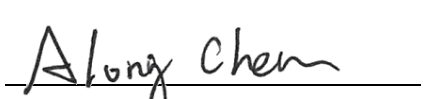
FCC Test Report

FCC ID	:	**NKR-MB20**
Product Description	:	**WLAN/BLE module**
Model No.	:	**DHSK-MB20**
Brand Name	:	**Wistron NeWeb Corporation**
Applicant	:	**Wistron NeWeb Corporation**
Address	:	**20 Park Avenue II, Hsinchu Science Park, Hsinchu 308,Taiwan, R.O.C.**
Standard	:	**47 CFR FCC Part 15.247**
Received Date	:	**Apr. 02, 2024**
Tested Date	:	**Jul. 15 ~ Jul. 18, 2024**

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:**



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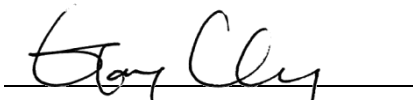

Gary Chang / Manager

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Release Record

Report No.	Version	Description	Issued Date
FR380701-02AC	Rev. 01	Initial issue	Aug. 16, 2024

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	AC Power Line Conducted Emission	[dBuV]: 0.491MHz 32.47 (Margin -13.67dB) - AV	Pass
15.247(d) 15.209	Unwanted Emissions	[dBuV/m at 3m]: 2.39GHz 52.84 (Margin -1.16dB) - AV	Pass
15.247(b)(3)	Conducted Output Power	Max Power [dBm]: 25.86	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 Product Details

The following models are provided to this EUT.

Brand Name	Model Name	Product Name	Product Description	Description
Wistron NeWeb Corporation	DHSK-MB20	81DHSK08.G01	WLAN/BLE module	LED *0, Button*0, level shifter*4, connector*2
		81DHSK08.G02		LED *0, Button*0, level shifter*1, connector*1
		81DHSK08.G03		LED *2, Button*1, level shifter*4, connector*2
✦ Remark: RF PCB layout and RF components of all the above listed models are the same, no change.				

1.1.2 Specification of the Equipment under Test (EUT)

RF General Information					
Frequency Range (MHz)	IEEE Std. 802.11	Ch. Freq. (MHz)	Channel Number	Transmit Chains (N_{TX})	Data Rate / MCS
2400-2483.5	b	2412-2462	1-11 [11]	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 Peak Conducted Output Power. Note 2: DSSS-DBPSK, DQPSK, CCK modulation, OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.					

1.1.3 Antenna Details

Ant. No.	Model	Type	Connector	Antenna Gain (dBi)
1	DHSK-MB20_ANT-0	PIFA	No	1.13
2	DHSK-MB20_ANT-1	PIFA	No	0.23

1.1.4 Configuration of Equipment under Test (EUT)

Power Supply Type	5Vdc from host

1.1.5 Accessories

N/A

1.1.6 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

1.1.7 Test Tool and Duty Cycle

Test Tool	AmebaZ2_mptool, version: 1v3		
Duty Cycle and Duty Factor	Mode	Duty Cycle (%)	Duty Factor (dB)
	11b	100.00%	0.00
	11g	100.00%	0.00
	HT20	100.00%	0.00

1.1.8 Power Index of Test Tool

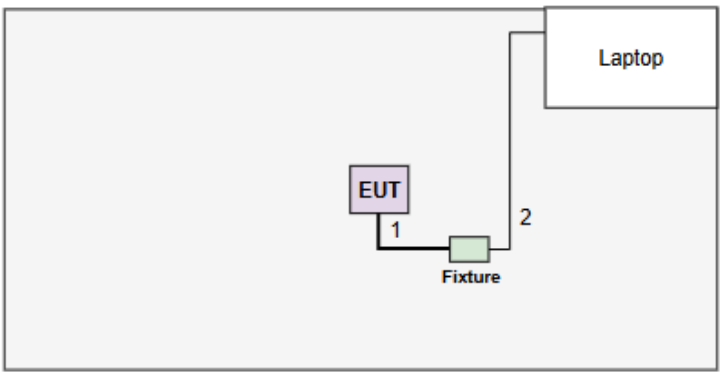
Modulation Mode	Test Frequency (MHz)	Power Index
11b	2412	113
11b	2437	120
11b	2462	108
11g	2412	111
11g	2437	127
11g	2462	104
HT20	2412	111
HT20	2437	127
HT20	2462	104

1.2 Local Support Equipment List

Support Equipment List					
No.	**Equipment**	**Brand**	**Model**	**FCC ID**	**Remarks**
1	Laptop	DELL	Latitude E5470	DoC	---
2	Fixture	---	---	---	Provided by applicant.

1.3 Test Setup Chart

Test Setup Diagram



No.	Signal cable / Length (m)
1	Fixture cable, 0.1m non-shielded.
2	USB, 1m shielded.

1.4 The Equipment List

Test Item	Radiated Emission below 1GHz test				
Test Site	966 chamber3 / (03CH03-WS)				
Tested Date	Jul. 17, 2024				
Instrument	**Brand**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Receiver	R&S	ESR3	101657	Mar. 05, 2024	Mar. 04, 2025
Loop Antenna	R&S	HFH2-Z2	100330	Oct. 31, 2023	Oct. 30, 2024
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-685	Jul. 02, 2024	Jul. 01, 2025
Preamplifier	EMC	EMC02325	980187	Jun. 27, 2024	Jun. 26, 2025
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Oct. 03, 2023	Oct. 02, 2024
LF cable-0.8M	EMC	EMC8D-NM-NM-800	EMC8D-NM-NM-800-001	Sep. 22, 2023	Sep. 21, 2024
LF cable-3M	EMC	EMC8D-NM-NM-3000	131103	Sep. 22, 2023	Sep. 21, 2024
LF cable-13M	EMC	EMC8D-NM-NM-13000	131104	Sep. 22, 2023	Sep. 21, 2024
Measurement Software	Sporton	SENSE-EMI	V5.11	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	Radiated Emission above 1GHz test				
Test Site	966 chamber3 / (03CH03-WS)				
Tested Date	Jul. 15, 2024				
Instrument	**Brand**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	R&S	FSV40	101499	Apr. 02, 2024	Apr. 01, 2025
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1206	Dec. 14, 2023	Dec. 13, 2024
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Oct. 30, 2023	Oct. 29, 2024
Preamplifier	EMC	EMC118A45SE	980897	Aug. 01, 2023	Jul. 31, 2024
Preamplifier	EMC	EMC184045SE	980903	Jul. 17, 2023	Jul. 16, 2024
RF cable-3M	HUBER+SUHNER	SUCOFLEX104	MY22620/4	Sep. 22, 2023	Sep. 21, 2024
RF cable-8M	EMC	EMC104-SM-SM-8000	181107	Sep. 22, 2023	Sep. 21, 2024
Attenuator	Pasternack	PE7005-10	10-3	Sep. 27, 2023	Sep. 26, 2024
HIGHPASS FILTER	WI	WHK3.1-18G-10SS	43	Sep. 27, 2023	Sep. 26, 2024
Measurement Software	Sporton	SENSE-15247_FS	V5.11.	NA	NA
Measurement Software	Sporton	SENSE-EMI	V5.11	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
Tested Date	Jul. 18, 2024				
Instrument	**Brand**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Receiver	R&S	ESR3	101658	Feb. 23, 2024	Feb. 22, 2025
LISN	R&S	ENV216	101579	May. 09, 2024	May. 08, 2025
RF Cable-CON	Woken	CFD200-NL	CFD200-NL-001	Oct. 11, 2023	Oct. 10, 2024
LISN (Support Unit)	SCHWARZBECK	Schwarzbeck 8127	8127666	Mar. 05, 2024	Mar. 04, 2025
50 ohm terminal (Support Unit)	NA	50	03	Aug. 08, 2023	Aug. 07, 2024
Measurement Software	AUDIX	e3	6.120210k	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	RF Conducted				
Test Site	(TH01-WS)				
Tested Date	Jul. 18, 2024				
Instrument	**Brand**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	R&S	FSV40	101910	Apr. 18, 2024	Apr. 17, 2025
Power Meter	Anritsu	ML2495A	1241002	Nov. 21, 2023	Nov. 20, 2024
Power Sensor	Anritsu	MA2411B	1207366	Nov. 21, 2023	Nov. 20, 2024
Attenuator	Pasternack	PE7005-10	10-2	Oct. 05, 2023	Oct. 04, 2024
Measurement Software	Sporton	SENSE-15247_DTS	V5.11	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 33381, 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	11g	2437	6 Mbps	---
Unwanted Emissions ≤ 1GHz	11g	2437	6 Mbps	---
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	---

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

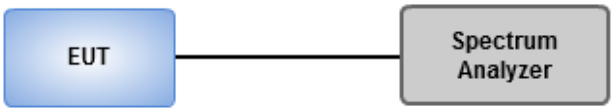
6dB Bandwidth

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	26°C / 63%	**Tested By**	Akun Chung

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	26°C / 63%	**Tested By**	Akun Chung

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 = 3 kHz, VBW = 10 kHz.
2. Detector = RMS, Sweep time = auto couple.
3. Sweep time = auto couple.
4. Employ trace averaging (RMS) mode over a minimum of 100 traces.
5. Use the peak marker function to determine the maximum amplitude level.

Average PSD, duty cycle < 98%

1 Set the RBW = 3 kHz, VBW = 10 kHz

2 Detector = RMS, Sweep time = auto couple.

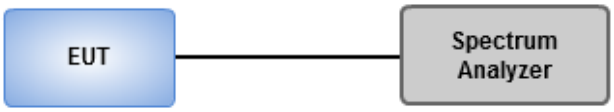
3 Sweep time = auto couple.

4 Employ trace averaging (RMS) mode over a minimum of 100 traces.

5 Use the peak marker function to determine the maximum amplitude level.

6 Add 10 log (1/x), where x is the duty cycle.

3.3.3 Test Setup



3.3.4 Test Results

Ambient Condition	26°C / 63%	**Tested By**	Akun Chung

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

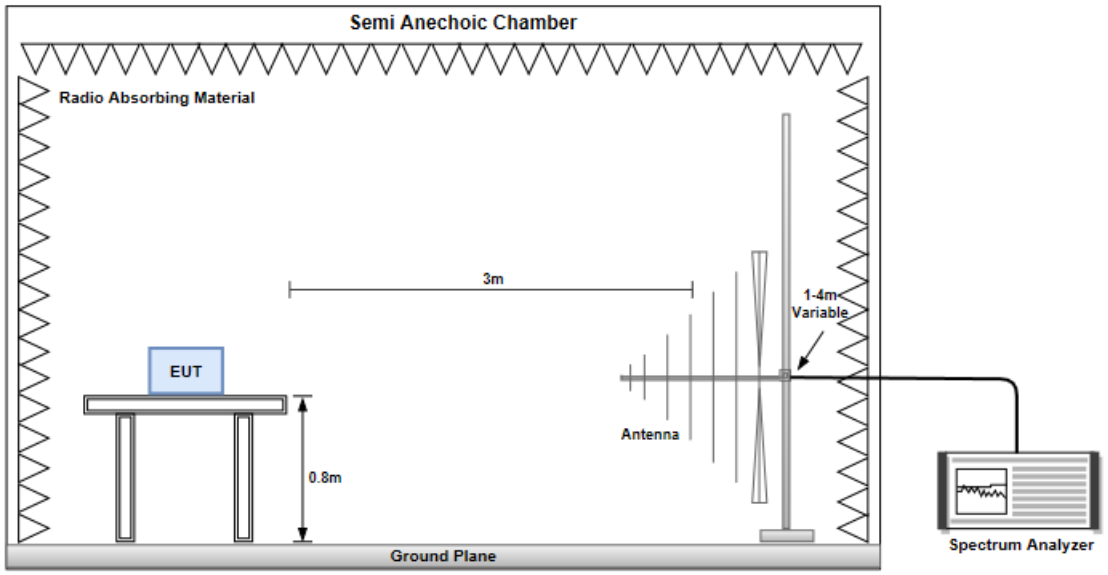
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission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

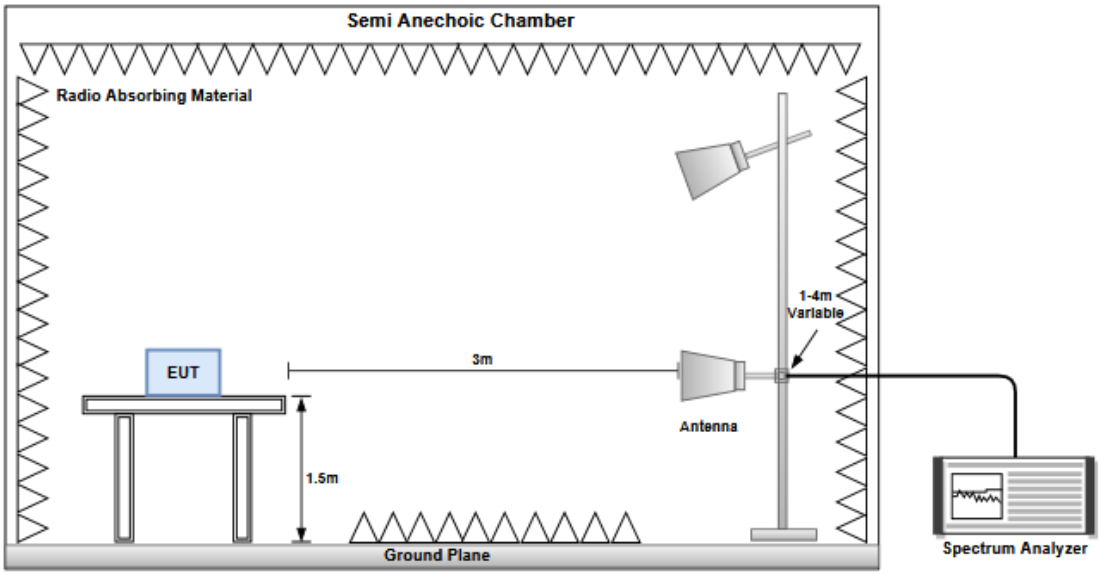
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.4.3 Test Setup

Radiated Emissions below 1 GHz



Radiated Emissions above 1 GHz



3.4.4 Test Results

Ambient Condition	25-26°C / 63-64%	Tested By	Allen Lee / Brad Wu

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

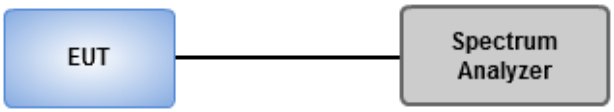
Reference level measurement

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	26°C / 63%	**Tested By**	Akun Chung

Refer to Appendix E.

