FCC Test Report

FCC ID	:	**MXF-WLTFQT141GN**
Equipment	:	**Cat4 Indoor CPE**
Model No.	:	**WLTFQT-141GN**
Brand Name	:	**Gemtek**
Multiple Listing	:	**Refer to item 1.1.1 for more details.**
Applicant	:	**Gemtek Technology Co., Ltd.**
Address	:	**No. 15-1 Zhonghua Road, Hsinchu Industrial Park, Hukou, Hsinchu, Taiwan, 30352.**
Standard	:	**47 CFR FCC Part 15.247**
Received Date	:	**May 17, 2018**
Tested Date	:	**May 18 ~ May 31, 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
FR851703	Rev. 01	Initial issue	Jun. 27, 2018

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.339MHz 33.44 (Margin -15.78dB) - AV	Pass
15.247(d) 15.209	Radiated Emissions	[dBuV/m at 3m]: 64.78MHz 38.98 (Margin -1.02dB) - QP	Pass
15.247(b)(3)	Maximum Output Power	Max Power [dBm]: 25.41	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 Product Details

The following models are provided to this EUT.

Brand Name	Model Name	Product Name	Description
Gemtek	WLTFQT-141GN	Cat4 Indoor CPE	Main tested model.
Blu-Castle	BC-4GMCPGa		For marketing purpose.
✦ All models are electrically identical, different model names are for marketing purpose.			

1.1.2 Specification of the Equipment under Test (EUT)

RF General Information					
Frequency Range (MHz)	IEEE Std. 802.11	Ch. Freq. (MHz)	Channel Number	Transmit Chains (N_{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 Peak Conducted Output Power. Note 2: 802.11b uses a combination of DSSS-DBPSK, DQPSK, CCK modulation. Note 3: 802.11g/n uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.					

1.1.3 Antenna Details

Type	Gain (dBi)	Connector	Remark
Monopole	2	No	---

1.1.4 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	12Vdc from AC adapter

1.1.5 Accessories

Accessories		
No.	**Equipment**	**Description**
1	Adapter	Brand: APD Model: WA-12M12FU Power Rating: I/P: 100-240Vac, 50-60Hz, 0.5A Max O/P: 12Vdc, 1A Power Line: 1.2m non-shielded without core
2	RJ45 cable	EEKSONG, 1.5m non-shielded without core

1.1.6 Channel List

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

1.1.7 Test Tool and Duty Cycle

Test Tool	Putty, V 0.60.0.0		
Duty Cycle and Duty Factor	**Mode**	**Duty cycle (%)**	**Duty factor (dB)**
	11b	100.00%	0.00
	11g	100.00%	0.00
	HT20	100.00%	0.00
	HT40	100.00%	0.00

1.1.8 Power Setting

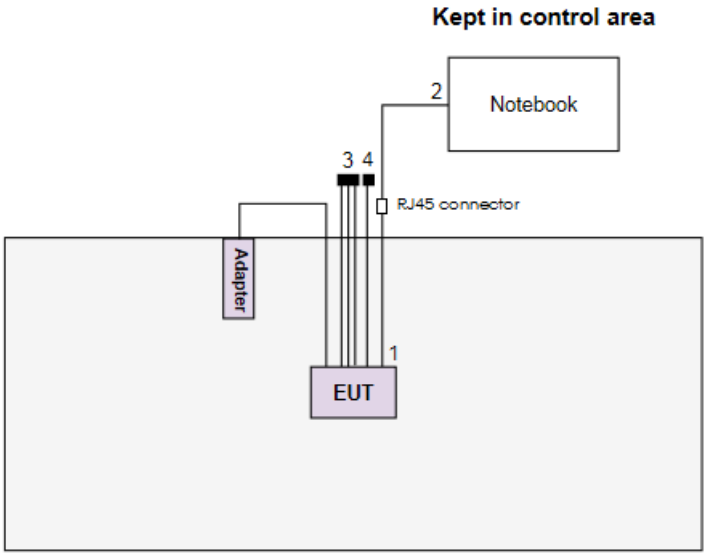
Modulation Mode	Test Frequency (MHz)	Power Set
11b	2412	41/41
11b	2437	40/40
11b	2462	40/40
11g	2412	45/45
11g	2437	44/44
11g	2462	44/44
HT20	2412	45/45
HT20	2437	44/44
HT20	2462	44/44
HT40	2422	44/44
HT40	2437	44/44
HT40	2452	43/43

1.2 Local Support Equipment List

Support Equipment List					
No.	**Equipment**	**Brand**	**Model**	**FCC ID**	**Remarks**
1	Notebook	DELL	Latitude E6430	DoC	---
2	RJ45 Load	ICC	---	---	---
3	RJ11 Load	ICC	---	---	---

1.3 Test Setup Chart

Test Setup Diagram



No.	Signal cable / Length (m)
1	RJ45, 1.5m non-shielded.
2	RJ45, 10m non-shielded.
3	RJ45, 1.5m(x3) non-shielded with load.
4	RJ11, 2m non-shielded with load.

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	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)				
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. 25, 2017	Jul. 24, 2018
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
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 13, 2017	Nov. 12, 2018
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Dec. 07, 2017	Dec. 06, 2018
Preamplifier	EMC	EMC02325	980225	Jul. 28, 2017	Jul. 27, 2018
Preamplifier	Agilent	83017A	MY39501308	Oct. 06, 2017	Oct. 05, 2018
Preamplifier	EMC	EMC184045B	980192	Aug. 22, 2017	Aug. 21, 2018
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)				
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 DTS Meas Guidance v04
FCC KDB 662911 D01 Multiple Transmitter Output v02r01

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	24°C / 58%	Alex Tsai
Radiated Emissions	03CH01-WS	23-24°C / 62-63%	Akun Chung Vincent Yeh
RF Conducted	TH01-WS	23°C / 63%	Brad Wu

- 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	11g	2437	6 Mbps	---
Radiated Emissions ≤1GHz	11g	2437	6 Mbps	---
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	---

3 Transmitter Test Results

3.1 Conducted Emissions

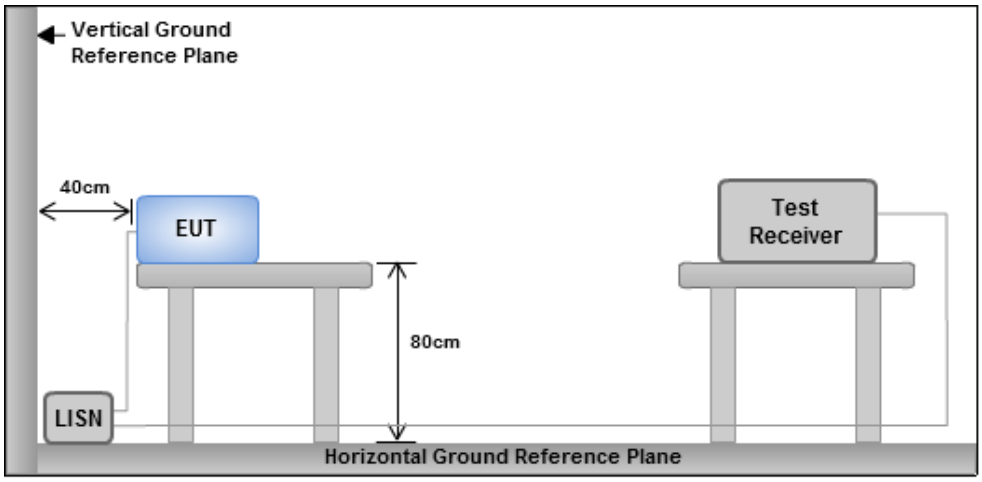
3.1.1 Limit of Conducted Emissions

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.

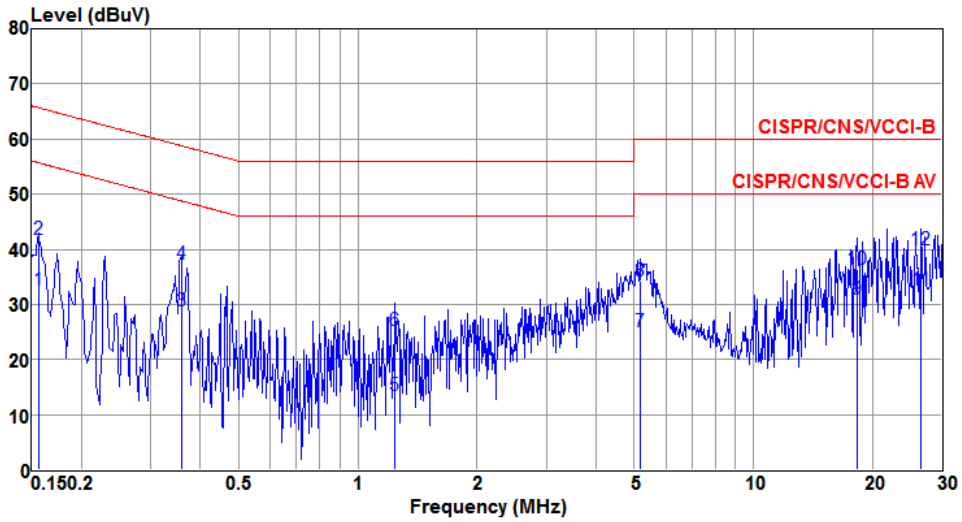
3.1.3 Test Setup



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

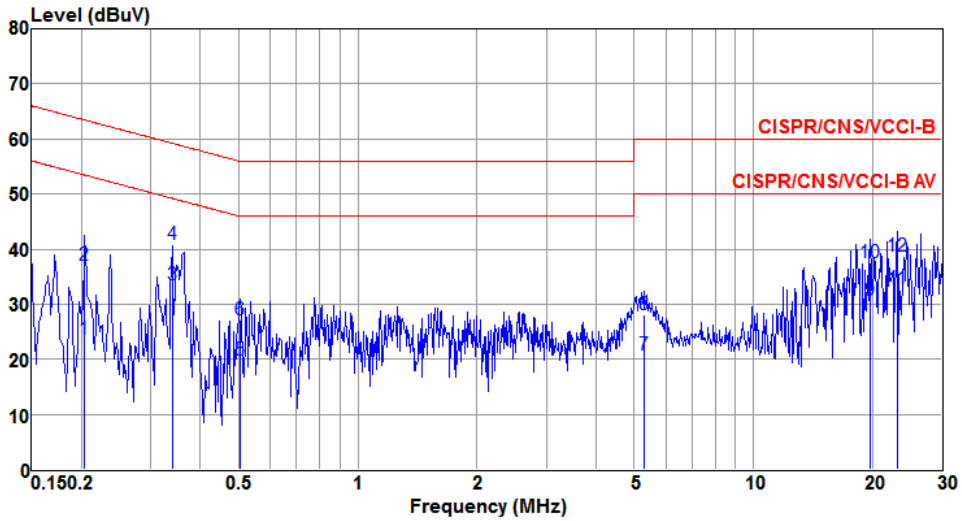
Modulation	11g	Test Freq. (MHz)	2437
Power Phase	Line		



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.156	32.59	55.69	-23.10	32.31	0.27	0.01	Average
2	0.156	41.67	65.69	-24.02	41.39	0.27	0.01	QP
3	0.358	28.69	48.78	-20.09	28.34	0.33	0.02	Average
4	0.358	37.32	58.78	-21.46	36.97	0.33	0.02	QP
5	1.242	13.47	46.00	-32.53	13.02	0.40	0.05	Average
6	1.242	25.15	56.00	-30.85	24.70	0.40	0.05	QP
7	5.194	25.12	50.00	-24.88	24.37	0.50	0.25	Average
8	5.194	34.29	60.00	-25.71	33.54	0.50	0.25	QP
9	18.328	30.86	50.00	-19.14	29.72	0.81	0.33	Average
10	18.328	36.39	60.00	-23.61	35.25	0.81	0.33	QP
11@	26.558	32.50	50.00	-17.50	31.10	1.01	0.39	Average
12	26.558	39.89	60.00	-20.11	38.49	1.01	0.39	QP

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

Modulation	11g	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	0.204	23.64	53.45	-29.81	23.46	0.15	0.03	Average
2	0.204	37.08	63.45	-26.37	36.90	0.15	0.03	QP
3@	0.339	33.44	49.22	-15.78	33.24	0.18	0.02	Average
4	0.339	40.92	59.22	-18.30	40.72	0.18	0.02	QP
5	0.505	19.72	46.00	-26.28	19.49	0.21	0.02	Average
6	0.505	27.12	56.00	-28.88	26.89	0.21	0.02	QP
7	5.277	20.67	50.00	-29.33	20.04	0.38	0.25	Average
8	5.277	28.08	60.00	-31.92	27.45	0.38	0.25	QP
9	19.740	30.60	50.00	-19.40	29.52	0.74	0.34	Average
10	19.740	37.45	60.00	-22.55	36.37	0.74	0.34	QP
11	23.140	32.74	50.00	-17.26	31.55	0.82	0.37	Average
12	23.140	38.66	60.00	-21.34	37.47	0.82	0.37	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

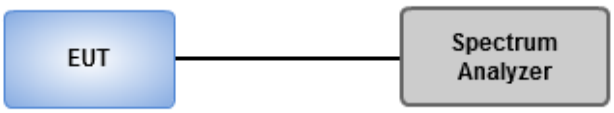
6dB Bandwidth

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)_2TX	10.072M	15.123M	15M1G1D	9.565M	14.978M
802.11g_Nss1,(6Mbps)_2TX	16.594M	16.715M	16M7D1D	16.522M	16.643M
802.11n HT20_Nss1,(MCS0)_2TX	17.826M	17.873M	17M9D1D	17.826M	17.8M
802.11n HT40_Nss1,(MCS0)_2TX	36.522M	36.179M	36M2D1D	36.377M	36.035M

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;

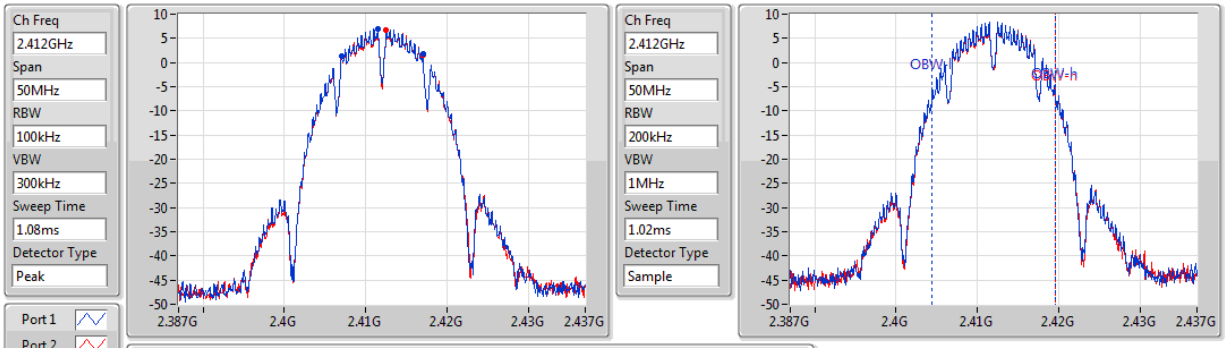
Result

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	15.123M	10.072M	15.123M
2437MHz	Pass	500k	9.565M	14.978M	10.072M	15.123M
2462MHz	Pass	500k	10M	15.051M	10M	15.123M
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	16.594M	16.715M	16.594M	16.643M
2437MHz	Pass	500k	16.522M	16.715M	16.594M	16.643M
2462MHz	Pass	500k	16.522M	16.643M	16.522M	16.715M
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	17.826M	17.8M	17.826M	17.8M
2437MHz	Pass	500k	17.826M	17.8M	17.826M	17.873M
2462MHz	Pass	500k	17.826M	17.8M	17.826M	17.873M
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	500k	36.377M	36.179M	36.377M	36.179M
2437MHz	Pass	500k	36.377M	36.179M	36.377M	36.035M
2452MHz	Pass	500k	36.522M	36.179M	36.377M	36.179M

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

802.11b_Nss1,(1Mbps)_2TX EBW

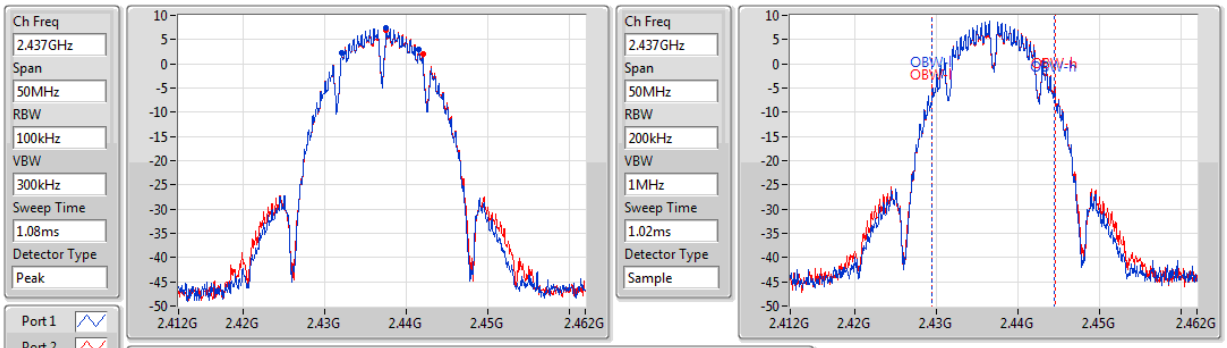
2412MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
10.072M	2.407G	2.417072G	15.123M	2.404475G	2.419598G	500k	1
10.072M	2.407G	2.417072G	15.123M	2.404475G	2.419598G	500k	2

