FCC Test Report

FCC ID	:	**P27LORAAREAV2**
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:	**Approved by:**
Along Chen / Assistant Manager	**Gary Chang / Manager**

Table of Contents

1 GENERAL DESCRIPTION 5

1.1 Information 5
1.2 Local Support Equipment List 7
1.3 Test Setup Chart 7
1.4 Test Equipment List and Calibration Data 9
1.5 Test Standards 10
1.6 Reference Guidance 10
1.7 Deviation from Test Standard and Measurement Procedure 10
1.8 Measurement Uncertainty 10

2 TEST CONFIGURATION 11

2.1 Testing Facility 11
2.2 The Worst Test Modes and Channel Details 11

3 TRANSMITTER TEST RESULTS 12

3.1 6dB and Occupied Bandwidth 12
3.2 Conducted Output Power 13
3.3 Power Spectral Density 14
3.4 Unwanted Emissions in Restricted Frequency Bands 15
3.5 Emissions in non-restricted Frequency Bands 17
3.6 AC Power Line Conducted Emissions 18

4 TEST LABORATORY INFORMATION 19

Appendix A. 6dB and Occupied Bandwidth
Appendix B. Conducted Output Power
Appendix C. Power Spectral Density
Appendix D. Unwanted Emissions into Restricted Frequency Bands
Appendix E. Emissions in Non-Restricted Frequency Bands
Appendix F. AC Power Line Conducted Emissions

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

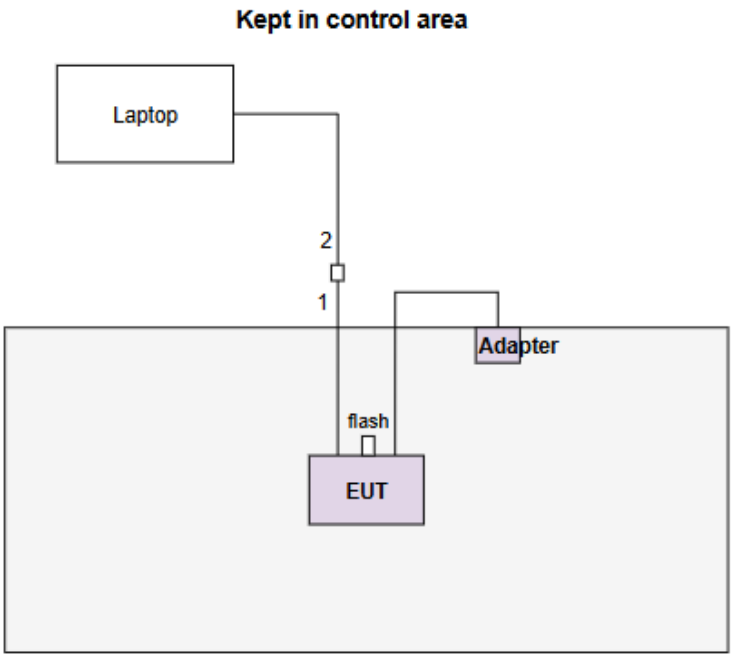
Modulation Mode	Test Frequency (MHz)			
	BT-LE(125kbps)	BT-LE(500kbps)	BT-LE(1Mbps)	BT-LE(2Mbps)
2402	-8	0	0	0
2440	-8	0	0	0
2478	-8	-6	-6	-6
2480	-21	-21	-21	-21

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.

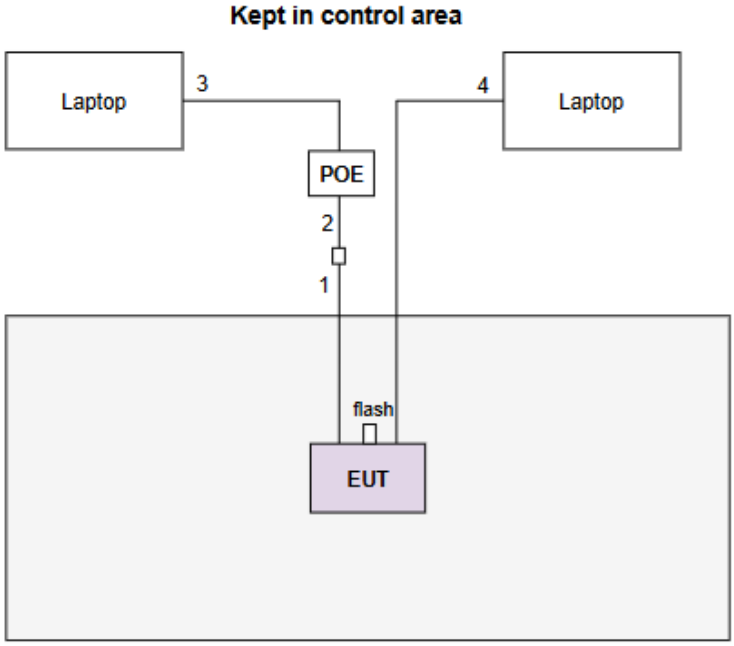
1.3 Test Setup Chart

Test Setup Diagram (Adapter mode)



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

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 ≤ 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

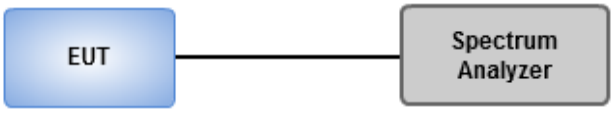
6dB Bandwidth

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

Refer to Appendix A.

3.2 Conducted Output Power

3.2.1 Limit of Conducted Output Power

Conducted power shall not exceed 1Watt.

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

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

Refer to Appendix B.

3.3 Power Spectral Density

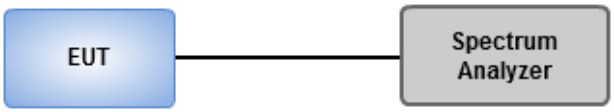
3.3.1 Limit of Power Spectral Density

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

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:
Qusai-Peak value is measured for frequency below 1GHz except for 9–90 kHz, 110–490 kHz frequency band. Peak and average value are measured for frequency above 1GHz. The limit on average radio frequency emission is as above table. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit
Note 2:
Measurements may be performed at a distance other than what is specified provided. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor as below, Frequency at or above 30 MHz: 20 dB/decade Frequency below 30 MHz: 40 dB/decade.

3.4.2 Test Procedures

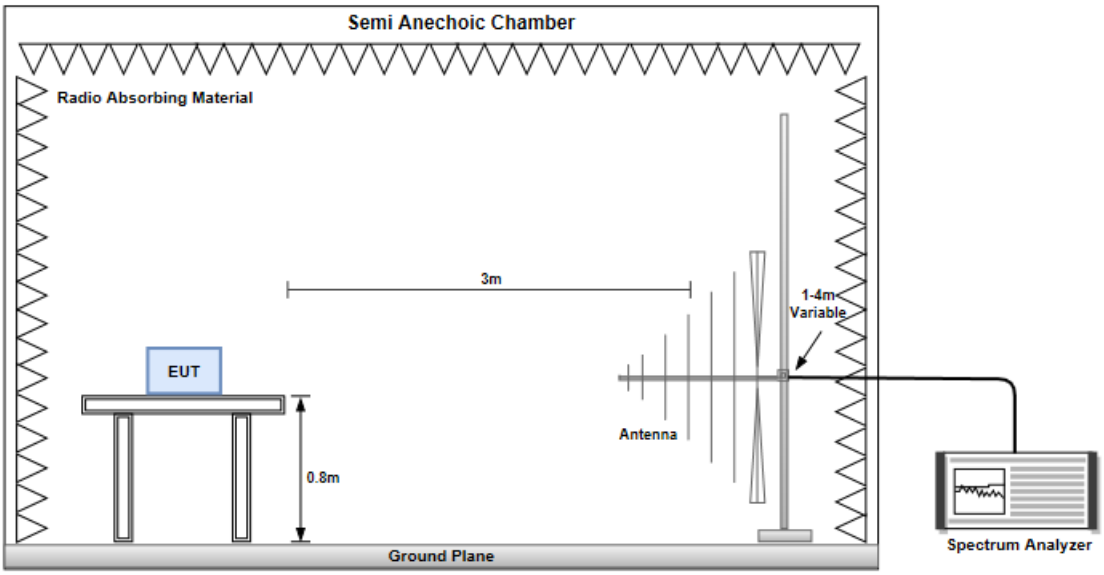
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission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

Note:

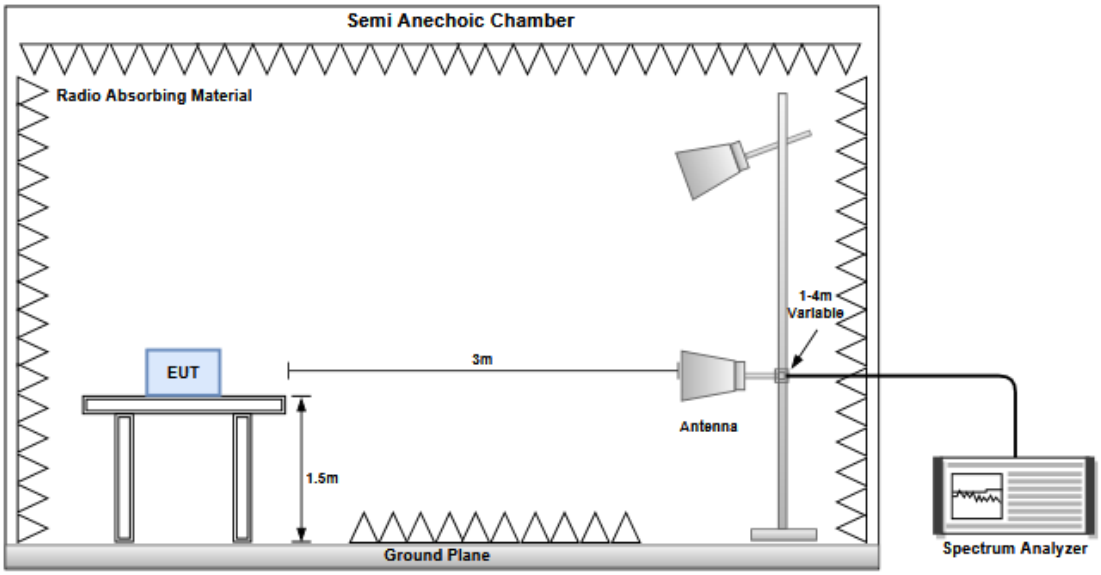
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.4.3 Test Setup

Radiated Emissions below 1 GHz



Radiated Emissions above 1 GHz



3.4.4 Test Results

Refer to Appendix D.

3.5 Emissions in non-restricted Frequency Bands

3.5.1 Emissions in non-restricted frequency bands limit

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

3.5.2 Test Procedures

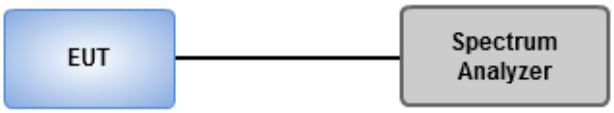
Reference level measurement

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

Emission level measurement

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

3.5.3 Test Setup



3.5.4 Test Results

Ambient Condition	23°C / 63%	**Tested By**	Brad Wu

Refer to Appendix E.

3.6 AC Power Line Conducted Emissions

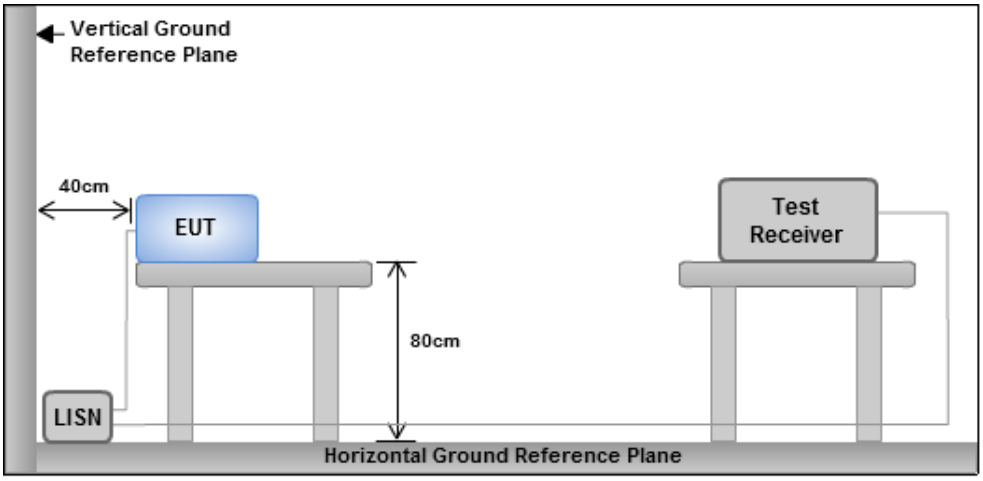
3.6.1 Limit of AC Power Line Conducted Emissions

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

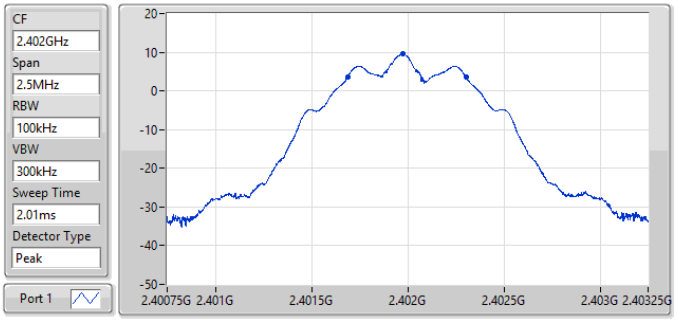
Result

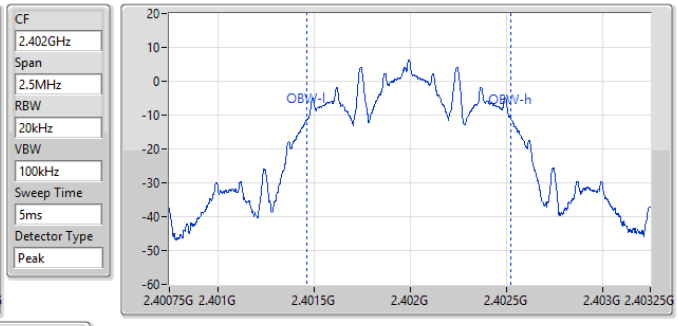
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(125kbps)	-	-	-	-
2402MHz	Pass	500k	613.75k	1.062M
2440MHz	Pass	500k	612.5k	1.067M
2478MHz	Pass	500k	611.25k	1.061M
2480MHz	Pass	500k	611.25k	1.066M
BT-LE(500kbps)	-	-	-	-
2402MHz	Pass	500k	687.5k	1.025M
2440MHz	Pass	500k	682.5k	1.026M
2478MHz	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

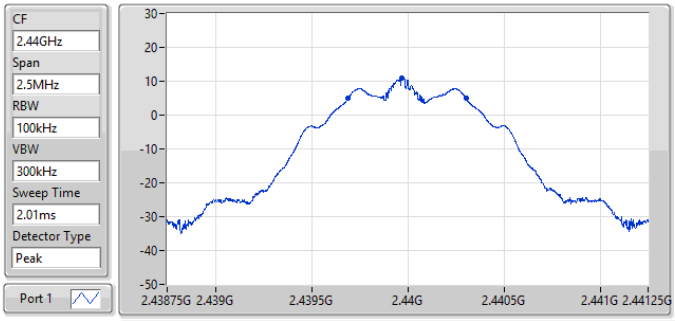


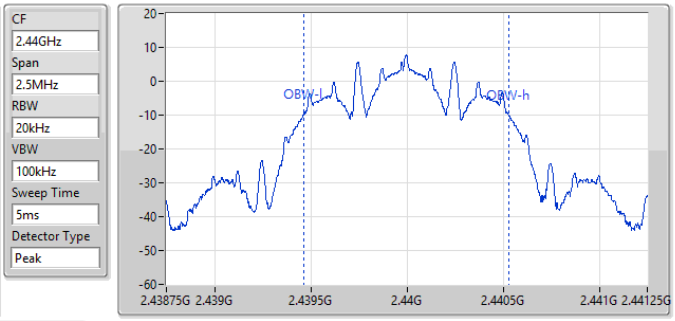


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
613.75k	2.401689G	2.402303G	1.062M	2.401465G	2.402527G	500k	1

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

2440MHz

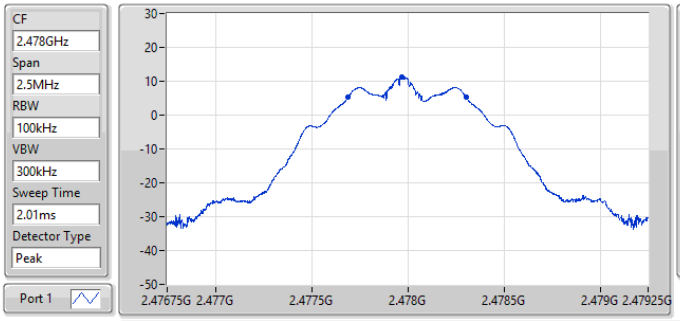


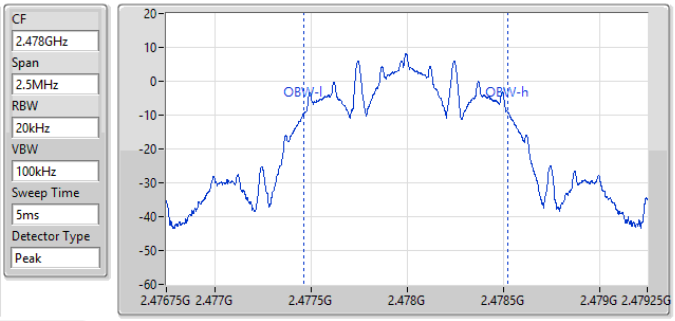


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
612.5k	2.43969G	2.440303G	1.067M	2.439463G	2.44053G	500k	1

