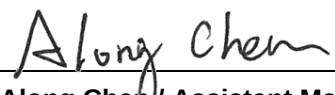


FCC Test Report

FCC ID : P27LORAAAREAV2
Equipment : MachineQ Area 8C V2 LoRaWAN Gateway
Model No. : GII-AD-B
Brand Name : Sercomm, Comcast, MachineQ
(For marketing purpose.)
Applicant : Sercomm Corporation
Address : 8F, No. 3-1, YuanQu St., NanKang, Taipei 115,
Taiwan, R.O.C.
Standard : 47 CFR FCC Part 15.247
Received Date : May 15, 2024
Tested Date : May 21 ~ Jun. 04, 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:


Along Chen / Assistant Manager

Approved by:

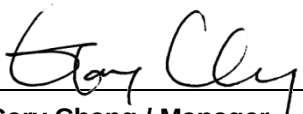

Gary Chang / Manager

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Release Record

Report No.	Version	Description	Issued Date
FR451502AE	Rev. 01	Initial issue	Jul. 19, 2024

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	AC Power Line Conducted Emissions	[dBuV]: 0.375MHz 40.36 (Margin -8.03dB) - AV	Pass
15.247(d) 15.209	Unwanted Emissions	[dBuV/m at 3m]: 2485.00MHz 73.88 (Margin -0.12dB) - PK	Pass
15.247(b)(3)	Conducted Output Power	Power [dBm]: 20.61	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	0-39 [40]	125 kbps
				500 kbps
				1 Mbps
				2 Mbps
Note 1: RF output power specifies that Maximum Conducted (Average) Output Power. Note 2: Bluetooth LE (Low energy) uses GFSK modulation.				

1.1.2 Antenna Details

Brand	Model	Type	Connector	Gain (dBi)	Remarks
Sercomm	6172003AWA	PIFA	UFL	5	-

1.1.3 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	48Vdc from adapter 54Vdc from PoE
-------------------	--------------------------------------

Note: The above PoE power supply is not bundled in market.

1.1.4 Accessories

Accessories		
No.	Equipment	Description
1	Adapter	Brand: MASS POWER Model: S024-1E480050VU-H I/P: 100-240Vac, 50/60Hz, 0.6A O/P: 48.0Vdc, 0.5A Power Line: 2.95m non-shielded without core
2	RJ45 cable	3m non-shielded without core

1.1.5 Channel List

Frequency band (MHz)				2400~2483.5			
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

1.1.6 Test Tool and Duty Cycle

Test Tool	PuTTY, Version: 0.6	
Modulation Mode	Duty Cycle Of Test Signal (%)	Duty Factor (dB)
BT-LE(125kbps)	98.35%	0.07
BT-LE(500kbps)	92.17%	0.35
BT-LE(1Mbps)	86.71%	0.62
BT-LE(2Mbps)	59.69%	2.24

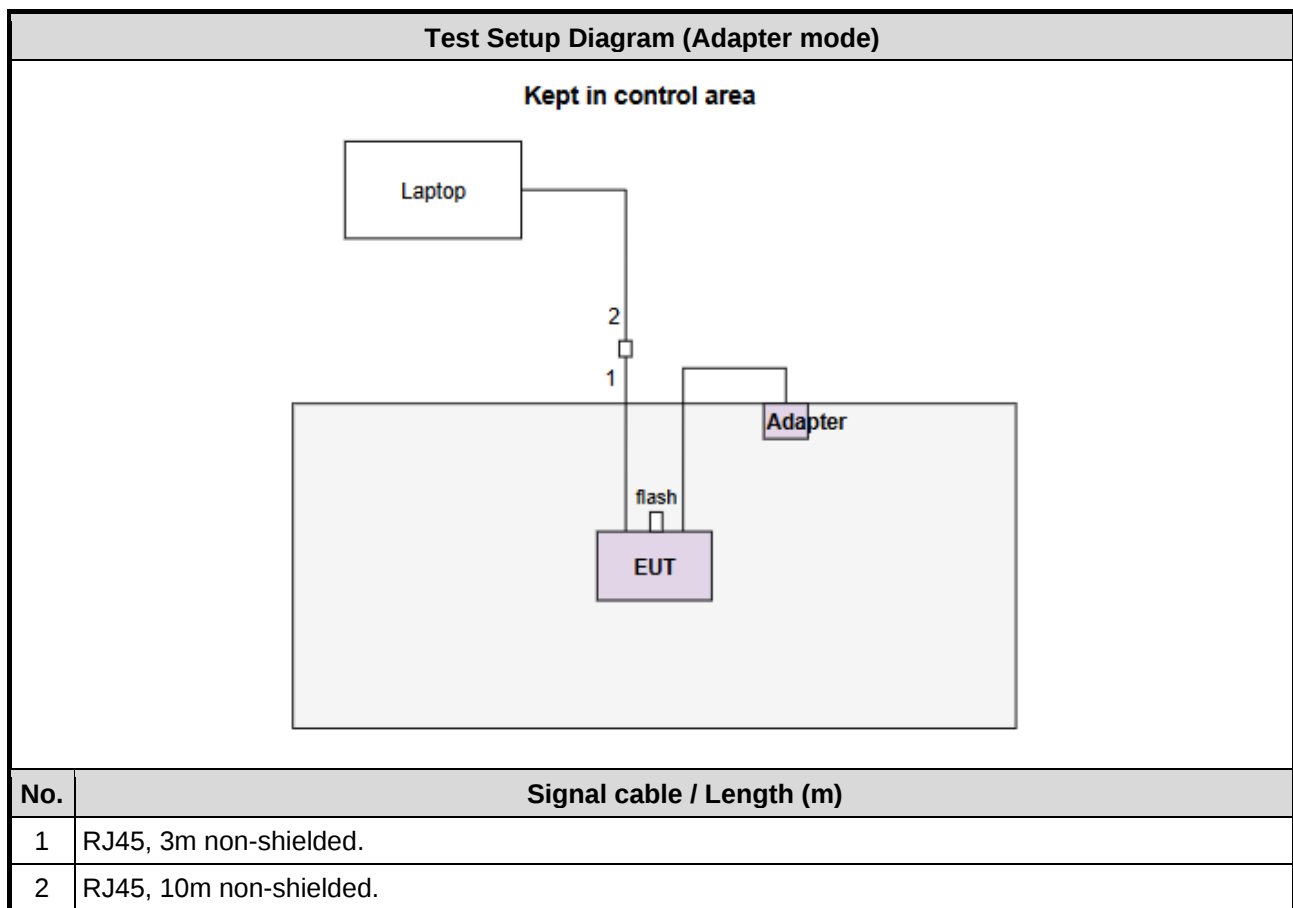
1.1.7 Power Index of Test Tool

Modulation Mode	Test Frequency (MHz)			
	BT-LE(125kbps)	BT-LE(500kbps)	BT-LE(1Mbps)	BT-LE(2Mbps)
2402	-8	0	0	0
2440	-8	0	0	0
2478	-8	-6	-6	-6
2480	-21	-21	-21	-21

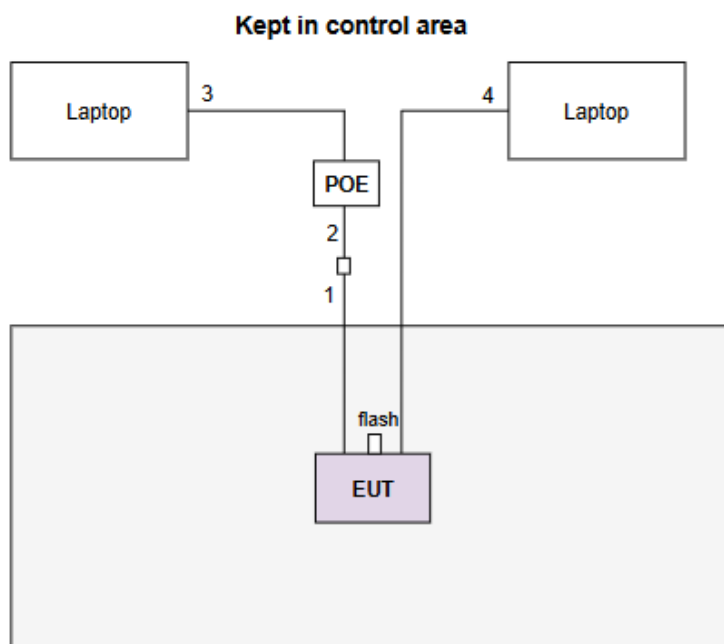
1.2 Local Support Equipment List

Support Equipment List					
No.	Equipment	Brand	Model	FCC ID	Remarks
1	Laptop	DELL	Latitude 3440	DoC	---
2	Laptop	DELL	Latitude 5400	DoC	---
3	USB 3.1 Type-C OTG Flash	pqi	Connect 313	---	---
4	PoE	UBIQUITI	POE-54V-80W	---	Provided by applicant.

1.3 Test Setup Chart



Test Setup Diagram (PoE mode)



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

1.4 Test Equipment List and Calibration Data

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
Tested Date	Jun. 04, 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	01	Jun. 14, 2023	Jun. 13, 2024
Measurement Software	AUDIX	e3	6.120210k	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	Radiated Emission				
Test Site	966 chamber3 / (03CH03-WS)				
Tested Date	May 21 ~ May 22, 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	101499	Apr. 02, 2024	Apr. 01, 2025
Loop Antenna	R&S	HFH2-Z2	100330	Oct. 31, 2023	Oct. 30, 2024
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-685	Jul. 04, 2023	Jul. 03, 2024
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	EMC02325	980187	Jul. 10, 2023	Jul. 09, 2024
Preamplifier	EMC	EMC118A45SE	980897	Aug. 01, 2023	Jul. 31, 2024
Preamplifier	EMC	EMC184045SE	980903	Jul. 17, 2023	Jul. 16, 2024
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
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	AUDIX	e3	6.120210g	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	RF Conducted				
Test Site	(TH01-WS)				
Tested Date	May 31, 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	V5.10.8	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)	Test Configuration
AC Power Line Conducted Emissions	BT-LE(2Mbps)	2440	1, 2
Unwanted Emissions $\leq$ 1GHz	BT-LE(2Mbps)	2440	1, 2
Conducted Output Power 6dB bandwidth Power spectral density Unwanted Emissions $>$ 1GHz	BT-LE(125kbps) BT-LE(500kbps) BT-LE(1Mbps) BT-LE(2Mbps)	2402, 2440, 2478, 2480	2
NOTE: 1. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The X-plane results were found as the worst case and were shown in this report. 2. Test Configurations are listed as below: 1) Test Configuration 1: Adapter mode 2) Test Configuration 2: PoE mode			

3 Transmitter Test Results

3.1 6dB and Occupied Bandwidth

3.1.1 Limit of 6dB Bandwidth

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

3.1.2 Test Procedures

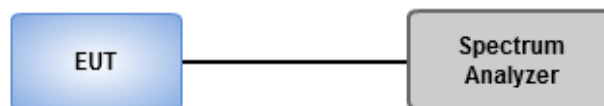
6dB Bandwidth

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

Occupied Bandwidth

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

3.1.3 Test Setup



3.1.4 Test Results

Ambient Condition	23°C / 63%	Tested By	Brad Wu
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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 $\leq 6\text{dBi}$, no any corresponding reduction is in output power limit.

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	23°C / 63%	Tested By	Brad Wu
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Refer to Appendix B.

3.3 Power Spectral Density

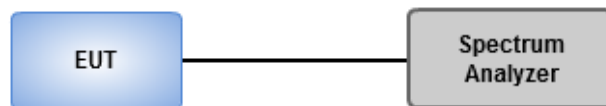
3.3.1 Limit of Power Spectral Density

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

3.3.2 Test Procedures

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.

3.3.3 Test Setup



3.3.4 Test Results

Ambient Condition	23°C / 63%	Tested By	Brad Wu
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Refer to Appendix C.

3.4 Unwanted Emissions in Restricted Frequency Bands

3.4.1 Limit of Unwanted 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:
Quasi-Peak value is measured for frequency below 1GHz except for 9~90 kHz, 110~490 kHz frequency band. Peak and average value are measured for frequency above 1GHz. The limit on average radio frequency emission is as above table. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit

Note 2:
Measurements may be performed at a distance other than what is specified provided. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor as below, Frequency at or above 30 MHz: 20 dB/decade Frequency below 30 MHz: 40 dB/decade.

3.4.2 Test Procedures

1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission frequency. The EUT is placed at test table. For emissions testing at or below 1 GHz, the table height is 80 cm above the reference ground plane. For emission measurements above 1 GHz, the table height is 1.5 m
2. Measurement is made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna is varied in height (1m ~ 4m) above the reference ground plane to obtain the maximum signal strength. Distance between EUT and antenna is 3 m.
3. This investigation is performed with the EUT rotated 360°, the antenna height scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations.

Note:

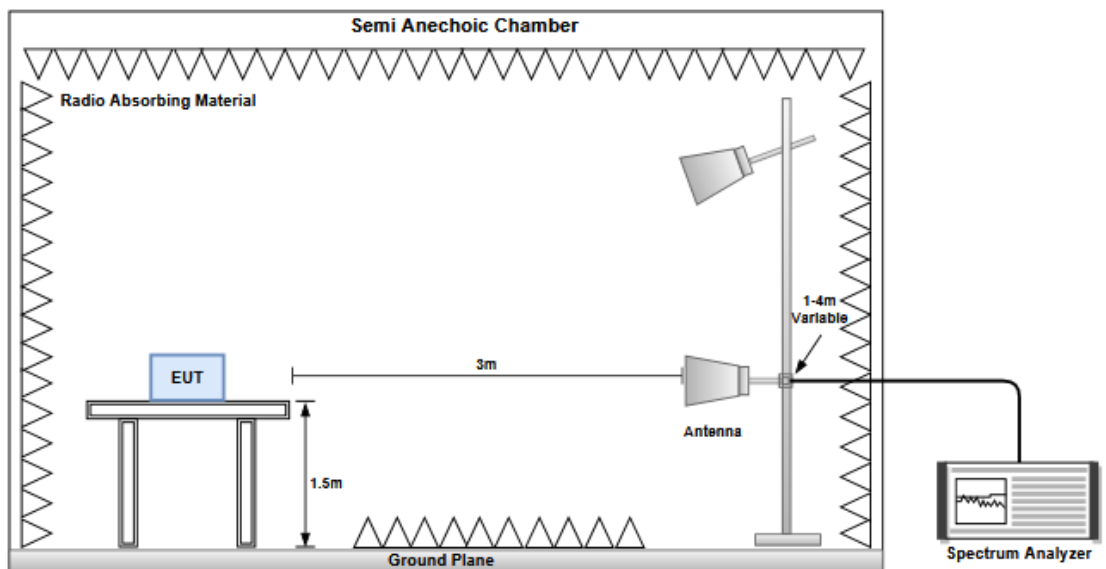
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.4.3 Test Setup

Radiated Emissions below 1 GHz



Radiated Emissions above 1 GHz



3.4.4 Test Results

Refer to Appendix D.

3.5 Emissions in non-restricted Frequency Bands

3.5.1 Emissions in non-restricted frequency bands limit

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

3.5.2 Test Procedures

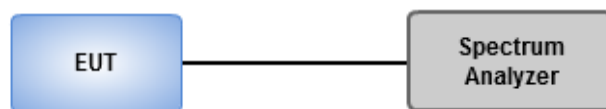
Reference level measurement

1. Set RBW=100kHz, VBW = 300kHz , Detector = Peak, Sweep time = Auto
2. Trace = max hold , Allow Trace to fully stabilize
3. Use the peak marker function to determine the maximum PSD level

Emission level measurement

1. Set RBW=100kHz, VBW = 300kHz , Detector = Peak, Sweep time = Auto
2. Trace = max hold , Allow Trace to fully stabilize
3. Scan Frequency range is up to 25GHz
4. Use the peak marker function to determine the maximum amplitude level

3.5.3 Test Setup



3.5.4 Test Results

Ambient Condition	23°C / 63%	Tested By	Brad Wu
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Refer to Appendix E.

