FCC Test Report

FCC ID	:	**NKR-A3**
Equipment	:	**WiFi module**
Model No.	:	**DNUR-A3**
Brand Name	:	**WNC**
Applicant	:	**Wistron Neweb Corporation**
Address	:	**20 Park Avenue II, Hsinchu Science Park, Hsinchu 308,Taiwan,R.O.C.**
Standard	:	**47 CFR FCC Part 15.247**
Received Date	:	**Oct. 28, 2019**
Tested Date	:	**Oct. 29 ~ Nov. 07, 2019**

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

Reviewed by: **Approved by:**

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

Testing Laboratory 2732

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Release Record

Report No.	Version	Description	Issued Date
FR780102-01	Rev. 01	Initial issue	Dec. 13, 2019

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.156MHz 44.96 (Margin -20.73dB) - QP	Pass
15.247(d) 15.209	Radiated Emissions	[dBuV/m at 3m]: 2390.00MHz 53.60 (Margin -0.40dB) - AV	Pass
15.247(b)(3)	Maximum Output Power	Max Power [dBm]: 27.76	Pass
15.247(a)(2)	6dB Bandwidth	Meet the requirement of limit	Pass
15.247(e)	Power Spectral Density	Meet the requirement of limit	Pass
15.203	Antenna Requirement	Meet the requirement of limit	Pass

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

1 General Description

1.1 Information

1.1.1 Specification of the Equipment under Test (EUT)

RF General Information					
Frequency Range (MHz)	**IEEE Std. 802.11**	**Ch. Freq. (MHz)**	**Channel Number**	**Transmit Chains (N_{TX})**	**Data Rate / MCS**
2400-2483.5	b	2412-2462	1-11 [11]	2	1-11 Mbps
2400-2483.5	g	2412-2462	1-11 [11]	2	6-54 Mbps
2400-2483.5	n (HT20)	2412-2462	1-11 [11]	2	MCS 0-15
2400-2483.5	n (HT40)	2422-2452	3-9 [7]	2	MCS 0-15
Note 1: RF output power specifies that Maximum 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	Connector	Gain (dBi)
1	printing ant	PIFA	UFL	5.18
2	printing ant	PIFA	UFL	4.59

1.1.3 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	5Vdc from host

1.1.4 Accessories

N/A

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	QATool, V 0.0.0.96		
Duty Cycle and Duty Factor	Mode	Duty Cycle (%)	Duty Factor (dB)
	11b	100.00%	0.00
	11g	90.70%	0.42
	HT20	90.15%	0.45
	HT40	81.18%	0.91

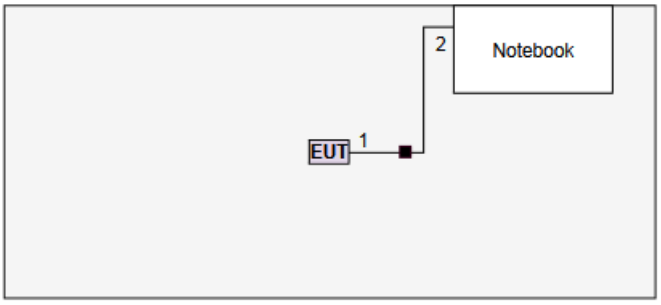
1.1.7 Power Index of Test Tool

Modulation Mode	Test Frequency (MHz)	Power Index
11b	2412	27
11b	2437	28
11b	2462	25
11g	2412	18
11g	2437	2A
11g	2462	1B
HT20	2412	18
HT20	2437	2A
HT20	2462	1B
HT40	2422	14
HT40	2437	1C
HT40	2452	16

1.2 Local Support Equipment List

Support Equipment List					
No.	**Equipment**	**Brand**	**Model**	**FCC ID**	**Remarks**
1	Notebook	DELL	Latitude E5470	DoC	---

1.3 Test Setup Chart

Test Setup Diagram


No.	Signal cable / Length (m)
1	USB, 0.1m shielded. (Provided by applicant.)
2	USB, 1.5m shielded.

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. 08, 2019	Jan. 07, 2020
LISN	R&S	ENV216	101579	Mar. 08, 2019	Mar. 07, 2020
RF Cable-CON	Woken	CFD200-NL	CFD200-NL-001	Oct. 22, 2019	Oct. 21, 2020
Measurement Software	AUDIX	e3	6.120210k	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

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. 27, 2018	Dec. 26, 2019
Receiver	R&S	ESR3	101658	Dec. 11, 2018	Dec. 10, 2019
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Jul. 12, 2019	Jul. 11, 2020
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 18, 2018	Dec. 17, 2019
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 15, 2018	Nov. 14, 2019
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 09, 2018	Nov. 08, 2019
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Oct. 07, 2019	Oct. 06, 2020
Preamplifier	EMC	EMC02325	980225	Jul. 09, 2019	Jul. 08, 2020
Preamplifier	Agilent	83017A	MY39501308	Oct. 08, 2019	Oct. 07, 2020
Preamplifier	EMC	EMC184045B	980192	Aug. 01, 2019	Jul. 31, 2020
RF Cable	EMC	EMC104-SM-SM-8000	181106	Oct. 07, 2019	Oct. 06, 2020
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Oct. 07, 2019	Oct. 06, 2020
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Oct. 07, 2019	Oct. 06, 2020
LF cable 1M	EMC	EMCCFD400-NM-NM-1000	160502	Oct. 07, 2019	Oct. 06, 2020
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Oct. 07, 2019	Oct. 06, 2020
LF cable 10M	Woken	CFD400NL-LW	CFD400NL-002	Oct. 07, 2019	Oct. 06, 2020
Measurement Software	AUDIX	e3	6.120210g	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	RF Conducted				
Test Site	(TH01-WS)				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	R&S	FSV40	101063	Apr. 17, 2019	Apr. 16, 2020
Power Meter	Anritsu	ML2495A	1241002	Oct. 23, 2019	Oct. 22, 2020
Power Sensor	Anritsu	MA2411B	1207366	Oct. 23, 2019	Oct. 22, 2020
Measurement Software	Sporton	Sporton_1	1.3.30	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

1.5 Test Standards

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

47 CFR FCC Part 15.247
ANSI C63.10-2013
FCC KDB 558074 D01 15.247 Meas Guidance v05r02
FCC KDB 662911 D01 Multiple Transmitter Output v02r01

1.6 Deviation from Test Standard and Measurement Procedure

None

1.7 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)).

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

2 Test Configuration

2.1 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
AC Conduction	CO01-WS	22°C / 69%	Akun Chung
Radiated Emissions	03CH01-WS	23-24°C / 65-67%	Roger Lu Mike Shu
RF Conducted	TH01-WS	21°C / 63%	Brad Wu

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

2.2 The Worst Test Modes and Channel Details

Test item	Modulation Mode	Test Frequency (MHz)	Data Rate	Test Configuration
Conducted Emissions	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	---
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.				

3 Transmitter Test Results

3.1 Conducted Emissions

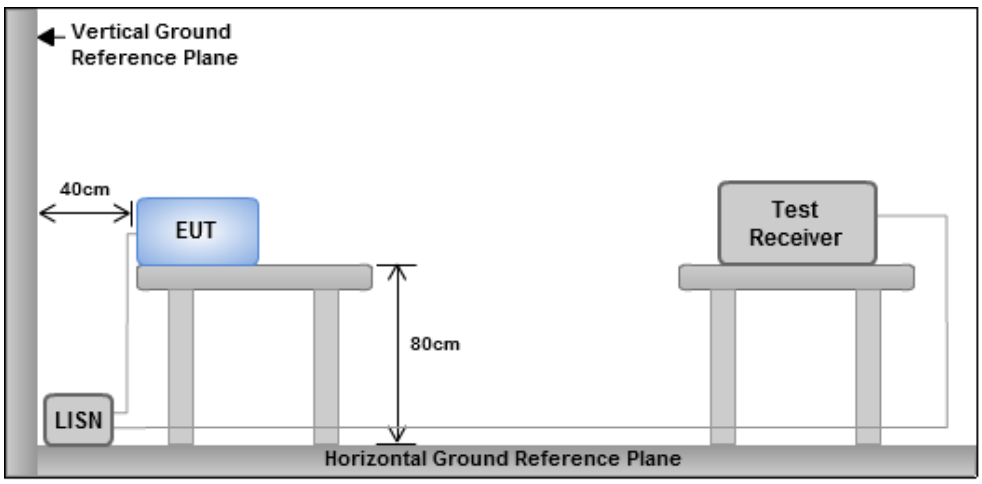
3.1.1 Limit of Conducted Emissions

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

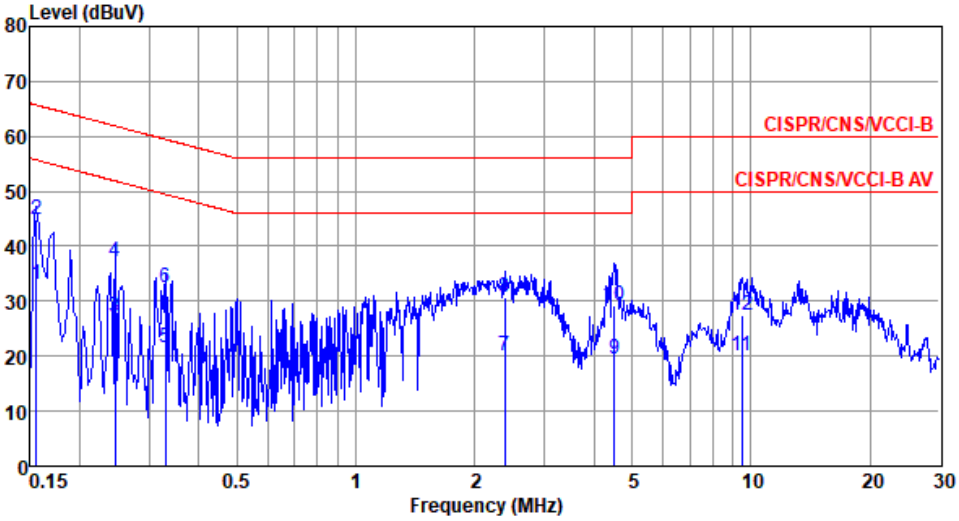


Note: 1. Support units were connected to second LISN.

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

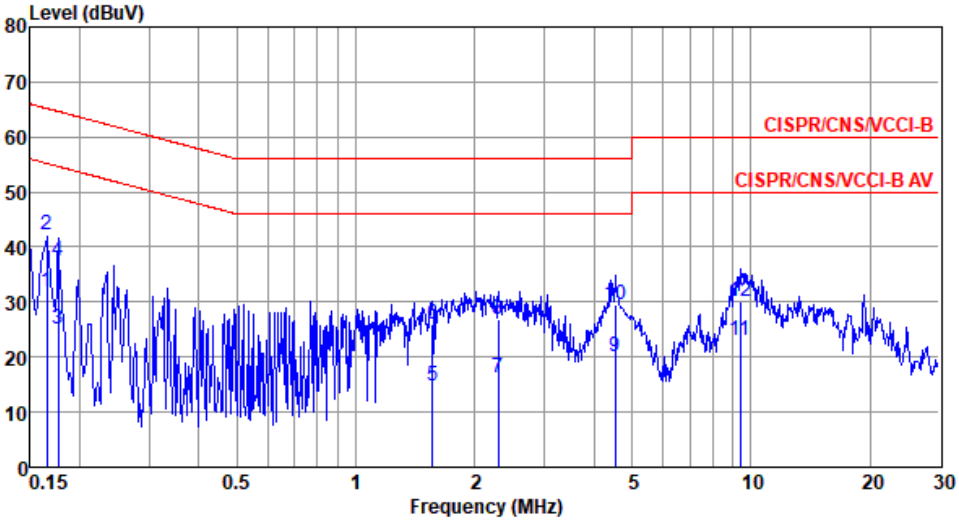
Modulation	11g	Test Freq. (MHz)	2437
Power Phase	Line		



	Freq	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1	0.156	32.97	55.69	-22.72	23.39	9.53	0.05	Average
2*	0.156	44.96	65.69	-20.73	35.38	9.53	0.05	QP
3	0.246	27.19	51.91	-24.72	17.57	9.55	0.07	Average
4	0.246	37.29	61.91	-24.62	27.67	9.55	0.07	QP
5	0.330	21.69	49.44	-27.75	12.06	9.56	0.07	Average
6	0.330	32.50	59.44	-26.94	22.87	9.56	0.07	QP
7	2.384	20.02	46.00	-25.98	10.21	9.60	0.21	Average
8	2.384	30.65	56.00	-25.35	20.84	9.60	0.21	QP
9	4.501	19.43	46.00	-26.57	9.52	9.61	0.30	Average
10	4.501	29.32	56.00	-26.68	19.41	9.61	0.30	QP
11	9.502	20.11	50.00	-29.89	10.08	9.65	0.38	Average
12	9.502	27.43	60.00	-32.57	17.40	9.65	0.38	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	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1	0.165	31.98	55.21	-23.23	22.36	9.57	0.05	Average
2*	0.165	42.26	65.21	-22.95	32.64	9.57	0.05	QP
3	0.177	25.05	54.64	-29.59	15.41	9.58	0.06	Average
4	0.177	37.42	64.64	-27.22	27.78	9.58	0.06	QP
5	1.560	14.83	46.00	-31.17	5.02	9.65	0.16	Average
6	1.560	25.86	56.00	-30.14	16.05	9.65	0.16	QP
7	2.297	16.32	46.00	-29.68	6.47	9.65	0.20	Average
8	2.297	26.86	56.00	-29.14	17.01	9.65	0.20	QP
9	4.525	20.18	46.00	-25.82	10.21	9.67	0.30	Average
10	4.525	29.56	56.00	-26.44	19.59	9.67	0.30	QP
11	9.401	23.03	50.00	-26.97	12.94	9.71	0.38	Average
12	9.401	29.99	60.00	-30.01	19.90	9.71	0.38	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

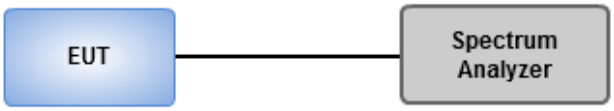
6dB Bandwidth

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	10M	14.761M	14M8G1D	9.058M	14.472M
802.11g_Nss1,(6Mbps)_2TX	15.072M	18.886M	18M9D1D	13.188M	16.353M
802.11n HT20_Nss1,(MCS0)_2TX	15.652M	18.813M	18M8D1D	12.899M	17.511M
802.11n HT40_Nss1,(MCS0)_2TX	35.072M	35.89M	35M9D1D	30.145M	35.745M

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;

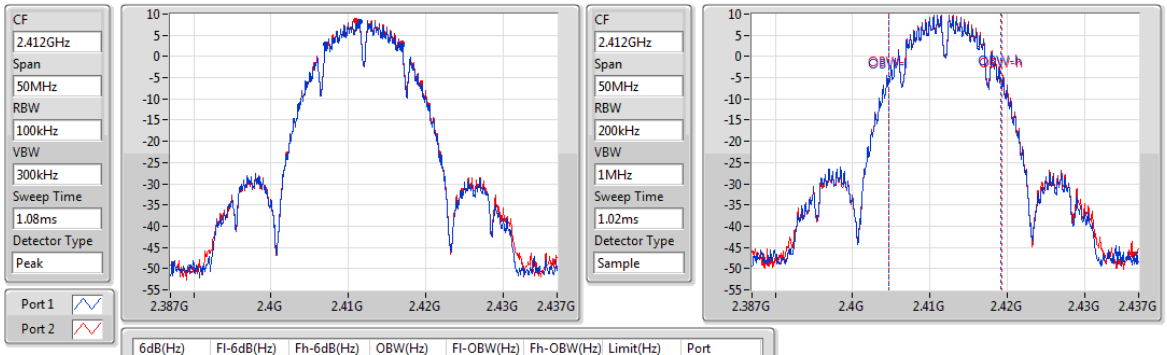
Result

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	10M	14.616M	9.783M	14.616M
2437MHz	Pass	500k	9.493M	14.761M	9.058M	14.761M
2462MHz	Pass	500k	9.493M	14.544M	9.493M	14.472M
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	13.188M	16.425M	14.71M	16.353M
2437MHz	Pass	500k	15.072M	18.886M	14.71M	17.945M
2462MHz	Pass	500k	14.13M	16.425M	14.203M	16.353M
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	15.072M	17.511M	14.348M	17.583M
2437MHz	Pass	500k	12.899M	18.596M	14.42M	18.813M
2462MHz	Pass	500k	15M	17.583M	15.652M	17.511M
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	500k	35.072M	35.89M	35.072M	35.745M
2437MHz	Pass	500k	35.072M	35.745M	30.145M	35.89M
2452MHz	Pass	500k	32.609M	35.89M	35.072M	35.89M

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

802.11b_Nss1,(1Mbps)_2TX **EBW**

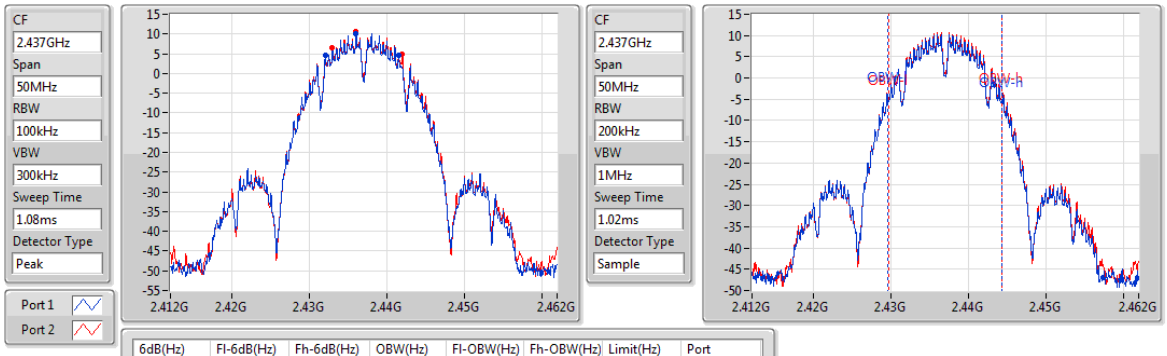
2412MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
10M	2.407G	2.417G	14.616M	2.404619G	2.419236G	500k	1
9.783M	2.407217G	2.417G	14.616M	2.404692G	2.419308G	500k	2