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

2478MHz

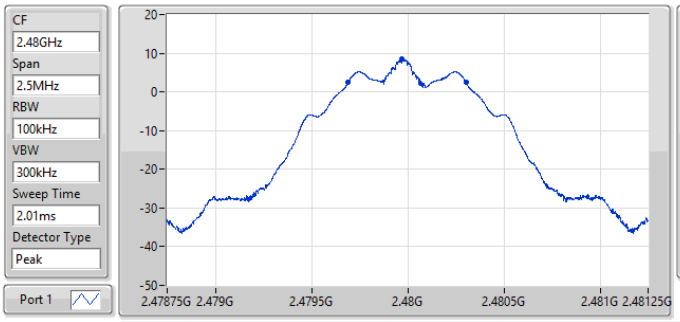


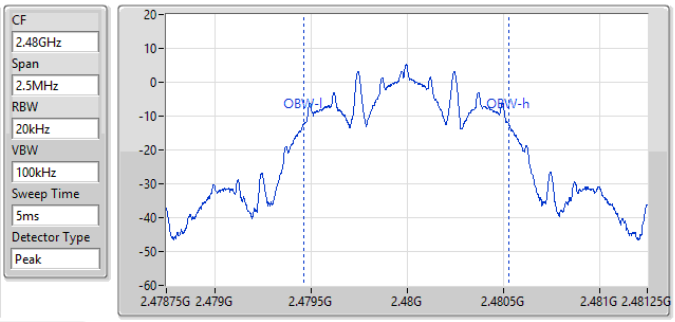


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
611.25k	2.477691G	2.478303G	1.061M	2.477467G	2.478527G	500k	1

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

2480MHz

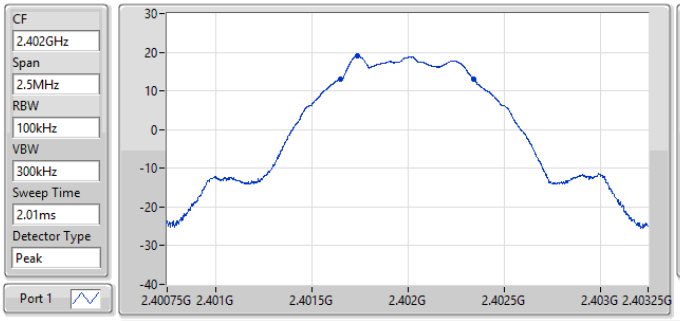


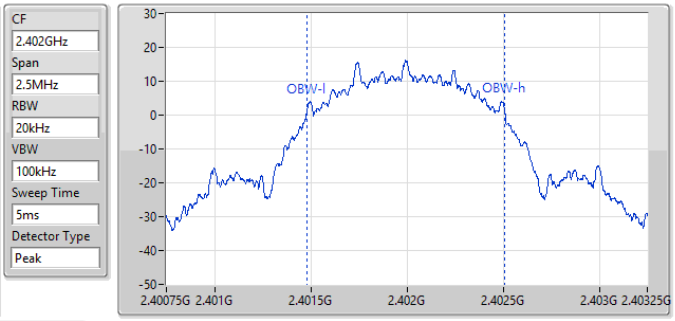


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
611.25k	2.479691G	2.480303G	1.066M	2.479464G	2.48053G	500k	1

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

2402MHz

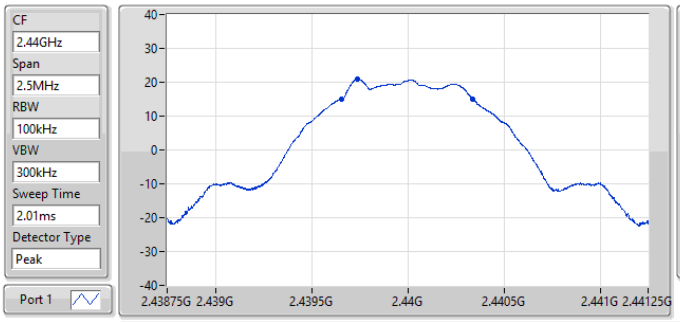


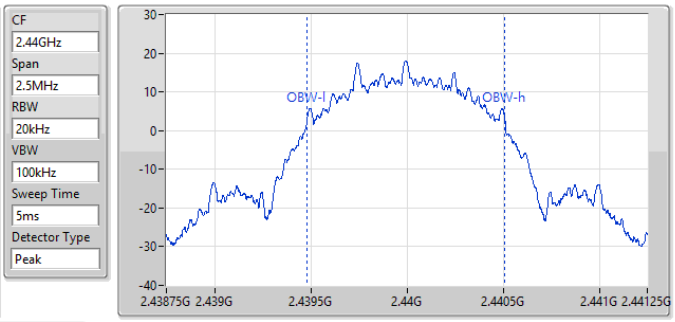


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
687.5k	2.401654G	2.402341G	1.025M	2.401482G	2.402507G	500k	1

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

2440MHz

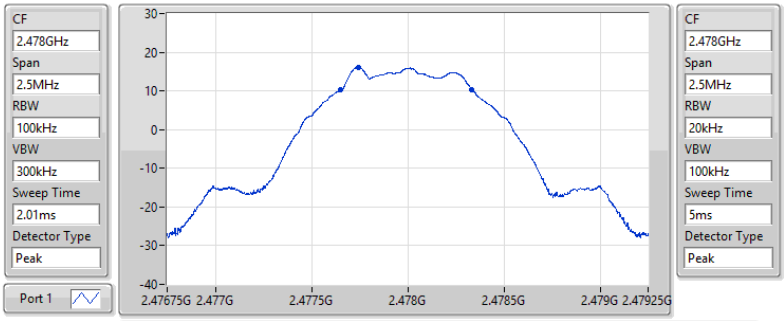


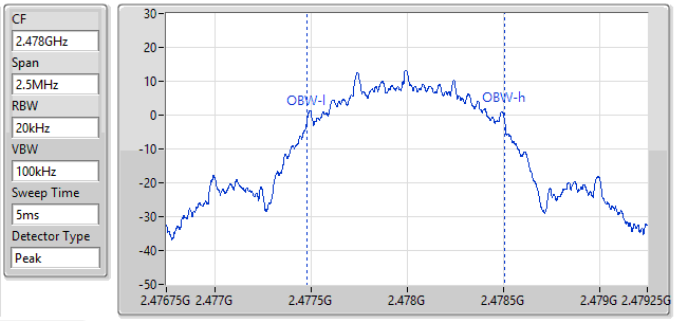


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
682.5k	2.439655G	2.440338G	1.026M	2.439483G	2.440508G	500k	1

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

2478MHz

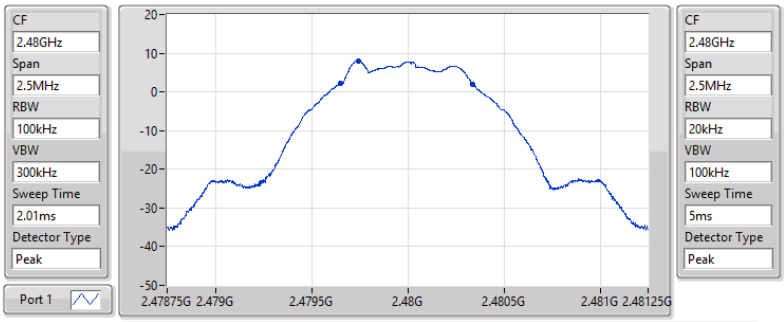


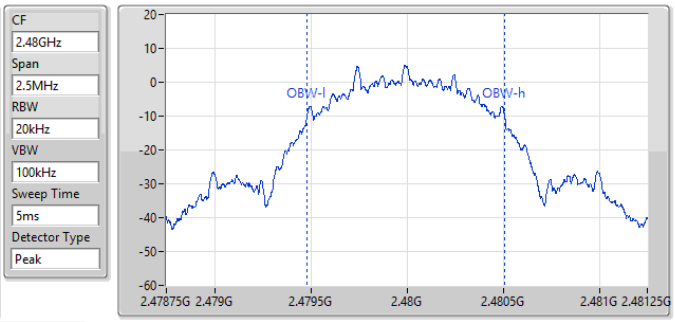


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
681.25k	2.477654G	2.478335G	1.026M	2.47748G	2.478506G	500k	1

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

2480MHz

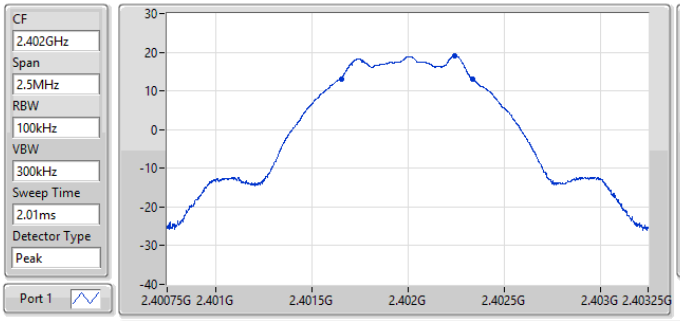




6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
683.75k	2.479653G	2.480336G	1.025M	2.479483G	2.480508G	500k	1

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

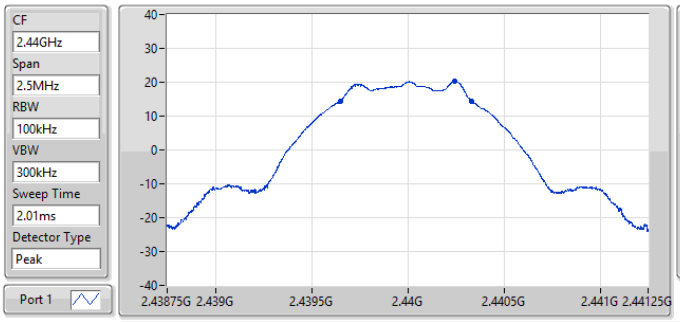
2402MHz

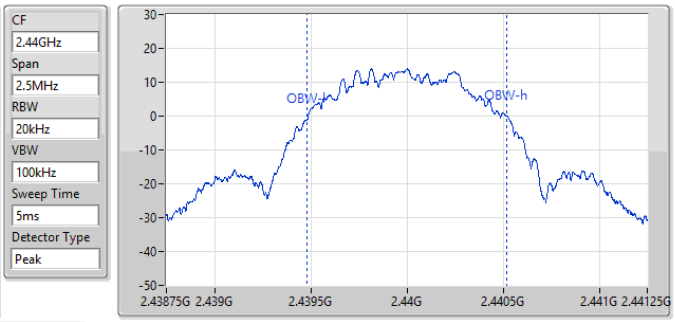


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
681.25k	2.401655G	2.402336G	1.03M	2.401487G	2.402517G	500k	1

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

2440MHz

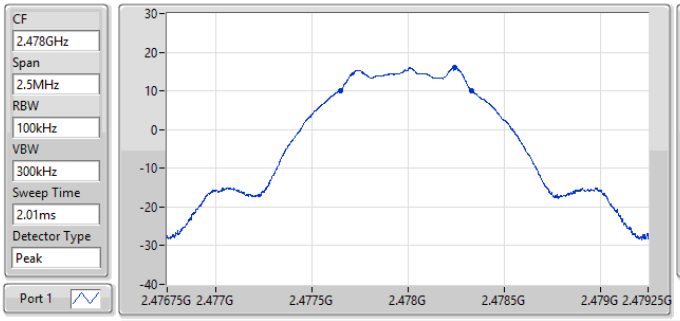


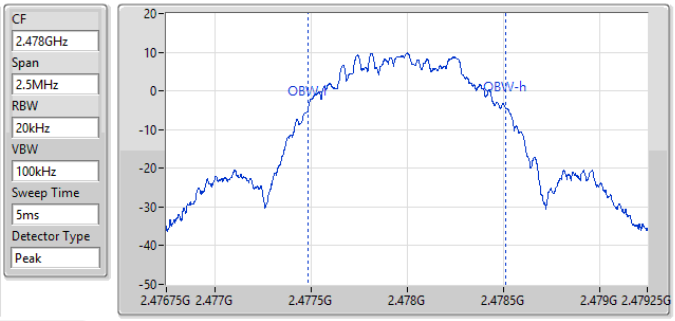


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
682.5k	2.439653G	2.440335G	1.033M	2.439483G	2.440517G	500k	1

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

2478MHz

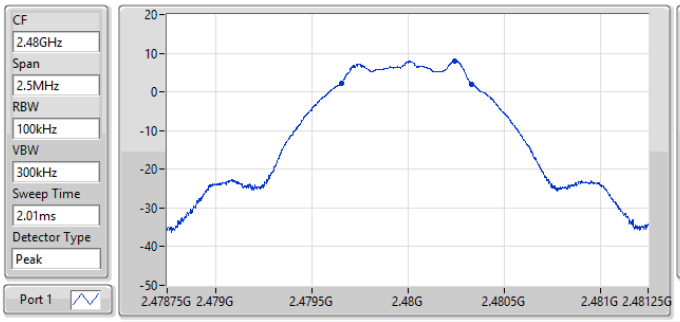


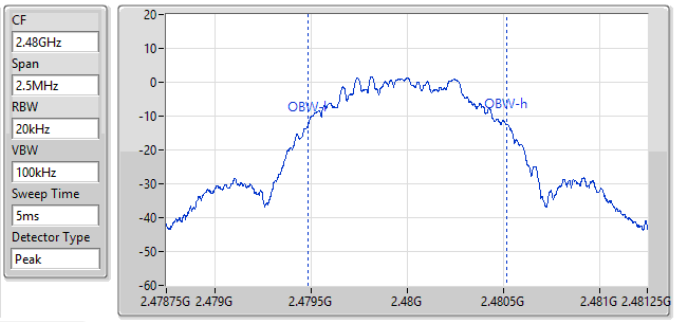


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
680k	2.477654G	2.478334G	1.029M	2.477485G	2.478514G	500k	1

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

2480MHz

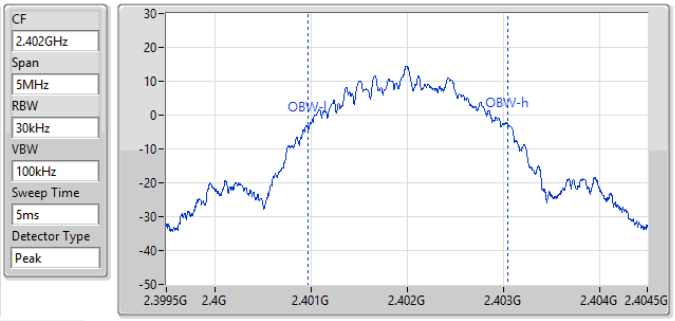




6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
678.75k	2.479655G	2.480334G	1.033M	2.479485G	2.480518G	500k	1

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

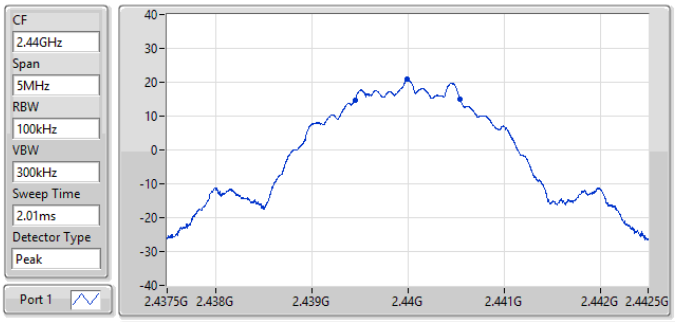
2402MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.09M	2.401453G	2.402543G	2.073M	2.400972G	2.403045G	500k	1

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

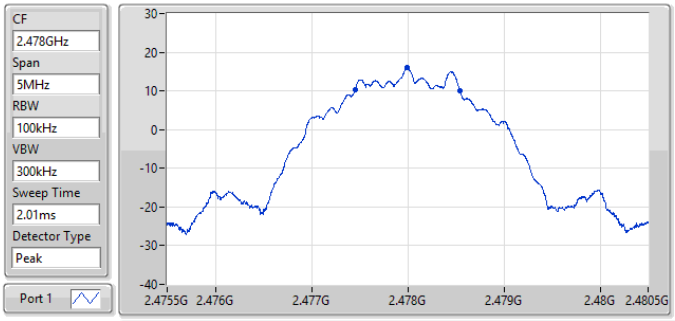
2440MHz

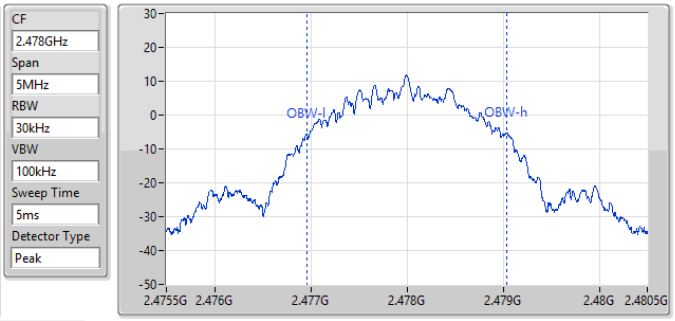


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.088M	2.439455G	2.440543G	2.079M	2.438963G	2.441042G	500k	1

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

2478MHz

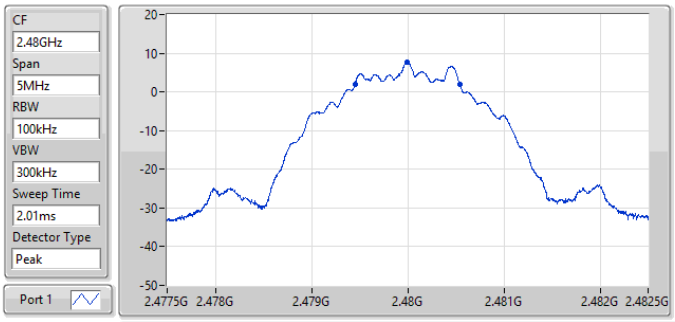


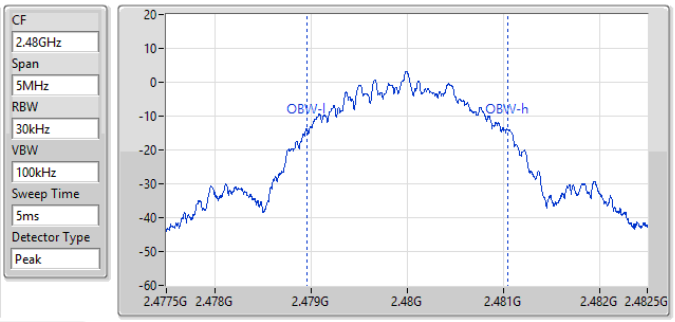


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.088M	2.477453G	2.47854G	2.085M	2.476956G	2.479042G	500k	1

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

2480MHz





6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.088M	2.479453G	2.48054G	2.082M	2.478962G	2.481044G	500k	1