3.6 AC Power Line Conducted Emissions

3.6.1 Limit of AC Power Line Conducted Emissions

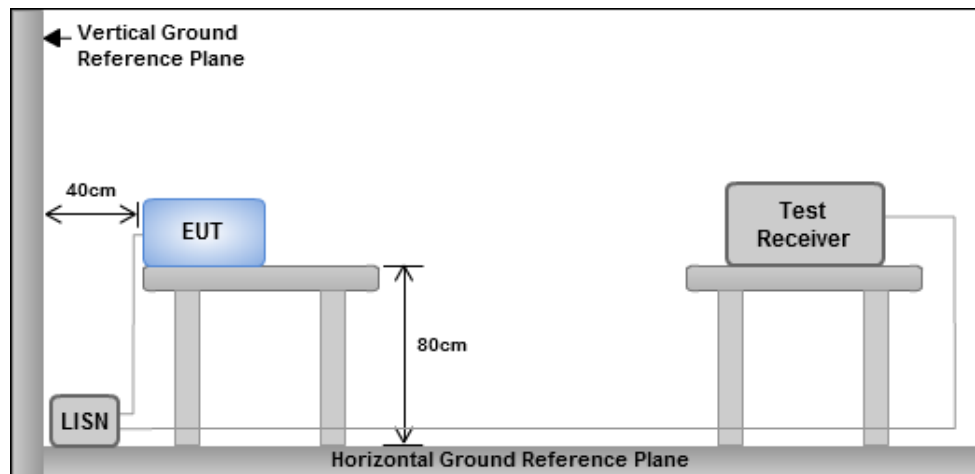
Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

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: 886-3-318-0155

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)	613.75k	1.067M	1M07F1D	611.25k	1.061M
BT-LE(500kbps)	687.5k	1.026M	1M03F1D	681.25k	1.025M
BT-LE(1Mbps)	682.5k	1.033M	1M03F1D	678.75k	1.029M
BT-LE(2Mbps)	1.09M	2.085M	2M09F1D	1.088M	2.073M

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	613.75k	1.062M
2440MHz	Pass	500k	612.5k	1.067M
2478MHz	Pass	500k	611.25k	1.061M
2480MHz	Pass	500k	611.25k	1.066M
BT-LE(500kbps)	-	-	-	-
2402MHz	Pass	500k	687.5k	1.025M
2440MHz	Pass	500k	682.5k	1.026M
2478MHz	Pass	500k	681.25k	1.026M
2480MHz	Pass	500k	683.75k	1.025M
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	681.25k	1.03M
2440MHz	Pass	500k	682.5k	1.033M
2478MHz	Pass	500k	680k	1.029M
2480MHz	Pass	500k	678.75k	1.033M
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	500k	1.09M	2.073M
2440MHz	Pass	500k	1.088M	2.079M
2478MHz	Pass	500k	1.088M	2.085M
2480MHz	Pass	500k	1.088M	2.082M

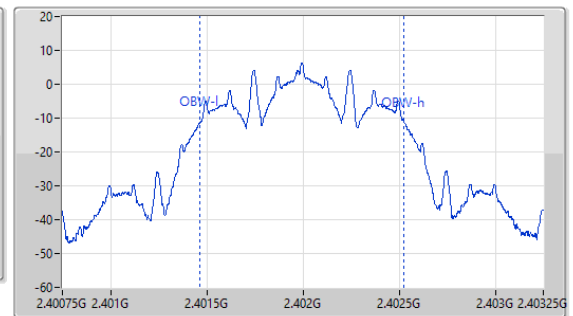
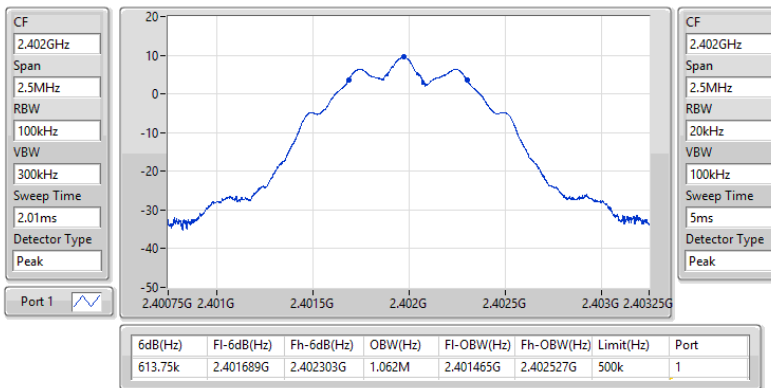
Port X-N dB = Port X 6dB down bandwidth;

Port X-OBW = Port X 99% occupied bandwidth

2.4-2.4835GHz_BT-LE(125kbps)

EBW-DTS

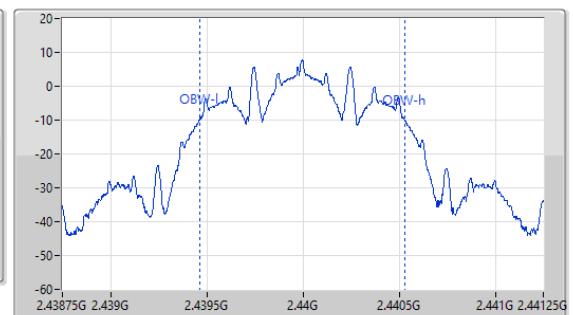
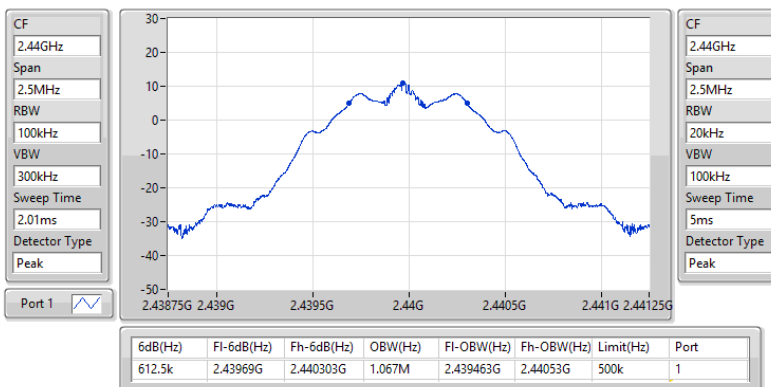
2402MHz



2.4-2.4835GHz_BT-LE(125kbps)

EBW-DTS

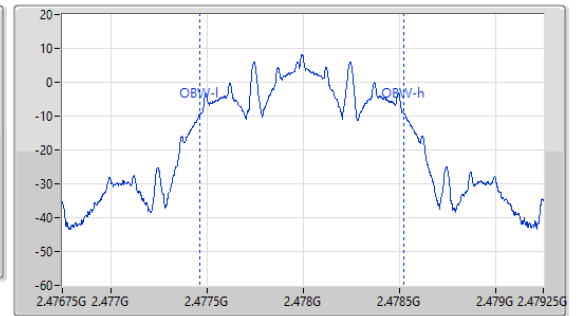
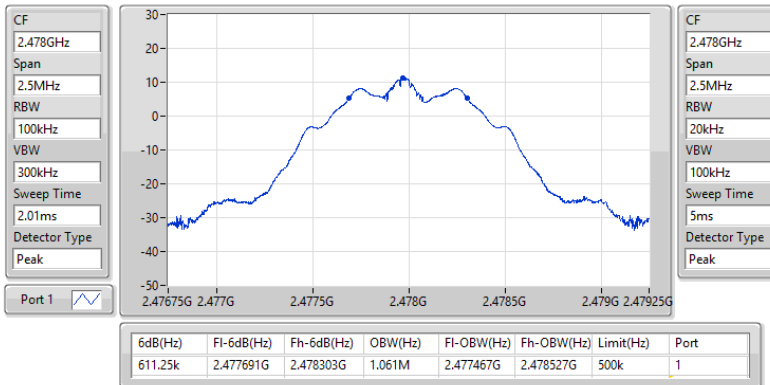
2440MHz



2.4-2.4835GHz_BT-LE(125kbps)

EBW-DTS

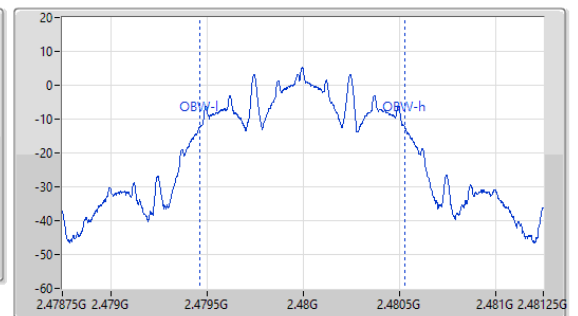
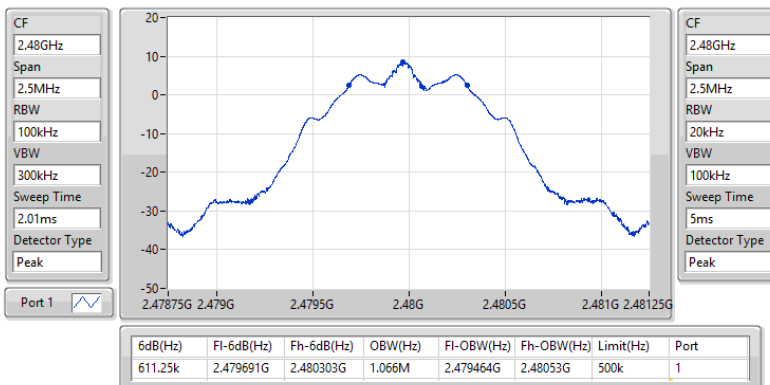
2478MHz



2.4-2.4835GHz_BT-LE(125kbps)

EBW-DTS

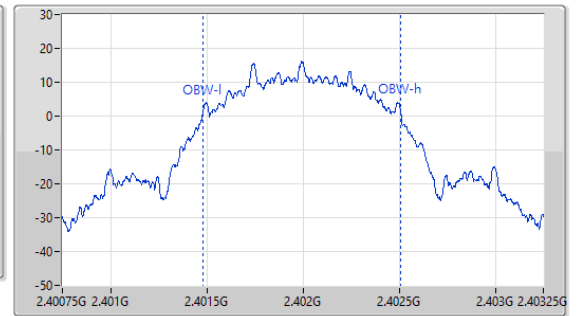
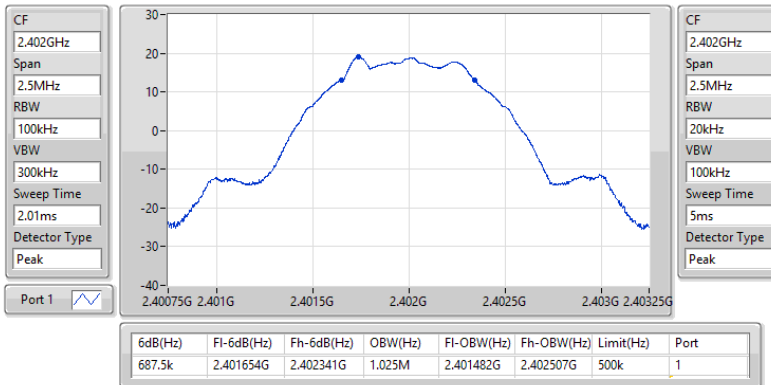
2480MHz



2.4-2.4835GHz_BT-LE(500kbps)

EBW-DTS

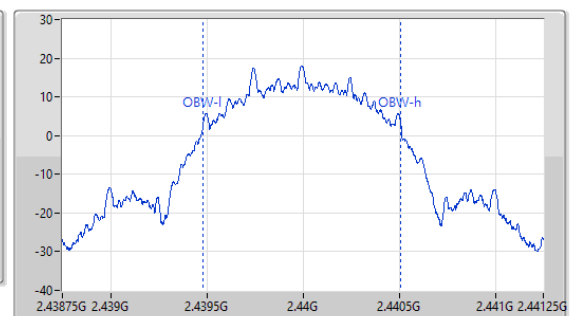
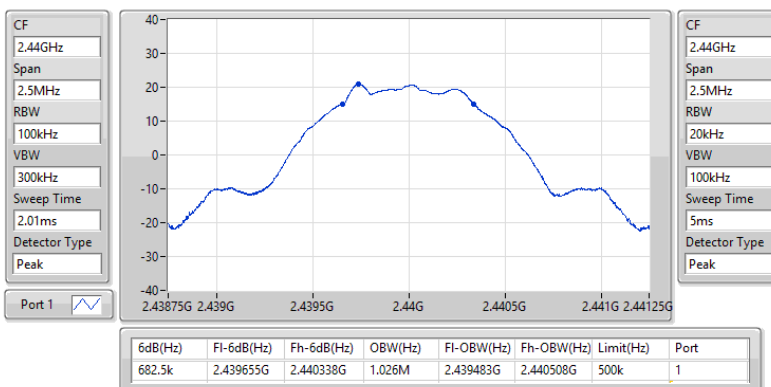
2402MHz



2.4-2.4835GHz_BT-LE(500kbps)

EBW-DTS

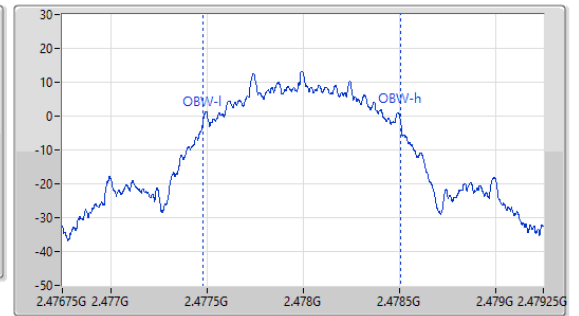
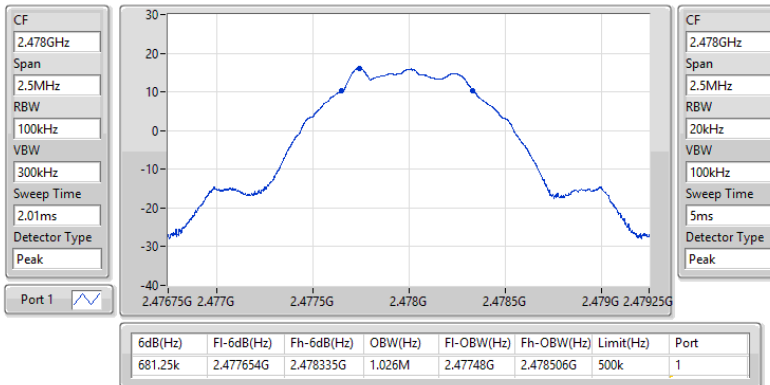
2440MHz



2.4-2.4835GHz_BT-LE(500kbps)

EBW-DTS

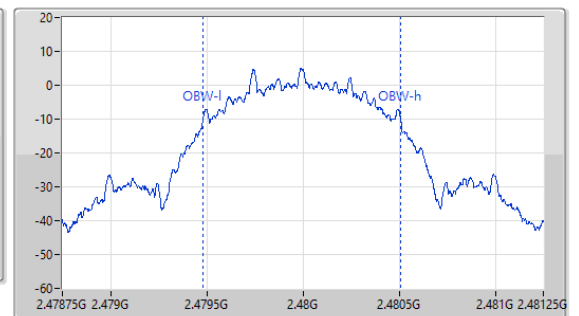
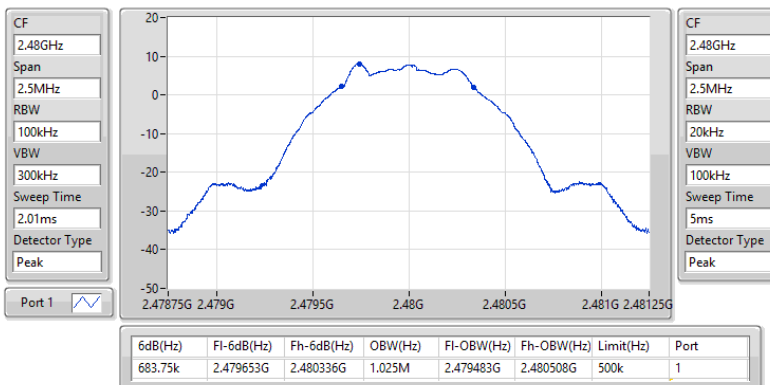
2478MHz



2.4-2.4835GHz_BT-LE(500kbps)

EBW-DTS

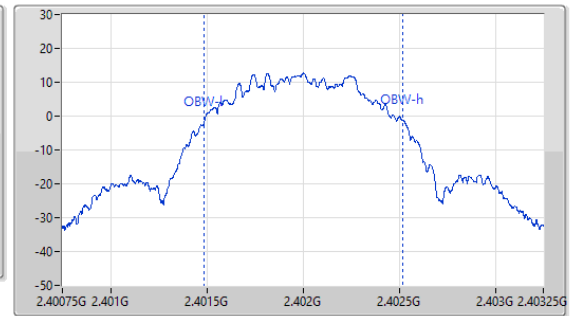
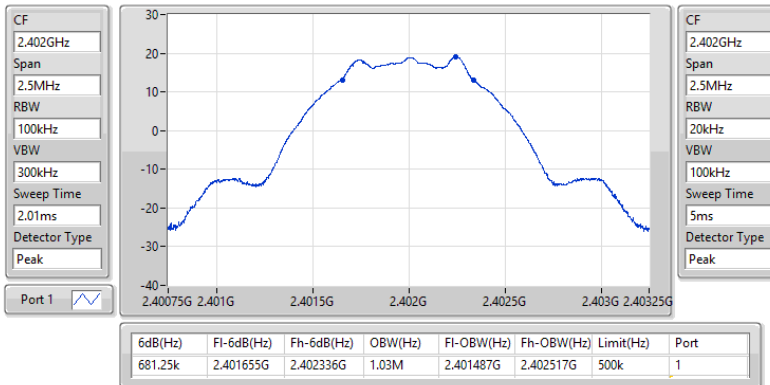
2480MHz



2.4-2.4835GHz_BT-LE(1Mbps)

EBW-DTS

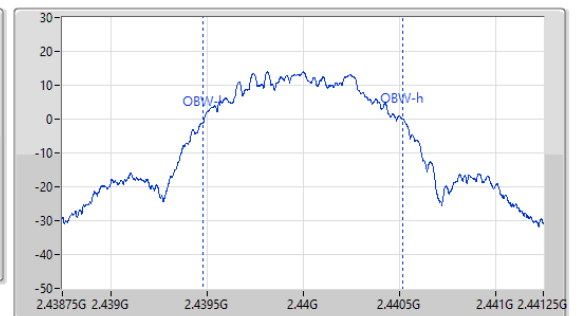
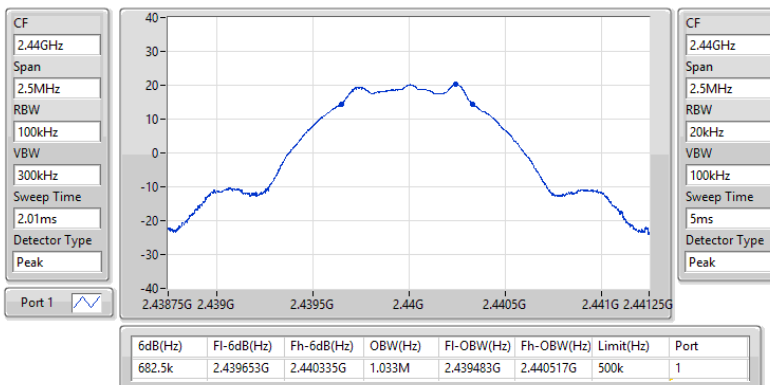
2402MHz



2.4-2.4835GHz_BT-LE(1Mbps)

EBW-DTS

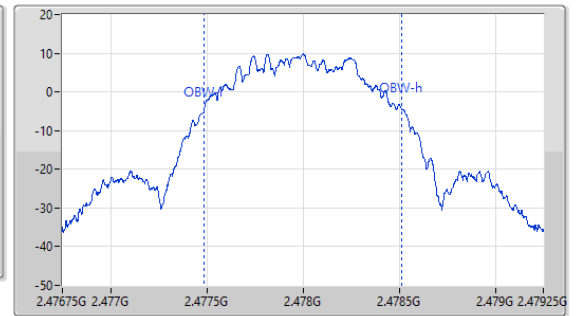
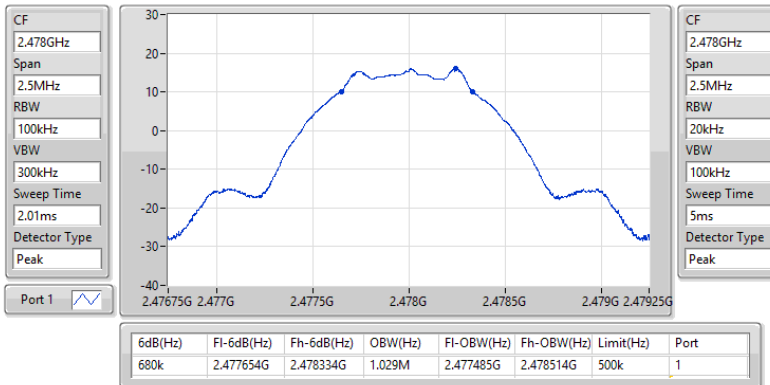
2440MHz



2.4-2.4835GHz_BT-LE(1Mbps)

