0.32	Average
12	5.333	43.02	60.00	-16.98	33.01	9.69	0.32	QP

Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB).  
 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

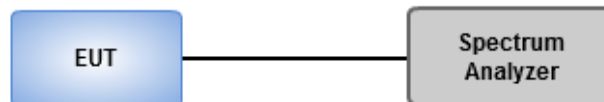
#### 6dB Bandwidth

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>	23°C / 66%	<b>Tested By</b>	Brad Wu
--------------------------	------------	------------------	---------

#### 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	10M	14.761M	14M8G1D	9.565M	14.645M
802.11g_Nss1,(6Mbps)_1TX	15.072M	18.466M	18M5D1D	13.913M	16.324M
802.11n HT20_Nss1,(MCS0)_1TX	15.87M	17.945M	17M9D1D	13.913M	17.54M
802.11n HT40_Nss1,(MCS0)_1TX	33.768M	36.237M	36M2D1D	31.304M	35.658M

**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

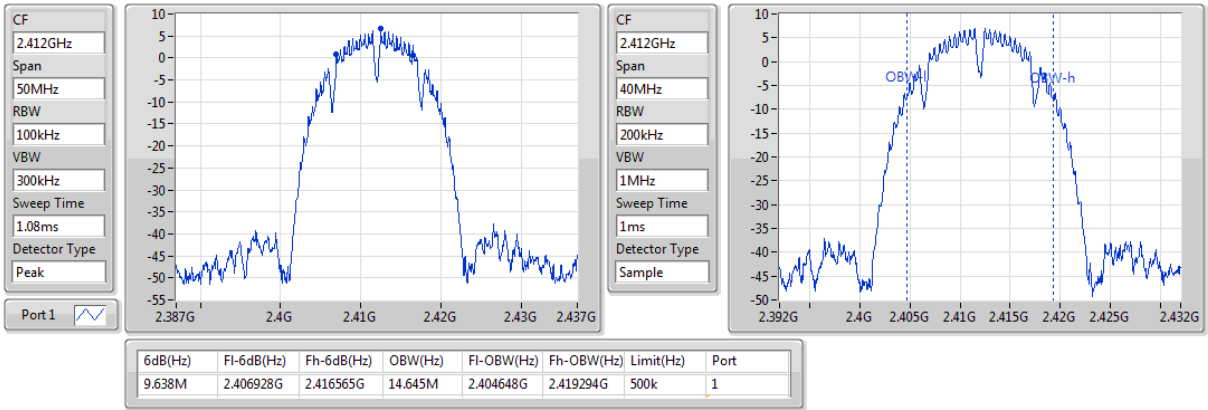
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-
2412MHz	Pass	500k	9.638M	14.645M
2437MHz	Pass	500k	10M	14.761M
2462MHz	Pass	500k	9.565M	14.703M
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-
2412MHz	Pass	500k	13.913M	16.382M
2437MHz	Pass	500k	15.072M	18.466M
2462MHz	Pass	500k	15.072M	16.324M
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-
2412MHz	Pass	500k	15.87M	17.54M
2437MHz	Pass	500k	13.913M	17.945M
2462MHz	Pass	500k	14.565M	17.54M
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-
2422MHz	Pass	500k	33.768M	35.658M
2437MHz	Pass	500k	31.304M	36.237M
2452MHz	Pass	500k	33.768M	35.658M