802.11b_Nss1,(1Mbps)_2TX **EBW**

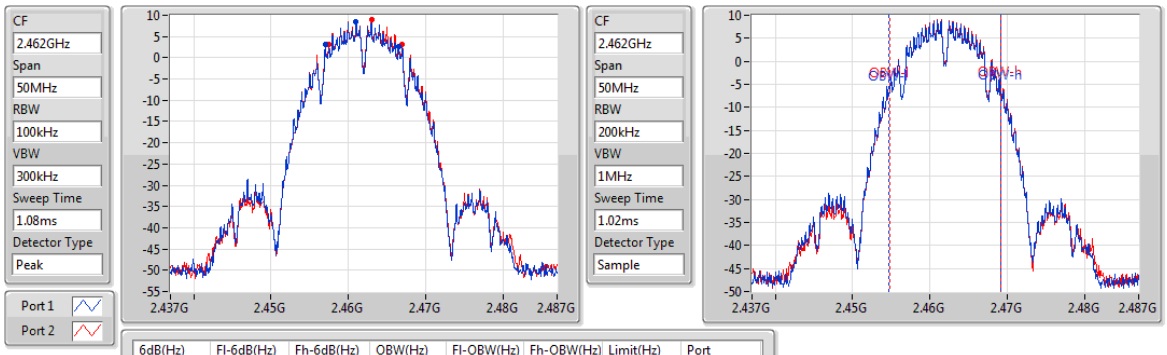
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
9.493M	2.432G	2.441493G	14.761M	2.429547G	2.444308G	500k	1
9.058M	2.432942G	2.442G	14.761M	2.429619G	2.444381G	500k	2

802.11b_Nss1,(1Mbps)_2TX **EBW**

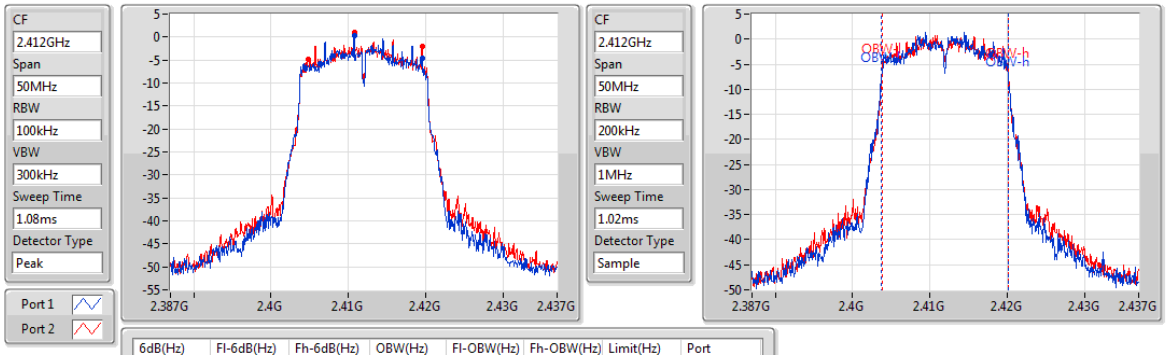
2462MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
9.493M	2.457G	2.466493G	14.544M	2.454619G	2.469164G	500k	1
9.493M	2.457507G	2.467G	14.472M	2.454764G	2.469236G	500k	2

802.11g_Nss1,(6Mbps)_2TX **EBW**

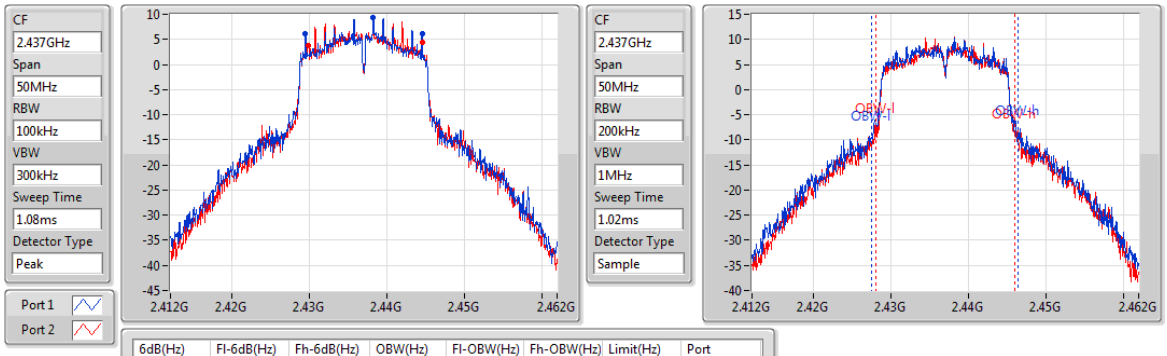
2412MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
13.188M	2.406348G	2.419536G	16.425M	2.403751G	2.420177G	500k	1
14.71M	2.404826G	2.419536G	16.353M	2.403823G	2.420177G	500k	2

802.11g_Nss1,(6Mbps)_2TX **EBW**

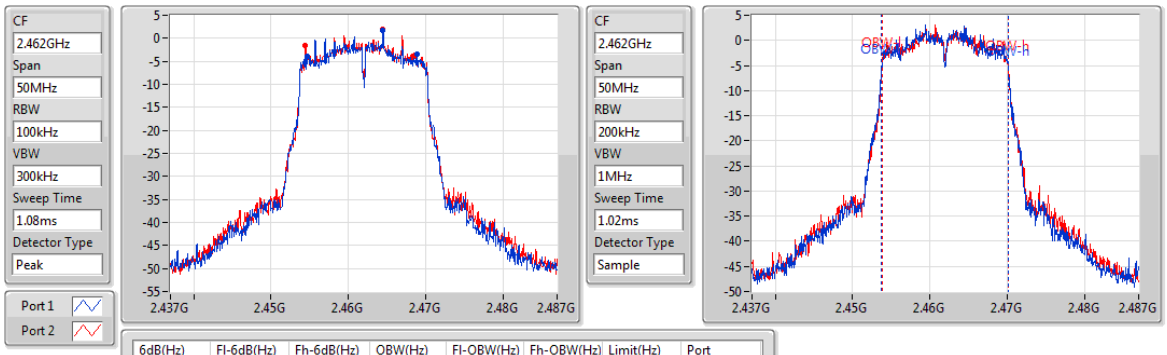
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15.072M	2.429464G	2.444536G	18.886M	2.427449G	2.446334G	500k	1
14.71M	2.429826G	2.444536G	17.945M	2.428027G	2.445973G	500k	2

802.11g_Nss1,(6Mbps)_2TX **EBW**

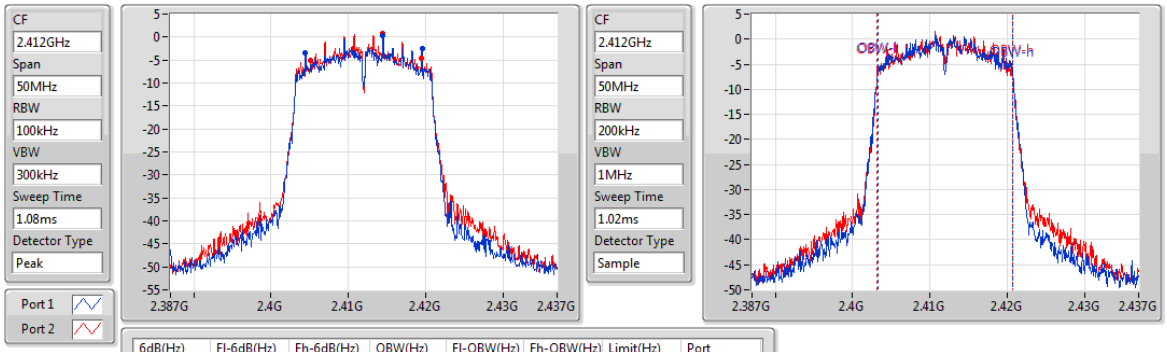
2462MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
14.13M	2.454754G	2.468884G	16.425M	2.453751G	2.470177G	500k	1
14.203M	2.454464G	2.468667G	16.353M	2.453823G	2.470177G	500k	2

802.11n HT20_Nss1,(MCS0)_2TX **EBW**

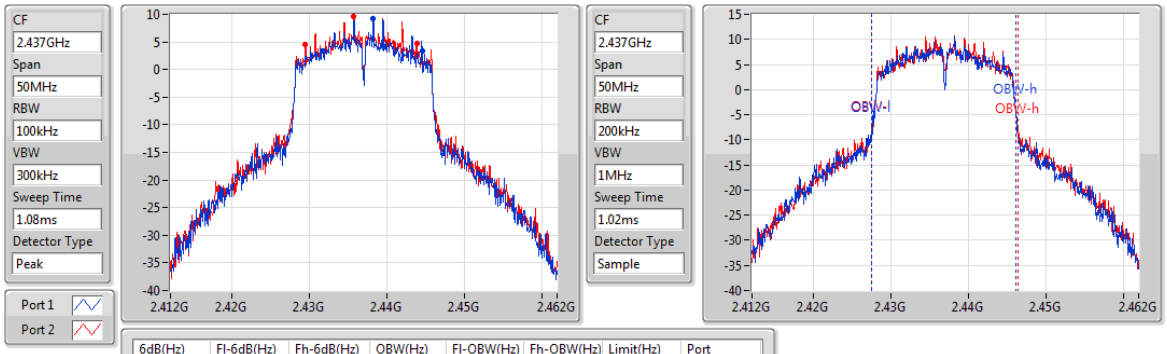
2412MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15.072M	2.404464G	2.419536G	17.511M	2.403245G	2.420755G	500k	1
14.348M	2.405116G	2.419464G	17.583M	2.403172G	2.420755G	500k	2

802.11n HT20_Nss1,(MCS0)_2TX **EBW**

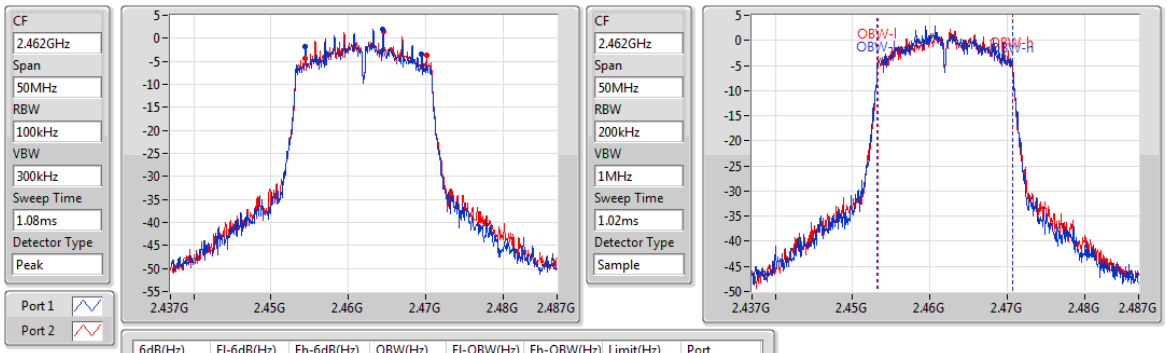
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
12.899M	2.431638G	2.444536G	18.596M	2.427521G	2.446117G	500k	1
14.42M	2.429464G	2.443884G	18.813M	2.427521G	2.446334G	500k	2

802.11n HT20_Nss1,(MCS0)_2TX **EBW**

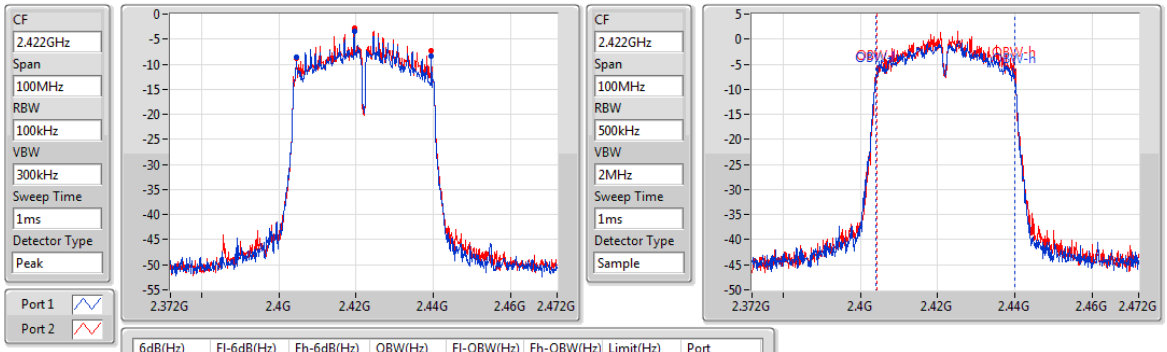
2462MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15M	2.454464G	2.469464G	17.583M	2.453172G	2.470755G	500k	1
15.652M	2.454464G	2.470116G	17.511M	2.453245G	2.470755G	500k	2

802.11n HT40_Nss1,(MCS0)_2TX **EBW**

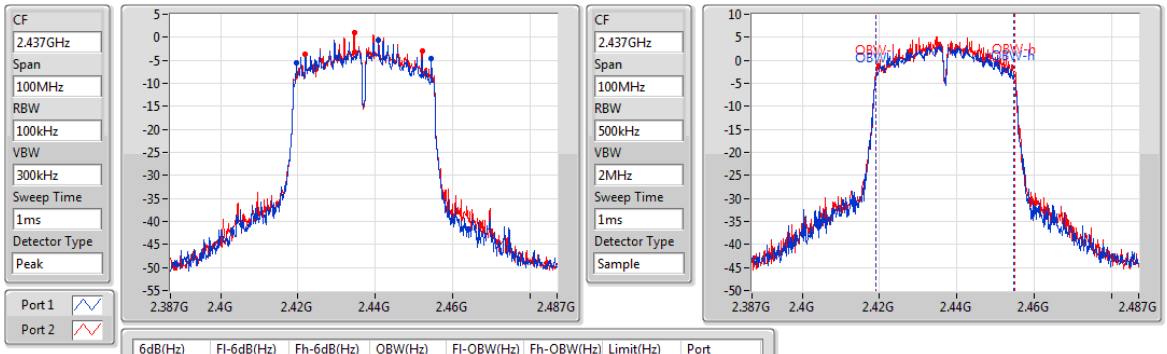
2422MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
35.072M	2.404464G	2.439536G	35.89M	2.404055G	2.439945G	500k	1
35.072M	2.404464G	2.439536G	35.745M	2.4042G	2.439945G	500k	2

802.11n HT40_Nss1,(MCS0)_2TX **EBW**

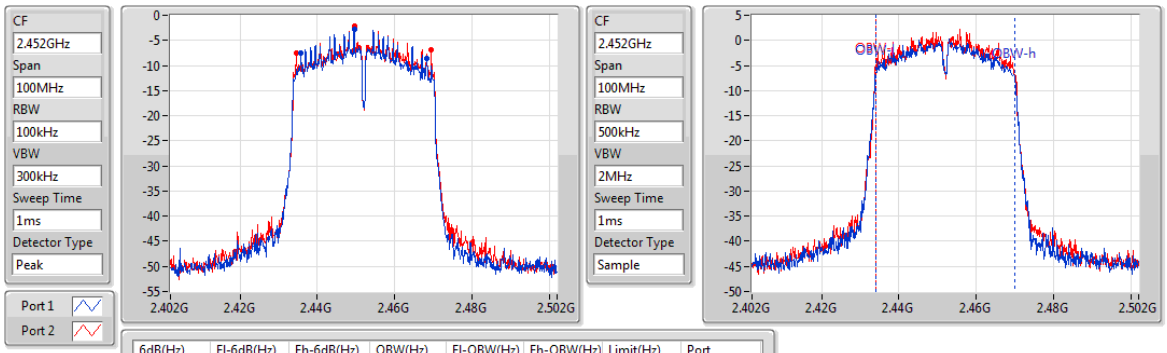
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
35.072M	2.419464G	2.454536G	35.745M	2.419055G	2.4548G	500k	1
30.145M	2.421928G	2.452072G	35.89M	2.419055G	2.454945G	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
32.609M	2.435768G	2.468377G	35.89M	2.434055G	2.469945G	500k	1
35.072M	2.434464G	2.469536G	35.89M	2.434055G	2.469945G	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.