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

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Summary

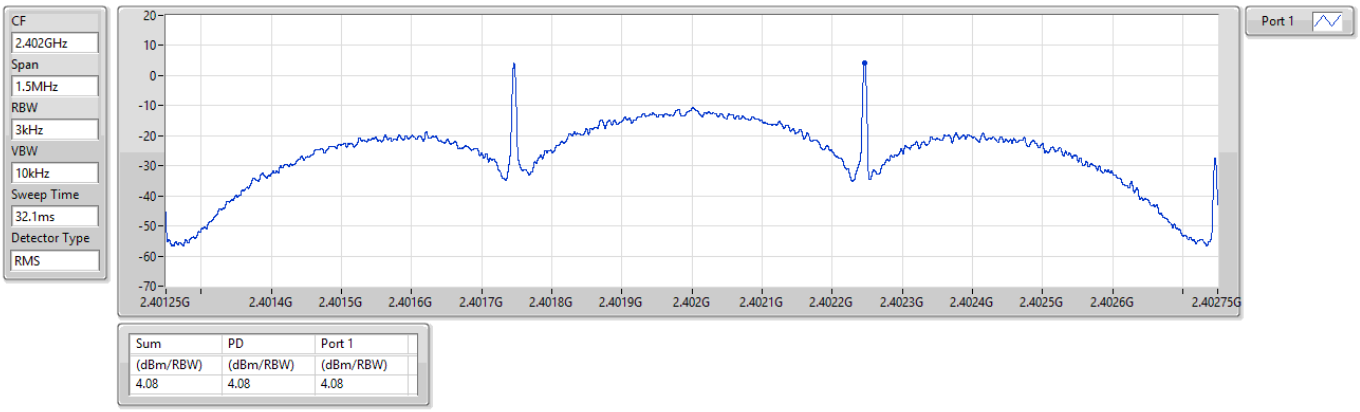
Mode	PD (dBm/3kHz)
2.4-2.4835GHz	-
BT-LE(125kbps)	5.69
BT-LE(500kbps)	4.45
BT-LE(1Mbps)	0.24
BT-LE(2Mbps)	2.77

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

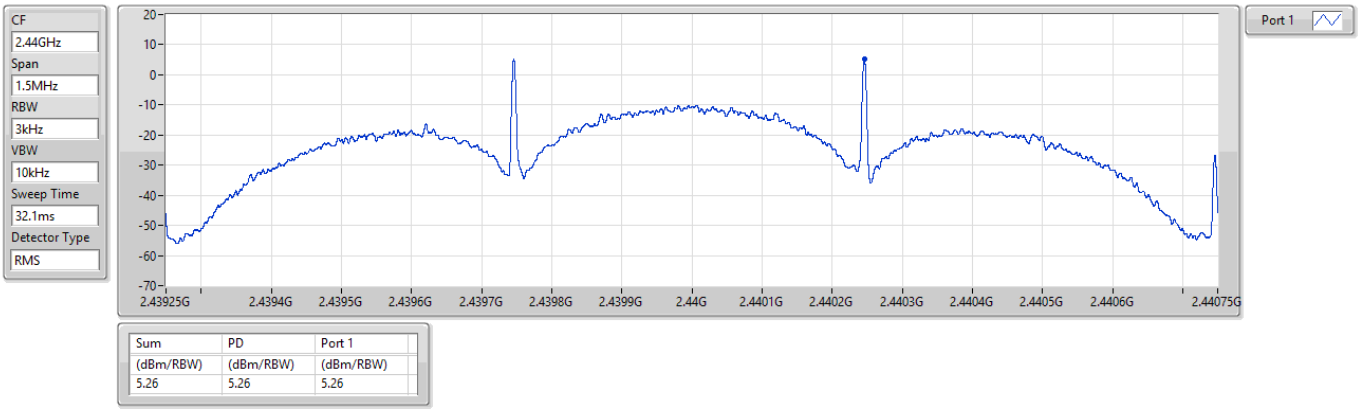
2.4-2.4835GHz_BT-LE(125kbps) **PSD**

2402MHz



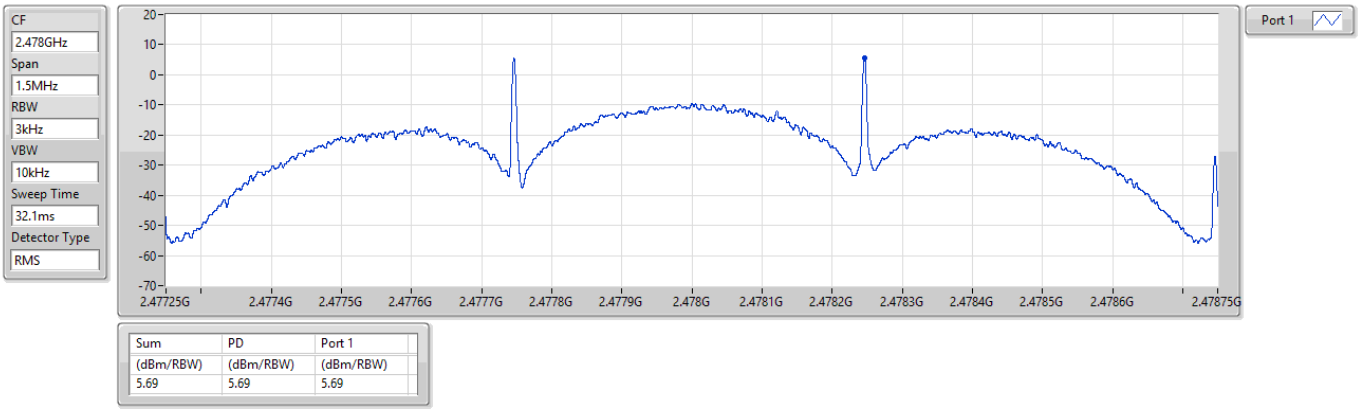
2.4-2.4835GHz_BT-LE(125kbps) **PSD**

2440MHz



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

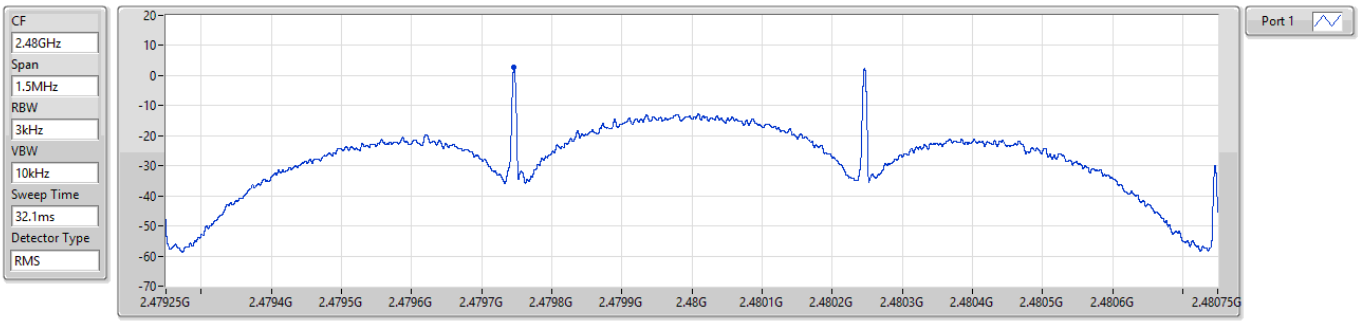
2478MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
5.69	5.69	5.69

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

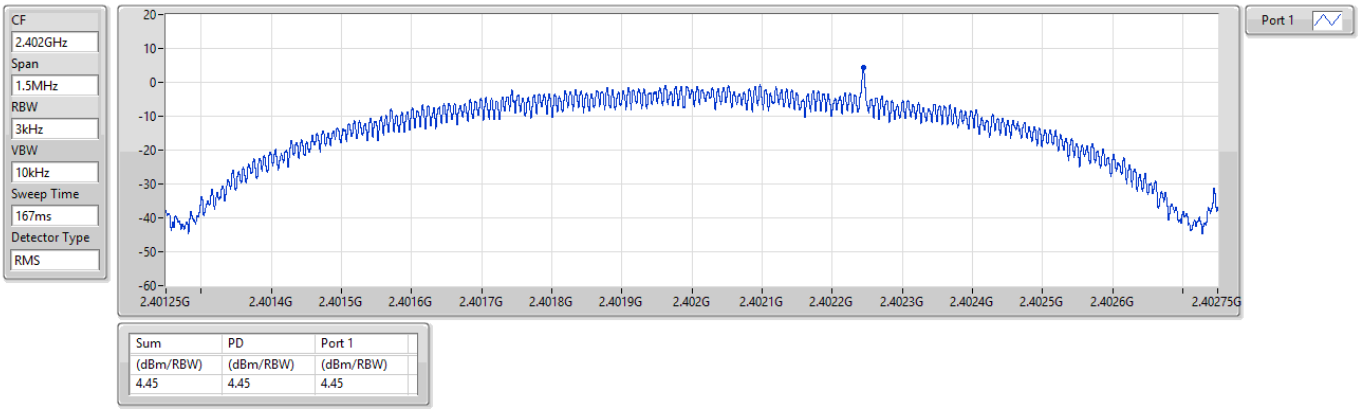
2480MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
2.60	2.60	2.60

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

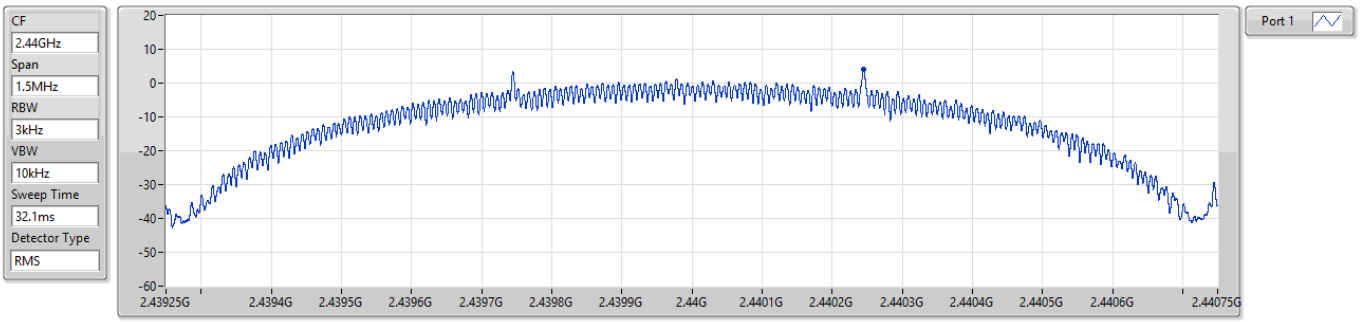
2402MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
4.45	4.45	4.45

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

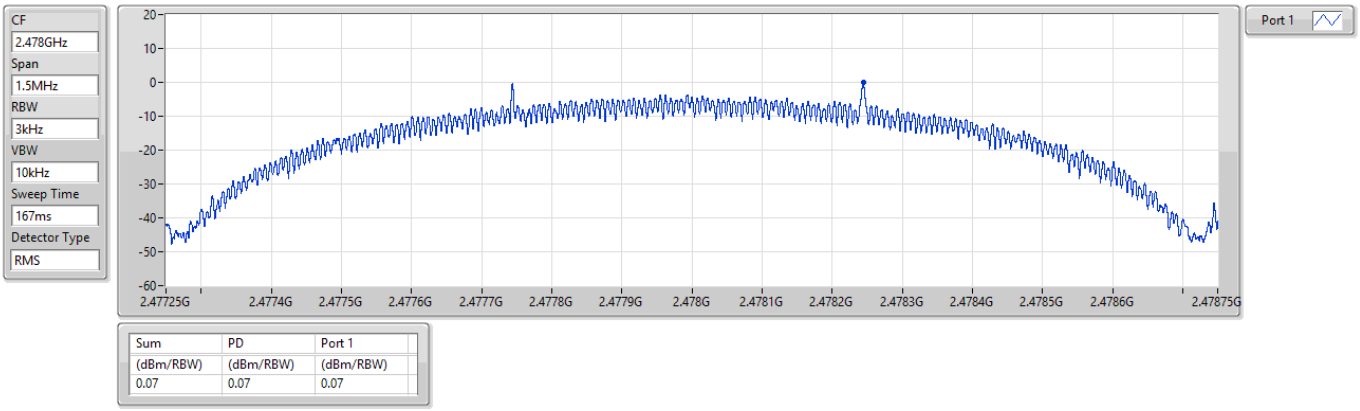
2440MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
4.15	4.15	4.15

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

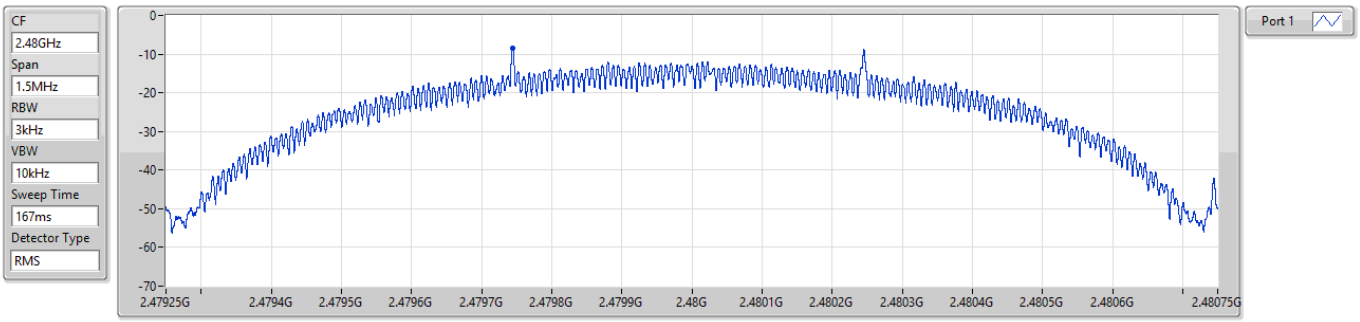
2478MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
0.07	0.07	0.07

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

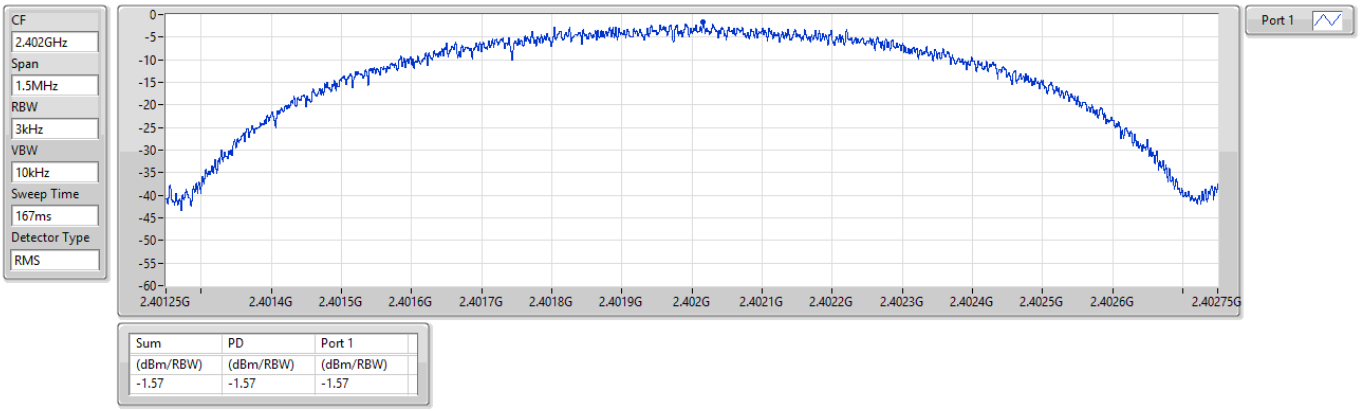
2480MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-8.37	-8.37	-8.37

