FCC Test Report

FCC ID	:	**POTT88**
Equipment	:	**Chiline Smart Tri-Mode Thermometer**
Model No.	:	**T88 Pro**
Brand Name	:	**Chiline**
Applicant	:	**Inventec Appliances Corp.**
Address	:	**1F, No. 37, Wugong 5th Road, Wugu District, New Taipei City, Taiwan, R.O.C.**
Standard	:	**47 CFR FCC Part 15.247**
Received Date	:	**Jun. 15, 2022**
Tested Date	:	**Jun. 24 ~ Jul. 01, 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**

Table of Contents

Release Record

Report No.	Version	Description	Issued Date
FR261502AC	Rev. 01	Initial issue	Oct. 26, 2022

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	AC Power Line Conducted Emission	[dBuV]: 0.466MHz 30.68 (Margin -15.90dB) - AV	Pass
15.247(d) 15.209	Unwanted Emissions	[dBuV/m at 3m]: 58.13MHz 34.00 (Margin -6.00dB) - PK	Pass
15.247(b)(3)	Conducted Output Power	Max Power [dBm]: 22.12	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]	1	1-11 Mbps
2400-2483.5	g	2412-2462	1-11 [11]	1	6-54 Mbps
2400-2483.5	n (HT20)	2412-2462	1-11 [11]	1	MCS 0-7
Note 1: RF output power specifies that Maximum Conducted (Average) Output Power. Note 2: DSSS-DBPSK, DQPSK, CCK modulation OFDM- BPSK, QPSK, 16QAM, 64QAM modulation.					

1.1.2 Antenna Details

Ant. No.	Brand	Model	Type	Connector	Gain (dBi)
1	YAGEO	ANT3216LL11R2400A	Chip Antenna	No	3.68

1.1.3 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	3.7Vdc from battery 5Vdc from adapter

Note: The above power adapter is not bundled in market.

1.1.4 Accessories

Accessories		
No.	**Equipment**	**Description**
1	Lithium battery	Brand: KAYO Model: Inventec-KPL382944 Rating: 500mAh, 1.85Wh, 3.7Vdc
2	Temperature probe cable	Brand: Chiline Model:TPC88 0.58m non-shielded without core
3	Storage case	Being part of T88 accessary and do not sale individually.
4	Forehead thermometer probe cover	Brand: Chiline Model: HPC88
5	Forehead and Ear thermometer probe (with protective cover)	Brand: Chiline Model: HEP88
6	Charging cable (USB cable)	Brand: UTE Model: 61401.12A40 1.0m shielded without core

1.1.5 Channel List

Channel	Frequency(MHz)
1	2412
2	2417
3	2422
4	2427
5	2432
6	2437
7	2442
8	2447
9	2452
10	2457
11	2462

1.1.6 Test Tool and Duty Cycle

Test Tool	wl_tool, Versioin: 7.45		
Duty Cycle and Duty Factor	Mode	Duty Cycle (%)	Duty Factor (dB)
	11b	99.60%	0.02
	11g	96.06%	0.17
	HT20	95.71%	0.19

1.1.7 Power Index of Test Tool

Modulation Mode	Test Frequency (MHz)	Power Index
11b	2412	14
11b	2437	14
11b	2462	14
11g	2412	12
11g	2437	12
11g	2462	12
HT20	2412	12
HT20	2437	12
HT20	2462	12

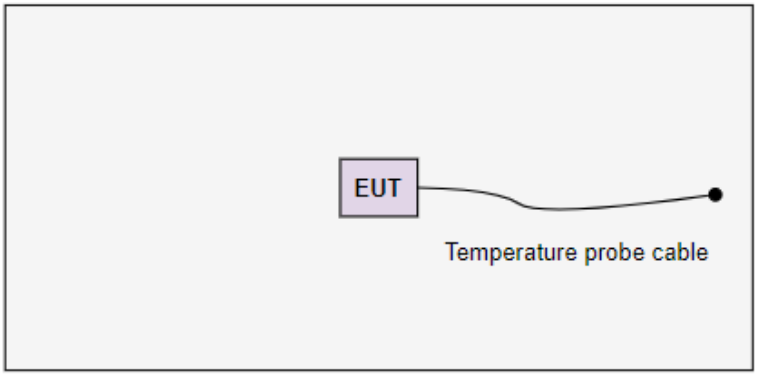
1.2 Local Support Equipment List

Support Equipment List					
No.	**Equipment**	**Brand**	**Model**	**FCC ID**	**Remarks**
1	Notebook	DELL	Latitude E5400	DoC	---
2	Adapter	DAPTER TECH	ATM012T-W050VU	---	Provided by applicant.

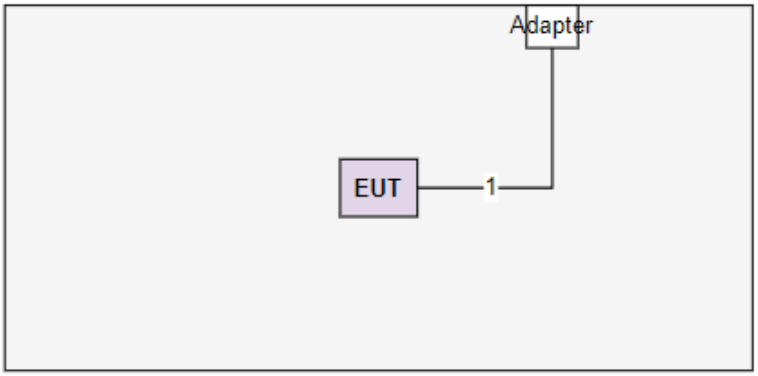
Note: The support notebook was disconnected from EUT and was removed from test table after sending command from notebook to control EUT to transmit continuously.

1.3 Test Setup Chart

Test Setup Diagram (battery mode)



Test Setup Diagram (charging mode)



No.	Signal cable / Length (m)
1	USB, 1.0m shielded.

1.4 The Equipment List

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
Tested Date	Jun. 28, 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	NSLK 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	04	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	Jun. 24, 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-0.8M	EMC	EMC8D-NM-NM-800	EMC8D-NM-NM-800 -001	Sep. 24, 2021	Sep. 23, 2022
LF cable-3M	EMC	EMC8D-NM-NM-300 0	131103	Sep. 24, 2021	Sep. 23, 2022
LF cable-13M	EMC	EMC8D-NM-NM-130 00	131104	Sep. 24, 2021	Sep. 23, 2022
RF cable-3M	HUBER+SUHNER	SUCOFLEX104	MY22620/4	Sep. 24, 2021	Sep. 23, 2022
RF cable-8M	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	Jul. 01, 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	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

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
AC Power Line Conducted Emission	Charging mode	---	---	---
Unwanted Emissions ≤ 1GHz	11b	2437	1 Mbps	---
	Charging mode	---	---	---
Unwanted Emissions >1GHz Conducted Output Power 6dB bandwidth Power spectral density	11b 11g HT20	2412 / 2437 / 2462 2412 / 2437 / 2462 2412 / 2437 / 2462	1 Mbps 6 Mbps MCS 0	---

NOTE:

1. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The **Y-plane** results were found as the worst case and were shown in this report.
2. Two test conditions,
   a. With Temperature probe cable, and
   b. With Forehead and Ear thermometer probe
   had been covered during the pretest and found that test condition **a. With Temperature probe cable** was the worst case and was chosen for final test.

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

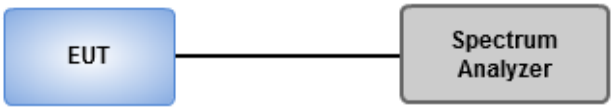
6dB Bandwidth

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	25°C / 66%	**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	25°C / 66%	**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.

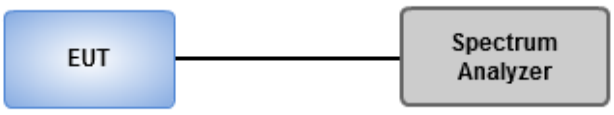
2 Set the sweep time to: ≥ 10 (number of measurement points in sweep) x (total on/off period of the transmitted signal).

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	25°C / 66%	**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

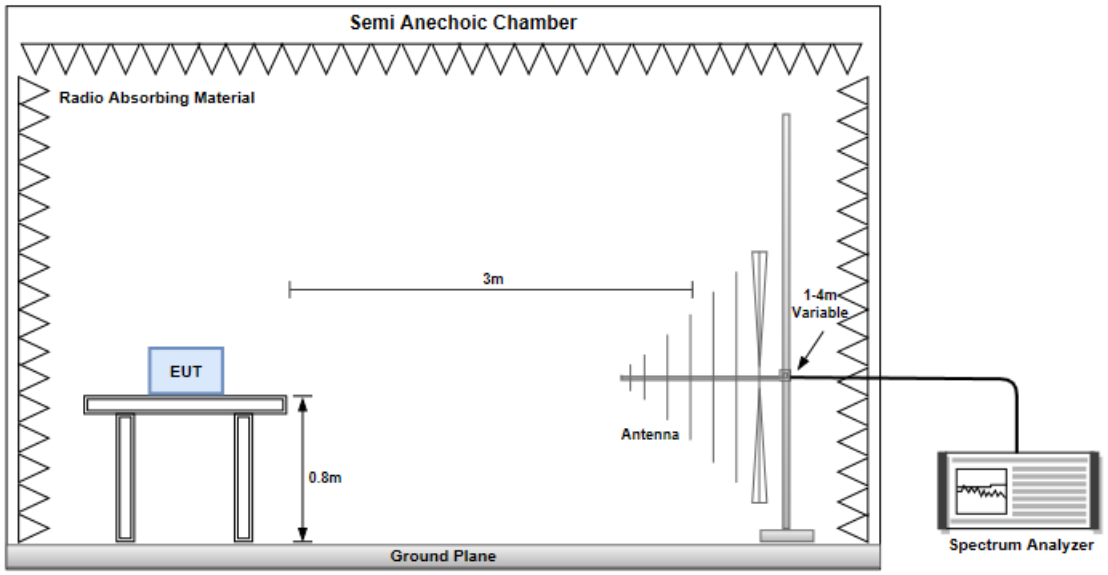
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission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

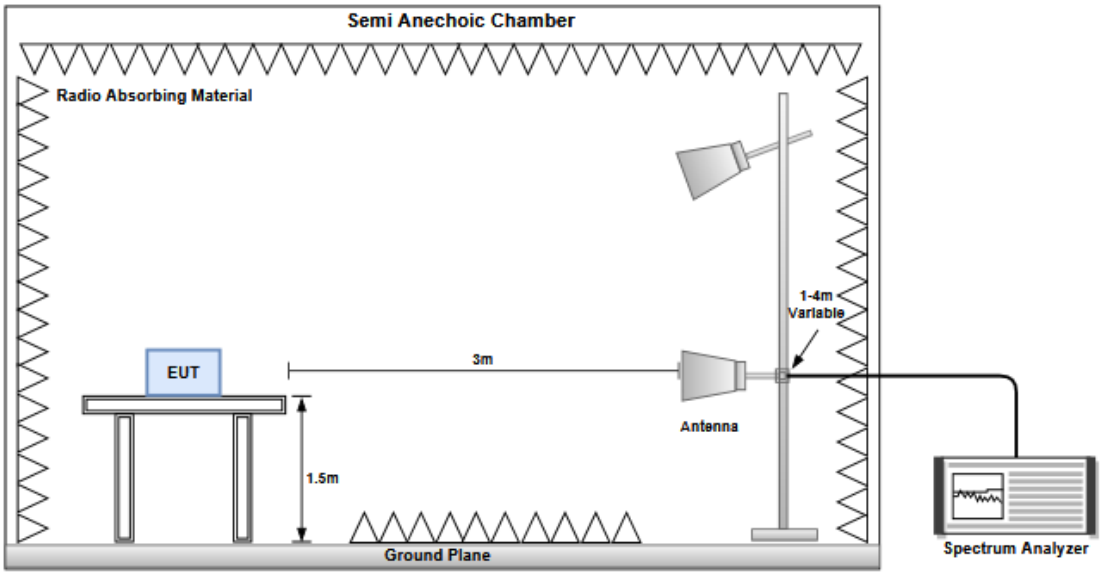
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above 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 20 dB relative to the maximum in-band peak PSD level in 100 kHz.

3.5.2 Test Procedures

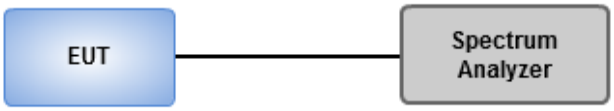
Reference level measurement

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	25°C / 66%	Tested By	Roger Lu

Refer to Appendix E.

3.6 AC Power Line Conducted Emissions

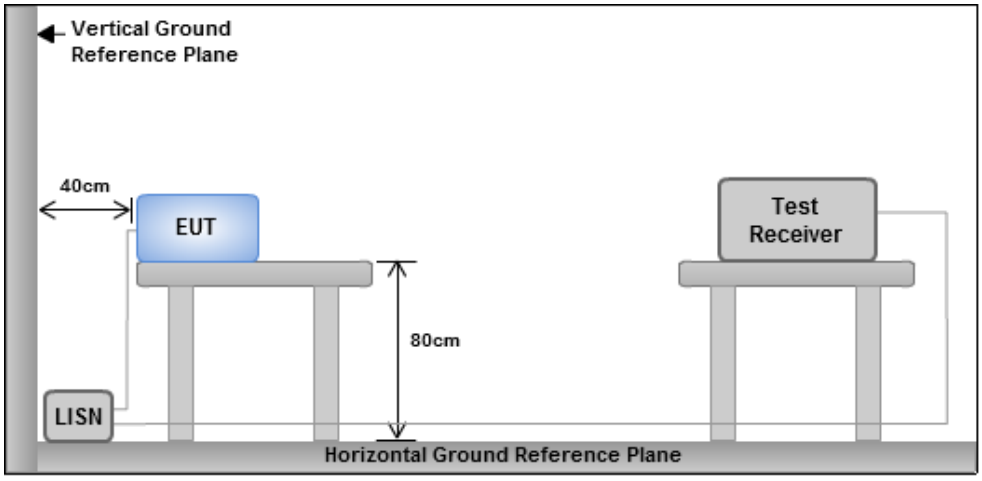
3.6.1 Limit of AC Power Line Conducted Emissions

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

Tel: 886-2-2601-1640

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

Kwei Shan

Tel: 886-3-271-8666

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

Kwei Shan Site II

Tel: 886-3-271-8640

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)_1TX	9.025M	14.043M	14M0G1D	8.05M	14.043M
802.11g_Nss1,(6Mbps)_1TX	15.075M	16.417M	16M4D1D	14.95M	16.367M
802.11n HT20_Nss1,(MCS0)_1TX	15.25M	17.516M	17M5D1D	15M	17.491M

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

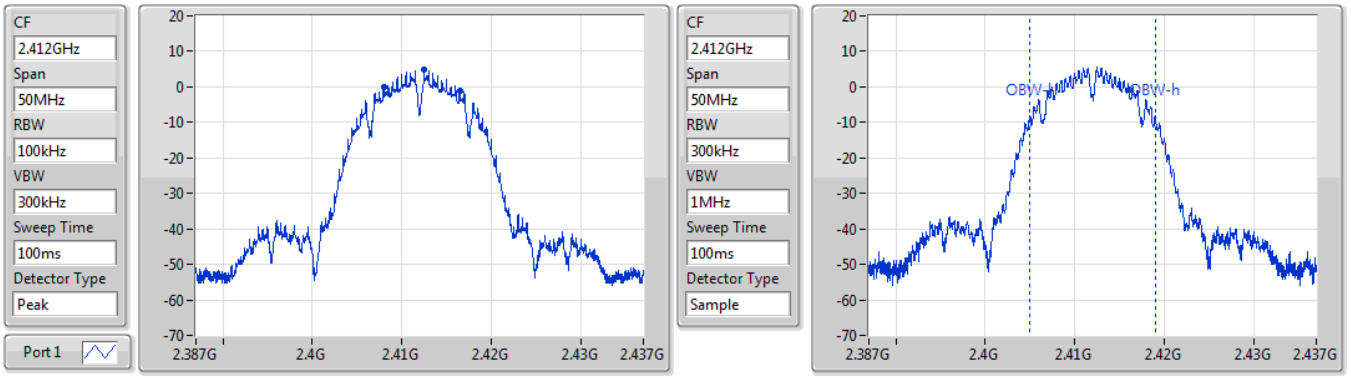
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-
2412MHz	Pass	500k	8.525M	14.043M
2437MHz	Pass	500k	8.05M	14.043M
2462MHz	Pass	500k	9.025M	14.043M
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-
2412MHz	Pass	500k	15.05M	16.367M
2437MHz	Pass	500k	14.95M	16.367M
2462MHz	Pass	500k	15.075M	16.417M
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-
2412MHz	Pass	500k	15M	17.491M
2437MHz	Pass	500k	15.25M	17.516M
2462MHz	Pass	500k	15.025M	17.491M

