FCC Test Report

FCC ID	:	**ACJ-V3WA**
Equipment	:	**Wireless Module**
Model No.	:	**PIOT-V3(WA)**
Brand Name	:	**Panasonic**
Applicant	:	**Panasonic Corporation of North America**
Address	:	**Two Riverfront Plaza, Newark, NJ 07102 5490**
Standard	:	**47 CFR FCC Part 15.247**
Received Date	:	**Sep. 19, 2024**
Tested Date	:	**Sep. 23 ~ Sep. 26, 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:**

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

Table of Contents

Release Record

Report No.	Version	Description	Issued Date
FR491901AE	Rev. 01	Initial issue	Dec. 25, 2024

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	AC Power line Conducted Emission	[dBuV]: 0.524MHz 32.65 (Margin -13.35dB) - AV	Pass
15.247(d) 15.209	Unwanted Emissions	[dBuV/m at 3m]: 31.2MHz 29.21 (Margin -10.79dB) - PK	Pass
15.247(b)(3)	Conducted Output Power	Power [dBm]: 8.86	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 Specification of the Equipment under Test (EUT)

RF General Information				
Frequency Range (MHz)	**Bluetooth Mode**	**Ch. Freq. (MHz)**	**Channel Number**	**Data Rate**
2400-2483.5	LE	2402-2480	40	125 kbps
		2402-2480	40	500 kbps
		2402-2480	40	1 Mbps
		2404-2478	37	2 Mbps
Note: Bluetooth LE (Low energy) uses GFSK modulation.				

1.1.2 Antenna Details

Brand	Model	Type	Connector	Gain (dBi)
WNC	DHSK-P21_ANT-0	Monopole	No	1.46
WNC	DHSK-P21_ANT-1	Monopole	No	1

1.1.3 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	5Vdc from host

1.1.4 Accessories

N/A

1.1.5 Channel List

Frequency band (MHz)				2402-2480 / BT-LE(125kbps / 500kbps / 1Mbps)			
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
37	2402	9	2422	18	2442	28	2462
0	2404	10	2424	19	2444	29	2464
1	2406	38	2426	20	2446	30	2466
2	2408	11	2428	21	2448	31	2468
3	2410	12	2430	22	2450	32	2470
4	2412	13	2432	23	2452	33	2472
5	2414	14	2434	24	2454	34	2474
6	2416	15	2436	25	2456	35	2476
7	2418	16	2438	26	2458	36	2478
8	2420	17	2440	27	2460	39	2480

Frequency band (MHz)				2404-2478 / BT-LE(2Mbps)			
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2404	10	2424	20	2446	30	2466
1	2406	11	2428	21	2448	31	2468
2	2408	12	2430	22	2450	32	2470
3	2410	13	2432	23	2452	33	2472
4	2412	14	2434	24	2454	34	2474
5	2414	15	2436	25	2456	35	2476
6	2416	16	2438	26	2458	36	2478
7	2418	17	2440	27	2460	--	--
8	2420	18	2442	28	2462	--	--
9	2422	19	2444	29	2464	--	--

1.1.6 Test Tool and Duty Cycle

Test Tool	RTLBTAPP, version: 5.2.4.11	
Modulation Mode	**Duty Cycle (%)**	**Duty Factor (dB)**
BT-LE(125kbps)	84.80%	0.72
BT-LE(500kbps)	58.21%	2.35
BT-LE(1Mbps)	64.53%	1.90
BT-LE(2Mbps)	33.67%	4.73

1.1.7 Power Index of Test Tool

Modulation Mode	Test Frequency (MHz)		
	2402	**2440**	**2480**
BT-LE(125kbps)	default	default	default
BT-LE(500kbps)	default	default	default
BT-LE(1Mbps)	default	default	default

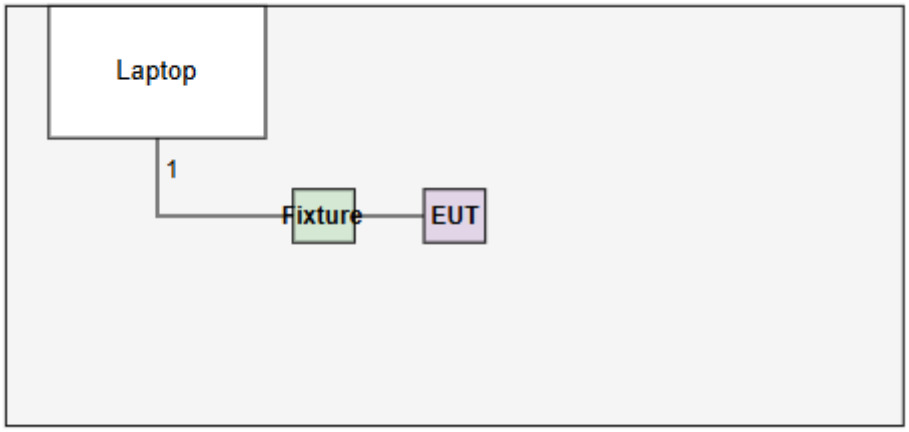
Modulation Mode	Test Frequency (MHz)		
	2404	**2440**	**2478**
BT-LE(2Mbps)	default	default	default

1.2 Local Support Equipment List

Support Equipment List					
No.	**Equipment**	**Brand**	**Model**	**FCC ID**	**Remarks**
1	Laptop	DELL	Latitude 5400	DoC	---
2	Fixture	WNC	DHSK-P21_TB 01	---	Provided by applicant.

1.3 Test Setup Chart

Test Setup Diagram



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

1.4 Test Equipment List and Calibration Data

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
Tested Date	Sep. 24, 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
LISN (Support Unit)	SCHWARZBECK	Schwarzbeck 8127	8127667	Jan. 10, 2024	Jan. 09, 2025
RF Cable-CON	Woken	CFD200-NL	CFD200-NL-001	Oct. 11, 2023	Oct. 10, 2024
50 ohm terminal	NA	50	01	Jun. 19, 2024	Jun. 18, 2025
Measurement Software	AUDIX	e3	6.120210k	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	Radiated Emission				
Test Site	966 chamber1 / (03CH01-WS)				
Tested Date	Sep. 23 ~ Sep. 24, 2024				
Instrument	**Brand**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Receiver	R&S	ESR3	101657	Mar. 05, 2024	Mar. 04, 2025
Spectrum Analyzer	R&S	FSV40	101498	Nov. 23, 2023	Nov. 22, 2024
Loop Antenna	R&S	HFH2-Z2	100330	Oct. 31, 2023	Oct. 30, 2024
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Aug. 09, 2024	Aug. 08, 2025
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Nov. 27, 2023	Nov. 26, 2024
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Oct. 30, 2023	Oct. 29, 2024
Preamplifier	EMC	EMC02325	980225	Jun. 17, 2024	Jun. 16, 2025
Preamplifier	EMC	EMC118A45SE	980898	Jul. 05, 2024	Jul. 04, 2025
Preamplifier	EMC	EMC184045SE	980903	Jul. 30, 2024	Jul. 29, 2025
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Oct. 03, 2023	Oct. 02, 2024
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Oct. 03, 2023	Oct. 02, 2024
LF cable 11M	EMC	EMCCFD400-NW-NW-11000	200801	Oct. 03, 2023	Oct. 02, 2024
LF cable 1M	EMC	EMCCFD400-NM-NM-1000	160502	Oct. 03, 2023	Oct. 02, 2024
RF Cable	EMC	EMC104-35M-35M-8000	210920	Oct. 03, 2023	Oct. 02, 2024
RF Cable	EMC	EMC104-35M-35M-3000	210922	Oct. 03, 2023	Oct. 02, 2024
Attenuator	Pasternack	PE7005-10	10-1	Oct. 05, 2023	Oct. 04, 2024
HIGHPASS FILTER 3.1-18G	WHK	WHK3.1/18G-10SS	39	Oct. 05, 2023	Oct. 04, 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	RF Conducted				
Test Site	(TH01-WS)				
Tested Date	Sep. 26, 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_FS	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
Radiated emission ≤ 1GHz	±3.41 dB
Radiated emission > 1GHz	±4.59 dB

2 Test Configuration

2.1 Testing Facility

Test Laboratory	International Certification Corporation
Test Site	CO01-WS, 03CH01-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.)

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

2.2 The Worst Test Modes and Channel Details

Test item	Modulation Mode	Test Frequency (MHz)	Data Rate	Test Configuration
AC Power Line Conducted Emissions	BT LE	2440	1Mbps	---
Unwanted Emissions ≤ 1GHz	BT LE	2440	1Mbps	---
Unwanted Emissions > 1GHz	BT LE	2402 / 2440 / 2480 2404 / 2440 / 2478	1Mbps 2Mbps	---
Conducted Output Power	BT LE	2402 / 2440 / 2480 2402 / 2440 / 2480 2402 / 2440 / 2480 2404 / 2440 / 2478	125kbps 500kbps 1Mbps 2Mbps	---
6dB bandwidth				
Power spectral density				

NOTE:

1. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The **Z-plane** results were found as the worst case and were shown in this report.

3 Transmitter Test Results

3.1 6dB and Occupied Bandwidth

3.1.1 Limit of 6dB Bandwidth

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

3.1.2 Test Procedures

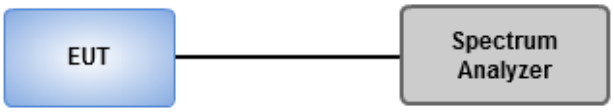
6dB Bandwidth

1. Set resolution bandwidth (RBW) = 100 kHz, Video bandwidth = 300 kHz.
2. Detector = Peak, Trace mode = max hold.
3. Sweep = auto couple, Allow the trace to stabilize.
4. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6dB relative to the maximum level measured in the fundamental emission.

Occupied Bandwidth

1. Set resolution bandwidth (RBW) = 1% ~ 5 % of OBW, Video bandwidth = 3 x RBW
2. Detector = Sample, Trace mode = max hold.
3 Sweep = auto couple, Allow the trace to stabilize.
4. Use the OBW measurement function of spectrum analyzer to measure the occupied bandwidth.

3.1.3 Test Setup



3.1.4 Test Results

Ambient Condition	24°C / 65%	**Tested By**	Roger Lu

Refer to Appendix A.

3.2 Conducted Output Power

3.2.1 Limit of RF Output Power

Conducted power shall not exceed 1Watt.

Antenna gain <= 6dBi, no any corresponding reduction is in output power limit.

Antenna gain > 6dBi

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

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

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

3.2.2 Test Procedures

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

3.2.3 Test Setup

3.2.4 Test Results

Ambient Condition	24°C / 65%	**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 = 3 kHz, VBW = 10 kHz.
2. Detector = RMS, Sweep time = auto couple.
3. Sweep time = auto couple.
4. Employ trace averaging (RMS) mode over a minimum of 100 traces.
5. Use the peak marker function to determine the maximum amplitude level.

Average PSD, duty cycle < 98%

1 Set the RBW = 3 kHz, VBW = 10 kHz. Detector = RMS.

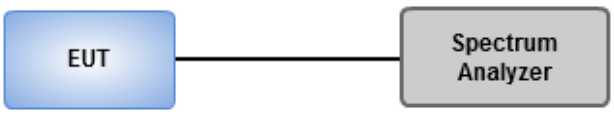
2 Set the sweep time to: ≥ 10 (number of measurement points in sweep) x (total on/off period of the transmitted signal).

3 Perform the measurement over a single sweep.

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

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

3.3.3 Test Setup



3.3.4 Test Results

Ambient Condition	24°C / 65%	**Tested By**	Roger Lu

Refer to Appendix C.

3.4 Emissions in Restricted Frequency Bands

3.4.1 Limit of Emissions in 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

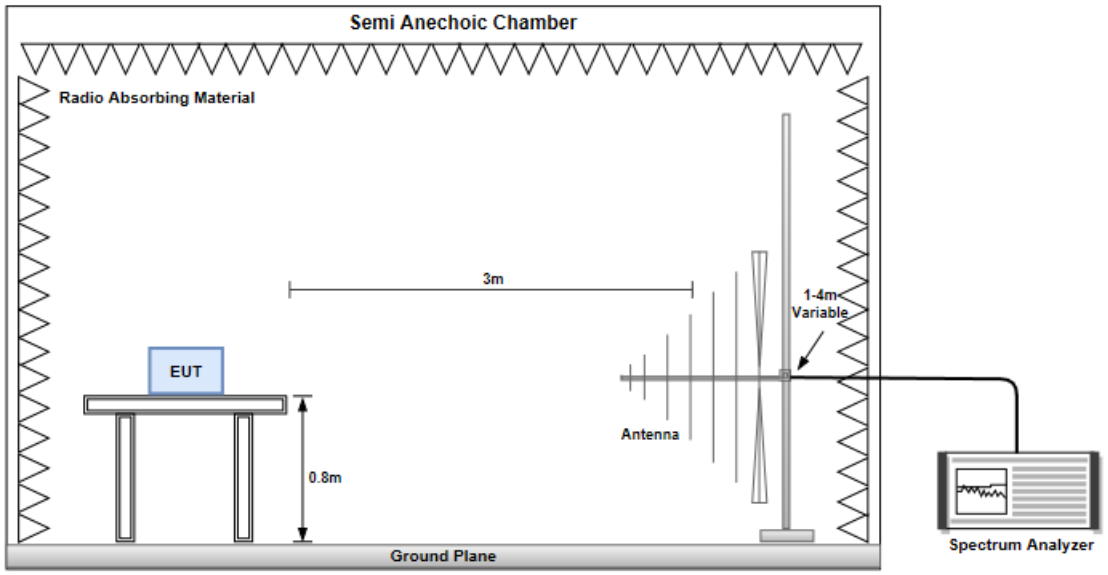
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission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

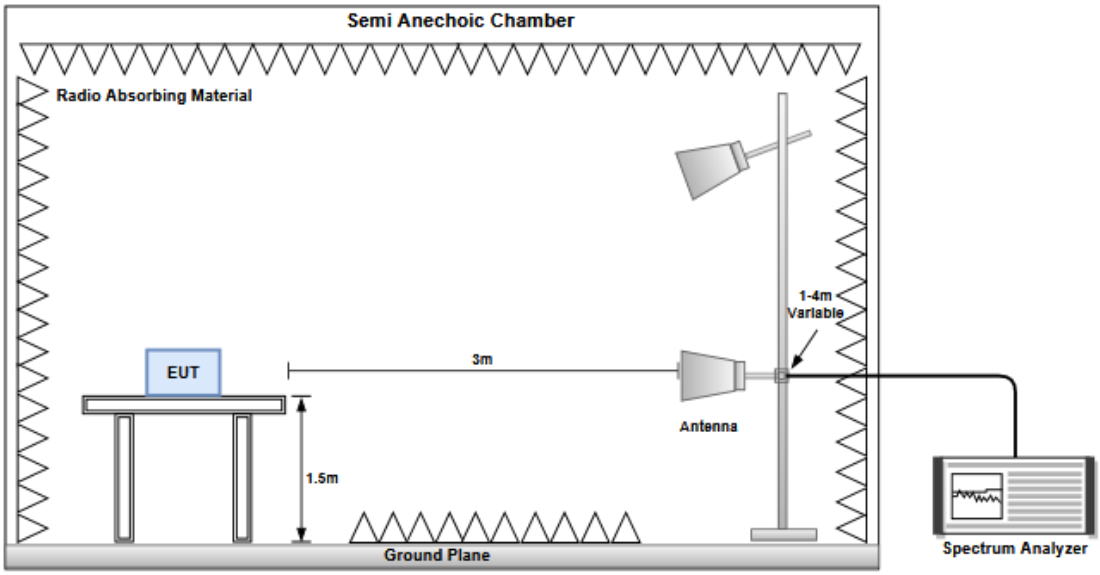
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.4.3 Test Setup

Radiated Emissions below 1 GHz



Radiated Emissions above 1 GHz



3.4.4 Test Results

Ambient Condition	24°C / 64-65%	Tested By	Allen Lee

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

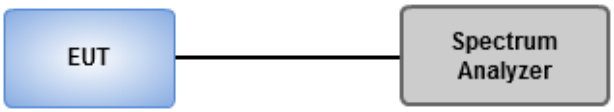
Reference level measurement

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	24°C / 65%	**Tested By**	Roger Lu

Refer to Appendix E.