802.11b_Nss1,(1Mbps)_2TX EBW

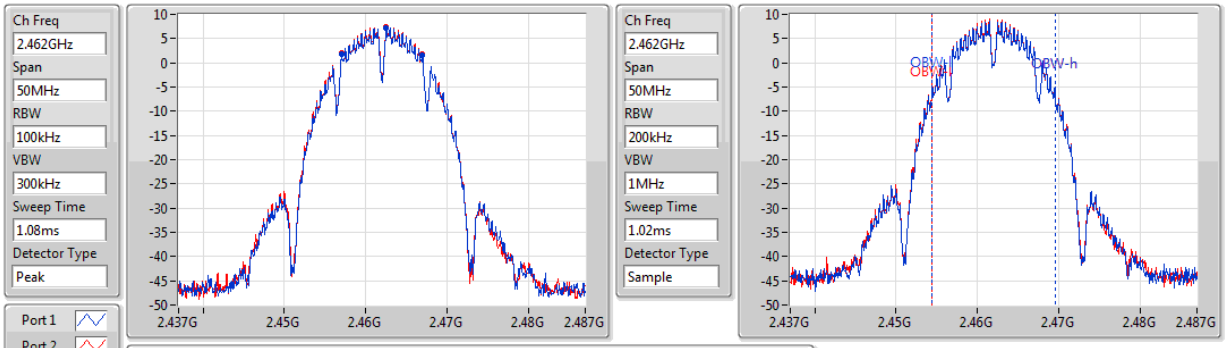
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
9.565M	2.432G	2.441565G	14.978M	2.429475G	2.444453G	500k	1
10.072M	2.432G	2.442072G	15.123M	2.429402G	2.444525G	500k	2

802.11b_Nss1,(1Mbps)_2TX EBW

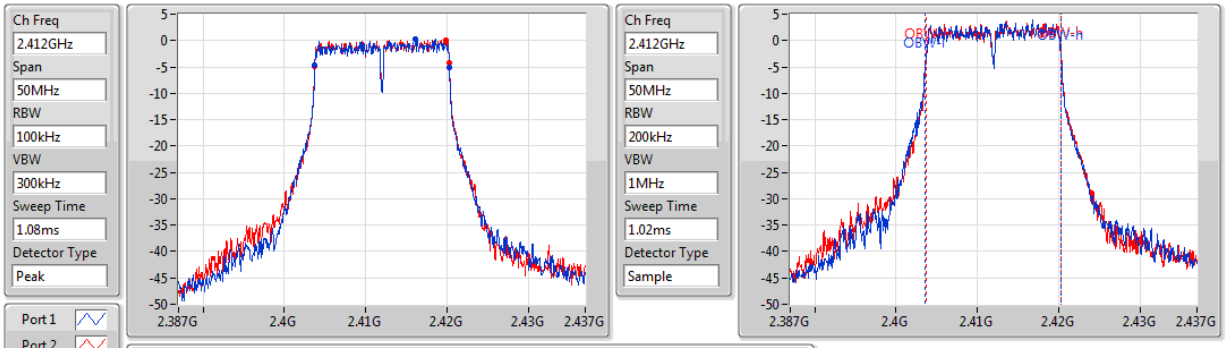
2462MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
10M	2.457G	2.467G	15.051M	2.454475G	2.469525G	500k	1
10M	2.457G	2.467G	15.123M	2.454402G	2.469525G	500k	2

802.11g_Nss1,(6Mbps)_2TX EBW

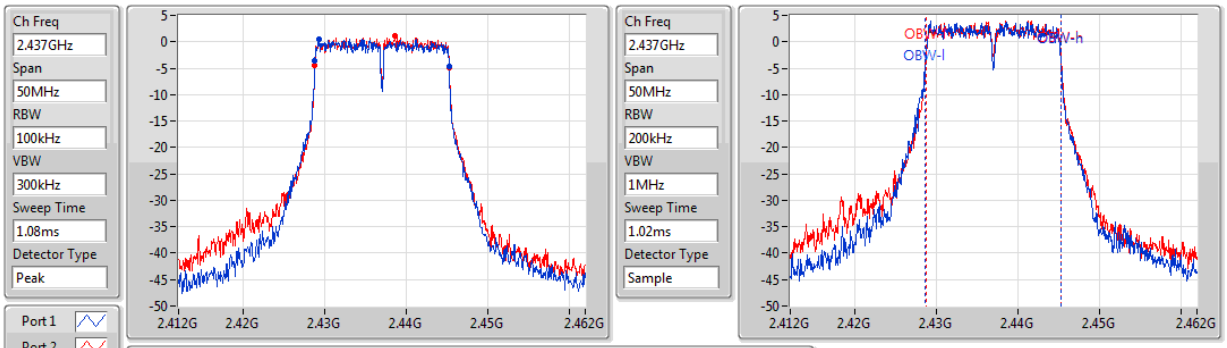
2412MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.594M	2.403739G	2.420333G	16.715M	2.403606G	2.420321G	500k	1
16.594M	2.403739G	2.420333G	16.643M	2.403679G	2.420321G	500k	2

802.11g_Nss1,(6Mbps)_2TX EBW

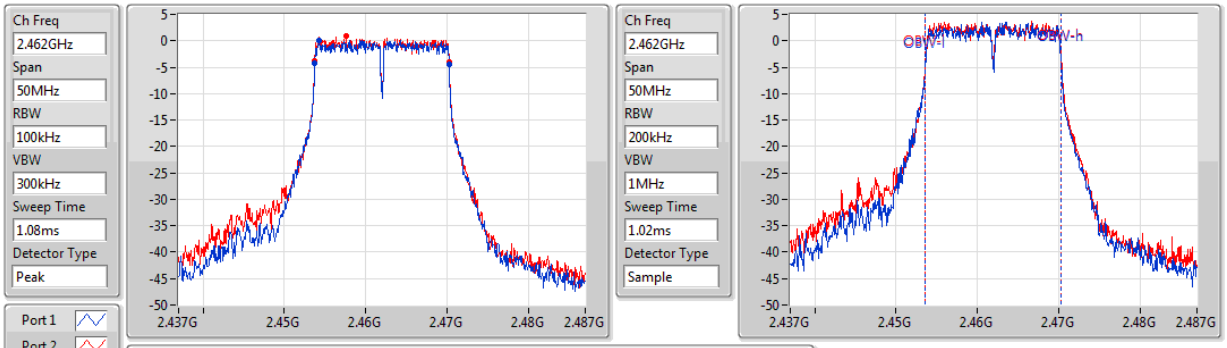
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.522M	2.428739G	2.445261G	16.715M	2.428534G	2.445249G	500k	1
16.594M	2.428739G	2.445333G	16.643M	2.428679G	2.445321G	500k	2

802.11g_Nss1,(6Mbps)_2TX EBW

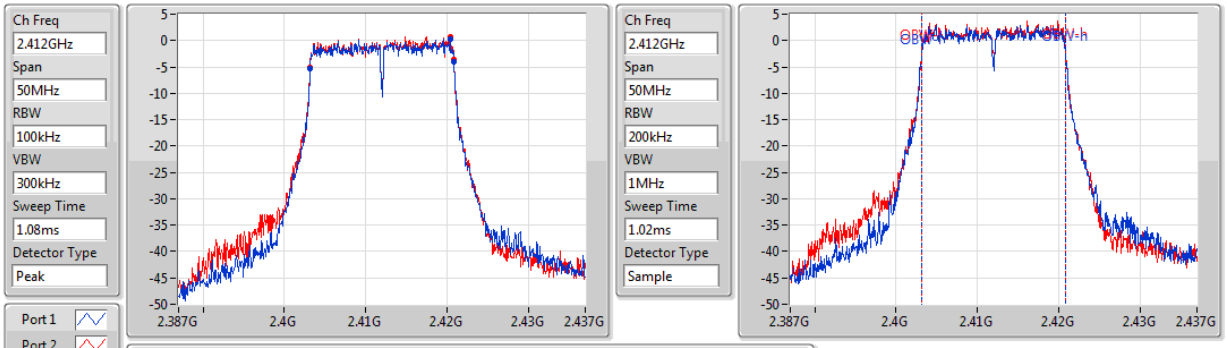
2462MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.522M	2.453739G	2.470261G	16.643M	2.453606G	2.470249G	500k	1
16.522M	2.453739G	2.470261G	16.715M	2.453606G	2.470321G	500k	2

802.11n HT20_Nss1,(MCS0)_2TX EBW

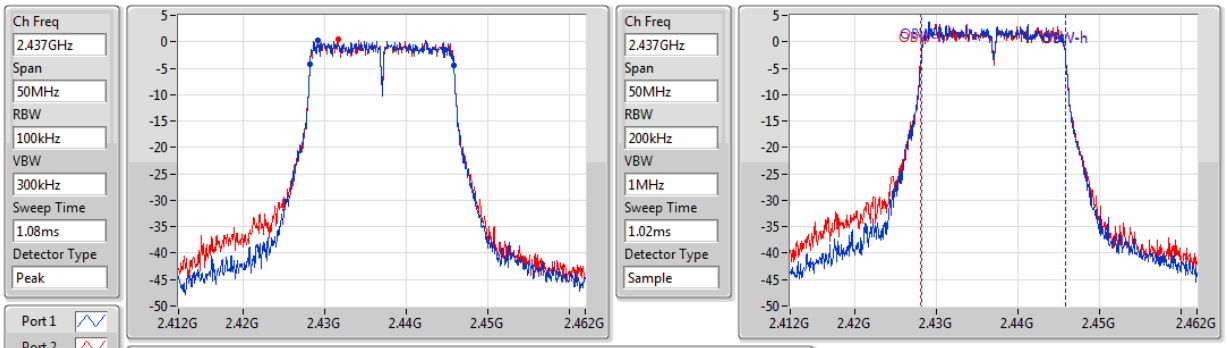
2412MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.826M	2.403087G	2.420913G	17.8M	2.4031G	2.4209G	500k	1
17.826M	2.403087G	2.420913G	17.8M	2.4031G	2.4209G	500k	2

802.11n HT20_Nss1,(MCS0)_2TX EBW

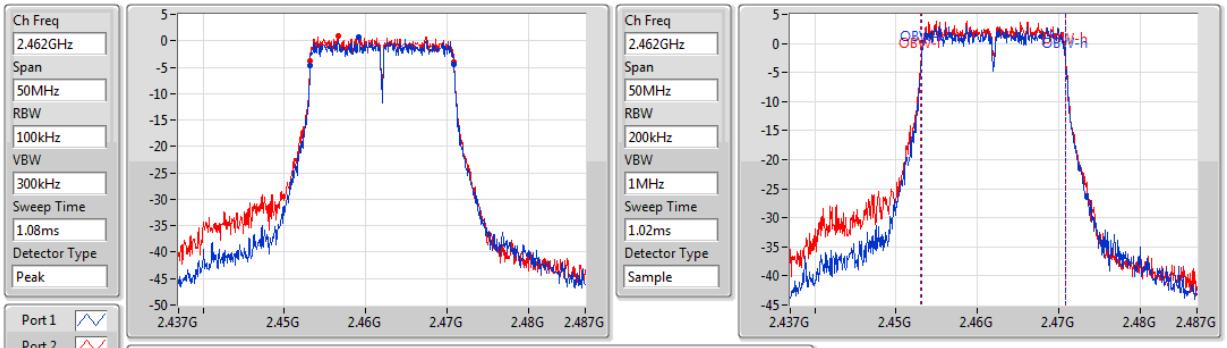
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.826M	2.428087G	2.445913G	17.8M	2.4281G	2.4459G	500k	1
17.826M	2.428087G	2.445913G	17.873M	2.428027G	2.4459G	500k	2

802.11n HT20_Nss1,(MCS0)_2TX EBW

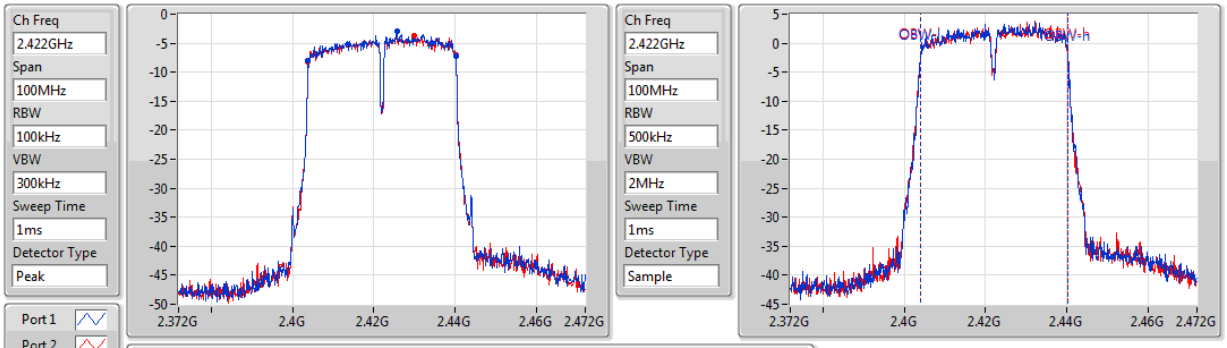
2462MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.826M	2.453087G	2.470913G	17.8M	2.4531G	2.4709G	500k	1
17.826M	2.453087G	2.470913G	17.873M	2.453027G	2.4709G	500k	2

802.11n HT40_Nss1,(MCS0)_2TX EBW

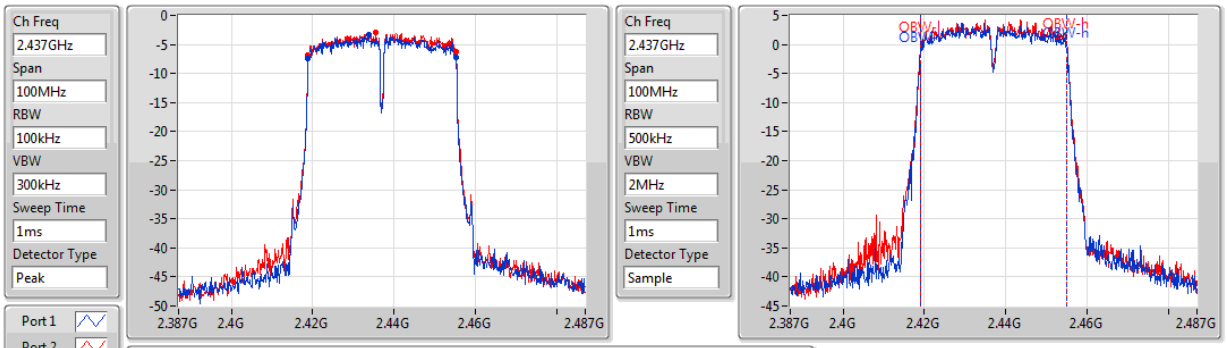
2422MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.377M	2.403884G	2.440261G	36.179M	2.404055G	2.440234G	500k	1
36.377M	2.403884G	2.440261G	36.179M	2.404055G	2.440234G	500k	2

802.11n HT40_Nss1,(MCS0)_2TX EBW

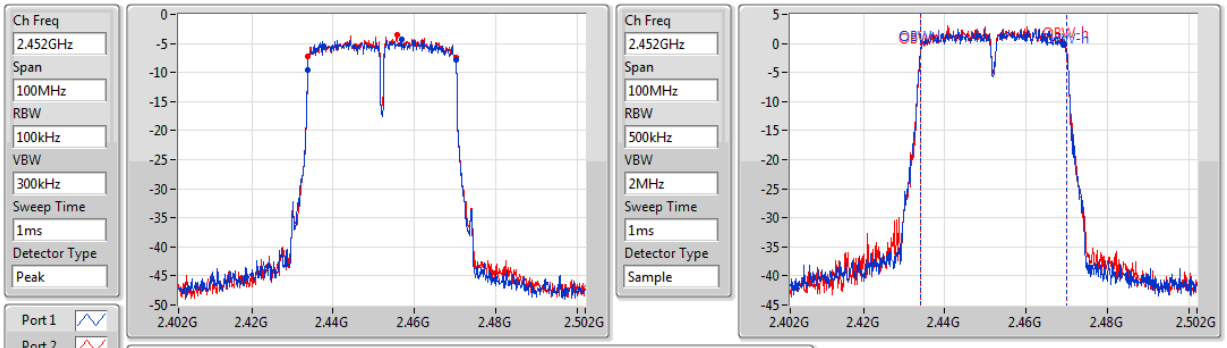
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.377M	2.418884G	2.455261G	36.179M	2.41891G	2.45509G	500k	1
36.377M	2.418884G	2.455261G	36.035M	2.419055G	2.45509G	500k	2

802.11n HT40_Nss1,(MCS0)_2TX EBW

2452MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.522M	2.433739G	2.470261G	36.179M	2.43391G	2.47009G	500k	1
36.377M	2.433884G	2.470261G	36.179M	2.43391G	2.47009G	500k	2

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.

Antenna gain > 6dBi

Non Fixed, point to point operations.
The conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dB

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

Systems operating in the 5725–5850 MHz band that are used exclusively for fixed, point-to-point operations ,no any corresponding reduction is in transmitter peak output power

3.3.2 Test Procedures

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

3.3.3 Test Setup

3.3.4 Test Result of Maximum Output Power

Summary of Peak Conducted Output Power

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_2TX	22.23	0.16711
802.11g_Nss1,(6Mbps)_2TX	**25.41**	0.34754
802.11n HT20_Nss1,(MCS0)_2TX	25.24	0.33420
802.11n HT40_Nss1,(MCS0)_2TX	24.12	0.25823

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	2.00	19.01	18.99	22.01	30.00	24.01	36.00
2437MHz	Pass	2.00	19.29	19.15	22.23	30.00	24.23	36.00
2462MHz	Pass	2.00	19.06	19.13	22.11	30.00	24.11	36.00
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-	-
2412MHz	Pass	2.00	22.03	22.01	25.03	30.00	27.03	36.00
2437MHz	Pass	2.00	22.63	22.15	**25.41**	30.00	27.41	36.00
2462MHz	Pass	2.00	22.05	22.6	25.34	30.00	27.34	36.00
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
2412MHz	Pass	2.00	22.03	21.99	25.02	30.00	27.02	36.00
2437MHz	Pass	2.00	22.54	21.89	25.24	30.00	27.24	36.00
2462MHz	Pass	2.00	21.95	21.97	24.97	30.00	26.97	36.00
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
2422MHz	Pass	2.00	21.05	20.86	23.97	30.00	25.97	36.00
2437MHz	Pass	2.00	21.06	21.15	24.12	30.00	26.12	36.00
2452MHz	Pass	2.00	20.78	20.91	23.86	30.00	25.86	36.00

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

Summary of Conducted (Average) Output Power

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_2TX	**20.16**	0.10375
802.11g_Nss1,(6Mbps)_2TX	17.76	0.05970
802.11n HT20_Nss1,(MCS0)_2TX	17.67	0.05848
802.11n HT40_Nss1,(MCS0)_2TX	16.47	0.04436

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	2.00	17.12	17.01	20.08		22.08	
2437MHz	Pass	2.00	17.23	17.07	**20.16**		22.16	
2462MHz	Pass	2.00	17.06	17.16	20.12		22.12	
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-		-	
2412MHz	Pass	2.00	14.58	14.61	17.61		19.61	
2437MHz	Pass	2.00	14.76	14.73	17.76		19.76	
2462MHz	Pass	2.00	14.51	14.75	17.64		19.64	
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-		-	
2412MHz	Pass	2.00	14.68	14.52	17.61		19.61	
2437MHz	Pass	2.00	14.73	14.58	17.67		19.67	
2462MHz	Pass	2.00	14.52	14.63	17.59		19.59	
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-		-	
2422MHz	Pass	2.00	13.37	13.22	16.31		18.31	
2437MHz	Pass	2.00	13.45	13.47	16.47		18.47	
2452MHz	Pass	2.00	13.12	13.39	16.27		18.27	

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 = 3 kHz, VBW = 10 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 = 3 kHz, VBW = 10 kHz. Detector = RMS.