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	24.52	0.28314
802.11g_Nss1,(6Mbps)_2TX	27.76	0.59704
802.11n HT20_Nss1,(MCS0)_2TX	27.69	0.58749
802.11n HT40_Nss1,(MCS0)_2TX	24.45	0.27861

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	5.18	21.11	21.15	24.14	30.00	29.32	36.00
2437MHz	Pass	5.18	21.51	21.50	24.52	30.00	29.70	36.00
2462MHz	Pass	5.18	19.91	19.92	22.93	30.00	28.11	36.00
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-	-
2412MHz	Pass	5.18	20.02	19.88	22.96	30.00	28.14	36.00
2437MHz	Pass	5.18	24.76	24.74	27.76	30.00	32.94	36.00
2462MHz	Pass	5.18	21.52	21.23	24.39	30.00	29.57	36.00
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
2412MHz	Pass	5.18	20.66	20.58	23.63	30.00	28.81	36.00
2437MHz	Pass	5.18	24.59	24.77	27.69	30.00	32.87	36.00
2462MHz	Pass	5.18	21.48	21.32	24.41	30.00	29.59	36.00
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
2422MHz	Pass	5.18	18.26	18.05	21.17	30.00	26.35	36.00
2437MHz	Pass	5.18	21.52	21.35	24.45	30.00	29.63	36.00
2452MHz	Pass	5.18	18.86	18.54	21.71	30.00	26.89	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	22.71	0.18664
802.11g_Nss1,(6Mbps)_2TX	23.23	0.21038
802.11n HT20_Nss1,(MCS0)_2TX	23.23	0.21038
802.11n HT40_Nss1,(MCS0)_2TX	16.84	0.04831

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	5.18	19.18	19.43	22.32	-	27.50	-
2437MHz	Pass	5.18	19.66	19.73	22.71	-	27.89	-
2462MHz	Pass	5.18	18.10	18.08	21.10	-	26.28	-
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-	-
2412MHz	Pass	5.18	11.84	11.73	14.80	-	19.98	-
2437MHz	Pass	5.18	20.34	20.09	23.23	-	28.41	-
2462MHz	Pass	5.18	13.28	13.10	16.20	-	21.38	-
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
2412MHz	Pass	5.18	11.90	11.87	14.90	-	20.08	-
2437MHz	Pass	5.18	20.29	20.15	23.23	-	28.41	-
2462MHz	Pass	5.18	13.12	13.08	16.11	-	21.29	-
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
2422MHz	Pass	5.18	10.12	10.01	13.08	-	18.26	-
2437MHz	Pass	5.18	13.83	13.82	16.84	-	22.02	-
2452MHz	Pass	5.18	11.03	10.73	13.89	-	19.07	-

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.

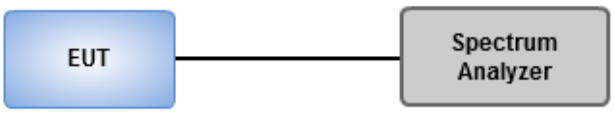
2 Set the sweep time to: ≥ 10 (number of measurement points in sweep) x (total on/off period of the transmitted signal).

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)_2TX	-1.74
802.11g_Nss1,(6Mbps)_2TX	-4.50
802.11n HT20_Nss1,(MCS0)_2TX	-3.28
802.11n HT40_Nss1,(MCS0)_2TX	-11.87

Result

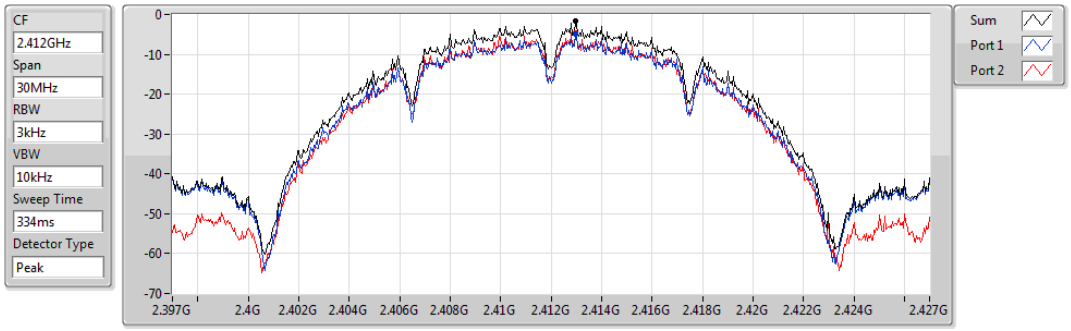
Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	7.90	-4.92	-4.58	-1.74	6.10
2437MHz	Pass	7.90	-5.05	-4.39	-2.10	6.10
2462MHz	Pass	7.90	-5.96	-6.45	-3.58	6.10
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	7.90	-15.68	-15.78	-12.79	6.10
2437MHz	Pass	7.90	-7.19	-7.17	-4.50	6.10
2462MHz	Pass	7.90	-14.25	-14.55	-11.65	6.10
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	7.90	-13.95	-14.21	-11.07	6.10
2437MHz	Pass	7.90	-6.27	-5.71	-3.28	6.10
2462MHz	Pass	7.90	-12.75	-13.22	-10.39	6.10
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	7.90	-18.66	-18.43	-16.22	6.10
2437MHz	Pass	7.90	-14.70	-15.00	-11.87	6.10
2452MHz	Pass	7.90	-18.27	-17.24	-15.03	6.10

DG = Directional Gain

= 10 * log((10$^{5.18/20}$+10$^{4.59/20}$)^2/2) = 7.9 dBi > 6 dBi, PD limit shall be reduced to 8 dBm – (7.9 dBi – 6 dBi) = 6.1 dBm;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port X power density;

802.11b_Nss1,(1Mbps)_2TX **PSD**

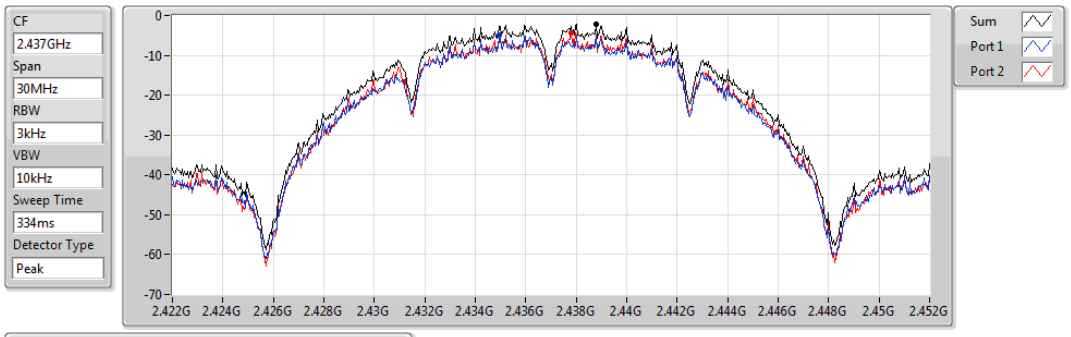
2412MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-1.74	-1.74	-4.92	-4.58

802.11b_Nss1,(1Mbps)_2TX **PSD**

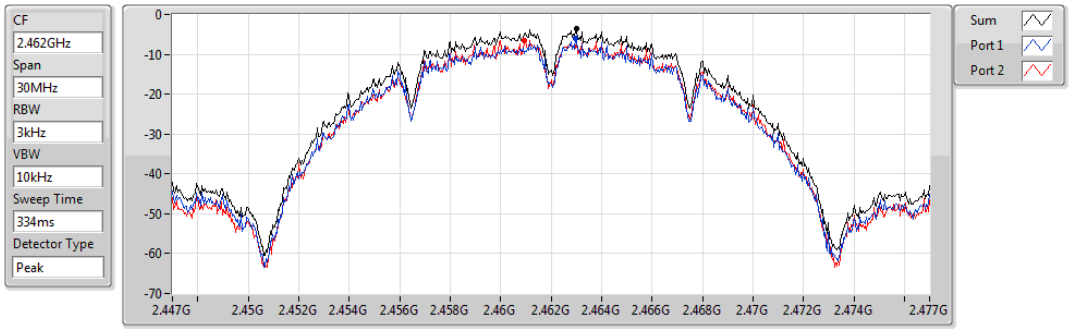
2437MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-2.10	-2.10	-5.05	-4.39

802.11b_Nss1,(1Mbps)_2TX **PSD**

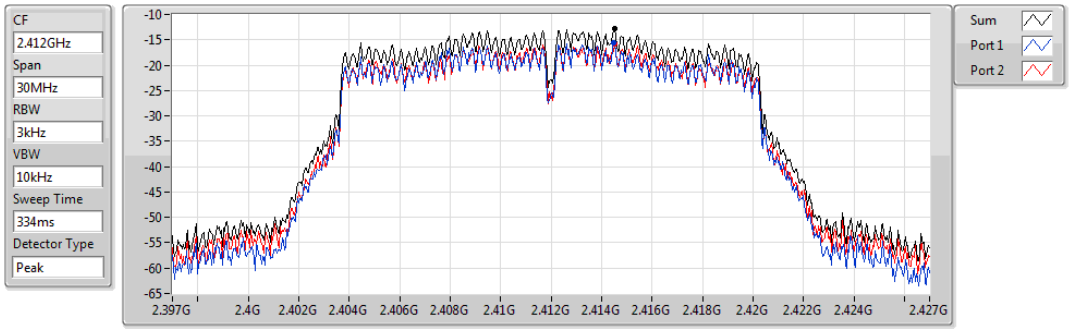
2462MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-3.58	-3.58	-5.96	-6.45

802.11g_Nss1,(6Mbps)_2TX **PSD**

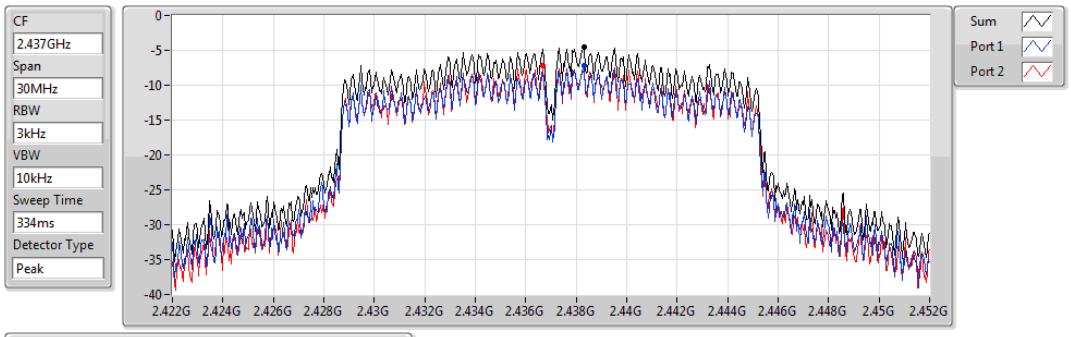
2412MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-12.79	-12.79	-15.68	-15.78

802.11g_Nss1,(6Mbps)_2TX **PSD**

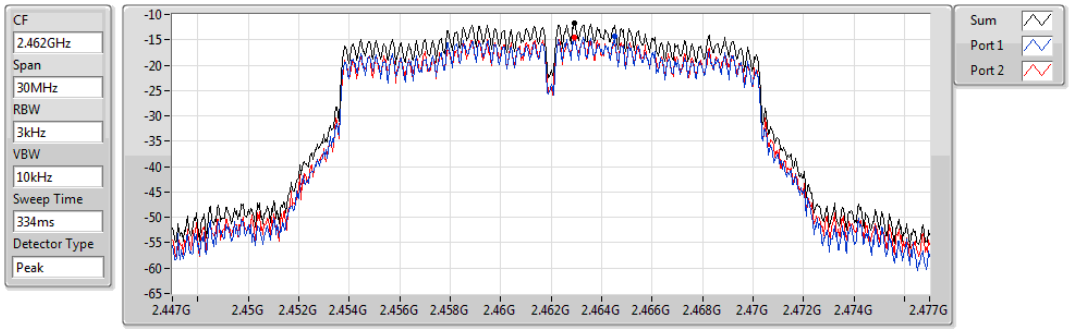
2437MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-4.50	-4.50	-7.19	-7.17

802.11g_Nss1,(6Mbps)_2TX **PSD**

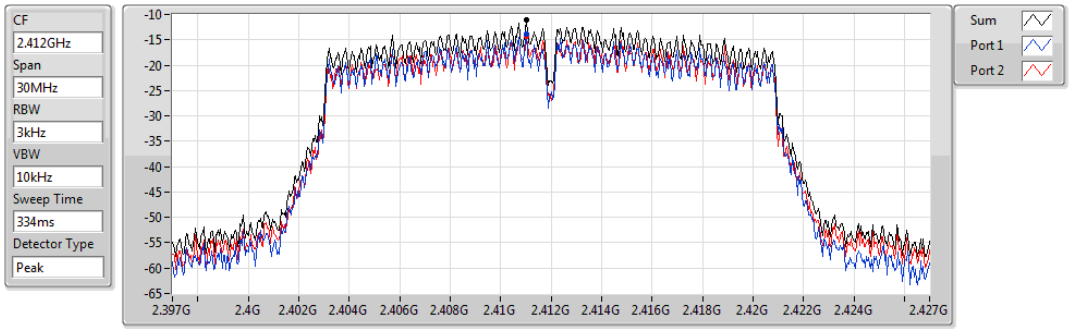
2462MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-11.65	-11.65	-14.25	-14.55

802.11n HT20_Nss1,(MCS0)_2TX **PSD**

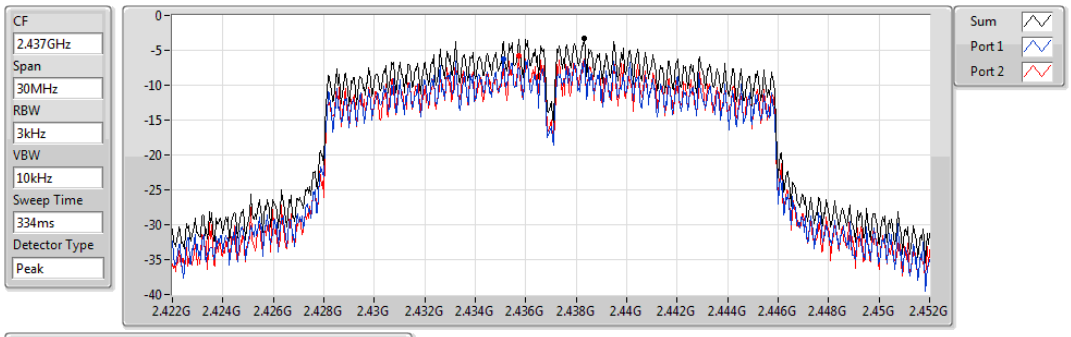
2412MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-11.07	-11.07	-13.95	-14.21

802.11n HT20_Nss1,(MCS0)_2TX **PSD**

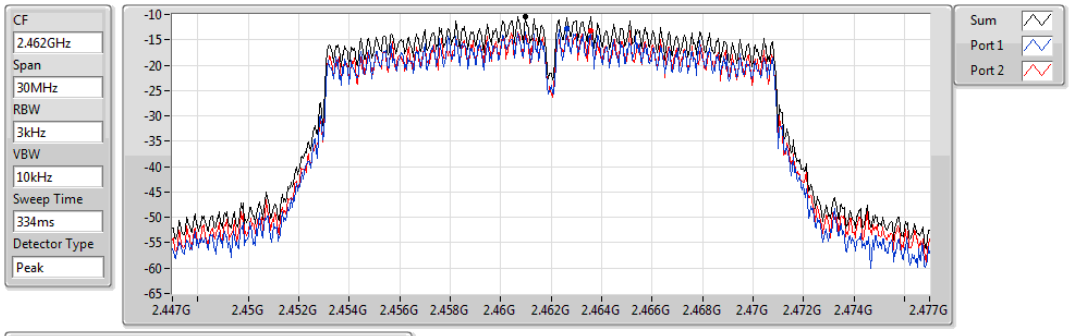
2437MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-3.28	-3.28	-6.27	-5.71

802.11n HT20_Nss1,(MCS0)_2TX **PSD**

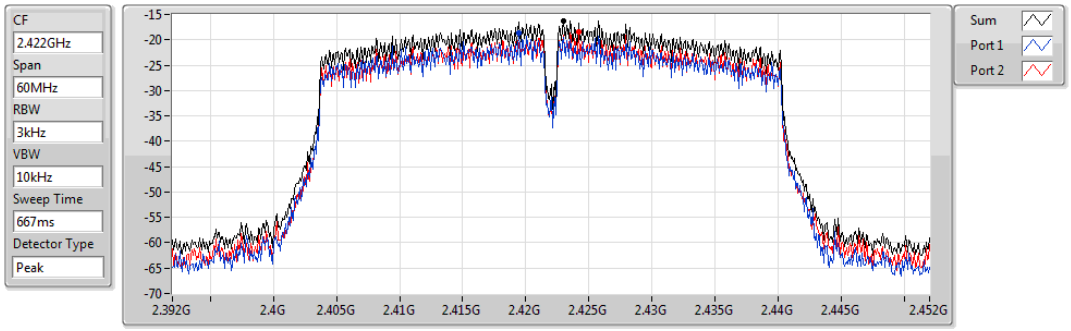
2462MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.39	-10.39	-12.75	-13.22

802.11n HT40_Nss1,(MCS0)_2TX **PSD**

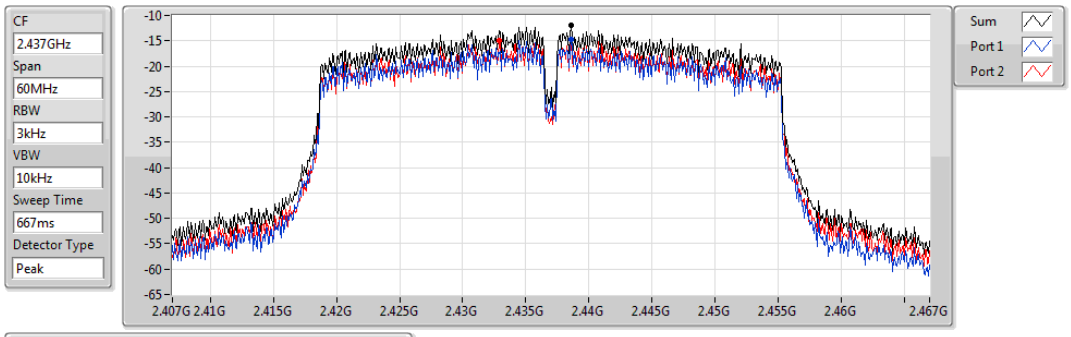
2422MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-16.22	-16.22	-18.66	-18.43