3.6 AC Power Line Conducted Emissions

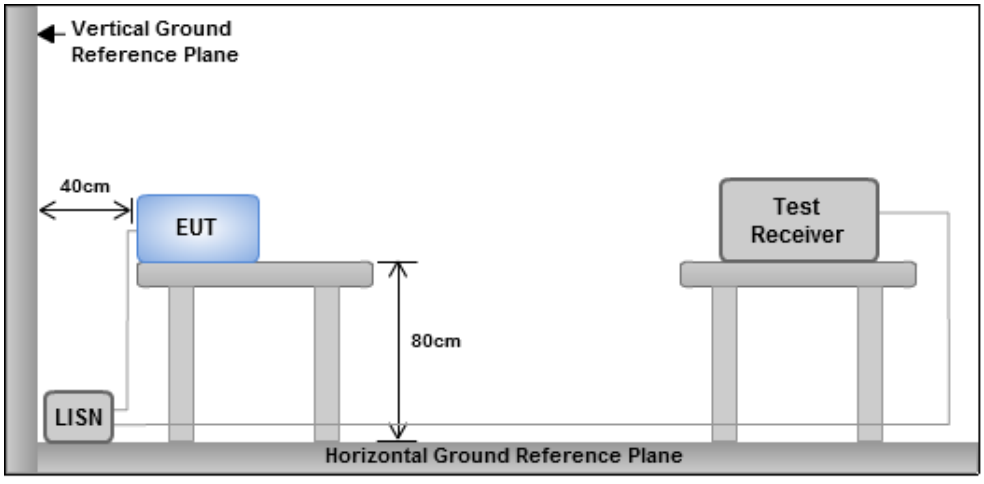
3.6.1 Limit of AC Power Line Conducted Emissions

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 33381, 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	10.025M	14.498M	14M5G1D	9.075M	14.078M
802.11g_Nss1,(6Mbps)_1TX	16.575M	19.064M	19M1D1D	16.45M	16.712M
802.11n HT20_Nss1,(MCS0)_1TX	17.825M	19.915M	19M9D1D	17.775M	17.841M

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

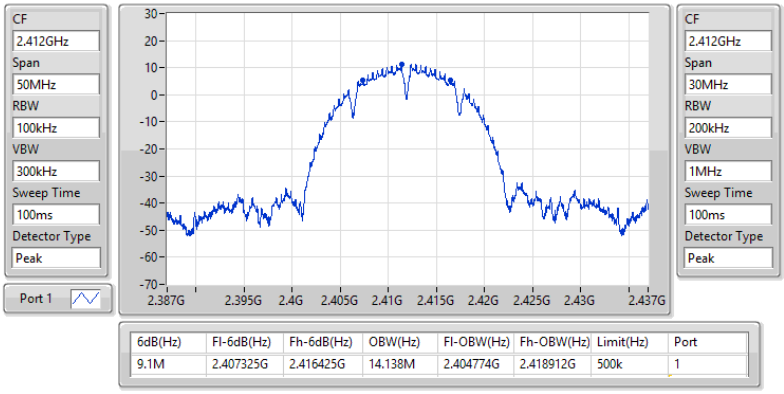
Result

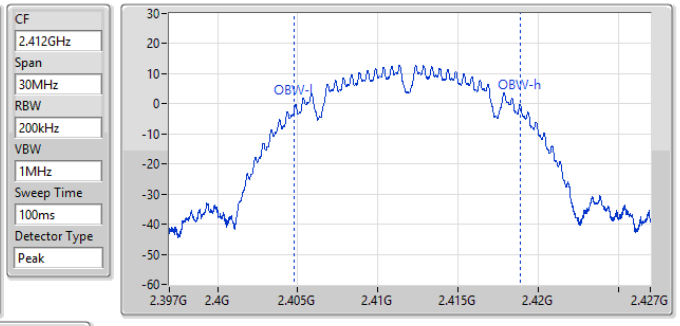
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-
2412MHz	Pass	500k	9.1M	14.138M
2437MHz	Pass	500k	10.025M	14.498M
2462MHz	Pass	500k	9.075M	14.078M
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-
2412MHz	Pass	500k	16.525M	16.712M
2437MHz	Pass	500k	16.45M	19.064M
2462MHz	Pass	500k	16.575M	16.712M
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-
2412MHz	Pass	500k	17.8M	17.866M
2437MHz	Pass	500k	17.825M	19.915M
2462MHz	Pass	500k	17.775M	17.841M

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

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX **EBW**

2412MHz

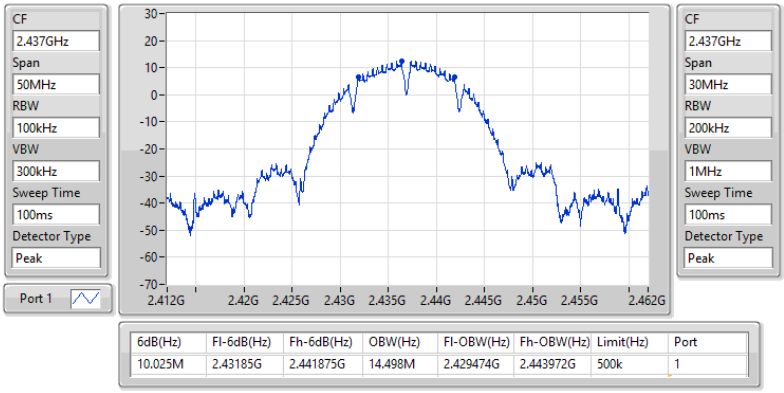


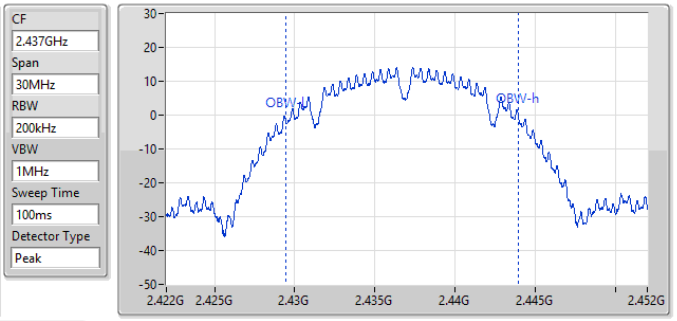


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
9.1M	2.407325G	2.416425G	14.138M	2.404774G	2.418912G	500k	1

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX **EBW**

2437MHz

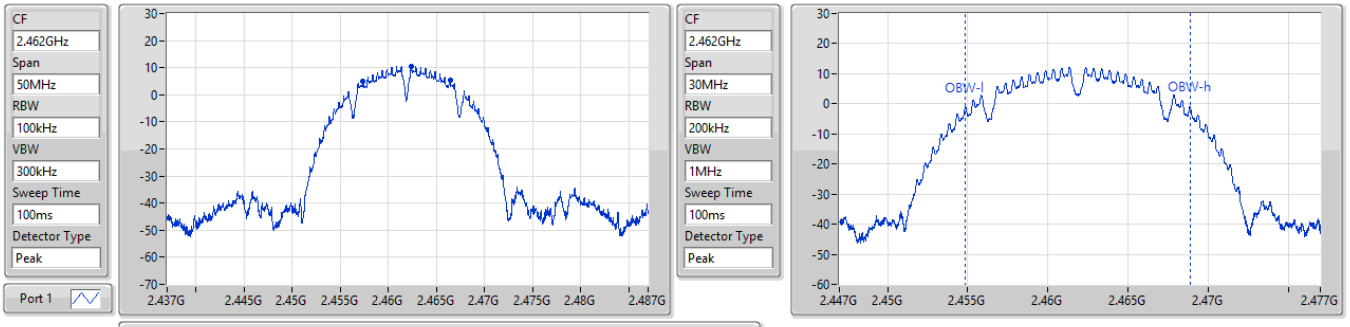




6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
10.025M	2.43185G	2.441875G	14.498M	2.429474G	2.443972G	500k	1

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX **EBW**

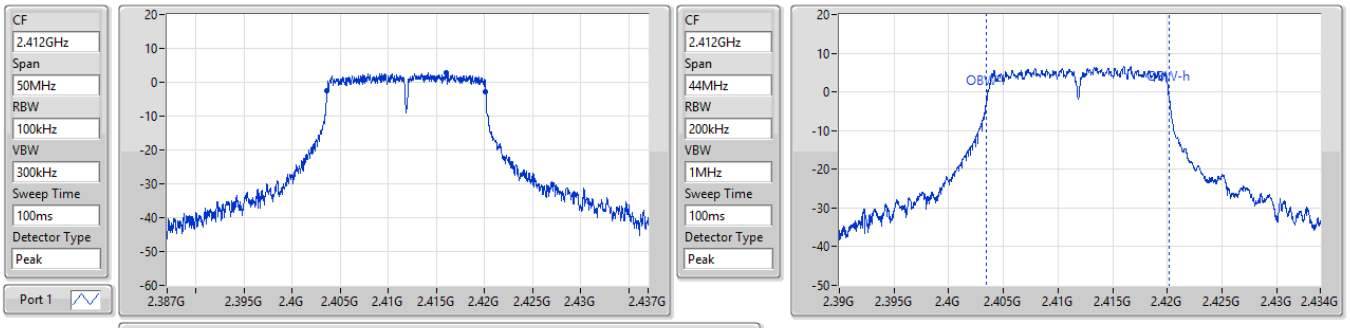
2462MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
9.075M	2.457325G	2.4664G	14.078M	2.454819G	2.468897G	500k	1

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX **EBW**

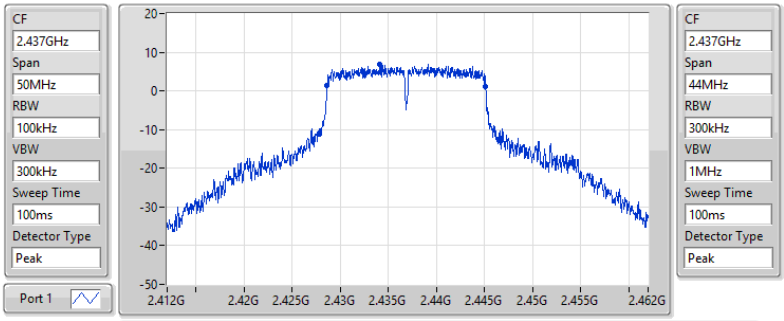
2412MHz

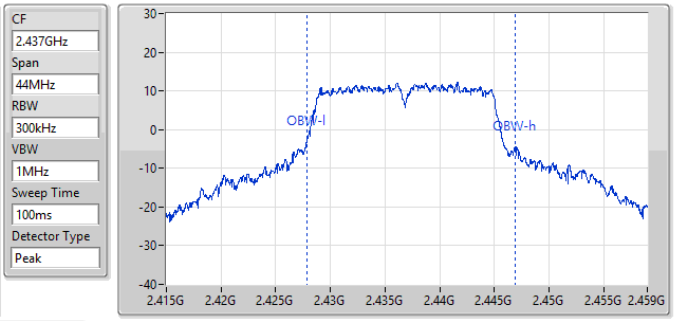


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.525M	2.4036G	2.420125G	16.712M	2.403446G	2.420158G	500k	1

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX **EBW**

2437MHz

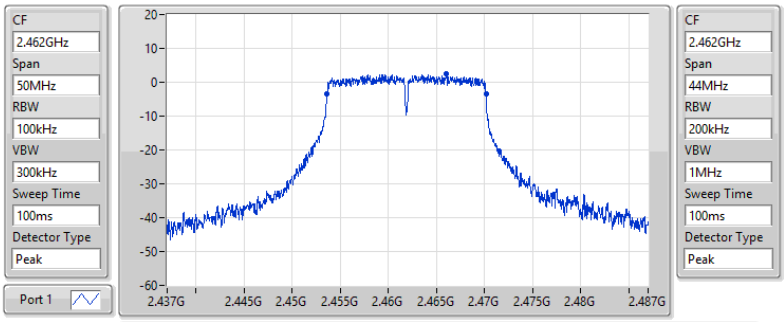


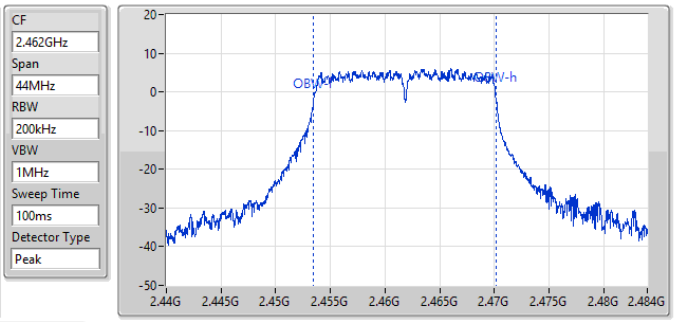


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.45M	2.428625G	2.445075G	19.064M	2.427853G	2.446917G	500k	1

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX **EBW**

2462MHz

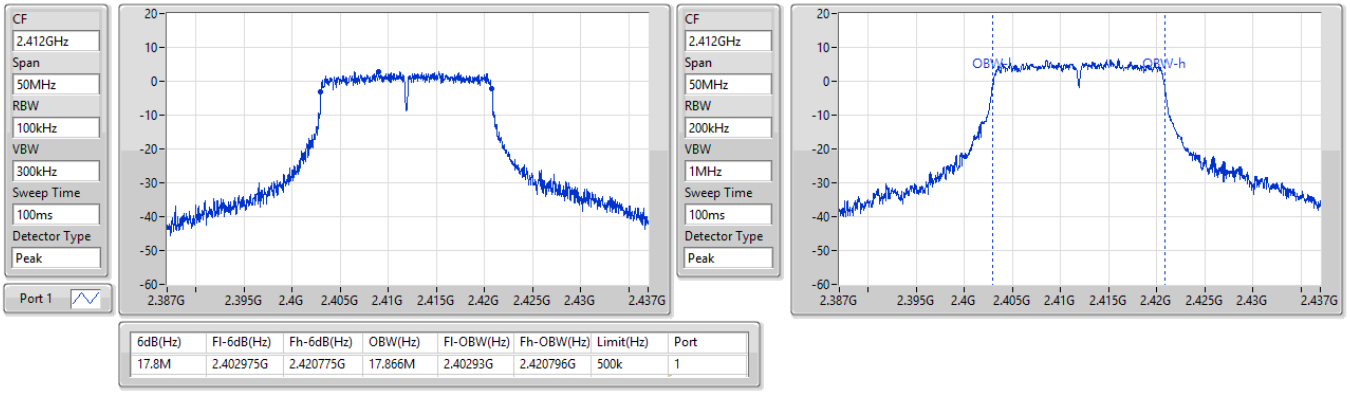




6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.575M	2.453575G	2.47015G	16.712M	2.453424G	2.470136G	500k	1

2.4-2.4835GHz_802.11n HT20_Nss1,(MCS0)_1TX **EBW**

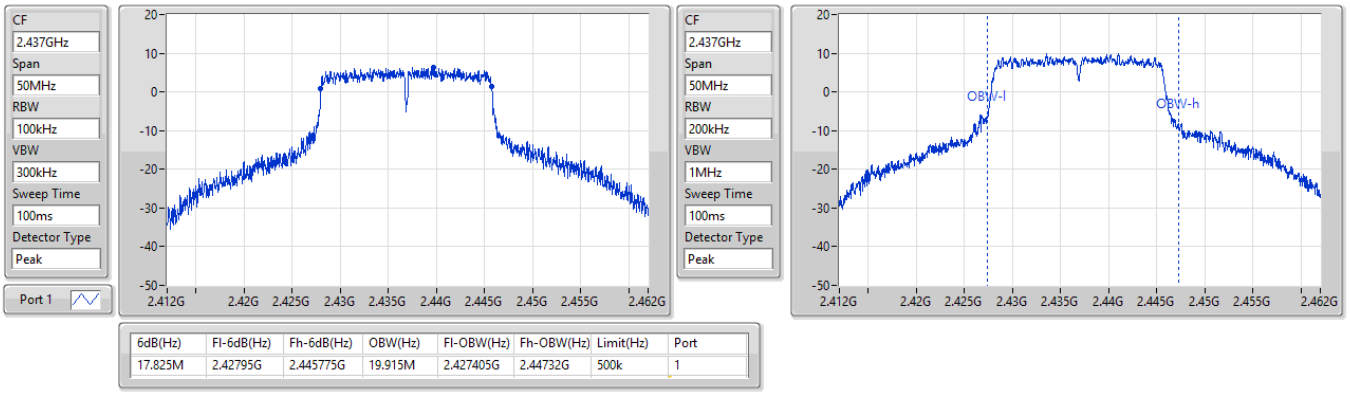
2412MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.8M	2.402975G	2.420775G	17.866M	2.40293G	2.420796G	500k	1

2.4-2.4835GHz_802.11n HT20_Nss1,(MCS0)_1TX **EBW**

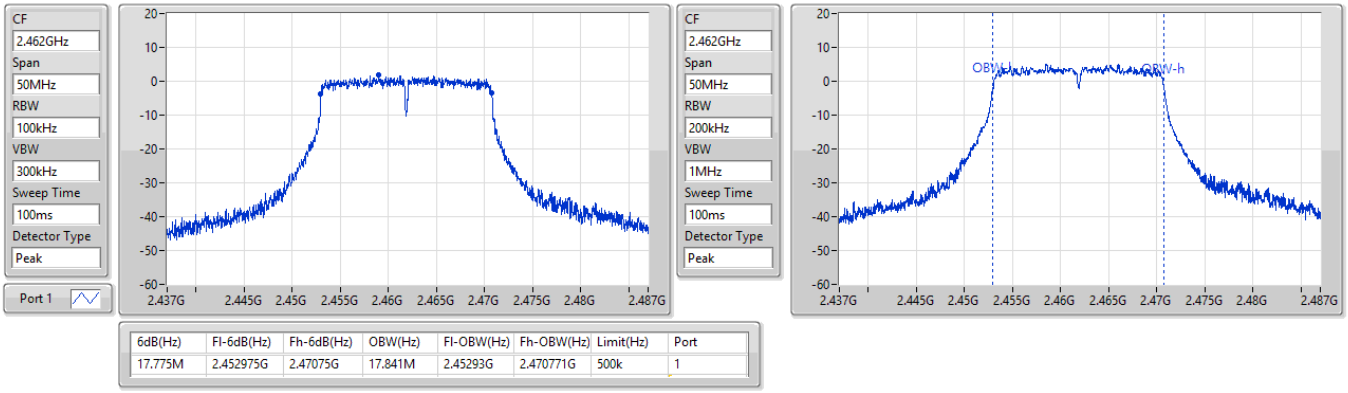
2437MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.825M	2.42795G	2.445775G	19.915M	2.427405G	2.44732G	500k	1

2.4-2.4835GHz_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
17.775M	2.452975G	2.47075G	17.841M	2.45293G	2.470771G	500k	1

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_1TX	24.83	0.30409
802.11g_Nss1,(6Mbps)_1TX	25.86	0.38548
802.11n HT20_Nss1,(MCS0)_1TX	25.79	0.37931