3.6 AC Power line Conducted Emissions

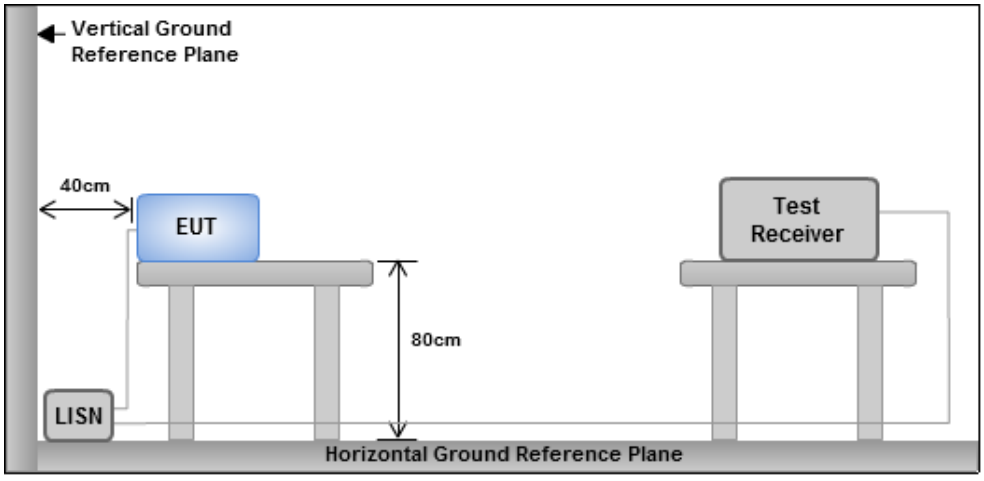
3.6.1 Limit of AC Power line Conducted Emissions

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 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	-	-	-	-	-
BT-LE(125kbps)	597.5k	1.052M	1M05F1D	596.25k	1.052M
BT-LE(500kbps)	660k	1.018M	1M02F1D	650k	1.016M
BT-LE(1Mbps)	661.25k	1.023M	1M02F1D	657.5k	1.018M
BT-LE(2Mbps)	1.135M	2.051M	2M05F1D	1.135M	2.029M

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

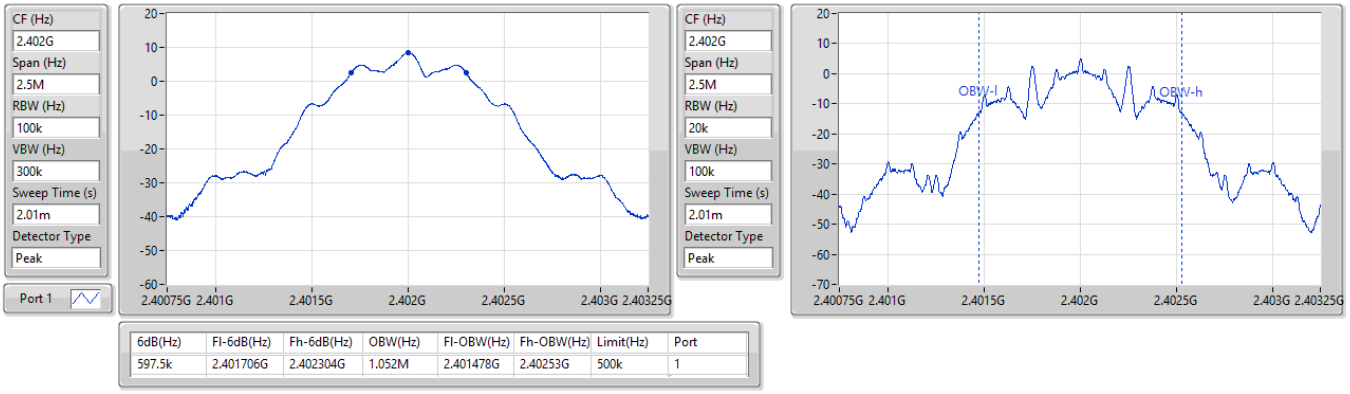
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(125kbps)	-	-	-	-
2402MHz	Pass	500k	597.5k	1.052M
2440MHz	Pass	500k	597.5k	1.052M
2480MHz	Pass	500k	596.25k	1.052M
BT-LE(500kbps)	-	-	-	-
2402MHz	Pass	500k	650k	1.017M
2440MHz	Pass	500k	658.75k	1.018M
2480MHz	Pass	500k	660k	1.016M
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	661.25k	1.018M
2440MHz	Pass	500k	657.5k	1.018M
2480MHz	Pass	500k	661.25k	1.023M
BT-LE(2Mbps)	-	-	-	-
2404MHz	Pass	500k	1.135M	2.044M
2440MHz	Pass	500k	1.135M	2.029M
2478MHz	Pass	500k	1.135M	2.051M

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

2.4-2.4835GHz_BT-LE(125kbps) **EBW-DTS**

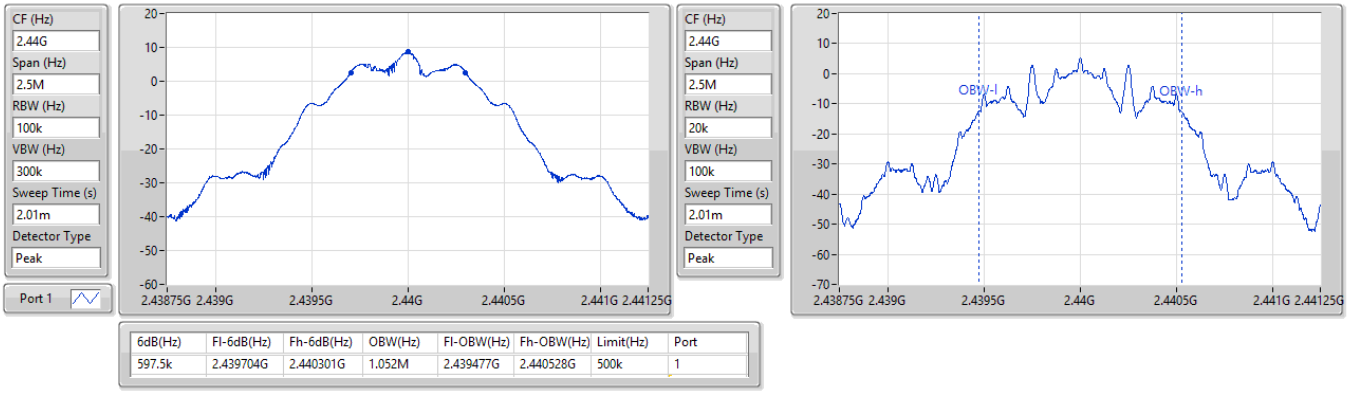
2402MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
597.5k	2.401706G	2.402304G	1.052M	2.401478G	2.40253G	500k	1

2.4-2.4835GHz_BT-LE(125kbps) **EBW-DTS**

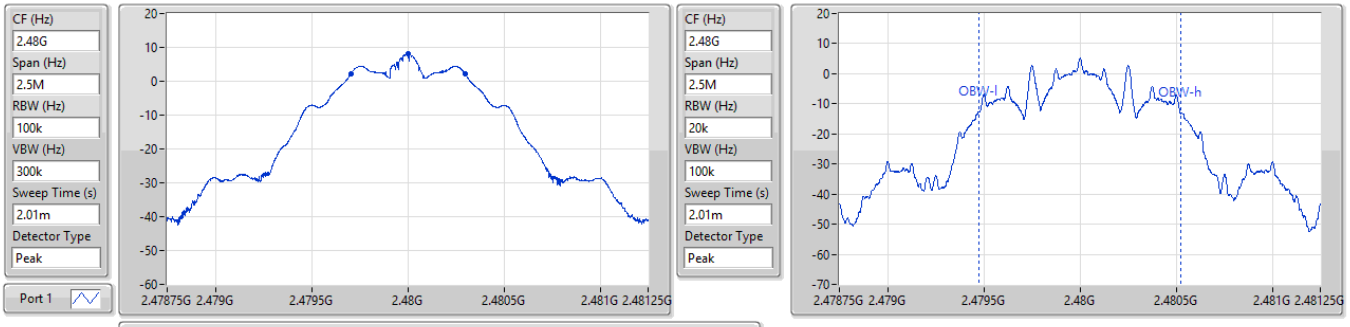
2440MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
597.5k	2.439704G	2.440301G	1.052M	2.439477G	2.440528G	500k	1

2.4-2.4835GHz_BT-LE(125kbps) **EBW-DTS**

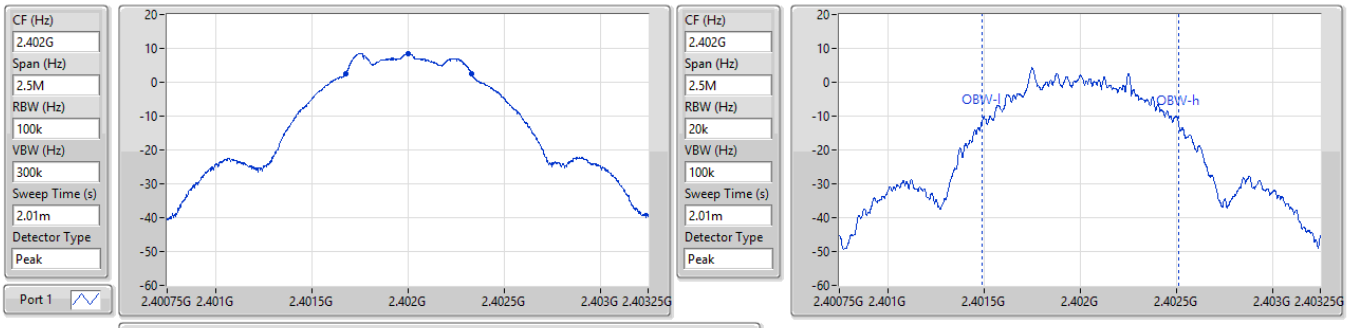
2480MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
596.25k	2.479704G	2.4803G	1.052M	2.479475G	2.480527G	500k	1

2.4-2.4835GHz_BT-LE(500kbps) **EBW-DTS**

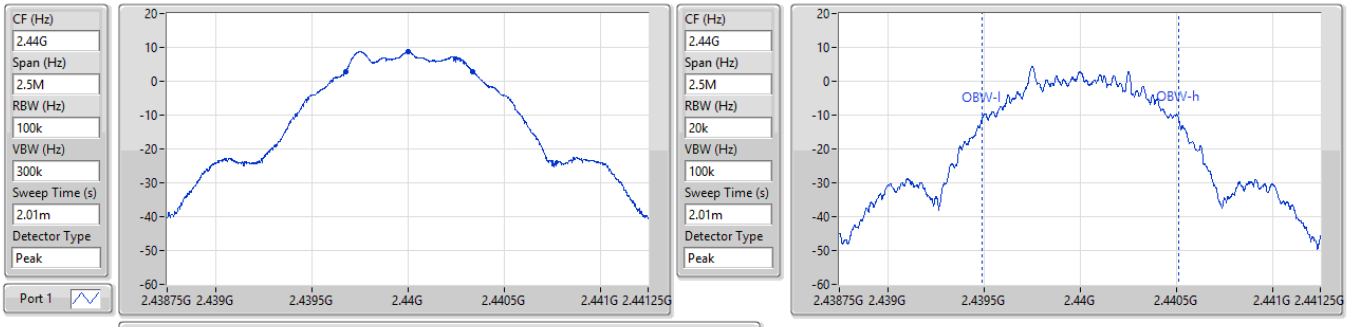
2402MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
650k	2.401681G	2.402331G	1.017M	2.401494G	2.402511G	500k	1

2.4-2.4835GHz_BT-LE(500kbps) **EBW-DTS**

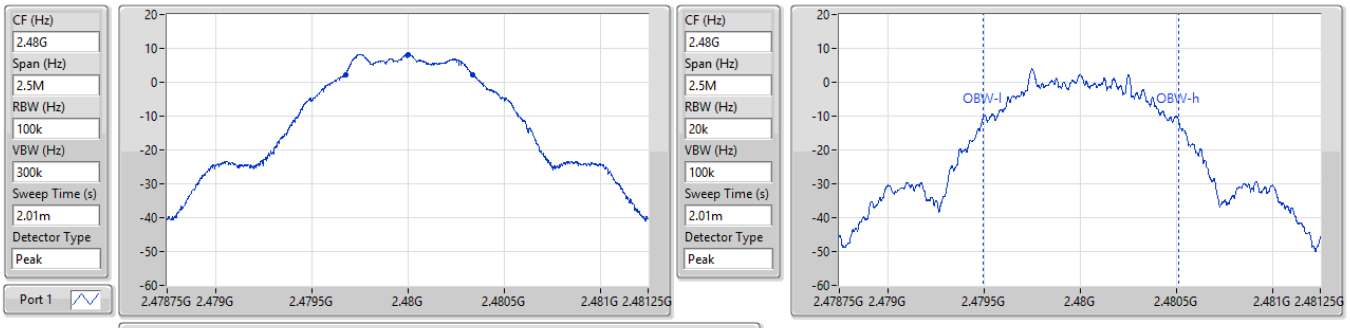
2440MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
658.75k	2.439679G	2.440338G	1.018M	2.439493G	2.440511G	500k	1

2.4-2.4835GHz_BT-LE(500kbps) **EBW-DTS**

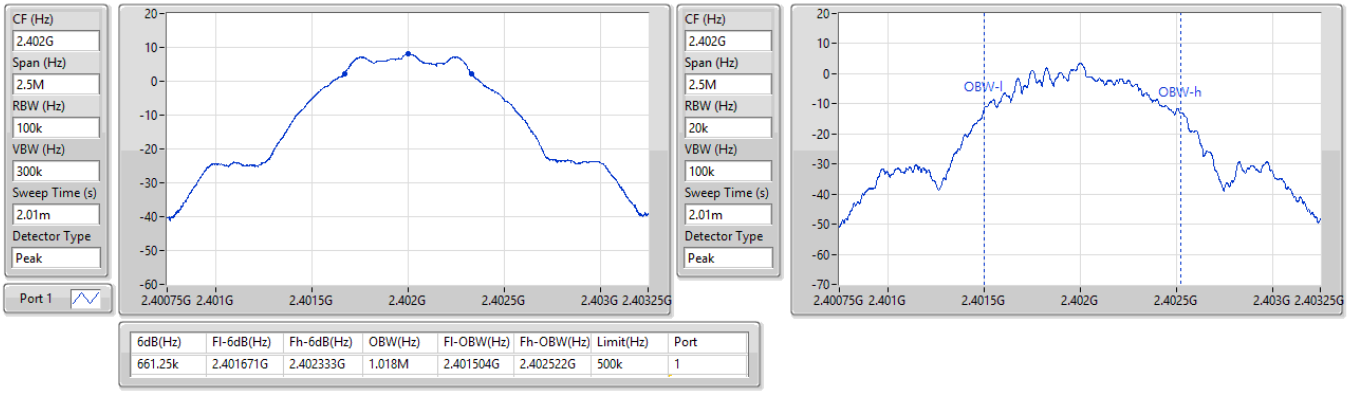
2480MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
660k	2.479679G	2.480339G	1.016M	2.479495G	2.480511G	500k	1

2.4-2.4835GHz_BT-LE(1Mbps) **EBW-DTS**

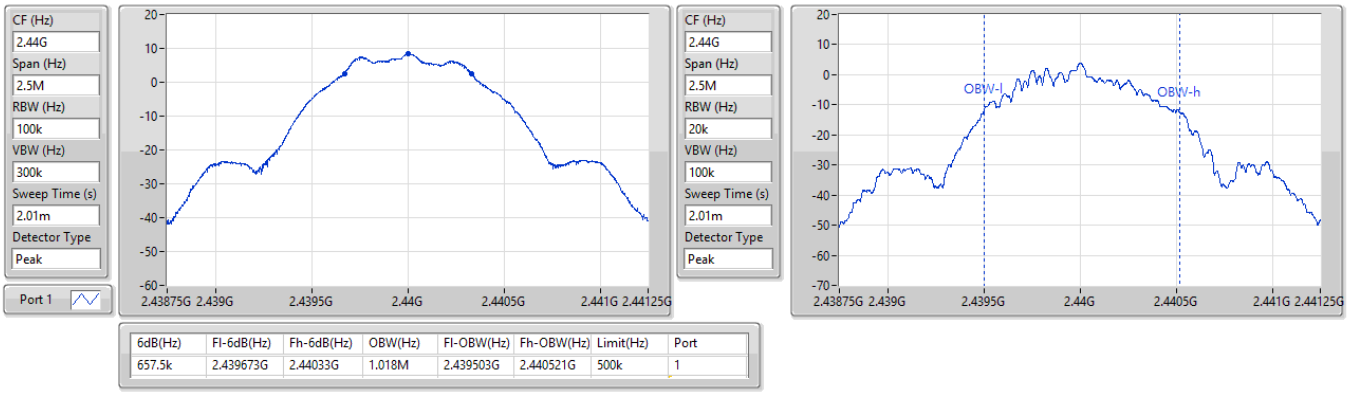
2402MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
661.25k	2.401671G	2.402333G	1.018M	2.401504G	2.402522G	500k	1

2.4-2.4835GHz_BT-LE(1Mbps) **EBW-DTS**

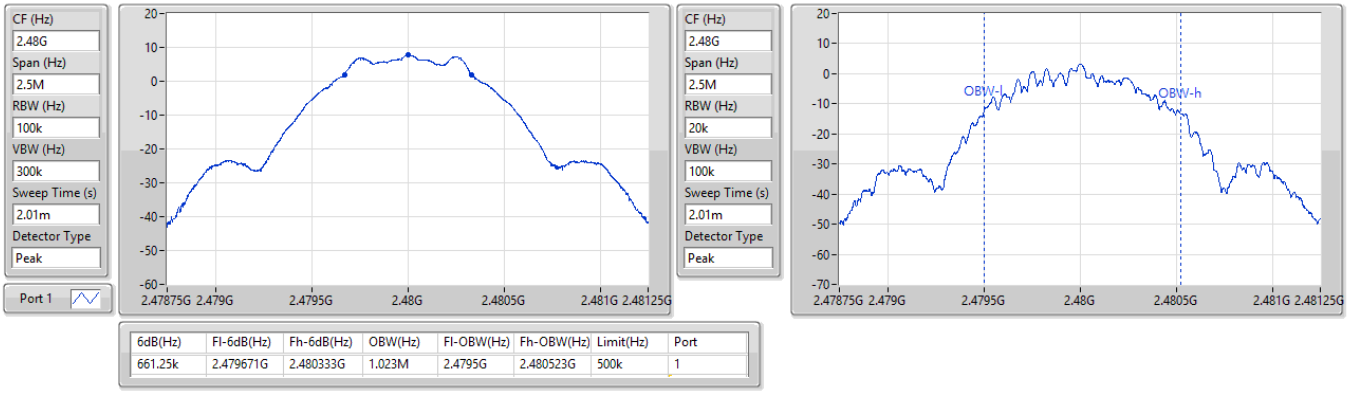
2440MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
657.5k	2.439673G	2.44033G	1.018M	2.439503G	2.440521G	500k	1