802.11n HT40_Nss1,(MCS0)_2TX **PSD**

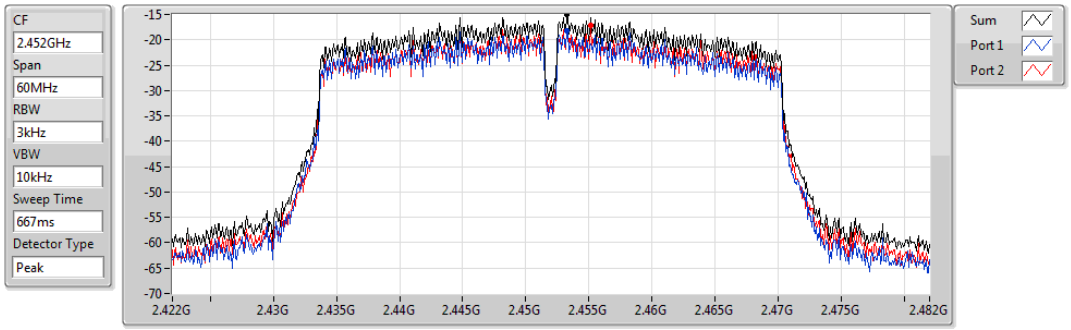
2437MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-11.87	-11.87	-14.70	-15.00

802.11n HT40_Nss1,(MCS0)_2TX **PSD**

2452MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-15.03	-15.03	-18.27	-17.24

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

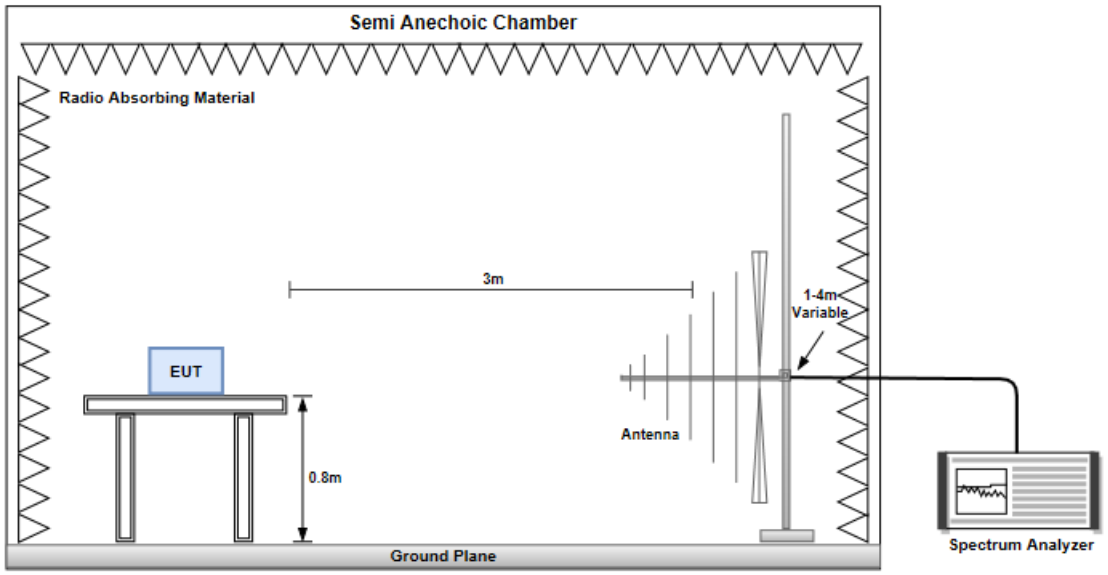
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission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

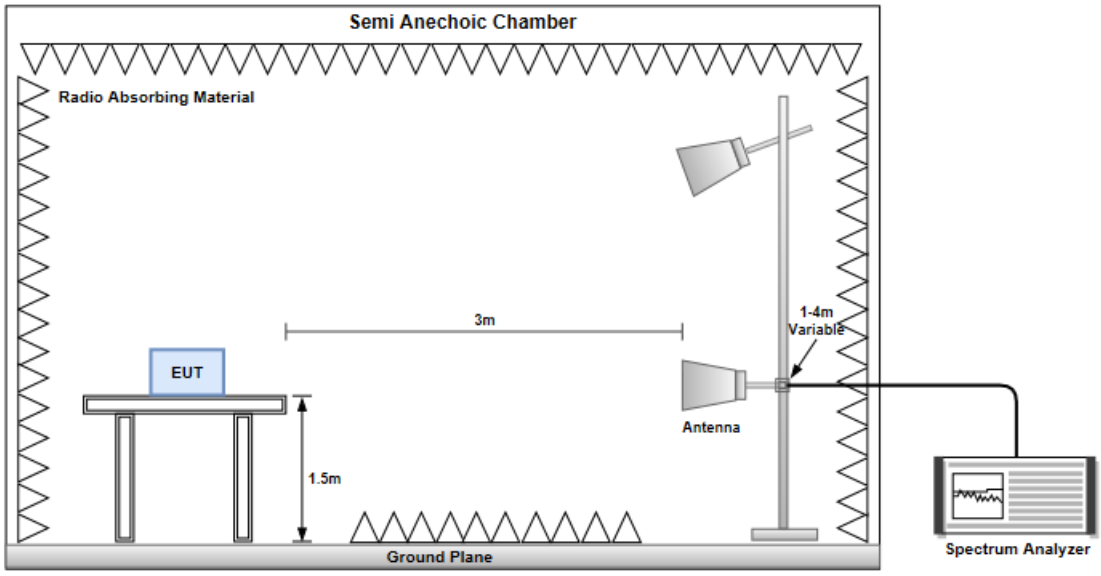
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.5.3 Test Setup

Radiated Emissions below 1 GHz

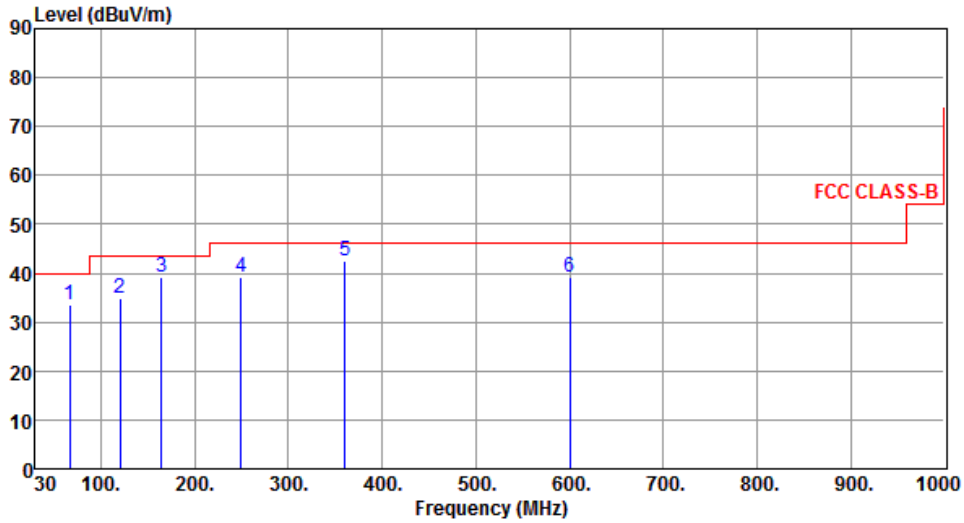


Radiated Emissions above 1 GHz



3.5.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

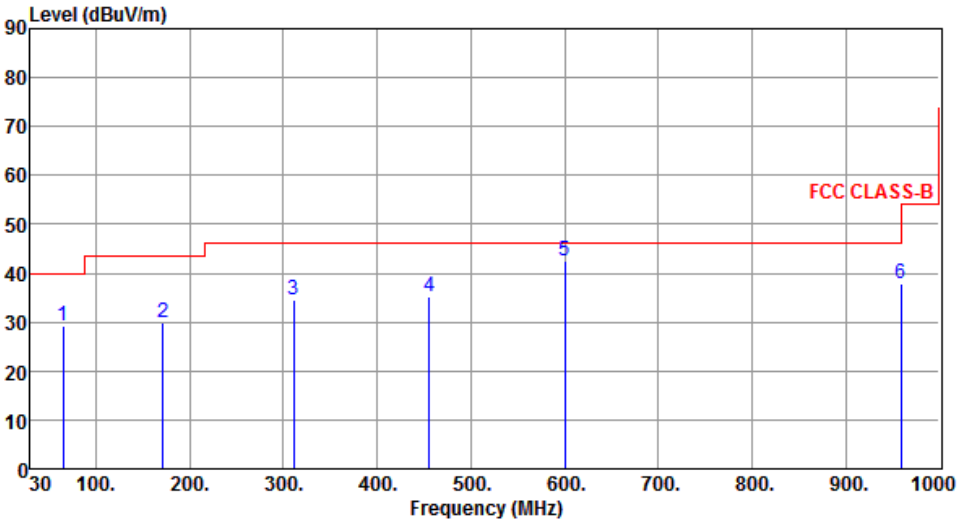
Modulation	11g	Test Freq. (MHz)	2437
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	66.86	33.45	40.00	-6.55	43.42	-9.97	Peak	---	---
2	120.21	34.77	43.50	-8.73	45.36	-10.59	Peak	---	---
3	164.83	39.07	43.50	-4.43	47.68	-8.61	Peak	---	---
4	249.22	39.14	46.00	-6.86	49.10	-9.96	Peak	---	---
5	360.77	42.45	46.00	-3.55	49.03	-6.58	Peak	---	---
6	600.36	39.20	46.00	-6.80	40.16	-0.96	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		

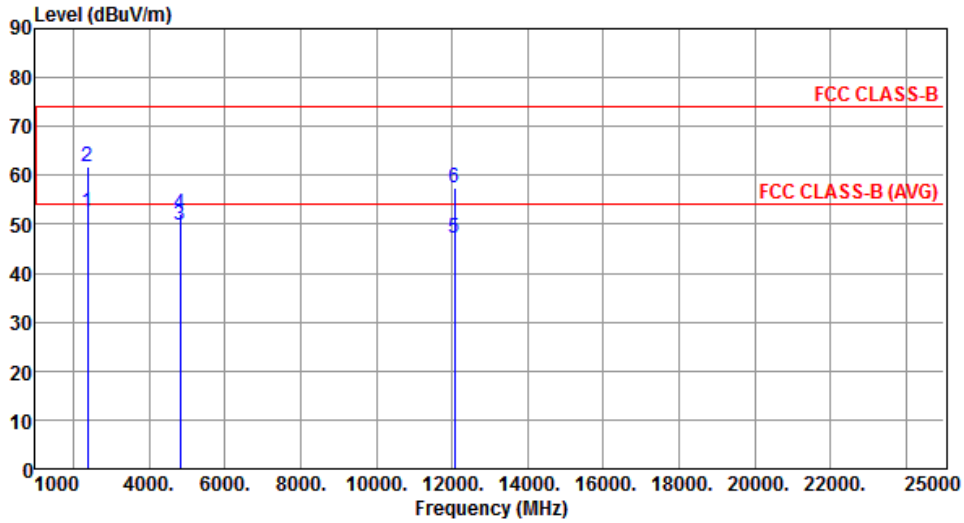


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	64.92	29.19	40.00	-10.81	38.75	-9.56	Peak	---	---
2	171.62	29.92	43.50	-13.58	38.91	-8.99	Peak	---	---
3	311.30	34.58	46.00	-11.42	42.27	-7.69	Peak	---	---
4	455.83	35.36	46.00	-10.64	39.32	-3.96	Peak	---	---
5	600.36	42.54	46.00	-3.46	43.50	-0.96	Peak	---	---
6	959.26	37.77	46.00	-8.23	32.94	4.83	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

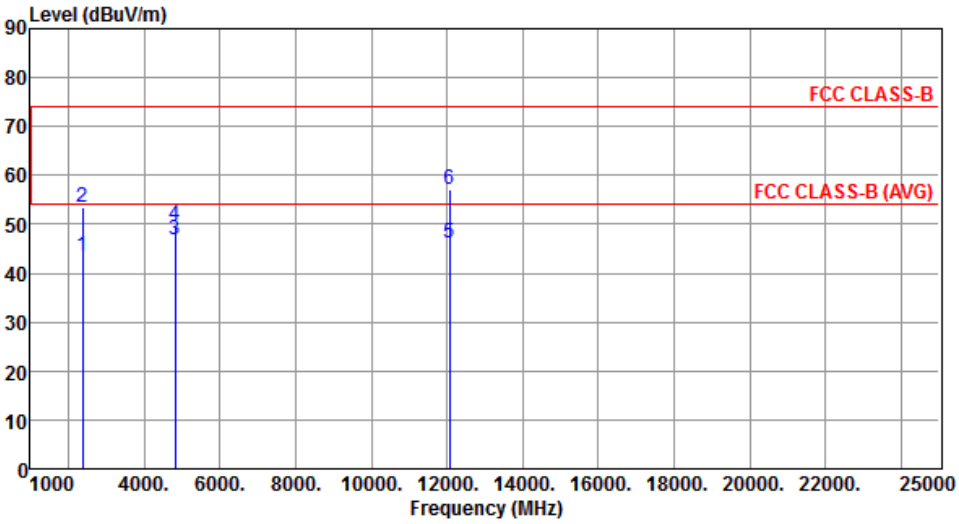
Modulation	11b	Test Freq. (MHz)	2412
Polarization	Horizontal		



	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	52.61	54.00	-1.39	55.43	-2.82	Average	215	109
2	2390.00	61.61	74.00	-12.39	64.43	-2.82	Peak	215	109
3	4824.00	49.72	54.00	-4.28	46.17	3.55	Average	102	94
4	4824.00	52.23	74.00	-21.77	48.68	3.55	Peak	102	94
5	12060.00	47.20	54.00	-6.80	33.37	13.83	Average	254	115
6	12060.00	57.48	74.00	-16.52	43.65	13.83	Peak	254	115

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

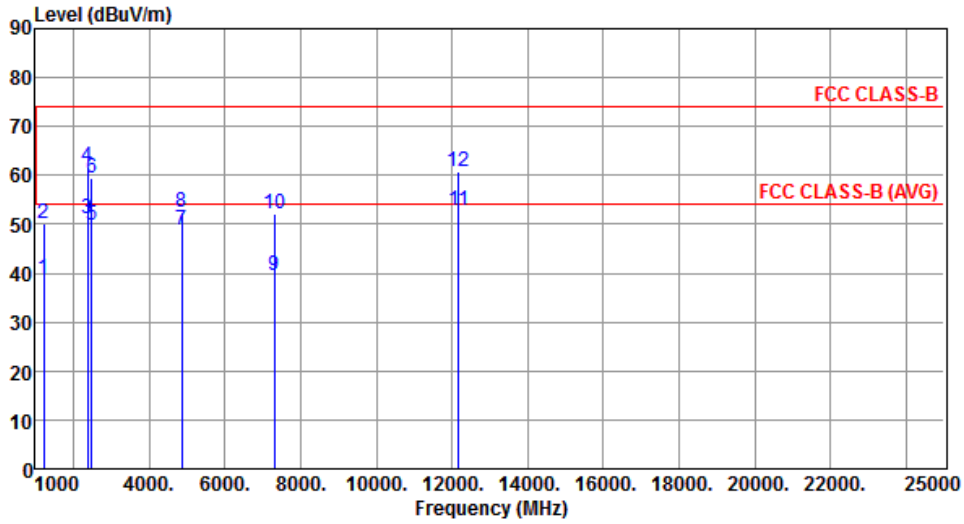
Modulation	11b	Test Freq. (MHz)	2412
Polarization	Vertical		



	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	43.43	54.00	-10.57	46.25	-2.82	Average	105	101
2	2390.00	53.63	74.00	-20.37	56.45	-2.82	Peak	105	101
3	4824.00	46.69	54.00	-7.31	43.14	3.55	Average	101	155
4	4824.00	49.74	74.00	-24.26	46.19	3.55	Peak	101	155
5	12060.00	46.08	54.00	-7.92	32.25	13.83	Average	358	302
6	12060.00	57.06	74.00	-16.94	43.23	13.83	Peak	358	302

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).

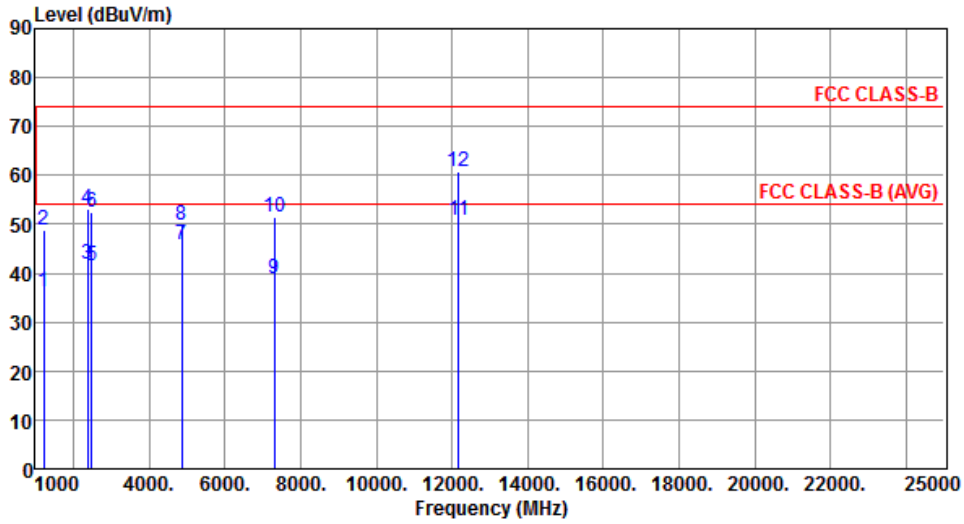
Modulation	11b	Test Freq. (MHz)	2437
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1218.50	39.00	54.00	-15.00	46.93	-7.93	Average	103	340
2	1218.50	50.05	74.00	-23.95	57.98	-7.93	Peak	103	340
3	2390.00	51.12	54.00	-2.88	53.94	-2.82	Average	212	111
4	2390.00	61.66	74.00	-12.34	64.48	-2.82	Peak	212	111
5	2483.50	49.83	54.00	-4.17	52.79	-2.96	Average	212	111
6	2483.50	59.39	74.00	-14.61	62.35	-2.96	Peak	212	111
7	4874.00	48.76	54.00	-5.24	45.17	3.59	Average	100	65
8	4874.00	52.36	74.00	-21.64	48.77	3.59	Peak	100	65
9	7311.00	39.37	54.00	-14.63	30.18	9.19	Average	133	12
10	7311.00	52.02	74.00	-21.98	42.83	9.19	Peak	133	12
11	12185.00	52.92	54.00	-1.08	39.03	13.89	Average	238	108
12	12185.00	60.89	74.00	-13.11	47.00	13.89	Peak	238	108

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).