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	1.13	23.75	23.75	30.00	24.88	36.00
2437MHz	Pass	1.13	24.83	24.83	30.00	25.96	36.00
2462MHz	Pass	1.13	23.26	23.26	30.00	24.39	36.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-	-	-
2412MHz	Pass	1.13	25.6	25.60	30.00	26.73	36.00
2437MHz	Pass	1.13	25.86	25.86	30.00	26.99	36.00
2462MHz	Pass	1.13	25.12	25.12	30.00	26.25	36.00
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
2412MHz	Pass	1.13	25.44	25.44	30.00	26.57	36.00
2437MHz	Pass	1.13	25.79	25.79	30.00	26.92	36.00
2462MHz	Pass	1.13	24.76	24.76	30.00	25.89	36.00

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

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_1TX	22.76	0.18880
802.11g_Nss1,(6Mbps)_1TX	20.89	0.12274
802.11n HT20_Nss1,(MCS0)_1TX	20.82	0.12078

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	1.13	21.32	21.32	-	22.45	-
2437MHz	Pass	1.13	22.76	22.76	-	23.89	-
2462MHz	Pass	1.13	20.75	20.75	-	21.88	-
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-	-	-
2412MHz	Pass	1.13	17.76	17.76	-	18.89	-
2437MHz	Pass	1.13	20.89	20.89	-	22.02	-
2462MHz	Pass	1.13	16.57	16.57	-	17.70	-
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
2412MHz	Pass	1.13	17.7	17.70	-	18.83	-
2437MHz	Pass	1.13	20.82	20.82	-	21.95	-
2462MHz	Pass	1.13	16.53	16.53	-	17.66	-

DG = Directional Gain; Port X = Port X output power
Note : Conducted average output power is for reference

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
802.11b_Nss1,(1Mbps)_1TX	-7.72
802.11g_Nss1,(6Mbps)_1TX	-7.65
802.11n HT20_Nss1,(MCS0)_1TX	-7.61

RBW = 3kHz;

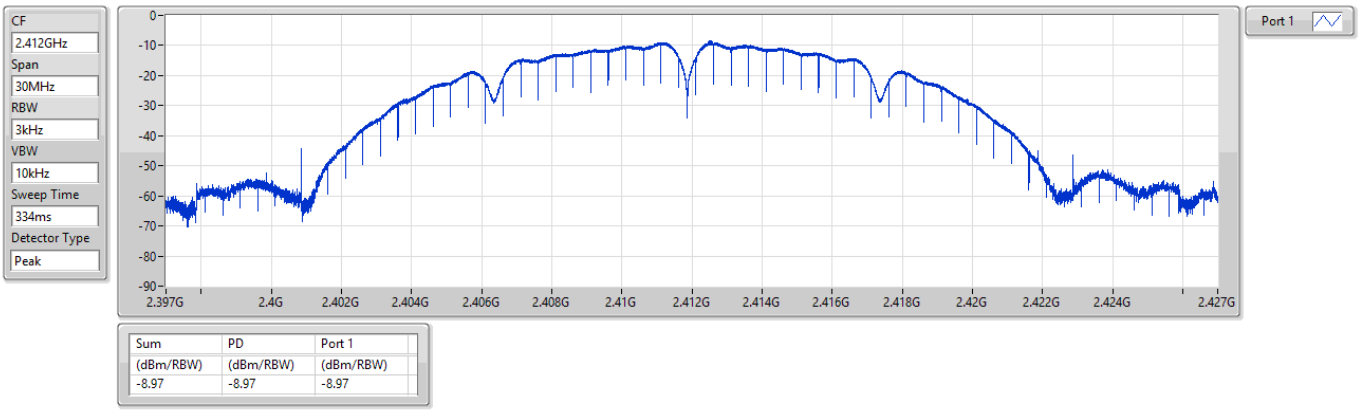
Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	1.13	-8.97	-8.97	8.00
2437MHz	Pass	1.13	-7.72	-7.72	8.00
2462MHz	Pass	1.13	-9.65	-9.65	8.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	1.13	-11.39	-11.39	8.00
2437MHz	Pass	1.13	-7.65	-7.65	8.00
2462MHz	Pass	1.13	-11.97	-11.97	8.00
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz	Pass	1.13	-10.59	-10.59	8.00
2437MHz	Pass	1.13	-7.61	-7.61	8.00
2462MHz	Pass	1.13	-12.03	-12.03	8.00

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

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX **PSD**

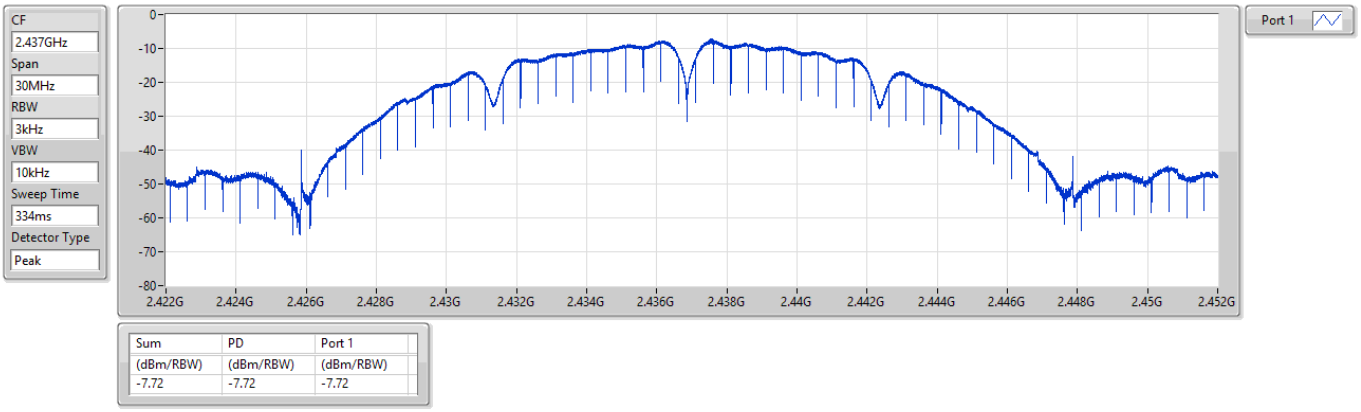
2412MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-8.97	-8.97	-8.97

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX **PSD**

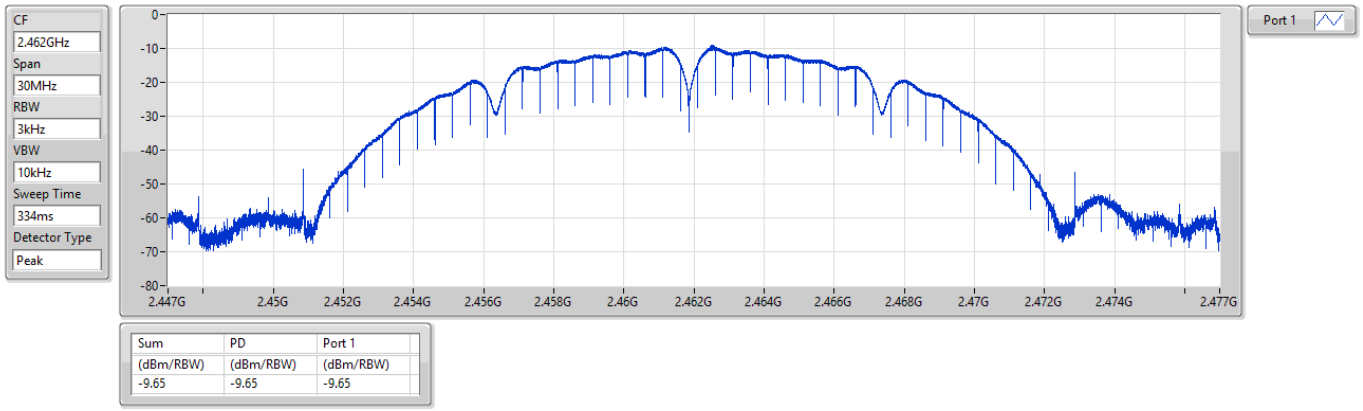
2437MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-7.72	-7.72	-7.72

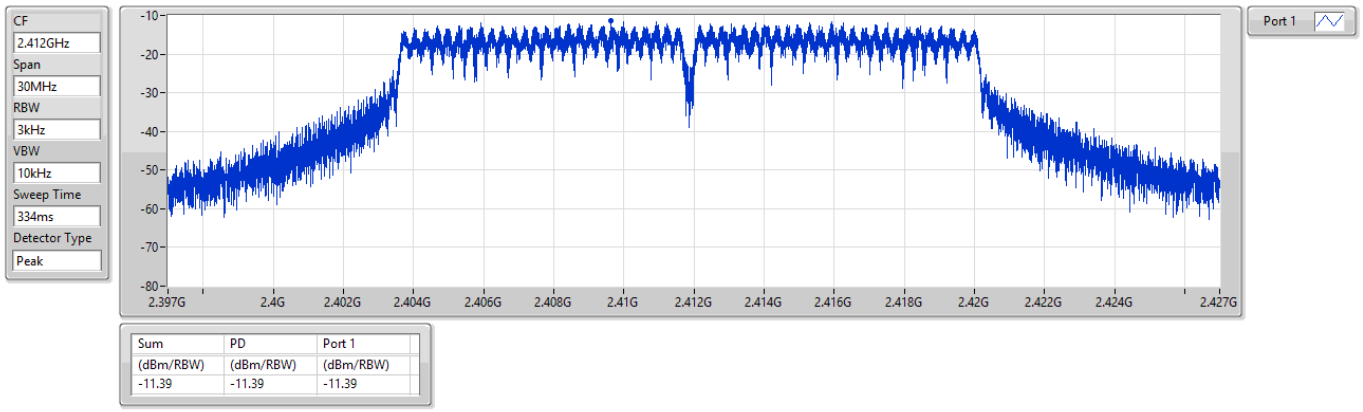
2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX **PSD**

2462MHz



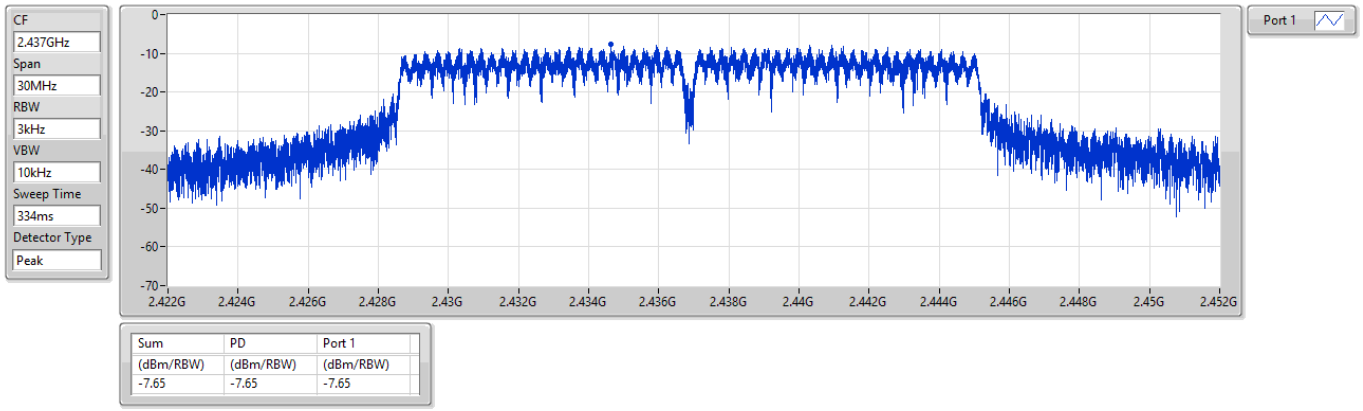
2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX **PSD**

2412MHz



2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX **PSD**

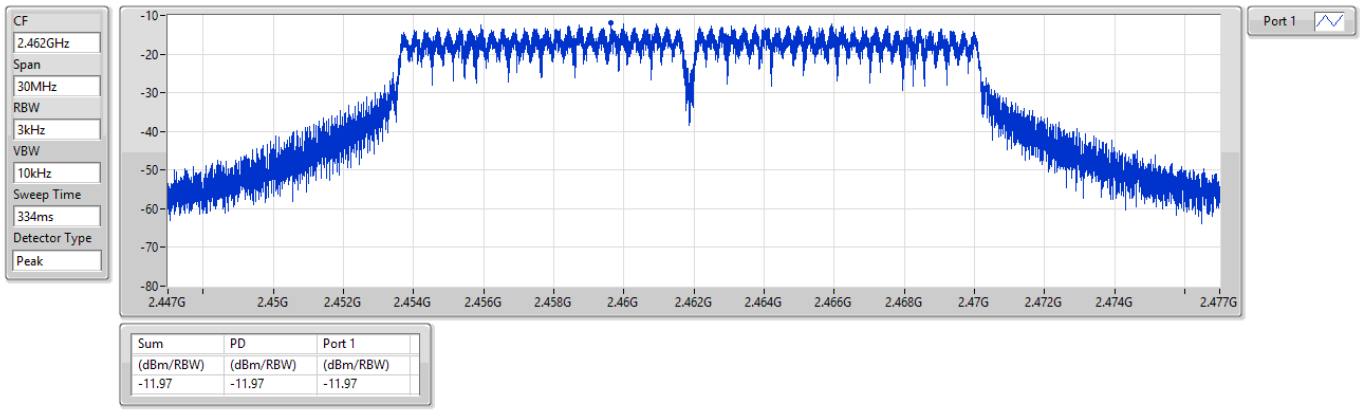
2437MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-7.65	-7.65	-7.65

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX **PSD**

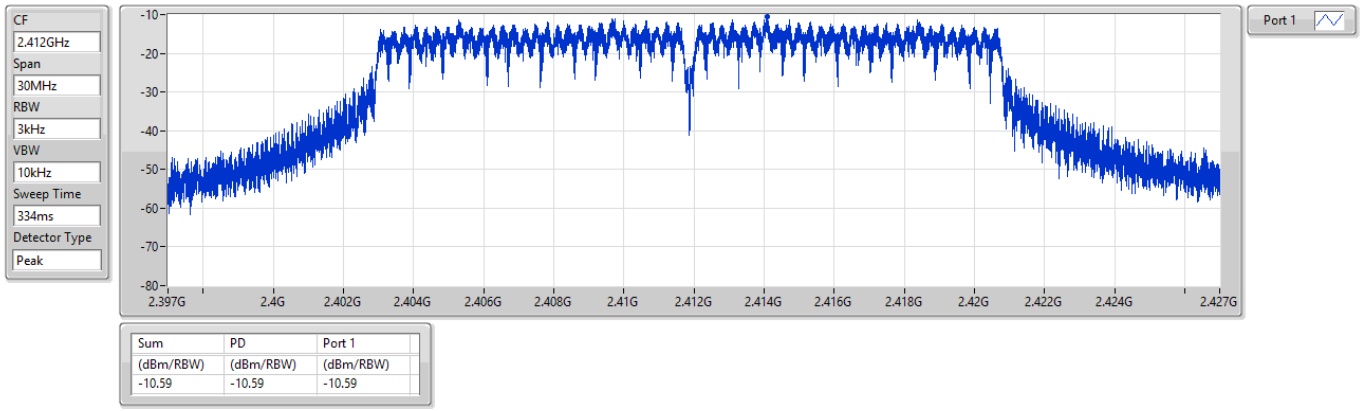
2462MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-11.97	-11.97	-11.97

2.4-2.4835GHz_802.11n HT20_Nss1,(MCS0)_1TX **PSD**

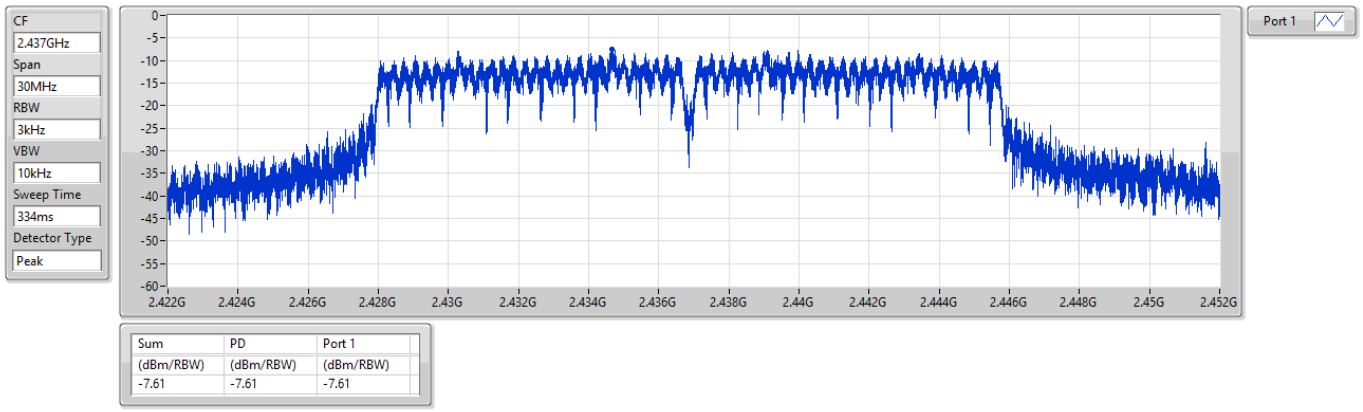
2412MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.59	-10.59	-10.59

