

# FCC C2PC Test Report

**FCC ID** : SQG-WB45NBT  
**Equipment** : 45 Series WB module with Bluetooth  
**Model No.** : WB45NBT  
**Brand Name** : Laird  
**Applicant** : Laird Connectivity  
**Address** : W66N220 Commerce Court, Cedarburg,  
Wisconsin 53012, USA  
**Standard** : 47 CFR FCC Part 15.247  
**Received Date** : Apr. 11, 2019  
**Tested Date** : Apr. 12 ~ Apr. 13, 2019  
Nov. 06 ~ Nov. 13, 2019

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
FR350301-07AC	Rev. 01	Initial issue	Feb. 11, 2020

## Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 18.990MHz 41.15 (Margin -8.85dB) - AV	Pass
15.247(d) 15.209	Radiated Emissions	[dBuV/m at 3m]: 79.47MHz 35.87 (Margin -4.13dB) - PK	Pass
15.247(b)(3)	Maximum Output Power	Max Power [dBm]: 22.85	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

This report is prepared for FCC class II permissive change.

This report is issued as a supplementary report to original ICC report no. FR350301-01AC. The modification is concerned with following:

- ✧ PCB materials and Balun change of Wi-Fi function.
- ✧ Diplexer 2nd source change of Wi-Fi function..
- ✧ Applicant is changed.

In this report, all tests had been re-tested and presented in the following sections.

### 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]	1	6-54 Mbps
2400-2483.5	n (HT20)	2412-2462	1-11 [11]	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.

### 1.1.2 Antenna Details

Ant. No.	Brand /Model	Type	Connector	Operating Frequencies (MHz) / Antenna Gain (dBi)				
				2400~2483.5	5150~5250	5250~5350	5470~5725	5725~5850
1	MAG.LAYERS EDA-1513-25GR2-B2-CY	Dipole	SMA Jack Reverse	2	2	2	2	2
2	MAG.LAYERS PCA-4606-2G4C1-A13-CY	PCB Dipole	UFL	2.21	---	---	---	---
3	Larid NanoBlade-IP04	PCB Dipole	UFL	2	3.9	3.9	4	4
4	Larid MAF95310 Mini NanoBlade Flex	PCB Dipole	UFL	2.79	3.38	3.38	3.38	3.38
5	Larid NanoBlue-IP04	PCB Dipole	UFL	2	---	---	---	---
6	Ethertronics WLAN_1000146	PIFA	UFL	2.5	3.5	3.5	3.5	3.5
7	SAA MG7018-41-000-R	Dipole	UFL	1.87	0.85	0.6	0.94	0.92
8	SAA MG7324-41-000-R	Dipole	UFL	1.32	1.04	1.6	2.75	2.24

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

<b>Power Supply Type</b>	3.3Vdc and 1.8Vdc
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### 1.1.4 Accessories

N/A

### 1.1.5 Channel List

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

### 1.1.6 Test Tool and Duty Cycle

<b>Test Tool</b>	Putty, Version: 0.60.0.0		
<b>Duty Cycle and Duty Factor</b>	<b>Mode</b>	<b>Duty Cycle (%)</b>	<b>Duty Factor (dB)</b>
	11b	100.00%	0.00
	11g	99.28%	0.03
	HT20	98.98%	0.04

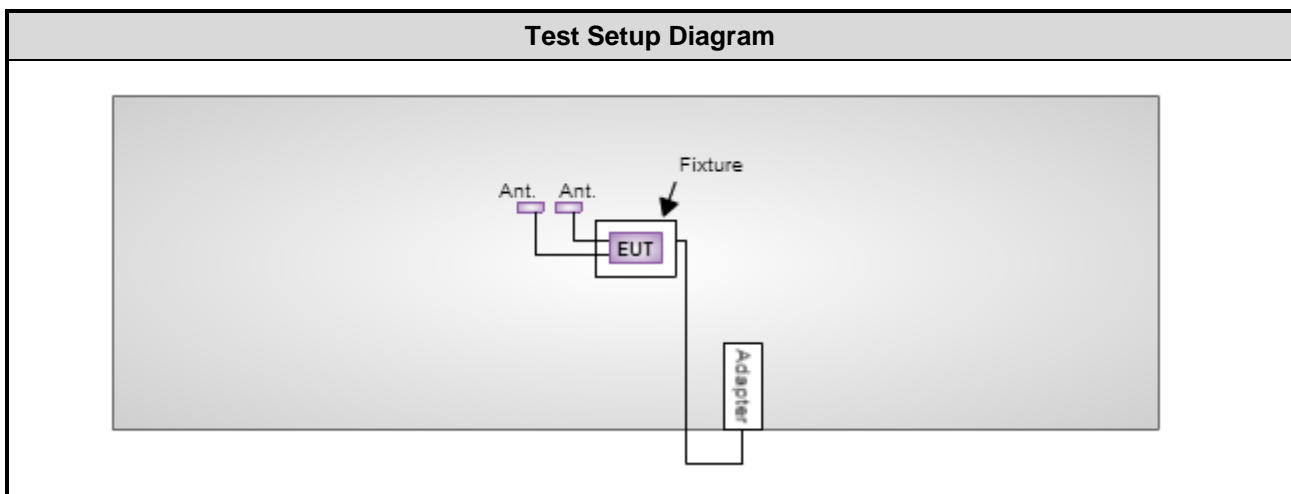
### 1.1.7 Power Index of Test Tool

Modulation Mode	Test Frequency (MHz)	Power Index
11b	2412	16
11b	2437	16.5
11b	2462	13.5
11g	2412	13
11g	2437	19
11g	2462	12
HT20	2412	13
HT20	2437	19.5
HT20	2462	12.5

## 1.2 Local Support Equipment List

Support Equipment List					
No.	Equipment	Brand	Model	FCC ID	Remarks
1	Notebook	DELL	Latitude E6430	DoC	---
2	Fixture	---	---	---	Provided by applicant.

## 1.3 Test Setup Chart



Note: The notebook is disconnected from EUT and removed from test table when EUT is set to transmit continuously.



## 1.4 The Equipment List

<b>Test Item</b>	Conducted Emission				
<b>Test Site</b>	Conduction room 1 / (CO01-WS)				
<b>Test Date</b>	Nov. 13, 2019				
<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	101657	Jan. 08, 2019	Jan. 07, 2020
LISN	R&S	ENV216	101579	Mar. 08, 2019	Mar. 07, 2020
RF Cable-CON	Woken	CFD200-NL	CFD200-NL-001	Oct. 22, 2019	Oct. 21, 2020
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 chamber 3 / (03CH03-WS)				
<b>Test Date</b>	Apr. 12 ~ Apr. 13, 2019				
<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. 07, 2019	Jan. 06, 2020
Receiver	R&S	ESR3	101658	Dec. 11, 2018	Dec. 10, 2019
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-685	Apr. 19, 2018	Apr. 18, 2019
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1206	Jan. 07, 2019	Jan. 06, 2020
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 15, 2018	Nov. 14, 2019
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 09, 2018	Nov. 08, 2019
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Oct. 08, 2018	Oct. 07, 2019
Preamplifier	EMC	EMC02325	980187	Aug. 24, 2018	Aug. 23, 2019
Preamplifier	Agilent	83017A	MY53270014	Aug. 09, 2018	Aug. 08, 2019
Preamplifier	EMC	EMC184045B	980192	Aug. 09, 2018	Aug. 08, 2019
RF cable-3M	HUBER+SUHNER	SUCOFLEX104	MY22620/4	Oct. 01, 2018	Sep. 30, 2019
RF cable-8M	EMC	EMC104-SM-SM-80 00	181107	Oct. 01, 2018	Sep. 30, 2019
RF cable-1M	HUBER+SUHNER	SUCOFLEX104	MY22624/4	Oct. 01, 2018	Sep. 30, 2019
LF cable-0.8M	EMC	EMC8D-NM-NM-800	EMC8D-NM-NM-800 -001	Oct. 01, 2018	Sep. 30, 2019
LF cable-3M	EMC	EMC8D-NM-NM-300 0	131103	Oct. 01, 2018	Sep. 30, 2019
LF cable-13M	EMC	EMC8D-NM-NM-130 00	131104	Oct. 01, 2018	Sep. 30, 2019
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>Test Date</b>	Nov. 06, 2019				
<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. 17, 2019	Apr. 16, 2020
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 INSTRON	GPC-6030D	GES855395	Oct. 29, 2019	Oct. 28, 2020
Measurement Software	Sporton	Sporton_1	1.3.30	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

## 1.5 Test Standards

According to the specification of EUT, the EUT must comply with following standards and KDB documents.

47 CFR FCC Part 15.247

ANSI C63.10-2013

FCC KDB 558074 D01 15.247 Meas Guidance v05r02

## 1.6 Deviation from Test Standard and Measurement Procedure

None

## 1.7 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. 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 Condition

Test Item	Test Site	Ambient Condition	Tested By
AC Conduction	CO01-WS	22°C / 67%	Akun Chung
Radiated Emissions	03CH03-WS	22-23°C / 66%	Roger Lu
RF Conducted	TH01-WS	22°C / 62%	Brad Wu

- 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	HT20	2437	MCS 0	2
Radiated Emissions ≤1GHz	HT20	2437	MCS 0	1,2,3
Radiated Emissions >1GHz	11b 11g HT20	2412 / 2437 / 2462 2412 / 2437 / 2462 2412 / 2437 / 2462	1 Mbps 6 Mbps MCS 0	1,2,3
Maximum Output Power	11b	2412 / 2437 / 2462	1 Mbps	2
6dB bandwidth	11g	2412 / 2437 / 2462	6 Mbps	
Power spectral density	HT20	2412 / 2437 / 2462	MCS 0	

**NOTE:**

1. Test configurations are listed as below:
  - 1) Configuration 1: Dipole antenna (Antenna No.1), Y-plane.
  - 2) Configuration 2 : PCB Dipole antenna (Antenna No.4) , Y-plane
  - 3) Configuration 3 : PIFA antenna (Antenna No.6) , Y-plane

## 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

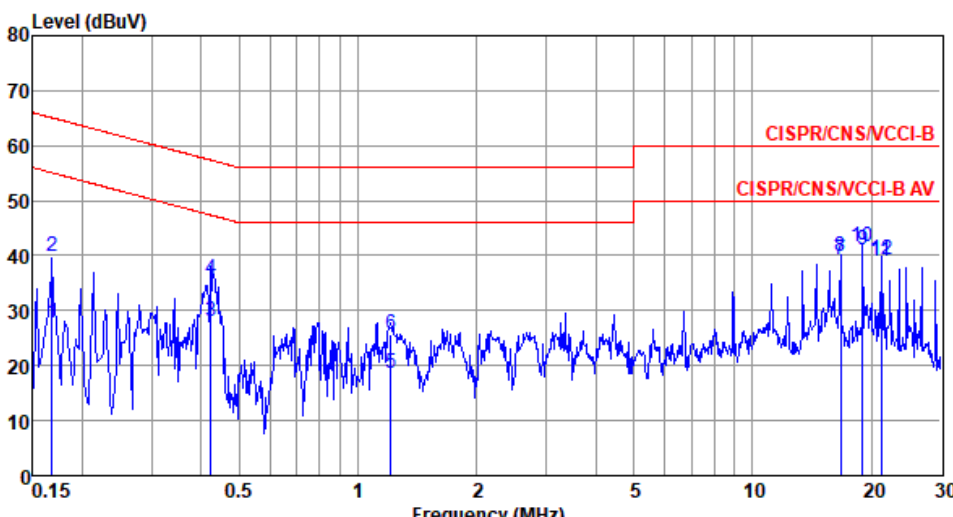


- Note: 1. Support units were connected to second LISN.  
 2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

### 3.1.4 Test Result of Conducted Emissions

<b>Modulation</b>	HT20	<b>Test Freq. (MHz)</b>	2437
<b>Power Phase</b>	Line		

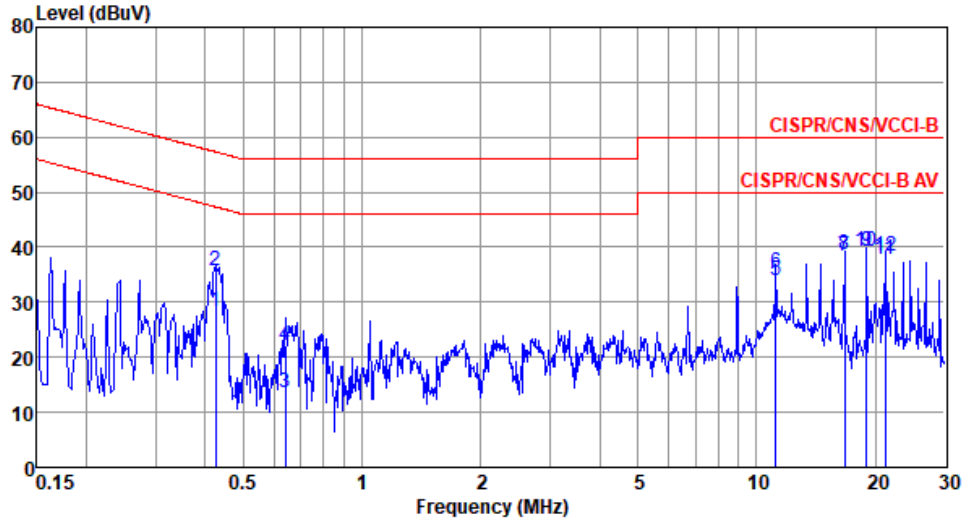
  



	Freq MHz	Level dBuA	Limit Line dBuA	Over Limit dB	Read Level dBuA	LISN factor dB	cable loss dB	Remark
1	0.168	27.73	55.08	-27.35	17.98	9.53	0.05	Average
2	0.168	39.97	65.08	-25.11	30.22	9.53	0.05	QP
3	0.424	28.13	47.37	-19.24	18.23	9.57	0.08	Average
4	0.424	35.84	57.37	-21.53	25.94	9.57	0.08	QP
5	1.210	18.72	46.00	-27.28	8.65	9.60	0.14	Average
6	1.210	25.65	56.00	-30.35	15.58	9.60	0.14	QP
7	16.756	39.21	50.00	-10.79	28.40	9.66	0.62	Average
8	16.756	39.83	60.00	-20.17	29.02	9.66	0.62	QP
9*	18.990	41.15	50.00	-8.85	30.25	9.66	0.65	Average
10	18.990	41.50	60.00	-18.50	30.60	9.66	0.65	QP
11	21.223	39.02	50.00	-10.98	28.07	9.65	0.67	Average
12	21.223	39.37	60.00	-20.63	28.42	9.65	0.67	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>	HT20	<b>Test Freq. (MHz)</b>	2437
<b>Power Phase</b>	Neutral		



	Freq MHz	Level dBuA	Limit Line dBuA	Over Limit dB	Read Level dBuA	LISN factor dB	cable loss dB	Remark
1	0.426	28.40	47.33	-18.93	18.54	9.61	0.08	Average
2	0.426	35.74	57.33	-21.59	25.88	9.61	0.08	QP
3	0.641	13.49	46.00	-32.51	3.57	9.63	0.10	Average
4	0.641	22.14	56.00	-33.86	12.22	9.63	0.10	QP
5	11.170	33.82	50.00	-16.18	23.31	9.73	0.44	Average
6	11.170	35.28	60.00	-24.72	24.77	9.73	0.44	QP
7	16.756	38.33	50.00	-11.67	27.50	9.78	0.62	Average
8	16.756	38.80	60.00	-21.20	27.97	9.78	0.62	QP
9*	18.990	39.27	50.00	-10.73	28.33	9.80	0.65	Average
10	18.990	39.36	60.00	-20.64	28.42	9.80	0.65	QP
11	21.223	37.91	50.00	-12.09	26.87	9.81	0.67	Average
12	21.223	38.34	60.00	-21.66	27.30	9.81	0.67	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

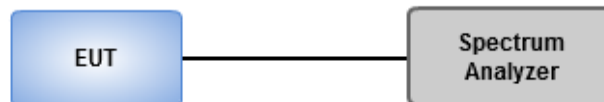
#### 6dB Bandwidth

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

#### 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	7.101M	12.012M	12M0G1D	7.029M	11.65M
802.11g_Nss1,(6Mbps)_1TX	16.377M	17.511M	17M5D1D	16.377M	16.57M
802.11n HT20_Nss1,(MCS0)_1TX	17.246M	18.886M	18M9D1D	16.812M	17.728M

**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	7.101M	11.867M
2437MHz	Pass	500k	7.101M	12.012M
2462MHz	Pass	500k	7.029M	11.65M
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-
2412MHz	Pass	500k	16.377M	16.57M
2437MHz	Pass	500k	16.377M	17.511M
2462MHz	Pass	500k	16.377M	16.57M
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-
2412MHz	Pass	500k	17.246M	17.728M
2437MHz	Pass	500k	16.812M	18.886M
2462MHz	Pass	500k	16.812M	17.728M

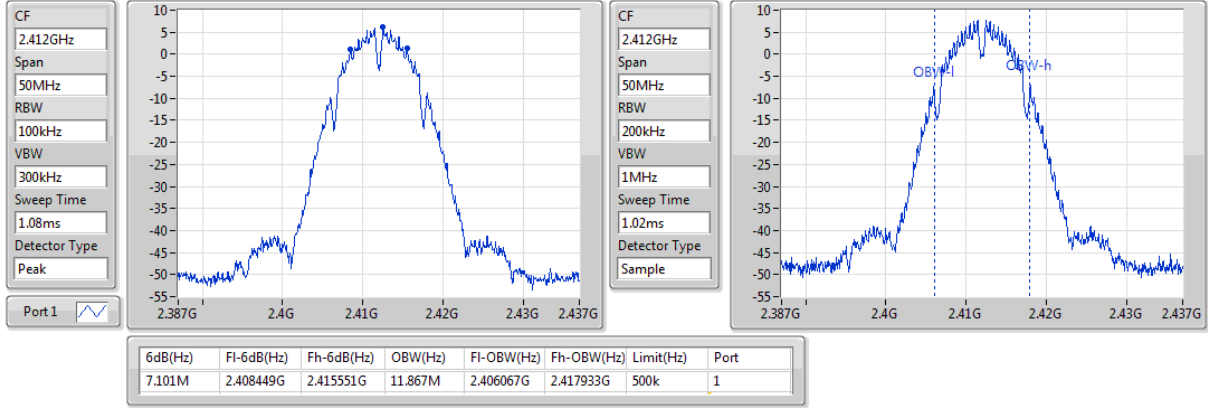
**Port X-N dB** = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;



