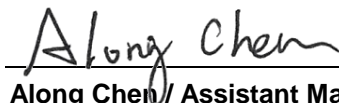


FCC Test Report

FCC ID : SWX-UAP6L
Equipment : UniFi Network UAP6 Lite
Model No. : UAP6-Lite
Brand Name : UBIQUITI
Applicant : Ubiquiti Inc.
Address : 685 Third Avenue, New York, New York 10017
USA
Standard : 47 CFR FCC Part 15.247
Received Date : Mar. 03, 2020
Tested Date : Apr. 16 ~ Apr. 20, 2020

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

Reviewed by:



Along Chen / Assistant Manager

Approved by:



Gary Chang / Manager



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Release Record

Report No.	Version	Description	Issued Date
FR030302AC	Rev. 01	Initial issue	Apr. 23, 2020

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.561MHz 36.48 (Margin -19.52dB) - QP	Pass
15.247(d) 15.209	Radiated Emissions	[dBuV/m at 3m]: 2483.50MHz 53.71 (Margin -0.29dB) - AV	Pass
15.247(b)(3)	Maximum Output Power	Max Power [dBm]: 23.37	Pass
15.247(a)(2)	6dB Bandwidth	Meet the requirement of limit	Pass
15.247(e)	Power Spectral Density	Meet the requirement of limit	Pass
15.203	Antenna Requirement	Meet the requirement of limit	Pass

Declaration of Conformity:

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

Comments and Explanations:

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

1 General Description

1.1 Information

1.1.1 Specification of the Equipment under Test (EUT)

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

Note 1: RF output power specifies that Maximum Conducted (Average) 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.	Type	Connector	Gain (dBi)	Remark
1	Internal antenna	I-PEX	3.8	--
2	Internal antenna	I-PEX	3.8	--

1.1.3 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	48Vdc from PoE
--------------------------	----------------

1.1.4 Accessories

Accessories		
No.	Equipment	Description
1	PoE	Brand: UBIQUITI Model: GP-V480-032G Power Rating: I/P: 100-240Vac, 50/60Hz, 0.5A(Max) O/P: 48Vdc, 0.32A Power Line: 0.7m non-shielded without core

1.1.5 Channel List

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

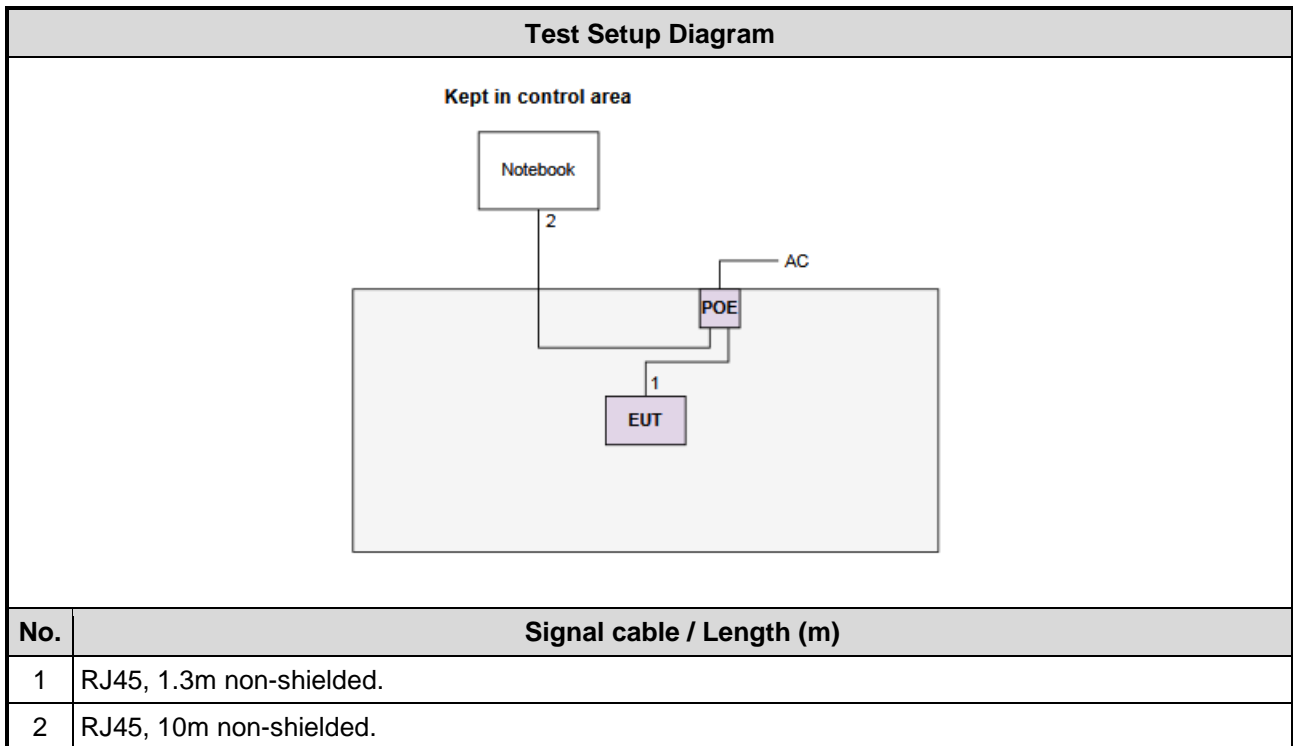
1.1.6 Test Tool and Duty Cycle

Test Tool	QA Tool, Version: MT7603 0.0.1.85		
Duty Cycle and Duty Factor	Mode	Duty Cycle (%)	Duty Factor (dB)
	11b	99.32%	0.03
	11g	89.86%	0.46
	HT20	90.15%	0.45
	HT40	81.00%	0.91

1.2 Local Support Equipment List

Support Equipment List					
No.	Equipment	Brand	Model	FCC ID	Remarks
1	Notebook	DELL	Latitude E6440	DoC	---

1.3 Test Setup Chart



1.4 The Equipment List

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Receiver	R&S	ESR3	101658	Dec. 12, 2019	Dec. 11, 2020
LISN	R&S	ENV216	101579	Mar. 12, 2020	Mar. 11, 2021
RF Cable-CON	Woken	CFD200-NL	CFD200-NL-001	Oct. 22, 2019	Oct. 21, 2020
Measurement Software	AUDIX	e3	6.120210k	NA	NA

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

Test Item	Radiated Emission				
Test Site	966 chamber1 / (03CH01-WS)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101498	Dec. 17, 2019	Dec. 16, 2020
Receiver	R&S	ESR3	101657	Feb. 14, 2020	Feb. 13, 2021
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Jul. 12, 2019	Jul. 11, 2020
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 12, 2019	Dec. 11, 2020
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 15, 2019	Nov. 14, 2020
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 13, 2019	Nov. 12, 2020
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Oct. 07, 2019	Oct. 06, 2020
Preamplifier	EMC	EMC02325	980225	Jul. 09, 2019	Jul. 08, 2020
Preamplifier	Agilent	83017A	MY39501308	Oct. 08, 2019	Oct. 07, 2020
Preamplifier	EMC	EMC184045B	980192	Aug. 01, 2019	Jul. 31, 2020
RF Cable	EMC	EMC104-SM-SM-8000	181106	Oct. 07, 2019	Oct. 06, 2020
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Oct. 07, 2019	Oct. 06, 2020
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Oct. 07, 2019	Oct. 06, 2020
LF cable 1M	EMC	EMCCFD400-NM-NM-1000	160502	Oct. 07, 2019	Oct. 06, 2020
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Oct. 07, 2019	Oct. 06, 2020
LF cable 10M	Woken	CFD400NL-LW	CFD400NL-002	Oct. 07, 2019	Oct. 06, 2020
Measurement Software	AUDIX	e3	6.120210g	NA	NA

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

Test Item	RF Conducted				
Test Site	(TH01-WS)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101498	Dec. 17, 2019	Dec. 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 INSTEK	GPC-6030D	GES855395	Oct. 29, 2019	Oct. 28, 2020
AC POWER SOURCE	APC	AFC-500W	F312060012	Dec. 02, 2019	Dec. 01, 2020
Measurement Software	-	SENSE-15247_DTS	V5.10	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

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

1.6 Deviation from Test Standard and Measurement Procedure

None

1.7 Measurement Uncertainty

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

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

2 Test Configuration

2.1 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
AC Conduction	CO01-WS	22°C / 67%	Alex Tsai
Radiated Emissions	03CH01-WS	23-24°C / 65-67%	Akun Chung Roger Lu
RF Conducted	TH01-WS	24°C / 67%	Aska Huang

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

2.2 The Worst Test Modes and Channel Details

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

NOTE:

1. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The **Y-plane** results were found as the worst case and were shown in this report.

3 Transmitter Test Results

3.1 Conducted Emissions

3.1.1 Limit of Conducted Emissions

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

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

3.1.2 Test Procedures

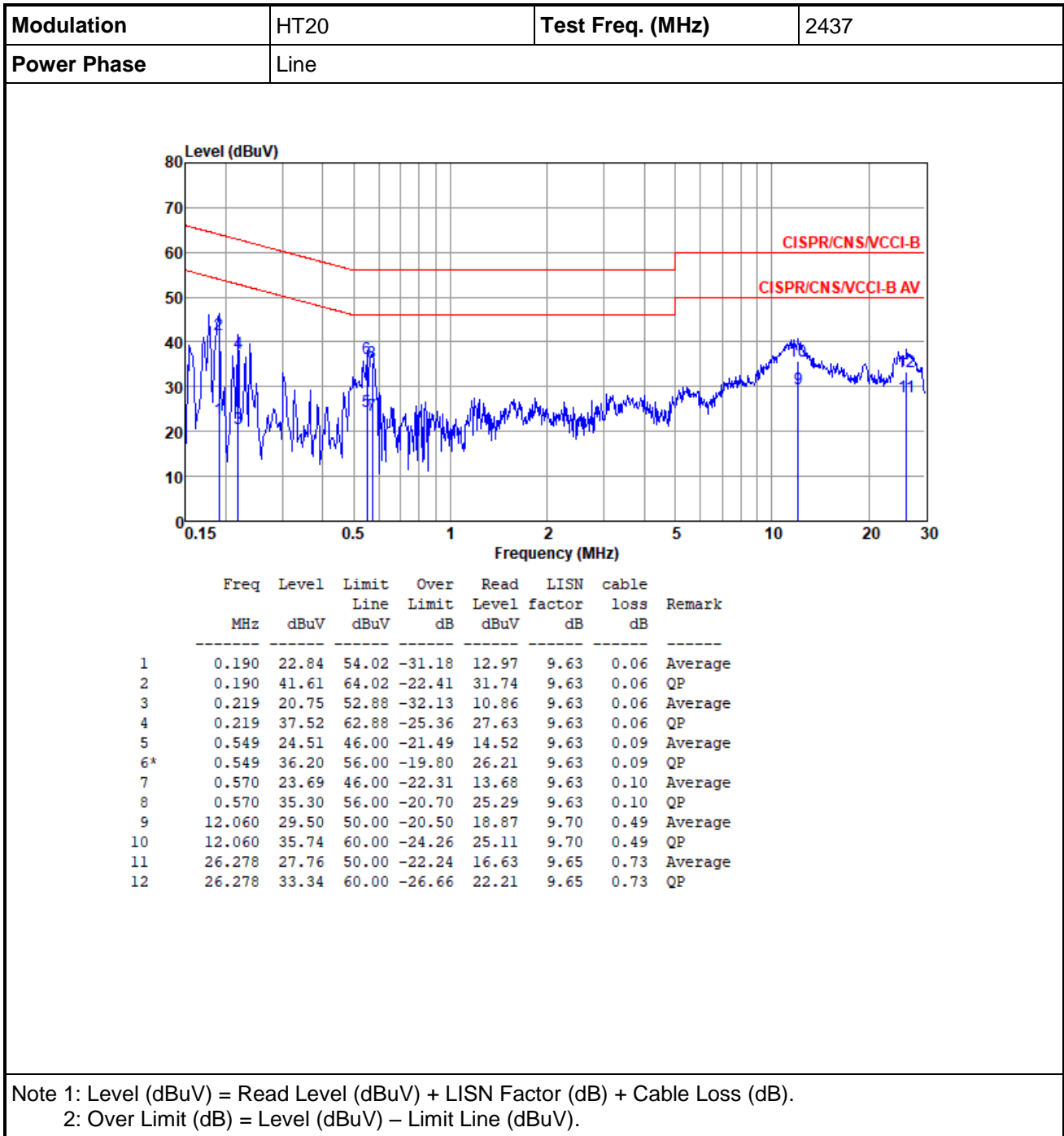
1. The device is placed on a test table, raised 80 cm above the reference ground plane. The vertical conducting plane is located 40 cm to the rear of the device.
2. The device is connected to line impedance stabilization network (LISN) and other accessories are connected to other LISN. Measured levels of AC power line conducted emission are across the 50 Ω 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

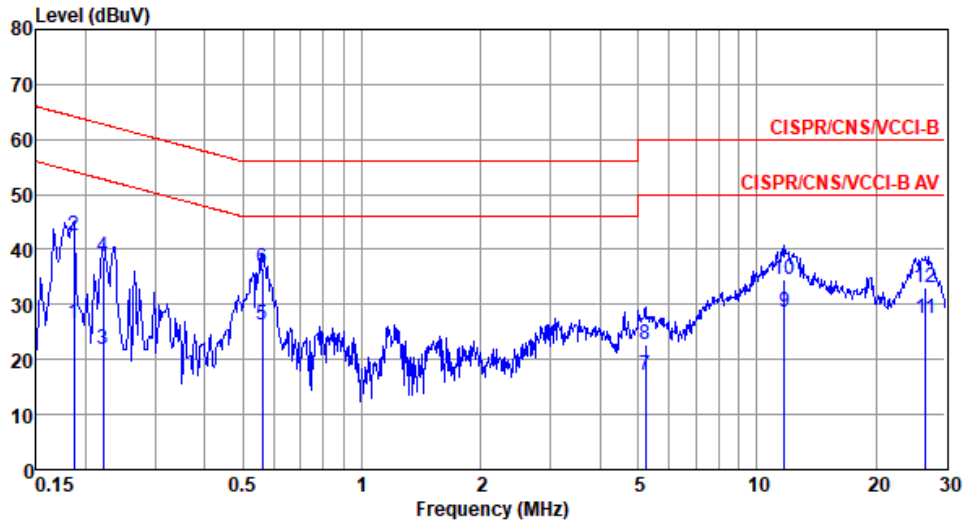


- Note: 1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

3.1.4 Test Result of Conducted Emissions



Modulation	HT20	Test Freq. (MHz)	2437
Power Phase	Neutral		



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.186	26.71	54.20	-27.49	16.86	9.65	0.06	Average
2	0.186	42.52	64.20	-21.68	32.67	9.65	0.06	QP
3	0.222	21.79	52.74	-30.95	11.93	9.65	0.06	Average
4	0.222	38.80	62.74	-23.94	28.94	9.65	0.06	QP
5	0.561	26.20	46.00	-19.80	16.28	9.65	0.09	Average
6*	0.561	36.48	56.00	-19.52	26.56	9.65	0.09	QP
7	5.221	17.02	50.00	-32.98	6.73	9.69	0.32	Average
8	5.221	22.84	60.00	-37.16	12.55	9.69	0.32	QP
9	11.745	28.68	50.00	-21.32	18.10	9.76	0.47	Average
10	11.745	34.65	60.00	-25.35	24.07	9.76	0.47	QP
11	26.699	27.59	50.00	-22.41	16.35	9.79	0.74	Average
12	26.699	32.98	60.00	-27.02	21.74	9.79	0.74	QP

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

3.2 6dB and Occupied Bandwidth

3.2.1 Limit of 6dB Bandwidth

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

3.2.2 Test Procedures

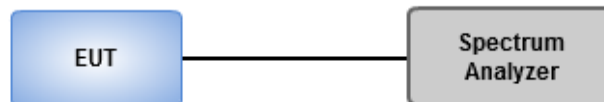
6dB Bandwidth

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

Occupied Bandwidth

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

3.2.3 Test Setup



3.2.4 Test Result of 6dB and Occupied Bandwidth

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)_2TX	10.072M	14.761M	14M8G1D	10M	14.616M
802.11g_Nss1,(6Mbps)_2TX	16.304M	16.787M	16M8D1D	12.899M	16.353M
802.11n HT20_Nss1,(MCS0)_2TX	15.652M	18.09M	18M1D1D	11.594M	17.511M
802.11n HT40_Nss1,(MCS0)_2TX	35.072M	36.035M	36M0D1D	31.449M	35.89M

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

Result

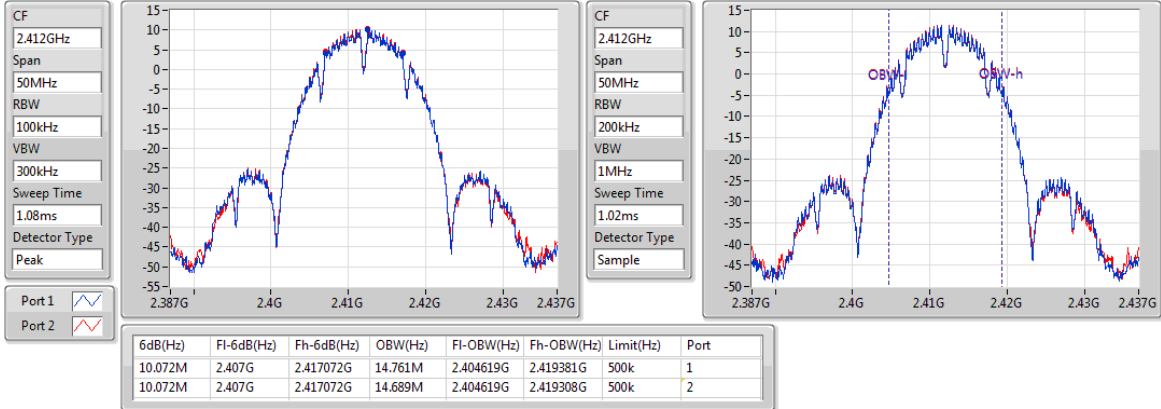
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	10.072M	14.761M	10.072M	14.689M
2437MHz	Pass	500k	10M	14.616M	10M	14.616M
2462MHz	Pass	500k	10.072M	14.616M	10M	14.616M
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	13.188M	16.498M	16.304M	16.353M
2437MHz	Pass	500k	12.899M	16.715M	15.58M	16.787M
2462MHz	Pass	500k	13.913M	16.425M	14.42M	16.353M
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	13.841M	17.511M	15.072M	17.511M
2437MHz	Pass	500k	11.594M	17.873M	15M	18.09M
2462MHz	Pass	500k	15.072M	17.511M	15.652M	17.511M
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	500k	31.449M	35.89M	33.913M	35.89M
2437MHz	Pass	500k	33.913M	35.89M	35.072M	35.89M
2452MHz	Pass	500k	35.072M	35.89M	35.072M	36.035M

