FCC Test Report

FCC ID	:	**2AP5F20181**
Equipment	:	**Helmet**
Model No.	:	**FENIX AR**
Brand Name	:	**SKULLY**
Applicant	:	**NEW SKULLY, INC.**
Address	:	**415 Plasters Ave. N.E. Suite 200, Atlanta Georgia, United States, 30324**
Standard	:	**47 CFR FCC Part 15.247**
Received Date	:	**Aug. 17, 2018**
Tested Date	:	**Sep. 03 ~ Sep. 13, 2018**

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: **Approved by:**

Along Chen / Assistant Manager **Gary Chang / Manager**

Testing Laboratory 2732

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Release Record

Report No.	Version	Description	Issued Date
FR890401AC	Rev. 01	Initial issue	Sep. 27, 2018
FR890401AC	Rev. 02	Revised Radiated emission test results.	May 06, 2019

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.168MHz 52.78 (Margin -12.30dB) - QP	Pass
15.247(d) 15.209	Radiated Emissions	[dBuV/m at 3m]: 2390.00 MHz 73.00 (Margin -1.00dB) - PK	Pass
15.247(b)(3)	Maximum Output Power	Max Power [dBm]: 20.81	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

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]	1	1-11 Mbps
2400-2483.5	g	2412-2462	1-11 [11]	1	6-54 Mbps
2400-2483.5	n (HT20)	2412-2462	1-11 [11]	1	MCS 0-7
2400-2483.5	n (HT40)	2422-2452	3-9 [7]	1	MCS 0-7
Note 1: RF output power specifies that Maximum Peak Conducted Output Power. Note 2: 802.11b uses a combination of DSSS-DBPSK, DQPSK, CCK modulation. Note 3: 802.11g/n uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.					

1.1.2 Antenna Details

Ant. No.	Model	Type	Gain (dBi)	Connector
1	Print Antenna	Printed	3.64	N/A

1.1.3 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	5Vdc from AC adapter 3.6Vdc from battery

1.1.4 Accessories

Accessories		
No.	**Equipment**	**Description**
1	AC adapter	Brand: APD Model: WB-10N05R Power Rating: I/P: 100-240Vac, 50-60Hz, 0.4A Max O/P: 5Vdc, 2A Power Line: 1.2m non-shielded with one core
2	AC adapter	Brand: DVE Model: DSA-12CB-05 Power Rating: I/P: 100-240Vac, 50/60Hz, 0.5A O/P: 5Vdc, 2A Power Line: 1.2m non-shielded with one core
3	Li-ion Battery Pack	Model: WP-DOB-01 Normal Voltage: 3.6V Normal Capacity: 5.0Ah Limited Charging Voltage: 4.2V

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	Putty, V0.60.0.0		
Duty Cycle and Duty Factor	**Mode**	**Duty cycle (%)**	**Duty factor (dB)**
	11b	98.66%	0.06
	11g	87.89%	0.56
	HT20	87.62%	0.57
	HT40	76.77%	1.15

1.1.7 Power Setting

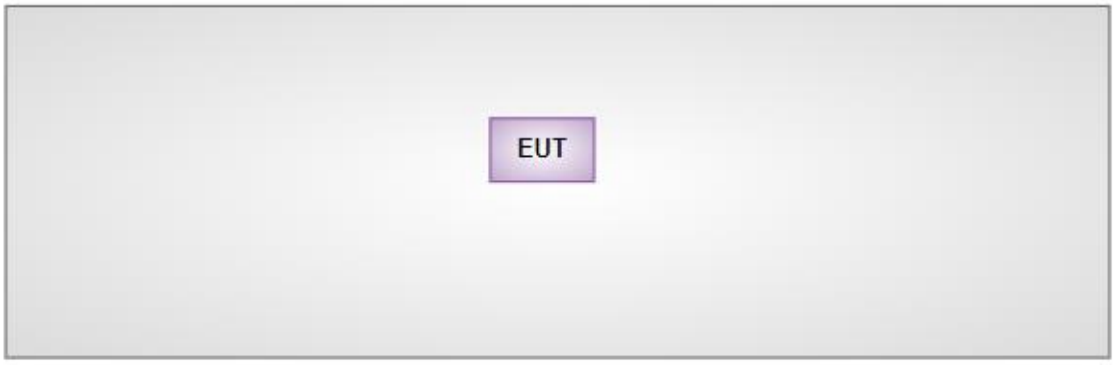
Modulation Mode	Test Frequency (MHz)	Power Set
11b	2412	16000
11b	2437	16000
11b	2462	16000
11g	2412	14000
11g	2437	14000
11g	2462	14000
HT20	2412	14000
HT20	2437	14000
HT20	2462	14000
HT40	2422	11000
HT40	2437	11500
HT40	2452	11500

1.2 Local Support Equipment List

Support Equipment List					
No.	**Equipment**	**Brand**	**Model**	**FCC ID**	**Remarks**
1	Notebook	DELL	Latitude E6430	DoC	---

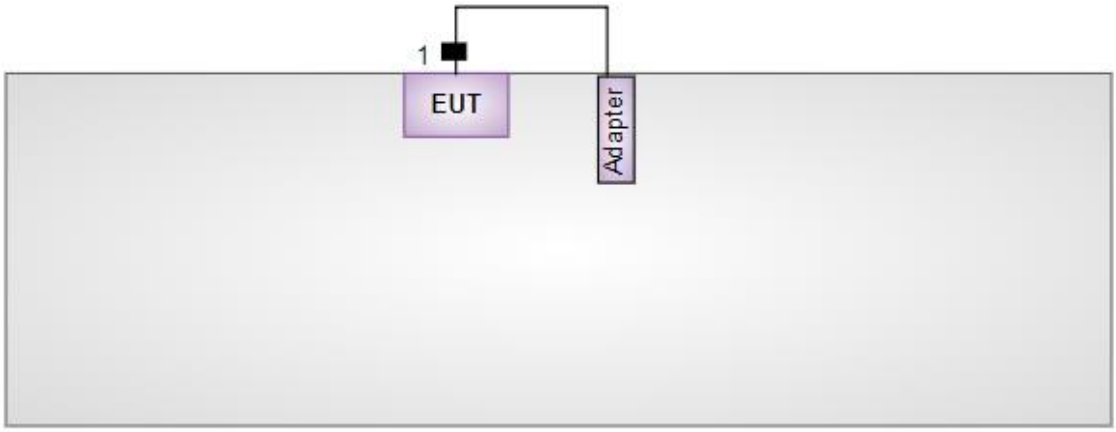
1.3 Test Setup Chart

Test Setup Diagram (Battery Mode)



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

Test Setup Diagram (Charger Mode)



No.	Signal cable / Length (m)
1	USB, 1.2m shielded with one core.

1.4 The Equipment List

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
Tested Date	Sep. 07, 2018				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Receiver	R&S	ESR3	101657	Jan. 05, 2018	Jan. 04, 2019
LISN	SCHWARZBECK	Schwarzbeck 8127	8127-667	Nov. 13, 2017	Nov. 12, 2018
RF Cable-CON	EMC	EMCCFD300-BM-BM-6000	50821	Dec. 18, 2017	Dec. 17, 2018
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)				
Tested Date	Sep. 03 ~ Sep. 05, 2018				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	R&S	FSV40	101498	Dec. 04, 2017	Dec. 03, 2018
Receiver	R&S	ESR3	101658	Nov. 20, 2017	Nov. 19, 2018
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Jul. 18, 2018	Jul. 17, 2019
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 20, 2017	Dec. 19, 2018
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 23, 2017	Nov. 22, 2018
Preamplifier	EMC	EMC02325	980225	Jul. 20, 2018	Jul. 19, 2019
Preamplifier	Agilent	83017A	MY39501308	Oct. 06, 2017	Oct. 05, 2018
Preamplifier	EMC	EMC184045B	980192	Aug. 09, 2018	Aug. 08, 2019
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16140/4	May 09, 2018	May 08, 2019
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Dec. 07, 2017	Dec. 06, 2018
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16139/4	Dec. 07, 2017	Dec. 06, 2018
LF cable 1M	EMC	EMCCFD400-NM-NM-1000	16052	Dec. 07, 2017	Dec. 06, 2018
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Dec. 07, 2017	Dec. 06, 2018
LF cable 10M	Woken	CFD400NL-LW	CFD400NL-002	Dec. 07, 2017	Dec. 06, 2018
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)				
Tested Date	Sep. 12, 2018				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	R&S	FSV40	101063	Apr. 16, 2018	Apr. 15, 2019
Power Meter	Anritsu	ML2495A	1241002	Oct. 16, 2017	Oct. 15, 2018
Power Sensor	Anritsu	MA2411B	1207366	Oct. 16, 2017	Oct. 15, 2018
AC POWER SOURCE	APC	AFC-500W	F312060012	Dec. 01, 2017	Nov. 30, 2018
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 v05

1.6 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	±34.134 Hz
Conducted power	±0.808 dB
Power density	±0.463 dB
Conducted emission	±2.670 dB
AC conducted emission	±2.90 dB
Radiated emission ≤ 1GHz	±3.66 dB
Radiated emission > 1GHz	±5.63 dB

2 Test Configuration

2.1 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
AC Conduction	CO01-WS	25°C / 58%	Alex Tsai
Radiated Emissions	03CH01-WS	24-26°C / 60-64%	Akun Chung
RF Conducted	TH01-WS	24°C / 66%	Aska Huang

- FCC Designation No.: TW2732
- FCC site registration No.: 181692
- IC site registration No.: 10807A-1

2.2 The Worst Test Modes and Channel Details

Test item	Modulation Mode	Test Frequency (MHz)	Data Rate	Test Configuration
Conducted Emissions	Charger mode	---	---	2
Radiated Emissions ≤1GHz	11g	2437	6 Mbps	1
	Charger mode	---	---	3
Radiated Emissions >1GHz Maximum Output Power 6dB bandwidth Power spectral density	11b 11g HT20 HT40	2412 / 2437 / 2462 2412 / 2437 / 2462 2412 / 2437 / 2462 2422 / 2437 / 2452	1 Mbps 6 Mbps MCS 0 MCS 0	1

NOTE:

1. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The **X-plane** results were found as the worst case and were shown in this report.
2. The EUT had been tested by following test configurations.
   1) Configuration 1 : Battery mode
   2) Configuration 2 : Charger mode, DVE adapter
   3) Configuration 3 : Charger mode, ADP adapter

3 Transmitter Test Results

3.1 Conducted Emissions

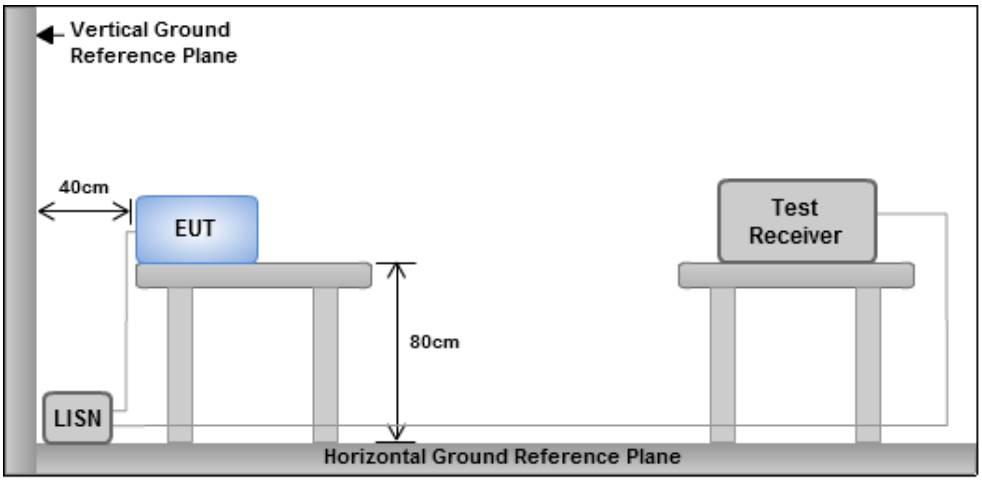
3.1.1 Limit of Conducted Emissions

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.

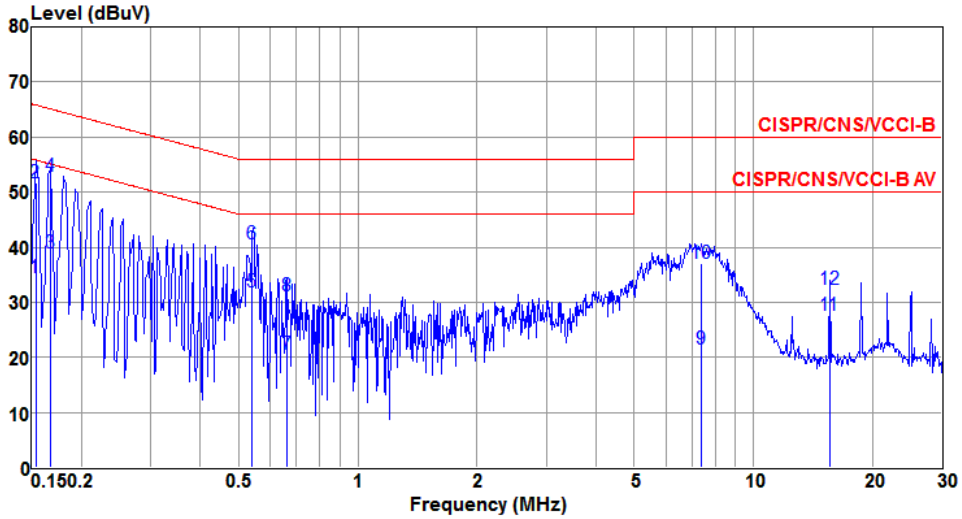
3.1.3 Test Setup



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

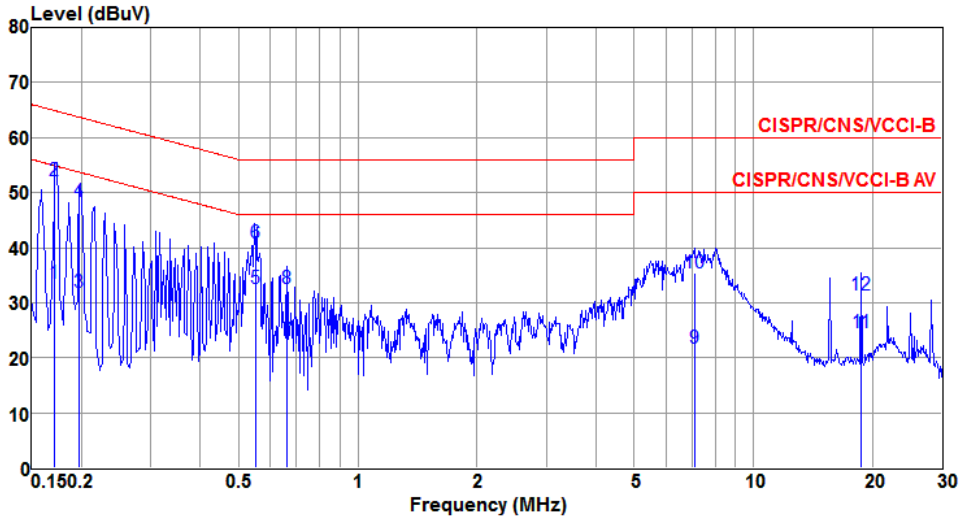
Modulation	Charger mode	**Test Freq. (MHz)**	---
Power Phase	Line	**Test Configuration**	2



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.153	34.47	55.82	-21.35	34.19	0.27	0.01	Average
2	0.153	51.78	65.82	-14.04	51.50	0.27	0.01	QP
3	0.168	39.00	55.08	-16.08	38.70	0.28	0.02	Average
4@	0.168	52.78	65.08	-12.30	52.48	0.28	0.02	QP
5	0.541	31.97	46.00	-14.03	31.59	0.36	0.02	Average
6	0.541	40.62	56.00	-15.38	40.24	0.36	0.02	QP
7	0.661	20.63	46.00	-25.37	20.23	0.37	0.03	Average
8	0.661	31.06	56.00	-24.94	30.66	0.37	0.03	QP
9	7.368	21.43	50.00	-28.57	20.60	0.54	0.29	Average
10	7.368	37.17	60.00	-22.83	36.34	0.54	0.29	QP
11	15.612	27.50	50.00	-22.50	26.46	0.72	0.32	Average
12	15.612	32.45	60.00	-27.55	31.41	0.72	0.32	QP

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

Modulation	Charger mode	Test Freq. (MHz)	---
Power Phase	Neutral	Test Configuration	2



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.171	33.51	54.90	-21.39	33.35	0.14	0.02	Average
2@	0.171	52.14	64.90	-12.76	51.98	0.14	0.02	QP
3	0.198	31.88	53.71	-21.83	31.70	0.15	0.03	Average
4	0.198	48.36	63.71	-15.35	48.18	0.15	0.03	QP
5	0.553	32.66	46.00	-13.34	32.43	0.21	0.02	Average
6	0.553	40.80	56.00	-15.20	40.57	0.21	0.02	QP
7	0.661	23.22	46.00	-22.78	22.96	0.23	0.03	Average
8	0.661	32.69	56.00	-23.31	32.43	0.23	0.03	QP
9	7.100	21.83	50.00	-28.17	21.13	0.42	0.28	Average
10	7.100	35.50	60.00	-24.50	34.80	0.42	0.28	QP
11	18.730	24.50	50.00	-25.50	23.45	0.71	0.34	Average
12	18.730	31.46	60.00	-28.54	30.41	0.71	0.34	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

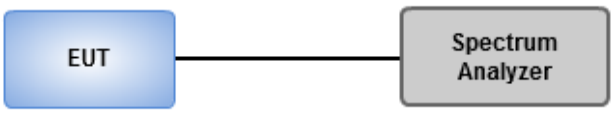
6dB Bandwidth

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	10.072M	14.616M	14M6G1D	9.565M	14.544M
802.11g_Nss1,(6Mbps)_1TX	14.783M	16.353M	16M4D1D	12.536M	16.281M
802.11n HT20_Nss1,(MCS0)_1TX	15.072M	17.438M	17M4D1D	13.841M	17.438M
802.11n HT40_Nss1,(MCS0)_1TX	33.768M	35.601M	35M6D1D	31.304M	35.601M