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

EBW

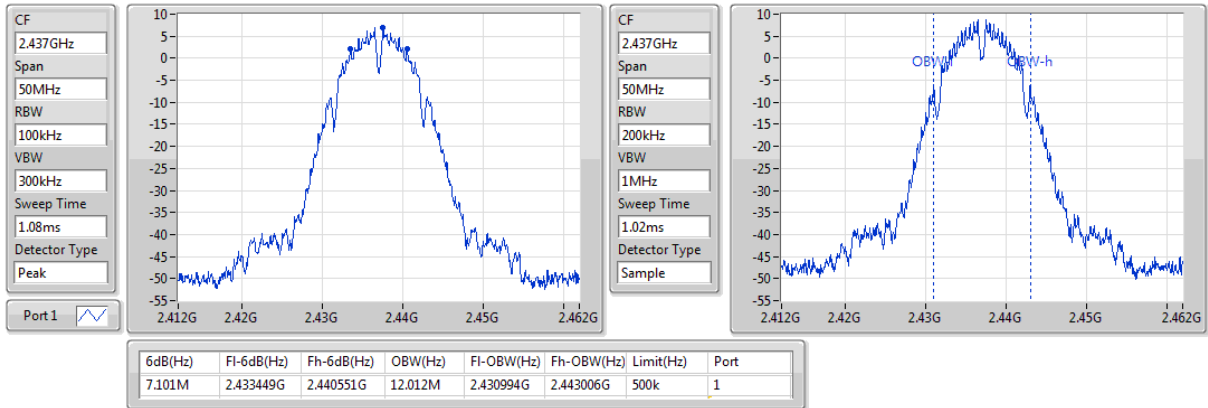
2412MHz



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

EBW

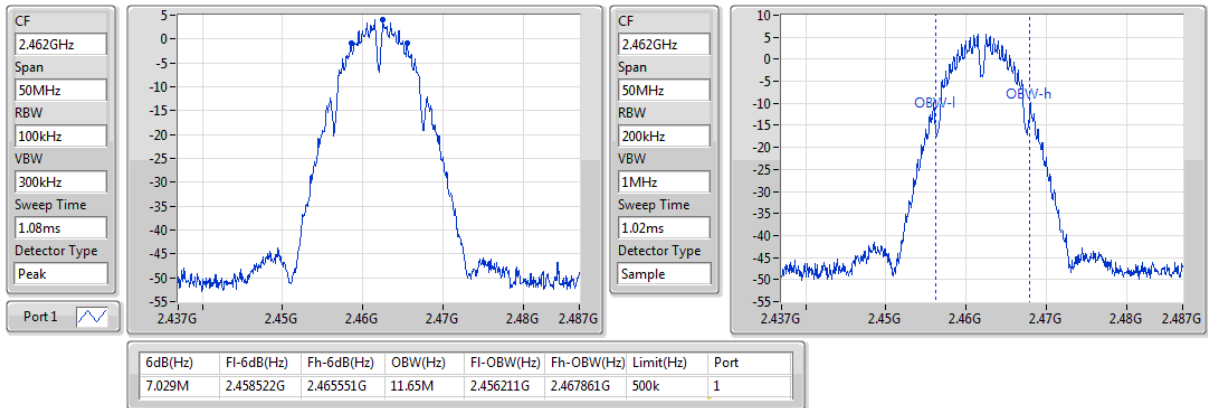
2437MHz



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

EBW

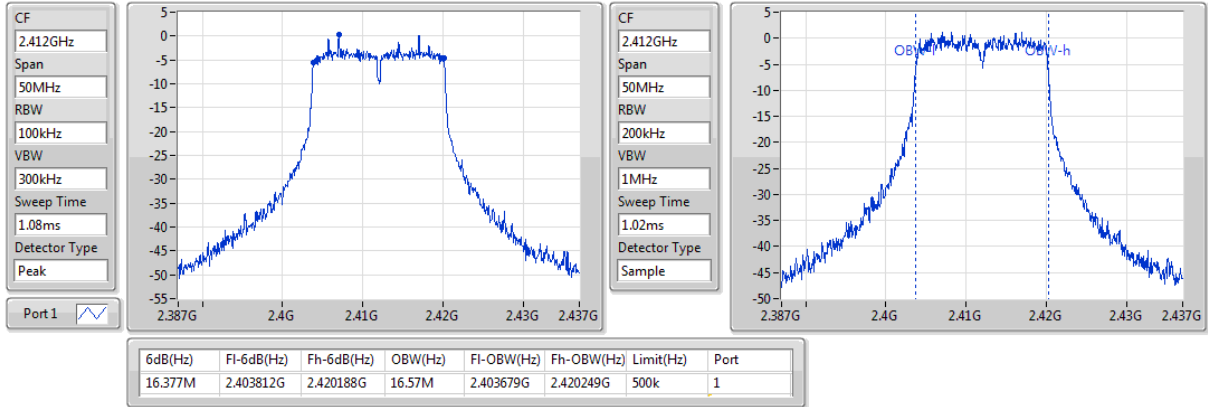
2462MHz



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

EBW

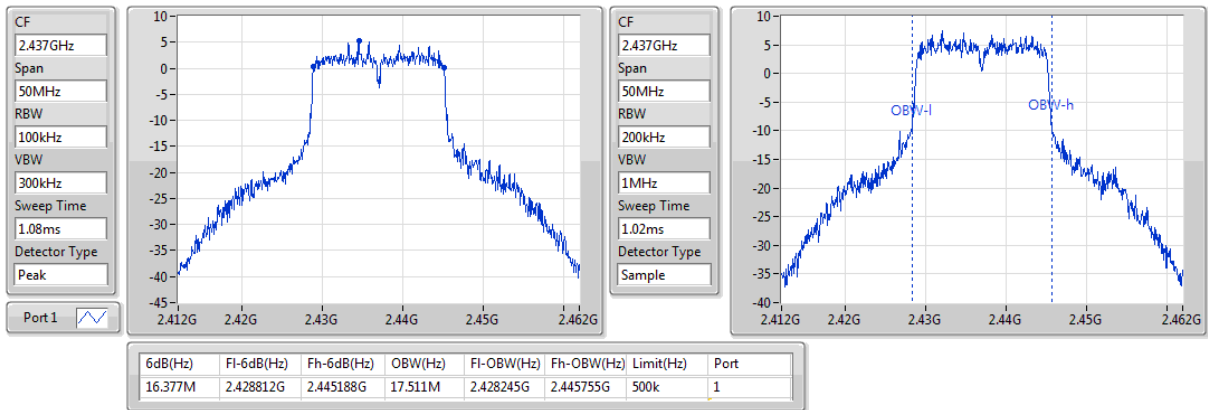
2412MHz



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

EBW

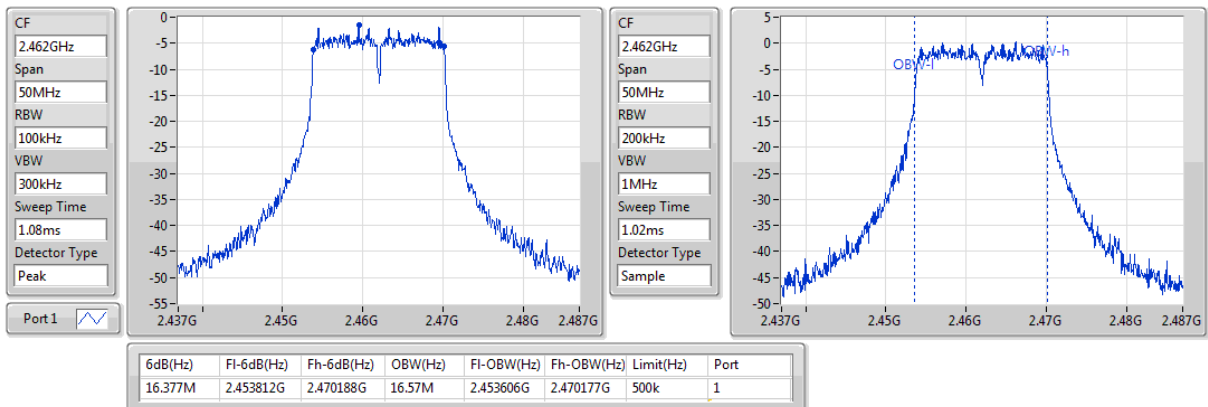
2437MHz



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

EBW

2462MHz

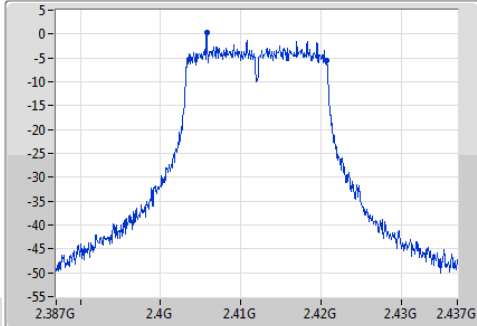


### 802.11n HT20\_Nss1,(MCS0)\_1TX

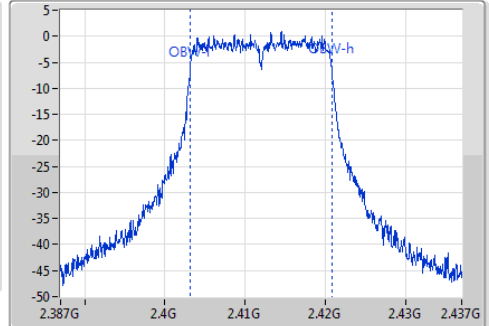
EBW

2412MHz

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



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



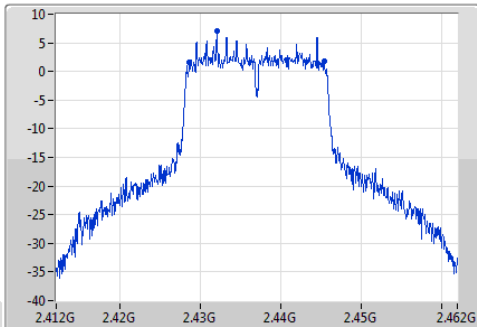
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.246M	2.403522G	2.420768G	17.728M	2.4031G	2.420828G	500k	1

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

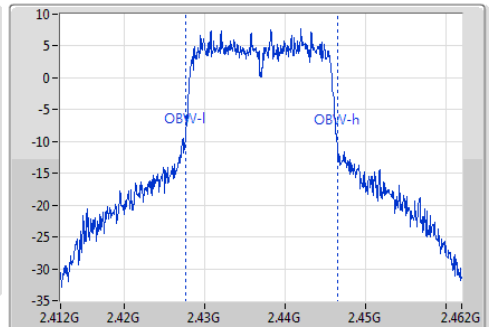
EBW

2437MHz

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



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



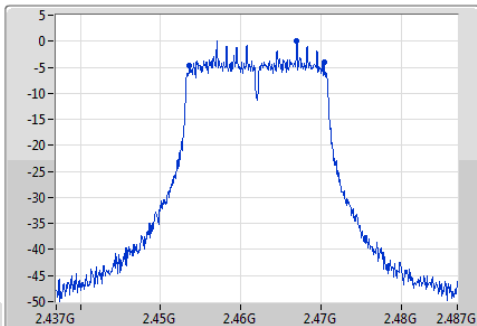
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.812M	2.428594G	2.445406G	18.886M	2.427593G	2.446479G	500k	1

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

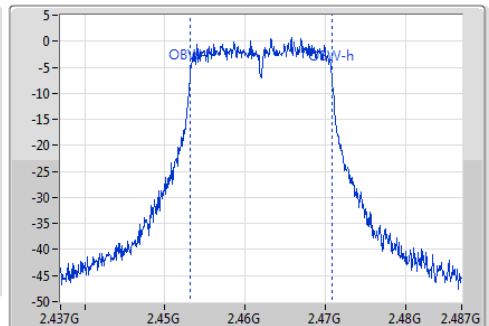
EBW

2462MHz

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



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
16.812M	2.453594G	2.470406G	17.728M	2.4531G	2.470828G	500k	1

### 3.3 RF Output Power

#### 3.3.1 Limit of RF Output Power

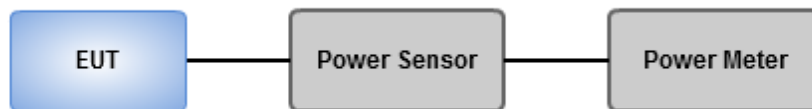
Conducted power shall not exceed 1Watt.

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

#### 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

#### Summary of Peak Conducted Output Power

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_1TX	18.77	0.07534
802.11g_Nss1,(6Mbps)_1TX	21.45	0.13964
802.11n HT20_Nss1,(MCS0)_1TX	<b>22.85</b>	0.19275

#### 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	2.79	17.86	17.86	30.00	20.65	36.00
2437MHz	Pass	2.79	18.77	18.77	30.00	21.56	36.00
2462MHz	Pass	2.79	15.43	15.43	30.00	18.22	36.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-	-	-
2412MHz	Pass	2.79	20.78	20.78	30.00	23.57	36.00
2437MHz	Pass	2.79	21.45	21.45	30.00	24.24	36.00
2462MHz	Pass	2.79	18.32	18.32	30.00	21.11	36.00
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
2412MHz	Pass	2.79	20.43	20.43	30.00	23.22	36.00
2437MHz	Pass	2.79	22.85	22.85	30.00	25.64	36.00
2462MHz	Pass	2.79	18.72	18.72	30.00	21.51	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	16.46	0.04426
802.11g_Nss1,(6Mbps)_1TX	18.14	0.06516
802.11n HT20_Nss1,(MCS0)_1TX	18.40	0.06918

### 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	2.79	15.76	15.76	-	18.55	-
2437MHz	Pass	2.79	16.46	16.46	-	19.25	-
2462MHz	Pass	2.79	13.26	13.26	-	16.05	-
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-	-	-
2412MHz	Pass	2.79	13.66	13.66	-	16.45	-
2437MHz	Pass	2.79	18.14	18.14	-	20.93	-
2462MHz	Pass	2.79	11.41	11.41	-	14.20	-
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
2412MHz	Pass	2.79	13.06	13.06	-	15.85	-
2437MHz	Pass	2.79	18.40	18.40	-	21.19	-
2462MHz	Pass	2.79	11.93	11.93	-	14.72	-

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.

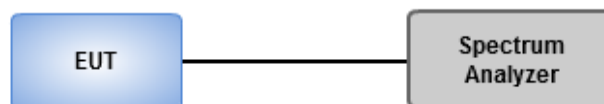
#### Average PSD, duty cycle $\geq$ 98%

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

#### Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
802.11b_Nss1,(1Mbps)_1TX	-8.90
802.11g_Nss1,(6Mbps)_1TX	-9.18
802.11n HT20_Nss1,(MCS0)_1TX	-7.22

#### Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	2.79	-8.90	-8.90	8.00
2437MHz	Pass	2.79	-9.87	-9.87	8.00
2462MHz	Pass	2.79	-11.48	-11.48	8.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	2.79	-15.21	-15.21	8.00
2437MHz	Pass	2.79	-9.18	-9.18	8.00
2462MHz	Pass	2.79	-16.44	-16.44	8.00
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz	Pass	2.79	-14.92	-14.92	8.00
2437MHz	Pass	2.79	-7.22	-7.22	8.00
2462MHz	Pass	2.79	-14.03	-14.03	8.00

DG = Directional Gain;

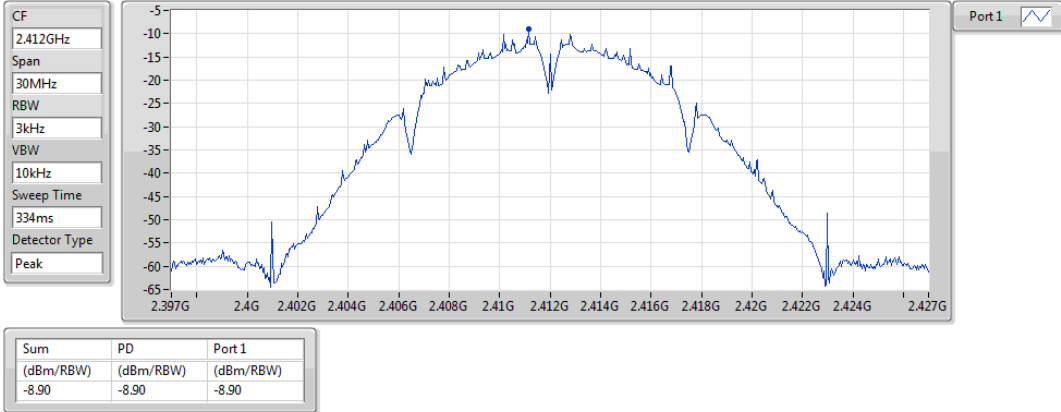
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port X power density;



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

PSD

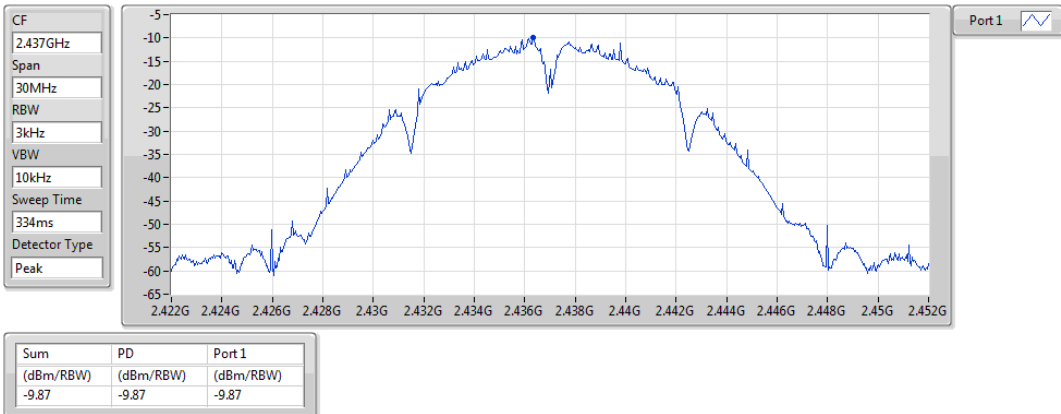
#### 2412MHz



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

PSD

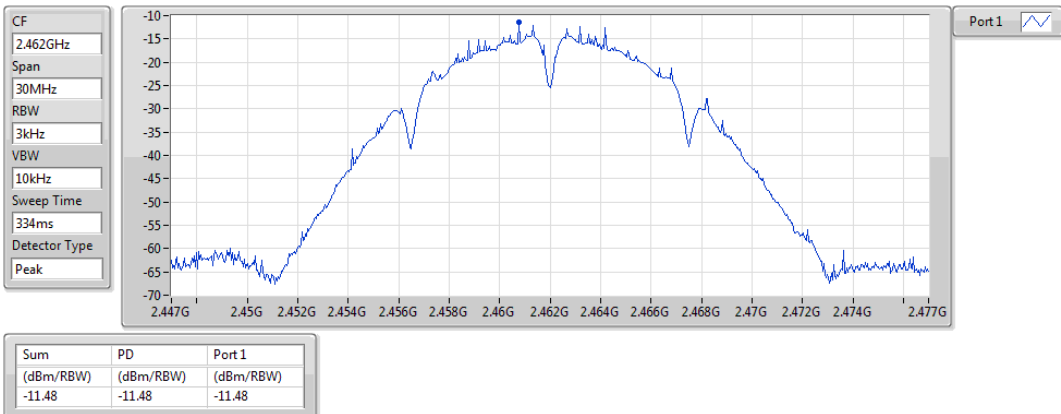
#### 2437MHz



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

PSD

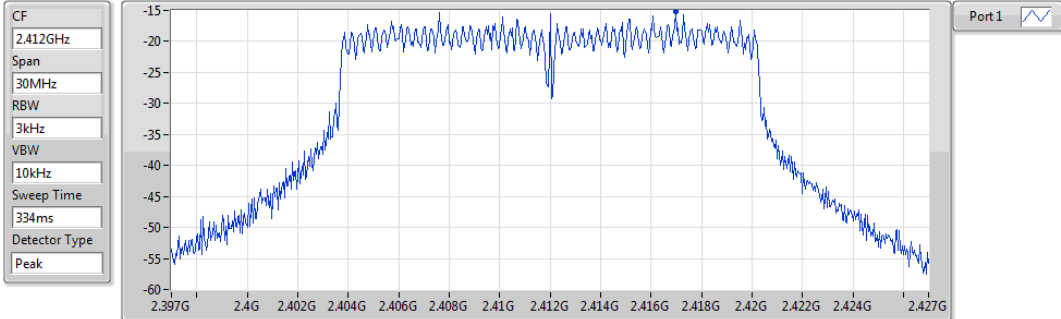
#### 2462MHz



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

PSD

2412MHz

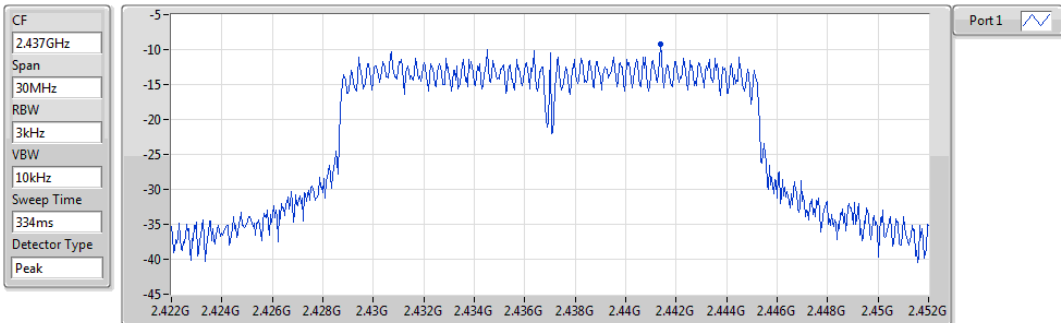


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-15.21	-15.21	-15.21

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

PSD

2437MHz

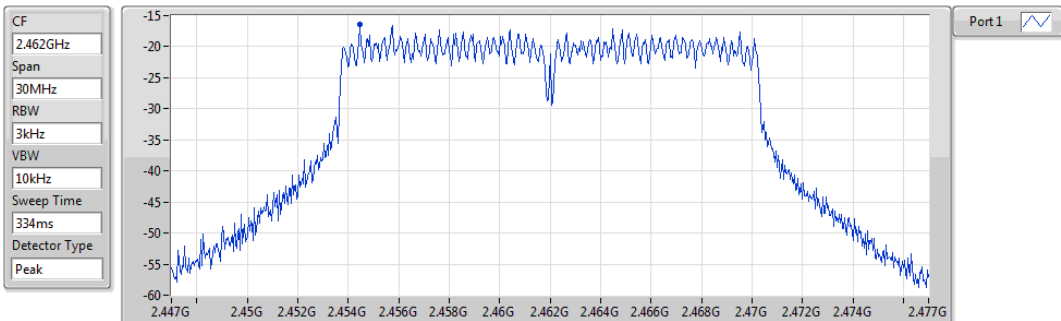


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-9.18	-9.18	-9.18

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

PSD

2462MHz

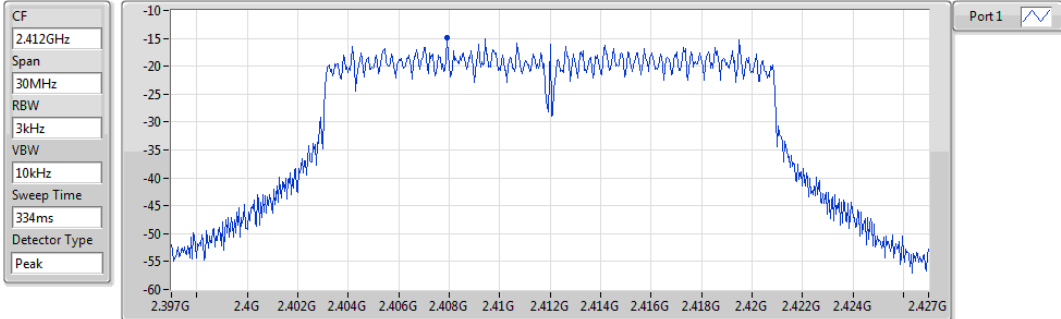


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-16.44	-16.44	-16.44

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

PSD

2412MHz

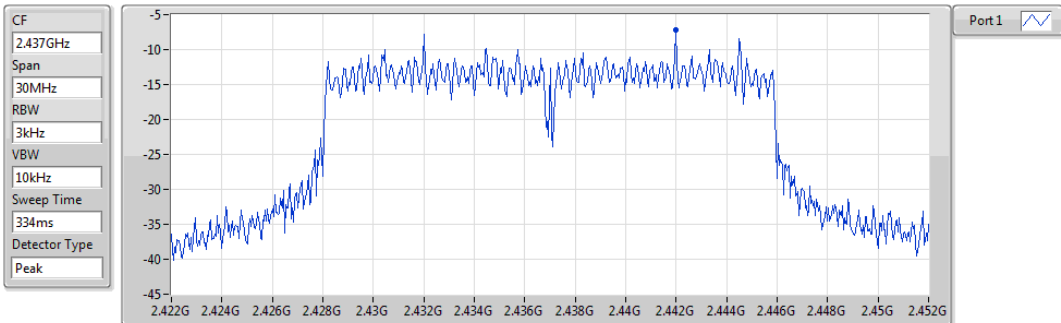


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-14.92	-14.92	-14.92

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

PSD

2437MHz

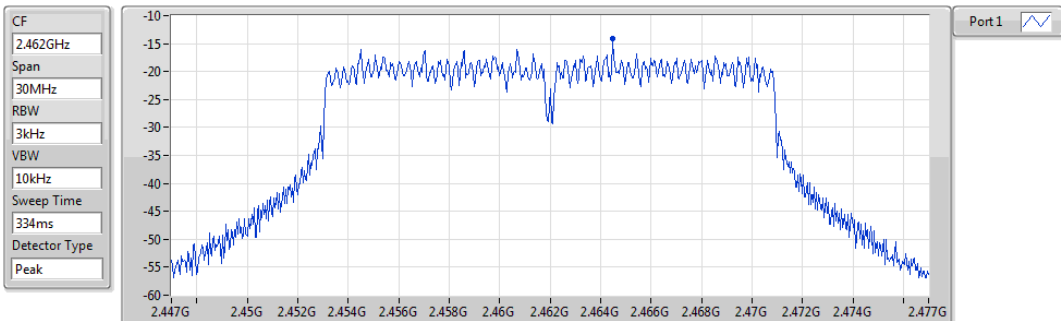


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-7.22	-7.22	-7.22

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

PSD

2462MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-14.03	-14.03	-14.03

## 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

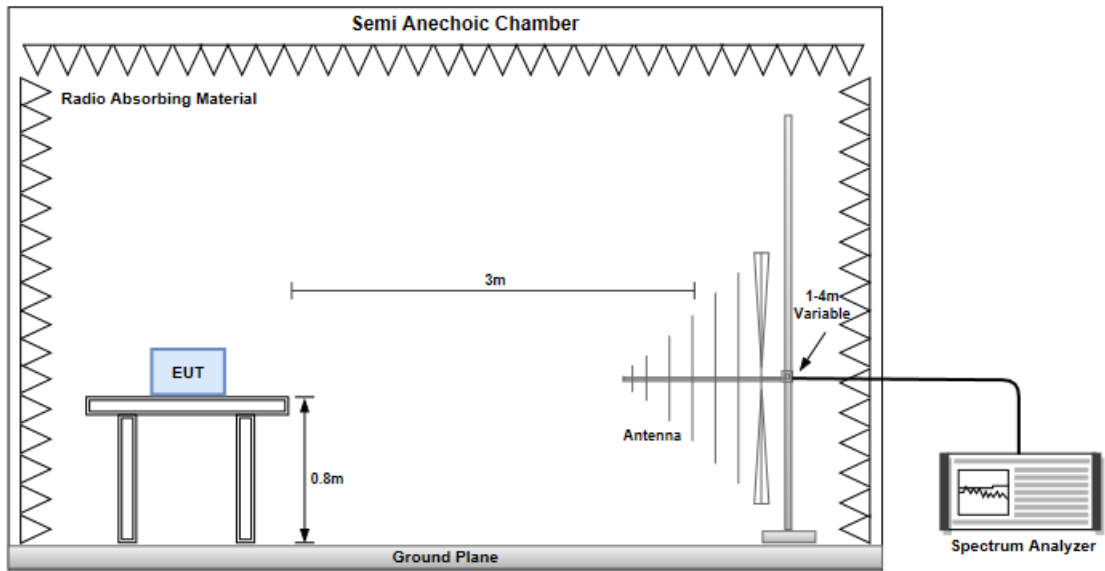
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission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

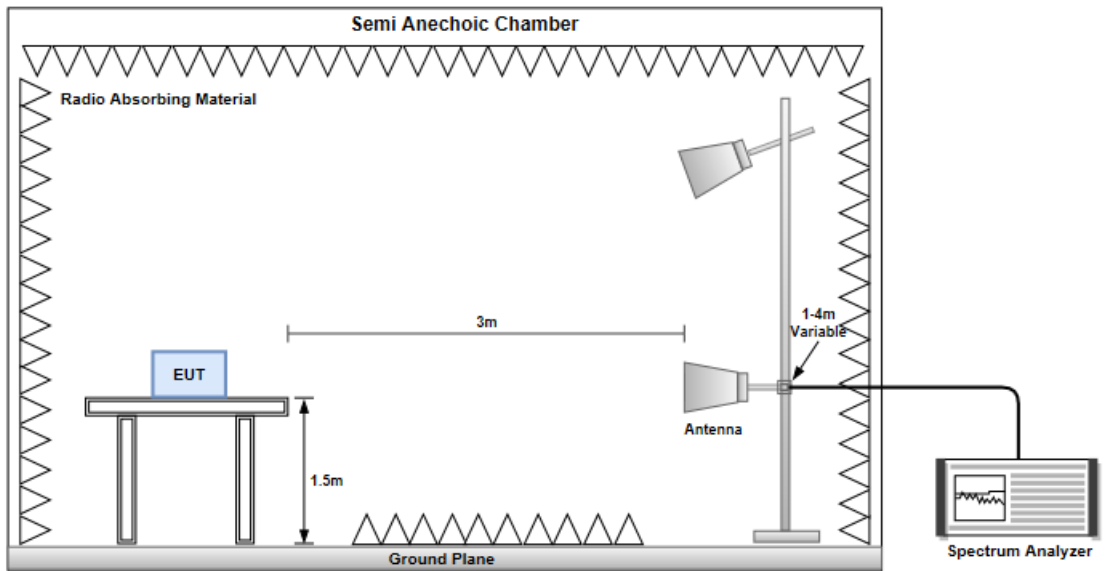
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