EBW-DTS

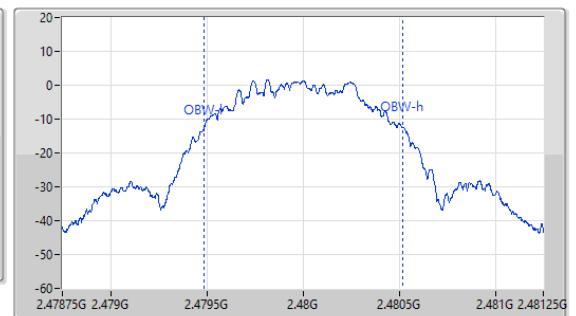
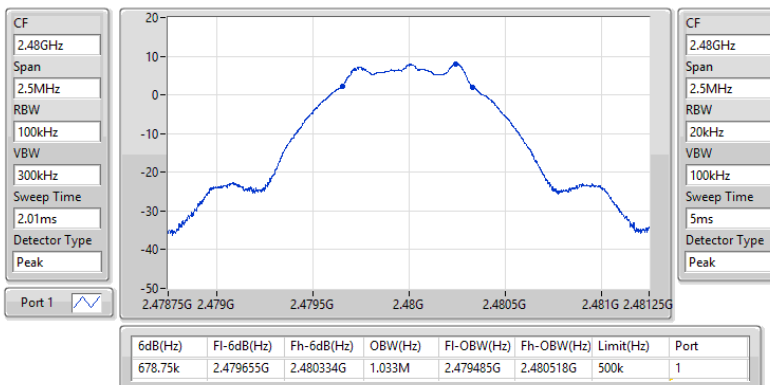
2478MHz



2.4-2.4835GHz_BT-LE(1Mbps)

EBW-DTS

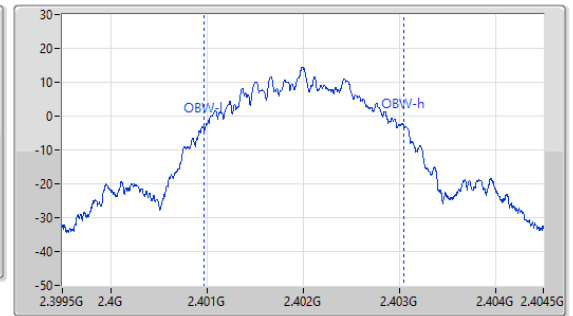
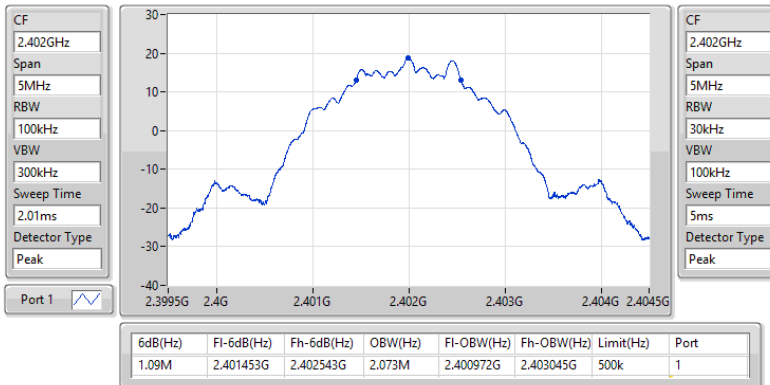
2480MHz



2.4-2.4835GHz_BT-LE(2Mbps)

EBW-DTS

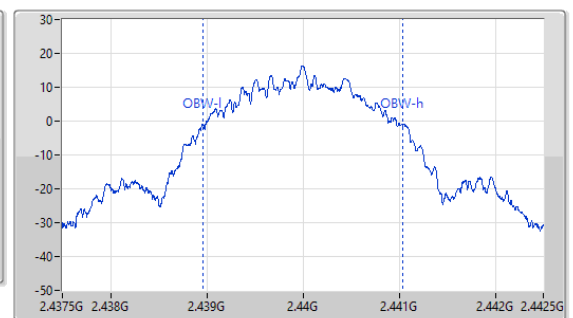
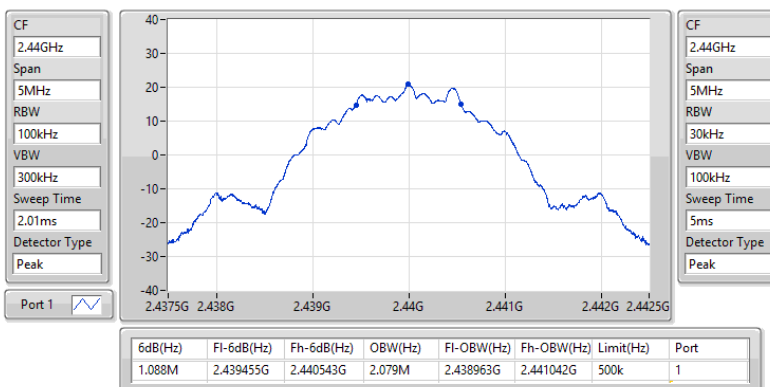
2402MHz



2.4-2.4835GHz_BT-LE(2Mbps)

EBW-DTS

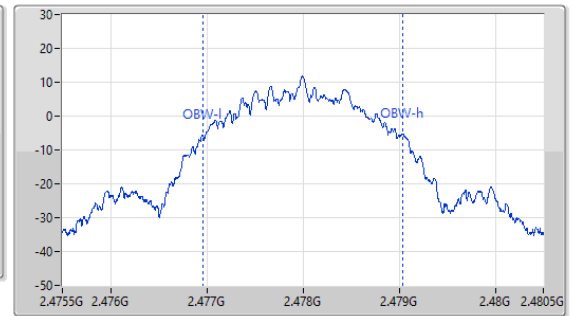
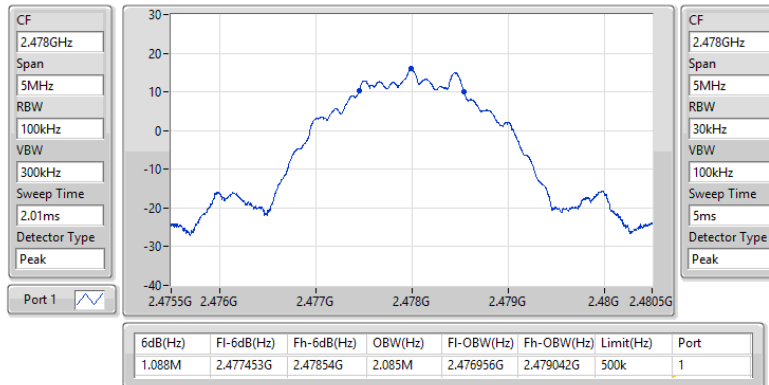
2440MHz



2.4-2.4835GHz_BT-LE(2Mbps)

EBW-DTS

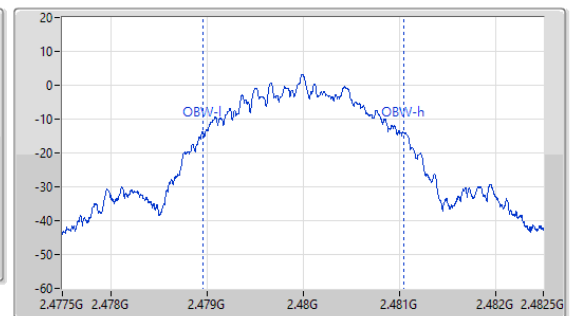
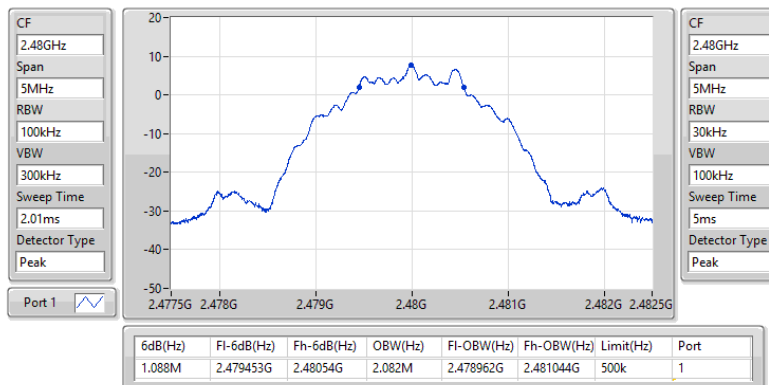
2478MHz



2.4-2.4835GHz_BT-LE(2Mbps)

EBW-DTS

2480MHz



Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
BT-LE(125kbps)	11.32	0.01355
BT-LE(500kbps)	20.45	0.11092
BT-LE(1Mbps)	20.49	0.11194
BT-LE(2Mbps)	20.61	0.11508

Result

Mode	Result	Antenna Gain (dBi)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
BT-LE(125kbps)	-	-	-	-	-	-
2402MHz	Pass	5.00	9.84	30.00	14.84	36.00
2440MHz	Pass	5.00	10.89	30.00	15.89	36.00
2478MHz	Pass	5.00	11.32	30.00	16.32	36.00
2480MHz	Pass	5.00	8.28	30.00	13.28	36.00
BT-LE(500kbps)	-	-	-	-	-	-
2402MHz	Pass	5.00	19.30	30.00	24.30	36.00
2440MHz	Pass	5.00	20.45	30.00	25.45	36.00
2478MHz	Pass	5.00	16.37	30.00	21.37	36.00
2480MHz	Pass	5.00	8.23	30.00	13.23	36.00
BT-LE(1Mbps)	-	-	-	-	-	-
2402MHz	Pass	5.00	19.32	30.00	24.32	36.00
2440MHz	Pass	5.00	20.49	30.00	25.49	36.00
2478MHz	Pass	5.00	16.38	30.00	21.38	36.00
2480MHz	Pass	5.00	8.29	30.00	13.29	36.00
BT-LE(2Mbps)	-	-	-	-	-	-
2402MHz	Pass	5.00	19.28	30.00	24.28	36.00
2440MHz	Pass	5.00	20.61	30.00	25.61	36.00
2478MHz	Pass	5.00	16.40	30.00	21.40	36.00
2480MHz	Pass	5.00	8.15	30.00	13.15	36.00

Summary

Mode	PD (dBm/3kHz)
2.4-2.4835GHz	-
BT-LE(125kbps)	5.69
BT-LE(500kbps)	4.45
BT-LE(1Mbps)	0.24
BT-LE(2Mbps)	2.77

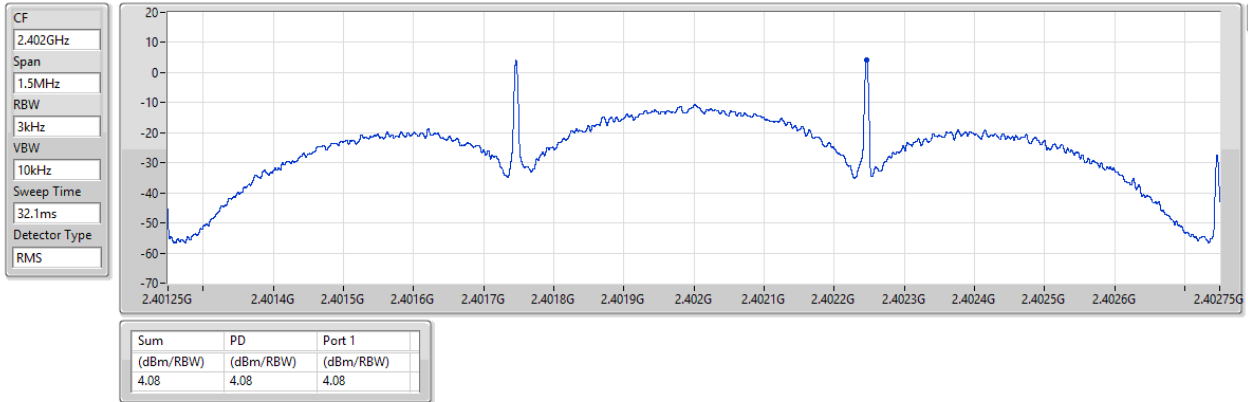
Result

Mode	Result	Antenna Gain (dBi)	Power Density (dBm/3kHz)	Power Density Limit (dBm/3kHz)
BT-LE(125kbps)	-	-	-	-
2402MHz	Pass	5.00	4.08	8.00
2440MHz	Pass	5.00	5.26	8.00
2478MHz	Pass	5.00	5.69	8.00
2480MHz	Pass	5.00	2.60	8.00
BT-LE(500kbps)	-	-	-	-
2402MHz	Pass	5.00	4.45	8.00
2440MHz	Pass	5.00	4.15	8.00
2478MHz	Pass	5.00	0.07	8.00
2480MHz	Pass	5.00	-8.37	8.00
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	5.00	-1.57	8.00
2440MHz	Pass	5.00	0.24	8.00
2478MHz	Pass	5.00	-4.76	8.00
2480MHz	Pass	5.00	-12.88	8.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	5.00	0.67	8.00
2440MHz	Pass	5.00	2.77	8.00
2478MHz	Pass	5.00	-2.70	8.00
2480MHz	Pass	5.00	-10.42	8.00

2.4-2.4835GHz_BT-LE(125kbps)

PSD

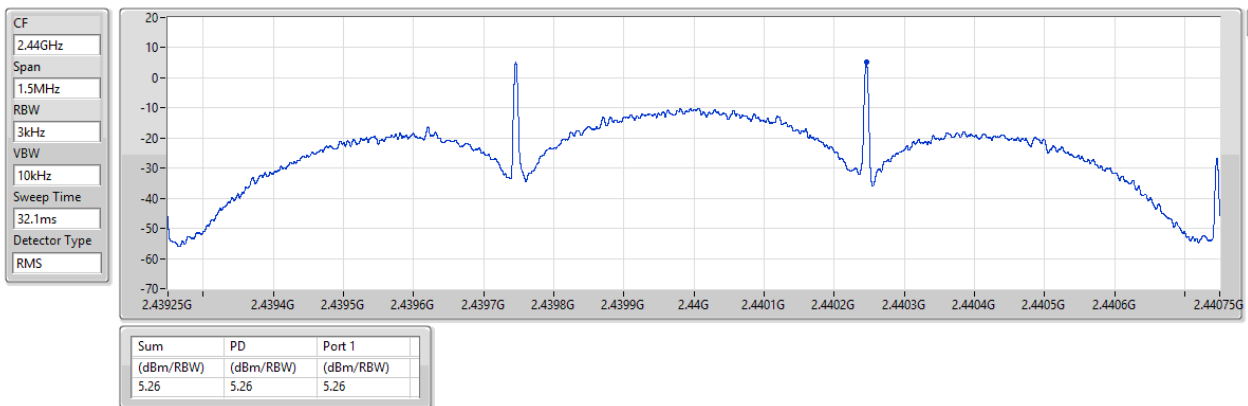
2402MHz



2.4-2.4835GHz_BT-LE(125kbps)

PSD

2440MHz

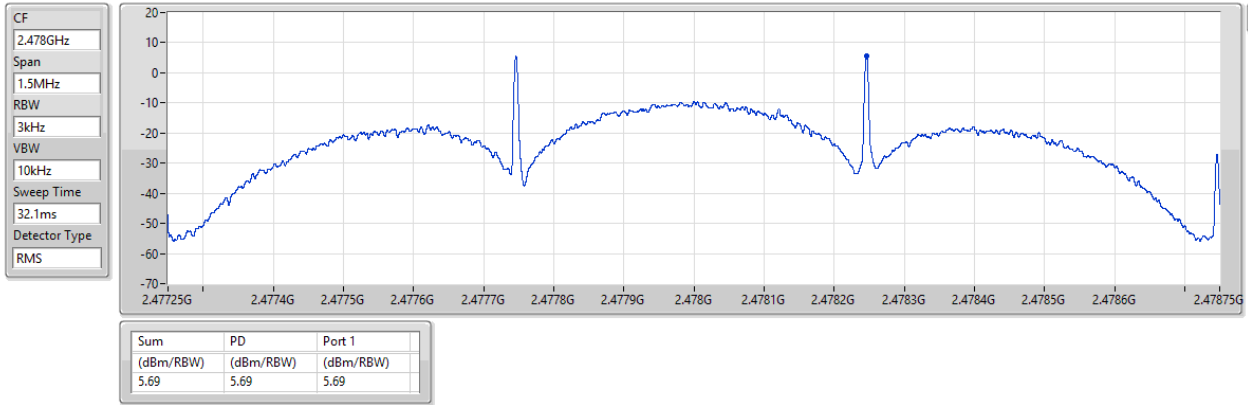




2.4-2.4835GHz_BT-LE(125kbps)

PSD

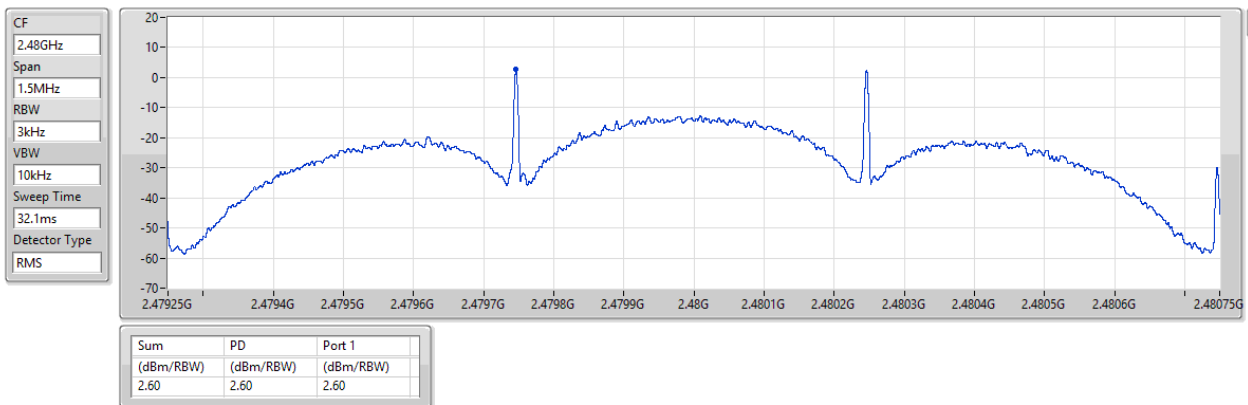
2478MHz



2.4-2.4835GHz_BT-LE(125kbps)