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

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

EBW

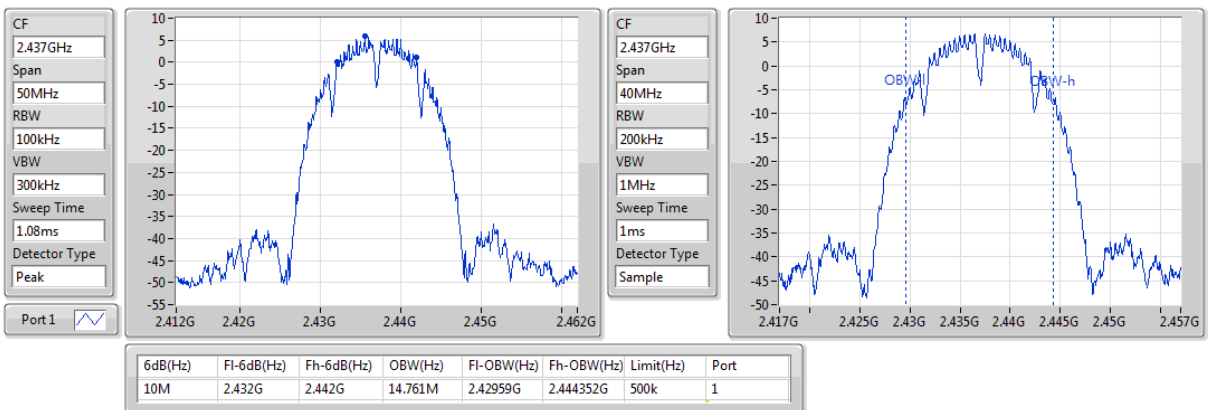
2412MHz



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

EBW

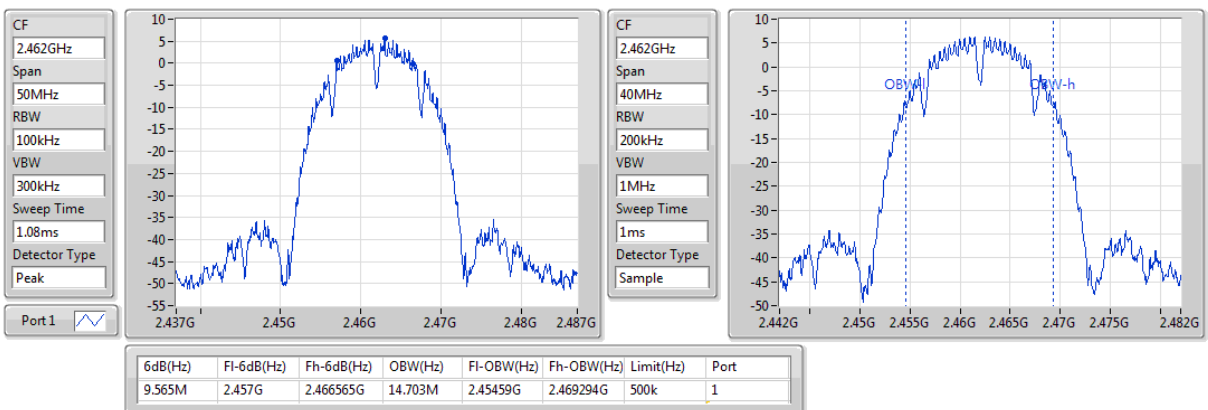
2437MHz



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

EBW

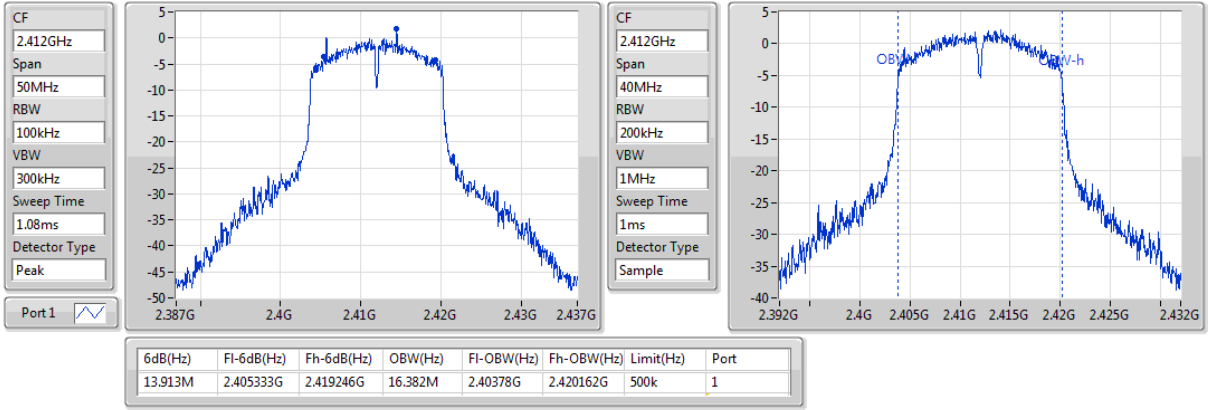
2462MHz



### 802.11g\_Nss1,(6Mbps)\_1TX

EBW

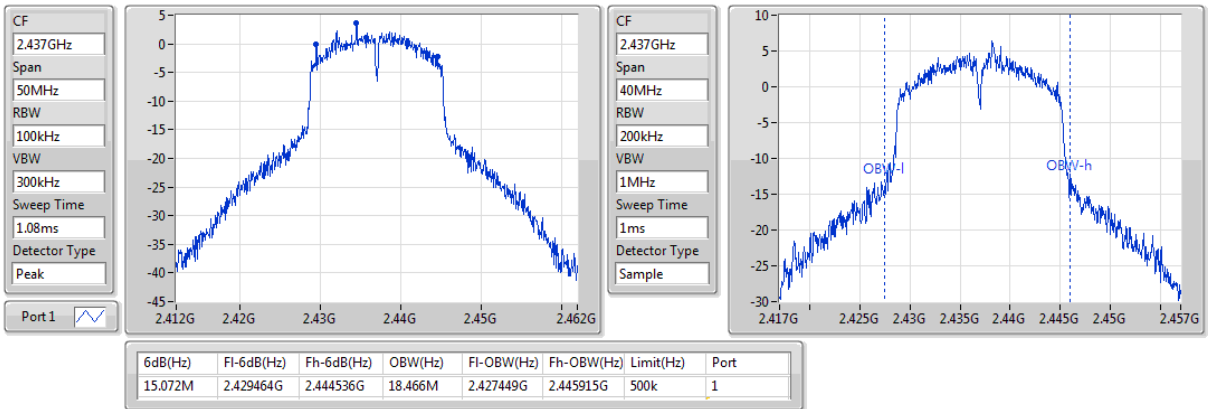
2412MHz



### 802.11g\_Nss1,(6Mbps)\_1TX

EBW

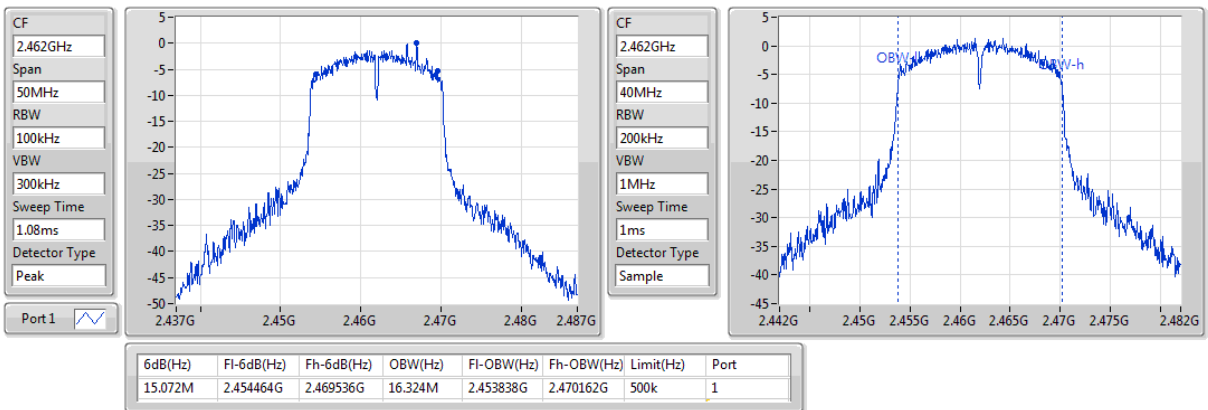
2437MHz



### 802.11g\_Nss1,(6Mbps)\_1TX

EBW

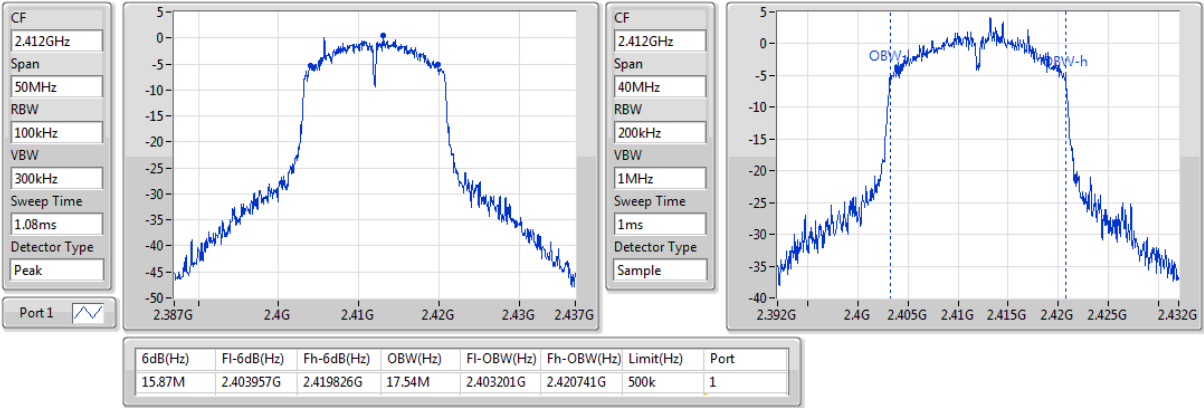
2462MHz



### 802.11n HT20\_Nss1,(MCS0)\_1TX

EBW

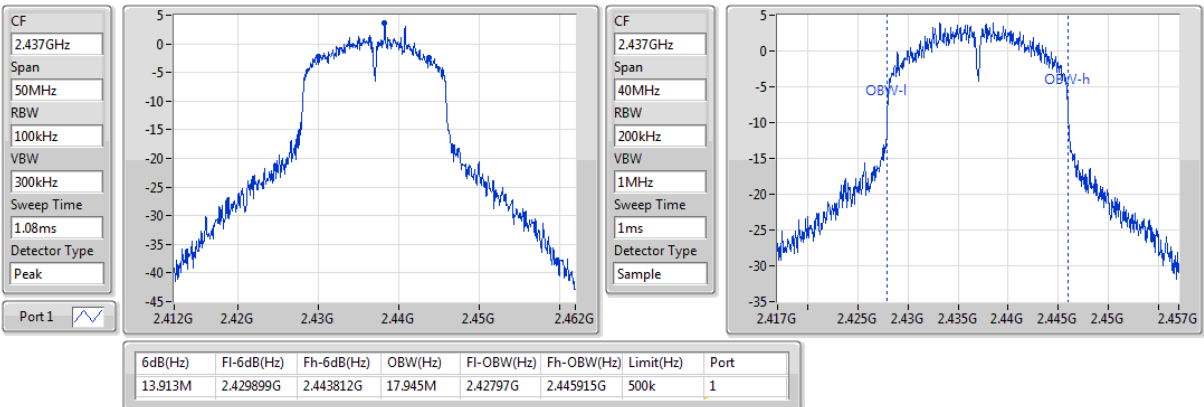
#### 2412MHz



### 802.11n HT20\_Nss1,(MCS0)\_1TX

EBW

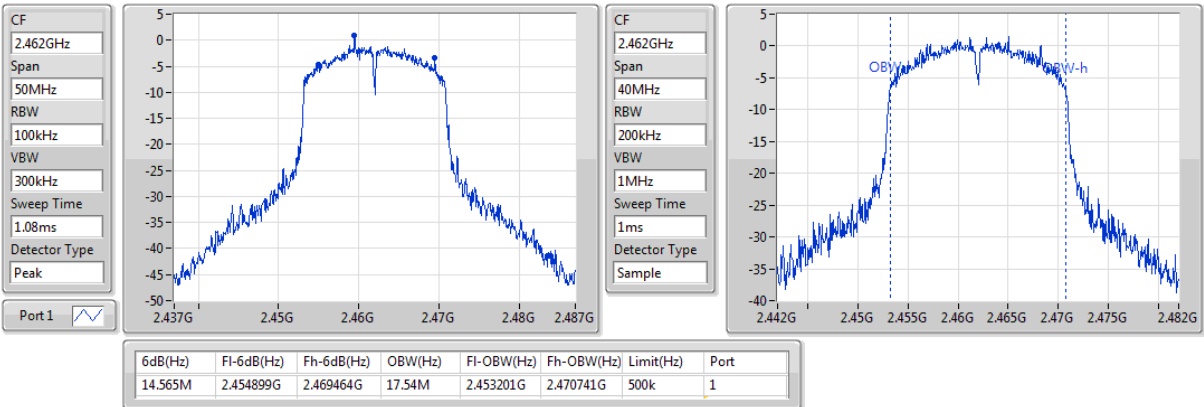
#### 2437MHz



### 802.11n HT20\_Nss1,(MCS0)\_1TX

EBW

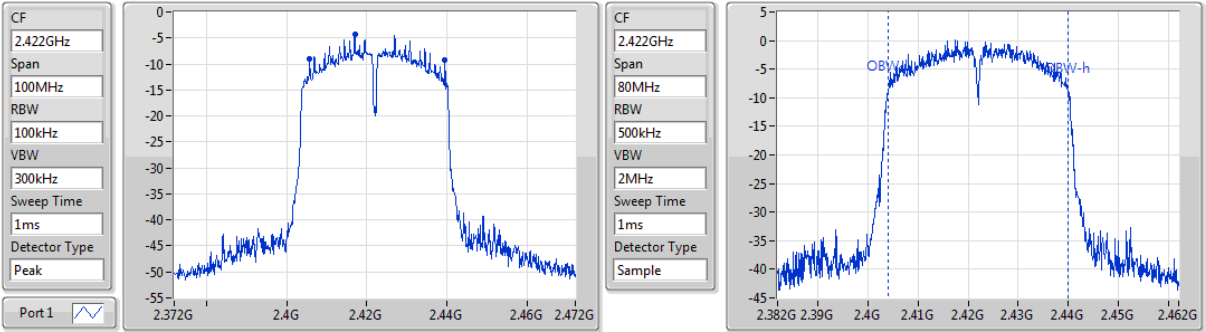
#### 2462MHz



### 802.11n HT40\_Nss1,(MCS0)\_1TX

EBW

2422MHz

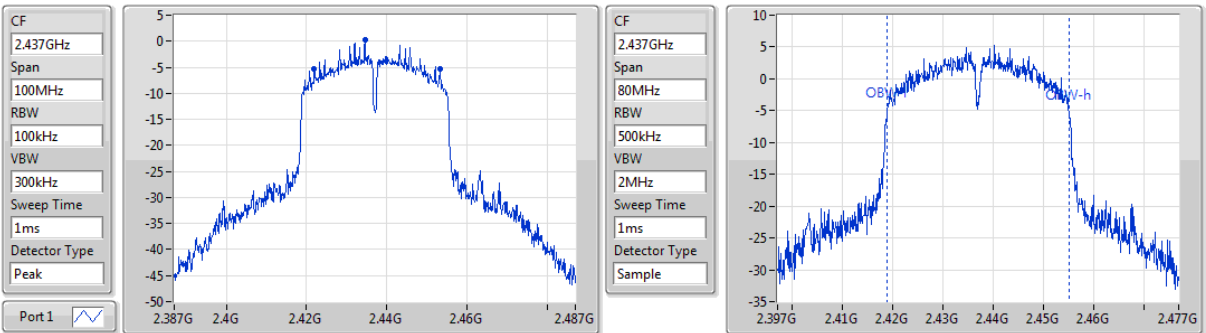


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
33.768M	2.405768G	2.439536G	35.658M	2.404171G	2.439829G	500k	1

### 802.11n HT40\_Nss1,(MCS0)\_1TX

EBW

2437MHz

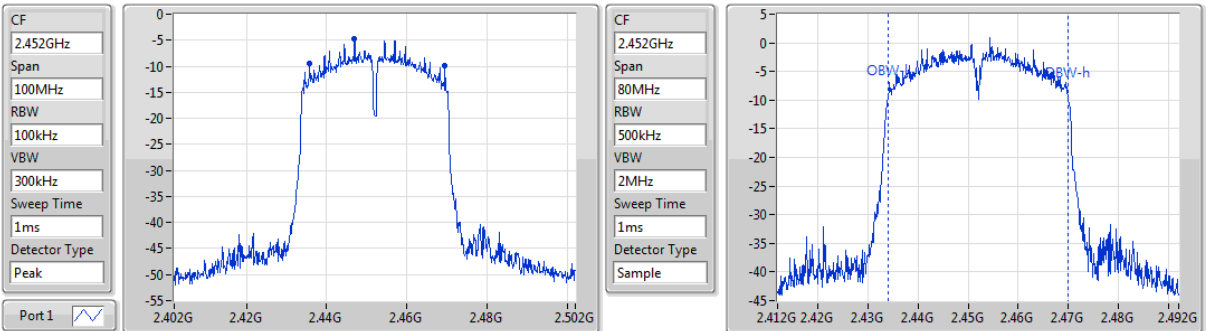


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
31.304M	2.421928G	2.453232G	36.237M	2.418823G	2.455061G	500k	1

### 802.11n HT40\_Nss1,(MCS0)\_1TX

EBW

2452MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
33.768M	2.435768G	2.469536G	35.658M	2.434171G	2.469829G	500k	1



### 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.

Antenna gain  $> 6\text{dBi}$

Non Fixed, point to point operations.

The conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dB

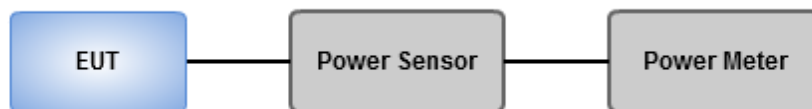
Fixed, point to point operations

Systems operating in the 2400–2483.5 MHz band that are used exclusively for fixed, point-to-point Operations, maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

#### 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>	23°C / 66%	<b>Tested By</b>	Brad Wu
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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	18.32	0.06792
802.11g_Nss1,(6Mbps)_1TX	20.23	0.10544
802.11n HT20_Nss1,(MCS0)_1TX	20.21	0.10495
802.11n HT40_Nss1,(MCS0)_1TX	19.57	0.09057

#### Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-	-	-
2412MHz	Pass	2.75	18.32	18.32	30.00	21.07	36.00
2437MHz	Pass	2.75	18.06	18.06	30.00	20.81	36.00
2462MHz	Pass	2.75	17.84	17.84	30.00	20.59	36.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-	-	-
2412MHz	Pass	2.75	20.19	20.19	30.00	22.94	36.00
2437MHz	Pass	2.75	20.23	20.23	30.00	22.98	36.00
2462MHz	Pass	2.75	19.56	19.56	30.00	22.31	36.00
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
2412MHz	Pass	2.75	20.05	20.05	30.00	22.80	36.00
2437MHz	Pass	2.75	20.21	20.21	30.00	22.96	36.00
2462MHz	Pass	2.75	19.61	19.61	30.00	22.36	36.00
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
2422MHz	Pass	2.75	17.82	17.82	30.00	20.57	36.00
2437MHz	Pass	2.75	19.57	19.57	30.00	22.32	36.00
2452MHz	Pass	2.75	17.26	17.26	30.00	20.01	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	16.54	0.04508
802.11g_Nss1,(6Mbps)_1TX	15.54	0.03581
802.11n HT20_Nss1,(MCS0)_1TX	15.22	0.03327
802.11n HT40_Nss1,(MCS0)_1TX	13.66	0.02323

### Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-	-	-
2412MHz	Pass	2.75	16.54	16.54	-	19.29	-
2437MHz	Pass	2.75	16.33	16.33	-	19.08	-
2462MHz	Pass	2.75	15.98	15.98	-	18.73	-
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-	-	-
2412MHz	Pass	2.75	13.65	13.65	-	16.40	-
2437MHz	Pass	2.75	15.54	15.54	-	18.29	-
2462MHz	Pass	2.75	12.81	12.81	-	15.56	-
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
2412MHz	Pass	2.75	13.51	13.51	-	16.26	-
2437MHz	Pass	2.75	15.22	15.22	-	17.97	-
2462MHz	Pass	2.75	12.91	12.91	-	15.66	-
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
2422MHz	Pass	2.75	9.45	9.45	-	12.20	-
2437MHz	Pass	2.75	13.66	13.66	-	16.41	-
2452MHz	Pass	2.75	9.01	9.01	-	11.76	-

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.

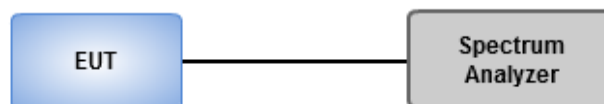
#### Average PSD, duty cycle $\geq$ 98%

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>	23°C / 66%	<b>Tested By</b>	Brad Wu
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#### Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
802.11b_Nss1,(1Mbps)_1TX	-6.84
802.11g_Nss1,(6Mbps)_1TX	-10.24
802.11n HT20_Nss1,(MCS0)_1TX	-11.59
802.11n HT40_Nss1,(MCS0)_1TX	-13.54

#### Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	2.75	-6.84	-6.84	8.00
2437MHz	Pass	2.75	-7.66	-7.66	8.00
2462MHz	Pass	2.75	-9.14	-9.14	8.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	2.75	-11.91	-11.91	8.00
2437MHz	Pass	2.75	-10.24	-10.24	8.00
2462MHz	Pass	2.75	-12.91	-12.91	8.00
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz	Pass	2.75	-12.39	-12.39	8.00
2437MHz	Pass	2.75	-11.59	-11.59	8.00
2462MHz	Pass	2.75	-13.31	-13.31	8.00
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-	-
2422MHz	Pass	2.75	-19.14	-19.14	8.00
2437MHz	Pass	2.75	-13.54	-13.54	8.00
2452MHz	Pass	2.75	-20.14	-20.14	8.00

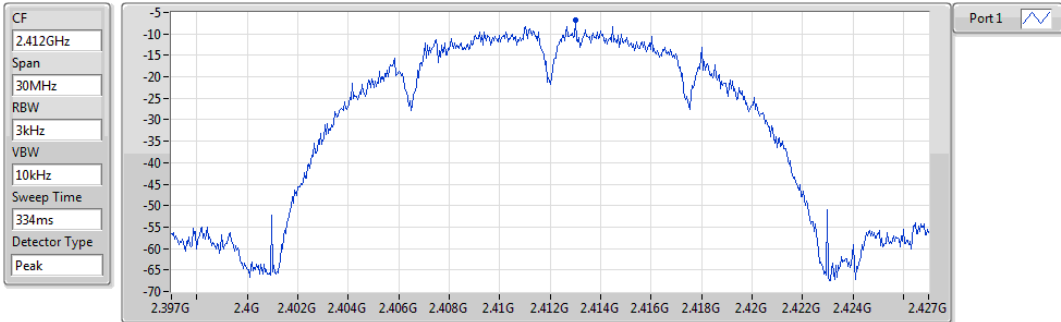
**DG** = Directional Gain;