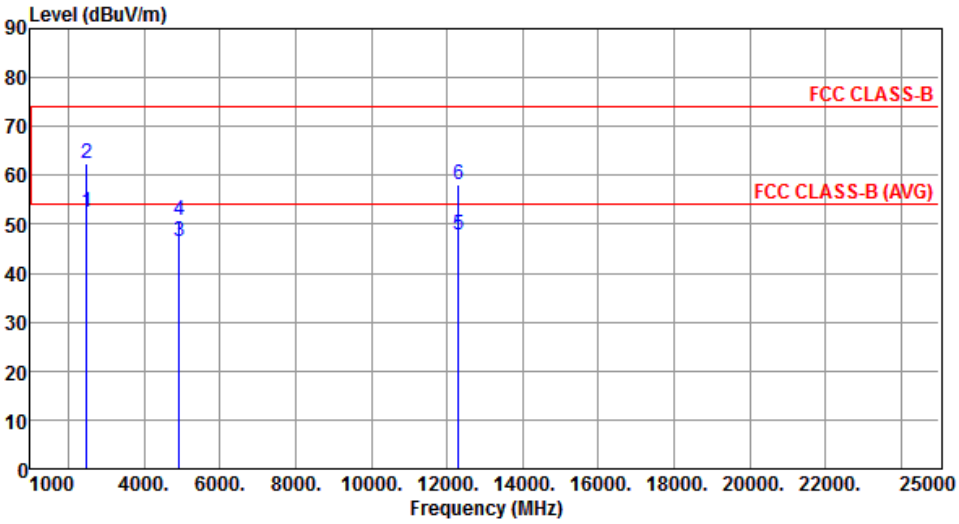
Modulation	11b	Test Freq. (MHz)	2437
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1218.50	36.31	54.00	-17.69	44.24	-7.93	Average	100	166
2	1218.50	48.87	74.00	-25.13	56.80	-7.93	Peak	100	166
3	2390.00	41.70	54.00	-12.30	44.52	-2.82	Average	108	100
4	2390.00	53.02	74.00	-20.98	55.84	-2.82	Peak	108	100
5	2483.50	41.53	54.00	-12.47	44.49	-2.96	Average	108	100
6	2483.50	52.63	74.00	-21.37	55.59	-2.96	Peak	108	100
7	4874.00	45.71	54.00	-8.29	42.12	3.59	Average	101	162
8	4874.00	49.92	74.00	-24.08	46.33	3.59	Peak	101	162
9	7311.00	38.98	54.00	-15.02	29.79	9.19	Average	100	177
10	7311.00	51.54	74.00	-22.46	42.35	9.19	Peak	100	177
11	12185.00	50.77	54.00	-3.23	36.88	13.89	Average	381	342
12	12185.00	60.80	74.00	-13.20	46.91	13.89	Peak	381	342

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

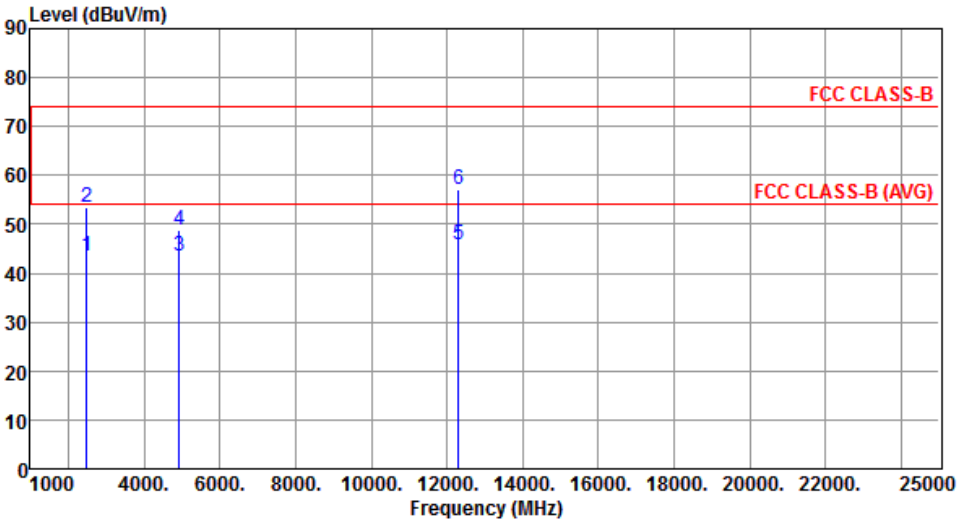
Modulation	11b	Test Freq. (MHz)	2462
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	52.53	54.00	-1.47	55.49	-2.96	Average	208	114
2	2483.50	62.33	74.00	-11.67	65.29	-2.96	Peak	208	114
3	4924.00	46.40	54.00	-7.60	42.71	3.69	Average	100	100
4	4924.00	50.74	74.00	-23.26	47.05	3.69	Peak	102	94
5	12310.00	47.85	54.00	-6.15	34.01	13.84	Average	252	109
6	12310.00	58.15	74.00	-15.85	44.31	13.84	Peak	252	109

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		

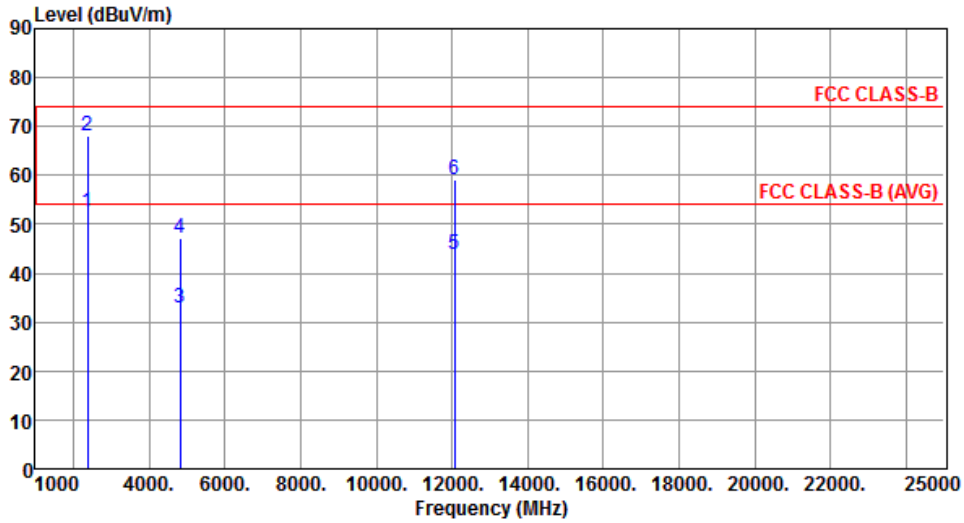


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	43.41	54.00	-10.59	46.37	-2.96	Average	106	105
2	2483.50	53.37	74.00	-20.63	56.33	-2.96	Peak	106	105
3	4924.00	43.35	54.00	-10.65	39.66	3.69	Average	101	163
4	4924.00	48.91	74.00	-25.09	45.22	3.69	Peak	101	163
5	12310.00	45.84	54.00	-8.16	32.00	13.84	Average	388	345
6	12310.00	56.99	74.00	-17.01	43.15	13.84	Peak	388	345

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

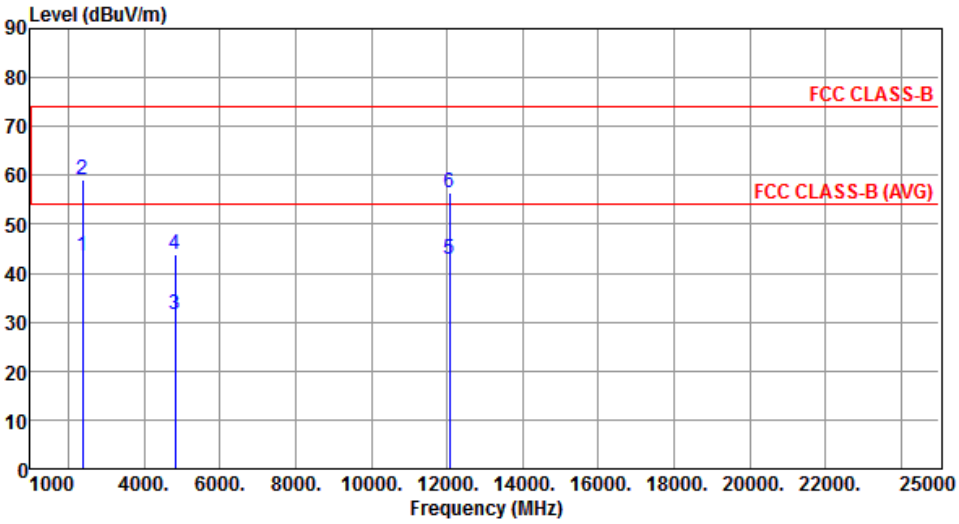
Modulation	11g	Test Freq. (MHz)	2412
Polarization	Horizontal		



	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	52.56	54.00	-1.44	55.38	-2.82	Average	217	113
2	2390.00	68.06	74.00	-5.94	70.88	-2.82	Peak	217	113
3	4824.00	32.75	54.00	-21.25	29.20	3.55	Average	188	86
4	4824.00	46.99	74.00	-27.01	43.44	3.55	Peak	188	86
5	12060.00	43.95	54.00	-10.05	30.12	13.83	Average	195	105
6	12060.00	59.09	74.00	-14.91	45.26	13.83	Peak	195	105

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).

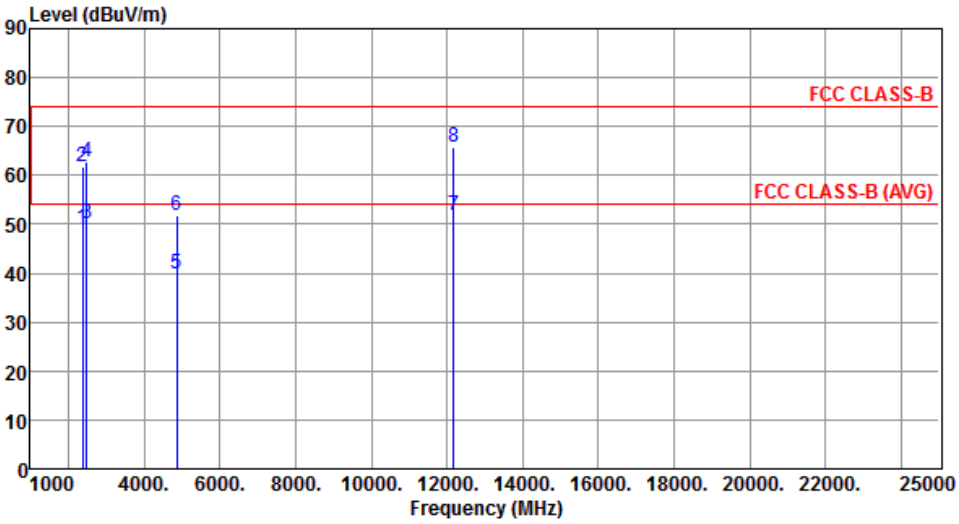
Modulation	11g	Test Freq. (MHz)	2412
Polarization	Vertical		



	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	43.62	54.00	-10.38	46.44	-2.82	Average	105	102
2	2390.00	59.16	74.00	-14.84	61.98	-2.82	Peak	105	102
3	4824.00	31.69	54.00	-22.31	28.14	3.55	Average	100	20
4	4824.00	43.89	74.00	-30.11	40.34	3.55	Peak	100	20
5	12060.00	42.98	54.00	-11.02	29.15	13.83	Average	100	60
6	12060.00	56.39	74.00	-17.61	42.56	13.83	Peak	100	60

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

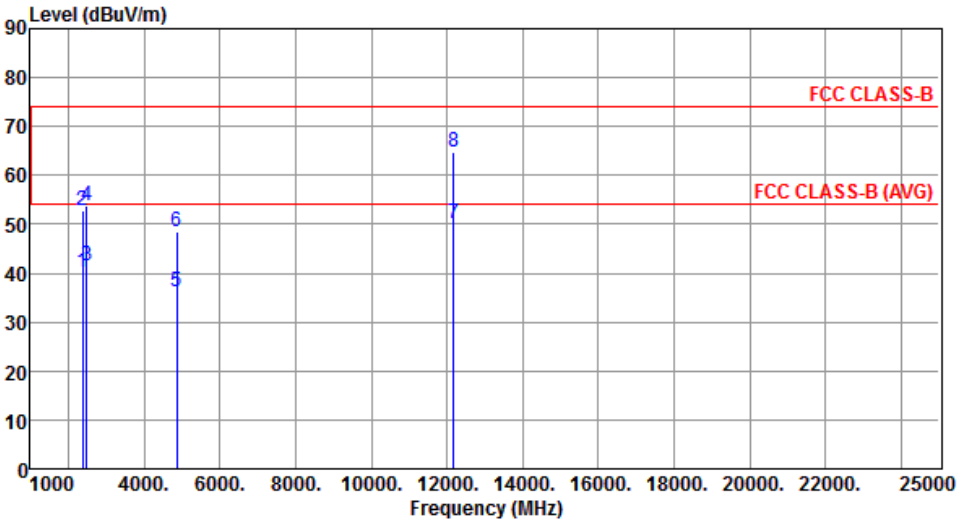
Modulation	11g	Test Freq. (MHz)	2437
Polarization	Horizontal		



	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	49.27	54.00	-4.73	52.09	-2.82	Average	211	115
2	2390.00	61.68	74.00	-12.32	64.50	-2.82	Peak	211	115
3	2483.50	50.23	54.00	-3.77	53.19	-2.96	Average	100	115
4	2483.50	62.89	74.00	-11.11	65.85	-2.96	Peak	100	115
5	4874.00	39.69	54.00	-14.31	36.10	3.59	Average	192	85
6	4874.00	51.77	74.00	-22.23	48.18	3.59	Peak	192	85
7	12185.00	51.78	54.00	-2.22	37.89	13.89	Average	193	104
8	12185.00	65.60	74.00	-8.40	51.71	13.89	Peak	193	104

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).

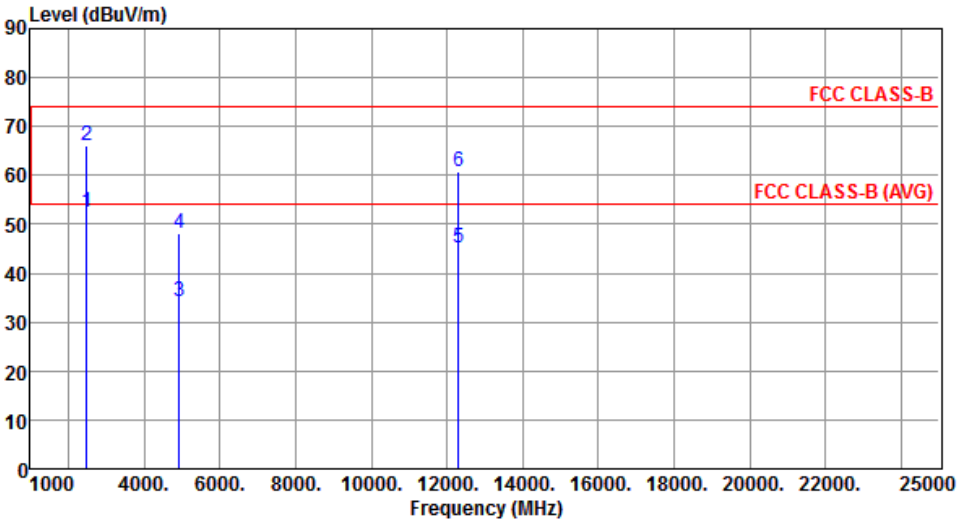
Modulation	11g	Test Freq. (MHz)	2437
Polarization	Vertical		



	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	40.33	54.00	-13.67	43.15	-2.82	Average	105	103
2	2390.00	52.87	74.00	-21.13	55.69	-2.82	Peak	105	103
3	2483.50	41.41	54.00	-12.59	44.37	-2.96	Average	105	103
4	2483.50	53.81	74.00	-20.19	56.77	-2.96	Peak	105	103
5	4874.00	36.18	54.00	-17.82	32.59	3.59	Average	105	163
6	4874.00	48.55	74.00	-25.45	44.96	3.59	Peak	105	163
7	12185.00	49.98	54.00	-4.02	36.09	13.89	Average	382	325
8	12185.00	64.81	74.00	-9.19	50.92	13.89	Peak	382	325