PSD

2480MHz

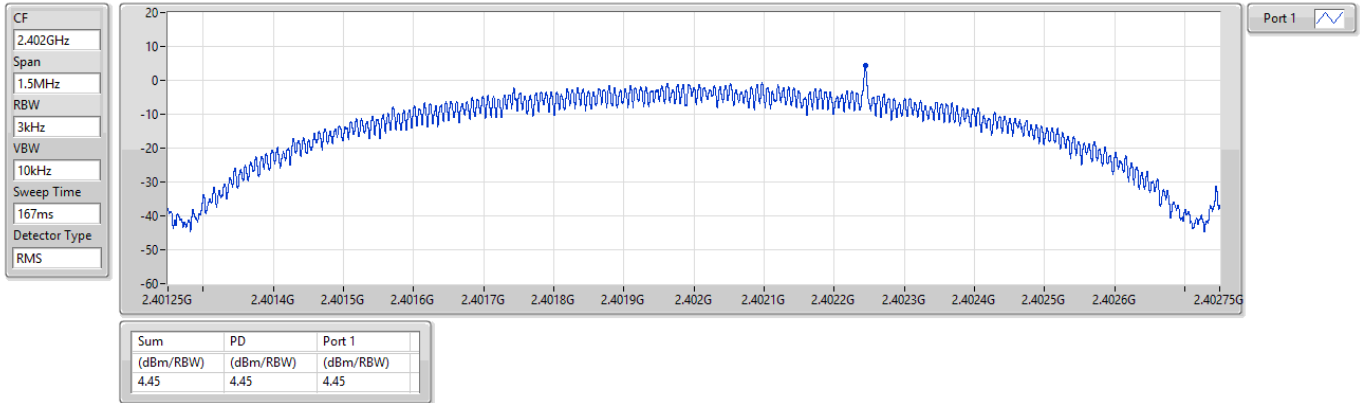




2.4-2.4835GHz_BT-LE(500kbps)

PSD

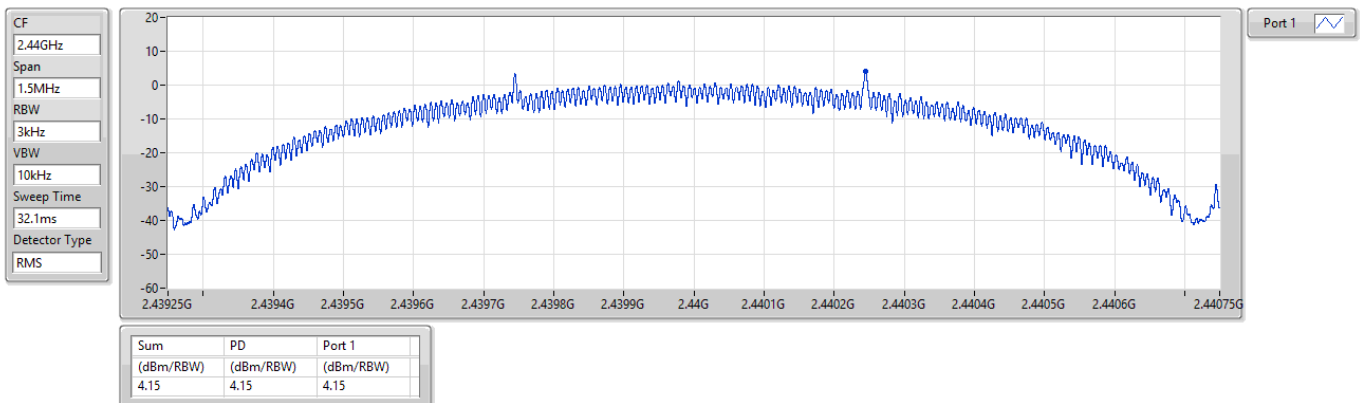
2402MHz



2.4-2.4835GHz_BT-LE(500kbps)

PSD

2440MHz

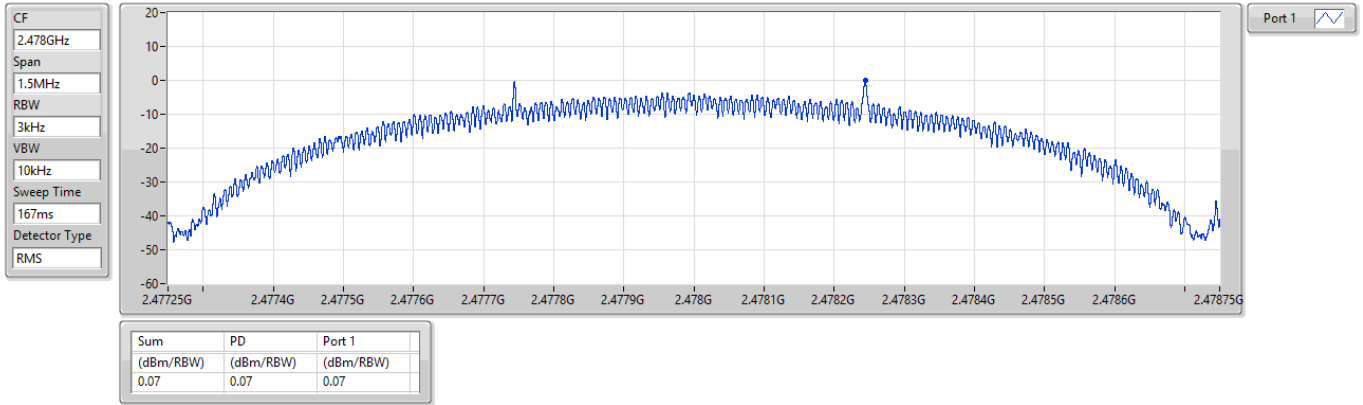




2.4-2.4835GHz_BT-LE(500kbps)

PSD

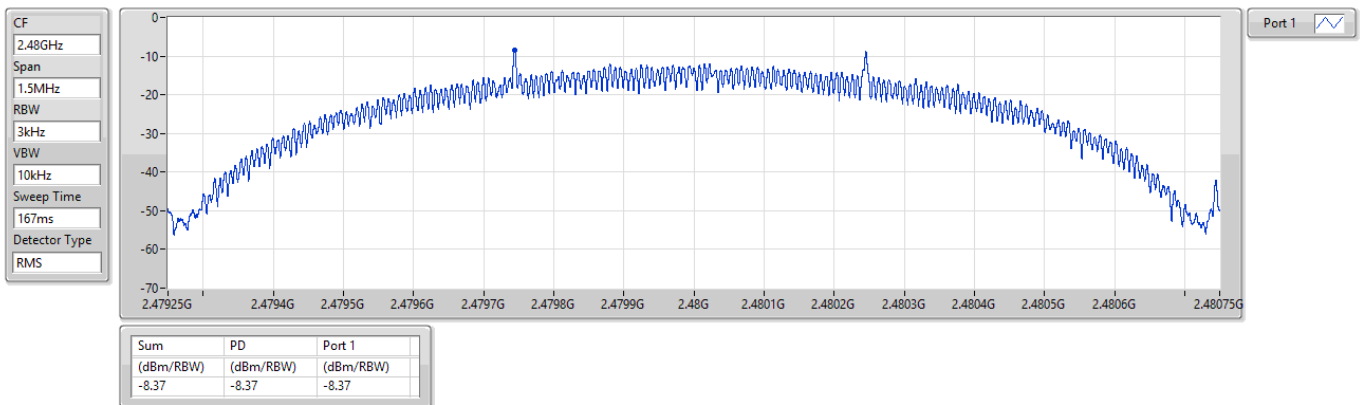
2478MHz



2.4-2.4835GHz_BT-LE(500kbps)

PSD

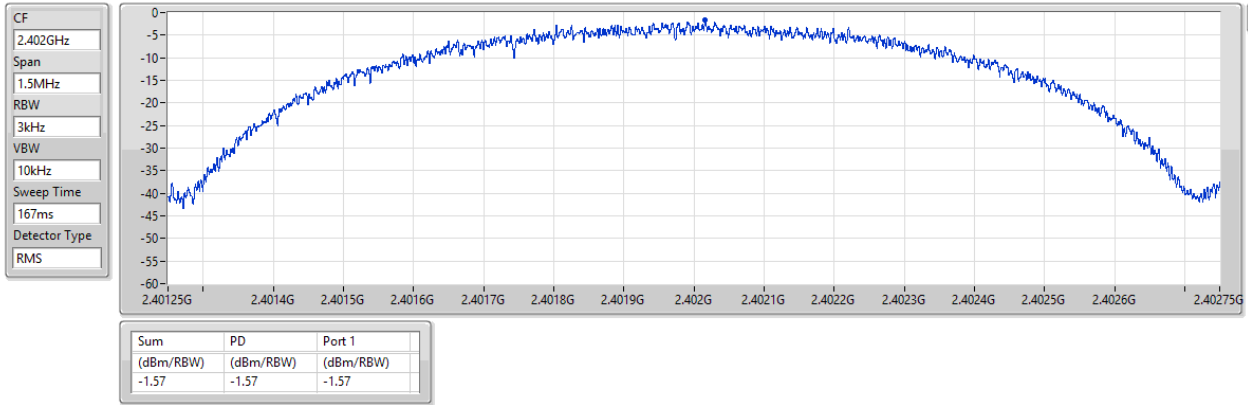
2480MHz



2.4-2.4835GHz_BT-LE(1Mbps)

PSD

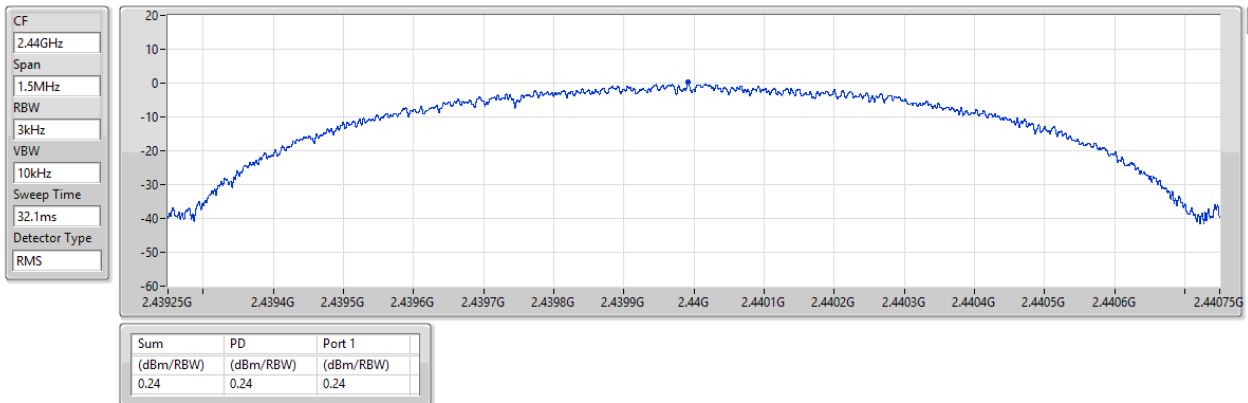
2402MHz



2.4-2.4835GHz_BT-LE(1Mbps)

PSD

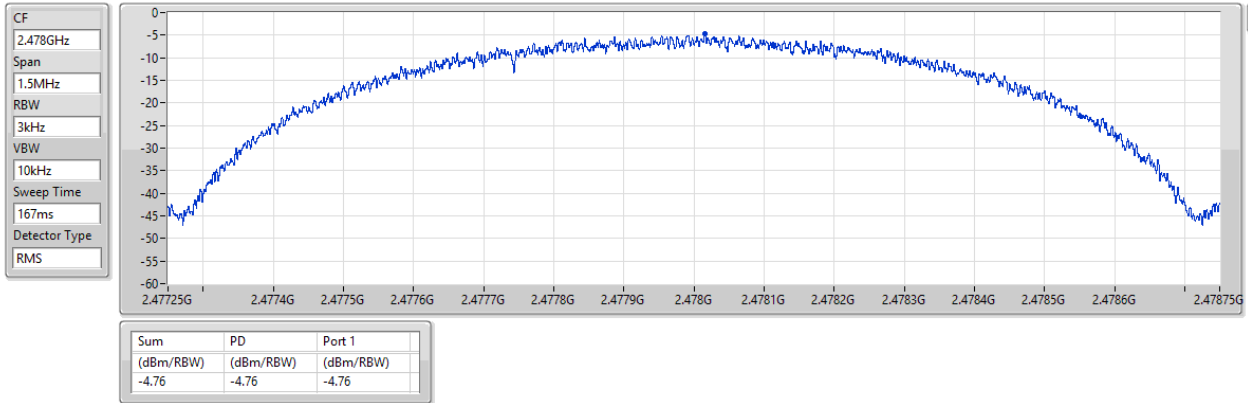
2440MHz



2.4-2.4835GHz_BT-LE(1Mbps)

PSD

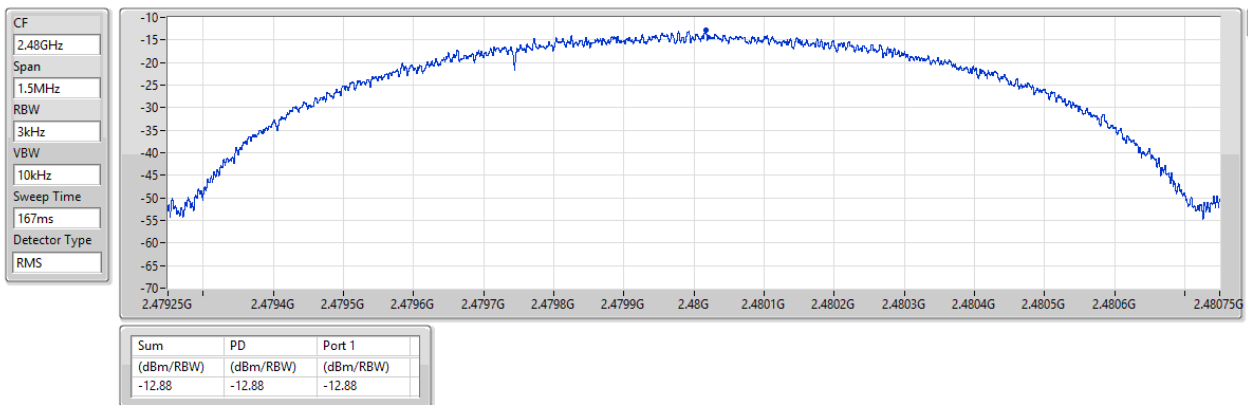
2478MHz



2.4-2.4835GHz_BT-LE(1Mbps)

PSD

2480MHz



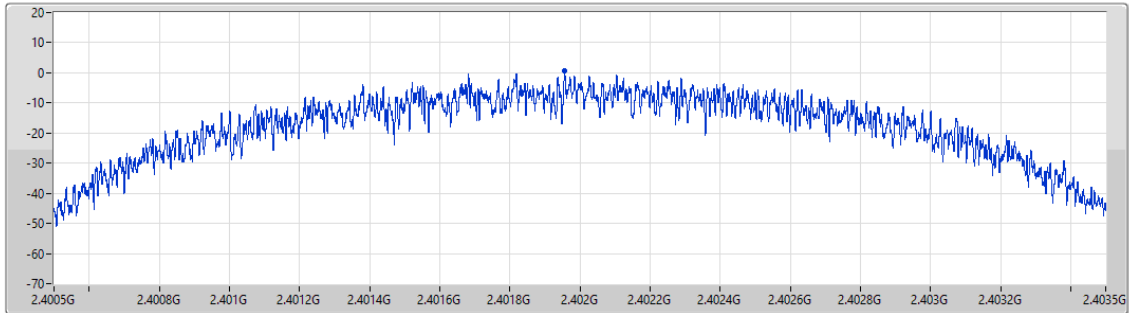


2.4-2.4835GHz_BT-LE(2Mbps)

PSD

2402MHz

CF
2.402GHz
Span
3MHz
RBW
3kHz
VBW
10kHz
Sweep Time
284ms
Detector Type
RMS



Port 1

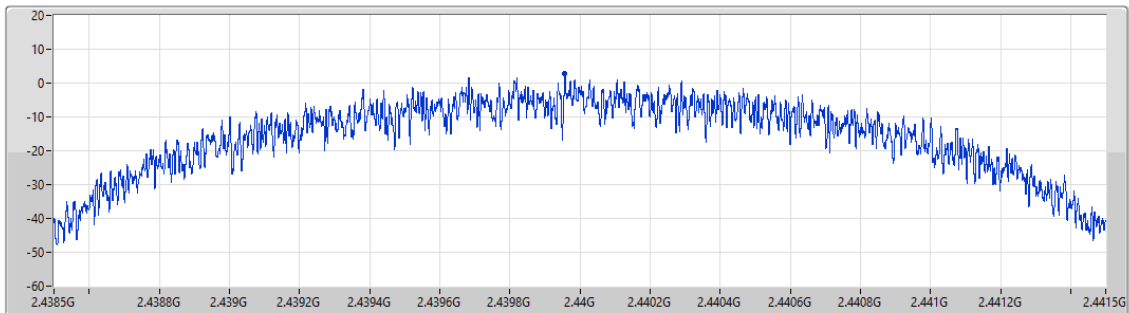
Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
0.67	0.67	0.67

2.4-2.4835GHz_BT-LE(2Mbps)

PSD

2440MHz

CF
2.44GHz
Span
3MHz
RBW
3kHz
VBW
10kHz
Sweep Time
33.4ms
Detector Type
RMS



Port 1

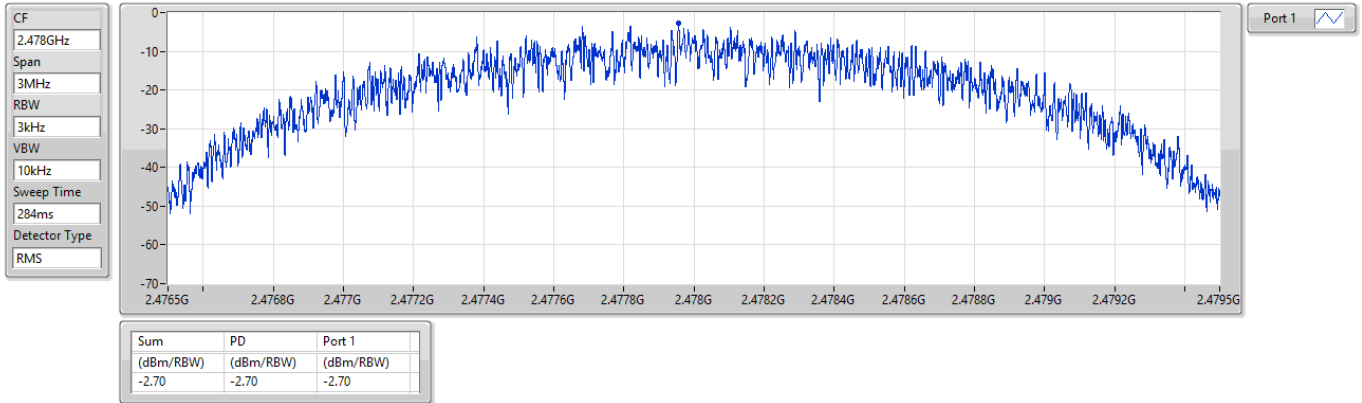
Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
2.77	2.77	2.77