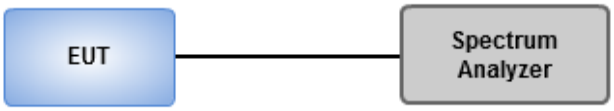
2 Set the sweep time to: ≥ 10 (number of measurement points in sweep) x (total on/off period of the transmitted signal).

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	-9.77
802.11g_Nss1,(6Mbps)_2TX	-10.60
802.11n HT20_Nss1,(MCS0)_2TX	-10.06
802.11n HT40_Nss1,(MCS0)_2TX	-12.09

RBW=3kHz.

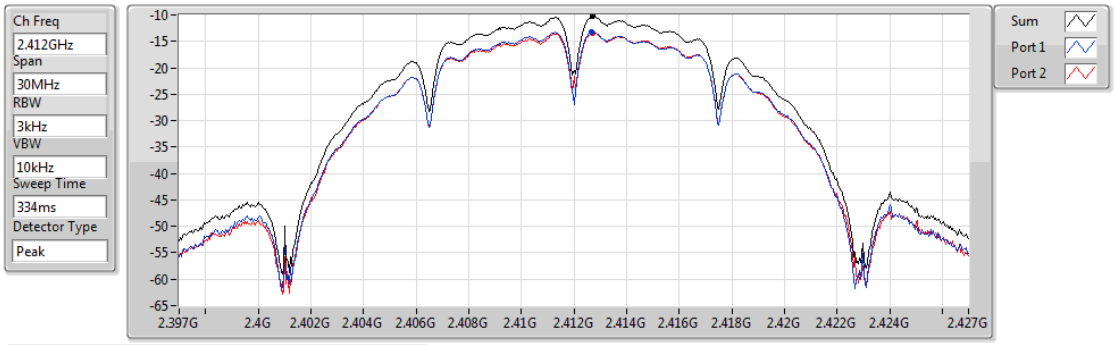
Result

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	5.01	-13.18	-13.40	-10.30	8.00
2437MHz	Pass	5.01	-12.84	-13.21	-10.03	8.00
2462MHz	Pass	5.01	-13.01	-12.56	-9.77	8.00
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	5.01	-14.16	-13.41	-10.99	8.00
2437MHz	Pass	5.01	-13.62	-13.38	-10.60	8.00
2462MHz	Pass	5.01	-14.17	-13.25	-10.68	8.00
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	5.01	-13.69	-13.19	-10.57	8.00
2437MHz	Pass	5.01	-13.21	-12.94	-10.06	8.00
2462MHz	Pass	5.01	-13.68	-12.91	-10.27	8.00
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	5.01	-16.15	-15.10	-12.94	8.00
2437MHz	Pass	5.01	-14.91	-14.28	-12.09	8.00
2452MHz	Pass	5.01	-16.17	-15.56	-13.50	8.00

DG = Directional Gain; RBW=3kHz;
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)_2TX PSD

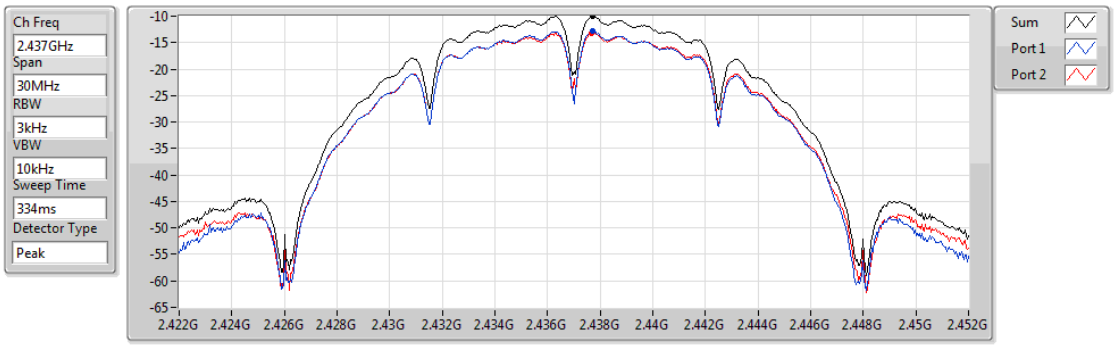
2412MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.30	-10.30	-13.18	-13.40

802.11b_Nss1,(1Mbps)_2TX PSD

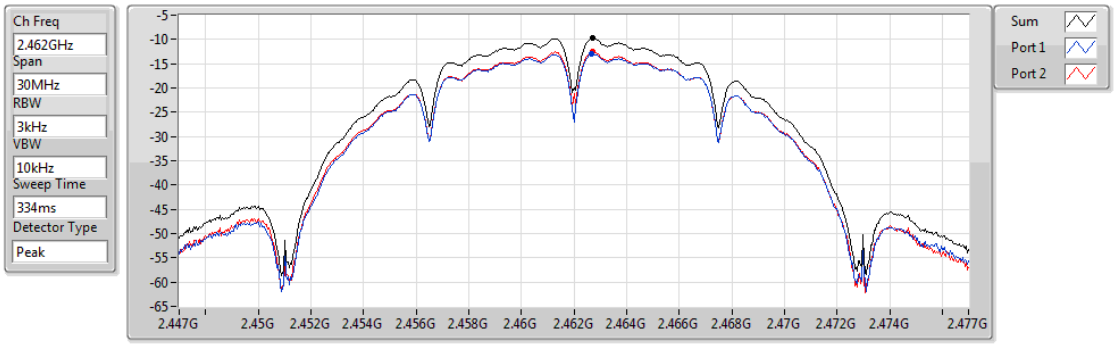
2437MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.03	-10.03	-12.84	-13.21

802.11b_Nss1,(1Mbps)_2TX PSD

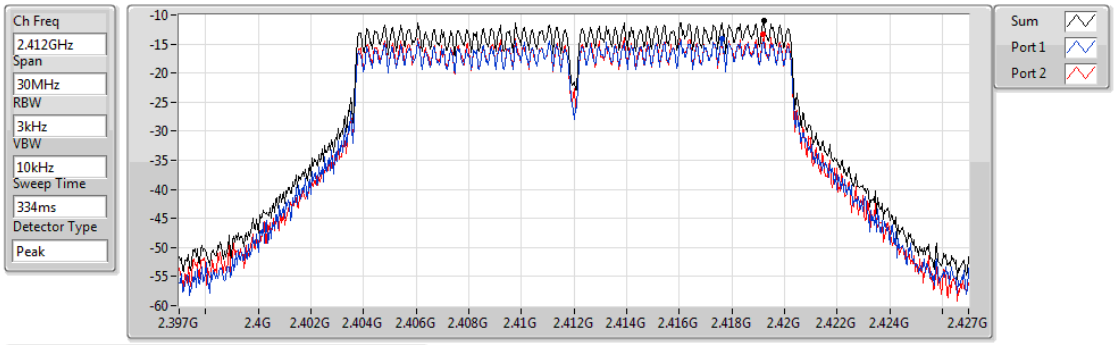
2462MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-9.77	-9.77	-13.01	-12.56

802.11g_Nss1,(6Mbps)_2TX PSD

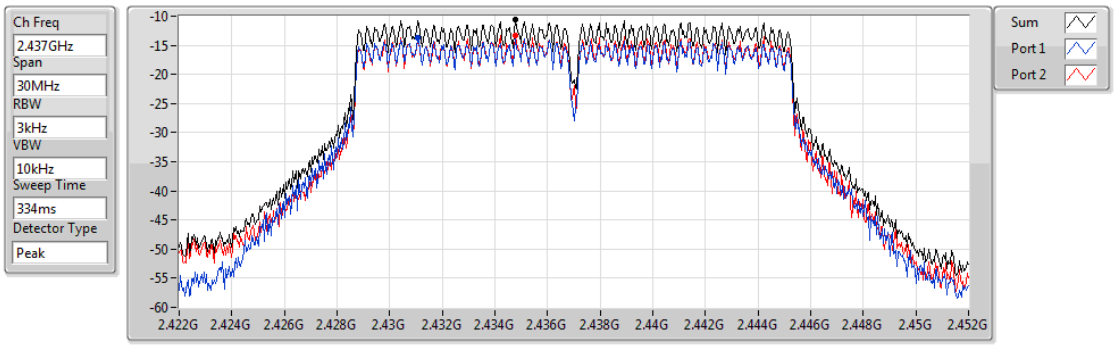
2412MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.99	-10.99	-14.16	-13.41

802.11g_Nss1,(6Mbps)_2TX PSD

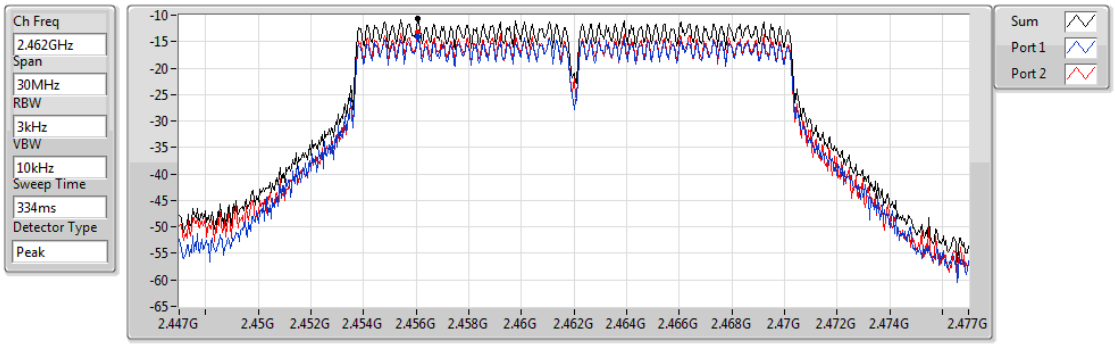
2437MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.60	-10.60	-13.62	-13.38

802.11g_Nss1,(6Mbps)_2TX PSD

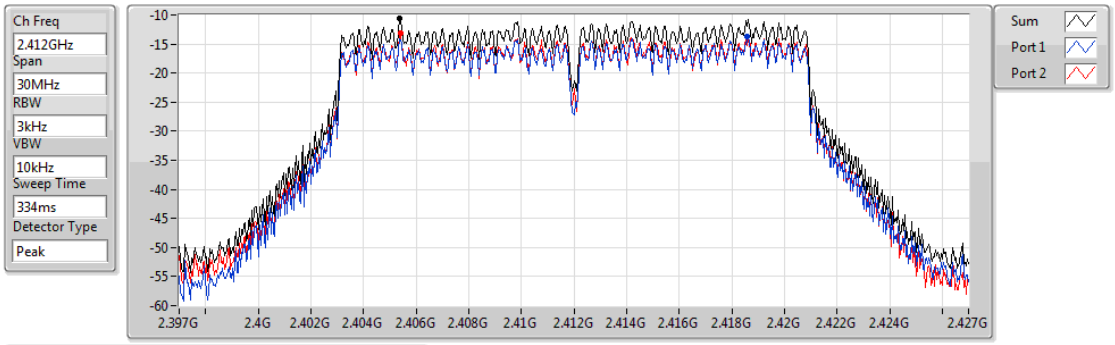
2462MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.68	-10.68	-14.17	-13.25

802.11n HT20_Nss1,(MCS0)_2TX PSD

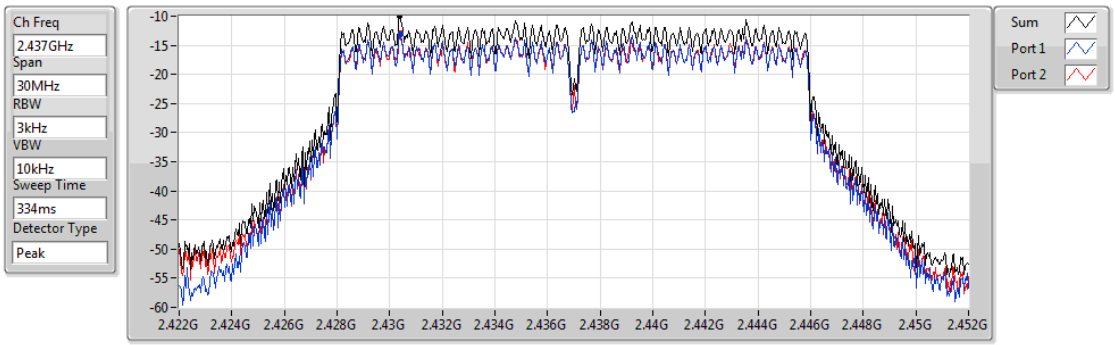
2412MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.57	-10.57	-13.69	-13.19

802.11n HT20_Nss1,(MCS0)_2TX PSD

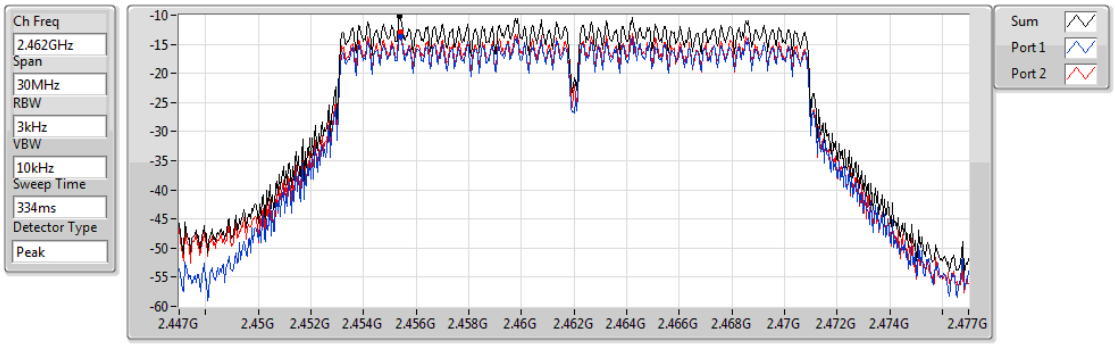
2437MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.06	-10.06	-13.21	-12.94

802.11n HT20_Nss1,(MCS0)_2TX PSD

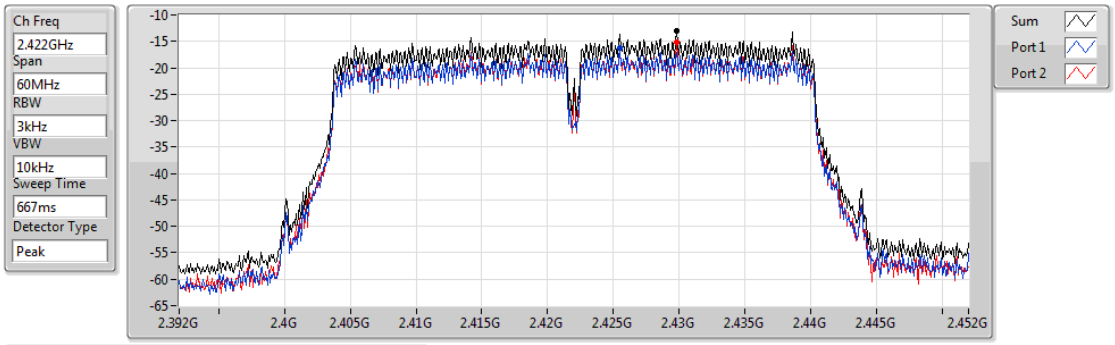
2462MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.27	-10.27	-13.68	-12.91

802.11n HT40_Nss1,(MCS0)_2TX PSD

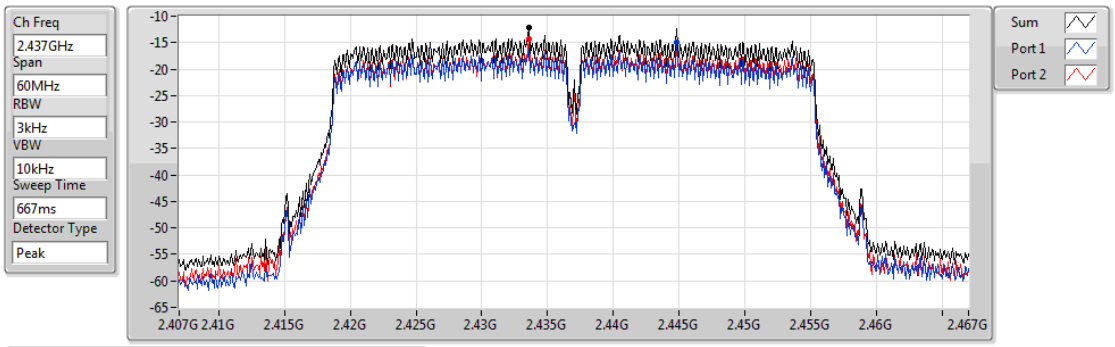
2422MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-12.94	-12.94	-16.15	-15.10