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

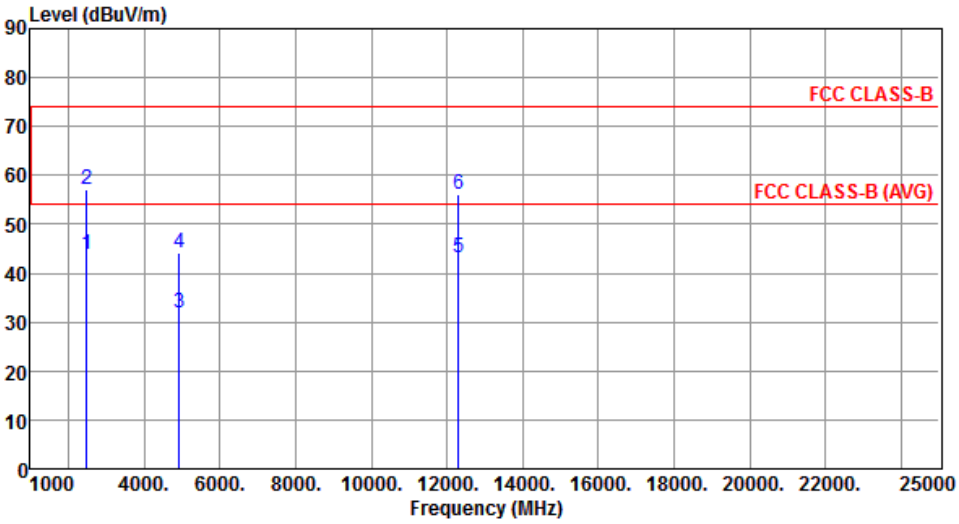
Modulation	11g	Test Freq. (MHz)	2462
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	52.61	54.00	-1.39	55.57	-2.96	Average	122	110
2	2483.50	66.02	74.00	-7.98	68.98	-2.96	Peak	122	110
3	4924.00	34.37	54.00	-19.63	30.68	3.69	Average	195	87
4	4924.00	48.08	74.00	-25.92	44.39	3.69	Peak	195	87
5	12310.00	45.28	54.00	-8.72	31.44	13.84	Average	195	106
6	12310.00	60.80	74.00	-13.20	46.96	13.84	Peak	195	106

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		

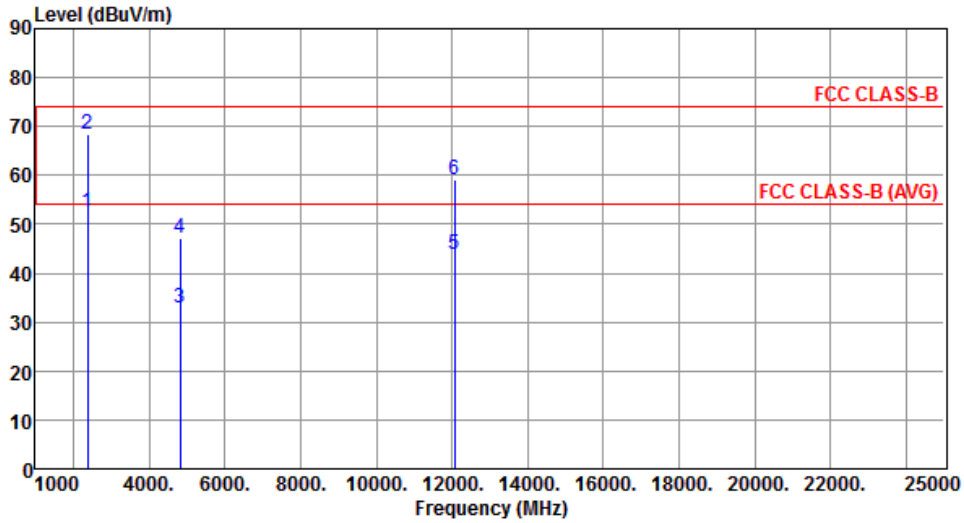


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	43.91	54.00	-10.09	46.87	-2.96	Average	103	104
2	2483.50	57.15	74.00	-16.85	60.11	-2.96	Peak	103	104
3	4924.00	31.95	54.00	-22.05	28.26	3.69	Average	100	40
4	4924.00	44.27	74.00	-29.73	40.58	3.69	Peak	100	40
5	12310.00	43.01	54.00	-10.99	29.17	13.84	Average	100	100
6	12310.00	56.28	74.00	-17.72	42.44	13.84	Peak	100	100

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

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

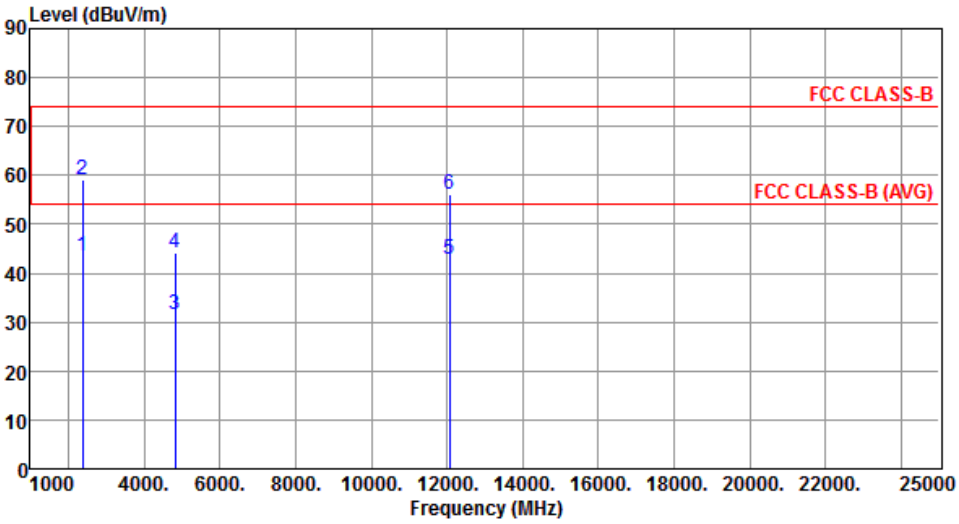
Modulation	HT20	**Test Freq. (MHz)**	2412
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	52.58	54.00	-1.42	55.40	-2.82	Average	214	110
2	2390.00	68.48	74.00	-5.52	71.30	-2.82	Peak	214	110
3	4824.00	32.72	54.00	-21.28	29.17	3.55	Average	189	87
4	4824.00	47.15	74.00	-26.85	43.60	3.55	Peak	189	87
5	12060.00	43.89	54.00	-10.11	30.06	13.83	Average	196	106
6	12060.00	59.14	74.00	-14.86	45.31	13.83	Peak	196	106

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).

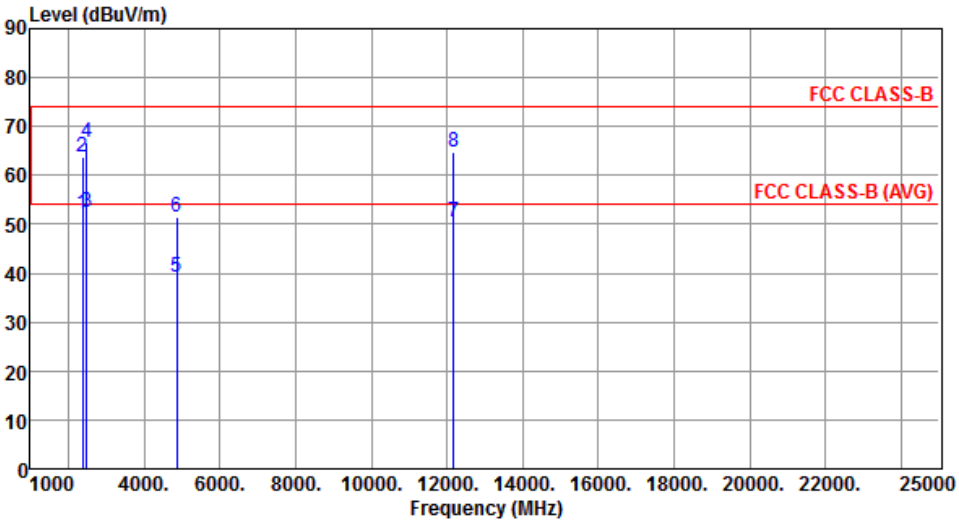
Modulation	HT20	Test Freq. (MHz)	2412
Polarization	Vertical		



	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	43.54	54.00	-10.46	46.36	-2.82	Average	106	105
2	2390.00	59.06	74.00	-14.94	61.88	-2.82	Peak	106	105
3	4824.00	31.69	54.00	-22.31	28.14	3.55	Average	100	30
4	4824.00	44.10	74.00	-29.90	40.55	3.55	Peak	100	30
5	12060.00	43.00	54.00	-11.00	29.17	13.83	Average	100	80
6	12060.00	56.26	74.00	-17.74	42.43	13.83	Peak	100	80

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

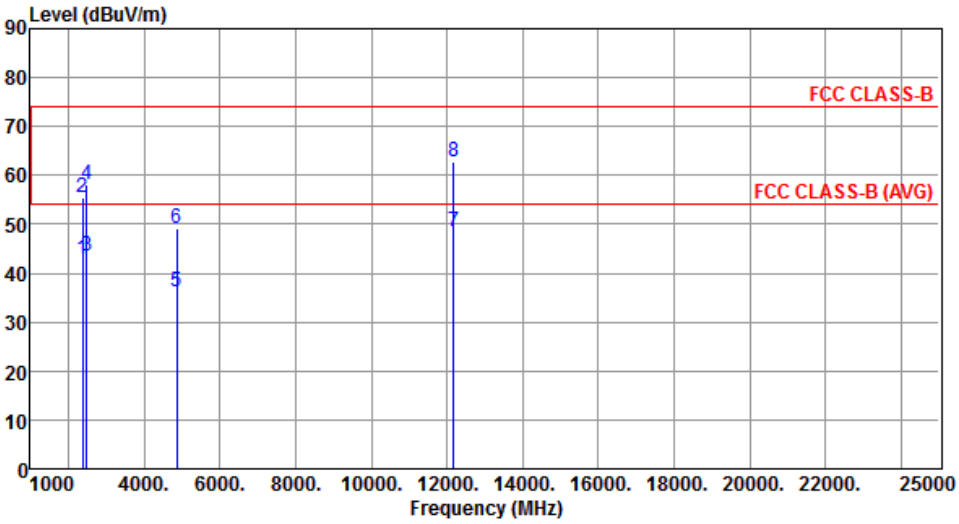
Modulation	HT20	Test Freq. (MHz)	2437
Polarization	Horizontal		



	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	52.04	54.00	-1.96	54.86	-2.82	Average	211	113
2	2390.00	63.75	74.00	-10.25	66.57	-2.82	Peak	211	113
3	2483.50	52.36	54.00	-1.64	55.32	-2.96	Average	211	113
4	2483.50	66.73	74.00	-7.27	69.69	-2.96	Peak	211	113
5	4874.00	39.15	54.00	-14.85	35.56	3.59	Average	195	87
6	4874.00	51.60	74.00	-22.40	48.01	3.59	Peak	195	87
7	12185.00	50.60	54.00	-3.40	36.71	13.89	Average	251	114
8	12185.00	64.67	74.00	-9.33	50.78	13.89	Peak	251	114

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).

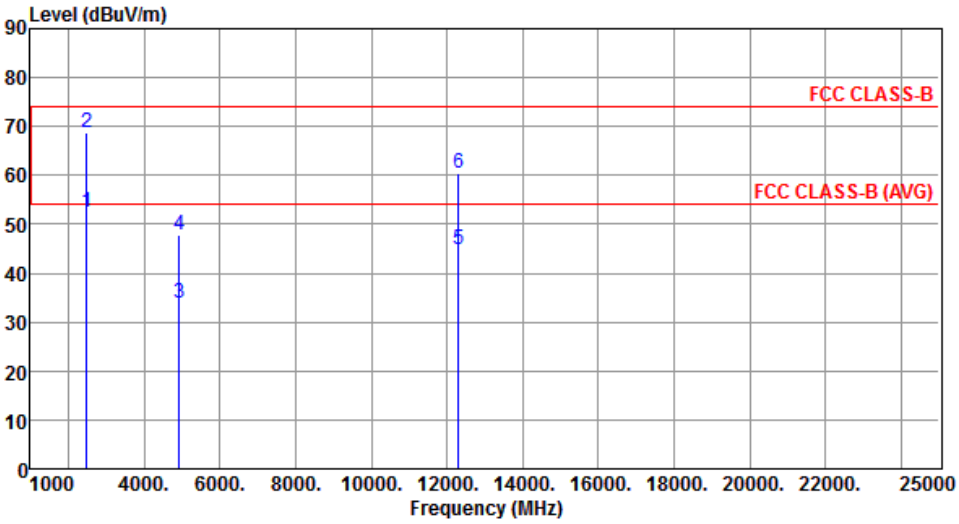
Modulation	HT20	Test Freq. (MHz)	2437
Polarization	Vertical		



	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	42.96	54.00	-11.04	45.78	-2.82	Average	100	105
2	2390.00	55.33	74.00	-18.67	58.15	-2.82	Peak	100	105
3	2483.50	43.52	54.00	-10.48	46.48	-2.96	Average	100	105
4	2483.50	58.28	74.00	-15.72	61.24	-2.96	Peak	100	105
5	4874.00	36.06	54.00	-17.94	32.47	3.59	Average	101	165
6	4874.00	49.10	74.00	-24.90	45.51	3.59	Peak	101	165
7	12185.00	48.45	54.00	-5.55	34.56	13.89	Average	388	345
8	12185.00	62.85	74.00	-11.15	48.96	13.89	Peak	388	345

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

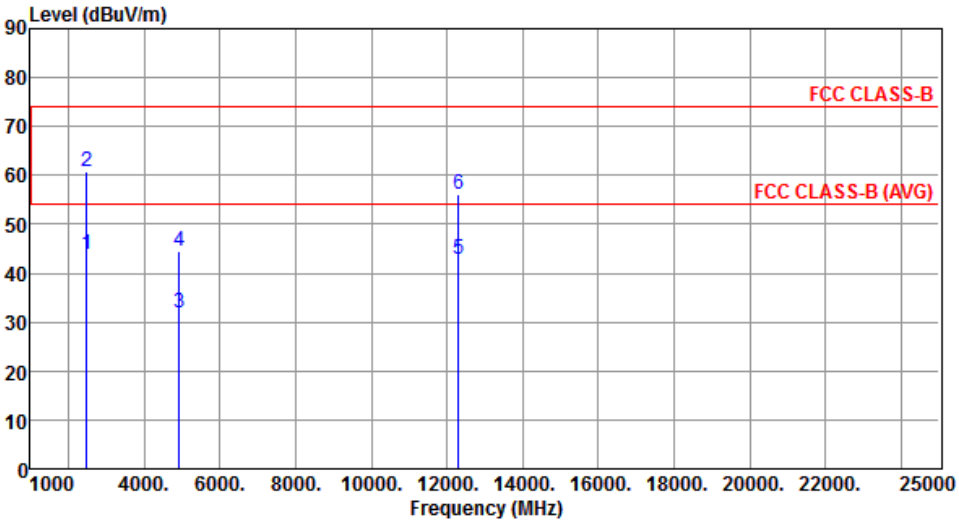
Modulation	HT20	Test Freq. (MHz)	2462
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	52.51	54.00	-1.49	55.47	-2.96	Average	203	114
2	2483.50	68.75	74.00	-5.25	71.71	-2.96	Peak	203	114
3	4924.00	33.81	54.00	-20.19	30.12	3.69	Average	196	88
4	4924.00	47.72	74.00	-26.28	44.03	3.69	Peak	196	88
5	12310.00	44.85	54.00	-9.15	31.01	13.84	Average	196	107
6	12310.00	60.40	74.00	-13.60	46.56	13.84	Peak	196	107

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		

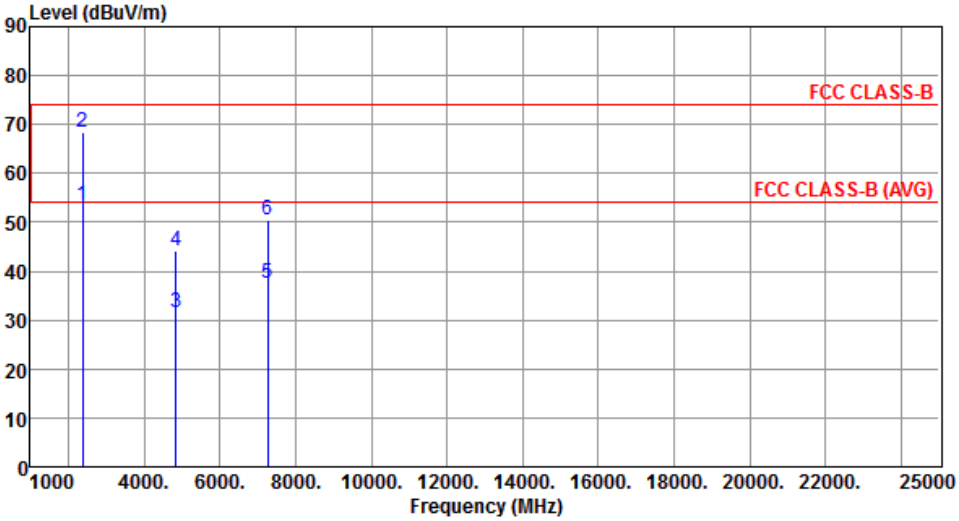


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	43.72	54.00	-10.28	46.68	-2.96	Average	109	104
2	2483.50	60.61	74.00	-13.39	63.57	-2.96	Peak	109	104
3	4924.00	31.85	54.00	-22.15	28.16	3.69	Average	100	50
4	4924.00	44.38	74.00	-29.62	40.69	3.69	Peak	100	50
5	12310.00	42.88	54.00	-11.12	29.04	13.84	Average	100	60
6	12310.00	56.19	74.00	-17.81	42.35	13.84	Peak	100	60