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

802.11b_Nss1,(1Mbps)_2TX

EBW

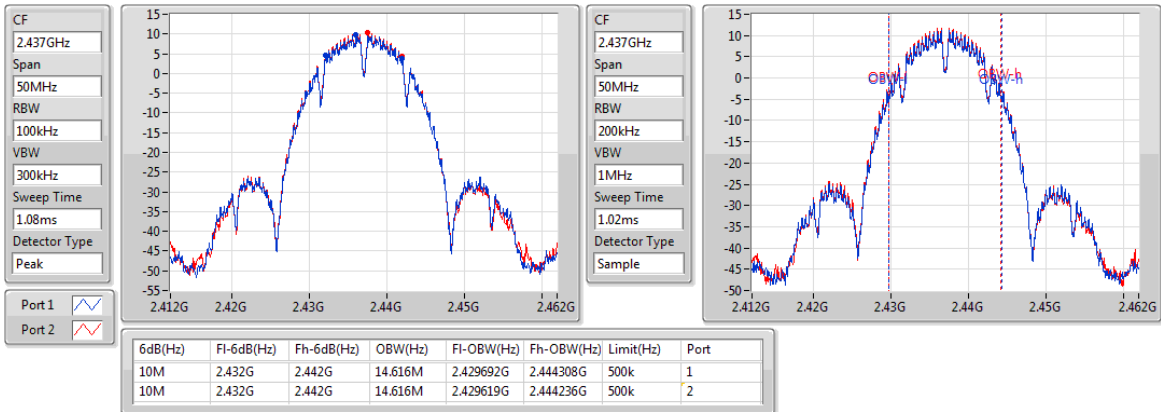
2412MHz



802.11b_Nss1,(1Mbps)_2TX

EBW

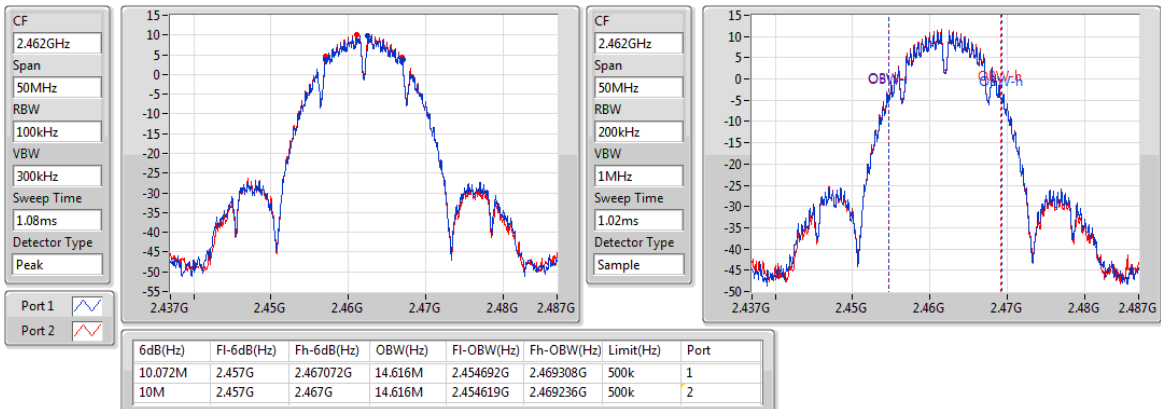
2437MHz



802.11b_Nss1,(1Mbps)_2TX

EBW

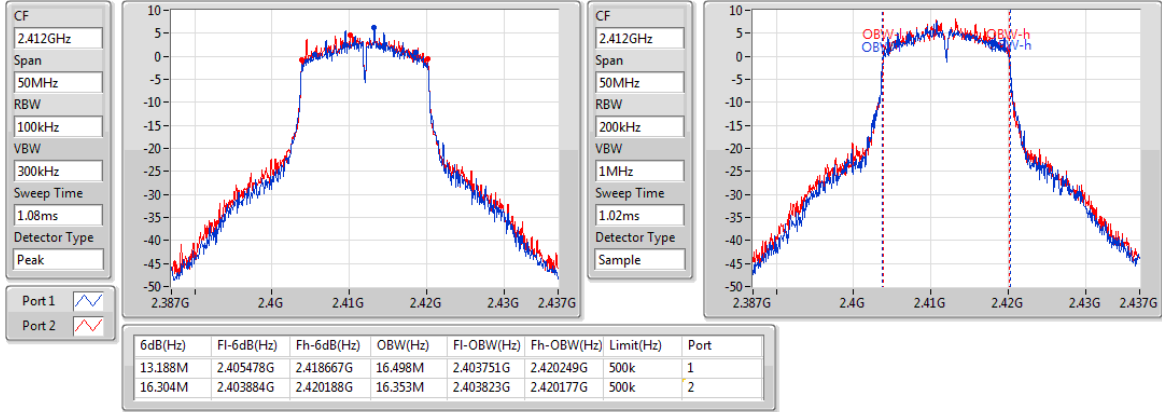
2462MHz



802.11g_Nss1,(6Mbps)_2TX

EBW

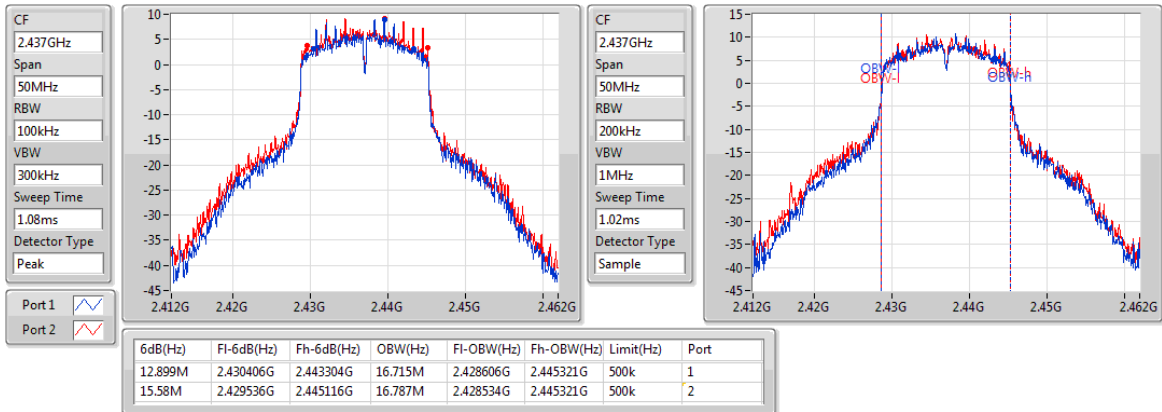
2412MHz



802.11g_Nss1,(6Mbps)_2TX

EBW

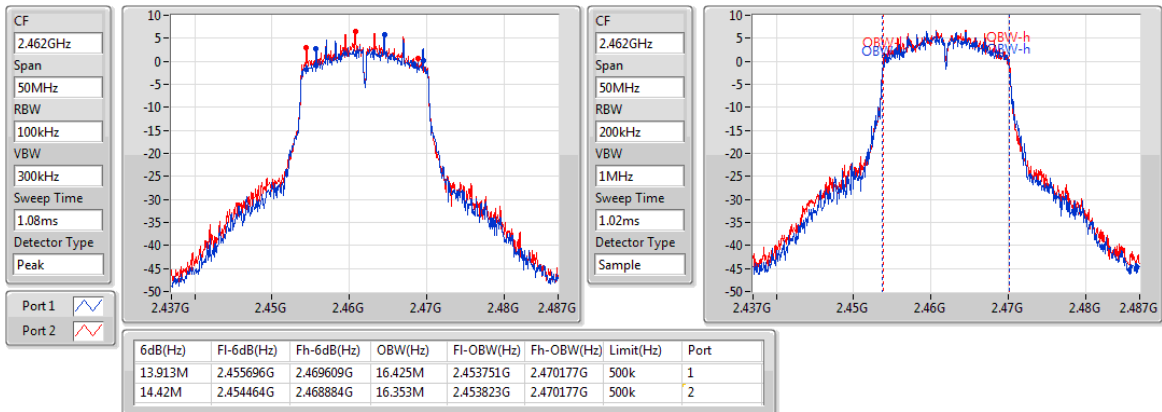
2437MHz



802.11g_Nss1,(6Mbps)_2TX

EBW

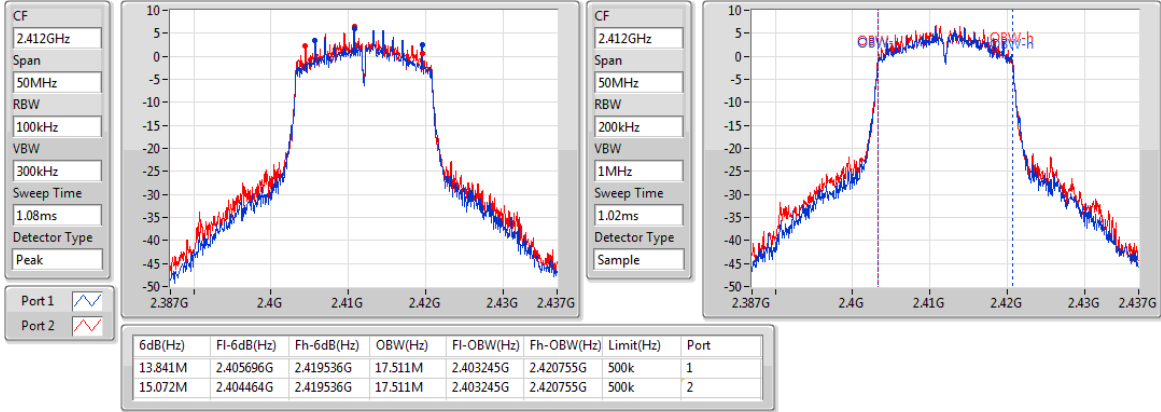
2462MHz



802.11n HT20_Nss1,(MCS0)_2TX

EBW

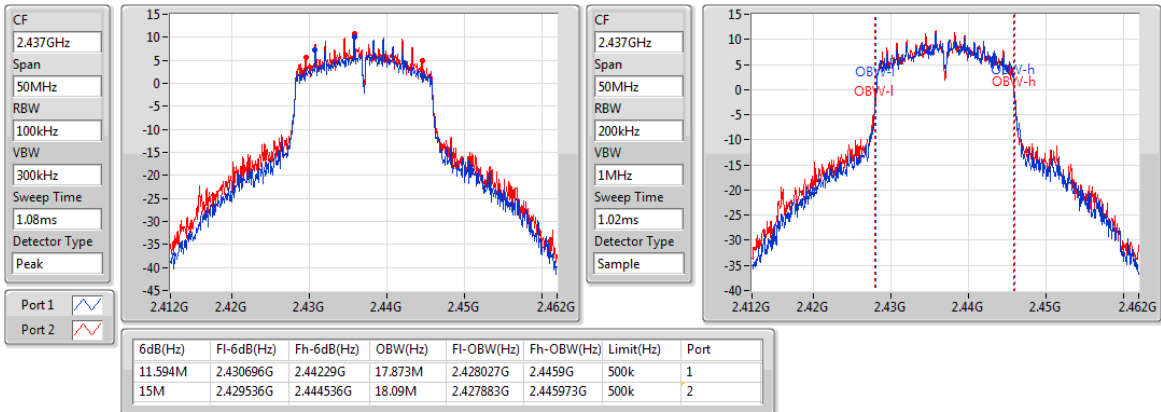
2412MHz



802.11n HT20_Nss1,(MCS0)_2TX

EBW

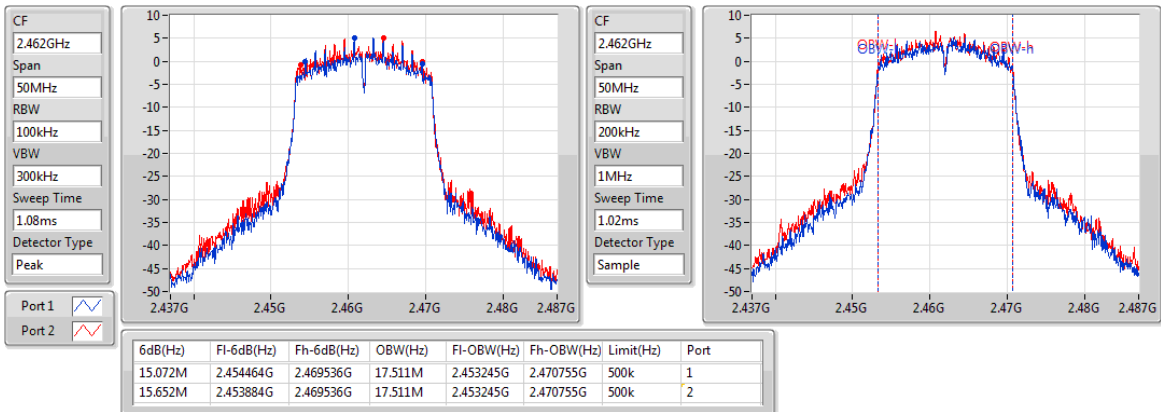
2437MHz



802.11n HT20_Nss1,(MCS0)_2TX

EBW

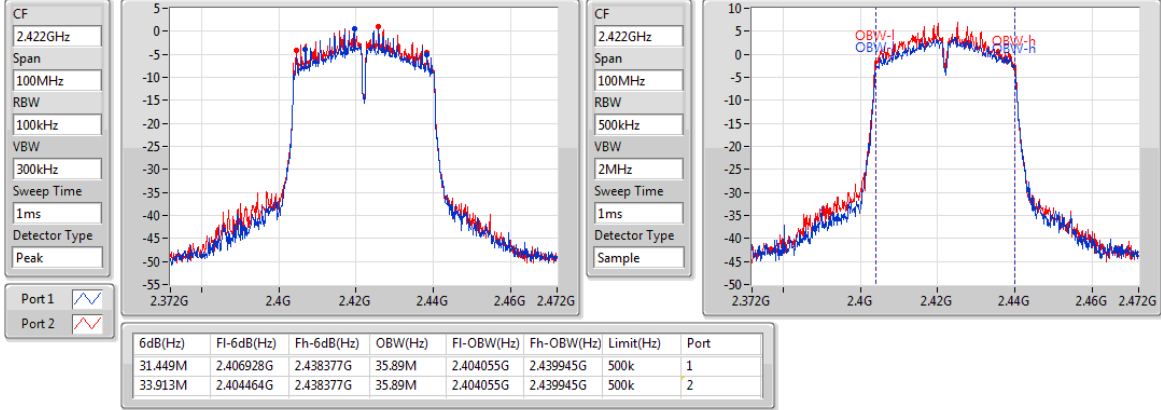
2462MHz



802.11n HT40_Nss1,(MCS0)_2TX

EBW

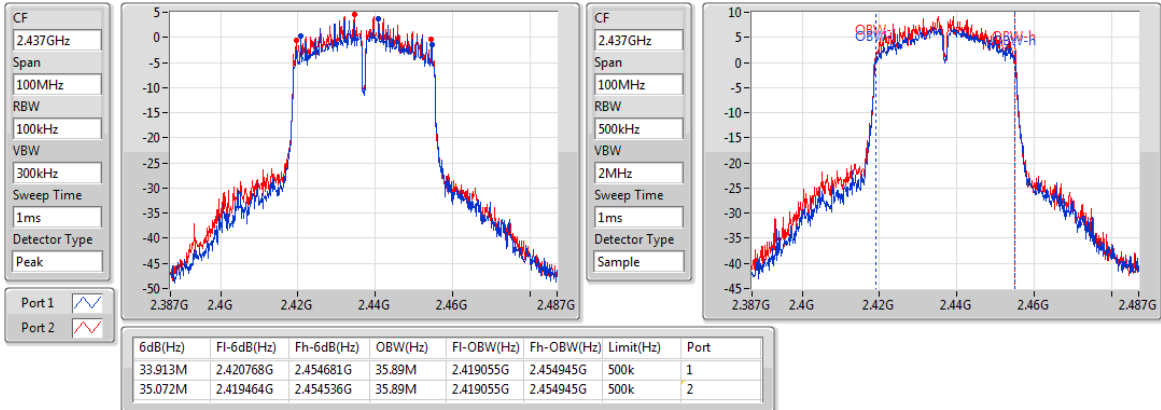
2422MHz



802.11n HT40_Nss1,(MCS0)_2TX

EBW

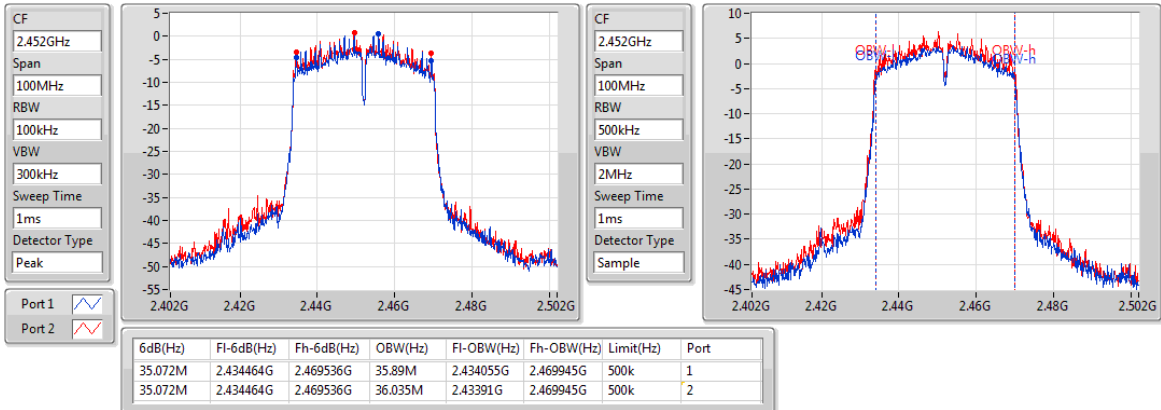
2437MHz



802.11n HT40_Nss1,(MCS0)_2TX

EBW

2452MHz



3.3 RF Output Power

3.3.1 Limit of RF Output Power

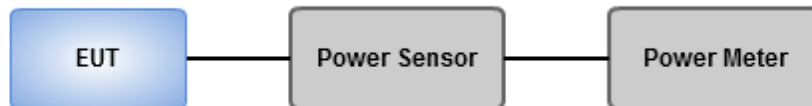
Conducted power shall not exceed 1Watt.

