FCC Test Report

FCC ID	:	**I8811AXAP2246E**
Equipment	:	**802.11ax (WiFi 6E) Triple-Radio Unified Pro Access Point**
Model No.	:	**WAX640S-6E**
Brand Name	:	**ZYXEL**
Applicant	:	**Zyxel Communications Corporation**
Address	:	**No.2 Industry East RD. IX, Hsinchu Science Park, Hsinchu 30075, Taiwan, R.O.C**
Standard	:	**47 CFR FCC Part 15.247**
Received Date	:	**May 10, 2022**
Tested Date	:	**May 10 ~ Jun. 21, 2022**

We, International Certification Corporation, 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 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**

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Release Record

Report No.	Version	Description	Issued Date
FR251701AC	Rev. 01	Initial issue	Aug. 02, 2022

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	AC Power Line Conducted Emission	[dBuV]: 0.168MHz 51.91 (Margin -13.17dB) - QP	Pass
15.247(d) 15.209	Unwanted Emissions	[dBuV/m at 3m]: 2483.50MHz 53.79 (Margin -0.21dB) - AV	Pass
15.247(b)(3)	Conducted Output Power	Max Power [dBm]: ***Non-beamforming mode*** 25.43 ***Beamforming mode*** 22.23	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
2400-2483.5	ax (HE20)	2412-2462	1-11 [11]	2	MCS 0-11
2400-2483.5	ax (HE40)	2422-2452	3-9 [7]	2	MCS 0-11
Note 1: RF output power specifies that Maximum Conducted (Average) Output Power. Note 2: DSSS-DBPSK, DQPSK, CCK modulation OFDM- BPSK, QPSK, 16QAM, 64QAM, 256QAM and 1024QAM modulation. Note 3: 802.11ax supports beamforming function.					

1.1.2 Antenna Details

Ant. No.	Brand / Model	Type	Connector	Antenna Gain (dBi)	Remark
1	DNI / P3	PIFA	UFL	1.20	-
2	DNI / P9	PIFA	UFL	1.14	

1.1.3 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	12Vdc from adapter 56Vdc from POE

Note: The above power supplies are not bundled in market.

1.1.4 Accessories

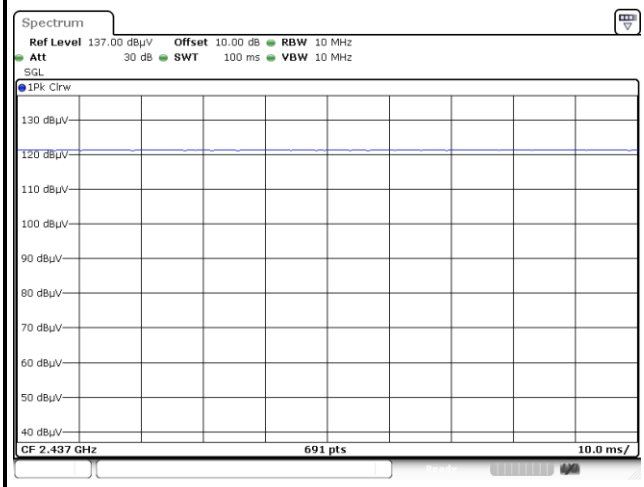
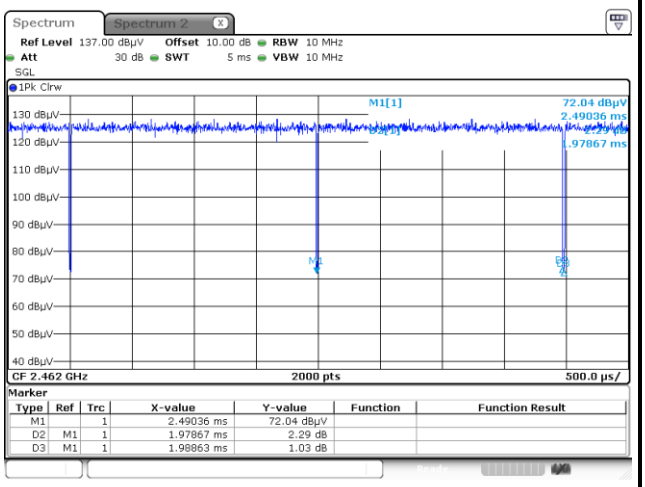
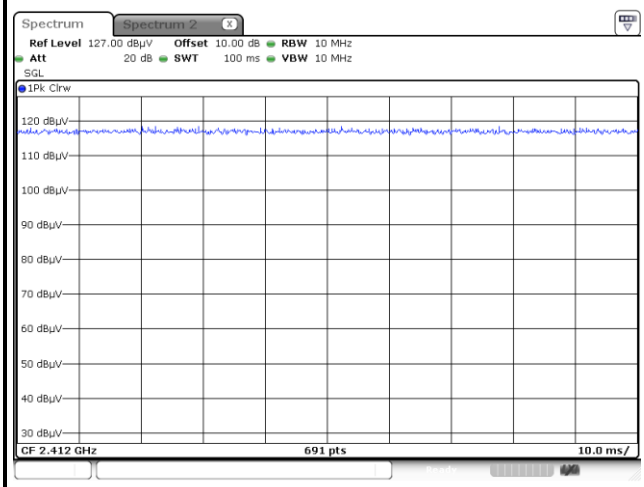
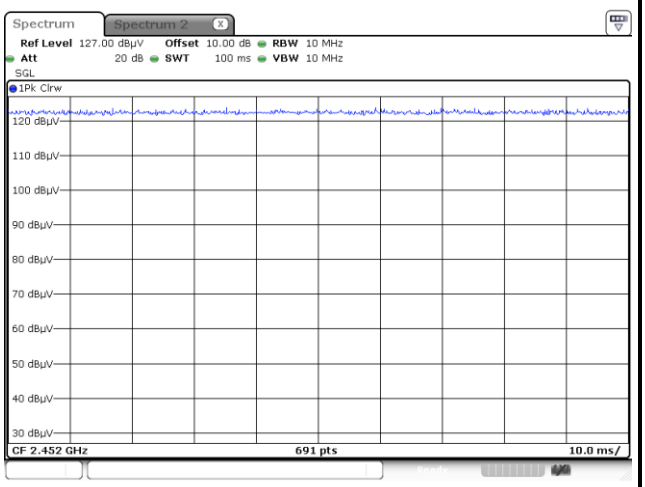
N/A

1.1.5 Channel List

Frequency band (MHz)		2400~2483.5	
802.11 b / g / n HT20 / ax HE20		802.11n HT40 / ax HE40	
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	QSPR, V5.0-00200		
Duty Cycle and Duty Factor	Mode	Duty Cycle (%)	Duty Factor (dB)
	11b	100.00%	0.00
	11g	99.50%	0.02
	ax HE20	100.00%	0.00
	ax HE40	100.00%	0.00

11b	11g
	
ax HE20	**ax HE40**
	

1.1.7 Power Index of Test Tool

Modulation Mode	Test Frequency (MHz)	Power Index
11b	2412	22.5
11b	2437	22.5
11b	2462	22.5
11g	2412	22.5
11g	2437	22.5
11g	2462	22.5
ax HE20	2412	22.5
ax HE20	2437	22.5
ax HE20	2462	22.5
ax HE40	2422	22.5
ax HE40	2437	22.5
ax HE40	2452	21

1.2 Local Support Equipment List

Adapter mode

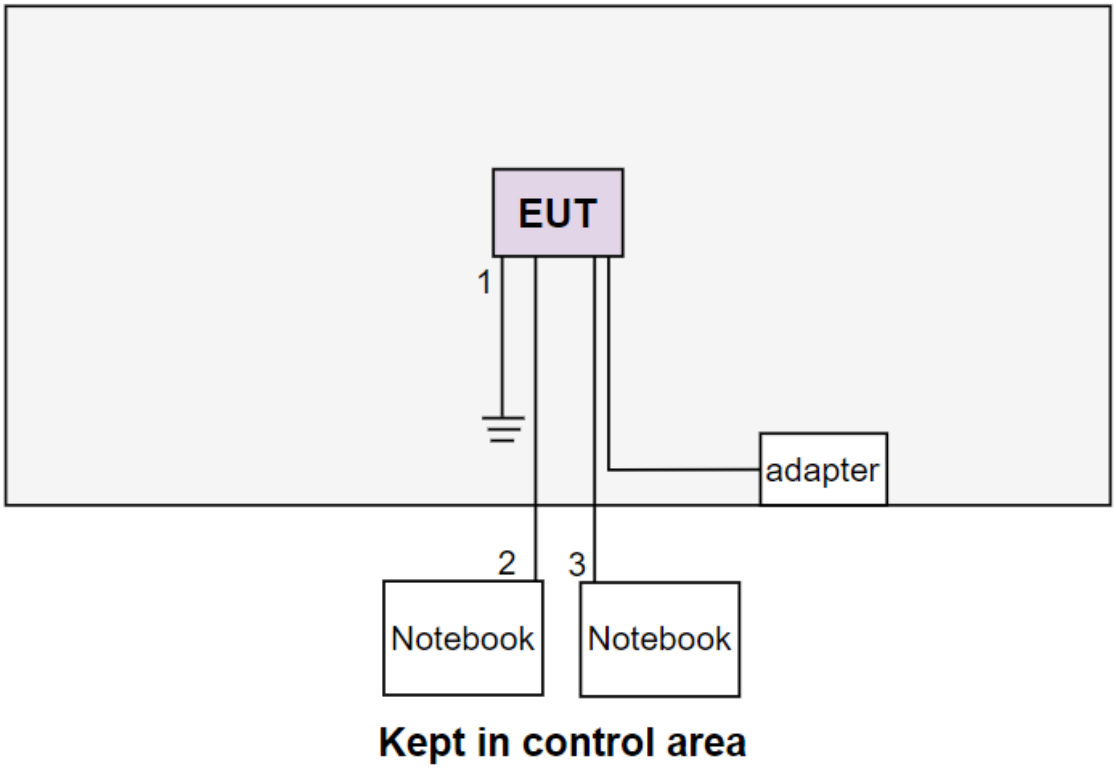
Support Equipment List					
No.	**Equipment**	**Brand**	**Model**	**FCC ID**	**Remarks**
1	Notebook	DELL	Latitude E5470	DoC	---
2	Notebook	DELL	Latitude 5400	DoC	---
3	Adapter	APD	WA-30P12R	---	Remarks: I/P: 100-240Vac, 50-60Hz, 0.9A Max O/P: 12Vdc, 2.5A The plug can be replaced. (Provided by applicant.)

POE mode

Support Equipment List					
No.	**Equipment**	**Brand**	**Model**	**FCC ID**	**Remarks**
1	Notebook	DELL	Latitude E5470	DoC	---
2	Notebook	DELL	Latitude 5400	DoC	---
3	POE	ZYXEL	PoE12-60W	---	Remarks: I/P: 100-240Vac, 50-60Hz, 2.0A O/P: 56Vdc, 1.161A (Provided by applicant.)

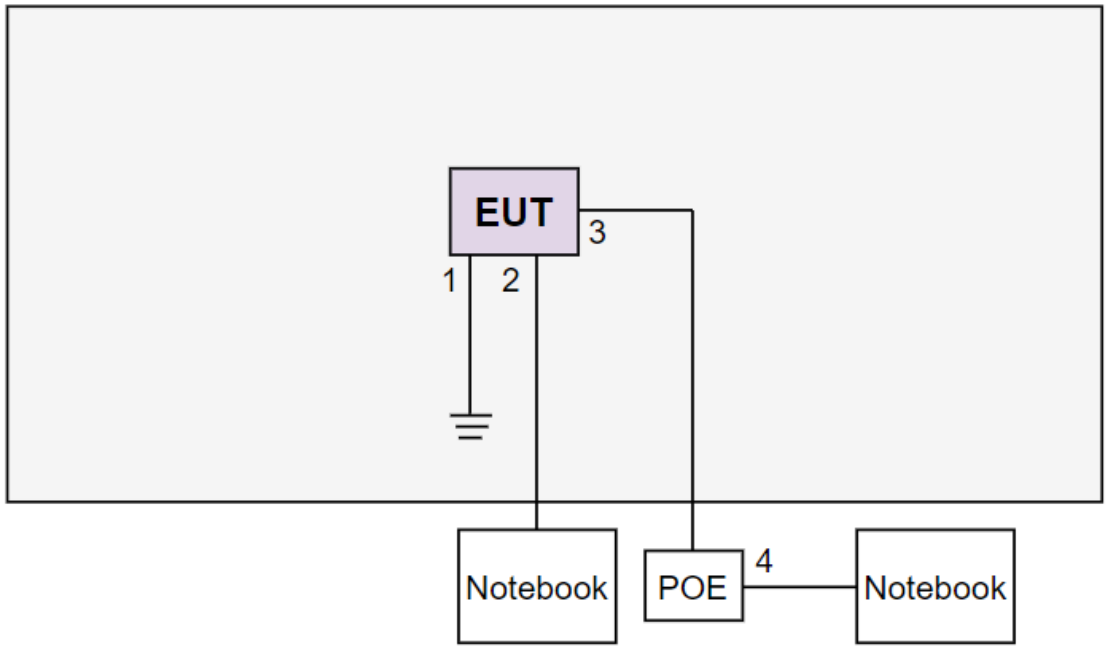
1.3 Test Setup Chart

Adapter mode

Test Setup Diagram


No.	Signal cable / Length (m)
1	Ground cable, 2.3m non-shielded.
2-3	RJ45, 10m non-shielded.

POE mode

Test Setup Diagram


No.	Signal cable / Length (m)
1	Ground cable, 2.3m non-shielded.
2-3	RJ45, 10m non-shielded.
4	RJ45, 1.3m non-shielded.

1.4 The Equipment List

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
Tested Date	Jun. 17, 2022				
Instrument	**Brand**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Receiver	R&S	ESR3	101658	Feb. 16, 2022	Feb. 15, 2023
LISN	R&S	ENV216	101579	Apr. 21, 2022	Apr. 20, 2023
LISN (Support Unit)	SCHWARZBECK	Schwarzbeck 8127	8127667	Jan. 07, 2022	Jan. 06, 2023
RF Cable-CON	Woken	CFD200-NL	CFD200-NL-001	Oct. 19, 2021	Oct. 18, 2022
50 ohm terminal (Support Unit)	NA	50	01	May 10, 2022	May 09, 2023
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 chamber3 / (03CH03-WS)				
Tested Date	May 10 ~ Jun. 11, 2022				
Instrument	**Brand**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Receiver	R&S	ESR3	101657	Mar. 15, 2022	Mar. 14, 2023
Spectrum Analyzer	R&S	FSV40	101499	Mar. 08, 2022	Mar. 07, 2023
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 08, 2021	Nov. 07, 2022
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Jun. 30, 2021	Jun. 29, 2022
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1206	Dec. 20, 2021	Dec. 19, 2022
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170508	Jan. 11, 2022	Jan. 10, 2023
Preamplifier	EMC	EMC02325	980187	Jul. 26, 2021	Jul. 25, 2022
Preamplifier	Agilent	83017A	MY39501309	Sep. 06, 2021	Sep. 05, 2022
Preamplifier	EMC	EMC184045B	980192	Jul. 14, 2021	Jul. 13, 2022
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Oct. 05, 2021	Oct. 04, 2022
LF cable 3M	EMC	EMC8D-NM-NM-800	EMC8D-NM-NM-800 -001	Sep. 24, 2021	Sep. 23, 2022
LF cable 11M	EMC	EMC8D-NM-NM-300 0	131103	Sep. 24, 2021	Sep. 23, 2022
LF cable 1M	EMC	EMC8D-NM-NM-130 00	131104	Sep. 24, 2021	Sep. 23, 2022
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY22620/4	Sep. 24, 2021	Sep. 23, 2022
RF Cable	EMC	EMC104-SM-SM-80 00	181107	Sep. 24, 2021	Sep. 23, 2022
Measurement Software	AUDIX	e3	6.120210g	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	RF Conducted				
Test Site	(TH01-WS)				
Tested Date	Jun. 21, 2022				
Instrument	**Brand**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	R&S	FSV40	101910	Apr. 18, 2022	Apr. 17, 2023
Power Meter	Anritsu	ML2495A	1241002	Nov. 07, 2021	Nov. 06, 2022
Power Sensor	Anritsu	MA2411B	1207366	Nov. 07, 2021	Nov. 06, 2022
Measurement Software	Sporton	SENSE-15247_DTS	V5.10.7.18	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

1.5 Test Standards

47 CFR FCC Part 15.247
ANSI C63.10-2013

1.6 Reference Guidance

FCC KDB 558074 D01 15.247 Meas Guidance v05r02
FCC KDB 662911 D01 Multiple Transmitter Output v02r01

1.7 Deviation from Test Standard and Measurement Procedure

None

1.8 Measurement Uncertainty

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

Measurement Uncertainty	
Parameters	**Uncertainty**
Bandwidth	±34.130 Hz
Conducted power	±0.808 dB
Power density	±0.583 dB
Conducted emission	±2.715 dB
AC conducted emission	±2.92 dB
Unwanted Emission ≤ 1GHz	±3.96 dB
Unwanted Emission > 1GHz	±4.51 dB

2 Test Configuration

2.1 Testing Facility

Test Laboratory	International Certification Corporation
Test Site	CO01-WS, TH01-WS
Address of Test Site	No.3-1, Lane 6, Wen San 3rd St., Kwei Shan Dist., Tao Yuan City 33381, Taiwan (R.O.C.)
Test Site	03CH03-WS
Address of Test Site	No.14-1, Lane 19, Wen San 3rd St., Kwei Shan Dist., Tao Yuan City 333, Taiwan (R.O.C.)

- FCC Designation No.: TW0009
- FCC site registration No.: 207696
- ISED#: 10807C
- CAB identifier: TW2732

2.2 The Worst Test Modes and Channel Details

Test item	Modulation Mode	Test Frequency (MHz)	Data Rate	Test Configuration
Non-beamforming mode				
AC Power Line Conducted Emission	11g	2437	6 Mbps	1,2
Unwanted Emissions ≤ 1GHz	11g	2437	6 Mbps	1,2
Conducted Output Power 6dB bandwidth Power spectral density	11b 11g ax HE20 ax HE40	2412 / 2437 / 2462 2412 / 2437 / 2462 2412 / 2437 / 2462 2422 / 2437 / 2452	1 Mbps 6 Mbps MCS 0 MCS 0	1
Unwanted Emissions >1GHz	11b 11g ax HE20 ax HE40	2412 / 2437 / 2462 2412 / 2437 / 2462 2412 / 2437 / 2462 2422 / 2437 / 2452	1 Mbps 6 Mbps MCS 0 MCS 0	1
Beamforming mode				
Conducted Output Power	ax HE20 ax HE40	2412 / 2437 / 2462 2422 / 2437 / 2452	MCS 0 MCS 0	1

NOTE:

1. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The **Z-plane** results were found as the worst case and were shown in this report.
2. Test configurations are listed as below:
   1) Configuration 1: Adapter Mode
   2) Configuration 2: POE Mode

3 Transmitter Test Results

3.1 6dB and Occupied Bandwidth

3.1.1 Limit of 6dB Bandwidth

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

3.1.2 Test Procedures

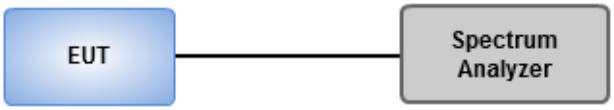
6dB Bandwidth

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.

3.1.3 Test Setup



3.1.4 Test Results

Ambient Condition	24°C / 63%	Tested By	Roger Lu

Refer to Appendix A.

3.2 Conducted Output Power

3.2.1 Limit of Conducted 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.

3.2.2 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.

3.2.3 Test Setup

3.2.4 Test Results

Ambient Condition	24°C / 63%	**Tested By**	Roger Lu

Refer to Appendix B.

3.3 Power Spectral Density

3.3.1 Limit of Power Spectral Density

Power spectral density shall not be greater than 8 dBm in any 3 kHz band.

3.3.2 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.

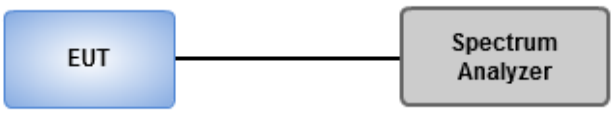
2 Set the sweep time to: ≥ 10 (number of measurement points in sweep) x (total on/off period of the transmitted signal).

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.

3.3.3 Test Setup



3.3.4 Test Results

Ambient Condition	24°C / 63%	Tested By	Roger Lu

Refer to Appendix C.

3.4 Unwanted Emissions into Restricted Frequency Bands

3.4.1 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.

3.4.2 Test Procedures

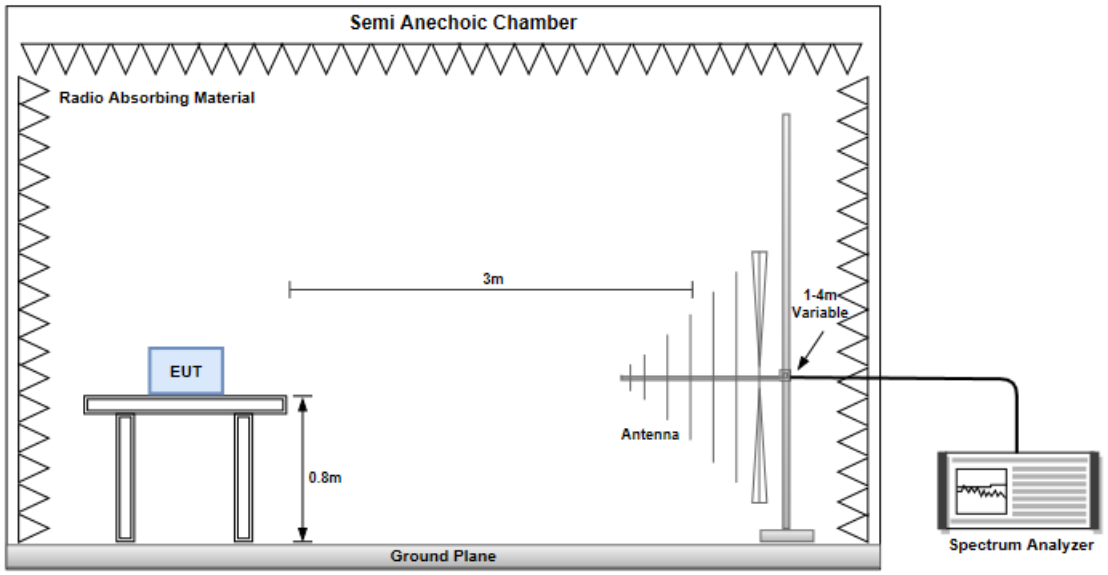
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission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

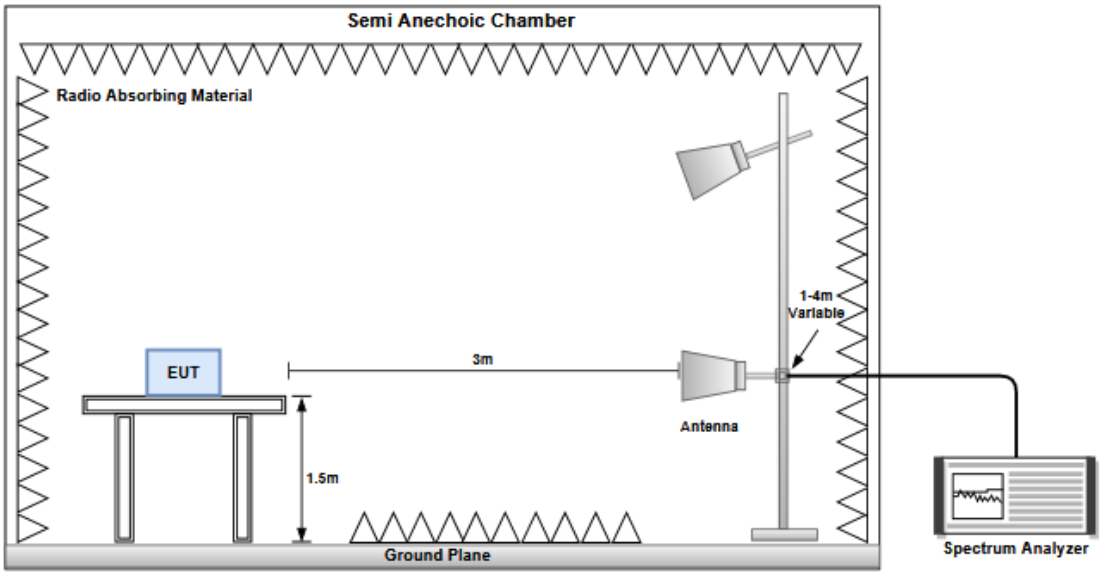
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.4.3 Test Setup

Radiated Emissions below 1 GHz



Radiated Emissions above 1 GHz



3.4.4 Test Results

Refer to Appendix D.