2.4-2.4835GHz_BT-LE(2Mbps)

PSD

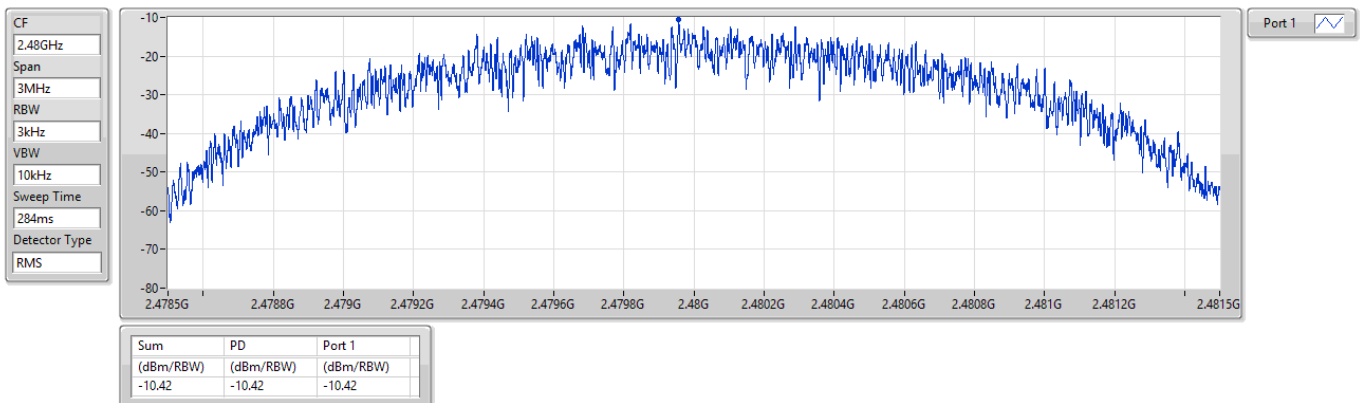
2478MHz



2.4-2.4835GHz_BT-LE(2Mbps)

PSD

2480MHz



Test configuration 1: Adapter mode

Unwanted Emissions (Below 1GHz)

Modulation	BT-LE (2Mbps)	Test Freq. (MHz)	2440
Polarization	Horizontal		
Test By :Sean Yu Temperature(°C):21 Humidity(%):66			
Level (dBuV/m) <			



Modulation	BT-LE (2Mbps)	Test Freq. (MHz)	2440
Polarization	Vertical		
Test By :Sean Yu Temperature(°C):21 Humidity(%):66			
Level (dBuV/m)			

Test configuration 2: PoE mode

Unwanted Emissions (Below 1GHz)

Modulation	BT-LE (2Mbps)	Test Freq. (MHz)	2440
Polarization	Horizontal		
Test By :Sean Yu Temperature(°C):21 Humidity(%):66			
Level (dBuV/m)			



Modulation	BT-LE (2Mbps)	Test Freq. (MHz)	2440
Polarization	Vertical		
Test By :Sean Yu Temperature(°C):21 Humidity(%):66			
Level (dBuV/m) </			

Unwanted Emissions (Above 1GHz)

Modulation	BT-LE (125kbps)	Test Freq. (MHz)	2402
Polarization	Horizontal		
Test By :Akun Chung Temperature(°C):22 Humidity(%):68			
Level (dBUV/m) </			



Modulation	BT-LE (125kbps)	Test Freq. (MHz)	2402
Polarization	Vertical		
Test By :Akun Chung Temperature(°C):22 Humidity(%):68			
Level (dBUV/m) </			

Modulation	BT-LE (125kbps)	Test Freq. (MHz)	2440
Polarization	Horizontal		
Test By :Akun Chung Temperature(°C):22 Humidity(%):68			
Level (dBuV/m) </			



Modulation	BT-LE (125kbps)	Test Freq. (MHz)	2440																																																																																										
Polarization	Vertical																																																																																												
Test By :Akun Chung Temperature(°C):22 Humidity(%):68																																																																																													
Level (dBUV/m) 4 2 3 6 5 8 7 CLASS-B CLASS-B (AVG) Frequency (MHz) 1000. 4000. 6000. 8000. 10000. 12000. 14000. 16000. 18000. 20000. 22000. 25000 <table><tr><th></th><th>Freq. MHz</th><th>Emission level dBuV/m</th><th>Limit dBuV/m</th><th>Margin dB</th><th>SA reading dBuV</th><th>Factor dB/m</th><th>Remark</th><th>ANT High cm</th><th>Turn Table deg</th></tr><tr><td>1</td><td>2390.00</td><td>38.76</td><td>54.00</td><td>-15.24</td><td>42.39</td><td>-3.63</td><td>Average</td><td>117</td><td>153</td></tr><tr><td>2</td><td>2390.00</td><td>50.76</td><td>74.00</td><td>-23.24</td><td>54.39</td><td>-3.63</td><td>Peak</td><td>117</td><td>153</td></tr><tr><td>3</td><td>2483.50</td><td>38.91</td><td>54.00</td><td>-15.09</td><td>42.83</td><td>-3.92</td><td>Average</td><td>117</td><td>153</td></tr><tr><td>4</td><td>2483.50</td><td>54.40</td><td>74.00</td><td>-19.60</td><td>58.32</td><td>-3.92</td><td>Peak</td><td>117</td><td>153</td></tr><tr><td>5</td><td>4880.00</td><td>37.25</td><td>54.00</td><td>-16.75</td><td>37.22</td><td>0.03</td><td>Average</td><td>103</td><td>210</td></tr><tr><td>6</td><td>4880.00</td><td>47.88</td><td>74.00</td><td>-26.12</td><td>47.85</td><td>0.03</td><td>Peak</td><td>103</td><td>210</td></tr><tr><td>7</td><td>7320.00</td><td>37.58</td><td>54.00</td><td>-16.42</td><td>32.21</td><td>5.37</td><td>Average</td><td>100</td><td>277</td></tr><tr><td>8</td><td>7320.00</td><td>50.31</td><td>74.00</td><td>-23.69</td><td>44.94</td><td>5.37</td><td>Peak</td><td>100</td><td>277</td></tr></table> Note 1: Emission Level (dBUV/m) = SA Reading (dBUV) + Factor* (dB/m) *Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).					Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg	1	2390.00	38.76	54.00	-15.24	42.39	-3.63	Average	117	153	2	2390.00	50.76	74.00	-23.24	54.39	-3.63	Peak	117	153	3	2483.50	38.91	54.00	-15.09	42.83	-3.92	Average	117	153	4	2483.50	54.40	74.00	-19.60	58.32	-3.92	Peak	117	153	5	4880.00	37.25	54.00	-16.75	37.22	0.03	Average	103	210	6	4880.00	47.88	74.00	-26.12	47.85	0.03	Peak	103	210	7	7320.00	37.58	54.00	-16.42	32.21	5.37	Average	100	277	8	7320.00	50.31	74.00	-23.69	44.94	5.37	Peak	100	277
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg																																																																																				
1	2390.00	38.76	54.00	-15.24	42.39	-3.63	Average	117	153																																																																																				
2	2390.00	50.76	74.00	-23.24	54.39	-3.63	Peak	117	153																																																																																				
3	2483.50	38.91	54.00	-15.09	42.83	-3.92	Average	117	153																																																																																				
4	2483.50	54.40	74.00	-19.60	58.32	-3.92	Peak	117	153																																																																																				
5	4880.00	37.25	54.00	-16.75	37.22	0.03	Average	103	210																																																																																				
6	4880.00	47.88	74.00	-26.12	47.85	0.03	Peak	103	210																																																																																				
7	7320.00	37.58	54.00	-16.42	32.21	5.37	Average	100	277																																																																																				
8	7320.00	50.31	74.00	-23.69	44.94	5.37	Peak	100	277																																																																																				

Modulation	BT-LE (125kbps)	Test Freq. (MHz)	2478
Polarization	Horizontal		
Test By :Akun Chung Temperature(°C):22 Humidity(%):68			
Level (dBuV/m) </			



Modulation	BT-LE (125kbps)	Test Freq. (MHz)	2478
Polarization	Vertical		
Test By :Akun Chung Temperature(°C):22 Humidity(%):68			
Level (dBUV/m) </			



Modulation	BT-LE (125kbps)	Test Freq. (MHz)	2480
Polarization	Horizontal		
Test By :Akun Chung Temperature(°C):22 Humidity(%):68			
Level (dBUV/m) </			



Modulation	BT-LE (125kbps)	Test Freq. (MHz)	2480																																																																																										
Polarization	Vertical																																																																																												
Test By :Akun Chung Temperature(°C):22 Humidity(%):68																																																																																													
Level (dBUV/m) 1 2 3 4 5 6 7 8 1000 4000 6000 8000 10000 12000 14000 16000 18000 20000 22000 25000 Frequency (MHz) CLASS-B CLASS-B (AVG) <table><tr><th></th><th>Freq. MHz</th><th>Emission level dBUV/m</th><th>Limit dBUV/m</th><th>Margin dB</th><th>SA reading dBUV</th><th>Factor dB/m</th><th>Remark</th><th>ANT High cm</th><th>Turn Table deg</th></tr><tr><td>1</td><td>2483.50</td><td>44.50</td><td>54.00</td><td>-9.50</td><td>48.42</td><td>-3.92</td><td>Average</td><td>120</td><td>149</td></tr><tr><td>2</td><td>2483.50</td><td>69.62</td><td>74.00</td><td>-4.38</td><td>73.54</td><td>-3.92</td><td>Peak</td><td>120</td><td>149</td></tr><tr><td>3</td><td>2485.00</td><td>40.82</td><td>54.00</td><td>-13.18</td><td>44.76</td><td>-3.94</td><td>Average</td><td>120</td><td>149</td></tr><tr><td>4</td><td>2485.00</td><td>70.92</td><td>74.00</td><td>-3.08</td><td>74.86</td><td>-3.94</td><td>Peak</td><td>120</td><td>149</td></tr><tr><td>5</td><td>4960.00</td><td>31.45</td><td>54.00</td><td>-22.55</td><td>31.36</td><td>0.09</td><td>Average</td><td>100</td><td>104</td></tr><tr><td>6</td><td>4960.00</td><td>44.37</td><td>74.00</td><td>-29.63</td><td>44.28</td><td>0.09</td><td>Peak</td><td>100</td><td>104</td></tr><tr><td>7</td><td>7440.00</td><td>36.64</td><td>54.00</td><td>-17.36</td><td>31.34</td><td>5.30</td><td>Average</td><td>100</td><td>247</td></tr><tr><td>8</td><td>7440.00</td><td>49.81</td><td>74.00</td><td>-24.19</td><td>44.51</td><td>5.30</td><td>Peak</td><td>100</td><td>247</td></tr></table> Note 1: Emission Level (dBUV/m) = SA Reading (dBUV) + Factor* (dB/m) *Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).					Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB/m	Remark	ANT High cm	Turn Table deg	1	2483.50	44.50	54.00	-9.50	48.42	-3.92	Average	120	149	2	2483.50	69.62	74.00	-4.38	73.54	-3.92	Peak	120	149	3	2485.00	40.82	54.00	-13.18	44.76	-3.94	Average	120	149	4	2485.00	70.92	74.00	-3.08	74.86	-3.94	Peak	120	149	5	4960.00	31.45	54.00	-22.55	31.36	0.09	Average	100	104	6	4960.00	44.37	74.00	-29.63	44.28	0.09	Peak	100	104	7	7440.00	36.64	54.00	-17.36	31.34	5.30	Average	100	247	8	7440.00	49.81	74.00	-24.19	44.51	5.30	Peak	100	247
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB/m	Remark	ANT High cm	Turn Table deg																																																																																				
1	2483.50	44.50	54.00	-9.50	48.42	-3.92	Average	120	149																																																																																				
2	2483.50	69.62	74.00	-4.38	73.54	-3.92	Peak	120	149																																																																																				
3	2485.00	40.82	54.00	-13.18	44.76	-3.94	Average	120	149																																																																																				
4	2485.00	70.92	74.00	-3.08	74.86	-3.94	Peak	120	149																																																																																				
5	4960.00	31.45	54.00	-22.55	31.36	0.09	Average	100	104																																																																																				
6	4960.00	44.37	74.00	-29.63	44.28	0.09	Peak	100	104																																																																																				
7	7440.00	36.64	54.00	-17.36	31.34	5.30	Average	100	247																																																																																				
8	7440.00	49.81	74.00	-24.19	44.51	5.30	Peak	100	247																																																																																				



Modulation	BT-LE (500kbps)	Test Freq. (MHz)	2402
Polarization	Horizontal		
Test By :Akun Chung Temperature(°C):22 Humidity(%):68			
Level (dBuV/m) </			



Modulation	BT-LE (500kbps)	Test Freq. (MHz)	2402
Polarization	Vertical		
Test By :Akun Chung Temperature(°C):22 Humidity(%):68			
Level (dBuV/m) <			

Modulation	BT-LE (500kbps)	Test Freq. (MHz)	2440						
Polarization	Horizontal								
Test By :Akun Chung Temperature(°C):22 Humidity(%):68									
Level (dBuV/m) Frequency (MHz)									
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	40.00	54.00	-14.00	43.63	-3.63	Average	143	19
2	2390.00	56.36	74.00	-17.64	59.99	-3.63	Peak	143	19
3	2483.50	40.61	54.00	-13.39	44.53	-3.92	Average	143	19
4	2483.50	62.01	74.00	-11.99	65.93	-3.92	Peak	143	19
5	4880.00	40.97	54.00	-13.03	40.94	0.03	Average	126	183
6	4880.00	49.70	74.00	-24.30	49.67	0.03	Peak	126	183
7	7320.00	37.05	54.00	-16.95	31.68	5.37	Average	100	27
8	7320.00	49.60	74.00	-24.40	44.23	5.37	Peak	100	27
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m) *Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).									

Modulation	BT-LE (500kbps)	Test Freq. (MHz)	2440																																																																																										
Polarization	Vertical																																																																																												
Test By :Akun Chung Temperature(°C):22 Humidity(%):68																																																																																													
Level (dBUV/m) 90 80 70 60 50 40 30 20 10 0 1000 4000 6000 8000 10000 12000 14000 16000 18000 20000 22000 25000 Frequency (MHz) CLASS-B CLASS-B (AVG) 4 2 3 6 5 8 7 <table><tr><th></th><th>Freq. MHz</th><th>Emission level dBUV/m</th><th>Limit dBUV/m</th><th>Margin dB</th><th>SA reading dBUV</th><th>Factor dB/m</th><th>Remark</th><th>ANT High cm</th><th>Turn Table deg</th></tr><tr><td>1</td><td>2390.00</td><td>38.76</td><td>54.00</td><td>-15.24</td><td>42.39</td><td>-3.63</td><td>Average</td><td>126</td><td>158</td></tr><tr><td>2</td><td>2390.00</td><td>50.80</td><td>74.00</td><td>-23.20</td><td>54.43</td><td>-3.63</td><td>Peak</td><td>126</td><td>158</td></tr><tr><td>3</td><td>2483.50</td><td>38.83</td><td>54.00</td><td>-15.17</td><td>42.75</td><td>-3.92</td><td>Average</td><td>126</td><td>158</td></tr><tr><td>4</td><td>2483.50</td><td>54.01</td><td>74.00</td><td>-19.99</td><td>57.93</td><td>-3.92</td><td>Peak</td><td>126</td><td>158</td></tr><tr><td>5</td><td>4880.00</td><td>41.53</td><td>54.00</td><td>-12.47</td><td>41.50</td><td>0.03</td><td>Average</td><td>110</td><td>208</td></tr><tr><td>6</td><td>4880.00</td><td>49.70</td><td>74.00</td><td>-24.30</td><td>49.67</td><td>0.03</td><td>Peak</td><td>110</td><td>208</td></tr><tr><td>7</td><td>7320.00</td><td>37.91</td><td>54.00</td><td>-16.09</td><td>32.54</td><td>5.37</td><td>Average</td><td>100</td><td>274</td></tr><tr><td>8</td><td>7320.00</td><td>50.05</td><td>74.00</td><td>-23.95</td><td>44.68</td><td>5.37</td><td>Peak</td><td>100</td><td>274</td></tr></table> Note 1: Emission Level (dBUV/m) = SA Reading (dBUV) + Factor* (dB/m) *Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).					Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB/m	Remark	ANT High cm	Turn Table deg	1	2390.00	38.76	54.00	-15.24	42.39	-3.63	Average	126	158	2	2390.00	50.80	74.00	-23.20	54.43	-3.63	Peak	126	158	3	2483.50	38.83	54.00	-15.17	42.75	-3.92	Average	126	158	4	2483.50	54.01	74.00	-19.99	57.93	-3.92	Peak	126	158	5	4880.00	41.53	54.00	-12.47	41.50	0.03	Average	110	208	6	4880.00	49.70	74.00	-24.30	49.67	0.03	Peak	110	208	7	7320.00	37.91	54.00	-16.09	32.54	5.37	Average	100	274	8	7320.00	50.05	74.00	-23.95	44.68	5.37	Peak	100	274
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB/m	Remark	ANT High cm	Turn Table deg																																																																																				
1	2390.00	38.76	54.00	-15.24	42.39	-3.63	Average	126	158																																																																																				
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8	7320.00	50.05	74.00	-23.95	44.68	5.37	Peak	100	274																																																																																				

Modulation	BT-LE (500kbps)	Test Freq. (MHz)	2478
Polarization	Horizontal		
Test By :Akun Chung Temperature(°C):22 Humidity(%):68			
Level (dBUV/m) </			

Modulation	BT-LE (500kbps)	Test Freq. (MHz)	2478
Polarization	Vertical		
Test By :Akun Chung Temperature(°C):22 Humidity(%):68			
Level (dBUV/m) </			



Modulation	BT-LE (500kbps)	Test Freq. (MHz)	2480
Polarization	Horizontal		
Test By :Akun Chung Temperature(°C):22 Humidity(%):68			
Level (dBUV/m) </			



Modulation	BT-LE (500kbps)	Test Freq. (MHz)	2480
Polarization	Vertical		
Test By :Akun Chung Temperature(°C):22 Humidity(%):68			
Level (dBuV/m) </			

Modulation	BT-LE (1Mbps)	Test Freq. (MHz)	2402
Polarization	Horizontal		
Test By :Akun Chung Temperature(°C):22 Humidity(%):68			
Level (dBuV/m)			



Modulation	BT-LE (1Mbps)	Test Freq. (MHz)	2402
Polarization	Vertical		
Test By :Akun Chung Temperature(°C):22 Humidity(%):68			
Level (dBUV/m) </			