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

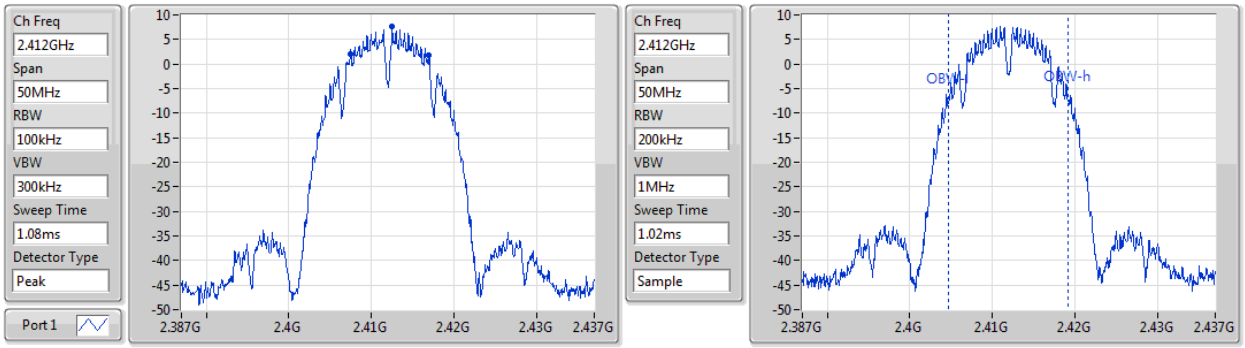
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-
2412MHz	Pass	500k	9.565M	14.544M
2437MHz	Pass	500k	9.565M	14.544M
2462MHz	Pass	500k	10.072M	14.616M
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-
2412MHz	Pass	500k	12.536M	16.353M
2437MHz	Pass	500k	14.783M	16.281M
2462MHz	Pass	500k	14.42M	16.281M
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-
2412MHz	Pass	500k	15.072M	17.438M
2437MHz	Pass	500k	13.841M	17.438M
2462MHz	Pass	500k	13.841M	17.438M
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-
2422MHz	Pass	500k	31.304M	35.601M
2437MHz	Pass	500k	33.768M	35.601M
2452MHz	Pass	500k	33.768M	35.601M

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

802.11b_Nss1,(1Mbps)_1TX EBW

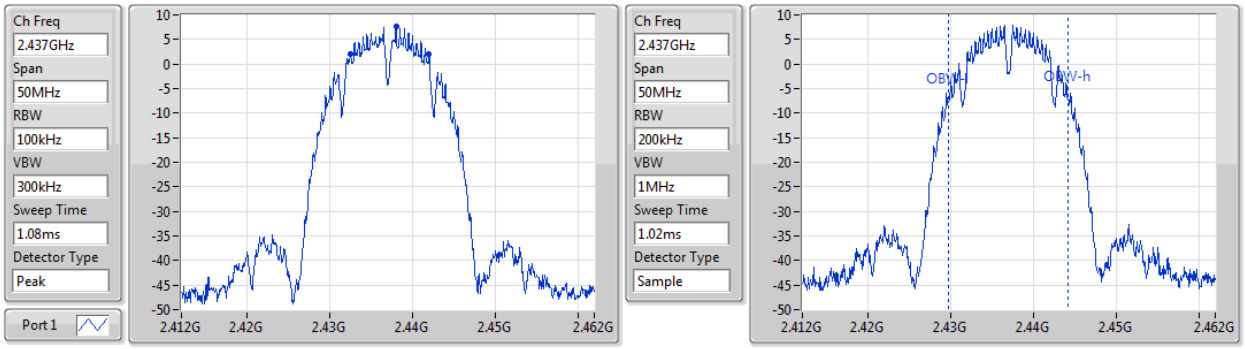
2412MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
9.565M	2.407435G	2.417G	14.544M	2.404692G	2.419236G	500k	1

802.11b_Nss1,(1Mbps)_1TX EBW

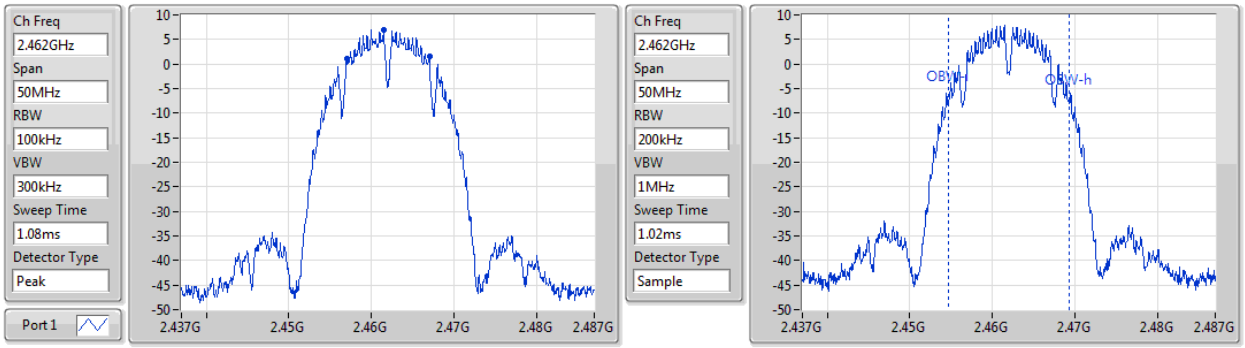
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
9.565M	2.432435G	2.442G	14.544M	2.429692G	2.444236G	500k	1

802.11b_Nss1,(1Mbps)_1TX EBW

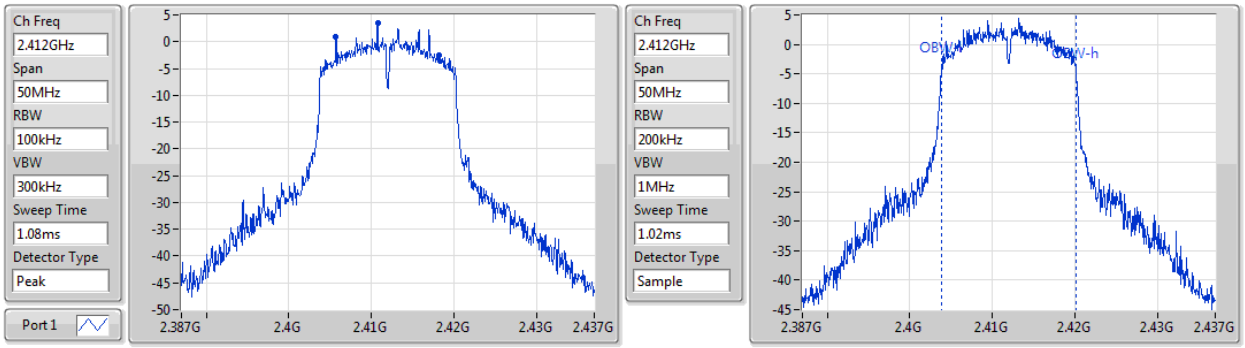
2462MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
10.072M	2.457G	2.467072G	14.616M	2.454692G	2.469308G	500k	1

802.11g_Nss1,(6Mbps)_1TX EBW

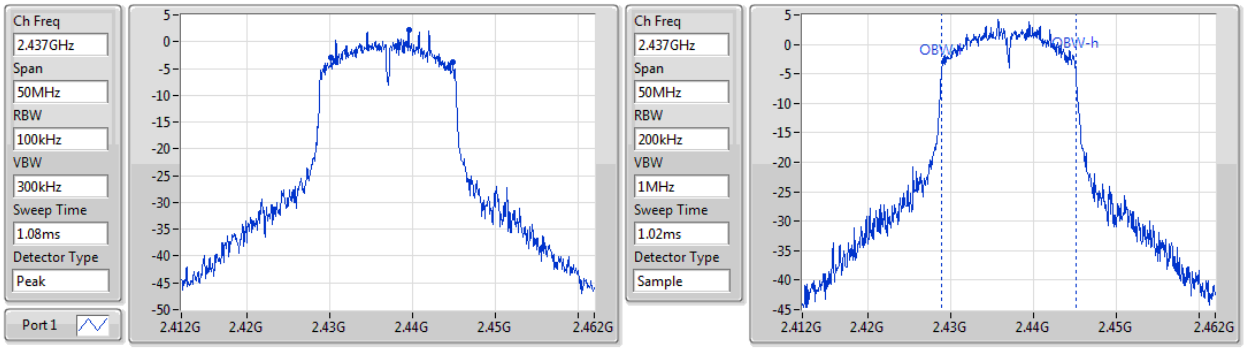
2412MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
12.536M	2.405696G	2.418232G	16.353M	2.403823G	2.420177G	500k	1

802.11g_Nss1,(6Mbps)_1TX EBW

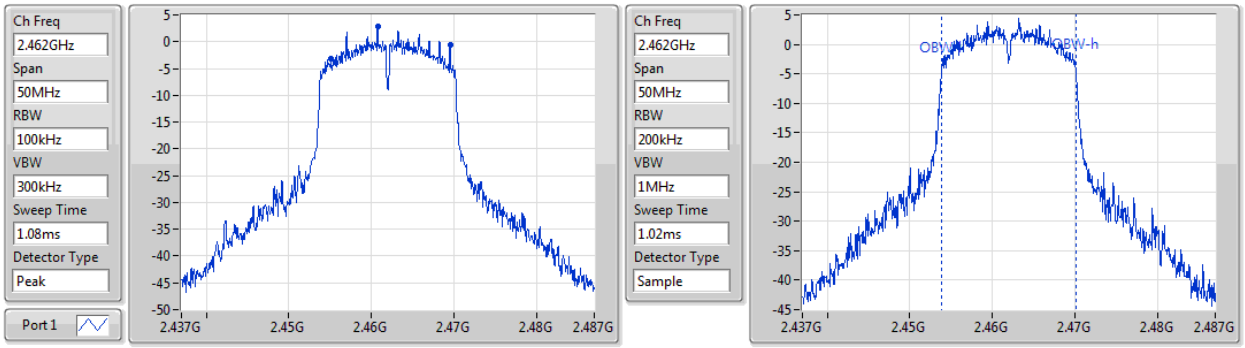
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
14.783M	2.430116G	2.444899G	16.281M	2.428823G	2.445104G	500k	1

802.11g_Nss1,(6Mbps)_1TX EBW

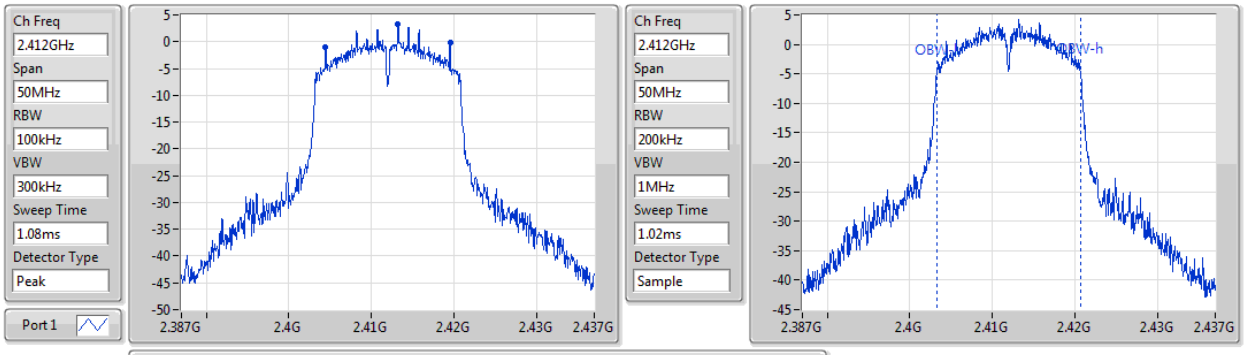
2462MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
14.42M	2.455116G	2.469536G	16.281M	2.453823G	2.470104G	500k	1

802.11n HT20_Nss1,(MCS0)_1TX EBW

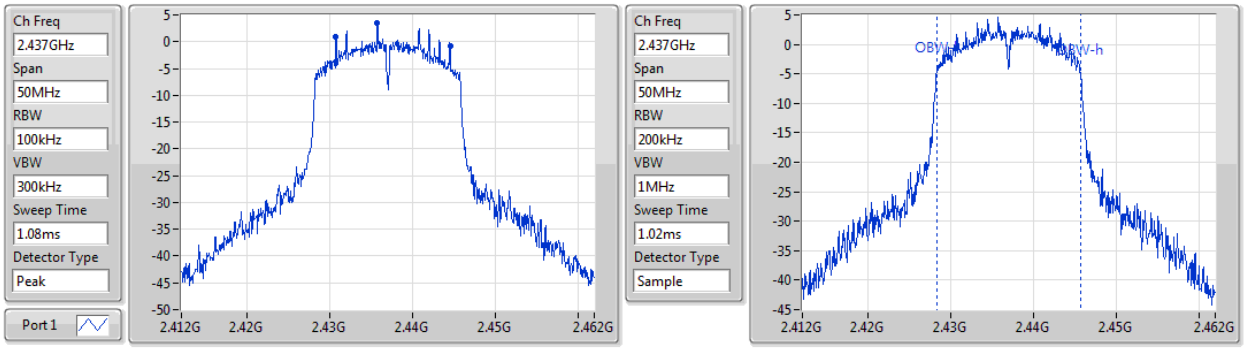
2412MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15.072M	2.404464G	2.419536G	17.438M	2.403245G	2.420683G	500k	1

802.11n HT20_Nss1,(MCS0)_1TX EBW

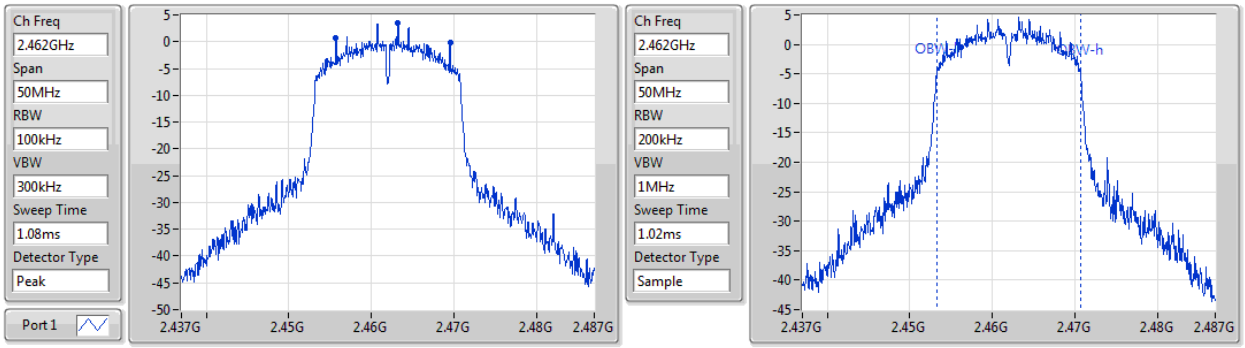
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
13.841M	2.430696G	2.444536G	17.438M	2.428245G	2.445683G	500k	1

802.11n HT20_Nss1,(MCS0)_1TX EBW

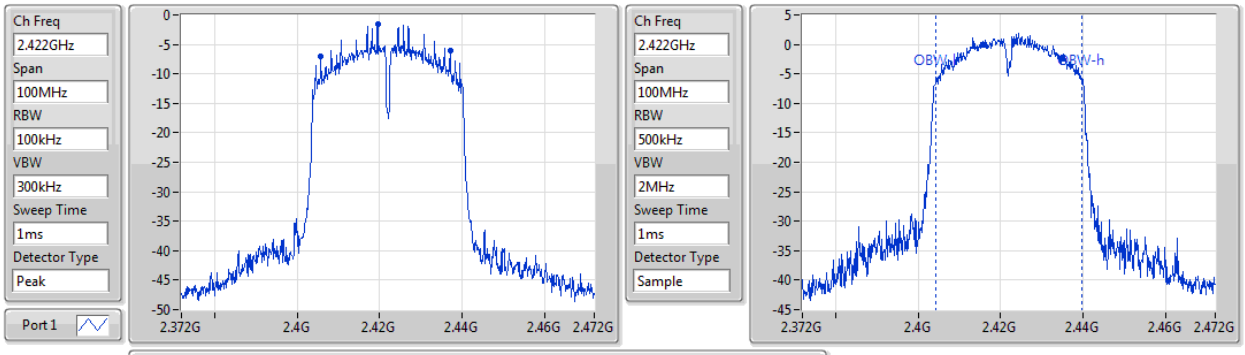
2462MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
13.841M	2.455696G	2.469536G	17.438M	2.453245G	2.470683G	500k	1

802.11n HT40_Nss1,(MCS0)_1TX EBW

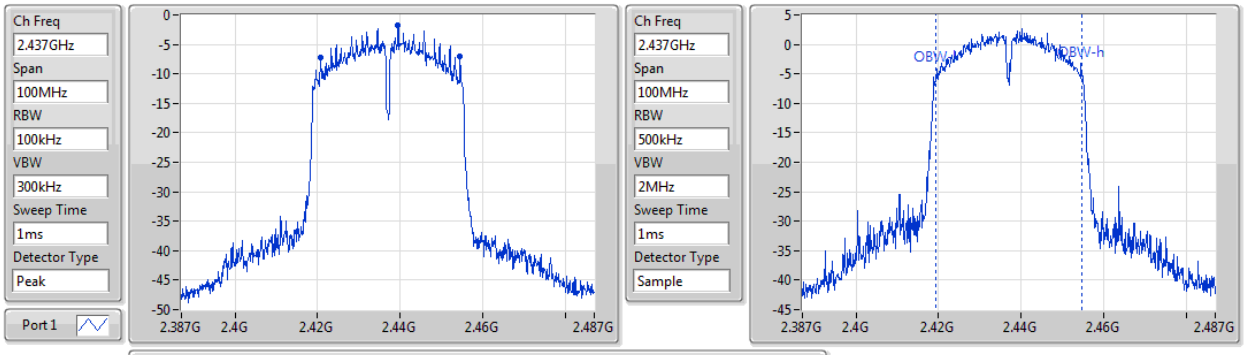
2422MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
31.304M	2.405768G	2.437072G	35.601M	2.4042G	2.4398G	500k	1

802.11n HT40_Nss1,(MCS0)_1TX EBW

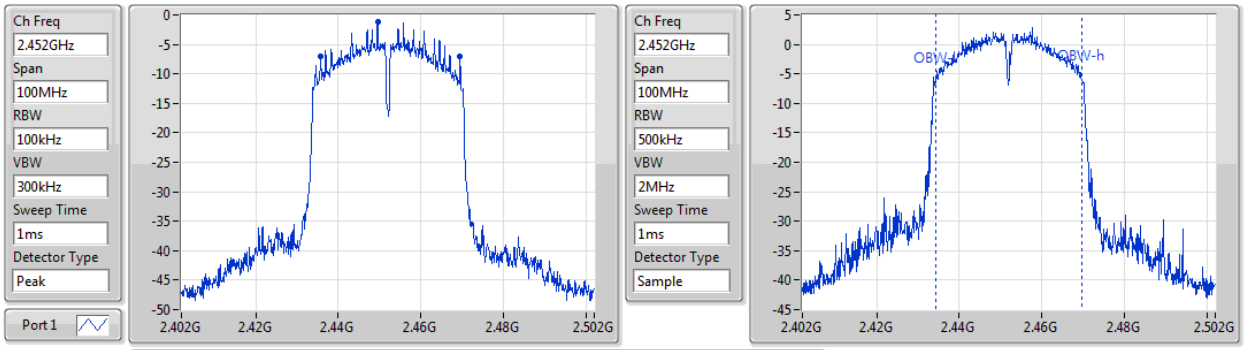
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
33.768M	2.420768G	2.454536G	35.601M	2.4192G	2.4548G	500k	1

802.11n HT40_Nss1,(MCS0)_1TX EBW

2452MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
33.768M	2.435768G	2.469536G	35.601M	2.4342G	2.4698G	500k	1

3.3 RF Output Power

3.3.1 Limit of RF Output Power

Conducted power shall not exceed 1Watt.