3.5 Emissions in Non-Restricted Frequency Bands

3.5.1 Emissions in Non-Restricted Frequency Bands Limit

Peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum in-band peak PSD level in 100 kHz.

3.5.2 Test Procedures

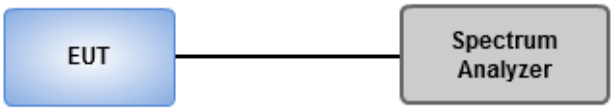
Reference level measurement

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

3.5.3 Test Setup



3.5.4 Test Results

Ambient Condition	24°C / 63%	**Tested By**	Roger Lu

Refer to Appendix E.

3.6 AC Power Line Conducted Emissions

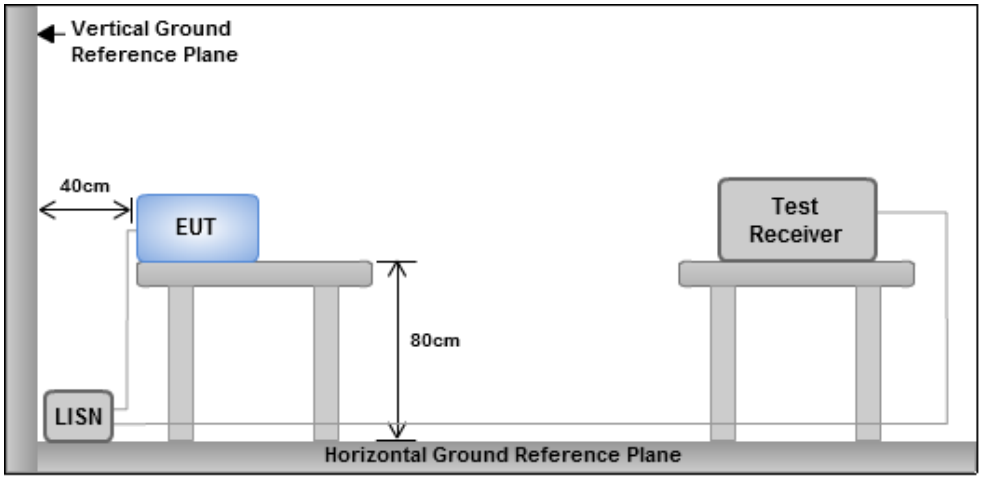
3.6.1 Limit of AC Power Line Conducted Emissions

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.		

3.6.2 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.

3.6.3 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

3.6.4 Test Results

Refer to Appendix F.

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 Corporation (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 Dist., Tao Yuan City 33381, Taiwan (R.O.C.) No.2-1, Lane 6, Wen San 3rd St., Kwei Shan Dist., Tao Yuan City 33381, Taiwan (R.O.C.)	No.14-1, Lane 19, Wen San 3rd St., Kwei Shan Dist., 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: 886-3-318-0345
Email: ICC_Service@icertifi.com.tw

==END==

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	8.525M	13.068M	13M1G1D	7.075M	12.594M
802.11g_Nss1,(6Mbps)_2TX	15.075M	16.267M	16M3D1D	13.775M	16.167M
802.11ax HEW20_Nss2,(MCS0)_2TX	15.075M	18.766M	18M8D1D	12.575M	18.666M
802.11ax HEW40_Nss2,(MCS0)_2TX	35.05M	37.431M	37M4D1D	27.5M	37.281M

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

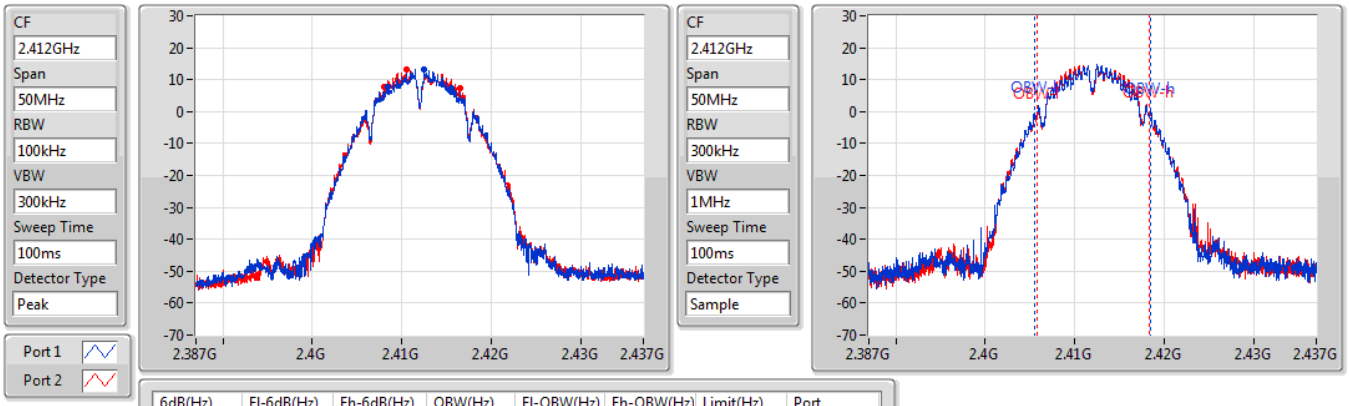
Result

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	7.075M	12.944M	8.525M	12.594M
2437MHz	Pass	500k	7.075M	12.944M	7.575M	12.844M
2462MHz	Pass	500k	8.025M	13.068M	8.05M	13.018M
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	14.975M	16.167M	13.775M	16.267M
2437MHz	Pass	500k	14.95M	16.217M	13.8M	16.192M
2462MHz	Pass	500k	13.85M	16.267M	15.075M	16.242M
802.11ax HEW20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	13.725M	18.666M	13.75M	18.691M
2437MHz	Pass	500k	15.075M	18.766M	15.025M	18.666M
2462MHz	Pass	500k	13.725M	18.766M	12.575M	18.741M
802.11ax HEW40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	500k	32.5M	37.431M	30M	37.431M
2437MHz	Pass	500k	27.5M	37.281M	35.05M	37.381M
2452MHz	Pass	500k	27.8M	37.381M	32.6M	37.431M

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

802.11b_Nss1,(1Mbps)_2TX EBW

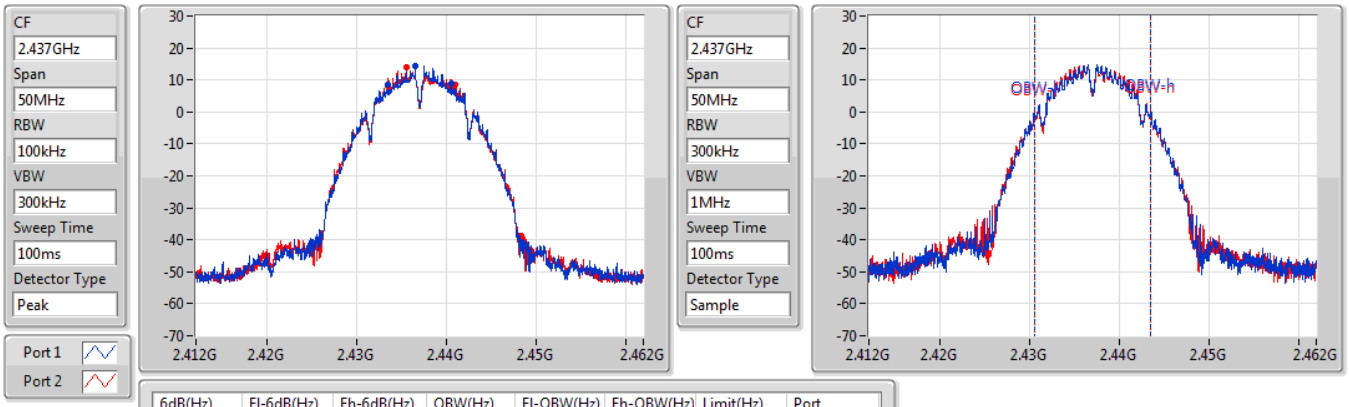
2412MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
7.075M	2.408475G	2.41555G	12.944M	2.405553G	2.418497G	500k	1
8.525M	2.408G	2.416525G	12.594M	2.405753G	2.418347G	500k	2

802.11b_Nss1,(1Mbps)_2TX EBW

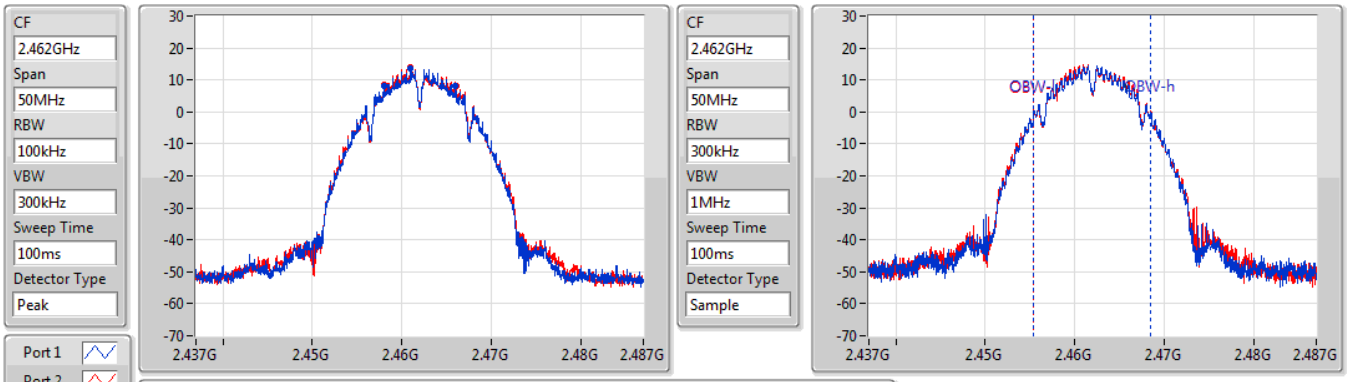
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
7.075M	2.433475G	2.44055G	12.944M	2.430553G	2.443497G	500k	1
7.575M	2.43345G	2.441025G	12.844M	2.430578G	2.443422G	500k	2

802.11b_Nss1,(1Mbps)_2TX EBW

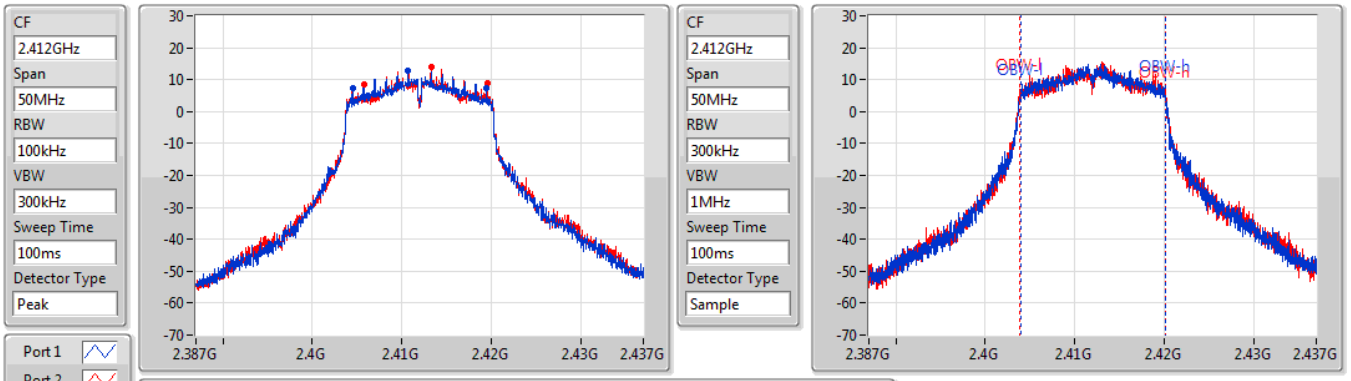
2462MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
8.025M	2.458G	2.466025G	13.068M	2.455428G	2.468497G	500k	1
8.05M	2.458G	2.46605G	13.018M	2.455428G	2.468447G	500k	2

802.11g_Nss1,(6Mbps)_2TX EBW

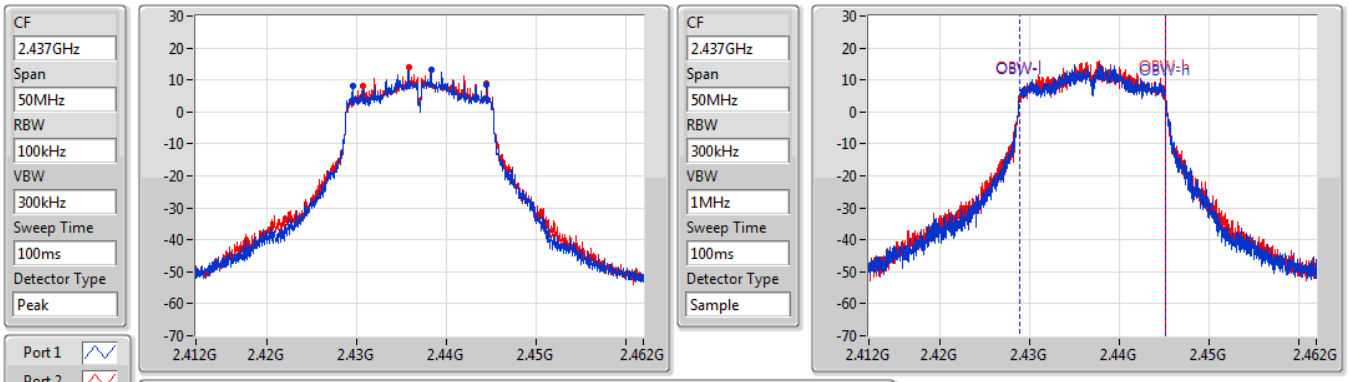
2412MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
14.975M	2.4045G	2.419475G	16.167M	2.403929G	2.420096G	500k	1
13.775M	2.40575G	2.419525G	16.267M	2.403854G	2.420121G	500k	2

802.11g_Nss1,(6Mbps)_2TX EBW

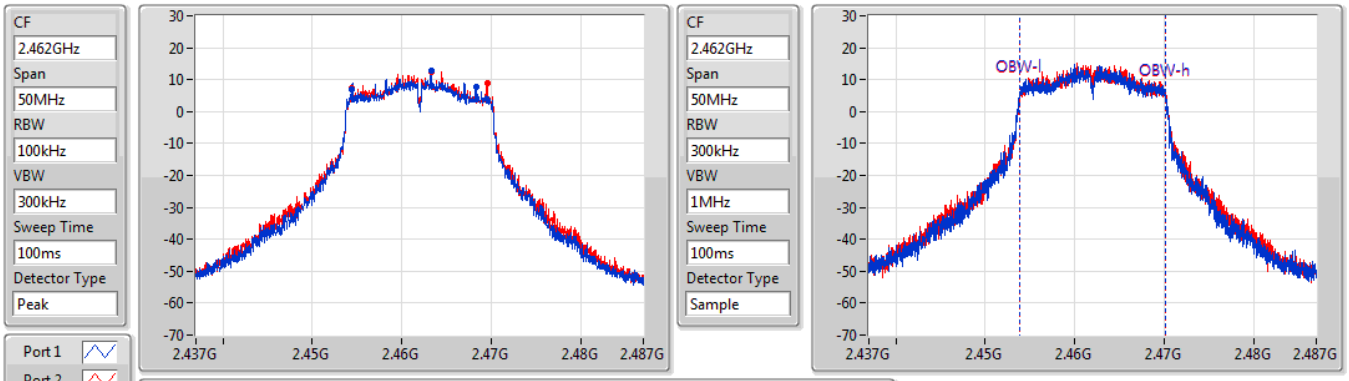
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
14.95M	2.429525G	2.444475G	16.217M	2.428904G	2.445121G	500k	1
13.8M	2.4307G	2.4445G	16.192M	2.428904G	2.445096G	500k	2

802.11g_Nss1,(6Mbps)_2TX EBW

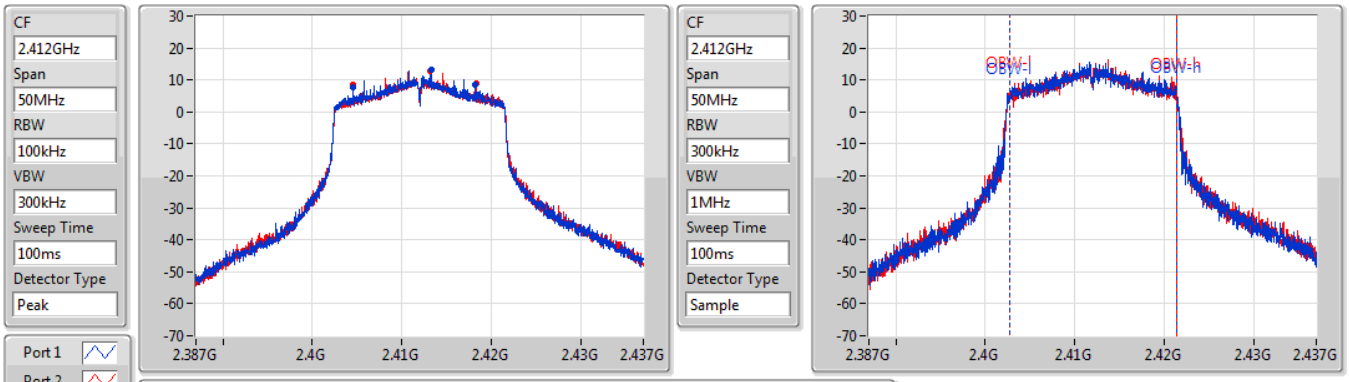
2462MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
13.85M	2.45445G	2.4683G	16.267M	2.453854G	2.470121G	500k	1
15.075M	2.45445G	2.469525G	16.242M	2.453904G	2.470146G	500k	2

802.11ax HEW20_Nss2,(MCS0)_2TX EBW

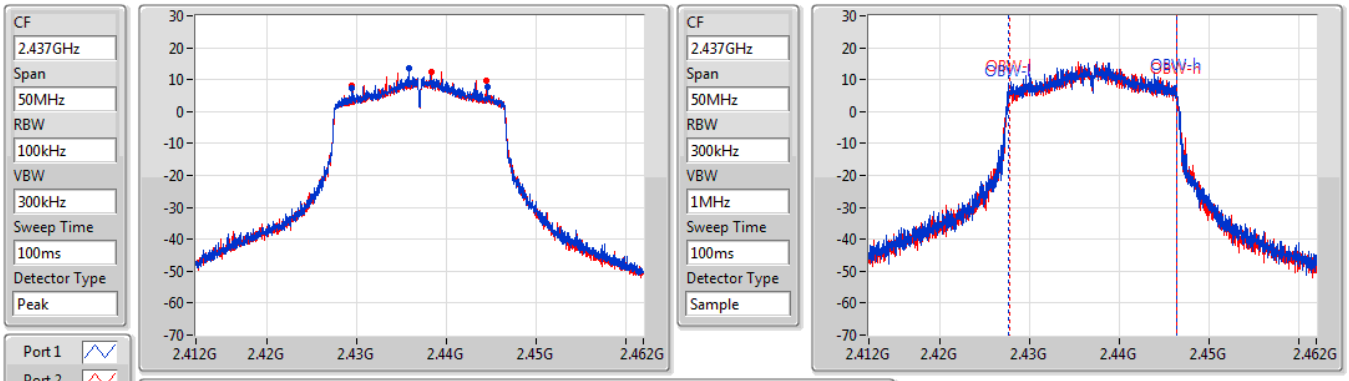
2412MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
13.725M	2.404525G	2.41825G	18.666M	2.40268G	2.421345G	500k	1
13.75M	2.404525G	2.418275G	18.691M	2.40268G	2.42137G	500k	2

802.11ax HEW20_Nss2,(MCS0)_2TX EBW

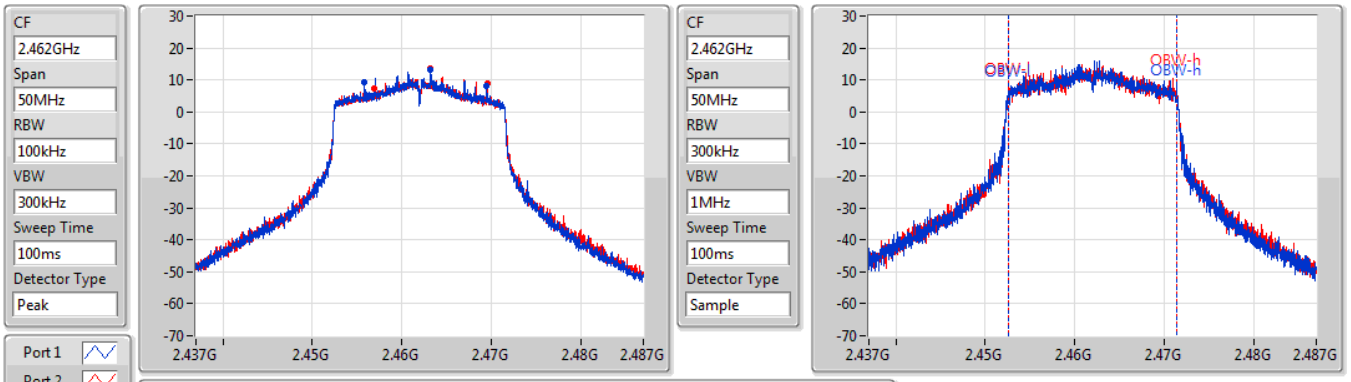
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15.075M	2.429475G	2.44455G	18.766M	2.42763G	2.446395G	500k	1
15.025M	2.429475G	2.4445G	18.666M	2.42768G	2.446345G	500k	2

802.11ax HEW20_Nss2,(MCS0)_2TX EBW

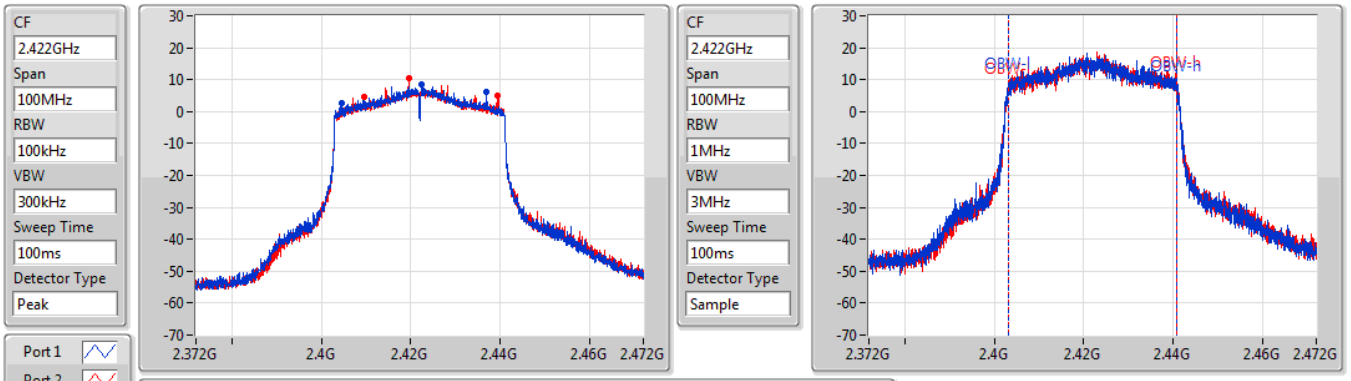
2462MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
13.725M	2.455775G	2.4695G	18.766M	2.452605G	2.47137G	500k	1
12.575M	2.45695G	2.469525G	18.741M	2.452605G	2.471345G	500k	2

802.11ax HEW40_Nss2,(MCS0)_2TX EBW

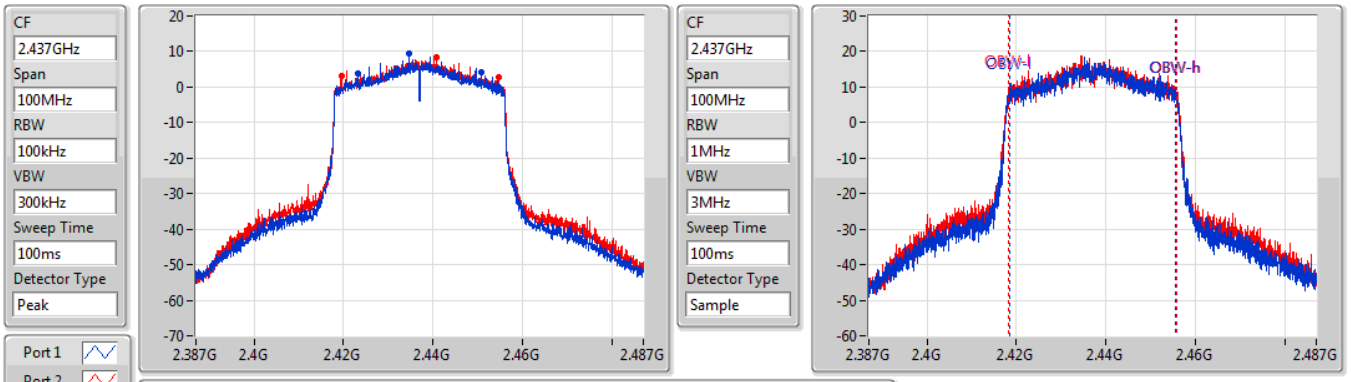
2422MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
32.5M	2.4045G	2.437G	37.431M	2.403309G	2.440741G	500k	1
30M	2.4095G	2.4395G	37.431M	2.403309G	2.440741G	500k	2