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

3.3.2 Test Procedures

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

3.3.3 Test Setup



3.3.4 Test Result of Maximum Output Power

Summary of Conducted (Average) Output Power

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_2TX	23.36	0.21677
802.11g_Nss1,(6Mbps)_2TX	23.30	0.21380
802.11n HT20_Nss1,(MCS0)_2TX	23.37	0.21727
802.11n HT40_Nss1,(MCS0)_2TX	20.21	0.10495

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-	-	-
2412MHz	Pass	3.80	20.18	20.47	23.34	30.00	27.14	36.00
2437MHz	Pass	3.80	20.22	20.48	23.36	30.00	27.16	36.00
2462MHz	Pass	3.80	20.21	20.49	23.36	30.00	27.16	36.00
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-	-
2412MHz	Pass	3.80	16.93	17.35	20.16	30.00	23.96	36.00
2437MHz	Pass	3.80	20.15	20.42	23.30	30.00	27.10	36.00
2462MHz	Pass	3.80	16.88	17.26	20.08	30.00	23.88	36.00
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
2412MHz	Pass	3.80	16.22	16.77	19.51	30.00	23.31	36.00
2437MHz	Pass	3.80	20.22	20.49	23.37	30.00	27.17	36.00
2462MHz	Pass	3.80	15.73	16.19	18.98	30.00	22.78	36.00
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
2422MHz	Pass	3.80	13.36	13.84	16.62	30.00	20.42	36.00
2437MHz	Pass	3.80	17.01	17.39	20.21	30.00	24.01	36.00
2452MHz	Pass	3.80	13.48	13.93	16.72	30.00	20.52	36.00

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

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.

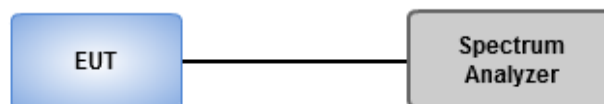
Average PSD, duty cycle $\geq 98\%$

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: ≥ 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)_2TX	1.27
802.11g_Nss1,(6Mbps)_2TX	-0.54
802.11n HT20_Nss1,(MCS0)_2TX	0.07
802.11n HT40_Nss1,(MCS0)_2TX	-6.34

Result

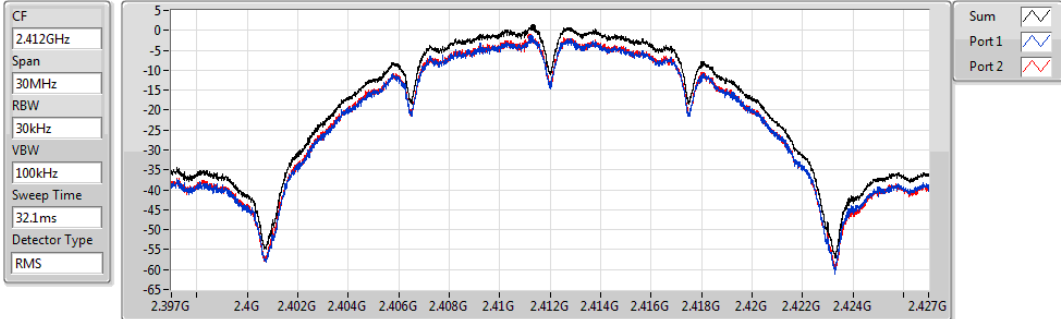
Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	6.81	-1.82	-1.48	0.78	7.19
2437MHz	Pass	6.81	-1.77	-1.80	1.00	7.19
2462MHz	Pass	6.81	-1.38	-1.90	1.27	7.19
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	6.81	-7.02	-6.51	-3.81	7.19
2437MHz	Pass	6.81	-3.73	-3.18	-0.54	7.19
2462MHz	Pass	6.81	-7.02	-6.56	-3.85	7.19
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	6.81	-7.70	-6.61	-4.14	7.19
2437MHz	Pass	6.81	-3.44	-2.36	0.07	7.19
2462MHz	Pass	6.81	-8.10	-7.00	-4.54	7.19
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	6.81	-13.18	-12.59	-9.97	7.19
2437MHz	Pass	6.81	-9.44	-8.96	-6.34	7.19
2452MHz	Pass	6.81	-12.91	-12.65	-9.79	7.19

DG = Directional Gain = $3.8 + 10 \cdot \log(2/1) = 6.81$ dBi > 6dBi, limit shall be reduced to 8 dBm - (6.81 dBi - 6 dBi) = 7.19 dBm ;
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)_2TX

PSD

2412MHz

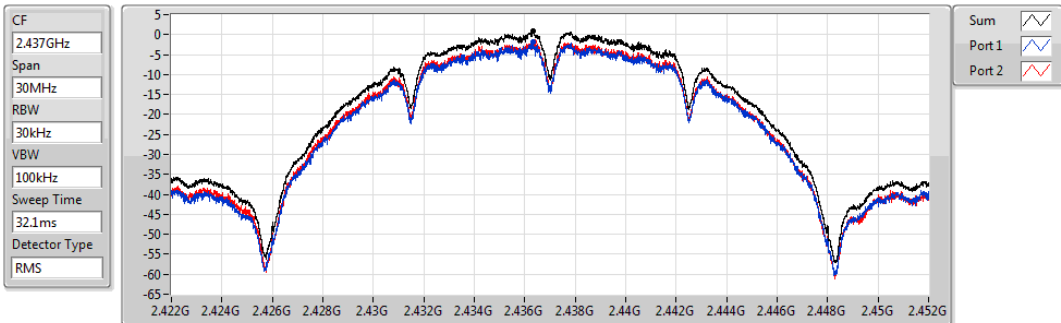


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
0.78	0.78	-1.82	-1.48

802.11b_Nss1,(1Mbps)_2TX

PSD

2437MHz

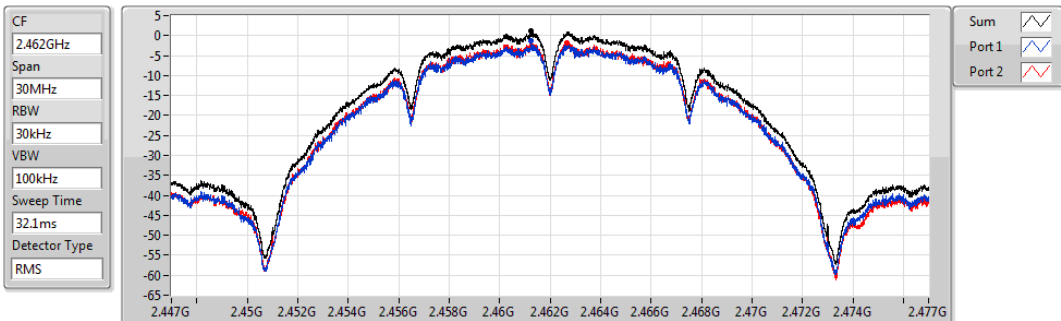


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
1.00	1.00	-1.77	-1.80

802.11b_Nss1,(1Mbps)_2TX

PSD

2462MHz

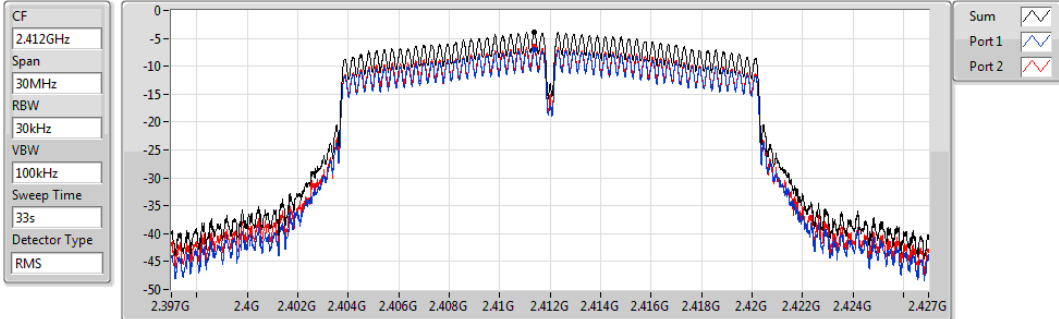


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
1.27	1.27	-1.38	-1.90

802.11g_Nss1,(6Mbps)_2TX

PSD

2412MHz

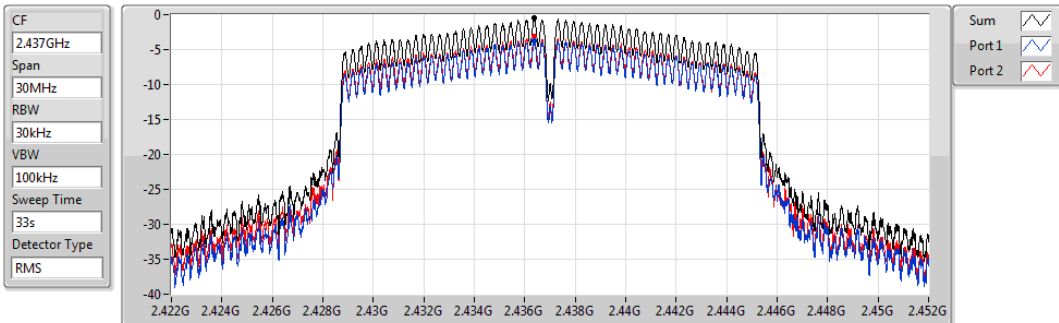


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-3.81	-3.81	-7.02	-6.51

802.11g_Nss1,(6Mbps)_2TX

PSD

2437MHz

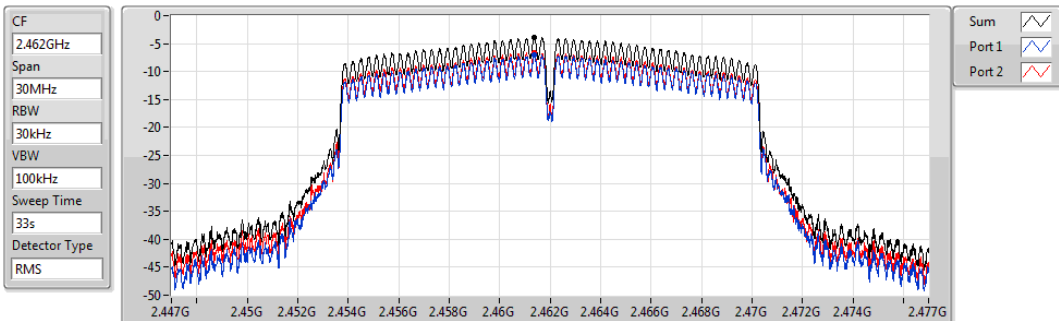


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-0.54	-0.54	-3.73	-3.18

802.11g_Nss1,(6Mbps)_2TX

PSD

2462MHz

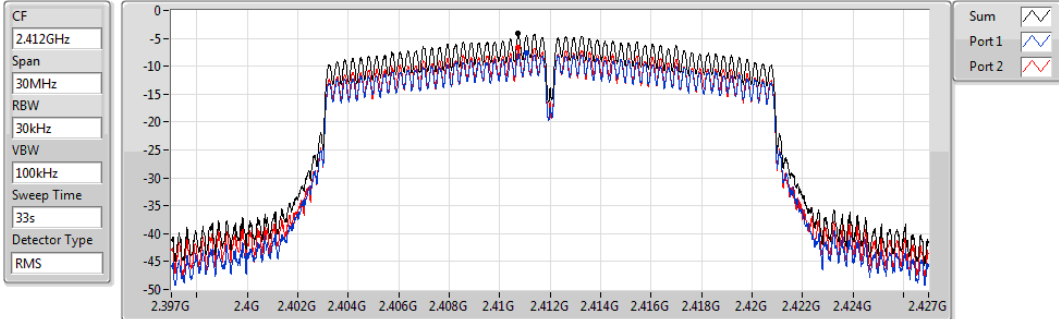


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-3.85	-3.85	-7.02	-6.56

802.11n HT20_Nss1,(MCS0)_2TX

PSD

2412MHz

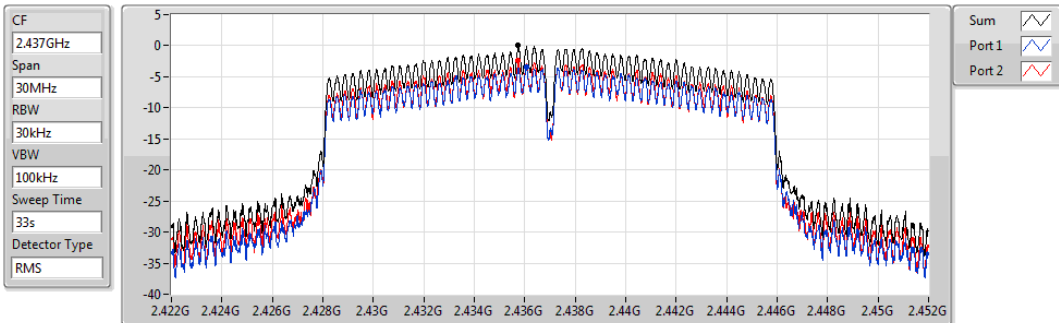


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-4.14	-4.14	-7.70	-6.61

802.11n HT20_Nss1,(MCS0)_2TX

PSD

2437MHz

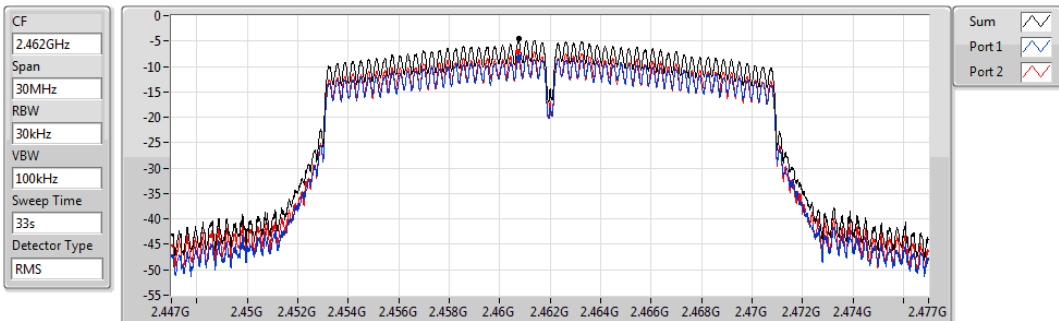


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
0.07	0.07	-3.44	-2.36

802.11n HT20_Nss1,(MCS0)_2TX

PSD

2462MHz

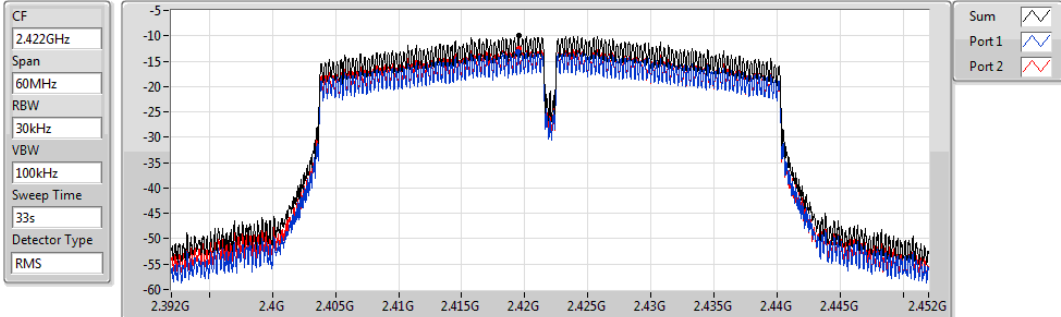


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-4.54	-4.54	-8.10	-7.00

802.11n HT40_Nss1,(MCS0)_2TX

PSD

2422MHz

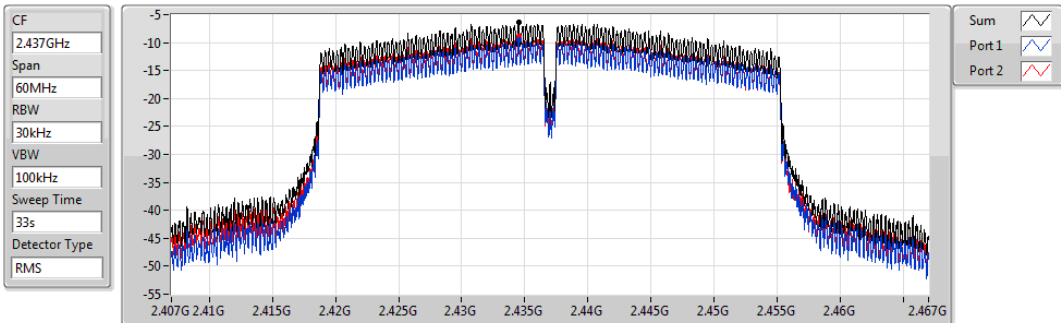


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-9.97	-9.97	-13.18	-12.59

802.11n HT40_Nss1,(MCS0)_2TX

PSD

2437MHz

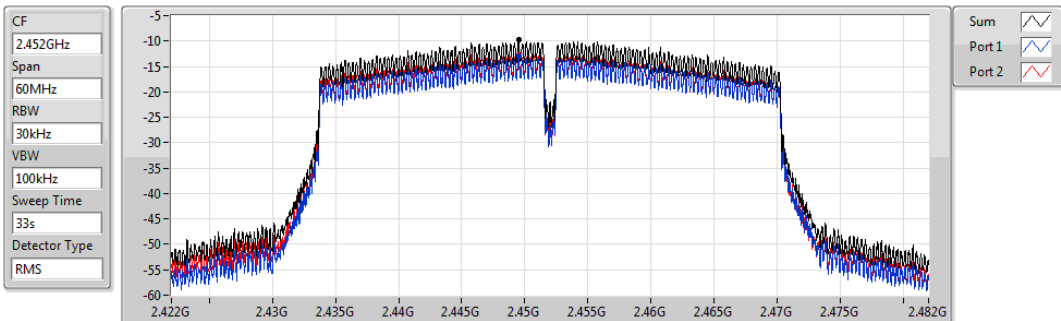


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-6.34	-6.34	-9.44	-8.96

802.11n HT40_Nss1,(MCS0)_2TX

PSD

2452MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-9.79	-9.79	-12.91	-12.65