**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

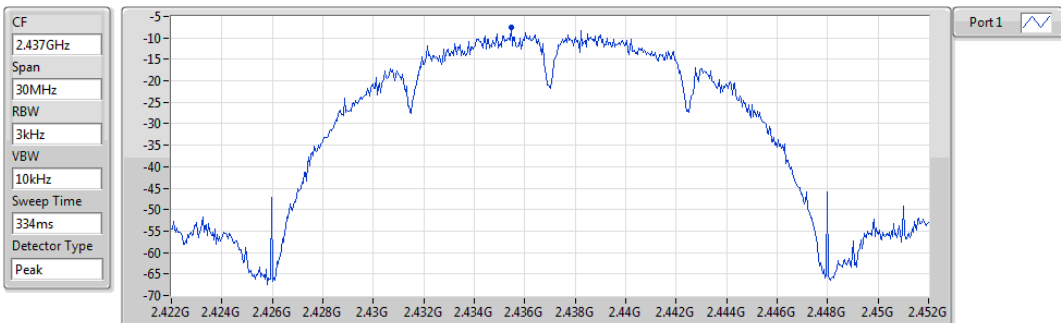


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-6.84	-6.84	-6.84

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

PSD

2437MHz

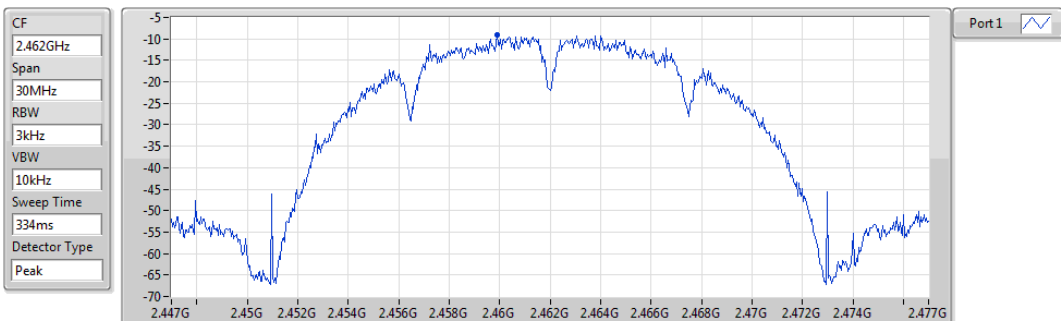


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-7.66	-7.66	-7.66

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

PSD

2462MHz

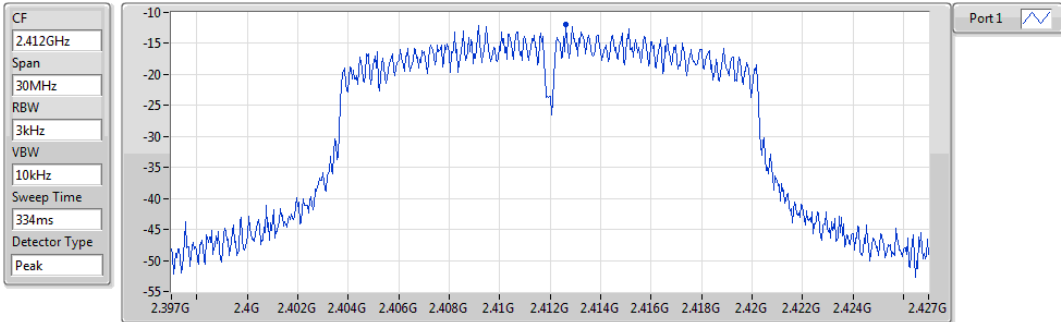


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-9.14	-9.14	-9.14

### 802.11g\_Nss1,(6Mbps)\_1TX

PSD

2412MHz

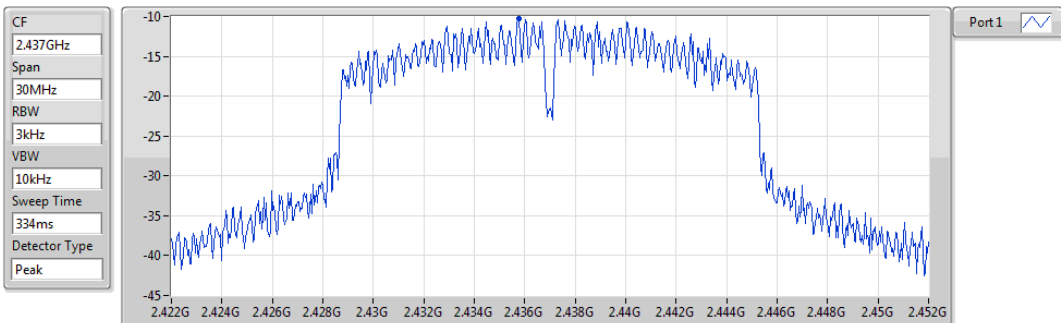


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-11.91	-11.91	-11.91

### 802.11g\_Nss1,(6Mbps)\_1TX

PSD

2437MHz

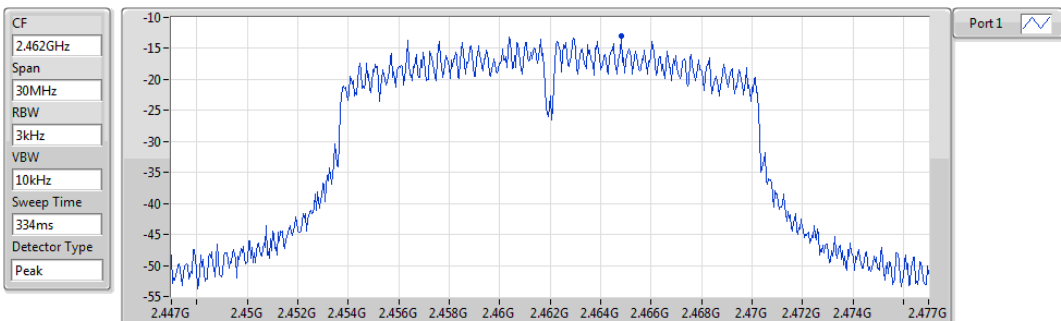


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.24	-10.24	-10.24

### 802.11g\_Nss1,(6Mbps)\_1TX

PSD

2462MHz

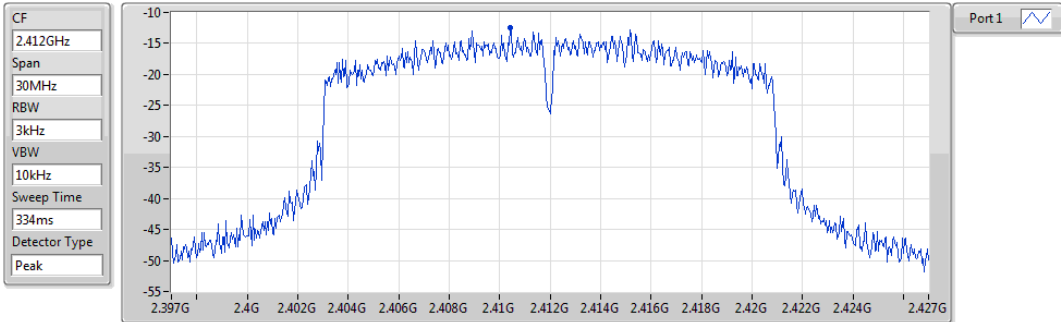


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-12.91	-12.91	-12.91

### 802.11n HT20\_Nss1,(MCS0)\_1TX

PSD

2412MHz

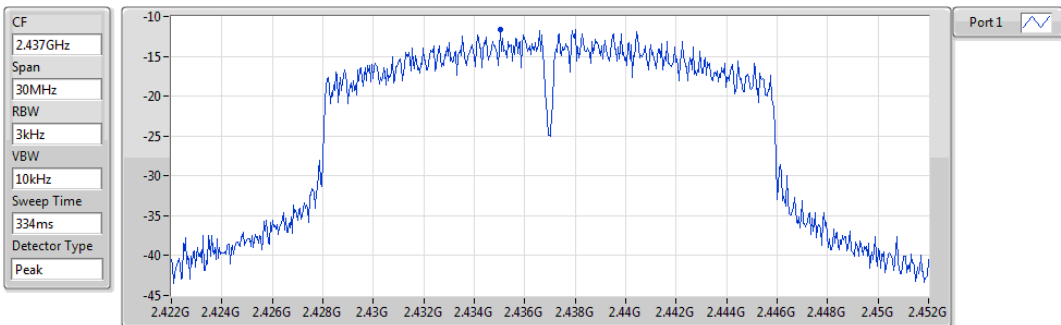


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-12.39	-12.39	-12.39

### 802.11n HT20\_Nss1,(MCS0)\_1TX

PSD

2437MHz

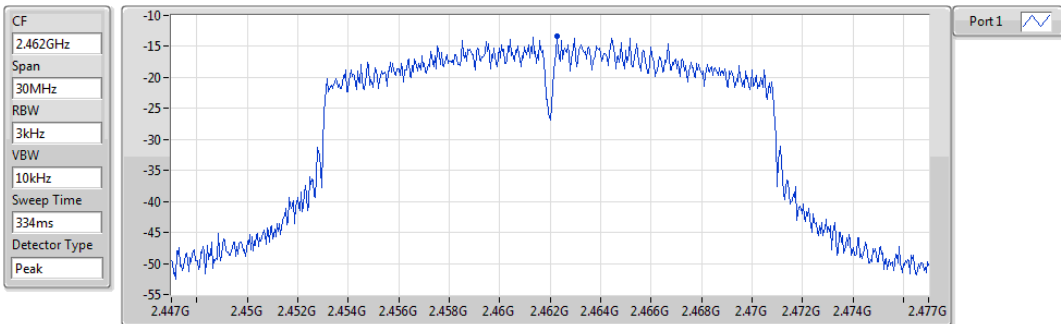


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-11.59	-11.59	-11.59

### 802.11n HT20\_Nss1,(MCS0)\_1TX

PSD

2462MHz



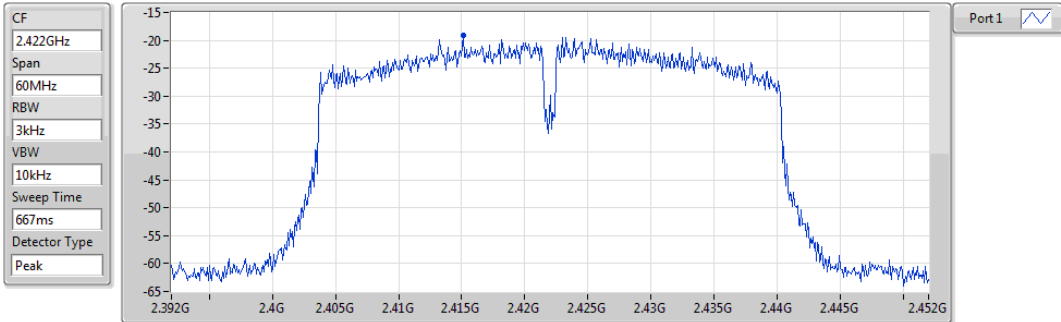
Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-13.31	-13.31	-13.31



### 802.11n HT40\_Nss1,(MCS0)\_1TX

PSD

2422MHz

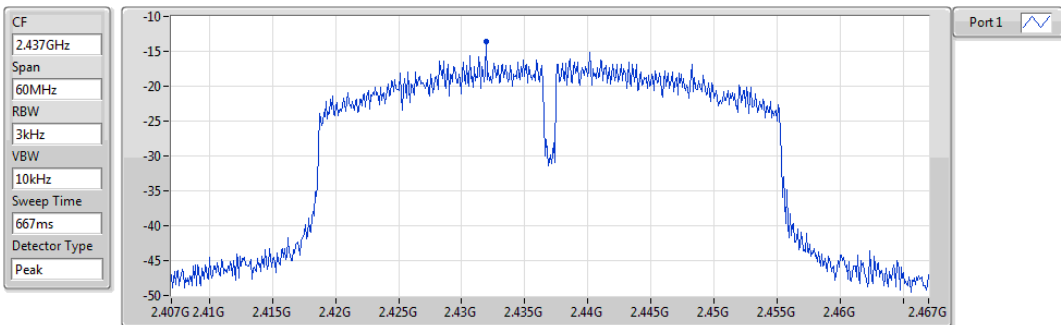


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-19.14	-19.14	-19.14

### 802.11n HT40\_Nss1,(MCS0)\_1TX

PSD

2437MHz

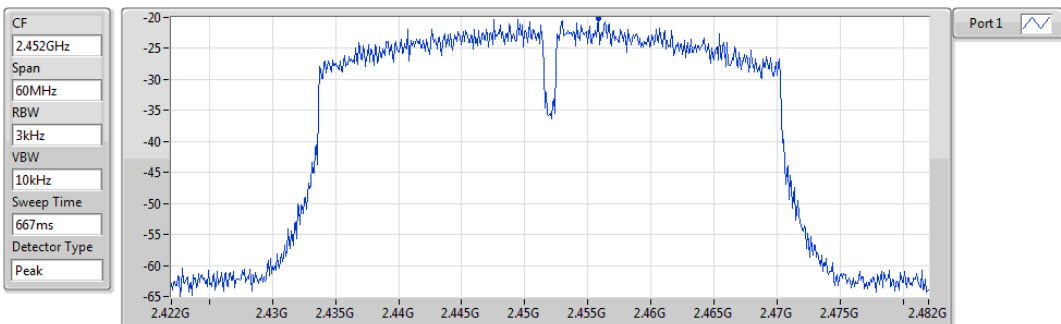


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-13.54	-13.54	-13.54

### 802.11n HT40\_Nss1,(MCS0)\_1TX

PSD

2452MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-20.14	-20.14	-20.14

## 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

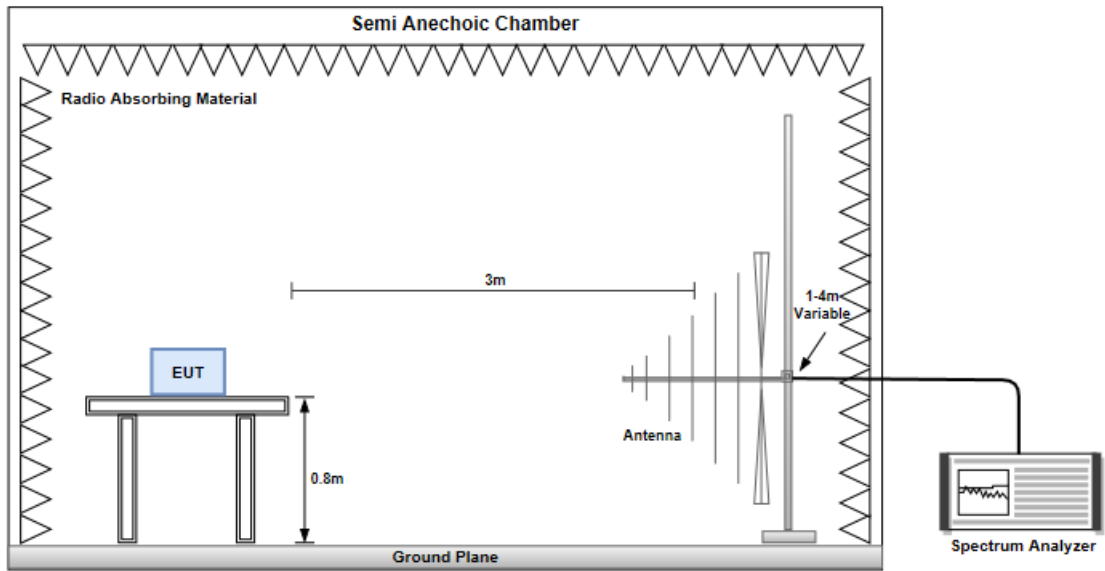
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission 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:**

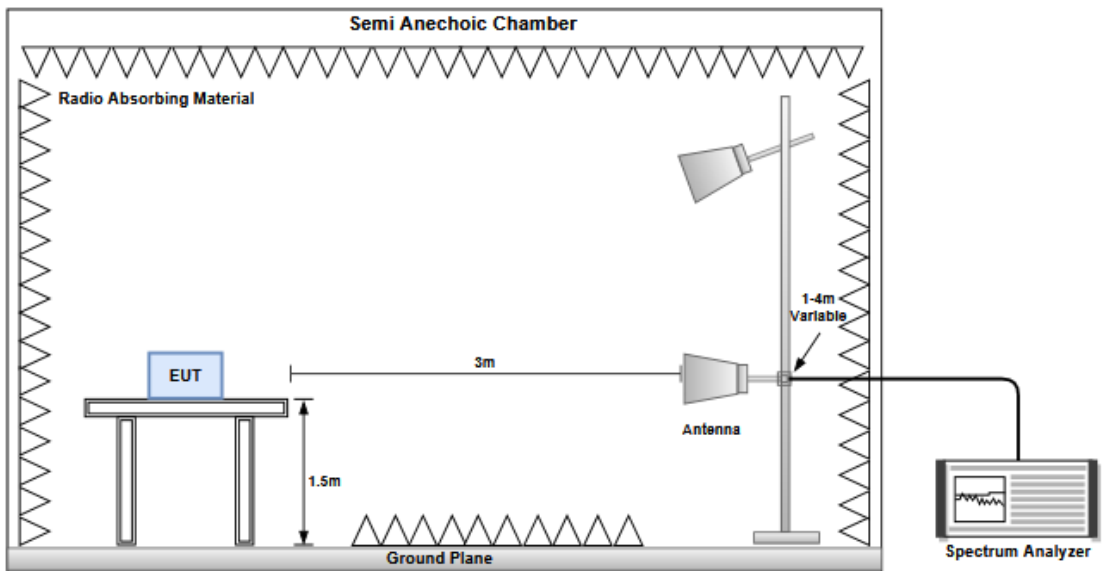
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

### 3.5.3 Test Setup

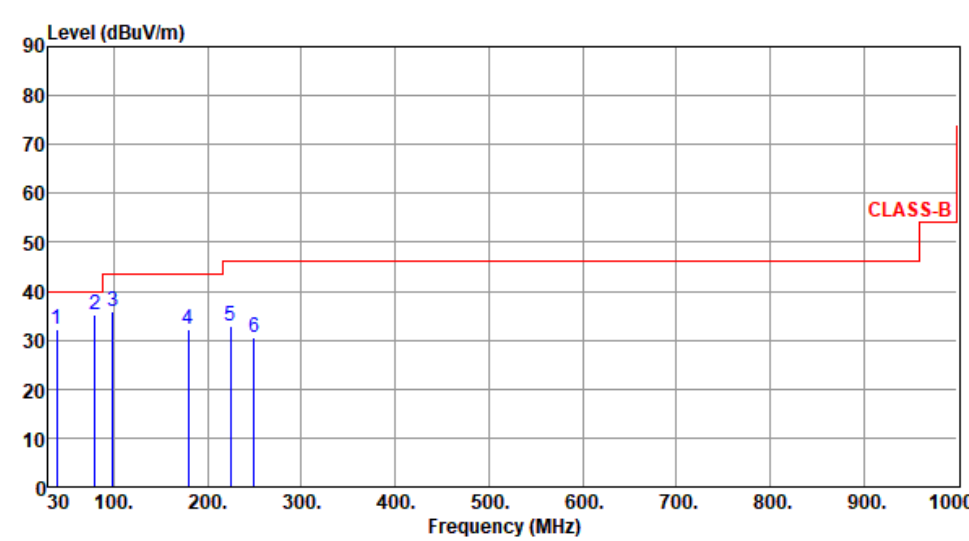
#### Radiated Emissions below 1 GHz



#### Radiated Emissions above 1 GHz

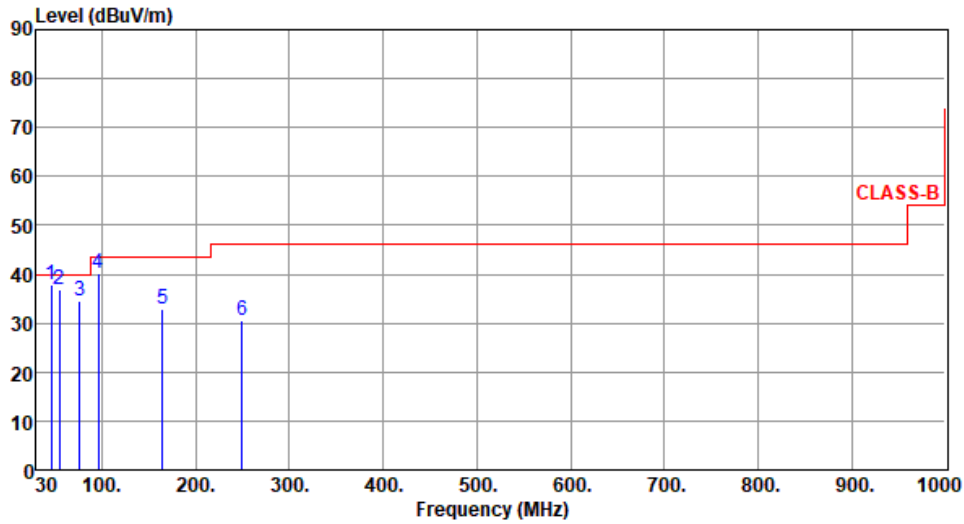


### 3.5.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

<b>Modulation</b>	11g	<b>Test Freq. (MHz)</b>	2437																																																																													
<b>Polarization</b>	Horizontal	<b>Test Configuration</b>	1																																																																													
<p>Test By : Roger Lu      Temperature(°C):23      Humidity(%):66</p>																																																																																
																																																																																