802.11ax HEW40_Nss2,(MCS0)_2TX EBW

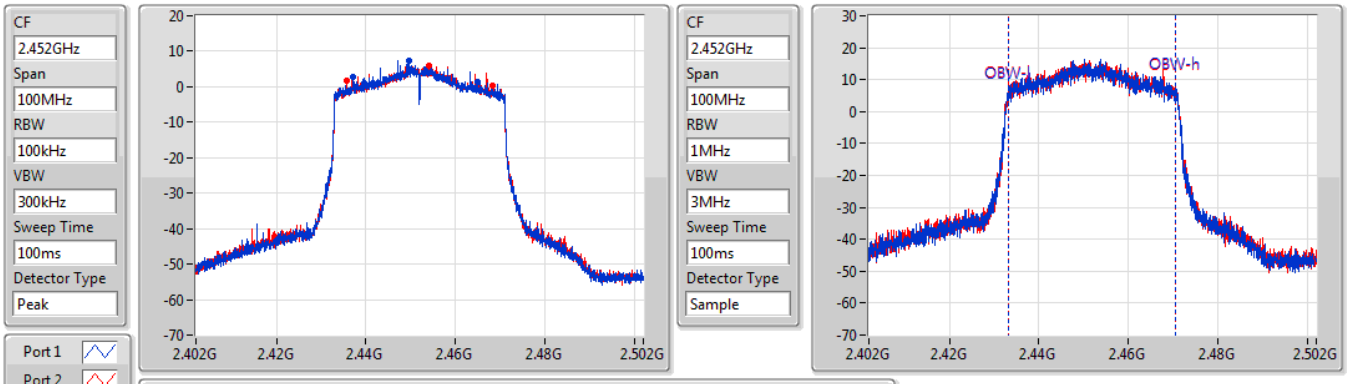
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
27.5M	2.42325G	2.45075G	37.281M	2.418359G	2.455641G	500k	1
35.05M	2.4195G	2.45455G	37.381M	2.418309G	2.455691G	500k	2

802.11ax HEW40_Nss2,(MCS0)_2TX EBW

2452MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
27.8M	2.43705G	2.46485G	37.381M	2.433259G	2.470641G	500k	1
32.6M	2.43575G	2.46835G	37.431M	2.433209G	2.470641G	500k	2

Beamforming mode

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11ax HEW20-BF_Nss2,(MCS0)_2TX	**22.23**	0.16711
802.11ax HEW40-BF_Nss2,(MCS0)_2TX	22.13	0.16331

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11ax HEW20-BF_Nss2,(MCS0)_2TX	-	-	-	-	-	-	-	-
2412MHz	Pass	1.17	18.6	19.6	22.14	30.00	23.31	36.00
2437MHz	Pass	1.17	19.32	19.12	**22.23**	30.00	23.40	36.00
2462MHz	Pass	1.17	19.05	19.2	22.14	30.00	23.31	36.00
802.11ax HEW40-BF_Nss2,(MCS0)_2TX	-	-	-	-	-	-	-	-
2422MHz	Pass	1.17	18.75	19.46	22.13	30.00	23.30	36.00
2437MHz	Pass	1.17	19.14	19.07	22.12	30.00	23.29	36.00
2452MHz	Pass	1.17	17.94	18.01	20.99	30.00	22.16	36.00

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

Note : Conducted average output power is for reference

Directional gain = 10 log [($10^{1.2/10}$ + $10^{1.14/10}$) / 2] = 1.17 dBi

Non-beamforming mode

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_2TX	25.33	0.34119
802.11g_Nss1,(6Mbps)_2TX	**25.43**	0.34914
802.11ax HEW20_Nss2,(MCS0)_2TX	25.24	0.33420
802.11ax HEW40_Nss2,(MCS0)_2TX	25.14	0.32659

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	1.20	21.86	22.53	25.22	30.00	26.42	36.00
2437MHz	Pass	1.20	22.16	22.48	25.33	30.00	26.53	36.00
2462MHz	Pass	1.20	21.95	22.29	25.13	30.00	26.33	36.00
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-	-
2412MHz	Pass	1.20	21.87	22.83	25.39	30.00	26.59	36.00
2437MHz	Pass	1.20	22.16	22.67	**25.43**	30.00	26.63	36.00
2462MHz	Pass	1.20	22.16	22.35	25.27	30.00	26.47	36.00
802.11ax HEW20_Nss2,(MCS0)_2TX	-	-	-	-	-	-	-	-
2412MHz	Pass	1.17	21.61	22.61	25.15	30.00	26.32	36.00
2437MHz	Pass	1.17	22.33	22.13	25.24	30.00	26.41	36.00
2462MHz	Pass	1.17	22.06	22.21	25.15	30.00	26.32	36.00
802.11ax HEW40_Nss2,(MCS0)_2TX	-	-	-	-	-	-	-	-
2422MHz	Pass	1.17	21.76	22.47	25.14	30.00	26.31	36.00
2437MHz	Pass	1.17	22.15	22.08	25.13	30.00	26.30	36.00
2452MHz	Pass	1.17	20.95	21.02	24.00	30.00	25.17	36.00

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

Note : Conducted average output power is for reference

For 802.11ax

Directional gain = 10 log [($10^{1.2/10}$ + $10^{1.14/10}$) / 2] = 1.17 dBi

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
802.11b_Nss1,(1Mbps)_2TX	-1.37
802.11g_Nss1,(6Mbps)_2TX	-4.17
802.11ax HEW20_Nss2,(MCS0)_2TX	-6.57
802.11ax HEW40_Nss2,(MCS0)_2TX	-9.30

RBW = 3kHz;

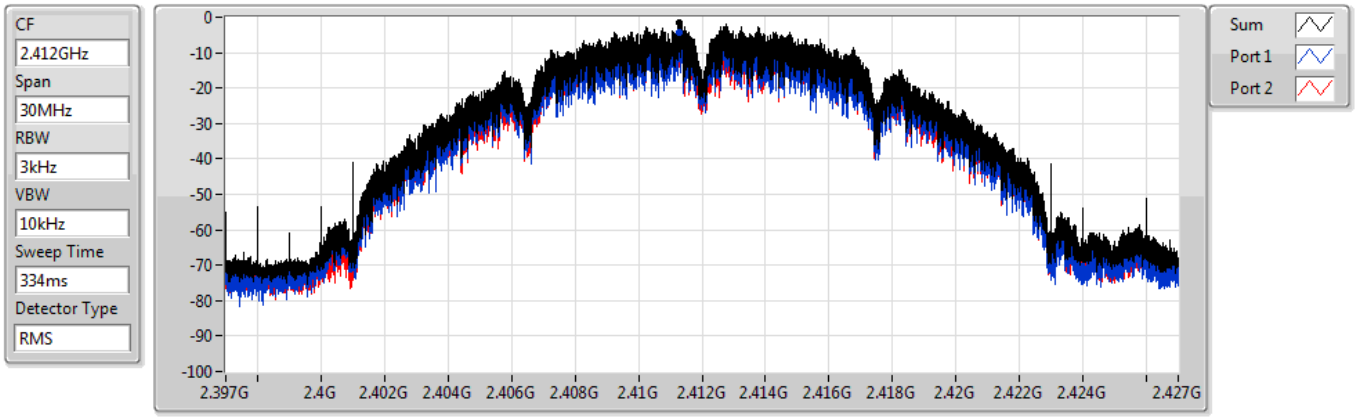
Result

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	4.18	-4.42	-4.35	-1.37	8.00
2437MHz	Pass	4.18	-4.14	-3.73	-1.57	8.00
2462MHz	Pass	4.18	-5.09	-4.08	-1.92	8.00
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	4.18	-7.01	-6.18	-4.17	8.00
2437MHz	Pass	4.18	-7.86	-6.05	-4.36	8.00
2462MHz	Pass	4.18	-8.15	-6.58	-4.36	8.00
802.11ax HEW20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	1.17	-9.19	-8.26	-6.57	8.00
2437MHz	Pass	1.17	-8.42	-8.49	-6.59	8.00
2462MHz	Pass	1.17	-8.83	-8.04	-6.95	8.00
802.11ax HEW40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	1.17	-11.93	-11.40	-9.52	8.00
2437MHz	Pass	1.17	-11.38	-11.53	-9.30	8.00
2452MHz	Pass	1.17	-12.02	-11.53	-10.22	8.00

DG = Directional Gain
For 802.11b/g
Directional gain = 10 log $[(10^{1.2/20} + 10^{1.14/20})^2 / 2]$ =4.18 dBi
For 802.11ax
Directional gain = 10 log $[(10^{1.2/10} + 10^{1.14/10}) / 2]$ = 1.17 dBi
RBW = 3kHz;
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

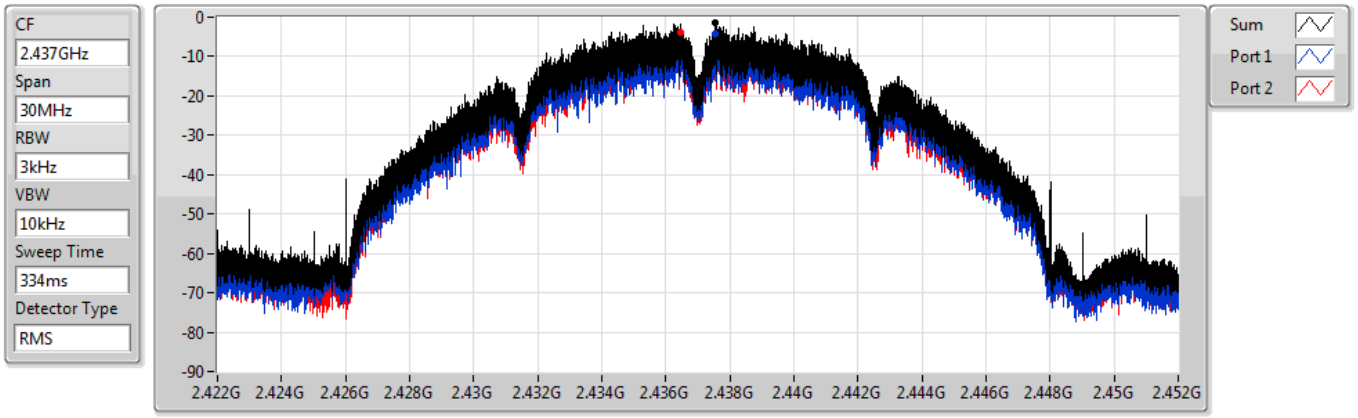
2412MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-1.37	-1.37	-4.42	-4.35

802.11b_Nss1,(1Mbps)_2TX PSD

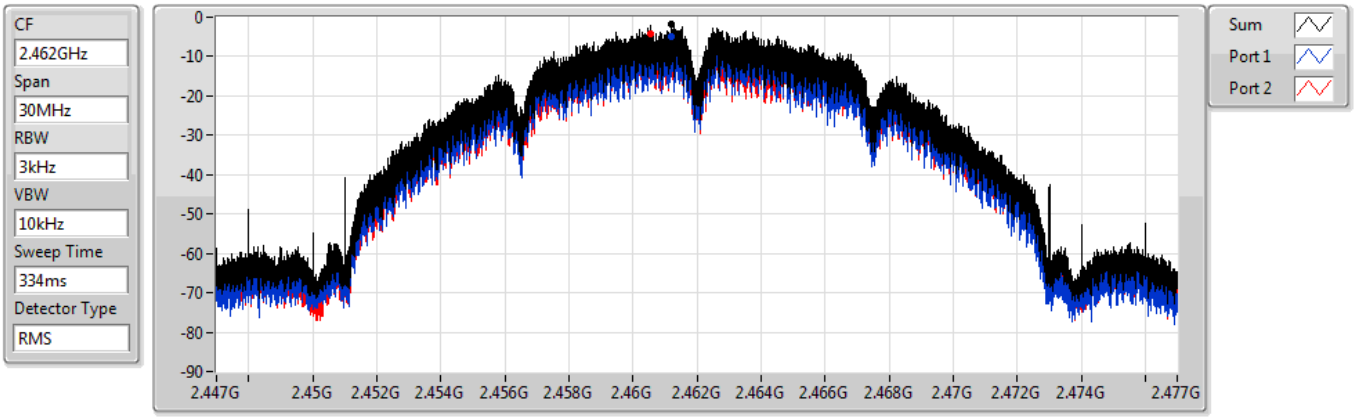
2437MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-1.57	-1.57	-4.14	-3.73

802.11b_Nss1,(1Mbps)_2TX PSD

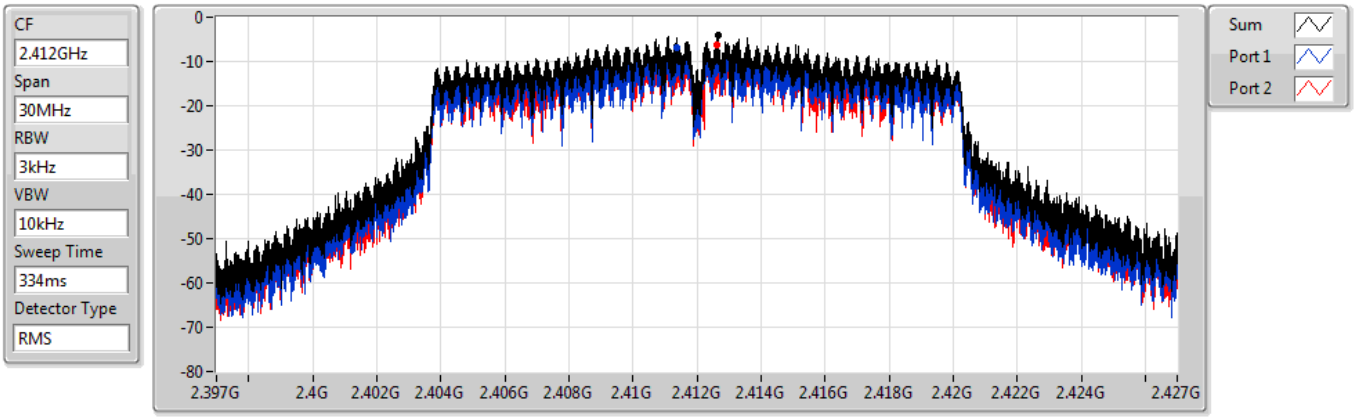
2462MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-1.92	-1.92	-5.09	-4.08

802.11g_Nss1,(6Mbps)_2TX PSD

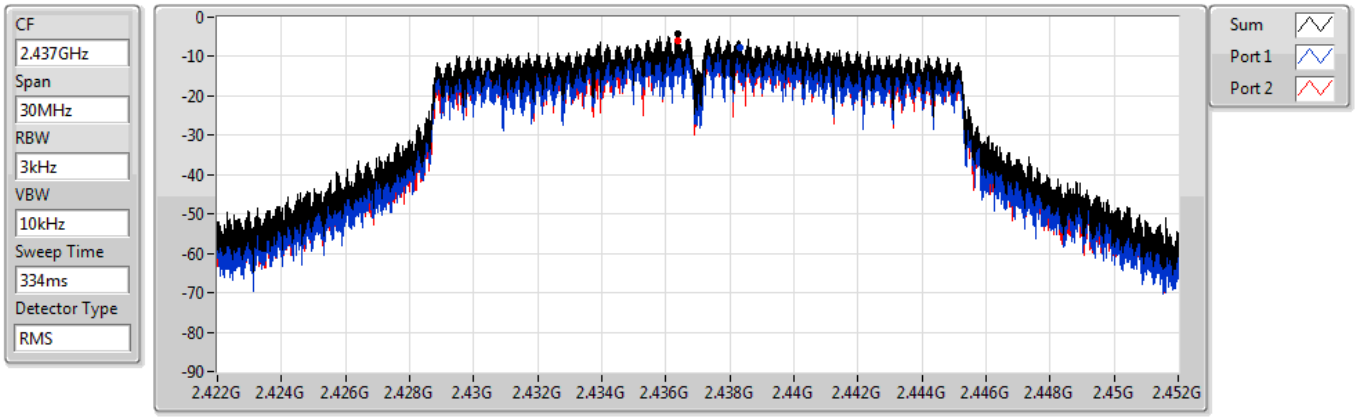
2412MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-4.17	-4.17	-7.01	-6.18

802.11g_Nss1,(6Mbps)_2TX PSD

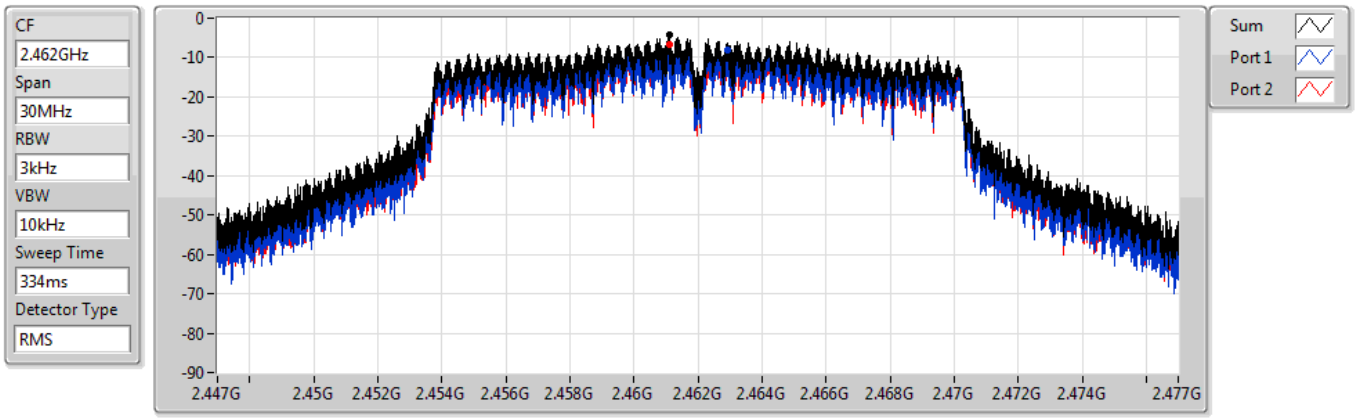
2437MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-4.36	-4.36	-7.86	-6.05

802.11g_Nss1,(6Mbps)_2TX PSD

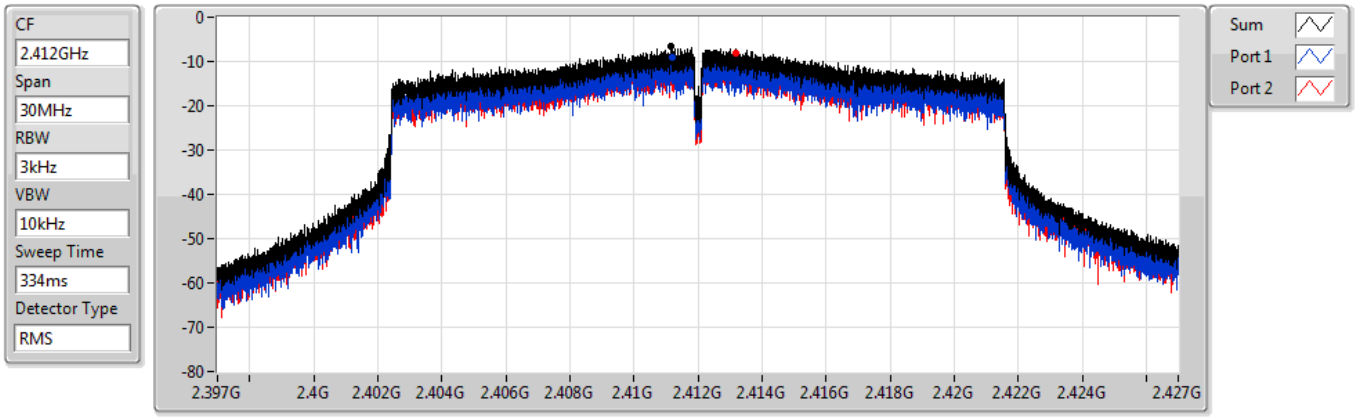
2462MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-4.36	-4.36	-8.15	-6.58

802.11ax HEW20_Nss2,(MCS0)_2TX PSD

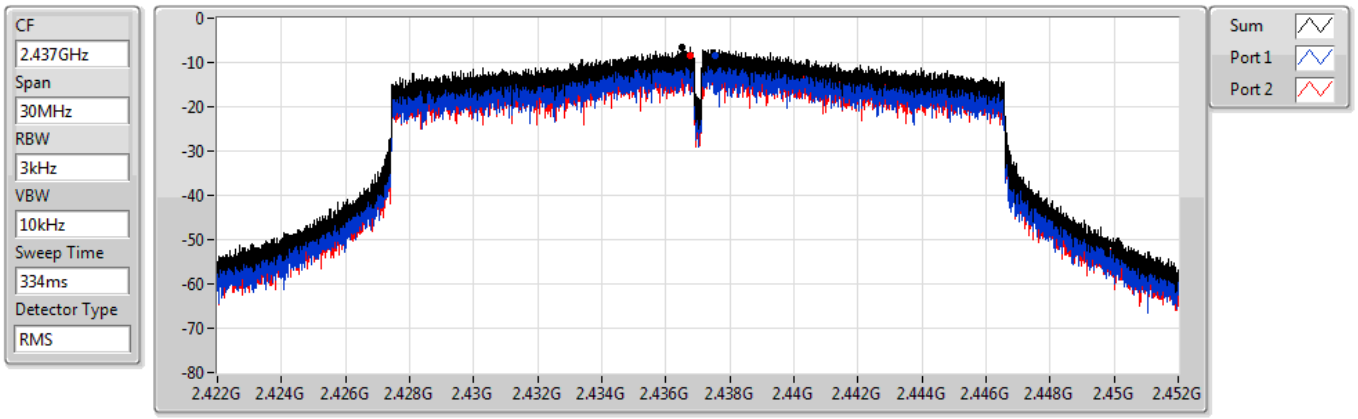
2412MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-6.57	-6.57	-9.19	-8.26

802.11ax HEW20_Nss2,(MCS0)_2TX PSD

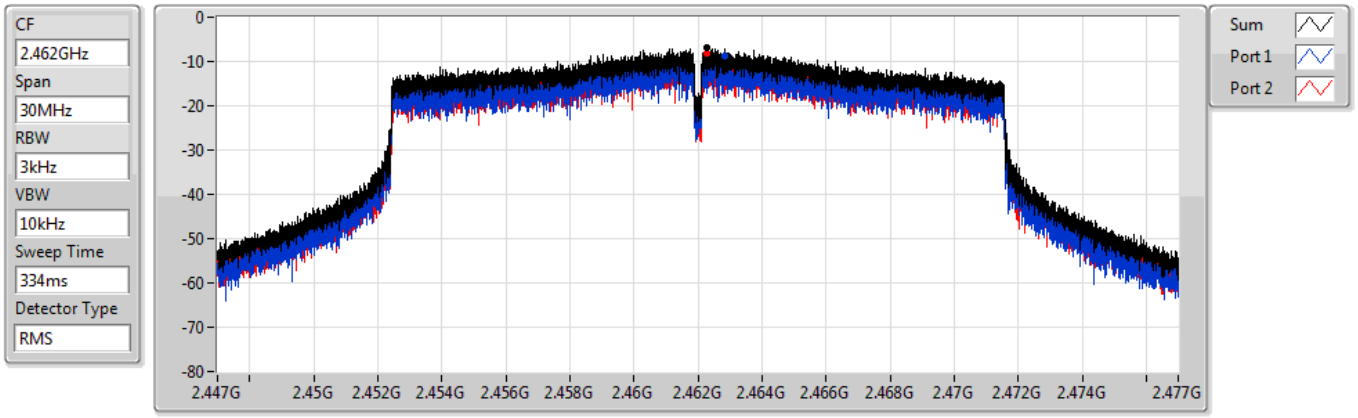
2437MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-6.59	-6.59	-8.42	-8.49