Modulation	BT-LE (1Mbps)	Test Freq. (MHz)	2440
Polarization	Horizontal		
Test By :Akun Chung Temperature(°C):22 Humidity(%):68			
Level (dBuV/m) </			

Modulation	BT-LE (1Mbps)	Test Freq. (MHz)	2440
Polarization	Vertical		
Test By :Akun Chung Temperature(°C):22 Humidity(%):68			
Level (dBuV/m) </			

Modulation	BT-LE (1Mbps)	Test Freq. (MHz)	2478
Polarization	Horizontal		
Test By :Akun Chung Temperature(°C):22 Humidity(%):68			
Level (dBuV/m) </			

Modulation	BT-LE (1Mbps)	Test Freq. (MHz)	2478
Polarization	Vertical		
Test By :Akun Chung Temperature(°C):22 Humidity(%):68			
Level (dBuV/m)			

Modulation	BT-LE (1Mbps)	Test Freq. (MHz)	2480
Polarization	Horizontal		
Test By :Akun Chung Temperature(°C):22 Humidity(%):68			
Level (dBuV/m) </			

Modulation	BT-LE (1Mbps)	Test Freq. (MHz)	2480
Polarization	Vertical		
Test By :Akun Chung Temperature(°C):22 Humidity(%):68			
Level (dBUV/m) </			

Modulation	BT-LE (2Mbps)	Test Freq. (MHz)	2402
Polarization	Horizontal		
Test By :Akun Chung Temperature(°C):22 Humidity(%):68			
Level (dBUV/m) </			



Modulation	BT-LE (2Mbps)	Test Freq. (MHz)	2402
Polarization	Vertical		
Test By :Akun Chung Temperature(°C):22 Humidity(%):68			
Level (dBuV/m) </			

Modulation	BT-LE (2Mbps)	Test Freq. (MHz)	2440
Polarization	Horizontal		
Test By :Akun Chung Temperature(°C):22 Humidity(%):68			
Level (dBuV/m) </			



Modulation	BT-LE (2Mbps)	Test Freq. (MHz)	2440
Polarization	Vertical		
Test By :Akun Chung Temperature(°C):22 Humidity(%):68			
Level (dBUV/m) </			

Modulation	BT-LE (2Mbps)	Test Freq. (MHz)	2478
Polarization	Horizontal		
Test By :Akun Chung Temperature(°C):22 Humidity(%):68			
Level (dBuV/m) </			

Modulation	BT-LE (2Mbps)	Test Freq. (MHz)	2478
Polarization	Vertical		
Test By :Akun Chung Temperature(°C):22 Humidity(%):68			
Level (dBuV/m) </			

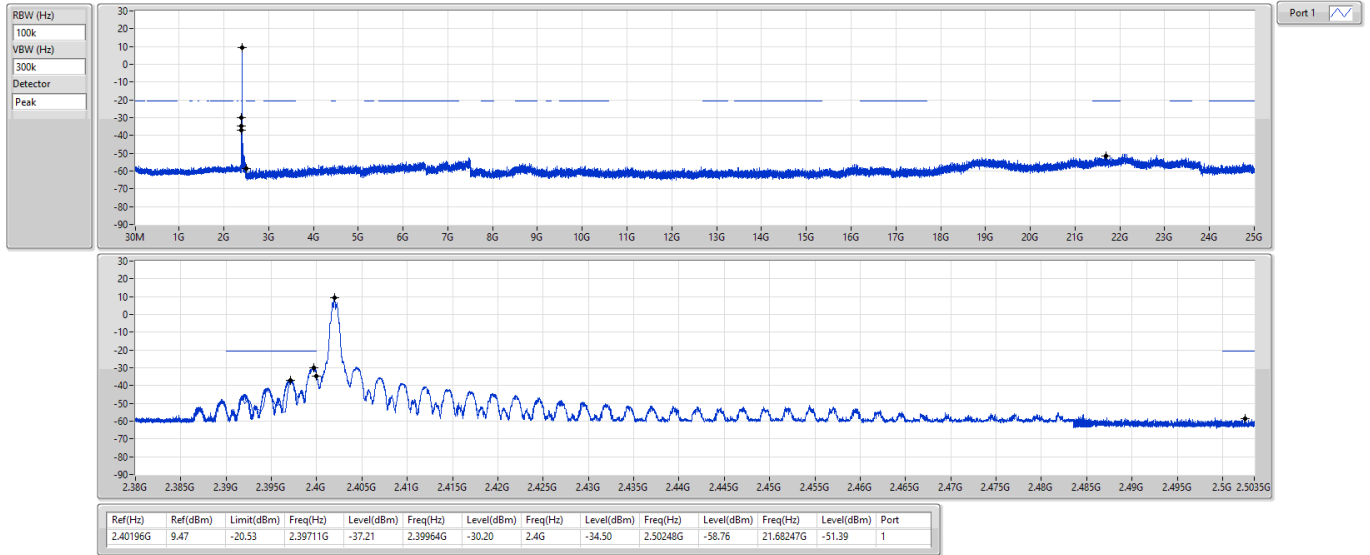
Modulation	BT-LE (2Mbps)	Test Freq. (MHz)	2480
Polarization	Horizontal		
Test By :Akun Chung Temperature(°C):22 Humidity(%):68			
Level (dBuV/m) </			

Modulation	BT-LE (2Mbps)	Test Freq. (MHz)	2480
Polarization	Vertical		
Test By :Akun Chung Temperature(°C):22 Humidity(%):68			
Level (dBUV/m) </			

2.4-2.4835GHz_BT-LE(125kbps)

CSEndB-DTS

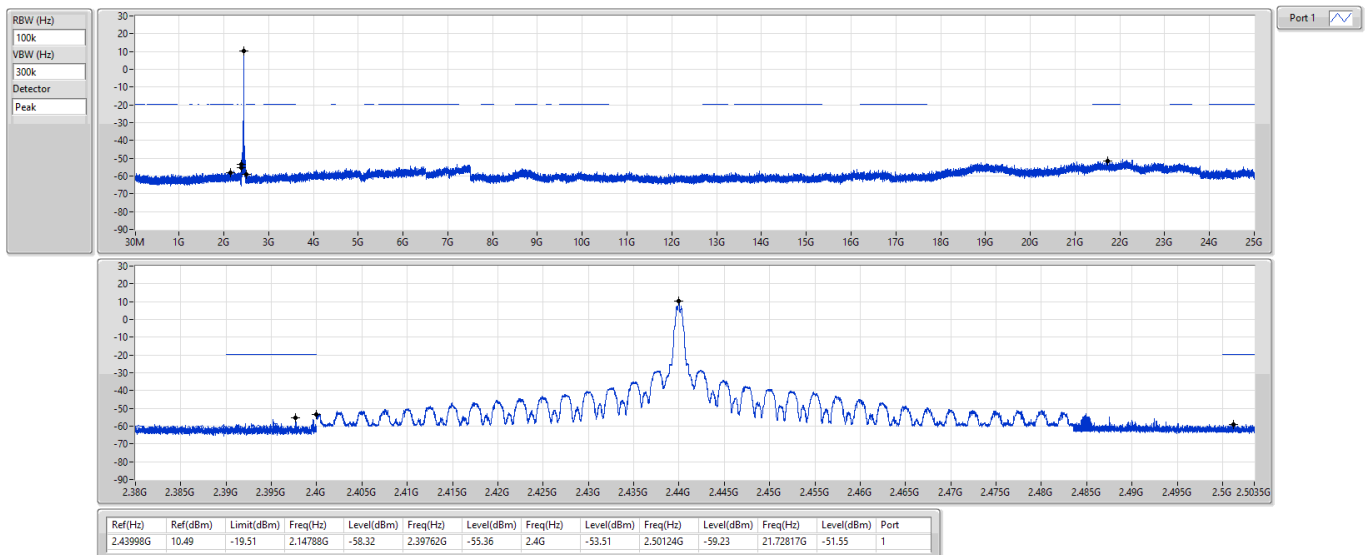
2402MHz



2.4-2.4835GHz_BT-LE(125kbps)

CSEndB-DTS

2440MHz

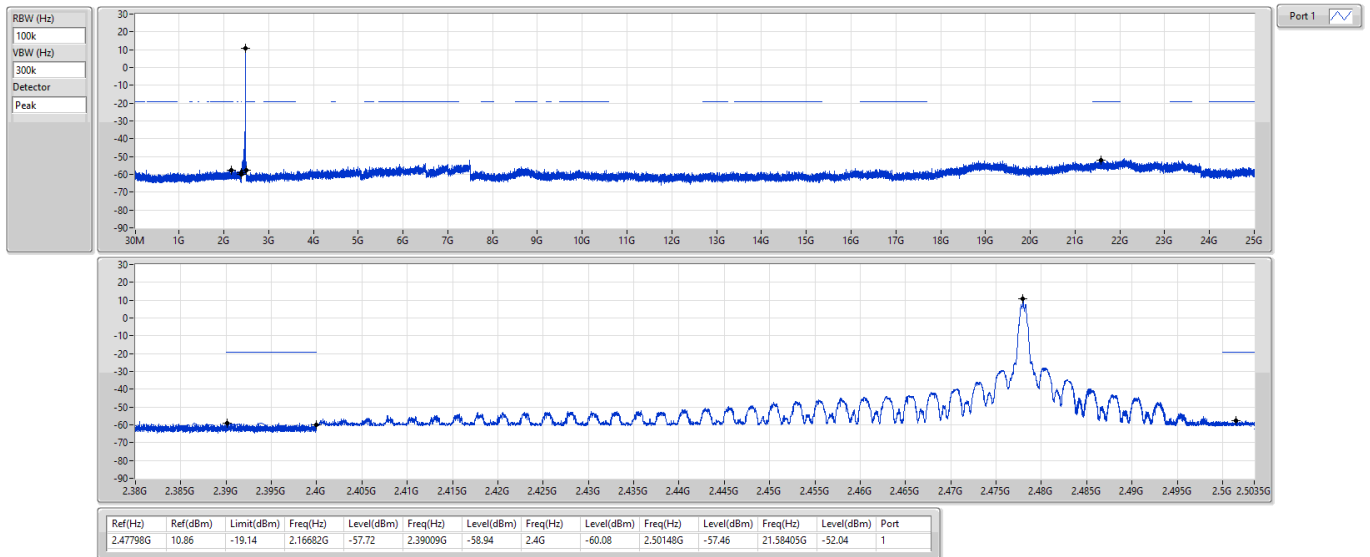




2.4-2.4835GHz_BT-LE(125kbps)

CSEndB-DTS

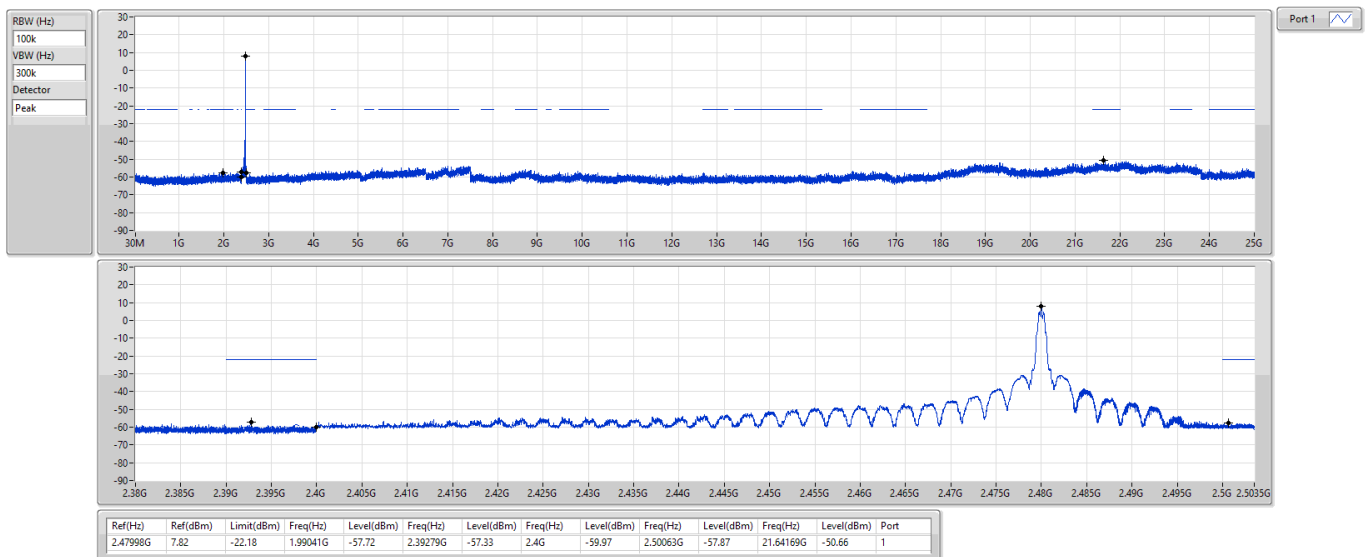
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2.4-2.4835GHz_BT-LE(125kbps)

CSEndB-DTS

2480MHz

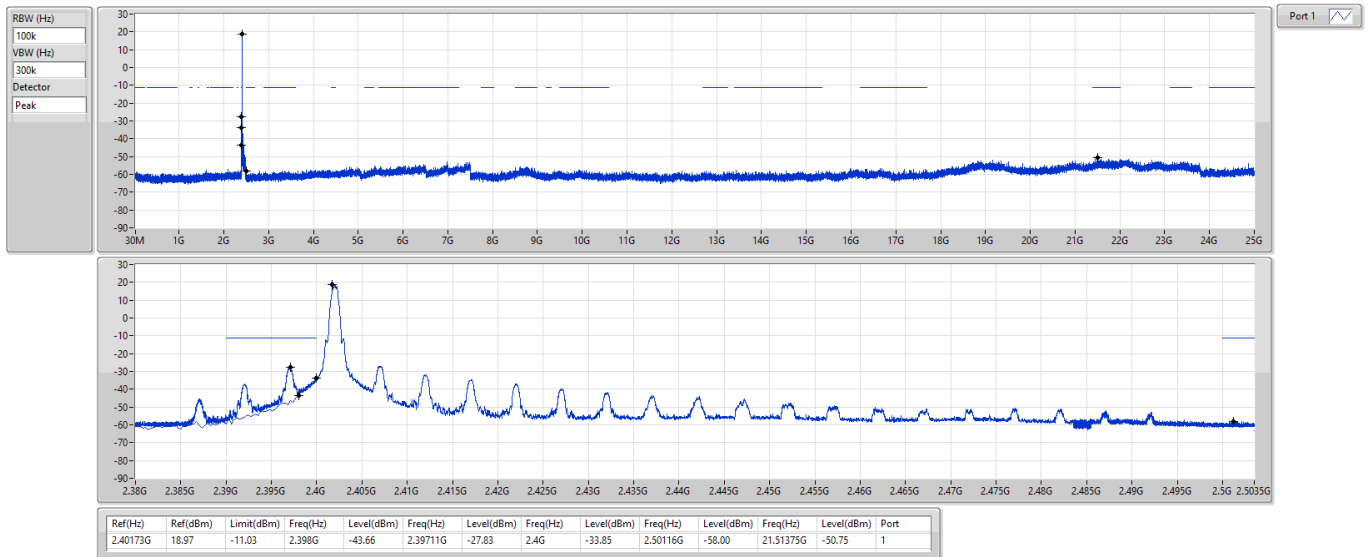




2.4-2.4835GHz_BT-LE(500kbps)

CSEndB-DTS

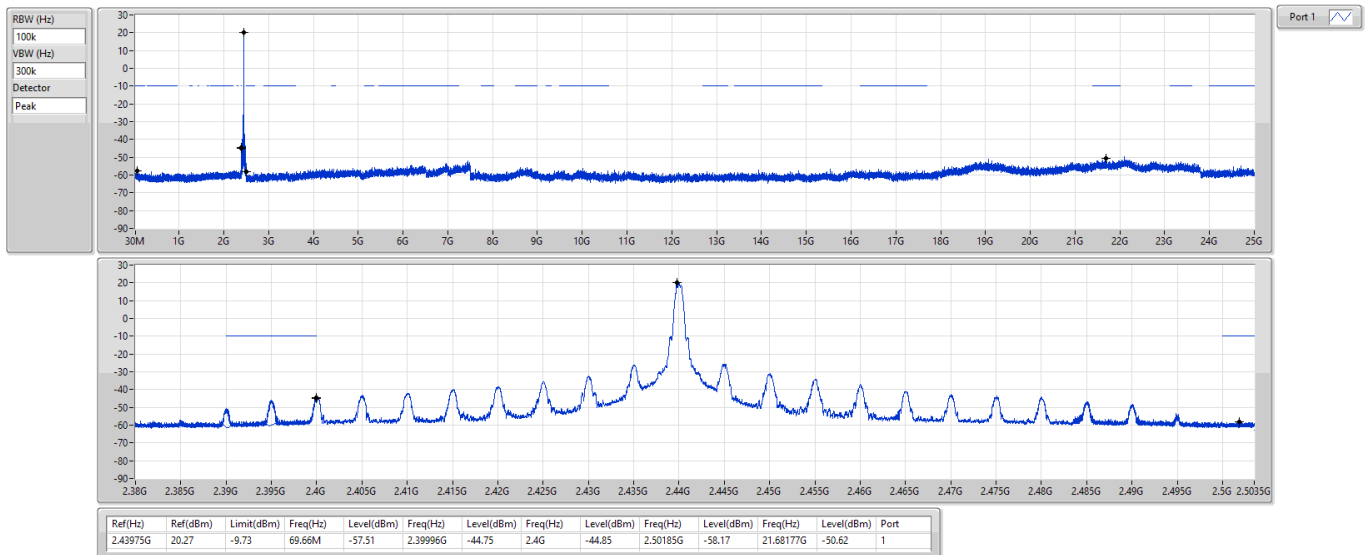
2402MHz



2.4-2.4835GHz_BT-LE(500kbps)