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

802.11b_Nss1,(1Mbps)_1TX EBW

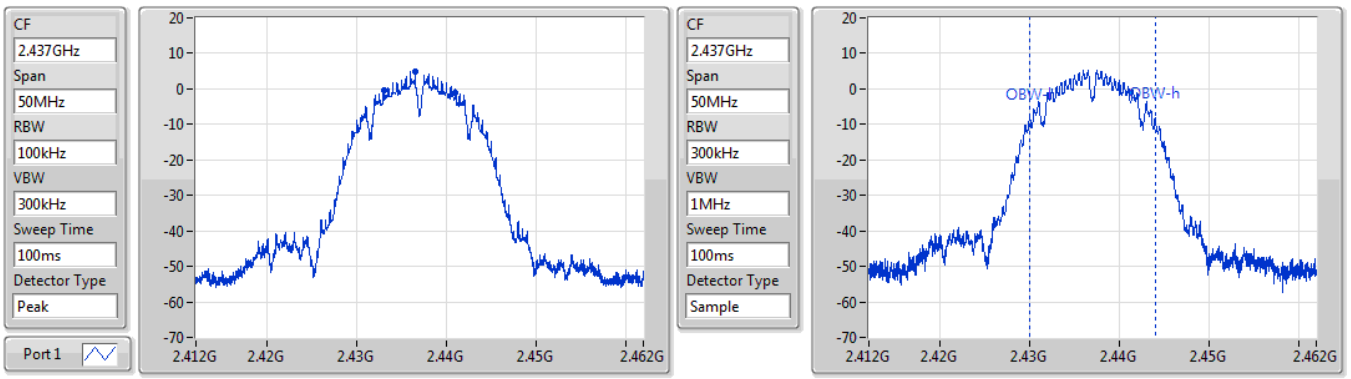
2412MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
8.525M	2.407975G	2.4165G	14.043M	2.404954G	2.418997G	500k	1

802.11b_Nss1,(1Mbps)_1TX EBW

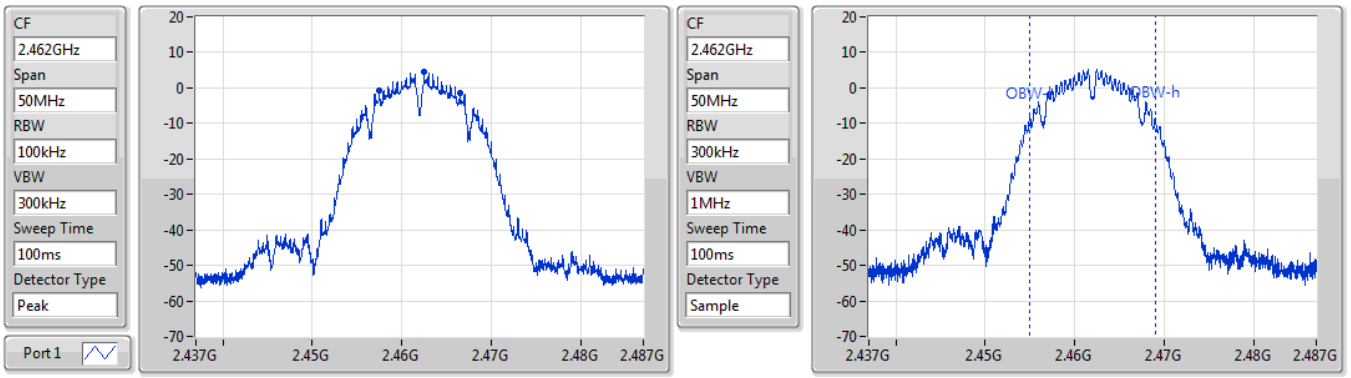
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
8.05M	2.432975G	2.441025G	14.043M	2.429954G	2.443997G	500k	1

802.11b_Nss1,(1Mbps)_1TX EBW

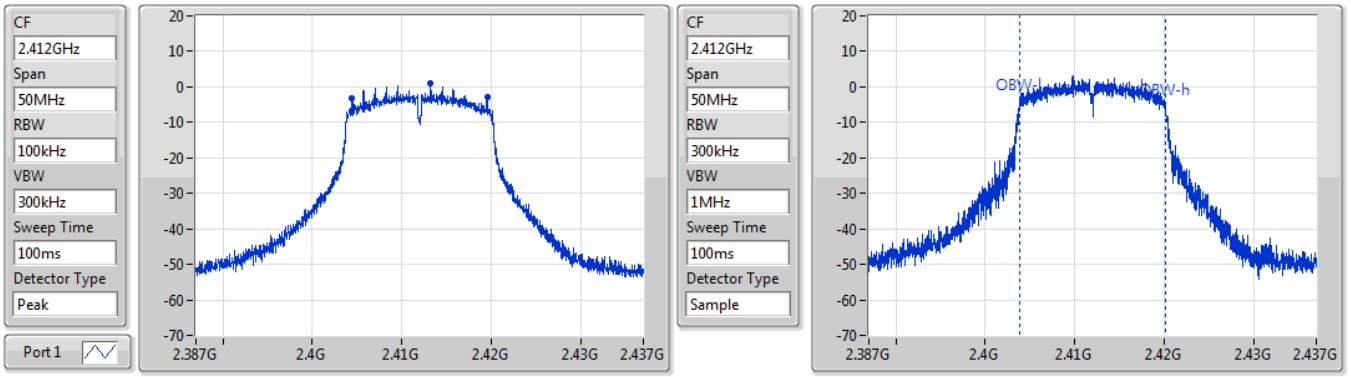
2462MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
9.025M	2.4575G	2.466525G	14.043M	2.454954G	2.468997G	500k	1

802.11g_Nss1,(6Mbps)_1TX EBW

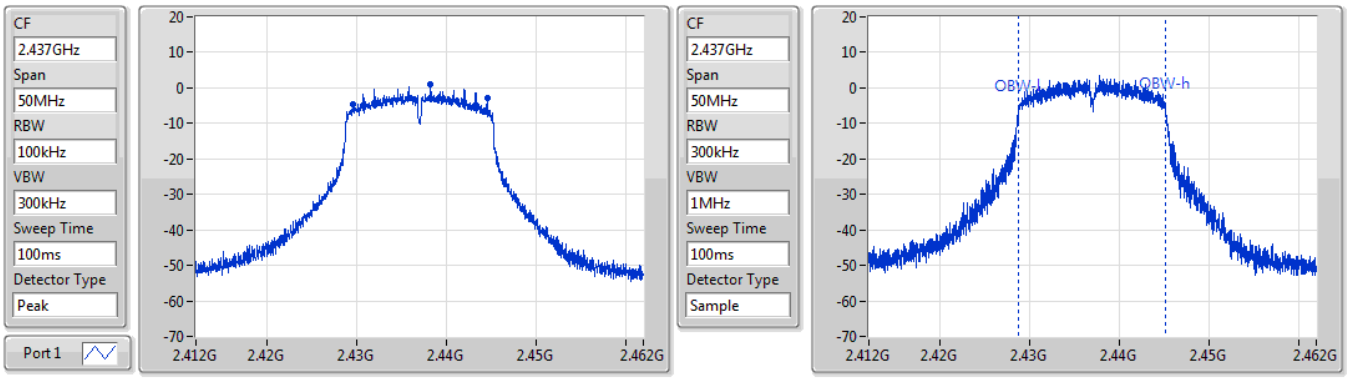
2412MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15.05M	2.404475G	2.419525G	16.367M	2.403804G	2.420171G	500k	1

802.11g_Nss1,(6Mbps)_1TX EBW

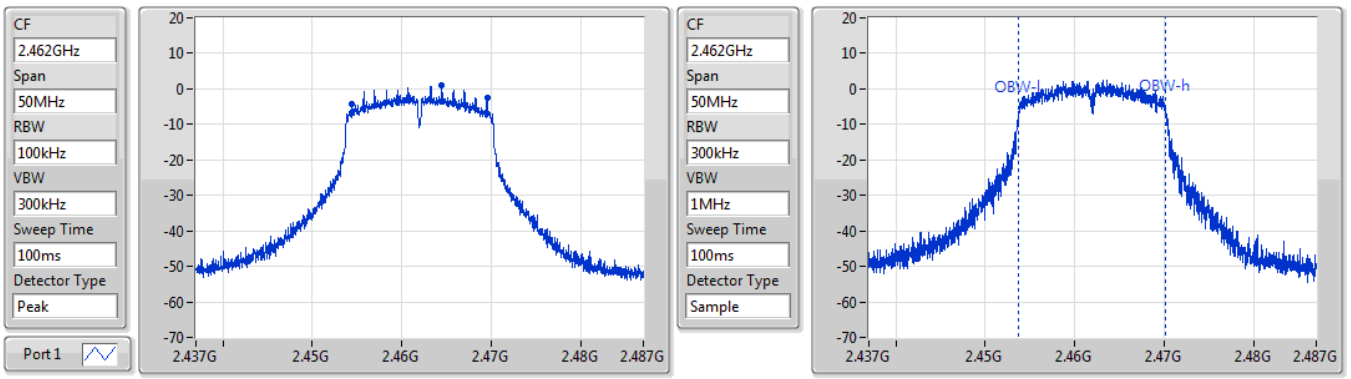
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
14.95M	2.429575G	2.444525G	16.367M	2.428779G	2.445146G	500k	1

802.11g_Nss1,(6Mbps)_1TX EBW

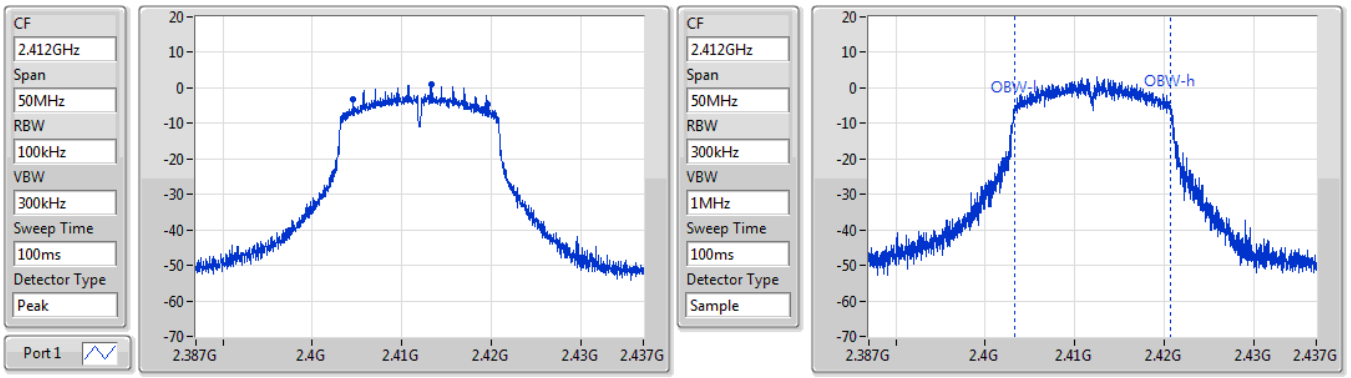
2462MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15.075M	2.45445G	2.469525G	16.417M	2.453779G	2.470196G	500k	1

802.11n HT20_Nss1,(MCS0)_1TX EBW

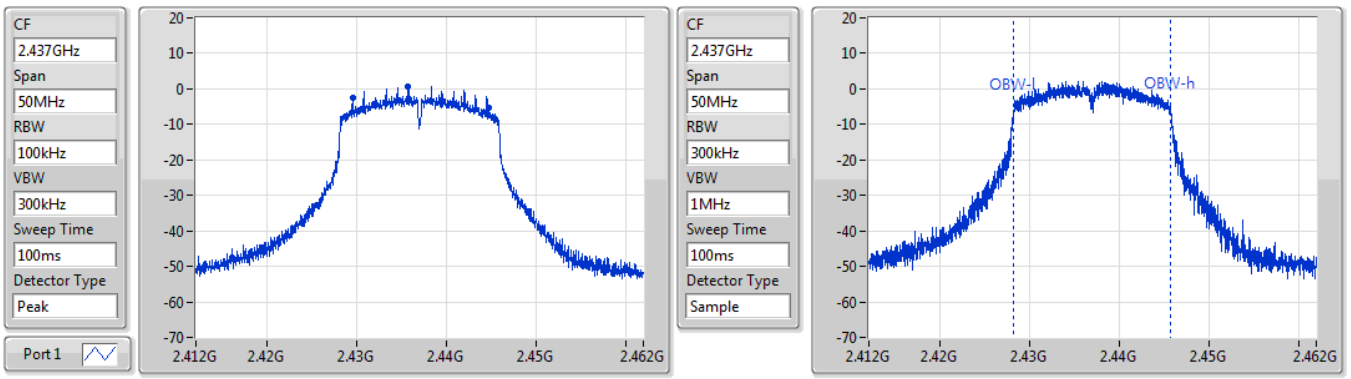
2412MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15M	2.404525G	2.419525G	17.491M	2.403254G	2.420746G	500k	1

802.11n HT20_Nss1,(MCS0)_1TX EBW

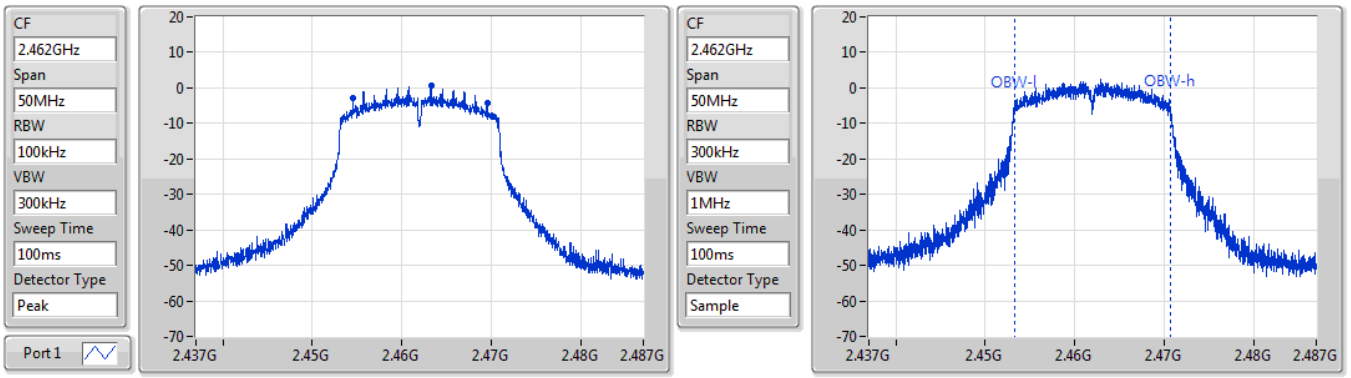
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15.25M	2.4295G	2.44475G	17.516M	2.428204G	2.445721G	500k	1

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

2462MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
15.025M	2.454525G	2.46955G	17.491M	2.453229G	2.470721G	500k	1

Summary of Peak Power

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_1TX	16.19	0.04159
802.11g_Nss1,(6Mbps)_1TX	22.12	0.16293
802.11n HT20_Nss1,(MCS0)_1TX	21.98	0.15776

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-	-	-
2412MHz	Pass	3.68	16.19	16.19	30.00	19.87	36.00
2437MHz	Pass	3.68	16.10	16.10	30.00	19.78	36.00
2462MHz	Pass	3.68	16.07	16.07	30.00	19.75	36.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-	-	-
2412MHz	Pass	3.68	22.12	22.12	30.00	25.80	36.00
2437MHz	Pass	3.68	21.90	21.90	30.00	25.58	36.00
2462MHz	Pass	3.68	21.84	21.84	30.00	25.52	36.00
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
2412MHz	Pass	3.68	21.98	21.98	30.00	25.66	36.00
2437MHz	Pass	3.68	21.95	21.95	30.00	25.63	36.00
2462MHz	Pass	3.68	21.92	21.92	30.00	25.60	36.00

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

Summary of Average Power

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_1TX	13.90	0.02455
802.11g_Nss1,(6Mbps)_1TX	11.92	0.01556
802.11n HT20_Nss1,(MCS0)_1TX	11.88	0.01542

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-	-	-
2412MHz	Pass	3.68	13.90	13.90	-	17.58	-
2437MHz	Pass	3.68	13.87	13.87	-	17.55	-
2462MHz	Pass	3.68	13.81	13.81	-	17.49	-
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-	-	-
2412MHz	Pass	3.68	11.92	11.92	-	15.60	-
2437MHz	Pass	3.68	11.90	11.90	-	15.58	-
2462MHz	Pass	3.68	11.87	11.87	-	15.55	-
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
2412MHz	Pass	3.68	11.88	11.88	-	15.56	-
2437MHz	Pass	3.68	11.86	11.86	-	15.54	-
2462MHz	Pass	3.68	11.80	11.80	-	15.48	-

Note: Average power is for reference only.
DG = Directional Gain; Port X = Port X output power

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
802.11b_Nss1,(1Mbps)_1TX	-8.58
802.11g_Nss1,(6Mbps)_1TX	-12.93
802.11n HT20_Nss1,(MCS0)_1TX	-12.61