### 3.5.3 Test Setup

#### Radiated Emissions below 1 GHz



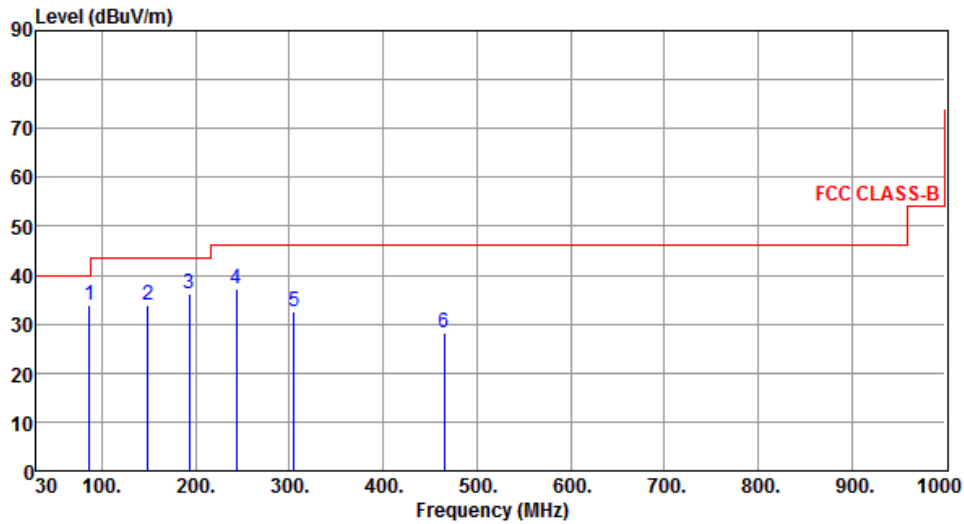
#### Radiated Emissions above 1 GHz



**Configuration 1: Dipole antenna (Antenna No.1), Y-plane.**

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

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



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	86.26	34.00	40.00	-6.00	47.88	-13.88	Peak	---	---
2	149.31	33.80	43.50	-9.70	42.16	-8.36	Peak	---	---
3	192.96	36.05	43.50	-7.45	46.90	-10.85	Peak	---	---
4	243.40	37.30	46.00	-8.70	46.73	-9.43	Peak	---	---
5	304.51	32.53	46.00	-13.47	40.08	-7.55	Peak	---	---
6	465.53	28.34	46.00	-17.66	31.71	-3.37	Peak	---	---

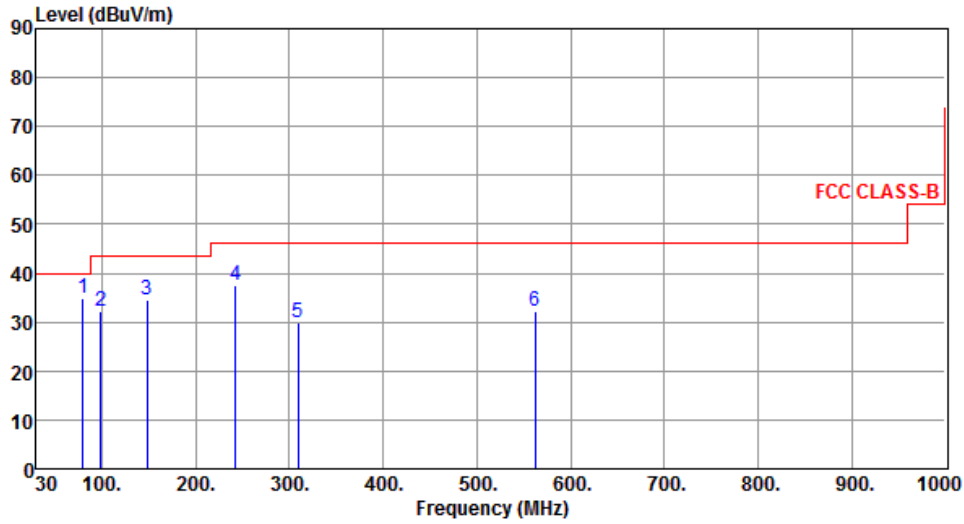
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

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



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	79.47	34.98	40.00	-5.02	47.68	-12.70	Peak	---	---
2	98.87	32.28	43.50	-11.22	45.95	-13.67	Peak	---	---
3	148.34	34.58	43.50	-8.92	42.98	-8.40	Peak	---	---
4	242.43	37.44	46.00	-8.56	46.89	-9.45	Peak	---	---
5	309.36	29.92	46.00	-16.08	37.33	-7.41	Peak	---	---
6	562.53	32.28	46.00	-13.72	33.70	-1.42	Peak	---	---

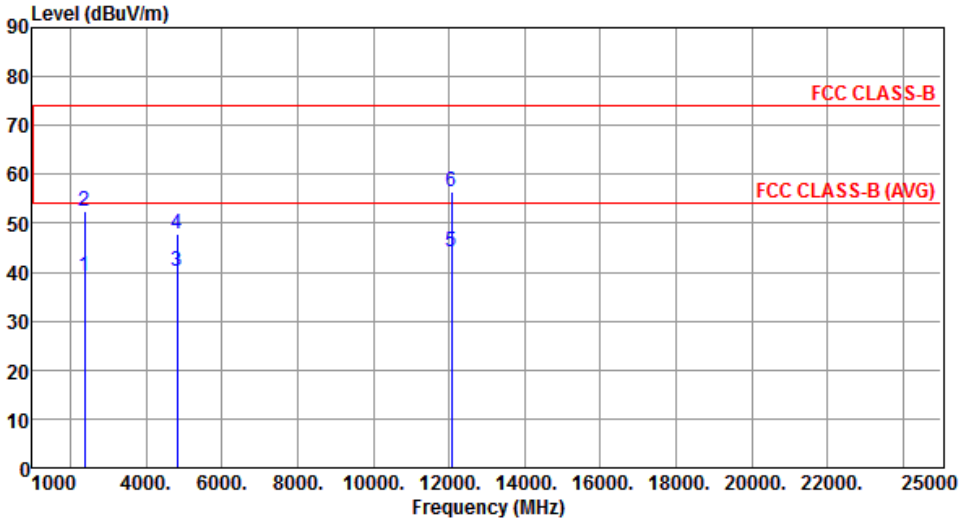
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

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

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

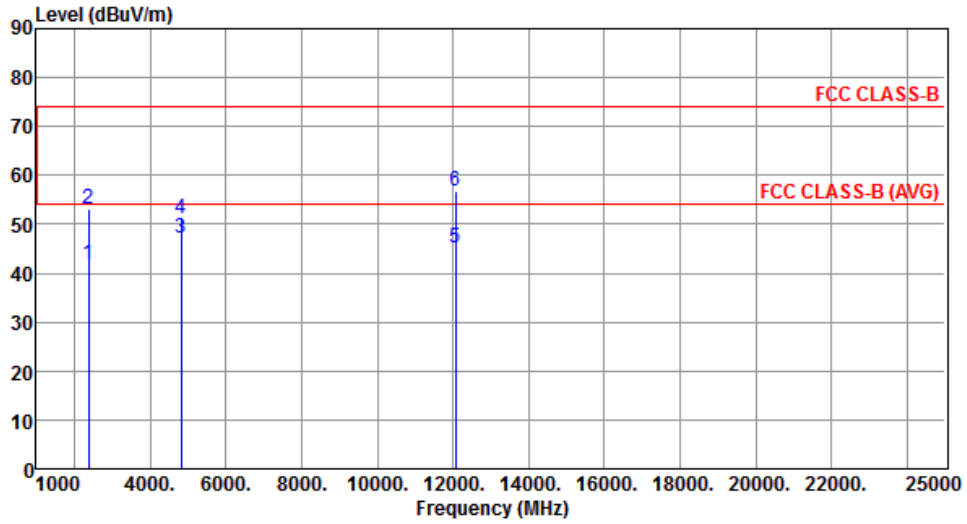
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

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

Modulation	11b	Test Freq. (MHz)	2412						
Polarization	Horizontal								
									
	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	39.30	54.00	-14.70	40.26	-0.96	Average	235	335
2	2390.00	52.59	74.00	-21.41	53.55	-0.96	Peak	235	335
3	4824.00	40.07	54.00	-13.93	35.20	4.87	Average	100	225
4	4824.00	47.97	74.00	-26.03	43.10	4.87	Peak	100	225
5	12060.00	44.04	54.00	-9.96	29.12	14.92	Average	100	295
6	12060.00	56.37	74.00	-17.63	41.45	14.92	Peak	100	295
<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		



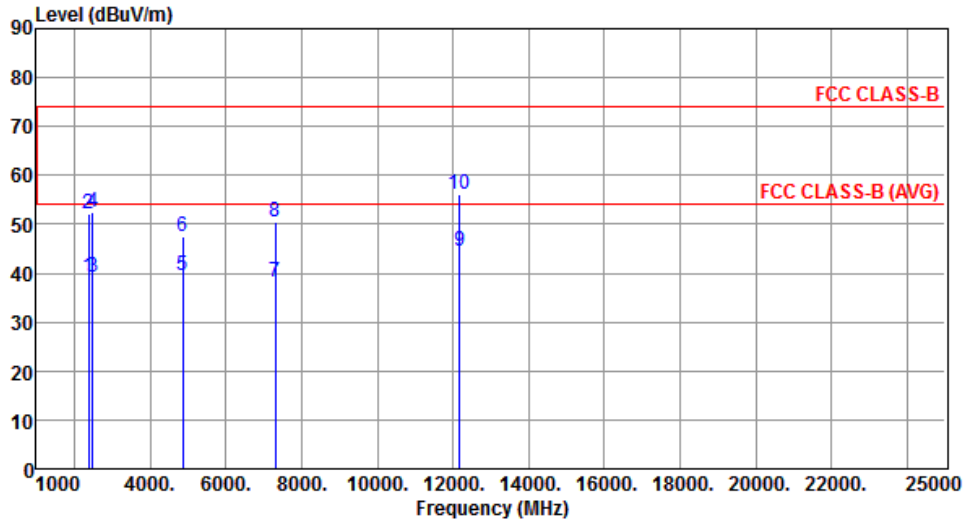
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	41.82	54.00	-12.18	42.78	-0.96	Average	100	283
2	2390.00	53.16	74.00	-20.84	54.12	-0.96	Peak	100	283
3	4824.00	47.24	54.00	-6.76	42.37	4.87	Average	239	163
4	4824.00	50.99	74.00	-23.01	46.12	4.87	Peak	239	163
5	12060.00	45.21	54.00	-8.79	30.29	14.92	Average	174	163
6	12060.00	56.90	74.00	-17.10	41.98	14.92	Peak	174	163

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		



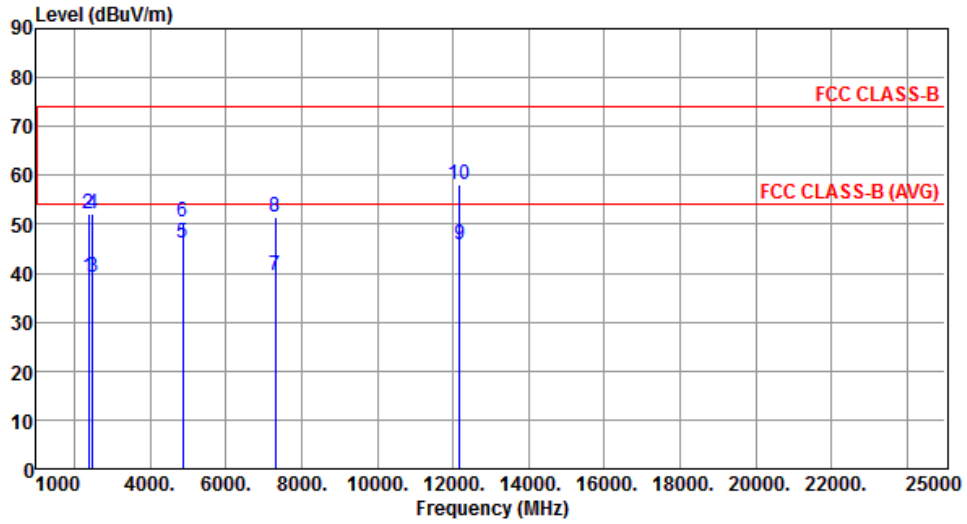
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	39.25	54.00	-14.75	40.21	-0.96	Average	234	331
2	2390.00	52.30	74.00	-21.70	53.26	-0.96	Peak	234	331
3	2483.50	39.04	54.00	-14.96	40.16	-1.12	Average	234	331
4	2483.50	52.52	74.00	-21.48	53.64	-1.12	Peak	234	331
5	4874.00	39.60	54.00	-14.40	34.69	4.91	Average	100	223
6	4874.00	47.55	74.00	-26.45	42.64	4.91	Peak	100	223
7	7311.00	38.15	54.00	-15.85	27.80	10.35	Average	100	100
8	7311.00	50.47	74.00	-23.53	40.12	10.35	Peak	100	100
9	12185.00	44.35	54.00	-9.65	29.49	14.86	Average	100	296
10	12185.00	56.24	74.00	-17.76	41.38	14.86	Peak	100	296

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		



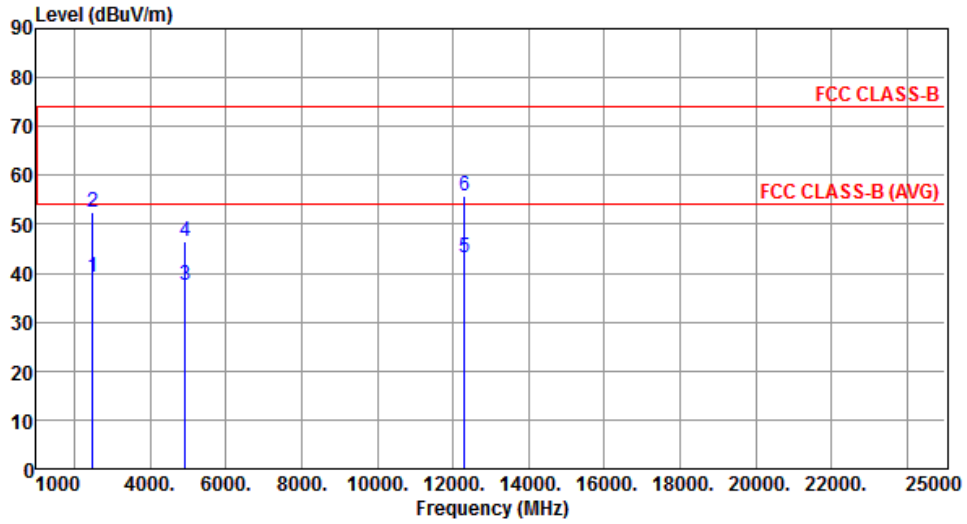
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	39.30	54.00	-14.70	40.26	-0.96	Average	100	294
2	2390.00	52.29	74.00	-21.71	53.25	-0.96	Peak	100	294
3	2483.50	39.07	54.00	-14.93	40.19	-1.12	Average	100	294
4	2483.50	52.19	74.00	-21.81	53.31	-1.12	Peak	100	294
5	4874.00	46.24	54.00	-7.76	41.33	4.91	Average	224	164
6	4874.00	50.63	74.00	-23.37	45.72	4.91	Peak	224	164
7	7311.00	39.55	54.00	-14.45	29.20	10.35	Average	100	206
8	7311.00	51.49	74.00	-22.51	41.14	10.35	Peak	100	206
9	12185.00	45.74	54.00	-8.26	30.88	14.86	Average	175	164
10	12185.00	57.98	74.00	-16.02	43.12	14.86	Peak	175	164

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		



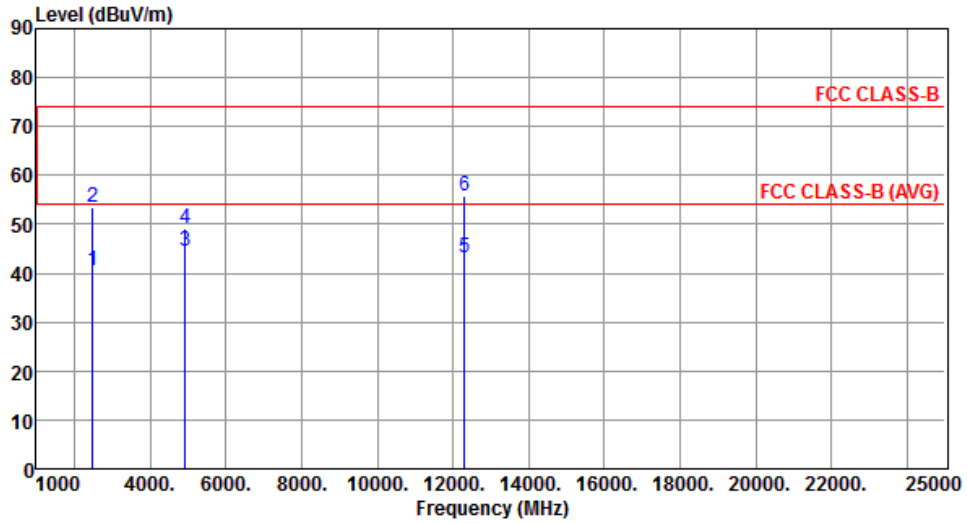
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	39.26	54.00	-14.74	40.38	-1.12	Average	235	333
2	2483.50	52.35	74.00	-21.65	53.47	-1.12	Peak	235	333
3	4924.00	37.69	54.00	-16.31	32.68	5.01	Average	100	224
4	4924.00	46.60	74.00	-27.40	41.59	5.01	Peak	100	224
5	12310.00	43.08	54.00	-10.92	28.45	14.63	Average	100	100
6	12310.00	55.84	74.00	-18.16	41.21	14.63	Peak	100	100

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		



	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	40.44	54.00	-13.56	41.56	-1.12	Average	100	281
2	2483.50	53.44	74.00	-20.56	54.56	-1.12	Peak	100	281
3	4924.00	44.45	54.00	-9.55	39.44	5.01	Average	234	163
4	4924.00	49.03	74.00	-24.97	44.02	5.01	Peak	234	163
5	12310.00	43.19	54.00	-10.81	28.56	14.63	Average	100	160
6	12310.00	55.86	74.00	-18.14	41.23	14.63	Peak	100	160

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

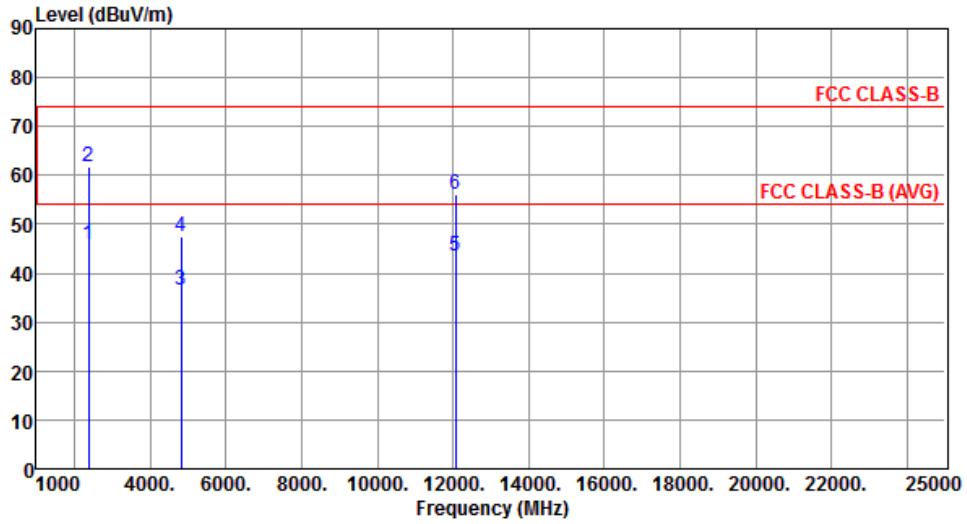
\*Factor includes antenna factor , cable loss and amplifier gain

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

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

Modulation	11g	Test Freq. (MHz)	2412						
Polarization	Horizontal								
	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	42.55	54.00	-11.45	43.51	-0.96	Average	149	326
2	2390.00	57.45	74.00	-16.55	58.41	-0.96	Peak	149	326
3	4824.00	33.10	54.00	-20.90	28.23	4.87	Average	100	30
4	4824.00	45.33	74.00	-28.67	40.46	4.87	Peak	100	30
5	12060.00	43.49	54.00	-10.51	28.57	14.92	Average	100	100
6	12060.00	56.31	74.00	-17.69	41.39	14.92	Peak	100	100
<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		



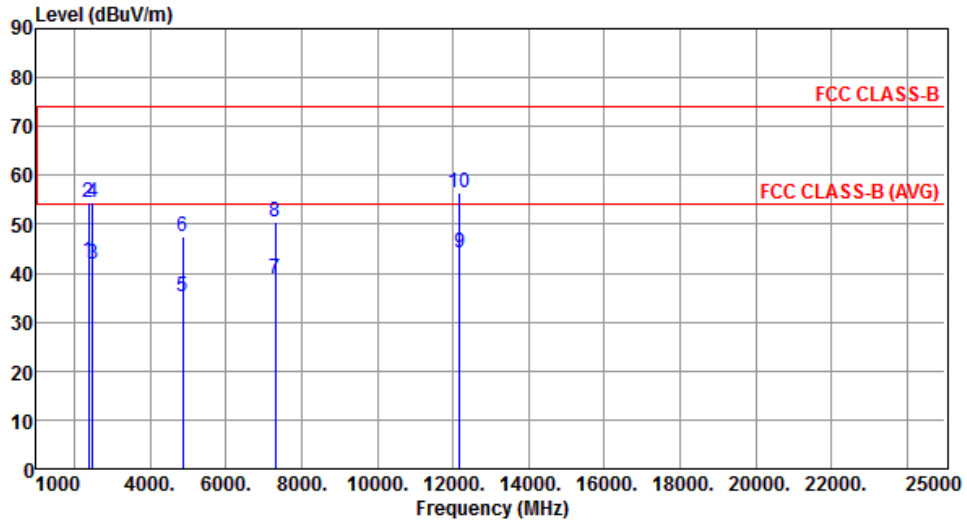
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	45.89	54.00	-8.11	46.85	-0.96	Average	100	292
2	2390.00	61.80	74.00	-12.20	62.76	-0.96	Peak	100	292
3	4824.00	36.42	54.00	-17.58	31.55	4.87	Average	225	175
4	4824.00	47.55	74.00	-26.45	42.68	4.87	Peak	225	175
5	12060.00	43.46	54.00	-10.54	28.54	14.92	Average	100	70
6	12060.00	56.20	74.00	-17.80	41.28	14.92	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>	11g	<b>Test Freq. (MHz)</b>	2437
<b>Polarization</b>	Horizontal		



	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	42.46	54.00	-11.54	43.42	-0.96	Average	152	323
2	2390.00	54.49	74.00	-19.51	55.45	-0.96	Peak	152	323
3	2483.50	41.70	54.00	-12.30	42.82	-1.12	Average	152	323
4	2483.50	54.44	74.00	-19.56	55.56	-1.12	Peak	152	323
5	4874.00	35.07	54.00	-18.93	30.16	4.91	Average	100	247
6	4874.00	47.60	74.00	-26.40	42.69	4.91	Peak	100	247
7	7311.00	38.91	54.00	-15.09	28.56	10.35	Average	100	50
8	7311.00	50.62	74.00	-23.38	40.27	10.35	Peak	100	50
9	12185.00	44.29	54.00	-9.71	29.43	14.86	Average	100	313
10	12185.00	56.32	74.00	-17.68	41.46	14.86	Peak	100	313