802.11n HT40_Nss1,(MCS0)_2TX PSD

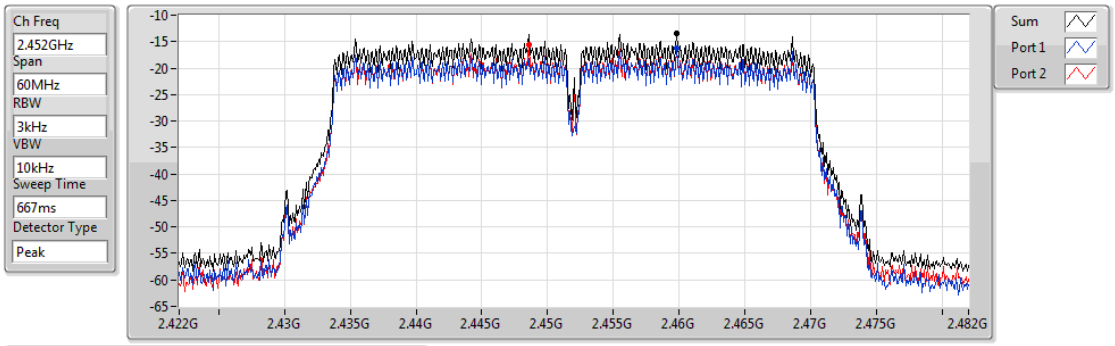
2437MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-12.09	-12.09	-14.91	-14.28

802.11n HT40_Nss1,(MCS0)_2TX PSD

2452MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-13.50	-13.50	-16.17	-15.56

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

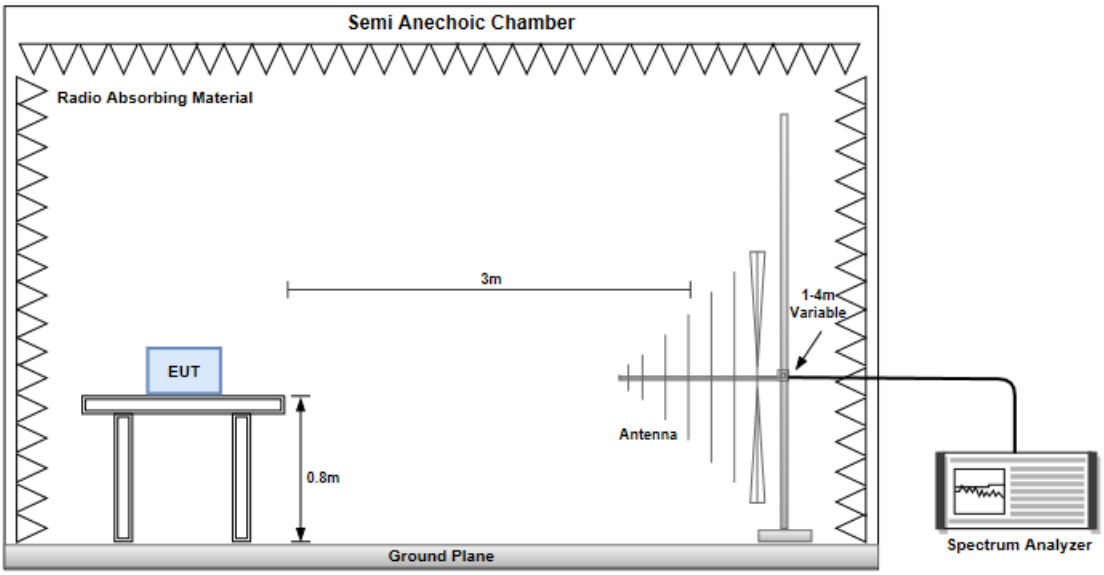
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission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

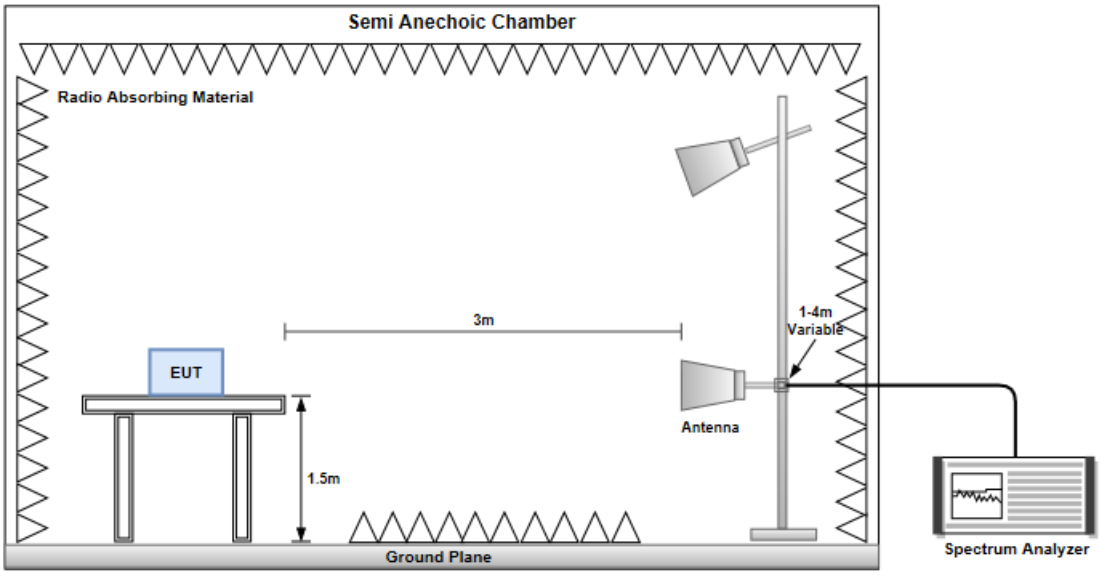
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.5.3 Test Setup

Radiated Emissions below 1 GHz

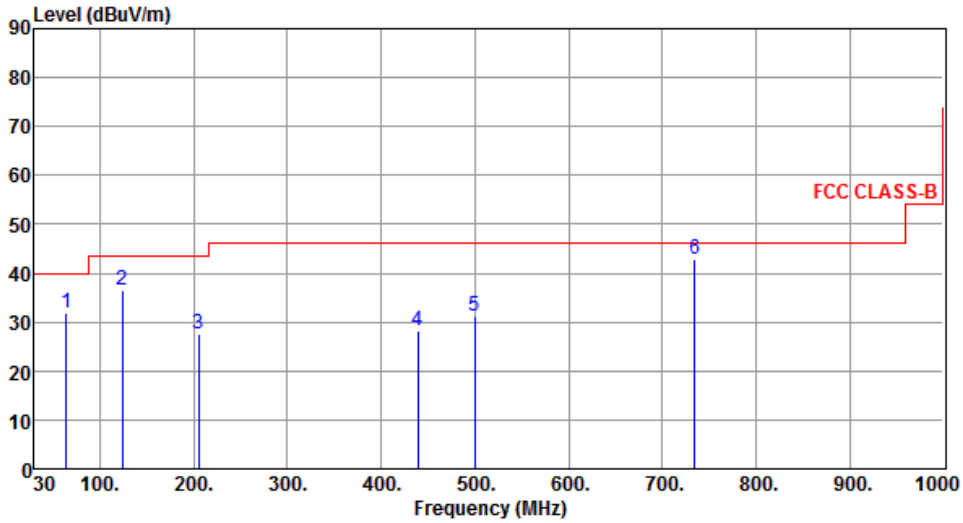


Radiated Emissions above 1 GHz



3.5.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

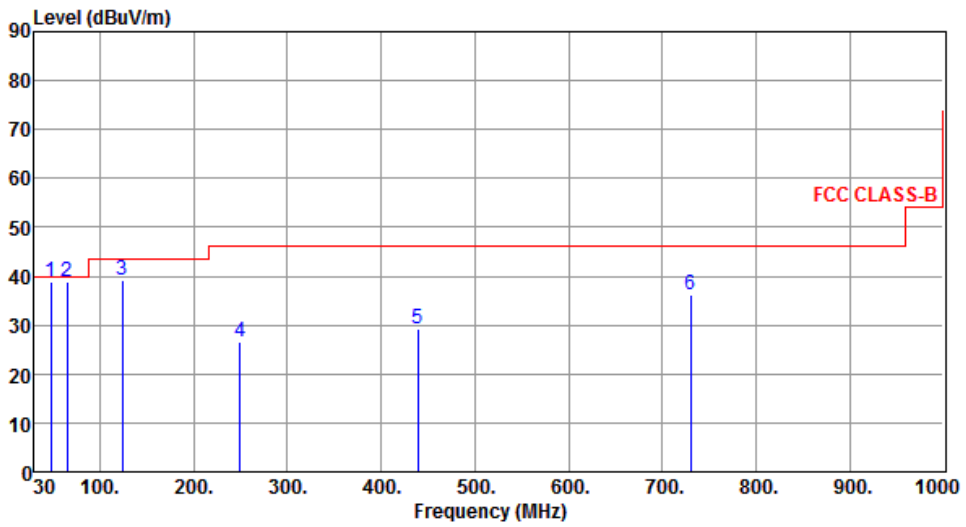
Modulation	11g	Test Freq. (MHz)	2437
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	63.95	31.76	40.00	-8.24	41.10	-9.34	Peak	---	---
2	124.09	36.48	43.50	-7.02	46.65	-10.17	Peak	---	---
3	205.57	27.58	43.50	-15.92	38.37	-10.79	Peak	---	---
4	439.34	28.38	46.00	-17.62	32.42	-4.04	Peak	---	---
5	499.48	31.11	46.00	-14.89	33.95	-2.84	Peak	---	---
6	734.22	42.76	46.00	-3.24	41.25	1.51	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		

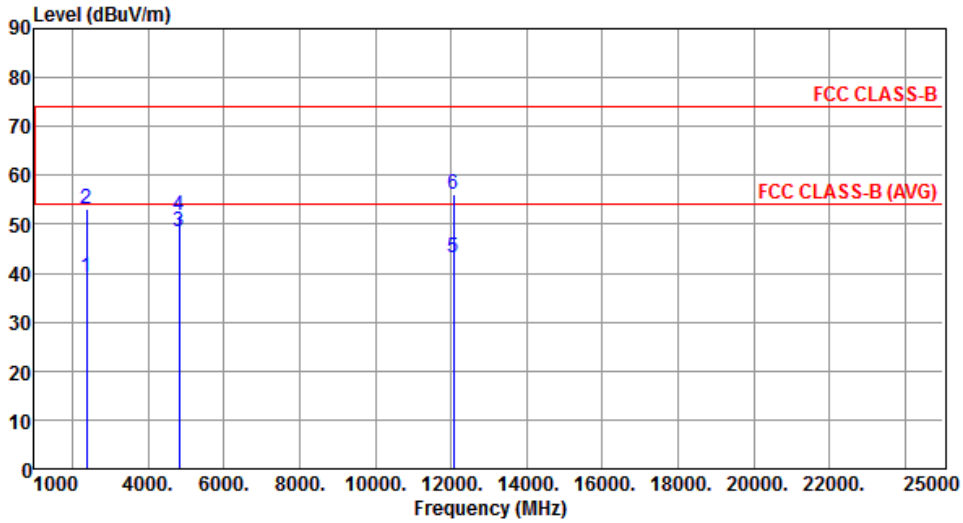


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	47.80	38.92	40.00	-1.08	46.63	-7.71	QP	100	101
2	64.78	38.98	40.00	-1.02	48.51	-9.53	QP	100	233
3	124.09	39.34	43.50	-4.16	49.51	-10.17	Peak	---	---
4	249.22	26.73	46.00	-19.27	36.08	-9.35	Peak	---	---
5	439.34	29.11	46.00	-16.89	33.15	-4.04	Peak	---	---
6	730.34	36.17	46.00	-9.83	34.75	1.42	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

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

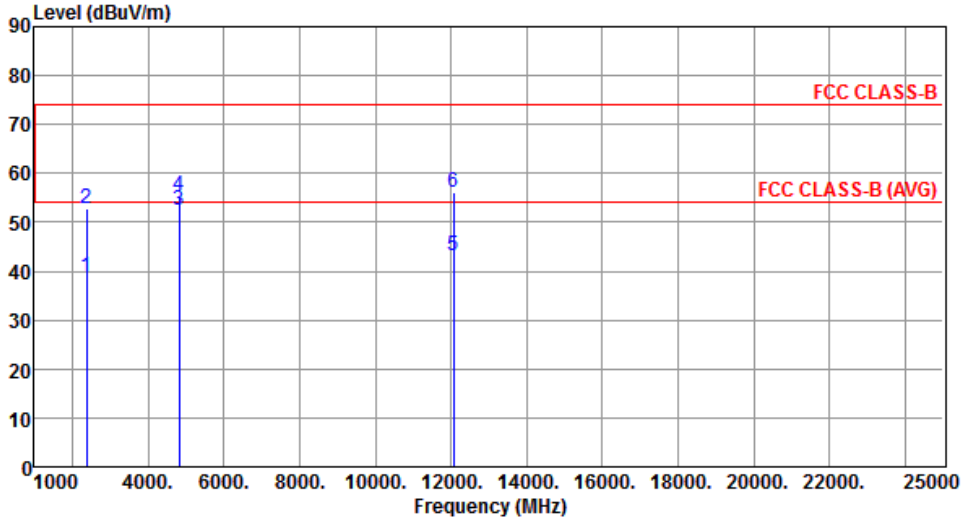
Modulation	11b	**Test Freq. (MHz)**	2412
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	39.11	54.00	-14.89	42.62	-3.51	Average	123	175
2	2390.00	53.18	74.00	-20.82	56.69	-3.51	Peak	123	175
3	4824.00	48.36	54.00	-5.64	44.83	3.53	Average	100	171
4	4824.00	51.95	74.00	-22.05	48.42	3.53	Peak	100	171
5	12060.00	43.21	54.00	-10.79	29.89	13.32	Average	100	189
6	12060.00	55.97	74.00	-18.03	42.65	13.32	Peak	100	189

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).

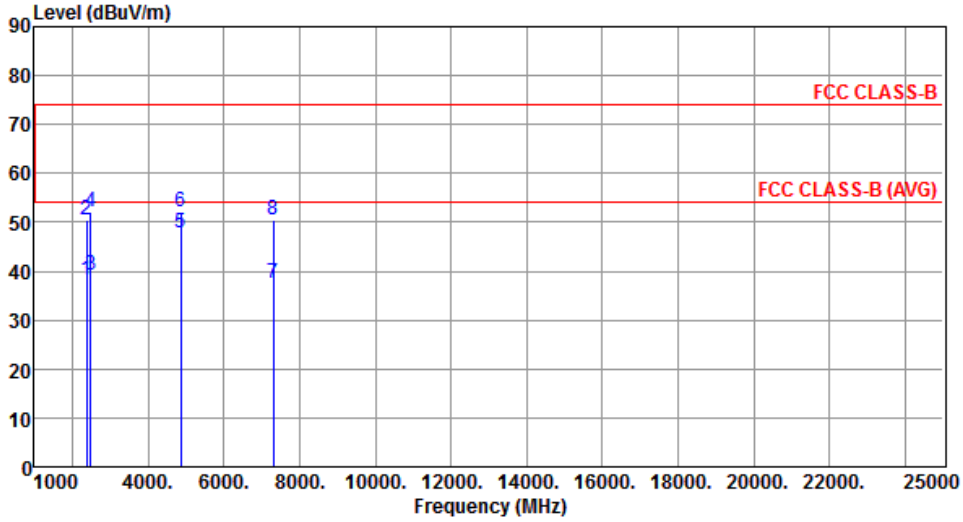
Modulation	11b	Test Freq. (MHz)	2412
Polarization	Vertical		



	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	38.85	54.00	-15.15	42.36	-3.51	Average	106	133
2	2390.00	52.66	74.00	-21.34	56.17	-3.51	Peak	106	133
3	4824.00	52.60	54.00	-1.40	49.07	3.53	Average	260	259
4	4824.00	55.49	74.00	-18.51	51.96	3.53	Peak	260	259
5	12060.00	43.33	54.00	-10.67	30.01	13.32	Average	100	130
6	12060.00	56.10	74.00	-17.90	42.78	13.32	Peak	100	130

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).

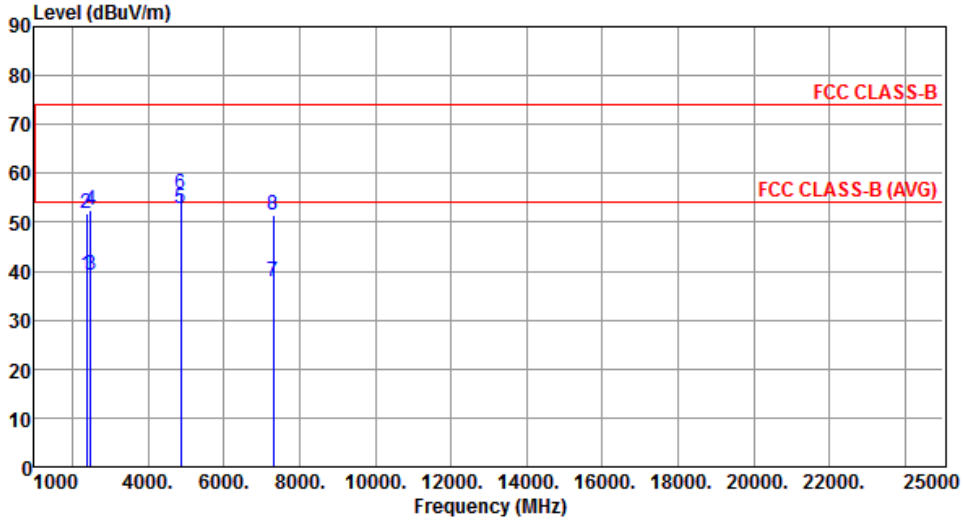
Modulation	11b	Test Freq. (MHz)	2437
Polarization	Horizontal		



	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	38.35	54.00	-15.65	41.86	-3.51	Average	118	177
2	2390.00	50.64	74.00	-23.36	54.15	-3.51	Peak	118	177
3	2483.50	39.14	54.00	-14.86	42.25	-3.11	Average	118	177
4	2483.50	51.98	74.00	-22.02	55.09	-3.11	Peak	118	177
5	4874.00	47.94	54.00	-6.06	44.26	3.68	Average	108	170
6	4874.00	52.27	74.00	-21.73	48.59	3.68	Peak	108	170
7	7311.00	37.65	54.00	-16.35	29.25	8.40	Average	100	181
8	7311.00	50.39	74.00	-23.61	41.99	8.40	Peak	100	181

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).