3.5 Unwanted Emissions into Restricted Frequency Bands

3.5.1 Limit of Unwanted Emissions into Restricted Frequency Bands

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

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

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

3.5.2 Test Procedures

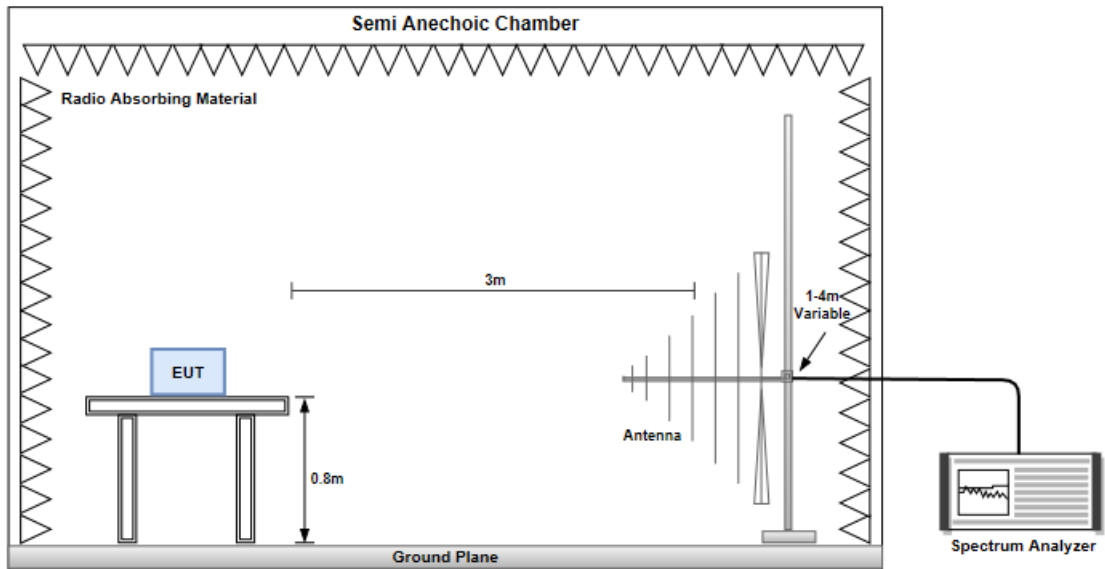
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission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

Note:

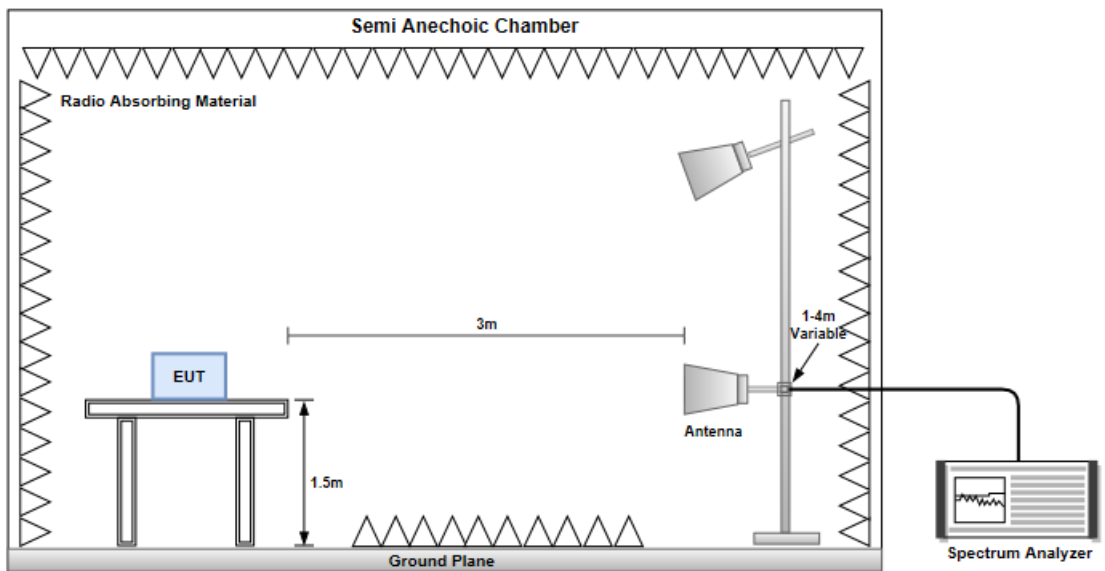
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.5.3 Test Setup

Radiated Emissions below 1 GHz

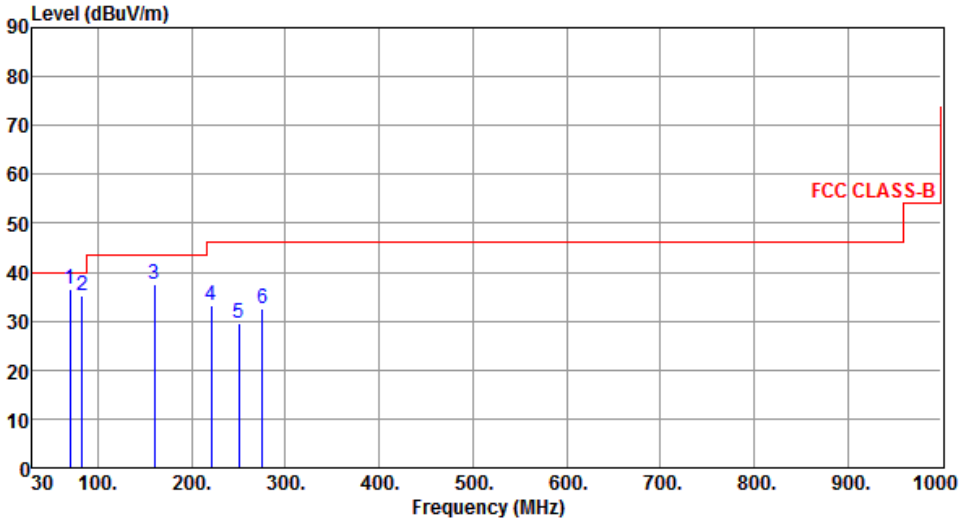


Radiated Emissions above 1 GHz



3.5.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

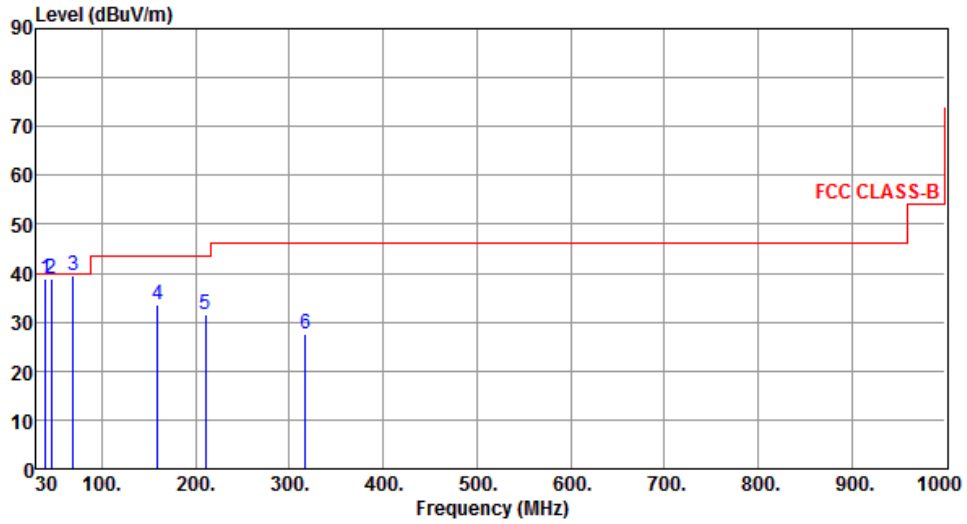
Modulation	11g	Test Freq. (MHz)	2437
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	69.75	36.56	40.00	-3.44	47.16	-10.60	QP	185	75
2	83.44	35.26	40.00	-4.74	49.01	-13.75	QP	100	132
3	160.53	37.44	43.50	-6.06	45.86	-8.42	Peak	---	---
4	221.22	33.25	46.00	-12.75	45.21	-11.96	Peak	---	---
5	250.05	29.62	46.00	-16.38	39.57	-9.95	Peak	---	---
6	275.52	32.41	46.00	-13.59	41.17	-8.76	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.

Modulation	11g	Test Freq. (MHz)	2437
Polarization	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	39.48	38.95	40.00	-1.05	47.67	-8.72	QP	100	53
2	46.28	38.72	40.00	-1.28	47.06	-8.34	QP	100	44
3	69.25	39.45	40.00	-0.55	49.96	-10.51	QP	100	145
4	159.22	33.42	43.50	-10.08	41.76	-8.34	Peak	---	---
5	210.53	31.55	43.50	-11.95	43.61	-12.06	Peak	---	---
6	317.26	27.45	46.00	-18.55	34.91	-7.46	Peak	---	---

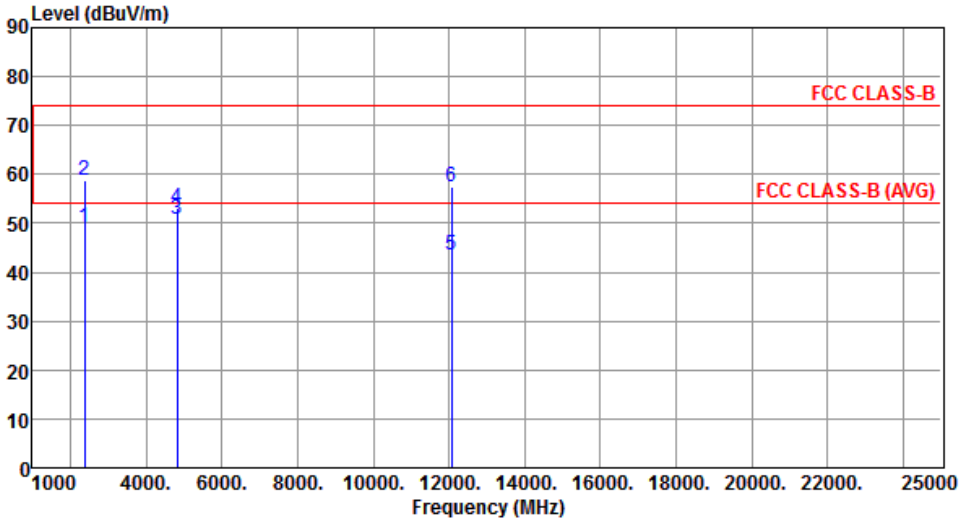
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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

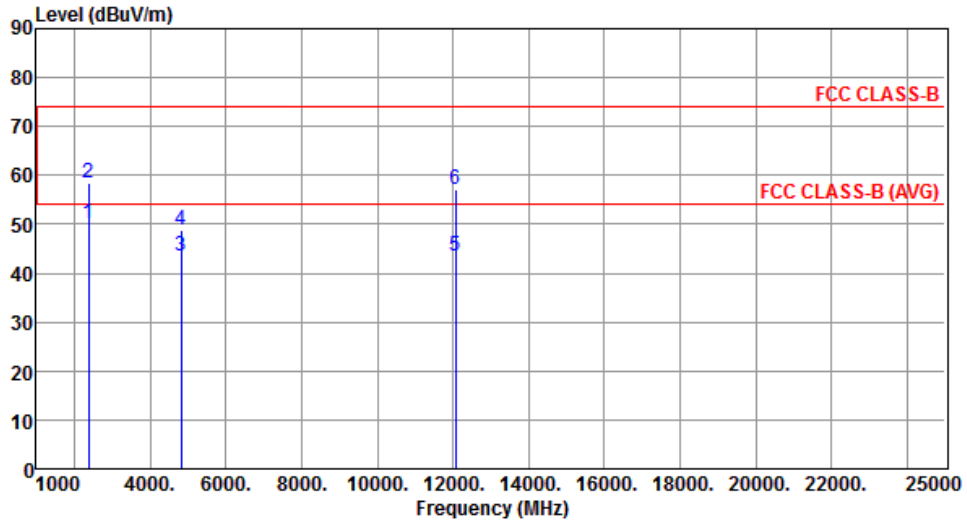
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

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

Modulation	11b	Test Freq. (MHz)	2412						
Polarization	Horizontal								
									
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	49.29	54.00	-4.71	52.09	-2.80	Average	116	47
2	2390.00	58.72	74.00	-15.28	61.52	-2.80	Peak	116	47
3	4824.00	50.94	54.00	-3.06	47.34	3.60	Average	278	345
4	4824.00	53.10	74.00	-20.90	49.50	3.60	Peak	278	345
5	12060.00	43.40	54.00	-10.60	29.55	13.85	Average	100	351
6	12060.00	57.49	74.00	-16.51	43.64	13.85	Peak	100	351

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).

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



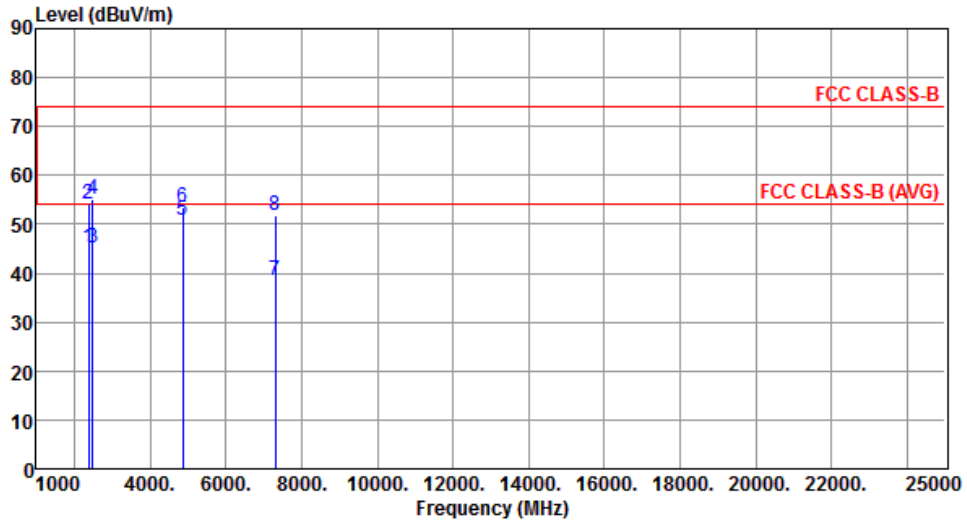
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	50.23	54.00	-3.77	53.03	-2.80	Average	218	3
2	2390.00	58.45	74.00	-15.55	61.25	-2.80	Peak	218	3
3	4824.00	43.61	54.00	-10.39	40.01	3.60	Average	345	25
4	4824.00	48.90	74.00	-25.10	45.30	3.60	Peak	345	25
5	12060.00	43.41	54.00	-10.59	29.56	13.85	Average	100	196
6	12060.00	57.00	74.00	-17.00	43.15	13.85	Peak	100	196

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).