802.11ax HEW20_Nss2,(MCS0)_2TX PSD

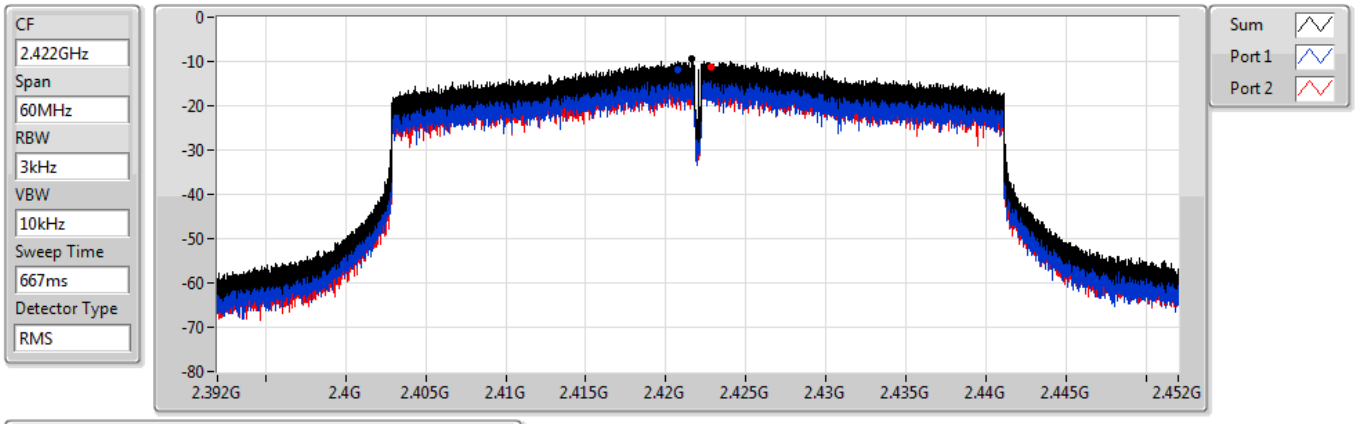
2462MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-6.95	-6.95	-8.83	-8.04

802.11ax HEW40_Nss2,(MCS0)_2TX PSD

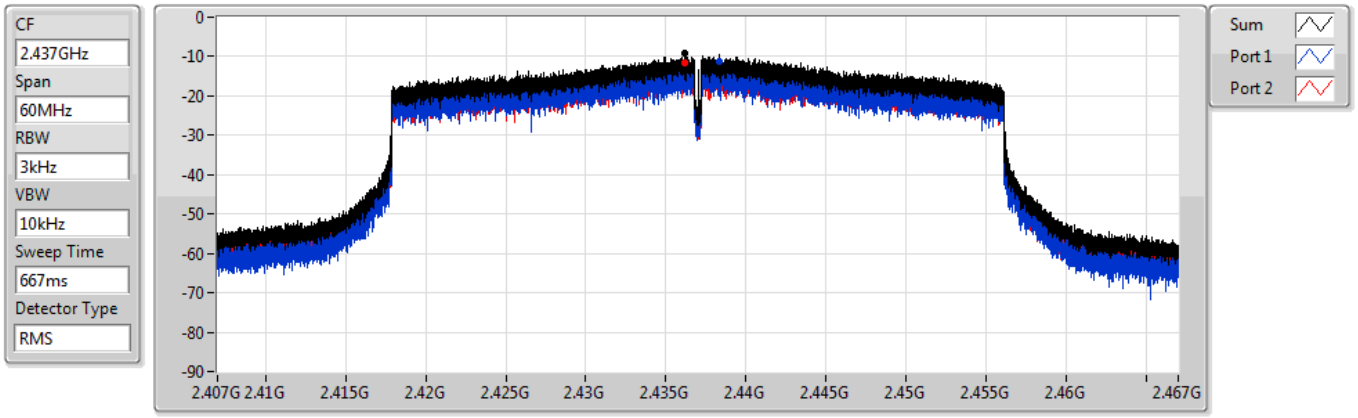
2422MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-9.52	-9.52	-11.93	-11.40

802.11ax HEW40_Nss2,(MCS0)_2TX PSD

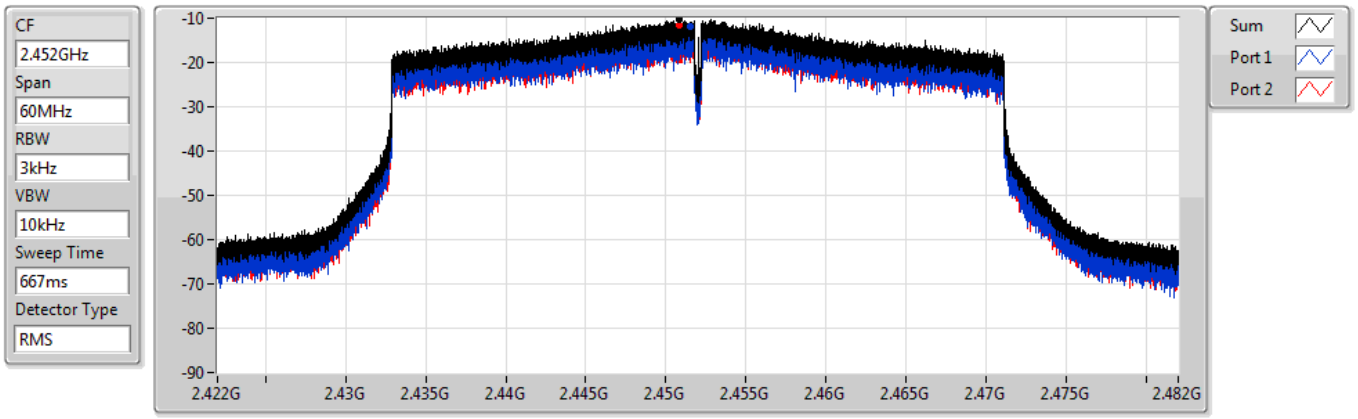
2437MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-9.30	-9.30	-11.38	-11.53

802.11ax HEW40_Nss2,(MCS0)_2TX PSD

2452MHz



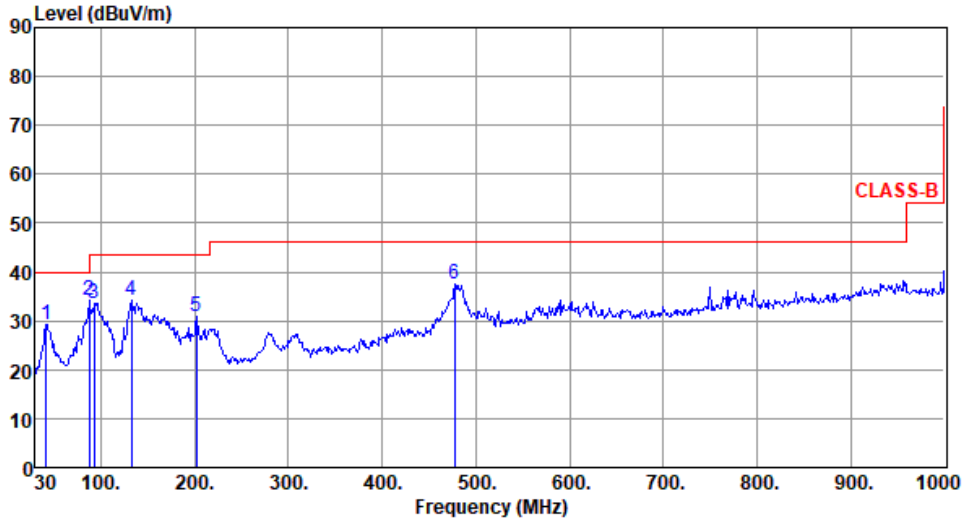
Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.22	-10.22	-12.02	-11.53

Adapter mode

Unwanted Emissions (Below 1GHz)

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

Test By :Akun Chung Temperature(℃):23 Humidity(%):68

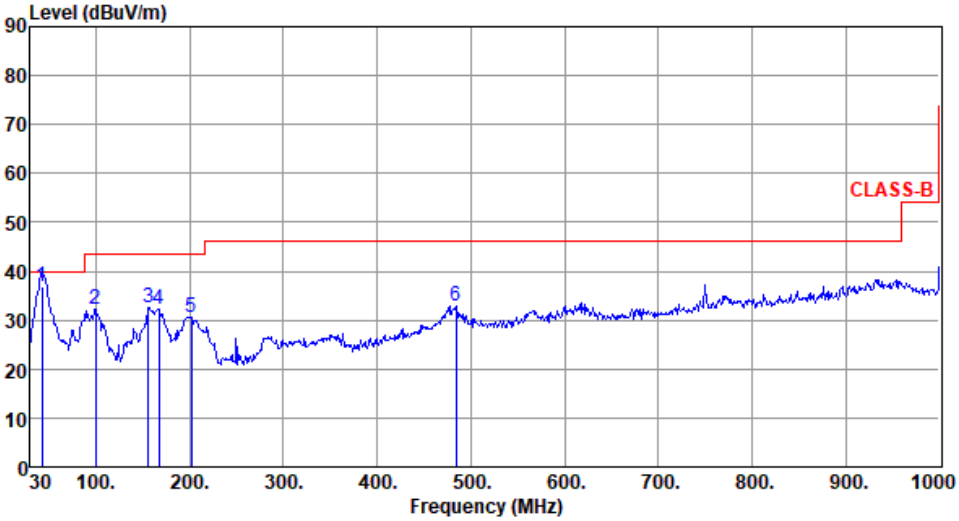


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	41.64	29.23	40.00	-10.77	37.76	-8.53	Peak	---	---
2	87.23	34.11	40.00	-5.89	48.65	-14.54	Peak	---	---
3	93.05	33.64	43.50	-9.86	47.92	-14.28	Peak	---	---
4	132.82	34.11	43.50	-9.39	43.49	-9.38	Peak	---	---
5	201.69	30.85	43.50	-12.65	42.39	-11.54	Peak	---	---
6	477.17	37.39	46.00	-8.61	40.27	-2.88	Peak	---	---

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

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

Test By :Akun Chung Temperature(°C):23 Humidity(%):68



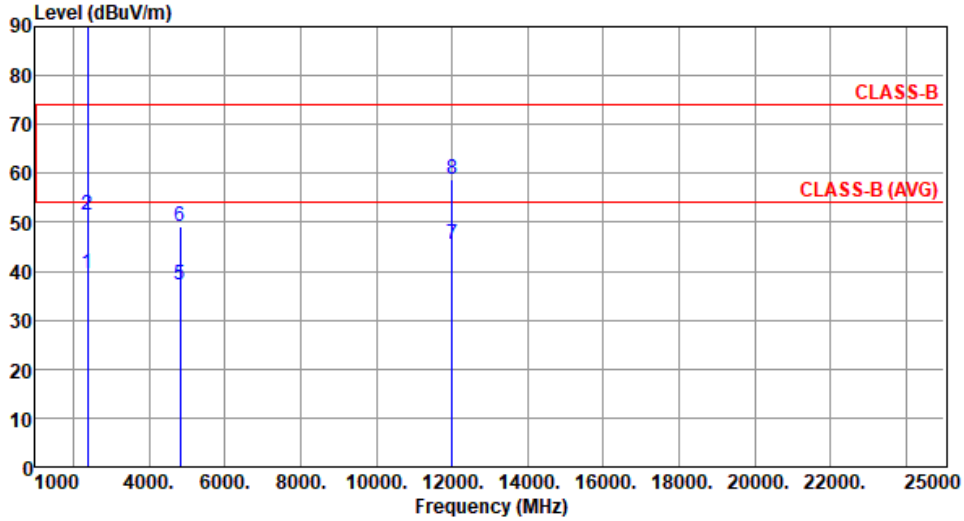
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	42.61	36.89	40.00	-3.11	45.29	-8.40	QP	100	194
2	99.84	32.33	43.50	-11.17	45.50	-13.17	Peak	---	---
3	156.10	32.51	43.50	-10.99	40.92	-8.41	Peak	---	---
4	166.77	32.30	43.50	-11.20	40.97	-8.67	Peak	---	---
5	201.69	30.71	43.50	-12.79	42.25	-11.54	Peak	---	---
6	483.96	33.02	46.00	-12.98	35.80	-2.78	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.

Unwanted Emissions (Above 1GHz) for 11b

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

Test By :Akun Chung Temperature(℃):24 Humidity(%):67

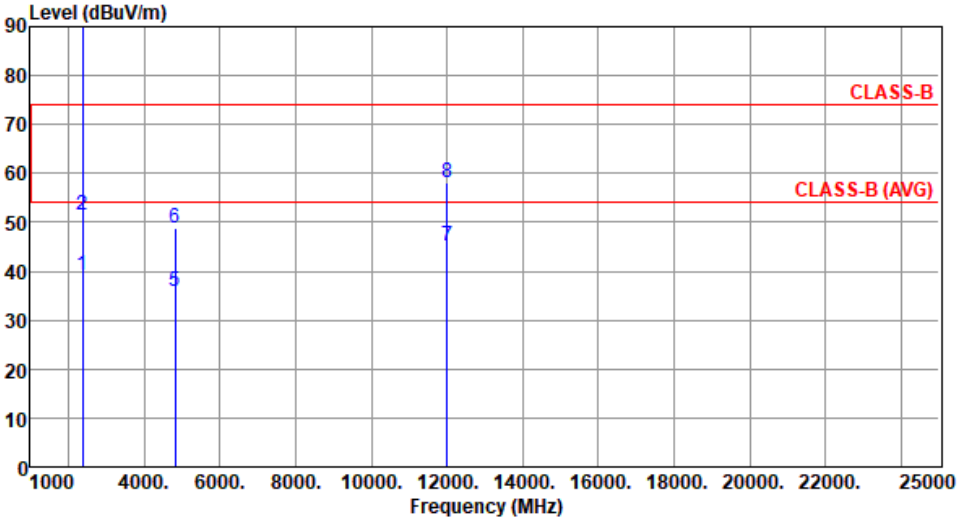


		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1		2390.00	39.65	54.00	-14.35	41.14	-1.49	Average	265	344
2		2390.00	51.57	74.00	-22.43	53.06	-1.49	Peak	265	344
3	*	2412.00	109.12			110.66	-1.54	Average	265	344
4	*	2412.00	112.61			114.15	-1.54	Peak	265	344
5		4824.00	37.26	54.00	-16.74	31.99	5.27	Average	100	355
6		4824.00	49.25	74.00	-24.75	43.98	5.27	Peak	100	355
7		12010.00	45.40	54.00	-8.60	30.66	14.74	Average	100	352
8		12010.00	58.62	74.00	-15.38	43.88	14.74	Peak	100	352

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:"*" is Peak / Average value of fundamental frequency

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

Test By :Akun Chung Temperature(℃):24 Humidity(%):67

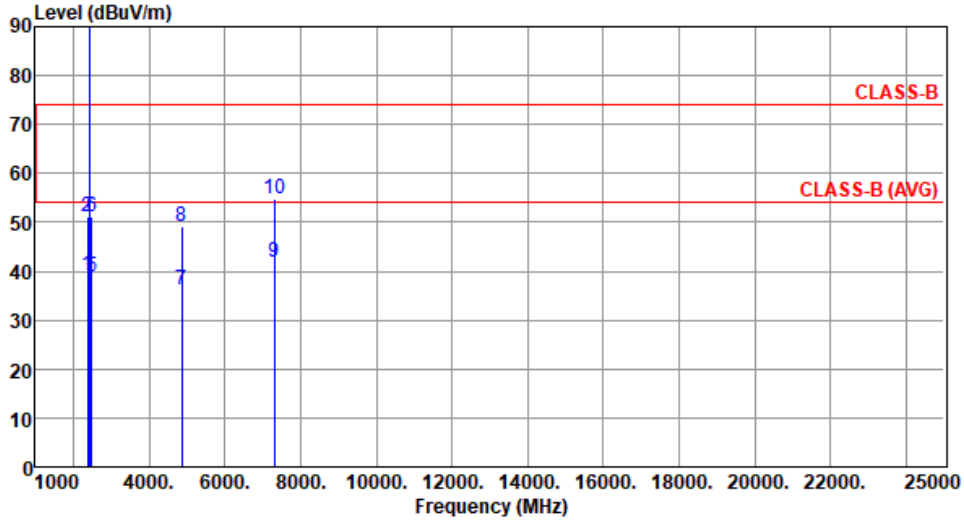


		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1		2390.00	39.13	54.00	-14.87	40.62	-1.49	Average	318	2
2		2390.00	51.37	74.00	-22.63	52.86	-1.49	Peak	318	2
3	*	2412.00	105.90			107.44	-1.54	Average	318	2
4	*	2412.00	109.48			111.02	-1.54	Peak	318	2
5		4824.00	35.86	54.00	-18.14	30.59	5.27	Average	100	9
6		4824.00	48.82	74.00	-25.18	43.55	5.27	Peak	100	9
7		12010.00	45.25	54.00	-8.75	30.51	14.74	Average	100	7
8		12010.00	58.22	74.00	-15.78	43.48	14.74	Peak	100	7

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:"*" is Peak / Average value of fundamental frequency

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

Test By :Akun Chung Temperature(℃):24 Humidity(%):67

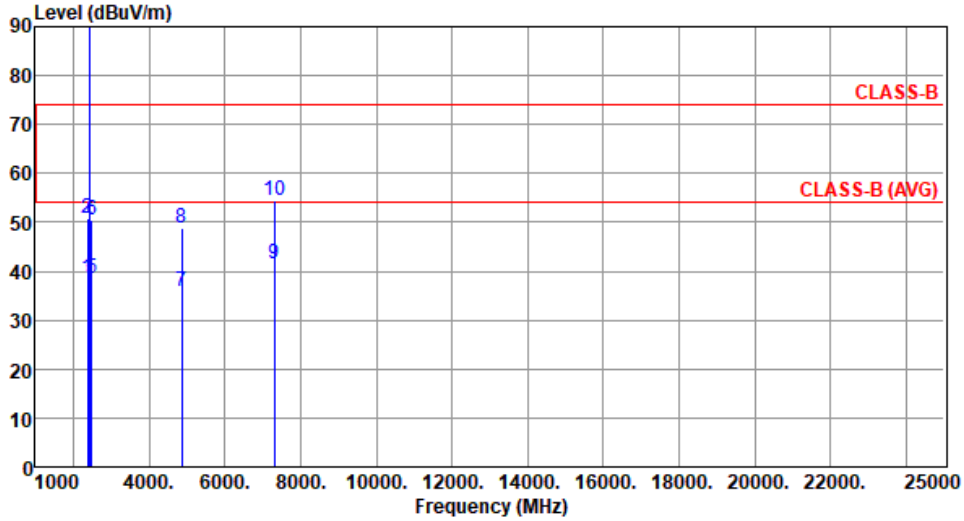


		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1		2390.00	39.16	54.00	-14.84	40.65	-1.49	Average	226	346
2		2390.00	51.08	74.00	-22.92	52.57	-1.49	Peak	226	346
3	*	2437.00	110.39			112.00	-1.61	Average	226	346
4	*	2437.00	113.77			115.38	-1.61	Peak	226	346
5		2483.50	38.97	54.00	-15.03	40.55	-1.58	Average	226	346
6		2483.50	51.05	74.00	-22.95	52.63	-1.58	Peak	226	346
7		4874.00	36.32	54.00	-17.68	30.99	5.33	Average	100	339
8		4874.00	49.31	74.00	-24.69	43.98	5.33	Peak	100	339
9		7311.00	41.82	54.00	-12.18	30.93	10.89	Average	100	335
10		7311.00	54.83	74.00	-19.17	43.94	10.89	Peak	100	335

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:"*" is Peak / Average value of fundamental frequency

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

Test By :Akun Chung Temperature(℃):24 Humidity(%):67

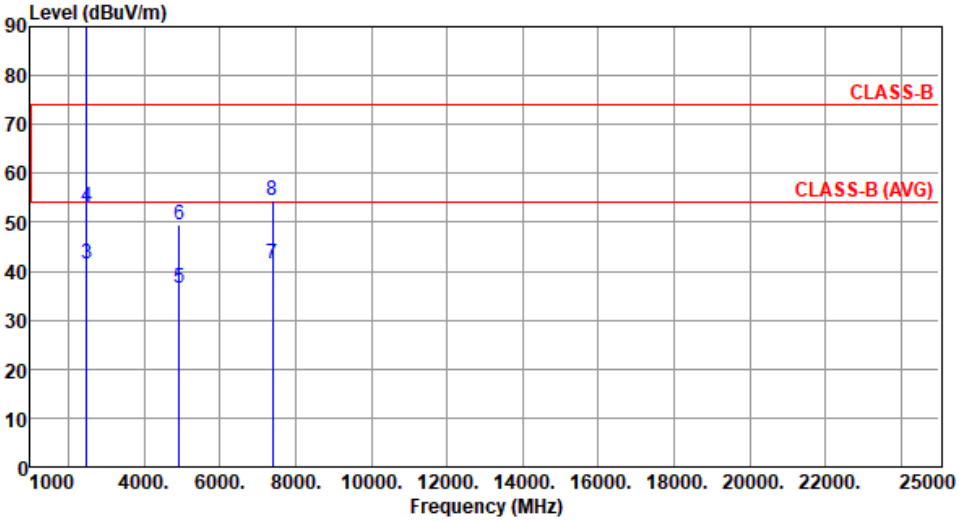


		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1		2390.00	38.53	54.00	-15.47	40.02	-1.49	Average	321	3
2		2390.00	50.76	74.00	-23.24	52.25	-1.49	Peak	321	3
3	*	2437.00	106.55			108.16	-1.61	Average	321	3
4	*	2437.00	109.99			111.60	-1.61	Peak	321	3
5		2483.50	38.60	54.00	-15.40	40.18	-1.58	Average	321	3
6		2483.50	50.63	74.00	-23.37	52.21	-1.58	Peak	321	3
7		4874.00	35.96	54.00	-18.04	30.63	5.33	Average	100	6
8		4874.00	48.96	74.00	-25.04	43.63	5.33	Peak	100	6
9		7311.00	41.43	54.00	-12.57	30.54	10.89	Average	100	4
10		7311.00	54.53	74.00	-19.47	43.64	10.89	Peak	100	4

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:"*" is Peak / Average value of fundamental frequency

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

Test By :Akun Chung Temperature(℃):24 Humidity(%):67

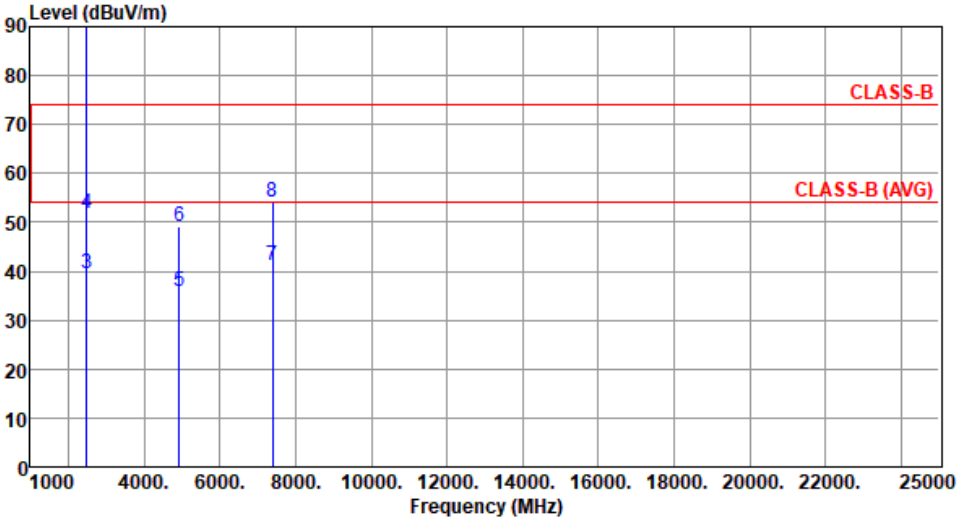


		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	*	2462.00	110.63			112.24	-1.61	Average	232	349
2	*	2462.00	114.04			115.65	-1.61	Peak	232	349
3		2483.50	41.35	54.00	-12.65	42.93	-1.58	Average	232	349
4		2483.50	53.17	74.00	-20.83	54.75	-1.58	Peak	232	349
5		4924.00	36.39	54.00	-17.61	30.92	5.47	Average	100	342
6		4924.00	49.43	74.00	-24.57	43.96	5.47	Peak	100	342
7		7386.00	41.59	54.00	-12.41	30.95	10.64	Average	100	348
8		7386.00	54.53	74.00	-19.47	43.89	10.64	Peak	100	348

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:"*" is Peak / Average value of fundamental frequency