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

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

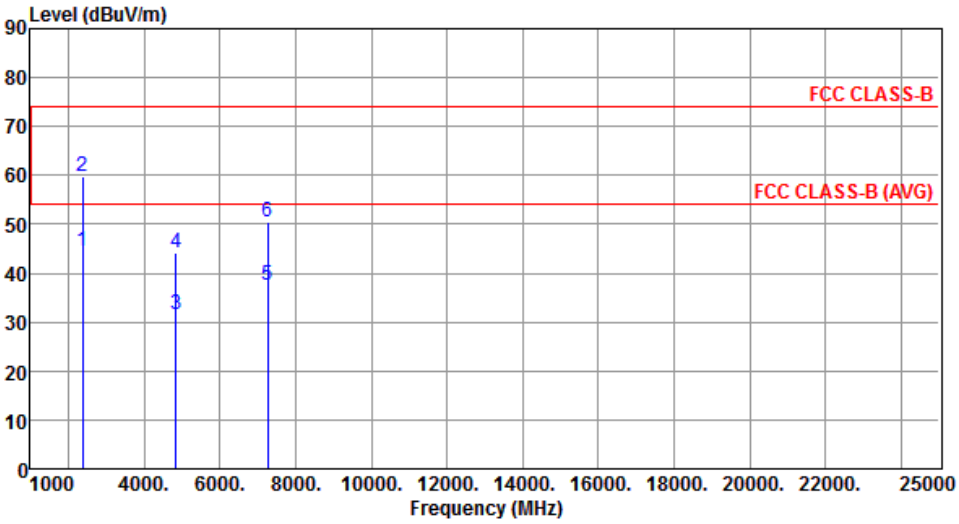
Modulation	HT40	Test Freq. (MHz)	2422
Polarization	Horizontal		



	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	53.60	54.00	-0.40	56.42	-2.82	Average	213	85
2	2390.00	68.46	74.00	-5.54	71.28	-2.82	Peak	213	85
3	4844.00	31.68	54.00	-22.32	28.12	3.56	Average	100	30
4	4844.00	44.09	74.00	-29.91	40.53	3.56	Peak	100	30
5	7266.00	37.68	54.00	-16.32	28.45	9.23	Average	100	40
6	7266.00	50.49	74.00	-23.51	41.26	9.23	Peak	100	40

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

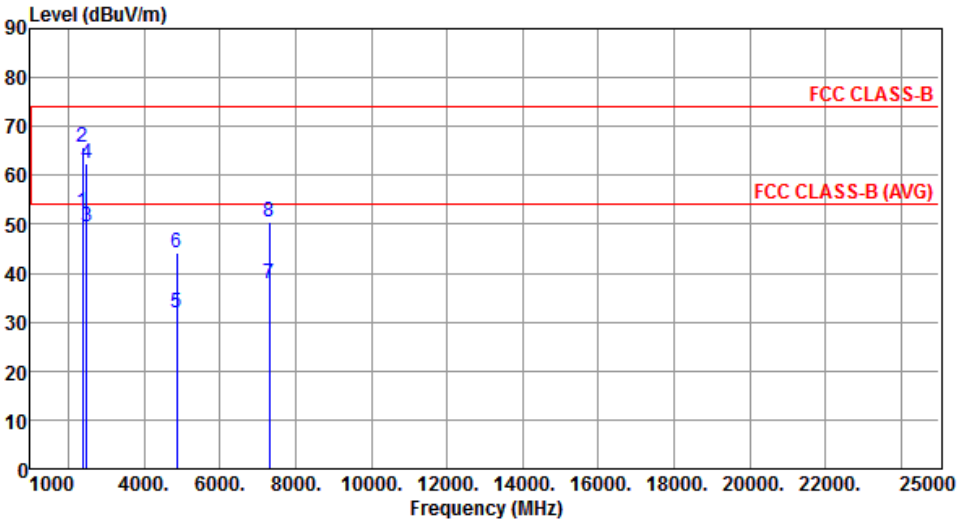
Modulation	HT40	Test Freq. (MHz)	2422
Polarization	Vertical		



	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	44.54	54.00	-9.46	47.36	-2.82	Average	106	101
2	2390.00	59.66	74.00	-14.34	62.48	-2.82	Peak	106	101
3	4844.00	31.71	54.00	-22.29	28.15	3.56	Average	100	40
4	4844.00	44.05	74.00	-29.95	40.49	3.56	Peak	100	40
5	7266.00	37.54	54.00	-16.46	28.31	9.23	Average	100	20
6	7266.00	50.54	74.00	-23.46	41.31	9.23	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).

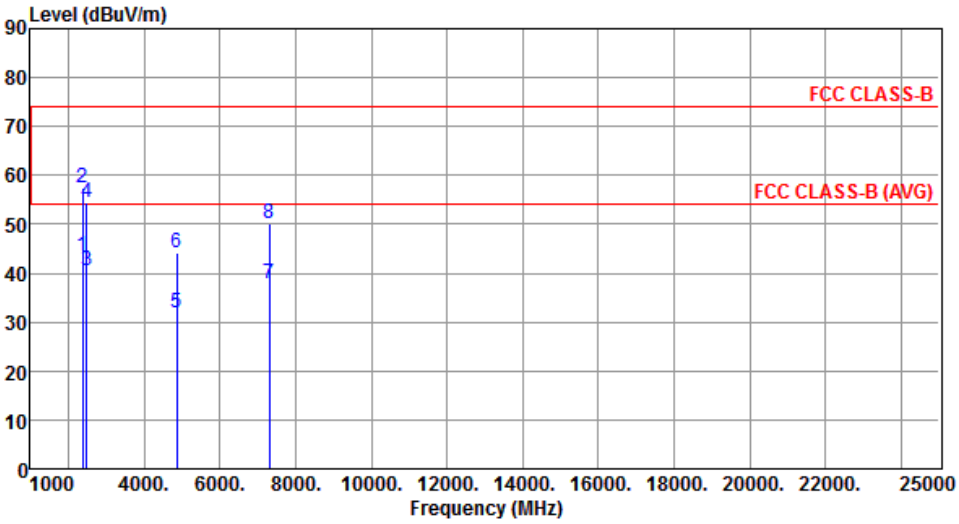
Modulation	HT40	Test Freq. (MHz)	2437
Polarization	Horizontal		



	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	52.63	54.00	-1.37	55.45	-2.82	Average	211	115
2	2390.00	65.89	74.00	-8.11	68.71	-2.82	Peak	211	115
3	2483.50	49.33	54.00	-4.67	52.29	-2.96	Average	211	115
4	2483.50	62.39	74.00	-11.61	65.35	-2.96	Peak	211	115
5	4874.00	31.85	54.00	-22.15	28.26	3.59	Average	100	80
6	4874.00	44.15	74.00	-29.85	40.56	3.59	Peak	100	80
7	7311.00	37.83	54.00	-16.17	28.64	9.19	Average	100	20
8	7311.00	50.43	74.00	-23.57	41.24	9.19	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).

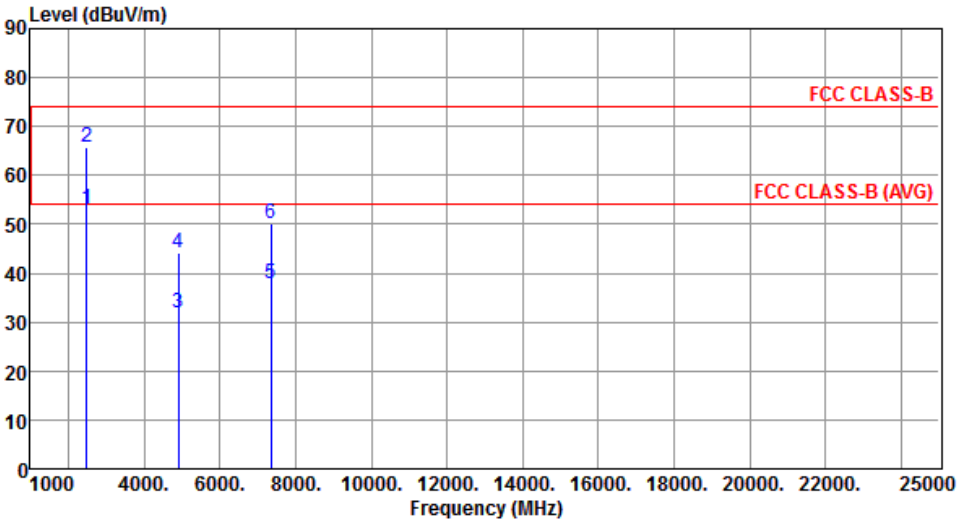
Modulation	HT40	Test Freq. (MHz)	2437
Polarization	Vertical		



	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	43.56	54.00	-10.44	46.38	-2.82	Average	106	102
2	2390.00	57.43	74.00	-16.57	60.25	-2.82	Peak	106	102
3	2483.50	40.52	54.00	-13.48	43.48	-2.96	Average	106	102
4	2483.50	54.51	74.00	-19.49	57.47	-2.96	Peak	106	102
5	4874.00	31.92	54.00	-22.08	28.33	3.59	Average	100	20
6	4874.00	44.11	74.00	-29.89	40.52	3.59	Peak	100	20
7	7311.00	37.73	54.00	-16.27	28.54	9.19	Average	100	40
8	7311.00	50.30	74.00	-23.70	41.11	9.19	Peak	100	40

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

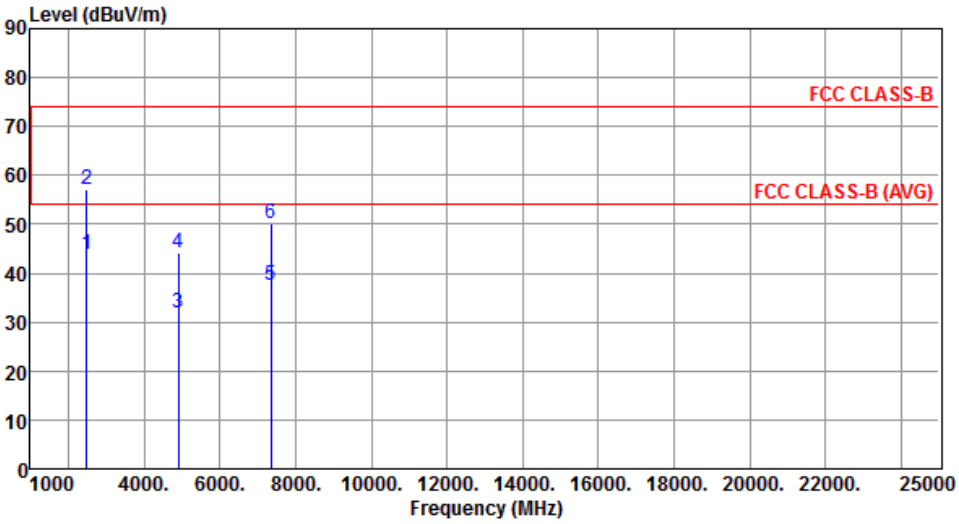
Modulation	HT40	Test Freq. (MHz)	2452
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	52.97	54.00	-1.03	55.93	-2.96	Average	203	116
2	2483.50	65.91	74.00	-8.09	68.87	-2.96	Peak	203	116
3	4904.00	31.84	54.00	-22.16	28.21	3.63	Average	100	50
4	4904.00	44.08	74.00	-29.92	40.45	3.63	Peak	100	50
5	7356.00	37.73	54.00	-16.27	28.67	9.06	Average	100	60
6	7356.00	50.29	74.00	-23.71	41.23	9.06	Peak	100	60

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

Modulation	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	43.90	54.00	-10.10	46.86	-2.96	Average	105	104
2	2483.50	57.21	74.00	-16.79	60.17	-2.96	Peak	105	104
3	4904.00	31.74	54.00	-22.26	28.11	3.63	Average	100	120
4	4904.00	44.20	74.00	-29.80	40.57	3.63	Peak	100	120
5	7356.00	37.61	54.00	-16.39	28.55	9.06	Average	100	40
6	7356.00	50.22	74.00	-23.78	41.16	9.06	Peak	100	40

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

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

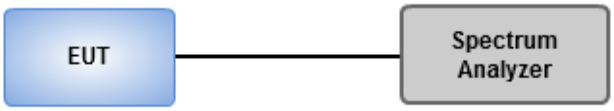
Reference level measurement

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

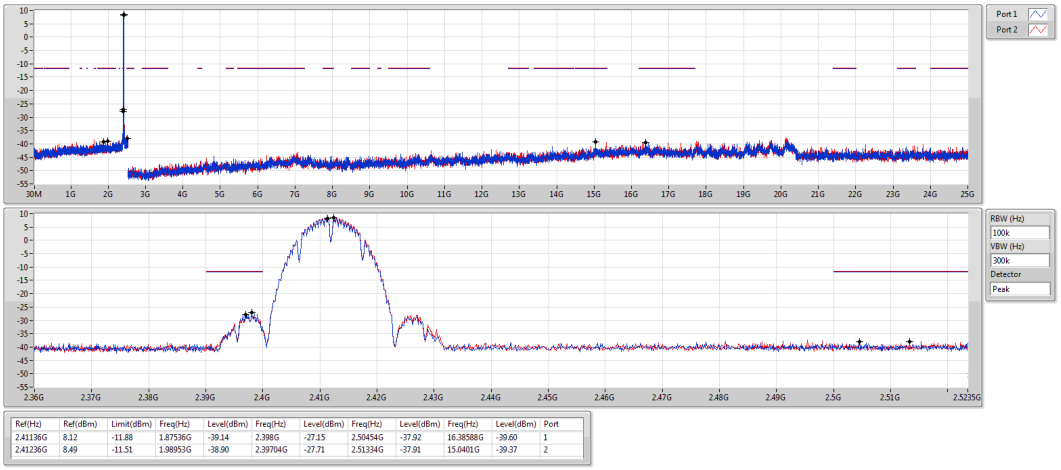
3.6.3 Test Setup



3.6.4 Unwanted Emissions into Non-Restricted Frequency Bands

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

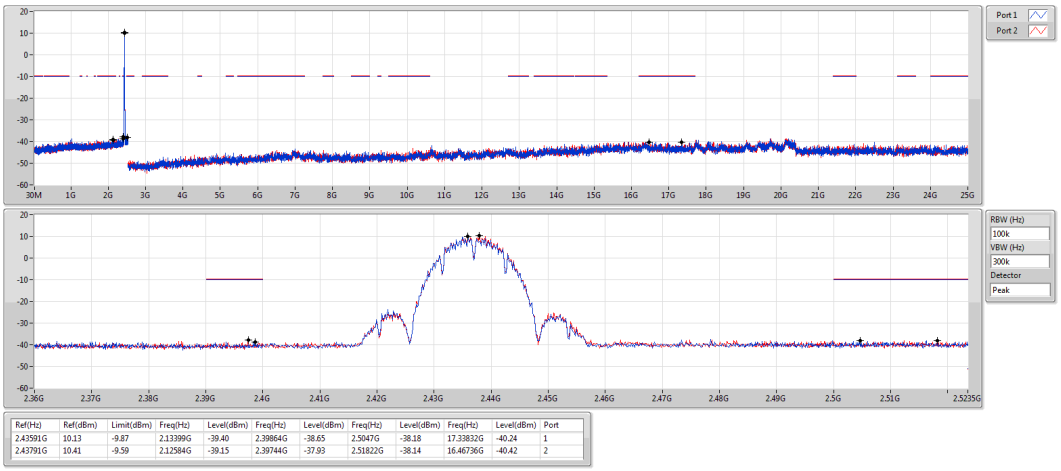
2412MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.41136G	8.12	-11.88	1.87536G	-39.14	2.398G	-27.15	2.50454G	-37.92	16.38588G	-39.60	1
2.41236G	8.49	-11.51	1.98953G	-38.90	2.39704G	-27.71	2.51334G	-37.91	15.0401G	-39.37	2

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

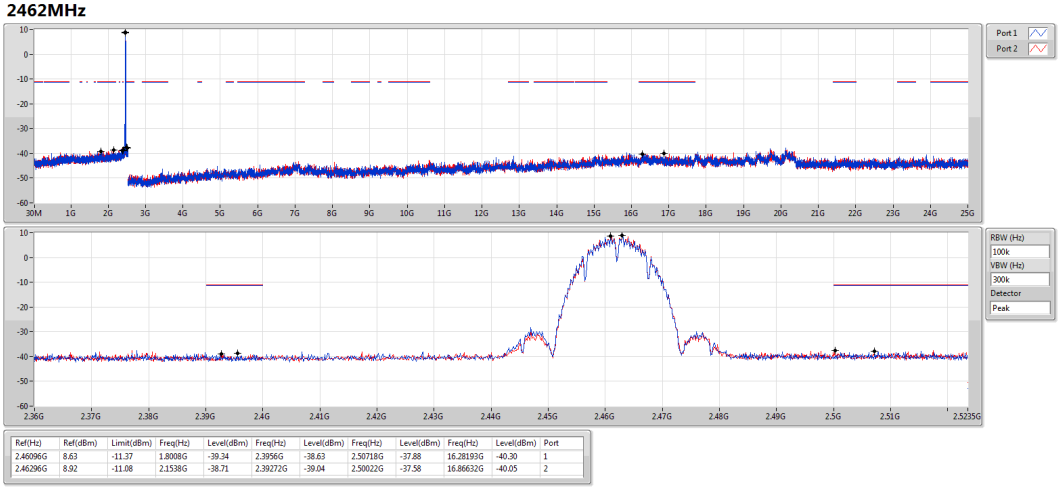
2437MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43591G	10.13	-9.87	2.13399G	-39.40	2.39864G	-38.65	2.5047G	-38.18	17.33832G	-40.24	1
2.43791G	10.41	-9.59	2.12584G	-39.15	2.39744G	-37.93	2.51822G	-38.14	16.46736G	-40.42	2