Antenna gain <= 6dBi, 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

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_1TX	18.89	0.07745
802.11g_Nss1,(6Mbps)_1TX	**20.81**	0.12050
802.11n HT20_Nss1,(MCS0)_1TX	20.78	0.11967
802.11n HT40_Nss1,(MCS0)_1TX	19.81	0.09572

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	3.64	18.86	18.86	30.00	22.50	36.00
2437MHz	Pass	3.64	18.89	18.89	30.00	22.53	36.00
2462MHz	Pass	3.64	18.78	18.78	30.00	22.42	36.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-	-	-
2412MHz	Pass	3.64	20.78	20.78	30.00	24.42	36.00
2437MHz	Pass	3.64	20.81	20.81	30.00	24.45	36.00
2462MHz	Pass	3.64	20.66	20.66	30.00	24.30	36.00
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
2412MHz	Pass	3.64	20.75	20.75	30.00	24.39	36.00
2437MHz	Pass	3.64	20.78	20.78	30.00	24.42	36.00
2462MHz	Pass	3.64	20.6	20.60	30.00	24.24	36.00
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
2422MHz	Pass	3.64	19.56	19.56	30.00	23.20	36.00
2437MHz	Pass	3.64	19.81	19.81	30.00	23.45	36.00
2452MHz	Pass	3.64	19.75	19.75	30.00	23.39	36.00

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

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_1TX	17.03	0.05047
802.11g_Nss1,(6Mbps)_1TX	14.08	0.02559
802.11n HT20_Nss1,(MCS0)_1TX	13.99	0.02506
802.11n HT40_Nss1,(MCS0)_1TX	11.97	0.01574

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	3.64	17.01	17.01	-	20.65	-
2437MHz	Pass	3.64	17.03	17.03	-	20.67	-
2462MHz	Pass	3.64	16.9	16.90	-	20.54	-
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-	-	-
2412MHz	Pass	3.64	14.06	14.06	-	17.70	-
2437MHz	Pass	3.64	14.08	14.08	-	17.72	-
2462MHz	Pass	3.64	13.93	13.93	-	17.57	-
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
2412MHz	Pass	3.64	13.96	13.96	-	17.60	-
2437MHz	Pass	3.64	13.99	13.99	-	17.63	-
2462MHz	Pass	3.64	13.83	13.83	-	17.47	-
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
2422MHz	Pass	3.64	11.45	11.45	-	15.09	-
2437MHz	Pass	3.64	11.97	11.97	-	15.61	-
2452MHz	Pass	3.64	11.94	11.94	-	15.58	-

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 ≥ 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.

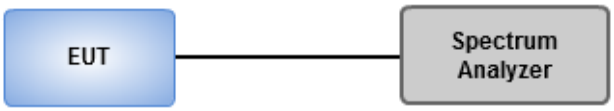
2 Set the sweep time to: ≥ 10 (number of measurement points in sweep) x (total on/off period of the transmitted signal).

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)_1TX	-5.94
802.11g_Nss1,(6Mbps)_1TX	-10.36
802.11n HT20_Nss1,(MCS0)_1TX	-10.12
802.11n HT40_Nss1,(MCS0)_1TX	-15.95

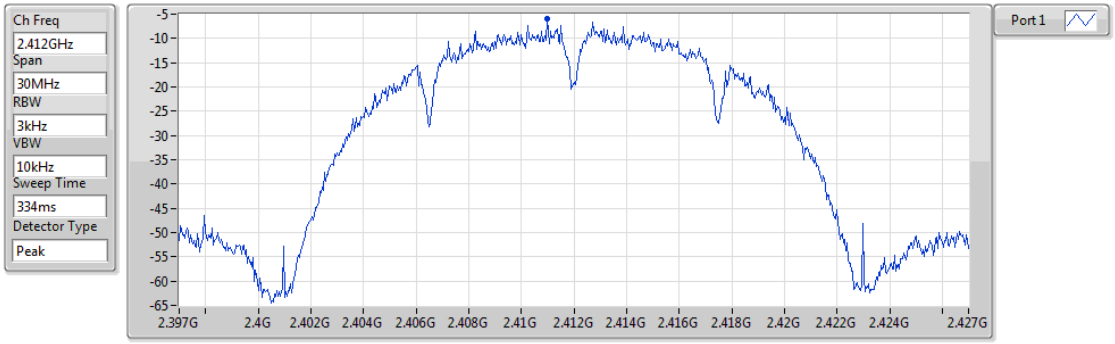
Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	3.64	-5.94	-5.94	8.00
2437MHz	Pass	3.64	-6.66	-6.66	8.00
2462MHz	Pass	3.64	-6.73	-6.73	8.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	3.64	-10.36	-10.36	8.00
2437MHz	Pass	3.64	-11.56	-11.56	8.00
2462MHz	Pass	3.64	-11.22	-11.22	8.00
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz	Pass	3.64	-10.95	-10.95	8.00
2437MHz	Pass	3.64	-10.12	-10.12	8.00
2462MHz	Pass	3.64	-11.61	-11.61	8.00
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-	-
2422MHz	Pass	3.64	-16.94	-16.94	8.00
2437MHz	Pass	3.64	-16.09	-16.09	8.00
2452MHz	Pass	3.64	-15.95	-15.95	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;
Test results of each port are measured value with duty factor

802.11b_Nss1,(1Mbps)_1TX **PSD**

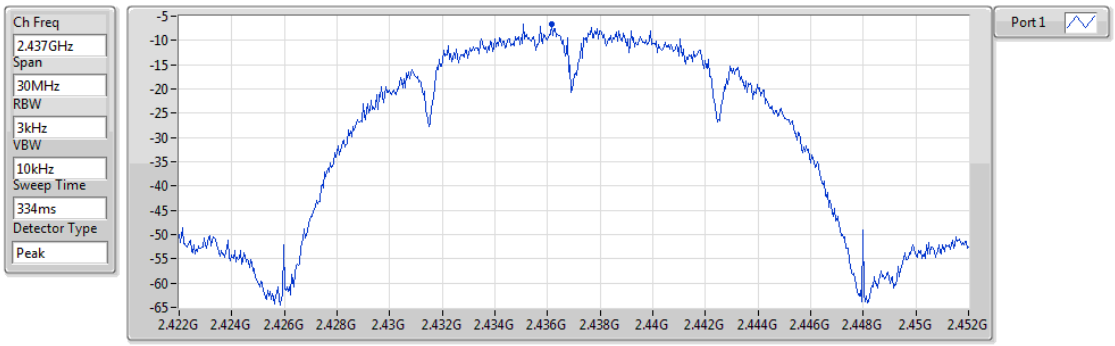
2412MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-5.94	-5.94	-5.94

802.11b_Nss1,(1Mbps)_1TX **PSD**

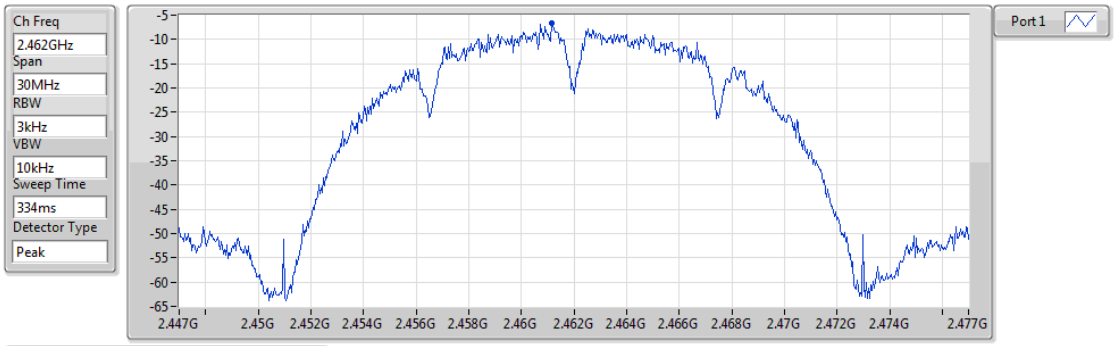
2437MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-6.66	-6.66	-6.66

802.11b_Nss1,(1Mbps)_1TX **PSD**

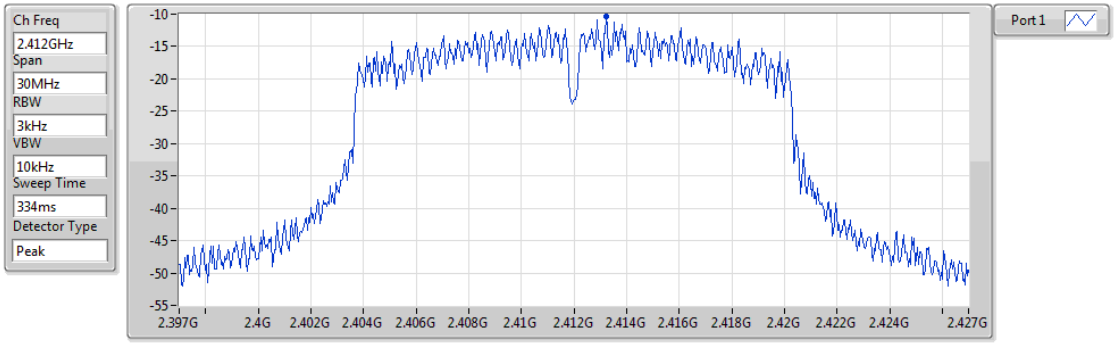
2462MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-6.73	-6.73	-6.73

802.11g_Nss1,(6Mbps)_1TX **PSD**

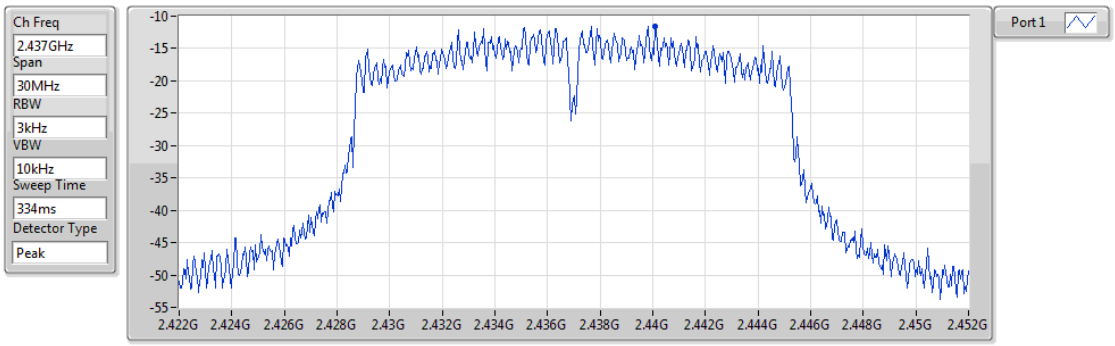
2412MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.36	-10.36	-10.36

802.11g_Nss1,(6Mbps)_1TX **PSD**

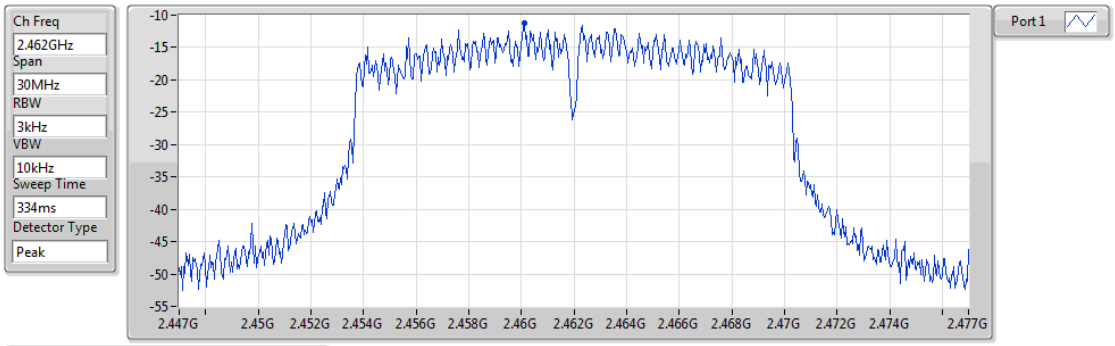
2437MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-11.56	-11.56	-11.56

802.11g_Nss1,(6Mbps)_1TX **PSD**

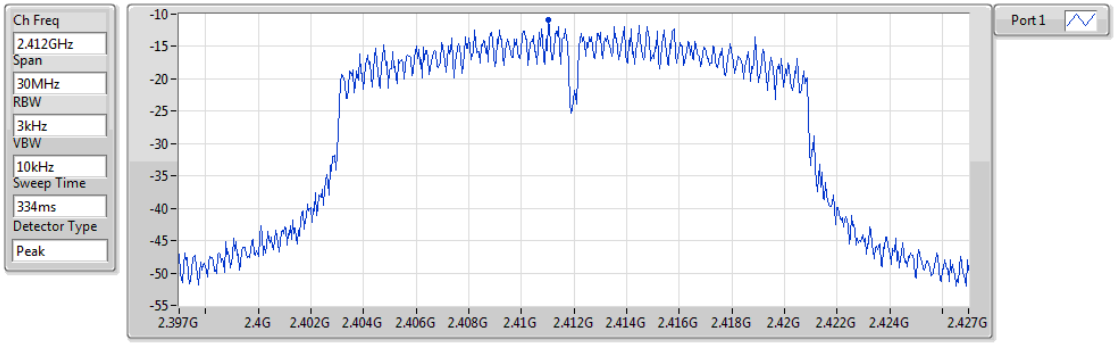
2462MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-11.22	-11.22	-11.22

802.11n HT20_Nss1,(MCS0)_1TX **PSD**

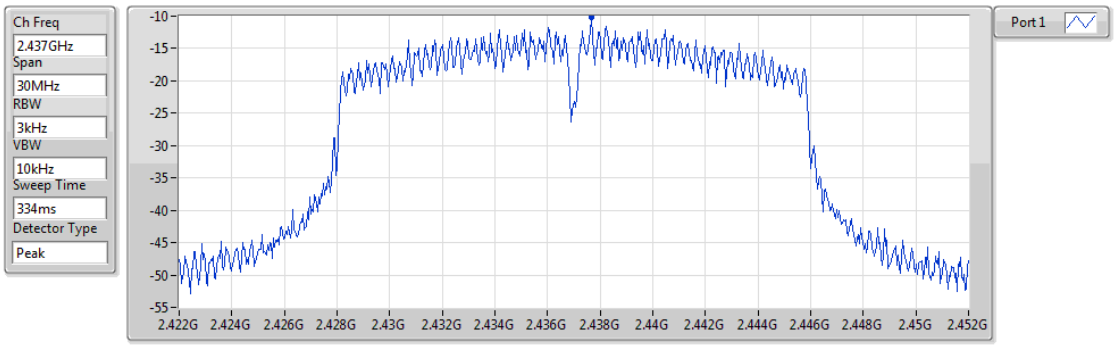
2412MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.95	-10.95	-10.95

802.11n HT20_Nss1,(MCS0)_1TX **PSD**

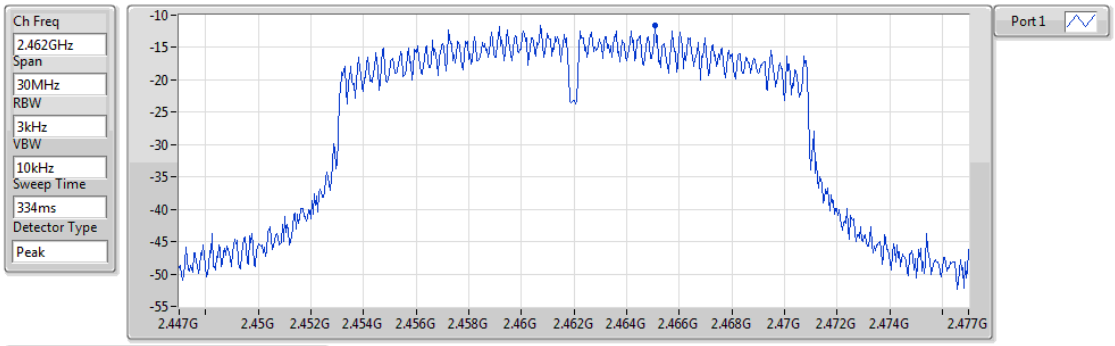
2437MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.12	-10.12	-10.12

802.11n HT20_Nss1,(MCS0)_1TX **PSD**

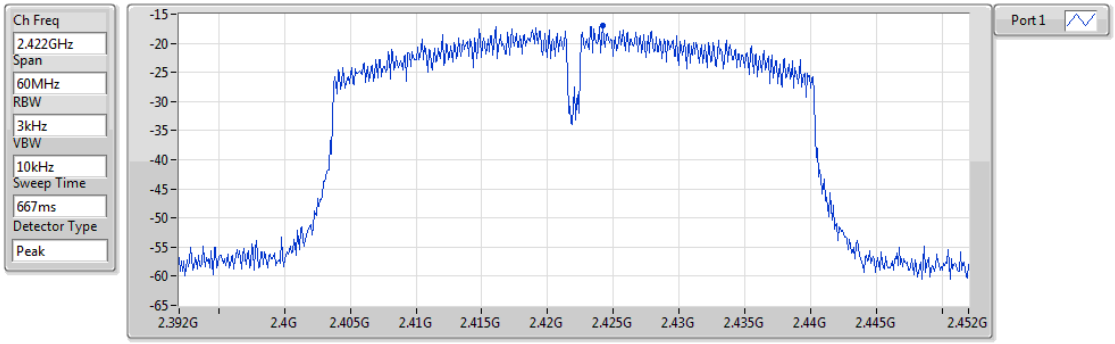
2462MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-11.61	-11.61	-11.61