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

Test By :Akun Chung Temperature(℃):24 Humidity(%):67



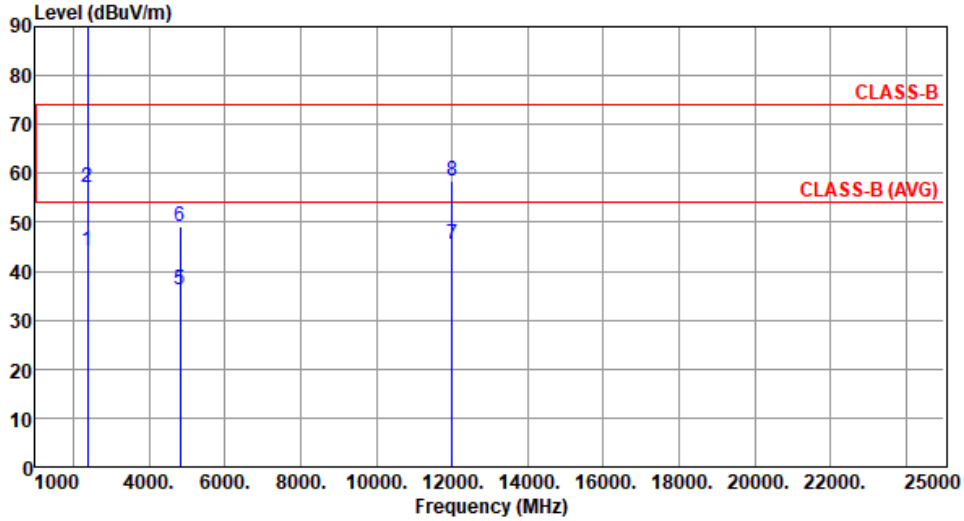
		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	*	2462.00	107.41			109.02	-1.61	Average	320	5
2	*	2462.00	110.80			112.41	-1.61	Peak	320	5
3		2483.50	39.57	54.00	-14.43	41.15	-1.58	Average	320	5
4		2483.50	51.96	74.00	-22.04	53.54	-1.58	Peak	320	5
5		4924.00	36.03	54.00	-17.97	30.56	5.47	Average	100	1
6		4924.00	49.06	74.00	-24.94	43.59	5.47	Peak	100	1
7		7386.00	41.07	54.00	-12.93	30.43	10.64	Average	100	3
8		7386.00	54.23	74.00	-19.77	43.59	10.64	Peak	100	3

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:"*" is Peak / Average value of fundamental frequency

Unwanted Emissions (Above 1GHz) for 11g

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

Test By :Akun Chung Temperature(℃):24 Humidity(%):67

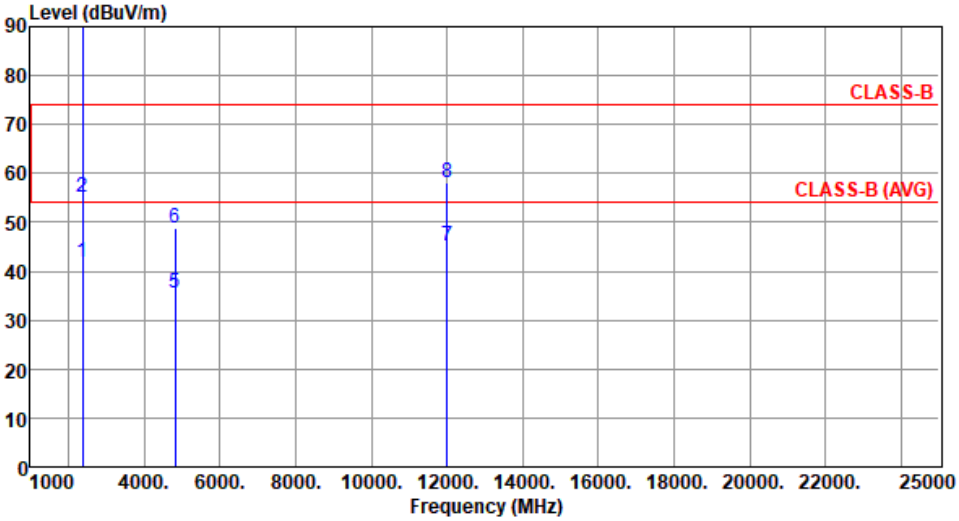


		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1		2390.00	44.18	54.00	-9.82	45.67	-1.49	Average	262	338
2		2390.00	57.00	74.00	-17.00	58.49	-1.49	Peak	262	338
3	*	2412.00	107.57			109.11	-1.54	Average	262	338
4	*	2412.00	117.63			119.17	-1.54	Peak	262	338
5		4824.00	36.04	54.00	-17.96	30.77	5.27	Average	100	340
6		4824.00	49.05	74.00	-24.95	43.78	5.27	Peak	100	340
7		12010.00	45.42	54.00	-8.58	30.68	14.74	Average	100	349
8		12010.00	58.55	74.00	-15.45	43.81	14.74	Peak	100	349

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:"*" is Peak / Average value of fundamental frequency

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

Test By :Akun Chung Temperature(℃):24 Humidity(%):67

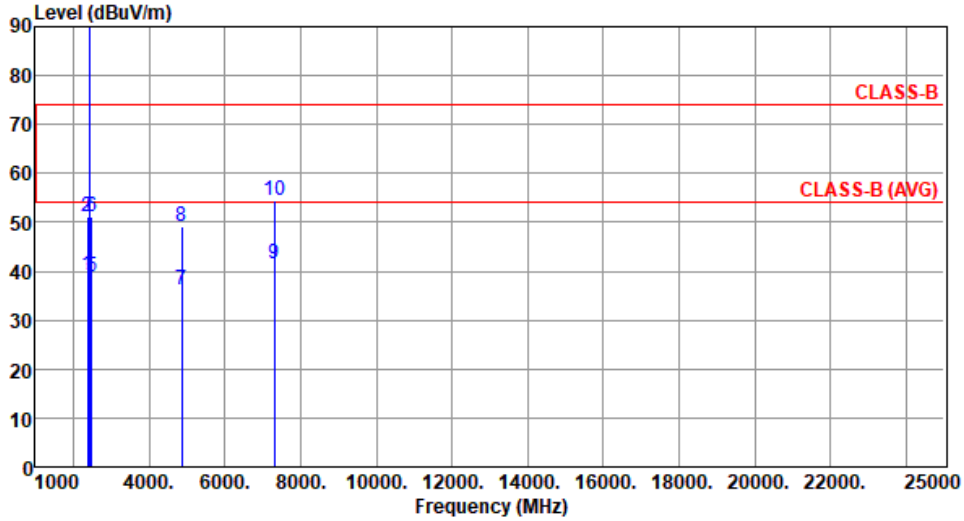


		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1		2390.00	41.68	54.00	-12.32	43.17	-1.49	Average	316	2
2		2390.00	55.13	74.00	-18.87	56.62	-1.49	Peak	316	2
3	*	2412.00	104.48			106.02	-1.54	Average	316	2
4	*	2412.00	114.35			115.89	-1.54	Peak	316	2
5		4824.00	35.60	54.00	-18.40	30.33	5.27	Average	100	3
6		4824.00	48.67	74.00	-25.33	43.40	5.27	Peak	100	3
7		12010.00	45.03	54.00	-8.97	30.29	14.74	Average	100	1
8		12010.00	57.98	74.00	-16.02	43.24	14.74	Peak	100	1

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:"*" is Peak / Average value of fundamental frequency

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

Test By :Akun Chung Temperature(℃):24 Humidity(%):67

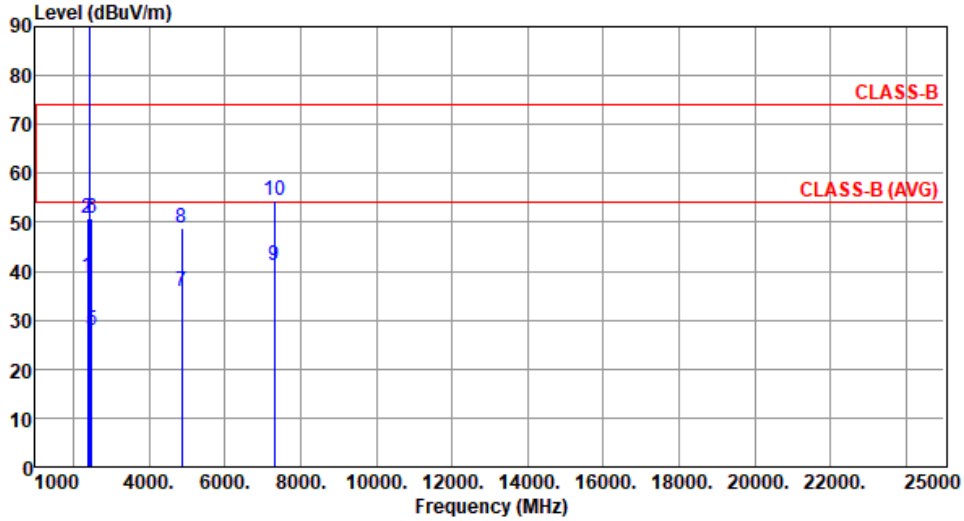


		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1		2390.00	39.17	54.00	-14.83	40.66	-1.49	Average	239	341
2		2390.00	51.18	74.00	-22.82	52.67	-1.49	Peak	239	341
3	*	2437.00	107.60			109.21	-1.61	Average	239	341
4	*	2437.00	118.95			120.56	-1.61	Peak	239	341
5		2483.50	39.01	54.00	-14.99	40.59	-1.58	Average	239	341
6		2483.50	51.04	74.00	-22.96	52.62	-1.58	Peak	239	341
7		4874.00	36.10	54.00	-17.90	30.77	5.33	Average	100	342
8		4874.00	49.01	74.00	-24.99	43.68	5.33	Peak	100	342
9		7311.00	41.65	54.00	-12.35	30.76	10.89	Average	100	344
10		7311.00	54.60	74.00	-19.40	43.71	10.89	Peak	100	344

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:"*" is Peak / Average value of fundamental frequency

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

Test By :Akun Chung Temperature(℃):24 Humidity(%):67

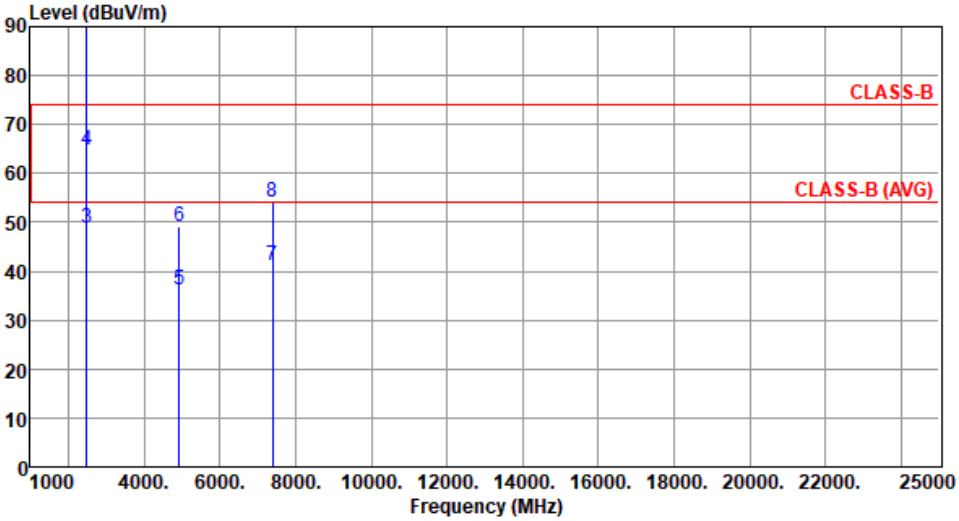


		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1		2390.00	38.80	54.00	-15.20	40.29	-1.49	Average	317	4
2		2390.00	50.79	74.00	-23.21	52.28	-1.49	Peak	317	4
3	*	2437.00	104.55			106.16	-1.61	Average	317	4
4	*	2437.00	115.66			117.27	-1.61	Peak	317	4
5		2483.50	27.75	54.00	-26.25	29.33	-1.58	Average	317	4
6		2483.50	50.78	74.00	-23.22	52.36	-1.58	Peak	317	4
7		4874.00	35.77	54.00	-18.23	30.44	5.33	Average	100	2
8		4874.00	48.71	74.00	-25.29	43.38	5.33	Peak	100	2
9		7311.00	41.33	54.00	-12.67	30.44	10.89	Average	100	5
10		7311.00	54.32	74.00	-19.68	43.43	10.89	Peak	100	5

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:"*" is Peak / Average value of fundamental frequency

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

Test By :Akun Chung Temperature(℃):24 Humidity(%):67

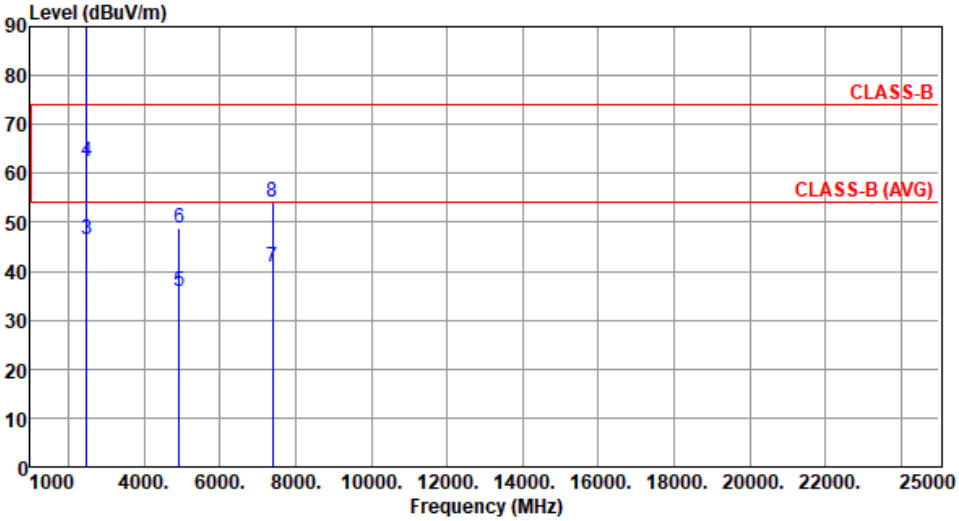


		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	*	2462.00	107.68			109.29	-1.61	Average	249	344
2	*	2462.00	119.02			120.63	-1.61	Peak	249	344
3		2483.50	48.90	54.00	-5.10	50.48	-1.58	Average	249	344
4		2483.50	64.64	74.00	-9.36	66.22	-1.58	Peak	249	344
5		4924.00	36.16	54.00	-17.84	30.69	5.47	Average	100	338
6		4924.00	49.13	74.00	-24.87	43.66	5.47	Peak	100	338
7		7386.00	41.29	54.00	-12.71	30.65	10.64	Average	100	345
8		7386.00	54.22	74.00	-19.78	43.58	10.64	Peak	100	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).
Note 3:"*" is Peak / Average value of fundamental frequency

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

Test By :Akun Chung Temperature(℃):24 Humidity(%):67



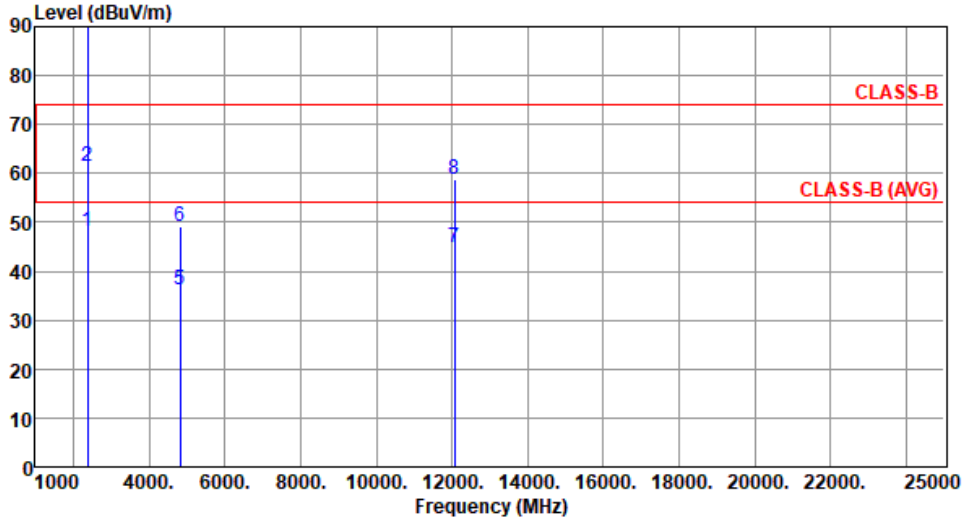
		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	*	2462.00	104.53			106.14	-1.61	Average	314	7
2	*	2462.00	115.82			117.43	-1.61	Peak	314	7
3		2483.50	46.53	54.00	-7.47	48.11	-1.58	Average	314	7
4		2483.50	62.60	74.00	-11.40	64.18	-1.58	Peak	314	7
5		4924.00	35.77	54.00	-18.23	30.30	5.47	Average	100	2
6		4924.00	48.77	74.00	-25.23	43.30	5.47	Peak	100	2
7		7386.00	40.93	54.00	-13.07	30.29	10.64	Average	100	5
8		7386.00	54.00	74.00	-20.00	43.36	10.64	Peak	100	5

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:"*" is Peak / Average value of fundamental frequency

Unwanted Emissions (Above 1GHz) for HE20

Modulation	HE20	**Test Freq. (MHz)**	2412
Polarization	Horizontal	**Test Configuration**	1

Test By :Akun Chung Temperature(℃):23 Humidity(%):69

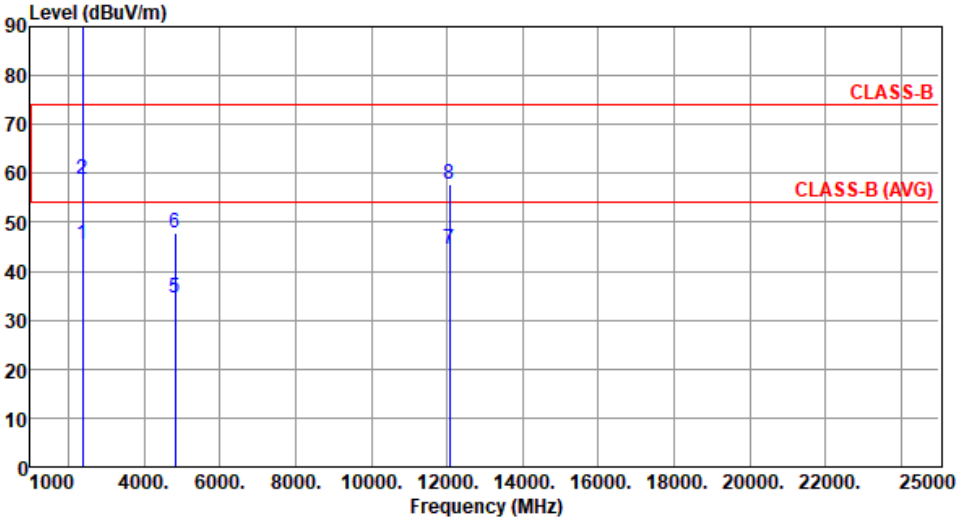


		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1		2390.00	48.00	54.00	-6.00	49.49	-1.49	Average	257	344
2		2390.00	61.35	74.00	-12.65	62.84	-1.49	Peak	257	344
3	*	2412.00	106.27			107.81	-1.54	Average	257	344
4	*	2412.00	119.11			120.65	-1.54	Peak	257	344
5		4824.00	36.17	54.00	-17.83	30.90	5.27	Average	100	349
6		4824.00	49.24	74.00	-24.76	43.97	5.27	Peak	100	349
7		12060.00	44.85	54.00	-9.15	29.89	14.96	Average	100	353
8		12060.00	58.83	74.00	-15.17	43.87	14.96	Peak	100	353

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:"*" is Peak / Average value of fundamental frequency

Modulation	HE20	**Test Freq. (MHz)**	2412
Polarization	Vertical	**Test Configuration**	1

Test By :Akun Chung Temperature(℃):23 Humidity(%):69

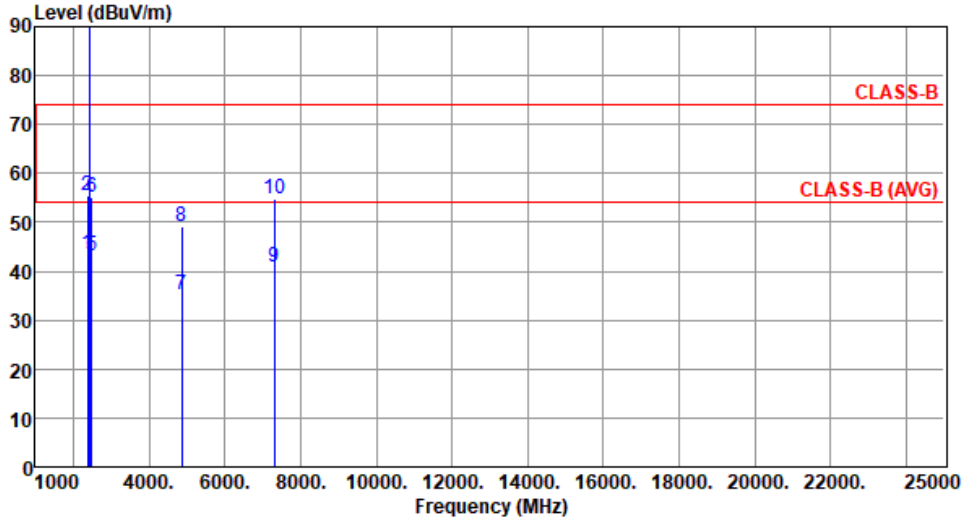


		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1		2390.00	45.61	54.00	-8.39	47.10	-1.49	Average	313	4
2		2390.00	58.78	74.00	-15.22	60.27	-1.49	Peak	313	4
3	*	2412.00	103.01			104.55	-1.54	Average	313	4
4	*	2412.00	115.91			117.45	-1.54	Peak	313	4
5		4824.00	34.66	54.00	-19.34	29.39	5.27	Average	100	4
6		4824.00	47.70	74.00	-26.30	42.43	5.27	Peak	100	4
7		12060.00	44.63	54.00	-9.37	29.67	14.96	Average	100	5
8		12060.00	57.65	74.00	-16.35	42.69	14.96	Peak	100	5

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:"*" is Peak / Average value of fundamental frequency

Modulation	HE20	**Test Freq. (MHz)**	2437
Polarization	Horizontal	**Test Configuration**	1

Test By :Akun Chung Temperature(℃):23 Humidity(%):69

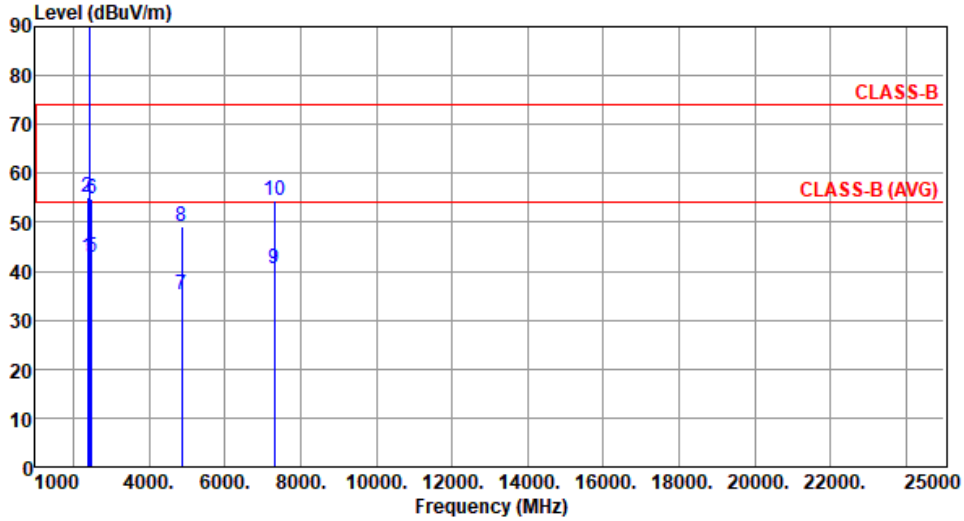


		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1		2390.00	43.38	54.00	-10.62	44.87	-1.49	Average	255	344
2		2390.00	55.45	74.00	-18.55	56.94	-1.49	Peak	255	344
3	*	2437.00	106.20			107.81	-1.61	Average	255	344
4	*	2437.00	118.85			120.46	-1.61	Peak	255	344
5		2483.50	43.19	54.00	-10.81	44.77	-1.58	Average	255	344
6		2483.50	55.27	74.00	-18.73	56.85	-1.58	Peak	255	344
7		4874.00	35.28	54.00	-18.72	29.95	5.33	Average	100	355
8		4874.00	49.27	74.00	-24.73	43.94	5.33	Peak	100	355
9		7311.00	40.85	54.00	-13.15	29.96	10.89	Average	100	352
10		7311.00	54.80	74.00	-19.20	43.91	10.89	Peak	100	352

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:"*" is Peak / Average value of fundamental frequency

Modulation	HE20	**Test Freq. (MHz)**	2437
Polarization	Vertical	**Test Configuration**	1