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



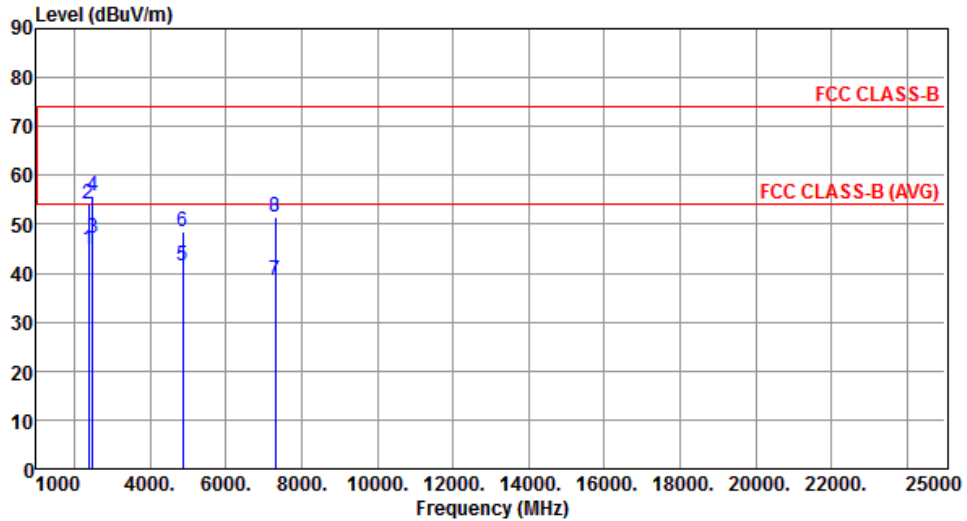
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	45.04	54.00	-8.96	47.84	-2.80	Average	118	46
2	2390.00	54.18	74.00	-19.82	56.98	-2.80	Peak	118	46
3	2483.50	45.30	54.00	-8.70	48.33	-3.03	Average	118	46
4	2483.50	55.02	74.00	-18.98	58.05	-3.03	Peak	118	46
5	4874.00	50.76	54.00	-3.24	47.12	3.64	Average	280	354
6	4874.00	53.32	74.00	-20.68	49.68	3.64	Peak	280	354
7	7311.00	38.67	54.00	-15.33	29.40	9.27	Average	100	50
8	7311.00	51.88	74.00	-22.12	42.61	9.27	Peak	100	60

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	11b	Test Freq. (MHz)	2437
Polarization	Vertical		



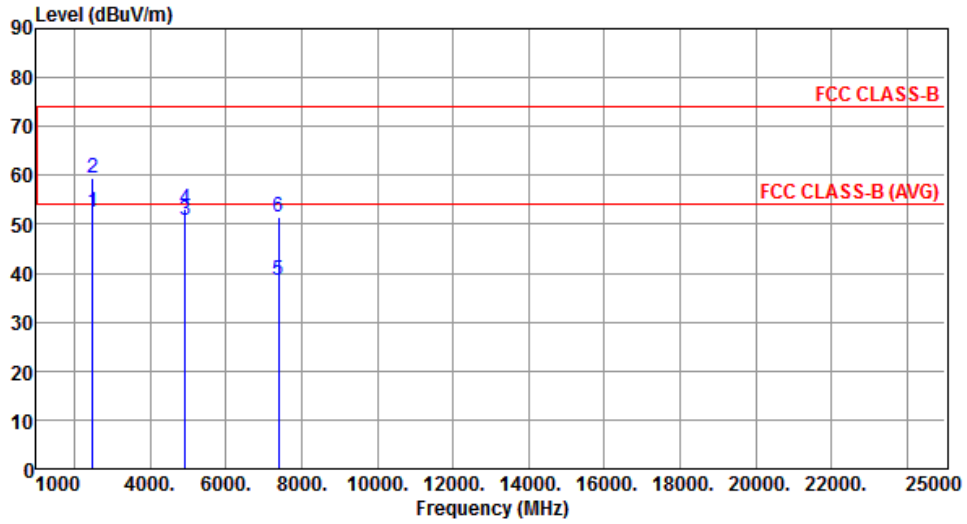
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	44.92	54.00	-9.08	47.72	-2.80	Average	217	354
2	2390.00	54.28	74.00	-19.72	57.08	-2.80	Peak	217	354
3	2483.50	47.24	54.00	-6.76	50.27	-3.03	Average	217	354
4	2483.50	55.74	74.00	-18.26	58.77	-3.03	Peak	217	354
5	4874.00	41.66	54.00	-12.34	38.02	3.64	Average	348	30
6	4874.00	48.36	74.00	-25.64	44.72	3.64	Peak	348	30
7	7311.00	38.40	54.00	-15.60	29.13	9.27	Average	100	60
8	7311.00	51.60	74.00	-22.40	42.33	9.27	Peak	100	60

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

*Factor includes antenna factor , cable loss and amplifier gain

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

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



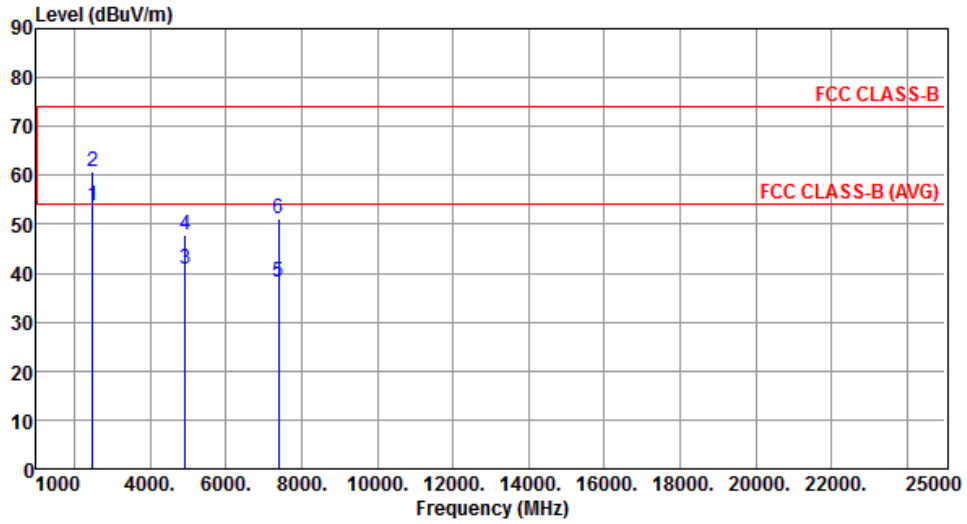
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	52.52	54.00	-1.48	55.55	-3.03	Average	132	53
2	2483.50	59.54	74.00	-14.46	62.57	-3.03	Peak	132	53
3	4924.00	50.70	54.00	-3.30	47.01	3.69	Average	288	354
4	4924.00	53.13	74.00	-20.87	49.44	3.69	Peak	288	354
5	7386.00	38.39	54.00	-15.61	29.32	9.07	Average	100	60
6	7386.00	51.49	74.00	-22.51	42.42	9.07	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).

Modulation	11b	Test Freq. (MHz)	2462
Polarization	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	53.71	54.00	-0.29	56.74	-3.03	Average	214	359
2	2483.50	60.61	74.00	-13.39	63.64	-3.03	Peak	214	359
3	4924.00	41.00	54.00	-13.00	37.31	3.69	Average	344	29
4	4924.00	47.81	74.00	-26.19	44.12	3.69	Peak	344	29
5	7386.00	38.28	54.00	-15.72	29.21	9.07	Average	100	50
6	7386.00	51.25	74.00	-22.75	42.18	9.07	Peak	100	50

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

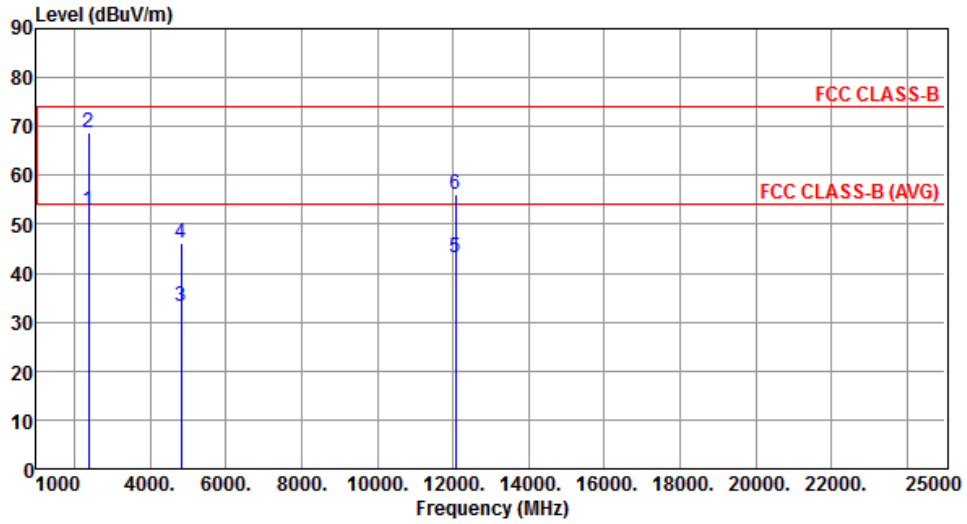
*Factor includes antenna factor , cable loss and amplifier gain

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

3.5.6 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	51.43	54.00	-2.57	54.23	-2.80	Average	131	340
2	2390.00	69.13	74.00	-4.87	71.93	-2.80	Peak	131	340
3	4824.00	33.13	54.00	-20.87	29.53	3.60	Average	100	196
4	4824.00	46.03	74.00	-27.97	42.43	3.60	Peak	100	196
5	12060.00	43.19	54.00	-10.81	29.34	13.85	Average	100	173
6	12060.00	55.39	74.00	-18.61	41.54	13.85	Peak	100	173
<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>									

Modulation	11g	Test Freq. (MHz)	2412
Polarization	Vertical		



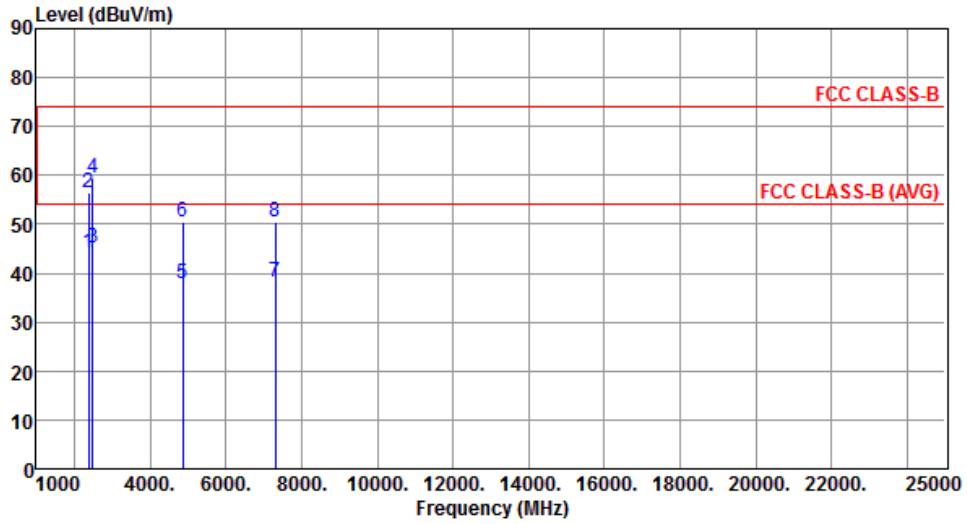
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	52.88	54.00	-1.12	55.68	-2.80	Average	199	4
2	2390.00	68.76	74.00	-5.24	71.56	-2.80	Peak	199	4
3	4824.00	33.16	54.00	-20.84	29.56	3.60	Average	100	216
4	4824.00	46.07	74.00	-27.93	42.47	3.60	Peak	100	216
5	12060.00	43.19	54.00	-10.81	29.34	13.85	Average	100	176
6	12060.00	56.28	74.00	-17.72	42.43	13.85	Peak	100	176

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).

Modulation	11g	Test Freq. (MHz)	2437
Polarization	Horizontal		



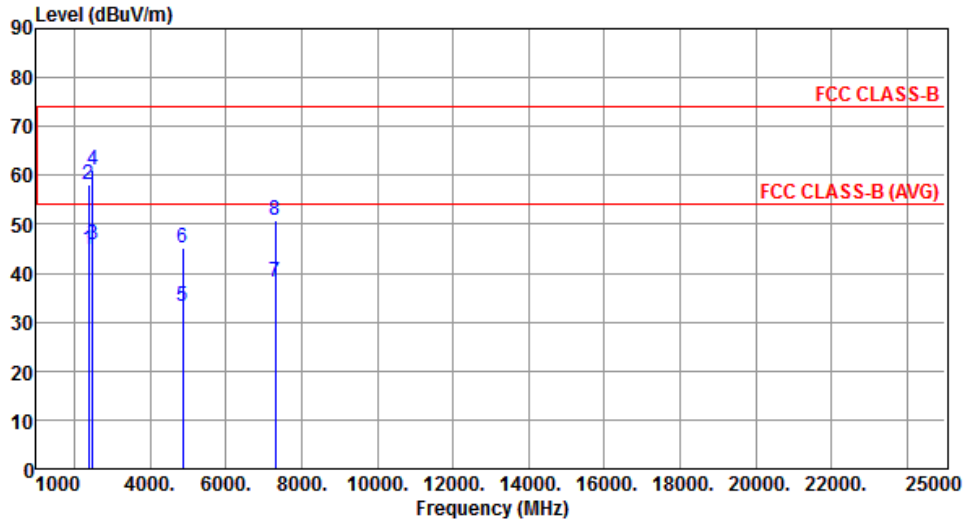
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	44.28	54.00	-9.72	47.08	-2.80	Average	123	48
2	2390.00	56.62	74.00	-17.38	59.42	-2.80	Peak	123	48
3	2483.50	45.18	54.00	-8.82	48.21	-3.03	Average	123	48
4	2483.50	59.45	74.00	-14.55	62.48	-3.03	Peak	123	48
5	4874.00	37.99	54.00	-16.01	34.35	3.64	Average	100	342
6	4874.00	50.46	74.00	-23.54	46.82	3.64	Peak	100	342
7	7311.00	38.16	54.00	-15.84	28.89	9.27	Average	100	30
8	7311.00	50.32	74.00	-23.68	41.05	9.27	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).

Modulation	11g	Test Freq. (MHz)	2437
Polarization	Vertical		



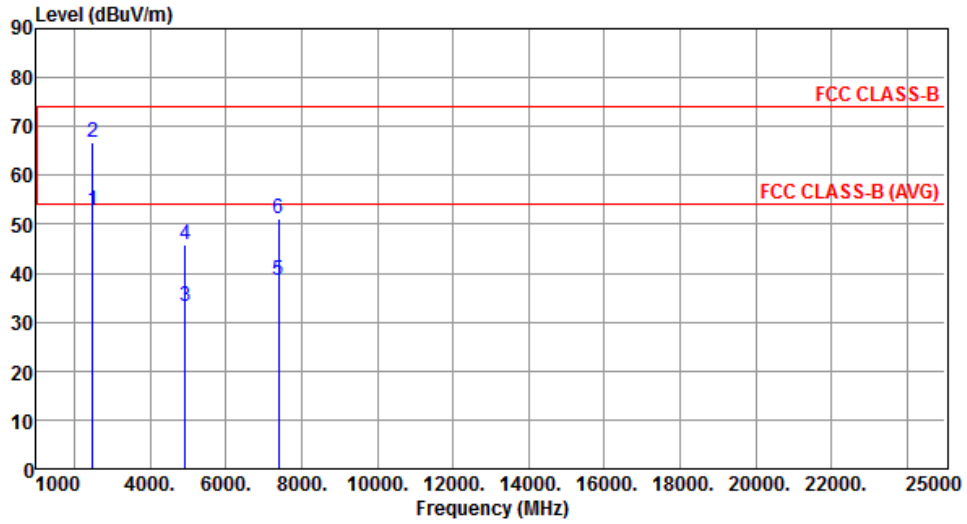
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	44.97	54.00	-9.03	47.77	-2.80	Average	148	4
2	2390.00	58.16	74.00	-15.84	60.96	-2.80	Peak	148	4
3	2483.50	45.99	54.00	-8.01	49.02	-3.03	Average	148	4
4	2483.50	61.22	74.00	-12.78	64.25	-3.03	Peak	148	4
5	4874.00	33.08	54.00	-20.92	29.44	3.64	Average	100	35
6	4874.00	45.15	74.00	-28.85	41.51	3.64	Peak	100	35
7	7311.00	38.19	54.00	-15.81	28.92	9.27	Average	100	165
8	7311.00	50.72	74.00	-23.28	41.45	9.27	Peak	100	165

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).

Modulation	11g	Test Freq. (MHz)	2462
Polarization	Horizontal		



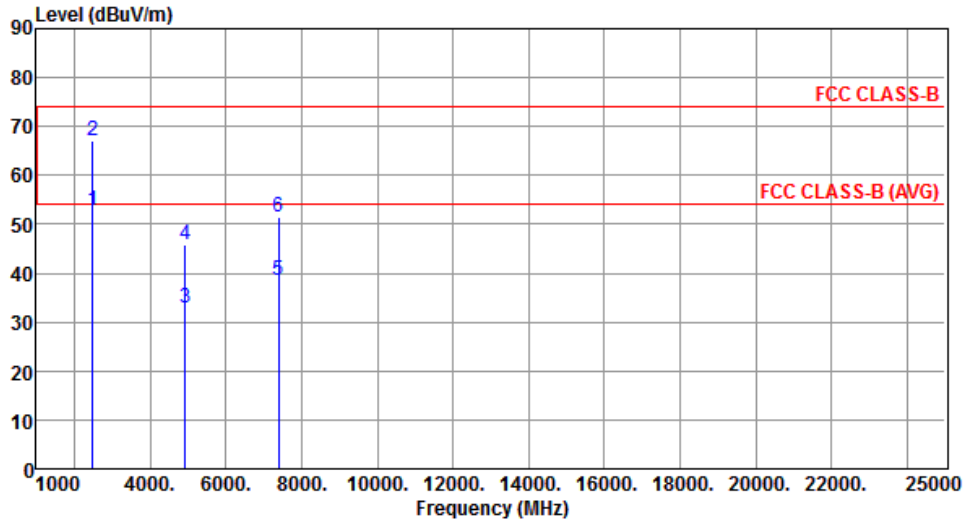
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	52.84	54.00	-1.16	55.87	-3.03	Average	134	326
2	2483.50	66.90	74.00	-7.10	69.93	-3.03	Peak	134	326
3	4924.00	33.36	54.00	-20.64	29.67	3.69	Average	100	144
4	4924.00	45.97	74.00	-28.03	42.28	3.69	Peak	100	144
5	7386.00	38.64	54.00	-15.36	29.57	9.07	Average	100	166
6	7386.00	51.31	74.00	-22.69	42.24	9.07	Peak	100	166

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).