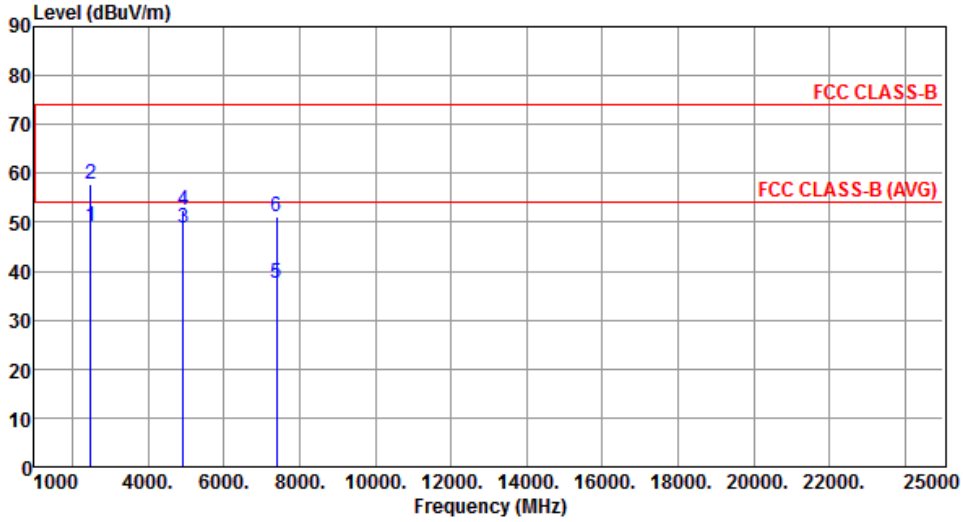
Modulation	11b	Test Freq. (MHz)	2437
Polarization	Vertical		



	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	39.19	54.00	-14.81	42.70	-3.51	Average	100	132
2	2390.00	51.92	74.00	-22.08	55.43	-3.51	Peak	100	132
3	2483.50	39.13	54.00	-14.87	42.24	-3.11	Average	100	132
4	2483.50	52.63	74.00	-21.37	55.74	-3.11	Peak	100	132
5	4874.00	52.65	54.00	-1.35	48.97	3.68	Average	247	271
6	4874.00	55.91	74.00	-18.09	52.23	3.68	Peak	247	271
7	7311.00	37.84	54.00	-16.16	29.44	8.40	Average	100	125
8	7311.00	51.37	74.00	-22.63	42.97	8.40	Peak	100	125

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

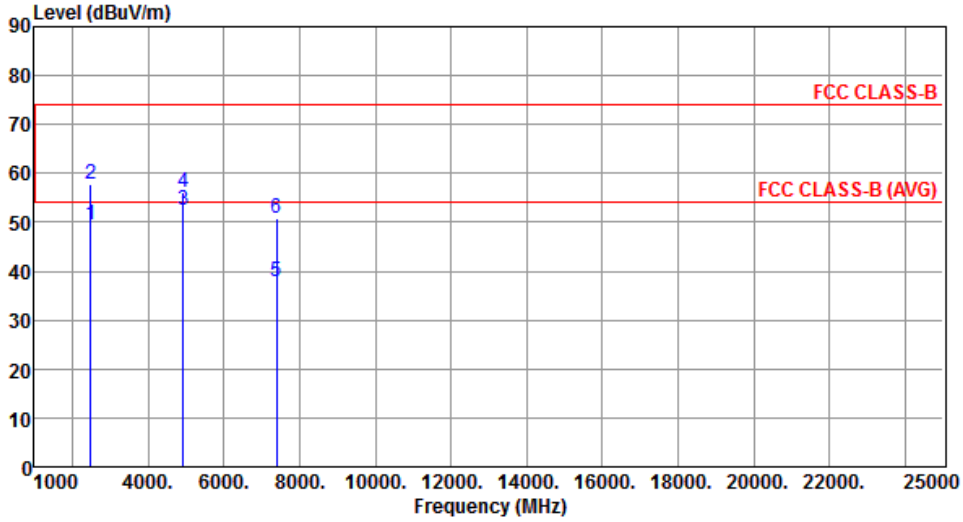
Modulation	11b	Test Freq. (MHz)	2462
Polarization	Horizontal		



	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	49.31	54.00	-4.69	52.42	-3.11	Average	189	157
2	2483.50	57.74	74.00	-16.26	60.85	-3.11	Peak	189	157
3	4924.00	48.70	54.00	-5.30	44.85	3.85	Average	108	170
4	4924.00	52.33	74.00	-21.67	48.48	3.85	Peak	108	170
5	7386.00	37.67	54.00	-16.33	29.11	8.56	Average	100	180
6	7386.00	51.04	74.00	-22.96	42.48	8.56	Peak	100	180

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		

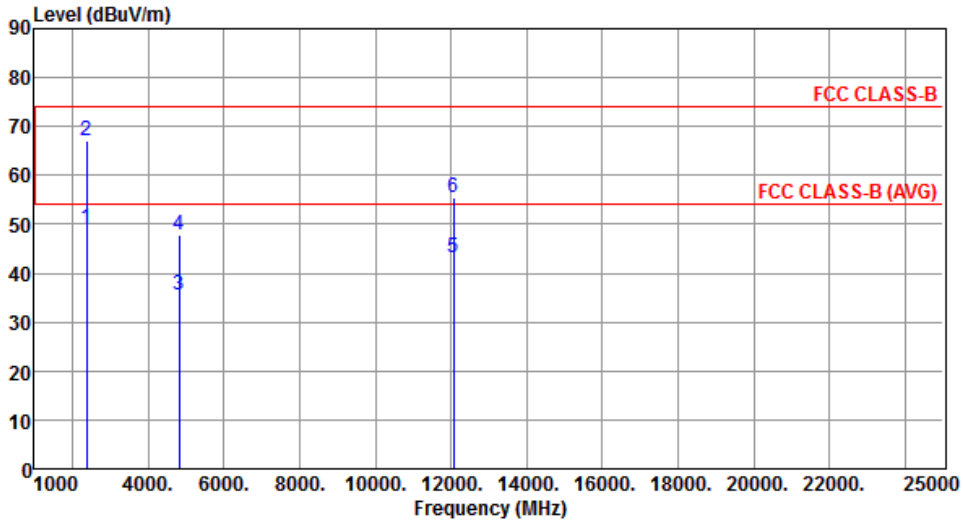


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	49.32	54.00	-4.68	52.43	-3.11	Average	100	228
2	2483.50	57.79	74.00	-16.21	60.90	-3.11	Peak	100	228
3	4924.00	52.61	54.00	-1.39	48.76	3.85	Average	262	264
4	4924.00	56.09	74.00	-17.91	52.24	3.85	Peak	262	264
5	7386.00	37.95	54.00	-16.05	29.39	8.56	Average	100	129
6	7386.00	50.71	74.00	-23.29	42.15	8.56	Peak	100	129

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

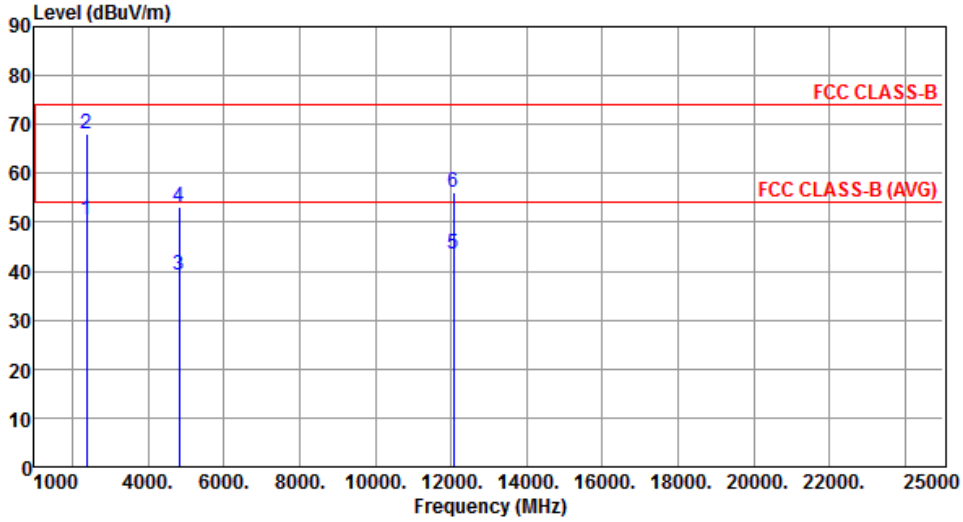
Modulation	11g	**Test Freq. (MHz)**	2412
Polarization	Horizontal		



	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	49.26	54.00	-4.74	52.77	-3.51	Average	162	181
2	2390.00	66.98	74.00	-7.02	70.49	-3.51	Peak	162	181
3	4824.00	35.46	54.00	-18.54	31.93	3.53	Average	320	185
4	4824.00	47.78	74.00	-26.22	44.25	3.53	Peak	320	185
5	12060.00	43.21	54.00	-10.79	29.89	13.32	Average	100	179
6	12060.00	55.42	74.00	-18.58	42.10	13.32	Peak	100	179

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

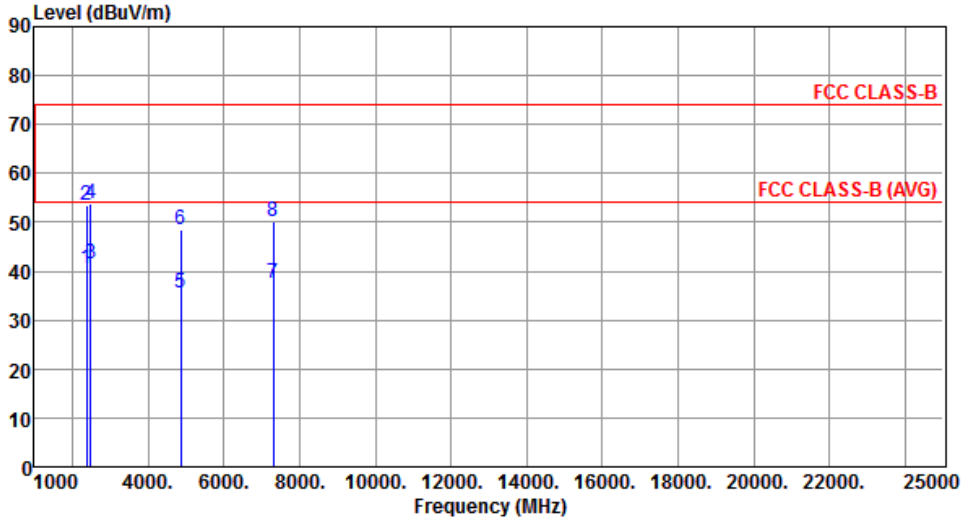
Modulation	11g	Test Freq. (MHz)	2412
Polarization	Vertical		



	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	50.54	54.00	-3.46	54.05	-3.51	Average	126	41
2	2390.00	68.14	74.00	-5.86	71.65	-3.51	Peak	126	41
3	4824.00	39.34	54.00	-14.66	35.81	3.53	Average	291	285
4	4824.00	53.14	74.00	-20.86	49.61	3.53	Peak	291	285
5	12060.00	43.56	54.00	-10.44	30.24	13.32	Average	100	50
6	12060.00	56.01	74.00	-17.99	42.69	13.32	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).

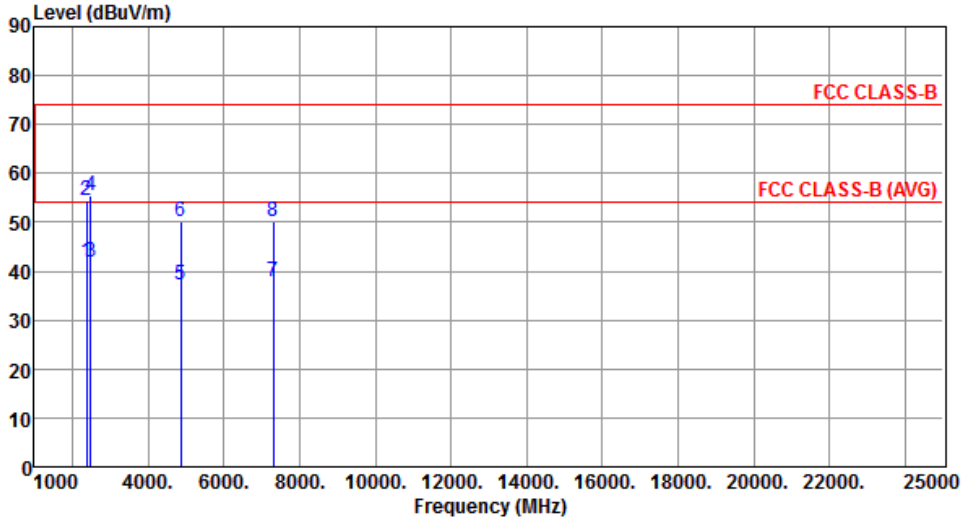
Modulation	11g	Test Freq. (MHz)	2437
Polarization	Horizontal		



	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	40.55	54.00	-13.45	44.06	-3.51	Average	130	175
2	2390.00	53.34	74.00	-20.66	56.85	-3.51	Peak	130	175
3	2483.50	41.66	54.00	-12.34	44.77	-3.11	Average	128	135
4	2483.50	53.91	74.00	-20.09	57.02	-3.11	Peak	128	135
5	4874.00	35.46	54.00	-18.54	31.78	3.68	Average	344	191
6	4874.00	48.58	74.00	-25.42	44.90	3.68	Peak	344	191
7	7311.00	37.57	54.00	-16.43	29.17	8.40	Average	100	179
8	7311.00	50.07	74.00	-23.93	41.67	8.40	Peak	100	179

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

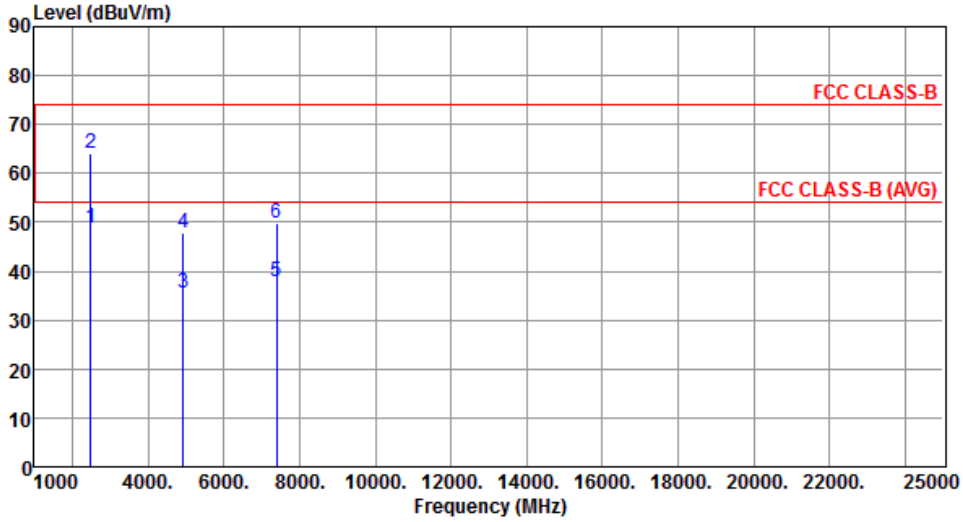
Modulation	11g	Test Freq. (MHz)	2437
Polarization	Vertical		



	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	42.00	54.00	-12.00	45.51	-3.51	Average	100	79
2	2390.00	54.51	74.00	-19.49	58.02	-3.51	Peak	100	79
3	2483.50	41.75	54.00	-12.25	44.86	-3.11	Average	100	17
4	2483.50	55.53	74.00	-18.47	58.64	-3.11	Peak	100	17
5	4874.00	37.28	54.00	-16.72	33.60	3.68	Average	259	265
6	4874.00	50.31	74.00	-23.69	46.63	3.68	Peak	259	265
7	7311.00	37.88	54.00	-16.12	29.48	8.40	Average	100	86
8	7311.00	50.22	74.00	-23.78	41.82	8.40	Peak	100	86

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).