802.11n HT40_Nss1,(MCS0)_1TX PSD

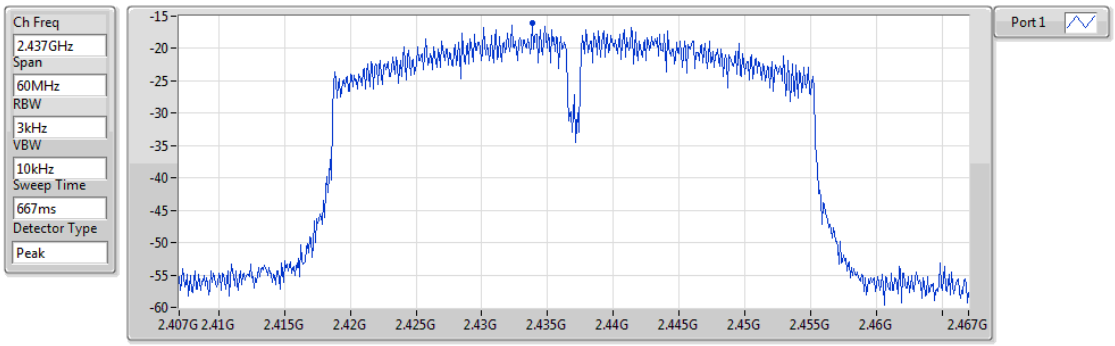
2422MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-16.94	-16.94	-16.94

802.11n HT40_Nss1,(MCS0)_1TX PSD

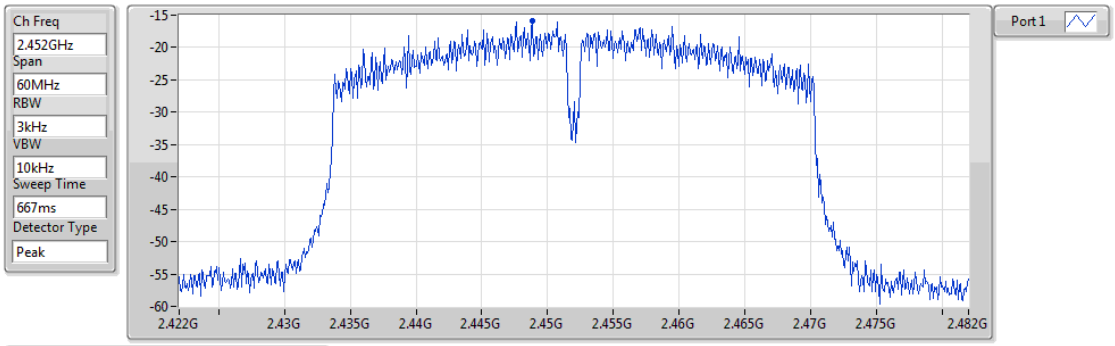
2437MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-16.09	-16.09	-16.09

802.11n HT40_Nss1,(MCS0)_1TX PSD

2452MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-15.95	-15.95	-15.95

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:
Qusai-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

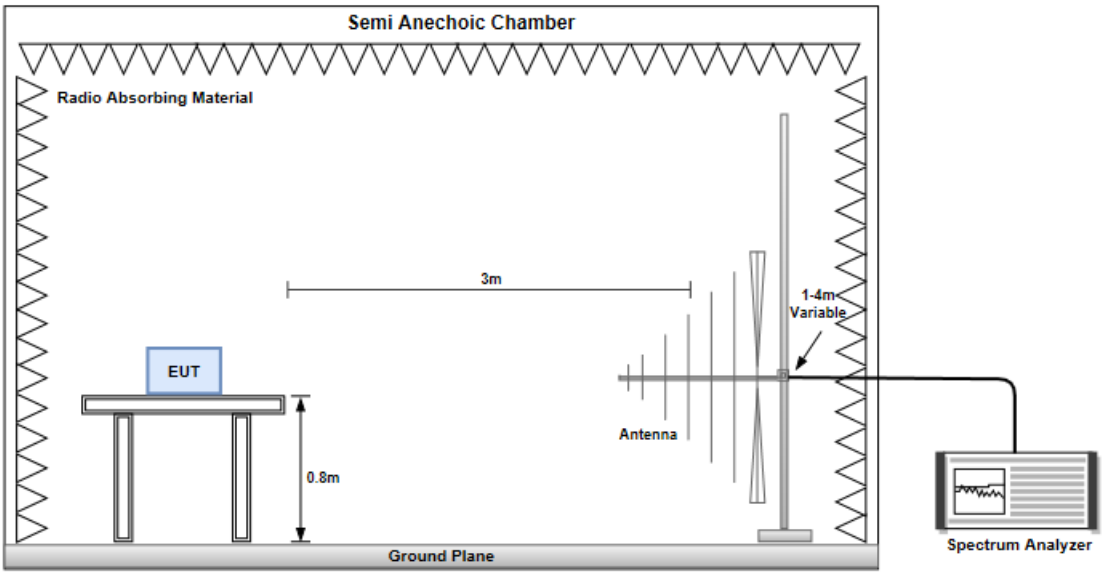
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission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

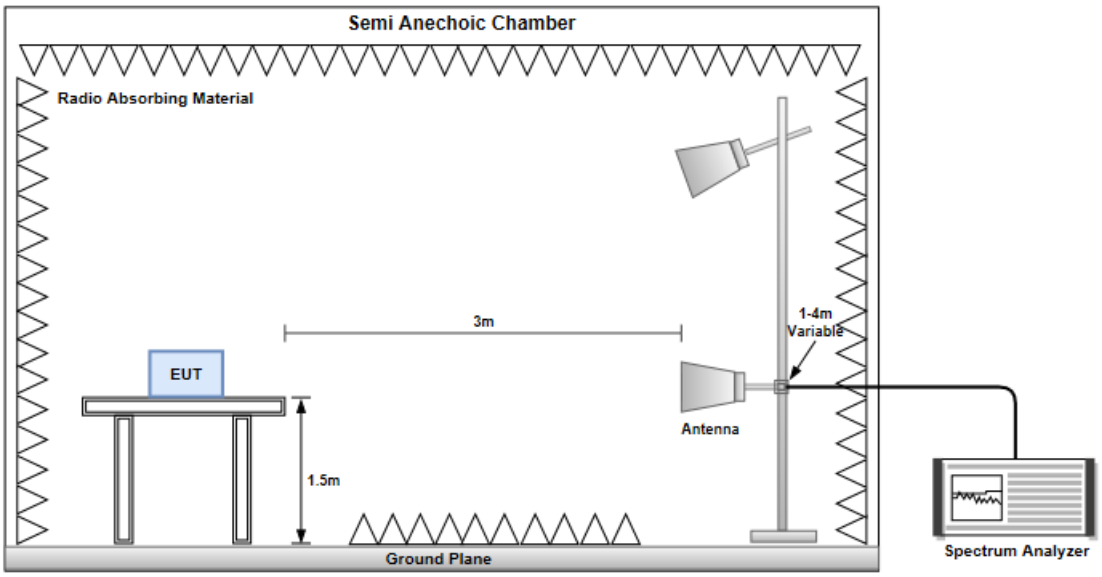
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.5.3 Test Setup

Radiated Emissions below 1 GHz

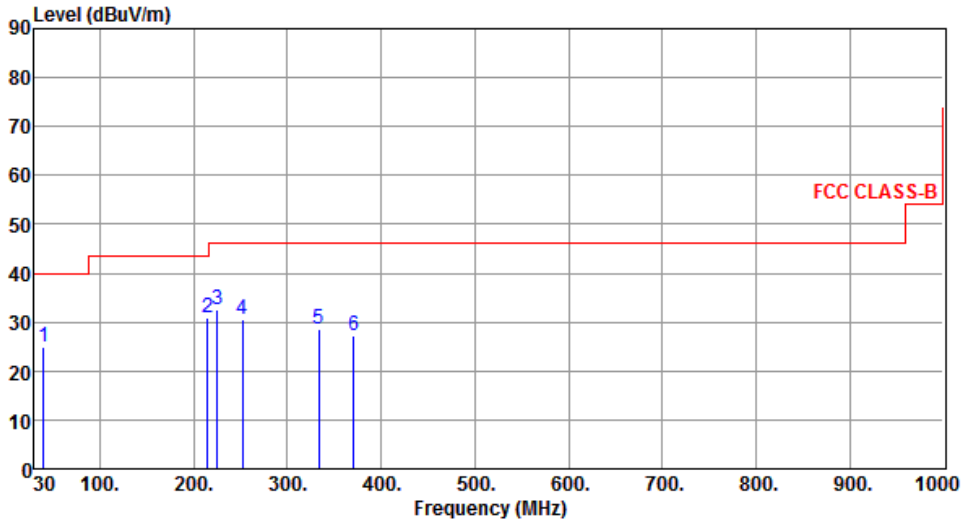


Radiated Emissions above 1 GHz



3.5.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

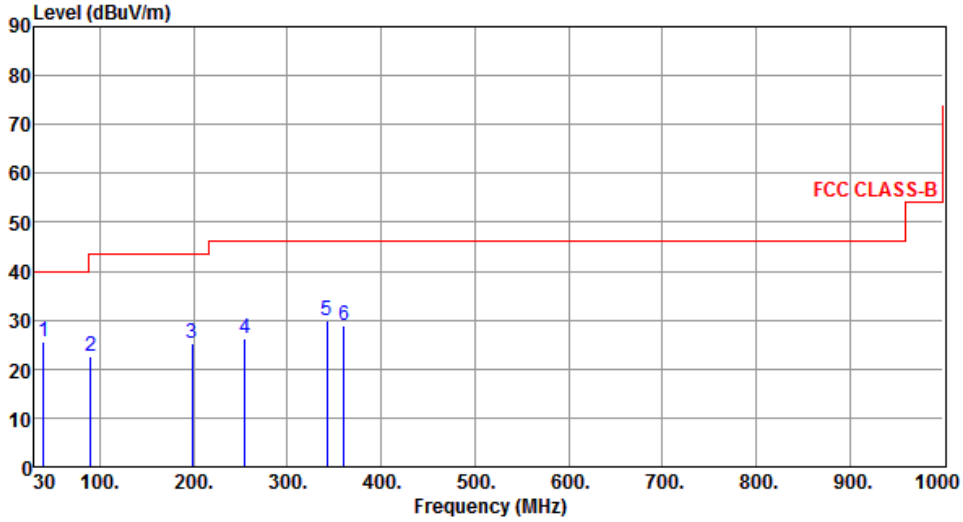
Modulation	11g	**Test Freq. (MHz)**	2437
Polarization	Horizontal	**Test Configuration**	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	39.70	24.80	40.00	-15.20	33.11	-8.31	Peak	---	---
2	215.27	30.84	43.50	-12.66	41.78	-10.94	Peak	---	---
3	224.97	32.41	46.00	-13.59	43.34	-10.93	Peak	---	---
4	252.13	30.50	46.00	-15.50	39.87	-9.37	Peak	---	---
5	333.61	28.60	46.00	-17.40	35.62	-7.02	Peak	---	---
6	370.47	27.23	46.00	-18.77	33.21	-5.98	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.

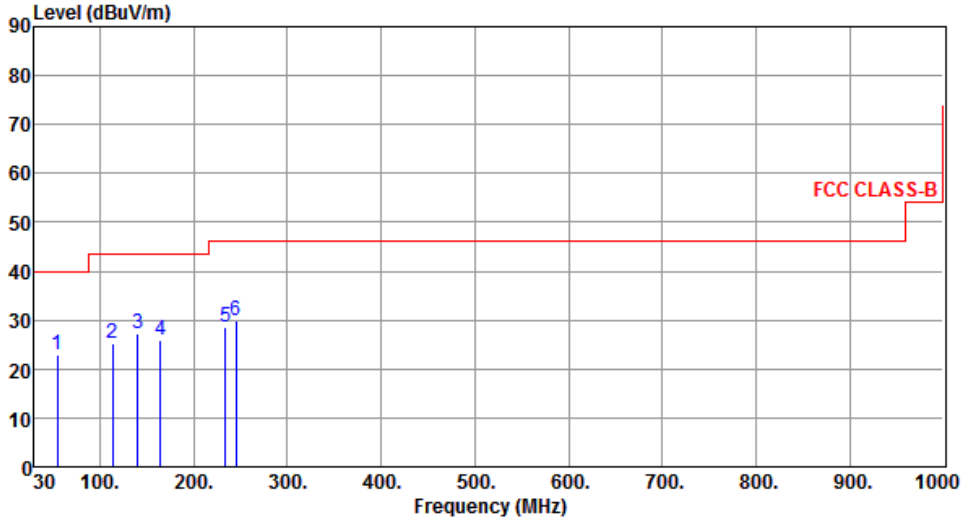
Modulation	11g	Test Freq. (MHz)	2437
Polarization	Vertical	Test Configuration	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	39.70	25.70	40.00	-14.30	34.01	-8.31	Peak	---	---
2	90.14	22.62	43.50	-20.88	37.26	-14.64	Peak	---	---
3	198.78	25.19	43.50	-18.31	36.06	-10.87	Peak	---	---
4	255.04	26.16	46.00	-19.84	35.42	-9.26	Peak	---	---
5	342.34	29.76	46.00	-16.24	36.57	-6.81	Peak	---	---
6	360.77	28.77	46.00	-17.23	35.07	-6.30	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.

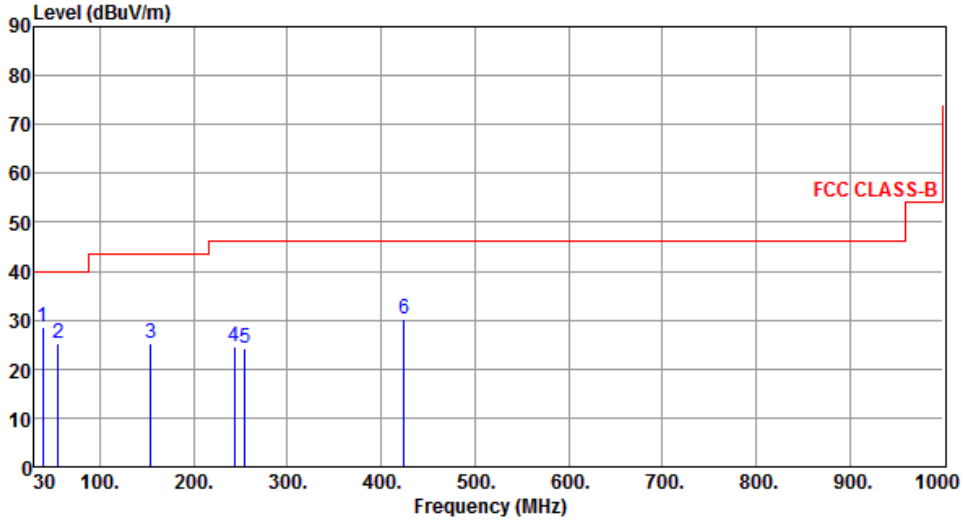
Modulation	Charger mode	Test Freq. (MHz)	---
Polarization	Horizontal	Test Configuration	3



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	54.25	23.01	40.00	-16.99	31.14	-8.13	Peak	---	---
2	113.42	25.14	43.50	-18.36	36.43	-11.29	Peak	---	---
3	140.58	27.12	43.50	-16.38	35.82	-8.70	Peak	---	---
4	164.83	25.86	43.50	-17.64	34.28	-8.42	Peak	---	---
5	233.70	28.51	46.00	-17.49	38.62	-10.11	Peak	---	---
6	245.34	29.92	46.00	-16.08	39.50	-9.58	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	Charger mode	Test Freq. (MHz)	---
Polarization	Vertical	Test Configuration	3

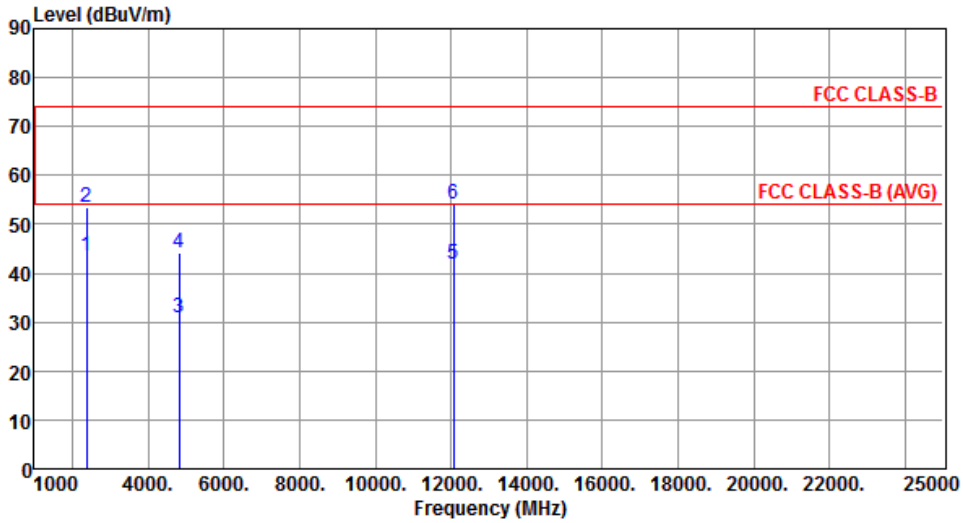


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	38.73	28.40	40.00	-11.60	36.82	-8.42	Peak	---	---
2	55.22	25.12	40.00	-14.88	33.27	-8.15	Peak	---	---
3	154.16	25.26	43.50	-18.24	33.62	-8.36	Peak	---	---
4	243.40	24.55	46.00	-21.45	34.17	-9.62	Peak	---	---
5	255.04	24.35	46.00	-21.65	33.61	-9.26	Peak	---	---
6	424.79	30.14	46.00	-15.86	34.80	-4.66	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

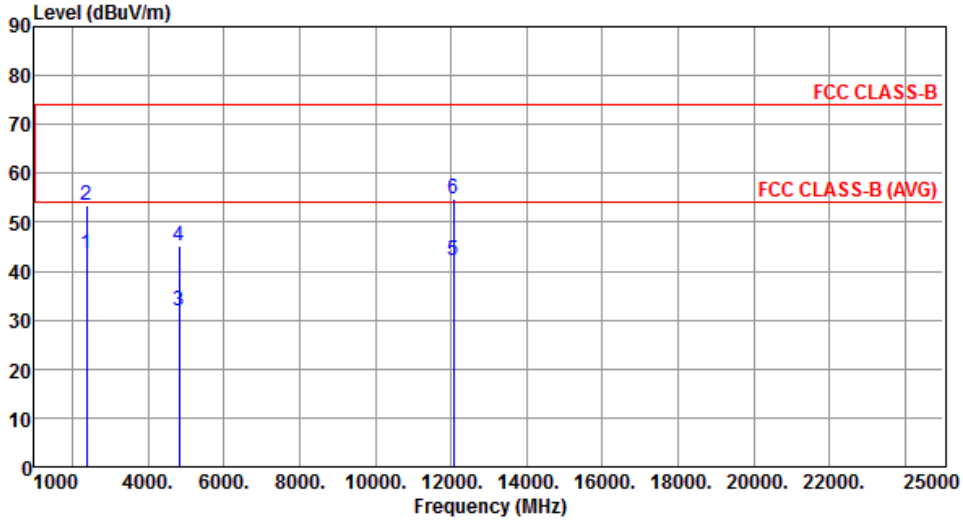
Modulation	11b	**Test Freq. (MHz)**	2412
Polarization	Horizontal	**Test Configuration**	1



	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	43.61	54.00	-10.39	47.12	-3.51	Average	253	240
2	2390.00	53.44	74.00	-20.56	56.95	-3.51	Peak	253	240
3	4824.00	30.76	54.00	-23.24	27.23	3.53	Average	100	167
4	4824.00	44.13	74.00	-29.87	40.60	3.53	Peak	100	167
5	12060.00	41.90	54.00	-12.10	28.58	13.32	Average	100	20
6	12060.00	54.19	74.00	-19.81	40.87	13.32	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).