Modulation	11g	Test Freq. (MHz)	2462
Polarization	Vertical		



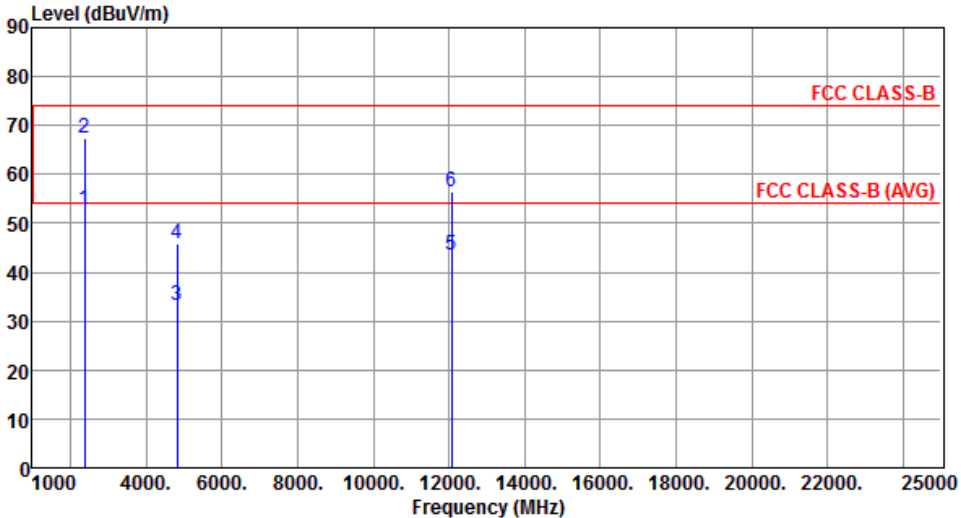
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	52.65	54.00	-1.35	55.68	-3.03	Average	143	3
2	2483.50	67.13	74.00	-6.87	70.16	-3.03	Peak	143	3
3	4924.00	32.97	54.00	-21.03	29.28	3.69	Average	100	122
4	4924.00	45.94	74.00	-28.06	42.25	3.69	Peak	100	122
5	7386.00	38.43	54.00	-15.57	29.36	9.07	Average	100	212
6	7386.00	51.54	74.00	-22.46	42.47	9.07	Peak	100	212

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

*Factor includes antenna factor , cable loss and amplifier gain

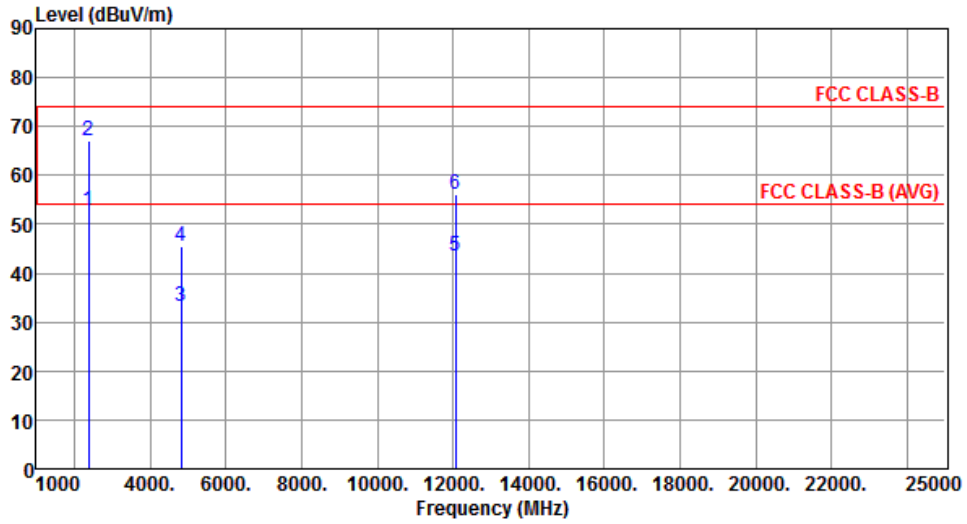
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

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

Modulation	HT20	Test Freq. (MHz)	2412						
Polarization	Horizontal								
									
	Freq. 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	52.69	54.00	-1.31	55.49	-2.80	Average	228	332
2	2390.00	67.48	74.00	-6.52	70.28	-2.80	Peak	228	332
3	4824.00	33.12	54.00	-20.88	29.52	3.60	Average	100	154
4	4824.00	45.87	74.00	-28.13	42.27	3.60	Peak	100	154
5	12060.00	43.40	54.00	-10.60	29.55	13.85	Average	100	173
6	12060.00	56.52	74.00	-17.48	42.67	13.85	Peak	100	173

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).

Modulation	HT20	Test Freq. (MHz)	2412
Polarization	Vertical		



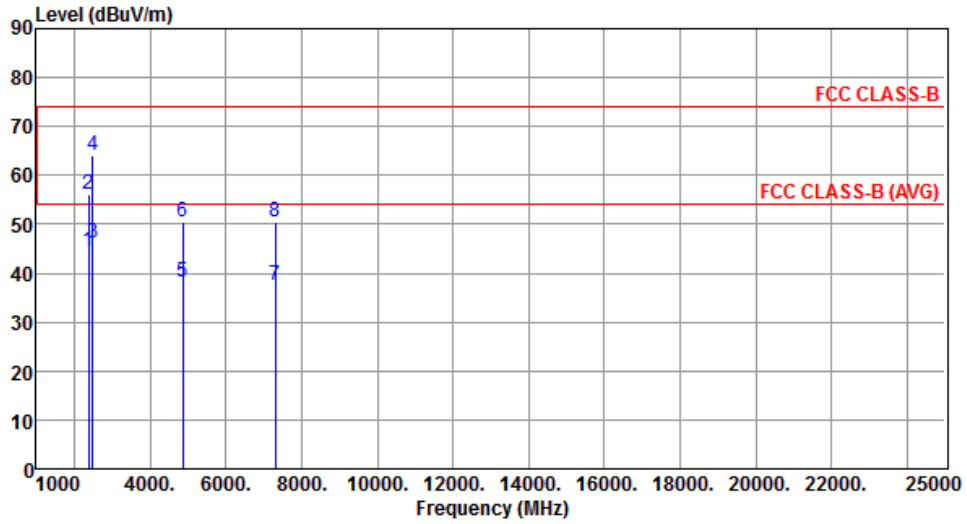
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	52.81	54.00	-1.19	55.61	-2.80	Average	201	3
2	2390.00	67.21	74.00	-6.79	70.01	-2.80	Peak	201	3
3	4824.00	33.09	54.00	-20.91	29.49	3.60	Average	100	147
4	4824.00	45.57	74.00	-28.43	41.97	3.60	Peak	100	147
5	12060.00	43.40	54.00	-10.60	29.55	13.85	Average	100	132
6	12060.00	56.17	74.00	-17.83	42.32	13.85	Peak	100	132

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).

Modulation	HT20	Test Freq. (MHz)	2437
Polarization	Horizontal		



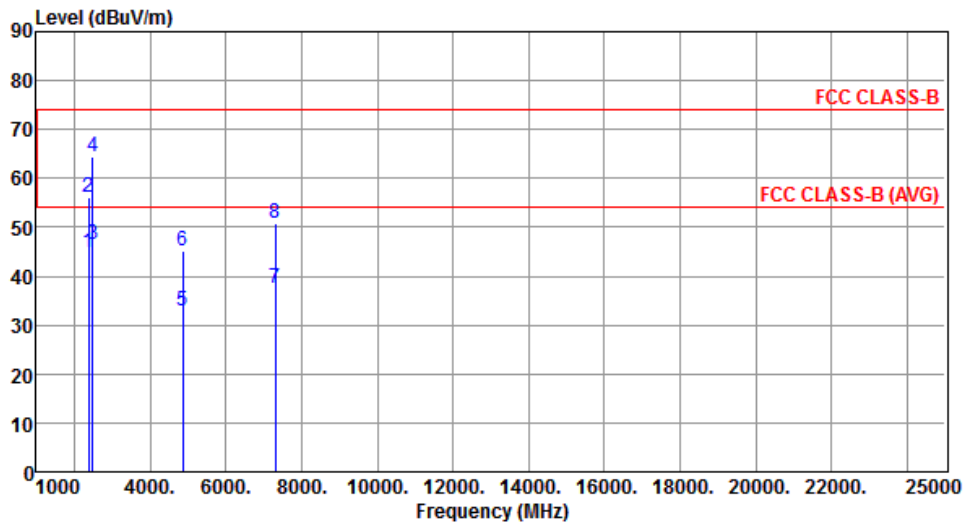
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	44.64	54.00	-9.36	47.44	-2.80	Average	134	49
2	2390.00	56.15	74.00	-17.85	58.95	-2.80	Peak	134	49
3	2483.50	46.25	54.00	-7.75	49.28	-3.03	Average	134	49
4	2483.50	64.09	74.00	-9.91	67.12	-3.03	Peak	134	49
5	4874.00	38.16	54.00	-15.84	34.52	3.64	Average	100	347
6	4874.00	50.56	74.00	-23.44	46.92	3.64	Peak	100	347
7	7311.00	37.59	54.00	-16.41	28.32	9.27	Average	100	167
8	7311.00	50.50	74.00	-23.50	41.23	9.27	Peak	100	167

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).

Modulation	HT20	Test Freq. (MHz)	2437
Polarization	Vertical		



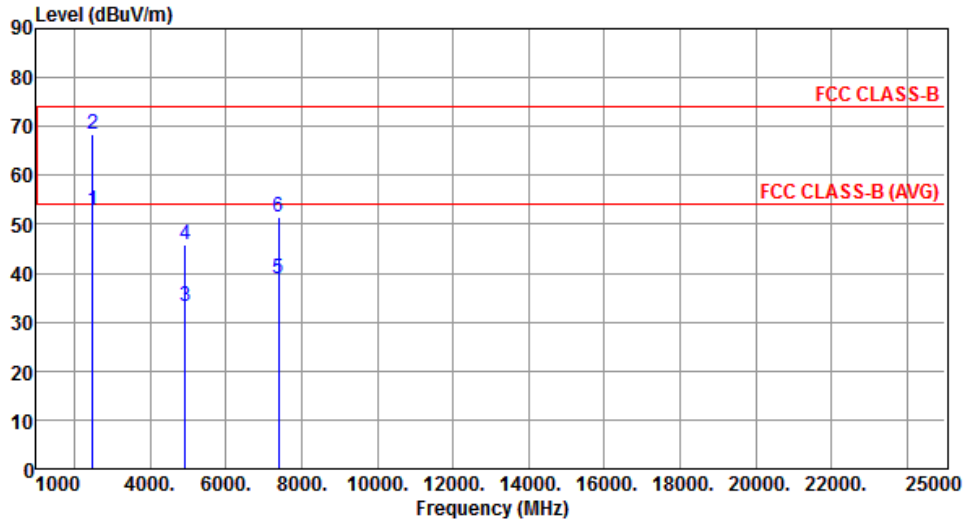
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	44.73	54.00	-9.27	47.53	-2.80	Average	193	4
2	2390.00	56.12	74.00	-17.88	58.92	-2.80	Peak	193	4
3	2483.50	46.35	54.00	-7.65	49.38	-3.03	Average	193	4
4	2483.50	64.32	74.00	-9.68	67.35	-3.03	Peak	193	4
5	4874.00	33.04	54.00	-20.96	29.40	3.64	Average	100	30
6	4874.00	45.09	74.00	-28.91	41.45	3.64	Peak	100	30
7	7311.00	37.57	54.00	-16.43	28.30	9.27	Average	100	60
8	7311.00	50.97	74.00	-23.03	41.70	9.27	Peak	100	60

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	HT20	Test Freq. (MHz)	2462
Polarization	Horizontal		



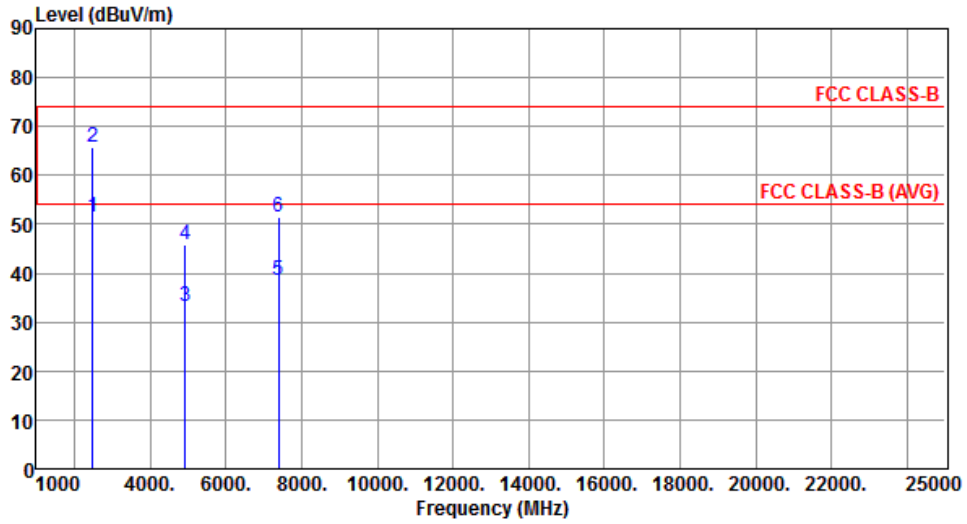
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	52.80	54.00	-1.20	55.83	-3.03	Average	238	325
2	2483.50	68.53	74.00	-5.47	71.56	-3.03	Peak	238	325
3	4924.00	33.25	54.00	-20.75	29.56	3.69	Average	100	182
4	4924.00	45.94	74.00	-28.06	42.25	3.69	Peak	100	182
5	7386.00	38.70	54.00	-15.30	29.63	9.07	Average	100	231
6	7386.00	51.62	74.00	-22.38	42.55	9.07	Peak	100	231

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).

Modulation	HT20	Test Freq. (MHz)	2462
Polarization	Vertical		



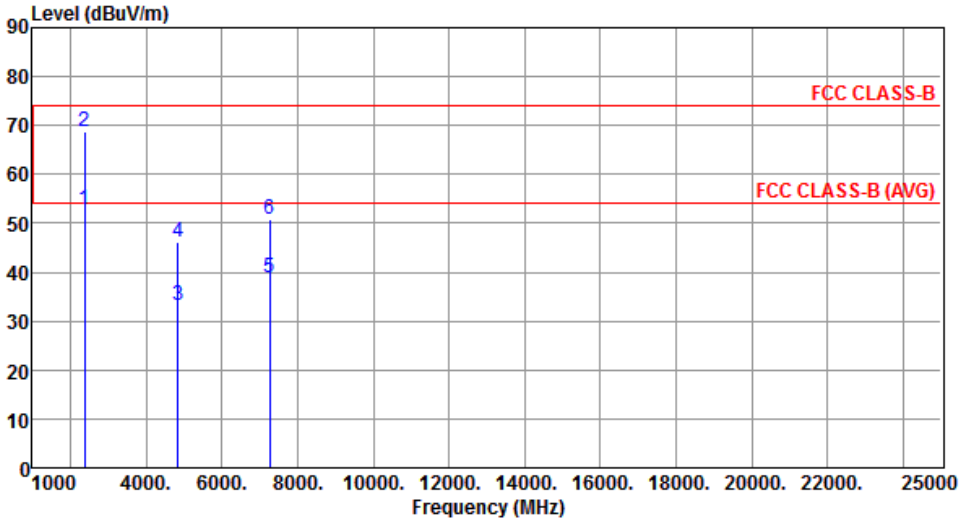
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	51.31	54.00	-2.69	54.34	-3.03	Average	210	10
2	2483.50	65.65	74.00	-8.35	68.68	-3.03	Peak	210	10
3	4924.00	33.30	54.00	-20.70	29.61	3.69	Average	100	175
4	4924.00	45.97	74.00	-28.03	42.28	3.69	Peak	100	175
5	7386.00	38.45	54.00	-15.55	29.38	9.07	Average	100	133
6	7386.00	51.52	74.00	-22.48	42.45	9.07	Peak	100	133

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

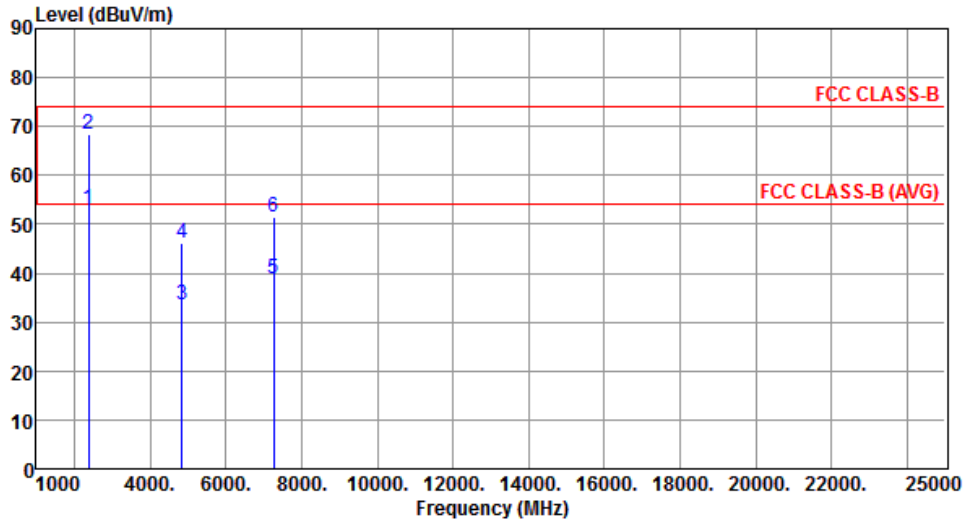
*Factor includes antenna factor , cable loss and amplifier gain