	<table border="1"> <thead> <tr> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> </tr> </thead> <tbody> <tr> <td>38.73</td> <td>79.47</td> <td>98.87</td> <td>179.38</td> <td>224.00</td> <td>249.22</td> </tr> </tbody> </table>	1	2	3	4	5	6	38.73	79.47	98.87	179.38	224.00	249.22	<table border="1"> <thead> <tr> <th>Emission level</th> <th>Limit</th> <th>Margin</th> <th>SA reading</th> <th>Factor</th> <th>Remark</th> <th>ANT High</th> <th>Turn Table</th> </tr> <tr> <th>dBuV/m</th> <th>dBuV/m</th> <th>dB</th> <th>dBuV</th> <th>dB</th> <th></th> <th>cm</th> <th>deg</th> </tr> </thead> <tbody> <tr> <td>32.31</td> <td>40.00</td> <td>-7.69</td> <td>41.32</td> <td>-9.01</td> <td>Peak</td> <td>---</td> <td>---</td> </tr> <tr> <td>35.21</td> <td>40.00</td> <td>-4.79</td> <td>48.56</td> <td>-13.35</td> <td>Peak</td> <td>---</td> <td>---</td> </tr> <tr> <td>35.89</td> <td>43.50</td> <td>-7.61</td> <td>49.94</td> <td>-14.05</td> <td>Peak</td> <td>---</td> <td>---</td> </tr> <tr> <td>32.30</td> <td>43.50</td> <td>-11.20</td> <td>42.62</td> <td>-10.32</td> <td>Peak</td> <td>---</td> <td>---</td> </tr> <tr> <td>32.88</td> <td>46.00</td> <td>-13.12</td> <td>45.31</td> <td>-12.43</td> <td>Peak</td> <td>---</td> <td>---</td> </tr> <tr> <td>30.67</td> <td>46.00</td> <td>-15.33</td> <td>40.86</td> <td>-10.19</td> <td>Peak</td> <td>---</td> <td>---</td> </tr> </tbody> </table>	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg	32.31	40.00	-7.69	41.32	-9.01	Peak	---	---	35.21	40.00	-4.79	48.56	-13.35	Peak	---	---	35.89	43.50	-7.61	49.94	-14.05	Peak	---	---	32.30	43.50	-11.20	42.62	-10.32	Peak	---	---	32.88	46.00	-13.12	45.31	-12.43	Peak	---	---	30.67	46.00	-15.33	40.86	-10.19	Peak	---	---		
1	2	3	4	5	6																																																																											
38.73	79.47	98.87	179.38	224.00	249.22																																																																											
Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table																																																																									
dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg																																																																									
32.31	40.00	-7.69	41.32	-9.01	Peak	---	---																																																																									
35.21	40.00	-4.79	48.56	-13.35	Peak	---	---																																																																									
35.89	43.50	-7.61	49.94	-14.05	Peak	---	---																																																																									
32.30	43.50	-11.20	42.62	-10.32	Peak	---	---																																																																									
32.88	46.00	-13.12	45.31	-12.43	Peak	---	---																																																																									
30.67	46.00	-15.33	40.86	-10.19	Peak	---	---																																																																									
<p>Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)            *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	<b>Test Configuration</b>	1

Test By :Roger Lu      Temperature(°C):23      Humidity(%):66



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	45.75	37.71	40.00	-2.29	46.41	-8.70	QP	165	312
2	54.35	36.85	40.00	-3.15	45.82	-8.97	QP	100	251
3	76.42	34.45	40.00	-5.55	47.03	-12.58	QP	100	25
4	95.96	40.29	43.50	-3.21	54.74	-14.45	Peak	---	---
5	164.83	32.73	43.50	-10.77	41.75	-9.02	Peak	---	---
6	249.22	30.49	46.00	-15.51	40.68	-10.19	Peak	---	---

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

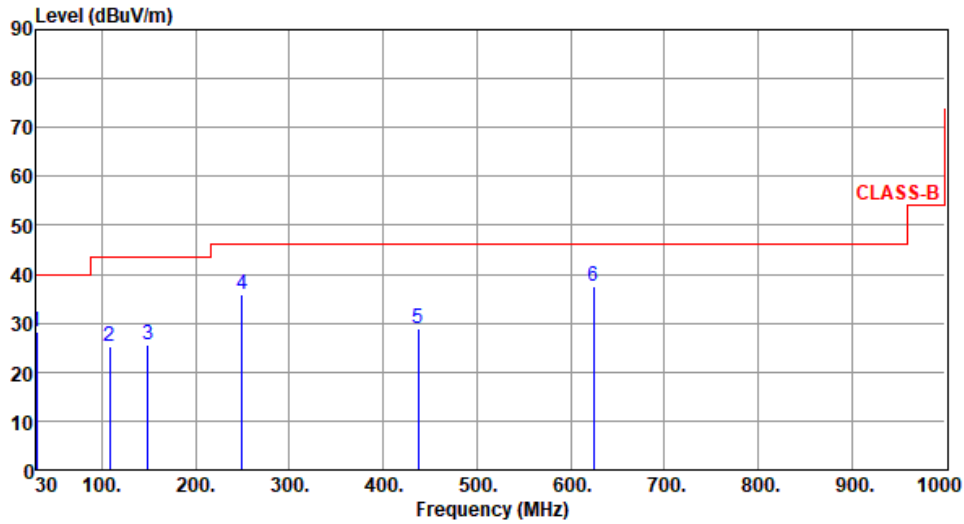
\*Factor includes antenna factor , cable loss and amplifier gain

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.

<b>Modulation</b>	11g	<b>Test Freq. (MHz)</b>	2437
<b>Polarization</b>	Horizontal	<b>Test Configuration</b>	2

Test By :BRAD WU      Temperature(°C):23      Humidity(%):66



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	30.00	28.09	40.00	-11.91	38.37	-10.28	Peak	---	---
2	108.57	25.16	43.50	-18.34	37.49	-12.33	Peak	---	---
3	149.31	25.54	43.50	-17.96	34.43	-8.89	Peak	---	---
4	249.22	35.91	46.00	-10.09	46.10	-10.19	Peak	---	---
5	437.40	28.85	46.00	-17.15	33.33	-4.48	Peak	---	---
6	624.61	37.41	46.00	-8.59	37.46	-0.05	Peak	---	---

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

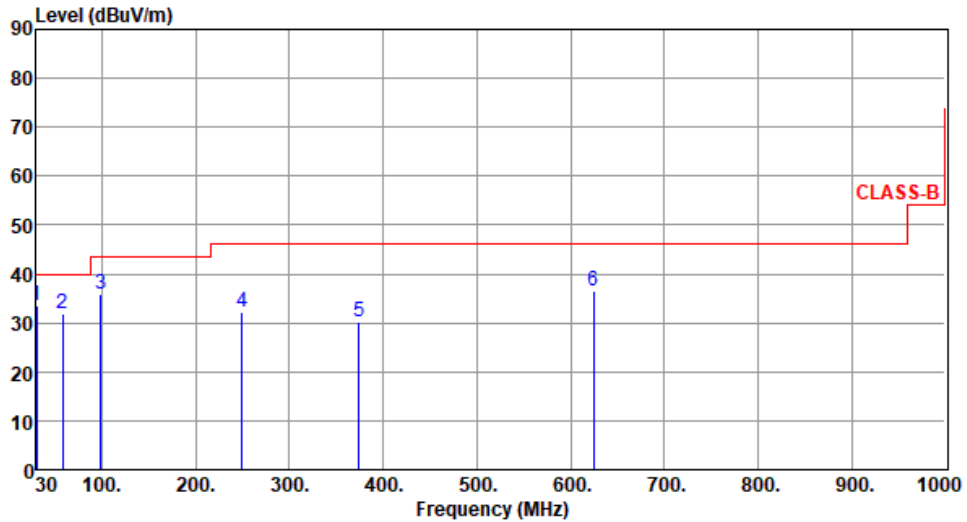
\*Factor includes antenna factor , cable loss and amplifier gain

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.

<b>Modulation</b>	11g	<b>Test Freq. (MHz)</b>	2437
<b>Polarization</b>	Vertical	<b>Test Configuration</b>	2

Test By :BRAD WU      Temperature(°C):23      Humidity(%):66



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	30.36	33.38	40.00	-6.62	43.59	-10.21	QP	100	15
2	58.13	31.83	40.00	-8.17	41.02	-9.19	Peak	---	---
3	98.87	35.82	43.50	-7.68	49.87	-14.05	Peak	---	---
4	249.22	32.15	46.00	-13.85	42.34	-10.19	Peak	---	---
5	374.35	30.33	46.00	-15.67	36.84	-6.51	Peak	---	---
6	624.61	36.50	46.00	-9.50	36.55	-0.05	Peak	---	---

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

\*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.

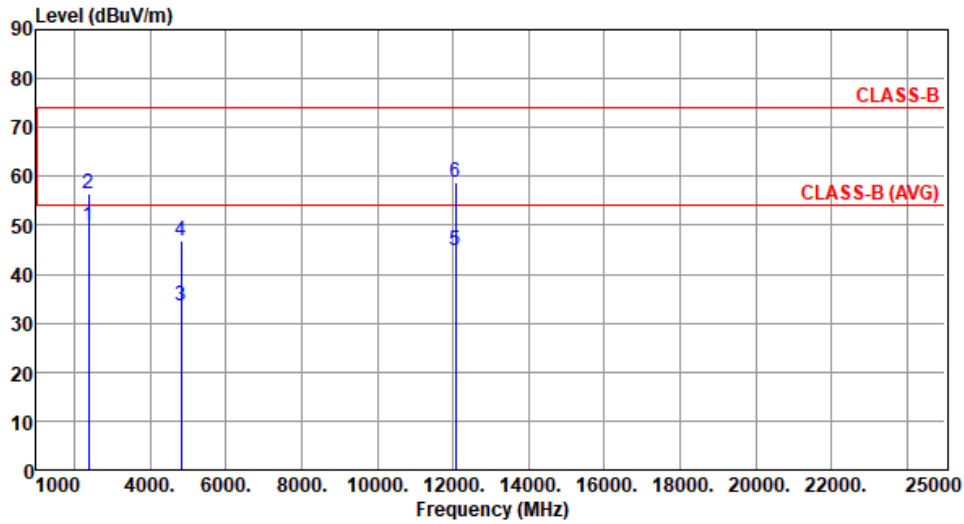
### 3.5.5 Transmitter Radiated Unwanted Emissions (Above 1GHz) for 11b

<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	Remark	ANT High cm	Turn Table deg
1	2390.00	45.41	54.00	-8.59	47.25	-1.84	Average	100	305
2	2390.00	53.46	74.00	-20.54	55.30	-1.84	Peak	100	305
3	4824.00	33.93	54.00	-20.07	28.85	5.08	Average	100	31
4	4824.00	46.95	74.00	-27.05	41.87	5.08	Peak	100	31
5	12060.00	45.37	54.00	-8.63	30.68	14.69	Average	100	25
6	12060.00	59.06	74.00	-14.94	44.37	14.69	Peak	100	25
<p>Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)          *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>	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	Remark	ANT High cm	Turn Table deg
1	2390.00	49.65	54.00	-4.35	51.49	-1.84	Average	103	345
2	2390.00	56.33	74.00	-17.67	58.17	-1.84	Peak	103	345
3	4824.00	33.62	54.00	-20.38	28.54	5.08	Average	100	61
4	4824.00	46.70	74.00	-27.30	41.62	5.08	Peak	100	61
5	12060.00	44.92	54.00	-9.08	30.23	14.69	Average	100	33
6	12060.00	58.84	74.00	-15.16	44.15	14.69	Peak	100	33

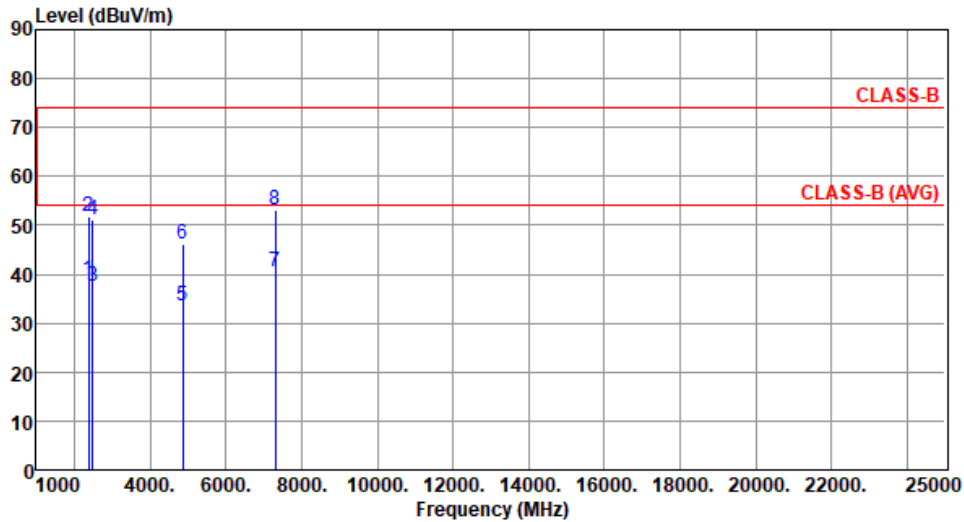
Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor\* (dB)

\*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	Remark	ANT High cm	Turn Table deg
1	2390.00	38.77	54.00	-15.23	40.61	-1.84	Average	100	302
2	2390.00	51.69	74.00	-22.31	53.53	-1.84	Peak	100	302
3	2483.50	37.64	54.00	-16.36	39.44	-1.80	Average	100	302
4	2483.50	51.16	74.00	-22.84	52.96	-1.80	Peak	100	302
5	4874.00	33.44	54.00	-20.56	28.37	5.07	Average	100	44
6	4874.00	46.03	74.00	-27.97	40.96	5.07	Peak	100	44
7	7311.00	40.40	54.00	-13.60	30.12	10.28	Average	100	26
8	7311.00	53.15	74.00	-20.85	42.87	10.28	Peak	100	26

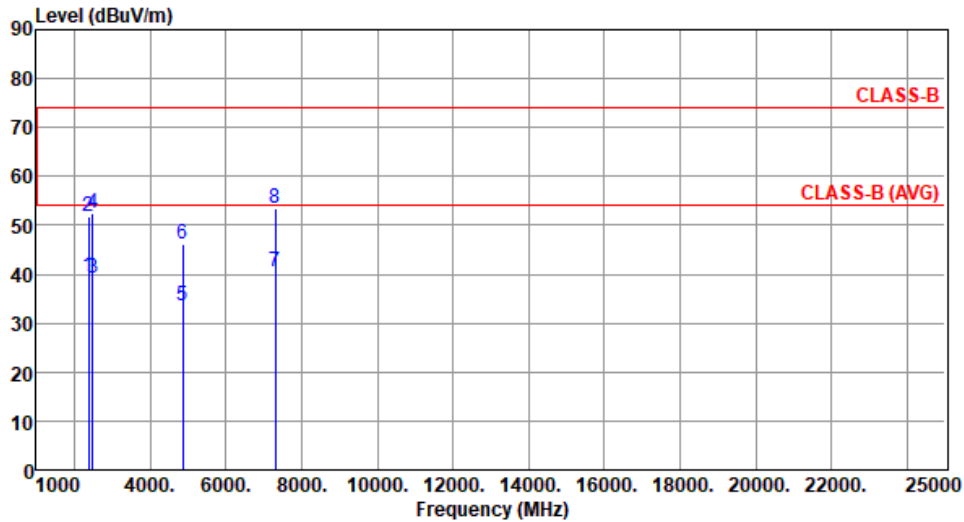
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*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	Remark	ANT High cm	Turn Table deg
1	2390.00	39.50	54.00	-14.50	41.34	-1.84	Average	111	345
2	2390.00	51.86	74.00	-22.14	53.70	-1.84	Peak	111	345
3	2483.50	39.16	54.00	-14.84	40.96	-1.80	Average	111	345
4	2483.50	52.44	74.00	-21.56	54.24	-1.80	Peak	111	345
5	4874.00	33.54	54.00	-20.46	28.47	5.07	Average	100	14
6	4874.00	46.20	74.00	-27.80	41.13	5.07	Peak	100	14
7	7311.00	40.44	54.00	-13.56	30.16	10.28	Average	100	22
8	7311.00	53.35	74.00	-20.65	43.07	10.28	Peak	100	22