2.4-2.4835GHz_BT-LE(1Mbps) **EBW-DTS**

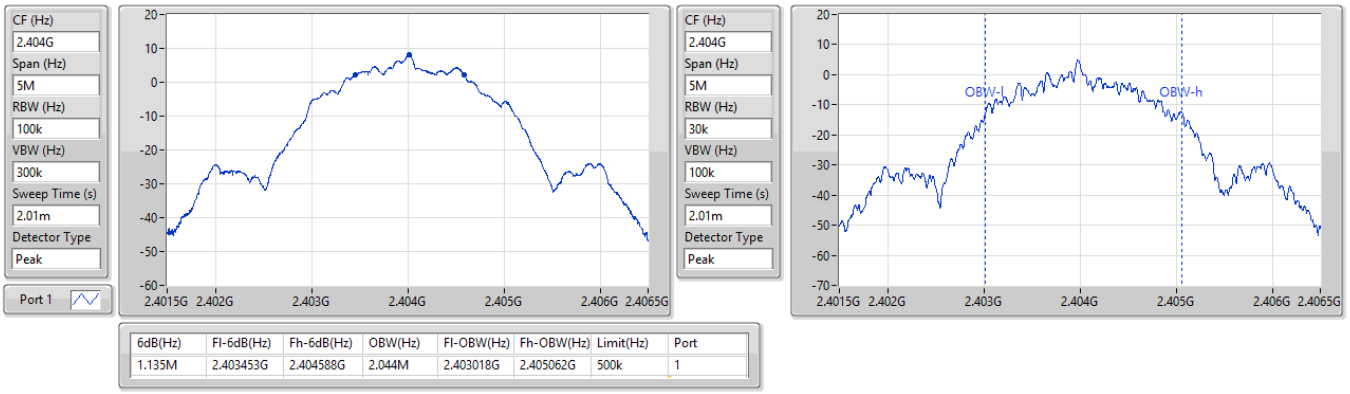
2480MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
661.25k	2.479671G	2.480333G	1.023M	2.4795G	2.480523G	500k	1

2.4-2.4835GHz_BT-LE(2Mbps) **EBW-DTS**

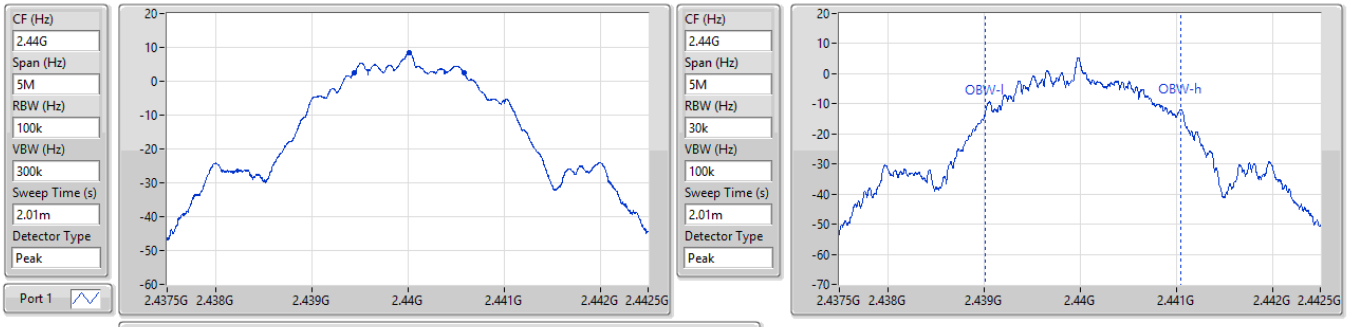
2404MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.135M	2.403453G	2.404588G	2.044M	2.403018G	2.405062G	500k	1

2.4-2.4835GHz_BT-LE(2Mbps) **EBW-DTS**

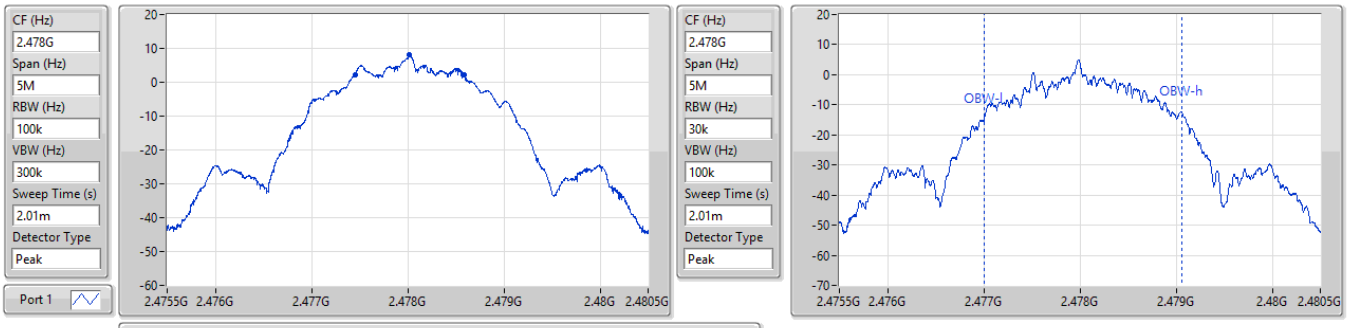
2440MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.135M	2.43945G	2.440585G	2.029M	2.43902G	2.441049G	500k	1

2.4-2.4835GHz_BT-LE(2Mbps) **EBW-DTS**

2478MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.135M	2.477453G	2.478588G	2.051M	2.477005G	2.479057G	500k	1

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
BT-LE(125kbps)	8.77	0.00753
BT-LE(500kbps)	8.84	0.00766
BT-LE(1Mbps)	8.86	0.00769
BT-LE(2Mbps)	8.85	0.00767

Result

Mode	Result	Antenna Gain (dBi)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
BT-LE(125kbps)	-	-	-	-	-	-
2402MHz	Pass	1.46	8.75	30.00	10.21	36.00
2440MHz	Pass	1.46	8.77	30.00	10.23	36.00
2480MHz	Pass	1.46	8.58	30.00	10.04	36.00
BT-LE(500kbps)	-	-	-	-	-	-
2402MHz	Pass	1.46	8.80	30.00	10.26	36.00
2440MHz	Pass	1.46	8.84	30.00	10.30	36.00
2480MHz	Pass	1.46	8.62	30.00	10.08	36.00
BT-LE(1Mbps)	-	-	-	-	-	-
2402MHz	Pass	1.46	8.82	30.00	10.28	36.00
2440MHz	Pass	1.46	8.86	30.00	10.32	36.00
2480MHz	Pass	1.46	8.65	30.00	10.11	36.00
BT-LE(2Mbps)	-	-	-	-	-	-
2404MHz	Pass	1.46	8.81	30.00	10.27	36.00
2440MHz	Pass	1.46	8.85	30.00	10.31	36.00
2478MHz	Pass	1.46	8.64	30.00	10.10	36.00

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
BT-LE(125kbps)	8.55	0.00716
BT-LE(500kbps)	8.60	0.00724
BT-LE(1Mbps)	8.62	0.00728
BT-LE(2Mbps)	8.61	0.00726

Result

Mode	Result	Antenna Gain (dBi)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
BT-LE(125kbps)	-	-	-	-	-	-
2402MHz	Pass	1.46	8.53	-	9.99	-
2440MHz	Pass	1.46	8.55	-	10.01	-
2480MHz	Pass	1.46	8.37	-	9.83	-
BT-LE(500kbps)	-	-	-	-	-	-
2402MHz	Pass	1.46	8.56	-	10.02	-
2440MHz	Pass	1.46	8.60	-	10.06	-
2480MHz	Pass	1.46	8.41	-	9.87	-
BT-LE(1Mbps)	-	-	-	-	-	-
2402MHz	Pass	1.46	8.58	-	10.04	-
2440MHz	Pass	1.46	8.62	-	10.08	-
2480MHz	Pass	1.46	8.43	-	9.89	-
BT-LE(2Mbps)	-	-	-	-	-	-
2404MHz	Pass	1.46	8.57	-	10.03	-
2440MHz	Pass	1.46	8.61	-	10.07	-
2478MHz	Pass	1.46	8.42	-	9.88	-

Note: Average power is for reference only.

Summary

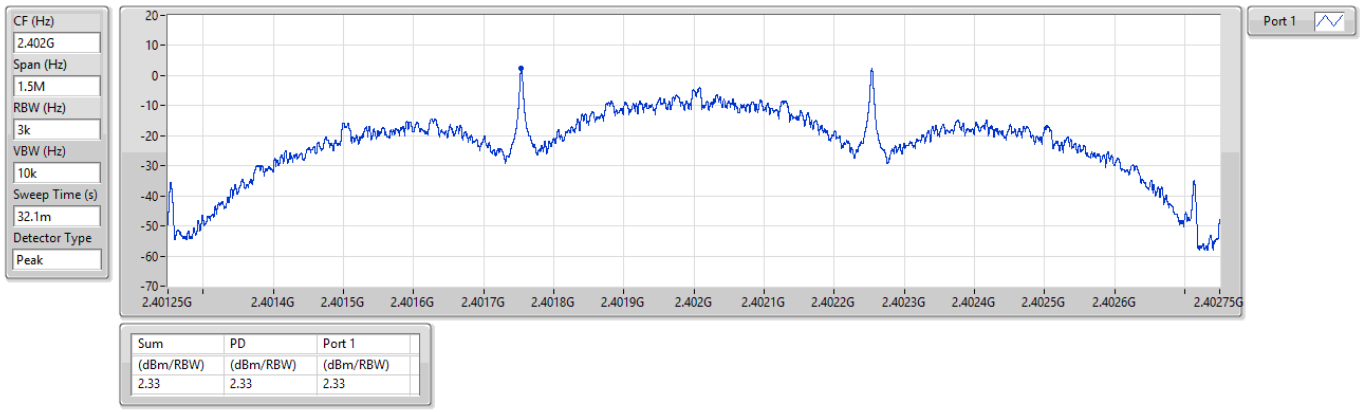
Mode	PD (dBm/3kHz)
2.4-2.4835GHz	-
BT-LE(125kbps)	2.50
BT-LE(500kbps)	2.40
BT-LE(1Mbps)	-6.29
BT-LE(2Mbps)	-8.97

Result

Mode	Result	Antenna Gain (dBi)	Power Density (dBm/3kHz)	Power Density Limit (dBm/3kHz)
BT-LE(125kbps)	-	-	-	-
2402MHz	Pass	1.46	2.33	8.00
2440MHz	Pass	1.46	2.50	8.00
2480MHz	Pass	1.46	2.44	8.00
BT-LE(500kbps)	-	-	-	-
2402MHz	Pass	1.46	2.19	8.00
2440MHz	Pass	1.46	2.40	8.00
2480MHz	Pass	1.46	1.92	8.00
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	1.46	-7.36	8.00
2440MHz	Pass	1.46	-6.29	8.00
2480MHz	Pass	1.46	-7.11	8.00
BT-LE(2Mbps)	-	-	-	-
2404MHz	Pass	1.46	-9.05	8.00
2440MHz	Pass	1.46	-8.97	8.00
2478MHz	Pass	1.46	-9.37	8.00

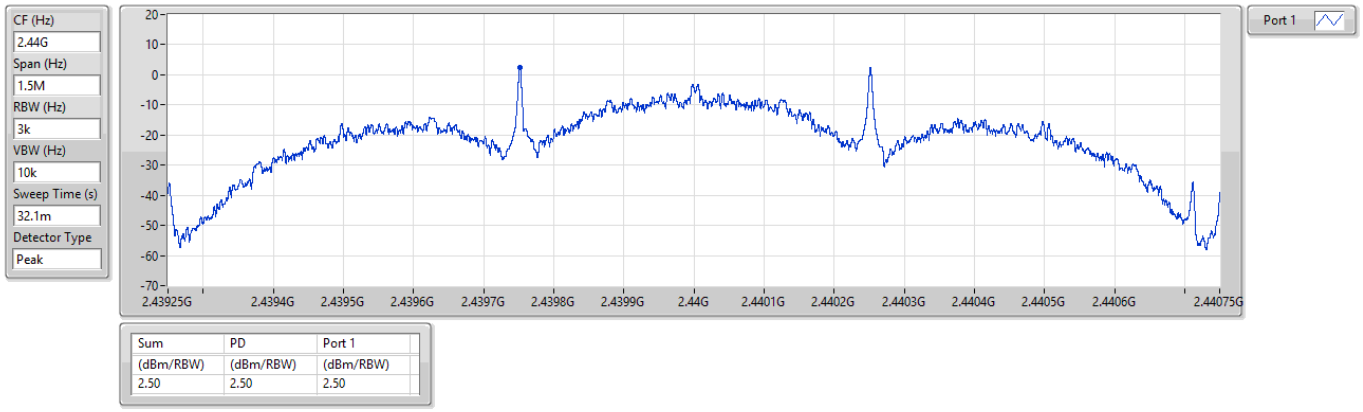
2.4-2.4835GHz_BT-LE(125kbps) **PSD**

2402MHz



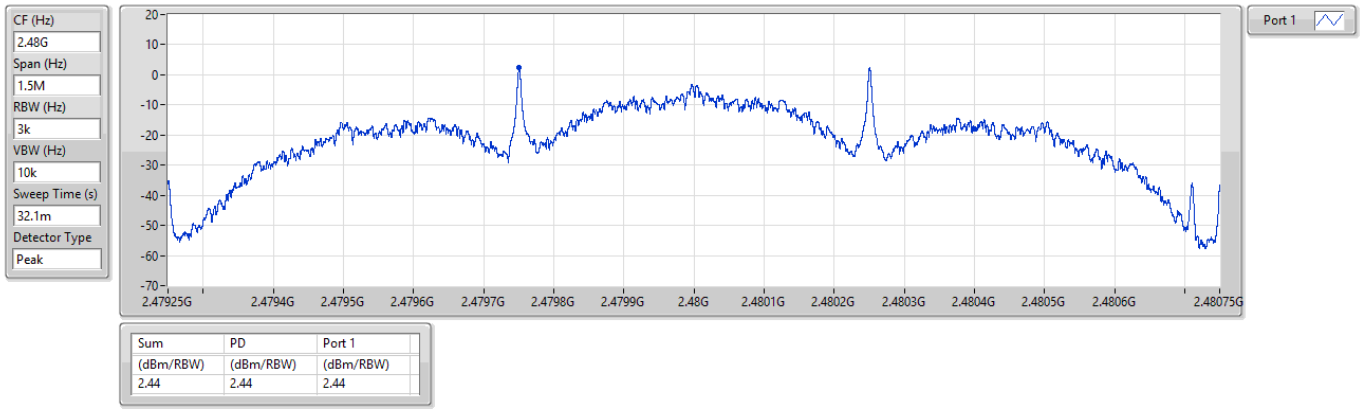
2.4-2.4835GHz_BT-LE(125kbps) **PSD**

2440MHz



2.4-2.4835GHz_BT-LE(125kbps) **PSD**

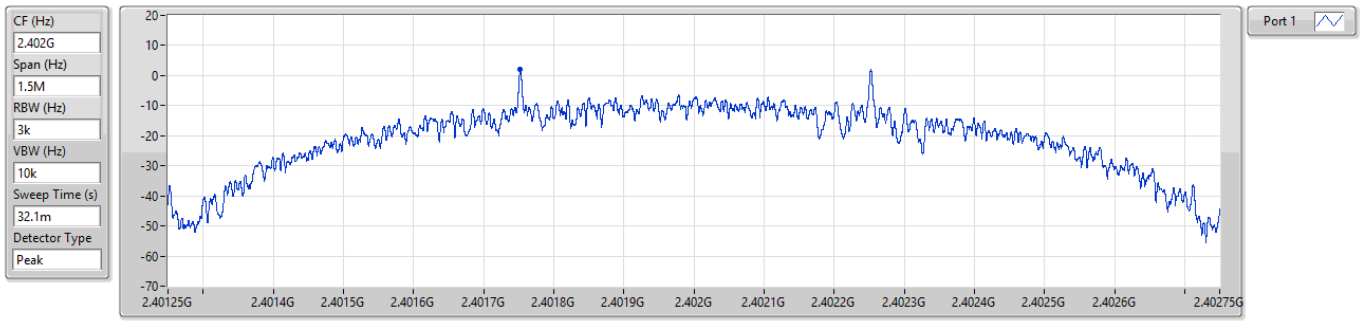
2480MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
2.44	2.44	2.44

2.4-2.4835GHz_BT-LE(500kbps) **PSD**

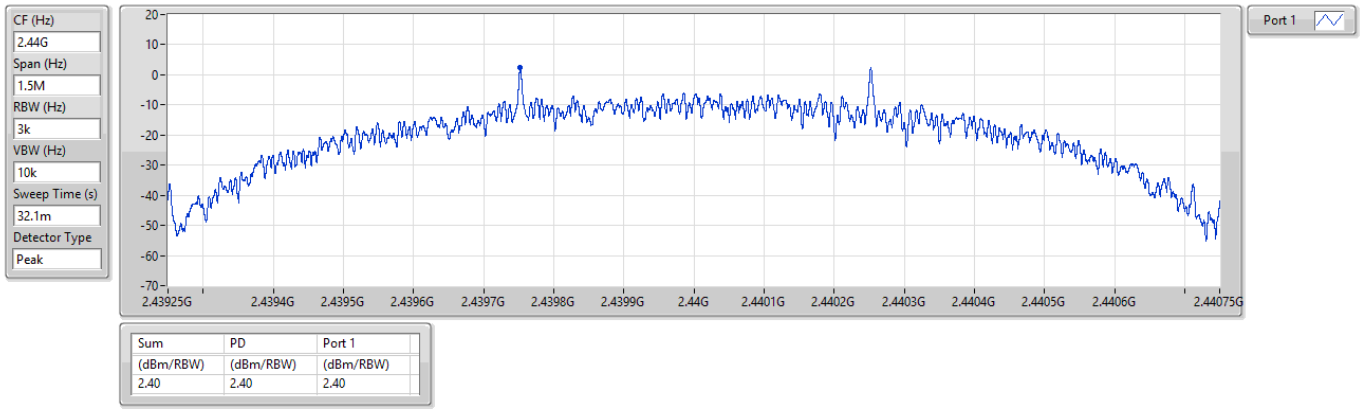
2402MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
2.19	2.19	2.19