2.4-2.4835GHz_802.11n HT20_Nss1,(MCS0)_1TX **PSD**

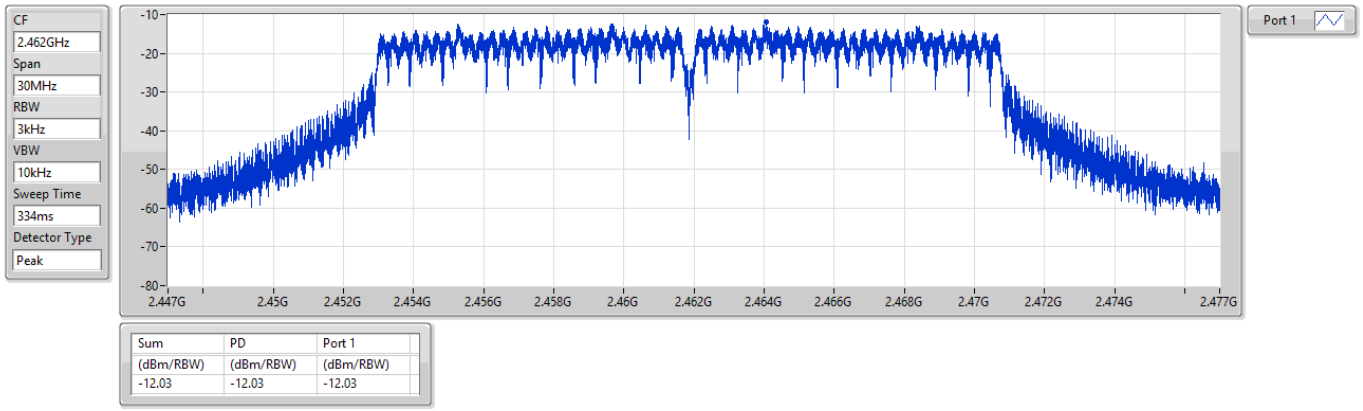
2437MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-7.61	-7.61	-7.61

2.4-2.4835GHz_802.11n HT20_Nss1,(MCS0)_1TX **PSD**

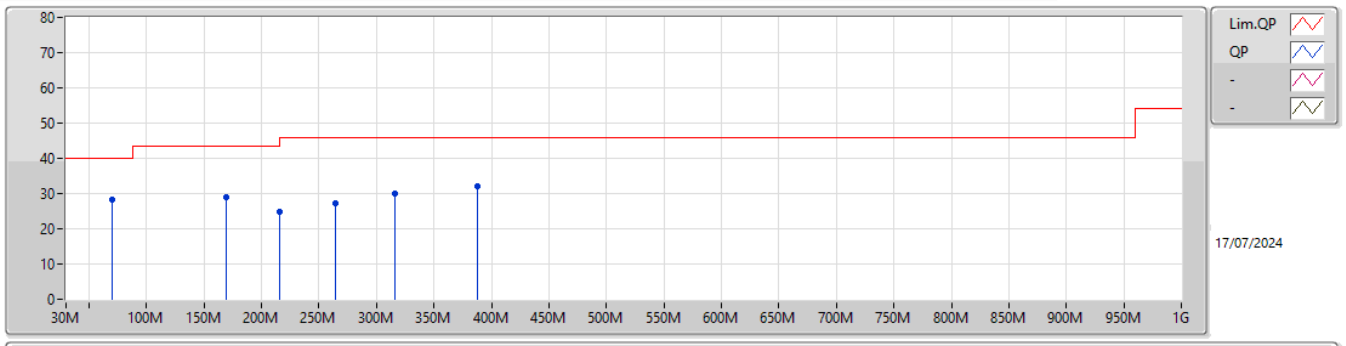
2462MHz



Summary

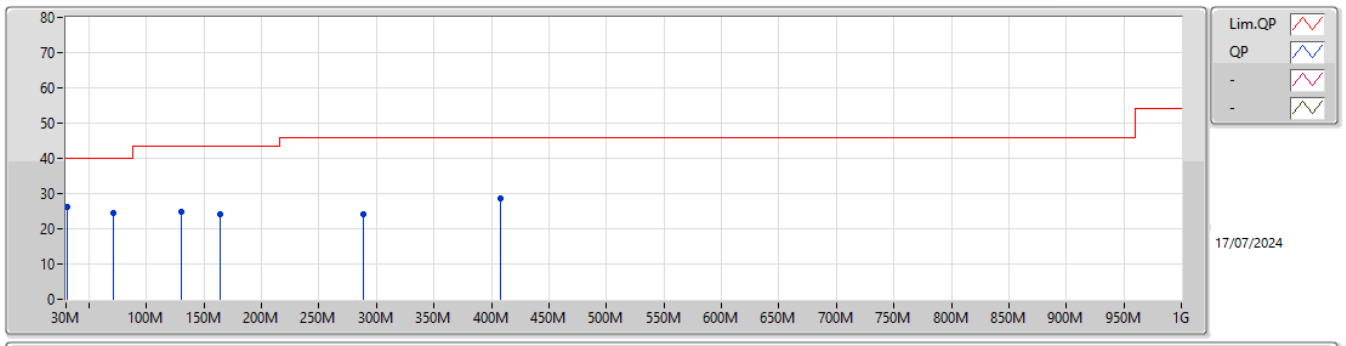
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	PK	70.5M	28.38	40.00	-11.62	Horizontal

Mode 1



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB/m)	(m)		(°)	(m)		(dBuV)	(dB/m)	(dB)	(dB)
PK	70.5M	28.38	40.00	-11.62	-11.05	3	Horizontal	-	-	-	39.43	16.20	0.80	28.05
PK	169.6M	28.87	43.50	-14.63	-9.13	3	Horizontal	-	-	-	38.00	17.64	1.34	28.11
PK	216M	24.71	43.50	-18.79	-11.91	3	Horizontal	-	-	-	36.62	14.70	1.53	28.14
PK	264M	27.28	46.00	-18.72	-9.37	3	Horizontal	-	-	-	36.65	17.06	1.74	28.17
PK	316.4M	29.91	46.00	-16.09	-7.47	3	Horizontal	-	-	-	37.38	18.73	1.97	28.17
PK	387.6M	32.08	46.00	-13.92	-5.51	3	Horizontal	-	-	-	37.59	20.25	2.26	28.02

Mode 1



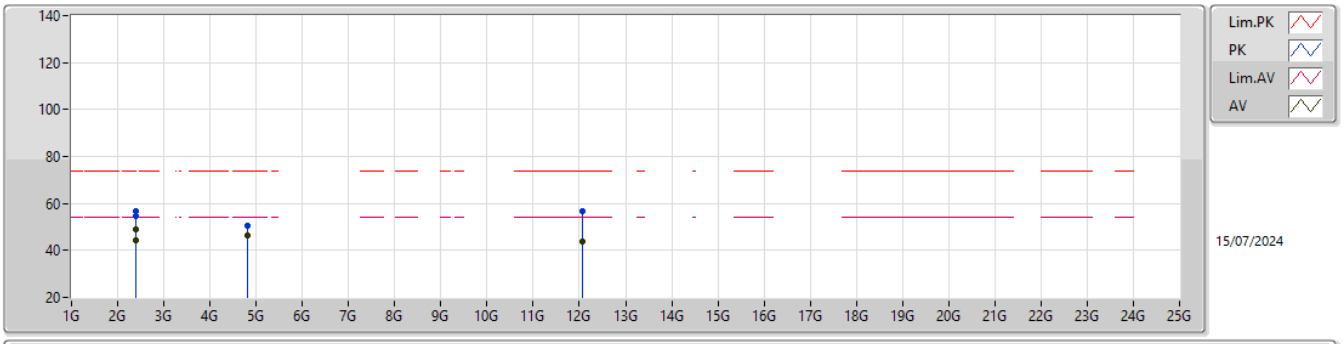
Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB/m)	(m)		(°)	(m)		(dBuV)	(dB/m)	(dB)	(dB)
PK	30.6M	26.27	40.00	-13.73	-10.00	3	Vertical	-	-	-	36.27	17.52	0.48	28.00
PK	71.5M	24.34	40.00	-15.66	-11.09	3	Vertical	-	-	-	35.43	16.15	0.81	28.05
PK	130.5M	24.78	43.50	-18.72	-9.75	3	Vertical	-	-	-	34.53	17.15	1.17	28.07
PK	163.6M	24.21	43.50	-19.29	-8.65	3	Vertical	-	-	-	32.86	18.14	1.31	28.10
PK	288.8M	24.07	46.00	-21.93	-8.26	3	Vertical	-	-	-	32.33	18.08	1.85	28.19
PK	408M	28.63	46.00	-17.37	-5.12	3	Vertical	-	-	-	33.75	20.52	2.34	27.98

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	Pass	AV	2.487G	52.82	54.00	-1.18	3	Vertical	263.4	1.03	-
802.11g_Nss1,(6Mbps)_1TX	Pass	AV	2.39G	52.81	54.00	-1.19	3	Vertical	268.7	1.03	-
802.11n HT20_Nss1,(MCS0)_1TX	Pass	AV	2.39G	52.84	54.00	-1.16	3	Vertical	286.4	1.03	-

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX

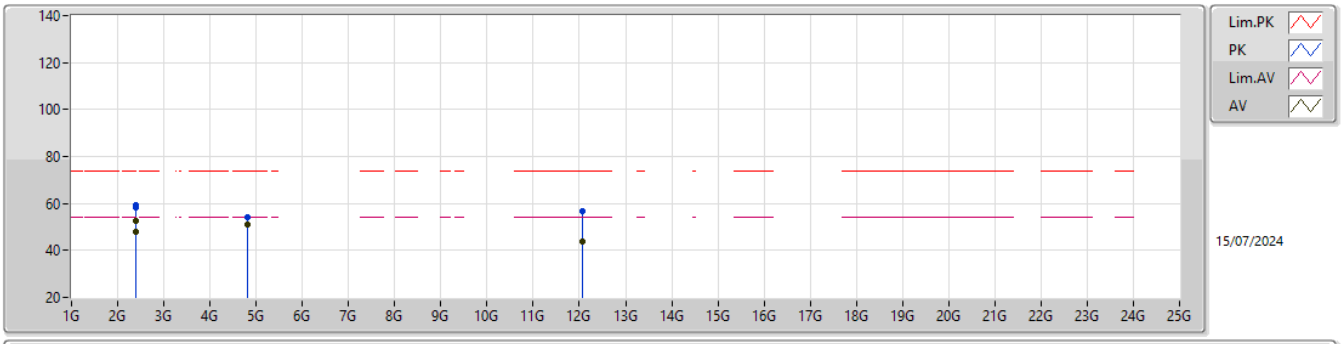
2412MHz_TX



Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB/m)	(dB)	(dB)
AV	2.386G	48.74	54.00	-5.26	52.36	3	Horizontal	42.3	1.03	-	27.70	5.15	36.47
PK	2.386G	56.93	74.00	-17.07	60.55	3	Horizontal	42.3	1.03	-	27.70	5.15	36.47
AV	2.39G	44.21	54.00	-9.79	47.84	3	Horizontal	42.3	1.03	-	27.70	5.15	36.48
PK	2.39G	54.89	74.00	-19.11	58.52	3	Horizontal	42.3	1.03	-	27.70	5.15	36.48
AV	4.824G	46.31	54.00	-7.69	46.20	3	Horizontal	315	1.54	-	31.55	6.84	38.28
PK	4.824G	50.42	74.00	-23.58	50.31	3	Horizontal	315	1.54	-	31.55	6.84	38.28
AV	12.06G	43.76	54.00	-10.24	36.02	3	Horizontal	152	1.03	-	39.28	10.75	42.29
PK	12.06G	56.64	74.00	-17.36	48.90	3	Horizontal	152	1.03	-	39.28	10.75	42.29

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX

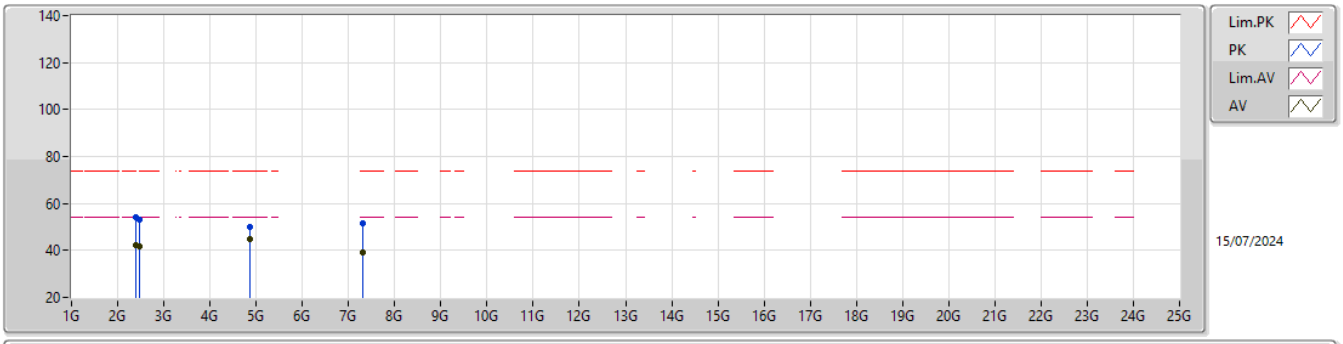
2412MHz_TX



Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB/m)	(dB)	(dB)
AV	2.386G	52.68	54.00	-1.32	56.30	3	Vertical	268.4	1.08	-	27.70	5.15	36.47
PK	2.386G	59.34	74.00	-14.66	62.96	3	Vertical	268.4	1.08	-	27.70	5.15	36.47
AV	2.39G	47.80	54.00	-6.20	51.43	3	Vertical	268.4	1.08	-	27.70	5.15	36.48
PK	2.39G	58.44	74.00	-15.56	62.07	3	Vertical	268.4	1.08	-	27.70	5.15	36.48
AV	4.824G	51.19	54.00	-2.81	51.08	3	Vertical	189.4	1.03	-	31.55	6.84	38.28
PK	4.824G	54.15	74.00	-19.85	54.04	3	Vertical	189.4	1.03	-	31.55	6.84	38.28
AV	12.06G	43.92	54.00	-10.08	36.18	3	Vertical	224	1.03	-	39.28	10.75	42.29
PK	12.06G	56.70	74.00	-17.30	48.96	3	Vertical	224	1.03	-	39.28	10.75	42.29

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX

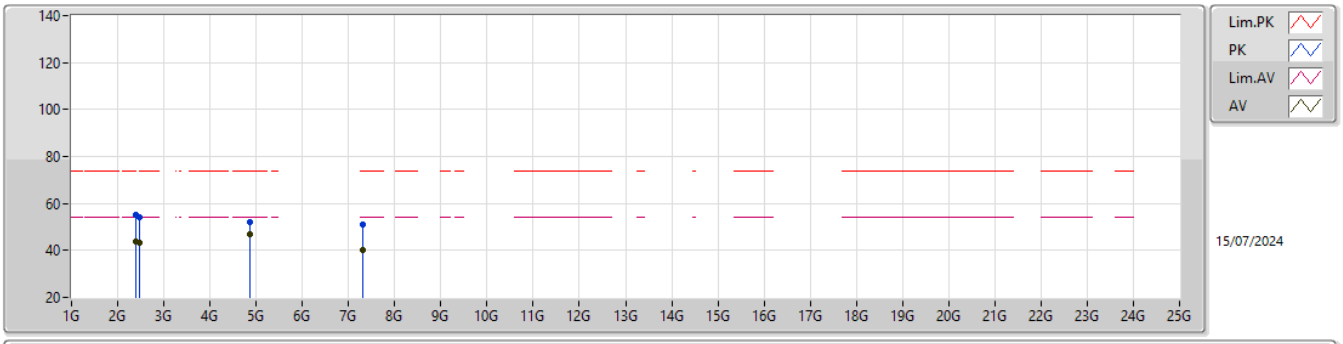
2437MHz_TX



Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB/m)	(dB)	(dB)
AV	2.39G	42.23	54.00	-11.77	45.86	3	Horizontal	29	2.35	-	27.70	5.15	36.48
PK	2.39G	54.04	74.00	-19.96	57.67	3	Horizontal	29	2.35	-	27.70	5.15	36.48
AV	2.4835G	41.97	54.00	-12.03	45.90	3	Horizontal	29	2.35	-	27.46	5.18	36.57
PK	2.4835G	53.34	74.00	-20.66	57.27	3	Horizontal	29	2.35	-	27.46	5.18	36.57
AV	4.874G	44.94	54.00	-9.06	44.89	3	Horizontal	315	3.23	-	31.50	6.87	38.32
PK	4.874G	49.81	74.00	-24.19	49.76	3	Horizontal	315	3.23	-	31.50	6.87	38.32
AV	7.311G	39.02	54.00	-14.98	33.64	3	Horizontal	199	1.03	-	36.40	8.20	39.22
PK	7.311G	51.70	74.00	-22.30	46.32	3	Horizontal	199	1.03	-	36.40	8.20	39.22