Test By :Akun Chung Temperature(°C):23 Humidity(%):69

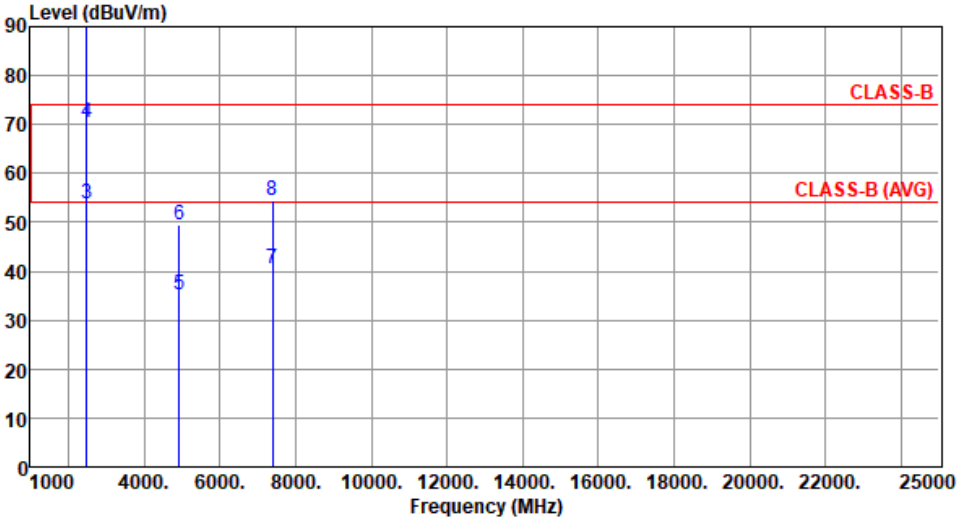


		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1		2390.00	42.97	54.00	-11.03	44.46	-1.49	Average	287	357
2		2390.00	55.05	74.00	-18.95	56.54	-1.49	Peak	287	357
3	*	2437.00	102.08			103.69	-1.61	Average	287	357
4	*	2437.00	114.50			116.11	-1.61	Peak	287	357
5		2483.50	42.84	54.00	-11.16	44.42	-1.58	Average	287	357
6		2483.50	54.93	74.00	-19.07	56.51	-1.58	Peak	287	357
7		4874.00	35.10	54.00	-18.90	29.77	5.33	Average	100	3
8		4874.00	49.08	74.00	-24.92	43.75	5.33	Peak	100	3
9		7311.00	40.62	54.00	-13.38	29.73	10.89	Average	100	8
10		7311.00	54.62	74.00	-19.38	43.73	10.89	Peak	100	8

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:"*" is Peak / Average value of fundamental frequency

Modulation	HE20	**Test Freq. (MHz)**	2462
Polarization	Horizontal	**Test Configuration**	1

Test By :Akun Chung Temperature(℃):23 Humidity(%):69

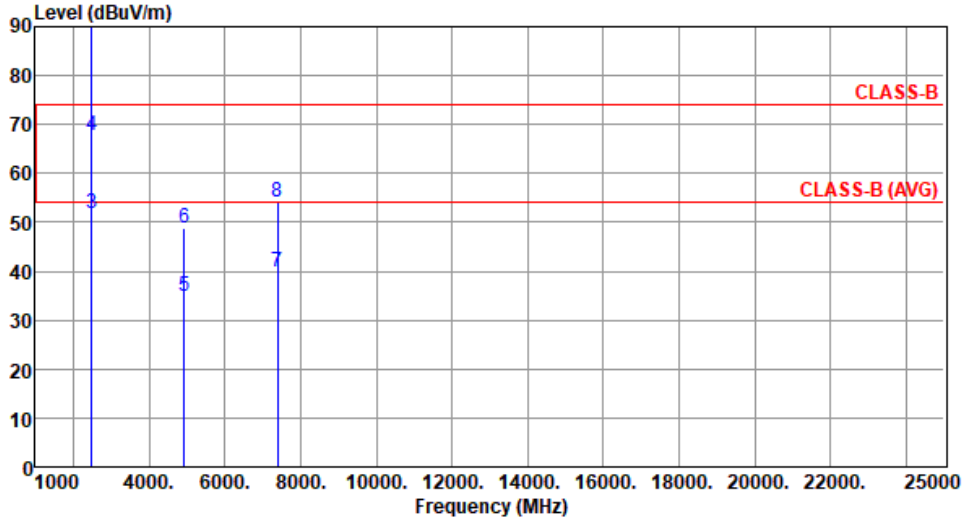


		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	*	2462.00	106.10			107.71	-1.61	Average	235	346
2	*	2462.00	117.95			119.56	-1.61	Peak	235	346
3		2483.50	53.79	54.00	-0.21	55.37	-1.58	Average	235	346
4		2483.50	70.31	74.00	-3.69	71.89	-1.58	Peak	235	346
5		4924.00	35.28	54.00	-18.72	29.81	5.47	Average	100	350
6		4924.00	49.34	74.00	-24.66	43.87	5.47	Peak	100	350
7		7386.00	40.46	54.00	-13.54	29.82	10.64	Average	100	352
8		7386.00	54.44	74.00	-19.56	43.80	10.64	Peak	100	352

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:"*" is Peak / Average value of fundamental frequency

Modulation	HE20	**Test Freq. (MHz)**	2462
Polarization	Vertical	**Test Configuration**	1

Test By :Akun Chung Temperature(℃):23 Humidity(%):69



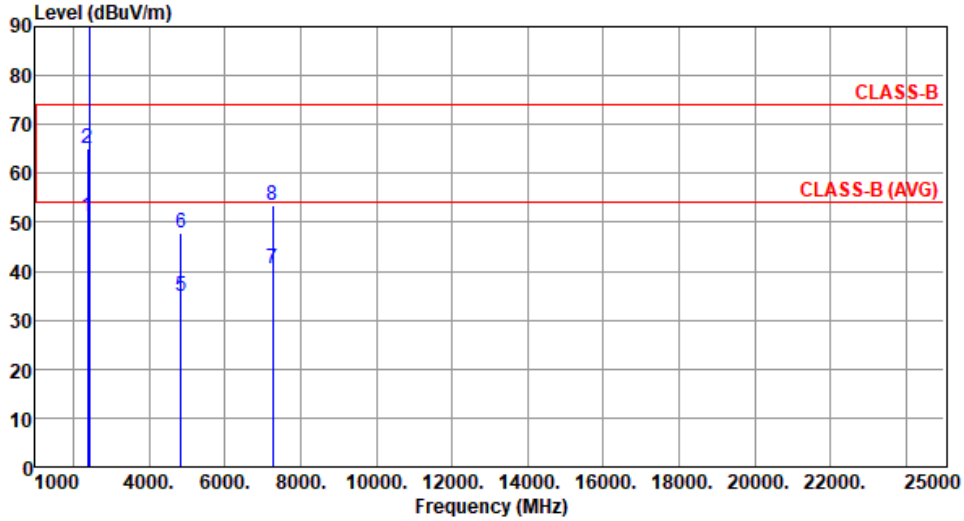
		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	*	2462.00	102.80			104.41	-1.61	Average	319	1
2	*	2462.00	114.67			116.28	-1.61	Peak	319	1
3		2483.50	51.67	54.00	-2.33	53.25	-1.58	Average	319	1
4		2483.50	67.86	74.00	-6.14	69.44	-1.58	Peak	319	1
5		4924.00	34.84	54.00	-19.16	29.37	5.47	Average	100	7
6		4924.00	48.87	74.00	-25.13	43.40	5.47	Peak	100	7
7		7386.00	40.00	54.00	-14.00	29.36	10.64	Average	100	5
8		7386.00	53.98	74.00	-20.02	43.34	10.64	Peak	100	5

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:"*" is Peak / Average value of fundamental frequency

Unwanted Emissions (Above 1GHz) for HE40

Modulation	HE40	**Test Freq. (MHz)**	2422
Polarization	Horizontal	**Test Configuration**	1

Test By :Akun Chung Temperature(℃):23 Humidity(%):69

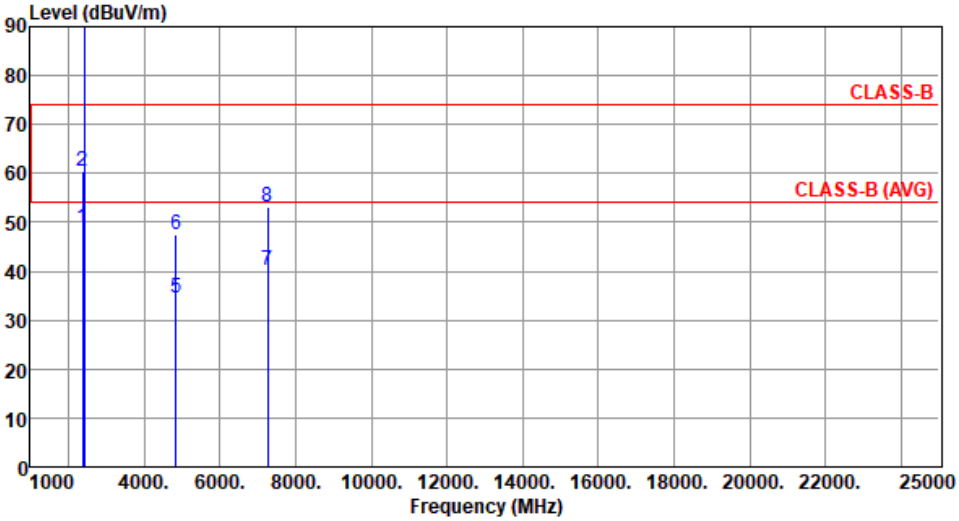


		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1		2390.00	51.02	54.00	-2.98	52.51	-1.49	Average	230	353
2		2390.00	64.98	74.00	-9.02	66.47	-1.49	Peak	230	353
3	*	2422.00	103.51			105.08	-1.57	Average	230	353
4	*	2422.00	116.39			117.96	-1.57	Peak	230	353
5		4844.00	34.87	54.00	-19.13	29.54	5.33	Average	100	341
6		4844.00	47.93	74.00	-26.07	42.60	5.33	Peak	100	341
7		7266.00	40.37	54.00	-13.63	29.53	10.84	Average	100	348
8		7266.00	53.42	74.00	-20.58	42.58	10.84	Peak	100	348

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:"*" is Peak / Average value of fundamental frequency

Modulation	HE40	**Test Freq. (MHz)**	2422
Polarization	Vertical	**Test Configuration**	1

Test By :Akun Chung Temperature(℃):23 Humidity(%):69

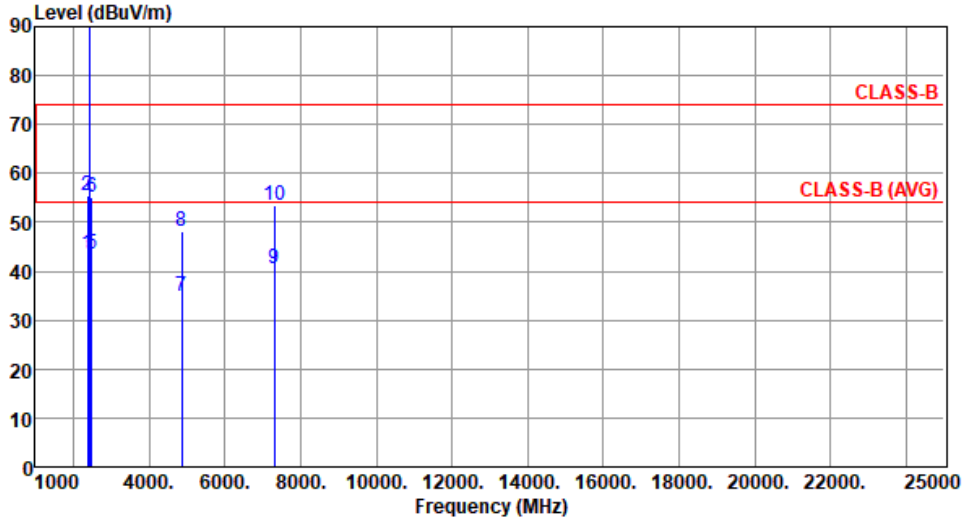


		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1		2390.00	48.65	54.00	-5.35	50.14	-1.49	Average	316	6
2		2390.00	60.56	74.00	-13.44	62.05	-1.49	Peak	316	6
3	*	2422.00	100.39			101.96	-1.57	Average	316	6
4	*	2422.00	112.89			114.46	-1.57	Peak	316	6
5		4844.00	34.51	54.00	-19.49	29.18	5.33	Average	100	2
6		4844.00	47.58	74.00	-26.42	42.25	5.33	Peak	100	2
7		7266.00	40.04	54.00	-13.96	29.20	10.84	Average	100	6
8		7266.00	53.11	74.00	-20.89	42.27	10.84	Peak	100	6

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:"*" is Peak / Average value of fundamental frequency

Modulation	HE40	**Test Freq. (MHz)**	2437
Polarization	Horizontal	**Test Configuration**	1

Test By :Akun Chung Temperature(℃):23 Humidity(%):69

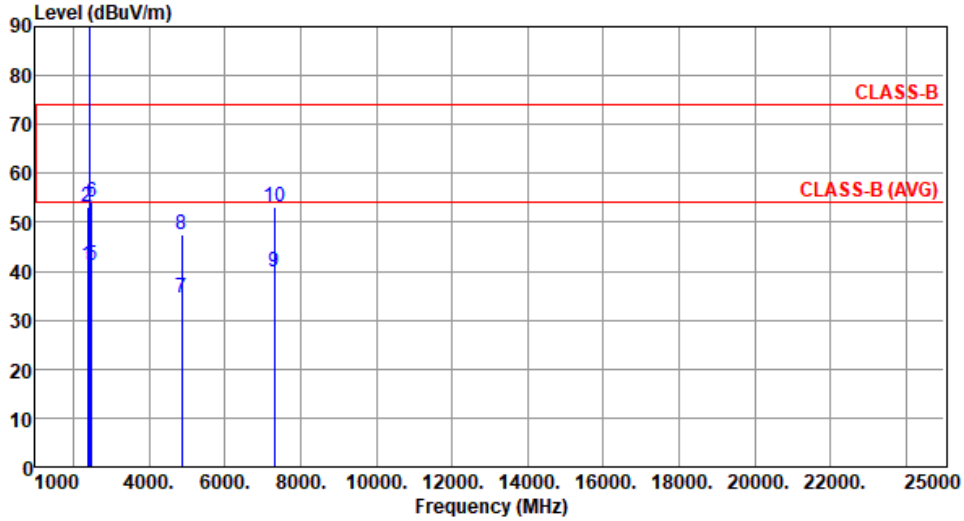


		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1		2390.00	43.40	54.00	-10.60	44.89	-1.49	Average	226	342
2		2390.00	55.38	74.00	-18.62	56.87	-1.49	Peak	226	342
3	*	2437.00	105.56			107.17	-1.61	Average	226	342
4	*	2437.00	119.25			120.86	-1.61	Peak	226	342
5		2483.50	43.37	54.00	-10.63	44.95	-1.58	Average	226	342
6		2483.50	55.17	74.00	-18.83	56.75	-1.58	Peak	226	342
7		4874.00	34.99	54.00	-19.01	29.66	5.33	Average	100	349
8		4874.00	48.01	74.00	-25.99	42.68	5.33	Peak	100	349
9		7311.00	40.53	54.00	-13.47	29.64	10.89	Average	100	343
10		7311.00	53.50	74.00	-20.50	42.61	10.89	Peak	100	343

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:"*" is Peak / Average value of fundamental frequency

Modulation	HE40	**Test Freq. (MHz)**	2437
Polarization	Vertical	**Test Configuration**	1

Test By :Akun Chung Temperature(℃):23 Humidity(%):69

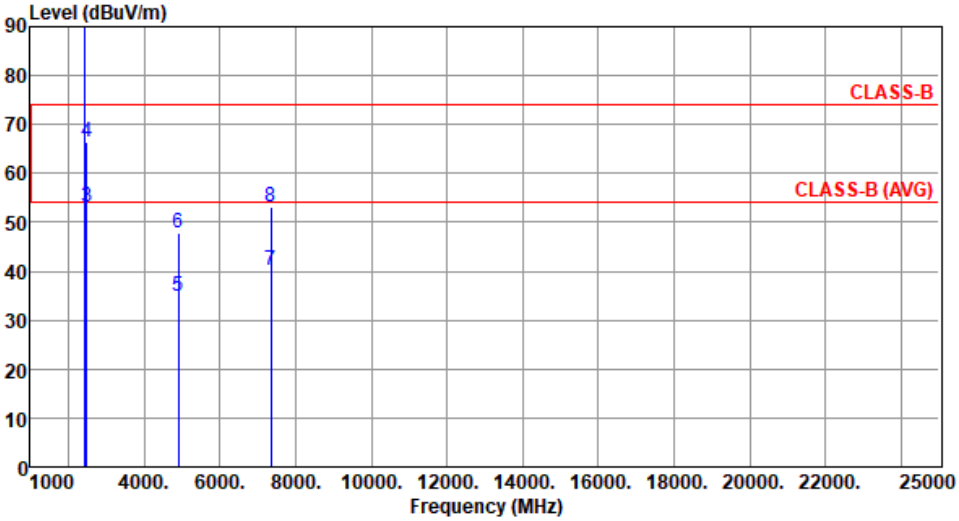


		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1		2390.00	41.05	54.00	-12.95	42.54	-1.49	Average	315	5
2		2390.00	53.25	74.00	-20.75	54.74	-1.49	Peak	315	5
3	*	2437.00	102.40			104.01	-1.61	Average	315	5
4	*	2437.00	116.02			117.63	-1.61	Peak	315	5
5		2483.50	41.17	54.00	-12.83	42.75	-1.58	Average	315	5
6		2483.50	54.05	74.00	-19.95	55.63	-1.58	Peak	315	5
7		4874.00	34.51	54.00	-19.49	29.18	5.33	Average	100	3
8		4874.00	47.61	74.00	-26.39	42.28	5.33	Peak	100	3
9		7311.00	40.01	54.00	-13.99	29.12	10.89	Average	100	1
10		7311.00	53.08	74.00	-20.92	42.19	10.89	Peak	100	1

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:"*" is Peak / Average value of fundamental frequency

Modulation	HE40	**Test Freq. (MHz)**	2452
Polarization	Horizontal	**Test Configuration**	1

Test By :Akun Chung Temperature(℃):23 Humidity(%):69

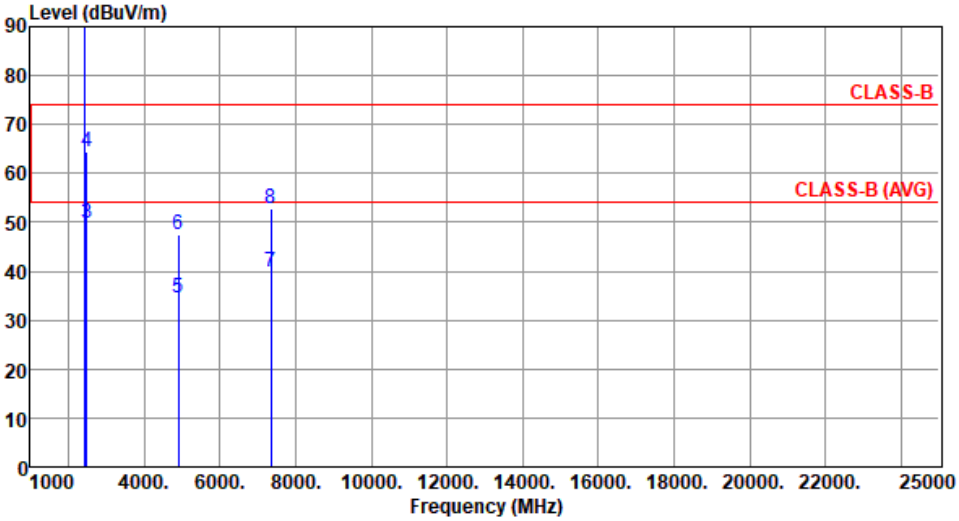


		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	*	2452.00	102.74			104.37	-1.63	Average	223	343
2	*	2452.00	114.84			116.47	-1.63	Peak	223	343
3		2483.50	53.02	54.00	-0.98	54.60	-1.58	Average	223	343
4		2483.50	66.27	74.00	-7.73	67.85	-1.58	Peak	223	343
5		4904.00	34.83	54.00	-19.17	29.50	5.33	Average	100	346
6		4904.00	47.85	74.00	-26.15	42.52	5.33	Peak	100	346
7		7356.00	40.24	54.00	-13.76	29.57	10.67	Average	100	342
8		7356.00	53.23	74.00	-20.77	42.56	10.67	Peak	100	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).
Note 3:"*" is Peak / Average value of fundamental frequency

Modulation	HE40	**Test Freq. (MHz)**	2452
Polarization	Vertical	**Test Configuration**	1

Test By :Akun Chung Temperature(℃):23 Humidity(%):69



		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	*	2452.00	100.16			101.79	-1.63	Average	314	3
2	*	2452.00	113.22			114.85	-1.63	Peak	314	3
3		2483.50	49.90	54.00	-4.10	51.48	-1.58	Average	314	3
4		2483.50	64.30	74.00	-9.70	65.88	-1.58	Peak	314	3
5		4904.00	34.49	54.00	-19.51	29.16	5.33	Average	100	2
6		4904.00	47.58	74.00	-26.42	42.25	5.33	Peak	100	2
7		7356.00	39.77	54.00	-14.23	29.10	10.67	Average	100	3
8		7356.00	52.88	74.00	-21.12	42.21	10.67	Peak	100	3

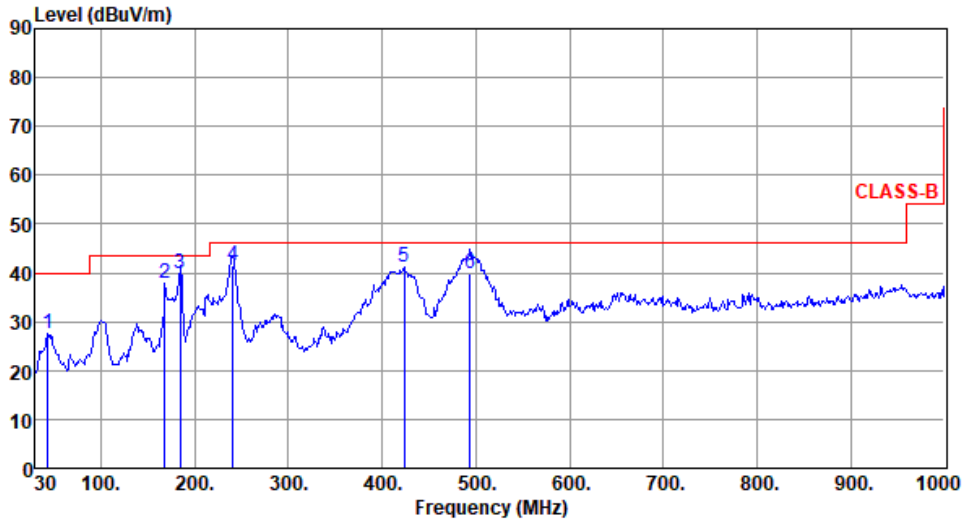
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3:"*" is Peak / Average value of fundamental frequency

POE mode

Unwanted Emissions (Below 1GHz)

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

Test By :Akun Chung Temperature(℃):22 Humidity(%):69

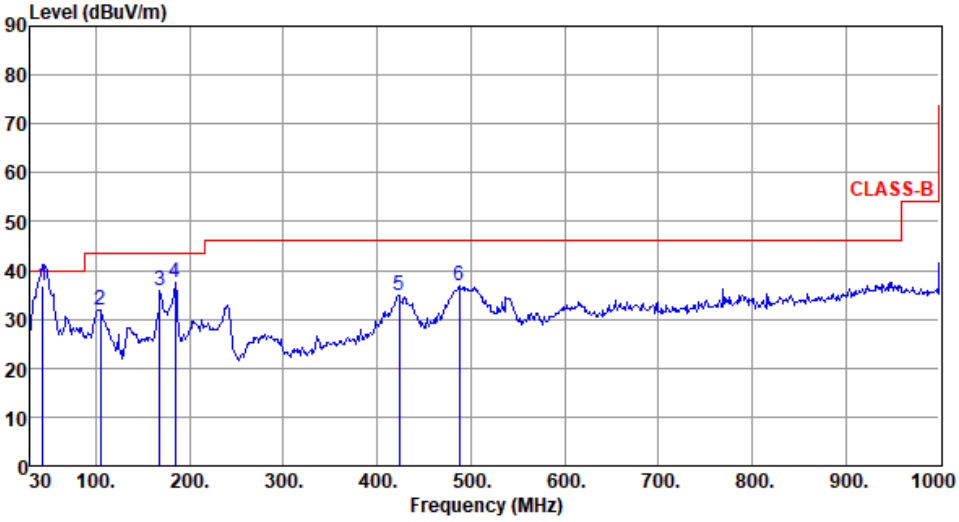


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	43.58	27.70	40.00	-12.30	36.19	-8.49	Peak	---	---
2	167.74	37.83	43.50	-5.67	46.50	-8.67	Peak	---	---
3	184.23	39.88	43.50	-3.62	50.20	-10.32	QP	159	126
4	240.49	41.66	46.00	-4.34	51.64	-9.98	QP	115	117
5	423.82	41.28	46.00	-4.72	45.62	-4.34	Peak	---	---
6	493.66	39.81	46.00	-6.19	42.25	-2.44	QP	154	209

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

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

Test By :Akun Chung Temperature(℃):22 Humidity(%):69

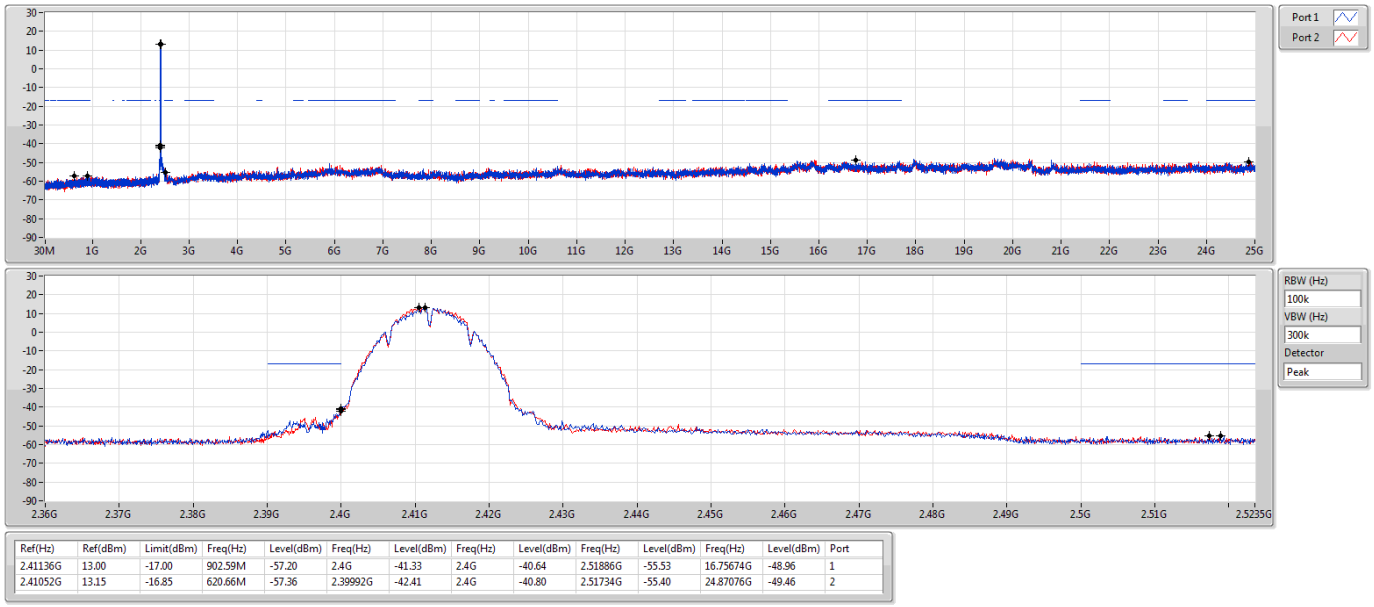


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	43.58	36.96	40.00	-3.04	45.45	-8.49	QP	100	19
2	104.69	31.98	43.50	-11.52	44.19	-12.21	Peak	---	---
3	167.74	35.77	43.50	-7.73	44.44	-8.67	Peak	---	---
4	184.23	37.36	43.50	-6.14	47.68	-10.32	Peak	---	---
5	423.82	35.01	46.00	-10.99	39.35	-4.34	Peak	---	---
6	487.84	36.70	46.00	-9.30	39.39	-2.69	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.