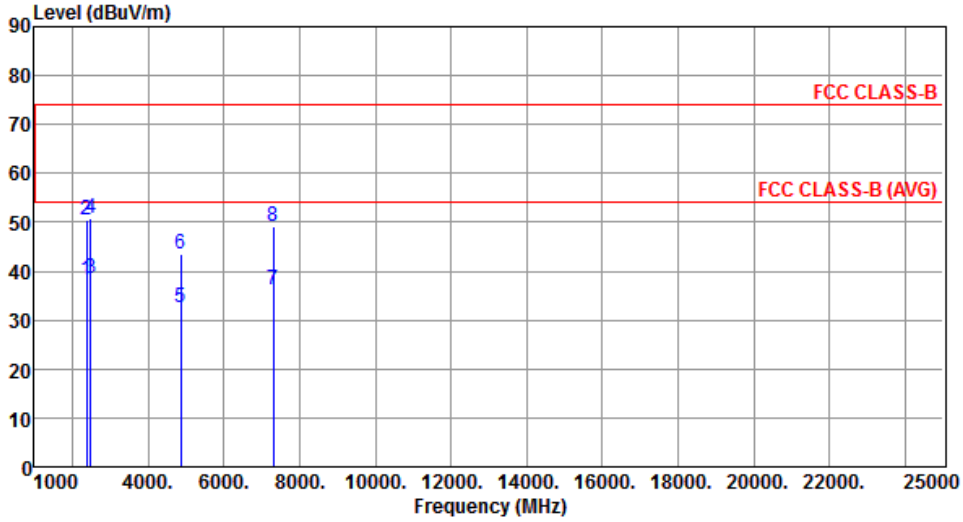
Modulation	11b	Test Freq. (MHz)	2412
Polarization	Vertical	Test Configuration	1



	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	43.49	54.00	-10.51	47.00	-3.51	Average	222	161
2	2390.00	53.49	74.00	-20.51	57.00	-3.51	Peak	222	161
3	4824.00	31.90	54.00	-22.10	28.37	3.53	Average	100	155
4	4824.00	45.06	74.00	-28.94	41.53	3.53	Peak	100	155
5	12060.00	42.09	54.00	-11.91	28.77	13.32	Average	100	236
6	12060.00	54.84	74.00	-19.16	41.52	13.32	Peak	100	236

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).

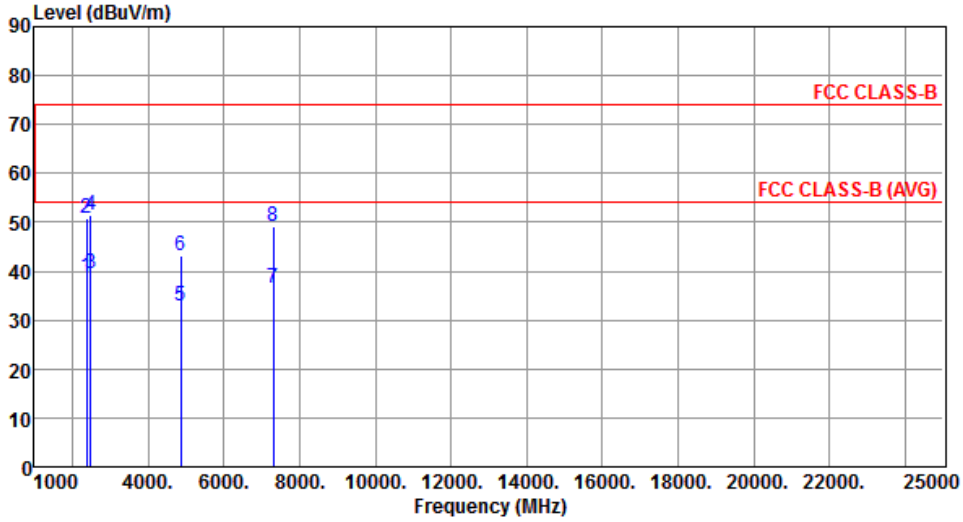
Modulation	11b	Test Freq. (MHz)	2437
Polarization	Horizontal	Test Configuration	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	38.33	54.00	-15.67	41.84	-3.51	Average	253	264
2	2390.00	50.39	74.00	-23.61	53.90	-3.51	Peak	253	264
3	2483.50	38.68	54.00	-15.32	41.79	-3.11	Average	253	264
4	2483.50	50.76	74.00	-23.24	53.87	-3.11	Peak	253	264
5	4874.00	32.52	54.00	-21.48	28.84	3.68	Average	100	154
6	4874.00	43.47	74.00	-30.53	39.79	3.68	Peak	100	154
7	7311.00	36.32	54.00	-17.68	27.92	8.40	Average	100	236
8	7311.00	49.20	74.00	-24.80	40.80	8.40	Peak	100	236

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).

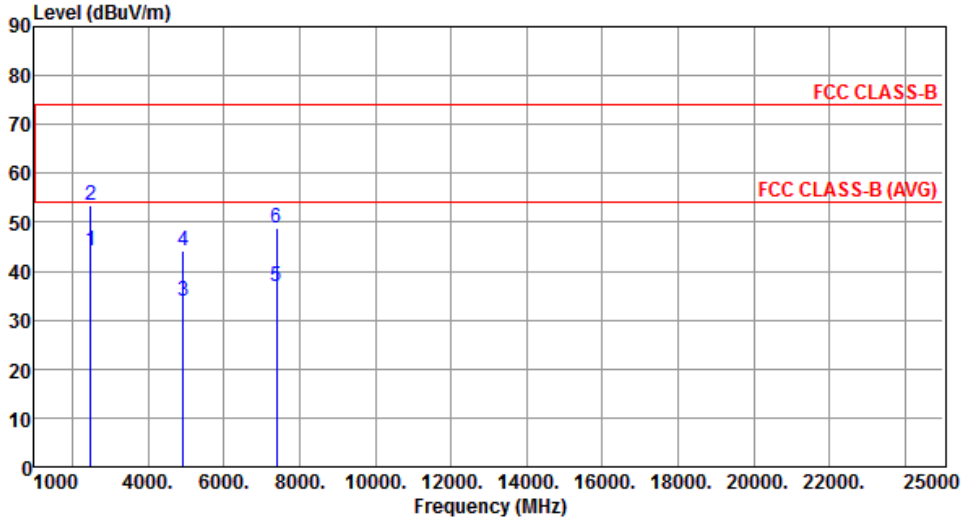
Modulation	11b	Test Freq. (MHz)	2437
Polarization	Vertical	Test Configuration	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	38.99	54.00	-15.01	42.50	-3.51	Average	215	143
2	2390.00	50.71	74.00	-23.29	54.22	-3.51	Peak	215	143
3	2483.50	39.47	54.00	-14.53	42.58	-3.11	Average	215	143
4	2483.50	51.54	74.00	-22.46	54.65	-3.11	Peak	215	143
5	4874.00	32.90	54.00	-21.10	29.22	3.68	Average	100	152
6	4874.00	43.13	74.00	-30.87	39.45	3.68	Peak	100	152
7	7311.00	36.55	54.00	-17.45	28.15	8.40	Average	100	174
8	7311.00	49.17	74.00	-24.83	40.77	8.40	Peak	100	174

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).

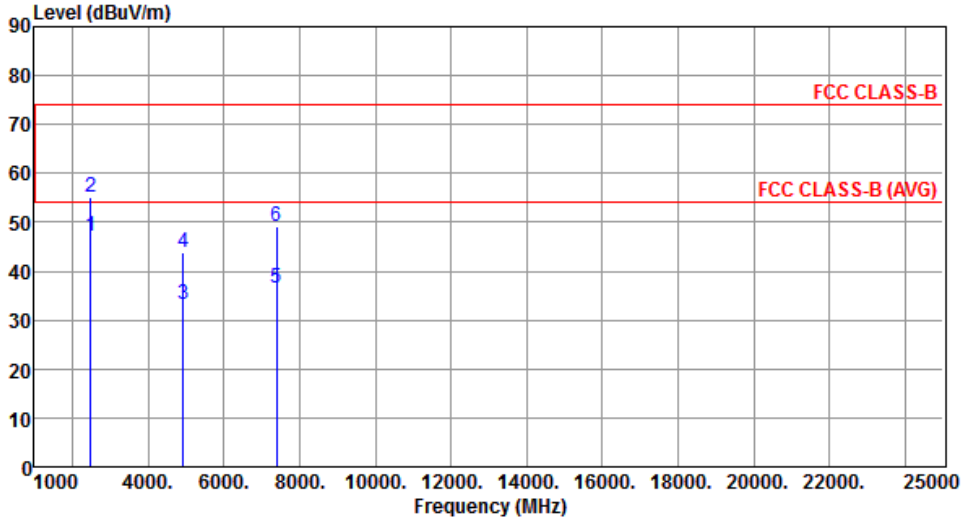
Modulation	11b	Test Freq. (MHz)	2462
Polarization	Horizontal	Test Configuration	1



	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	44.12	54.00	-9.88	47.23	-3.11	Average	227	287
2	2483.50	53.46	74.00	-20.54	56.57	-3.11	Peak	227	287
3	4924.00	33.72	54.00	-20.28	29.87	3.85	Average	100	153
4	4924.00	44.26	74.00	-29.74	40.41	3.85	Peak	100	153
5	7386.00	36.89	54.00	-17.11	28.33	8.56	Average	100	234
6	7386.00	48.70	74.00	-25.30	40.14	8.56	Peak	100	234

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	Test Configuration	1

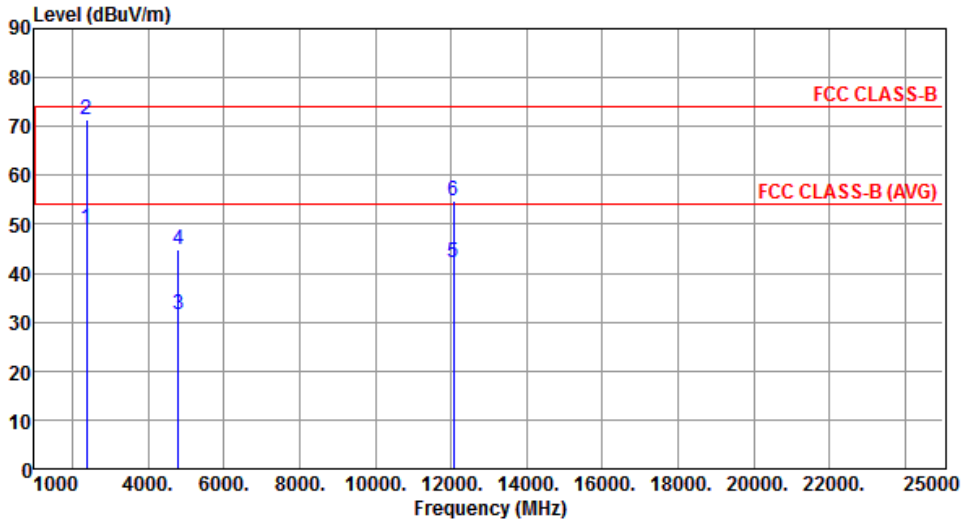


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	47.16	54.00	-6.84	50.27	-3.11	Average	190	152
2	2483.50	55.12	74.00	-18.88	58.23	-3.11	Peak	190	152
3	4924.00	33.26	54.00	-20.74	29.41	3.85	Average	100	148
4	4924.00	43.98	74.00	-30.02	40.13	3.85	Peak	100	148
5	7386.00	36.68	54.00	-17.32	28.12	8.56	Average	100	169
6	7386.00	49.10	74.00	-24.90	40.54	8.56	Peak	100	169

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

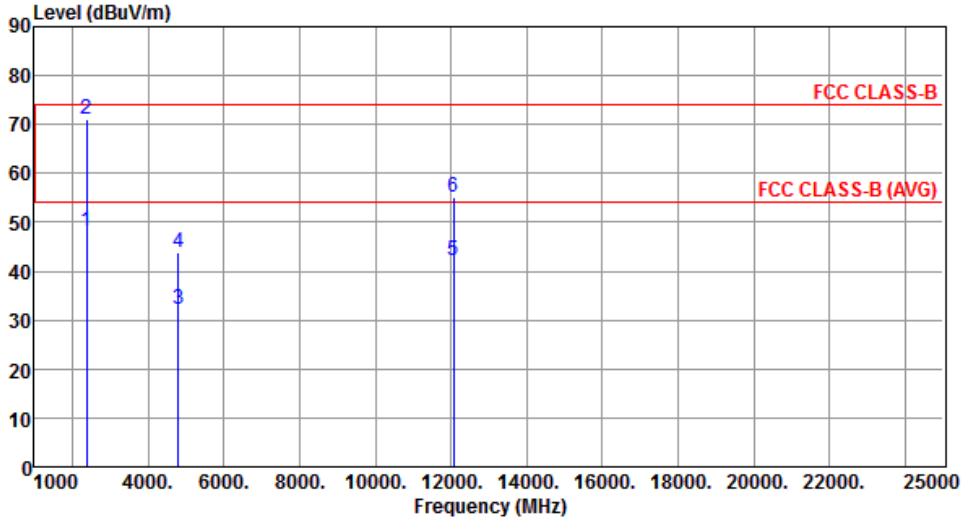
Modulation	11g	**Test Freq. (MHz)**	2412
Polarization	Horizontal	**Test Configuration**	1



	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	49.03	54.00	-4.97	52.54	-3.51	Average	261	262
2	2390.00	71.48	74.00	-2.52	74.99	-3.51	Peak	261	262
3	4804.00	31.69	54.00	-22.31	28.22	3.47	Average	100	167
4	4804.00	44.81	74.00	-29.19	41.34	3.47	Peak	100	167
5	12060.00	42.31	54.00	-11.69	28.99	13.32	Average	100	19
6	12060.00	54.70	74.00	-19.30	41.38	13.32	Peak	100	19

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).

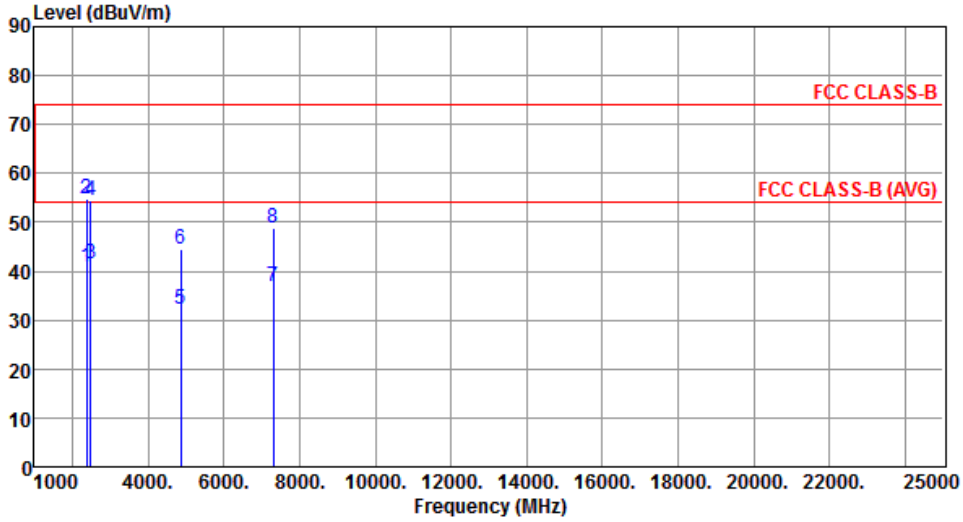
Modulation	11g	Test Freq. (MHz)	2412
Polarization	Vertical	Test Configuration	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	48.16	54.00	-5.84	51.67	-3.51	Average	157	152
2	2390.00	71.16	74.00	-2.84	74.67	-3.51	Peak	157	152
3	4804.00	32.17	54.00	-21.83	28.70	3.47	Average	100	149
4	4804.00	43.83	74.00	-30.17	40.36	3.47	Peak	100	149
5	12060.00	42.29	54.00	-11.71	28.97	13.32	Average	100	233
6	12060.00	54.99	74.00	-19.01	41.67	13.32	Peak	100	233

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).