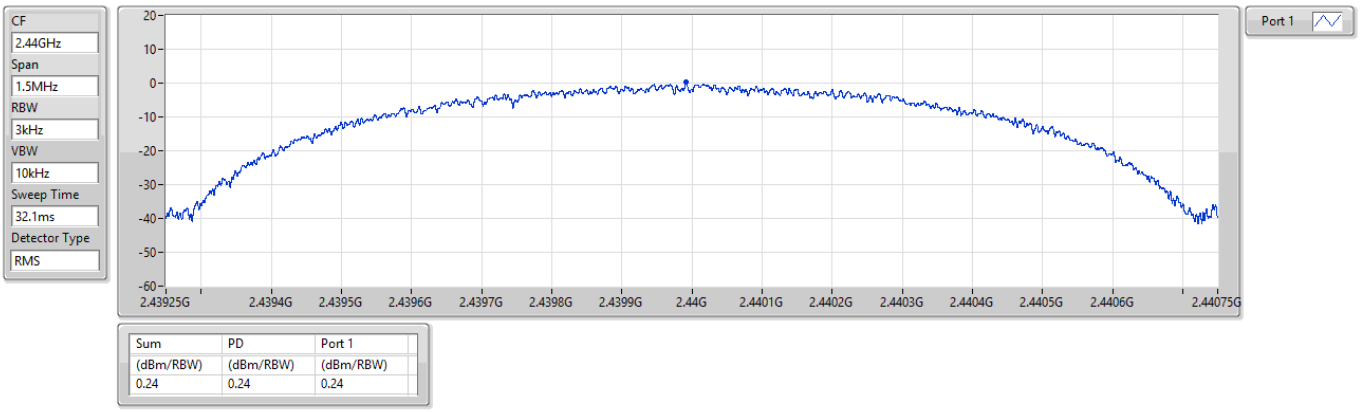
2.4-2.4835GHz_BT-LE(1Mbps) **PSD**

2402MHz



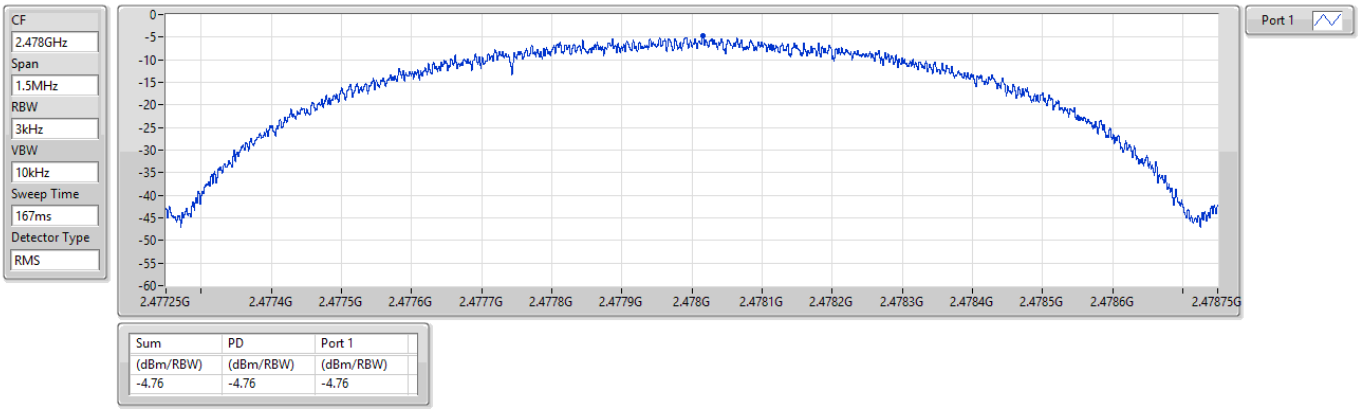
2.4-2.4835GHz_BT-LE(1Mbps) **PSD**

2440MHz



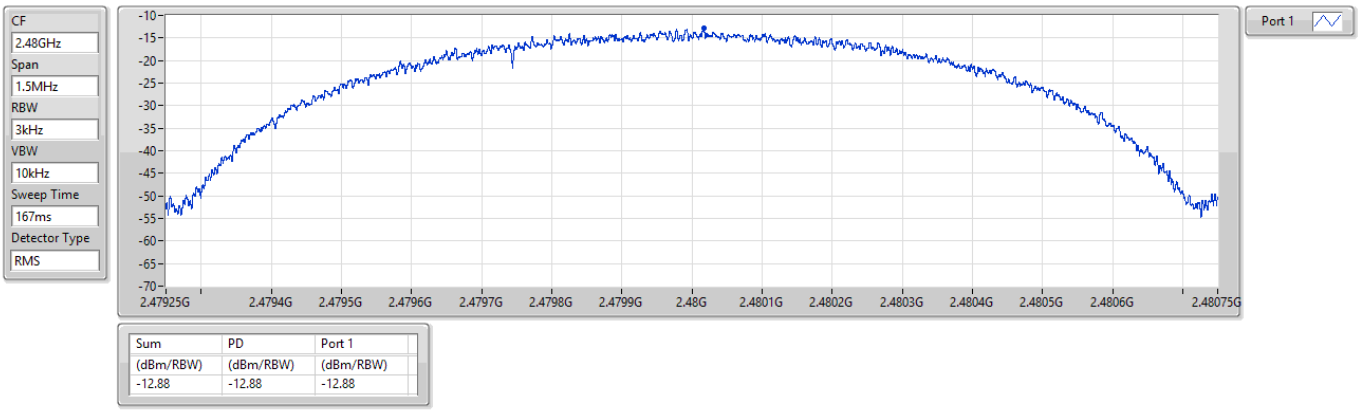
2.4-2.4835GHz_BT-LE(1Mbps) **PSD**

2478MHz



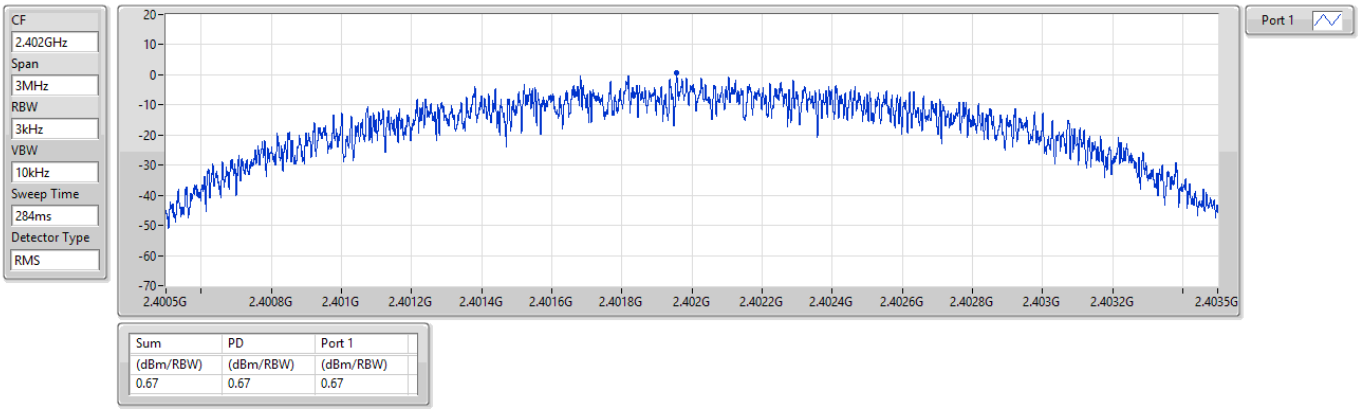
2.4-2.4835GHz_BT-LE(1Mbps) **PSD**

2480MHz



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

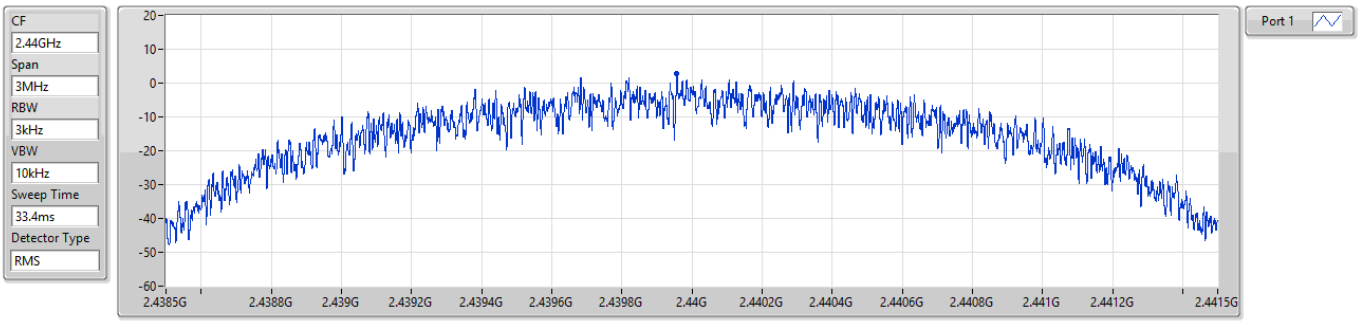
2402MHz



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

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

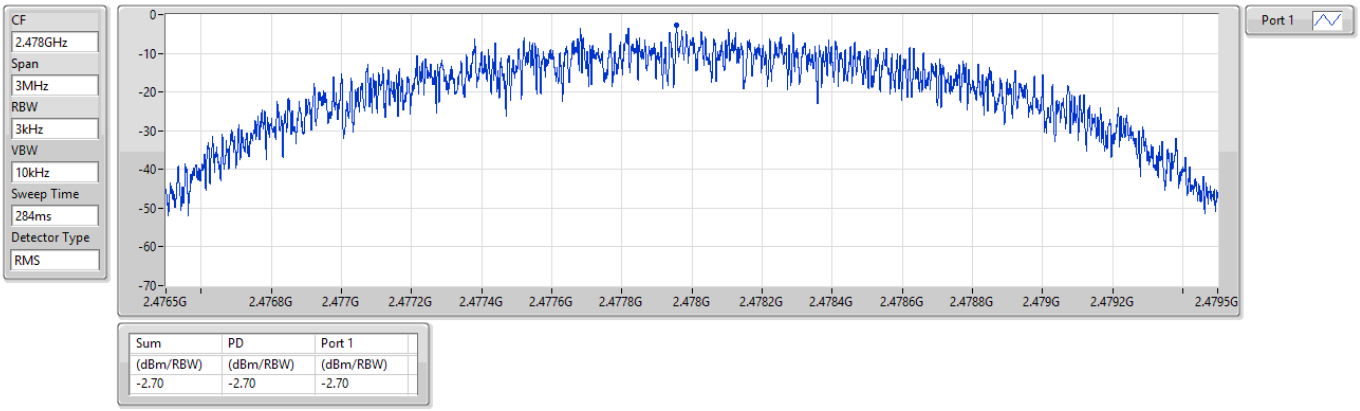
2440MHz



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

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

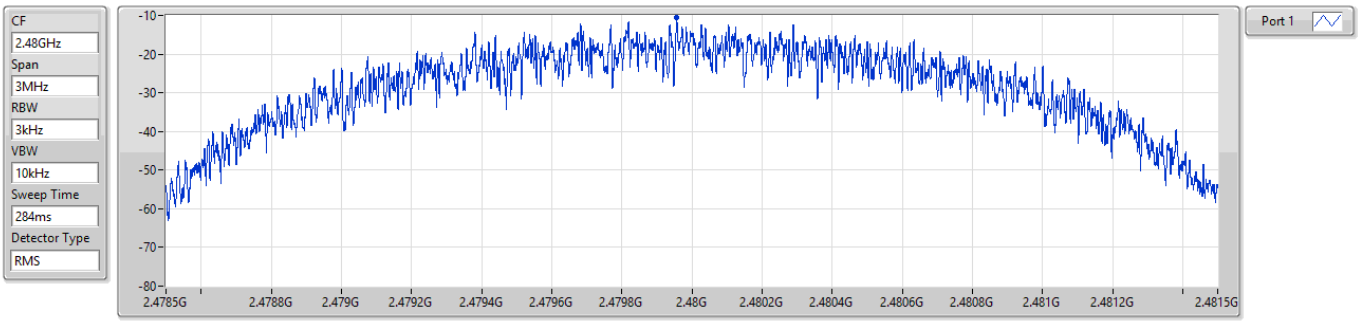
2478MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-2.70	-2.70	-2.70

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

2480MHz



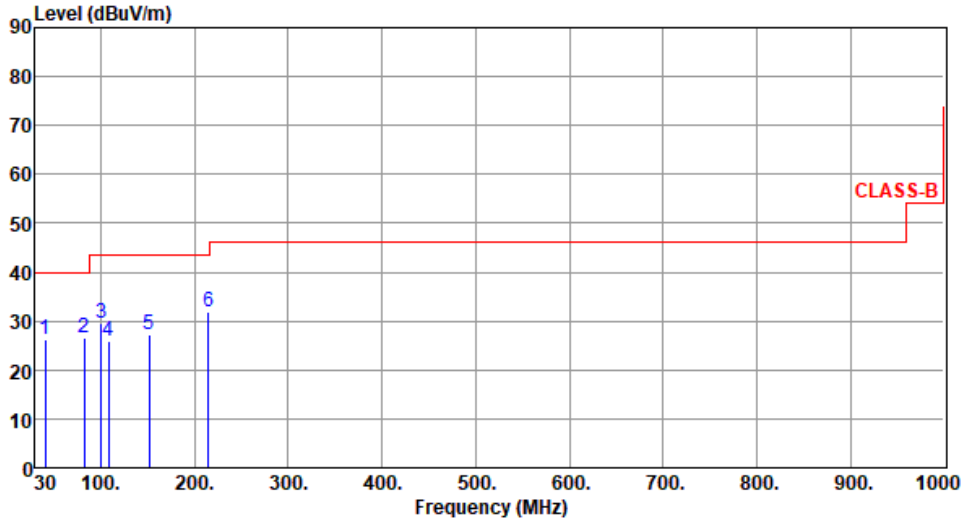
Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-10.42	-10.42	-10.42

Test configuration 1: Adapter mode

Unwanted Emissions (Below 1GHz)

Modulation	BT-LE (2Mbps)	**Test Freq. (MHz)**	2440
Polarization	Horizontal		

Test By :Sean Yu Temperature(℃):21 Humidity(%):66

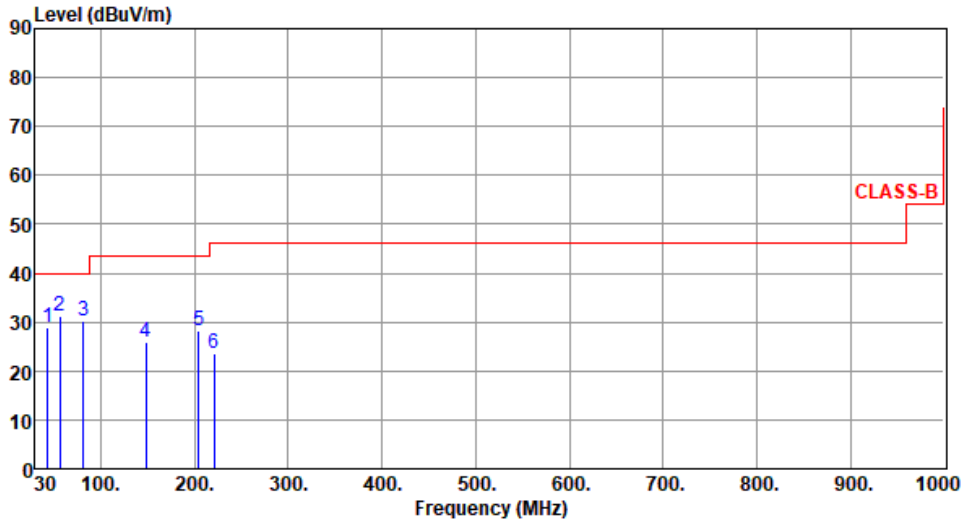


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	40.67	26.28	40.00	-13.72	34.98	-8.70	Peak	---	---
2	82.38	26.41	40.00	-13.59	40.13	-13.72	Peak	---	---
3	100.81	29.54	43.50	-13.96	42.30	-12.76	Peak	---	---
4	108.57	25.98	43.50	-17.52	37.58	-11.60	Peak	---	---
5	151.25	27.13	43.50	-16.37	35.55	-8.42	Peak	---	---
6	215.27	31.81	43.50	-11.69	43.70	-11.89	Peak	---	---

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

Modulation	BT-LE (2Mbps)	**Test Freq. (MHz)**	2440
Polarization	Vertical		

Test By :Sean Yu Temperature(℃):21 Humidity(%):66



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	43.58	28.93	40.00	-11.07	37.21	-8.28	QP	100	346
2	56.19	31.14	40.00	-8.86	39.46	-8.32	Peak	---	---
3	81.41	30.36	40.00	-9.64	43.89	-13.53	Peak	---	---
4	148.34	26.01	43.50	-17.49	34.62	-8.61	Peak	---	---
5	204.60	28.10	43.50	-15.40	39.92	-11.82	Peak	---	---
6	221.09	23.54	46.00	-22.46	35.69	-12.15	Peak	---	---

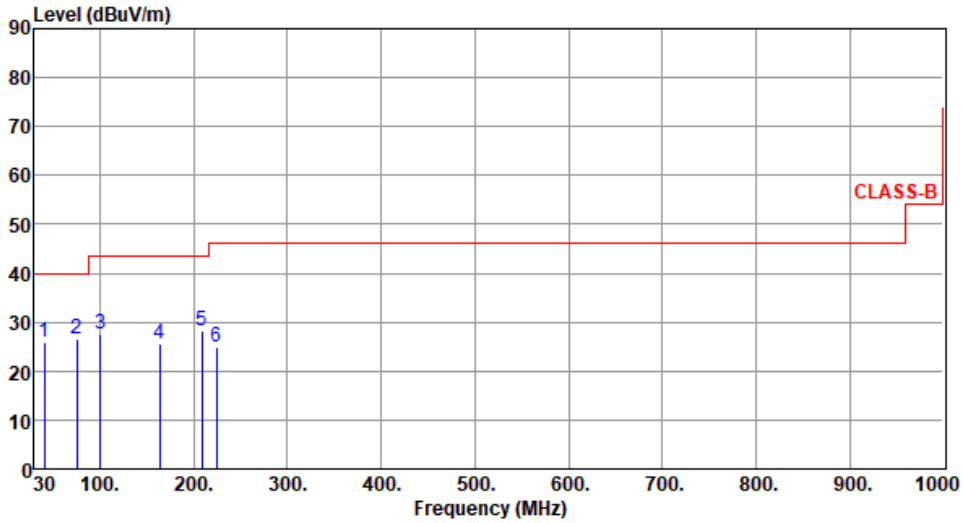
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

Test configuration 2: PoE mode

Unwanted Emissions (Below 1GHz)

Modulation	BT-LE (2Mbps)	**Test Freq. (MHz)**	2440
Polarization	Horizontal		

Test By :Sean Yu Temperature(℃):21 Humidity(%):66

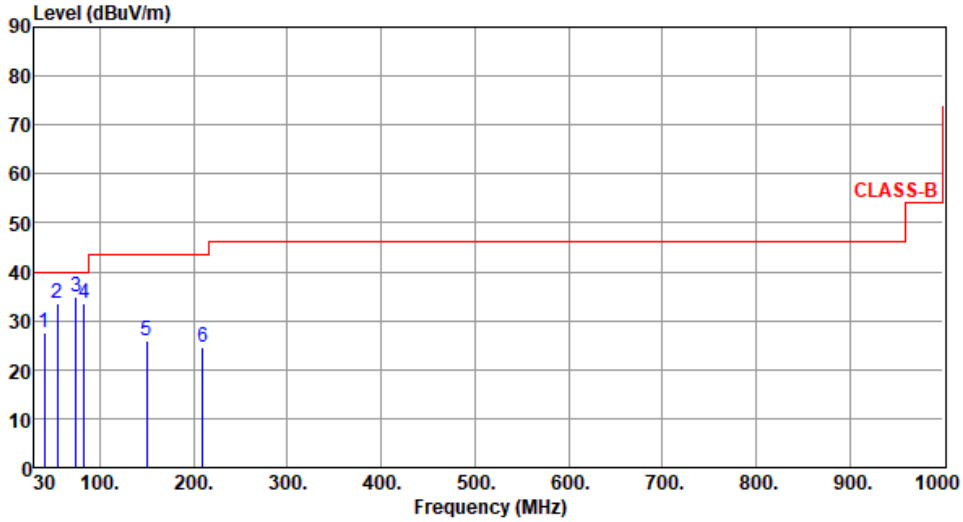


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	40.67	25.91	40.00	-14.09	34.61	-8.70	Peak	---	---
2	75.59	26.60	40.00	-13.40	38.82	-12.22	Peak	---	---
3	100.81	27.67	43.50	-15.83	40.43	-12.76	Peak	---	---
4	163.86	25.69	43.50	-17.81	34.35	-8.66	Peak	---	---
5	208.48	28.35	43.50	-15.15	40.16	-11.81	Peak	---	---
6	224.00	24.80	46.00	-21.20	36.93	-12.13	Peak	---	---