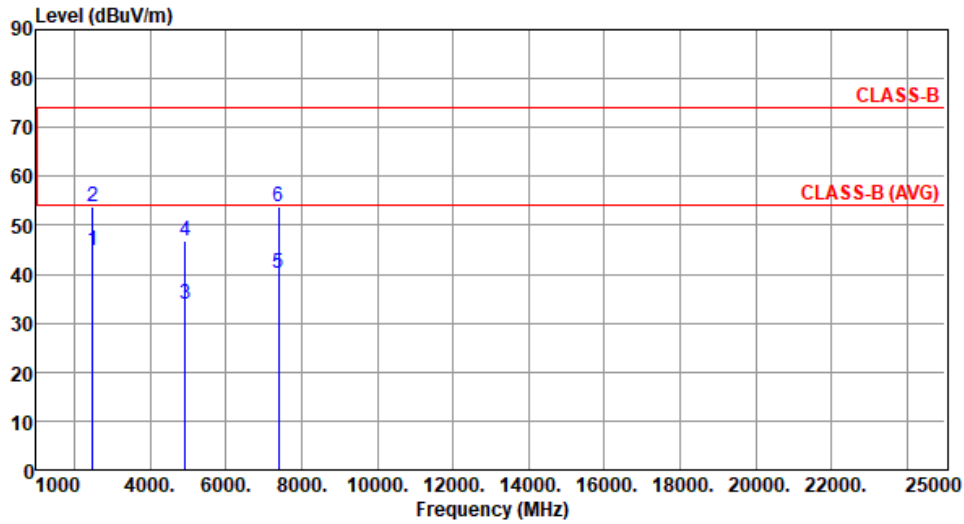
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*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>	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	Remark	ANT High cm	Turn Table deg
1	2483.50	44.69	54.00	-9.31	46.49	-1.80	Average	100	303
2	2483.50	53.94	74.00	-20.06	55.74	-1.80	Peak	100	303
3	4924.00	33.80	54.00	-20.20	28.68	5.12	Average	100	16
4	4924.00	46.71	74.00	-27.29	41.59	5.12	Peak	100	16
5	7386.00	40.33	54.00	-13.67	30.06	10.27	Average	100	79
6	7386.00	53.89	74.00	-20.11	43.62	10.27	Peak	100	79

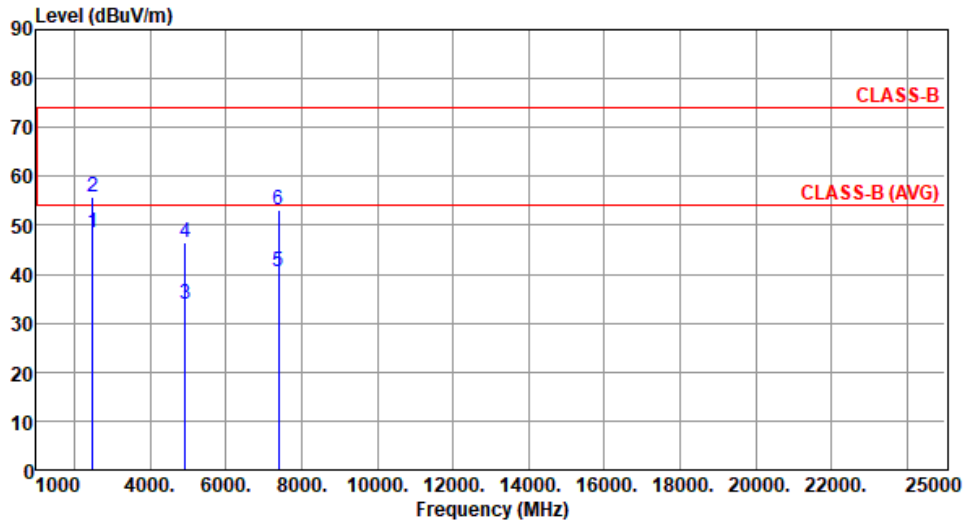
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*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



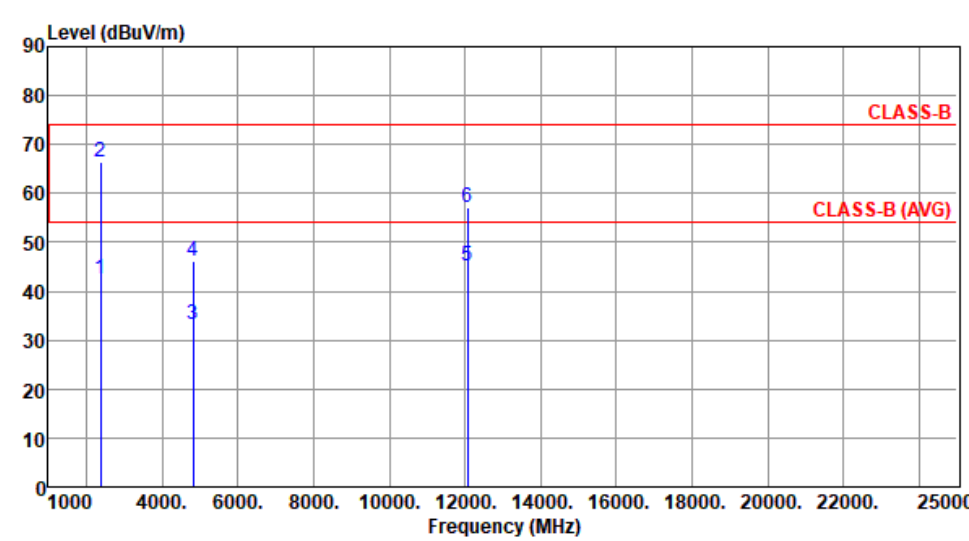
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	48.54	54.00	-5.46	50.34	-1.80	Average	108	342
2	2483.50	55.80	74.00	-18.20	57.60	-1.80	Peak	108	342
3	4924.00	33.98	54.00	-20.02	28.86	5.12	Average	100	55
4	4924.00	46.36	74.00	-27.64	41.24	5.12	Peak	100	55
5	7386.00	40.43	54.00	-13.57	30.16	10.27	Average	100	62
6	7386.00	53.22	74.00	-20.78	42.95	10.27	Peak	100	62

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

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

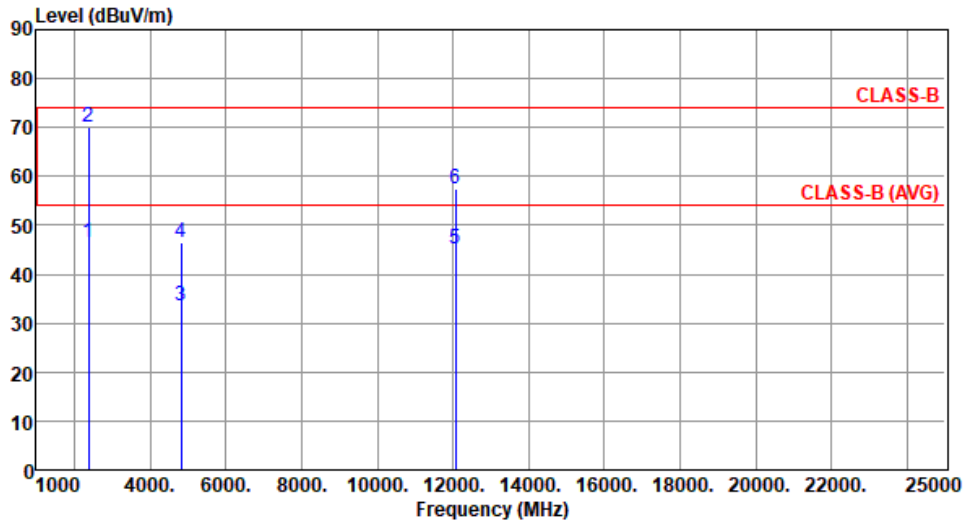
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

### 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		cm	deg
1	2390.00	42.41	54.00	-11.59	44.25	-1.84	Average	105	306
2	2390.00	66.46	74.00	-7.54	68.30	-1.84	Peak	105	306
3	4824.00	33.32	54.00	-20.68	28.24	5.08	Average	100	20
4	4824.00	46.23	74.00	-27.77	41.15	5.08	Peak	100	20
5	12060.00	45.02	54.00	-8.98	30.33	14.69	Average	100	80
6	12060.00	57.23	74.00	-16.77	42.54	14.69	Peak	100	80
<p>Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)  *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. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	46.33	54.00	-7.67	48.17	-1.84	Average	102	344
2	2390.00	70.19	74.00	-3.81	72.03	-1.84	Peak	102	344
3	4824.00	33.41	54.00	-20.59	28.33	5.08	Average	100	80
4	4824.00	46.44	74.00	-27.56	41.36	5.08	Peak	100	80
5	12060.00	45.17	54.00	-8.83	30.48	14.69	Average	100	50
6	12060.00	57.36	74.00	-16.64	42.67	14.69	Peak	100	50

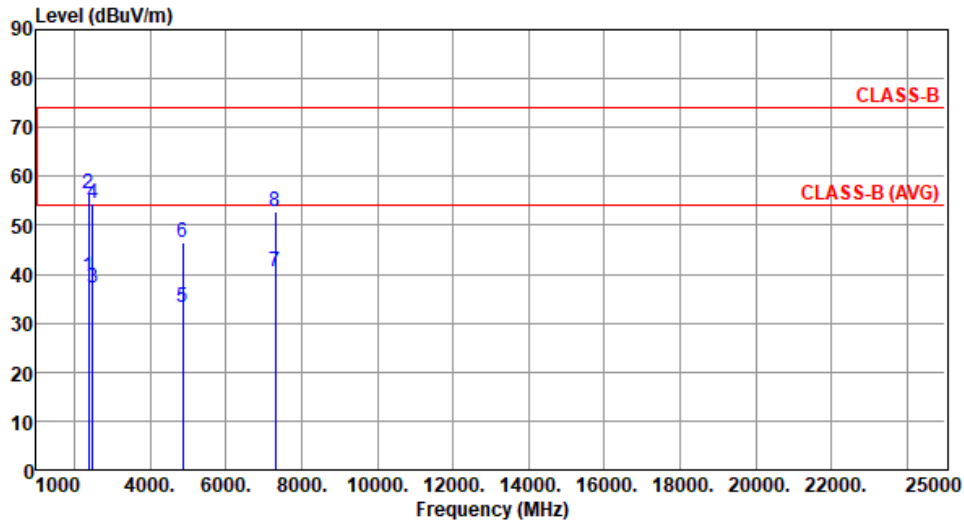
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*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>	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	Remark	ANT High cm	Turn Table deg
1	2390.00	39.68	54.00	-14.32	41.52	-1.84	Average	104	301
2	2390.00	56.60	74.00	-17.40	58.44	-1.84	Peak	104	301
3	2483.50	37.06	54.00	-16.94	38.86	-1.80	Average	104	301
4	2483.50	54.48	74.00	-19.52	56.28	-1.80	Peak	104	301
5	4874.00	33.34	54.00	-20.66	28.27	5.07	Average	100	30
6	4874.00	46.34	74.00	-27.66	41.27	5.07	Peak	100	30
7	7311.00	40.54	54.00	-13.46	30.26	10.28	Average	100	40
8	7311.00	52.85	74.00	-21.15	42.57	10.28	Peak	100	40

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

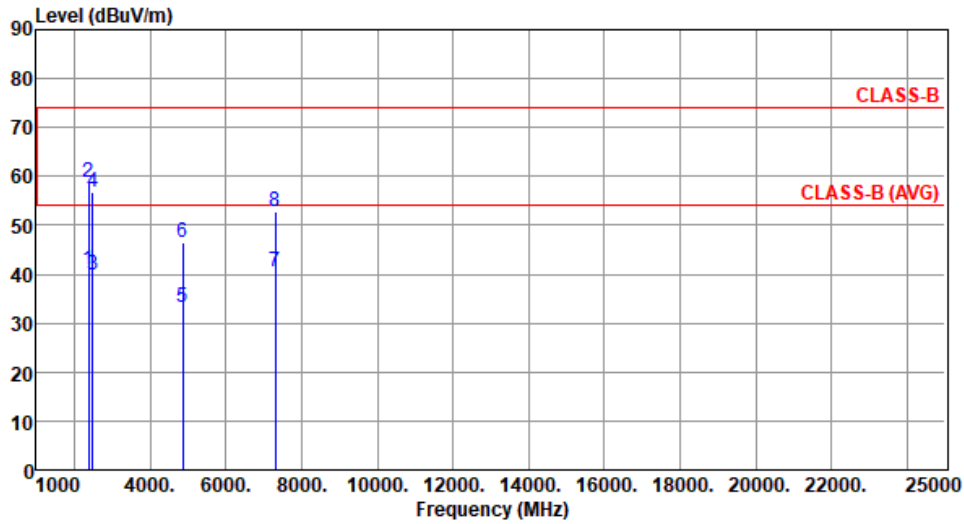
\*Factor includes antenna factor , cable loss and amplifier gain

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	Remark	ANT High cm	Turn Table deg
1	2390.00	40.95	54.00	-13.05	42.79	-1.84	Average	110	344
2	2390.00	58.66	74.00	-15.34	60.50	-1.84	Peak	110	344
3	2483.50	39.85	54.00	-14.15	41.65	-1.80	Average	110	344
4	2483.50	56.78	74.00	-17.22	58.58	-1.80	Peak	110	344
5	4874.00	33.27	54.00	-20.73	28.20	5.07	Average	100	30
6	4874.00	46.42	74.00	-27.58	41.35	5.07	Peak	100	30
7	7311.00	40.66	54.00	-13.34	30.38	10.28	Average	100	60
8	7311.00	52.90	74.00	-21.10	42.62	10.28	Peak	100	60

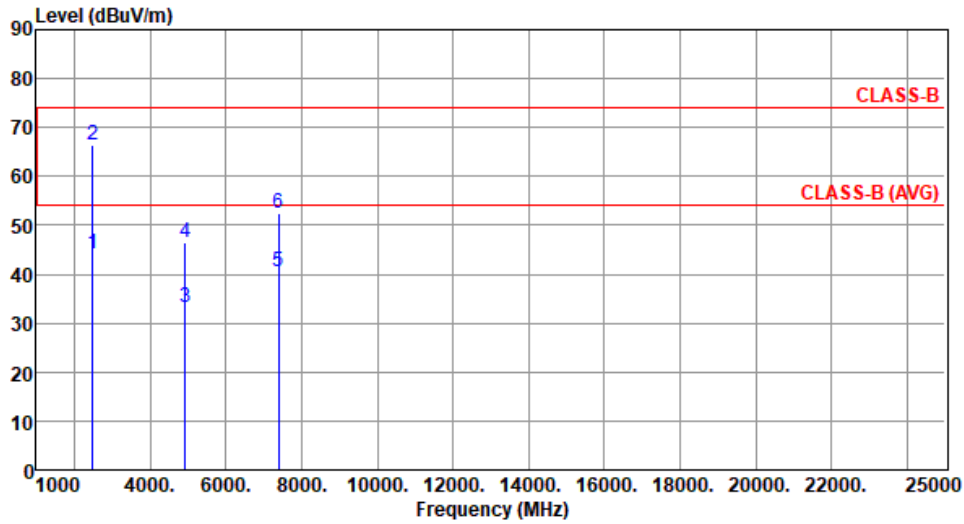
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*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	Remark	ANT High cm	Turn Table deg
1	2483.50	44.06	54.00	-9.94	45.86	-1.80	Average	105	307
2	2483.50	66.41	74.00	-7.59	68.21	-1.80	Peak	105	307
3	4924.00	33.33	54.00	-20.67	28.21	5.12	Average	100	30
4	4924.00	46.49	74.00	-27.51	41.37	5.12	Peak	100	30
5	7386.00	40.56	54.00	-13.44	30.29	10.27	Average	100	40
6	7386.00	52.55	74.00	-21.45	42.28	10.27	Peak	100	40