2.4-2.4835GHz_BT-LE(500kbps) **PSD**

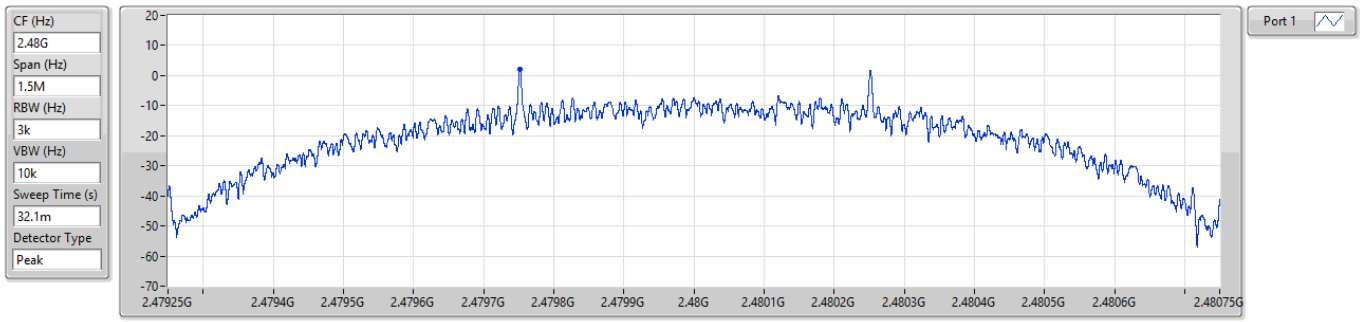
2440MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
2.40	2.40	2.40

2.4-2.4835GHz_BT-LE(500kbps) **PSD**

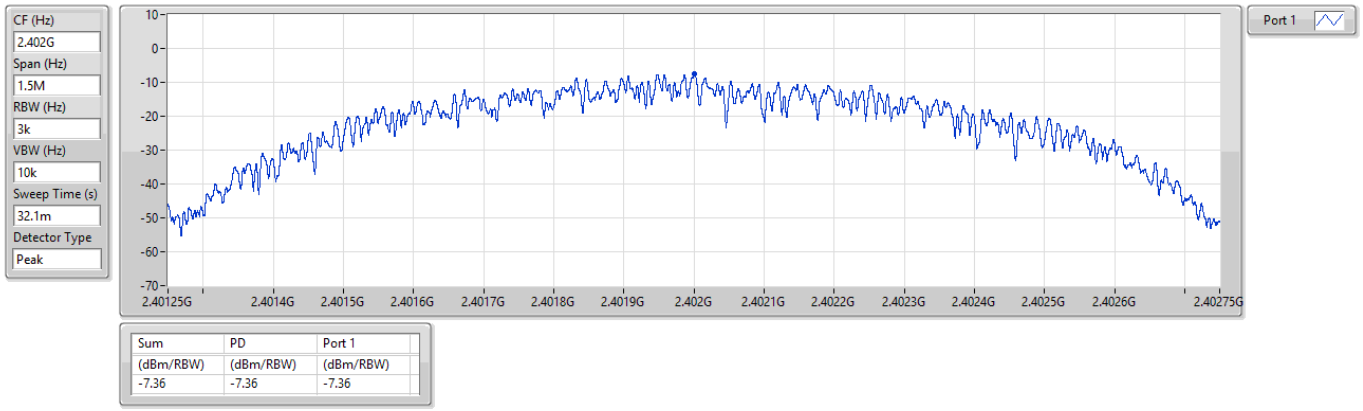
2480MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
1.92	1.92	1.92

2.4-2.4835GHz_BT-LE(1Mbps) **PSD**

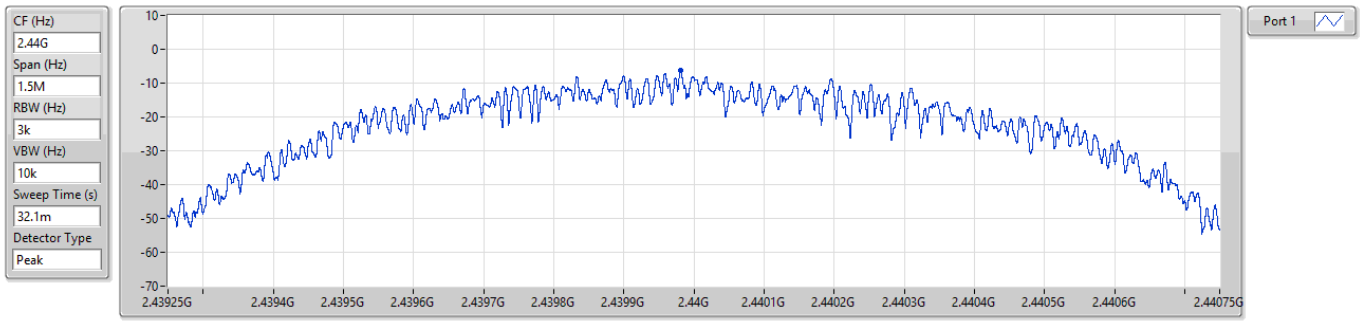
2402MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-7.36	-7.36	-7.36

2.4-2.4835GHz_BT-LE(1Mbps) **PSD**

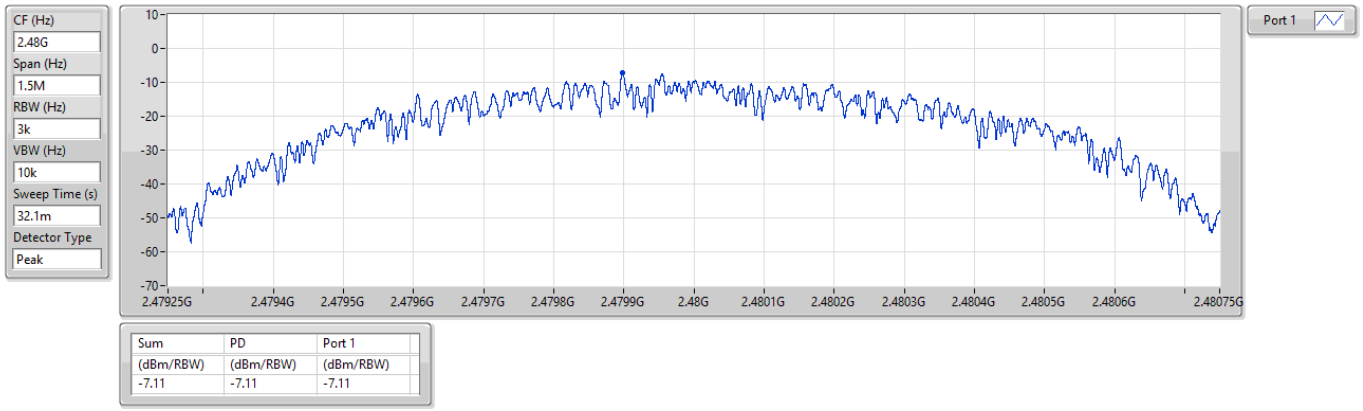
2440MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-6.29	-6.29	-6.29

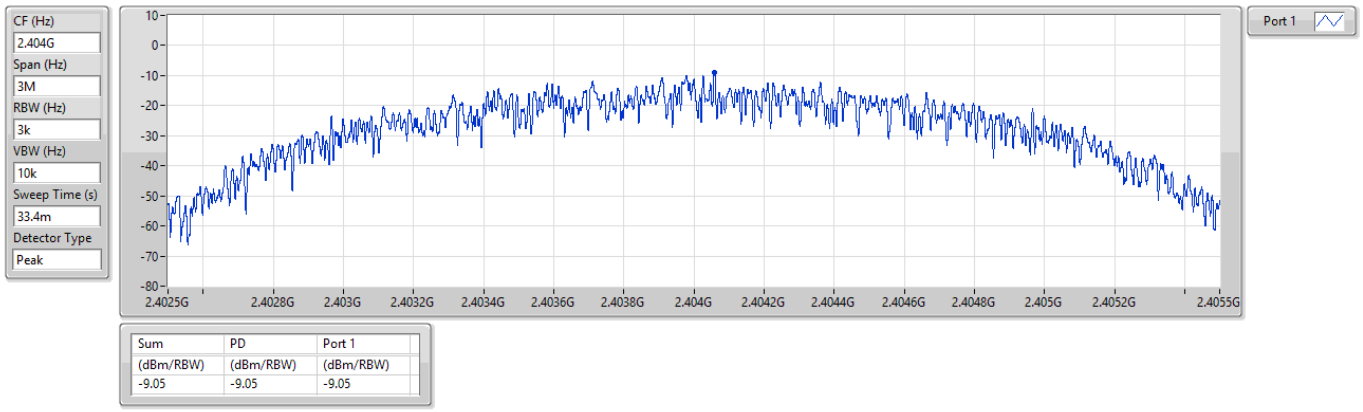
2.4-2.4835GHz_BT-LE(1Mbps) **PSD**

2480MHz



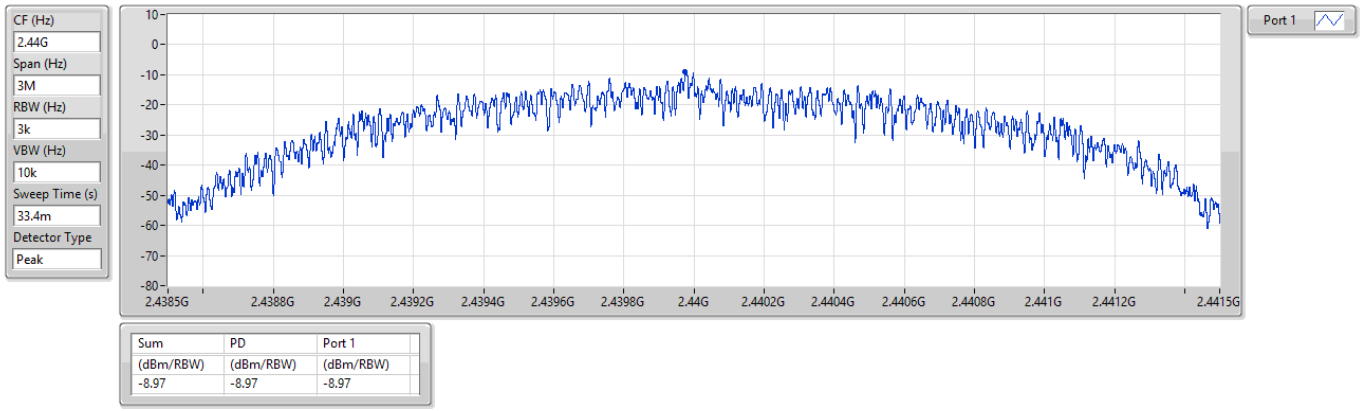
2.4-2.4835GHz_BT-LE(2Mbps) **PSD**

2404MHz



2.4-2.4835GHz_BT-LE(2Mbps) **PSD**

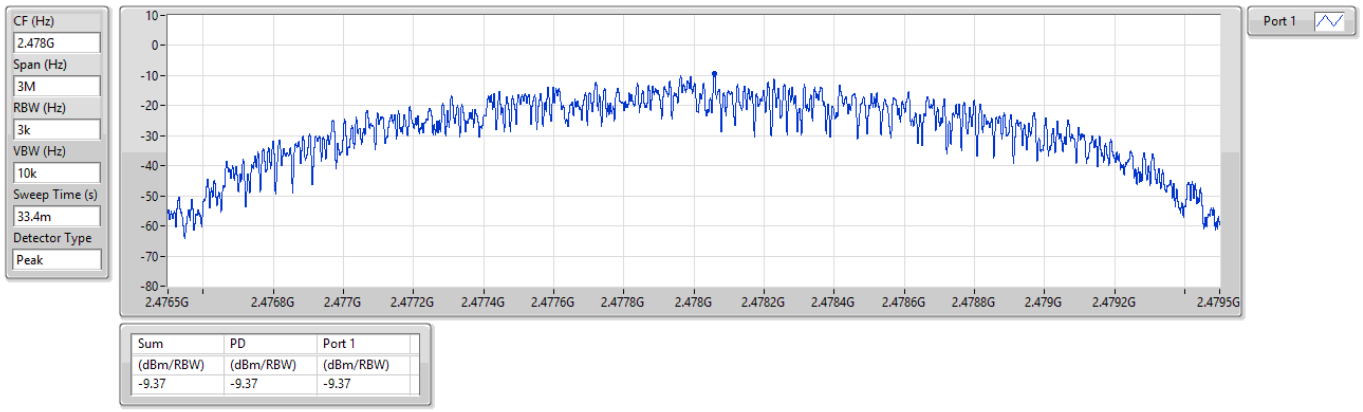
2440MHz



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

2.4-2.4835GHz_BT-LE(2Mbps) **PSD**

2478MHz

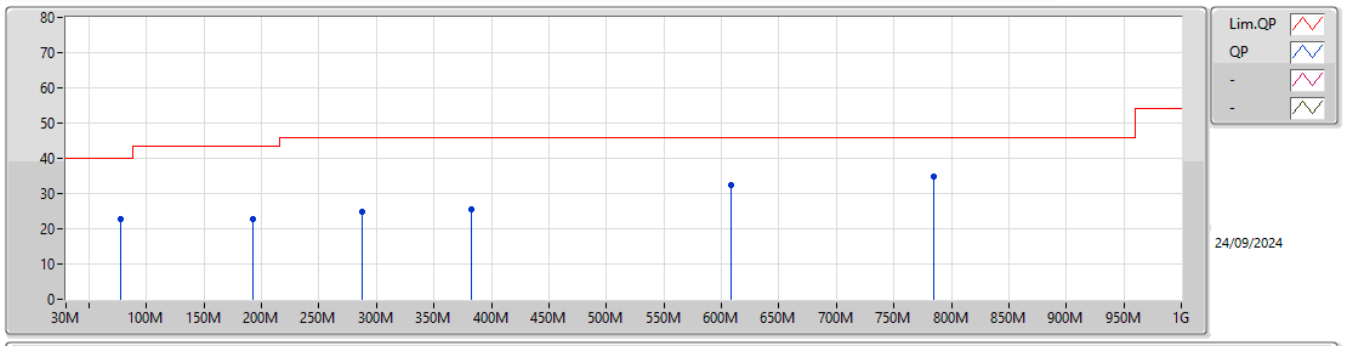


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-9.37	-9.37	-9.37

Summary

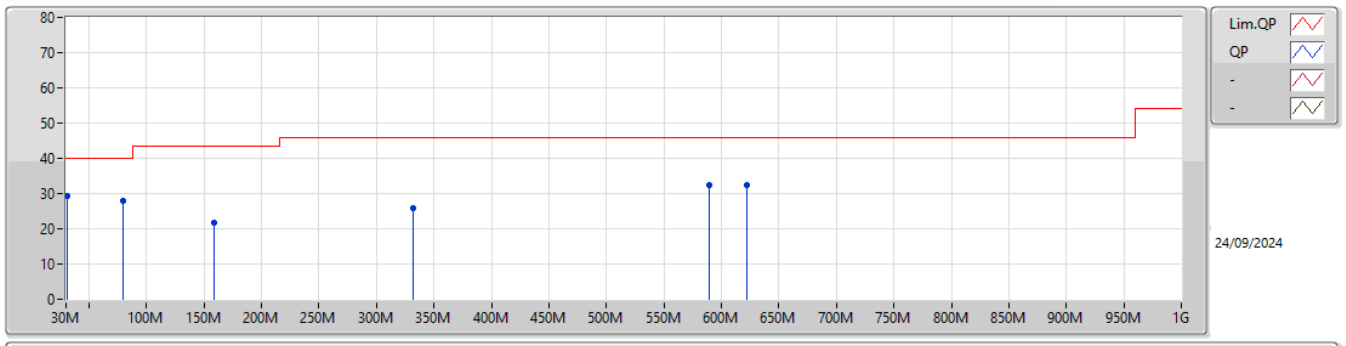
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	PK	31.2M	29.21	40.00	-10.79	Vertical

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	77.3M	22.85	40.00	-17.15	-12.99	3	Horizontal	-	-	-	35.84	14.38	0.82	28.19
PK	192.5M	22.91	43.50	-20.59	-11.37	3	Horizontal	-	-	-	34.28	15.60	1.31	28.28
PK	287.8M	24.93	46.00	-21.07	-8.26	3	Horizontal	-	-	-	33.19	18.36	1.62	28.24
PK	382.7M	25.46	46.00	-20.54	-5.86	3	Horizontal	-	-	-	31.32	20.50	1.82	28.18
PK	608.2M	32.56	46.00	-13.44	-0.71	3	Horizontal	-	-	-	33.27	24.96	2.50	28.17
PK	785.2M	34.72	46.00	-11.28	2.41	3	Horizontal	-	-	-	32.31	27.30	2.98	27.87