RBW = 3kHz;

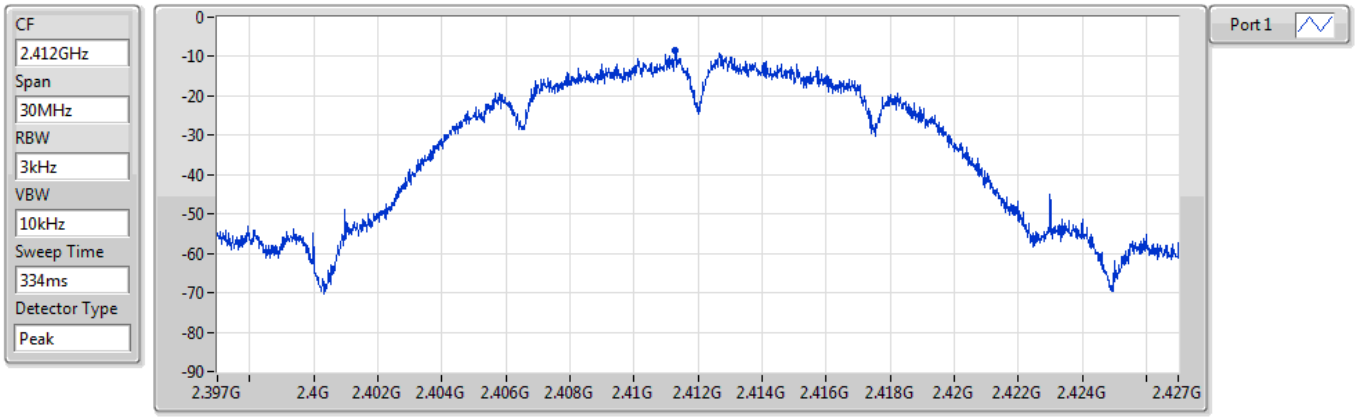
Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	3.68	-8.58	-8.58	8.00
2437MHz	Pass	3.68	-9.18	-9.18	8.00
2462MHz	Pass	3.68	-9.25	-9.25	8.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	3.68	-13.47	-13.47	8.00
2437MHz	Pass	3.68	-13.38	-13.38	8.00
2462MHz	Pass	3.68	-12.93	-12.93	8.00
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz	Pass	3.68	-12.61	-12.61	8.00
2437MHz	Pass	3.68	-12.97	-12.97	8.00
2462MHz	Pass	3.68	-13.77	-13.77	8.00

DG = Directional Gain; RBW = 3kHz;
PD = Power density; Port X = Port X Power Density;

802.11b_Nss1,(1Mbps)_1TX PSD

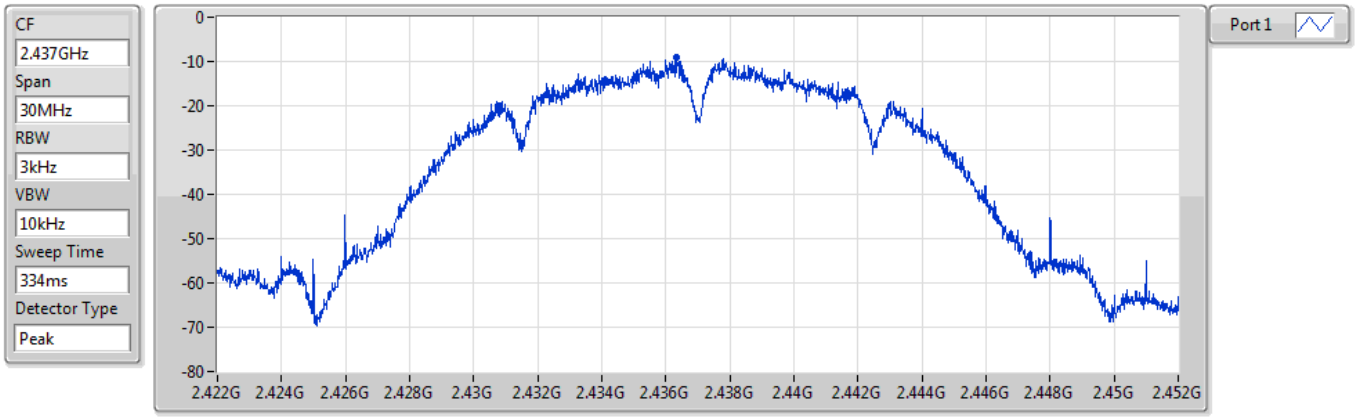
2412MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-8.58	-8.58	-8.58

802.11b_Nss1,(1Mbps)_1TX PSD

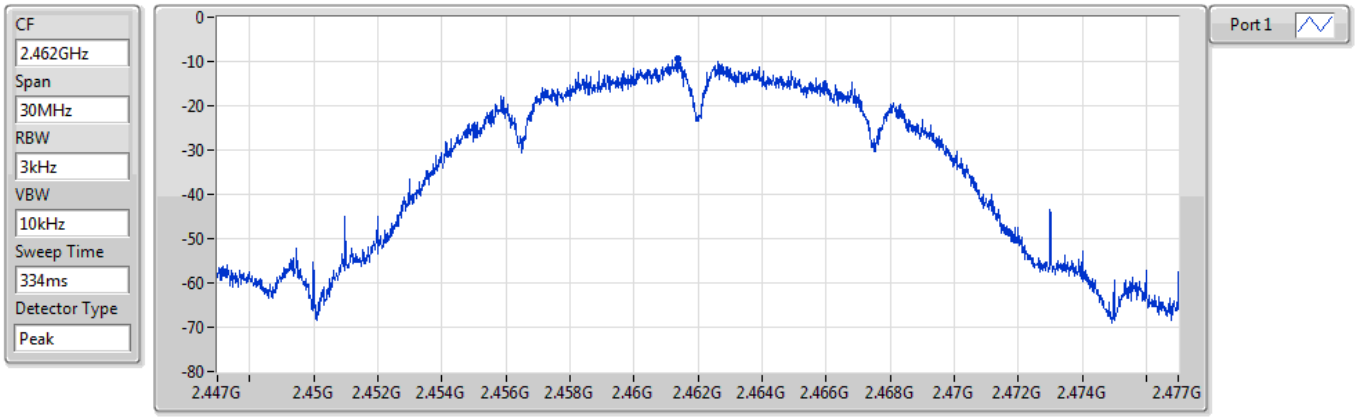
2437MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-9.18	-9.18	-9.18

802.11b_Nss1,(1Mbps)_1TX PSD

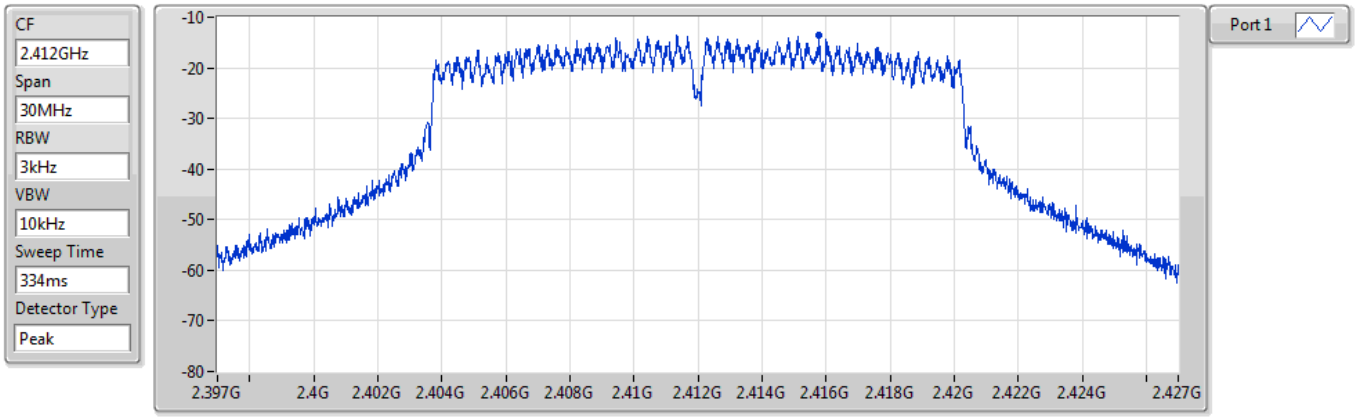
2462MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-9.25	-9.25	-9.25

802.11g_Nss1,(6Mbps)_1TX PSD

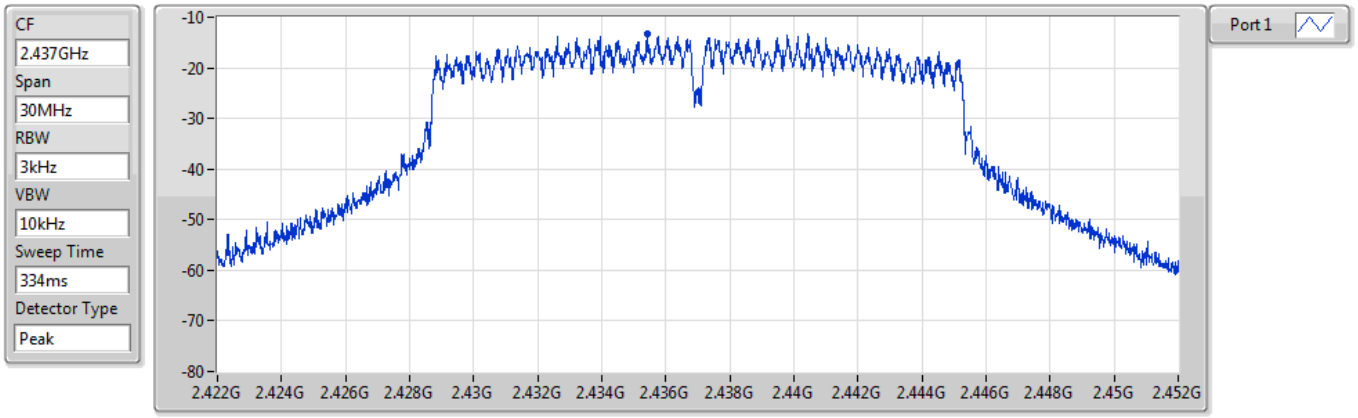
2412MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-13.47	-13.47	-13.47

802.11g_Nss1,(6Mbps)_1TX PSD

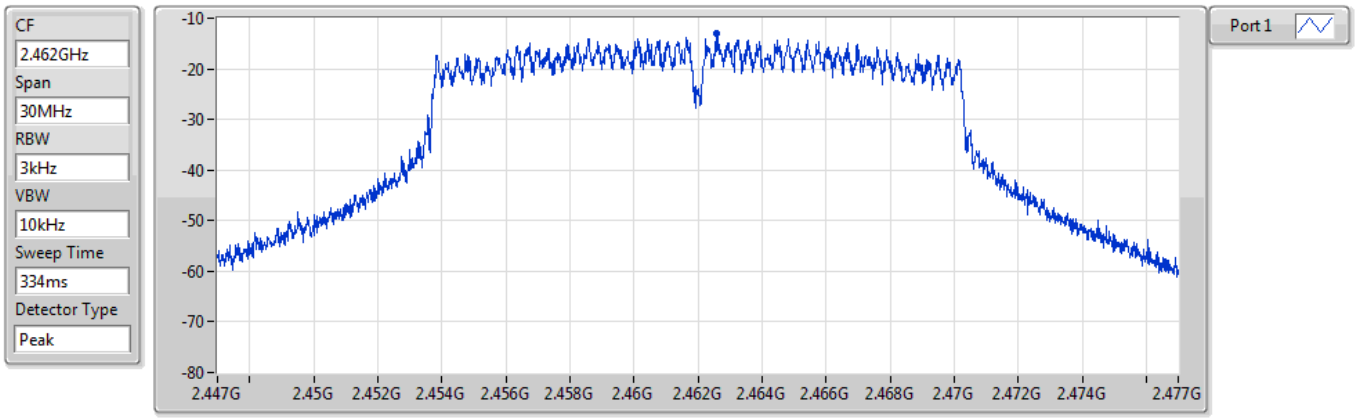
2437MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-13.38	-13.38	-13.38

802.11g_Nss1,(6Mbps)_1TX PSD

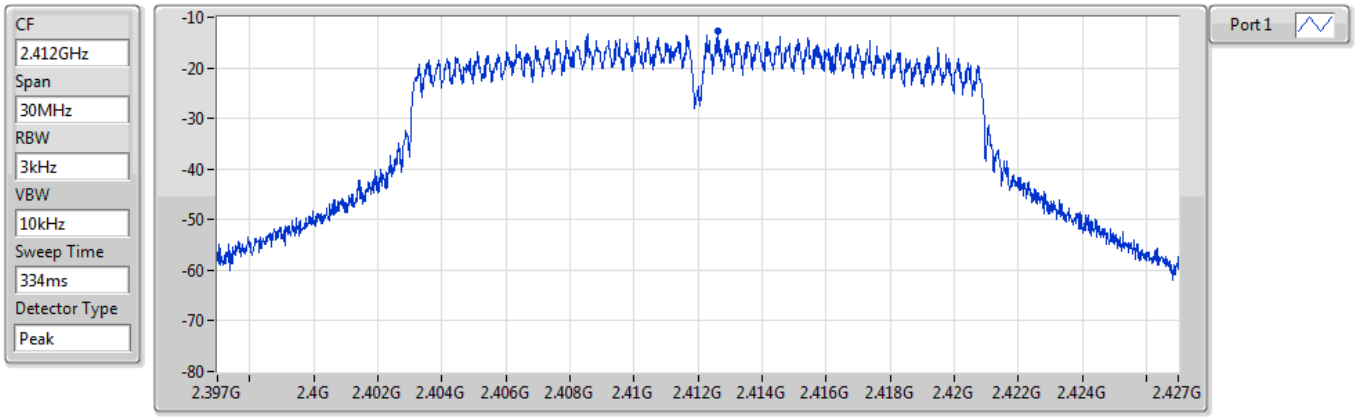
2462MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-12.93	-12.93	-12.93

802.11n HT20_Nss1,(MCS0)_1TX PSD

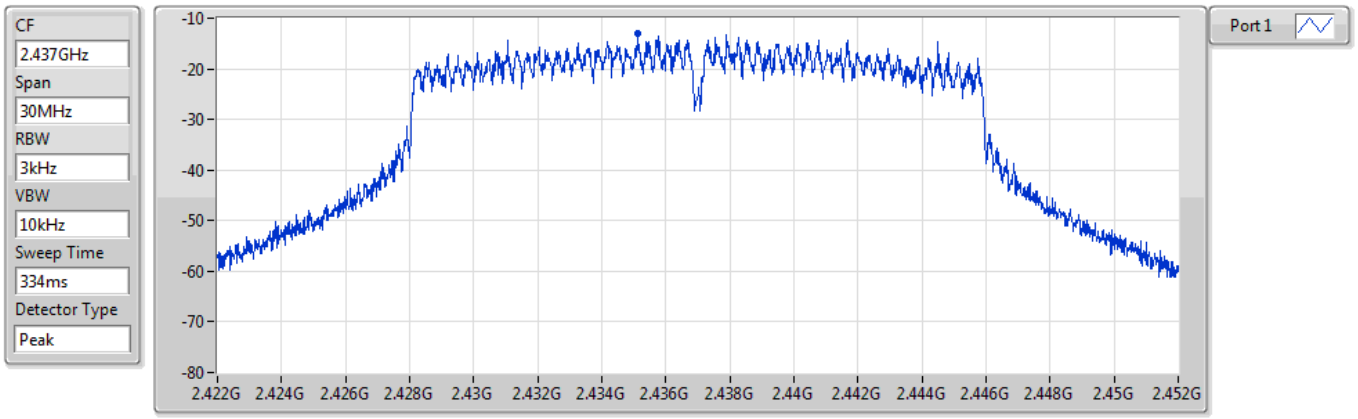
2412MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-12.61	-12.61	-12.61