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

Modulation	BT-LE (2Mbps)	**Test Freq. (MHz)**	2440
Polarization	Vertical		

Test By :Sean Yu Temperature(℃):21 Humidity(%):66



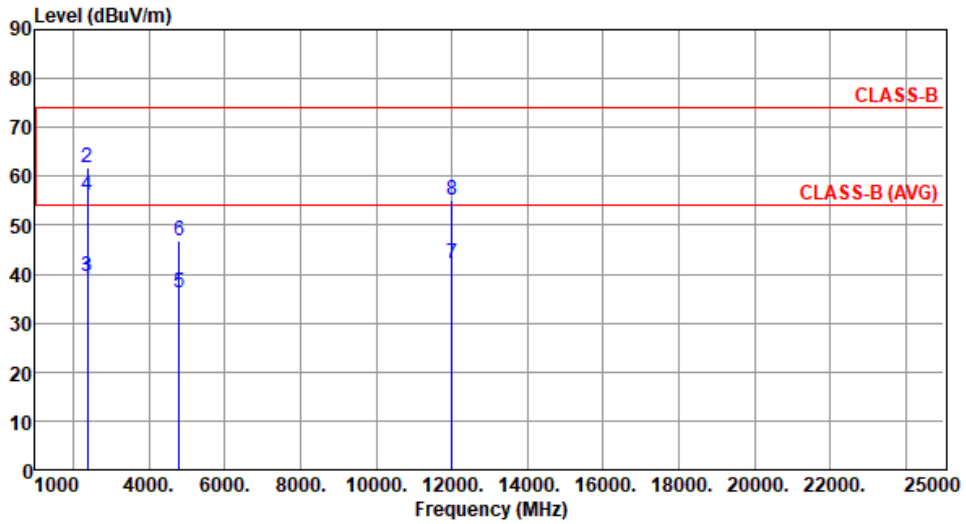
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	40.67	27.69	40.00	-12.31	36.39	-8.70	QP	100	321
2	54.25	33.38	40.00	-6.62	41.43	-8.05	Peak	---	---
3	74.62	34.97	40.00	-5.03	46.77	-11.80	Peak	---	---
4	83.35	33.68	40.00	-6.32	47.77	-14.09	Peak	---	---
5	150.28	26.01	43.50	-17.49	34.37	-8.36	Peak	---	---
6	209.45	24.65	43.50	-18.85	36.46	-11.81	Peak	---	---

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

Unwanted Emissions (Above 1GHz)

Modulation	BT-LE (125kbps)	**Test Freq. (MHz)**	2402
Polarization	Horizontal		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

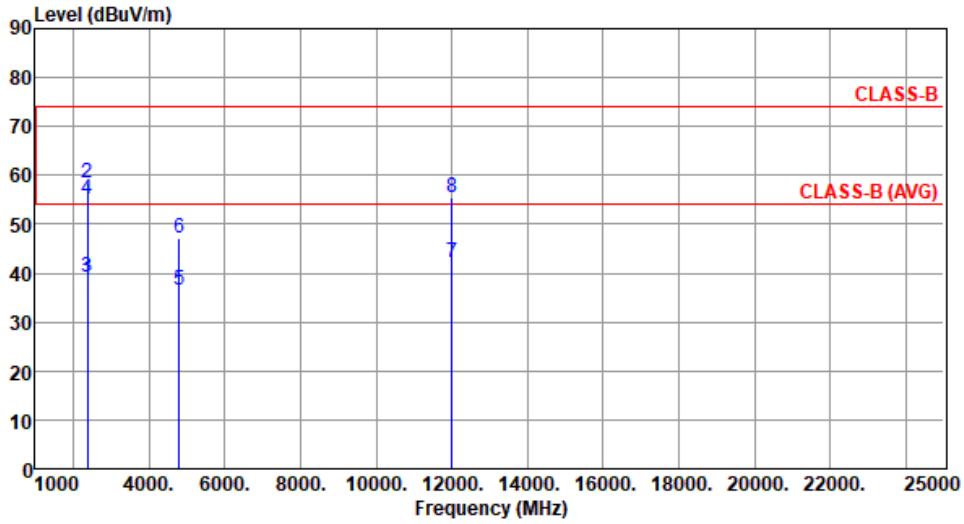


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2387.00	38.94	54.00	-15.06	42.56	-3.62	Average	151	17
2	2387.00	61.81	74.00	-12.19	65.43	-3.62	Peak	151	17
3	2390.00	39.64	54.00	-14.36	43.27	-3.63	Average	151	17
4	2390.00	56.24	74.00	-17.76	59.87	-3.63	Peak	151	17
5	4804.00	36.28	54.00	-17.72	36.21	0.07	Average	105	215
6	4804.00	46.93	74.00	-27.07	46.86	0.07	Peak	105	215
7	12010.00	42.08	54.00	-11.92	34.38	7.70	Average	100	126
8	12010.00	55.26	74.00	-18.74	47.56	7.70	Peak	100	126

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 (125kbps)	**Test Freq. (MHz)**	2402
Polarization	Vertical		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

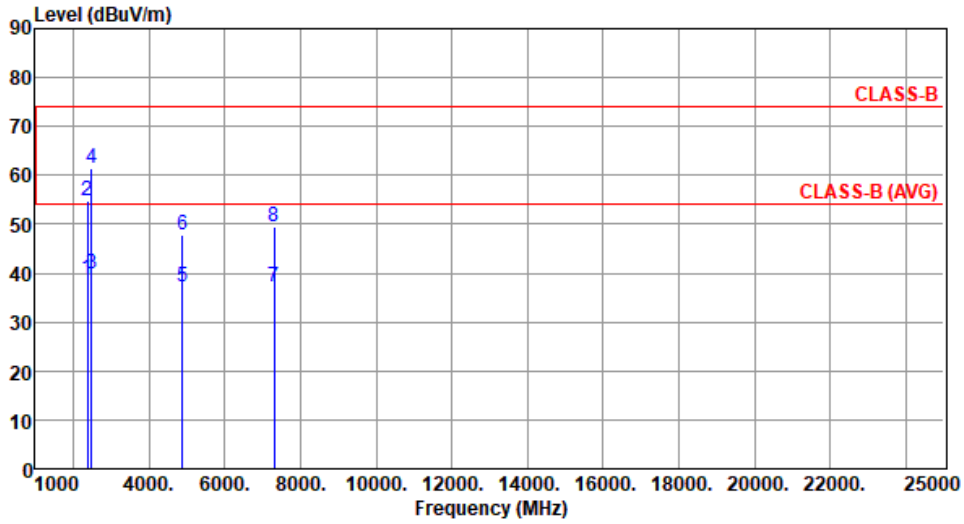


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2387.00	38.59	54.00	-15.41	42.21	-3.62	Average	118	161
2	2387.00	58.48	74.00	-15.52	62.10	-3.62	Peak	118	161
3	2390.00	39.13	54.00	-14.87	42.76	-3.63	Average	118	161
4	2390.00	55.05	74.00	-18.95	58.68	-3.63	Peak	118	161
5	4804.00	36.58	54.00	-17.42	36.51	0.07	Average	105	213
6	4804.00	47.20	74.00	-26.80	47.13	0.07	Peak	105	213
7	12010.00	42.28	54.00	-11.72	34.58	7.70	Average	100	108
8	12010.00	55.38	74.00	-18.62	47.68	7.70	Peak	100	108

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 (125kbps)	**Test Freq. (MHz)**	2440
Polarization	Horizontal		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

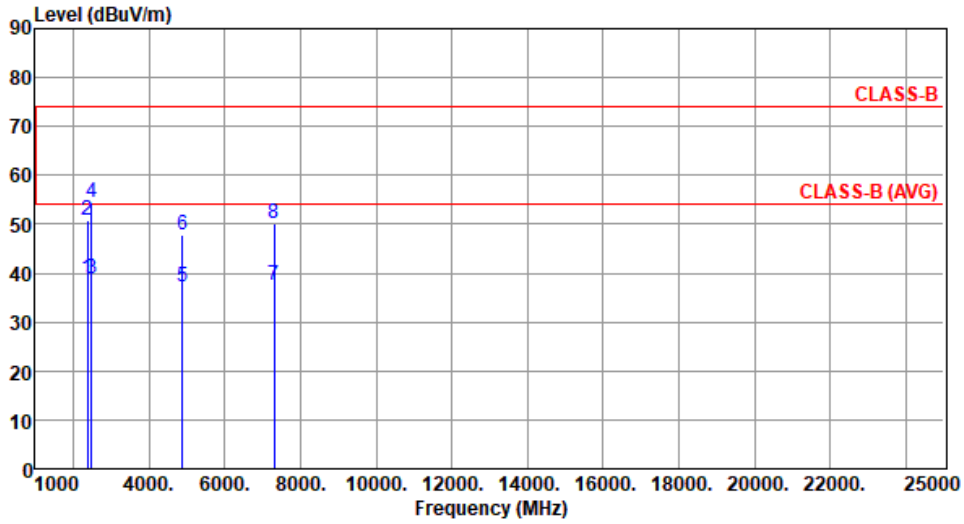


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	38.84	54.00	-15.16	42.47	-3.63	Average	146	21
2	2390.00	54.94	74.00	-19.06	58.57	-3.63	Peak	146	21
3	2483.50	39.80	54.00	-14.20	43.72	-3.92	Average	146	21
4	2483.50	61.50	74.00	-12.50	65.42	-3.92	Peak	146	21
5	4880.00	37.16	54.00	-16.84	37.13	0.03	Average	123	188
6	4880.00	47.87	74.00	-26.13	47.84	0.03	Peak	123	188
7	7320.00	37.05	54.00	-16.95	31.68	5.37	Average	100	157
8	7320.00	49.60	74.00	-24.40	44.23	5.37	Peak	100	157

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 (125kbps)	**Test Freq. (MHz)**	2440
Polarization	Vertical		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

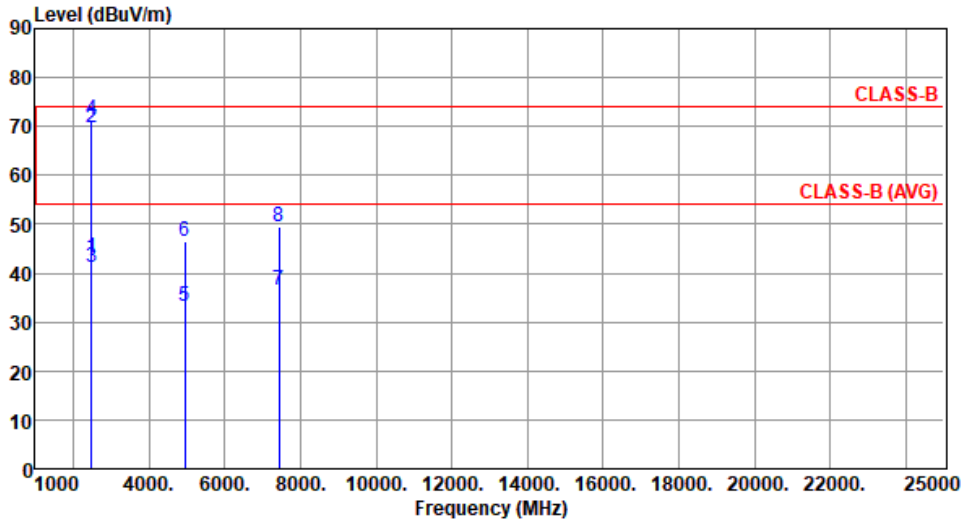


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	38.76	54.00	-15.24	42.39	-3.63	Average	117	153
2	2390.00	50.76	74.00	-23.24	54.39	-3.63	Peak	117	153
3	2483.50	38.91	54.00	-15.09	42.83	-3.92	Average	117	153
4	2483.50	54.40	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

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 (125kbps)	**Test Freq. (MHz)**	2478
Polarization	Horizontal		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

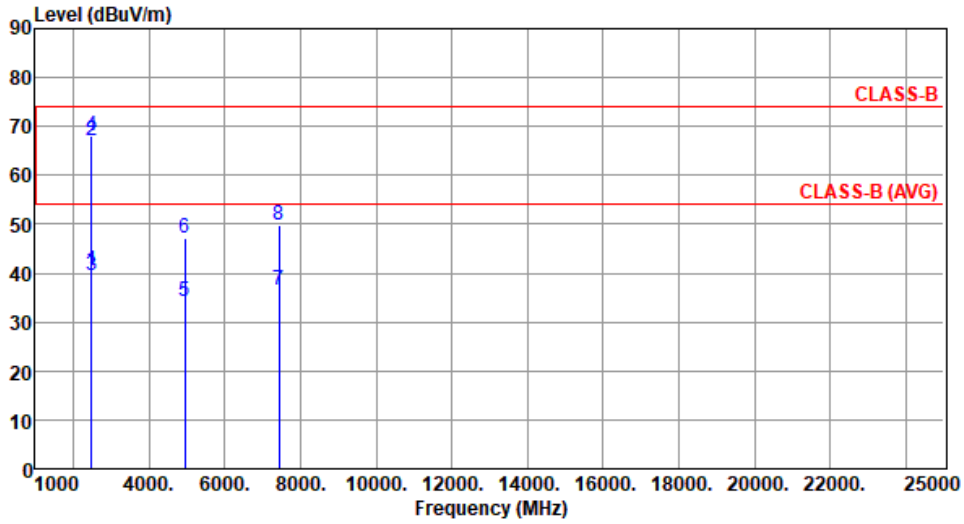


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	43.03	54.00	-10.97	46.95	-3.92	Average	125	16
2	2483.50	69.72	74.00	-4.28	73.64	-3.92	Peak	125	16
3	2485.50	41.26	54.00	-12.74	45.22	-3.96	Average	125	16
4	2485.50	71.57	74.00	-2.43	75.53	-3.96	Peak	125	16
5	4956.00	33.31	54.00	-20.69	33.24	0.07	Average	120	186
6	4956.00	46.50	74.00	-27.50	46.43	0.07	Peak	120	186
7	7434.00	36.47	54.00	-17.53	31.16	5.31	Average	100	126
8	7434.00	49.62	74.00	-24.38	44.31	5.31	Peak	100	126

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 (125kbps)	**Test Freq. (MHz)**	2478
Polarization	Vertical		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

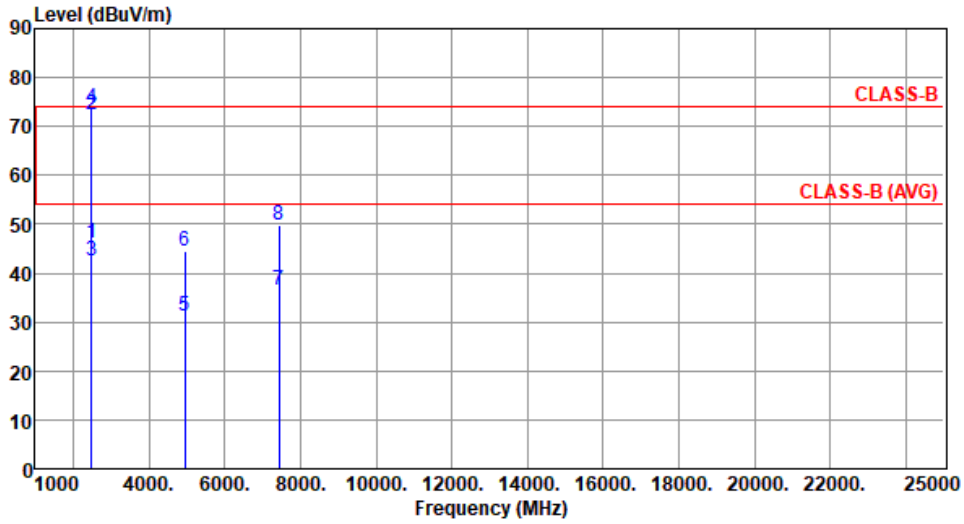


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	40.63	54.00	-13.37	44.55	-3.92	Average	123	148
2	2483.50	67.20	74.00	-6.80	71.12	-3.92	Peak	123	148
3	2485.50	39.53	54.00	-14.47	43.49	-3.96	Average	123	148
4	2485.50	68.16	74.00	-5.84	72.12	-3.96	Peak	123	148
5	4956.00	34.17	54.00	-19.83	34.10	0.07	Average	108	210
6	4956.00	47.28	74.00	-26.72	47.21	0.07	Peak	108	210
7	7434.00	36.49	54.00	-17.51	31.18	5.31	Average	100	106
8	7434.00	49.69	74.00	-24.31	44.38	5.31	Peak	100	106

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 (125kbps)	**Test Freq. (MHz)**	2480
Polarization	Horizontal		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

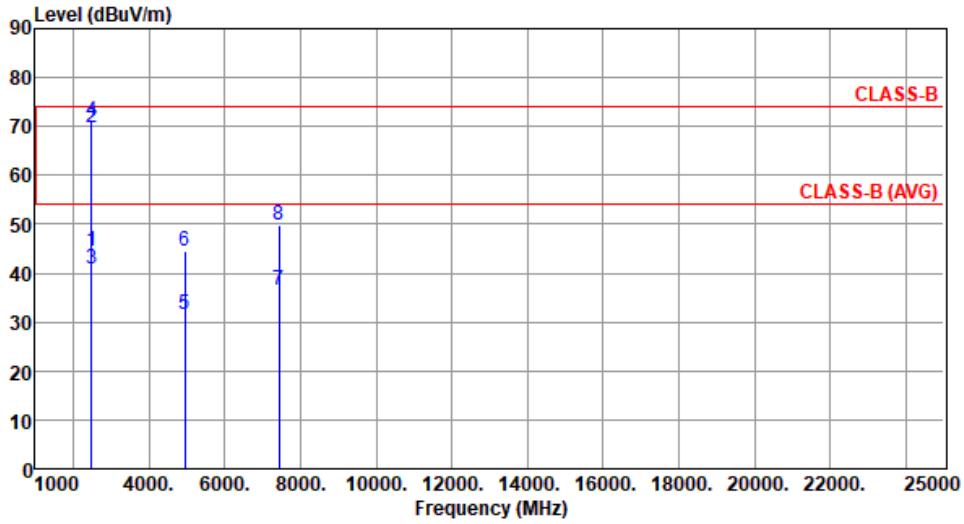


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	46.16	54.00	-7.84	50.08	-3.92	Average	141	2
2	2483.50	72.32	74.00	-1.68	76.24	-3.92	Peak	141	2
3	2485.00	42.44	54.00	-11.56	46.38	-3.94	Average	141	2
4	2485.00	73.86	74.00	-0.14	77.80	-3.94	Peak	141	2
5	4960.00	31.31	54.00	-22.69	31.22	0.09	Average	100	166
6	4960.00	44.65	74.00	-29.35	44.56	0.09	Peak	100	166
7	7440.00	36.63	54.00	-17.37	31.33	5.30	Average	100	208
8	7440.00	49.68	74.00	-24.32	44.38	5.30	Peak	100	208

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 (125kbps)	**Test Freq. (MHz)**	2480
Polarization	Vertical		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