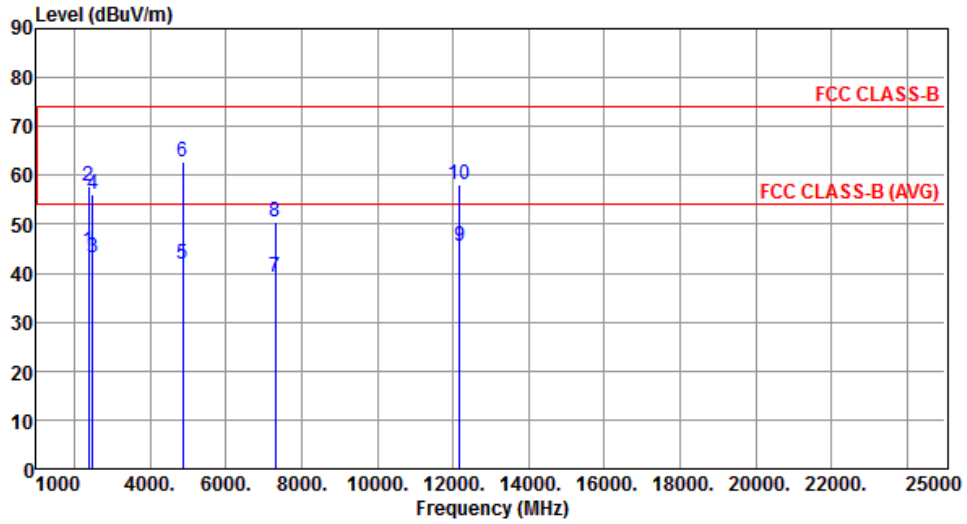
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*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		



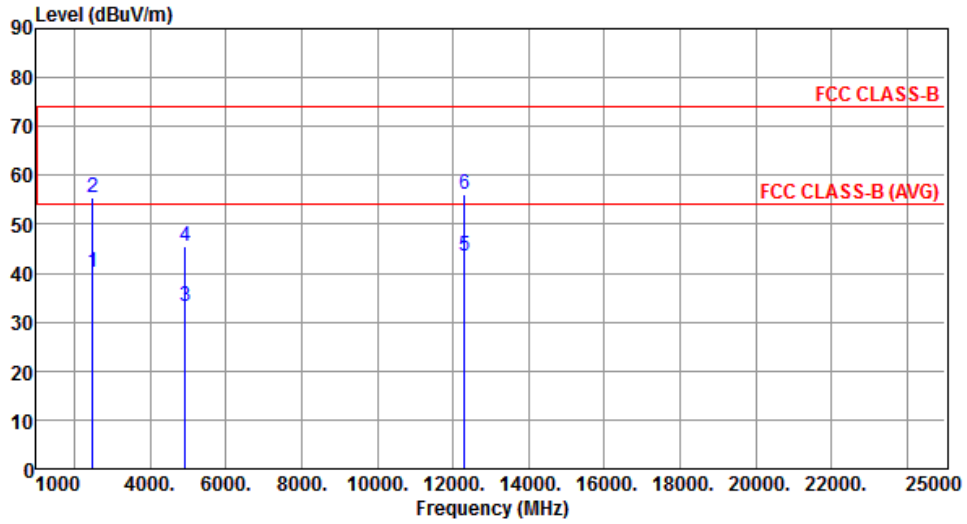
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	44.40	54.00	-9.60	45.36	-0.96	Average	100	284
2	2390.00	57.94	74.00	-16.06	58.90	-0.96	Peak	100	284
3	2483.50	43.03	54.00	-10.97	44.15	-1.12	Average	100	284
4	2483.50	56.20	74.00	-17.80	57.32	-1.12	Peak	100	284
5	4874.00	41.76	54.00	-12.24	36.85	4.91	Average	234	171
6	4874.00	62.67	74.00	-11.33	57.76	4.91	Peak	234	171
7	7311.00	39.08	54.00	-14.92	28.73	10.35	Average	100	30
8	7311.00	50.61	74.00	-23.39	40.26	10.35	Peak	100	30
9	12185.00	45.61	54.00	-8.39	30.75	14.86	Average	134	171
10	12185.00	58.18	74.00	-15.82	43.32	14.86	Peak	134	171

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		



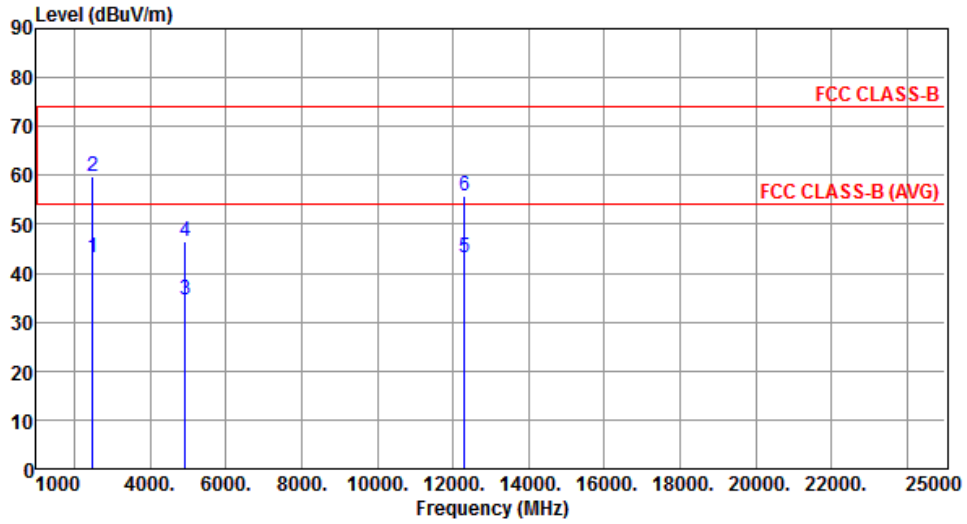
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	40.19	54.00	-13.81	41.31	-1.12	Average	143	326
2	2483.50	55.46	74.00	-18.54	56.58	-1.12	Peak	143	326
3	4924.00	33.13	54.00	-20.87	28.12	5.01	Average	100	30
4	4924.00	45.55	74.00	-28.45	40.54	5.01	Peak	100	30
5	12310.00	43.37	54.00	-10.63	28.74	14.63	Average	100	315
6	12310.00	56.08	74.00	-17.92	41.45	14.63	Peak	100	315

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		



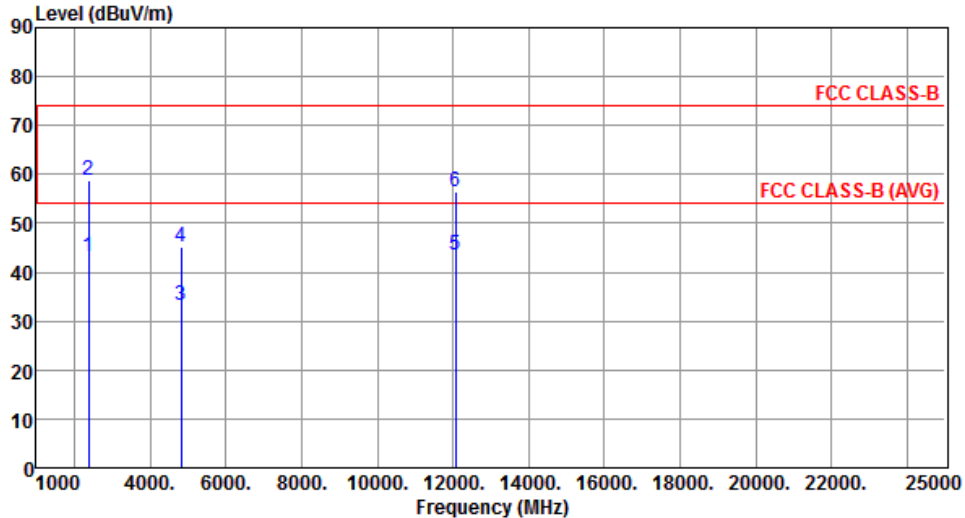
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	43.14	54.00	-10.86	44.26	-1.12	Average	100	290
2	2483.50	59.73	74.00	-14.27	60.85	-1.12	Peak	100	290
3	4924.00	34.46	54.00	-19.54	29.45	5.01	Average	200	170
4	4924.00	46.59	74.00	-27.41	41.58	5.01	Peak	200	170
5	12310.00	43.17	54.00	-10.83	28.54	14.63	Average	100	160
6	12310.00	55.92	74.00	-18.08	41.29	14.63	Peak	100	160

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

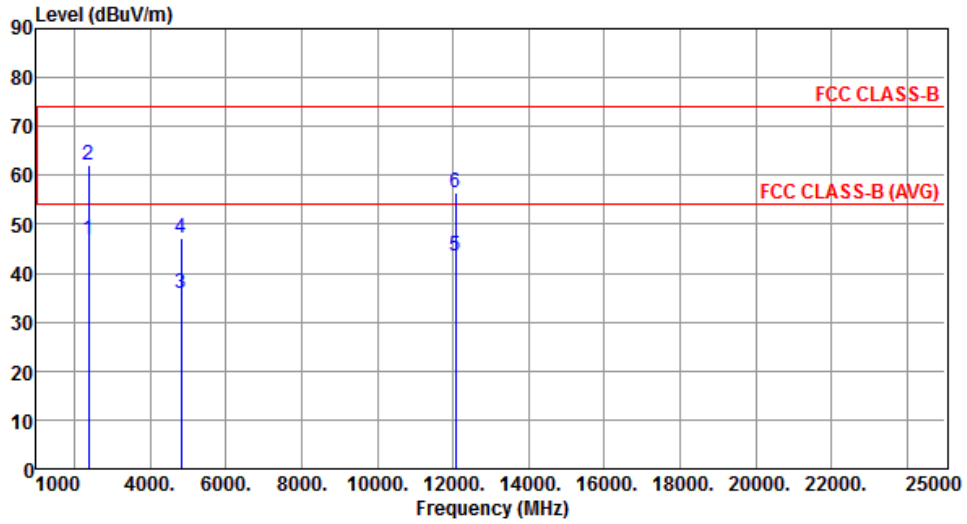
\*Factor includes antenna factor , cable loss and amplifier gain

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

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

Modulation	HT20	Test Freq. (MHz)	2412						
Polarization	Horizontal								
									
	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	43.30	54.00	-10.70	44.26	-0.96	Average	140	328
2	2390.00	58.69	74.00	-15.31	59.65	-0.96	Peak	140	328
3	4824.00	33.32	54.00	-20.68	28.45	4.87	Average	100	50
4	4824.00	45.12	74.00	-28.88	40.25	4.87	Peak	100	50
5	12060.00	43.57	54.00	-10.43	28.65	14.92	Average	100	90
6	12060.00	56.55	74.00	-17.45	41.63	14.92	Peak	100	90
<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		



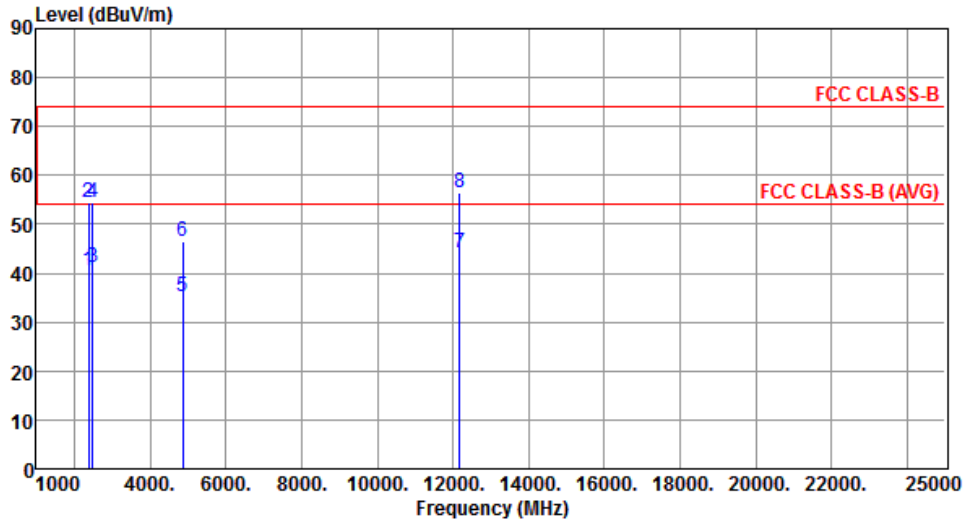
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	46.75	54.00	-7.25	47.71	-0.96	Average	100	292
2	2390.00	62.18	74.00	-11.82	63.14	-0.96	Peak	100	292
3	4824.00	35.88	54.00	-18.12	31.01	4.87	Average	220	179
4	4824.00	47.10	74.00	-26.90	42.23	4.87	Peak	220	179
5	12060.00	43.49	54.00	-10.51	28.57	14.92	Average	100	60
6	12060.00	56.31	74.00	-17.69	41.39	14.92	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>	2437
<b>Polarization</b>	Horizontal		



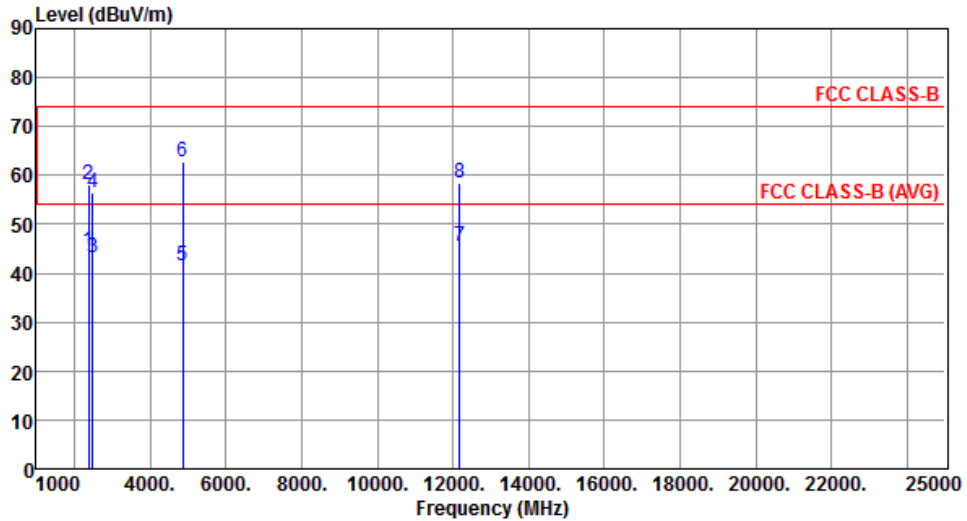
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	40.40	54.00	-13.60	41.36	-0.96	Average	148	326
2	2390.00	54.50	74.00	-19.50	55.46	-0.96	Peak	148	326
3	2483.50	41.09	54.00	-12.91	42.21	-1.12	Average	148	326
4	2483.50	54.30	74.00	-19.70	55.42	-1.12	Peak	148	326
5	4874.00	35.12	54.00	-18.88	30.21	4.91	Average	100	250
6	4874.00	46.49	74.00	-27.51	41.58	4.91	Peak	100	250
7	12185.00	44.01	54.00	-9.99	29.15	14.86	Average	100	300
8	12185.00	56.43	74.00	-17.57	41.57	14.86	Peak	100	300

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		



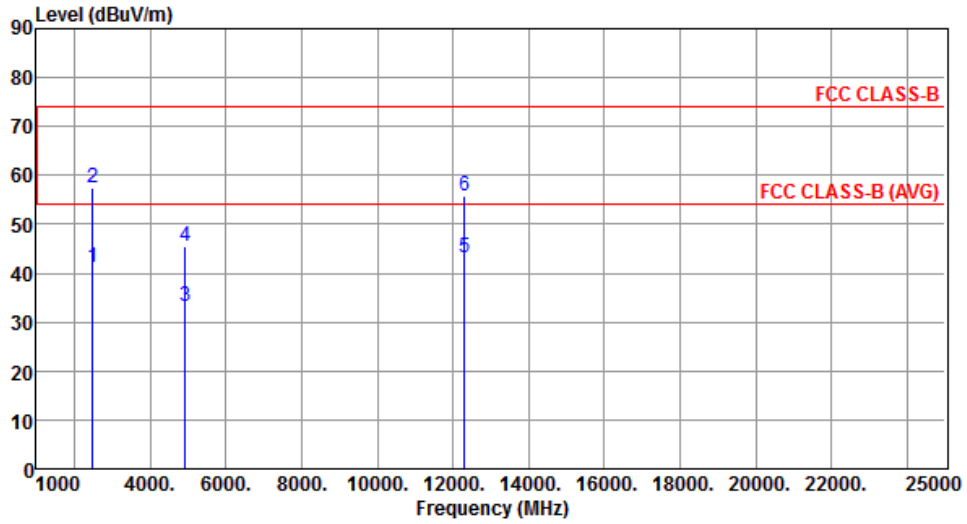
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	44.46	54.00	-9.54	45.42	-0.96	Average	100	285
2	2390.00	58.16	74.00	-15.84	59.12	-0.96	Peak	100	285
3	2483.50	43.17	54.00	-10.83	44.29	-1.12	Average	100	285
4	2483.50	56.56	74.00	-17.44	57.68	-1.12	Peak	100	285
5	4874.00	41.65	54.00	-12.35	36.74	4.91	Average	235	172
6	4874.00	62.60	74.00	-11.40	57.69	4.91	Peak	235	172
7	12185.00	45.51	54.00	-8.49	30.65	14.86	Average	135	179
8	12185.00	58.43	74.00	-15.57	43.57	14.86	Peak	135	179

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		



	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	41.06	54.00	-12.94	42.18	-1.12	Average	146	329
2	2483.50	57.35	74.00	-16.65	58.47	-1.12	Peak	146	329
3	4924.00	33.25	54.00	-20.75	28.24	5.01	Average	100	60
4	4924.00	45.48	74.00	-28.52	40.47	5.01	Peak	100	60
5	12310.00	43.32	54.00	-10.68	28.69	14.63	Average	100	30
6	12310.00	55.88	74.00	-18.12	41.25	14.63	Peak	100	30

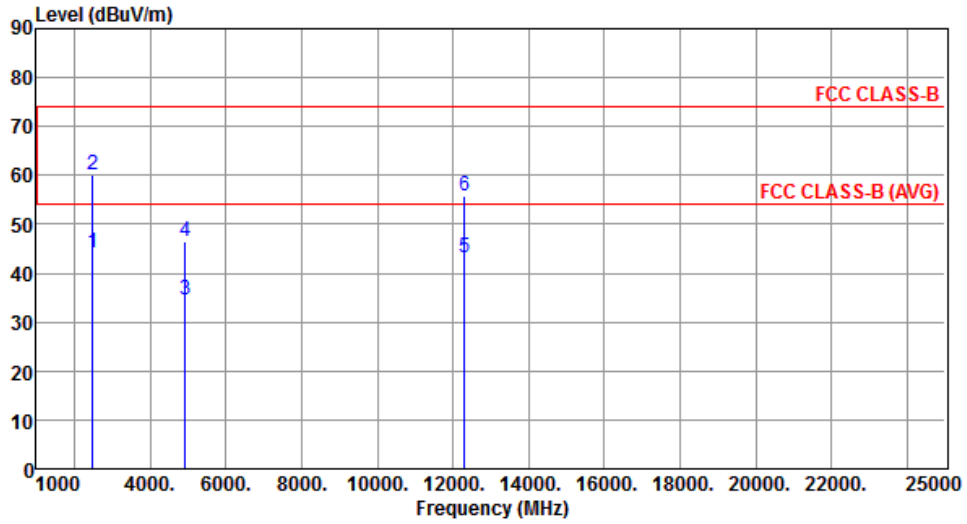
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*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		



	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	44.19	54.00	-9.81	45.31	-1.12	Average	100	291
2	2483.50	60.11	74.00	-13.89	61.23	-1.12	Peak	100	291
3	4924.00	34.62	54.00	-19.38	29.61	5.01	Average	190	166
4	4924.00	46.37	74.00	-27.63	41.36	5.01	Peak	190	166
5	12310.00	43.16	54.00	-10.84	28.53	14.63	Average	100	90
6	12310.00	55.96	74.00	-18.04	41.33	14.63	Peak	100	90

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

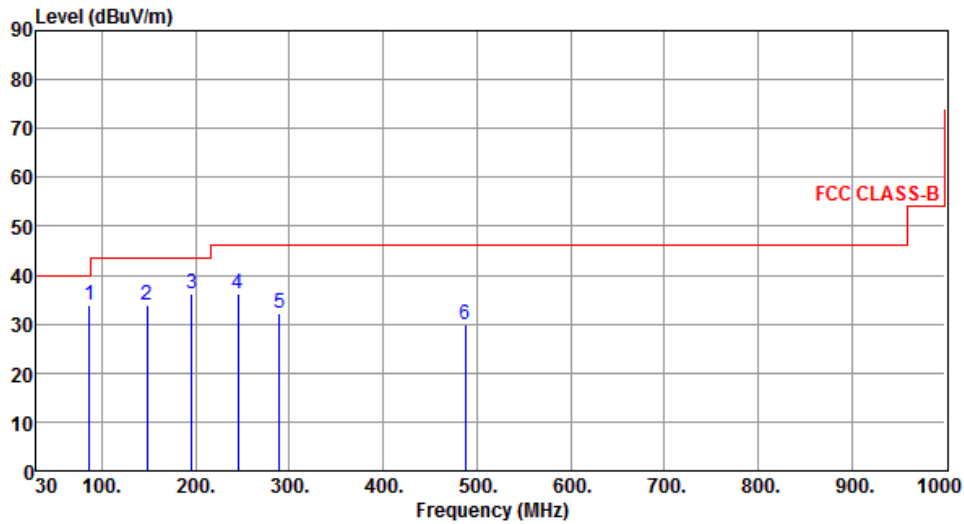
\*Factor includes antenna factor , cable loss and amplifier gain

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

**Configuration 2 : PCB Dipole antenna (Antenna No.4) , Y-plane**

**3.5.8 Transmitter Radiated Unwanted Emissions (Below 1GHz)**

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



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	86.26	33.77	40.00	-6.23	47.65	-13.88	Peak	---	---
2	148.34	33.80	43.50	-9.70	42.20	-8.40	Peak	---	---
3	195.87	36.33	43.50	-7.17	47.26	-10.93	Peak	---	---
4	245.34	36.34	46.00	-9.66	45.71	-9.37	Peak	---	---
5	288.99	32.12	46.00	-13.88	40.05	-7.93	Peak	---	---
6	487.84	29.85	46.00	-16.15	32.85	-3.00	Peak	---	---

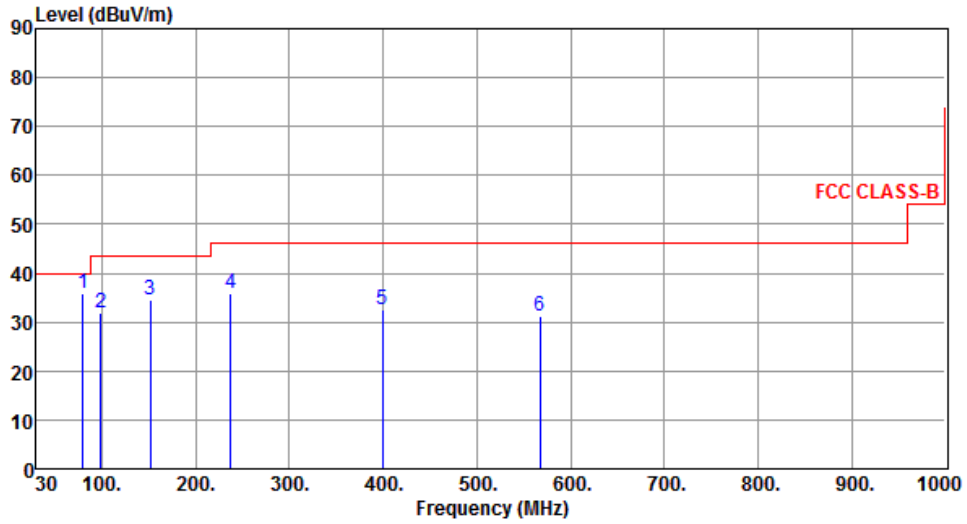
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

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



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	79.47	35.87	40.00	-4.13	48.57	-12.70	Peak	---	---
2	98.87	31.95	43.50	-11.55	45.62	-13.67	Peak	---	---
3	151.25	34.61	43.50	-8.89	42.93	-8.32	Peak	---	---
4	237.58	36.01	46.00	-9.99	45.70	-9.69	Peak	---	---
5	399.57	32.66	46.00	-13.34	37.59	-4.93	Peak	---	---
6	567.38	31.18	46.00	-14.82	32.46	-1.28	Peak	---	---