802.11n HT20_Nss1,(MCS0)_1TX PSD

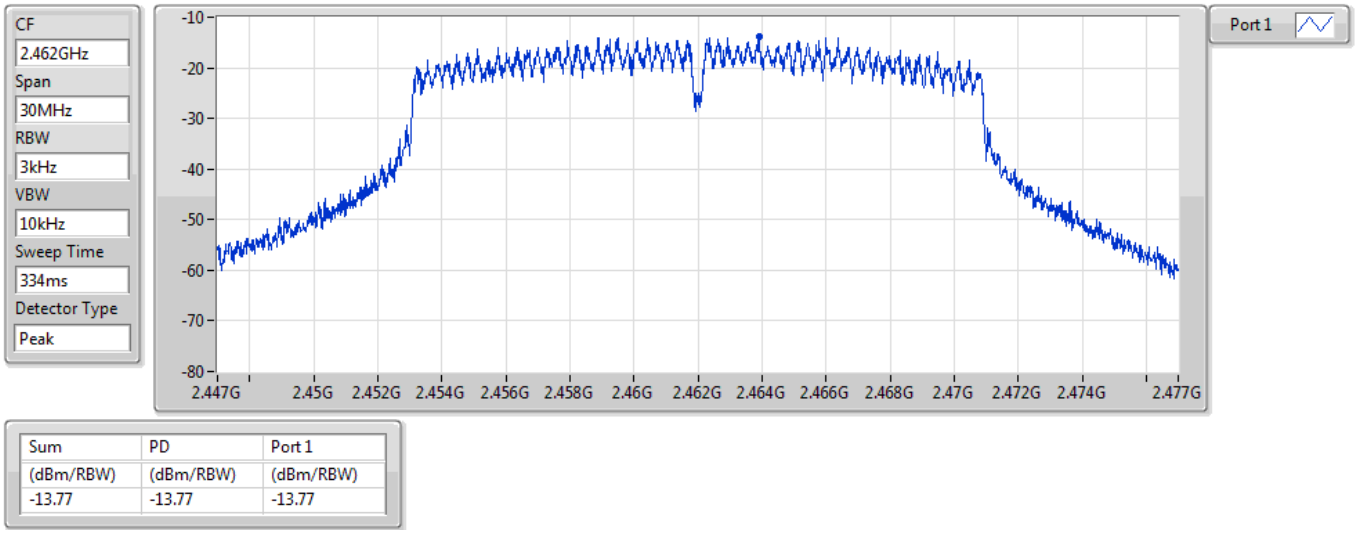
2437MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-12.97	-12.97	-12.97

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

2462MHz



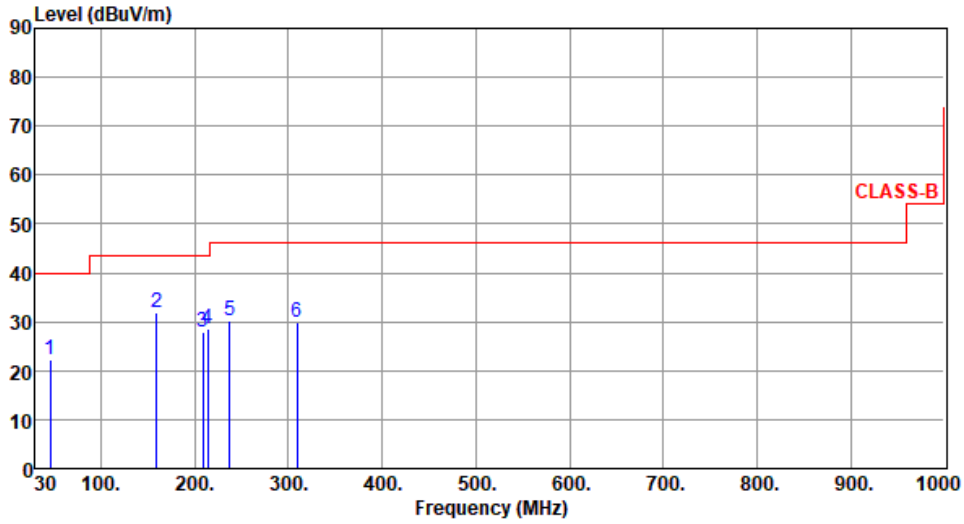
Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-13.77	-13.77	-13.77

Battery mode

Unwanted Emissions (Below 1GHz)

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

Test By :Akun Chung Temperature(℃):26 Humidity(%):62

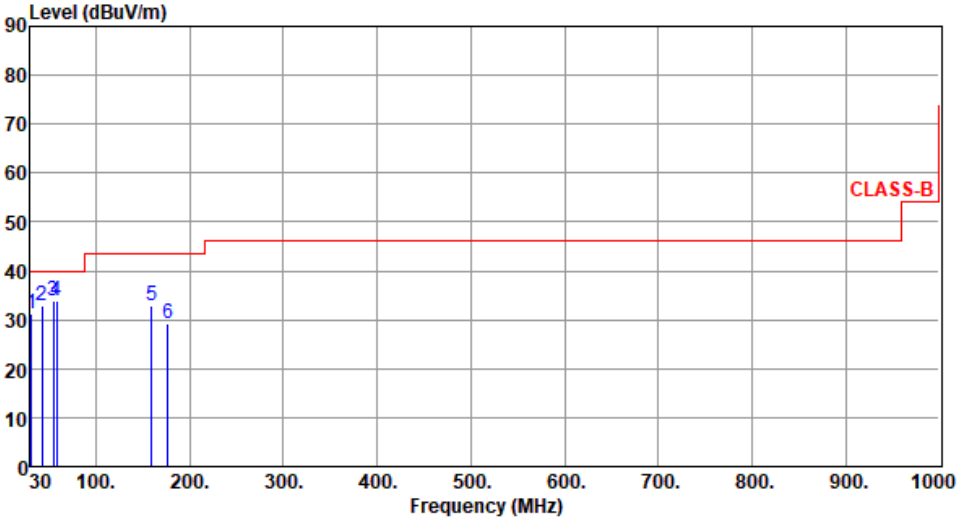


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	45.52	22.22	40.00	-17.78	30.64	-8.42	Peak	---	---
2	159.01	31.85	43.50	-11.65	40.24	-8.39	Peak	---	---
3	208.48	28.02	43.50	-15.48	39.61	-11.59	Peak	---	---
4	214.30	28.59	43.50	-14.91	40.16	-11.57	Peak	---	---
5	237.58	30.23	46.00	-15.77	40.48	-10.25	Peak	---	---
6	309.36	30.03	46.00	-15.97	37.45	-7.42	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)
*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	11b	**Test Freq. (MHz)**	2437
Polarization	Vertical		

Test By :Akun Chung Temperature(℃):26 Humidity(%):62



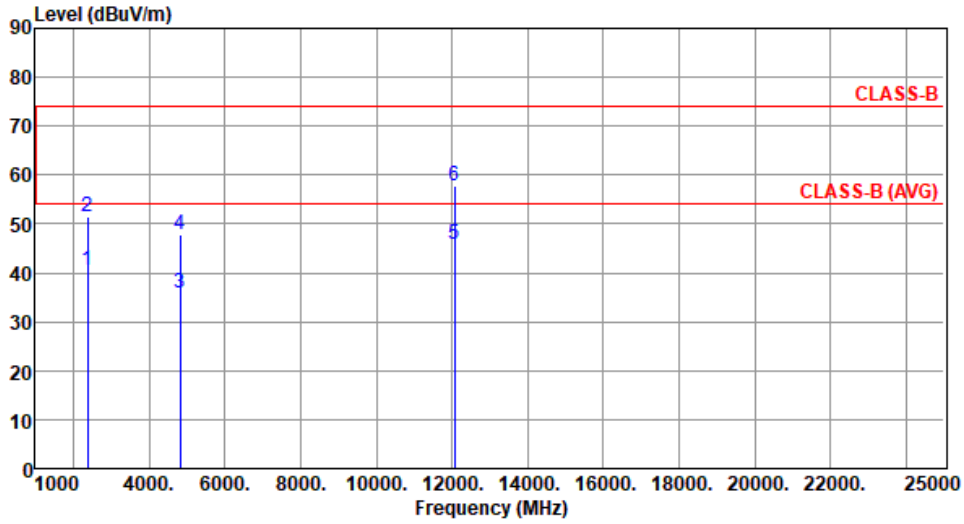
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	30.97	31.24	40.00	-8.76	41.31	-10.07	Peak	---	---
2	42.61	33.00	40.00	-7.00	41.40	-8.40	Peak	---	---
3	54.25	33.88	40.00	-6.12	42.75	-8.87	Peak	---	---
4	58.13	34.00	40.00	-6.00	43.11	-9.11	Peak	---	---
5	159.01	32.87	43.50	-10.63	41.26	-8.39	Peak	---	---
6	176.47	29.31	43.50	-14.19	38.80	-9.49	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)
*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 Emission (Above 1GHz) for 11b

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

Test By :Akun Chung Temperature(℃):26 Humidity(%):62

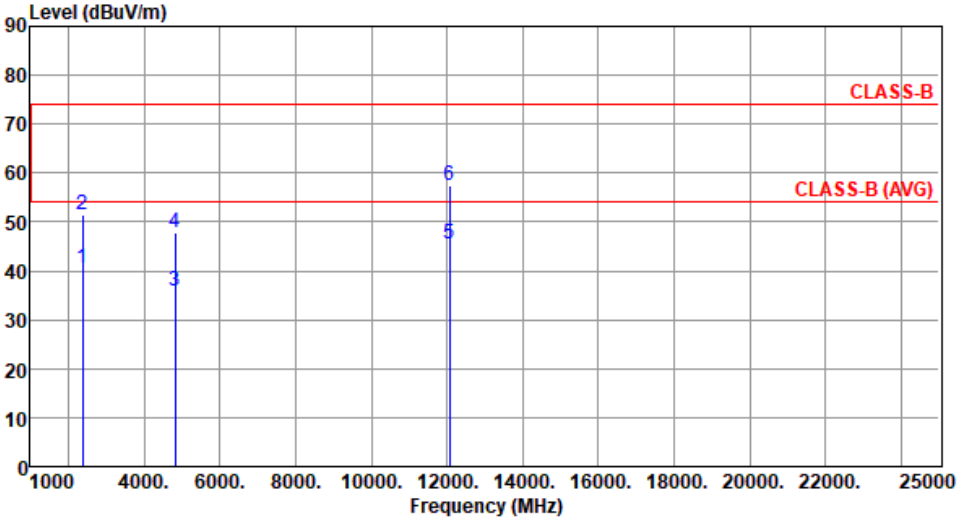


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	40.37	54.00	-13.63	41.86	-1.49	Average	102	163
2	2390.00	51.47	74.00	-22.53	52.96	-1.49	Peak	102	163
3	4824.00	35.93	54.00	-18.07	30.66	5.27	Average	100	185
4	4824.00	47.95	74.00	-26.05	42.68	5.27	Peak	100	185
5	12060.00	45.72	54.00	-8.28	30.76	14.96	Average	100	187
6	12060.00	57.73	74.00	-16.27	42.77	14.96	Peak	100	187

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

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

Test By :Akun Chung Temperature(℃):26 Humidity(%):62

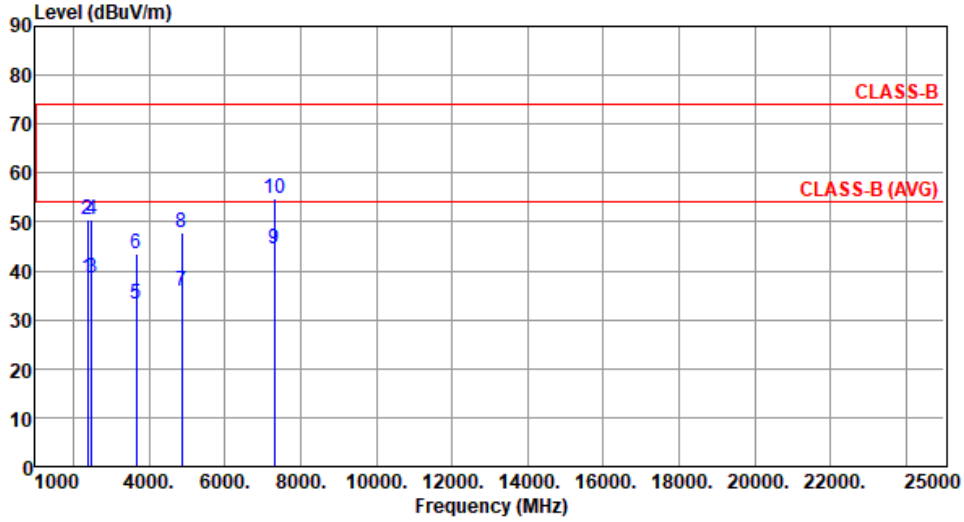


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	40.45	54.00	-13.55	41.94	-1.49	Average	102	313
2	2390.00	51.54	74.00	-22.46	53.03	-1.49	Peak	102	313
3	4824.00	35.71	54.00	-18.29	30.44	5.27	Average	100	308
4	4824.00	47.82	74.00	-26.18	42.55	5.27	Peak	100	308
5	12060.00	45.39	54.00	-8.61	30.43	14.96	Average	100	311
6	12060.00	57.44	74.00	-16.56	42.48	14.96	Peak	100	311

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

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

Test By :Akun Chung Temperature(℃):26 Humidity(%):62

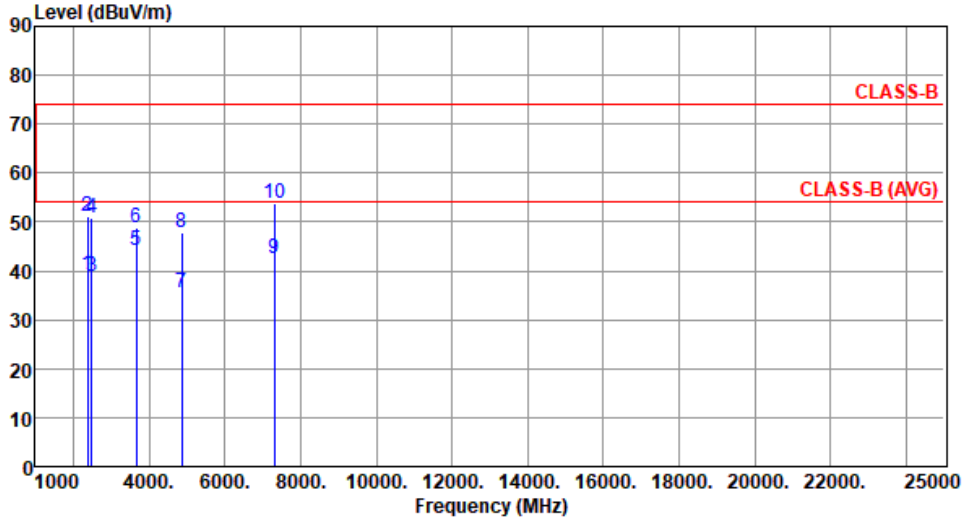


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	38.55	54.00	-15.45	40.04	-1.49	Average	100	185
2	2390.00	50.53	74.00	-23.47	52.02	-1.49	Peak	100	185
3	2483.50	38.48	54.00	-15.52	40.06	-1.58	Average	100	185
4	2483.50	50.52	74.00	-23.48	52.10	-1.58	Peak	100	185
5	3655.50	33.35	54.00	-20.65	31.23	2.12	Average	100	56
6	3655.50	43.67	74.00	-30.33	41.55	2.12	Peak	100	56
7	4874.00	35.88	54.00	-18.12	30.55	5.33	Average	100	177
8	4874.00	47.81	74.00	-26.19	42.48	5.33	Peak	100	177
9	7311.00	44.54	54.00	-9.46	33.65	10.89	Average	113	241
10	7311.00	54.73	74.00	-19.27	43.84	10.89	Peak	113	241

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

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

Test By :Akun Chung Temperature(℃):26 Humidity(%):62

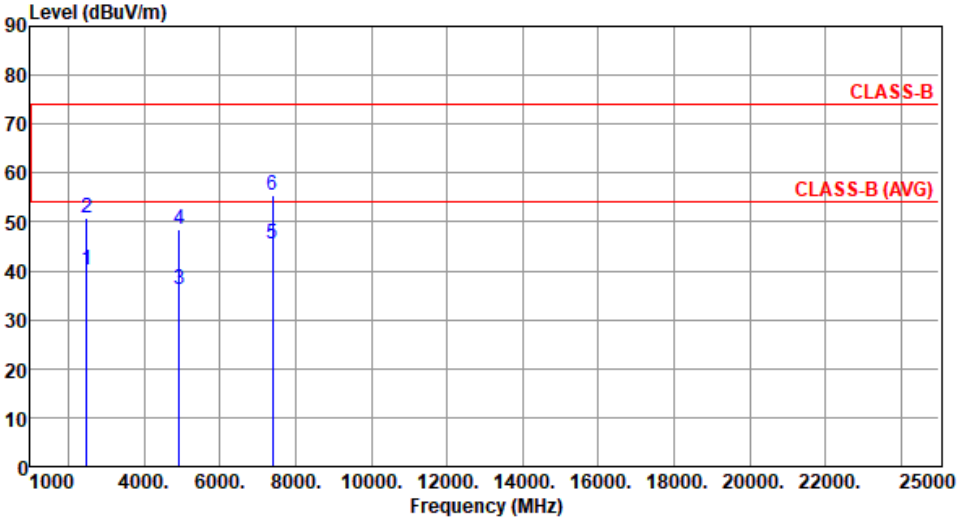


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	39.05	54.00	-14.95	40.54	-1.49	Average	100	292
2	2390.00	51.08	74.00	-22.92	52.57	-1.49	Peak	100	292
3	2483.50	38.93	54.00	-15.07	40.51	-1.58	Average	100	292
4	2483.50	50.92	74.00	-23.08	52.50	-1.58	Peak	100	292
5	3655.50	44.26	54.00	-9.74	42.14	2.12	Average	115	184
6	3655.50	48.94	74.00	-25.06	46.82	2.12	Peak	115	184
7	4874.00	35.55	54.00	-18.45	30.22	5.33	Average	100	303
8	4874.00	47.68	74.00	-26.32	42.35	5.33	Peak	100	303
9	7311.00	42.42	54.00	-11.58	31.53	10.89	Average	104	243
10	7311.00	53.77	74.00	-20.23	42.88	10.89	Peak	104	243