CSEndB-DTS

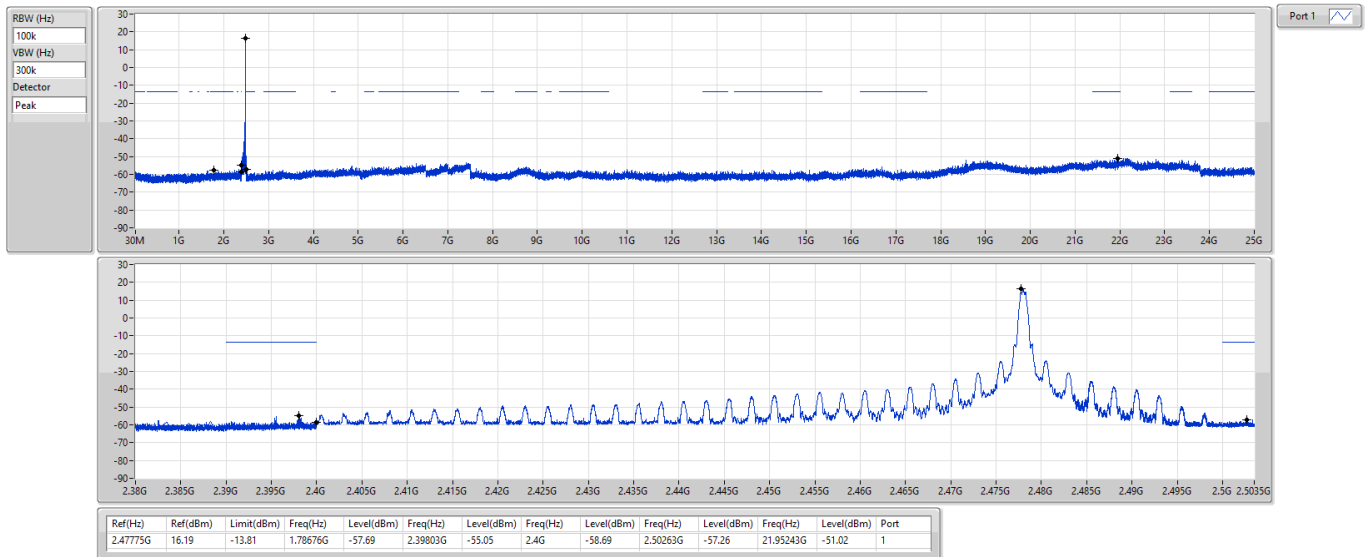
2440MHz



2.4-2.4835GHz_BT-LE(500kbps)

CSEndB-DTS

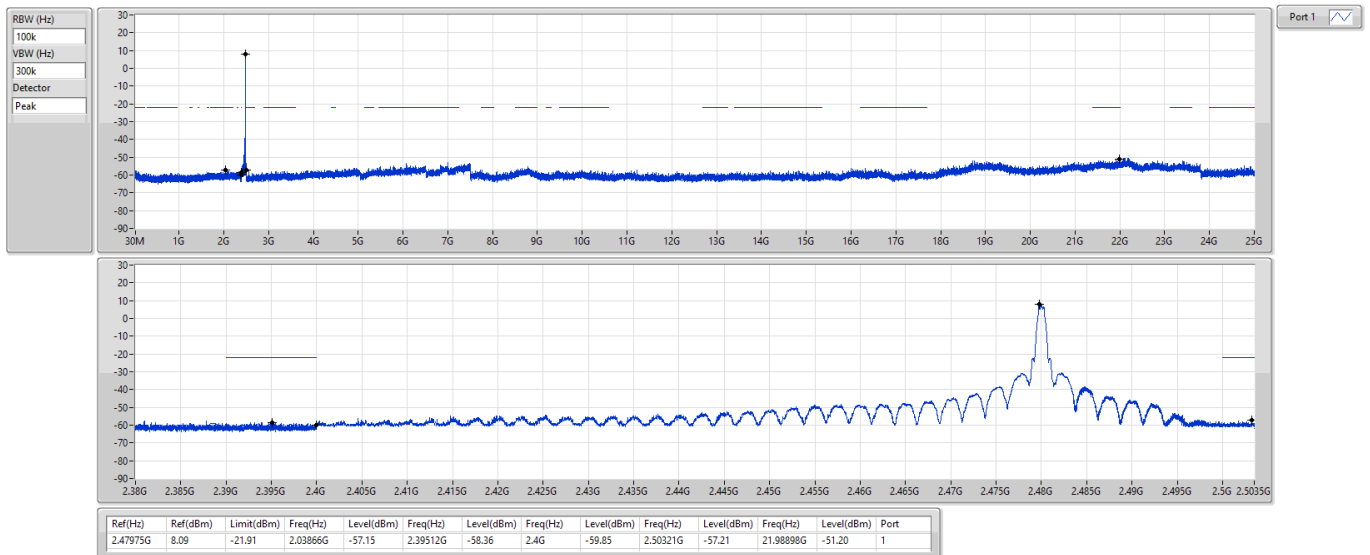
2478MHz



2.4-2.4835GHz_BT-LE(500kbps)

CSEndB-DTS

2480MHz

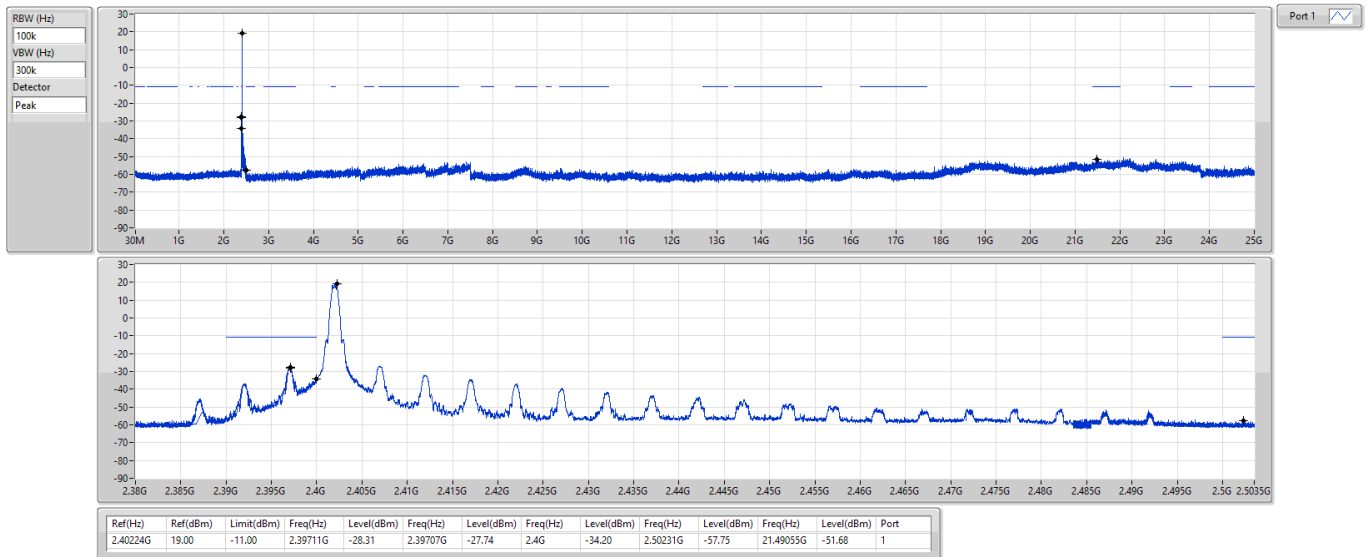




2.4-2.4835GHz_BT-LE(1Mbps)

CSEndB-DTS

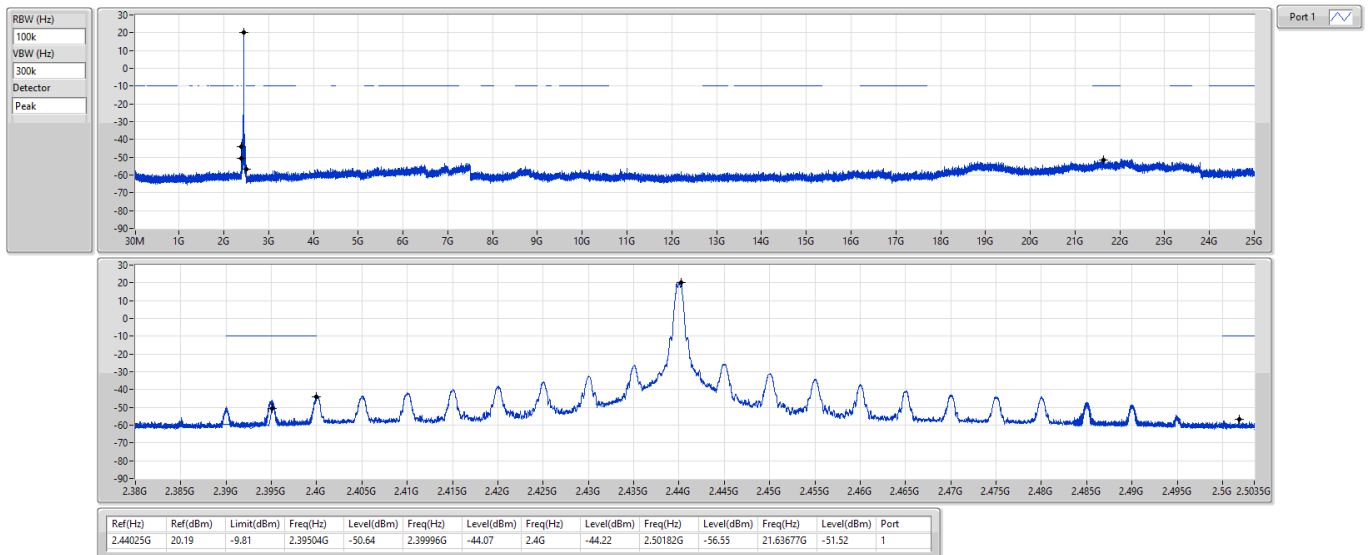
2402MHz



2.4-2.4835GHz_BT-LE(1Mbps)

CSEndB-DTS

2440MHz

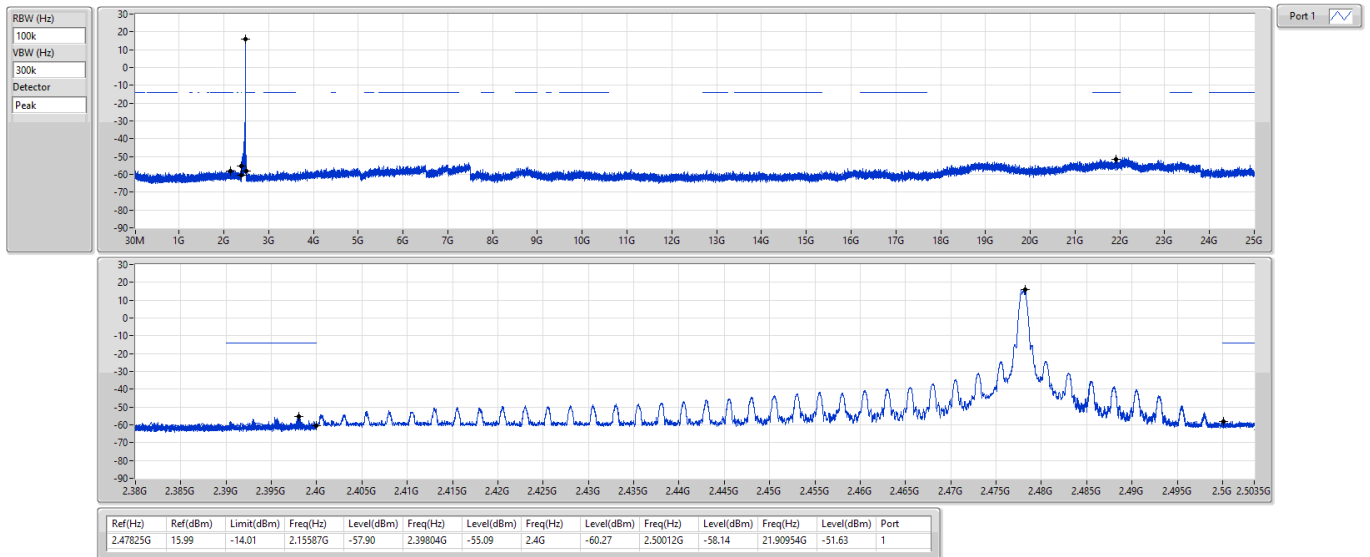




2.4-2.4835GHz_BT-LE(1Mbps)

CSEndB-DTS

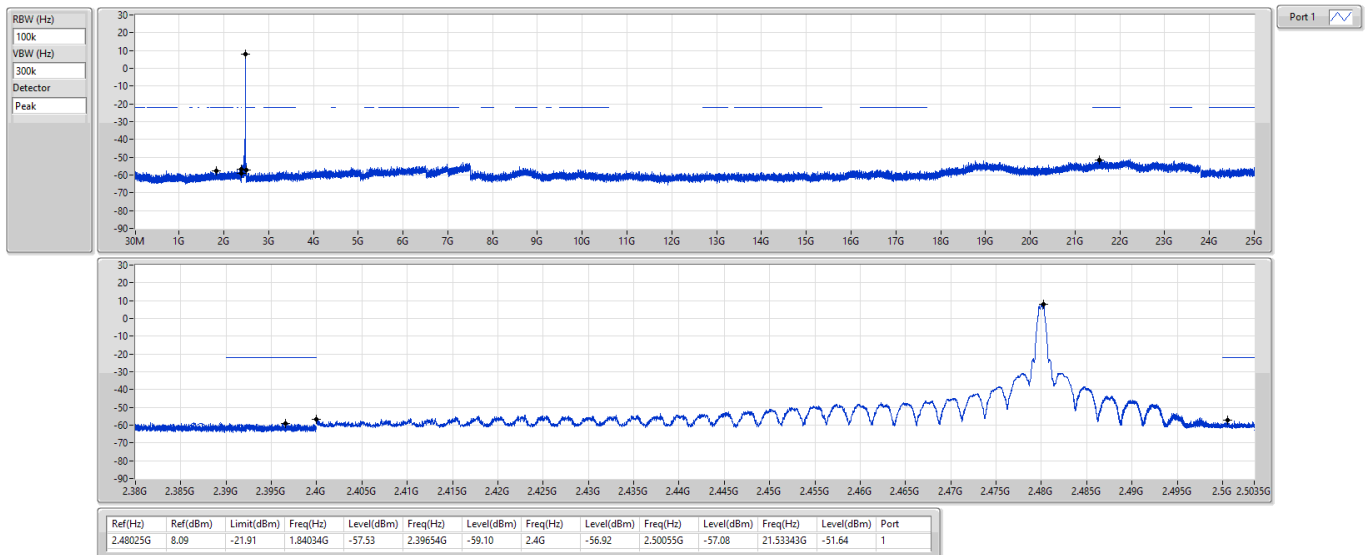
2478MHz



2.4-2.4835GHz_BT-LE(1Mbps)

CSEndB-DTS

2480MHz

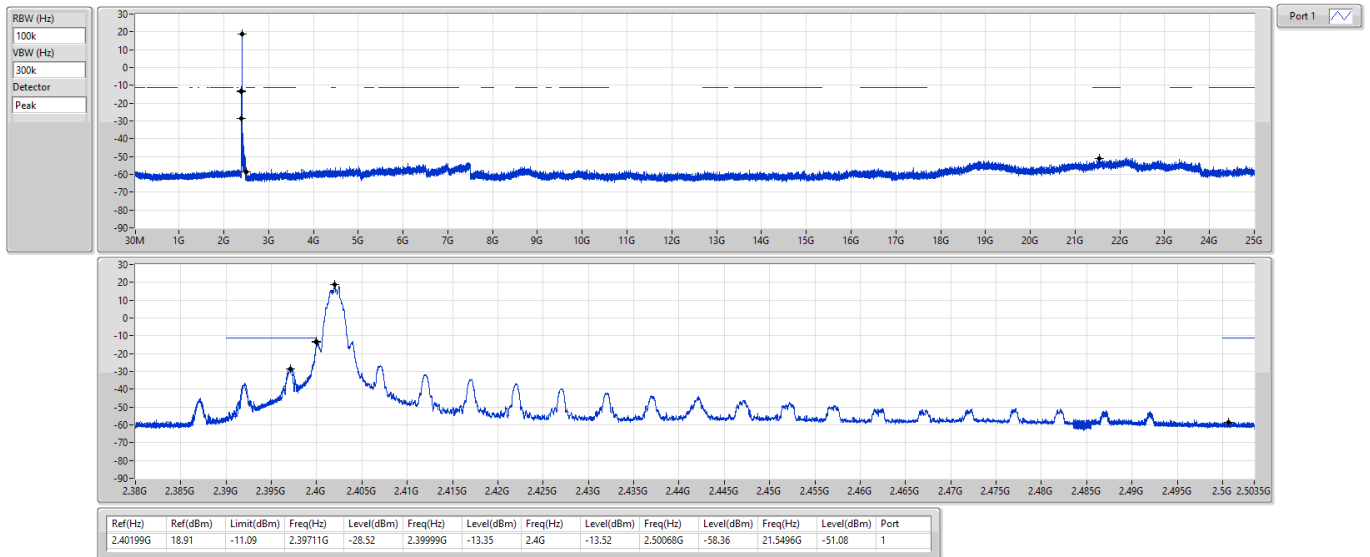




2.4-2.4835GHz_BT-LE(2Mbps)

CSEndB-DTS

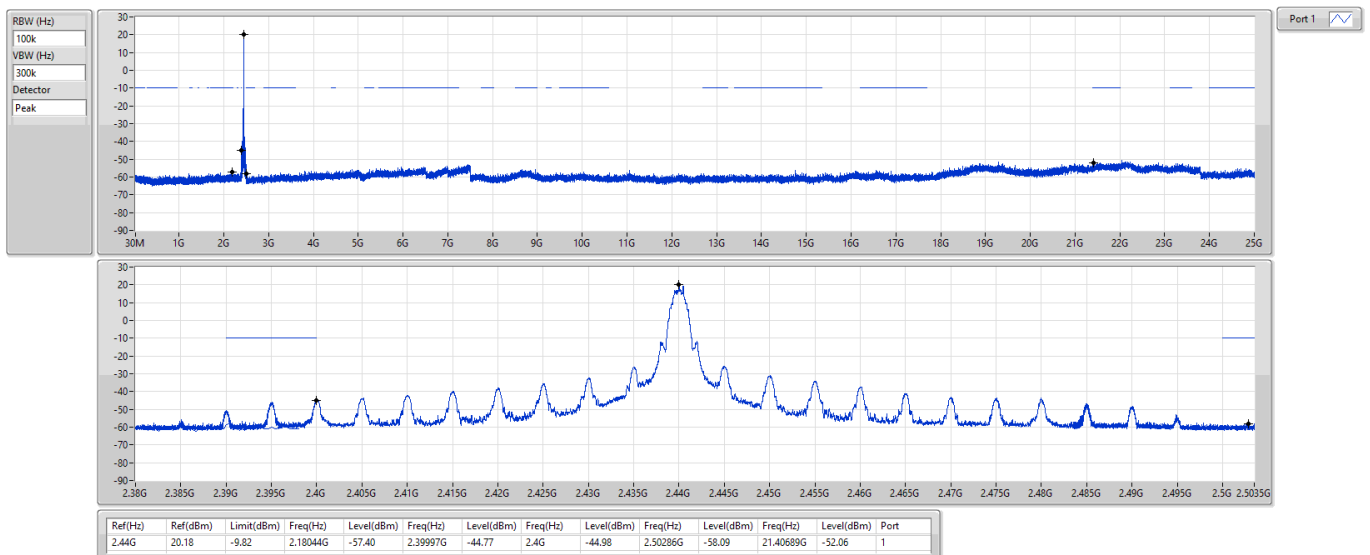
2402MHz



2.4-2.4835GHz_BT-LE(2Mbps)