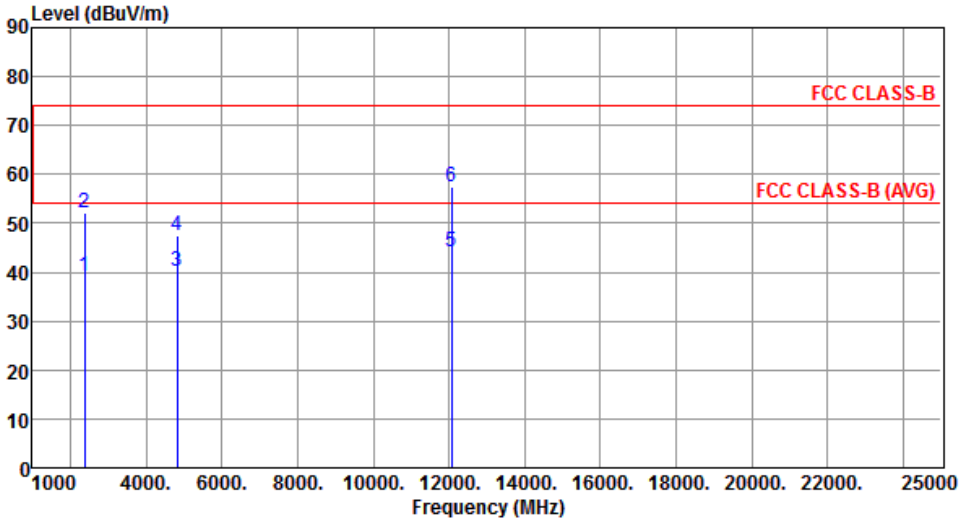
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

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

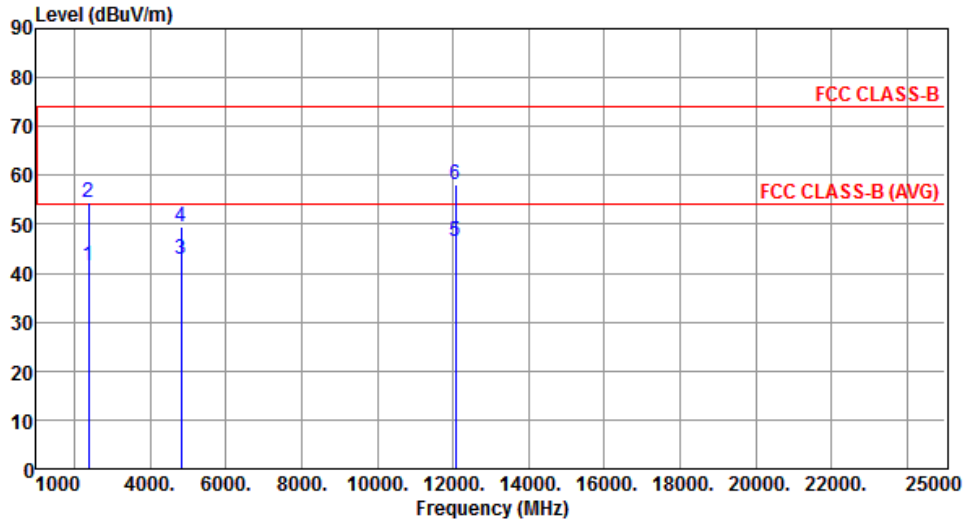
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

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

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

Modulation	11b	Test Freq. (MHz)	2412						
Polarization	Horizontal								
									
	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	39.25	54.00	-14.75	40.21	-0.96	Average	100	305
2	2390.00	52.16	74.00	-21.84	53.12	-0.96	Peak	100	305
3	4824.00	40.02	54.00	-13.98	35.15	4.87	Average	100	59
4	4824.00	47.45	74.00	-26.55	42.58	4.87	Peak	100	59
5	12060.00	44.06	54.00	-9.94	29.14	14.92	Average	149	54
6	12060.00	57.30	74.00	-16.70	42.38	14.92	Peak	149	54
<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		



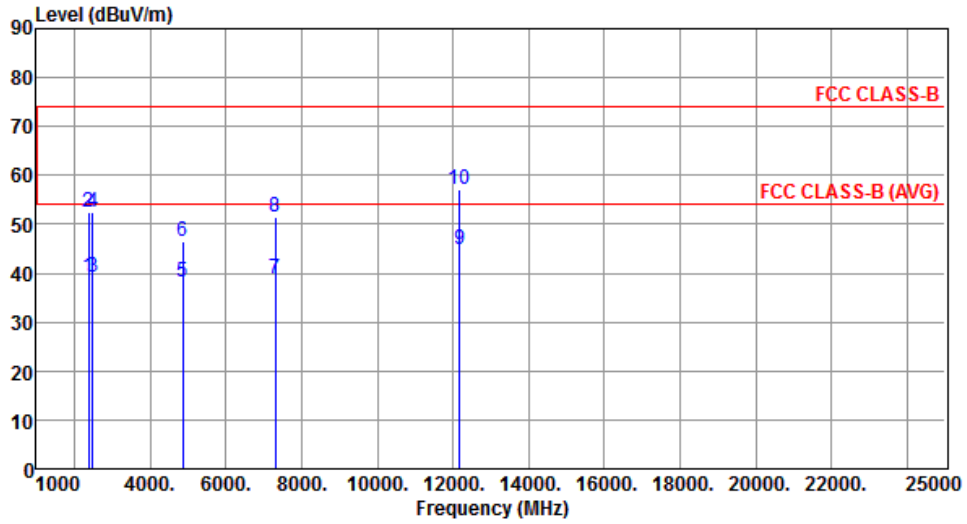
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	41.37	54.00	-12.63	42.33	-0.96	Average	267	270
2	2390.00	54.58	74.00	-19.42	55.54	-0.96	Peak	267	270
3	4824.00	42.98	54.00	-11.02	38.11	4.87	Average	100	316
4	4824.00	49.44	74.00	-24.56	44.57	4.87	Peak	100	316
5	12060.00	46.37	54.00	-7.63	31.45	14.92	Average	215	125
6	12060.00	58.16	74.00	-15.84	43.24	14.92	Peak	215	125

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		



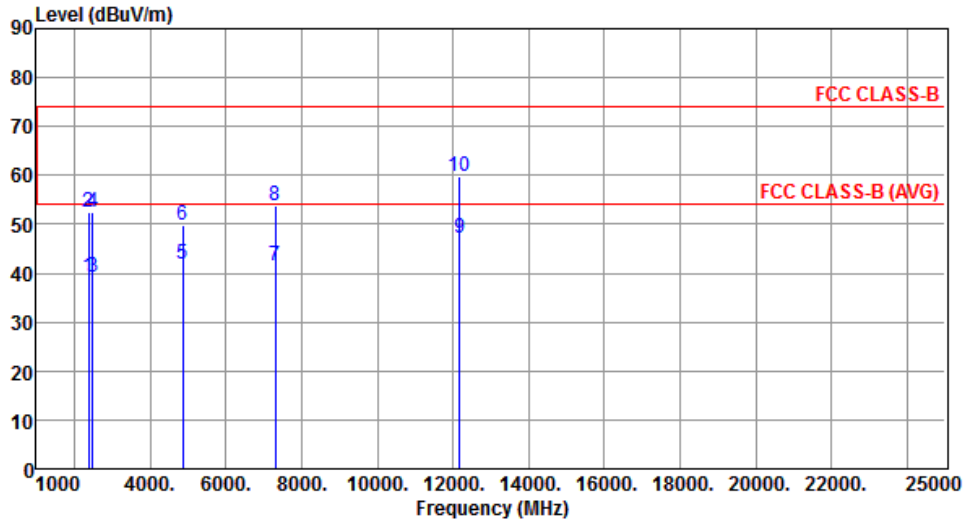
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	39.33	54.00	-14.67	40.29	-0.96	Average	107	304
2	2390.00	52.62	74.00	-21.38	53.58	-0.96	Peak	107	304
3	2483.50	39.15	54.00	-14.85	40.27	-1.12	Average	107	304
4	2483.50	52.50	74.00	-21.50	53.62	-1.12	Peak	107	304
5	4874.00	38.33	54.00	-15.67	33.42	4.91	Average	100	63
6	4874.00	46.35	74.00	-27.65	41.44	4.91	Peak	100	63
7	7311.00	38.87	54.00	-15.13	28.52	10.35	Average	100	50
8	7311.00	51.44	74.00	-22.56	41.09	10.35	Peak	100	50
9	12185.00	44.74	54.00	-9.26	29.88	14.86	Average	153	52
10	12185.00	57.14	74.00	-16.86	42.28	14.86	Peak	153	52

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		



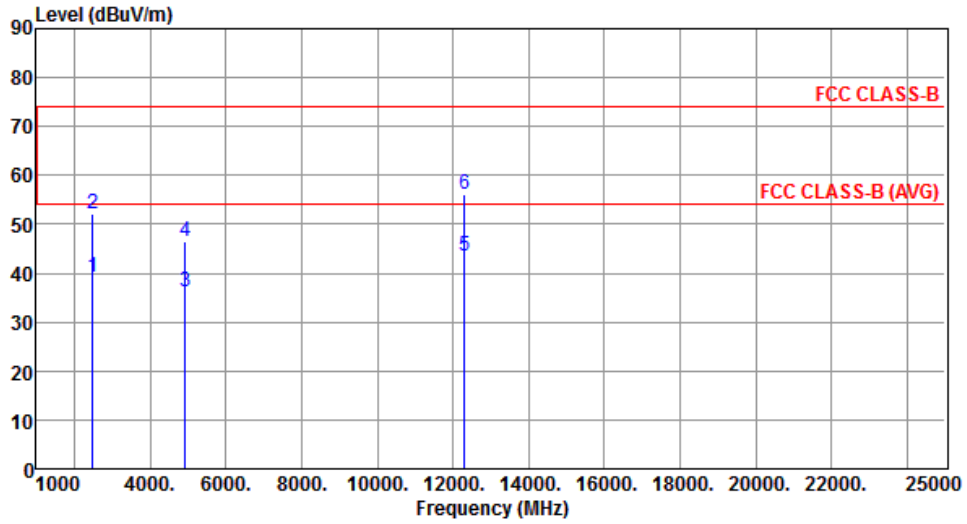
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	39.30	54.00	-14.70	40.26	-0.96	Average	267	267
2	2390.00	52.49	74.00	-21.51	53.45	-0.96	Peak	267	267
3	2483.50	39.27	54.00	-14.73	40.39	-1.12	Average	267	267
4	2483.50	52.35	74.00	-21.65	53.47	-1.12	Peak	267	267
5	4874.00	41.97	54.00	-12.03	37.06	4.91	Average	100	315
6	4874.00	49.84	74.00	-24.16	44.93	4.91	Peak	100	315
7	7311.00	41.66	54.00	-12.34	31.31	10.35	Average	119	130
8	7311.00	53.84	74.00	-20.16	43.49	10.35	Peak	119	130
9	12185.00	47.18	54.00	-6.82	32.32	14.86	Average	213	123
10	12185.00	59.77	74.00	-14.23	44.91	14.86	Peak	213	123

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		



	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	39.13	54.00	-14.87	40.25	-1.12	Average	102	307
2	2483.50	52.05	74.00	-21.95	53.17	-1.12	Peak	102	307
3	4924.00	36.27	54.00	-17.73	31.26	5.01	Average	100	60
4	4924.00	46.59	74.00	-27.41	41.58	5.01	Peak	100	60
5	12310.00	43.48	54.00	-10.52	28.85	14.63	Average	100	60
6	12310.00	56.02	74.00	-17.98	41.39	14.63	Peak	100	60

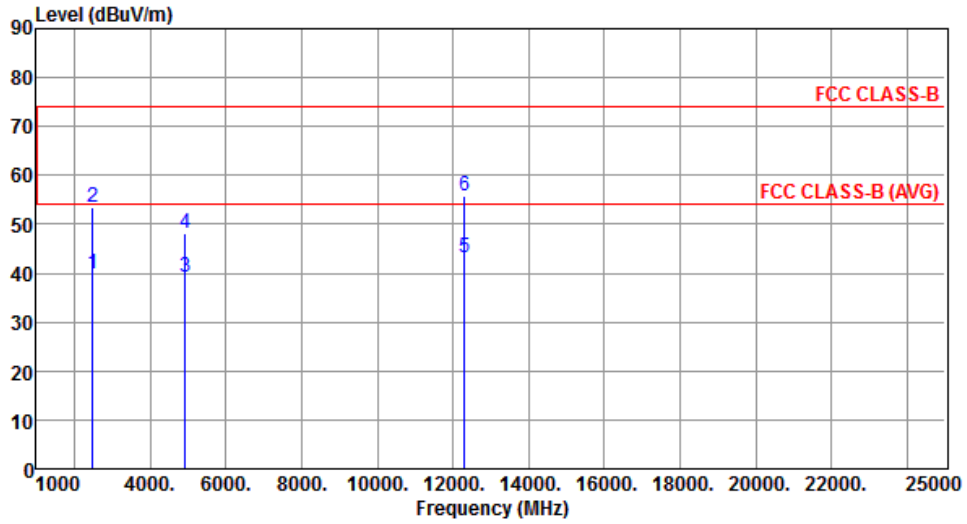
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

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

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



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



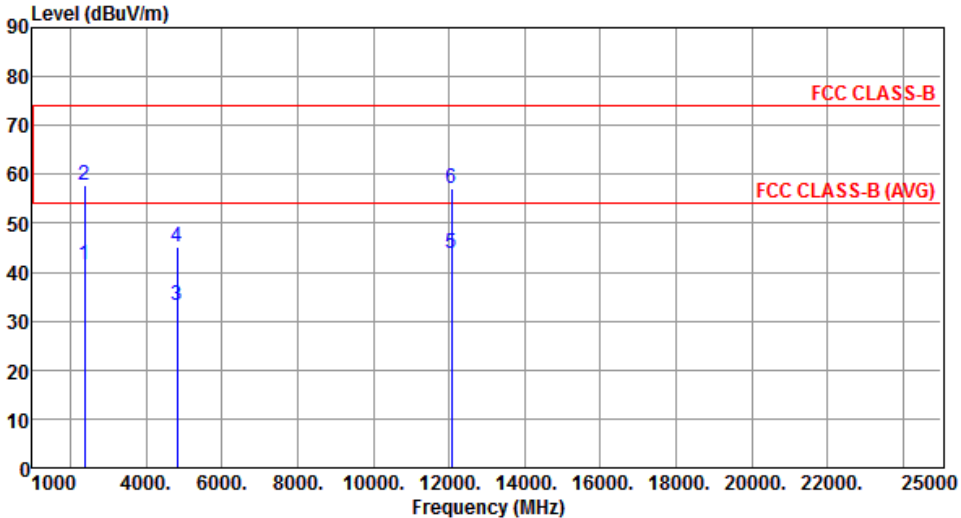
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	39.99	54.00	-14.01	41.11	-1.12	Average	304	260
2	2483.50	53.33	74.00	-20.67	54.45	-1.12	Peak	304	260
3	4924.00	39.03	54.00	-14.97	34.02	5.01	Average	100	317
4	4924.00	48.16	74.00	-25.84	43.15	5.01	Peak	100	317
5	12310.00	43.18	54.00	-10.82	28.55	14.63	Average	100	125
6	12310.00	55.90	74.00	-18.10	41.27	14.63	Peak	100	125

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

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

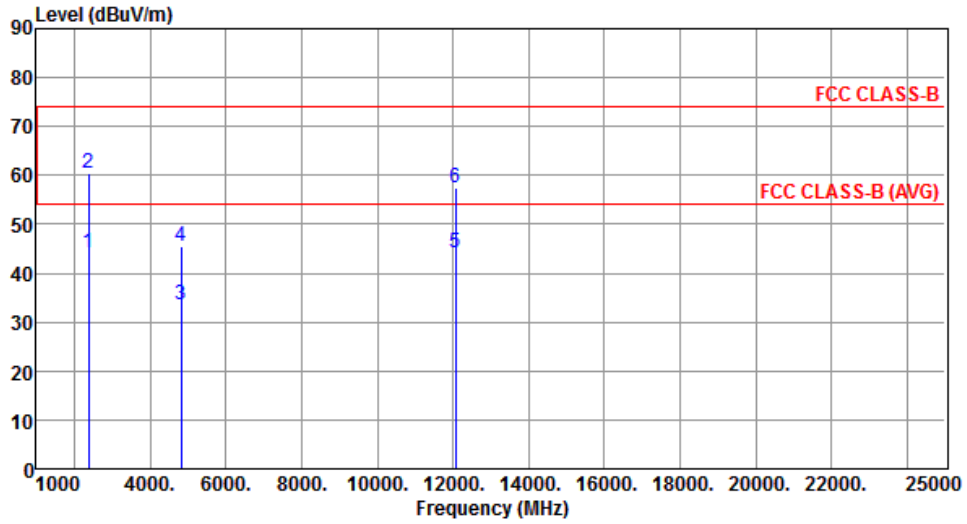
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

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

Modulation	11g	Test Freq. (MHz)	2412						
Polarization	Horizontal								
									
	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	41.38	54.00	-12.62	42.34	-0.96	Average	115	307
2	2390.00	57.69	74.00	-16.31	58.65	-0.96	Peak	115	307
3	4824.00	33.31	54.00	-20.69	28.44	4.87	Average	100	100
4	4824.00	45.12	74.00	-28.88	40.25	4.87	Peak	100	100
5	12060.00	43.98	54.00	-10.02	29.06	14.92	Average	100	60
6	12060.00	57.25	74.00	-16.75	42.33	14.92	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>	2412
<b>Polarization</b>	Vertical		



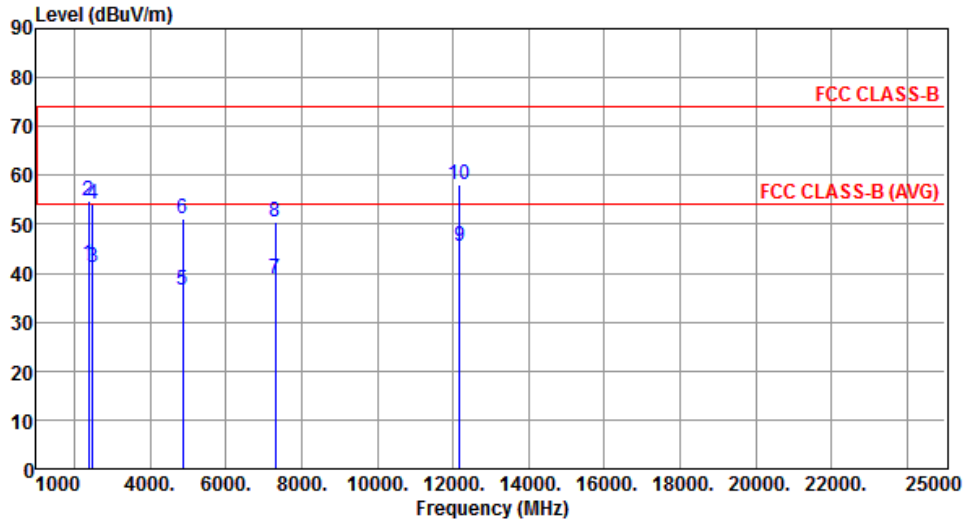
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	44.24	54.00	-9.76	45.20	-0.96	Average	294	268
2	2390.00	60.41	74.00	-13.59	61.37	-0.96	Peak	294	268
3	4824.00	33.51	54.00	-20.49	28.64	4.87	Average	100	190
4	4824.00	45.55	74.00	-28.45	40.68	4.87	Peak	100	190
5	12060.00	44.07	54.00	-9.93	29.15	14.92	Average	100	120
6	12060.00	57.49	74.00	-16.51	42.57	14.92	Peak	100	120

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		



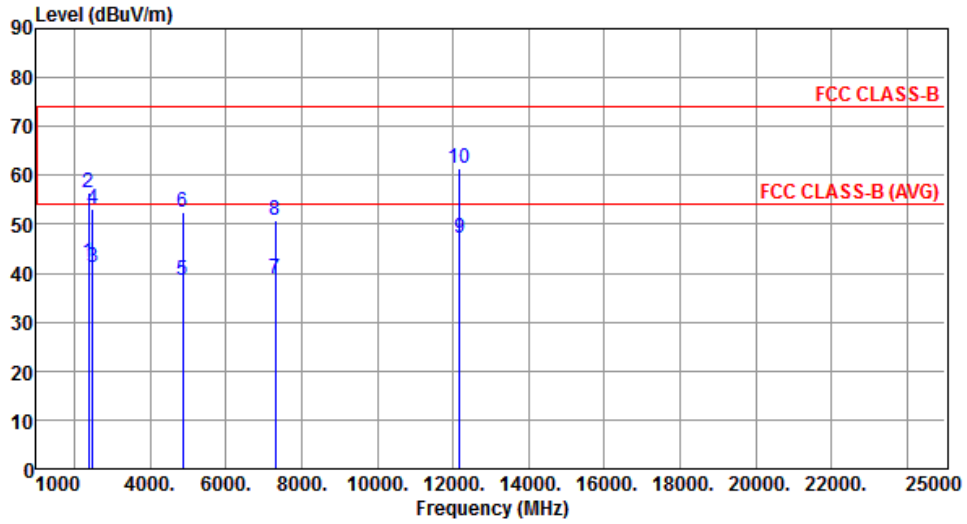
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	41.84	54.00	-12.16	42.80	-0.96	Average	112	305
2	2390.00	54.77	74.00	-19.23	55.73	-0.96	Peak	112	305
3	2483.50	41.13	54.00	-12.87	42.25	-1.12	Average	112	305
4	2483.50	53.98	74.00	-20.02	55.10	-1.12	Peak	112	305
5	4874.00	36.42	54.00	-17.58	31.51	4.91	Average	100	126
6	4874.00	51.04	74.00	-22.96	46.13	4.91	Peak	100	126
7	7311.00	38.76	54.00	-15.24	28.41	10.35	Average	100	30
8	7311.00	50.61	74.00	-23.39	40.26	10.35	Peak	100	30
9	12185.00	45.63	54.00	-8.37	30.77	14.86	Average	100	44
10	12185.00	58.03	74.00	-15.97	43.17	14.86	Peak	100	44

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		



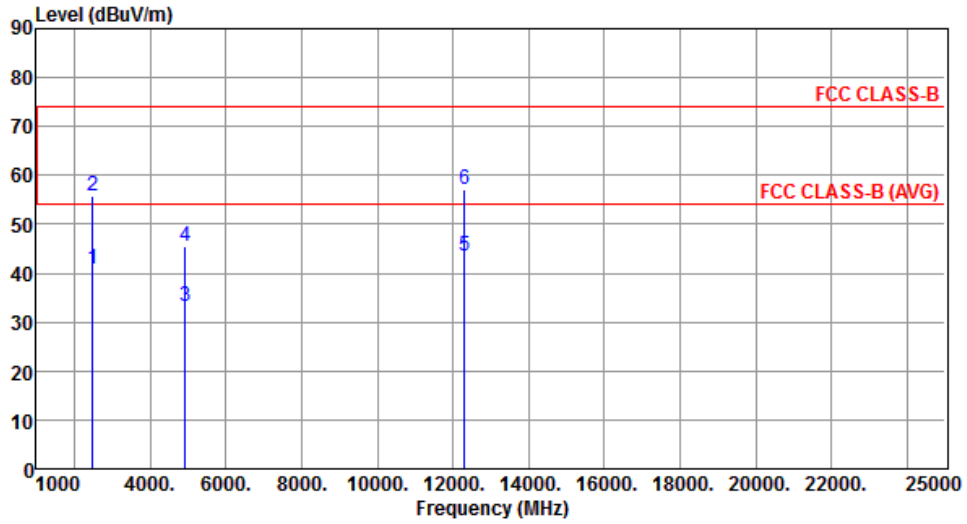
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	42.27	54.00	-11.73	43.23	-0.96	Average	267	269
2	2390.00	56.48	74.00	-17.52	57.44	-0.96	Peak	267	269
3	2483.50	41.30	54.00	-12.70	42.42	-1.12	Average	267	269
4	2483.50	53.03	74.00	-20.97	54.15	-1.12	Peak	267	269
5	4874.00	38.39	54.00	-15.61	33.48	4.91	Average	100	192
6	4874.00	52.41	74.00	-21.59	47.50	4.91	Peak	100	192
7	7311.00	38.81	54.00	-15.19	28.46	10.35	Average	100	60
8	7311.00	50.92	74.00	-23.08	40.57	10.35	Peak	100	60
9	12185.00	47.20	54.00	-6.80	32.34	14.86	Average	209	115
10	12185.00	61.38	74.00	-12.62	46.52	14.86	Peak	209	115