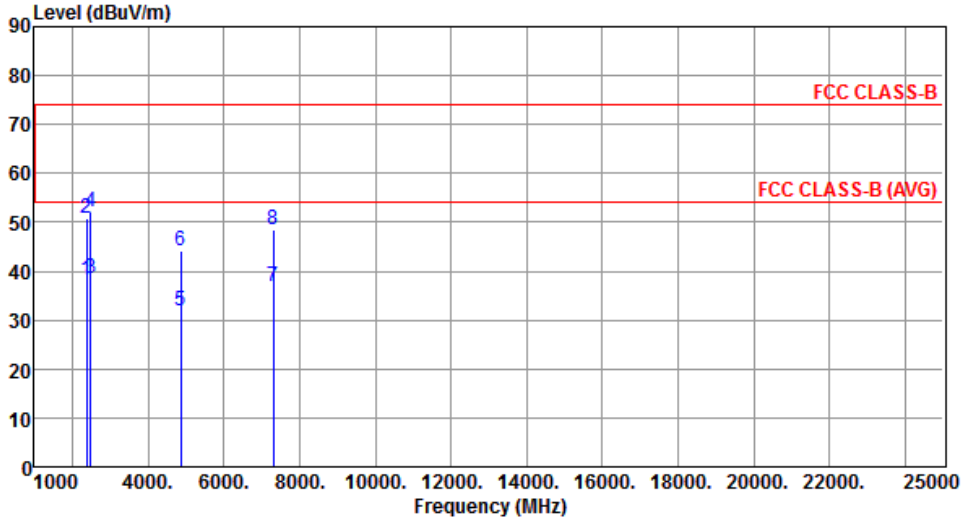
Modulation	11g	Test Freq. (MHz)	2437
Polarization	Horizontal	Test Configuration	1



	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	40.93	54.00	-13.07	44.44	-3.51	Average	189	263
2	2390.00	54.82	74.00	-19.18	58.33	-3.51	Peak	189	263
3	2483.50	41.47	54.00	-12.53	44.58	-3.11	Average	189	263
4	2483.50	54.45	74.00	-19.55	57.56	-3.11	Peak	189	263
5	4874.00	32.10	54.00	-21.90	28.42	3.68	Average	100	162
6	4874.00	44.59	74.00	-29.41	40.91	3.68	Peak	100	162
7	7311.00	36.96	54.00	-17.04	28.56	8.40	Average	100	245
8	7311.00	48.72	74.00	-25.28	40.32	8.40	Peak	100	245

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).

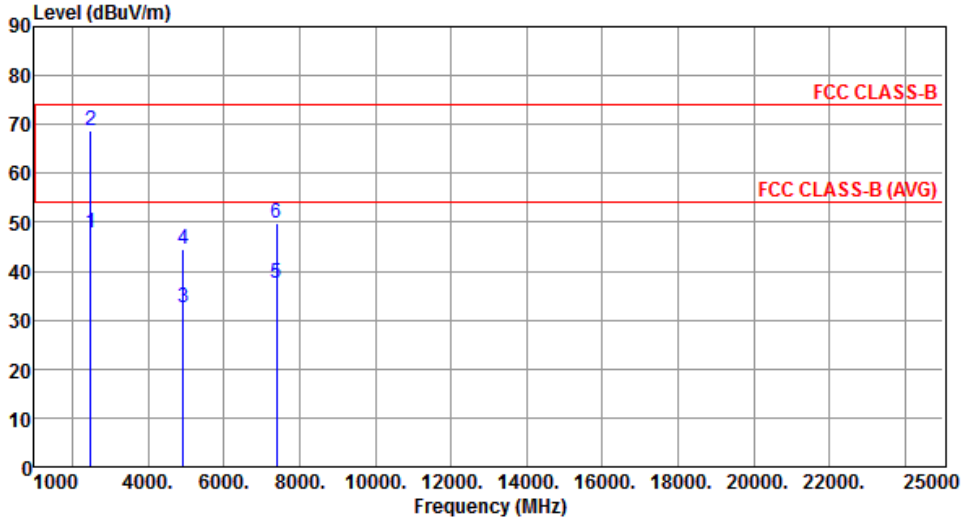
Modulation	11g	Test Freq. (MHz)	2437
Polarization	Vertical	Test Configuration	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	38.07	54.00	-15.93	41.58	-3.51	Average	224	142
2	2390.00	50.70	74.00	-23.30	54.21	-3.51	Peak	224	142
3	2483.50	38.56	54.00	-15.44	41.67	-3.11	Average	224	142
4	2483.50	52.16	74.00	-21.84	55.27	-3.11	Peak	224	142
5	4874.00	31.99	54.00	-22.01	28.31	3.68	Average	100	153
6	4874.00	44.01	74.00	-29.99	40.33	3.68	Peak	100	153
7	7311.00	36.74	54.00	-17.26	28.34	8.40	Average	100	168
8	7311.00	48.42	74.00	-25.58	40.02	8.40	Peak	100	168

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).

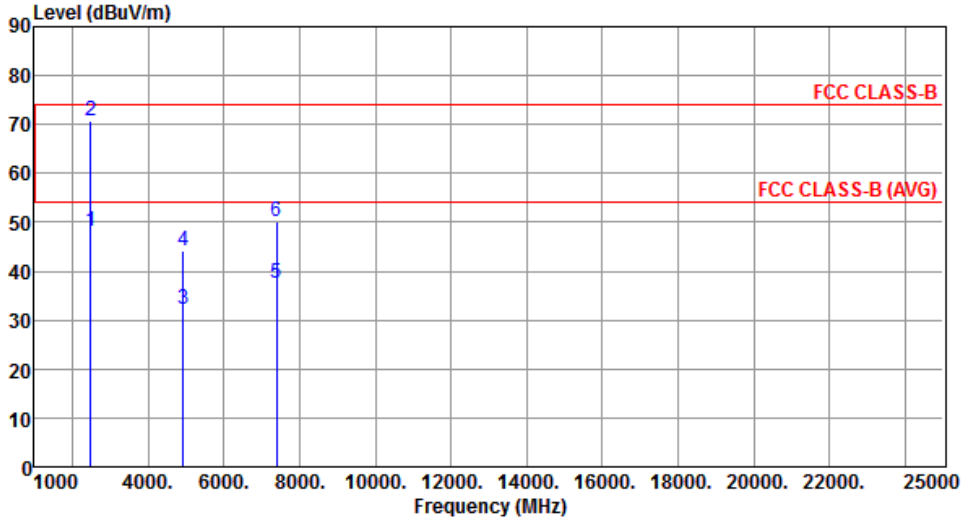
Modulation	11g	Test Freq. (MHz)	2462
Polarization	Horizontal	Test Configuration	1



	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	47.67	54.00	-6.33	50.78	-3.11	Average	230	218
2	2483.50	68.84	74.00	-5.16	71.95	-3.11	Peak	230	218
3	4924.00	32.45	54.00	-21.55	28.60	3.85	Average	100	163
4	4924.00	44.52	74.00	-29.48	40.67	3.85	Peak	100	163
5	7386.00	37.44	54.00	-16.56	28.88	8.56	Average	100	248
6	7386.00	49.84	74.00	-24.16	41.28	8.56	Peak	100	248

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	Test Configuration	1

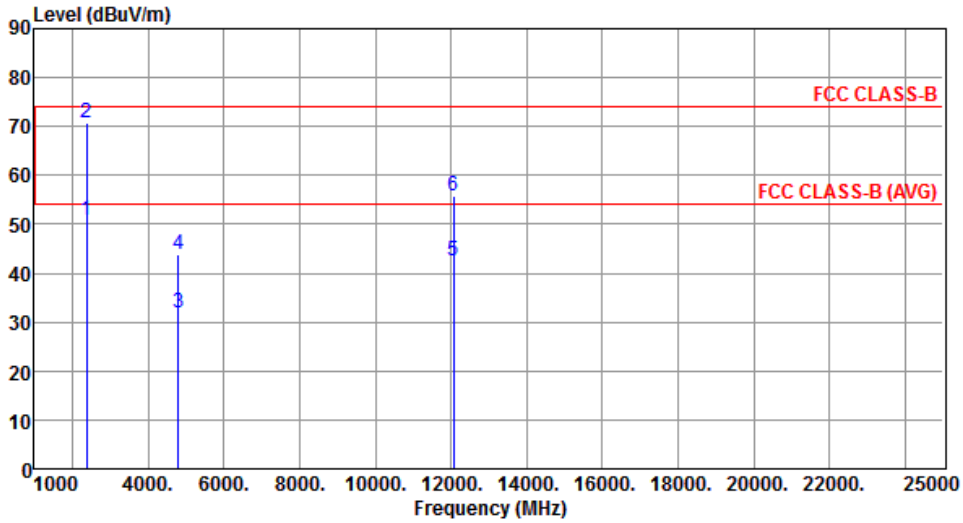


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	48.18	54.00	-5.82	51.29	-3.11	Average	239	149
2	2483.50	70.61	74.00	-3.39	73.72	-3.11	Peak	239	149
3	4924.00	32.26	54.00	-21.74	28.41	3.85	Average	100	158
4	4924.00	44.24	74.00	-29.76	40.39	3.85	Peak	100	158
5	7386.00	37.46	54.00	-16.54	28.90	8.56	Average	100	172
6	7386.00	50.27	74.00	-23.73	41.71	8.56	Peak	100	172

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

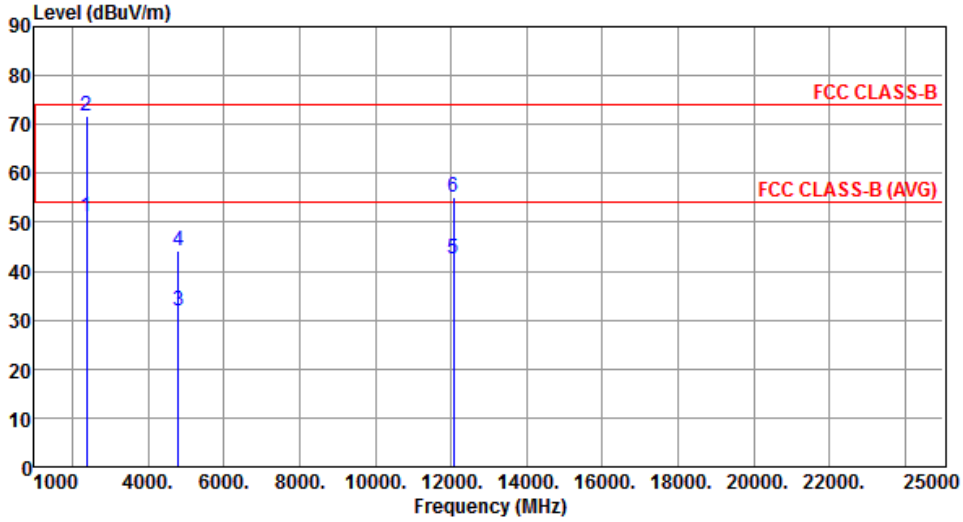
Modulation	HT20	**Test Freq. (MHz)**	2412
Polarization	Horizontal	**Test Configuration**	1



	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	50.87	54.00	-3.13	54.38	-3.51	Average	256	262
2	2390.00	70.77	74.00	-3.23	74.28	-3.51	Peak	256	262
3	4804.00	31.78	54.00	-22.22	28.31	3.47	Average	100	164
4	4804.00	43.86	74.00	-30.14	40.39	3.47	Peak	100	164
5	12060.00	42.42	54.00	-11.58	29.10	13.32	Average	100	23
6	12060.00	55.63	74.00	-18.37	42.31	13.32	Peak	100	23

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).

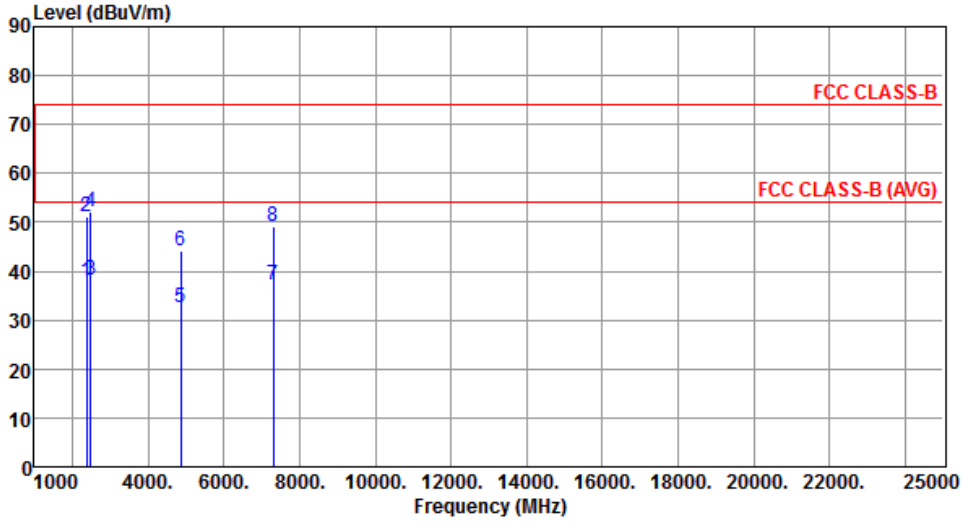
Modulation	HT20	Test Freq. (MHz)	2412
Polarization	Vertical	Test Configuration	1



	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	51.02	54.00	-2.98	54.53	-3.51	Average	157	155
2	2390.00	71.80	74.00	-2.20	75.31	-3.51	Peak	157	155
3	4804.00	31.86	54.00	-22.14	28.39	3.47	Average	100	148
4	4804.00	44.18	74.00	-29.82	40.71	3.47	Peak	100	148
5	12060.00	42.66	54.00	-11.34	29.34	13.32	Average	100	240
6	12060.00	55.19	74.00	-18.81	41.87	13.32	Peak	100	240

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).

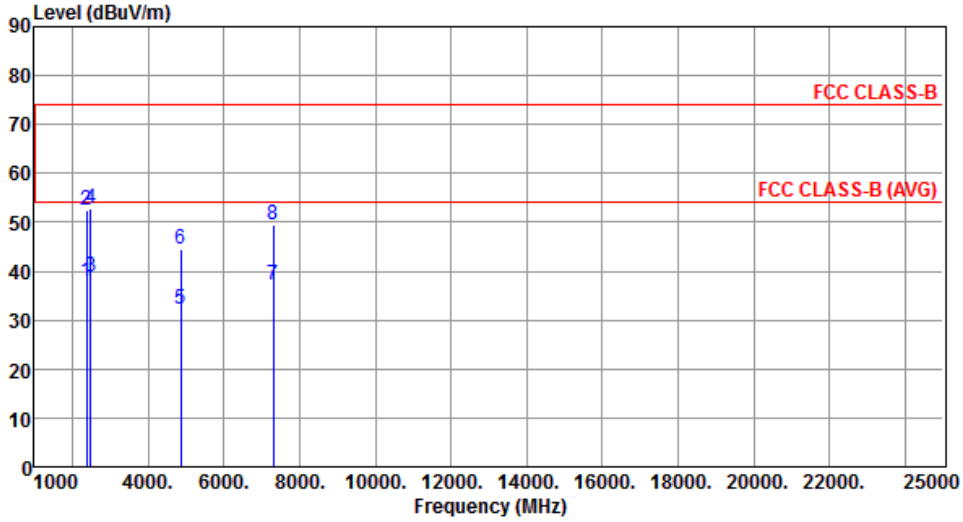
Modulation	HT20	Test Freq. (MHz)	2437
Polarization	Horizontal	Test Configuration	1



	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	37.94	54.00	-16.06	41.45	-3.51	Average	249	267
2	2390.00	51.06	74.00	-22.94	54.57	-3.51	Peak	249	267
3	2483.50	38.27	54.00	-15.73	41.38	-3.11	Average	249	267
4	2483.50	52.16	74.00	-21.84	55.27	-3.11	Peak	249	267
5	4874.00	32.40	54.00	-21.60	28.72	3.68	Average	100	161
6	4874.00	44.25	74.00	-29.75	40.57	3.68	Peak	100	161
7	7311.00	37.08	54.00	-16.92	28.68	8.40	Average	100	242
8	7311.00	49.29	74.00	-24.71	40.89	8.40	Peak	100	242

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).

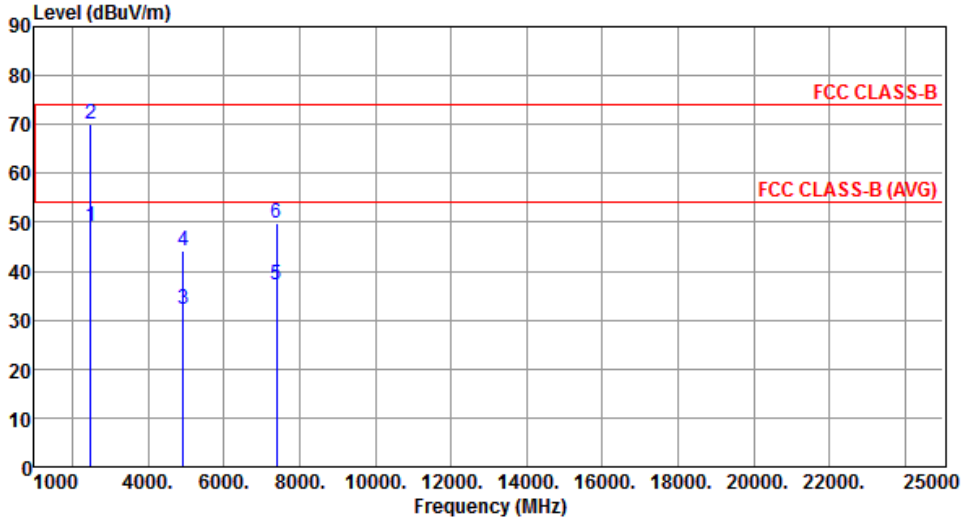
Modulation	HT20	Test Freq. (MHz)	2437
Polarization	Vertical	Test Configuration	1



	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	37.97	54.00	-16.03	41.48	-3.51	Average	211	148
2	2390.00	52.32	74.00	-21.68	55.83	-3.51	Peak	211	148
3	2483.50	38.73	54.00	-15.27	41.84	-3.11	Average	211	148
4	2483.50	52.89	74.00	-21.11	56.00	-3.11	Peak	211	148
5	4874.00	32.37	54.00	-21.63	28.69	3.68	Average	100	152
6	4874.00	44.50	74.00	-29.50	40.82	3.68	Peak	100	152
7	7311.00	37.29	54.00	-16.71	28.89	8.40	Average	100	165
8	7311.00	49.51	74.00	-24.49	41.11	8.40	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).