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

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

Modulation	HT40	Test Freq. (MHz)	2422						
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	52.79	54.00	-1.21	55.59	-2.80	Average	146	58
2	2390.00	68.62	74.00	-5.38	71.42	-2.80	Peak	146	58
3	4844.00	33.30	54.00	-20.70	29.65	3.65	Average	100	145
4	4844.00	46.09	74.00	-27.91	42.44	3.65	Peak	100	145
5	7266.00	38.94	54.00	-15.06	29.61	9.33	Average	100	186
6	7266.00	50.70	74.00	-23.30	41.37	9.33	Peak	100	186
<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>									

Modulation	HT40	Test Freq. (MHz)	2422
Polarization	Vertical		



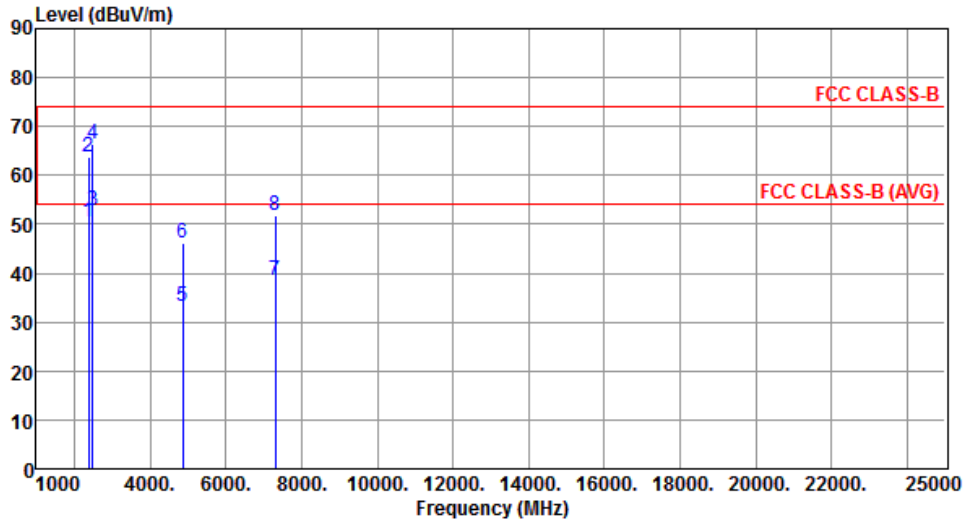
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	52.98	54.00	-1.02	55.78	-2.80	Average	170	355
2	2390.00	68.52	74.00	-5.48	71.32	-2.80	Peak	170	355
3	4844.00	33.41	54.00	-20.59	29.76	3.65	Average	100	168
4	4844.00	46.22	74.00	-27.78	42.57	3.65	Peak	100	168
5	7266.00	38.74	54.00	-15.26	29.41	9.33	Average	100	215
6	7266.00	51.64	74.00	-22.36	42.31	9.33	Peak	100	215

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).

Modulation	HT40	Test Freq. (MHz)	2437
Polarization	Horizontal		



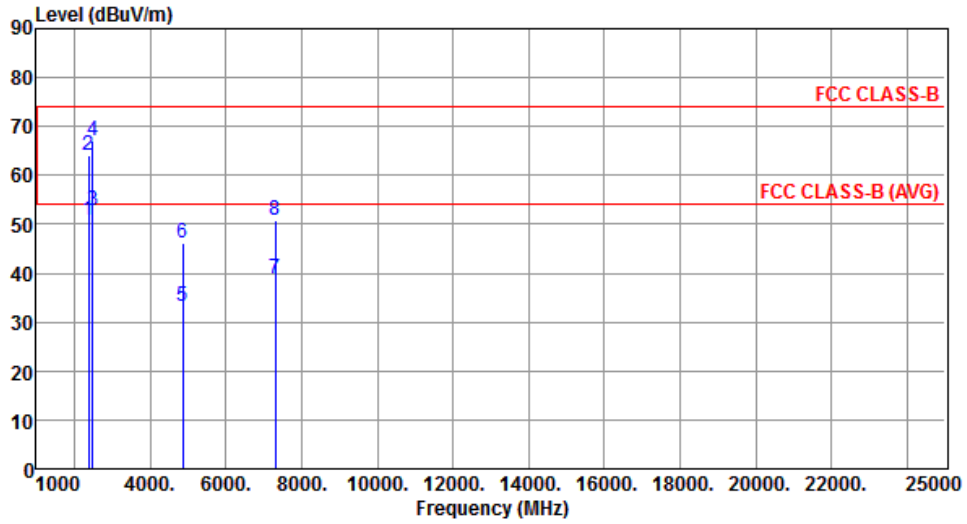
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	50.43	54.00	-3.57	53.23	-2.80	Average	155	46
2	2390.00	63.71	74.00	-10.29	66.51	-2.80	Peak	155	46
3	2483.50	52.92	54.00	-1.08	55.95	-3.03	Average	155	46
4	2483.50	66.42	74.00	-7.58	69.45	-3.03	Peak	155	46
5	4874.00	33.20	54.00	-20.80	29.56	3.64	Average	100	176
6	4874.00	46.18	74.00	-27.82	42.54	3.64	Peak	100	176
7	7311.00	38.53	54.00	-15.47	29.26	9.27	Average	100	123
8	7311.00	51.93	74.00	-22.07	42.66	9.27	Peak	100	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).

Modulation	HT40	Test Freq. (MHz)	2437
Polarization	Vertical		



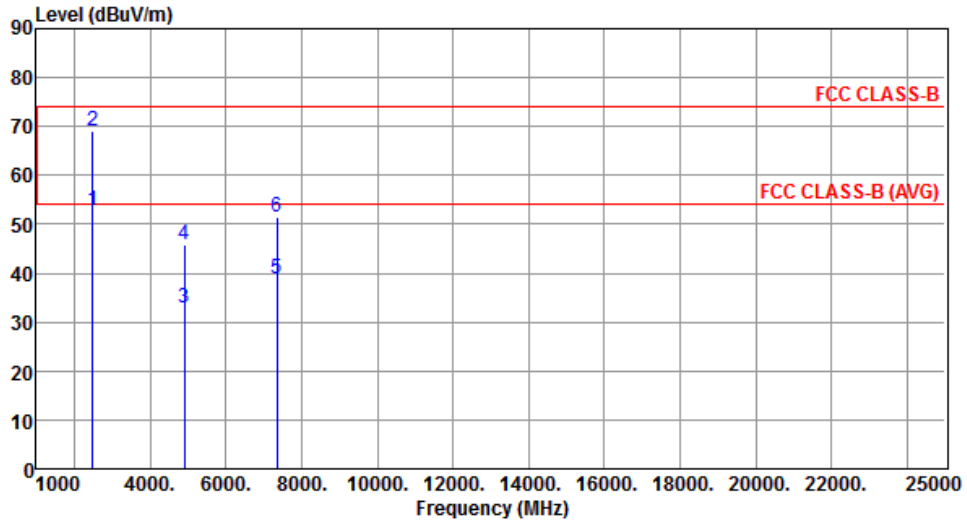
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	50.70	54.00	-3.30	53.50	-2.80	Average	164	359
2	2390.00	64.11	74.00	-9.89	66.91	-2.80	Peak	164	359
3	2483.50	52.80	54.00	-1.20	55.83	-3.03	Average	164	359
4	2483.50	66.98	74.00	-7.02	70.01	-3.03	Peak	164	359
5	4874.00	33.27	54.00	-20.73	29.63	3.64	Average	100	185
6	4874.00	46.15	74.00	-27.85	42.51	3.64	Peak	100	185
7	7311.00	39.02	54.00	-14.98	29.75	9.27	Average	100	138
8	7311.00	50.75	74.00	-23.25	41.48	9.27	Peak	100	138

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).

Modulation	HT40	Test Freq. (MHz)	2452
Polarization	Horizontal		



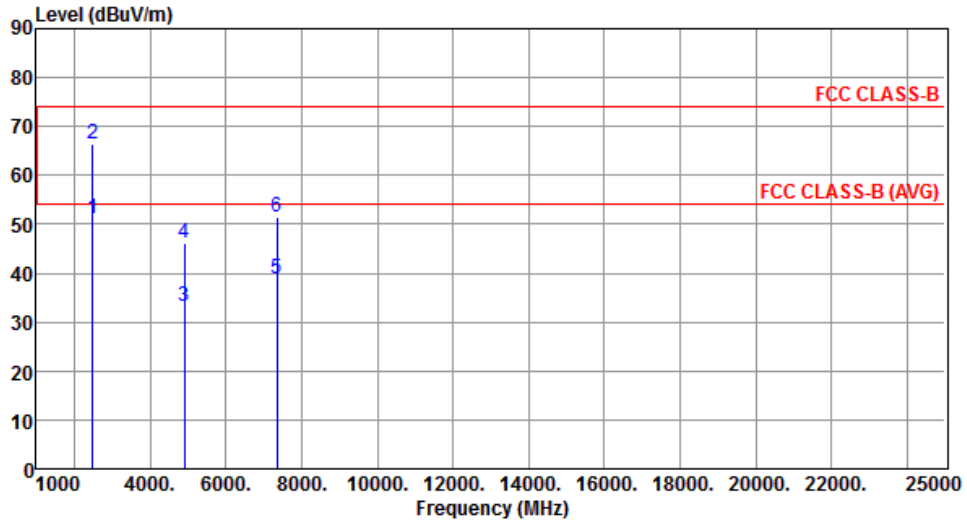
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	52.68	54.00	-1.32	55.71	-3.03	Average	206	330
2	2483.50	68.95	74.00	-5.05	71.98	-3.03	Peak	206	330
3	4904.00	32.97	54.00	-21.03	29.34	3.63	Average	100	168
4	4904.00	45.88	74.00	-28.12	42.25	3.63	Peak	100	168
5	7356.00	38.83	54.00	-15.17	29.75	9.08	Average	100	196
6	7356.00	51.51	74.00	-22.49	42.43	9.08	Peak	100	196

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).

Modulation	HT40	Test Freq. (MHz)	2452
Polarization	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	51.17	54.00	-2.83	54.20	-3.03	Average	235	3
2	2483.50	66.35	74.00	-7.65	69.38	-3.03	Peak	235	3
3	4904.00	33.31	54.00	-20.69	29.68	3.63	Average	100	171
4	4904.00	46.07	74.00	-27.93	42.44	3.63	Peak	100	171
5	7356.00	38.84	54.00	-15.16	29.76	9.08	Average	100	185
6	7356.00	51.55	74.00	-22.45	42.47	9.08	Peak	100	185

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 30 dB relative to the maximum in-band peak PSD level in 100 kHz.