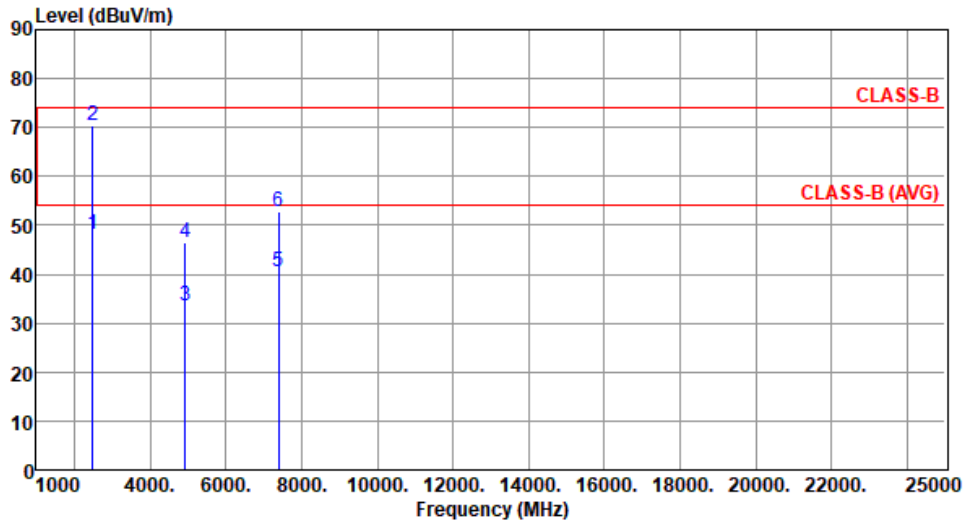
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*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



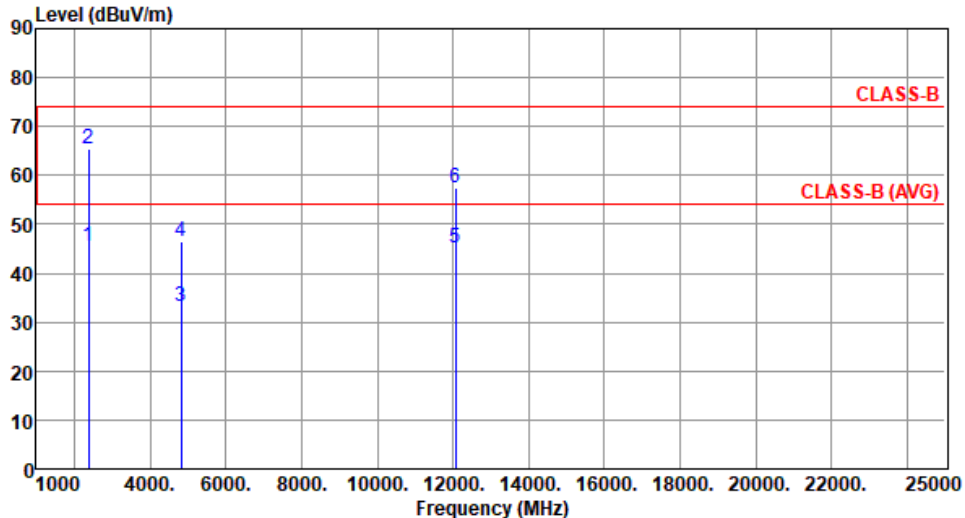
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	48.12	54.00	-5.88	49.92	-1.80	Average	108	346
2	2483.50	70.51	74.00	-3.49	72.31	-1.80	Peak	108	346
3	4924.00	33.45	54.00	-20.55	28.33	5.12	Average	100	60
4	4924.00	46.58	74.00	-27.42	41.46	5.12	Peak	100	60
5	7386.00	40.61	54.00	-13.39	30.34	10.27	Average	100	20
6	7386.00	52.76	74.00	-21.24	42.49	10.27	Peak	100	20

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

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

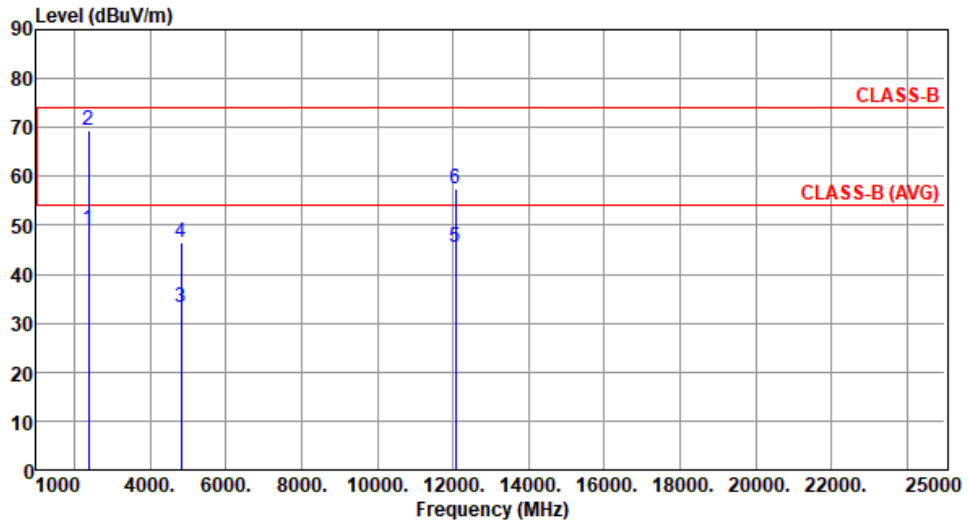
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

### 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. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	45.41	54.00	-8.59	47.25	-1.84	Average	100	303
2	2390.00	65.57	74.00	-8.43	67.41	-1.84	Peak	100	303
3	4824.00	33.26	54.00	-20.74	28.18	5.08	Average	100	30
4	4824.00	46.42	74.00	-27.58	41.34	5.08	Peak	100	30
5	12060.00	45.26	54.00	-8.74	30.57	14.69	Average	100	70
6	12060.00	57.35	74.00	-16.65	42.66	14.69	Peak	100	70
<p>Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)  *Factor includes antenna factor , cable loss and amplifier gain  Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).</p>									

<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	Remark	ANT High cm	Turn Table deg
1	2390.00	49.20	54.00	-4.80	51.04	-1.84	Average	103	347
2	2390.00	69.36	74.00	-4.64	71.20	-1.84	Peak	103	347
3	4824.00	33.33	54.00	-20.67	28.25	5.08	Average	100	20
4	4824.00	46.53	74.00	-27.47	41.45	5.08	Peak	100	20
5	12060.00	45.36	54.00	-8.64	30.67	14.69	Average	100	50
6	12060.00	57.52	74.00	-16.48	42.83	14.69	Peak	100	50

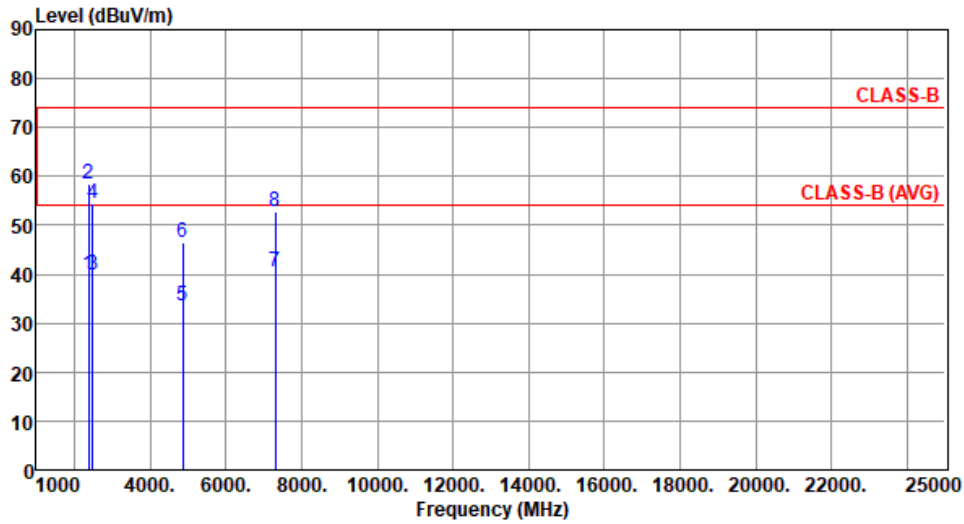
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*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	Remark	ANT High cm	Turn Table deg
1	2390.00	40.01	54.00	-13.99	41.85	-1.84	Average	100	305
2	2390.00	58.40	74.00	-15.60	60.24	-1.84	Peak	100	305
3	2483.50	39.70	54.00	-14.30	41.50	-1.80	Average	100	305
4	2483.50	54.58	74.00	-19.42	56.38	-1.80	Peak	100	305
5	4874.00	33.41	54.00	-20.59	28.34	5.07	Average	100	90
6	4874.00	46.54	74.00	-27.46	41.47	5.07	Peak	100	90
7	7311.00	40.47	54.00	-13.53	30.19	10.28	Average	100	20
8	7311.00	52.77	74.00	-21.23	42.49	10.28	Peak	100	20

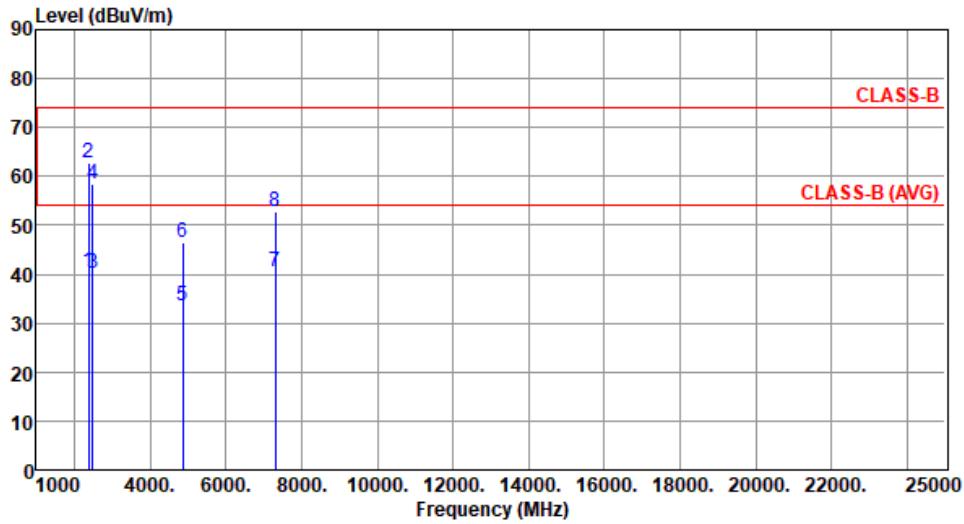
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*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	Remark	ANT High cm	Turn Table deg
1	2390.00	40.50	54.00	-13.50	42.34	-1.84	Average	111	343
2	2390.00	62.76	74.00	-11.24	64.60	-1.84	Peak	111	343
3	2483.50	40.06	54.00	-13.94	41.86	-1.80	Average	111	343
4	2483.50	58.45	74.00	-15.55	60.25	-1.80	Peak	111	343
5	4874.00	33.54	54.00	-20.46	28.47	5.07	Average	100	50
6	4874.00	46.66	74.00	-27.34	41.59	5.07	Peak	100	50
7	7311.00	40.54	54.00	-13.46	30.26	10.28	Average	100	70
8	7311.00	52.97	74.00	-21.03	42.69	10.28	Peak	100	70

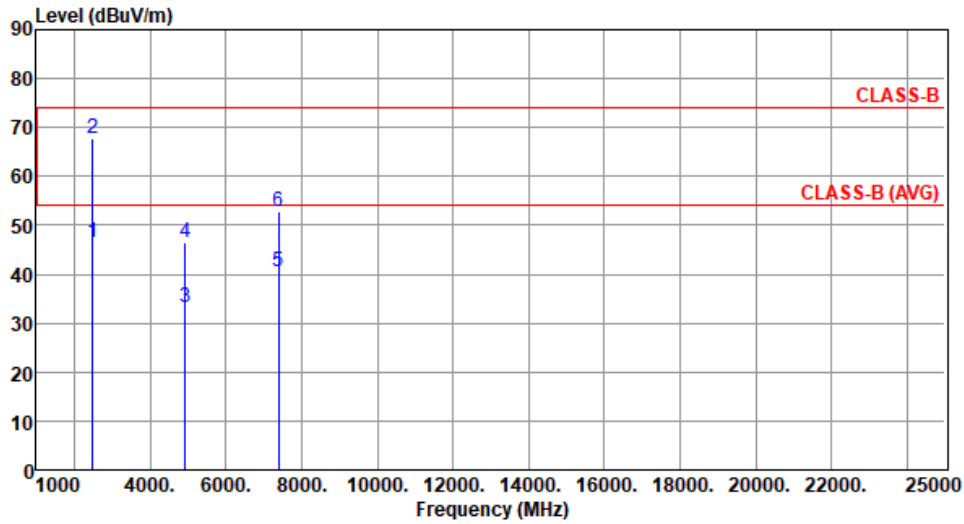
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*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	Remark	ANT High cm	Turn Table deg
1	2483.50	46.63	54.00	-7.37	48.43	-1.80	Average	100	304
2	2483.50	67.65	74.00	-6.35	69.45	-1.80	Peak	100	304
3	4924.00	33.27	54.00	-20.73	28.15	5.12	Average	100	40
4	4924.00	46.38	74.00	-27.62	41.26	5.12	Peak	100	40
5	7386.00	40.58	54.00	-13.42	30.31	10.27	Average	100	60
6	7386.00	52.64	74.00	-21.36	42.37	10.27	Peak	100	60

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

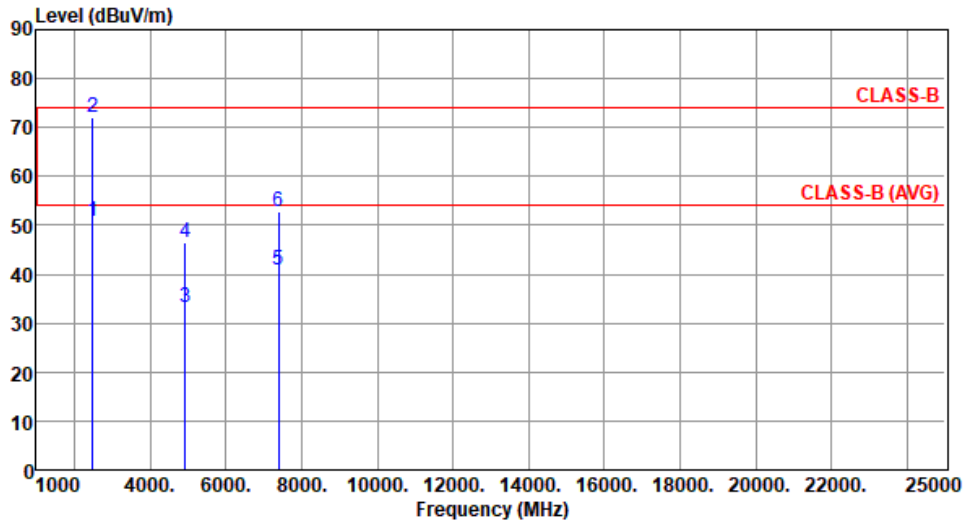
\*Factor includes antenna factor , cable loss and amplifier gain

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



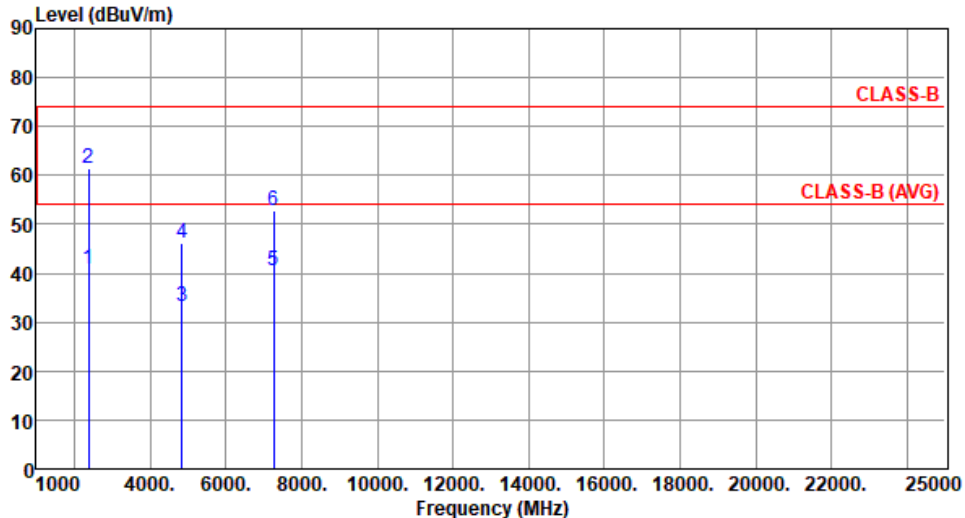
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	50.71	54.00	-3.29	52.51	-1.80	Average	109	338
2	2483.50	72.01	74.00	-1.99	73.81	-1.80	Peak	109	338
3	4924.00	33.36	54.00	-20.64	28.24	5.12	Average	100	30
4	4924.00	46.47	74.00	-27.53	41.35	5.12	Peak	100	30
5	7386.00	40.73	54.00	-13.27	30.46	10.27	Average	100	50
6	7386.00	52.74	74.00	-21.26	42.47	10.27	Peak	100	50