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

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

Test By :Akun Chung Temperature(℃):26 Humidity(%):62

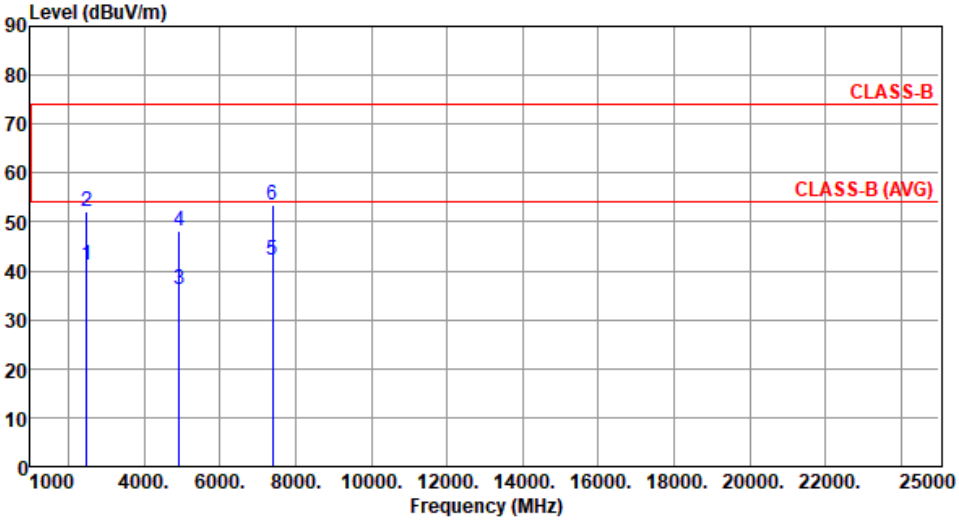


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	40.26	54.00	-13.74	41.84	-1.58	Average	104	179
2	2483.50	50.67	74.00	-23.33	52.25	-1.58	Peak	104	179
3	4924.00	36.33	54.00	-17.67	30.86	5.47	Average	100	174
4	4924.00	48.46	74.00	-25.54	42.99	5.47	Peak	100	174
5	7386.00	45.58	54.00	-8.42	34.94	10.64	Average	220	232
6	7386.00	55.51	74.00	-18.49	44.87	10.64	Peak	220	232

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

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

Test By :Akun Chung Temperature(℃):26 Humidity(%):62



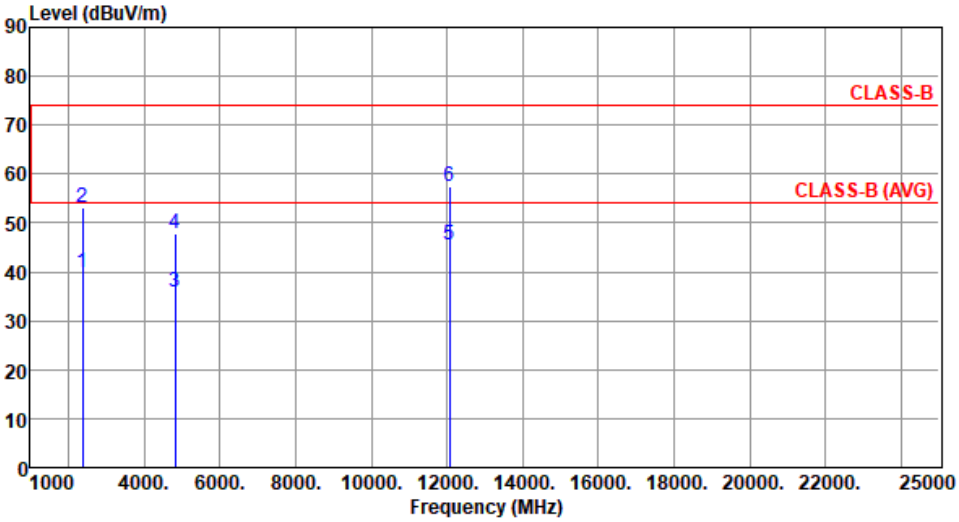
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	41.26	54.00	-12.74	42.84	-1.58	Average	100	293
2	2483.50	52.08	74.00	-21.92	53.66	-1.58	Peak	100	293
3	4924.00	36.14	54.00	-17.86	30.67	5.47	Average	100	307
4	4924.00	48.06	74.00	-25.94	42.59	5.47	Peak	100	307
5	7386.00	42.02	54.00	-11.98	31.38	10.64	Average	100	251
6	7386.00	53.32	74.00	-20.68	42.68	10.64	Peak	100	251

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

Unwanted Emissions (Above 1GHz) for 11g

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

Test By :Akun Chung Temperature(℃):26 Humidity(%):62

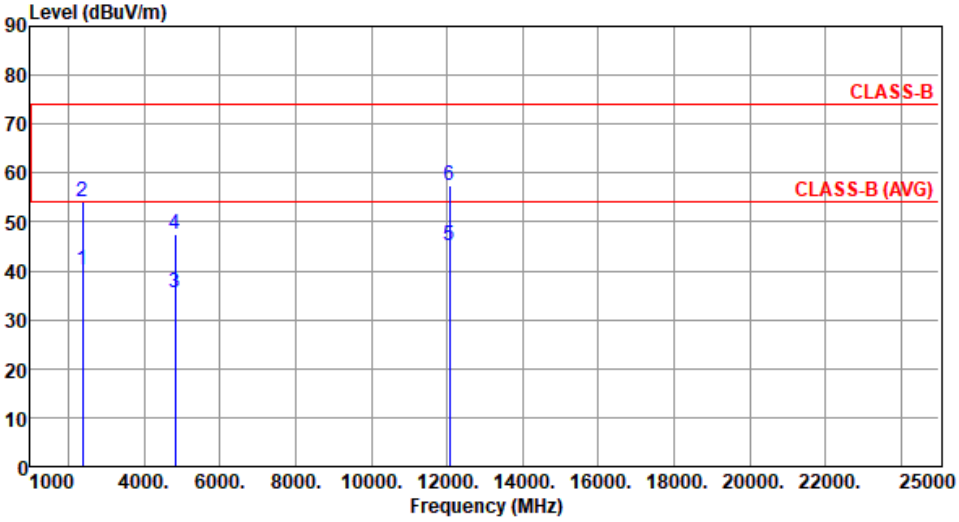


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	39.78	54.00	-14.22	41.27	-1.49	Average	115	153
2	2390.00	53.19	74.00	-20.81	54.68	-1.49	Peak	115	153
3	4824.00	35.81	54.00	-18.19	30.54	5.27	Average	100	180
4	4824.00	47.89	74.00	-26.11	42.62	5.27	Peak	100	180
5	12060.00	45.44	54.00	-8.56	30.48	14.96	Average	100	185
6	12060.00	57.47	74.00	-16.53	42.51	14.96	Peak	100	185

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

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

Test By :Akun Chung Temperature(℃):26 Humidity(%):62

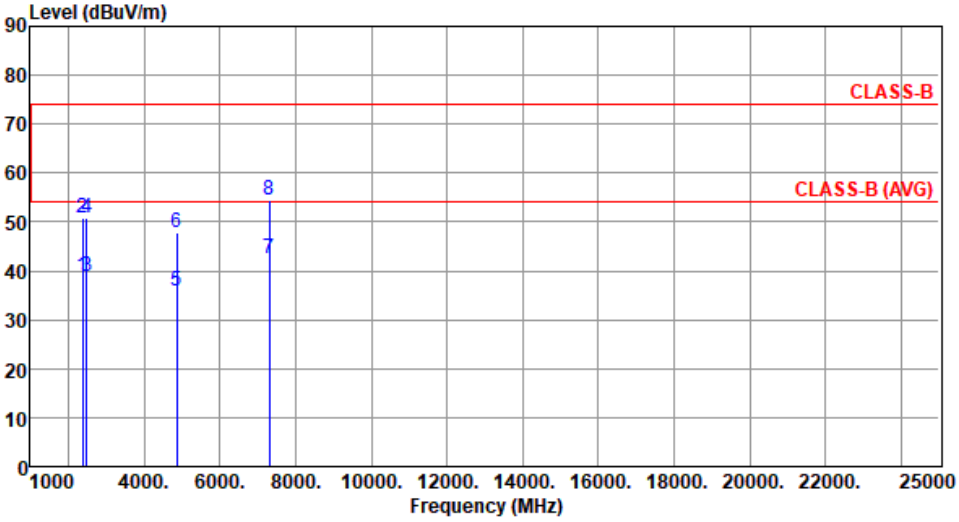


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	40.05	54.00	-13.95	41.54	-1.49	Average	100	329
2	2390.00	54.10	74.00	-19.90	55.59	-1.49	Peak	100	329
3	4824.00	35.51	54.00	-18.49	30.24	5.27	Average	100	302
4	4824.00	47.62	74.00	-26.38	42.35	5.27	Peak	100	302
5	12060.00	45.27	54.00	-8.73	30.31	14.96	Average	100	309
6	12060.00	57.32	74.00	-16.68	42.36	14.96	Peak	100	309

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

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

Test By :Akun Chung Temperature(℃):26 Humidity(%):62

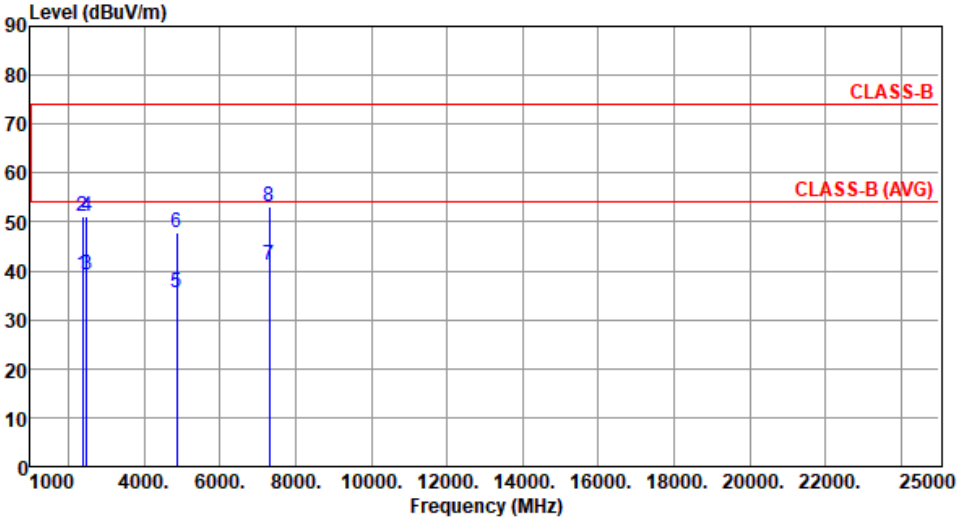


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	38.79	54.00	-15.21	40.28	-1.49	Average	109	157
2	2390.00	50.83	74.00	-23.17	52.32	-1.49	Peak	109	157
3	2483.50	38.81	54.00	-15.19	40.39	-1.58	Average	109	157
4	2483.50	50.84	74.00	-23.16	52.42	-1.58	Peak	109	157
5	4874.00	35.80	54.00	-18.20	30.47	5.33	Average	100	182
6	4874.00	47.82	74.00	-26.18	42.49	5.33	Peak	100	182
7	7311.00	42.43	54.00	-11.57	31.54	10.89	Average	100	185
8	7311.00	54.42	74.00	-19.58	43.53	10.89	Peak	100	185

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

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

Test By :Akun Chung Temperature(℃):26 Humidity(%):62

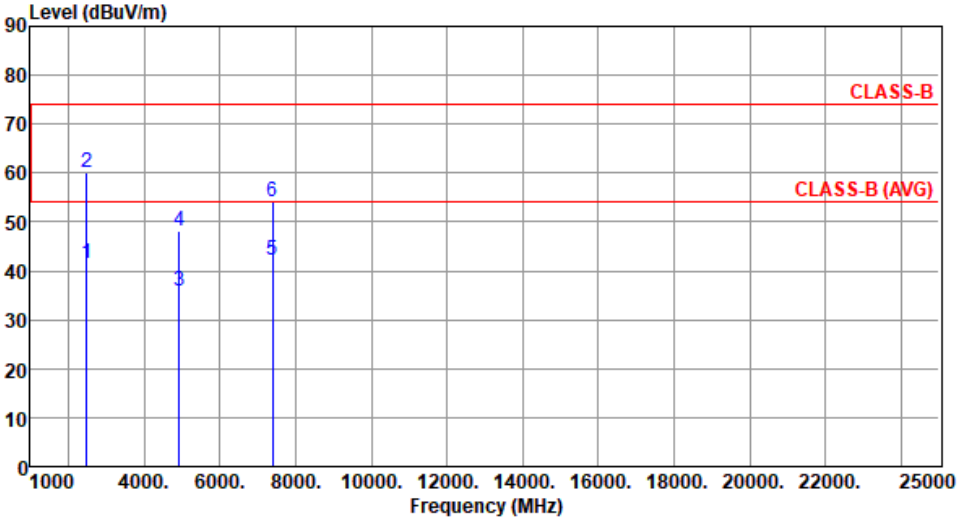


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	39.08	54.00	-14.92	40.57	-1.49	Average	106	335
2	2390.00	51.27	74.00	-22.73	52.76	-1.49	Peak	106	335
3	2483.50	39.08	54.00	-14.92	40.66	-1.58	Average	106	335
4	2483.50	51.27	74.00	-22.73	52.85	-1.58	Peak	106	335
5	4874.00	35.70	54.00	-18.30	30.37	5.33	Average	100	307
6	4874.00	47.68	74.00	-26.32	42.35	5.33	Peak	100	307
7	7311.00	41.23	54.00	-12.77	30.34	10.89	Average	100	298
8	7311.00	53.20	74.00	-20.80	42.31	10.89	Peak	100	298

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

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

Test By :Akun Chung Temperature(℃):26 Humidity(%):62

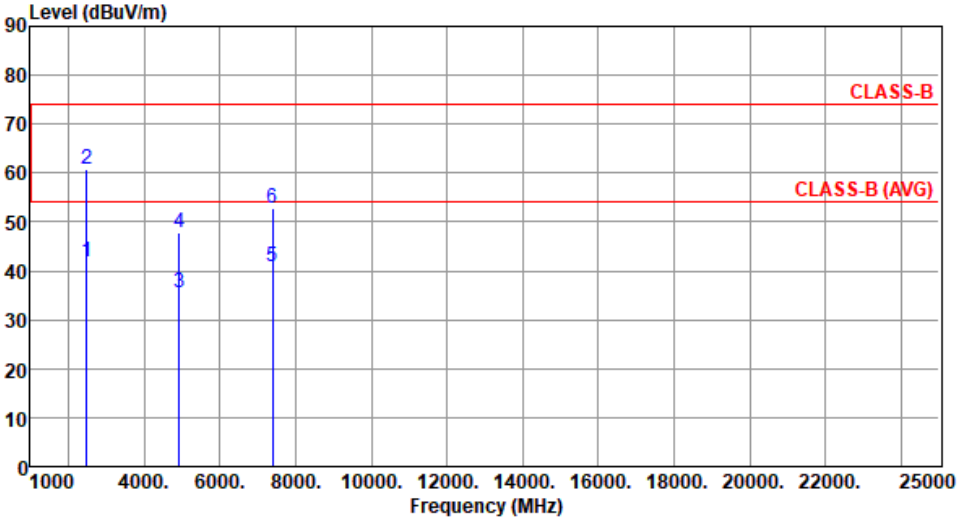


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	41.36	54.00	-12.64	42.94	-1.58	Average	100	152
2	2483.50	59.97	74.00	-14.03	61.55	-1.58	Peak	100	152
3	4924.00	36.00	54.00	-18.00	30.53	5.47	Average	100	183
4	4924.00	48.14	74.00	-25.86	42.67	5.47	Peak	100	183
5	7386.00	42.16	54.00	-11.84	31.52	10.64	Average	105	249
6	7386.00	54.23	74.00	-19.77	43.59	10.64	Peak	105	249