3.6.2 Test Procedures

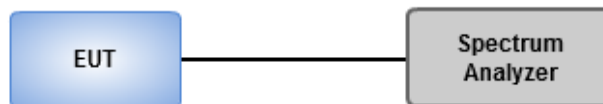
Reference level measurement

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

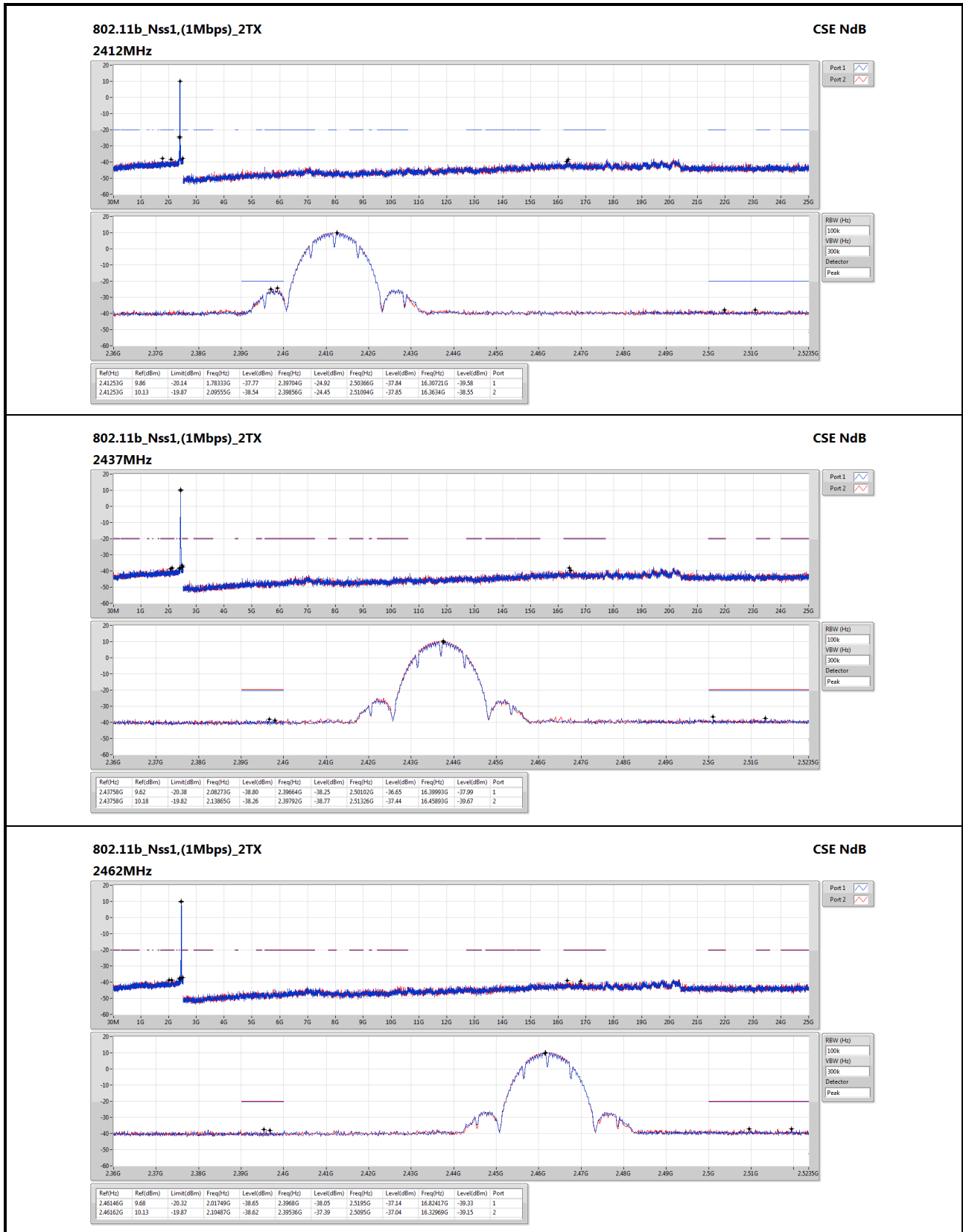
Emission level measurement

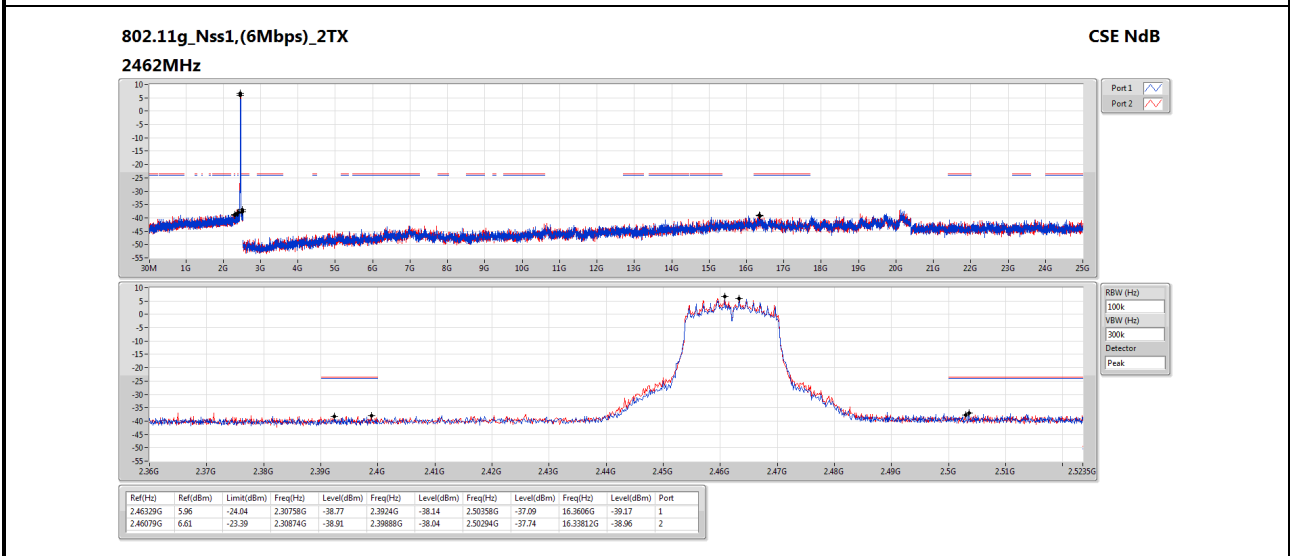
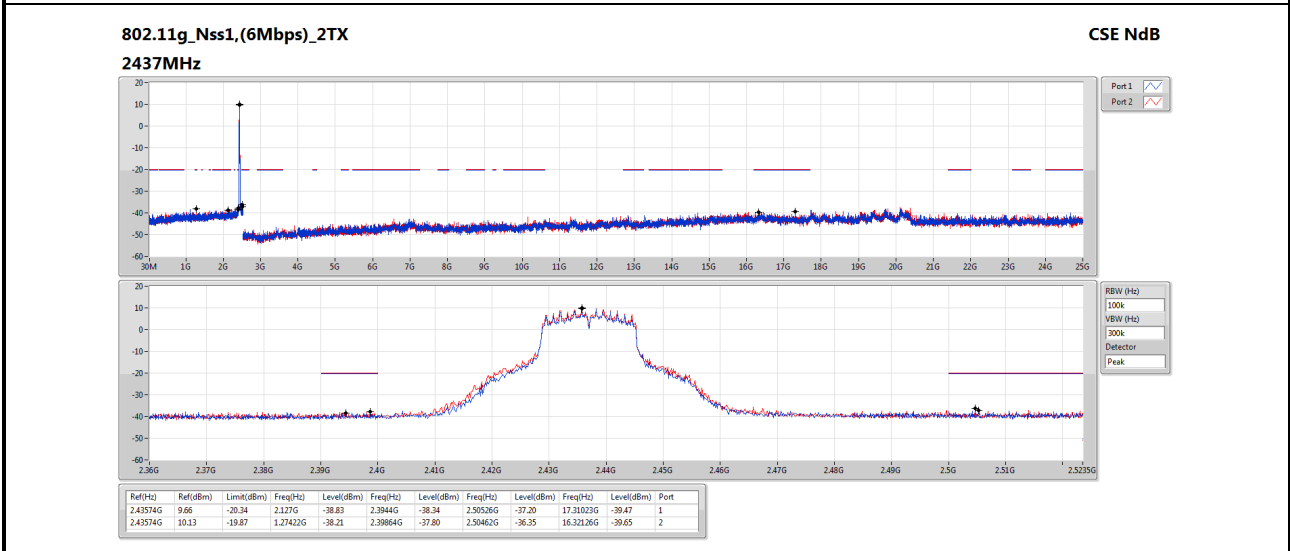
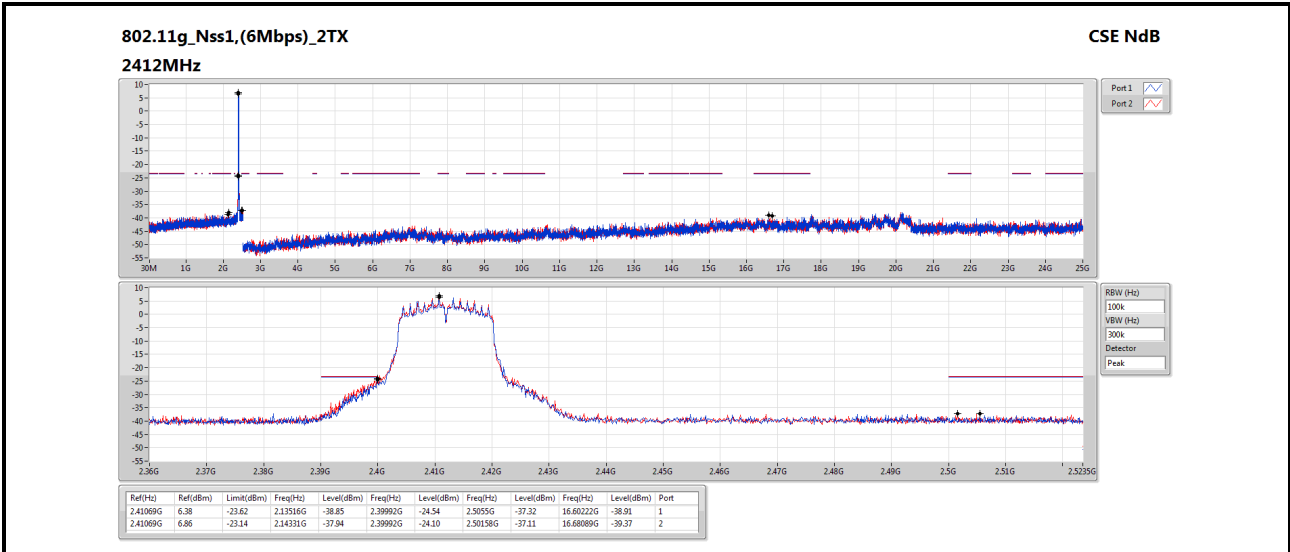
1. Set RBW=100kHz, VBW = 300kHz , Detector = Peak, Sweep time = Auto
2. Trace = max hold , Allow Trace to fully stabilize
3. Scan Frequency range is up to 25GHz
4. Use the peak marker function to determine the maximum amplitude level

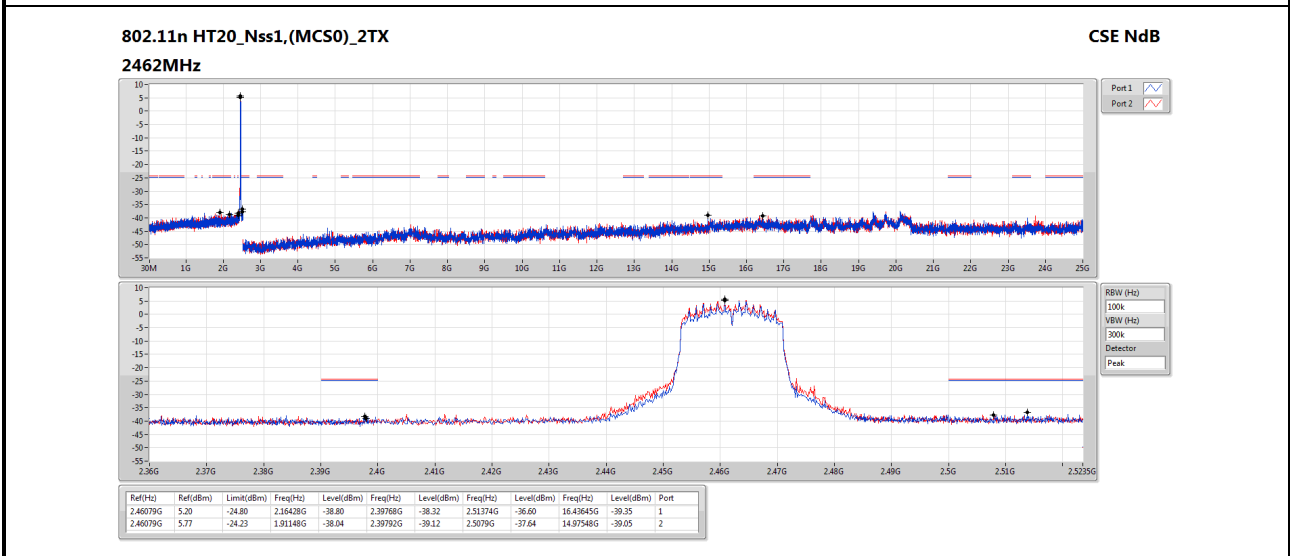
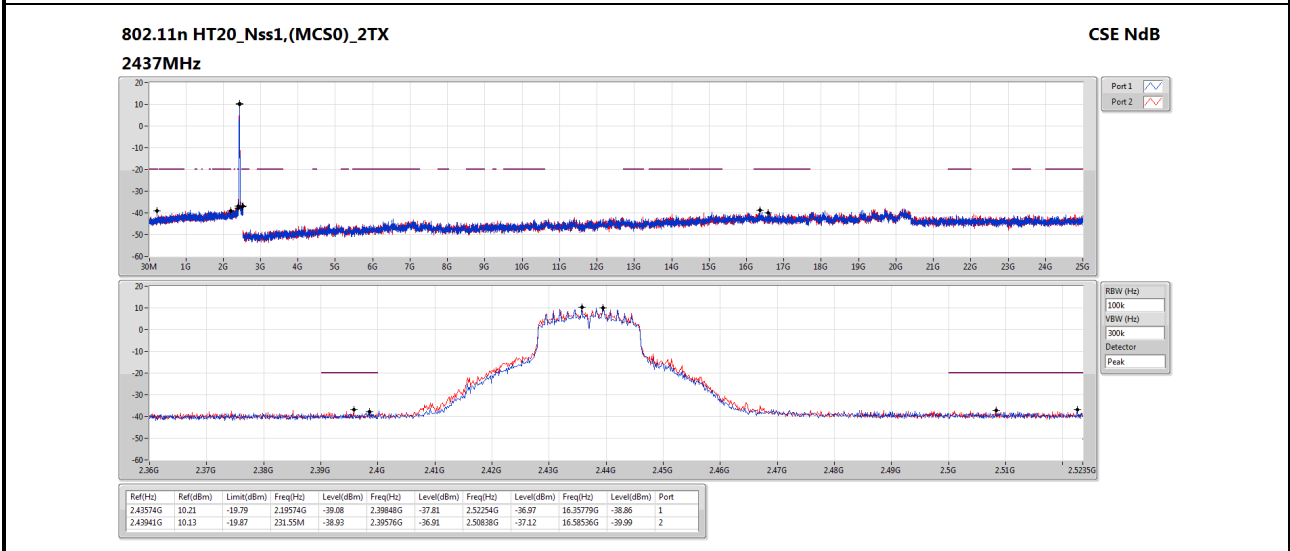
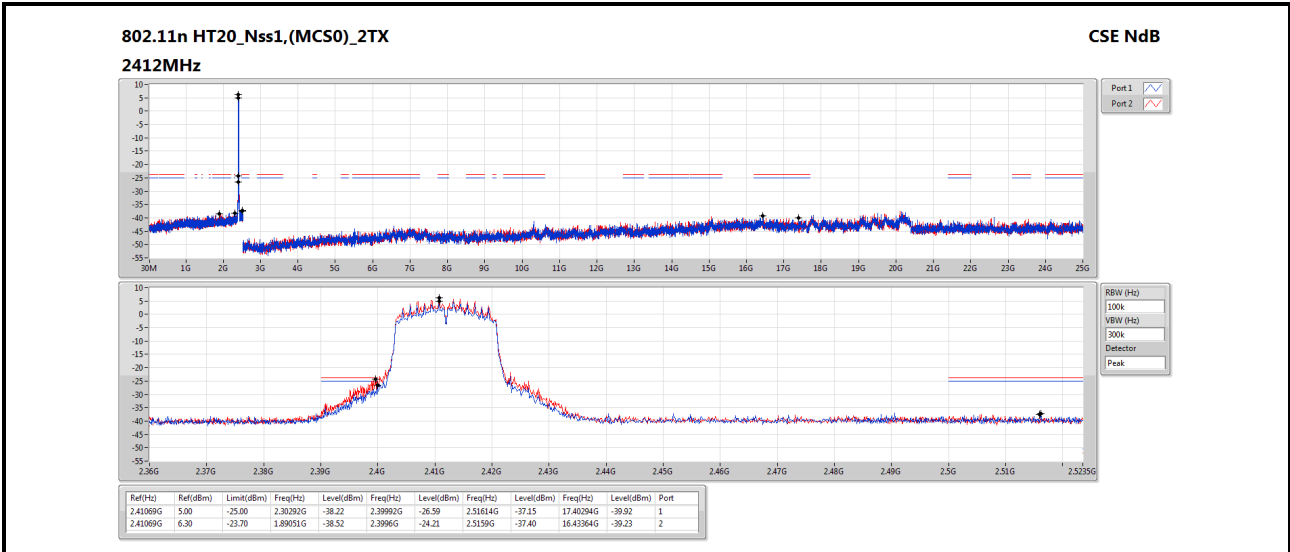
3.6.3 Test Setup

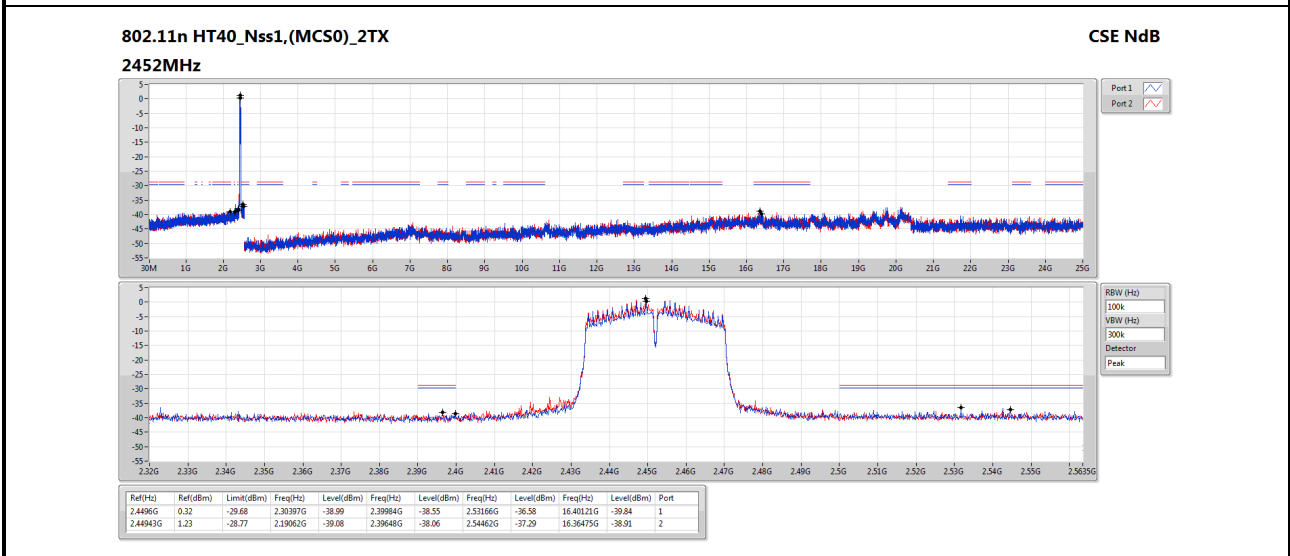
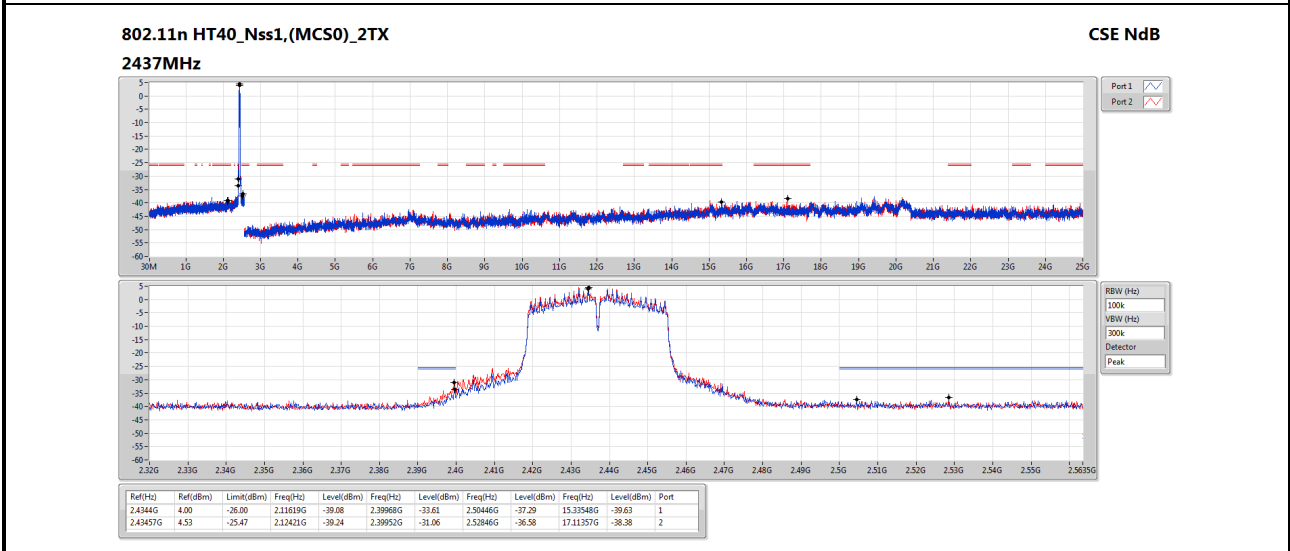
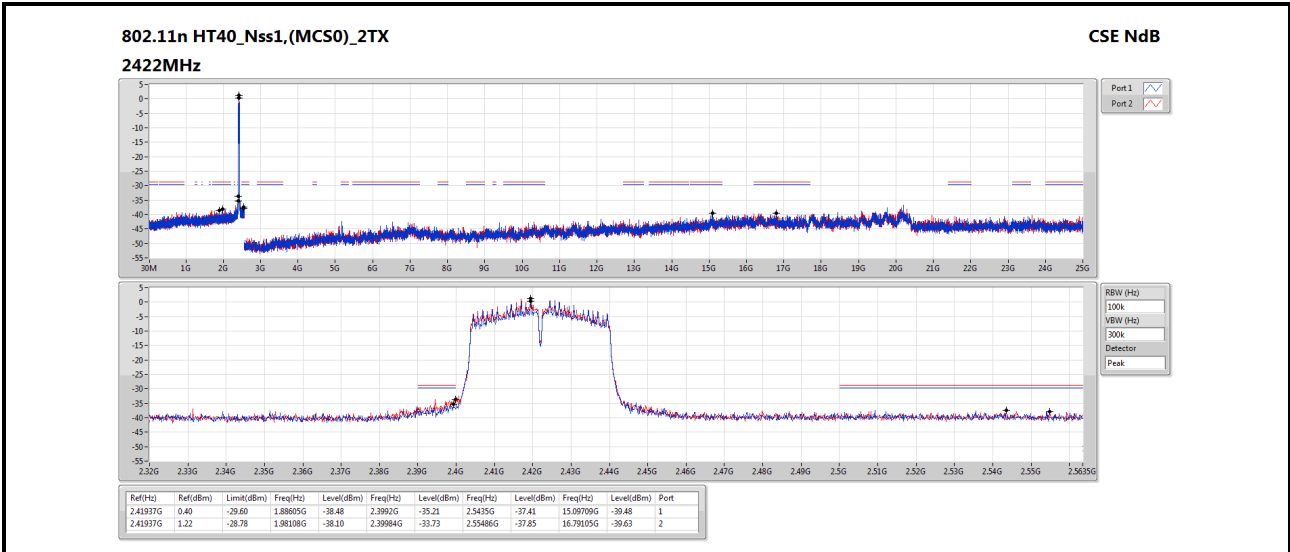


3.6.4 Unwanted Emissions into Non-Restricted Frequency Bands


802.11b_Nss1,(1Mbps)_2TX
CSE NdB
2462MHz







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

Kwei Shan

Tel: 886-3-271-8666

No. 3-1, Lane 6, Wen San 3rd St.,
Kwei Shan 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

==END==