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

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

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

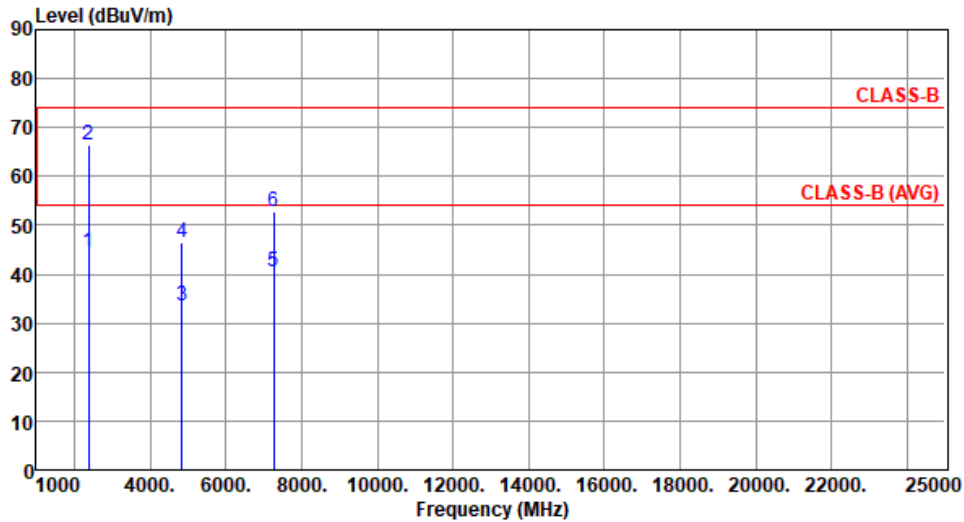
### 3.5.8 Transmitter Radiated Unwanted Emissions (Above 1GHz) for HT40

<b>Modulation</b>	HT40	<b>Test Freq. (MHz)</b>	2422						
<b>Polarization</b>	Horizontal								
Test By :BRAD WU      Temperature(°C):22      Humidity(%):65									
 <p>The graph plots Level (dBuV/m) on the y-axis (0 to 90) against Frequency (MHz) on the x-axis (1000 to 25000). Two horizontal red lines represent CLASS-B limits: one at approximately 75 dBuV/m and another at approximately 55 dBuV/m. Six vertical blue lines represent emission points labeled 1 through 6. Point 1 is at ~2390 MHz, point 2 at ~2390 MHz, point 3 at ~4844 MHz, point 4 at ~4844 MHz, point 5 at ~7266 MHz, and point 6 at ~7266 MHz.</p>									
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	2390.00	40.73	54.00	-13.27	42.57	-1.84	Average	100	301
2	2390.00	61.49	74.00	-12.51	63.33	-1.84	Peak	100	301
3	4844.00	33.37	54.00	-20.63	28.24	5.13	Average	100	80
4	4844.00	46.31	74.00	-27.69	41.18	5.13	Peak	100	80
5	7266.00	40.36	54.00	-13.64	30.18	10.18	Average	100	40
6	7266.00	52.64	74.00	-21.36	42.46	10.18	Peak	100	40

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)  
\*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. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	44.63	54.00	-9.37	46.47	-1.84	Average	101	345
2	2390.00	66.45	74.00	-7.55	68.29	-1.84	Peak	101	345
3	4844.00	33.49	54.00	-20.51	28.36	5.13	Average	100	50
4	4844.00	46.40	74.00	-27.60	41.27	5.13	Peak	100	50
5	7266.00	40.47	54.00	-13.53	30.29	10.18	Average	100	60
6	7266.00	52.72	74.00	-21.28	42.54	10.18	Peak	100	60

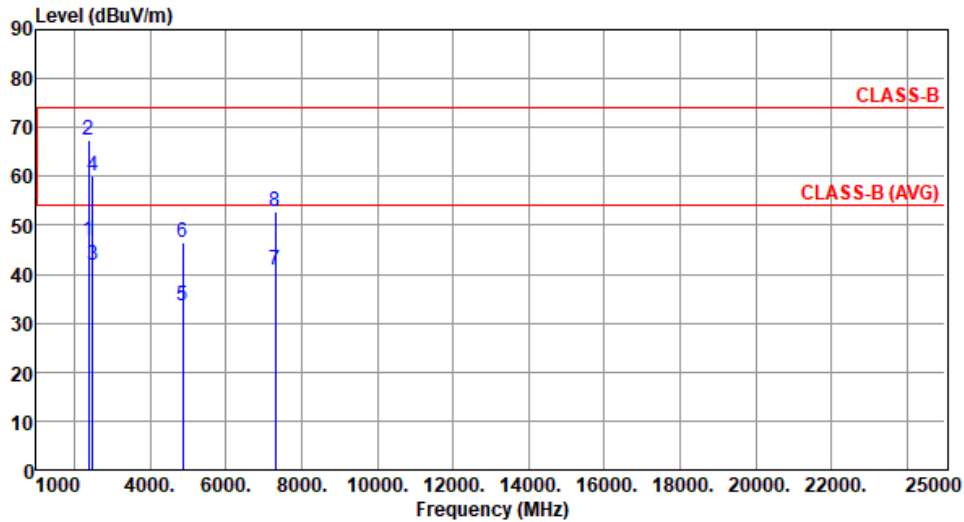
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*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>	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	Remark	ANT High cm	Turn Table deg
1	2390.00	46.79	54.00	-7.21	48.63	-1.84	Average	103	302
2	2390.00	67.41	74.00	-6.59	69.25	-1.84	Peak	103	302
3	2483.50	41.72	54.00	-12.28	43.52	-1.80	Average	103	302
4	2483.50	60.05	74.00	-13.95	61.85	-1.80	Peak	103	302
5	4874.00	33.54	54.00	-20.46	28.47	5.07	Average	100	30
6	4874.00	46.66	74.00	-27.34	41.59	5.07	Peak	100	30
7	7311.00	40.75	54.00	-13.25	30.47	10.28	Average	100	40
8	7311.00	52.87	74.00	-21.13	42.59	10.28	Peak	100	40

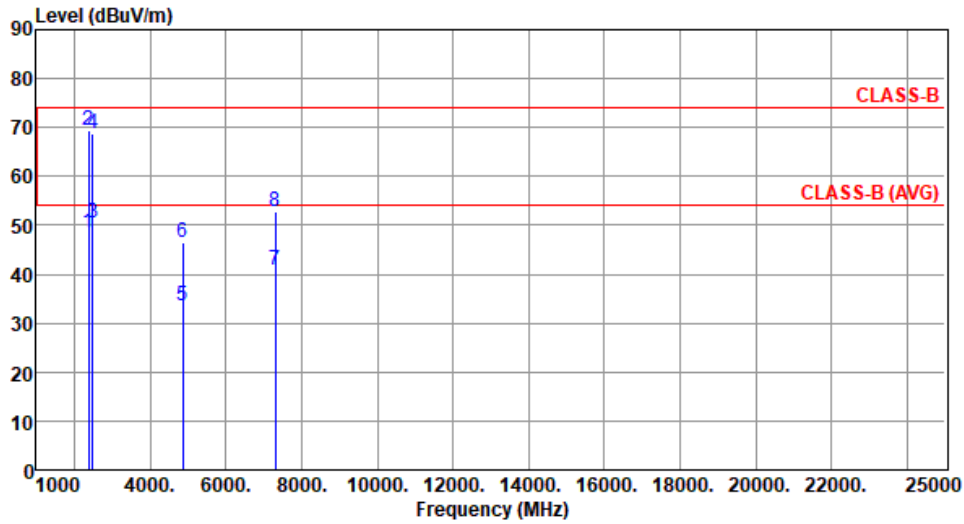
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*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>	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	Remark	ANT High cm	Turn Table deg
1	2390.00	48.39	54.00	-5.61	50.23	-1.84	Average	110	343
2	2390.00	69.37	74.00	-4.63	71.21	-1.84	Peak	110	343
3	2483.50	50.32	54.00	-3.68	52.12	-1.80	Average	110	343
4	2483.50	68.76	74.00	-5.24	70.56	-1.80	Peak	110	343
5	4874.00	33.45	54.00	-20.55	28.38	5.07	Average	100	40
6	4874.00	46.46	74.00	-27.54	41.39	5.07	Peak	100	40
7	7311.00	40.71	54.00	-13.29	30.43	10.28	Average	100	80
8	7311.00	52.86	74.00	-21.14	42.58	10.28	Peak	100	80

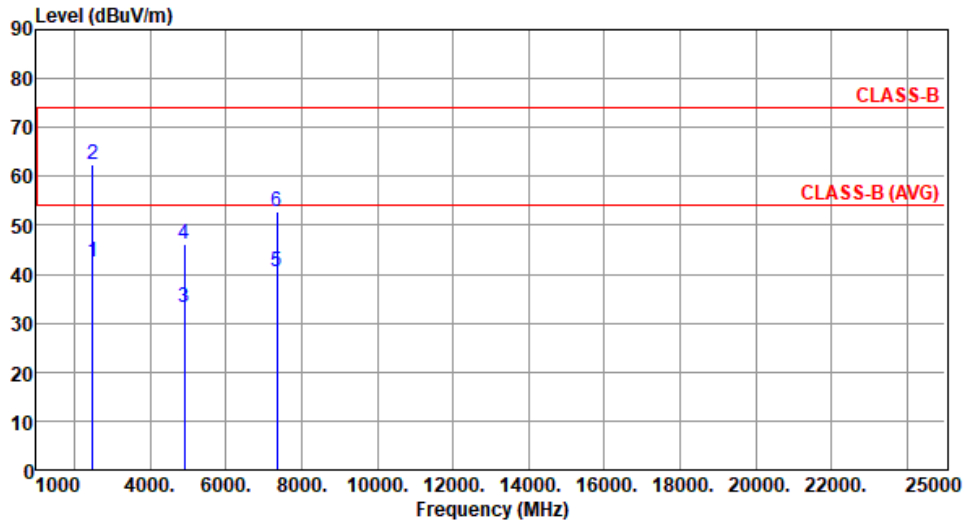
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*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	Remark	ANT High cm	Turn Table deg
1	2483.50	42.46	54.00	-11.54	44.26	-1.80	Average	100	307
2	2483.50	62.51	74.00	-11.49	64.31	-1.80	Peak	100	307
3	4904.00	33.17	54.00	-20.83	28.15	5.02	Average	100	80
4	4904.00	46.28	74.00	-27.72	41.26	5.02	Peak	100	80
5	7356.00	40.49	54.00	-13.51	30.18	10.31	Average	100	20
6	7356.00	52.85	74.00	-21.15	42.54	10.31	Peak	100	20

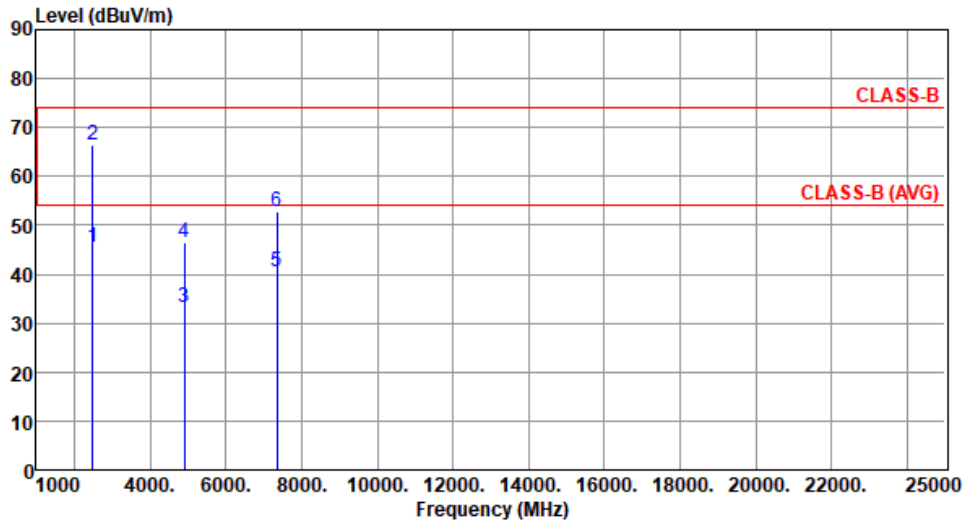
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*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	Remark	ANT High cm	Turn Table deg
1	2483.50	45.33	54.00	-8.67	47.13	-1.80	Average	109	339
2	2483.50	66.48	74.00	-7.52	68.28	-1.80	Peak	109	339
3	4904.00	33.33	54.00	-20.67	28.31	5.02	Average	100	90
4	4904.00	46.40	74.00	-27.60	41.38	5.02	Peak	100	90
5	7356.00	40.65	54.00	-13.35	30.34	10.31	Average	100	70
6	7356.00	52.96	74.00	-21.04	42.65	10.31	Peak	100	70