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

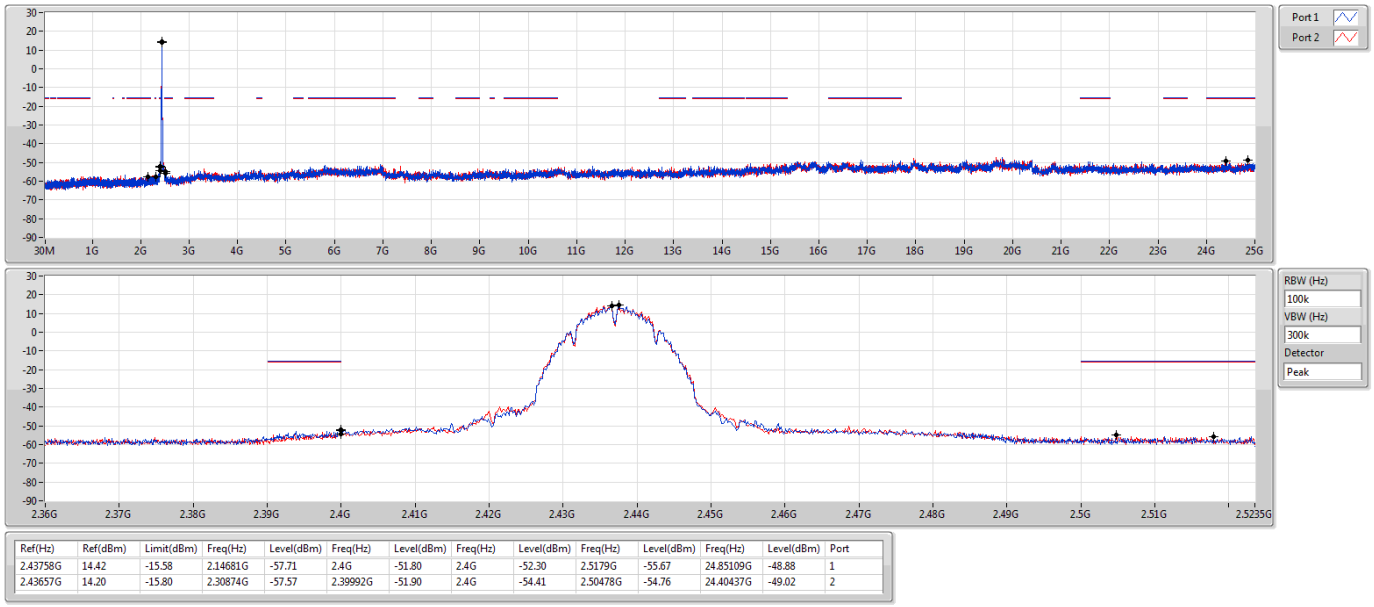
2412MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.41136G	13.00	-17.00	902.59M	-57.20	2.4G	-41.33	2.4G	-40.64	2.51886G	-55.53	16.75674G	-48.96	1
2.41052G	13.15	-16.85	620.66M	-57.36	2.39992G	-42.41	2.4G	-40.80	2.51734G	-55.40	24.87076G	-49.46	2

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

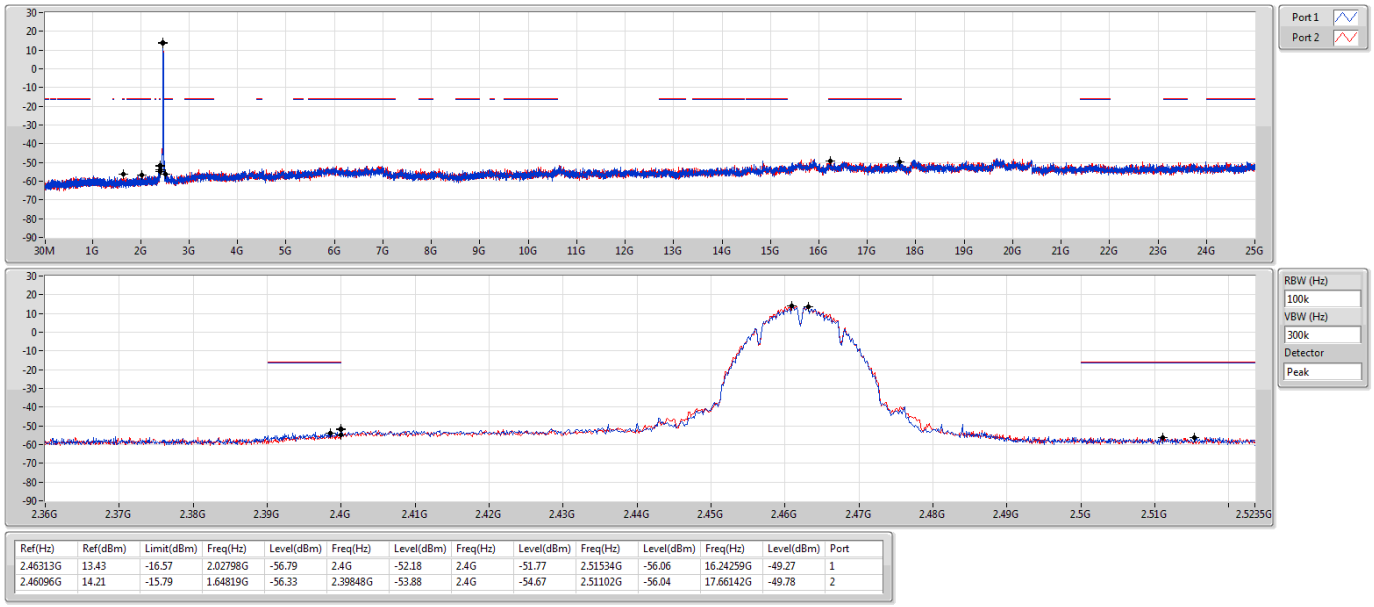
2437MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43758G	14.42	-15.58	2.14681G	-57.71	2.4G	-51.80	2.4G	-52.30	2.5179G	-55.67	24.85109G	-48.88	1
2.43657G	14.20	-15.80	2.30874G	-57.57	2.39992G	-51.90	2.4G	-54.41	2.50478G	-54.76	24.40437G	-49.02	2

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

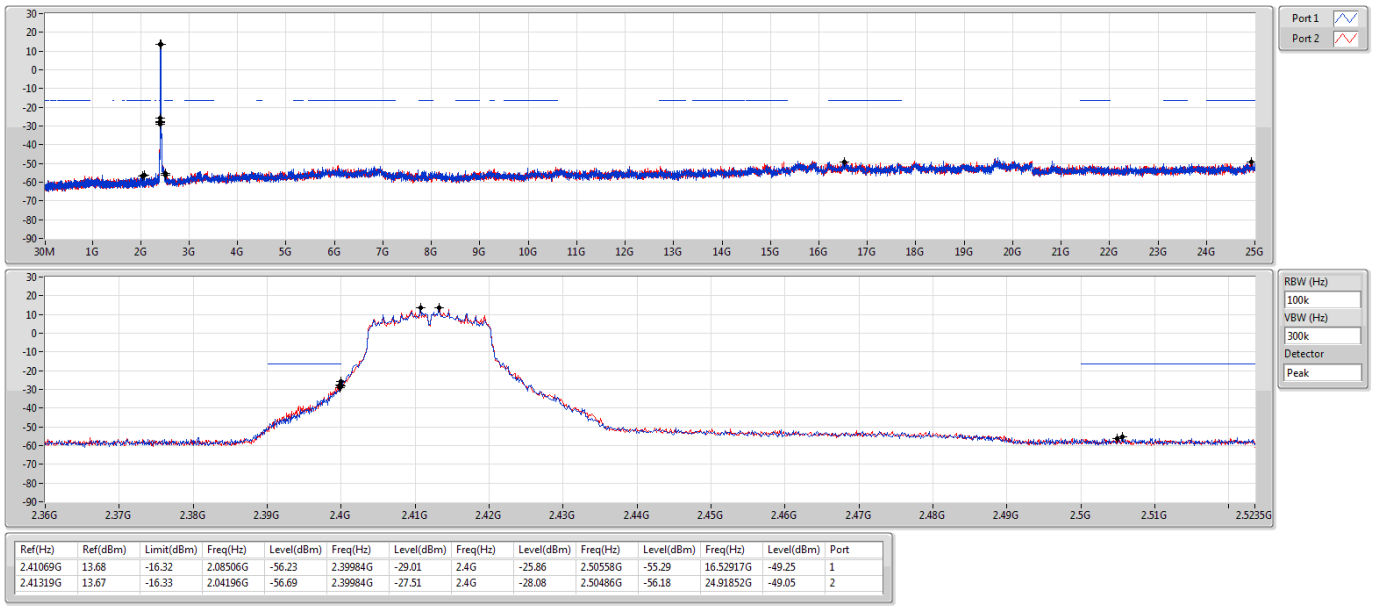
2462MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.46313G	13.43	-16.57	2.02798G	-56.79	2.4G	-52.18	2.4G	-51.77	2.51534G	-56.06	16.24259G	-49.27	1
2.46096G	14.21	-15.79	1.64819G	-56.33	2.39848G	-53.88	2.4G	-54.67	2.51102G	-56.04	17.66142G	-49.78	2

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

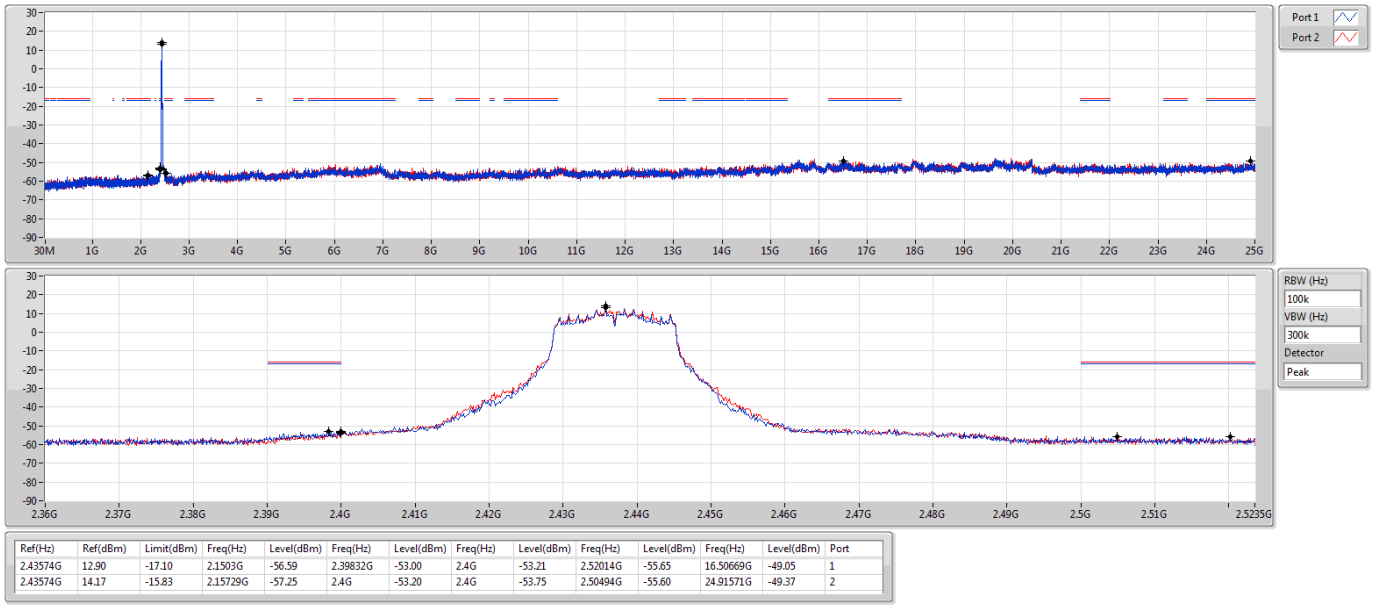
2412MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.41069G	13.68	-16.32	2.08506G	-56.23	2.39984G	-29.01	2.4G	-25.86	2.50558G	-55.29	16.52917G	-49.25	1
2.41319G	13.67	-16.33	2.04196G	-56.69	2.39984G	-27.51	2.4G	-28.08	2.50486G	-56.18	24.91852G	-49.05	2

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

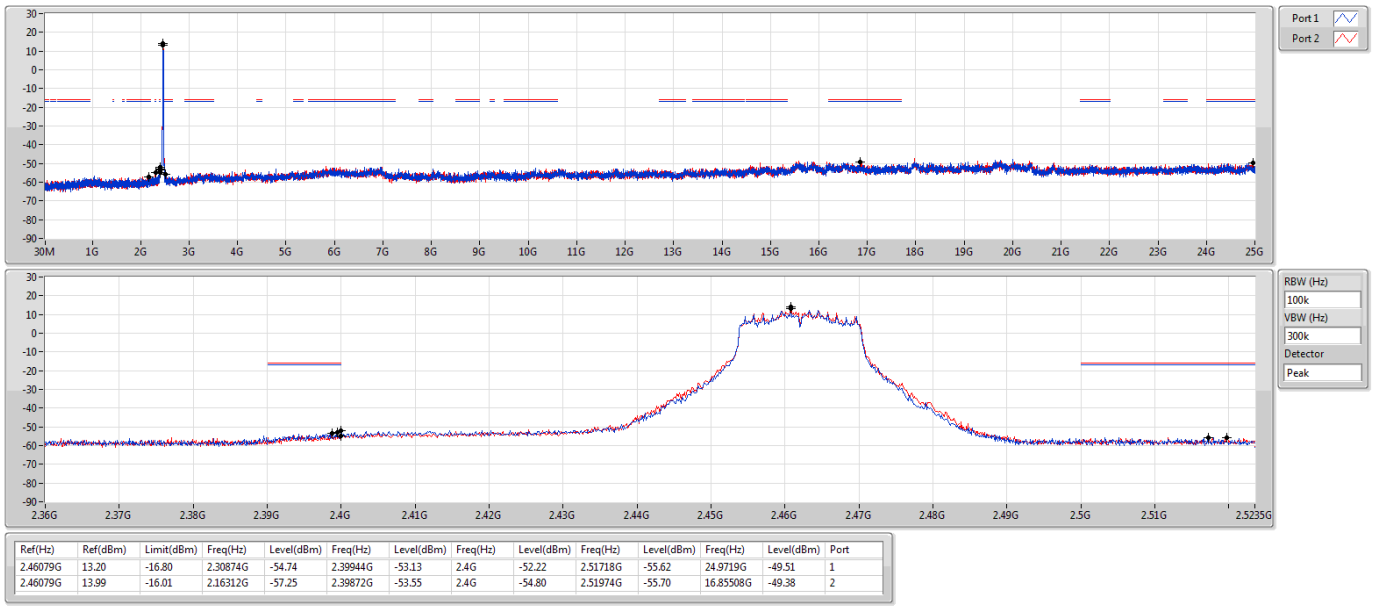
2437MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43574G	12.90	-17.10	2.1503G	-56.59	2.39832G	-53.00	2.4G	-53.21	2.52014G	-55.65	16.50669G	-49.05	1
2.43574G	14.17	-15.83	2.15729G	-57.25	2.4G	-53.20	2.4G	-53.75	2.50494G	-55.60	24.91571G	-49.37	2

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

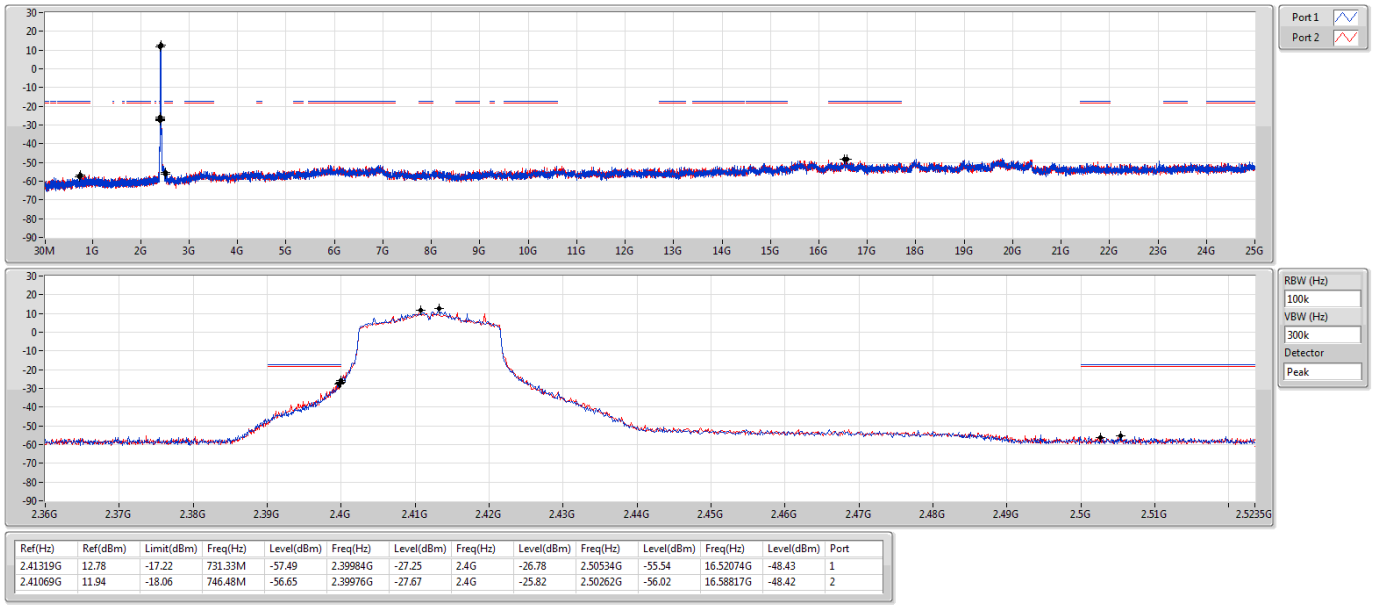
2462MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.46079G	13.20	-16.80	2.30874G	-54.74	2.39944G	-53.13	2.4G	-52.22	2.51718G	-55.62	24.9719G	-49.51	1
2.46079G	13.99	-16.01	2.16312G	-57.25	2.39872G	-53.55	2.4G	-54.80	2.51974G	-55.70	16.85508G	-49.38	2

802.11ax HEW20_Nss2,(MCS0)_2TX **CSENdB**

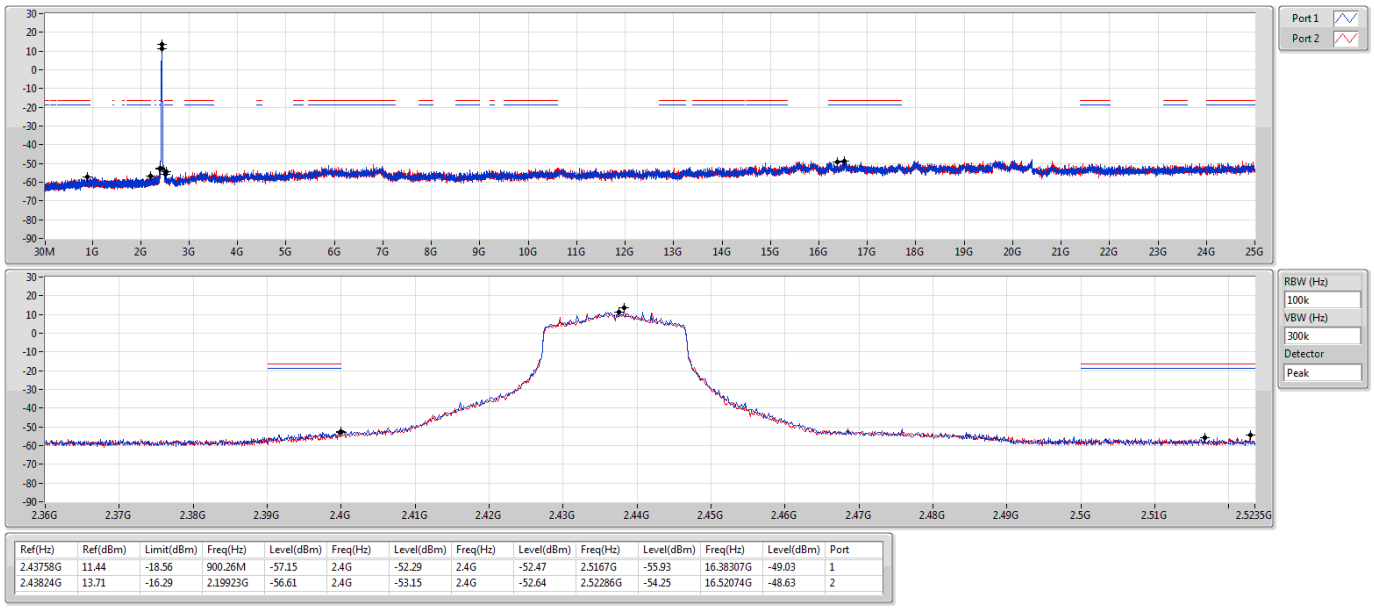
2412MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.41319G	12.78	-17.22	731.33M	-57.49	2.39984G	-27.25	2.4G	-26.78	2.50534G	-55.54	16.52074G	-48.43	1
2.41069G	11.94	-18.06	746.48M	-56.65	2.39976G	-27.67	2.4G	-25.82	2.50262G	-56.02	16.58817G	-48.42	2