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

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

Test By :Akun Chung Temperature(℃):26 Humidity(%):62



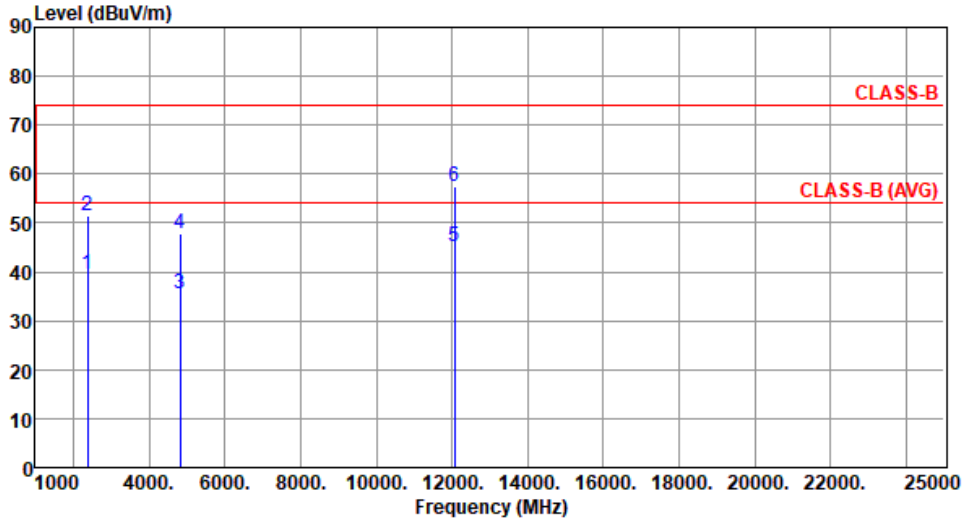
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	41.78	54.00	-12.22	43.36	-1.58	Average	100	311
2	2483.50	60.63	74.00	-13.37	62.21	-1.58	Peak	100	311
3	4924.00	35.69	54.00	-18.31	30.22	5.47	Average	100	305
4	4924.00	47.76	74.00	-26.24	42.29	5.47	Peak	100	305
5	7386.00	40.84	54.00	-13.16	30.20	10.64	Average	100	254
6	7386.00	52.91	74.00	-21.09	42.27	10.64	Peak	100	254

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

Unwanted Emissions (Above 1GHz) for HT20

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

Test By :Akun Chung Temperature(℃):26 Humidity(%):62

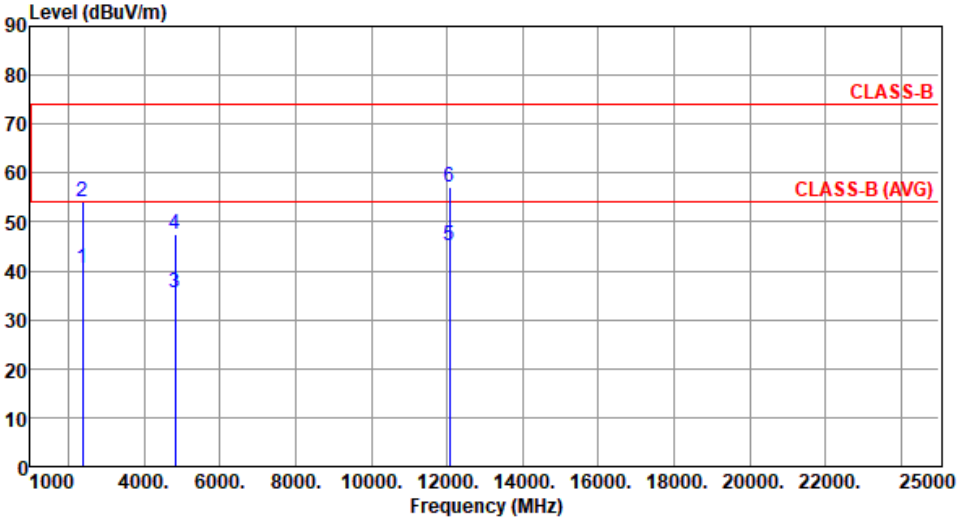


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	39.65	54.00	-14.35	41.14	-1.49	Average	134	159
2	2390.00	51.35	74.00	-22.65	52.84	-1.49	Peak	134	159
3	4824.00	35.66	54.00	-18.34	30.39	5.27	Average	100	179
4	4824.00	47.72	74.00	-26.28	42.45	5.27	Peak	100	179
5	12060.00	45.25	54.00	-8.75	30.29	14.96	Average	100	184
6	12060.00	57.35	74.00	-16.65	42.39	14.96	Peak	100	184

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

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

Test By :Akun Chung Temperature(℃):26 Humidity(%):62

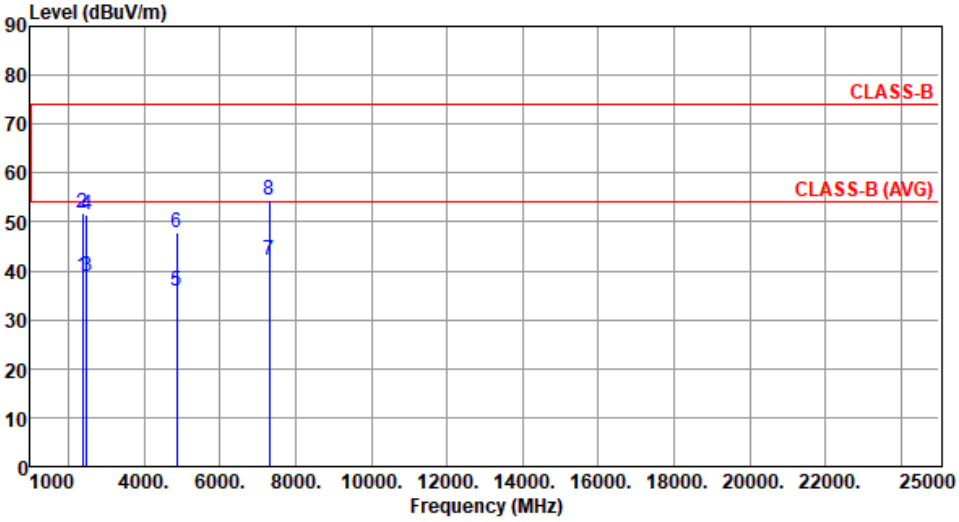


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	40.61	54.00	-13.39	42.10	-1.49	Average	149	330
2	2390.00	54.02	74.00	-19.98	55.51	-1.49	Peak	149	330
3	4824.00	35.45	54.00	-18.55	30.18	5.27	Average	100	301
4	4824.00	47.42	74.00	-26.58	42.15	5.27	Peak	100	301
5	12060.00	45.12	54.00	-8.88	30.16	14.96	Average	100	303
6	12060.00	57.12	74.00	-16.88	42.16	14.96	Peak	100	303

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

Modulation	HT20	**Test Freq. (MHz)**	2437
Polarization	Horizontal		

Test By :Akun Chung Temperature(℃):26 Humidity(%):62

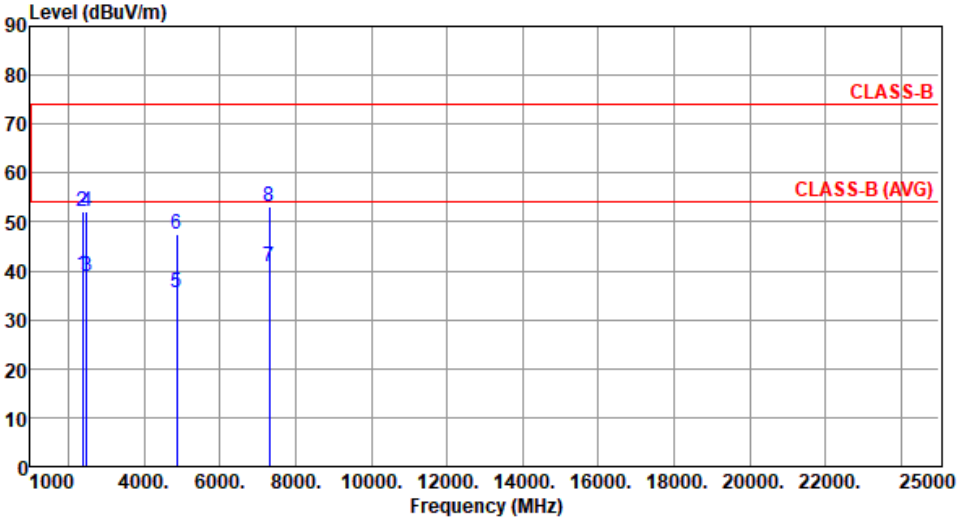


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	38.91	54.00	-15.09	40.40	-1.49	Average	100	125
2	2390.00	51.78	74.00	-22.22	53.27	-1.49	Peak	100	125
3	2483.50	38.90	54.00	-15.10	40.48	-1.58	Average	100	125
4	2483.50	51.63	74.00	-22.37	53.21	-1.58	Peak	100	125
5	4874.00	35.71	54.00	-18.29	30.38	5.33	Average	100	184
6	4874.00	47.78	74.00	-26.22	42.45	5.33	Peak	100	184
7	7311.00	42.30	54.00	-11.70	31.41	10.89	Average	105	245
8	7311.00	54.33	74.00	-19.67	43.44	10.89	Peak	105	245

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

Modulation	HT20	**Test Freq. (MHz)**	2437
Polarization	Vertical		

Test By :Akun Chung Temperature(℃):26 Humidity(%):62

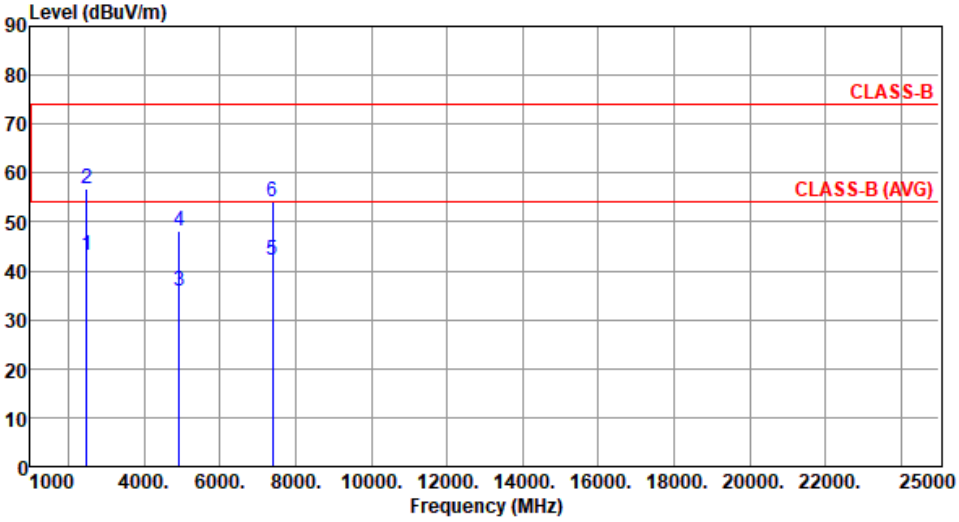


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	39.09	54.00	-14.91	40.58	-1.49	Average	102	327
2	2390.00	52.00	74.00	-22.00	53.49	-1.49	Peak	102	327
3	2483.50	38.93	54.00	-15.07	40.51	-1.58	Average	102	327
4	2483.50	51.98	74.00	-22.02	53.56	-1.58	Peak	102	327
5	4874.00	35.43	54.00	-18.57	30.10	5.33	Average	100	307
6	4874.00	47.48	74.00	-26.52	42.15	5.33	Peak	100	307
7	7311.00	41.00	54.00	-13.00	30.11	10.89	Average	100	255
8	7311.00	53.07	74.00	-20.93	42.18	10.89	Peak	100	255

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

Modulation	HT20	**Test Freq. (MHz)**	2462
Polarization	Horizontal		

Test By :Akun Chung Temperature(℃):26 Humidity(%):62

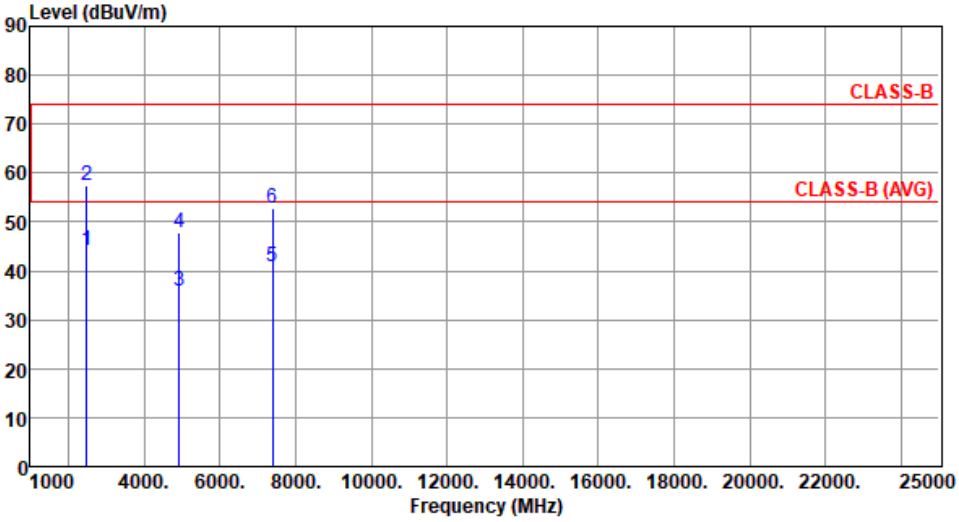


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	43.27	54.00	-10.73	44.85	-1.58	Average	148	151
2	2483.50	56.75	74.00	-17.25	58.33	-1.58	Peak	148	151
3	4924.00	36.03	54.00	-17.97	30.56	5.47	Average	100	277
4	4924.00	48.00	74.00	-26.00	42.53	5.47	Peak	100	277
5	7386.00	42.11	54.00	-11.89	31.47	10.64	Average	115	242
6	7386.00	54.28	74.00	-19.72	43.64	10.64	Peak	115	242

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

Modulation	HT20	**Test Freq. (MHz)**	2462
Polarization	Vertical		

Test By :Akun Chung Temperature(℃):26 Humidity(%):62



	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	2483.50	44.19	54.00	-9.81	45.77	-1.58	Average	122	322
2	2483.50	57.48	74.00	-16.52	59.06	-1.58	Peak	122	322
3	4924.00	35.73	54.00	-18.27	30.26	5.47	Average	100	301
4	4924.00	47.73	74.00	-26.27	42.26	5.47	Peak	100	301
5	7386.00	40.89	54.00	-13.11	30.25	10.64	Average	100	250
6	7386.00	52.93	74.00	-21.07	42.29	10.64	Peak	100	250

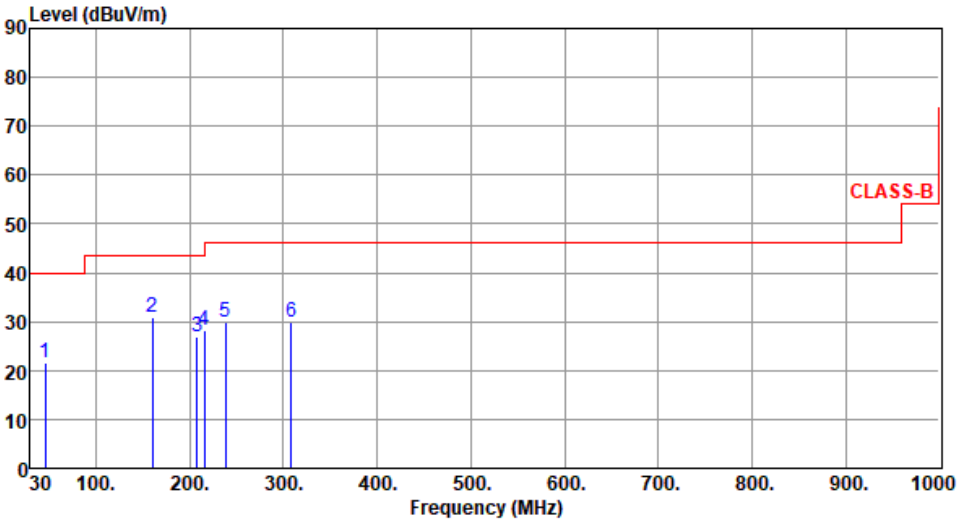
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Charging mode

Unwanted Emissions (Below 1GHz)