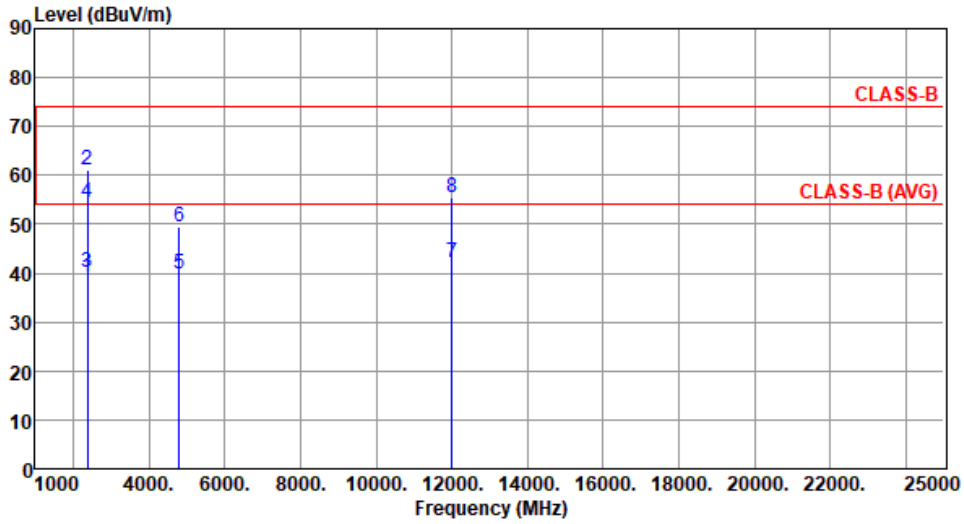


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	44.50	54.00	-9.50	48.42	-3.92	Average	120	149
2	2483.50	69.62	74.00	-4.38	73.54	-3.92	Peak	120	149
3	2485.00	40.82	54.00	-13.18	44.76	-3.94	Average	120	149
4	2485.00	70.92	74.00	-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

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)**	2402
Polarization	Horizontal		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

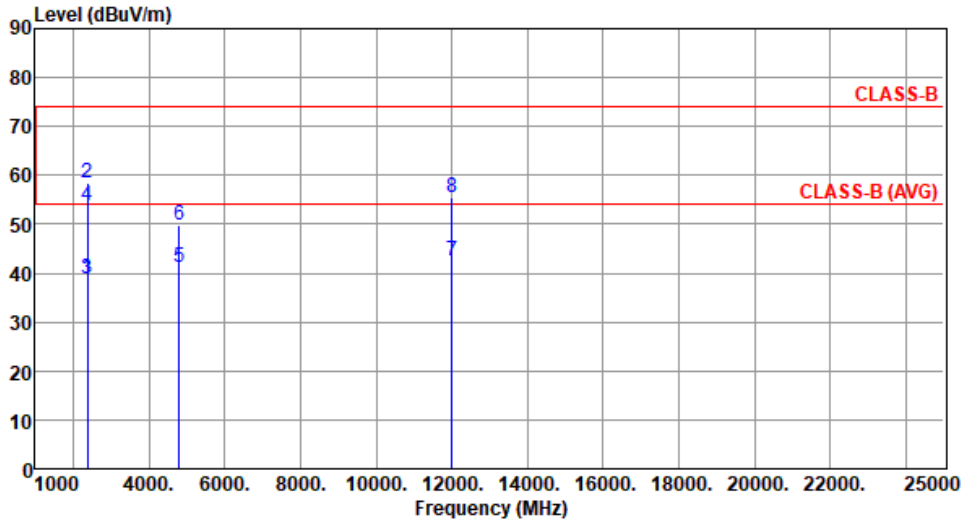


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2387.00	39.24	54.00	-14.76	42.86	-3.62	Average	145	18
2	2387.00	61.13	74.00	-12.87	64.75	-3.62	Peak	145	18
3	2390.00	40.05	54.00	-13.95	43.68	-3.63	Average	145	18
4	2390.00	54.44	74.00	-19.56	58.07	-3.63	Peak	145	18
5	4804.00	40.01	54.00	-13.99	39.94	0.07	Average	106	204
6	4804.00	49.44	74.00	-24.56	49.37	0.07	Peak	106	204
7	12010.00	42.22	54.00	-11.78	34.52	7.70	Average	100	175
8	12010.00	55.37	74.00	-18.63	47.67	7.70	Peak	100	175

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)**	2402
Polarization	Vertical		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

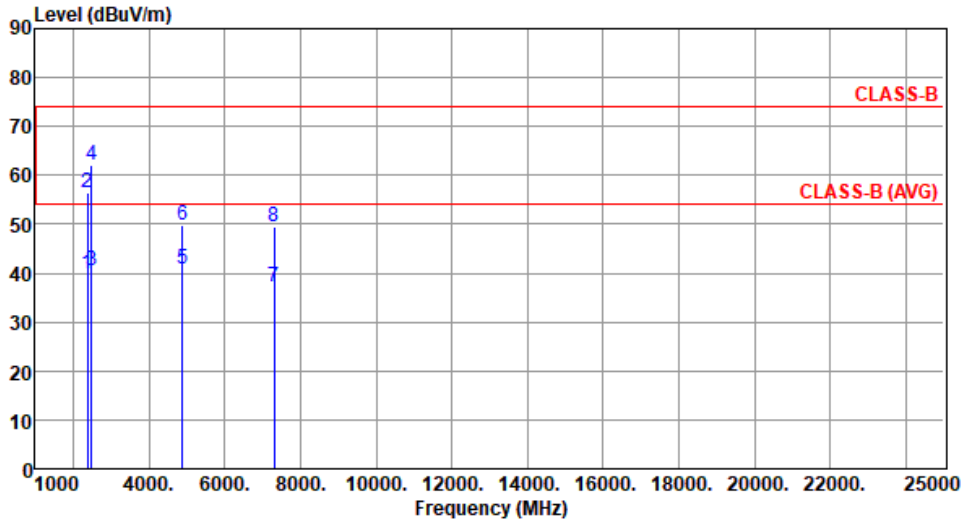


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2387.00	38.76	54.00	-15.24	42.38	-3.62	Average	118	156
2	2387.00	58.56	74.00	-15.44	62.18	-3.62	Peak	118	156
3	2390.00	38.94	54.00	-15.06	42.57	-3.63	Average	118	156
4	2390.00	53.71	74.00	-20.29	57.34	-3.63	Peak	118	156
5	4804.00	41.33	54.00	-12.67	41.26	0.07	Average	108	204
6	4804.00	49.93	74.00	-24.07	49.86	0.07	Peak	108	204
7	12010.00	42.47	54.00	-11.53	34.77	7.70	Average	100	123
8	12010.00	55.39	74.00	-18.61	47.69	7.70	Peak	100	123

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	Horizontal		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

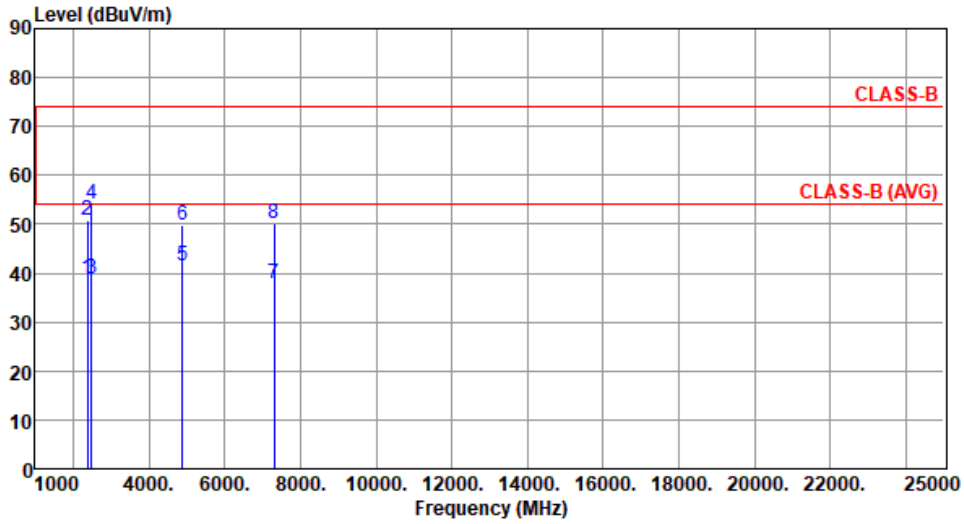


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	40.00	54.00	-14.00	43.63	-3.63	Average	143	19
2	2390.00	56.36	74.00	-17.64	59.99	-3.63	Peak	143	19
3	2483.50	40.61	54.00	-13.39	44.53	-3.92	Average	143	19
4	2483.50	62.01	74.00	-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(℃):22 Humidity(%):68

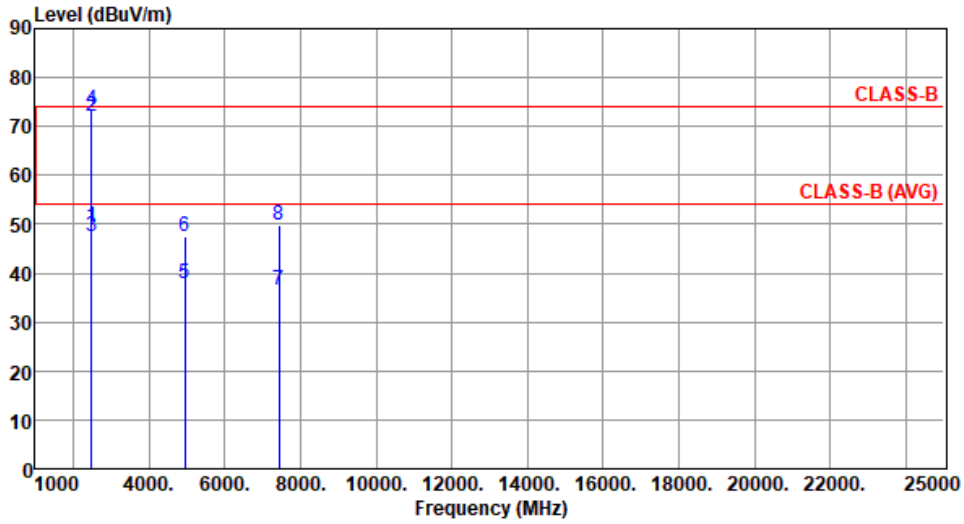


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	38.76	54.00	-15.24	42.39	-3.63	Average	126	158
2	2390.00	50.80	74.00	-23.20	54.43	-3.63	Peak	126	158
3	2483.50	38.83	54.00	-15.17	42.75	-3.92	Average	126	158
4	2483.50	54.01	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

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)**	2478
Polarization	Horizontal		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

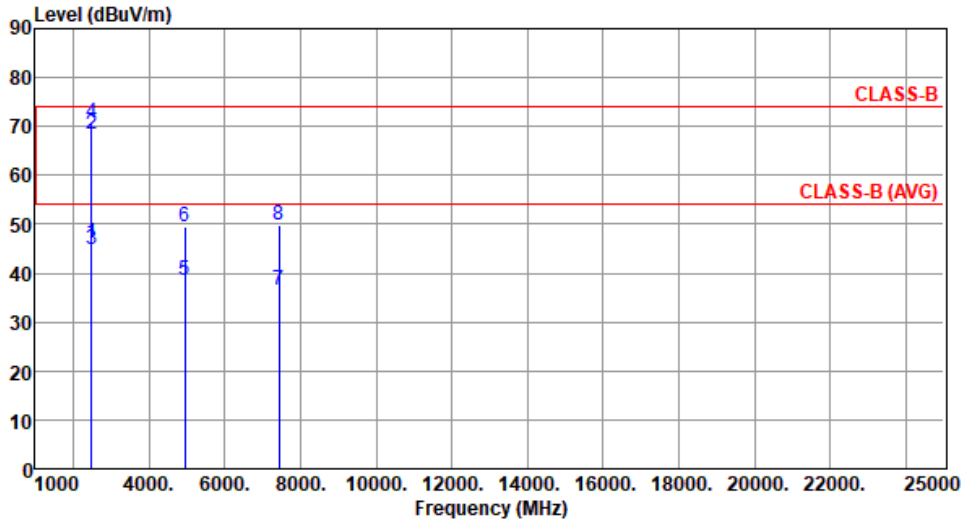


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	49.49	54.00	-4.51	53.41	-3.92	Average	142	21
2	2483.50	72.05	74.00	-1.95	75.97	-3.92	Peak	142	21
3	2485.50	47.34	54.00	-6.66	51.30	-3.96	Average	142	21
4	2485.50	73.45	74.00	-0.55	77.41	-3.96	Peak	142	21
5	4956.00	37.93	54.00	-16.07	37.86	0.07	Average	122	190
6	4956.00	47.50	74.00	-26.50	47.43	0.07	Peak	122	190
7	7434.00	36.69	54.00	-17.31	31.38	5.31	Average	100	126
8	7434.00	49.74	74.00	-24.26	44.43	5.31	Peak	100	126

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)**	2478
Polarization	Vertical		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

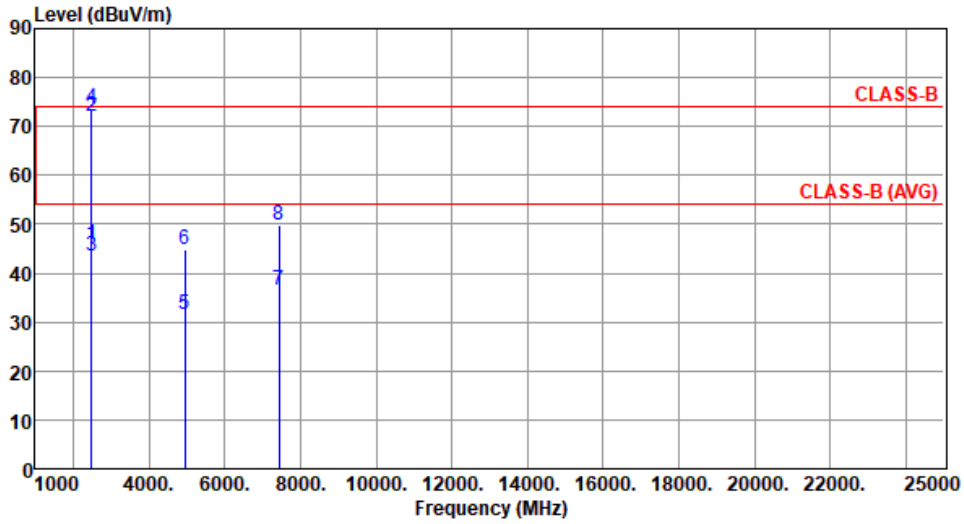


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	46.18	54.00	-7.82	50.10	-3.92	Average	121	168
2	2483.50	68.40	74.00	-5.60	72.32	-3.92	Peak	121	168
3	2485.50	44.73	54.00	-9.27	48.69	-3.96	Average	121	168
4	2485.50	70.61	74.00	-3.39	74.57	-3.96	Peak	121	168
5	4956.00	38.55	54.00	-15.45	38.48	0.07	Average	106	211
6	4956.00	49.40	74.00	-24.60	49.33	0.07	Peak	106	211
7	7434.00	36.64	54.00	-17.36	31.33	5.31	Average	100	258
8	7434.00	49.82	74.00	-24.18	44.51	5.31	Peak	100	258

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)**	2480
Polarization	Horizontal		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

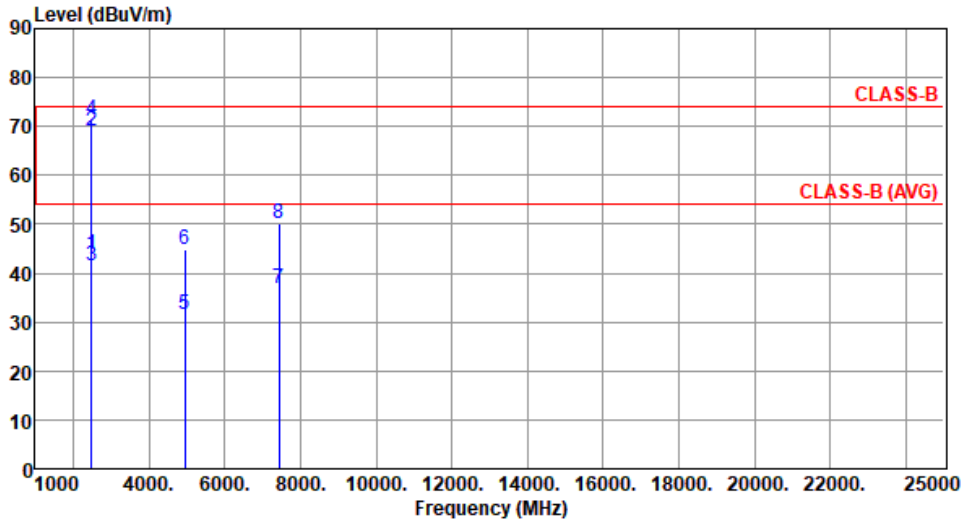


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	45.90	54.00	-8.10	49.82	-3.92	Average	141	20
2	2483.50	71.92	74.00	-2.08	75.84	-3.92	Peak	141	20
3	2485.00	43.38	54.00	-10.62	47.32	-3.94	Average	141	20
4	2485.00	73.82	74.00	-0.18	77.76	-3.94	Peak	141	20
5	4960.00	31.41	54.00	-22.59	31.32	0.09	Average	100	125
6	4960.00	44.72	74.00	-29.28	44.63	0.09	Peak	100	125
7	7440.00	36.59	54.00	-17.41	31.29	5.30	Average	100	247
8	7440.00	49.81	74.00	-24.19	44.51	5.30	Peak	100	247

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)**	2480
Polarization	Vertical		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

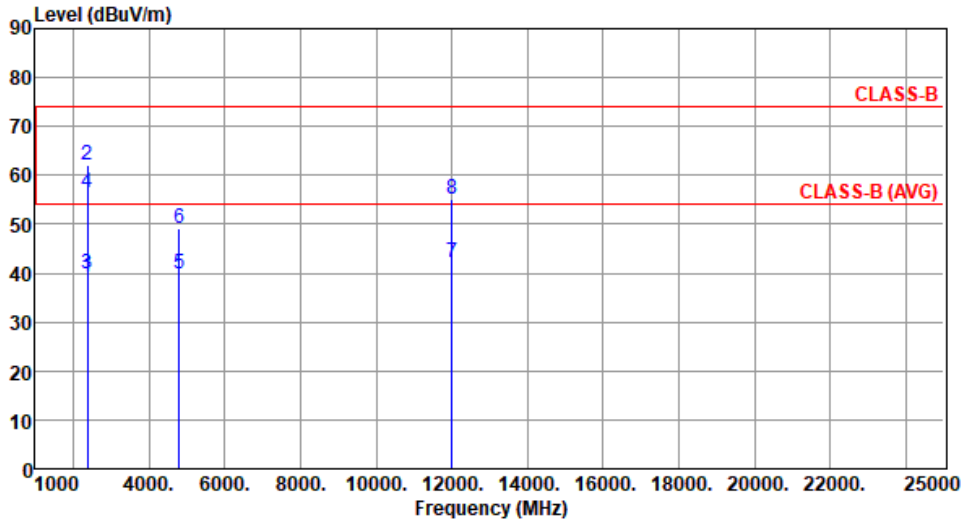


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	43.73	54.00	-10.27	47.65	-3.92	Average	120	154
2	2483.50	69.23	74.00	-4.77	73.15	-3.92	Peak	120	154
3	2485.00	41.44	54.00	-12.56	45.38	-3.94	Average	120	154
4	2485.00	71.39	74.00	-2.61	75.33	-3.94	Peak	120	154
5	4960.00	31.46	54.00	-22.54	31.37	0.09	Average	100	154
6	4960.00	44.69	74.00	-29.31	44.60	0.09	Peak	100	154
7	7440.00	36.72	54.00	-17.28	31.42	5.30	Average	100	208
8	7440.00	50.14	74.00	-23.86	44.84	5.30	Peak	100	208