Mode 1



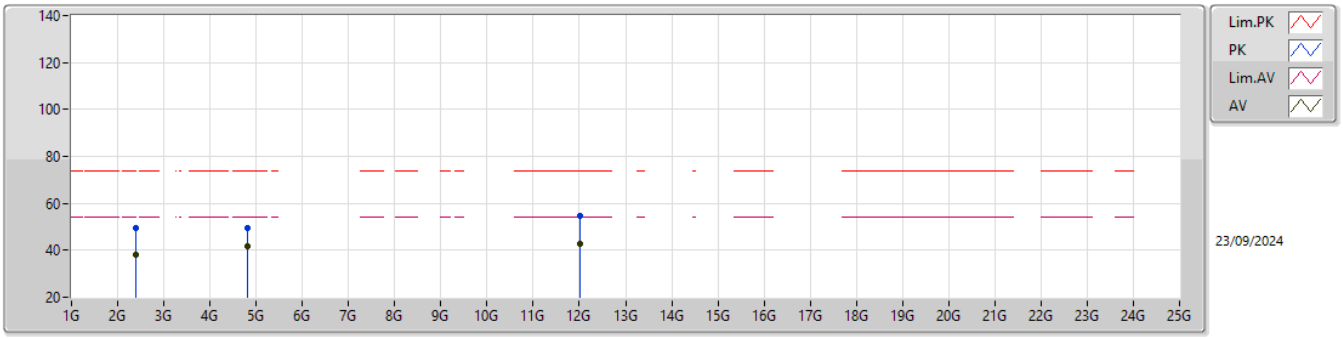
Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB/m)	(m)		(°)	(m)		(dBuV)	(dB/m)	(dB)	(dB)
PK	31.2M	29.21	40.00	-10.79	-9.84	3	Vertical	-	-	-	39.05	17.74	0.50	28.08
PK	80M	27.78	40.00	-12.22	-13.55	3	Vertical	-	-	-	41.33	13.80	0.84	28.19
PK	158.5M	21.83	43.50	-21.67	-8.69	3	Vertical	-	-	-	30.52	18.40	1.17	28.26
PK	331.8M	25.88	46.00	-20.12	-7.19	3	Vertical	-	-	-	33.07	19.30	1.72	28.21
PK	589.9M	32.38	46.00	-13.62	-1.24	3	Vertical	-	-	-	33.62	24.50	2.44	28.18
PK	621.9M	32.56	46.00	-13.44	-0.15	3	Vertical	-	-	-	32.71	25.44	2.55	28.14

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	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	AV	12.01G	42.79	54.00	-11.21	3	Vertical	39	1.00	-
BT-LE(2Mbps)	Pass	AV	12.02G	42.88	54.00	-11.12	3	Vertical	42	1.00	-

2.4-2.4835GHz_BT-LE(1Mbps)

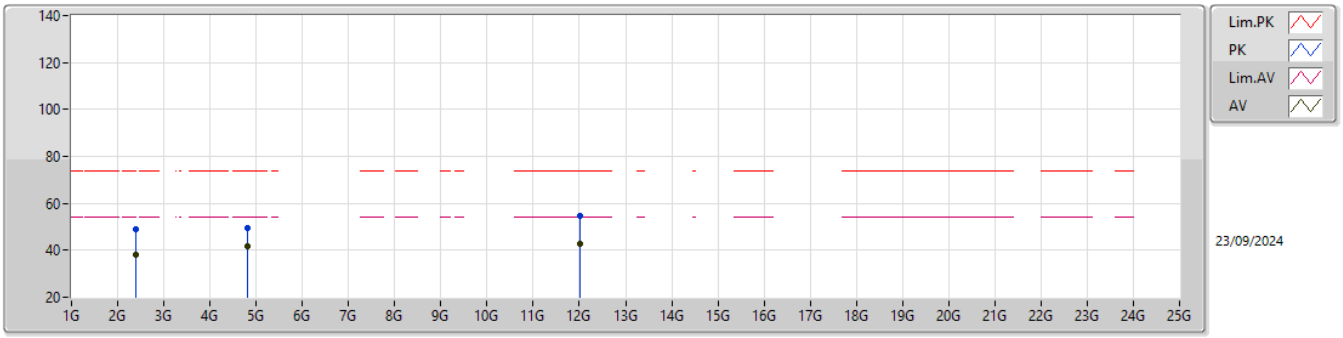
2402MHz_TX



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	38.17	54.00	-15.83	42.51	3	Horizontal	1	1.11	-	27.60	4.95	36.89
PK	2.39G	49.29	74.00	-24.71	53.63	3	Horizontal	1	1.11	-	27.60	4.95	36.89
AV	4.804G	41.91	54.00	-12.09	42.29	3	Horizontal	232	2.31	-	31.29	6.85	38.52
PK	4.804G	49.38	74.00	-24.62	49.76	3	Horizontal	232	2.31	-	31.29	6.85	38.52
AV	12.01G	42.66	54.00	-11.34	36.34	3	Horizontal	27	1.00	-	39.20	10.02	42.90
PK	12.01G	54.65	74.00	-19.35	48.33	3	Horizontal	27	1.00	-	39.20	10.02	42.90

2.4-2.4835GHz_BT-LE(1Mbps)

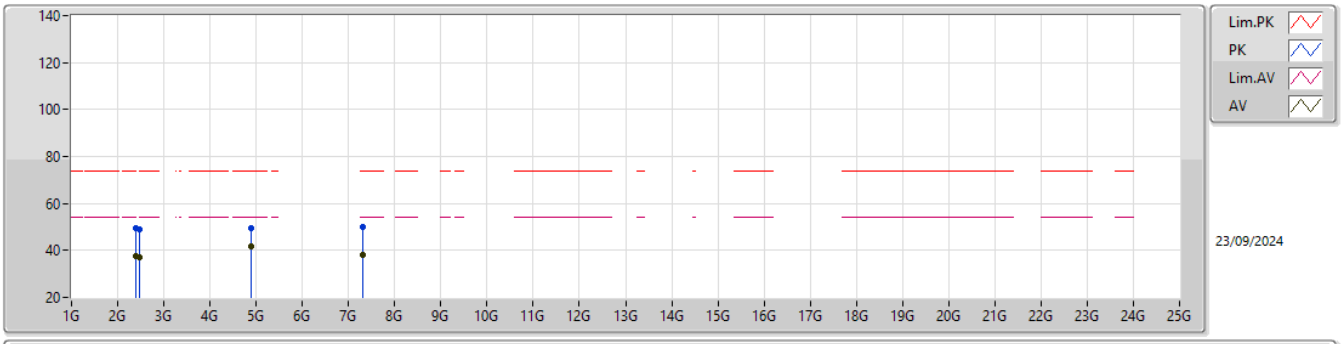
2402MHz_TX



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	37.91	54.00	-16.09	42.25	3	Vertical	264	1.40	-	27.60	4.95	36.89
PK	2.39G	49.03	74.00	-24.97	53.37	3	Vertical	264	1.40	-	27.60	4.95	36.89
AV	4.804G	41.69	54.00	-12.31	42.07	3	Vertical	276	2.28	-	31.29	6.85	38.52
PK	4.804G	49.37	74.00	-24.63	49.75	3	Vertical	276	2.28	-	31.29	6.85	38.52
AV	12.01G	42.79	54.00	-11.21	36.47	3	Vertical	39	1.00	-	39.20	10.02	42.90
PK	12.01G	54.73	74.00	-19.27	48.41	3	Vertical	39	1.00	-	39.20	10.02	42.90

2.4-2.4835GHz_BT-LE(1Mbps)

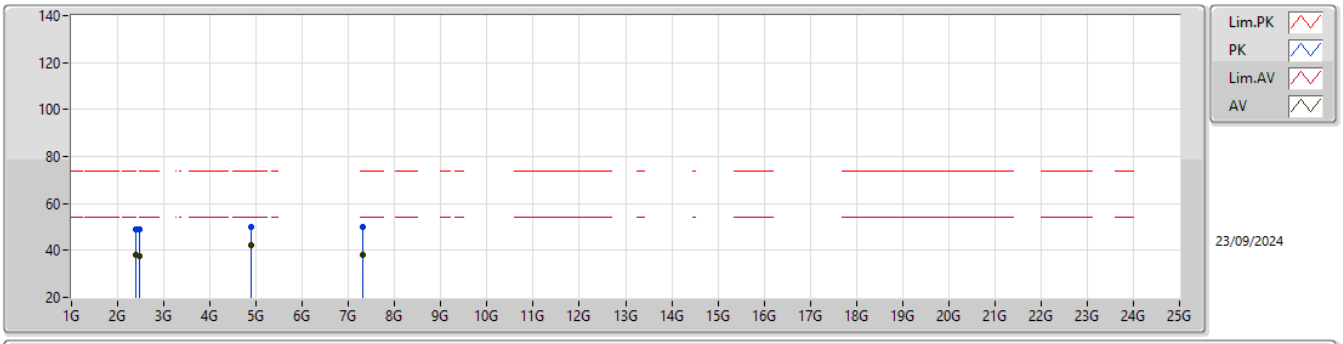
2440MHz_TX



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	37.42	54.00	-16.58	41.76	3	Horizontal	9	1.29	-	27.60	4.95	36.89
PK	2.39G	49.39	74.00	-24.61	53.73	3	Horizontal	9	1.29	-	27.60	4.95	36.89
AV	2.4835G	37.08	54.00	-16.92	41.80	3	Horizontal	9	1.29	-	27.20	5.06	36.98
PK	2.4835G	49.07	74.00	-24.93	53.79	3	Horizontal	9	1.29	-	27.20	5.06	36.98
AV	4.880G	41.89	54.00	-12.11	42.40	3	Horizontal	233	2.26	-	31.14	6.92	38.57
PK	4.880G	49.28	74.00	-24.72	49.79	3	Horizontal	233	2.26	-	31.14	6.92	38.57
AV	7.320G	38.00	54.00	-16.00	32.80	3	Horizontal	118	1.00	-	36.16	8.43	39.39
PK	7.320G	49.88	74.00	-24.12	44.68	3	Horizontal	118	1.00	-	36.16	8.43	39.39

2.4-2.4835GHz_BT-LE(1Mbps)

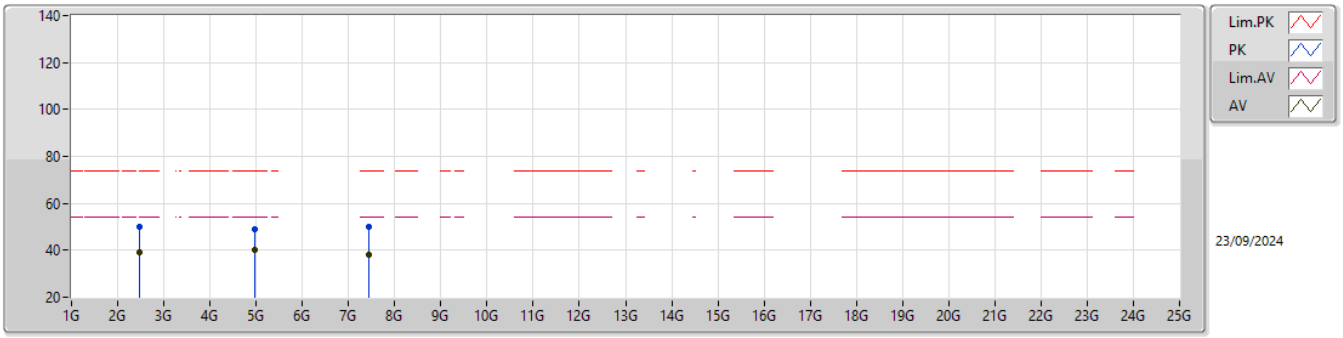
2440MHz_TX



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	37.99	54.00	-16.01	42.33	3	Vertical	265	1.34	-	27.60	4.95	36.89
PK	2.39G	48.86	74.00	-25.14	53.20	3	Vertical	265	1.34	-	27.60	4.95	36.89
AV	2.4835G	37.53	54.00	-16.47	42.25	3	Vertical	265	1.34	-	27.20	5.06	36.98
PK	2.4835G	48.73	74.00	-25.27	53.45	3	Vertical	265	1.34	-	27.20	5.06	36.98
AV	4.880G	42.48	54.00	-11.52	42.99	3	Vertical	293	3.10	-	31.14	6.92	38.57
PK	4.880G	49.97	74.00	-24.03	50.48	3	Vertical	293	3.10	-	31.14	6.92	38.57
AV	7.320G	37.94	54.00	-16.06	32.74	3	Vertical	34	1.00	-	36.16	8.43	39.39
PK	7.320G	50.11	74.00	-23.89	44.91	3	Vertical	34	1.00	-	36.16	8.43	39.39

2.4-2.4835GHz_BT-LE(1Mbps)

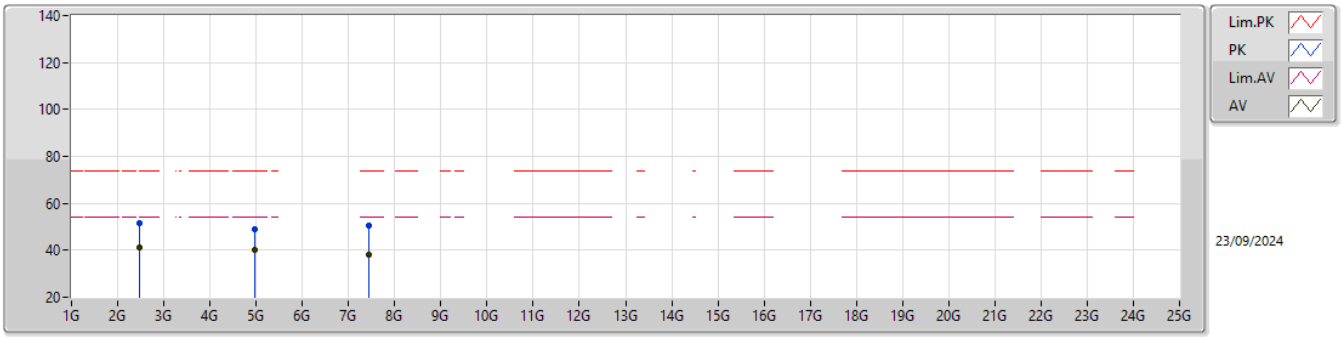
2480MHz_TX



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	39.06	54.00	-14.94	43.78	3	Horizontal	7	1.28	-	27.20	5.06	36.98
PK	2.4835G	49.90	74.00	-24.10	54.62	3	Horizontal	7	1.28	-	27.20	5.06	36.98
AV	4.96G	40.25	54.00	-13.75	40.52	3	Horizontal	174	2.35	-	31.36	6.99	38.62
PK	4.96G	48.75	74.00	-25.25	49.02	3	Horizontal	174	2.35	-	31.36	6.99	38.62
AV	7.44G	38.14	54.00	-15.86	32.84	3	Horizontal	23	1.00	-	36.34	8.50	39.54
PK	7.44G	50.25	74.00	-23.75	44.95	3	Horizontal	23	1.00	-	36.34	8.50	39.54

2.4-2.4835GHz_BT-LE(1Mbps)

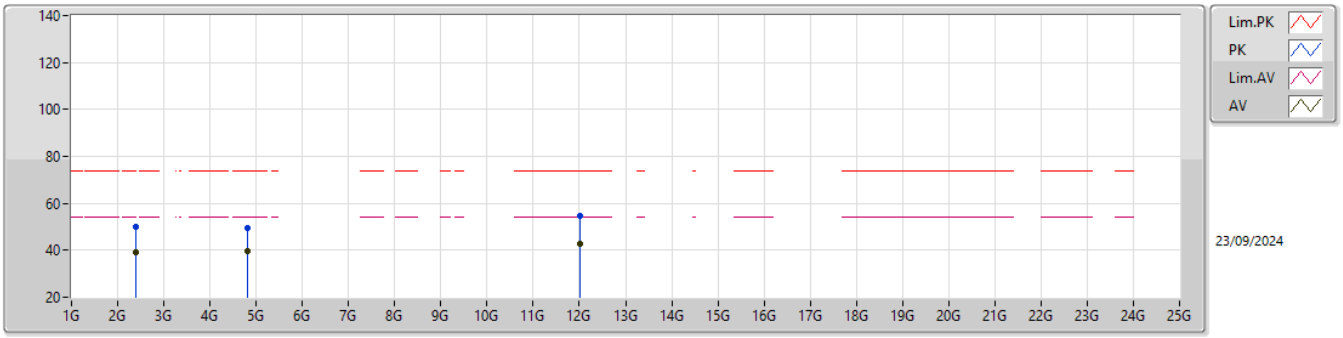
2480MHz_TX



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	40.97	54.00	-13.03	45.69	3	Vertical	266	1.17	-	27.20	5.06	36.98
PK	2.4835G	51.78	74.00	-22.22	56.50	3	Vertical	266	1.17	-	27.20	5.06	36.98
AV	4.96G	40.37	54.00	-13.63	40.64	3	Vertical	200	3.29	-	31.36	6.99	38.62
PK	4.96G	48.92	74.00	-25.08	49.19	3	Vertical	200	3.29	-	31.36	6.99	38.62
AV	7.44G	38.18	54.00	-15.82	32.88	3	Vertical	50	1.00	-	36.34	8.50	39.54
PK	7.44G	50.32	74.00	-23.68	45.02	3	Vertical	50	1.00	-	36.34	8.50	39.54

2.4-2.4835GHz_BT-LE(2Mbps)