802.11ax HEW20_Nss2,(MCS0)_2TX **CSENdB**

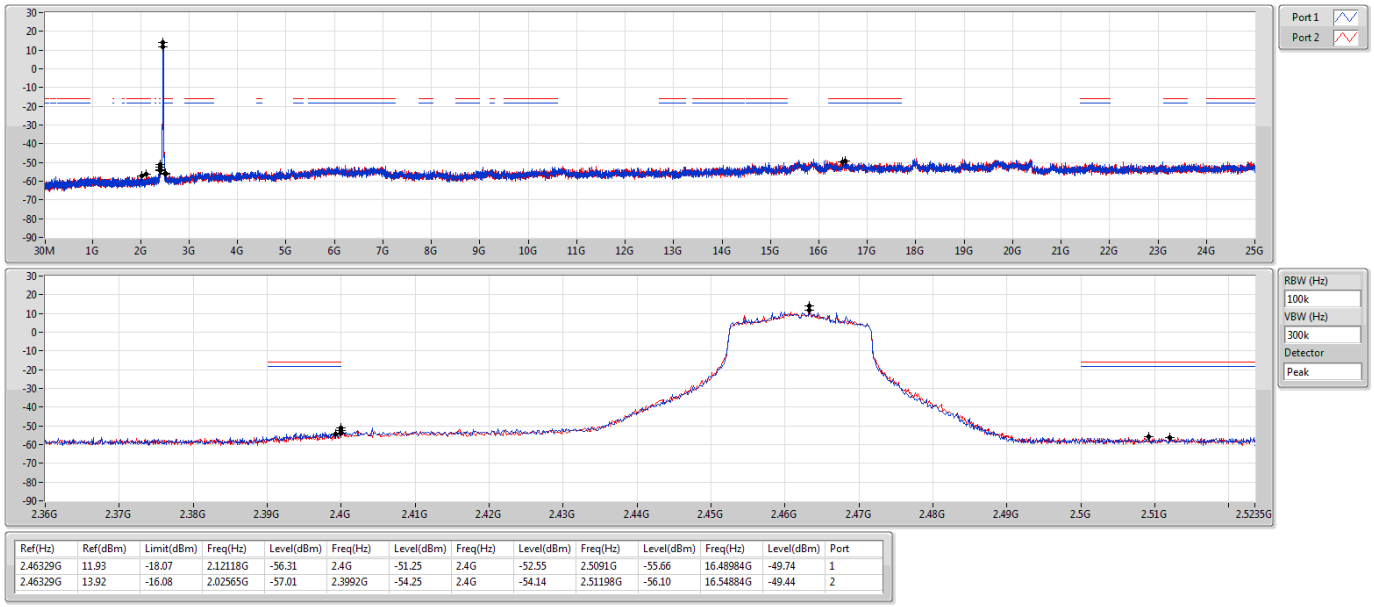
2437MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43758G	11.44	-18.56	900.26M	-57.15	2.4G	-52.29	2.4G	-52.47	2.5167G	-55.93	16.38307G	-49.03	1
2.43824G	13.71	-16.29	2.19923G	-56.61	2.4G	-53.15	2.4G	-52.64	2.52286G	-54.25	16.52074G	-48.63	2

802.11ax HEW20_Nss2,(MCS0)_2TX **CSENdB**

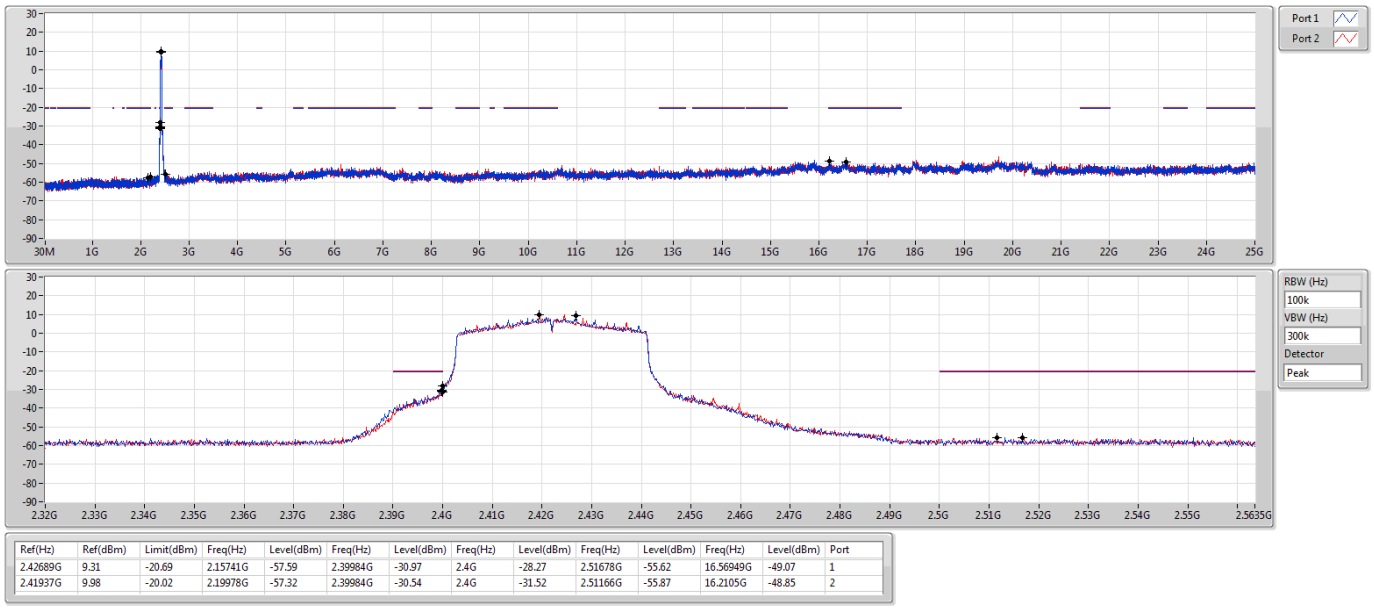
2462MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.46329G	11.93	-18.07	2.12118G	-56.31	2.4G	-51.25	2.4G	-52.55	2.5091G	-55.66	16.48984G	-49.74	1
2.46329G	13.92	-16.08	2.02565G	-57.01	2.3992G	-54.25	2.4G	-54.14	2.51198G	-56.10	16.54884G	-49.44	2

802.11ax HEW40_Nss2,(MCS0)_2TX **CSENdB**

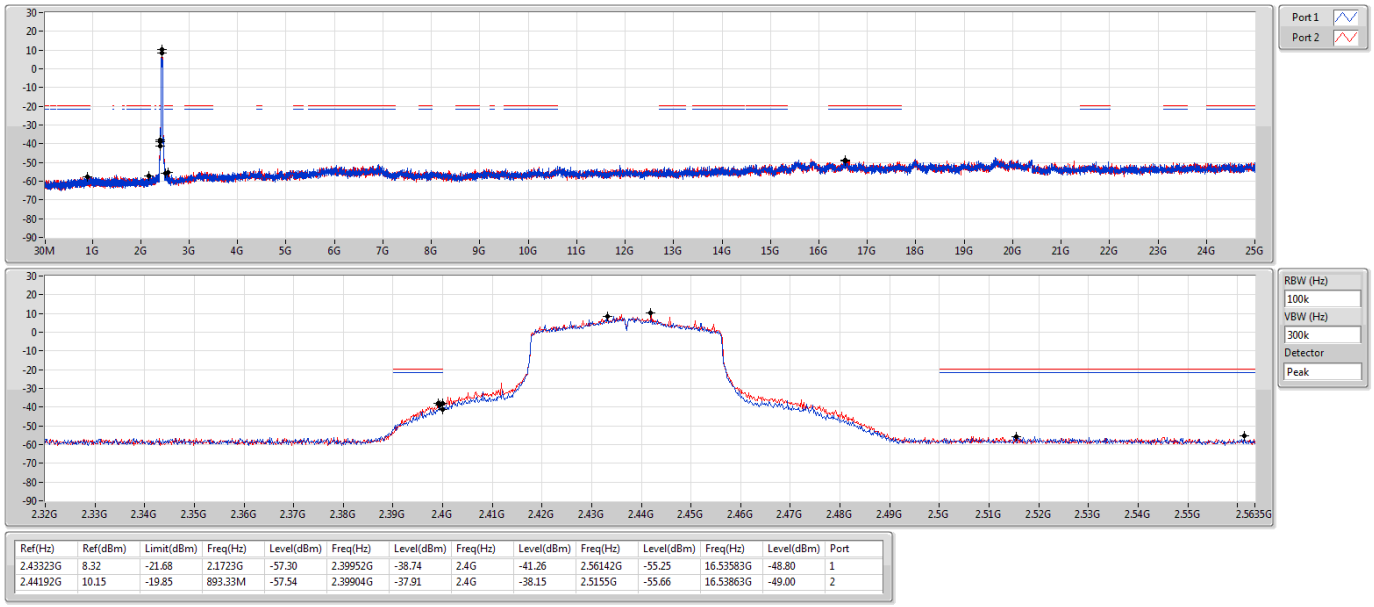
2422MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.42689G	9.31	-20.69	2.15741G	-57.59	2.39984G	-30.97	2.4G	-28.27	2.51678G	-55.62	16.56949G	-49.07	1
2.41937G	9.98	-20.02	2.19978G	-57.32	2.39984G	-30.54	2.4G	-31.52	2.51166G	-55.87	16.2105G	-48.85	2

802.11ax HEW40_Nss2,(MCS0)_2TX **CSENdB**

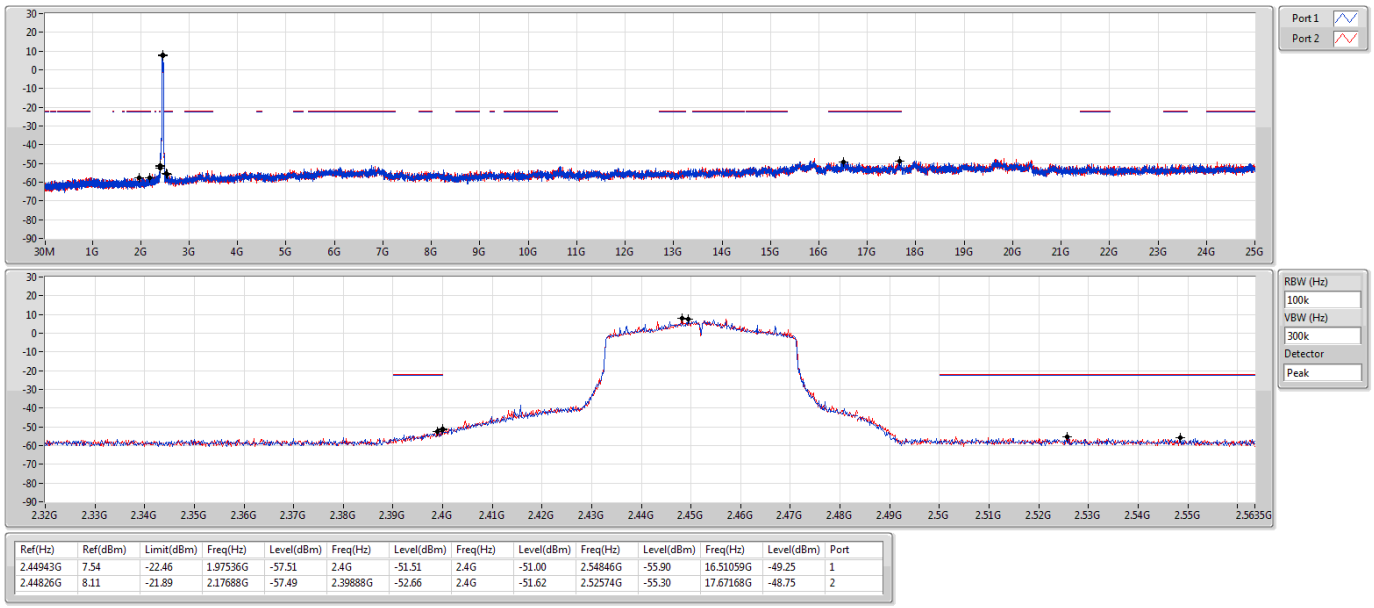
2437MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43323G	8.32	-21.68	2.1723G	-57.30	2.39952G	-38.74	2.4G	-41.26	2.56142G	-55.25	16.53583G	-48.80	1
2.44192G	10.15	-19.85	893.33M	-57.54	2.39904G	-37.91	2.4G	-38.15	2.5155G	-55.66	16.53863G	-49.00	2

802.11ax HEW40_Nss2,(MCS0)_2TX **CSENdB**

2452MHz

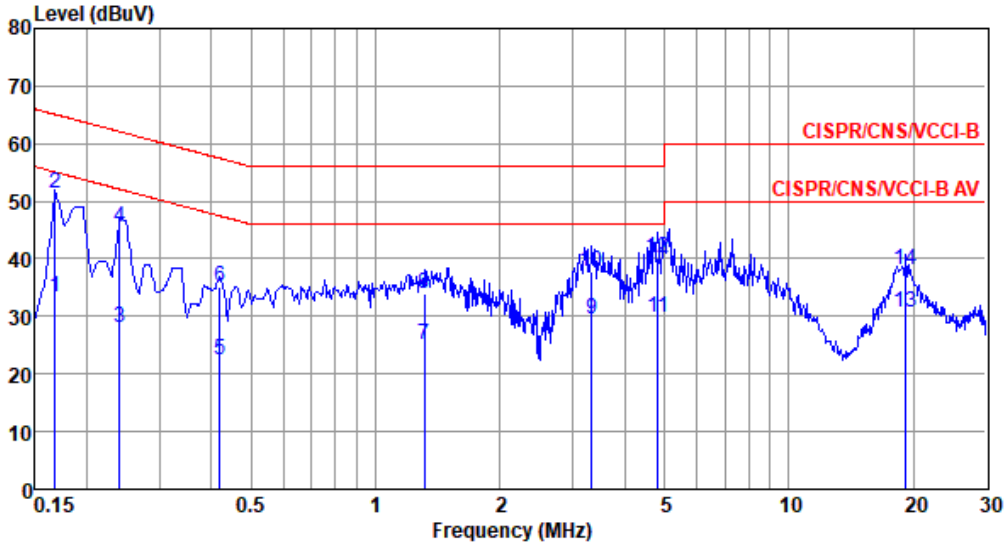


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44943G	7.54	-22.46	1.97536G	-57.51	2.4G	-51.51	2.4G	-51.00	2.54846G	-55.90	16.51059G	-49.25	1
2.44826G	8.11	-21.89	2.17688G	-57.49	2.39888G	-52.66	2.4G	-51.62	2.52574G	-55.30	17.67168G	-48.75	2

Adapter mode

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

Test by : Joe Liao Temperature: 21°C Humidity: 64%

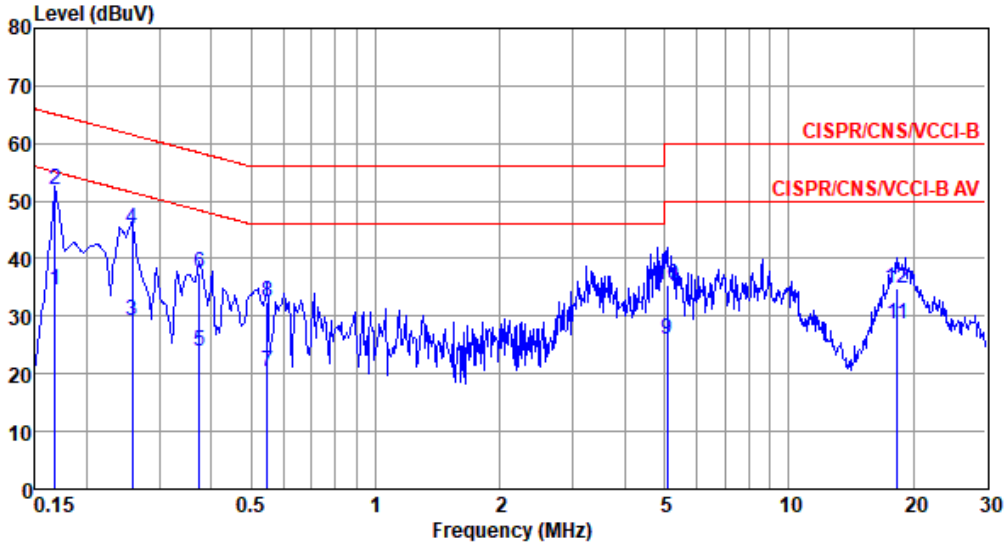


	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Cable loss	Aux	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	dB	
1	0.168	33.47	55.08	-21.61	23.50	9.68	0.08	0.21	Average
2*	0.168	51.41	65.08	-13.67	41.44	9.68	0.08	0.21	QP
3	0.240	27.92	52.08	-24.16	17.90	9.68	0.08	0.26	Average
4	0.240	45.46	62.08	-16.62	35.44	9.68	0.08	0.26	QP
5	0.419	22.32	47.46	-25.14	12.21	9.67	0.08	0.36	Average
6	0.419	35.09	57.46	-22.37	24.98	9.67	0.08	0.36	QP
7	1.310	25.22	46.00	-20.78	14.98	9.68	0.18	0.38	Average
8	1.310	34.07	56.00	-21.93	23.83	9.68	0.18	0.38	QP
9	3.328	29.53	46.00	-16.47	19.21	9.70	0.21	0.41	Average
10	3.328	37.79	56.00	-18.21	27.47	9.70	0.21	0.41	QP
11	4.822	29.76	46.00	-16.24	19.37	9.71	0.26	0.42	Average
12	4.822	40.03	56.00	-15.97	29.64	9.71	0.26	0.42	QP
13	19.224	30.63	50.00	-19.37	19.62	9.73	0.65	0.63	Average
14	19.224	37.96	60.00	-22.04	26.95	9.73	0.65	0.63	QP

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

Modulation Mode	11g	**Test Freq. (MHz)**	2437
Power Phase	Neutral		

Test by : Joe Liao Temperature: 21°C Humidity: 64%



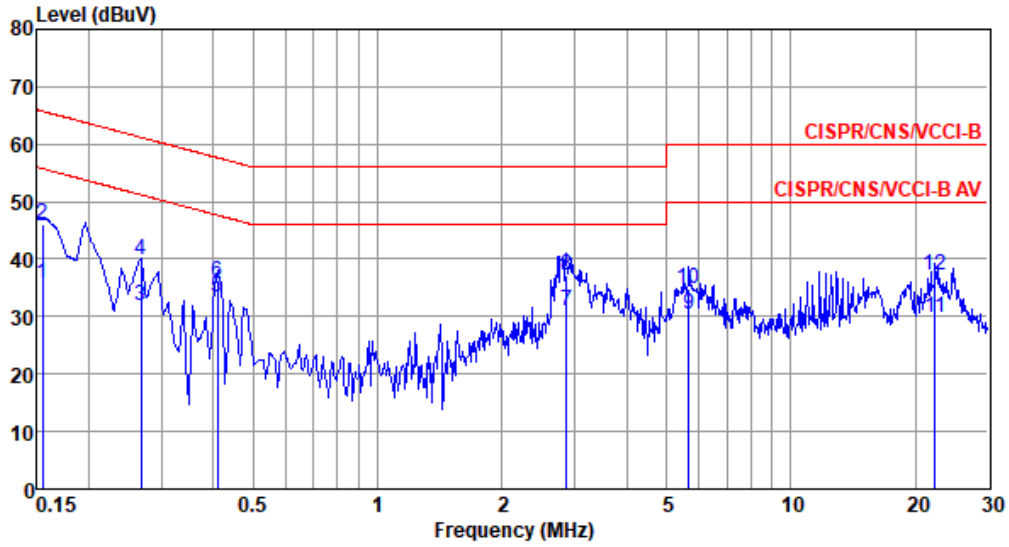
	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Cable loss	Aux	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	dB	
1	0.168	34.68	55.08	-20.40	24.82	9.61	0.08	0.17	Average
2*	0.168	51.91	65.08	-13.17	42.05	9.61	0.08	0.17	QP
3	0.258	29.14	51.51	-22.37	19.27	9.61	0.08	0.18	Average
4	0.258	45.20	61.51	-16.31	35.33	9.61	0.08	0.18	QP
5	0.375	23.95	48.39	-24.44	14.07	9.61	0.08	0.19	Average
6	0.375	37.49	58.39	-20.90	27.61	9.61	0.08	0.19	QP
7	0.546	20.25	46.00	-25.75	10.31	9.61	0.11	0.22	Average
8	0.546	32.46	56.00	-23.54	22.52	9.61	0.11	0.22	QP
9	5.085	25.90	50.00	-24.10	15.64	9.65	0.27	0.34	Average
10	5.085	35.49	60.00	-24.51	25.23	9.65	0.27	0.34	QP
11	18.328	28.71	50.00	-21.29	17.84	9.78	0.63	0.46	Average
12	18.328	34.89	60.00	-25.11	24.02	9.78	0.63	0.46	QP

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

POE mode

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

Test by : Joe Liao Temperature: 21°C Humidity: 64%

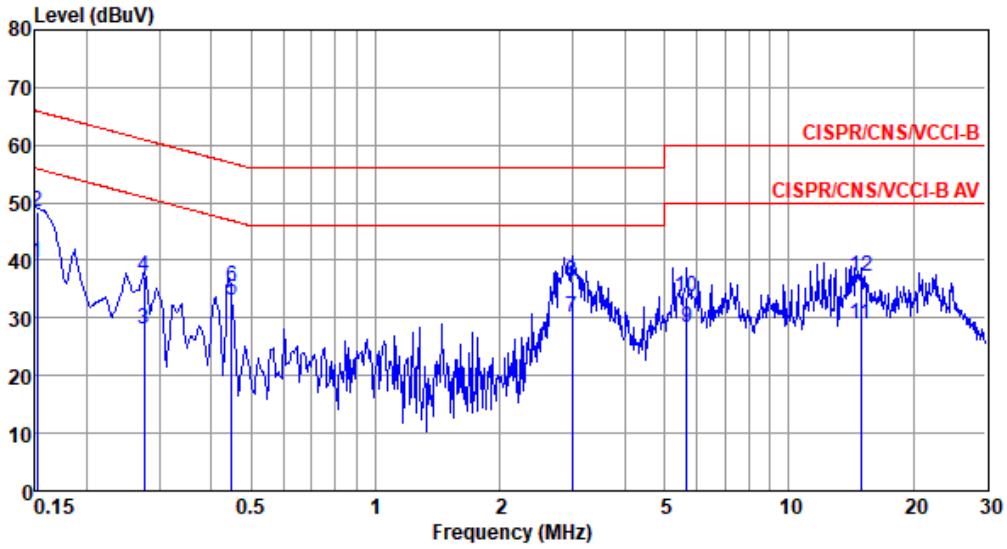


	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Cable loss	Aux	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	dB	
1	0.155	35.81	55.74	-19.93	26.05	9.68	0.08	0.00	Average
2	0.155	46.14	65.74	-19.60	36.38	9.68	0.08	0.00	QP
3	0.267	32.00	51.20	-19.20	22.24	9.68	0.08	0.00	Average
4	0.267	39.76	61.20	-21.44	30.00	9.68	0.08	0.00	QP
5*	0.410	33.47	47.64	-14.17	23.72	9.67	0.08	0.00	Average
6	0.410	36.07	57.64	-21.57	26.32	9.67	0.08	0.00	QP
7	2.869	31.06	46.00	-14.94	21.15	9.70	0.21	0.00	Average
8	2.869	37.34	56.00	-18.66	27.43	9.70	0.21	0.00	QP
9	5.653	30.29	50.00	-19.71	20.28	9.71	0.30	0.00	Average
10	5.653	34.88	60.00	-25.12	24.87	9.71	0.30	0.00	QP
11	22.298	29.84	50.00	-20.16	19.46	9.71	0.67	0.00	Average
12	22.298	37.07	60.00	-22.93	26.69	9.71	0.67	0.00	QP

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

Modulation Mode	11g	**Test Freq. (MHz)**	2437
Power Phase	Neutral		

Test by : Joe Liao Temperature: 21°C Humidity: 64%



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Cable loss	Aux	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	dB	
1	0.152	39.68	55.91	-16.23	29.99	9.61	0.08	0.00	Average
2	0.152	48.36	65.91	-17.55	38.67	9.61	0.08	0.00	QP
3	0.276	28.04	50.94	-22.90	18.35	9.61	0.08	0.00	Average
4	0.276	37.12	60.94	-23.82	27.43	9.61	0.08	0.00	QP
5*	0.448	33.14	46.92	-13.78	23.44	9.61	0.09	0.00	Average
6	0.448	35.45	56.92	-21.47	25.75	9.61	0.09	0.00	QP
7	2.993	30.15	46.00	-15.85	20.31	9.63	0.21	0.00	Average
8	2.993	36.26	56.00	-19.74	26.42	9.63	0.21	0.00	QP
9	5.653	28.46	50.00	-21.54	18.50	9.66	0.30	0.00	Average
10	5.653	33.59	60.00	-26.41	23.63	9.66	0.30	0.00	QP
11	14.907	28.93	50.00	-21.07	18.62	9.75	0.56	0.00	Average
12	14.907	37.10	60.00	-22.90	26.79	9.75	0.56	0.00	QP

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