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 (1Mbps)	**Test Freq. (MHz)**	2402
Polarization	Horizontal		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

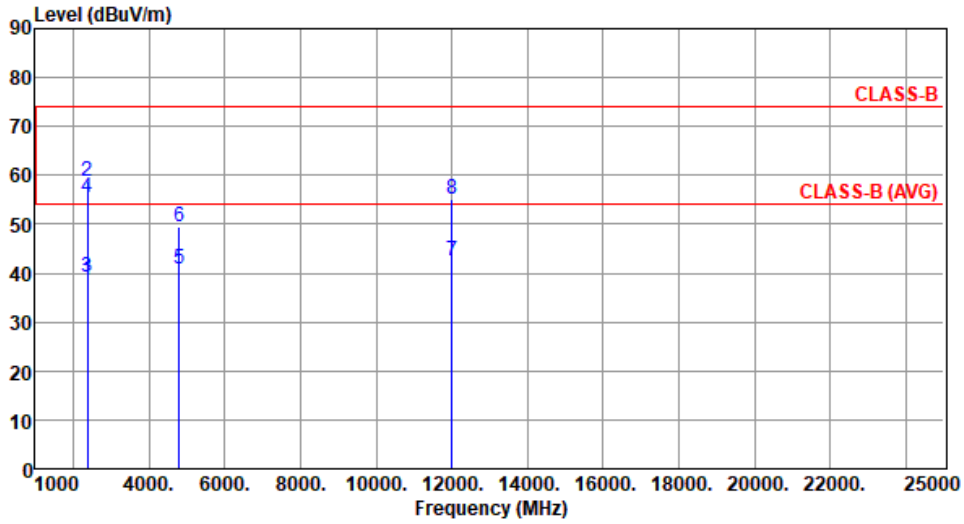


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2387.00	39.12	54.00	-14.88	42.74	-3.62	Average	145	18
2	2387.00	62.15	74.00	-11.85	65.77	-3.62	Peak	145	18
3	2390.00	39.74	54.00	-14.26	43.37	-3.63	Average	145	18
4	2390.00	56.60	74.00	-17.40	60.23	-3.63	Peak	145	18
5	4804.00	39.75	54.00	-14.25	39.68	0.07	Average	105	208
6	4804.00	49.19	74.00	-24.81	49.12	0.07	Peak	105	208
7	12010.00	42.04	54.00	-11.96	34.34	7.70	Average	100	25
8	12010.00	55.26	74.00	-18.74	47.56	7.70	Peak	100	25

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 (1Mbps)	**Test Freq. (MHz)**	2402
Polarization	Vertical		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

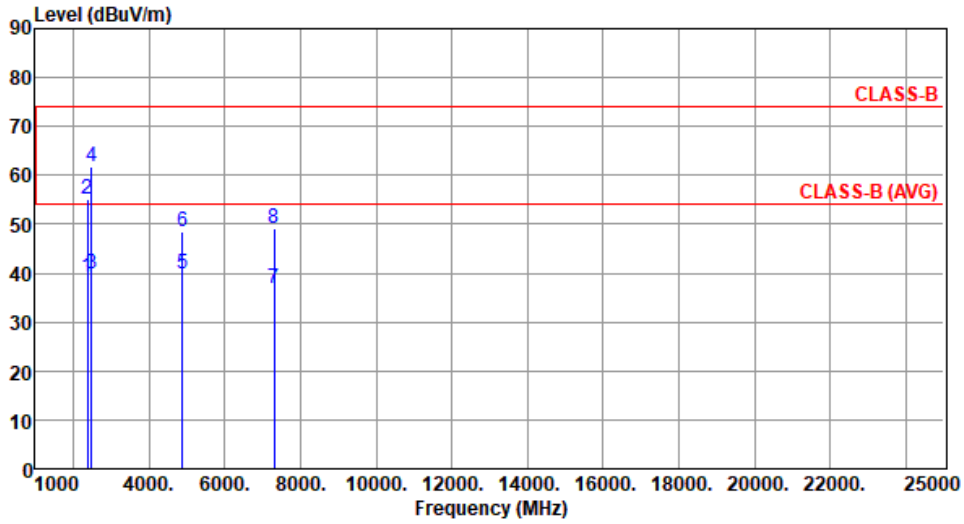


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2387.00	38.64	54.00	-15.36	42.26	-3.62	Average	116	157
2	2387.00	58.71	74.00	-15.29	62.33	-3.62	Peak	116	157
3	2390.00	39.24	54.00	-14.76	42.87	-3.63	Average	116	157
4	2390.00	55.32	74.00	-18.68	58.95	-3.63	Peak	116	157
5	4804.00	40.84	54.00	-13.16	40.77	0.07	Average	106	205
6	4804.00	49.51	74.00	-24.49	49.44	0.07	Peak	106	205
7	12010.00	42.58	54.00	-11.42	34.88	7.70	Average	100	205
8	12010.00	55.27	74.00	-18.73	47.57	7.70	Peak	100	205

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 (1Mbps)	**Test Freq. (MHz)**	2440
Polarization	Horizontal		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

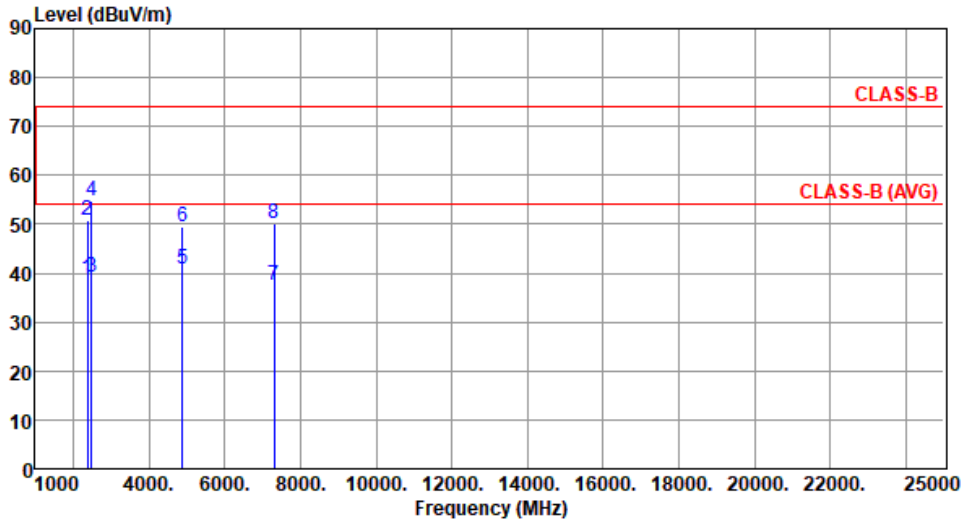


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	39.15	54.00	-14.85	42.78	-3.63	Average	144	17
2	2390.00	55.16	74.00	-18.84	58.79	-3.63	Peak	144	17
3	2483.50	39.94	54.00	-14.06	43.86	-3.92	Average	144	17
4	2483.50	61.83	74.00	-12.17	65.75	-3.92	Peak	144	17
5	4880.00	39.91	54.00	-14.09	39.88	0.03	Average	124	184
6	4880.00	48.60	74.00	-25.40	48.57	0.03	Peak	124	184
7	7320.00	36.92	54.00	-17.08	31.55	5.37	Average	100	20
8	7320.00	49.22	74.00	-24.78	43.85	5.37	Peak	100	20

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 (1Mbps)	**Test Freq. (MHz)**	2440
Polarization	Vertical		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

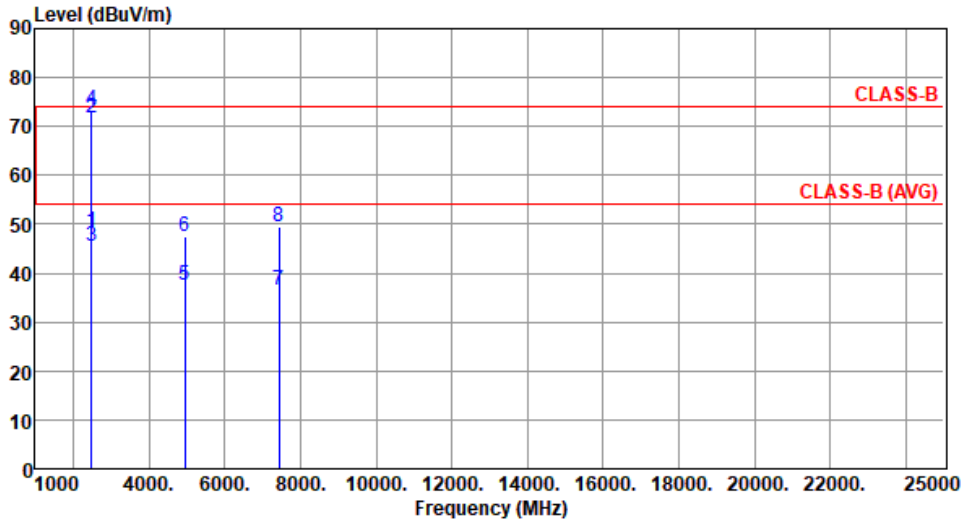


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	38.86	54.00	-15.14	42.49	-3.63	Average	115	154
2	2390.00	50.91	74.00	-23.09	54.54	-3.63	Peak	115	154
3	2483.50	39.22	54.00	-14.78	43.14	-3.92	Average	115	154
4	2483.50	54.66	74.00	-19.34	58.58	-3.92	Peak	115	154
5	4880.00	40.86	54.00	-13.14	40.83	0.03	Average	104	203
6	4880.00	49.58	74.00	-24.42	49.55	0.03	Peak	104	203
7	7320.00	37.50	54.00	-16.50	32.13	5.37	Average	100	274
8	7320.00	50.05	74.00	-23.95	44.68	5.37	Peak	100	274

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 (1Mbps)	**Test Freq. (MHz)**	2478
Polarization	Horizontal		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

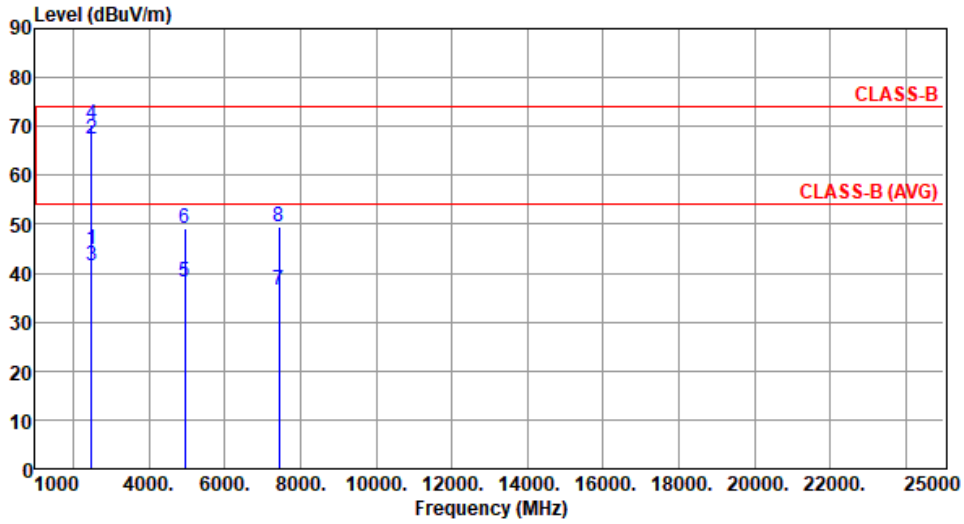


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	48.62	54.00	-5.38	52.54	-3.92	Average	143	22
2	2483.50	71.87	74.00	-2.13	75.79	-3.92	Peak	143	22
3	2485.50	45.60	54.00	-8.40	49.56	-3.96	Average	143	22
4	2485.50	73.45	74.00	-0.55	77.41	-3.96	Peak	143	22
5	4956.00	37.49	54.00	-16.51	37.42	0.07	Average	123	189
6	4956.00	47.33	74.00	-26.67	47.26	0.07	Peak	123	189
7	7434.00	36.57	54.00	-17.43	31.26	5.31	Average	100	178
8	7434.00	49.44	74.00	-24.56	44.13	5.31	Peak	100	178

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 (1Mbps)	**Test Freq. (MHz)**	2478
Polarization	Vertical		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

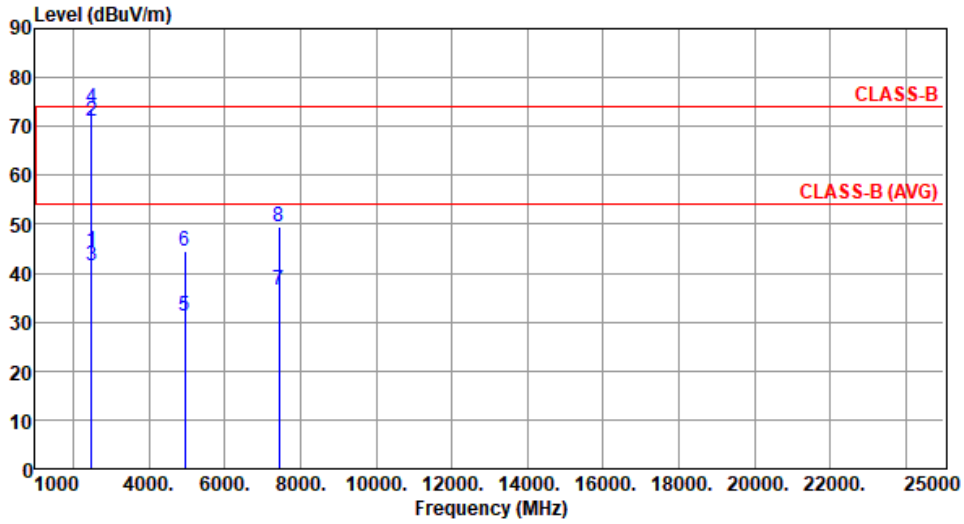


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	44.71	54.00	-9.29	48.63	-3.92	Average	118	156
2	2483.50	67.30	74.00	-6.70	71.22	-3.92	Peak	118	156
3	2485.50	41.67	54.00	-12.33	45.63	-3.96	Average	118	156
4	2485.50	70.28	74.00	-3.72	74.24	-3.96	Peak	118	156
5	4956.00	38.29	54.00	-15.71	38.22	0.07	Average	105	209
6	4956.00	49.23	74.00	-24.77	49.16	0.07	Peak	105	209
7	7434.00	36.53	54.00	-17.47	31.22	5.31	Average	100	248
8	7434.00	49.57	74.00	-24.43	44.26	5.31	Peak	100	248

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 (1Mbps)	**Test Freq. (MHz)**	2480
Polarization	Horizontal		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

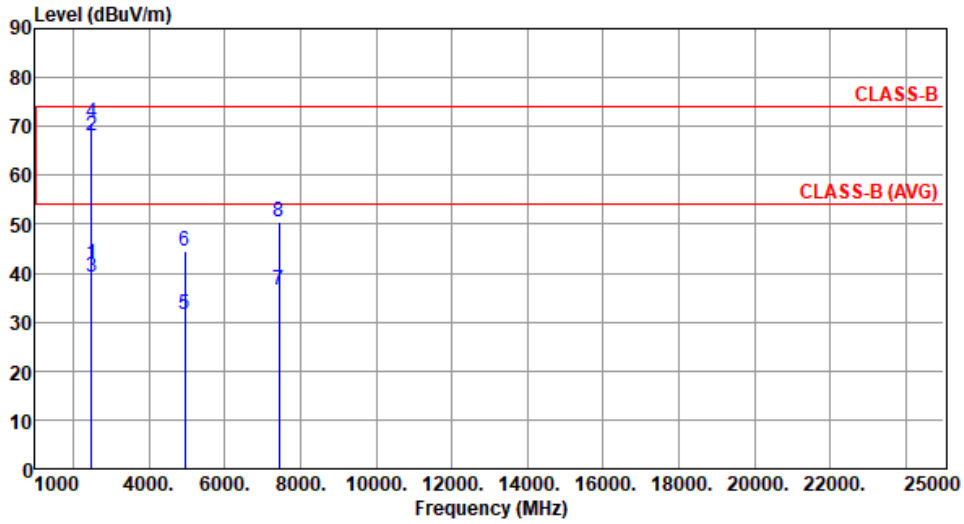


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	44.54	54.00	-9.46	48.46	-3.92	Average	143	21
2	2483.50	71.13	74.00	-2.87	75.05	-3.92	Peak	143	21
3	2485.00	41.55	54.00	-12.45	45.49	-3.94	Average	143	21
4	2485.00	73.86	74.00	-0.14	77.80	-3.94	Peak	143	21
5	4960.00	31.35	54.00	-22.65	31.26	0.09	Average	100	183
6	4960.00	44.65	74.00	-29.35	44.56	0.09	Peak	100	183
7	7440.00	36.51	54.00	-17.49	31.21	5.30	Average	100	126
8	7440.00	49.60	74.00	-24.40	44.30	5.30	Peak	100	126

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 (1Mbps)	**Test Freq. (MHz)**	2480
Polarization	Vertical		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