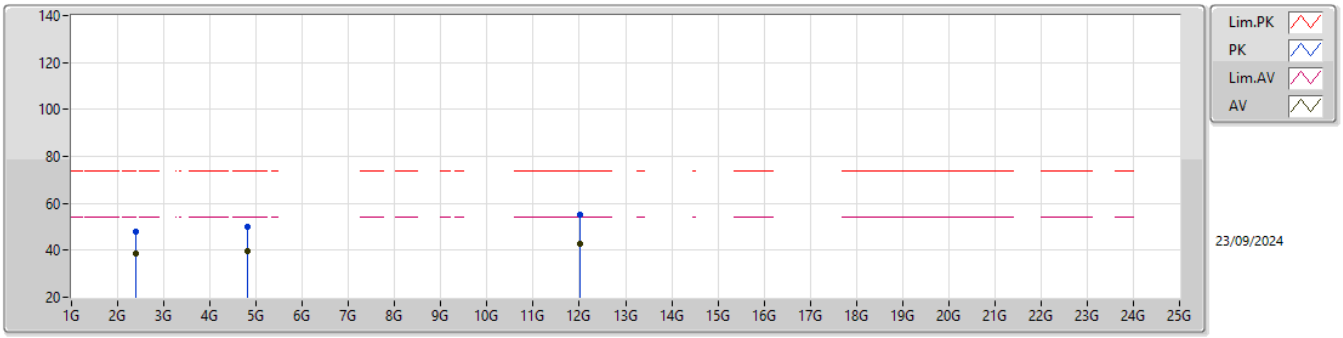
2404MHz_TX



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	39.06	54.00	-14.94	43.40	3	Horizontal	12	1.10	-	27.60	4.95	36.89
PK	2.39G	49.88	74.00	-24.12	54.22	3	Horizontal	12	1.10	-	27.60	4.95	36.89
AV	4.808G	39.51	54.00	-14.49	39.89	3	Horizontal	170	3.11	-	31.28	6.86	38.52
PK	4.808G	49.58	74.00	-24.42	49.96	3	Horizontal	170	3.11	-	31.28	6.86	38.52
AV	12.02G	42.83	54.00	-11.17	36.50	3	Horizontal	25	1.00	-	39.20	10.02	42.89
PK	12.02G	54.74	74.00	-19.26	48.41	3	Horizontal	25	1.00	-	39.20	10.02	42.89

2.4-2.4835GHz_BT-LE(2Mbps)

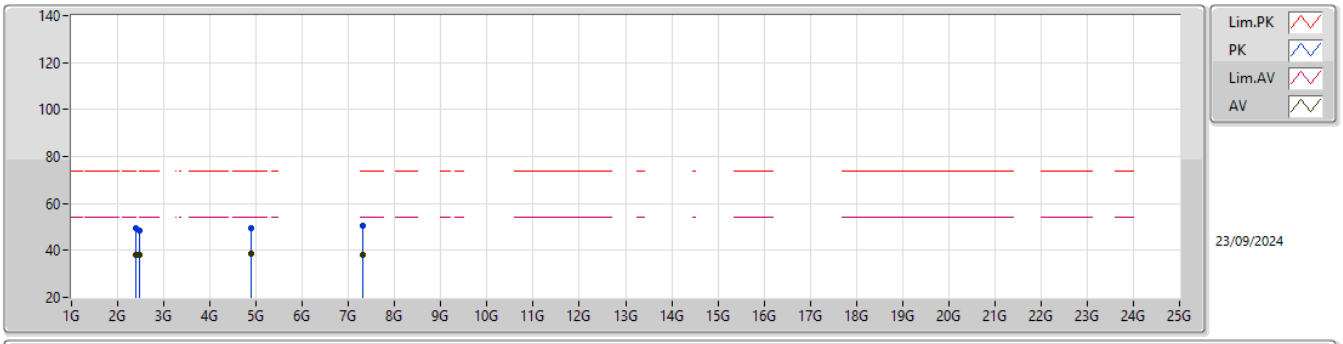
2404MHz_TX



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	38.46	54.00	-15.54	42.80	3	Vertical	263	1.42	-	27.60	4.95	36.89
PK	2.39G	48.03	74.00	-25.97	52.37	3	Vertical	263	1.42	-	27.60	4.95	36.89
AV	4.808G	39.89	54.00	-14.11	40.27	3	Vertical	187	2.99	-	31.28	6.86	38.52
PK	4.808G	49.84	74.00	-24.16	50.22	3	Vertical	187	2.99	-	31.28	6.86	38.52
AV	12.02G	42.88	54.00	-11.12	36.55	3	Vertical	42	1.00	-	39.20	10.02	42.89
PK	12.02G	54.96	74.00	-19.04	48.63	3	Vertical	42	1.00	-	39.20	10.02	42.89

2.4-2.4835GHz_BT-LE(2Mbps)

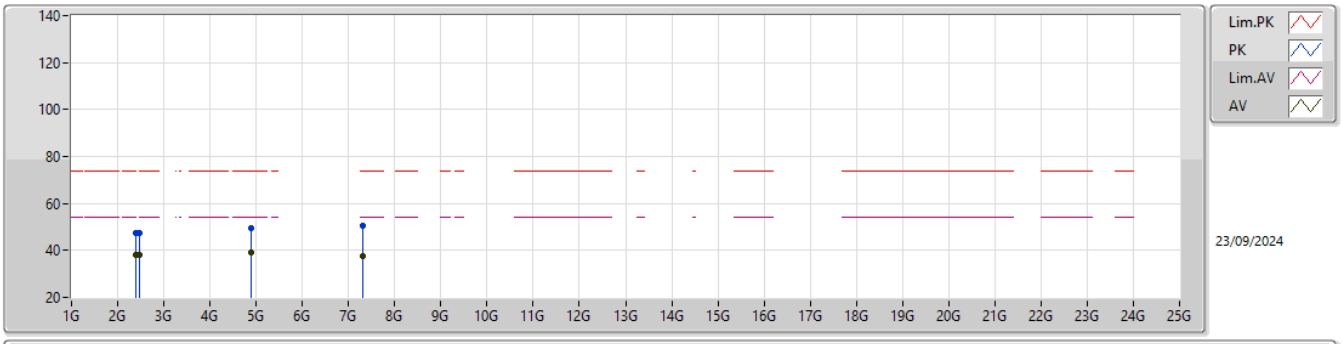
2440MHz_TX



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	37.95	54.00	-16.05	42.29	3	Horizontal	342	1.31	-	27.60	4.95	36.89
PK	2.39G	49.48	74.00	-24.52	53.82	3	Horizontal	342	1.31	-	27.60	4.95	36.89
AV	2.4835G	38.13	54.00	-15.87	42.85	3	Horizontal	342	1.31	-	27.20	5.06	36.98
PK	2.4835G	48.42	74.00	-25.58	53.14	3	Horizontal	342	1.31	-	27.20	5.06	36.98
AV	4.88G	38.54	54.00	-15.46	39.05	3	Horizontal	166	2.28	-	31.14	6.92	38.57
PK	4.88G	49.67	74.00	-24.33	50.18	3	Horizontal	166	2.28	-	31.14	6.92	38.57
AV	7.32G	37.87	54.00	-16.13	32.67	3	Horizontal	18	1.00	-	36.16	8.43	39.39
PK	7.32G	50.53	74.00	-23.47	45.33	3	Horizontal	18	1.00	-	36.16	8.43	39.39

2.4-2.4835GHz_BT-LE(2Mbps)

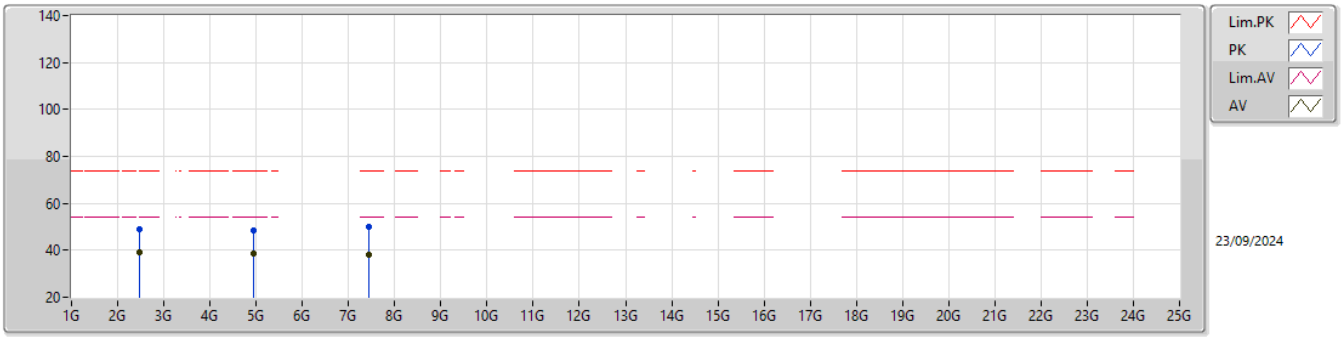
2440MHz_TX



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	37.92	54.00	-16.08	42.26	3	Vertical	264	1.34	-	27.60	4.95	36.89
PK	2.39G	47.28	74.00	-26.72	51.62	3	Vertical	264	1.34	-	27.60	4.95	36.89
AV	2.4835G	37.97	54.00	-16.03	42.69	3	Vertical	264	1.34	-	27.20	5.06	36.98
PK	2.4835G	47.45	74.00	-26.55	52.17	3	Vertical	264	1.34	-	27.20	5.06	36.98
AV	4.88G	39.00	54.00	-15.00	39.51	3	Vertical	297	3.10	-	31.14	6.92	38.57
PK	4.88G	49.47	74.00	-24.53	49.98	3	Vertical	297	3.10	-	31.14	6.92	38.57
AV	7.32G	37.81	54.00	-16.19	32.61	3	Vertical	61	1.00	-	36.16	8.43	39.39
PK	7.32G	50.49	74.00	-23.51	45.29	3	Vertical	61	1.00	-	36.16	8.43	39.39

2.4-2.4835GHz_BT-LE(2Mbps)

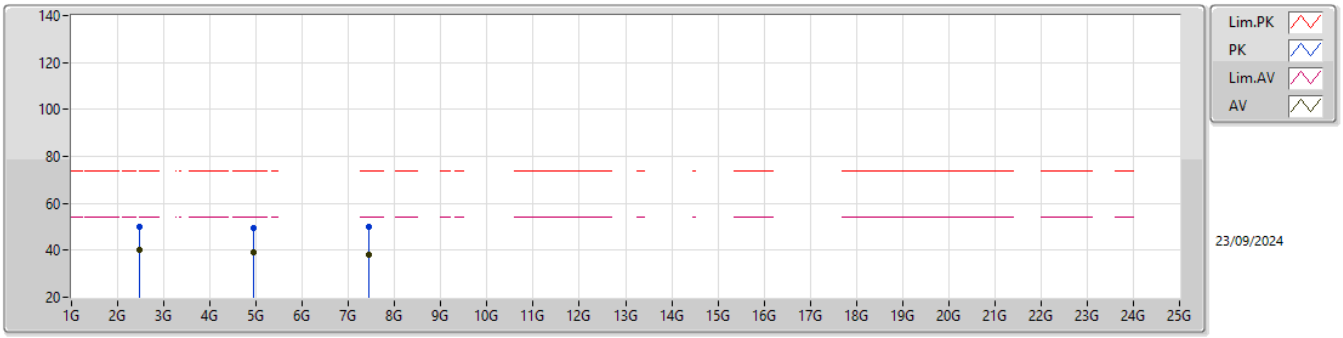
2478MHz_TX



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	39.10	54.00	-14.90	43.82	3	Horizontal	10	1.30	-	27.20	5.06	36.98
PK	2.4835G	48.83	74.00	-25.17	53.55	3	Horizontal	10	1.30	-	27.20	5.06	36.98
AV	4.956G	38.84	54.00	-15.16	39.13	3	Horizontal	176	2.40	-	31.34	6.99	38.62
PK	4.956G	48.69	74.00	-25.31	48.98	3	Horizontal	176	2.40	-	31.34	6.99	38.62
AV	7.434G	38.19	54.00	-15.81	32.93	3	Horizontal	18	1.00	-	36.30	8.50	39.54
PK	7.434G	50.24	74.00	-23.76	44.98	3	Horizontal	18	1.00	-	36.30	8.50	39.54

2.4-2.4835GHz_BT-LE(2Mbps)

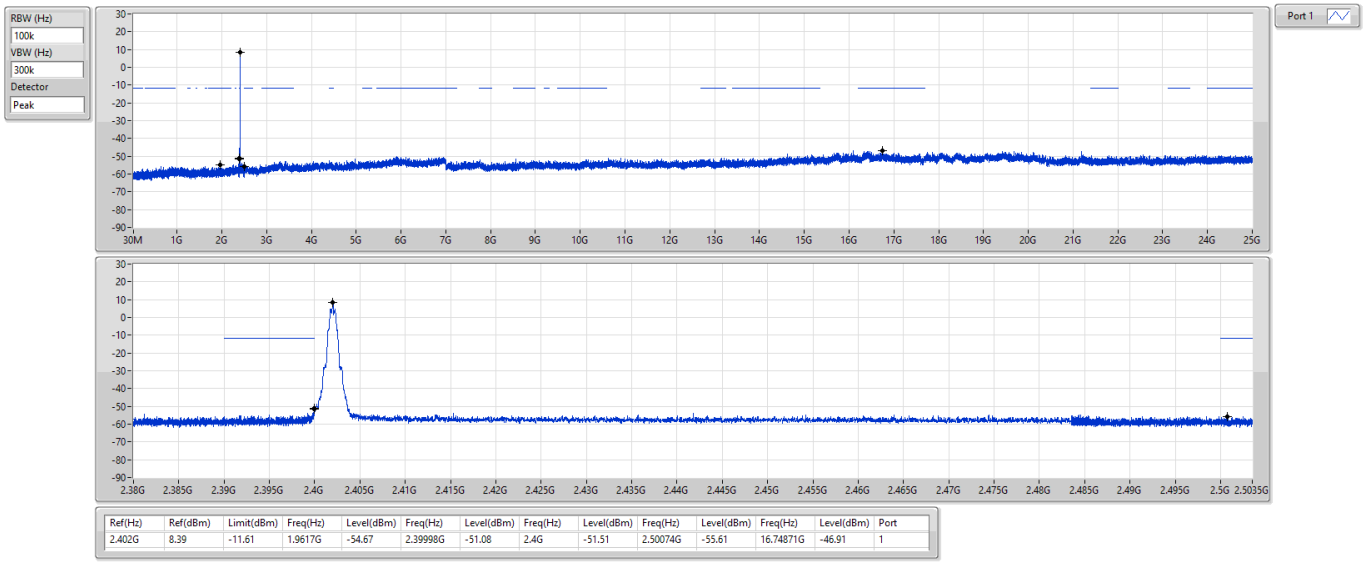
2478MHz_TX



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	40.26	54.00	-13.74	44.98	3	Vertical	254	1.14	-	27.20	5.06	36.98
PK	2.4835G	50.23	74.00	-23.77	54.95	3	Vertical	254	1.14	-	27.20	5.06	36.98
AV	4.956G	39.11	54.00	-14.89	39.40	3	Vertical	198	3.15	-	31.34	6.99	38.62
PK	4.956G	49.26	74.00	-24.74	49.55	3	Vertical	198	3.15	-	31.34	6.99	38.62
AV	7.434G	38.07	54.00	-15.93	32.81	3	Vertical	45	1.00	-	36.30	8.50	39.54
PK	7.434G	50.18	74.00	-23.82	44.92	3	Vertical	45	1.00	-	36.30	8.50	39.54

2.4-2.4835GHz_BT-LE(125kbps) **CSENdB-DTS**

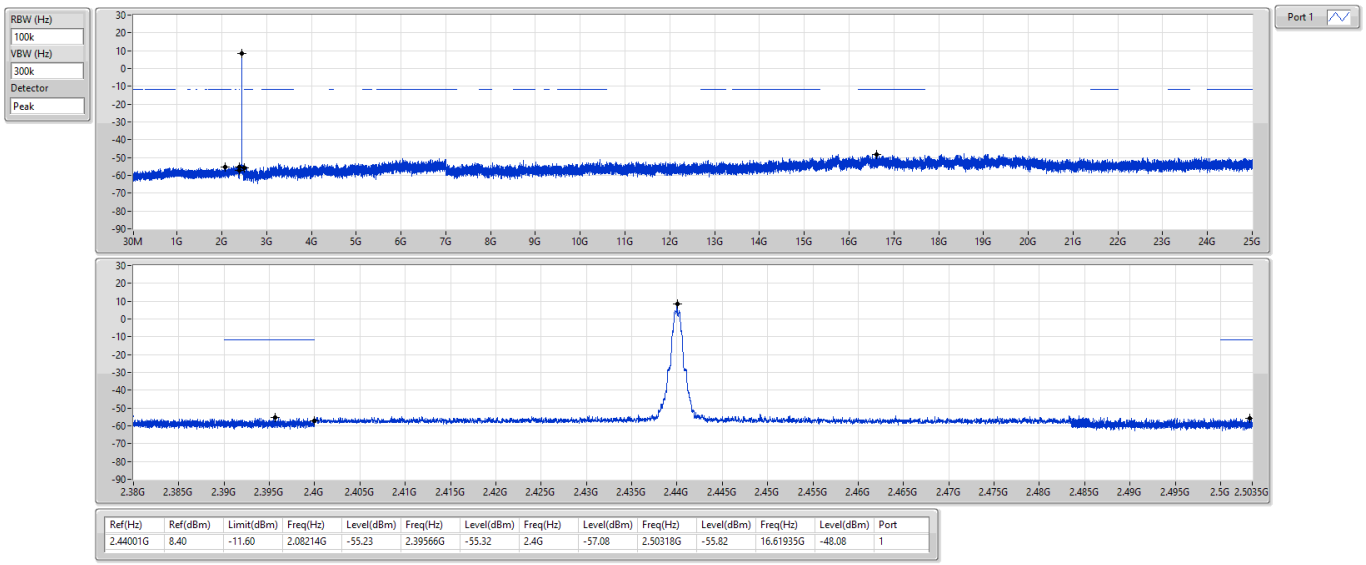
2402MHz



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
2.402G	8.39	-11.61	1.9617G	-54.67	2.39998G	-51.08	2.4G	-51.51	2.50074G	-55.61	16.74871G	-46.91	1