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

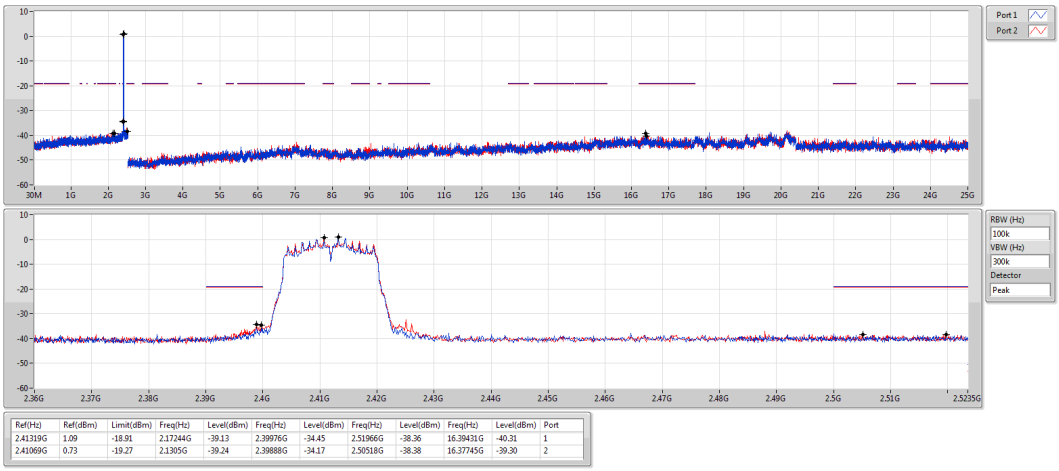
2462MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.46096G	8.63	-11.37	1.8008G	-39.34	2.3956G	-38.63	2.50718G	-37.88	16.28193G	-40.30	1
2.46296G	8.92	-11.08	2.1538G	-38.71	2.39272G	-39.04	2.50022G	-37.58	16.86632G	-40.05	2

802.11g_Nss1,(6Mbps)_2TX **CSE NdB**

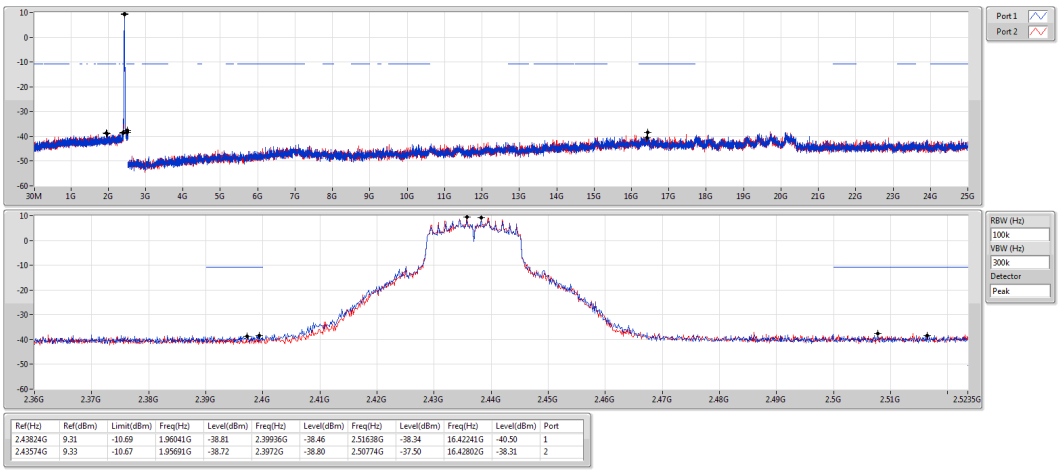
2412MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.41319G	1.09	-18.91	2.17244G	-39.13	2.39976G	-34.45	2.51966G	-38.36	16.39431G	-40.31	1
2.41069G	0.73	-19.27	2.1305G	-39.24	2.39888G	-34.17	2.50518G	-38.38	16.37745G	-39.30	2

802.11g_Nss1,(6Mbps)_2TX **CSE NdB**

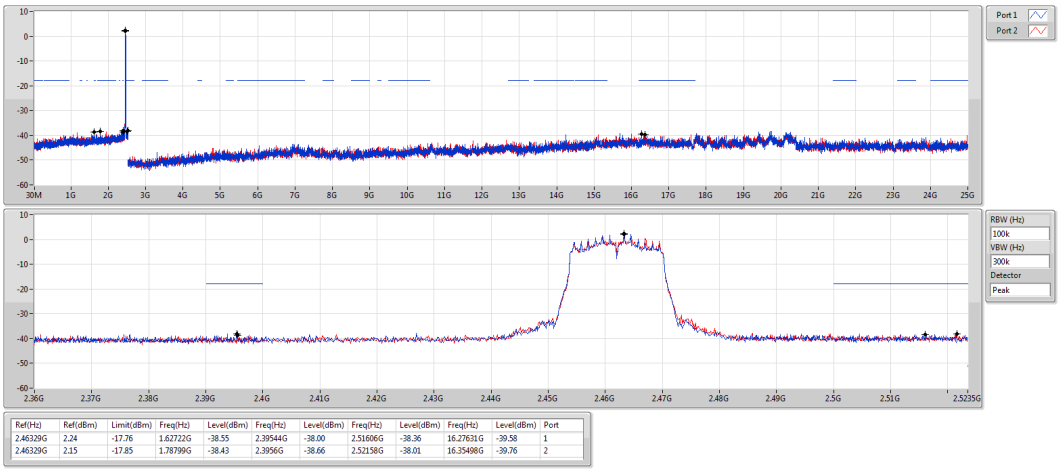
2437MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43824G	9.31	-10.69	1.96041G	-38.81	2.39936G	-38.46	2.51638G	-38.34	16.42241G	-40.50	1
2.43574G	9.33	-10.67	1.95691G	-38.72	2.3972G	-38.80	2.50774G	-37.50	16.42802G	-38.31	2

802.11g_Nss1,(6Mbps)_2TX **CSE NdB**

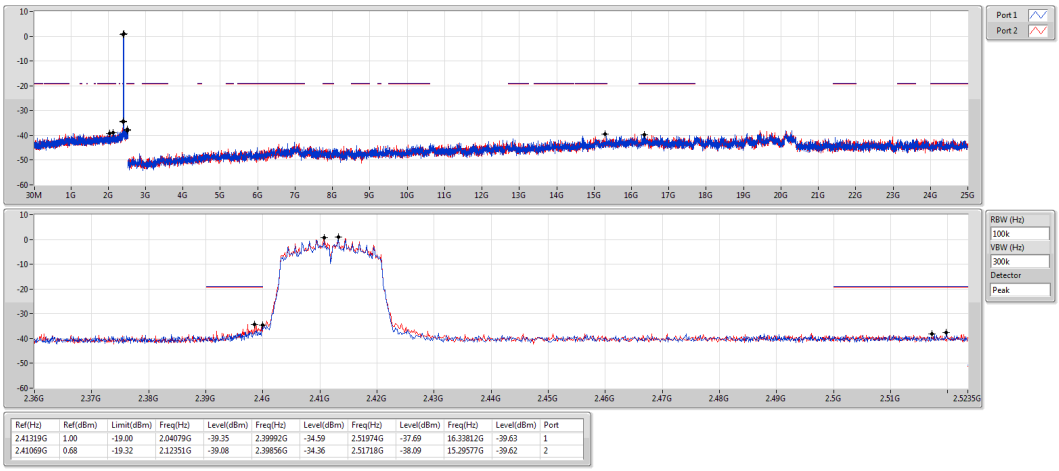
2462MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.46329G	2.24	-17.76	1.62722G	-38.55	2.39544G	-38.00	2.51606G	-38.36	16.27631G	-39.58	1
2.46329G	2.15	-17.85	1.78799G	-38.43	2.3956G	-38.66	2.52158G	-38.01	16.35498G	-39.76	2

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

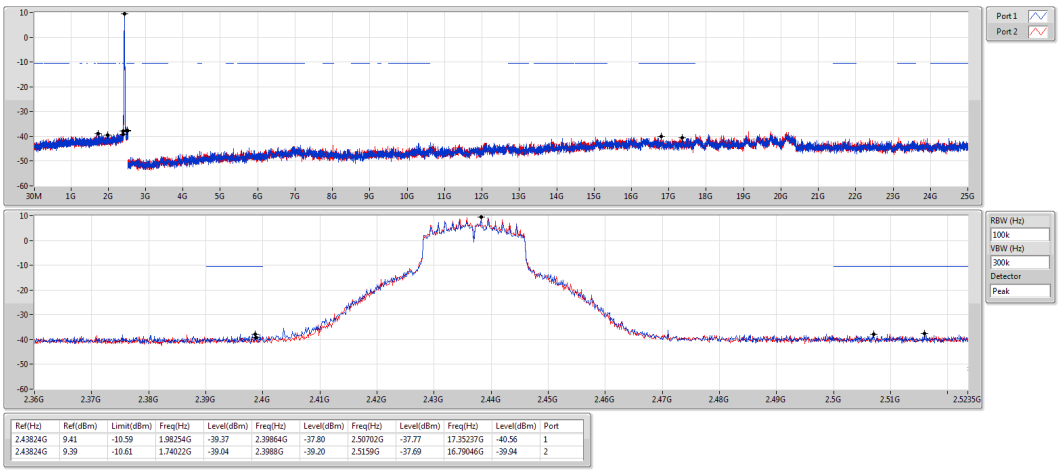
2412MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.41319G	1.00	-19.00	2.04079G	-39.35	2.39992G	-34.59	2.51974G	-37.69	16.33812G	-39.63	1
2.41069G	0.68	-19.32	2.12351G	-39.08	2.39856G	-34.36	2.51718G	-38.09	15.29577G	-39.62	2

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

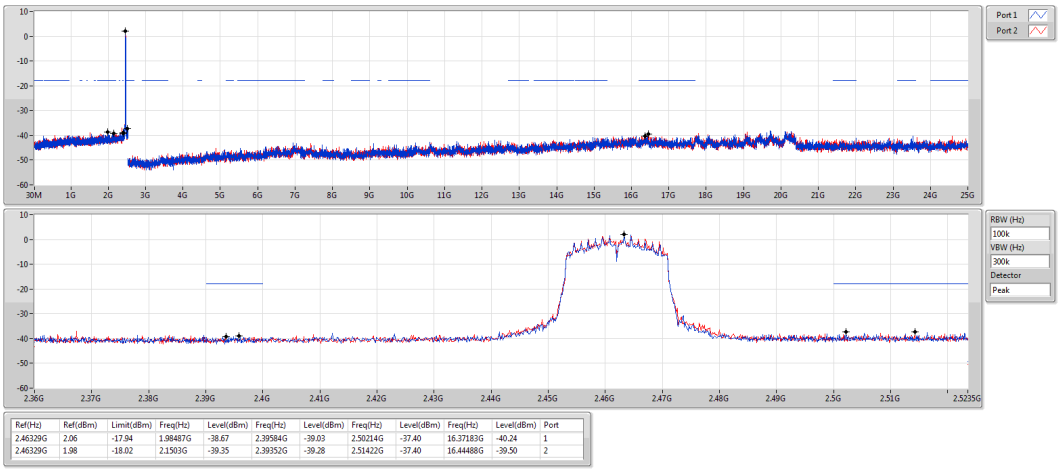
2437MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43824G	9.41	-10.59	1.98254G	-39.37	2.39864G	-37.80	2.50702G	-37.77	17.35237G	-40.56	1
2.43824G	9.39	-10.61	1.74022G	-39.04	2.3988G	-39.20	2.5159G	-37.69	16.79046G	-39.94	2

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

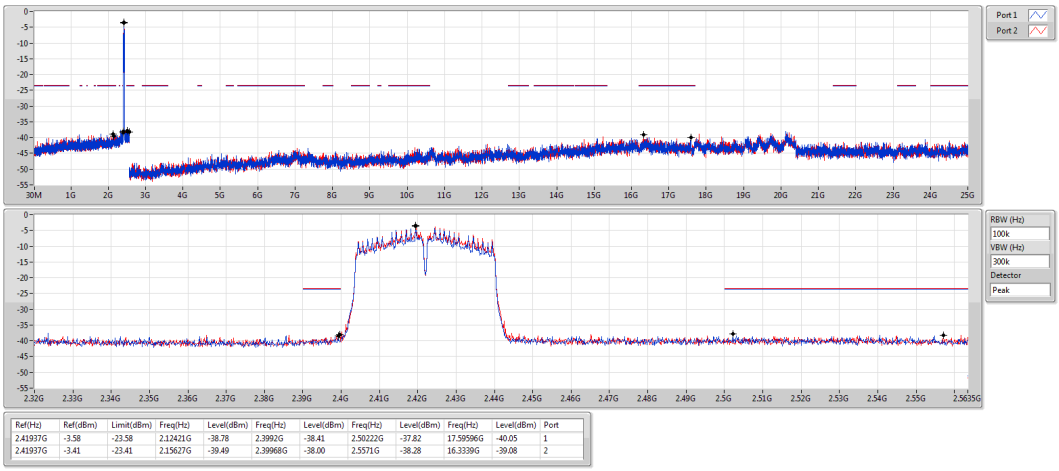
2462MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.46329G	2.06	-17.94	1.98487G	-38.67	2.39584G	-39.03	2.50214G	-37.40	16.37183G	-40.24	1
2.46329G	1.98	-18.02	2.1503G	-39.35	2.39352G	-39.28	2.51422G	-37.40	16.44488G	-39.50	2

802.11n HT40_Nss1,(MCS0)_2TX **CSE NdB**

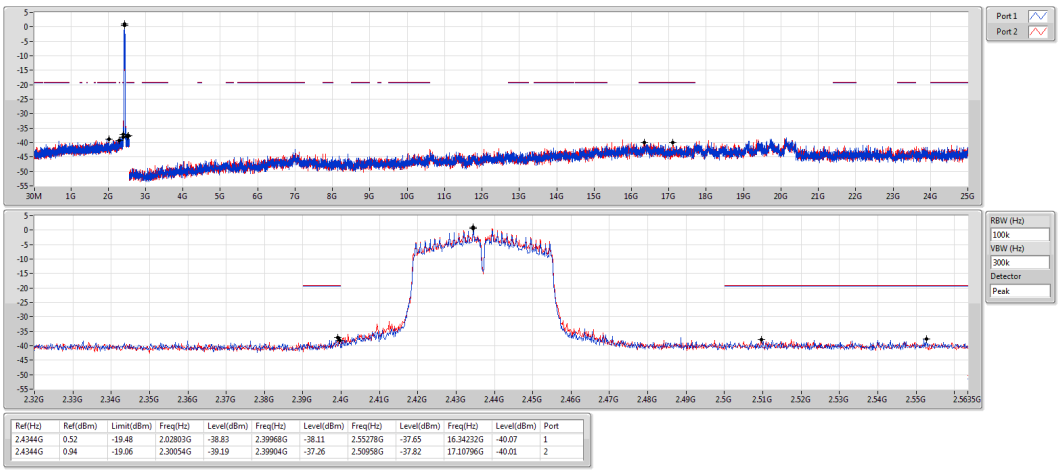
2422MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.41937G	-3.58	-23.58	2.12421G	-38.78	2.3992G	-38.41	2.50222G	-37.82	17.59596G	-40.05	1
2.41937G	-3.41	-23.41	2.15627G	-39.49	2.39968G	-38.00	2.5571G	-38.28	16.3339G	-39.08	2

802.11n HT40_Nss1,(MCS0)_2TX **CSE NdB**

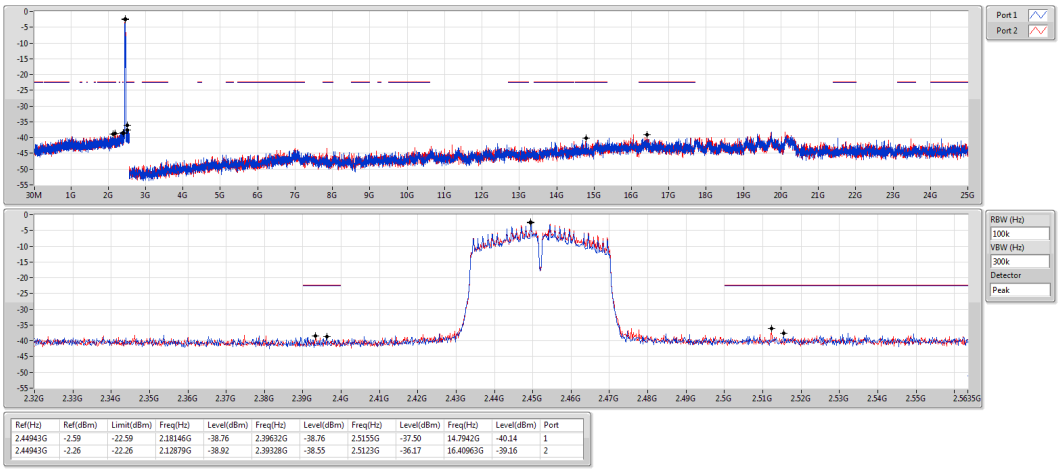
2437MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.4344G	0.52	-19.48	2.02803G	-38.83	2.39968G	-38.11	2.55278G	-37.65	16.34232G	-40.07	1
2.4344G	0.94	-19.06	2.30054G	-39.19	2.39904G	-37.26	2.50958G	-37.82	17.10796G	-40.01	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
2.44943G	-2.59	-22.59	2.18146G	-38.76	2.39632G	-38.76	2.5155G	-37.50	14.7942G	-40.14	1
2.44943G	-2.26	-22.26	2.12879G	-38.92	2.39328G	-38.55	2.5123G	-36.17	16.40963G	-39.16	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.

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Email: ICC_Service@icertifi.com.tw

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