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		



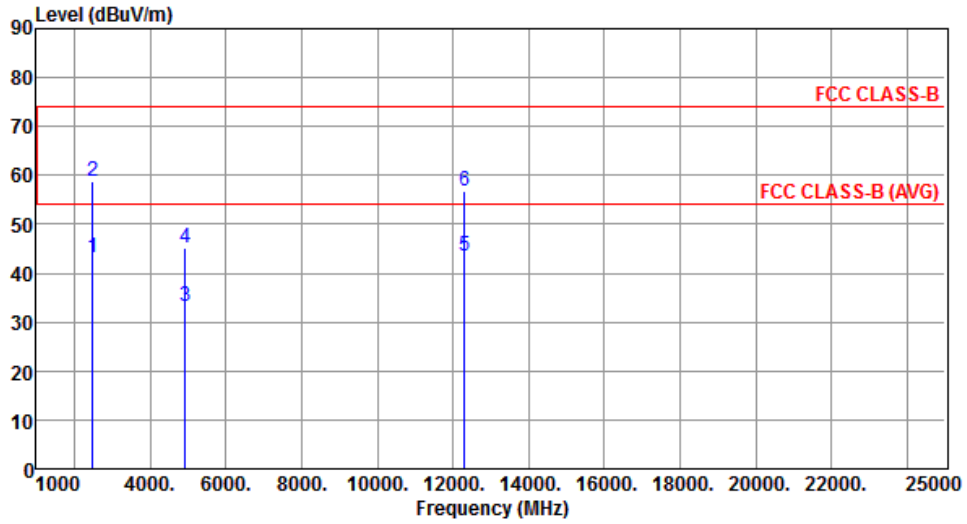
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	40.93	54.00	-13.07	42.05	-1.12	Average	115	307
2	2483.50	55.77	74.00	-18.23	56.89	-1.12	Peak	115	307
3	4924.00	33.27	54.00	-20.73	28.26	5.01	Average	100	100
4	4924.00	45.40	74.00	-28.60	40.39	5.01	Peak	100	100
5	12310.00	43.37	54.00	-10.63	28.74	14.63	Average	100	30
6	12310.00	57.01	74.00	-16.99	42.38	14.63	Peak	100	30

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		



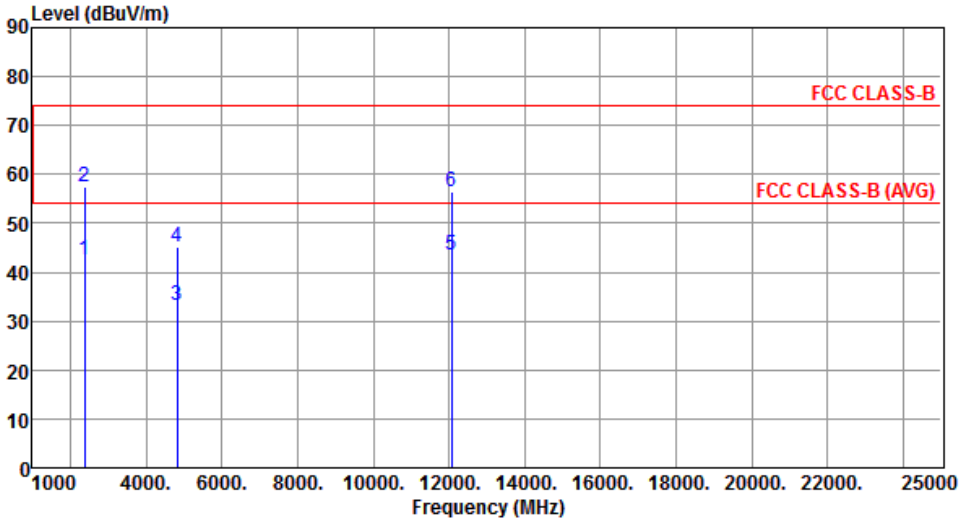
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	43.05	54.00	-10.95	44.17	-1.12	Average	285	259
2	2483.50	58.81	74.00	-15.19	59.93	-1.12	Peak	285	259
3	4924.00	33.13	54.00	-20.87	28.12	5.01	Average	100	180
4	4924.00	45.28	74.00	-28.72	40.27	5.01	Peak	100	180
5	12310.00	43.50	54.00	-10.50	28.87	14.63	Average	100	10
6	12310.00	56.90	74.00	-17.10	42.27	14.63	Peak	100	10

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

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

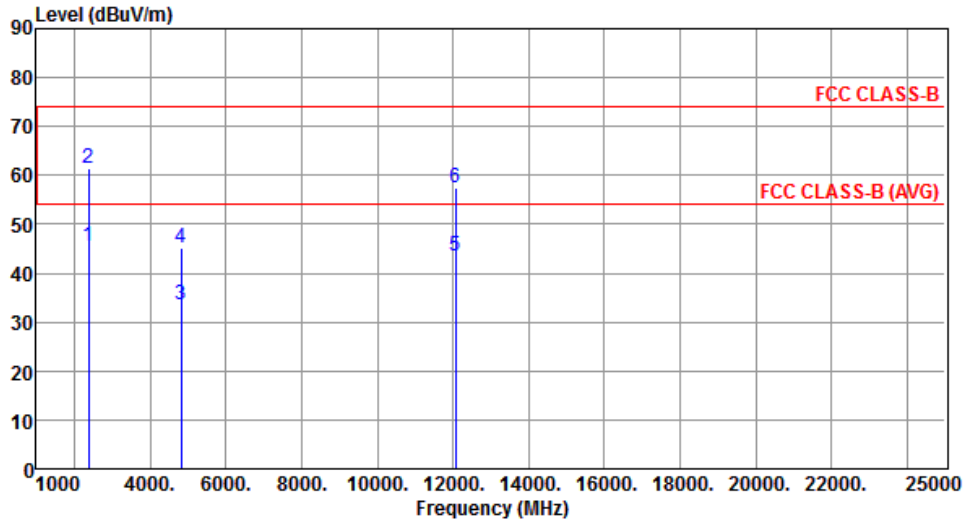
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

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

Modulation	HT20	Test Freq. (MHz)	2412						
Polarization	Horizontal								
									
	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	42.62	54.00	-11.38	43.58	-0.96	Average	110	306
2	2390.00	57.60	74.00	-16.40	58.56	-0.96	Peak	110	306
3	4824.00	33.07	54.00	-20.93	28.20	4.87	Average	100	30
4	4824.00	45.12	74.00	-28.88	40.25	4.87	Peak	100	30
5	12060.00	43.67	54.00	-10.33	28.75	14.92	Average	100	90
6	12060.00	56.46	74.00	-17.54	41.54	14.92	Peak	100	90
<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		



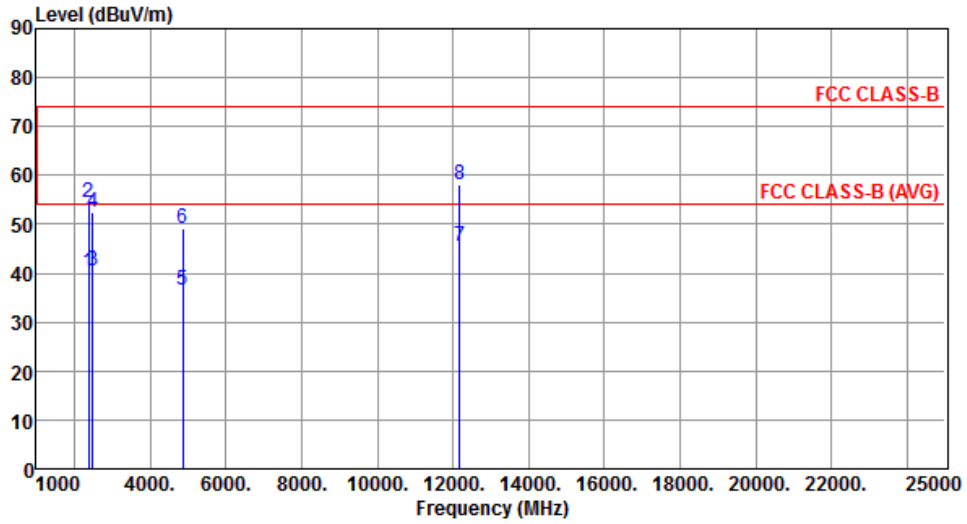
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	45.61	54.00	-8.39	46.57	-0.96	Average	295	270
2	2390.00	61.57	74.00	-12.43	62.53	-0.96	Peak	295	270
3	4824.00	33.40	54.00	-20.60	28.53	4.87	Average	100	185
4	4824.00	45.28	74.00	-28.72	40.41	4.87	Peak	100	185
5	12060.00	43.57	54.00	-10.43	28.65	14.92	Average	100	110
6	12060.00	57.34	74.00	-16.66	42.42	14.92	Peak	100	110

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		



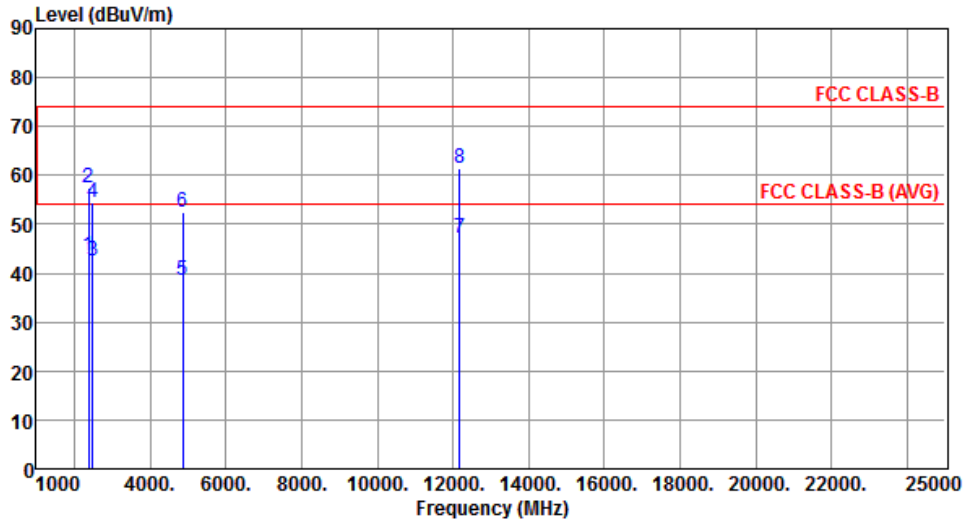
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	40.33	54.00	-13.67	41.29	-0.96	Average	100	309
2	2390.00	54.58	74.00	-19.42	55.54	-0.96	Peak	100	309
3	2483.50	40.56	54.00	-13.44	41.68	-1.12	Average	100	309
4	2483.50	52.45	74.00	-21.55	53.57	-1.12	Peak	100	309
5	4874.00	36.40	54.00	-17.60	31.49	4.91	Average	100	130
6	4874.00	49.17	74.00	-24.83	44.26	4.91	Peak	100	130
7	12185.00	45.51	54.00	-8.49	30.65	14.86	Average	100	45
8	12185.00	58.11	74.00	-15.89	43.25	14.86	Peak	100	45

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		



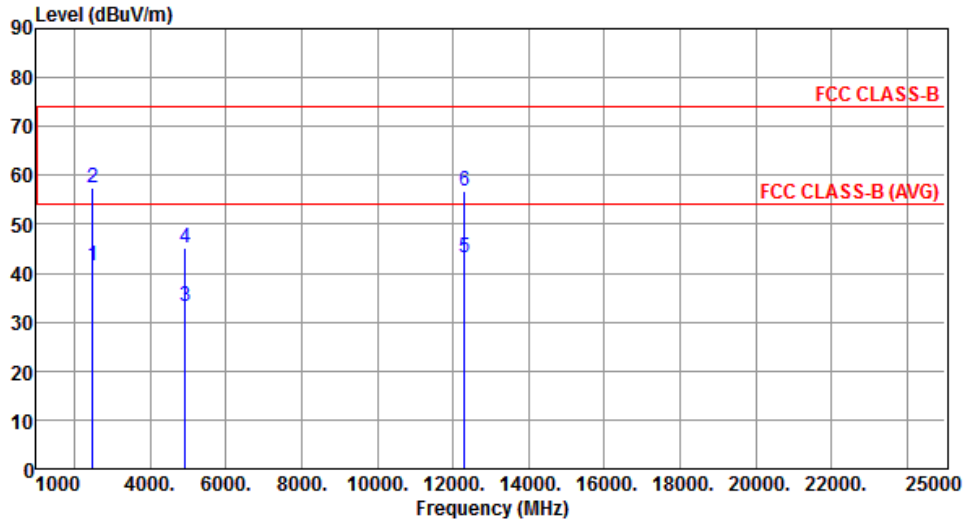
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	43.35	54.00	-10.65	44.31	-0.96	Average	270	269
2	2390.00	57.60	74.00	-16.40	58.56	-0.96	Peak	270	269
3	2483.50	42.46	54.00	-11.54	43.58	-1.12	Average	270	269
4	2483.50	54.44	74.00	-19.56	55.56	-1.12	Peak	270	269
5	4874.00	38.58	54.00	-15.42	33.67	4.91	Average	100	192
6	4874.00	52.59	74.00	-21.41	47.68	4.91	Peak	100	192
7	12185.00	47.31	54.00	-6.69	32.45	14.86	Average	210	116
8	12185.00	61.44	74.00	-12.56	46.58	14.86	Peak	210	116

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		



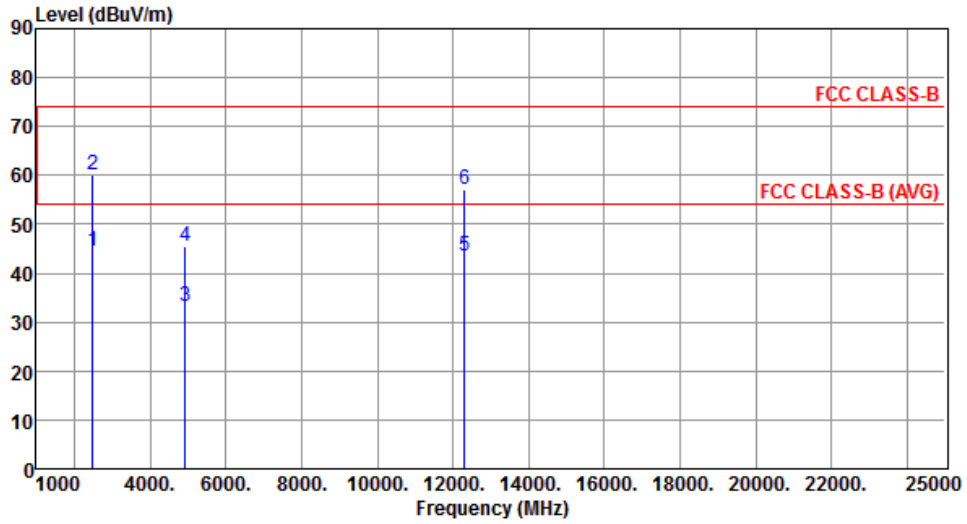
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	41.47	54.00	-12.53	42.59	-1.12	Average	115	304
2	2483.50	57.33	74.00	-16.67	58.45	-1.12	Peak	115	304
3	4924.00	33.14	54.00	-20.86	28.13	5.01	Average	100	30
4	4924.00	45.29	74.00	-28.71	40.28	5.01	Peak	100	30
5	12310.00	43.32	54.00	-10.68	28.69	14.63	Average	100	90
6	12310.00	56.91	74.00	-17.09	42.28	14.63	Peak	100	90

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		



	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	44.43	54.00	-9.57	45.55	-1.12	Average	283	261
2	2483.50	60.15	74.00	-13.85	61.27	-1.12	Peak	283	261
3	4924.00	33.28	54.00	-20.72	28.27	5.01	Average	100	180
4	4924.00	45.40	74.00	-28.60	40.39	5.01	Peak	100	180
5	12310.00	43.38	54.00	-10.62	28.75	14.63	Average	100	60
6	12310.00	56.96	74.00	-17.04	42.33	14.63	Peak	100	60

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

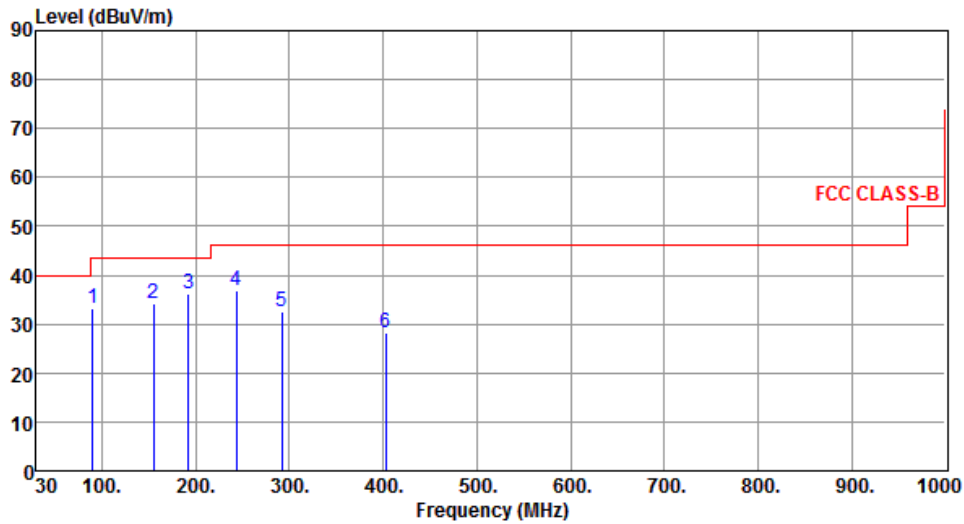
\*Factor includes antenna factor , cable loss and amplifier gain

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

**Configuration 3 : PIFA antenna (Antenna No.6) , Y-plane**

**3.5.12 Transmitter Radiated Unwanted Emissions (Below 1GHz)**

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



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	90.14	33.21	43.50	-10.29	47.68	-14.47	Peak	---	---
2	155.13	34.21	43.50	-9.29	42.53	-8.32	Peak	---	---
3	191.99	36.24	43.50	-7.26	47.06	-10.82	Peak	---	---
4	243.40	36.81	46.00	-9.19	46.24	-9.43	Peak	---	---
5	291.90	32.52	46.00	-13.48	40.38	-7.86	Peak	---	---
6	402.48	28.22	46.00	-17.78	33.08	-4.86	Peak	---	---

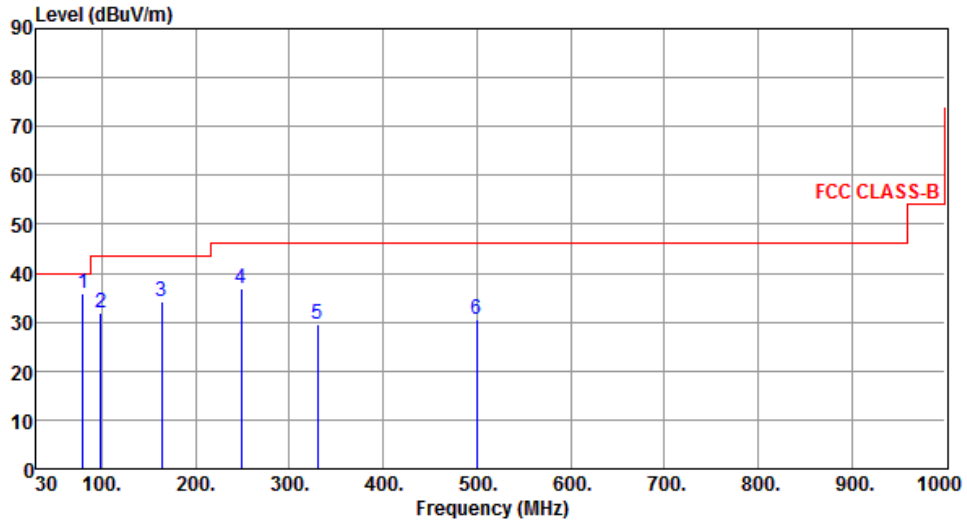
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

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



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	79.47	35.83	40.00	-4.17	48.53	-12.70	Peak	---	---
2	98.87	32.03	43.50	-11.47	45.70	-13.67	Peak	---	---
3	163.86	34.06	43.50	-9.44	42.46	-8.40	Peak	---	---
4	248.25	36.84	46.00	-9.16	46.15	-9.31	Peak	---	---
5	329.73	29.66	46.00	-16.34	36.53	-6.87	Peak	---	---
6	499.48	30.54	46.00	-15.46	33.35	-2.81	Peak	---	---

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

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

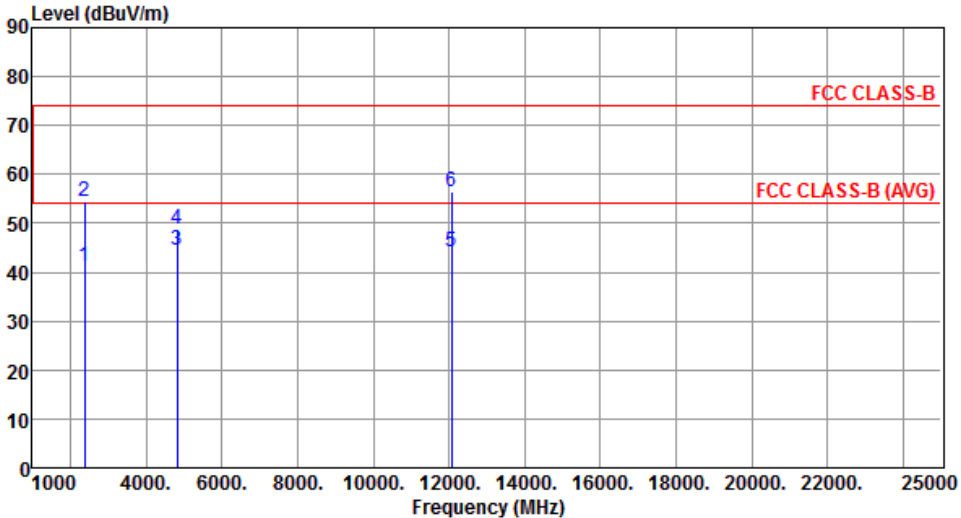
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

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

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

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

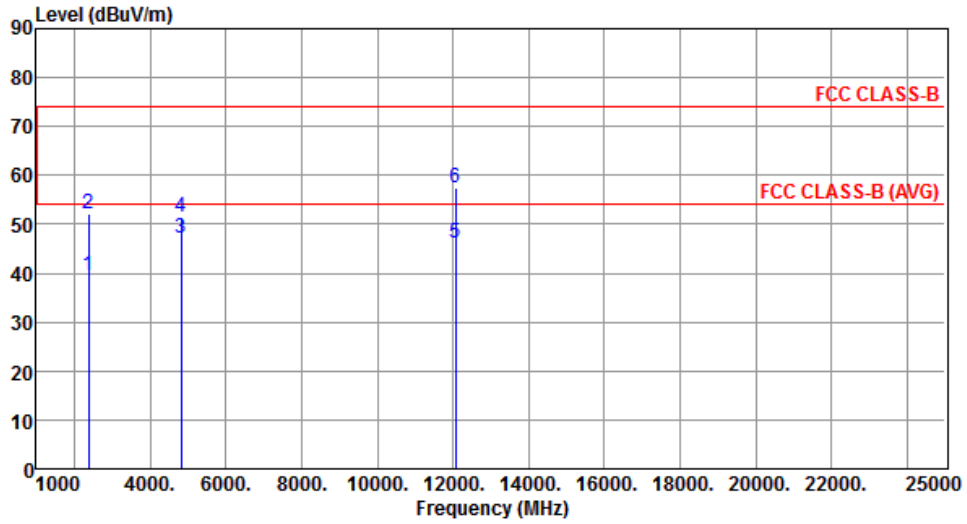


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	41.25	54.00	-12.75	42.21	-0.96	Average	100	82
2	2390.00	54.49	74.00	-19.51	55.45	-0.96	Peak	100	82
3	4824.00	44.38	54.00	-9.62	39.51	4.87	Average	235	52
4	4824.00	48.71	74.00	-25.29	43.84	4.87	Peak	235	52
5	12060.00	44.04	54.00	-9.96	29.12	14.92	Average	100	20
6	12060.00	56.31	74.00	-17.69	41.39	14.92	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>	11b	<b>Test Freq. (MHz)</b>	2412
<b>Polarization</b>	Vertical		