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX

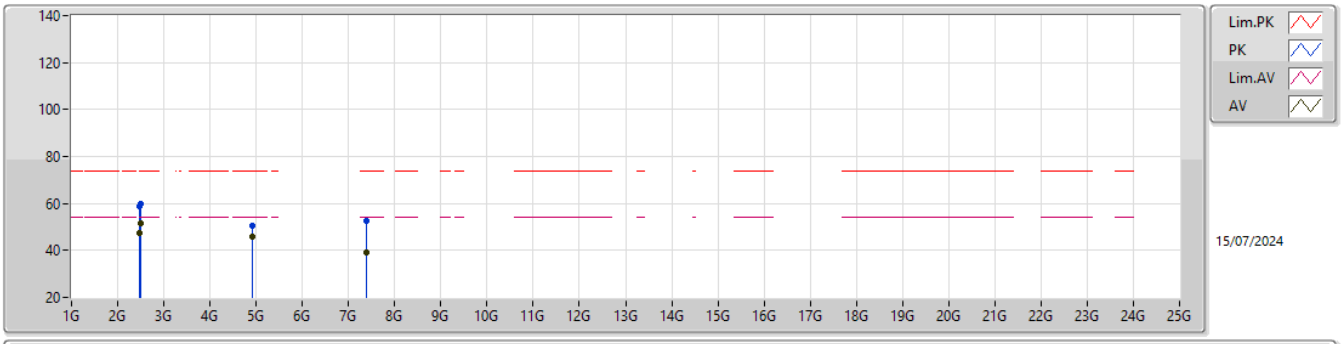
2437MHz_TX



Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB/m)	(dB)	(dB)
AV	2.39G	43.93	54.00	-10.07	47.56	3	Vertical	270	1.03	-	27.70	5.15	36.48
PK	2.39G	55.05	74.00	-18.95	58.68	3	Vertical	270	1.03	-	27.70	5.15	36.48
AV	2.4835G	43.32	54.00	-10.68	47.25	3	Vertical	270	1.03	-	27.46	5.18	36.57
PK	2.4835G	54.18	74.00	-19.82	58.11	3	Vertical	270	1.03	-	27.46	5.18	36.57
AV	4.874G	47.05	54.00	-6.95	47.00	3	Vertical	163	1.03	-	31.50	6.87	38.32
PK	4.874G	51.87	74.00	-22.13	51.82	3	Vertical	163	1.03	-	31.50	6.87	38.32
AV	7.311G	40.01	54.00	-13.99	34.63	3	Vertical	141	1.03	-	36.40	8.20	39.22
PK	7.311G	51.27	74.00	-22.73	45.89	3	Vertical	141	1.03	-	36.40	8.20	39.22

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX

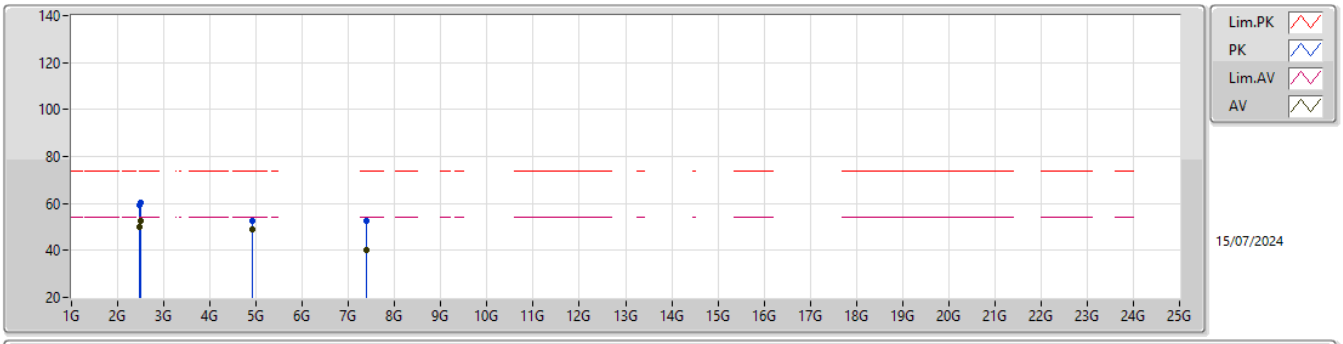
2462MHz_TX



Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB/m)	(dB)	(dB)
AV	2.4835G	47.61	54.00	-6.39	51.54	3	Horizontal	30.5	1.83	-	27.46	5.18	36.57
PK	2.4835G	58.61	74.00	-15.39	62.54	3	Horizontal	30.5	1.83	-	27.46	5.18	36.57
AV	2.487G	51.59	54.00	-2.41	55.56	3	Horizontal	30.5	1.83	-	27.43	5.18	36.58
PK	2.487G	59.83	74.00	-14.17	63.80	3	Horizontal	30.5	1.83	-	27.43	5.18	36.58
AV	4.924G	46.07	54.00	-7.93	46.07	3	Horizontal	310.1	3.29	-	31.45	6.90	38.35
PK	4.924G	50.54	74.00	-23.46	50.54	3	Horizontal	310.1	3.29	-	31.45	6.90	38.35
AV	7.386G	39.11	54.00	-14.89	33.78	3	Horizontal	210	1.03	-	36.40	8.23	39.30
PK	7.386G	52.48	74.00	-21.52	47.15	3	Horizontal	210	1.03	-	36.40	8.23	39.30

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX

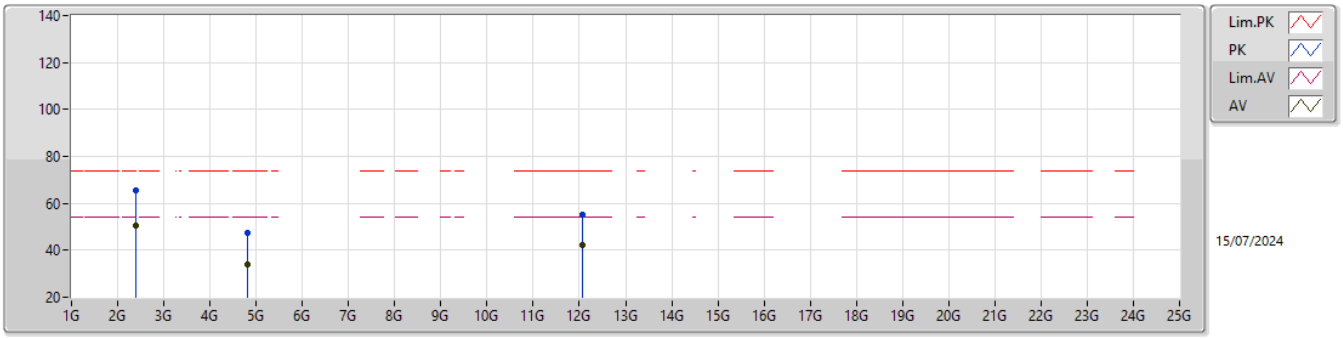
2462MHz_TX



Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB/m)	(dB)	(dB)
AV	2.4835G	49.82	54.00	-4.18	53.75	3	Vertical	263.4	1.03	-	27.46	5.18	36.57
PK	2.4835G	59.43	74.00	-14.57	63.36	3	Vertical	263.4	1.03	-	27.46	5.18	36.57
AV	2.487G	52.82	54.00	-1.18	56.79	3	Vertical	263.4	1.03	-	27.43	5.18	36.58
PK	2.487G	60.28	74.00	-13.72	64.25	3	Vertical	263.4	1.03	-	27.43	5.18	36.58
AV	4.924G	49.10	54.00	-4.90	49.10	3	Vertical	186.7	1.03	-	31.45	6.90	38.35
PK	4.924G	52.62	74.00	-21.38	52.62	3	Vertical	186.7	1.03	-	31.45	6.90	38.35
AV	7.386G	40.09	54.00	-13.91	34.76	3	Vertical	168	1.03	-	36.40	8.23	39.30
PK	7.386G	52.62	74.00	-21.38	47.29	3	Vertical	168	1.03	-	36.40	8.23	39.30

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

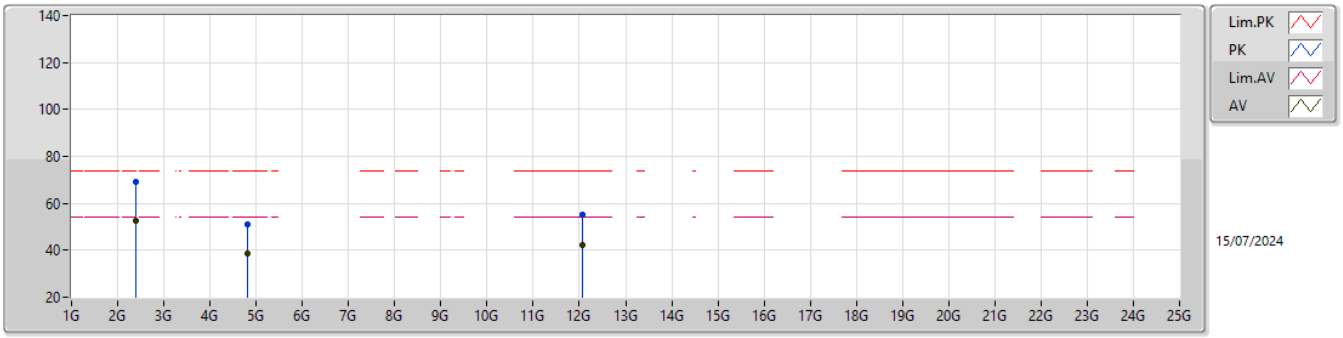
2412MHz_TX



Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB/m)	(dB)	(dB)
AV	2.39G	50.43	54.00	-3.57	54.06	3	Horizontal	32.6	2.17	-	27.70	5.15	36.48
PK	2.39G	65.73	74.00	-8.27	69.36	3	Horizontal	32.6	2.17	-	27.70	5.15	36.48
AV	4.824G	34.11	54.00	-19.89	34.00	3	Horizontal	320.9	1.03	-	31.55	6.84	38.28
PK	4.824G	47.42	74.00	-26.58	47.31	3	Horizontal	320.9	1.03	-	31.55	6.84	38.28
AV	12.06G	42.20	54.00	-11.80	34.46	3	Horizontal	253	1.03	-	39.28	10.75	42.29
PK	12.06G	54.93	74.00	-19.07	47.19	3	Horizontal	253	1.03	-	39.28	10.75	42.29

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

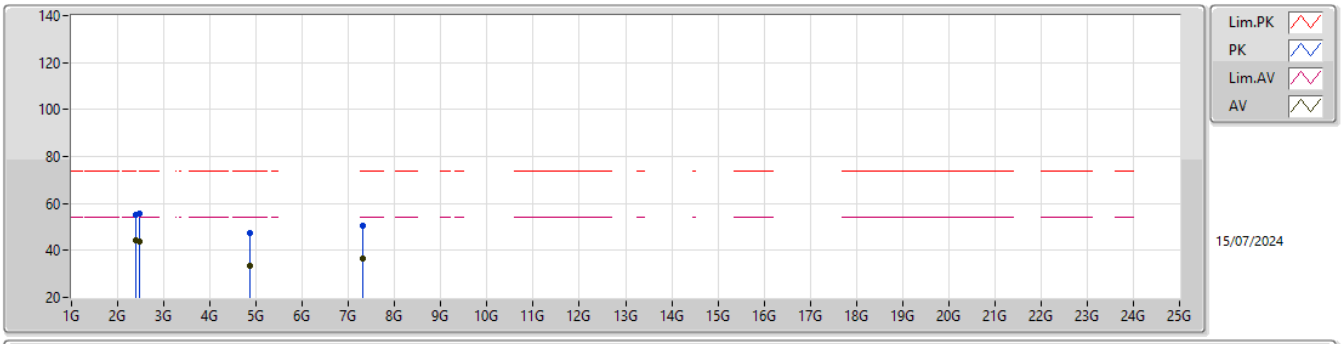
2412MHz_TX



Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB/m)	(dB)	(dB)
AV	2.39G	52.81	54.00	-1.19	56.44	3	Vertical	268.7	1.03	-	27.70	5.15	36.48
PK	2.39G	69.22	74.00	-4.78	72.85	3	Vertical	268.7	1.03	-	27.70	5.15	36.48
AV	4.824G	38.55	54.00	-15.45	38.44	3	Vertical	188.1	1.03	-	31.55	6.84	38.28
PK	4.824G	51.28	74.00	-22.72	51.17	3	Vertical	188.1	1.03	-	31.55	6.84	38.28
AV	12.06G	42.11	54.00	-11.89	34.37	3	Vertical	149	1.03	-	39.28	10.75	42.29
PK	12.06G	55.03	74.00	-18.97	47.29	3	Vertical	149	1.03	-	39.28	10.75	42.29

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

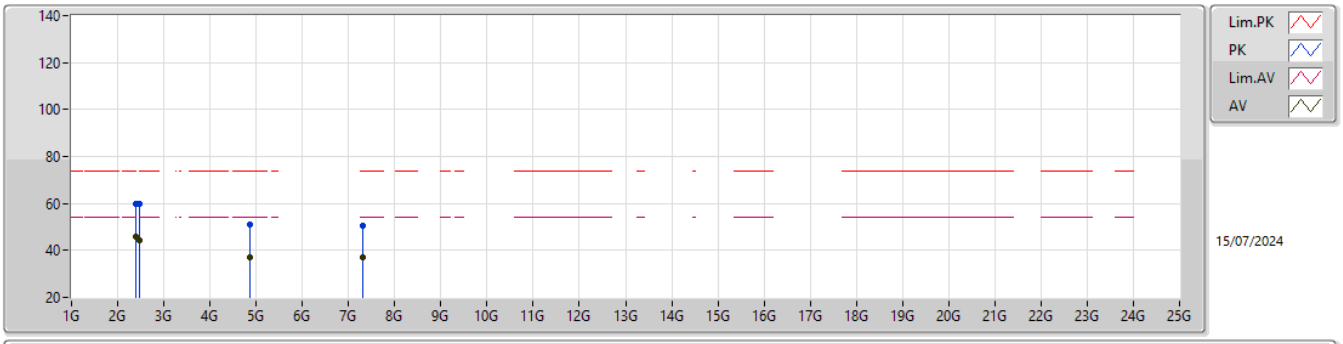
2437MHz_TX



Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB/m)	(dB)	(dB)
AV	2.39G	44.09	54.00	-9.91	47.72	3	Horizontal	23.4	2.12	-	27.70	5.15	36.48
PK	2.39G	55.23	74.00	-18.77	58.86	3	Horizontal	23.4	2.12	-	27.70	5.15	36.48
AV	2.4835G	43.94	54.00	-10.06	47.87	3	Horizontal	23.4	2.12	-	27.46	5.18	36.57
PK	2.4835G	55.74	74.00	-18.26	59.67	3	Horizontal	23.4	2.12	-	27.46	5.18	36.57
AV	4.874G	33.58	54.00	-20.42	33.53	3	Horizontal	329.1	1.03	-	31.50	6.87	38.32
PK	4.874G	47.33	74.00	-26.67	47.28	3	Horizontal	329.1	1.03	-	31.50	6.87	38.32
AV	7.311G	36.70	54.00	-17.30	31.32	3	Horizontal	240.8	1.03	-	36.40	8.20	39.22
PK	7.311G	50.38	74.00	-23.62	45.00	3	Horizontal	240.8	1.03	-	36.40	8.20	39.22

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

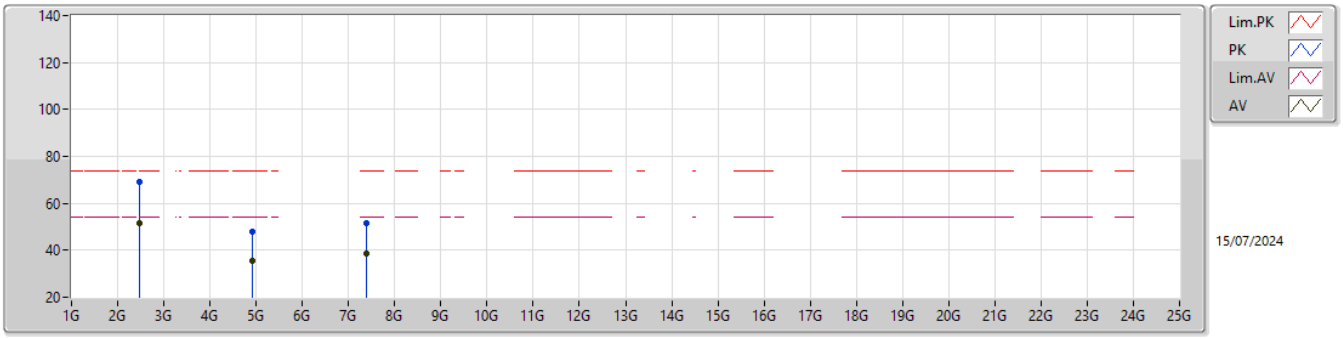
2437MHz_TX



Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB/m)	(dB)	(dB)
AV	2.39G	45.79	54.00	-8.21	49.42	3	Vertical	269.7	1.03	-	27.70	5.15	36.48
PK	2.39G	59.66	74.00	-14.34	63.29	3	Vertical	269.7	1.03	-	27.70	5.15	36.48
AV	2.4835G	44.53	54.00	-9.47	48.46	3	Vertical	269.7	1.03	-	27.46	5.18	36.57
PK	2.4835G	59.95	74.00	-14.05	63.88	3	Vertical	269.7	1.03	-	27.46	5.18	36.57
AV	4.874G	37.30	54.00	-16.70	37.25	3	Vertical	191	1.03	-	31.50	6.87	38.32
PK	4.874G	51.03	74.00	-22.97	50.98	3	Vertical	191	1.03	-	31.50	6.87	38.32
AV	7.311G	37.03	54.00	-16.97	31.65	3	Vertical	253	1.03	-	36.40	8.20	39.22
PK	7.311G	50.28	74.00	-23.72	44.90	3	Vertical	253	1.03	-	36.40	8.20	39.22