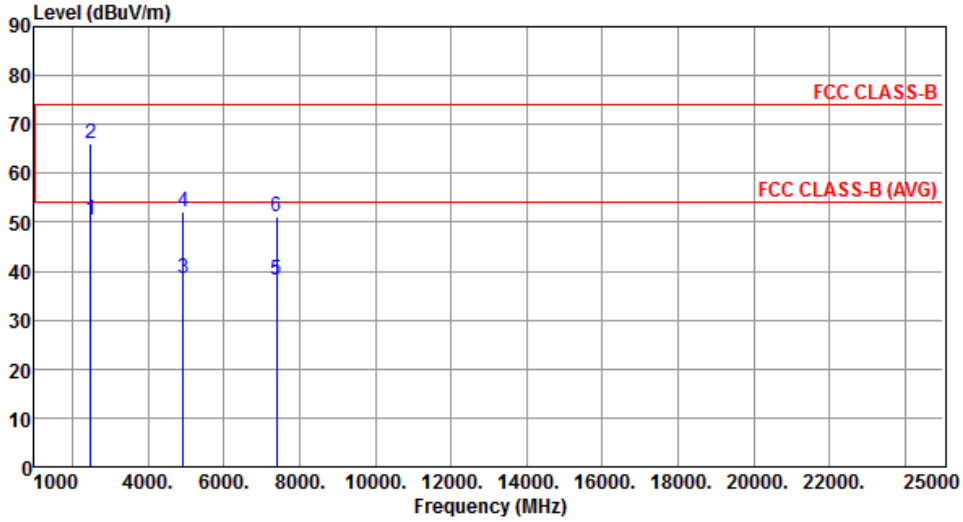
Modulation	11g	Test Freq. (MHz)	2462
Polarization	Horizontal		



	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	48.94	54.00	-5.06	52.05	-3.11	Average	118	171
2	2483.50	64.15	74.00	-9.85	67.26	-3.11	Peak	118	171
3	4924.00	35.64	54.00	-18.36	31.79	3.85	Average	277	192
4	4924.00	47.92	74.00	-26.08	44.07	3.85	Peak	277	192
5	7386.00	37.71	54.00	-16.29	29.15	8.56	Average	100	138
6	7386.00	49.78	74.00	-24.22	41.22	8.56	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	11g	Test Freq. (MHz)	2462
Polarization	Vertical		

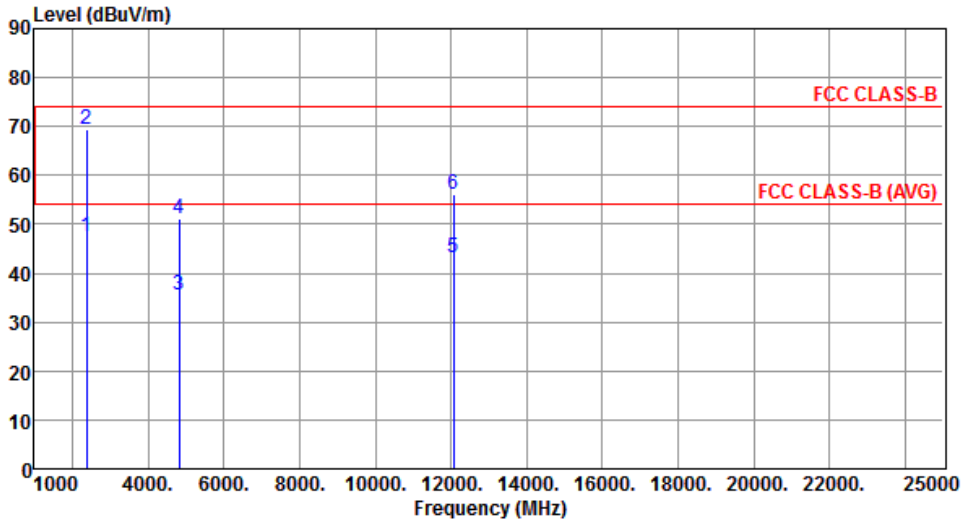


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	50.52	54.00	-3.48	53.63	-3.11	Average	105	155
2	2483.50	66.13	74.00	-7.87	69.24	-3.11	Peak	105	155
3	4924.00	38.37	54.00	-15.63	34.52	3.85	Average	281	281
4	4924.00	52.04	74.00	-21.96	48.19	3.85	Peak	281	281
5	7386.00	38.17	54.00	-15.83	29.61	8.56	Average	100	160
6	7386.00	51.26	74.00	-22.74	42.70	8.56	Peak	100	160

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

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

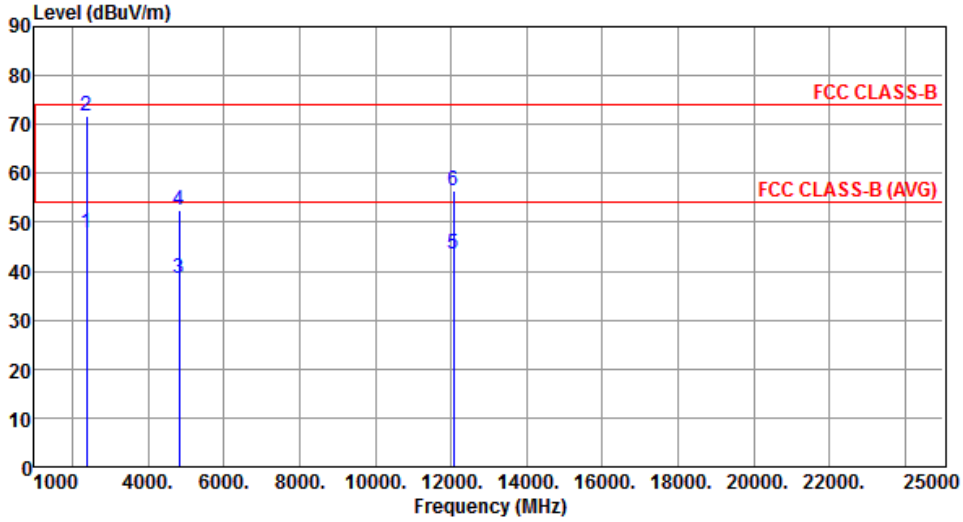
Modulation	HT20	**Test Freq. (MHz)**	2412
Polarization	Horizontal		



	Freq. 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	47.54	54.00	-6.46	51.05	-3.51	Average	157	179
2	2390.00	69.48	74.00	-4.52	72.99	-3.51	Peak	157	179
3	4824.00	35.55	54.00	-18.45	32.02	3.53	Average	125	191
4	4824.00	51.31	74.00	-22.69	47.78	3.53	Peak	125	191
5	12060.00	43.18	54.00	-10.82	29.86	13.32	Average	100	181
6	12060.00	56.21	74.00	-17.79	42.89	13.32	Peak	100	181

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).

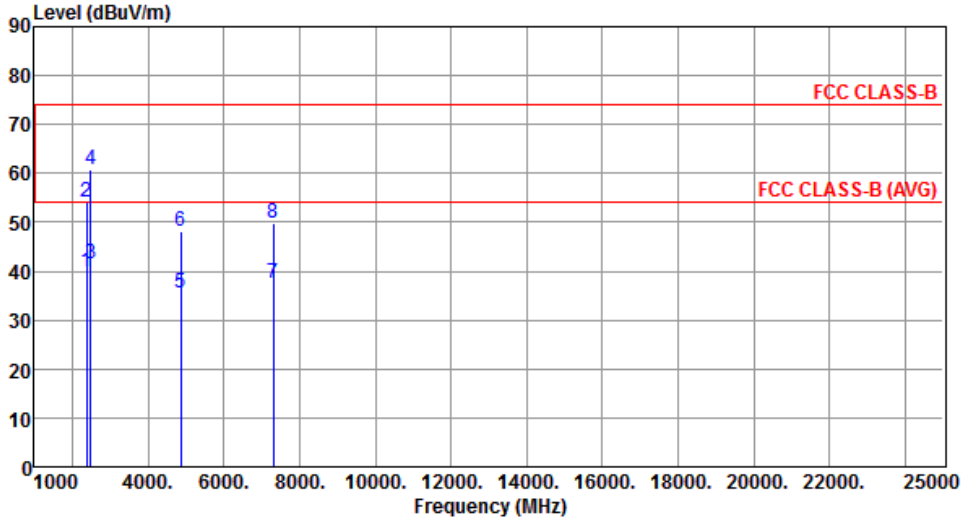
Modulation	HT20	Test Freq. (MHz)	2412
Polarization	Vertical		



	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	47.97	54.00	-6.03	51.48	-3.51	Average	113	46
2	2390.00	71.69	74.00	-2.31	75.20	-3.51	Peak	113	46
3	4824.00	38.43	54.00	-15.57	34.90	3.53	Average	262	266
4	4824.00	52.54	74.00	-21.46	49.01	3.53	Peak	262	266
5	12060.00	43.44	54.00	-10.56	30.12	13.32	Average	100	135
6	12060.00	56.53	74.00	-17.47	43.21	13.32	Peak	100	135

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

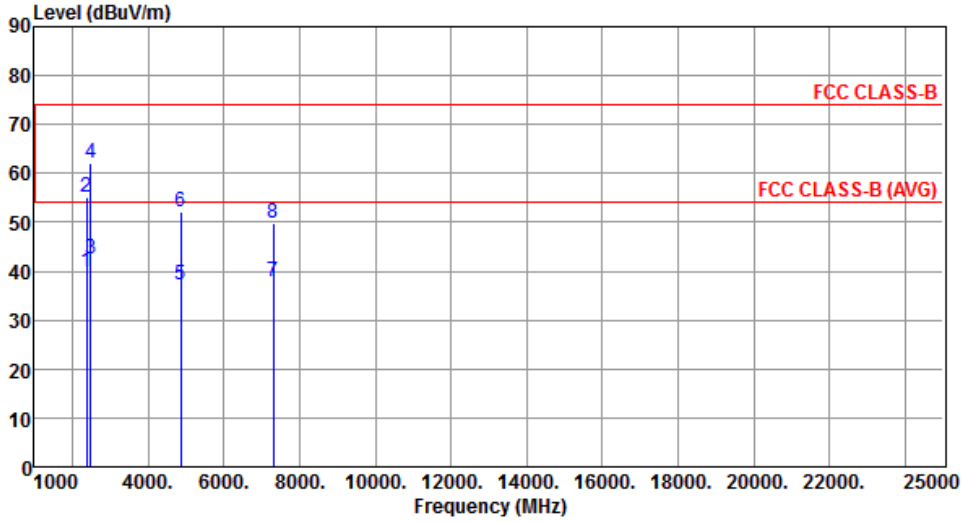
Modulation	HT20	Test Freq. (MHz)	2437
Polarization	Horizontal		



	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	40.00	54.00	-14.00	43.51	-3.51	Average	118	180
2	2390.00	53.99	74.00	-20.01	57.50	-3.51	Peak	118	180
3	2483.50	41.66	54.00	-12.34	44.77	-3.11	Average	118	180
4	2483.50	60.73	74.00	-13.27	63.84	-3.11	Peak	118	180
5	4874.00	35.62	54.00	-18.38	31.94	3.68	Average	340	186
6	4874.00	48.28	74.00	-25.72	44.60	3.68	Peak	340	186
7	7311.00	37.58	54.00	-16.42	29.18	8.40	Average	100	177
8	7311.00	49.83	74.00	-24.17	41.43	8.40	Peak	100	177

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).

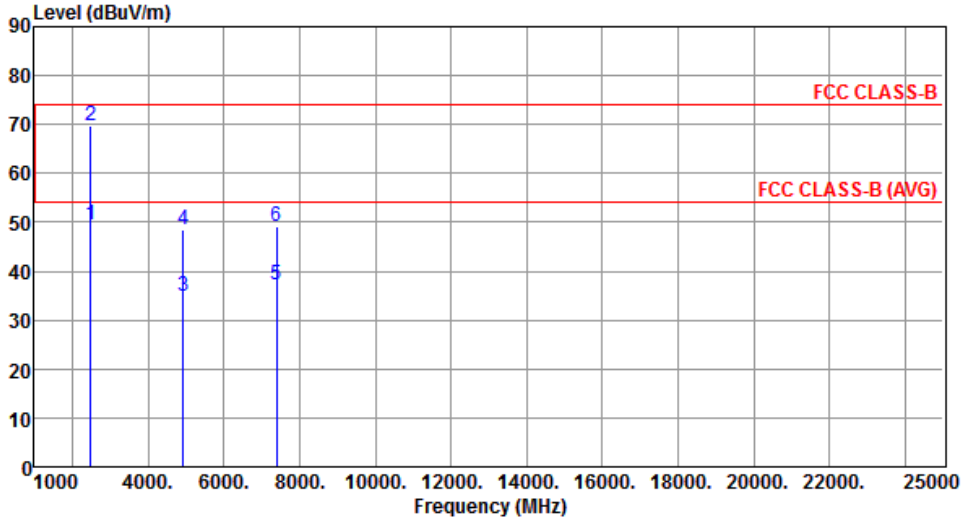
Modulation	HT20	Test Freq. (MHz)	2437
Polarization	Vertical		



	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	39.87	54.00	-14.13	43.38	-3.51	Average	100	39
2	2390.00	55.26	74.00	-18.74	58.77	-3.51	Peak	100	39
3	2483.50	42.50	54.00	-11.50	45.61	-3.11	Average	100	131
4	2483.50	62.26	74.00	-11.74	65.37	-3.11	Peak	100	131
5	4874.00	37.21	54.00	-16.79	33.53	3.68	Average	252	261
6	4874.00	52.22	74.00	-21.78	48.54	3.68	Peak	252	261
7	7311.00	37.94	54.00	-16.06	29.54	8.40	Average	100	125
8	7311.00	49.98	74.00	-24.02	41.58	8.40	Peak	100	125

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

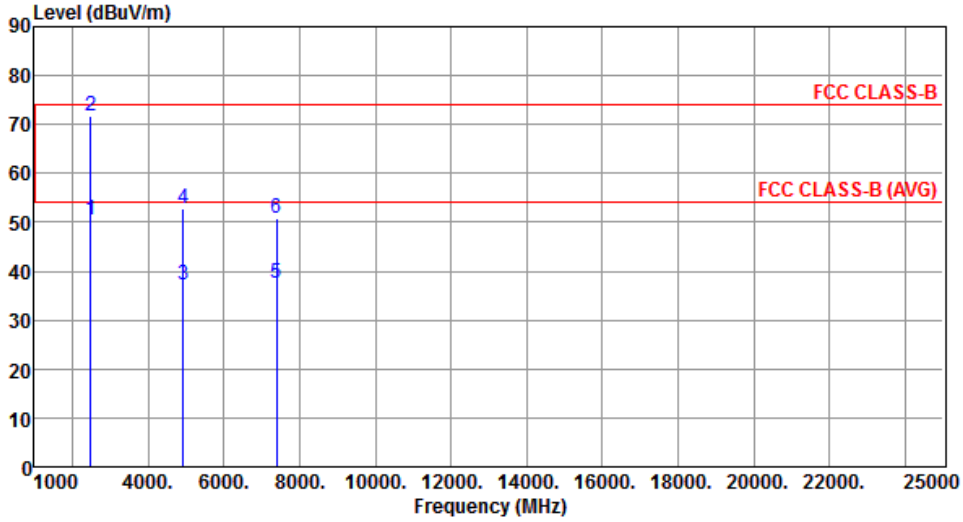
Modulation	HT20	Test Freq. (MHz)	2462
Polarization	Horizontal		



	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	49.47	54.00	-4.53	52.58	-3.11	Average	155	184
2	2483.50	69.83	74.00	-4.17	72.94	-3.11	Peak	155	184
3	4924.00	35.04	54.00	-18.96	31.19	3.85	Average	116	191
4	4924.00	48.61	74.00	-25.39	44.76	3.85	Peak	116	191
5	7386.00	37.05	54.00	-16.95	28.49	8.56	Average	100	178
6	7386.00	49.07	74.00	-24.93	40.51	8.56	Peak	100	178

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		

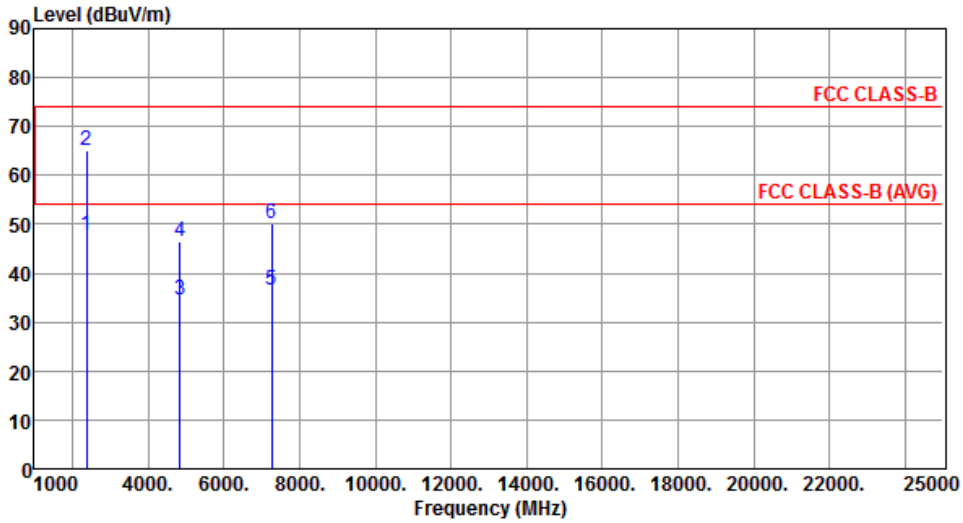


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	50.60	54.00	-3.40	53.71	-3.11	Average	135	139
2	2483.50	71.74	74.00	-2.26	74.85	-3.11	Peak	135	139
3	4924.00	37.11	54.00	-16.89	33.26	3.85	Average	271	274
4	4924.00	52.65	74.00	-21.35	48.80	3.85	Peak	271	274
5	7386.00	37.46	54.00	-16.54	28.90	8.56	Average	100	133
6	7386.00	50.74	74.00	-23.26	42.18	8.56	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

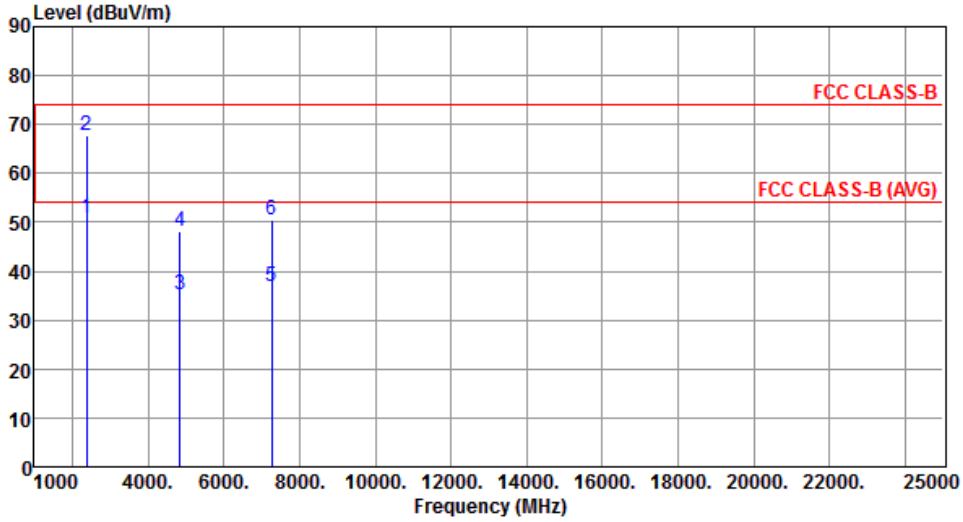
Modulation	HT40	**Test Freq. (MHz)**	2422
Polarization	Horizontal		



	Freq. 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	47.91	54.00	-6.09	51.42	-3.51	Average	160	182
2	2390.00	65.23	74.00	-8.77	68.74	-3.51	Peak	160	182
3	4844.00	34.41	54.00	-19.59	30.81	3.60	Average	250	188
4	4844.00	46.50	74.00	-27.50	42.90	3.60	Peak	250	188
5	7266.00	36.47	54.00	-17.53	28.18	8.29	Average	100	174
6	7266.00	50.28	74.00	-23.72	41.99	8.29	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).