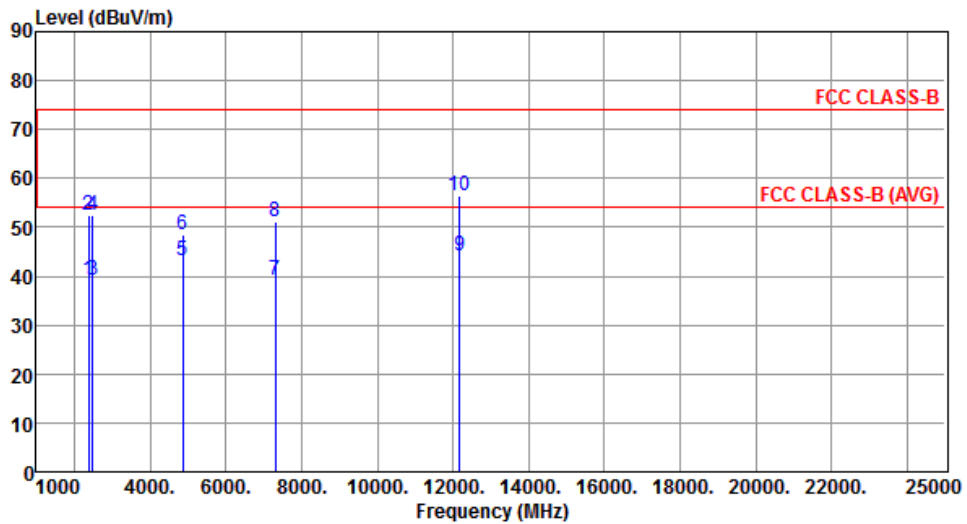
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	39.40	54.00	-14.60	40.36	-0.96	Average	145	219
2	2390.00	52.18	74.00	-21.82	53.14	-0.96	Peak	145	219
3	4824.00	47.17	54.00	-6.83	42.30	4.87	Average	100	156
4	4824.00	51.44	74.00	-22.56	46.57	4.87	Peak	100	156
5	12060.00	46.07	54.00	-7.93	31.15	14.92	Average	100	135
6	12060.00	57.57	74.00	-16.43	42.65	14.92	Peak	100	135

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		



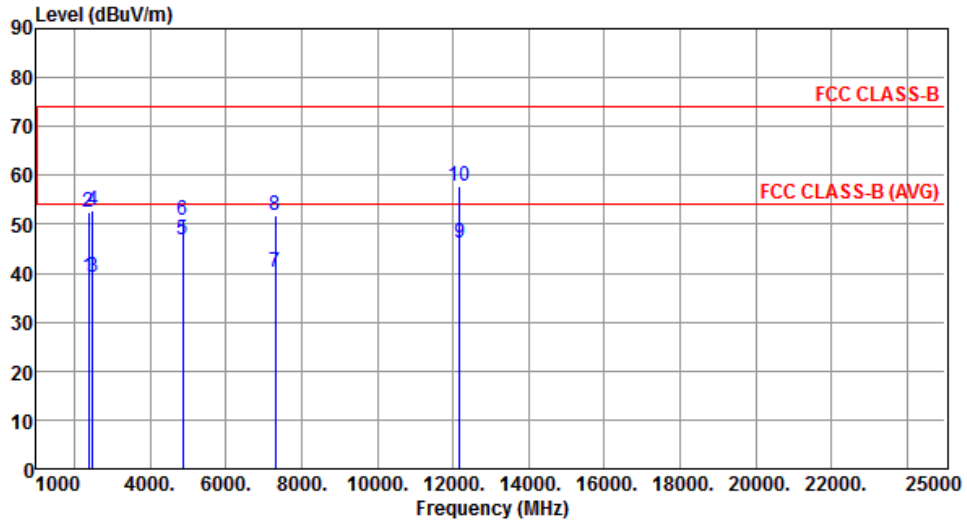
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	39.19	54.00	-14.81	40.15	-0.96	Average	100	84
2	2390.00	52.35	74.00	-21.65	53.31	-0.96	Peak	100	84
3	2483.50	39.23	54.00	-14.77	40.35	-1.12	Average	100	84
4	2483.50	52.35	74.00	-21.65	53.47	-1.12	Peak	100	84
5	4874.00	43.31	54.00	-10.69	38.40	4.91	Average	234	50
6	4874.00	48.58	74.00	-25.42	43.67	4.91	Peak	234	50
7	7311.00	39.24	54.00	-14.76	28.89	10.35	Average	100	60
8	7311.00	51.20	74.00	-22.80	40.85	10.35	Peak	100	60
9	12185.00	44.11	54.00	-9.89	29.25	14.86	Average	100	10
10	12185.00	56.43	74.00	-17.57	41.57	14.86	Peak	100	10

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		



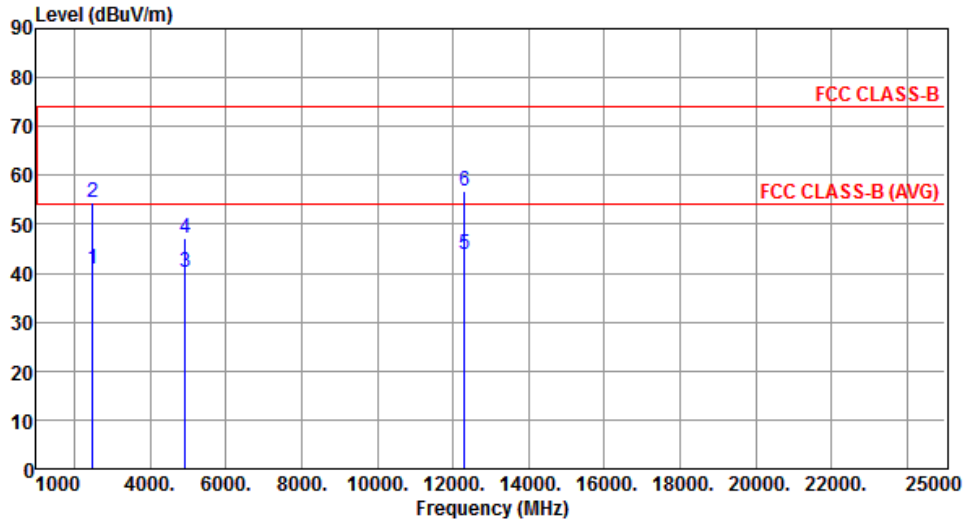
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	39.30	54.00	-14.70	40.26	-0.96	Average	146	214
2	2390.00	52.49	74.00	-21.51	53.45	-0.96	Peak	146	214
3	2483.50	39.17	54.00	-14.83	40.29	-1.12	Average	146	214
4	2483.50	52.67	74.00	-21.33	53.79	-1.12	Peak	146	214
5	4874.00	46.80	54.00	-7.20	41.89	4.91	Average	100	154
6	4874.00	50.91	74.00	-23.09	46.00	4.91	Peak	100	154
7	7311.00	40.14	54.00	-13.86	29.79	10.35	Average	100	205
8	7311.00	51.92	74.00	-22.08	41.57	10.35	Peak	100	205
9	12185.00	46.03	54.00	-7.97	31.17	14.86	Average	100	137
10	12185.00	57.64	74.00	-16.36	42.78	14.86	Peak	100	137

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		



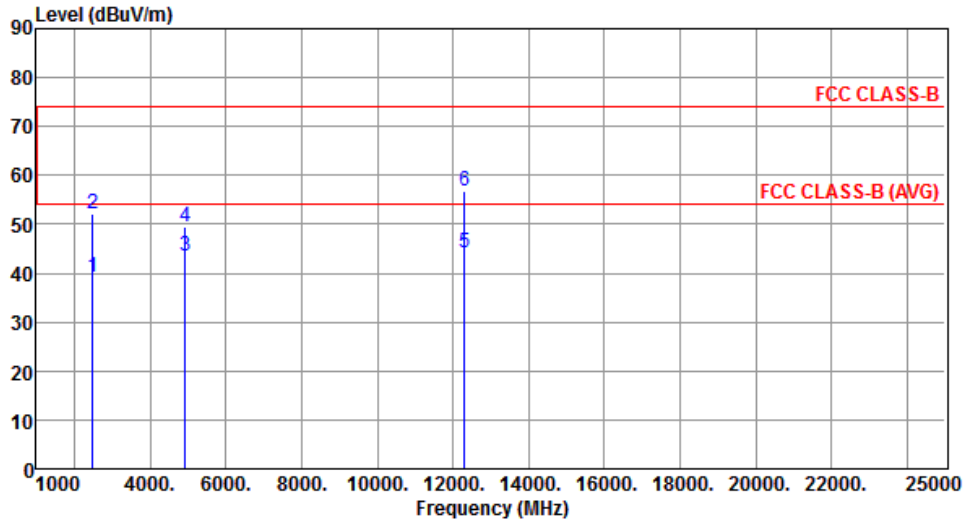
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	40.85	54.00	-13.15	41.97	-1.12	Average	109	86
2	2483.50	54.37	74.00	-19.63	55.49	-1.12	Peak	109	86
3	4924.00	40.13	54.00	-13.87	35.12	5.01	Average	236	49
4	4924.00	47.18	74.00	-26.82	42.17	5.01	Peak	236	49
5	12310.00	43.77	54.00	-10.23	29.14	14.63	Average	100	30
6	12310.00	56.90	74.00	-17.10	42.27	14.63	Peak	100	30

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		



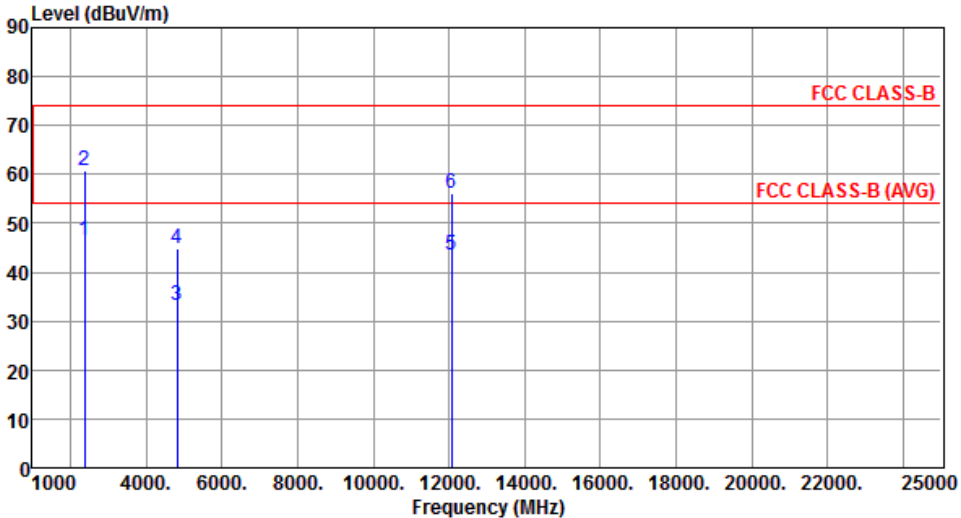
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	39.15	54.00	-14.85	40.27	-1.12	Average	149	211
2	2483.50	52.00	74.00	-22.00	53.12	-1.12	Peak	149	211
3	4924.00	43.57	54.00	-10.43	38.56	5.01	Average	100	162
4	4924.00	49.57	74.00	-24.43	44.56	5.01	Peak	100	162
5	12310.00	44.10	54.00	-9.90	29.47	14.63	Average	100	140
6	12310.00	56.75	74.00	-17.25	42.12	14.63	Peak	100	140

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

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

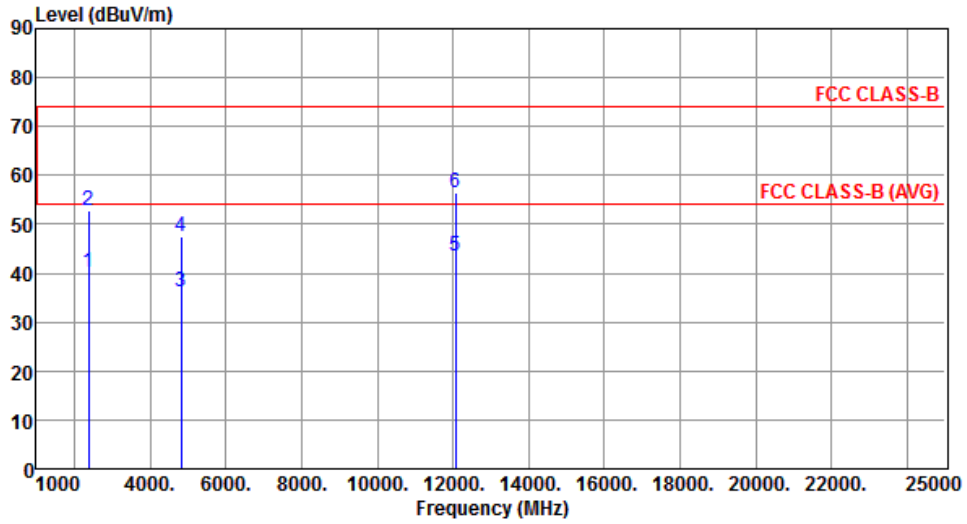
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

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

Modulation	11g	Test Freq. (MHz)	2412						
Polarization	Horizontal								
									
	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	46.35	54.00	-7.65	47.31	-0.96	Average	100	86
2	2390.00	60.62	74.00	-13.38	61.58	-0.96	Peak	100	86
3	4824.00	33.31	54.00	-20.69	28.44	4.87	Average	100	100
4	4824.00	44.98	74.00	-29.02	40.11	4.87	Peak	100	100
5	12060.00	43.67	54.00	-10.33	28.75	14.92	Average	100	20
6	12060.00	56.08	74.00	-17.92	41.16	14.92	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>	11g	<b>Test Freq. (MHz)</b>	2412
<b>Polarization</b>	Vertical		



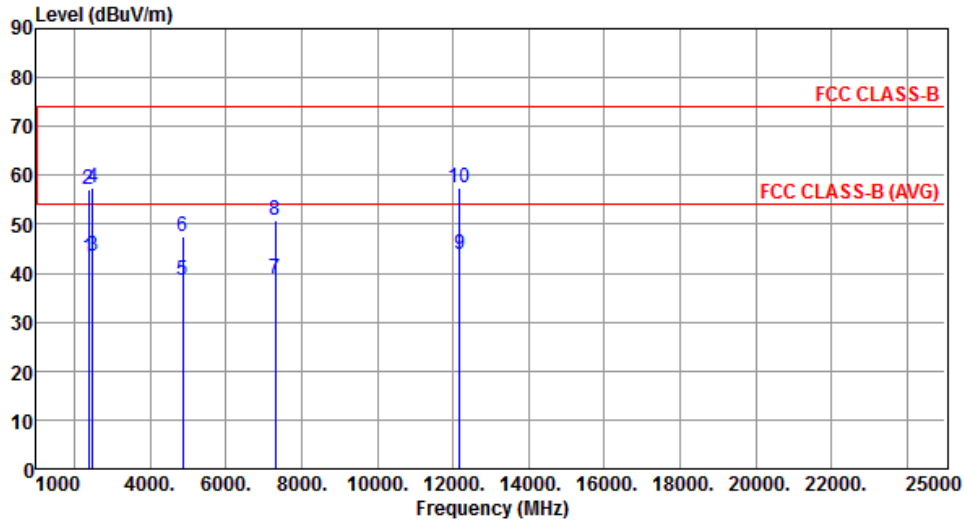
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	40.25	54.00	-13.75	41.21	-0.96	Average	129	210
2	2390.00	52.72	74.00	-21.28	53.68	-0.96	Peak	129	210
3	4824.00	36.35	54.00	-17.65	31.48	4.87	Average	100	157
4	4824.00	47.45	74.00	-26.55	42.58	4.87	Peak	100	157
5	12060.00	43.58	54.00	-10.42	28.66	14.92	Average	100	25
6	12060.00	56.31	74.00	-17.69	41.39	14.92	Peak	100	25

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		



	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	43.14	54.00	-10.86	44.10	-0.96	Average	100	84
2	2390.00	56.98	74.00	-17.02	57.94	-0.96	Peak	100	84
3	2483.50	43.51	54.00	-10.49	44.63	-1.12	Average	100	84
4	2483.50	57.31	74.00	-16.69	58.43	-1.12	Peak	100	84
5	4874.00	38.49	54.00	-15.51	33.58	4.91	Average	200	52
6	4874.00	47.48	74.00	-26.52	42.57	4.91	Peak	200	52
7	7311.00	38.80	54.00	-15.20	28.45	10.35	Average	100	20
8	7311.00	50.92	74.00	-23.08	40.57	10.35	Peak	100	20
9	12185.00	44.00	54.00	-10.00	29.14	14.86	Average	100	30
10	12185.00	57.38	74.00	-16.62	42.52	14.86	Peak	100	30

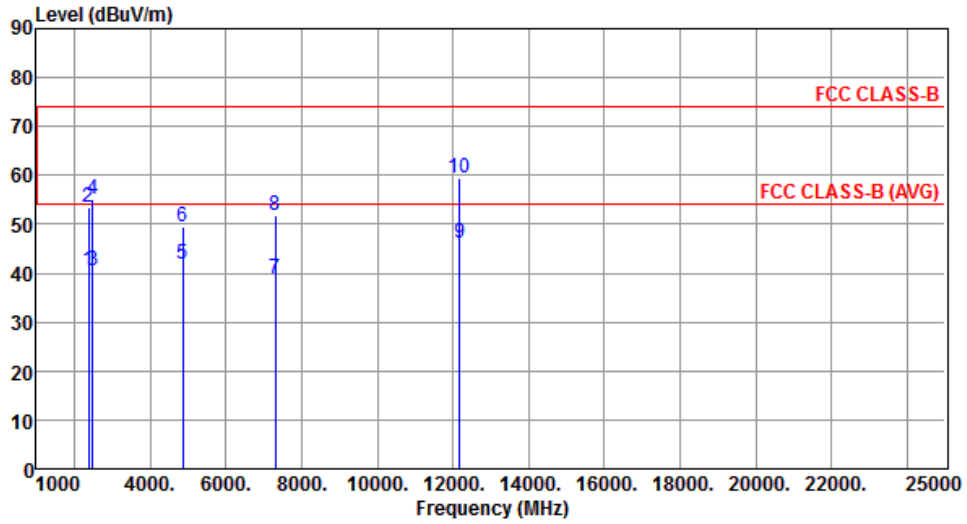
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*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		



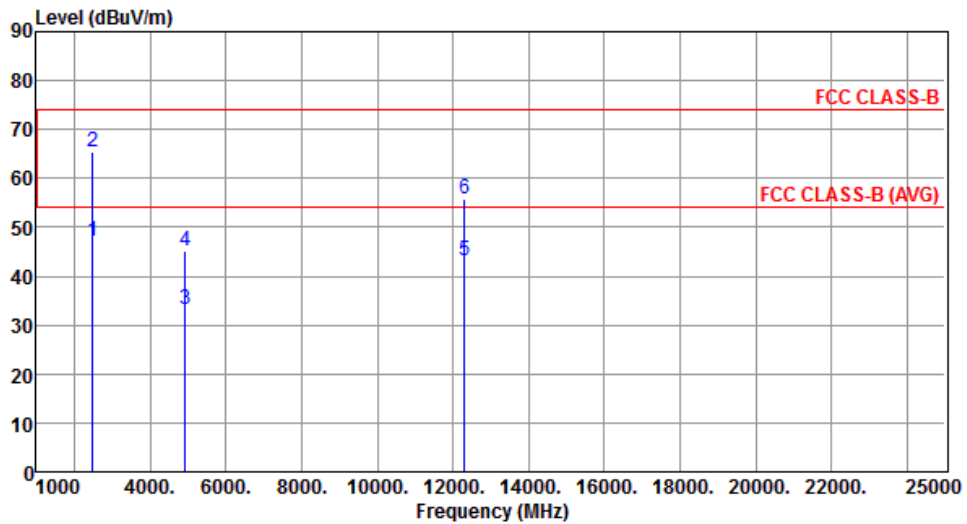
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	40.39	54.00	-13.61	41.35	-0.96	Average	131	213
2	2390.00	53.63	74.00	-20.37	54.59	-0.96	Peak	131	213
3	2483.50	40.61	54.00	-13.39	41.73	-1.12	Average	131	213
4	2483.50	55.07	74.00	-18.93	56.19	-1.12	Peak	131	213
5	4874.00	41.78	54.00	-12.22	36.87	4.91	Average	100	155
6	4874.00	49.49	74.00	-24.51	44.58	4.91	Peak	100	155
7	7311.00	38.80	54.00	-15.20	28.45	10.35	Average	100	200
8	7311.00	51.70	74.00	-22.30	41.35	10.35	Peak	100	200
9	12185.00	46.13	54.00	-7.87	31.27	14.86	Average	100	140
10	12185.00	59.44	74.00	-14.56	44.58	14.86	Peak	100	140

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		



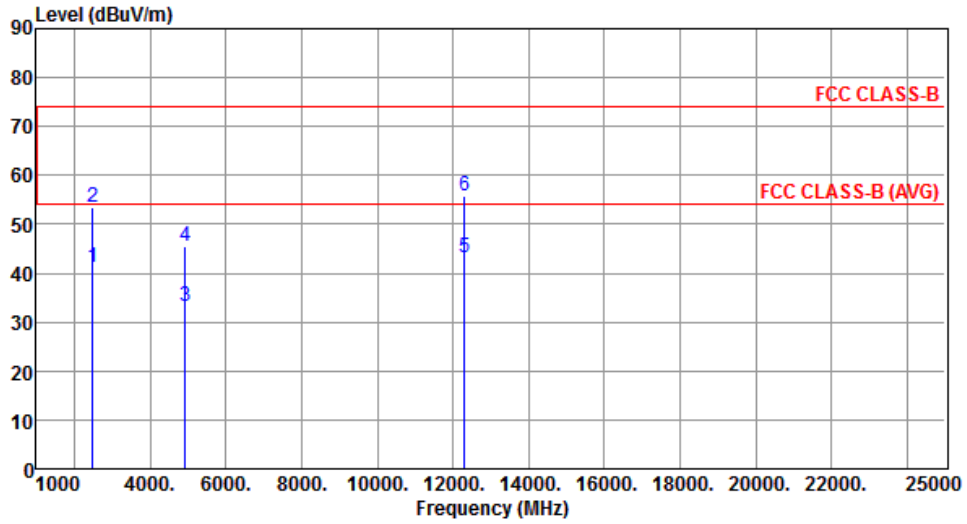
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	47.30	54.00	-6.70	48.42	-1.12	Average	100	85
2	2483.50	65.44	74.00	-8.56	66.56	-1.12	Peak	100	85
3	4924.00	33.12	54.00	-20.88	28.11	5.01	Average	100	30
4	4924.00	45.25	74.00	-28.75	40.24	5.01	Peak	100	30
5	12310.00	43.28	54.00	-10.72	28.65	14.63	Average	100	90
6	12310.00	55.86	74.00	-18.14	41.23	14.63	Peak	100	90

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		



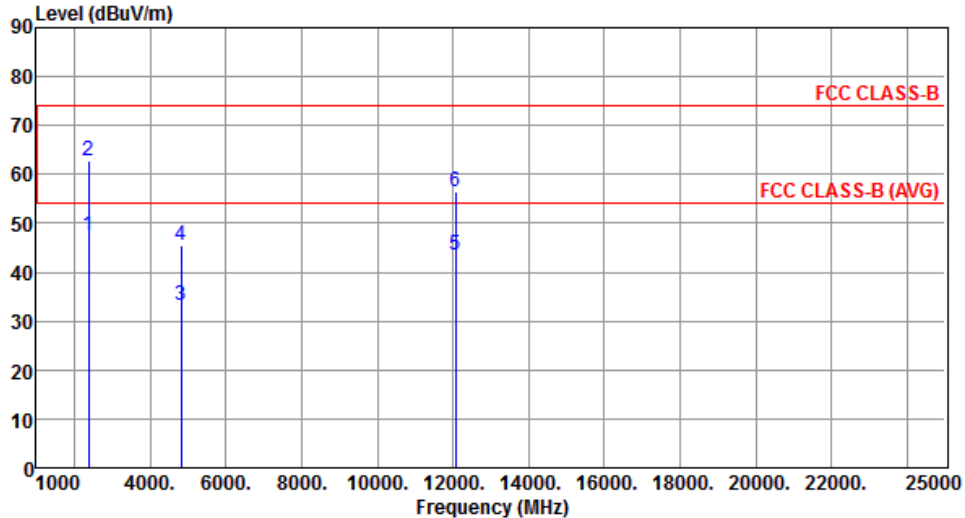
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	41.27	54.00	-12.73	42.39	-1.12	Average	135	215
2	2483.50	53.44	74.00	-20.56	54.56	-1.12	Peak	135	215
3	4924.00	33.27	54.00	-20.73	28.26	5.01	Average	100	160
4	4924.00	45.40	74.00	-28.60	40.39	5.01	Peak	100	160
5	12310.00	43.15	54.00	-10.85	28.52	14.63	Average	100	60
6	12310.00	55.87	74.00	-18.13	41.24	14.63	Peak	100	60

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

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

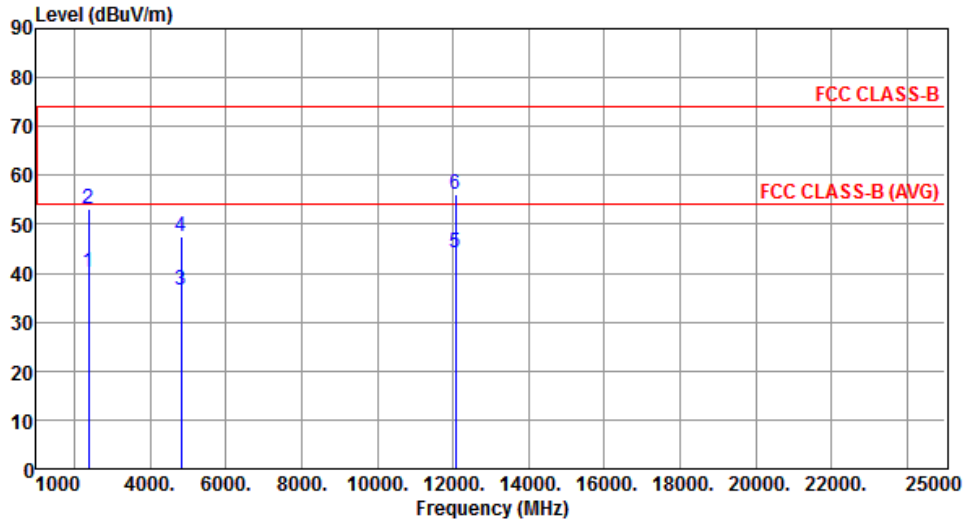
Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).