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

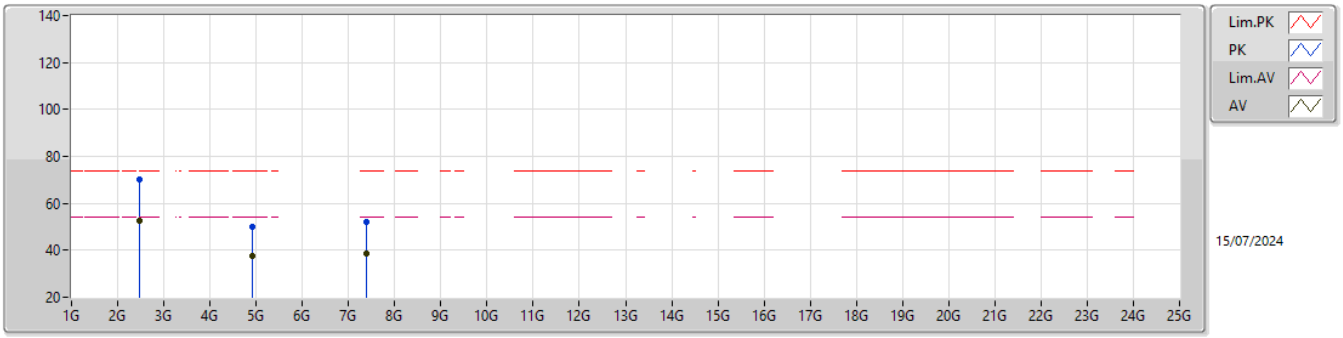
2462MHz_TX



Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB/m)	(dB)	(dB)
AV	2.4835G	51.66	54.00	-2.34	55.59	3	Horizontal	27	2.07	-	27.46	5.18	36.57
PK	2.4835G	69.07	74.00	-4.93	73.00	3	Horizontal	27	2.07	-	27.46	5.18	36.57
AV	4.924G	35.52	54.00	-18.48	35.52	3	Horizontal	311.2	1.03	-	31.45	6.90	38.35
PK	4.924G	47.71	74.00	-26.29	47.71	3	Horizontal	311.2	1.03	-	31.45	6.90	38.35
AV	7.386G	38.71	54.00	-15.29	33.38	3	Horizontal	263	1.03	-	36.40	8.23	39.30
PK	7.386G	51.70	74.00	-22.30	46.37	3	Horizontal	263	1.03	-	36.40	8.23	39.30

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX

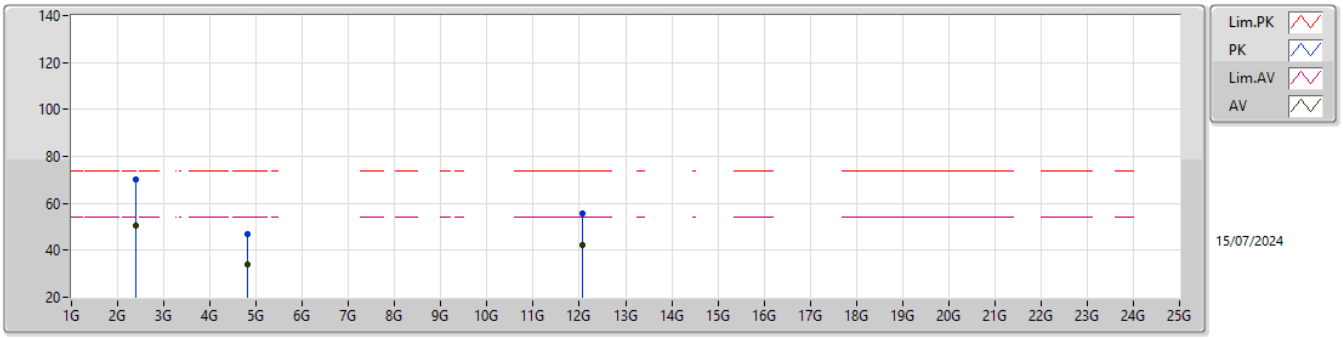
2462MHz_TX



Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB/m)	(dB)	(dB)
AV	2.4835G	52.75	54.00	-1.25	56.68	3	Vertical	264.5	1.03	-	27.46	5.18	36.57
PK	2.4835G	70.04	74.00	-3.96	73.97	3	Vertical	264.5	1.03	-	27.46	5.18	36.57
AV	4.924G	37.73	54.00	-16.27	37.73	3	Vertical	186	1.03	-	31.45	6.90	38.35
PK	4.924G	49.98	74.00	-24.02	49.98	3	Vertical	186	1.03	-	31.45	6.90	38.35
AV	7.386G	38.72	54.00	-15.28	33.39	3	Vertical	153	1.03	-	36.40	8.23	39.30
PK	7.386G	52.07	74.00	-21.93	46.74	3	Vertical	153	1.03	-	36.40	8.23	39.30

2.4-2.4835GHz_802.11n HT20_Nss1,(MCS0)_1TX

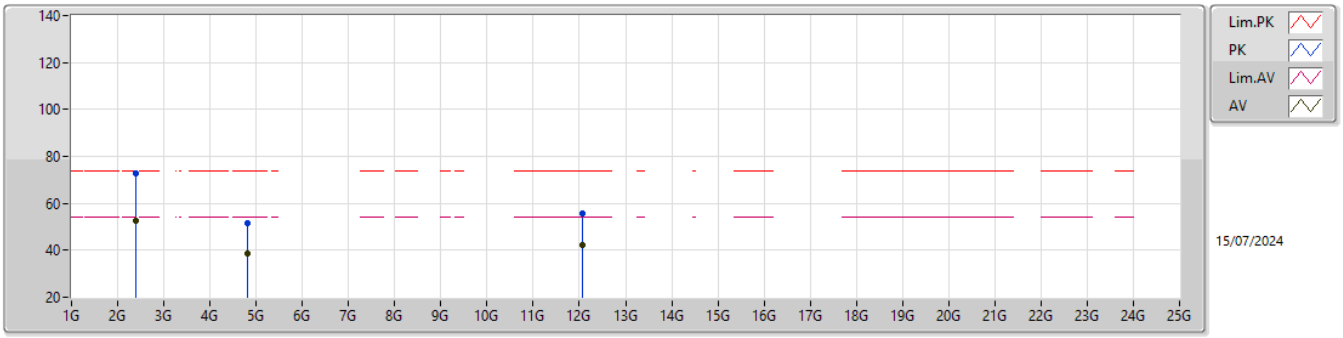
2412MHz_TX



Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB/m)	(dB)	(dB)
AV	2.39G	50.44	54.00	-3.56	54.07	3	Horizontal	44.4	1.03	-	27.70	5.15	36.48
PK	2.39G	70.04	74.00	-3.96	73.67	3	Horizontal	44.4	1.03	-	27.70	5.15	36.48
AV	4.824G	33.87	54.00	-20.13	33.76	3	Horizontal	329.4	1.03	-	31.55	6.84	38.28
PK	4.824G	46.68	74.00	-27.32	46.57	3	Horizontal	329.4	1.03	-	31.55	6.84	38.28
AV	12.06G	42.14	54.00	-11.86	34.40	3	Horizontal	248	1.03	-	39.28	10.75	42.29
PK	12.06G	55.56	74.00	-18.44	47.82	3	Horizontal	248	1.03	-	39.28	10.75	42.29

2.4-2.4835GHz_802.11n HT20_Nss1,(MCS0)_1TX

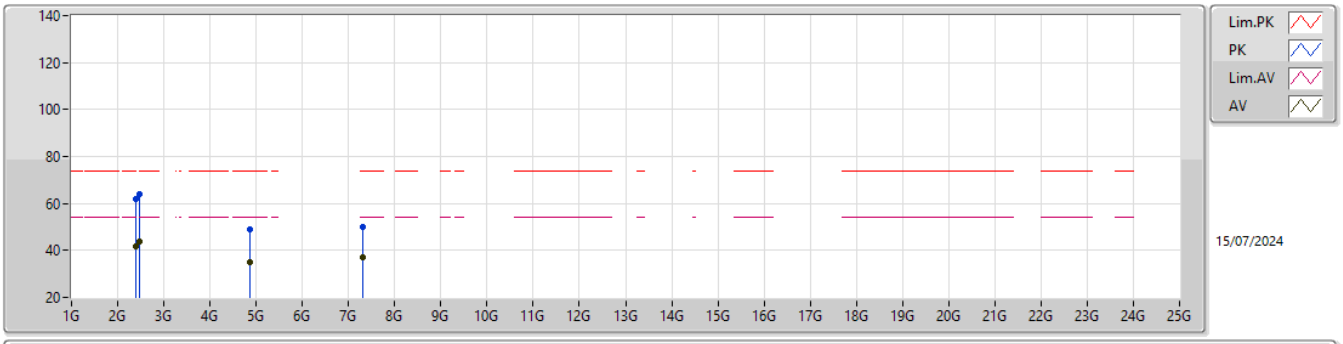
2412MHz_TX



Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB/m)	(dB)	(dB)
AV	2.39G	52.84	54.00	-1.16	56.47	3	Vertical	286.4	1.03	-	27.70	5.15	36.48
PK	2.39G	72.82	74.00	-1.18	76.45	3	Vertical	286.4	1.03	-	27.70	5.15	36.48
AV	4.824G	38.67	54.00	-15.33	38.56	3	Vertical	190.4	1.03	-	31.55	6.84	38.28
PK	4.824G	51.45	74.00	-22.55	51.34	3	Vertical	190.4	1.03	-	31.55	6.84	38.28
AV	12.06G	42.16	54.00	-11.84	34.42	3	Vertical	150	1.03	-	39.28	10.75	42.29
PK	12.06G	55.67	74.00	-18.33	47.93	3	Vertical	150	1.03	-	39.28	10.75	42.29

2.4-2.4835GHz_802.11n HT20_Nss1,(MCS0)_1TX

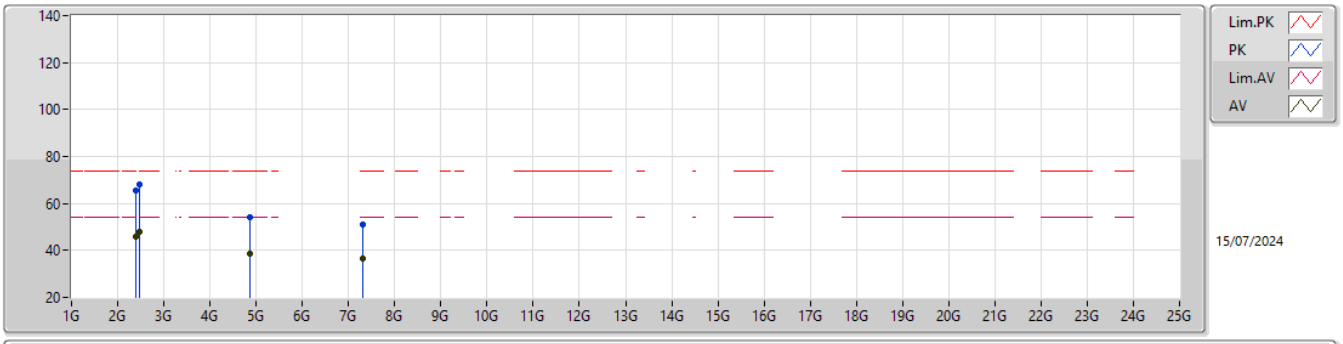
2437MHz_TX



Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB/m)	(dB)	(dB)
AV	2.39G	41.92	54.00	-12.08	45.55	3	Horizontal	29.9	1.87	-	27.70	5.15	36.48
PK	2.39G	61.64	74.00	-12.36	65.27	3	Horizontal	29.9	1.87	-	27.70	5.15	36.48
AV	2.4835G	43.72	54.00	-10.28	47.65	3	Horizontal	29.9	1.87	-	27.46	5.18	36.57
PK	2.4835G	64.17	74.00	-9.83	68.10	3	Horizontal	29.9	1.87	-	27.46	5.18	36.57
AV	4.874G	34.84	54.00	-19.16	34.79	3	Horizontal	321.2	1.03	-	31.50	6.87	38.32
PK	4.874G	48.93	74.00	-25.07	48.88	3	Horizontal	321.2	1.03	-	31.50	6.87	38.32
AV	7.311G	36.94	54.00	-17.06	31.56	3	Horizontal	247.9	1.03	-	36.40	8.20	39.22
PK	7.311G	49.82	74.00	-24.18	44.44	3	Horizontal	247.9	1.03	-	36.40	8.20	39.22

2.4-2.4835GHz_802.11n HT20_Nss1,(MCS0)_1TX

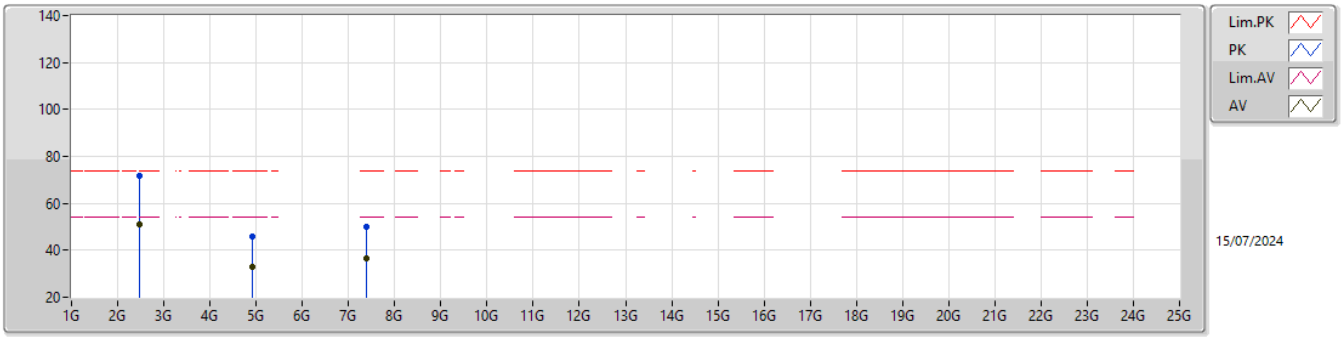
2437MHz_TX



Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB/m)	(dB)	(dB)
AV	2.39G	45.77	54.00	-8.23	49.40	3	Vertical	266	1.03	-	27.70	5.15	36.48
PK	2.39G	65.65	74.00	-8.35	69.28	3	Vertical	266	1.03	-	27.70	5.15	36.48
AV	2.4835G	47.80	54.00	-6.20	51.73	3	Vertical	266	1.03	-	27.46	5.18	36.57
PK	2.4835G	68.04	74.00	-5.96	71.97	3	Vertical	266	1.03	-	27.46	5.18	36.57
AV	4.874G	38.57	54.00	-15.43	38.52	3	Vertical	194.7	1.03	-	31.50	6.87	38.32
PK	4.874G	54.08	74.00	-19.92	54.03	3	Vertical	194.7	1.03	-	31.50	6.87	38.32
AV	7.311G	36.67	54.00	-17.33	31.29	3	Vertical	262.4	1.03	-	36.40	8.20	39.22
PK	7.311G	50.84	74.00	-23.16	45.46	3	Vertical	262.4	1.03	-	36.40	8.20	39.22