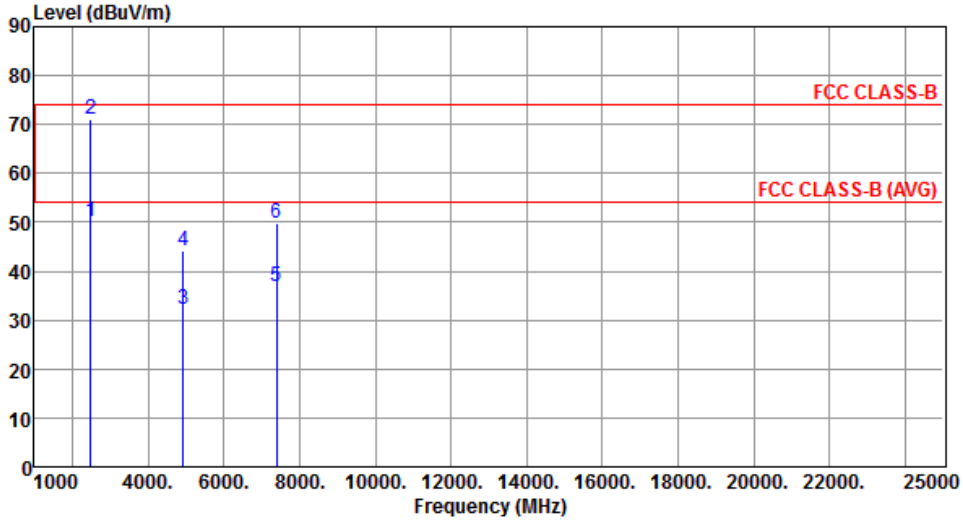
Modulation	HT20	Test Freq. (MHz)	2462
Polarization	Horizontal	Test Configuration	1



	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	49.23	54.00	-4.77	52.34	-3.11	Average	247	269
2	2483.50	69.95	74.00	-4.05	73.06	-3.11	Peak	247	269
3	4924.00	32.15	54.00	-21.85	28.30	3.85	Average	100	164
4	4924.00	44.24	74.00	-29.76	40.39	3.85	Peak	100	164
5	7386.00	37.28	54.00	-16.72	28.72	8.56	Average	100	239
6	7386.00	49.78	74.00	-24.22	41.22	8.56	Peak	100	239

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	Test Configuration	1

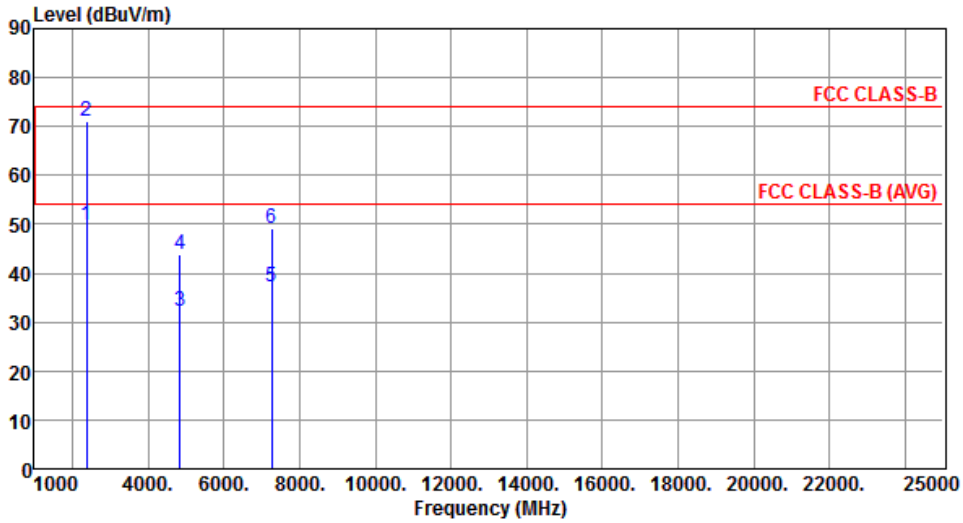


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	50.05	54.00	-3.95	53.16	-3.11	Average	242	148
2	2483.50	71.22	74.00	-2.78	74.33	-3.11	Peak	242	148
3	4924.00	32.32	54.00	-21.68	28.47	3.85	Average	100	158
4	4924.00	44.24	74.00	-29.76	40.39	3.85	Peak	100	158
5	7386.00	37.01	54.00	-16.99	28.45	8.56	Average	100	167
6	7386.00	49.78	74.00	-24.22	41.22	8.56	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).

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

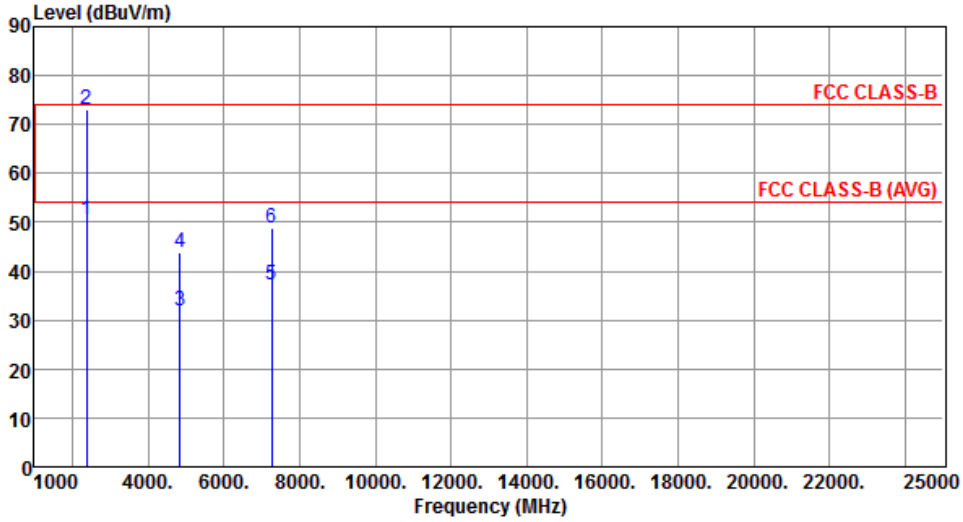
Modulation	HT40	**Test Freq. (MHz)**	2422
Polarization	Horizontal	**Test Configuration**	1



	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	49.95	54.00	-4.05	53.46	-3.51	Average	258	270
2	2390.00	70.94	74.00	-3.06	74.45	-3.51	Peak	258	270
3	4844.00	32.27	54.00	-21.73	28.67	3.60	Average	100	166
4	4844.00	43.98	74.00	-30.02	40.38	3.60	Peak	100	166
5	7266.00	37.16	54.00	-16.84	28.87	8.29	Average	100	176
6	7266.00	49.17	74.00	-24.83	40.88	8.29	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).

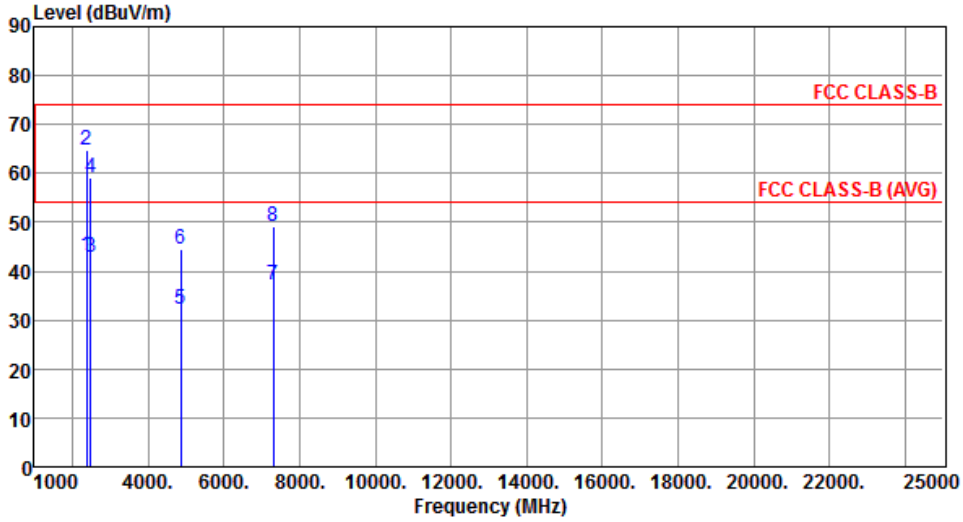
Modulation	HT40	Test Freq. (MHz)	2422
Polarization	Vertical	Test Configuration	1



	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	50.38	54.00	-3.62	53.89	-3.51	Average	197	154
2	2390.00	73.00	74.00	-1.00	76.51	-3.51	Peak	197	154
3	4844.00	31.99	54.00	-22.01	28.39	3.60	Average	100	157
4	4844.00	43.96	74.00	-30.04	40.36	3.60	Peak	100	157
5	7266.00	37.29	54.00	-16.71	29.00	8.29	Average	100	170
6	7266.00	48.96	74.00	-25.04	40.67	8.29	Peak	100	170

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).

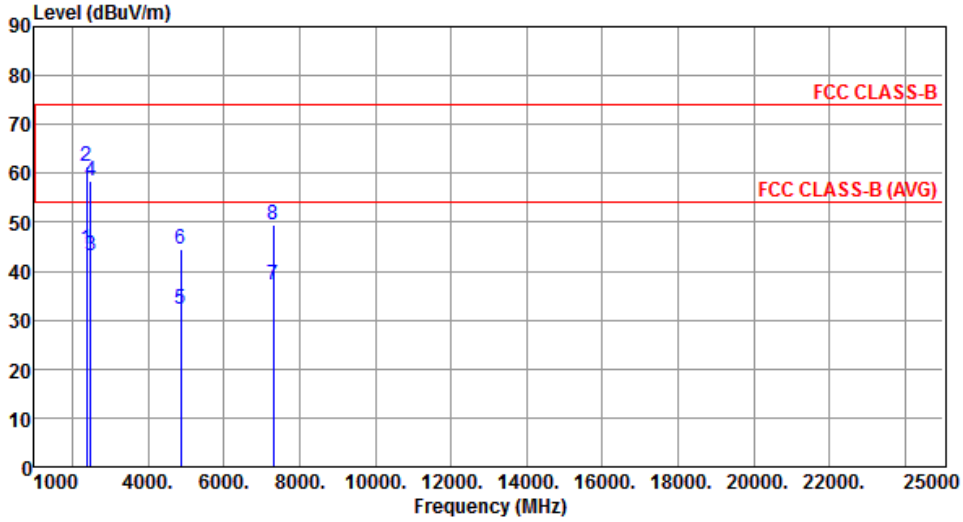
Modulation	HT40	Test Freq. (MHz)	2437
Polarization	Horizontal	Test Configuration	1



	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	43.28	54.00	-10.72	46.79	-3.51	Average	189	261
2	2390.00	64.68	74.00	-9.32	68.19	-3.51	Peak	189	261
3	2483.50	42.89	54.00	-11.11	46.00	-3.11	Average	189	261
4	2483.50	59.00	74.00	-15.00	62.11	-3.11	Peak	189	261
5	4874.00	32.36	54.00	-21.64	28.68	3.68	Average	100	161
6	4874.00	44.36	74.00	-29.64	40.68	3.68	Peak	100	161
7	7311.00	37.07	54.00	-16.93	28.67	8.40	Average	100	246
8	7311.00	49.06	74.00	-24.94	40.66	8.40	Peak	100	246

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).

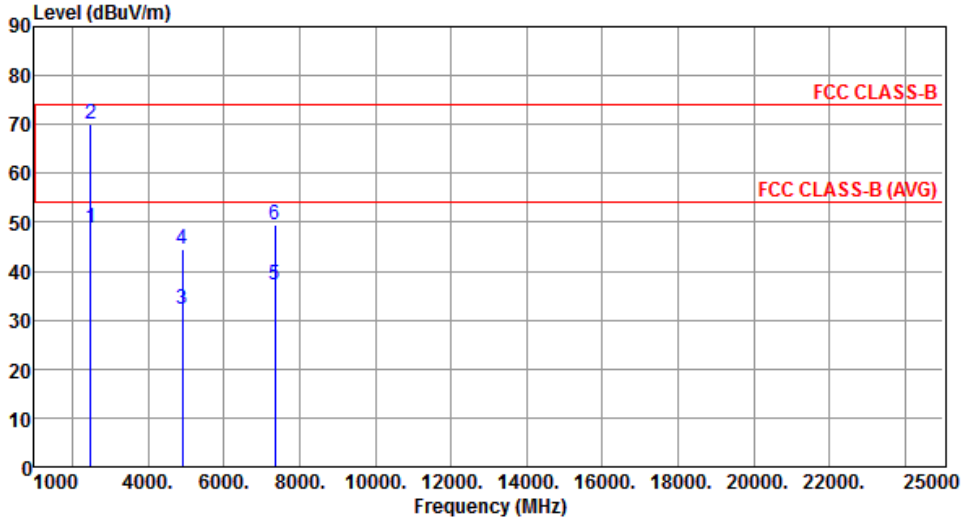
Modulation	HT40	Test Freq. (MHz)	2437
Polarization	Vertical	Test Configuration	1



	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	44.45	54.00	-9.55	47.96	-3.51	Average	170	158
2	2390.00	61.48	74.00	-12.52	64.99	-3.51	Peak	170	158
3	2483.50	43.17	54.00	-10.83	46.28	-3.11	Average	170	158
4	2483.50	58.42	74.00	-15.58	61.53	-3.11	Peak	170	158
5	4874.00	32.16	54.00	-21.84	28.48	3.68	Average	100	150
6	4874.00	44.47	74.00	-29.53	40.79	3.68	Peak	100	150
7	7311.00	37.36	54.00	-16.64	28.96	8.40	Average	100	173
8	7311.00	49.32	74.00	-24.68	40.92	8.40	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).

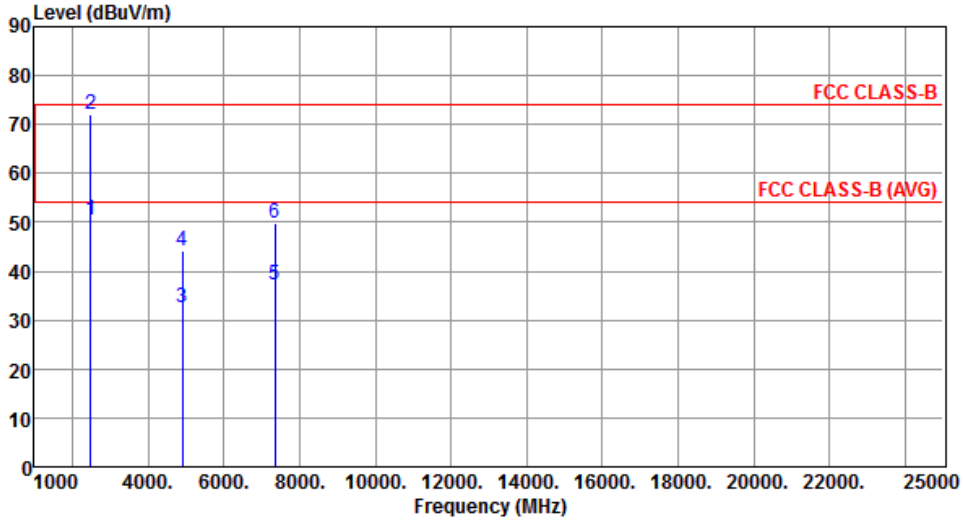
Modulation	HT40	Test Freq. (MHz)	2452
Polarization	Horizontal	Test Configuration	1



	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	48.89	54.00	-5.11	52.00	-3.11	Average	268	267
2	2483.50	69.97	74.00	-4.03	73.08	-3.11	Peak	268	267
3	4904.00	32.33	54.00	-21.67	28.54	3.79	Average	100	169
4	4904.00	44.37	74.00	-29.63	40.58	3.79	Peak	100	169
5	7356.00	37.20	54.00	-16.80	28.69	8.51	Average	100	242
6	7356.00	49.38	74.00	-24.62	40.87	8.51	Peak	100	242

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	Test Configuration	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	50.60	54.00	-3.40	53.71	-3.11	Average	210	155
2	2483.50	72.20	74.00	-1.80	75.31	-3.11	Peak	210	155
3	4904.00	32.45	54.00	-21.55	28.66	3.79	Average	100	150
4	4904.00	44.12	74.00	-29.88	40.33	3.79	Peak	100	150
5	7356.00	37.17	54.00	-16.83	28.66	8.51	Average	100	170
6	7356.00	49.81	74.00	-24.19	41.30	8.51	Peak	100	170

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

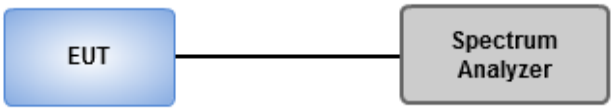
Reference level measurement

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

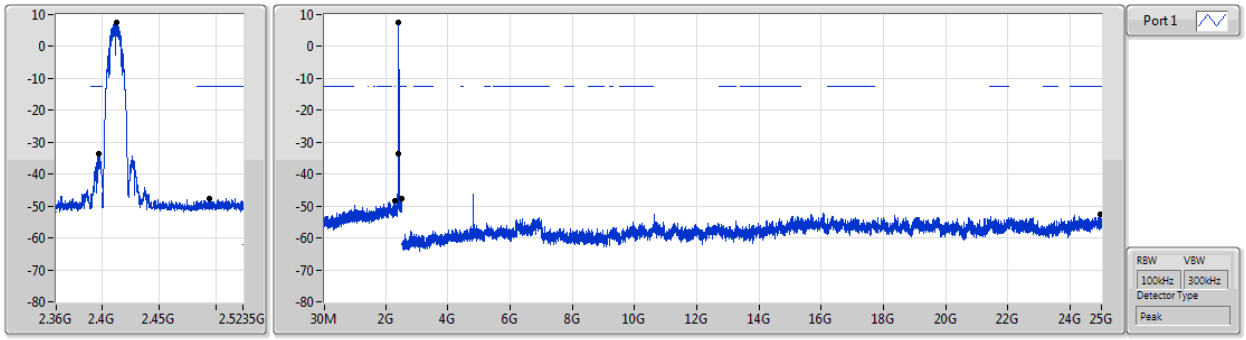
3.6.3 Test Setup



3.6.4 Unwanted Emissions into Non-Restricted Frequency Bands

802.11b_Nss1,(1Mbps)_1TX **CSE NdB**

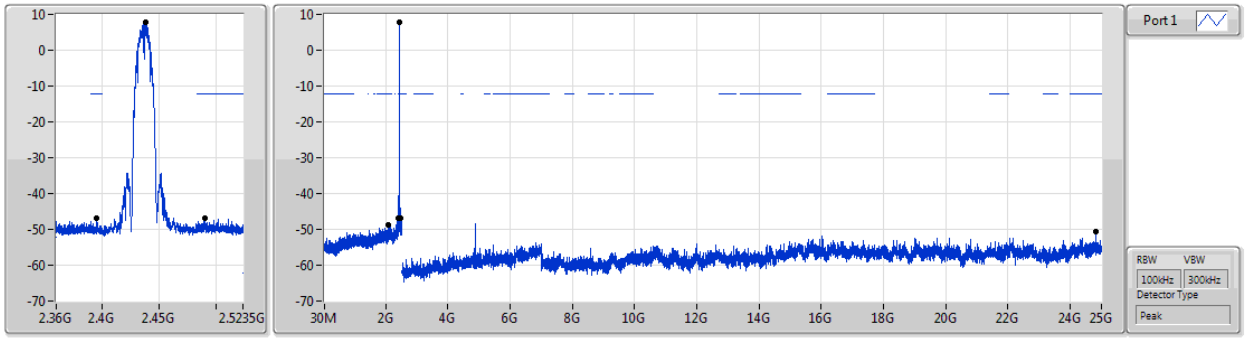
2412MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.412859G	7.60	-12.40	2.307575G	-48.21	2.39704G	-33.43	2.49406G	-47.58	24.955047G	-52.57	1