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

\*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

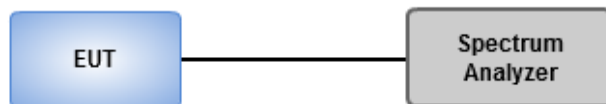
#### Reference level measurement

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

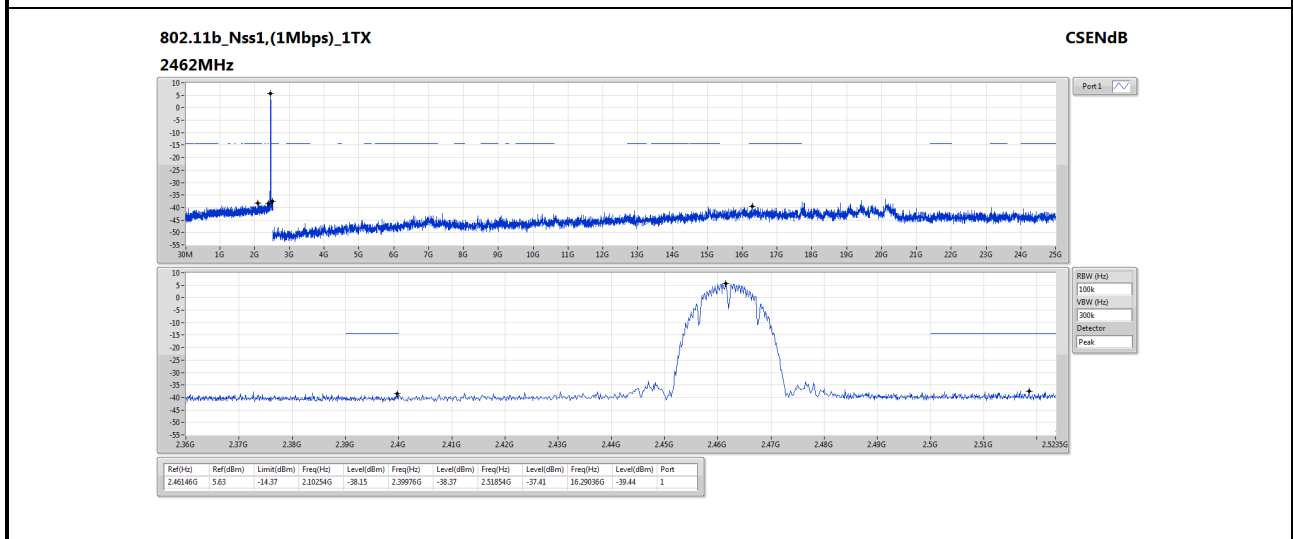
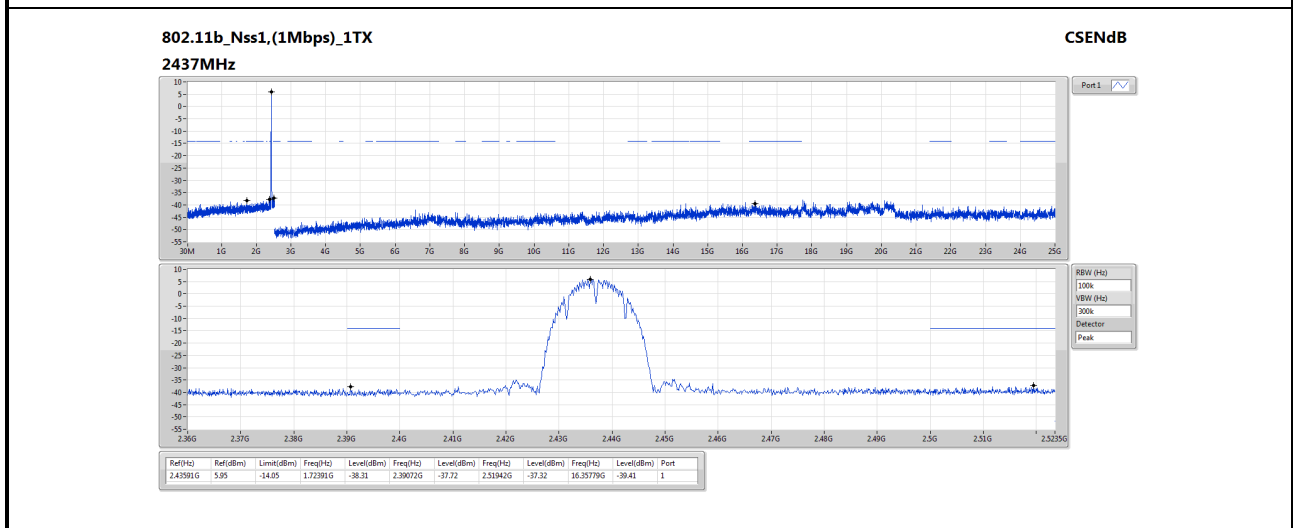
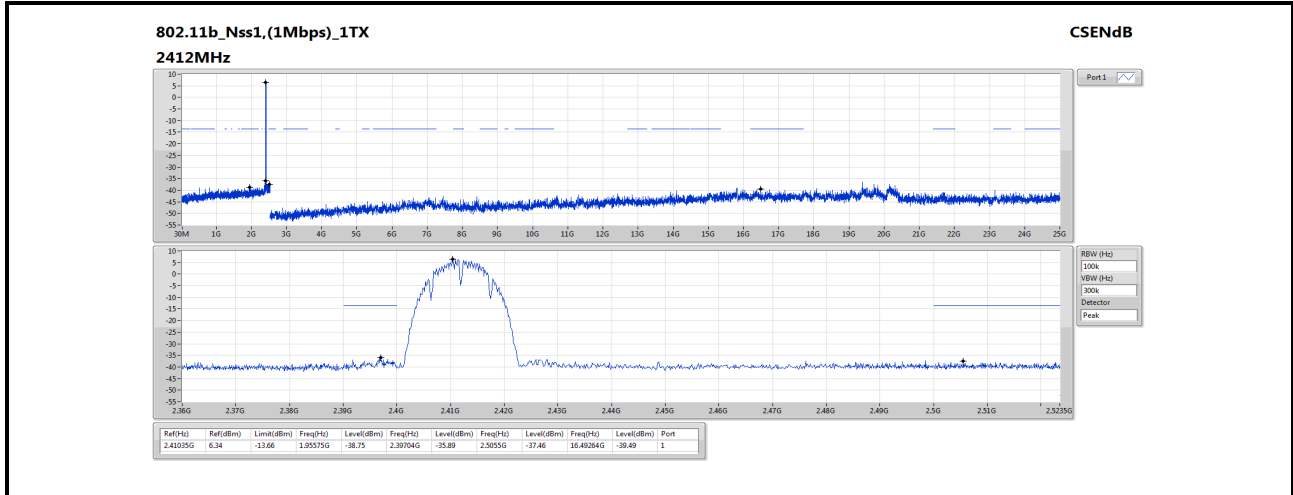
### 3.6.3 Test Setup

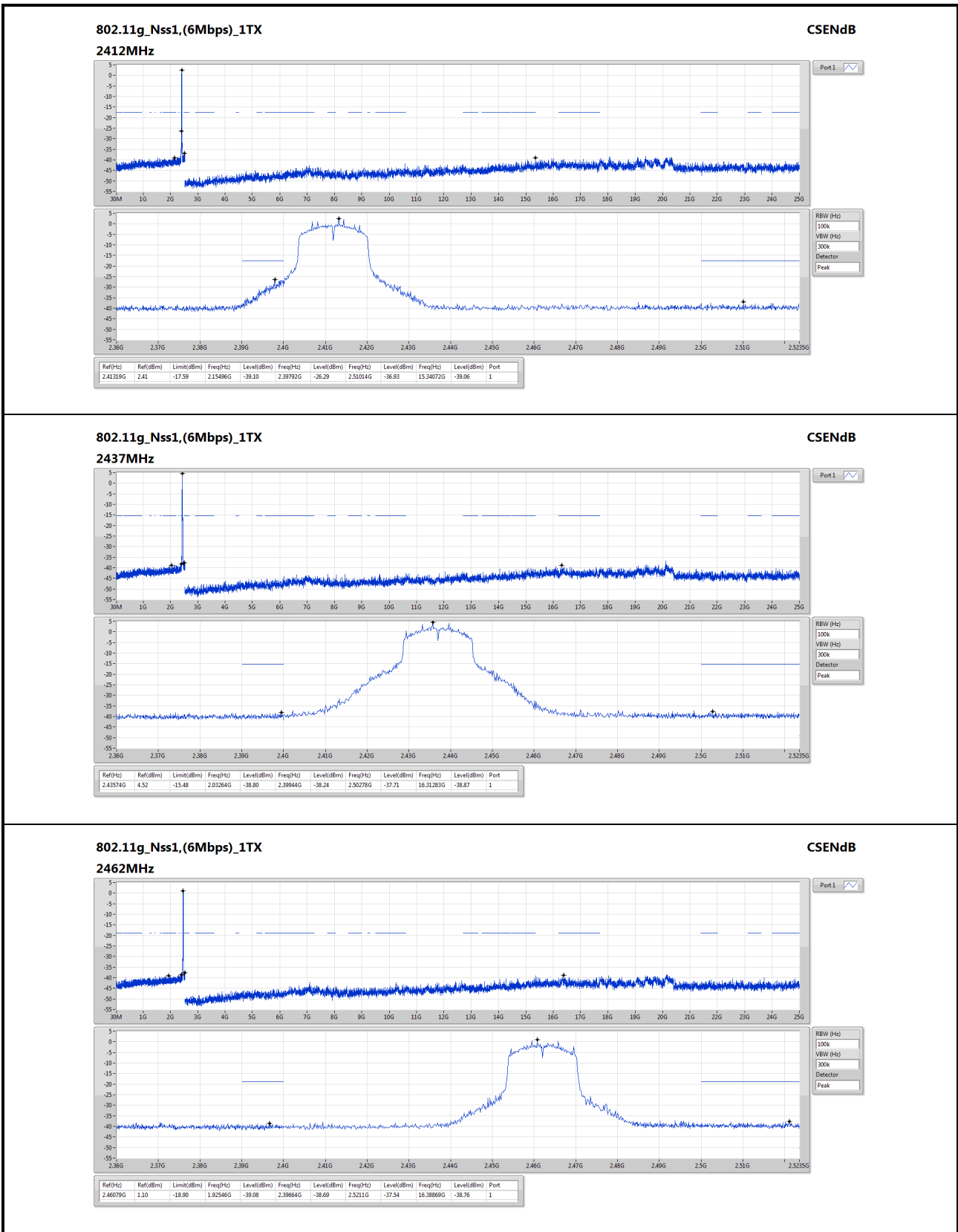


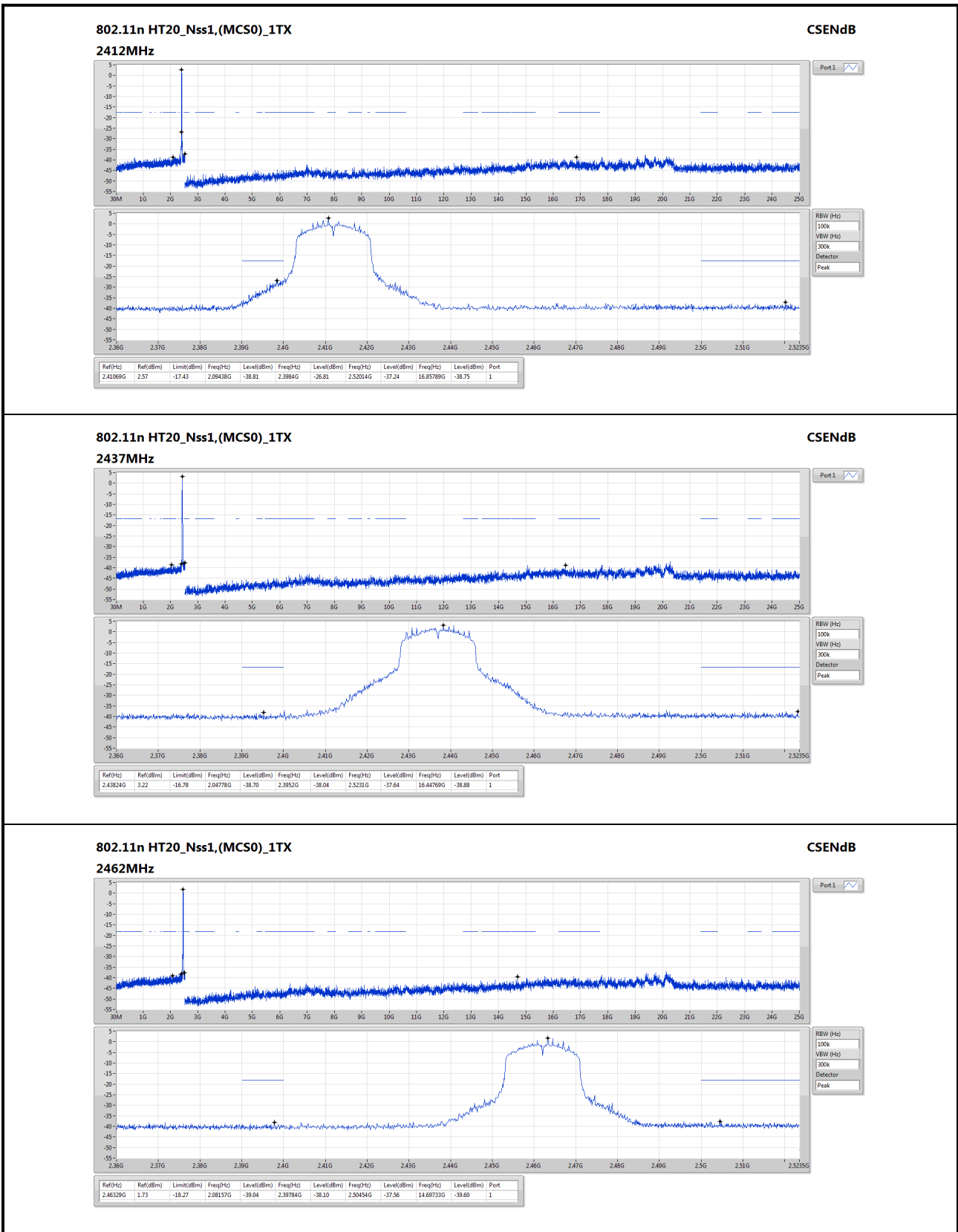


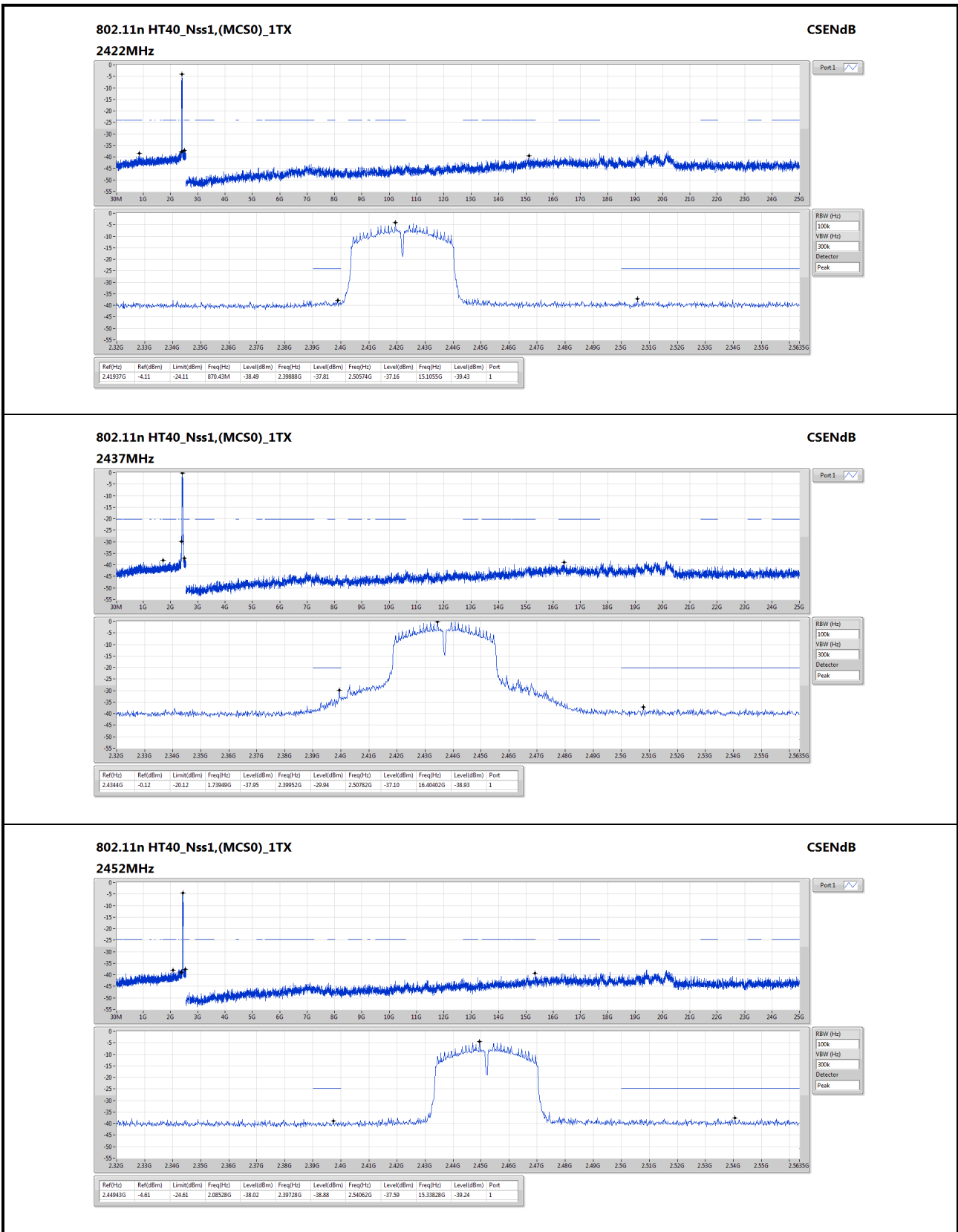
### 3.6.4 Unwanted Emissions into Non-Restricted Frequency Bands

Ambient Condition	23°C / 66%	Tested By	Brad Wu
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## 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 Corp (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

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### **Kwei Shan**

Tel: 886-3-271-8666

No. 3-1, Lane 6, Wen San 3rd St.,  
Kwei Shan District, Tao Yuan City  
333, Taiwan, R.O.C.

### **Kwei Shan Site II**

Tel: 886-3-271-8640

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

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

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Email: ICC\_Service@icertifi.com.tw

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