2.4-2.4835GHz_802.11n HT20_Nss1,(MCS0)_1TX

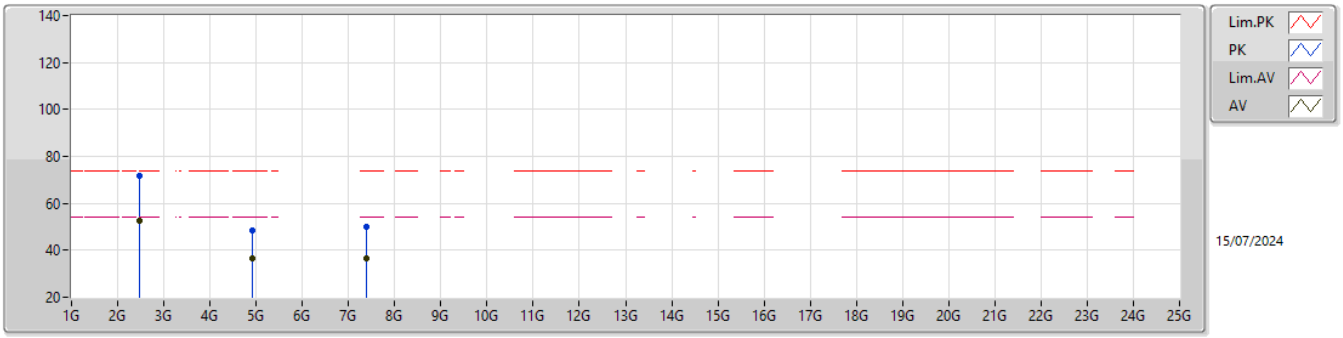
2462MHz_TX



Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB/m)	(dB)	(dB)
AV	2.4835G	51.09	54.00	-2.91	55.02	3	Horizontal	29.7	1.83	-	27.46	5.18	36.57
PK	2.4835G	71.49	74.00	-2.51	75.42	3	Horizontal	29.7	1.83	-	27.46	5.18	36.57
AV	4.924G	33.01	54.00	-20.99	33.01	3	Horizontal	319.3	1.03	-	31.45	6.90	38.35
PK	4.924G	45.74	74.00	-28.26	45.74	3	Horizontal	319.3	1.03	-	31.45	6.90	38.35
AV	7.386G	36.78	54.00	-17.22	31.45	3	Horizontal	239	1.03	-	36.40	8.23	39.30
PK	7.386G	50.24	74.00	-23.76	44.91	3	Horizontal	239	1.03	-	36.40	8.23	39.30

2.4-2.4835GHz_802.11n HT20_Nss1,(MCS0)_1TX

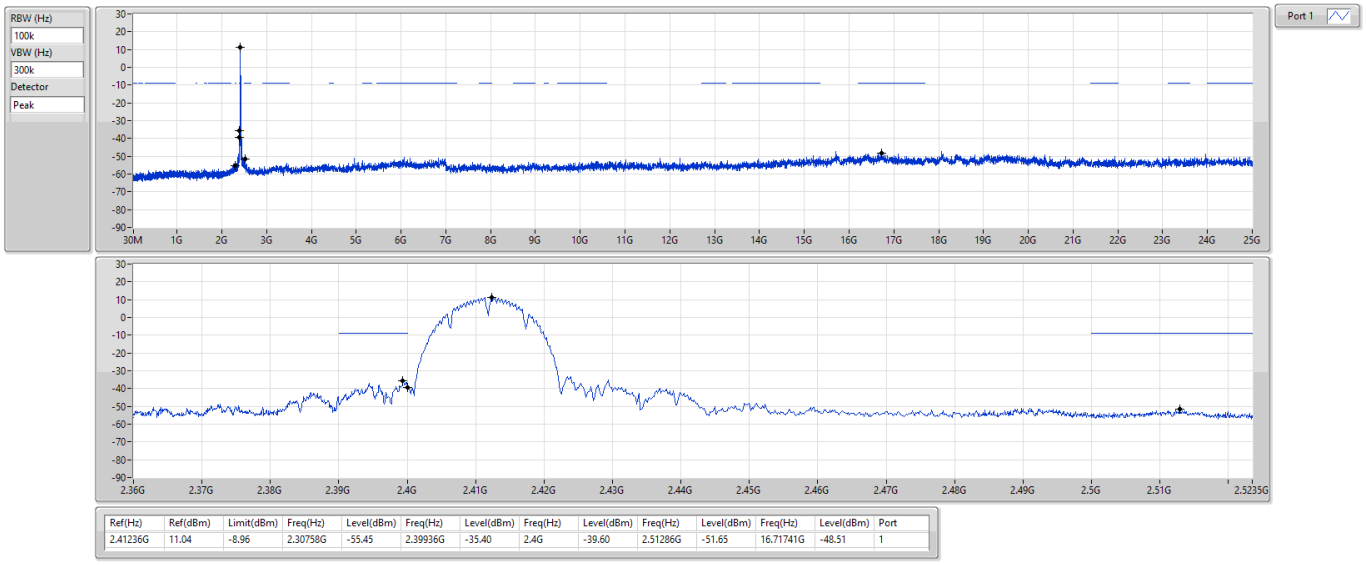
2462MHz_TX



Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB/m)	(dB)	(dB)
AV	2.4835G	52.82	54.00	-1.18	56.75	3	Vertical	285.7	1.03	-	27.46	5.18	36.57
PK	2.4835G	71.65	74.00	-2.35	75.58	3	Vertical	285.7	1.03	-	27.46	5.18	36.57
AV	4.924G	36.49	54.00	-17.51	36.49	3	Vertical	186	1.03	-	31.45	6.90	38.35
PK	4.924G	48.40	74.00	-25.60	48.40	3	Vertical	186	1.03	-	31.45	6.90	38.35
AV	7.386G	36.50	54.00	-17.50	31.17	3	Vertical	284	1.03	-	36.40	8.23	39.30
PK	7.386G	50.11	74.00	-23.89	44.78	3	Vertical	284	1.03	-	36.40	8.23	39.30

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX **CSENdB**

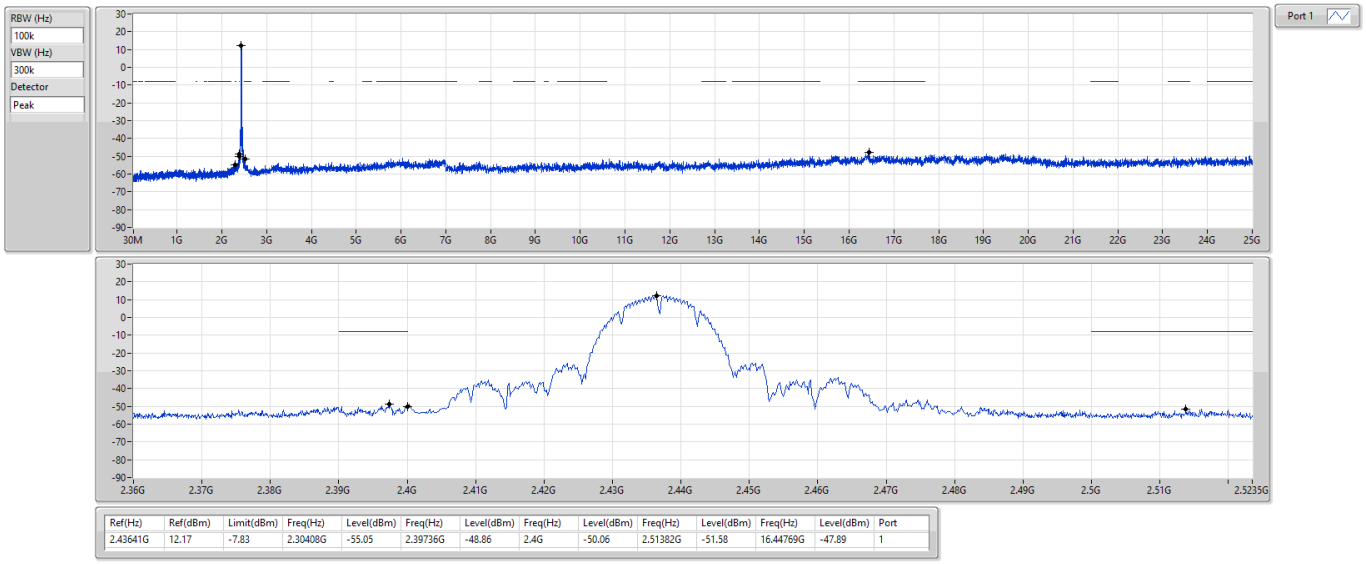
2412MHz



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
2.41236G	11.04	-8.96	2.30758G	-55.45	2.39936G	-35.40	2.4G	-39.60	2.51286G	-51.65	16.71741G	-48.51	1

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX **CSENdB**

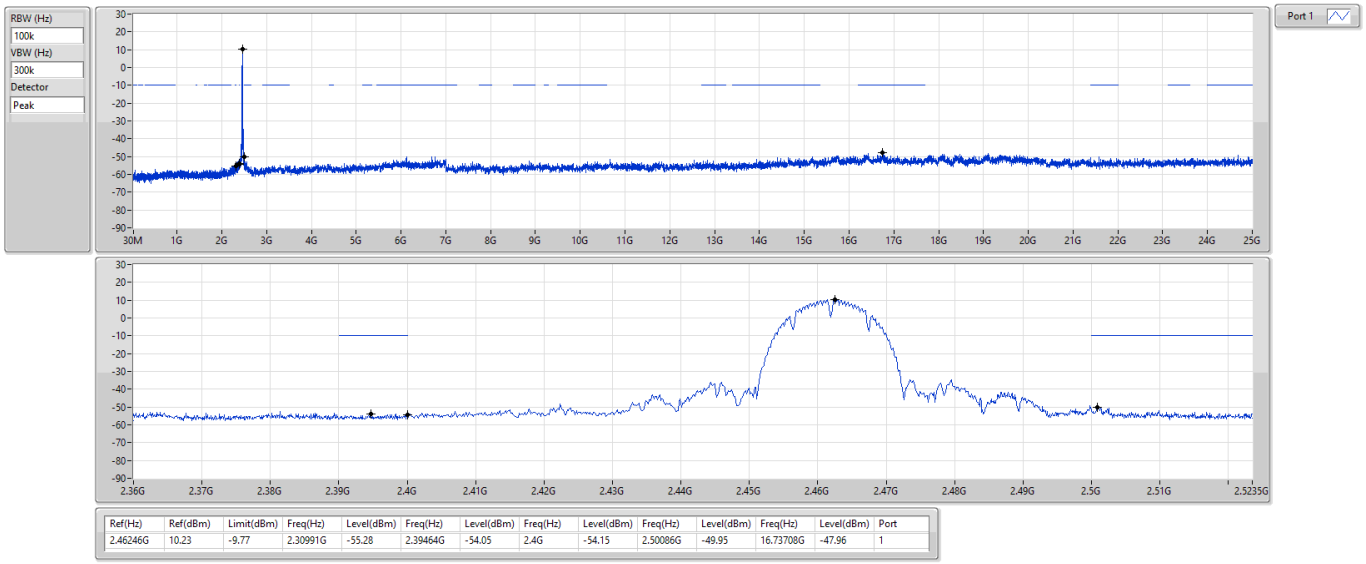
2437MHz



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
2.43641G	12.17	-7.83	2.30408G	-55.05	2.39736G	-48.86	2.4G	-50.06	2.51382G	-51.58	16.44769G	-47.89	1

2.4-2.4835GHz_802.11b_Nss1,(1Mbps)_1TX **CSENdB**

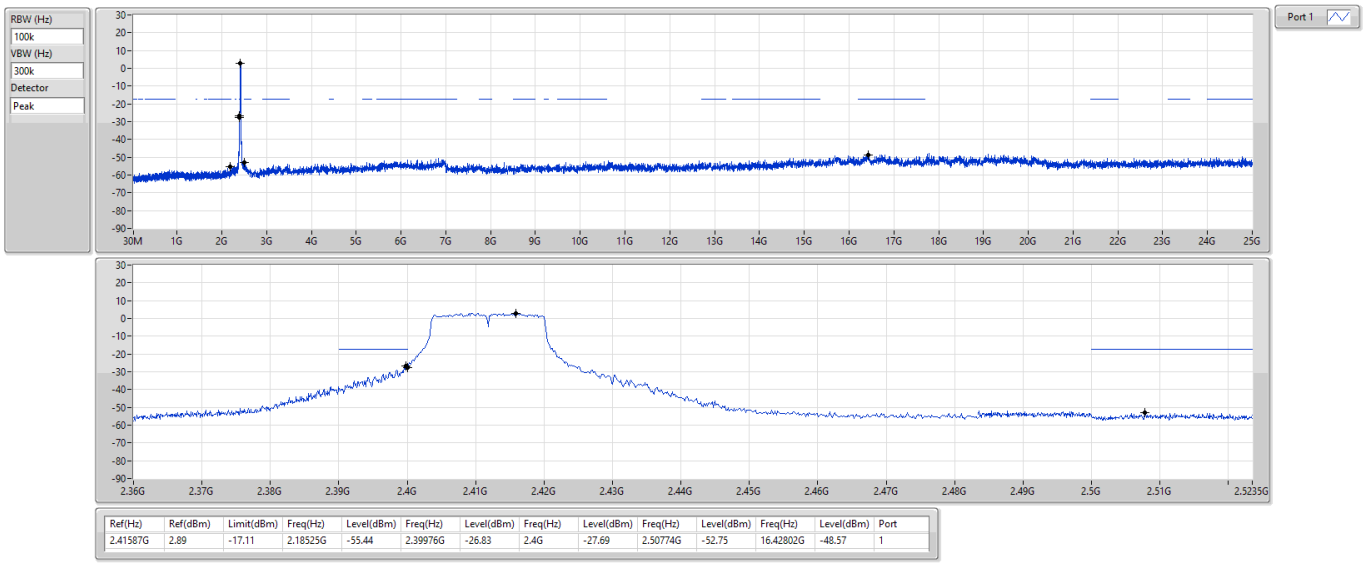
2462MHz



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
2.46246G	10.23	-9.77	2.30991G	-55.28	2.39464G	-54.05	2.4G	-54.15	2.50086G	-49.95	16.73708G	-47.96	1

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX **CSENdB**

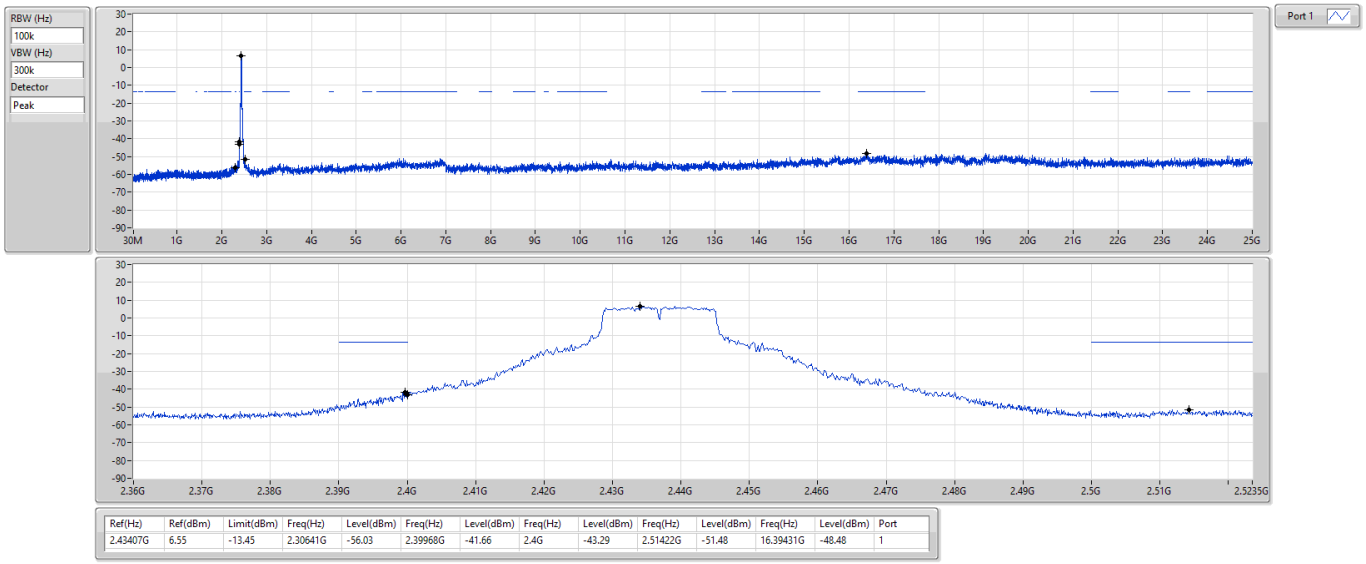
2412MHz



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
2.41587G	2.89	-17.11	2.18525G	-55.44	2.39976G	-26.83	2.4G	-27.69	2.50774G	-52.75	16.42802G	-48.57	1