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

Modulation	HT20	Test Freq. (MHz)	2412						
Polarization	Horizontal								
									
	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	47.46	54.00	-6.54	48.42	-0.96	Average	100	86
2	2390.00	62.89	74.00	-11.11	63.85	-0.96	Peak	100	86
3	4824.00	33.22	54.00	-20.78	28.35	4.87	Average	100	30
4	4824.00	45.44	74.00	-28.56	40.57	4.87	Peak	100	30
5	12060.00	43.61	54.00	-10.39	28.69	14.92	Average	100	35
6	12060.00	56.50	74.00	-17.50	41.58	14.92	Peak	100	35

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>	2412
<b>Polarization</b>	Vertical		



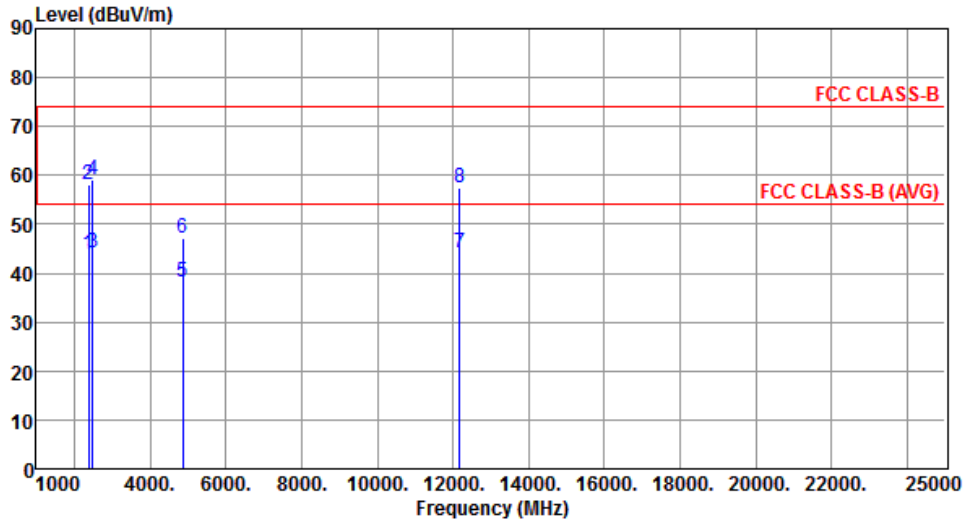
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	40.32	54.00	-13.68	41.28	-0.96	Average	130	211
2	2390.00	53.28	74.00	-20.72	54.24	-0.96	Peak	130	211
3	4824.00	36.38	54.00	-17.62	31.51	4.87	Average	100	156
4	4824.00	47.33	74.00	-26.67	42.46	4.87	Peak	100	156
5	12060.00	44.06	54.00	-9.94	29.14	14.92	Average	100	30
6	12060.00	56.19	74.00	-17.81	41.27	14.92	Peak	100	30

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		



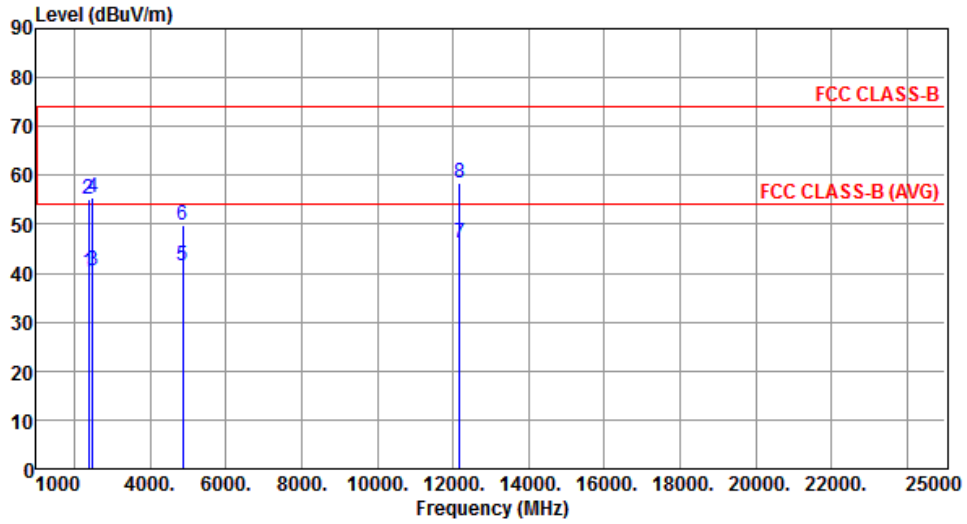
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	43.73	54.00	-10.27	44.69	-0.96	Average	100	92
2	2390.00	58.02	74.00	-15.98	58.98	-0.96	Peak	100	92
3	2483.50	44.20	54.00	-9.80	45.32	-1.12	Average	100	92
4	2483.50	59.09	74.00	-14.91	60.21	-1.12	Peak	100	92
5	4874.00	38.33	54.00	-15.67	33.42	4.91	Average	205	50
6	4874.00	47.25	74.00	-26.75	42.34	4.91	Peak	205	50
7	12185.00	44.07	54.00	-9.93	29.21	14.86	Average	100	250
8	12185.00	57.45	74.00	-16.55	42.59	14.86	Peak	100	250

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		



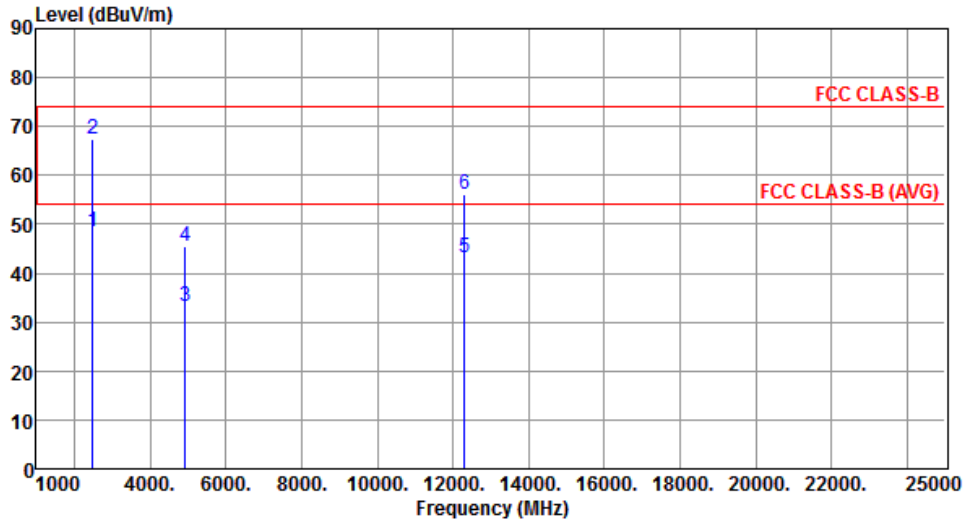
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	40.26	54.00	-13.74	41.22	-0.96	Average	135	215
2	2390.00	55.25	74.00	-18.75	56.21	-0.96	Peak	135	215
3	2483.50	40.57	54.00	-13.43	41.69	-1.12	Average	135	215
4	2483.50	55.33	74.00	-18.67	56.45	-1.12	Peak	135	215
5	4874.00	41.49	54.00	-12.51	36.58	4.91	Average	100	157
6	4874.00	49.71	74.00	-24.29	44.80	4.91	Peak	100	157
7	12185.00	46.21	54.00	-7.79	31.35	14.86	Average	100	139
8	12185.00	58.55	74.00	-15.45	43.69	14.86	Peak	100	139

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		



	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	48.44	54.00	-5.56	49.56	-1.12	Average	100	86
2	2483.50	67.49	74.00	-6.51	68.61	-1.12	Peak	100	86
3	4924.00	33.27	54.00	-20.73	28.26	5.01	Average	100	35
4	4924.00	45.59	74.00	-28.41	40.58	5.01	Peak	100	35
5	12310.00	43.20	54.00	-10.80	28.57	14.63	Average	100	80
6	12310.00	55.99	74.00	-18.01	41.36	14.63	Peak	100	80

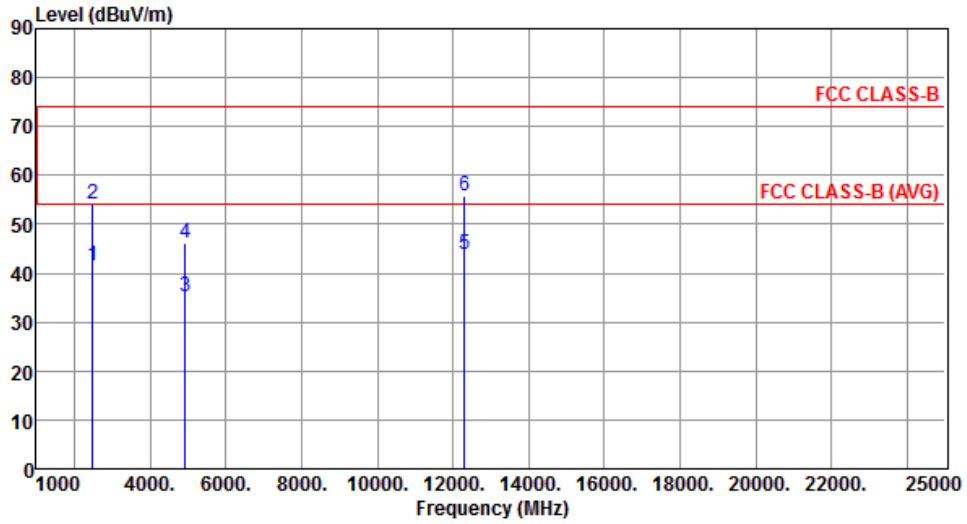
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

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

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



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



	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	41.44	54.00	-12.56	42.56	-1.12	Average	134	212
2	2483.50	54.00	74.00	-20.00	55.12	-1.12	Peak	134	212
3	4924.00	35.13	54.00	-18.87	30.12	5.01	Average	100	156
4	4924.00	46.27	74.00	-27.73	41.26	5.01	Peak	100	156
5	12310.00	43.77	54.00	-10.23	29.14	14.63	Average	100	30
6	12310.00	55.92	74.00	-18.08	41.29	14.63	Peak	100	30

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

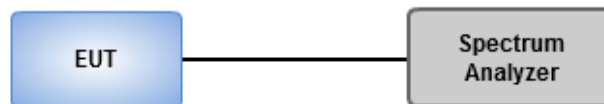
#### Reference level measurement

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

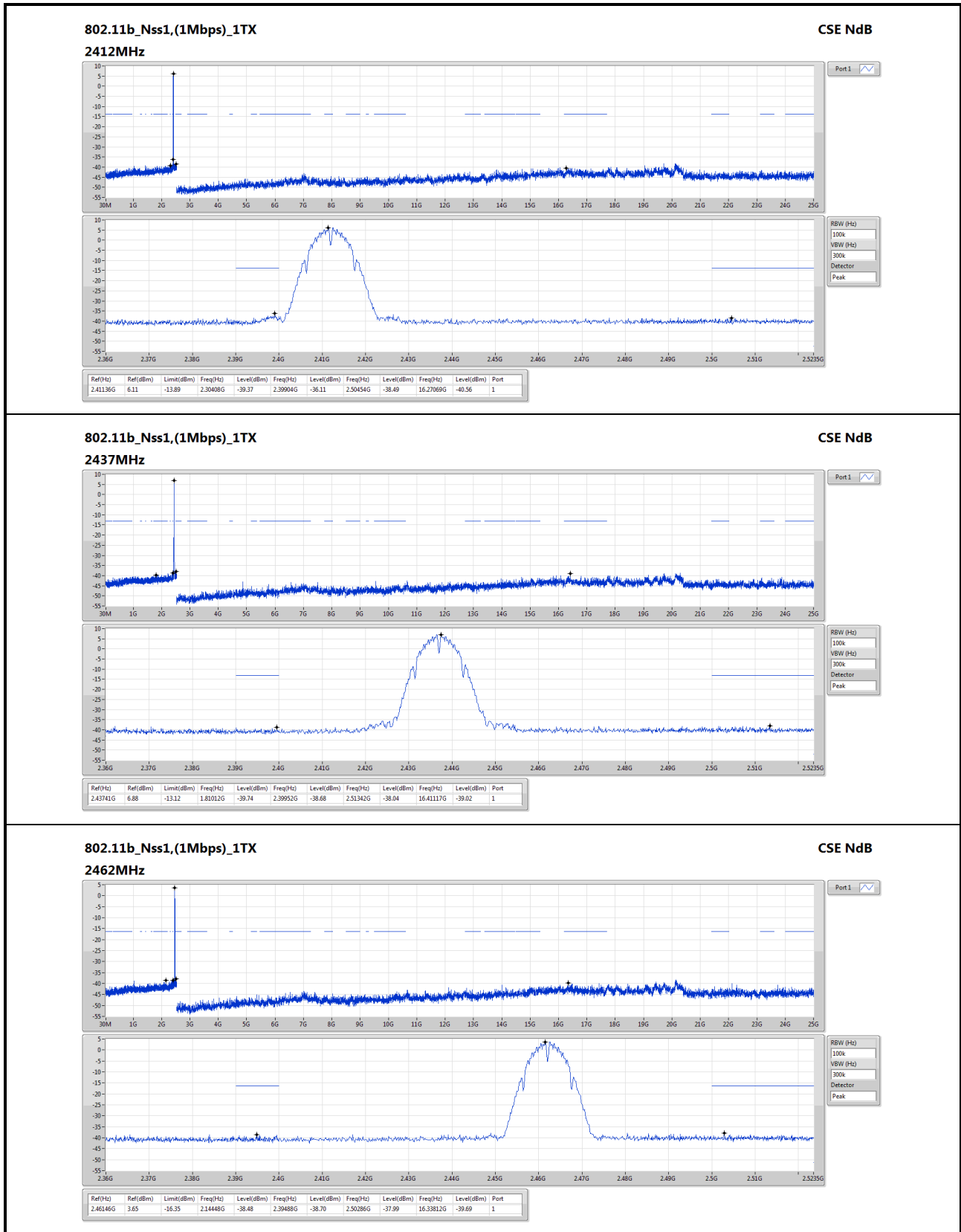
#### Emission level measurement

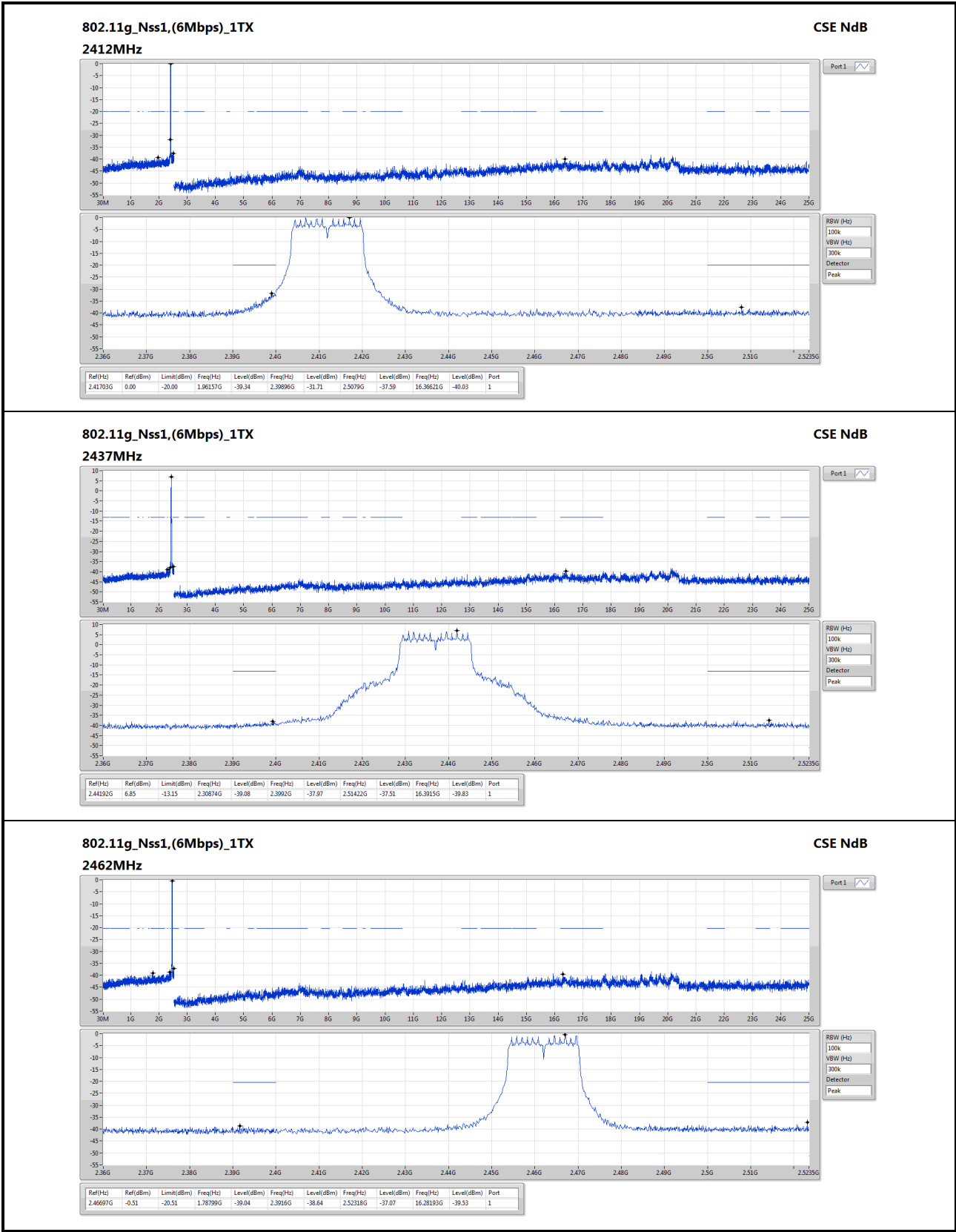
1. Set RBW=100kHz, VBW = 300kHz , Detector = Peak, Sweep time = Auto
2. Trace = max hold , Allow Trace to fully stabilize
3. Scan Frequency range is up to 25GHz
4. Use the peak marker function to determine the maximum amplitude level

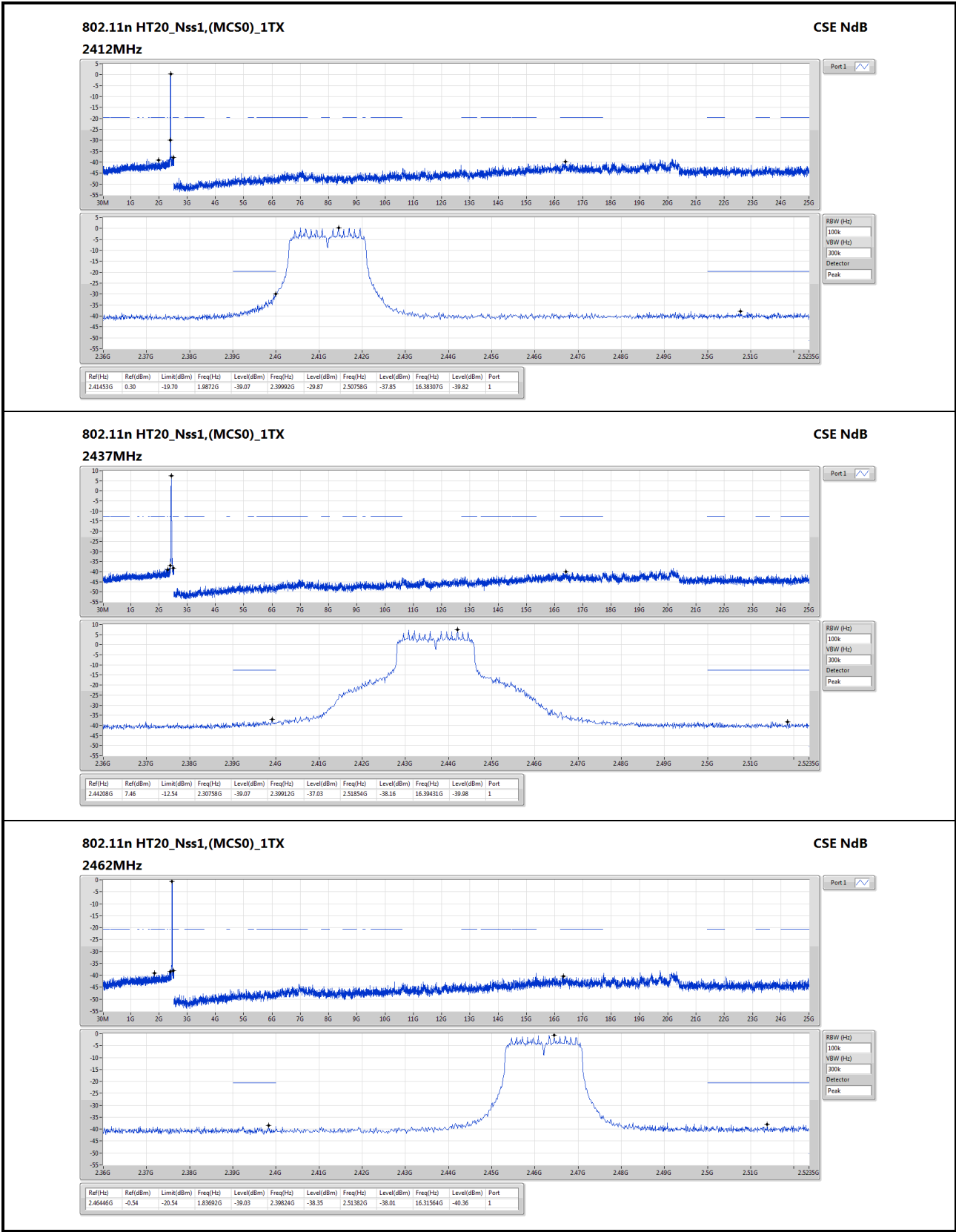
### 3.6.3 Test Setup



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







## 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**

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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 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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