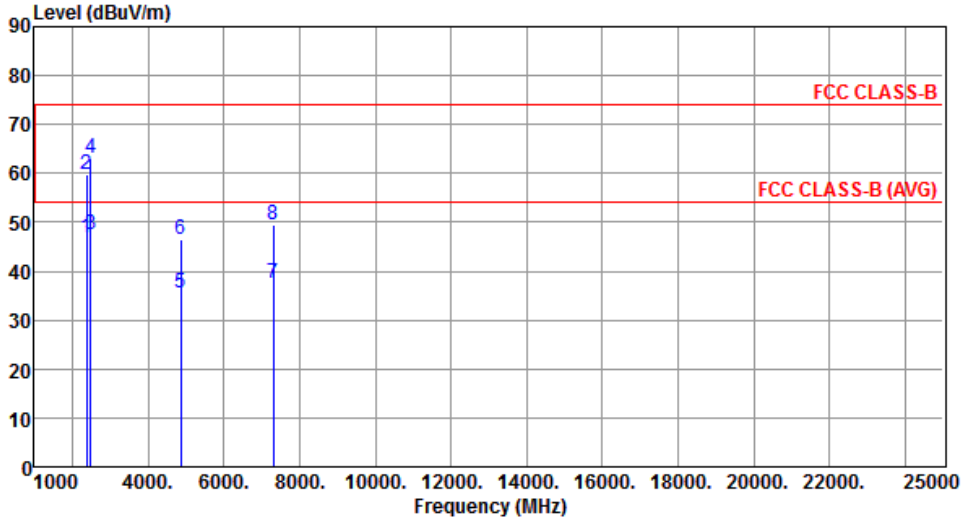
Modulation	HT40	Test Freq. (MHz)	2422
Polarization	Vertical		



	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	50.68	54.00	-3.32	54.19	-3.51	Average	100	48
2	2390.00	67.89	74.00	-6.11	71.40	-3.51	Peak	100	48
3	4844.00	35.13	54.00	-18.87	31.53	3.60	Average	265	274
4	4844.00	48.21	74.00	-25.79	44.61	3.60	Peak	265	274
5	7266.00	36.91	54.00	-17.09	28.62	8.29	Average	100	148
6	7266.00	50.49	74.00	-23.51	42.20	8.29	Peak	100	148

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).

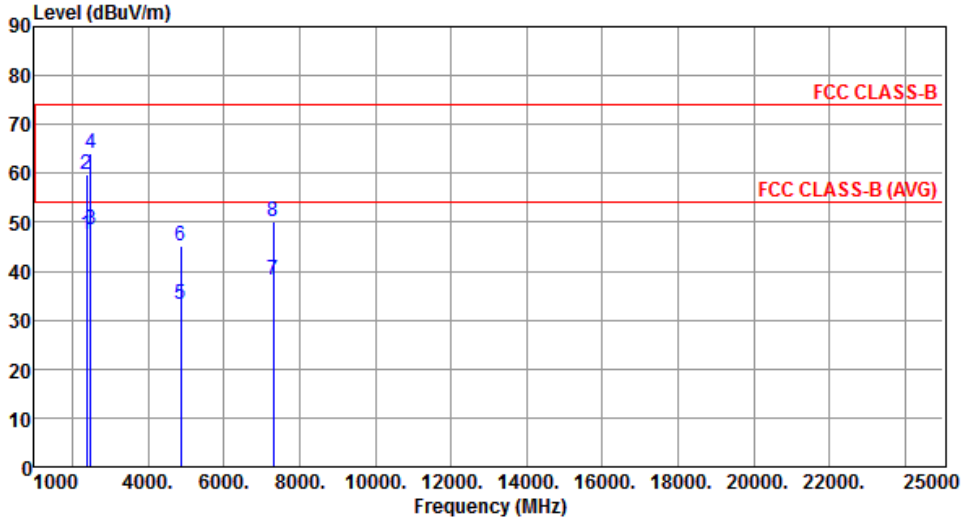
Modulation	HT40	Test Freq. (MHz)	2437
Polarization	Horizontal		



	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	46.99	54.00	-7.01	50.50	-3.51	Average	117	185
2	2390.00	59.65	74.00	-14.35	63.16	-3.51	Peak	117	185
3	2483.50	47.59	54.00	-6.41	50.70	-3.11	Average	117	185
4	2483.50	63.05	74.00	-10.95	66.16	-3.11	Peak	117	185
5	4874.00	35.66	54.00	-18.34	31.98	3.68	Average	277	190
6	4874.00	46.59	74.00	-27.41	42.91	3.68	Peak	277	190
7	7311.00	37.57	54.00	-16.43	29.17	8.40	Average	100	191
8	7311.00	49.39	74.00	-24.61	40.99	8.40	Peak	100	191

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).

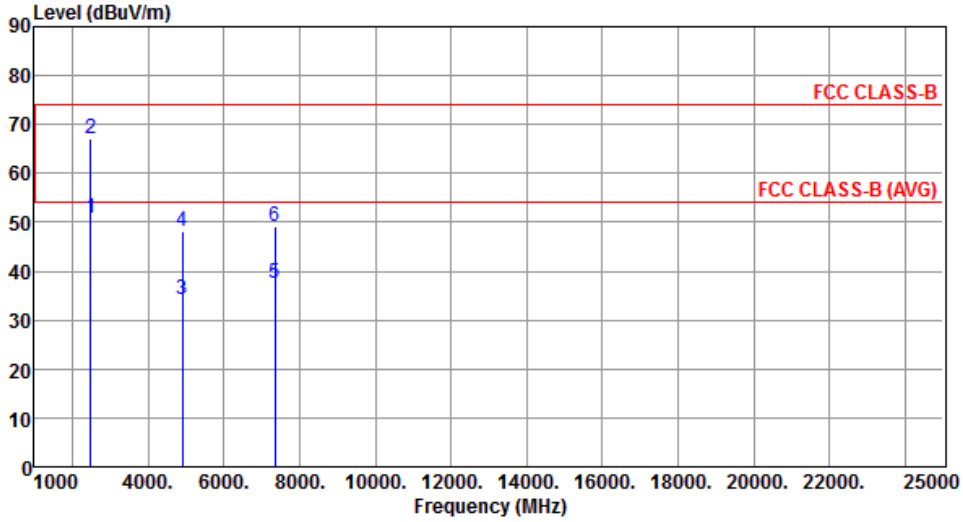
Modulation	HT40	Test Freq. (MHz)	2437
Polarization	Vertical		



	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	47.42	54.00	-6.58	50.93	-3.51	Average	101	131
2	2390.00	59.81	74.00	-14.19	63.32	-3.51	Peak	101	131
3	2483.50	48.52	54.00	-5.48	51.63	-3.11	Average	101	131
4	2483.50	63.97	74.00	-10.03	67.08	-3.11	Peak	101	131
5	4874.00	33.25	54.00	-20.75	29.57	3.68	Average	225	278
6	4874.00	45.20	74.00	-28.80	41.52	3.68	Peak	225	278
7	7311.00	38.04	54.00	-15.96	29.64	8.40	Average	101	128
8	7311.00	50.28	74.00	-23.72	41.88	8.40	Peak	101	128

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).

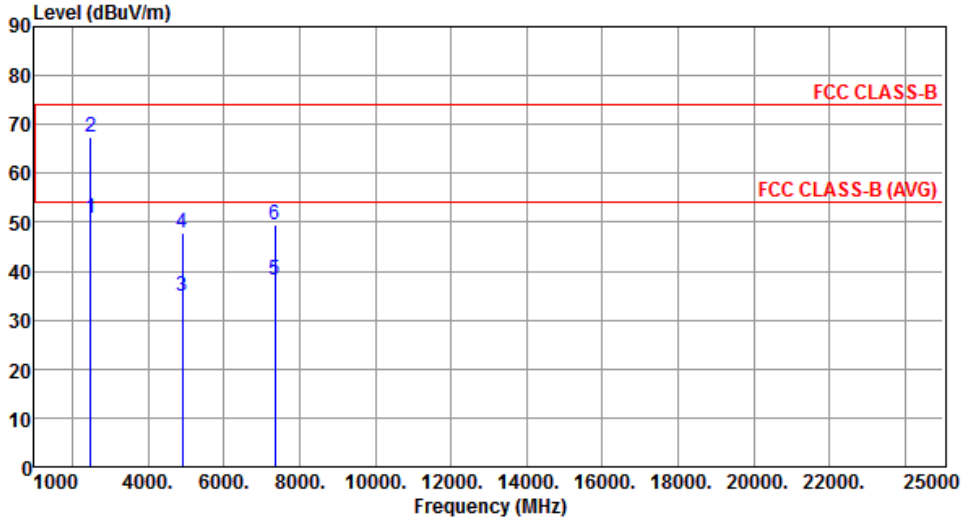
Modulation	HT40	Test Freq. (MHz)	2452
Polarization	Horizontal		



	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	50.91	54.00	-3.09	54.02	-3.11	Average	157	184
2	2483.50	67.22	74.00	-6.78	70.33	-3.11	Peak	157	184
3	4904.00	34.22	54.00	-19.78	30.43	3.79	Average	286	280
4	4904.00	48.25	74.00	-25.75	44.46	3.79	Peak	286	280
5	7356.00	37.46	54.00	-16.54	28.95	8.51	Average	100	196
6	7356.00	49.30	74.00	-24.70	40.79	8.51	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	50.65	54.00	-3.35	53.76	-3.11	Average	135	136
2	2483.50	67.53	74.00	-6.47	70.64	-3.11	Peak	135	136
3	4904.00	35.02	54.00	-18.98	31.23	3.79	Average	249	282
4	4904.00	47.76	74.00	-26.24	43.97	3.79	Peak	249	282
5	7356.00	38.05	54.00	-15.95	29.54	8.51	Average	100	140
6	7356.00	49.55	74.00	-24.45	41.04	8.51	Peak	100	140

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

3.6 Emissions in Non-Restricted Frequency Bands

3.6.1 Emissions in Non-Restricted Frequency Bands Limit

a) If the maximum peak conducted output power procedure was used to demonstrate compliance, then the peak output power measured 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.

b) If maximum conducted (average) output power was used to demonstrate compliance, then the 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

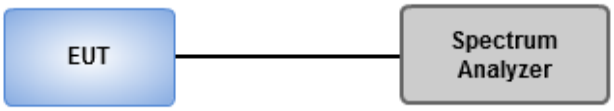
Reference level measurement

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

Summary

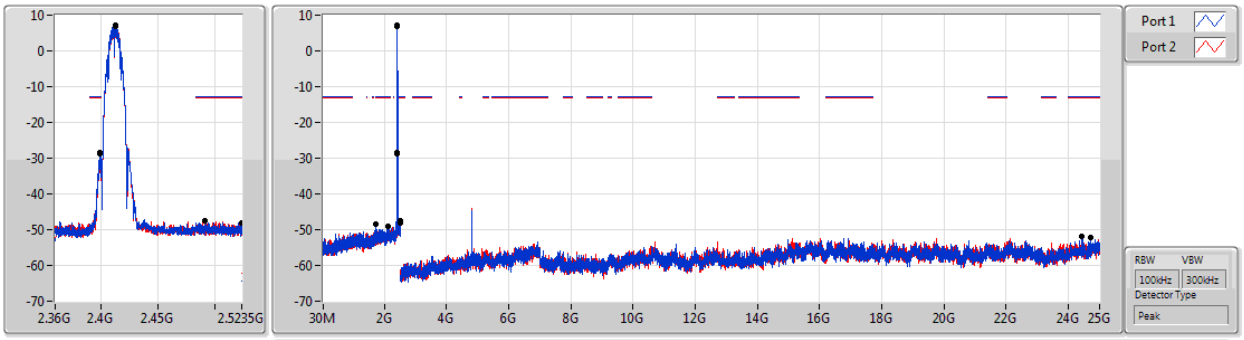
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_2TX	Pass	2.412525G	7.06	-12.94	1.71459G	-48.54	2.39952G	-28.32	2.5231G	-48.07	24.699377G	-52.14	1
802.11g_Nss1,(6Mbps)_2TX	Pass	2.418871G	0.49	-19.51	2.09671G	-48.33	2.39976G	-29.79	2.52022G	-47.86	24.856712G	-51.81	2
802.11n HT20_Nss1,(MCS0)_2TX	Pass	2.420374G	0.99	-19.01	1.787985G	-48.75	2.39992G	-30.01	2.48446G	-46.47	24.176798G	-52.61	2
802.11n HT40_Nss1,(MCS0)_2TX	Pass	2.425384G	-3.34	-23.34	2.1139G	-49.12	2.39984G	-39.47	2.49566G	-48.47	21.435401G	-51.53	2

Result

Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.412525G	7.06	-12.94	1.71459G	-48.54	2.39952G	-28.32	2.5231G	-48.07	24.699377G	-52.14	1
2412MHz	Pass	2.412525G	6.81	-13.19	2.11535G	-48.97	2.39952G	-28.77	2.4915G	-47.60	24.42404G	-52.00	2
2437MHz	Pass	2.436406G	7.53	-12.47	2.14797G	-48.66	2.39864G	-48.47	2.48814G	-47.53	6.965418G	-52.62	1
2437MHz	Pass	2.437575G	7.18	-12.82	2.083895G	-49.28	2.39448G	-48.51	2.51846G	-47.54	16.324071G	-52.09	2
2462MHz	Pass	2.462625G	7.34	-12.66	2.149135G	-49.17	2.39224G	-46.88	2.51534G	-47.45	16.335309G	-53.13	1
2462MHz	Pass	2.462625G	7.73	-12.27	2.10603G	-50.16	2.39624G	-47.89	2.48734G	-46.77	24.727472G	-51.09	2
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.418537G	0.49	-19.51	2.139815G	-47.27	2.39992G	-32.38	2.4923G	-47.87	24.969095G	-52.53	1
2412MHz	Pass	2.418871G	0.49	-19.51	2.09671G	-48.33	2.39976G	-29.79	2.52022G	-47.86	24.856712G	-51.81	2
2437MHz	Pass	2.429225G	0.76	-19.24	2.10836G	-49.01	2.3908G	-48.02	2.49094G	-47.17	24.645995G	-52.16	1
2437MHz	Pass	2.439245G	1.18	-18.82	2.079235G	-49.24	2.39712G	-46.21	2.48478G	-46.51	16.366214G	-51.58	2
2462MHz	Pass	2.466132G	0.43	-19.57	1.962735G	-49.57	2.39384G	-47.86	2.48446G	-44.55	24.758378G	-52.52	1
2462MHz	Pass	2.457615G	0.96	-19.04	2.14797G	-49.43	2.3928G	-47.31	2.48422G	-42.02	6.872703G	-52.54	2
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.420374G	0.61	-19.39	2.10603G	-48.53	2.39992G	-32.33	2.49766G	-47.31	24.991571G	-52.07	1
2412MHz	Pass	2.420374G	0.99	-19.01	1.787985G	-48.75	2.39992G	-30.01	2.48446G	-46.47	24.176798G	-52.61	2
2437MHz	Pass	2.434068G	1.07	-18.93	2.07807G	-48.80	2.39016G	-48.44	2.49334G	-47.67	24.218942G	-52.19	1
2437MHz	Pass	2.434068G	1.15	-18.85	2.128165G	-49.35	2.3996G	-46.24	2.48398G	-45.70	24.87076G	-51.99	2
2462MHz	Pass	2.459118G	0.74	-19.26	2.156125G	-49.63	2.39192G	-48.30	2.48358G	-42.99	24.719044G	-51.98	1
2462MHz	Pass	2.459118G	1.54	-18.46	1.8008G	-48.68	2.3964G	-47.74	2.48382G	-40.97	24.35942G	-52.69	2
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	2.425551G	-3.29	-23.29	2.14596G	-49.17	2.39984G	-39.86	2.4843G	-48.47	16.339511G	-51.66	1
2422MHz	Pass	2.425384G	-3.34	-23.34	2.1139G	-49.12	2.39984G	-39.47	2.49566G	-48.47	21.435401G	-51.53	2
2437MHz	Pass	2.432899G	-3.21	-23.21	2.11161G	-49.17	2.39856G	-47.00	2.4843G	-47.23	24.725153G	-52.44	1
2437MHz	Pass	2.440581G	-2.58	-22.58	2.08184G	-49.08	2.39776G	-44.45	2.48494G	-47.06	24.141804G	-52.79	2
2452MHz	Pass	2.454108G	-4.23	-24.23	1.82765G	-49.03	2.39712G	-48.82	2.48622G	-47.13	17.250994G	-52.29	1
2452MHz	Pass	2.444255G	-3.89	-23.89	2.011995G	-49.23	2.3936G	-49.48	2.48414G	-45.61	24.733567G	-51.86	2

802.11b_Nss1,(1Mbps)_2TX **CSE NdB**

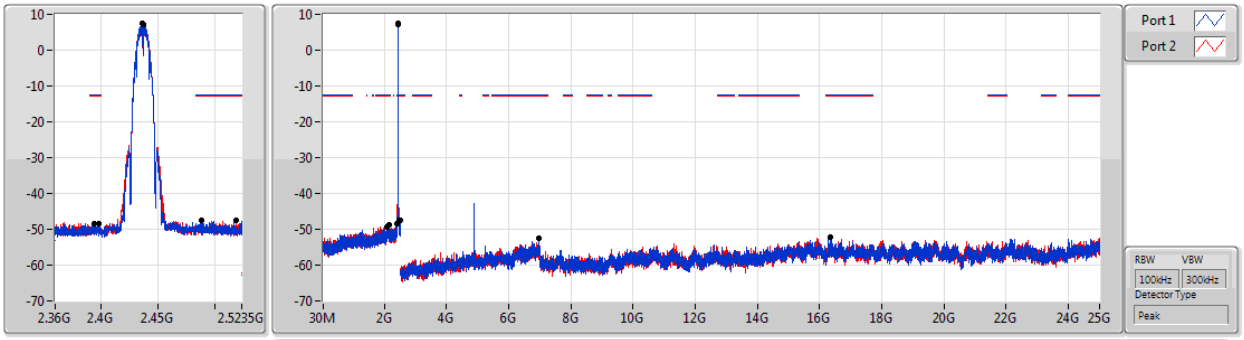
2412MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.412525G	7.06	-12.94	1.71459G	-48.54	2.39952G	-28.32	2.5231G	-48.07	24.699377G	-52.14	1
2.412525G	6.81	-13.19	2.11535G	-48.97	2.39952G	-28.77	2.4915G	-47.60	24.42404G	-52.00	2