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX **CSENdB**

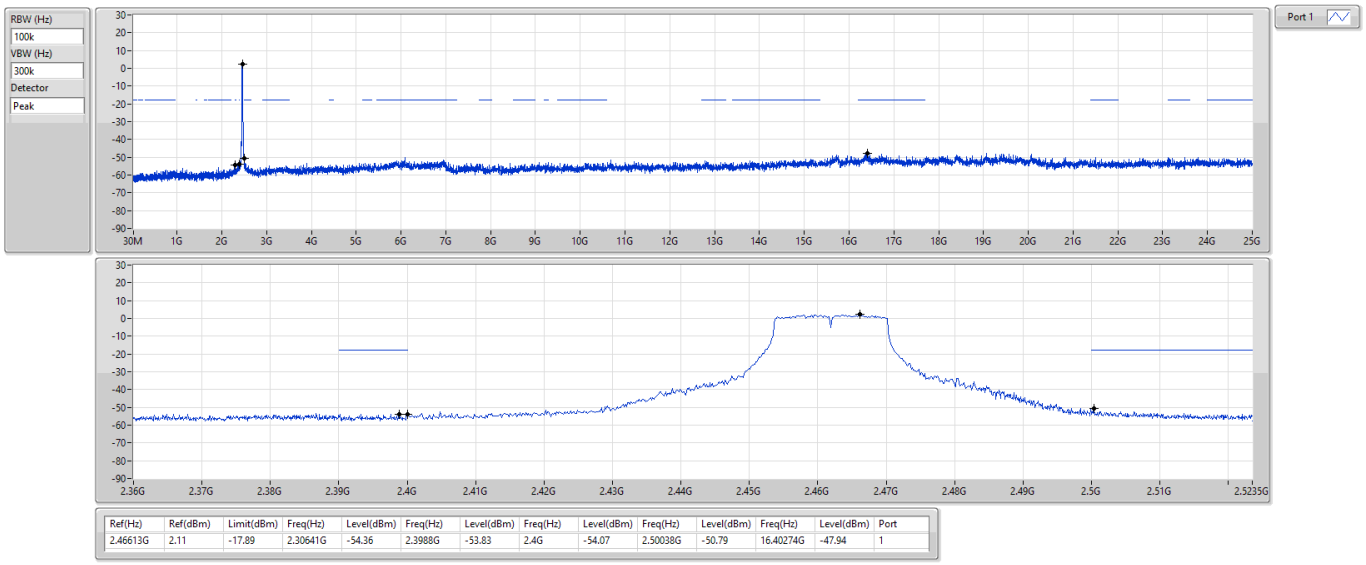
2437MHz



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
2.43407G	6.55	-13.45	2.30641G	-56.03	2.39968G	-41.66	2.4G	-43.29	2.51422G	-51.48	16.39431G	-48.48	1

2.4-2.4835GHz_802.11g_Nss1,(6Mbps)_1TX **CSENdB**

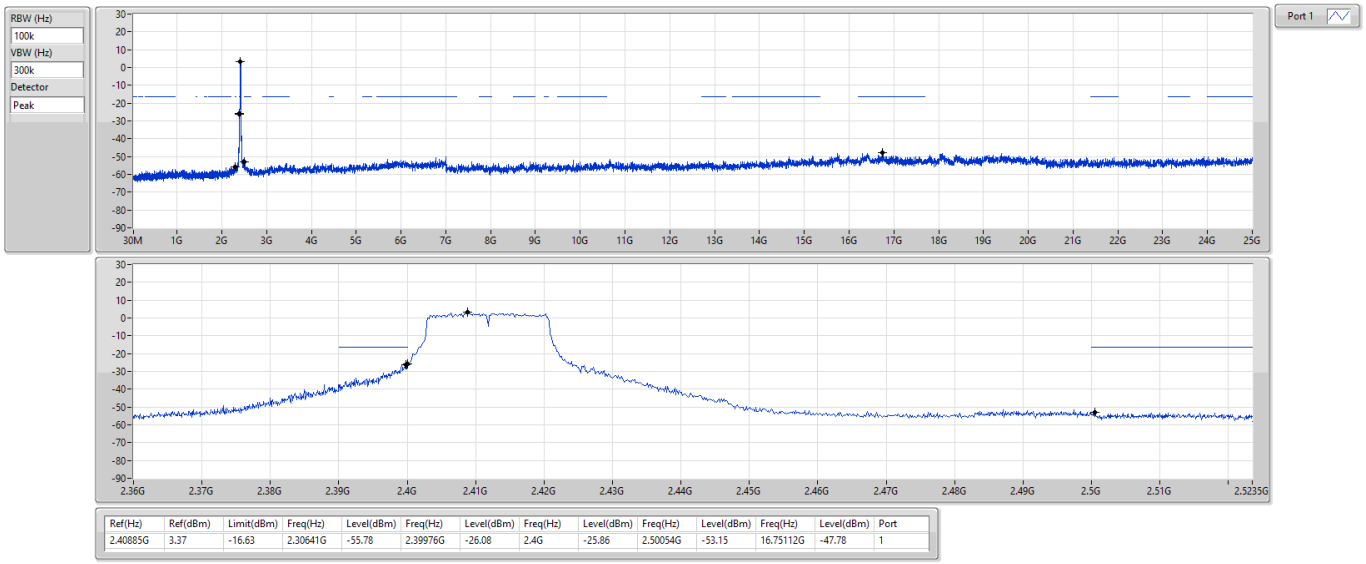
2462MHz



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
2.46613G	2.11	-17.89	2.30641G	-54.36	2.3988G	-53.83	2.4G	-54.07	2.50038G	-50.79	16.40274G	-47.94	1

2.4-2.4835GHz_802.11n HT20_Nss1,(MCS0)_1TX **CSENdB**

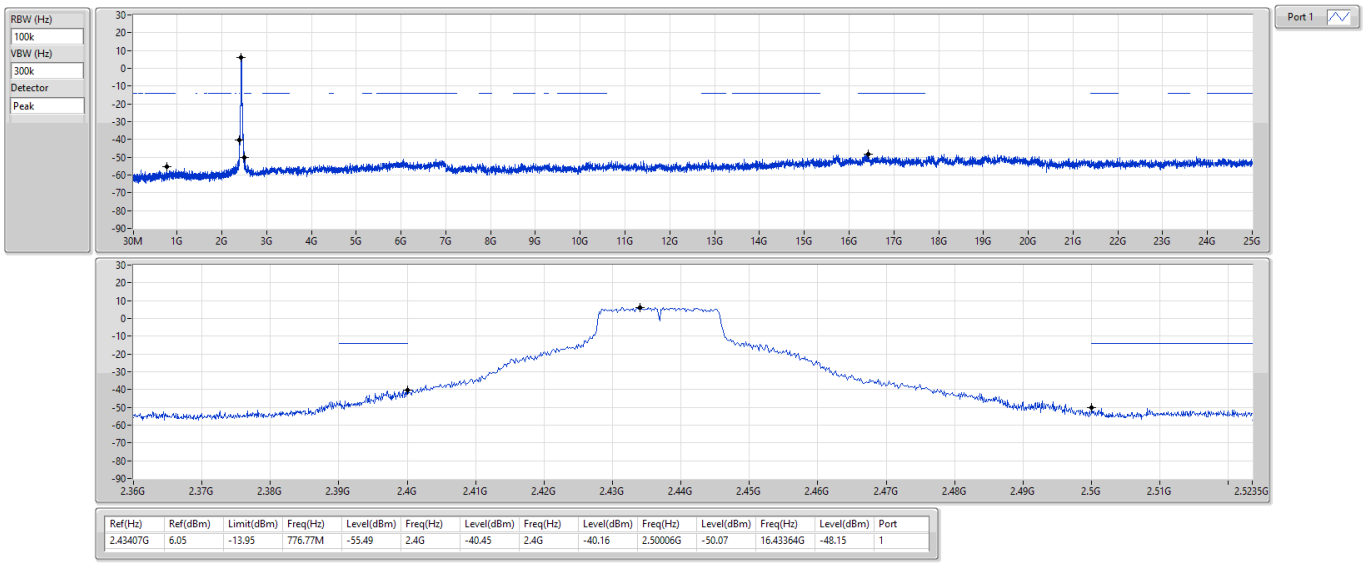
2412MHz



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
2.40885G	3.37	-16.63	2.30641G	-55.78	2.39976G	-26.08	2.4G	-25.86	2.50054G	-53.15	16.75112G	-47.78	1

2.4-2.4835GHz_802.11n HT20_Nss1,(MCS0)_1TX **CSENdB**

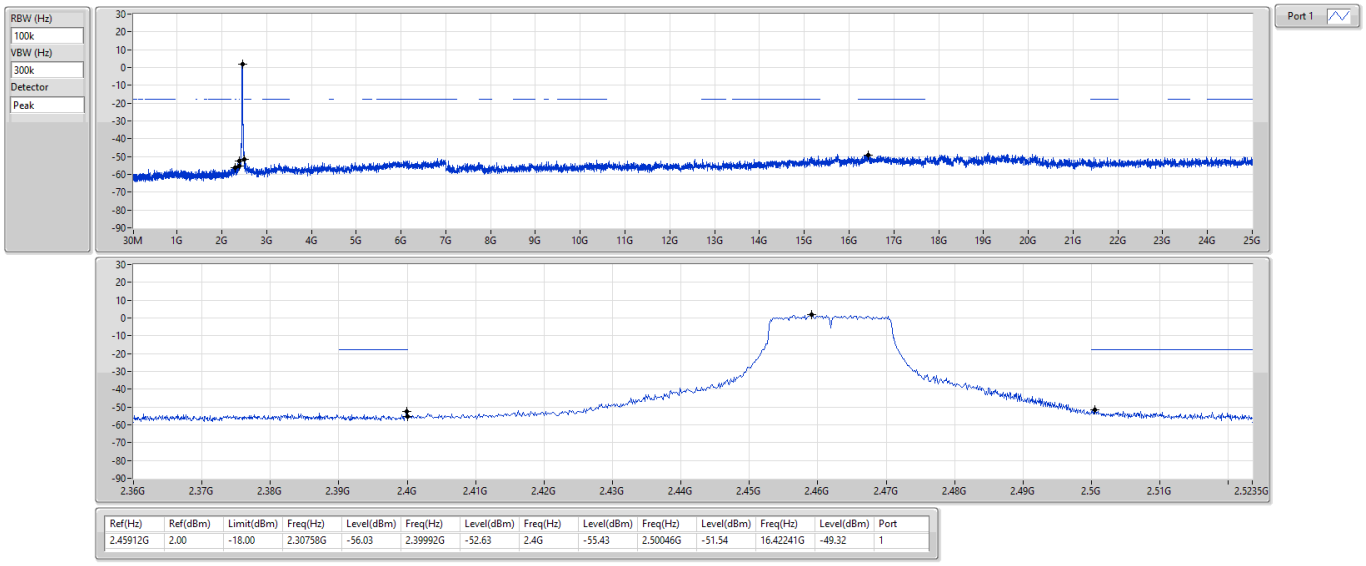
2437MHz



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
2.43407G	6.05	-13.95	776.77M	-55.49	2.4G	-40.45	2.4G	-40.16	2.50006G	-50.07	16.43364G	-48.15	1

2.4-2.4835GHz_802.11n HT20_Nss1,(MCS0)_1TX **CSENdB**

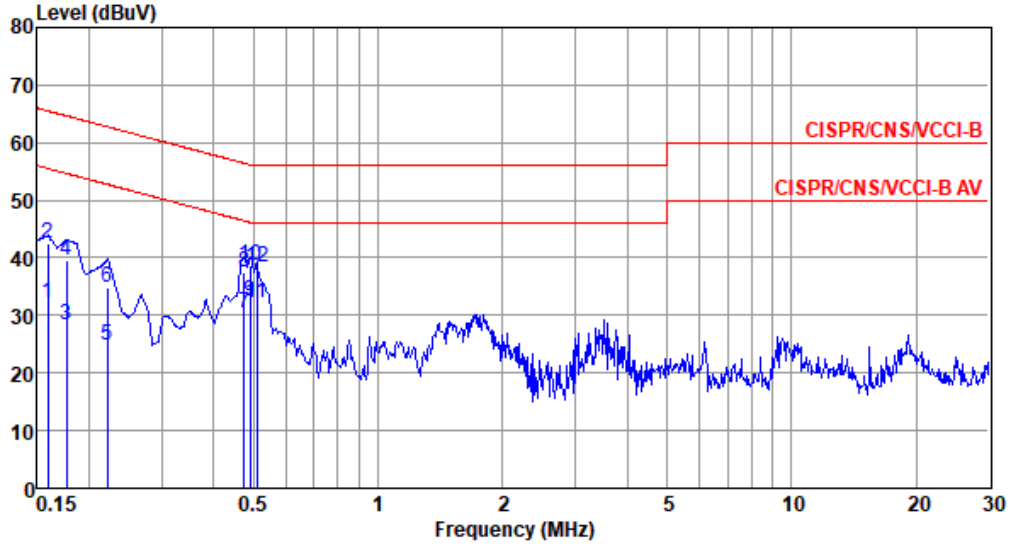
2462MHz



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
2.45912G	2.00	-18.00	2.30758G	-56.03	2.39992G	-52.63	2.4G	-55.43	2.50046G	-51.54	16.42241G	-49.32	1

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

Test by : Joe Liao_AK Temperature: 26℃ Humidity: 63%

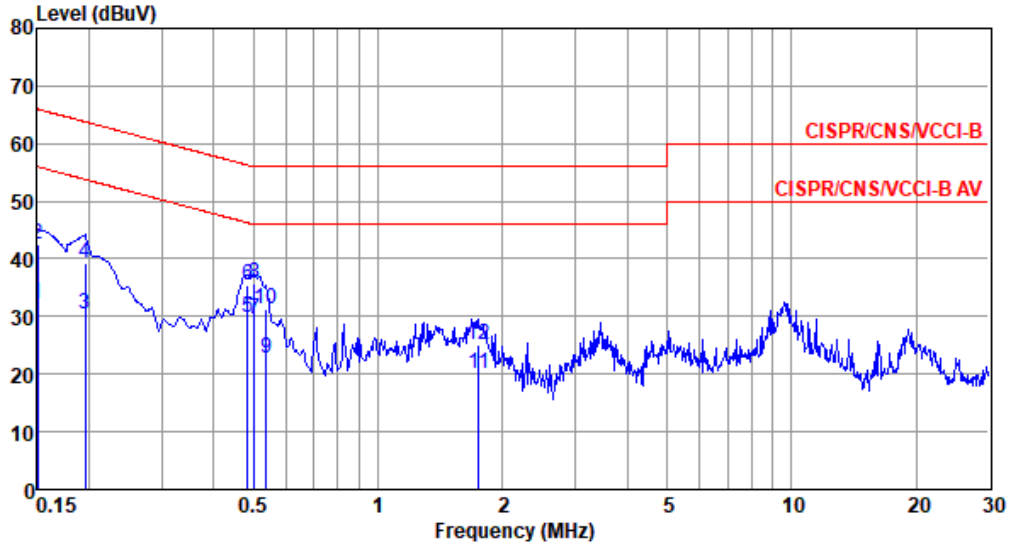


	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Cable loss	Aux	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	dB	
1	0.159	32.03	55.52	-23.49	22.30	9.65	0.08	0.00	Average
2	0.159	42.43	65.52	-23.09	32.70	9.65	0.08	0.00	QP
3	0.177	28.22	54.64	-26.42	18.50	9.65	0.07	0.00	Average
4	0.177	39.47	64.64	-25.17	29.75	9.65	0.07	0.00	QP
5	0.222	24.74	52.74	-28.00	15.03	9.65	0.06	0.00	Average
6	0.222	34.80	62.74	-27.94	25.09	9.65	0.06	0.00	QP
7	0.474	30.44	46.45	-16.01	20.72	9.64	0.08	0.00	Average
8	0.474	37.61	56.45	-18.84	27.89	9.64	0.08	0.00	QP
9*	0.491	32.47	46.14	-13.67	22.75	9.64	0.08	0.00	Average
10	0.491	38.57	56.14	-17.57	28.85	9.64	0.08	0.00	QP
11	0.510	32.12	46.00	-13.88	22.40	9.64	0.08	0.00	Average
12	0.510	38.31	56.00	-17.69	28.59	9.64	0.08	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_AK Temperature: 26°C Humidity: 63%



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Cable loss	Aux	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	dB	
1	0.150	32.06	56.00	-23.94	22.32	9.66	0.08	0.00	Average
2	0.150	42.52	66.00	-23.48	32.78	9.66	0.08	0.00	QP
3	0.195	30.46	53.80	-23.34	20.75	9.65	0.06	0.00	Average
4	0.195	39.38	63.80	-24.42	29.67	9.65	0.06	0.00	QP
5	0.484	29.92	46.27	-16.35	20.20	9.64	0.08	0.00	Average
6	0.484	35.46	56.27	-20.81	25.74	9.64	0.08	0.00	QP
7*	0.502	29.66	46.00	-16.34	19.94	9.64	0.08	0.00	Average
8	0.502	35.60	56.00	-20.40	25.88	9.64	0.08	0.00	QP
9	0.538	22.76	46.00	-23.24	13.04	9.64	0.08	0.00	Average
10	0.538	31.43	56.00	-24.57	21.71	9.64	0.08	0.00	QP
11	1.753	19.95	46.00	-26.05	10.18	9.66	0.11	0.00	Average
12	1.753	25.03	56.00	-30.97	15.26	9.66	0.11	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).