Mode	Charging mode
Polarization	Horizontal

Test By :Akun Chung Temperature(℃):26 Humidity(%):62

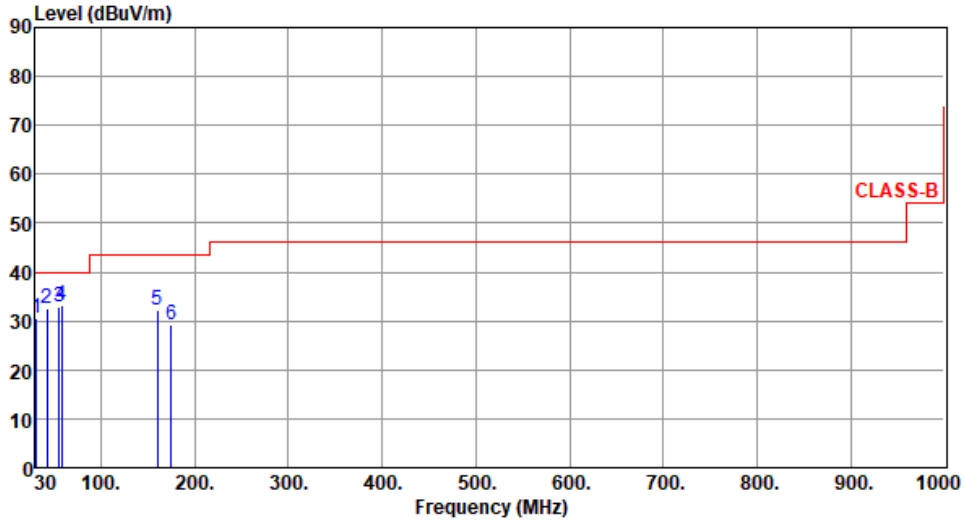


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	46.29	21.54	40.00	-18.46	29.99	-8.45	Peak	---	---
2	160.11	30.80	43.50	-12.70	39.11	-8.31	Peak	---	---
3	208.10	26.83	43.50	-16.67	38.42	-11.59	Peak	---	---
4	215.29	28.14	43.50	-15.36	39.70	-11.56	Peak	---	---
5	238.43	29.73	46.00	-16.27	39.90	-10.17	Peak	---	---
6	308.74	29.74	46.00	-16.26	37.18	-7.44	Peak	---	---

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

Mode	Charging mode
Polarization	Vertical

Test By :Akun Chung Temperature(℃):26 Humidity(%):62

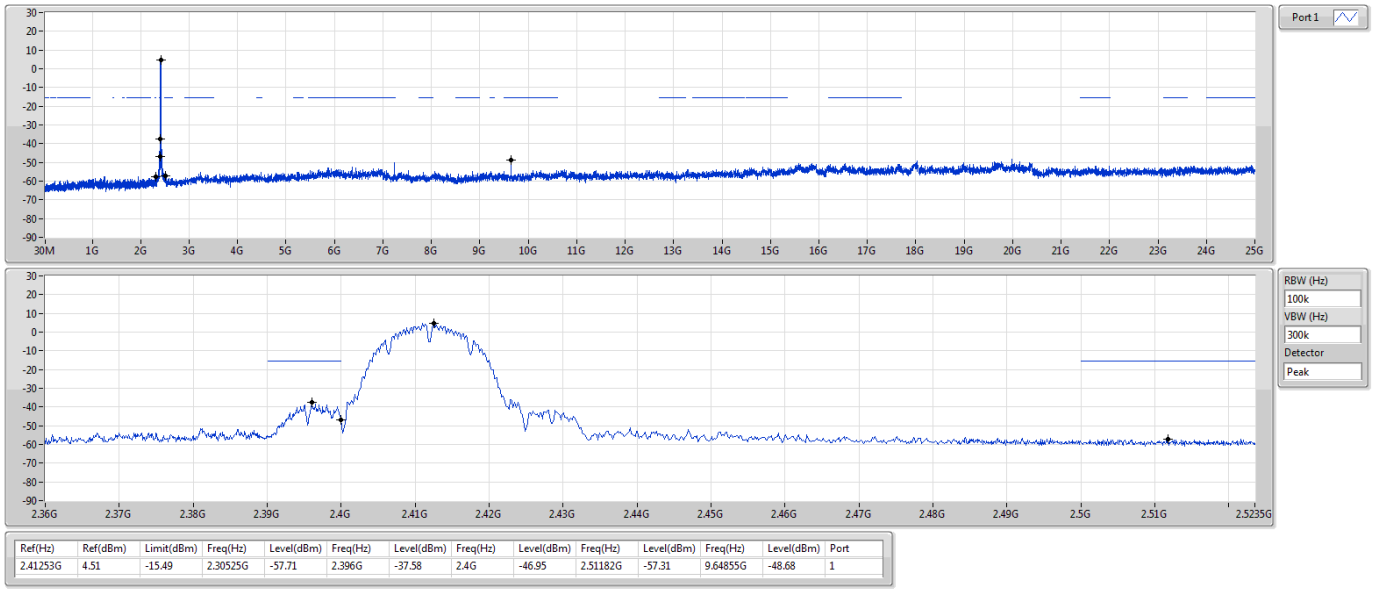


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	31.11	30.69	40.00	-9.31	40.73	-10.04	Peak	---	---
2	42.58	32.40	40.00	-7.60	40.80	-8.40	Peak	---	---
3	55.50	32.74	40.00	-7.26	41.61	-8.87	Peak	---	---
4	58.01	33.28	40.00	-6.72	42.36	-9.08	Peak	---	---
5	160.08	32.17	43.50	-11.33	40.48	-8.31	Peak	---	---
6	175.22	29.17	43.50	-14.33	38.53	-9.36	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)
*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)_1TX **CSENdB**

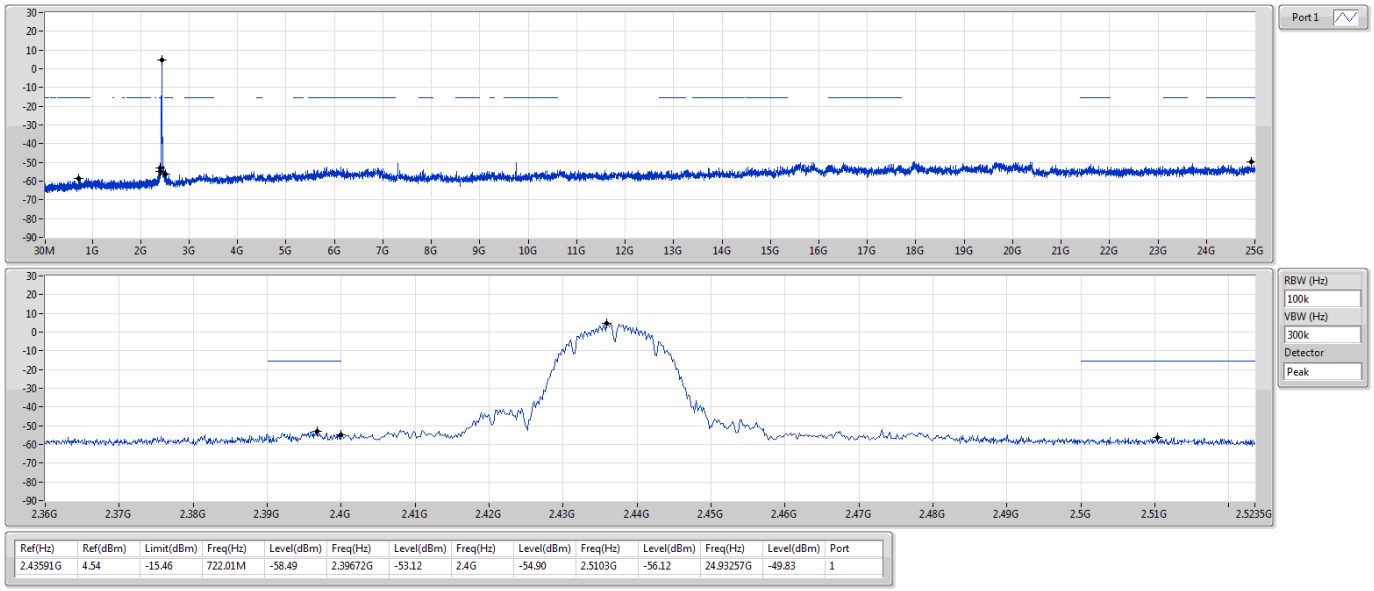
2412MHz



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
2.41253G	4.51	-15.49	2.30525G	-57.71	2.396G	-37.58	2.4G	-46.95	2.51182G	-57.31	9.64855G	-48.68	1

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

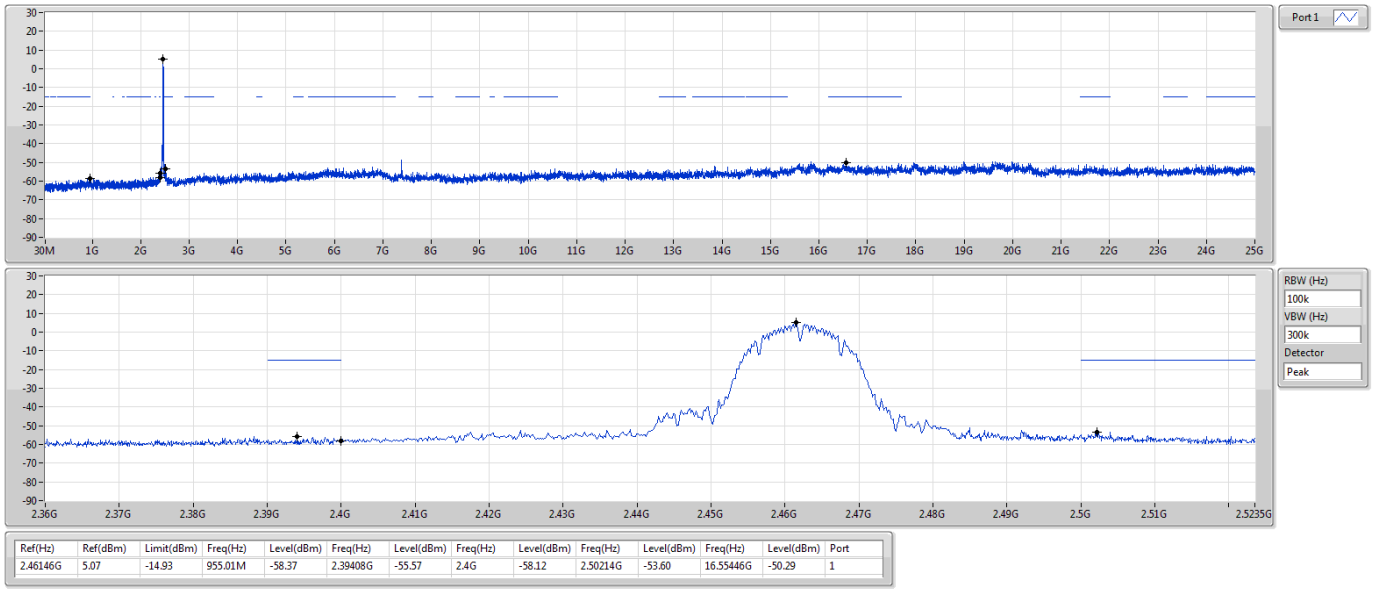
2437MHz



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
2.43591G	4.54	-15.46	722.01M	-58.49	2.39672G	-53.12	2.4G	-54.90	2.5103G	-56.12	24.93257G	-49.83	1

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

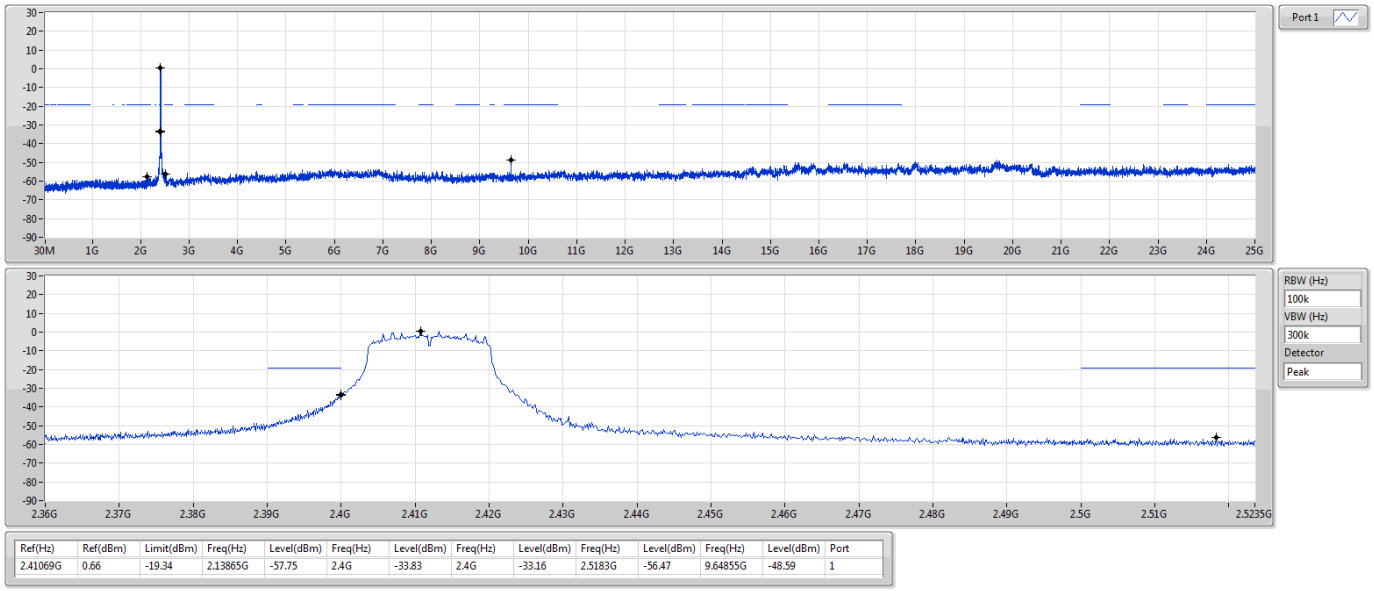
2462MHz



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
2.46146G	5.07	-14.93	955.01M	-58.37	2.39408G	-55.57	2.4G	-58.12	2.50214G	-53.60	16.55446G	-50.29	1

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

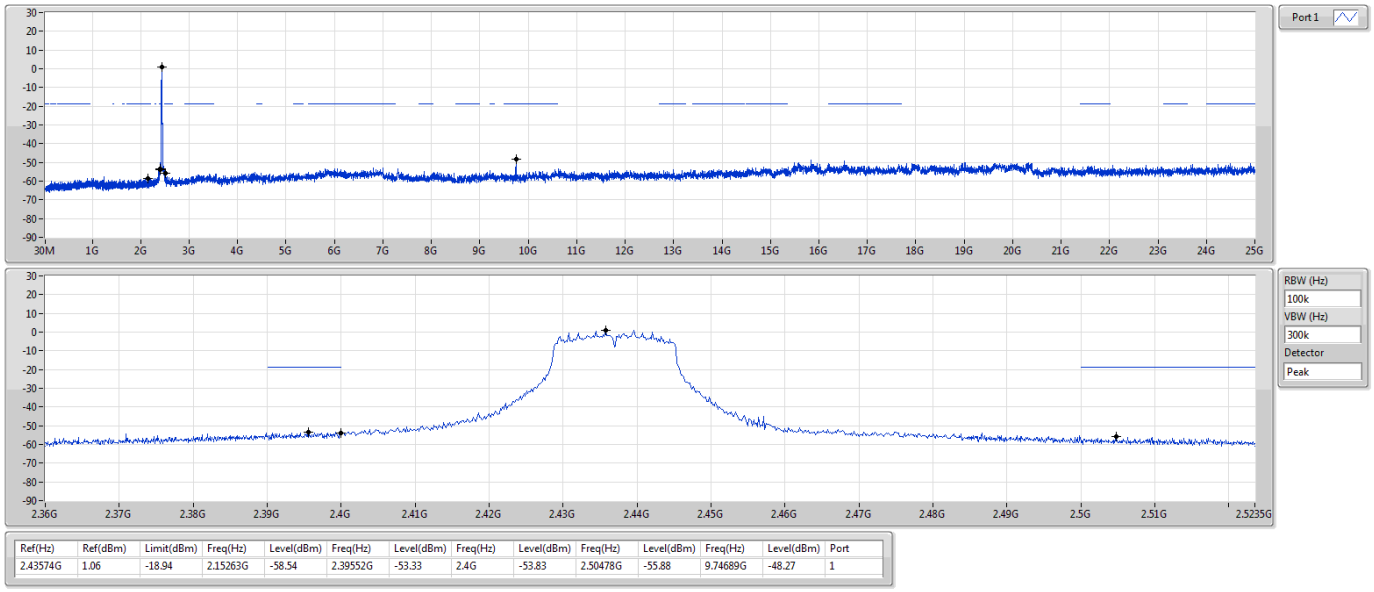
2412MHz



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	0.66	-19.34	2.13865G	-57.75	2.4G	-33.83	2.4G	-33.16	2.5183G	-56.47	9.64855G	-48.59	1