CSEndB-DTS

2440MHz

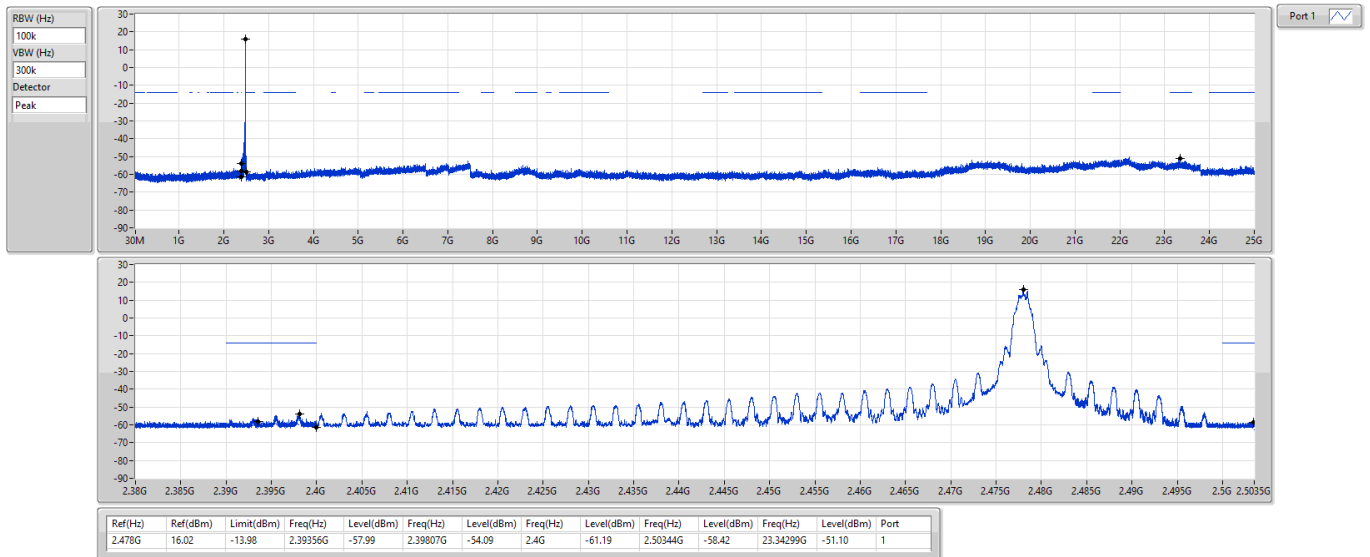




2.4-2.4835GHz_BT-LE(2Mbps)

CSEndB-DTS

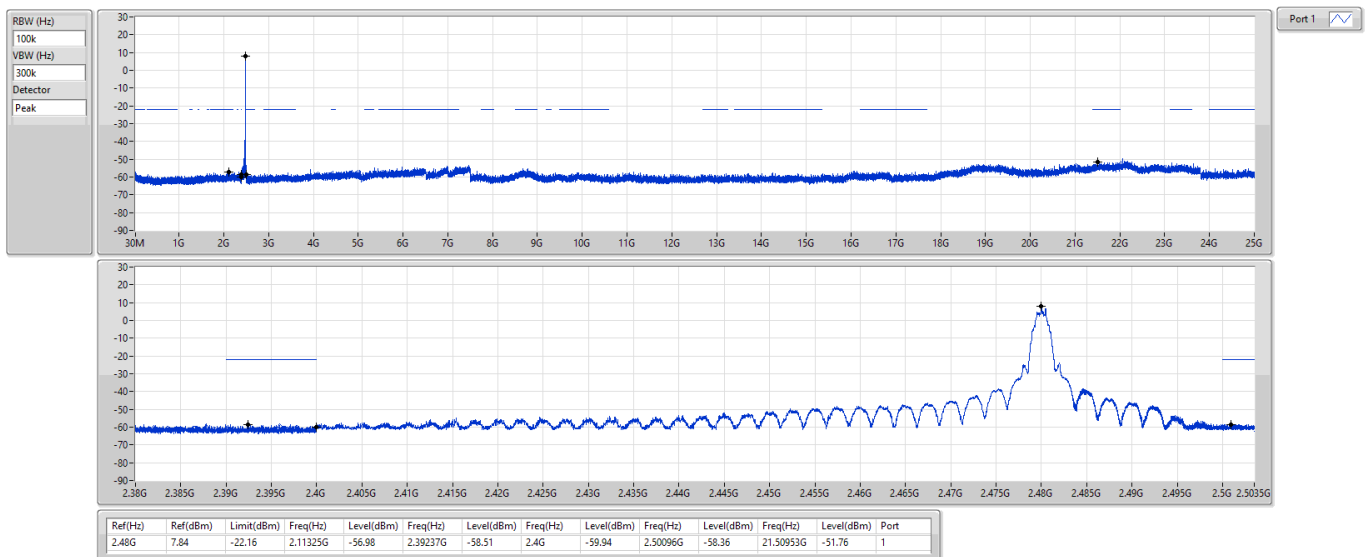
2478MHz



2.4-2.4835GHz_BT-LE(2Mbps)

CSEndB-DTS

2480MHz





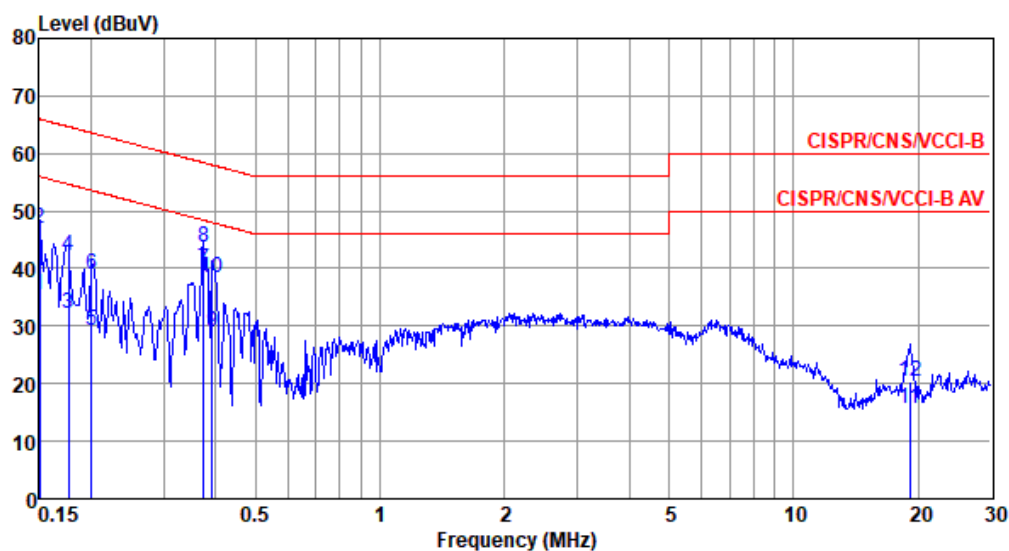
Test Configuration 1: Adapter mode

Modulation	BT-LE(2Mbps)	Test Freq. (MHz)	2440
Power Phase	Line		

Test by : Joe Liao

Temperature: 23°C

Humidity: 63%



	Freq MHz	Level dBUV	Limit Line dBUV	Over Limit dB	Read Level dBUV	Factor dB	Cable loss dB	Aux dB	Remark
1	0.150	35.30	56.00	-20.70	25.37	9.65	0.08	0.20	Average
2	0.150	46.85	66.00	-19.15	36.92	9.65	0.08	0.20	QP
3	0.177	32.09	54.64	-22.55	22.14	9.65	0.07	0.23	Average
4	0.177	42.23	64.64	-22.41	32.28	9.65	0.07	0.23	QP
5	0.201	29.30	53.58	-24.28	19.34	9.65	0.06	0.25	Average
6	0.201	38.87	63.58	-24.71	28.91	9.65	0.06	0.25	QP
7*	0.375	39.72	48.39	-8.67	29.68	9.64	0.08	0.32	Average
8	0.375	43.66	58.39	-14.73	33.62	9.64	0.08	0.32	QP
9	0.393	29.05	47.99	-18.94	19.00	9.64	0.08	0.33	Average
10	0.393	38.25	57.99	-19.74	28.20	9.64	0.08	0.33	QP
11	19.122	15.63	50.00	-34.37	4.87	9.68	0.50	0.58	Average
12	19.122	20.34	60.00	-39.66	9.58	9.68	0.50	0.58	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).

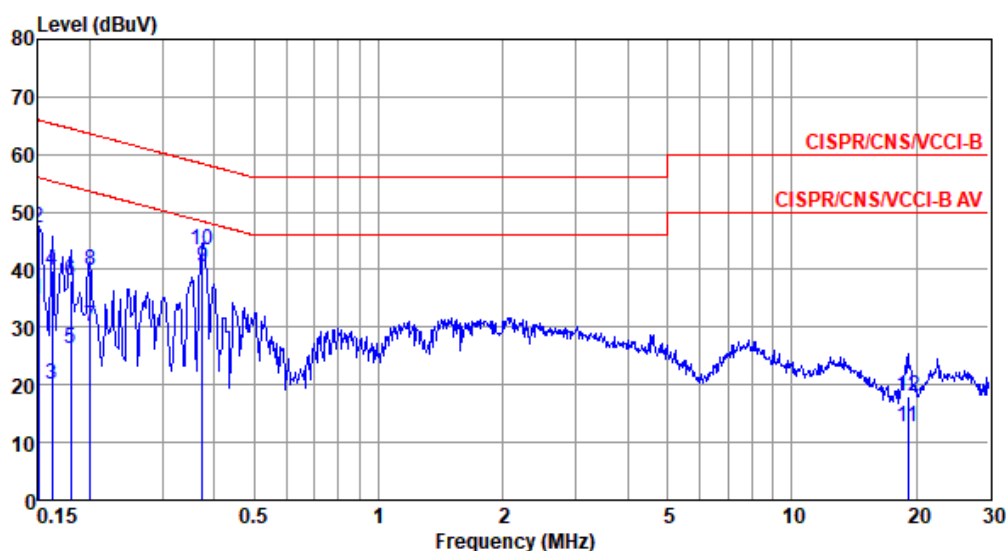


Modulation	BT-LE(2Mbps)	Test Freq. (MHz)	2440
Power Phase	Neutral		

Test by : Joe Liao

Temperature: 23°C

Humidity: 63%



	Freq MHz	Level dBuV	Limit dBuV	Over Limit dB	Read Level dBuV	Factor dB	Cable loss dB	Aux dB	Remark
1	0.150	34.81	56.00	-21.19	24.95	9.66	0.08	0.12	Average
2	0.150	47.30	66.00	-18.70	37.44	9.66	0.08	0.12	QP
3	0.162	20.15	55.34	-35.19	10.29	9.66	0.07	0.13	Average
4	0.162	39.99	65.34	-25.35	30.13	9.66	0.07	0.13	QP
5	0.180	26.26	54.50	-28.24	16.39	9.65	0.07	0.15	Average
6	0.180	37.97	64.50	-26.53	28.10	9.65	0.07	0.15	QP
7	0.201	30.21	53.58	-23.37	20.33	9.65	0.06	0.17	Average
8	0.201	39.84	63.58	-23.74	29.96	9.65	0.06	0.17	QP
9*	0.375	40.36	48.39	-8.03	30.40	9.64	0.08	0.24	Average
10	0.375	43.49	58.39	-14.90	33.53	9.64	0.08	0.24	QP
11	19.122	12.63	50.00	-37.37	1.74	9.82	0.50	0.57	Average
12	19.122	17.87	60.00	-42.13	6.98	9.82	0.50	0.57	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).



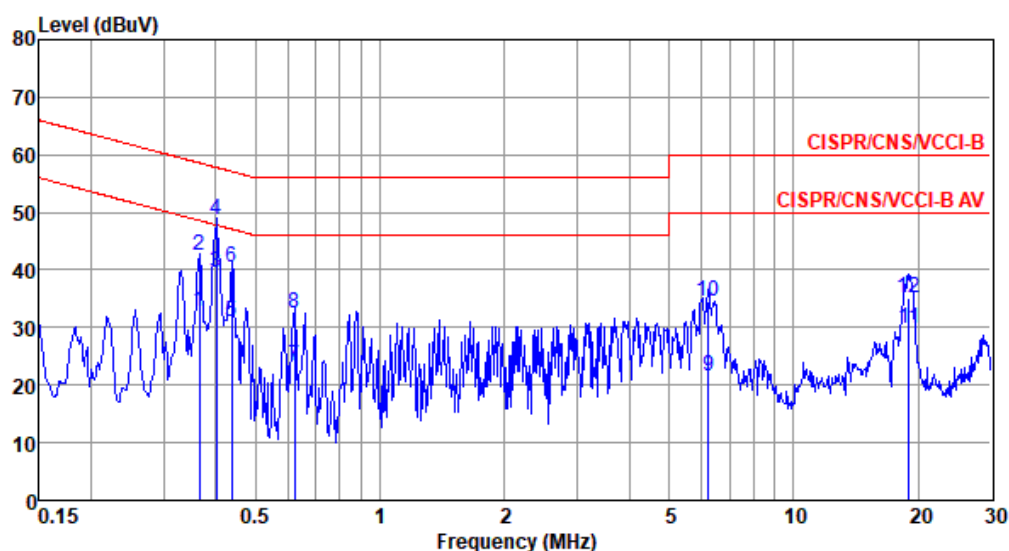
Test Configuration 2: PoE mode

Modulation	BT-LE(2Mbps)	Test Freq. (MHz)	2440
Power Phase	Line		

Test by : Joe Liao

Temperature: 23°C

Humidity: 63%



	Freq	Level	Limit	Over	Read	Factor	Cable	Aux	
	MHz	dBuV	Line	Limit	Level		loss		Remark
			dBuV	dB	dBuV	dB	dB	dB	
1	0.365	32.79	48.61	-15.82	22.75	9.64	0.08	0.32	Average
2	0.365	42.56	58.61	-16.05	32.52	9.64	0.08	0.32	QP
3*	0.402	39.64	47.81	-8.17	29.59	9.64	0.08	0.33	Average
4	0.402	48.68	57.81	-9.13	38.63	9.64	0.08	0.33	QP
5	0.437	30.94	47.11	-16.17	20.89	9.64	0.08	0.33	Average
6	0.437	40.57	57.11	-16.54	30.52	9.64	0.08	0.33	QP
7	0.621	23.46	46.00	-22.54	13.40	9.64	0.08	0.34	Average
8	0.621	32.55	56.00	-23.45	22.49	9.64	0.08	0.34	QP
9	6.219	21.50	50.00	-28.50	11.12	9.69	0.26	0.43	Average
10	6.219	34.59	60.00	-25.41	24.21	9.69	0.26	0.43	QP
11	19.021	29.76	50.00	-20.24	19.00	9.68	0.50	0.58	Average
12	19.021	35.12	60.00	-24.88	24.36	9.68	0.50	0.58	QP

Note 1: Level (dBUV) = Read Level (dBUV) + LISN Factor (dB) + Cable Loss (dB) + Aux (dB).

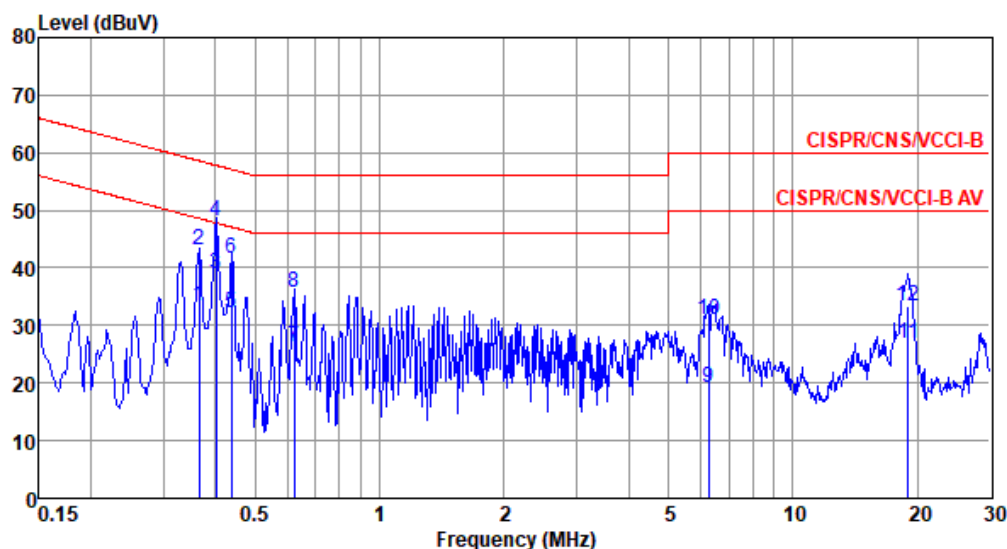
2: Over Limit (dB) = Level (dBUV) - Limit Line (dBUV).

Modulation	BT-LE(2Mbps)	Test Freq. (MHz)	2440
Power Phase	Neutral		

Test by : Joe Liao

Temperature: 23°C

Humidity: 63%



	Freq	Level	Limit	Over	Read	Factor	Cable	Aux	Remark
	MHz	dBuV	Line	Limit	Level	dB	loss	dB	
			dBuV	dB	dBuV		dB		
1	0.365	33.28	48.61	-15.33	23.32	9.64	0.08	0.24	Average
2	0.365	43.05	58.61	-15.56	33.09	9.64	0.08	0.24	QP
3*	0.402	39.10	47.81	-8.71	29.13	9.64	0.08	0.25	Average
4	0.402	48.20	57.81	-9.61	38.23	9.64	0.08	0.25	QP
5	0.437	32.08	47.11	-15.03	22.11	9.64	0.08	0.25	Average
6	0.437	41.75	57.11	-15.36	31.78	9.64	0.08	0.25	QP
7	0.621	26.27	46.00	-19.73	16.28	9.64	0.08	0.27	Average
8	0.621	35.61	56.00	-20.39	25.62	9.64	0.08	0.27	QP
9	6.252	19.21	50.00	-30.79	8.83	9.71	0.26	0.41	Average
10	6.252	30.88	60.00	-29.12	20.50	9.71	0.26	0.41	QP
11	19.021	26.94	50.00	-23.06	16.05	9.82	0.50	0.57	Average
12	19.021	33.48	60.00	-26.52	22.59	9.82	0.50	0.57	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).