2.4-2.4835GHz_BT-LE(125kbps) **CSENdB-DTS**

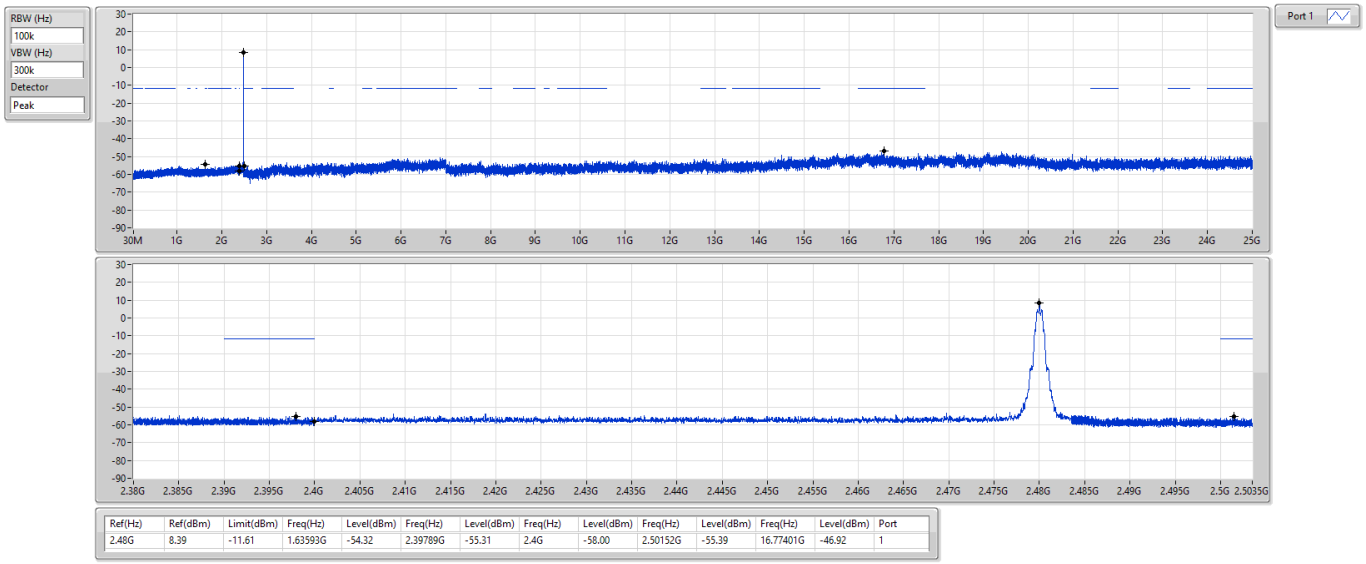
2440MHz



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
2.44001G	8.40	-11.60	2.08214G	-55.23	2.39566G	-55.32	2.4G	-57.08	2.50318G	-55.82	16.61935G	-48.08	1

2.4-2.4835GHz_BT-LE(125kbps) CSENdB-DTS

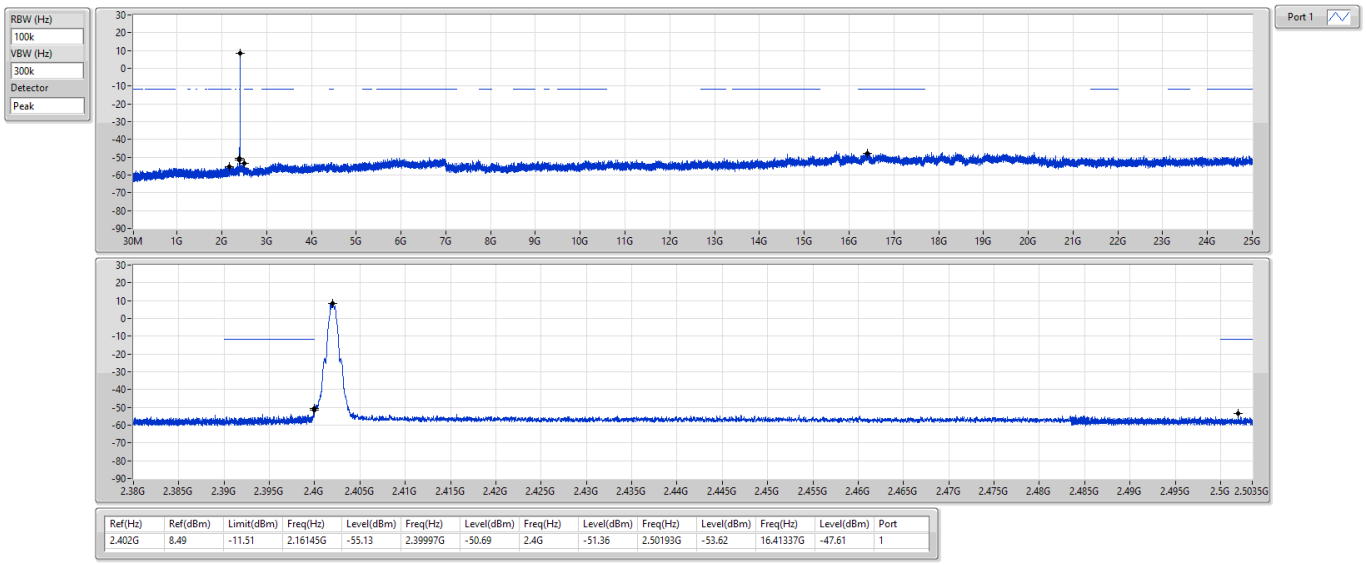
2480MHz



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
2.48G	8.39	-11.61	1.63593G	-54.32	2.39789G	-55.31	2.4G	-58.00	2.50152G	-55.39	16.77401G	-46.92	1

2.4-2.4835GHz_BT-LE(500kbps) CSENdB-DTS

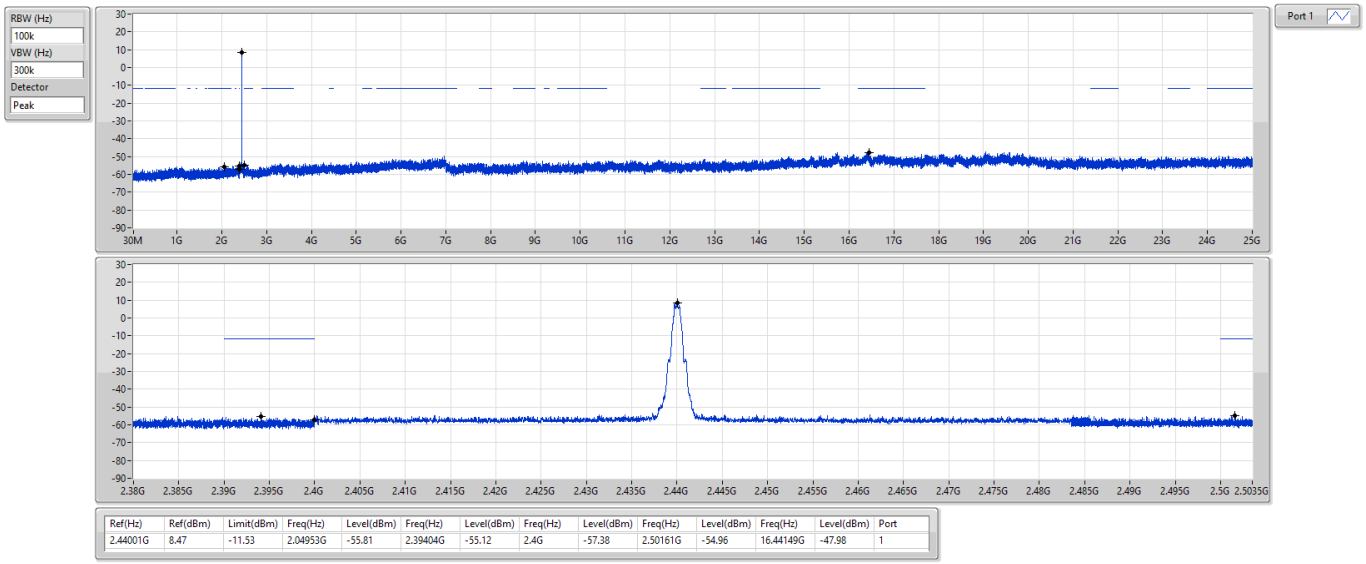
2402MHz



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
2.402G	8.49	-11.51	2.16145G	-55.13	2.39997G	-50.69	2.4G	-51.36	2.50193G	-53.62	16.41337G	-47.61	1

2.4-2.4835GHz_BT-LE(500kbps) CSENdB-DTS

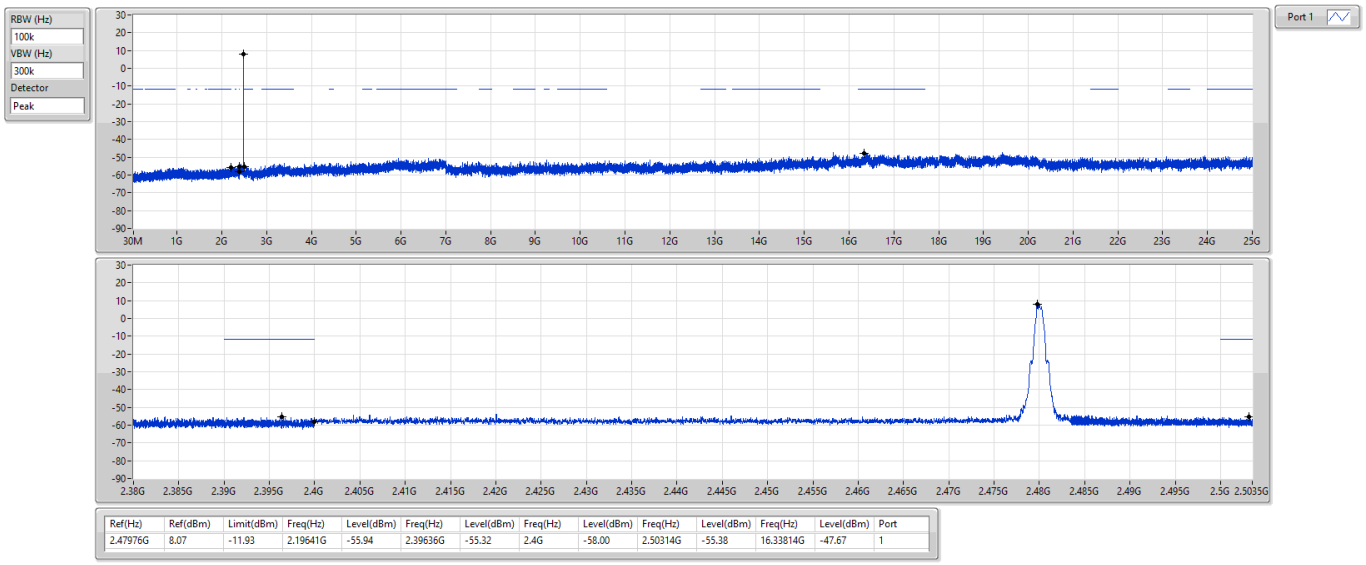
2440MHz



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
2.44001G	8.47	-11.53	2.04953G	-55.81	2.39404G	-55.12	2.4G	-57.38	2.50161G	-54.96	16.44149G	-47.98	1

2.4-2.4835GHz_BT-LE(500kbps) CSENdB-DTS

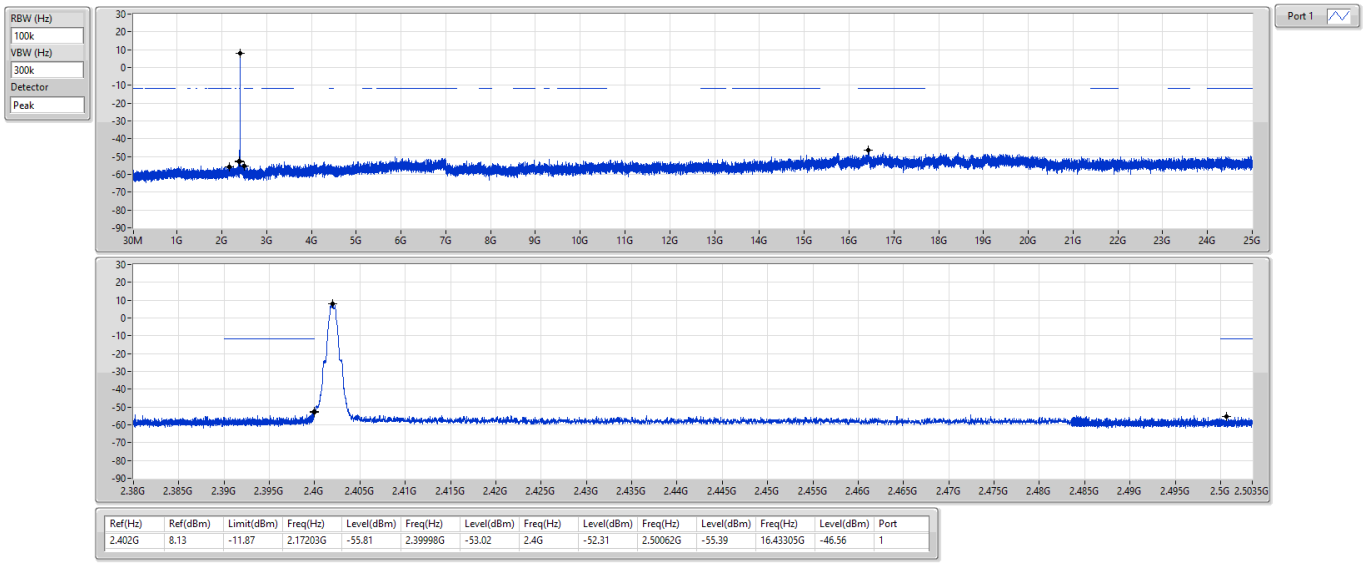
2480MHz



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
2.47976G	8.07	-11.93	2.19641G	-55.94	2.39636G	-55.32	2.4G	-58.00	2.50314G	-55.38	16.33814G	-47.67	1

2.4-2.4835GHz_BT-LE(1Mbps) **CSENdB-DTS**

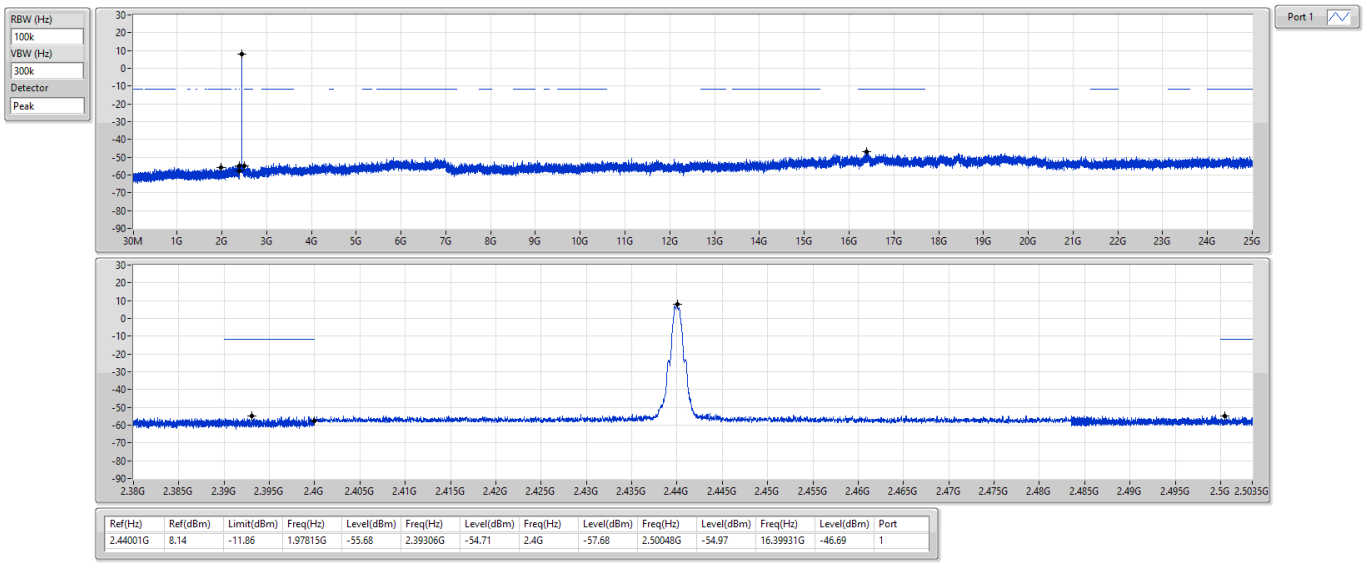
2402MHz



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
2.402G	8.13	-11.87	2.17203G	-55.81	2.39998G	-53.02	2.4G	-52.31	2.50062G	-55.39	16.43305G	-46.56	1