802.11b_Nss1,(1Mbps)_1TX **CSE NdB**

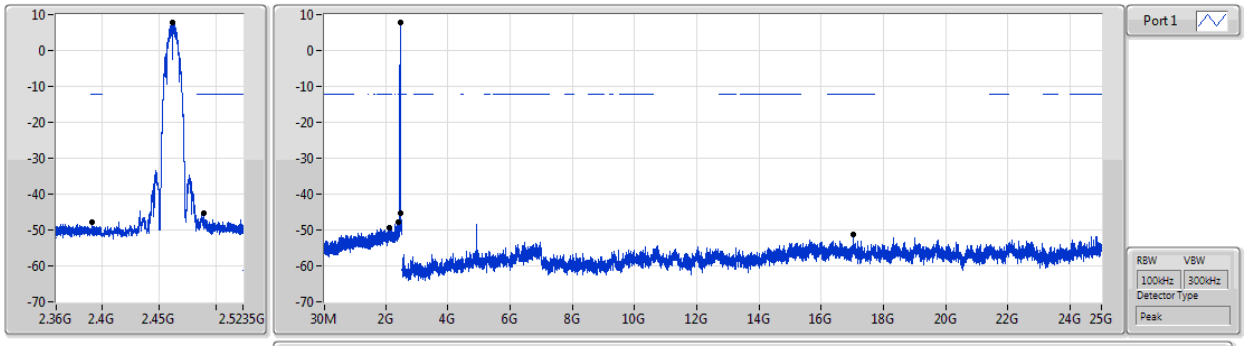
2437MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43841G	7.75	-12.25	2.074575G	-48.90	2.39544G	-46.76	2.4903G	-46.92	24.825807G	-50.55	1

802.11b_Nss1,(1Mbps)_1TX **CSE NdB**

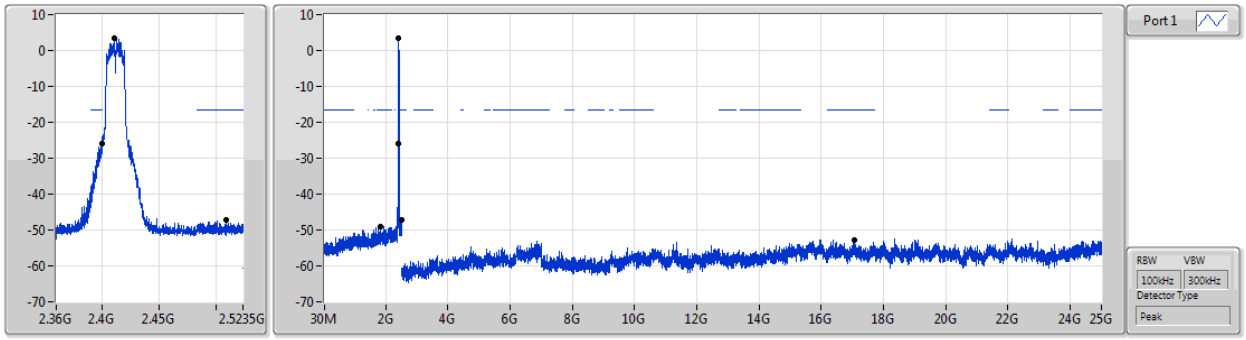
2462MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.461456G	7.81	-12.19	2.12001G	-49.25	2.39168G	-47.67	2.48894G	-45.46	17.018033G	-51.30	1

802.11g_Nss1,(6Mbps)_1TX **CSE NdB**

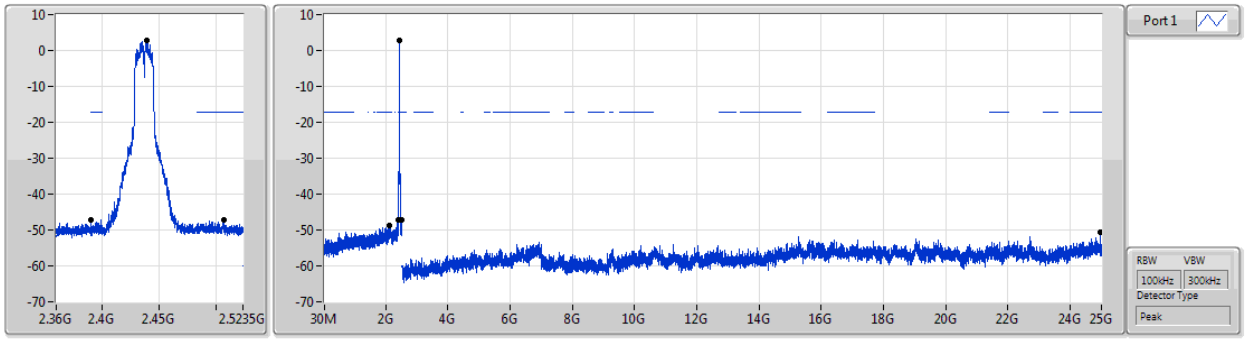
2412MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.410688G	3.37	-16.63	1.81012G	-49.06	2.39984G	-26.00	2.50846G	-47.10	17.043319G	-52.79	1

802.11g_Nss1,(6Mbps)_1TX **CSE NdB**

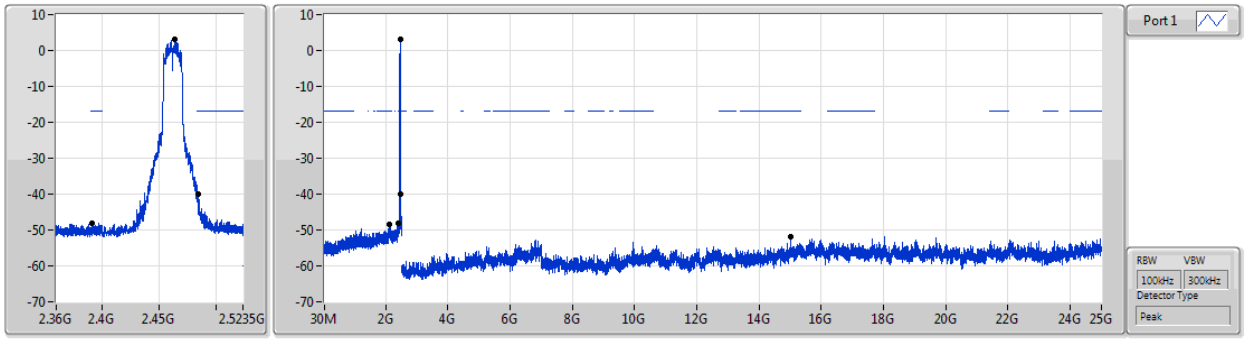
2437MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.439412G	2.94	-17.06	2.109525G	-48.90	2.39008G	-47.18	2.50702G	-47.23	24.949428G	-50.68	1

802.11g_Nss1,(6Mbps)_1TX **CSE NdB**

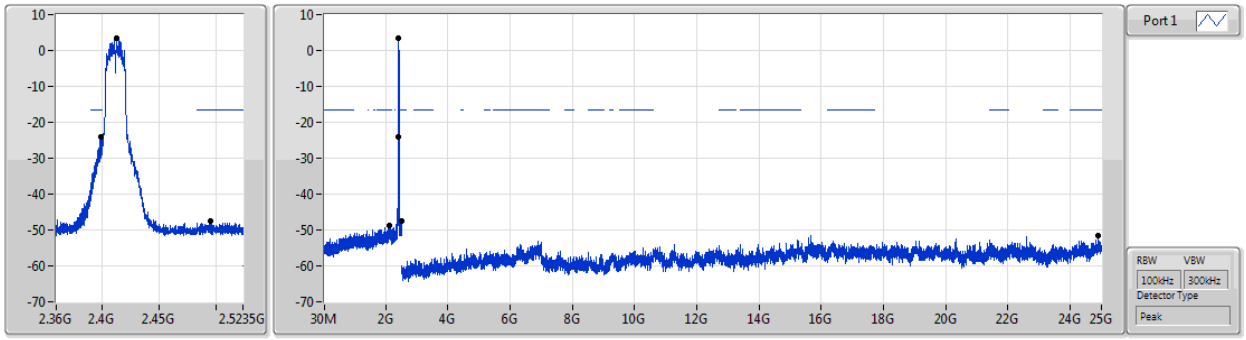
2462MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.463293G	3.17	-16.83	2.121175G	-48.48	2.39168G	-48.20	2.4839G	-40.09	15.003577G	-51.72	1

802.11n HT20_Nss1,(MCS0)_1TX **CSE NdB**

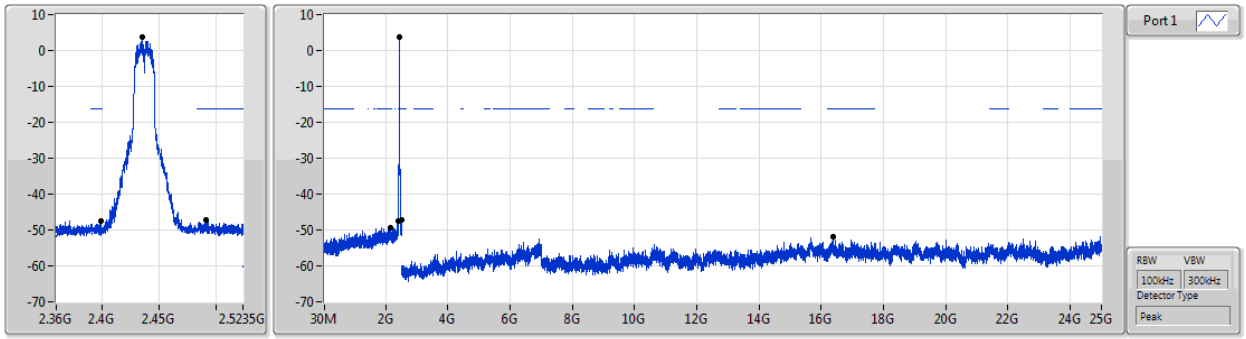
2412MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.413193G	3.35	-16.65	2.128165G	-48.87	2.39952G	-23.95	2.49542G	-47.63	24.901665G	-51.44	1

802.11n HT20_Nss1,(MCS0)_1TX **CSE NdB**

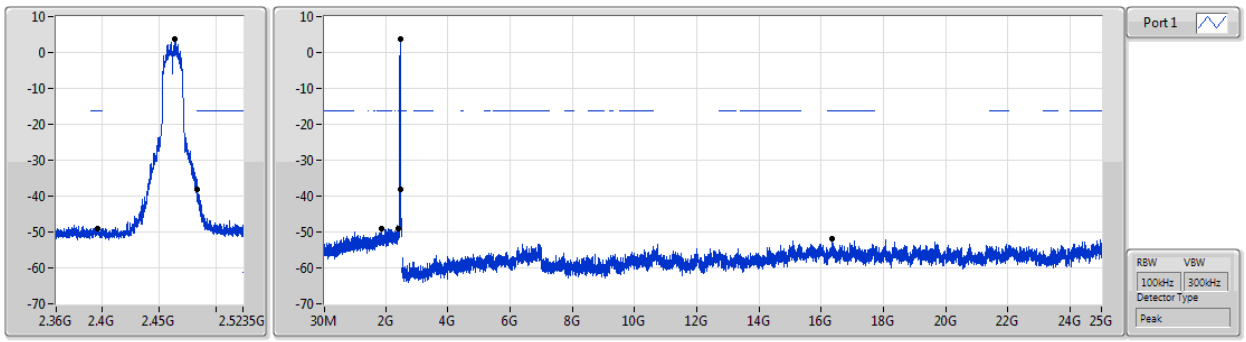
2437MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.435738G	3.62	-16.38	2.153795G	-49.27	2.3992G	-47.65	2.49158G	-47.06	16.371834G	-51.98	1

802.11n HT20_Nss1,(MCS0)_1TX **CSE NdB**

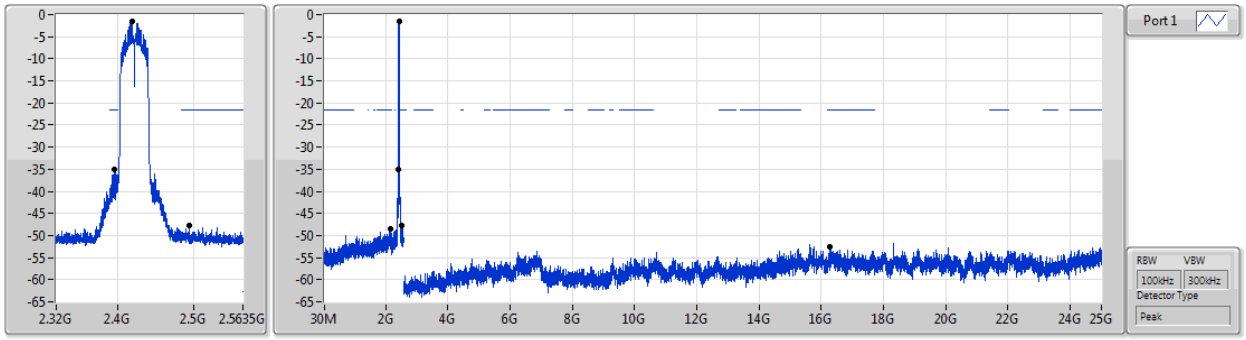
2462MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.463293G	3.61	-16.39	1.878855G	-48.99	2.39632G	-48.92	2.48358G	-38.01	16.349357G	-51.77	1

802.11n HT40_Nss1,(MCS0)_1TX **CSE NdB**

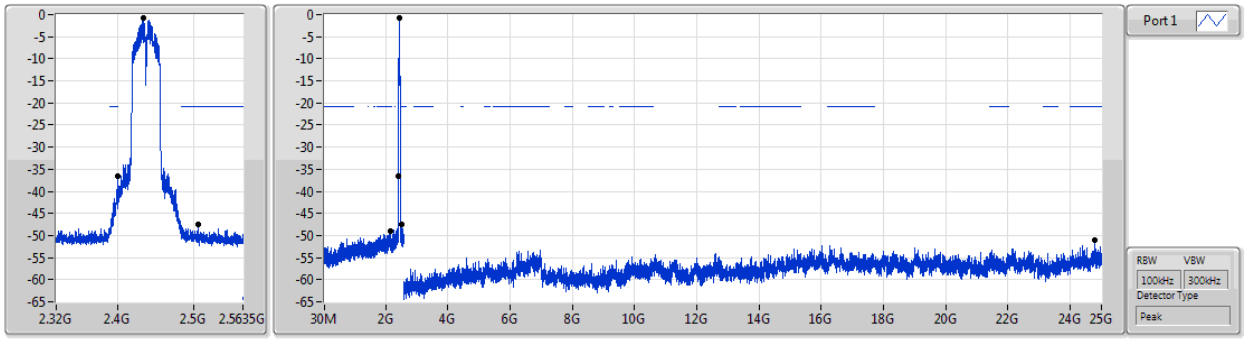
2422MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.419372G	-1.53	-21.53	2.137945G	-48.43	2.39616G	-34.98	2.49294G	-47.80	16.286224G	-52.52	1

802.11n HT40_Nss1,(MCS0)_1TX **CSE NdB**

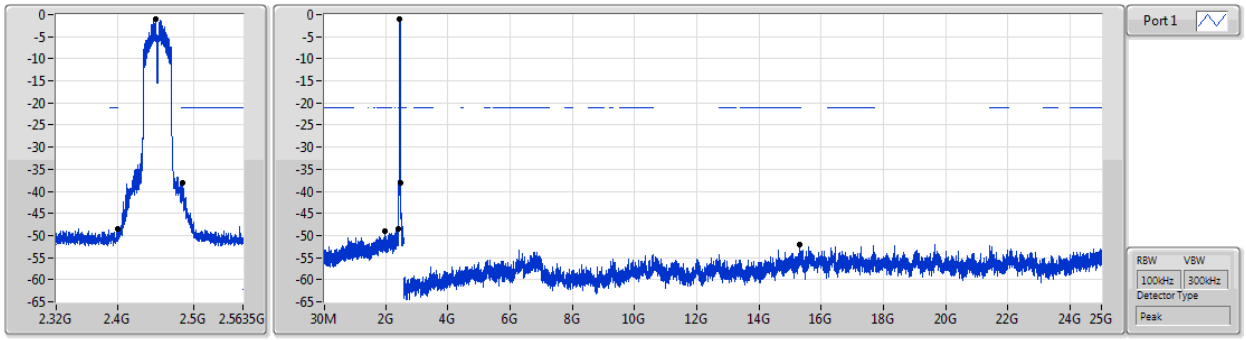
2437MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.434402G	-0.84	-20.84	2.13222G	-49.10	2.39984G	-36.66	2.50462G	-47.55	24.800876G	-51.11	1

802.11n HT40_Nss1,(MCS0)_1TX **CSE NdB**

2452MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.449432G	-0.96	-20.96	1.979935G	-49.09	2.39968G	-48.40	2.48446G	-37.96	15.299018G	-52.00	1

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	**Kwei Shan**	**Kwei Shan Site II**
Tel: 886-2-2601-1640	Tel: 886-3-271-8666	Tel: 886-3-271-8640
No. 30-2, Ding Fwu Tsuen, Lin Kou District, New Taipei City, Taiwan, R.O.C.	No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan, R.O.C.	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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