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

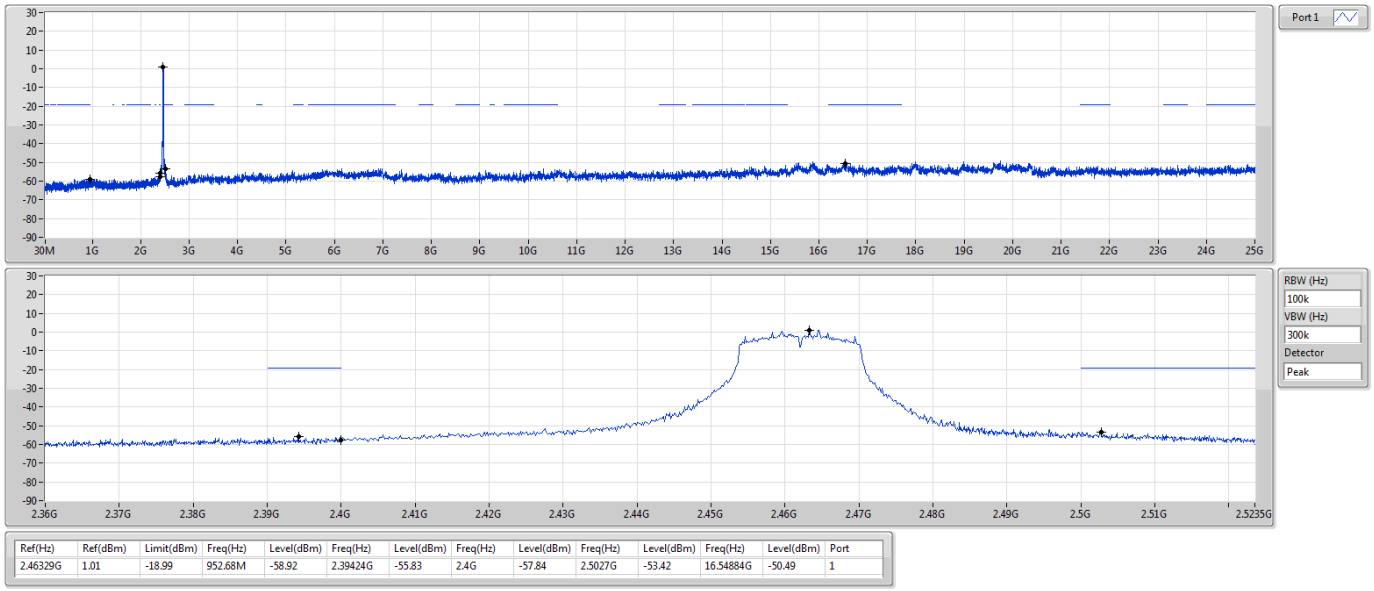
2437MHz



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	1.06	-18.94	2.15263G	-58.54	2.39552G	-53.33	2.4G	-53.83	2.50478G	-55.88	9.74689G	-48.27	1

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

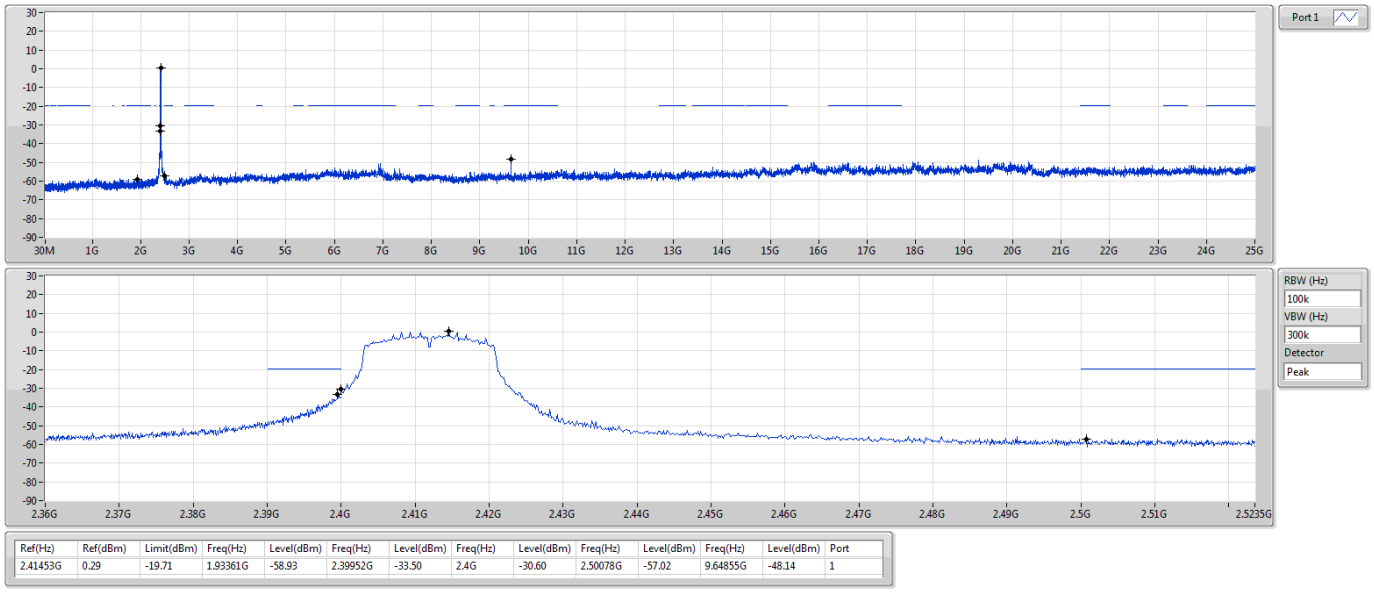
2462MHz



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	1.01	-18.99	952.68M	-58.92	2.39424G	-55.83	2.4G	-57.84	2.5027G	-53.42	16.54884G	-50.49	1

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

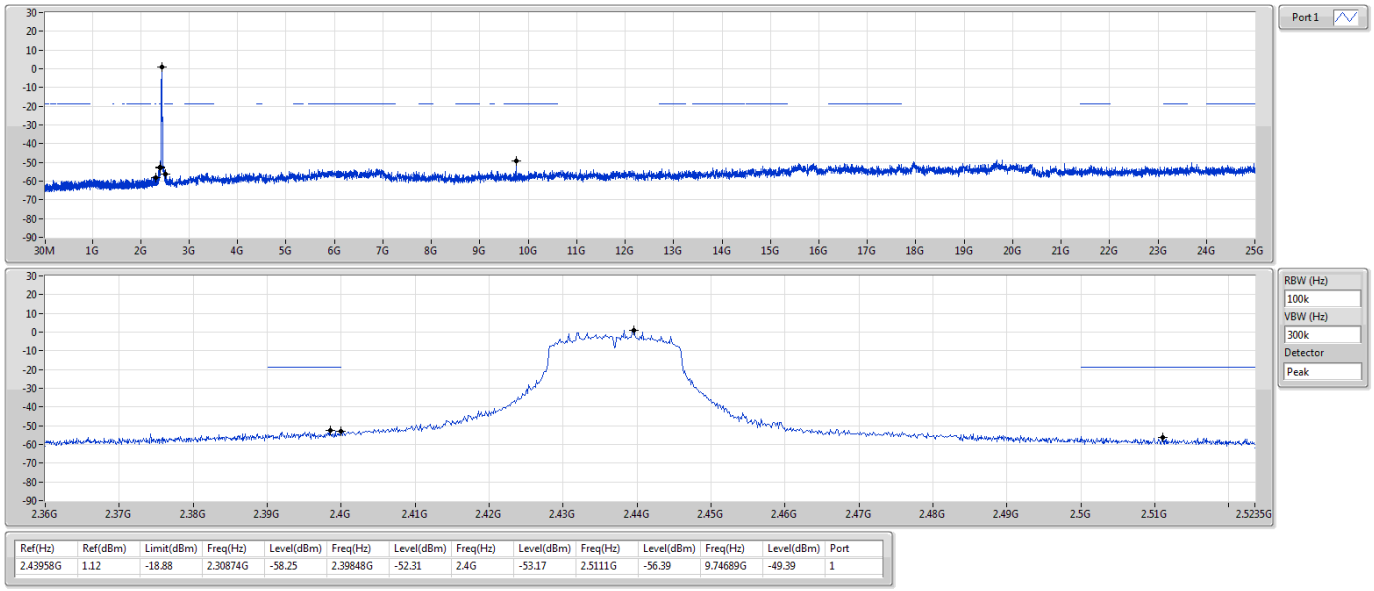
2412MHz



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
2.41453G	0.29	-19.71	1.93361G	-58.93	2.39952G	-33.50	2.4G	-30.60	2.50078G	-57.02	9.64855G	-48.14	1

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

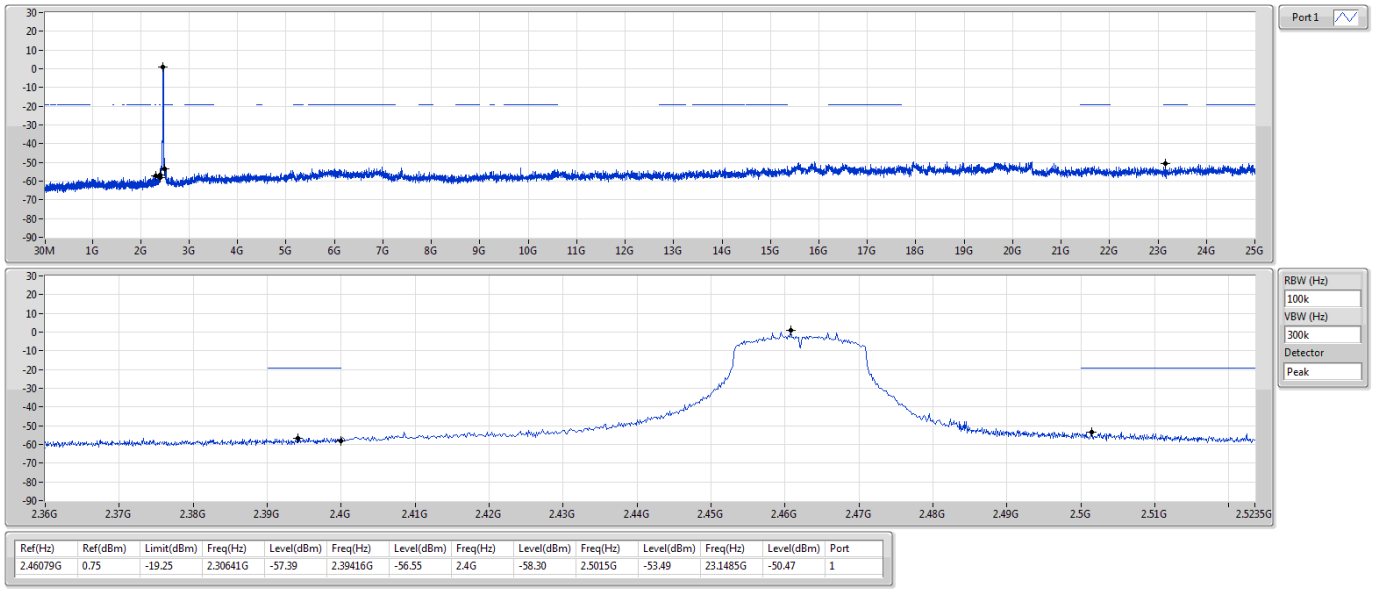
2437MHz



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
2.43958G	1.12	-18.88	2.30874G	-58.25	2.39848G	-52.31	2.4G	-53.17	2.5111G	-56.39	9.74689G	-49.39	1

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

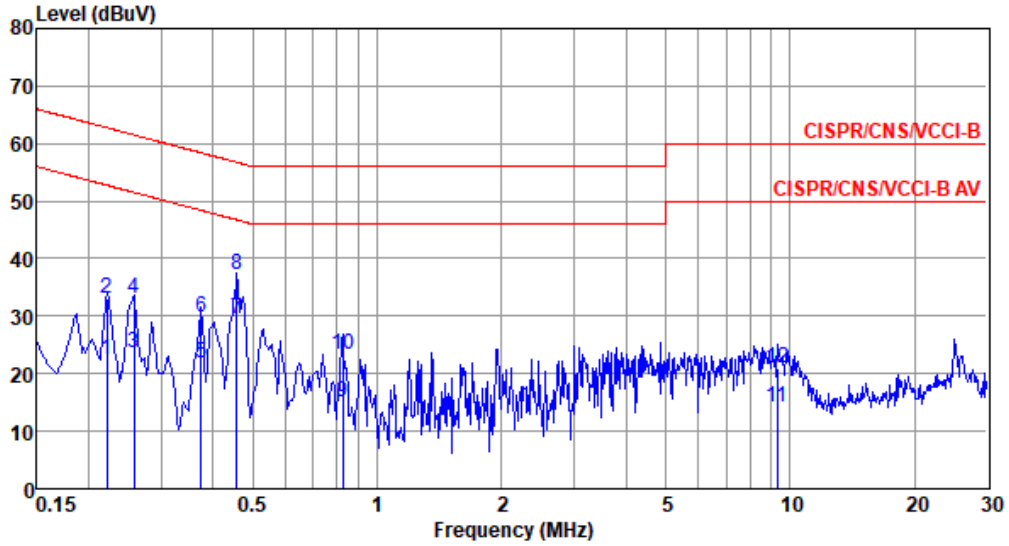
2462MHz



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	0.75	-19.25	2.30641G	-57.39	2.39416G	-56.55	2.4G	-58.30	2.5015G	-53.49	23.1485G	-50.47	1

Mode	Charging mode
Power Phase	Line

Test by : Joe Liao Temperature: 20°C Humidity: 60%

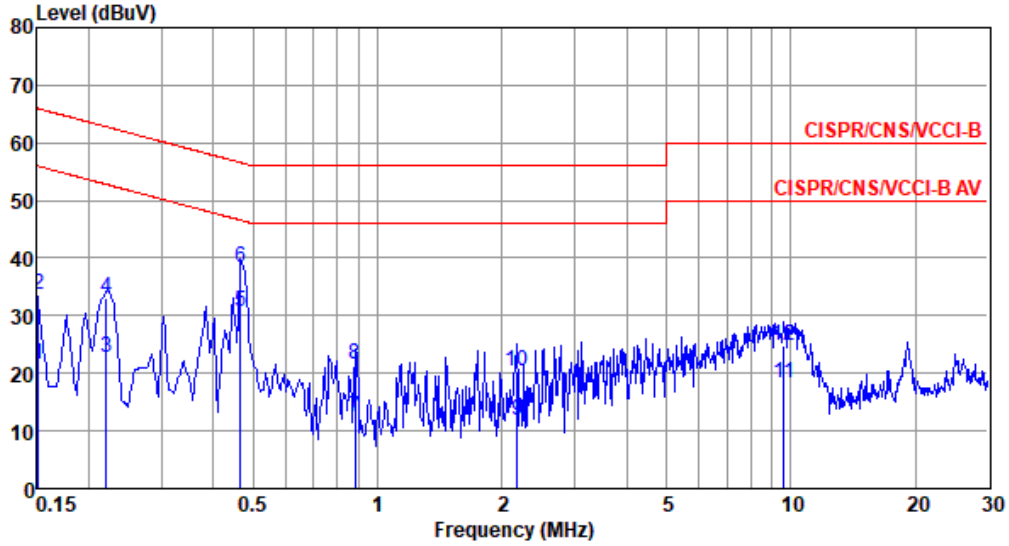


	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Cable loss	Aux	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	dB	
1	0.222	22.47	52.74	-30.27	12.47	9.68	0.08	0.24	Average
2	0.222	33.15	62.74	-29.59	23.15	9.68	0.08	0.24	QP
3	0.258	23.53	51.51	-27.98	13.50	9.68	0.08	0.27	Average
4	0.258	33.03	61.51	-28.48	23.00	9.68	0.08	0.27	QP
5	0.375	21.71	48.39	-26.68	11.61	9.67	0.08	0.35	Average
6	0.375	29.84	58.39	-28.55	19.74	9.67	0.08	0.35	QP
7*	0.456	29.40	46.76	-17.36	19.28	9.67	0.09	0.36	Average
8	0.456	37.22	56.76	-19.54	27.10	9.67	0.09	0.36	QP
9	0.826	14.96	46.00	-31.04	4.77	9.68	0.14	0.37	Average
10	0.826	23.44	56.00	-32.56	13.25	9.68	0.14	0.37	QP
11	9.302	14.16	50.00	-35.84	3.55	9.74	0.43	0.44	Average
12	9.302	20.84	60.00	-39.16	10.23	9.74	0.43	0.44	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).

Mode	Charging mode
Power Phase	Neutral

Test by : Joe Liao Temperature: 20°C Humidity: 60%



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Cable loss	Aux	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	dB	
1	0.151	21.53	55.96	-34.43	11.68	9.61	0.08	0.16	Average
2	0.151	33.64	65.96	-32.32	23.79	9.61	0.08	0.16	QP
3	0.221	22.59	52.79	-30.20	12.72	9.61	0.08	0.18	Average
4	0.221	33.05	62.79	-29.74	23.18	9.61	0.08	0.18	QP
5*	0.466	30.68	46.58	-15.90	20.77	9.61	0.09	0.21	Average
6	0.466	38.33	56.58	-18.25	28.42	9.61	0.09	0.21	QP
7	0.880	12.54	46.00	-33.46	2.51	9.61	0.15	0.27	Average
8	0.880	21.54	56.00	-34.46	11.51	9.61	0.15	0.27	QP
9	2.178	11.68	46.00	-34.32	1.56	9.62	0.20	0.30	Average
10	2.178	20.24	56.00	-35.76	10.12	9.62	0.20	0.30	QP
11	9.603	18.29	50.00	-31.71	7.79	9.69	0.44	0.37	Average
12	9.603	24.81	60.00	-35.19	14.31	9.69	0.44	0.37	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).