2.4-2.4835GHz_BT-LE(1Mbps) **CSENdB-DTS**

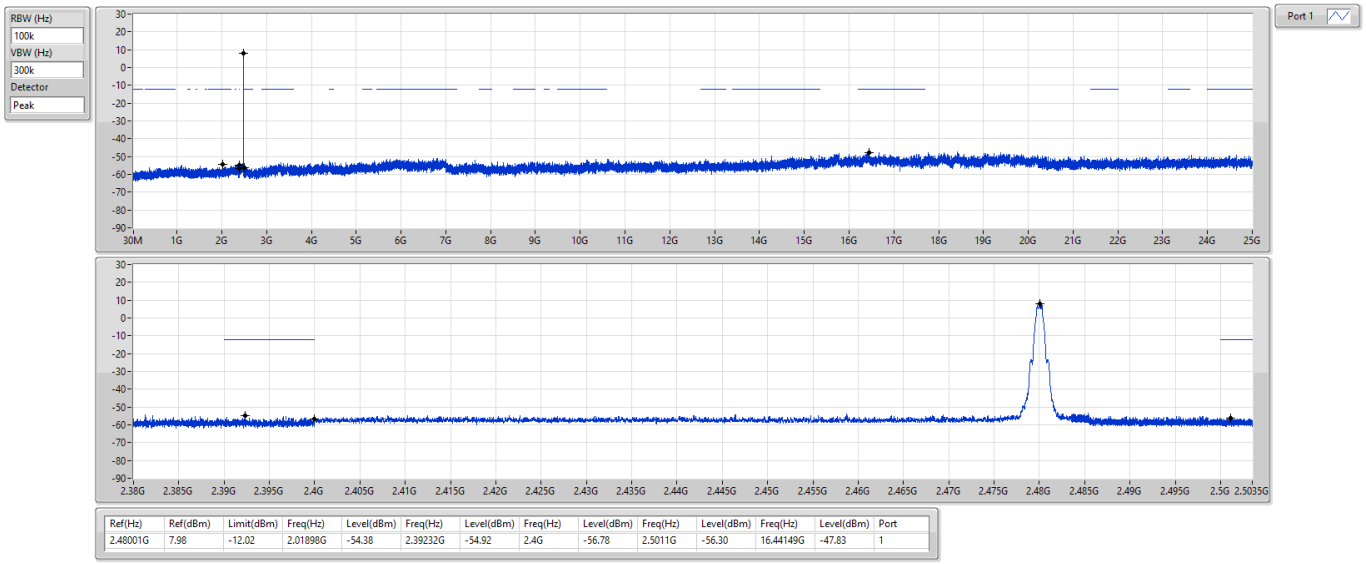
2440MHz



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
2.44001G	8.14	-11.86	1.97815G	-55.68	2.39306G	-54.71	2.4G	-57.68	2.50048G	-54.97	16.39931G	-46.69	1

2.4-2.4835GHz_BT-LE(1Mbps) CSENdB-DTS

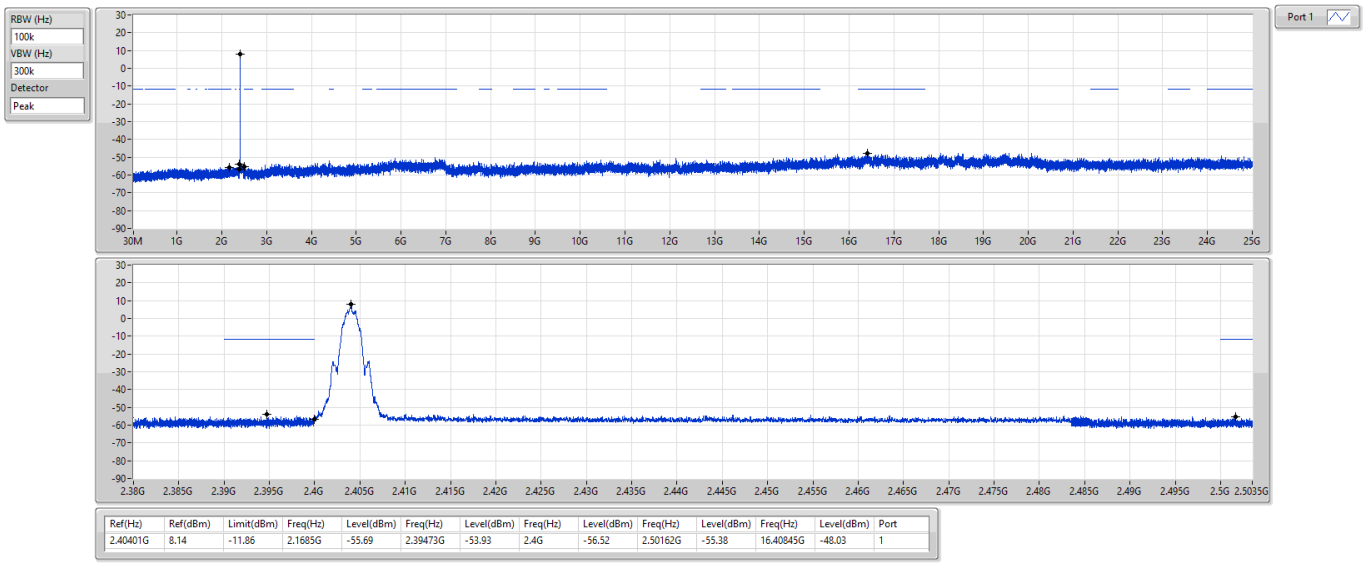
2480MHz



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
2.48001G	7.98	-12.02	2.01898G	-54.38	2.39232G	-54.92	2.4G	-56.78	2.5011G	-56.30	16.44149G	-47.83	1

2.4-2.4835GHz_BT-LE(2Mbps) CSENdB-DTS

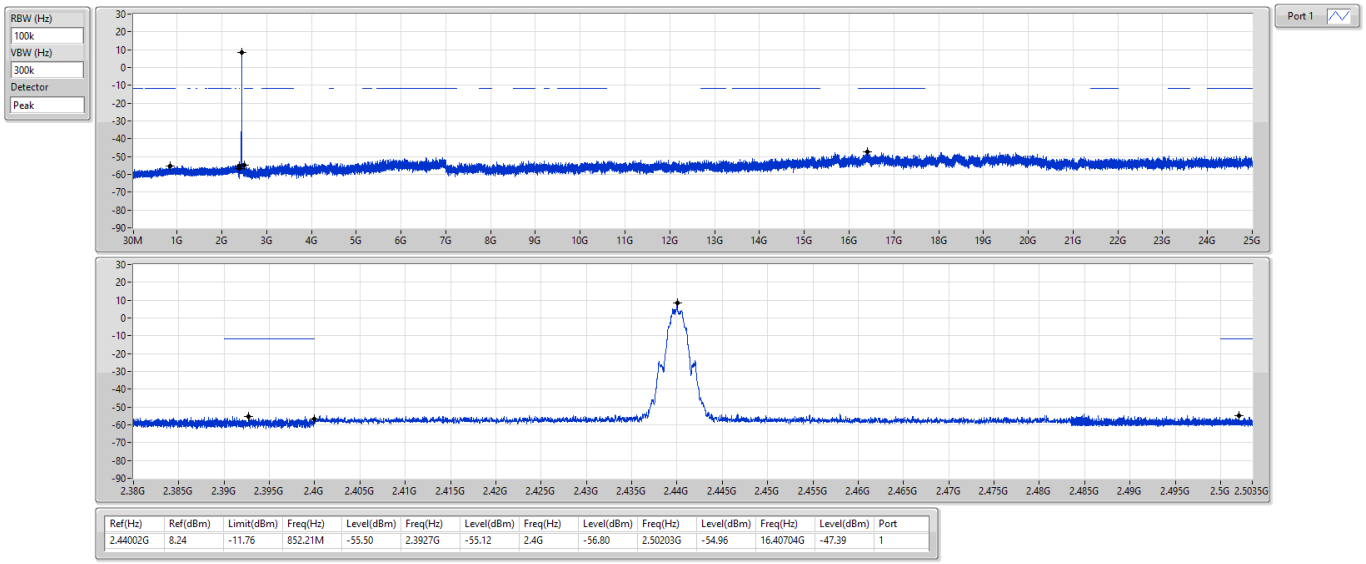
2404MHz



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
2.40401G	8.14	-11.86	2.1685G	-55.69	2.39473G	-53.93	2.4G	-56.52	2.50162G	-55.38	16.40845G	-48.03	1

2.4-2.4835GHz_BT-LE(2Mbps) CSENdB-DTS

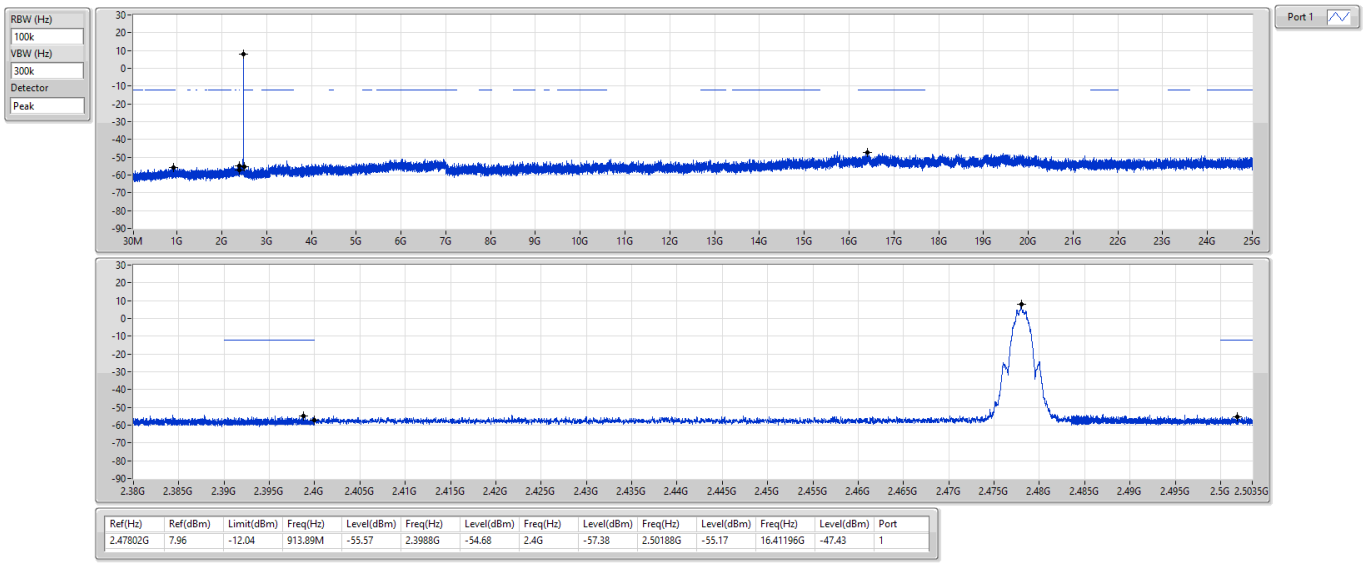
2440MHz



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
2.44002G	8.24	-11.76	852.21M	-55.50	2.3927G	-55.12	2.4G	-56.80	2.50203G	-54.96	16.40704G	-47.39	1

2.4-2.4835GHz_BT-LE(2Mbps) CSENdB-DTS

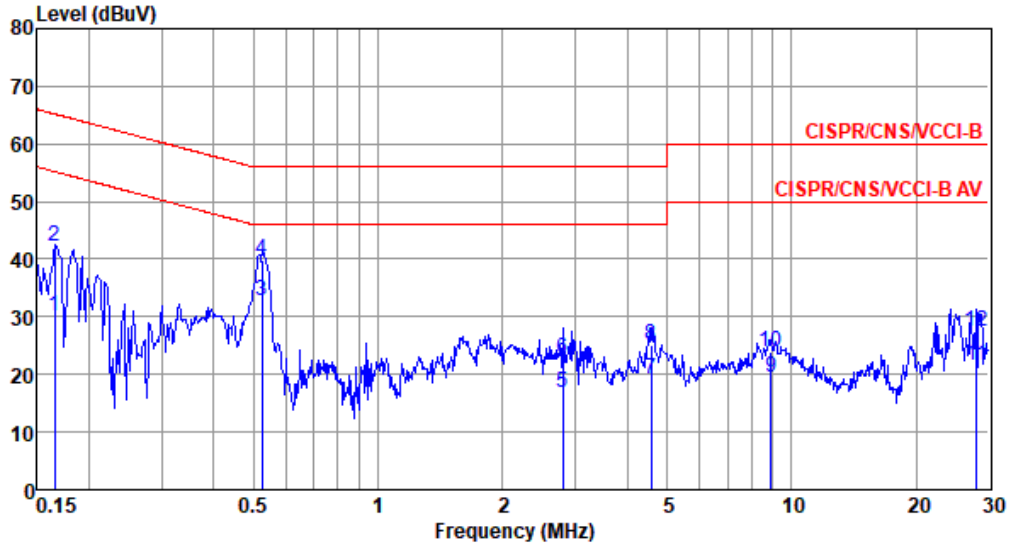
2478MHz



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
2.47802G	7.96	-12.04	913.89M	-55.57	2.3988G	-54.68	2.4G	-57.38	2.50188G	-55.17	16.41196G	-47.43	1

Modulation	BT-LE(1Mbps)	**Test Freq. (MHz)**	2440
Power Phase	Line		

Test by : Joe Liao_AN Temperature: 24°C Humidity: 64%

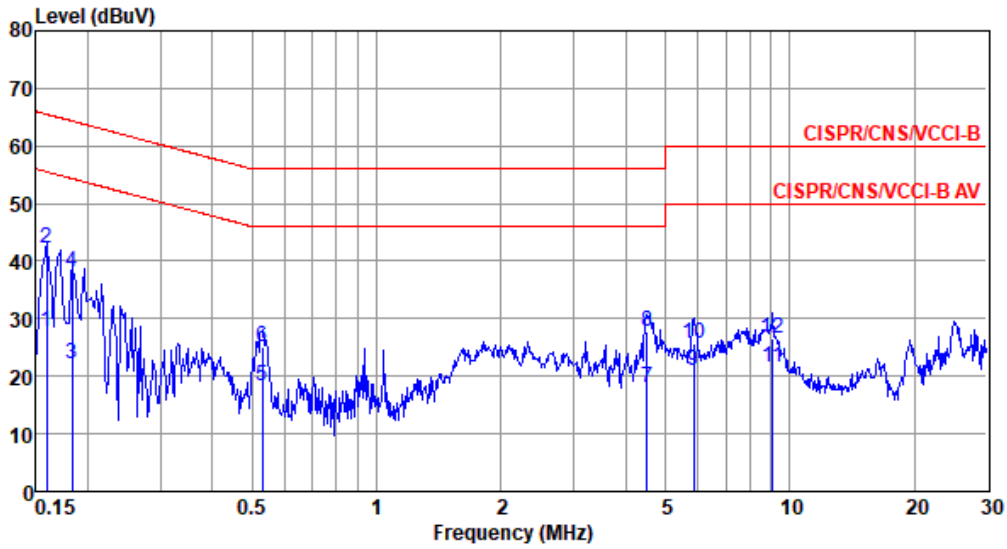


	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Cable loss	Aux	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	dB	
1	0.165	29.99	55.21	-25.22	20.27	9.65	0.07	0.00	Average
2	0.165	42.09	65.21	-23.12	32.37	9.65	0.07	0.00	QP
3*	0.524	32.65	46.00	-13.35	22.93	9.64	0.08	0.00	Average
4	0.524	39.94	56.00	-16.06	30.22	9.64	0.08	0.00	QP
5	2.794	16.77	46.00	-29.23	6.97	9.66	0.14	0.00	Average
6	2.794	22.70	56.00	-33.30	12.90	9.66	0.14	0.00	QP
7	4.574	19.15	46.00	-26.85	9.27	9.68	0.20	0.00	Average
8	4.574	25.02	56.00	-30.98	15.14	9.68	0.20	0.00	QP
9	8.916	19.61	50.00	-30.39	9.58	9.70	0.33	0.00	Average
10	8.916	23.94	60.00	-36.06	13.91	9.70	0.33	0.00	QP
11	28.003	21.57	50.00	-28.43	11.34	9.65	0.58	0.00	Average
12	28.003	27.51	60.00	-32.49	17.28	9.65	0.58	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	BT-LE(1Mbps)	**Test Freq. (MHz)**	2440
Power Phase	Neutral		

Test by : Joe Liao_AN Temperature: 24°C Humidity: 64%



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Cable loss	Aux	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	dB	
1	0.159	27.61	55.52	-27.91	17.87	9.66	0.08	0.00	Average
2*	0.159	42.15	65.52	-23.37	32.41	9.66	0.08	0.00	QP
3	0.183	22.17	54.33	-32.16	12.45	9.65	0.07	0.00	Average
4	0.183	38.07	64.33	-26.26	28.35	9.65	0.07	0.00	QP
5	0.529	18.40	46.00	-27.60	8.68	9.64	0.08	0.00	Average
6	0.529	25.07	56.00	-30.93	15.35	9.64	0.08	0.00	QP
7	4.501	17.88	46.00	-28.12	7.99	9.69	0.20	0.00	Average
8	4.501	27.65	56.00	-28.35	17.76	9.69	0.20	0.00	QP
9	5.867	20.95	50.00	-29.05	11.00	9.70	0.25	0.00	Average
10	5.867	25.54	60.00	-34.46	15.59	9.70	0.25	0.00	QP
11	9.107	21.44	50.00	-28.56	11.38	9.73	0.33	0.00	Average
12	9.107	26.47	60.00	-33.53	16.41	9.73	0.33	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).