802.11b_Nss1,(1Mbps)_2TX **CSE NdB**

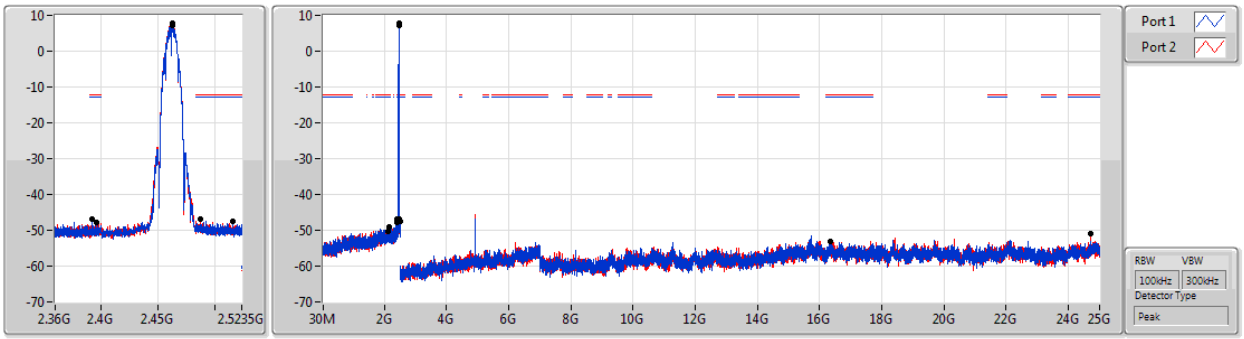
2437MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.436406G	7.53	-12.47	2.14797G	-48.66	2.39864G	-48.47	2.48814G	-47.53	6.965418G	-52.62	1
2.437575G	7.18	-12.82	2.083895G	-49.28	2.39448G	-48.51	2.51846G	-47.54	16.324071G	-52.09	2

802.11b_Nss1,(1Mbps)_2TX **CSE NdB**

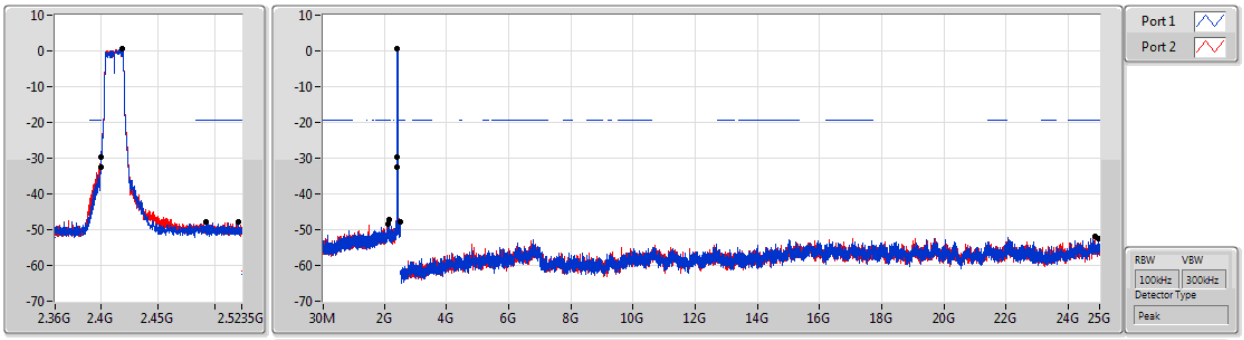
2462MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.462625G	7.34	-12.66	2.149135G	-49.17	2.39224G	-46.88	2.51534G	-47.45	16.335309G	-53.13	1
2.462625G	7.73	-12.27	2.10603G	-50.16	2.39624G	-47.89	2.48734G	-46.77	24.727472G	-51.09	2

802.11g_Nss1,(6Mbps)_2TX — CSE NdB

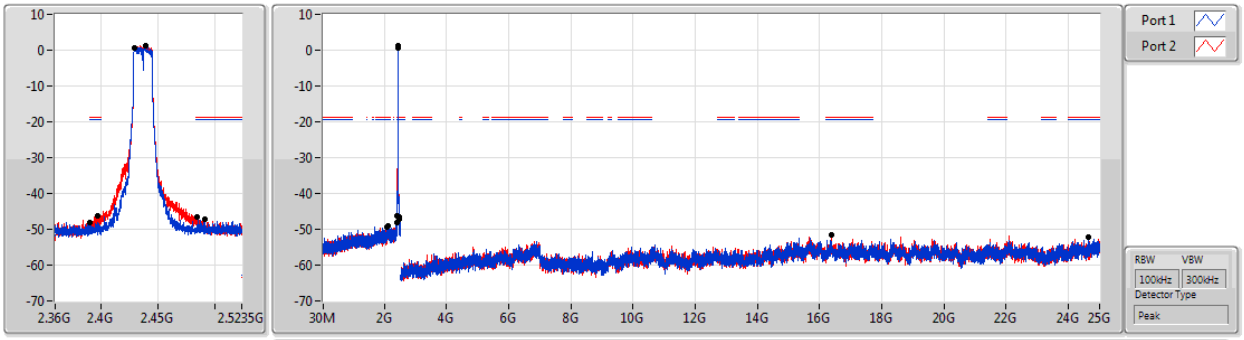
2412MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.418537G	0.49	-19.51	2.139815G	-47.27	2.39992G	-32.38	2.4923G	-47.87	24.969095G	-52.53	1
2.418871G	0.49	-19.51	2.09671G	-48.33	2.39976G	-29.79	2.52022G	-47.86	24.856712G	-51.81	2

802.11g_Nss1,(6Mbps)_2TX — CSE NdB

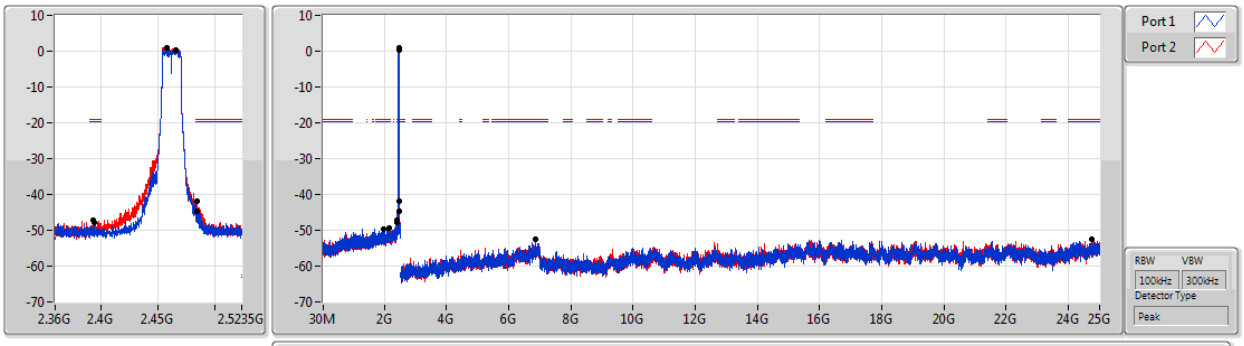
2437MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.429225G	0.76	-19.24	2.10836G	-49.01	2.3908G	-48.02	2.49094G	-47.17	24.645995G	-52.16	1
2.439245G	1.18	-18.82	2.079235G	-49.24	2.39712G	-46.21	2.48478G	-46.51	16.366214G	-51.58	2

802.11g_Nss1,(6Mbps)_2TX — CSE NdB

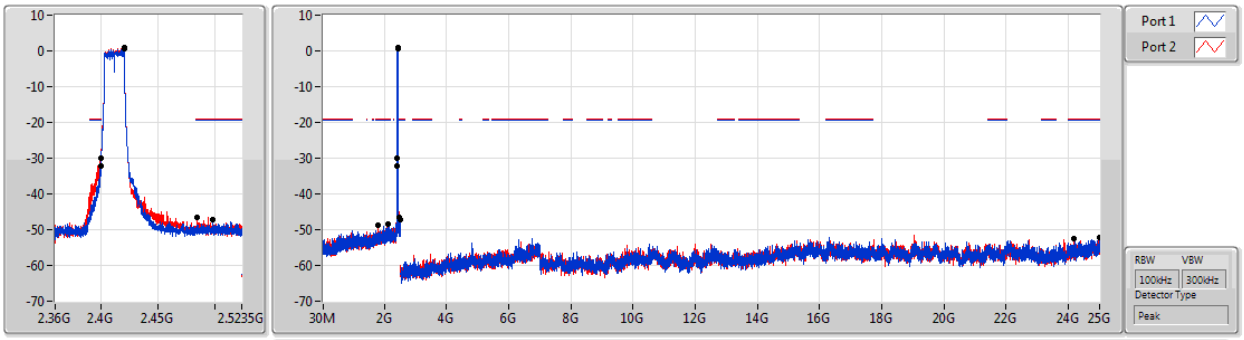
2462MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.466132G	0.43	-19.57	1.962735G	-49.57	2.39384G	-47.86	2.48446G	-44.55	24.758378G	-52.52	1
2.457615G	0.96	-19.04	2.14797G	-49.43	2.3928G	-47.31	2.48422G	-42.02	6.872703G	-52.54	2

802.11n HT20_Nss1,(MCS0)_2TX **CSE NdB**

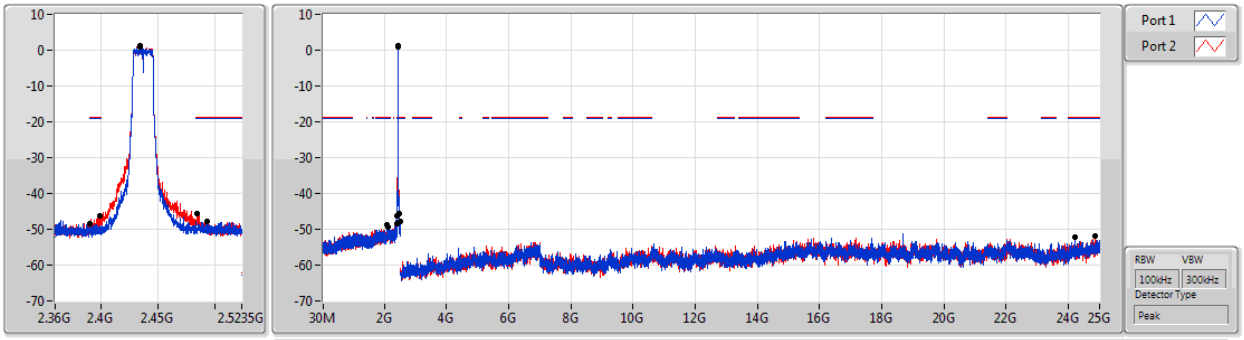
2412MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.420374G	0.61	-19.39	2.10603G	-48.53	2.39992G	-32.33	2.49766G	-47.31	24.991571G	-52.07	1
2.420374G	0.99	-19.01	1.787985G	-48.75	2.39992G	-30.01	2.48446G	-46.47	24.176798G	-52.61	2

802.11n HT20_Nss1,(MCS0)_2TX **CSE NdB**

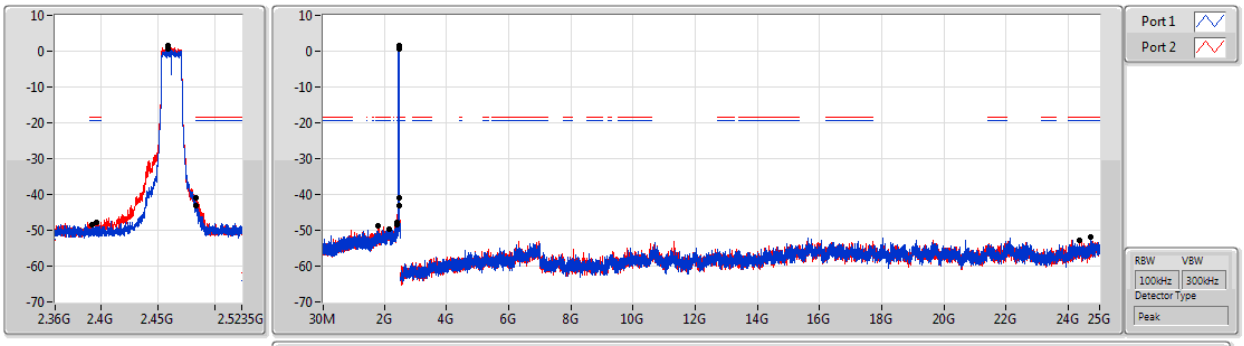
2437MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.434068G	1.07	-18.93	2.07807G	-48.80	2.39016G	-48.44	2.49334G	-47.67	24.218942G	-52.19	1
2.434068G	1.15	-18.85	2.128165G	-49.35	2.3996G	-46.24	2.48398G	-45.70	24.87076G	-51.99	2

802.11n HT20_Nss1,(MCS0)_2TX **CSE NdB**

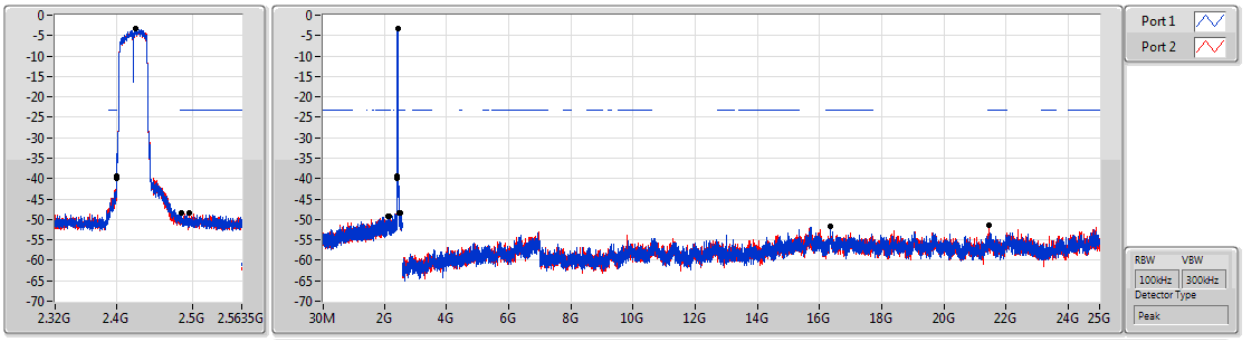
2462MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.459118G	0.74	-19.26	2.156125G	-49.63	2.39192G	-48.30	2.48358G	-42.99	24.719044G	-51.98	1
2.459118G	1.54	-18.46	1.8008G	-48.68	2.3964G	-47.74	2.48382G	-40.97	24.35942G	-52.69	2

802.11n HT40_Nss1,(MCS0)_2TX — CSE NdB

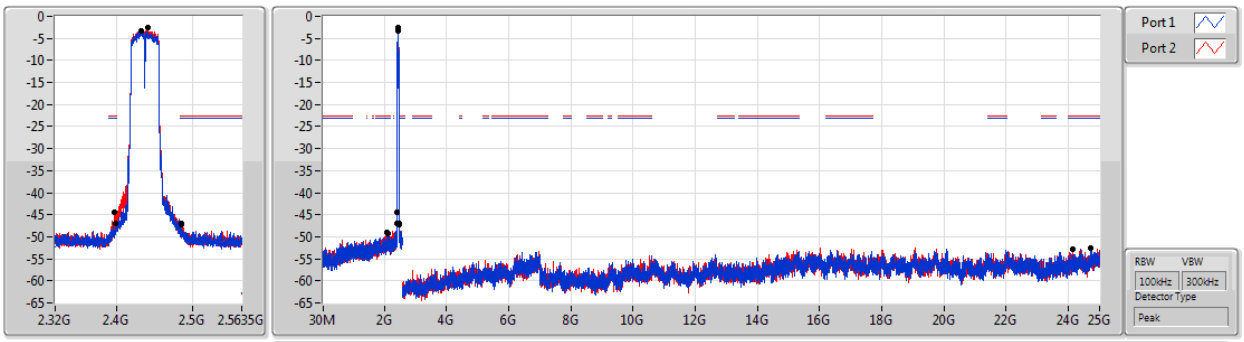
2422MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.425551G	-3.29	-23.29	2.14596G	-49.17	2.39984G	-39.86	2.4843G	-48.47	16.339511G	-51.66	1
2.425384G	-3.34	-23.34	2.1139G	-49.12	2.39984G	-39.47	2.49566G	-48.47	21.435401G	-51.53	2

802.11n HT40_Nss1,(MCS0)_2TX — CSE NdB

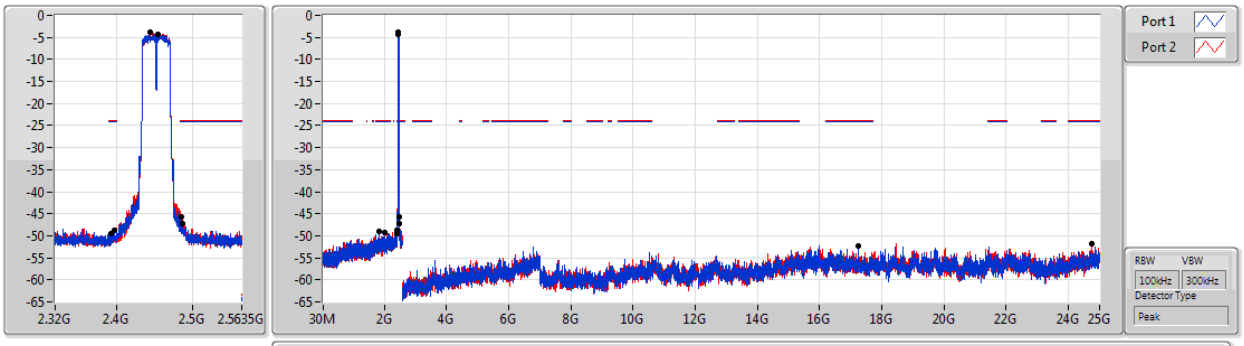
2437MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.432899G	-3.21	-23.21	2.11161G	-49.17	2.39856G	-47.00	2.4843G	-47.23	24.725153G	-52.44	1
2.440581G	-2.58	-22.58	2.08184G	-49.08	2.39776G	-44.45	2.48494G	-47.06	24.141804G	-52.79	2

802.11n HT40_Nss1,(MCS0)_2TX — 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
2.454108G	-4.23	-24.23	1.82765G	-49.03	2.39712G	-48.82	2.48622G	-47.13	17.250994G	-52.29	1
2.444255G	-3.89	-23.89	2.011995G	-49.23	2.3936G	-49.48	2.48414G	-45.61	24.733567G	-51.86	2

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.

Tel: 886-3-271-8666
Fax: 886-3-318-0155
Email: ICC_Service@icertifi.com.tw

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