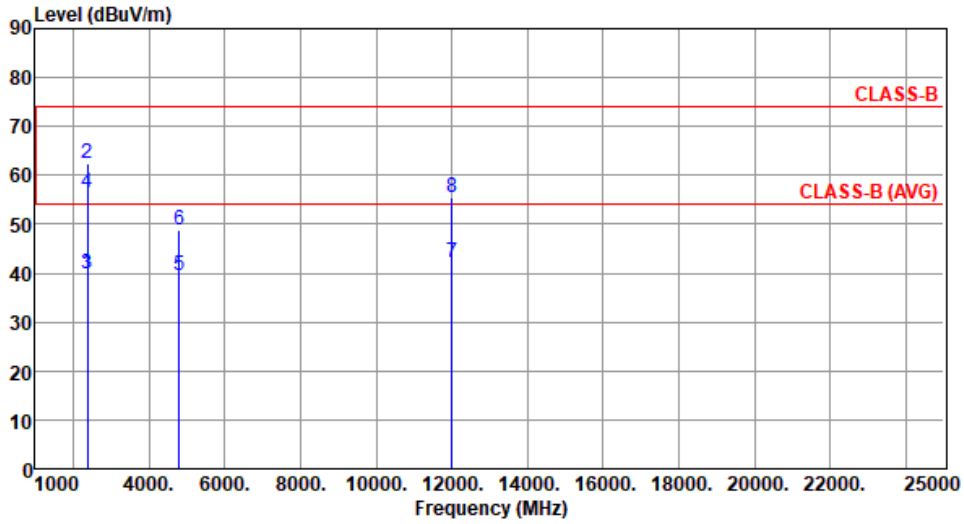


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	41.73	54.00	-12.27	45.65	-3.92	Average	115	156
2	2483.50	68.10	74.00	-5.90	72.02	-3.92	Peak	115	156
3	2485.00	39.30	54.00	-14.70	43.24	-3.94	Average	115	156
4	2485.00	70.68	74.00	-3.32	74.62	-3.94	Peak	115	156
5	4960.00	31.39	54.00	-22.61	31.30	0.09	Average	100	178
6	4960.00	44.62	74.00	-29.38	44.53	0.09	Peak	100	178
7	7440.00	36.63	54.00	-17.37	31.33	5.30	Average	100	215
8	7440.00	50.43	74.00	-23.57	45.13	5.30	Peak	100	215

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 (2Mbps)	**Test Freq. (MHz)**	2402
Polarization	Horizontal		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

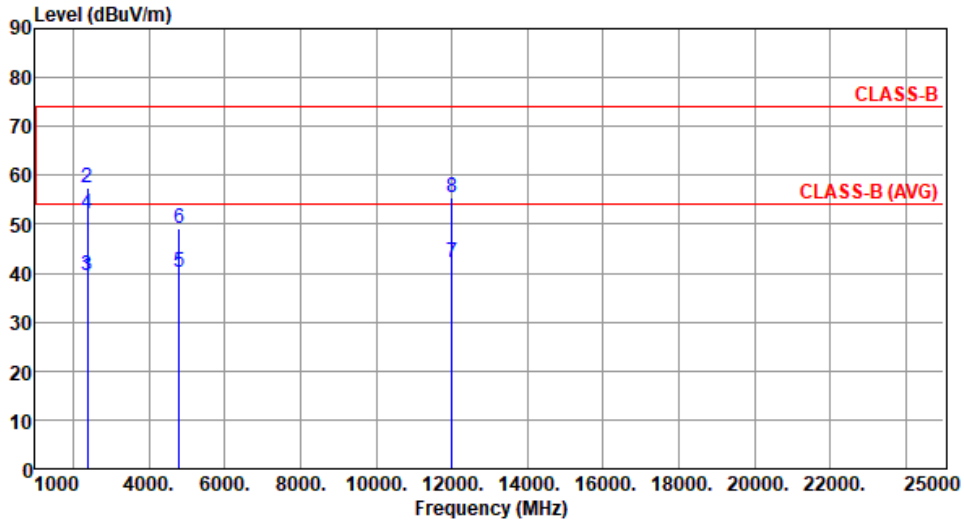


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2387.00	39.92	54.00	-14.08	43.54	-3.62	Average	244	16
2	2387.00	62.29	74.00	-11.71	65.91	-3.62	Peak	244	16
3	2390.00	40.02	54.00	-13.98	43.65	-3.63	Average	244	16
4	2390.00	56.36	74.00	-17.64	59.99	-3.63	Peak	244	16
5	4804.00	39.63	54.00	-14.37	39.56	0.07	Average	108	211
6	4804.00	48.93	74.00	-25.07	48.86	0.07	Peak	108	211
7	12010.00	42.08	54.00	-11.92	34.38	7.70	Average	100	31
8	12010.00	55.30	74.00	-18.70	47.60	7.70	Peak	100	31

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 (2Mbps)	**Test Freq. (MHz)**	2402
Polarization	Vertical		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

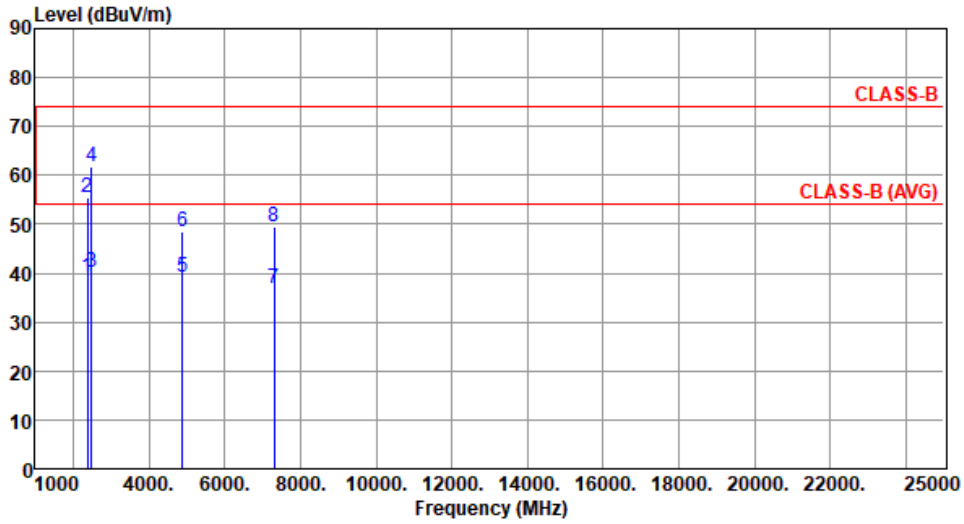


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2387.00	39.28	54.00	-14.72	42.90	-3.62	Average	124	153
2	2387.00	57.49	74.00	-16.51	61.11	-3.62	Peak	124	153
3	2390.00	39.36	54.00	-14.64	42.99	-3.63	Average	124	153
4	2390.00	52.23	74.00	-21.77	55.86	-3.63	Peak	124	153
5	4804.00	40.33	54.00	-13.67	40.26	0.07	Average	105	201
6	4804.00	49.18	74.00	-24.82	49.11	0.07	Peak	105	201
7	12010.00	42.27	54.00	-11.73	34.57	7.70	Average	100	123
8	12010.00	55.38	74.00	-18.62	47.68	7.70	Peak	100	123

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 (2Mbps)	**Test Freq. (MHz)**	2440
Polarization	Horizontal		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

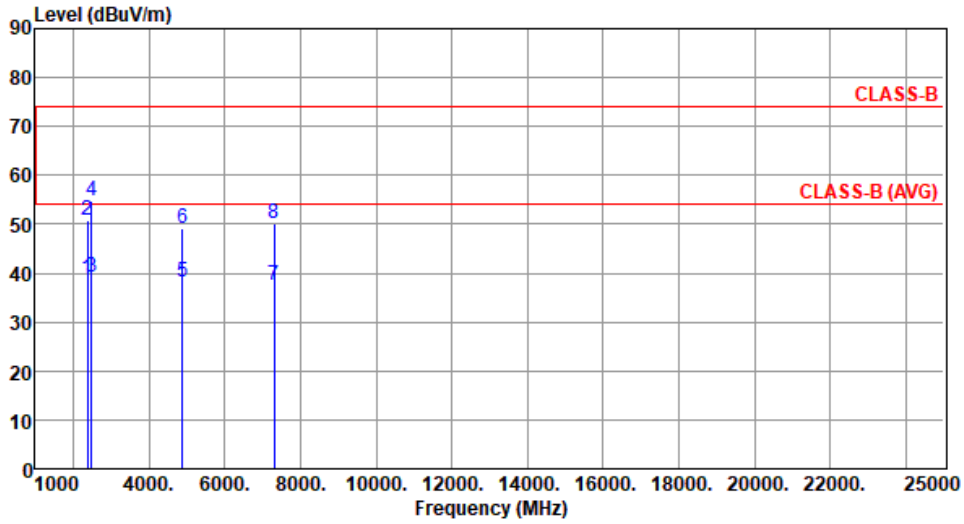


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	39.16	54.00	-14.84	42.79	-3.63	Average	142	15
2	2390.00	55.37	74.00	-18.63	59.00	-3.63	Peak	142	15
3	2483.50	40.05	54.00	-13.95	43.97	-3.92	Average	142	15
4	2483.50	61.94	74.00	-12.06	65.86	-3.92	Peak	142	15
5	4880.00	39.19	54.00	-14.81	39.16	0.03	Average	123	186
6	4880.00	48.39	74.00	-25.61	48.36	0.03	Peak	123	186
7	7320.00	36.71	54.00	-17.29	31.34	5.37	Average	100	26
8	7320.00	49.64	74.00	-24.36	44.27	5.37	Peak	100	26

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 (2Mbps)	**Test Freq. (MHz)**	2440
Polarization	Vertical		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

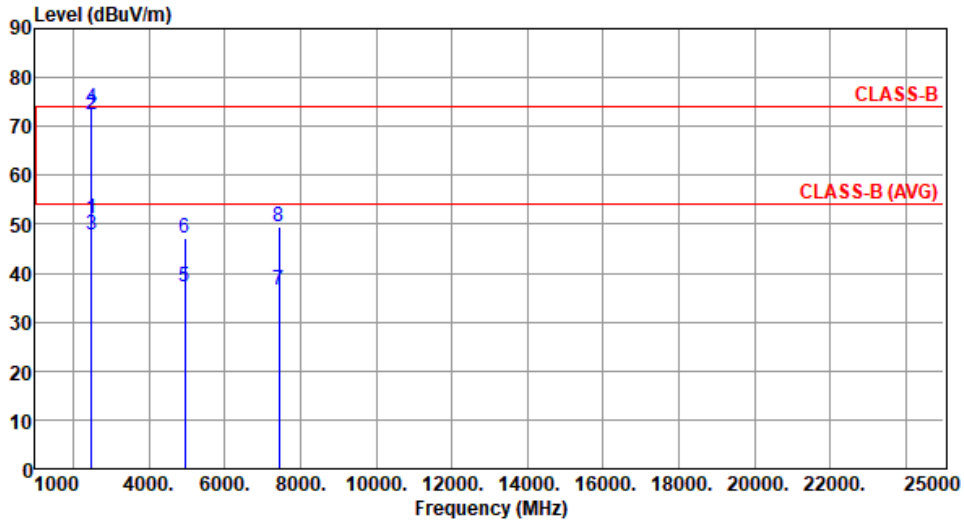


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2390.00	38.92	54.00	-15.08	42.55	-3.63	Average	113	153
2	2390.00	50.93	74.00	-23.07	54.56	-3.63	Peak	113	153
3	2483.50	39.26	54.00	-14.74	43.18	-3.92	Average	113	153
4	2483.50	54.72	74.00	-19.28	58.64	-3.92	Peak	113	153
5	4880.00	38.28	54.00	-15.72	38.25	0.03	Average	100	201
6	4880.00	49.18	74.00	-24.82	49.15	0.03	Peak	100	201
7	7320.00	37.48	54.00	-16.52	32.11	5.37	Average	100	211
8	7320.00	49.99	74.00	-24.01	44.62	5.37	Peak	100	211

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 (2Mbps)	**Test Freq. (MHz)**	2478
Polarization	Horizontal		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

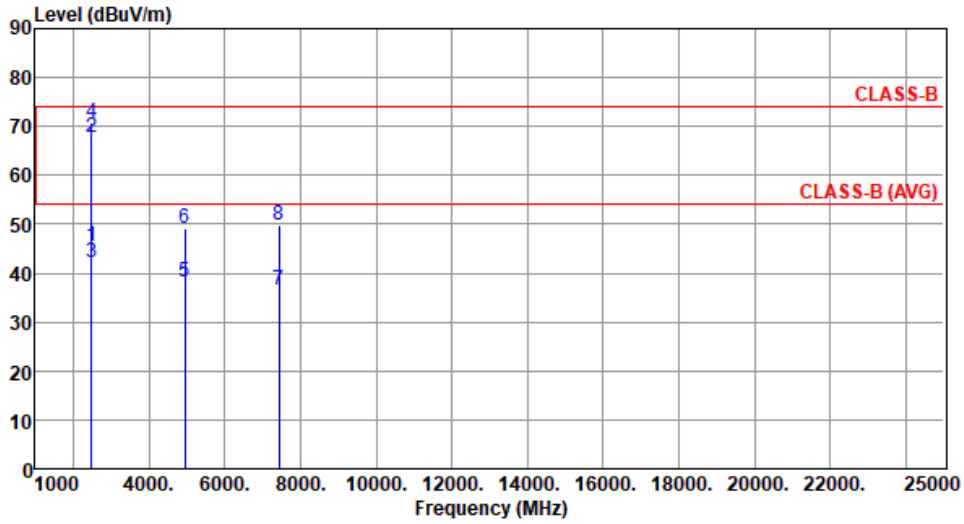


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	51.27	54.00	-2.73	55.19	-3.92	Average	145	24
2	2483.50	72.43	74.00	-1.57	76.35	-3.92	Peak	145	24
3	2485.50	47.71	54.00	-6.29	51.67	-3.96	Average	145	24
4	2485.50	73.59	74.00	-0.41	77.55	-3.96	Peak	145	24
5	4956.00	37.28	54.00	-16.72	37.21	0.07	Average	125	186
6	4956.00	47.18	74.00	-26.82	47.11	0.07	Peak	125	186
7	7434.00	36.51	54.00	-17.49	31.20	5.31	Average	100	205
8	7434.00	49.58	74.00	-24.42	44.27	5.31	Peak	100	205

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 (2Mbps)	**Test Freq. (MHz)**	2478
Polarization	Vertical		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

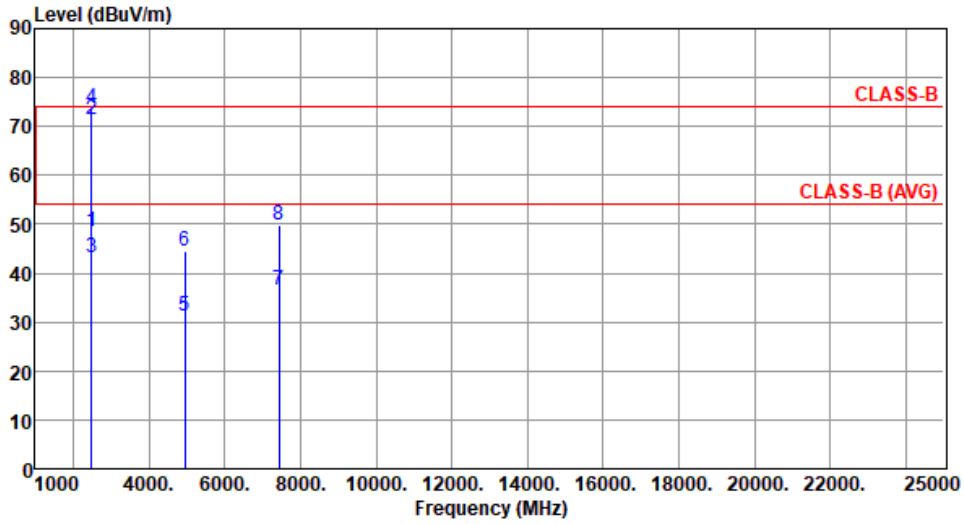


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	45.58	54.00	-8.42	49.50	-3.92	Average	121	154
2	2483.50	67.61	74.00	-6.39	71.53	-3.92	Peak	121	154
3	2485.50	42.32	54.00	-11.68	46.28	-3.96	Average	121	154
4	2485.50	70.61	74.00	-3.39	74.57	-3.96	Peak	121	154
5	4956.00	38.23	54.00	-15.77	38.16	0.07	Average	104	208
6	4956.00	49.01	74.00	-24.99	48.94	0.07	Peak	104	208
7	7434.00	36.66	54.00	-17.34	31.35	5.31	Average	100	158
8	7434.00	49.73	74.00	-24.27	44.42	5.31	Peak	100	158

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 (2Mbps)	**Test Freq. (MHz)**	2480
Polarization	Horizontal		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

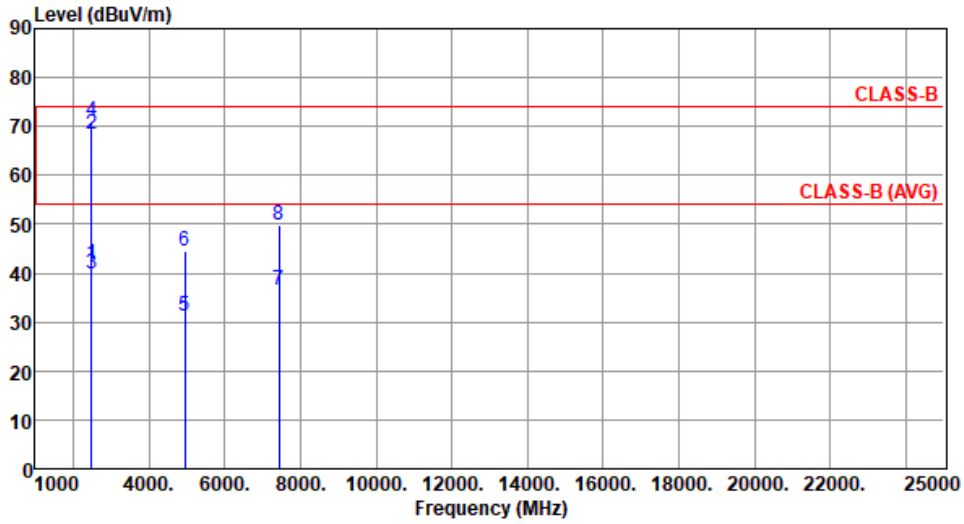


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	48.57	54.00	-5.43	52.49	-3.92	Average	144	23
2	2483.50	71.43	74.00	-2.57	75.35	-3.92	Peak	144	23
3	2485.00	43.29	54.00	-10.71	47.23	-3.94	Average	144	23
4	2485.00	73.88	74.00	-0.12	77.82	-3.94	Peak	144	23
5	4960.00	31.35	54.00	-22.65	31.26	0.09	Average	100	125
6	4960.00	44.55	74.00	-29.45	44.46	0.09	Peak	100	125
7	7440.00	36.63	54.00	-17.37	31.33	5.30	Average	100	258
8	7440.00	49.81	74.00	-24.19	44.51	5.30	Peak	100	258

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 (2Mbps)	**Test Freq. (MHz)**	2480
Polarization	Vertical		

Test By :Akun Chung Temperature(℃):22 Humidity(%):68

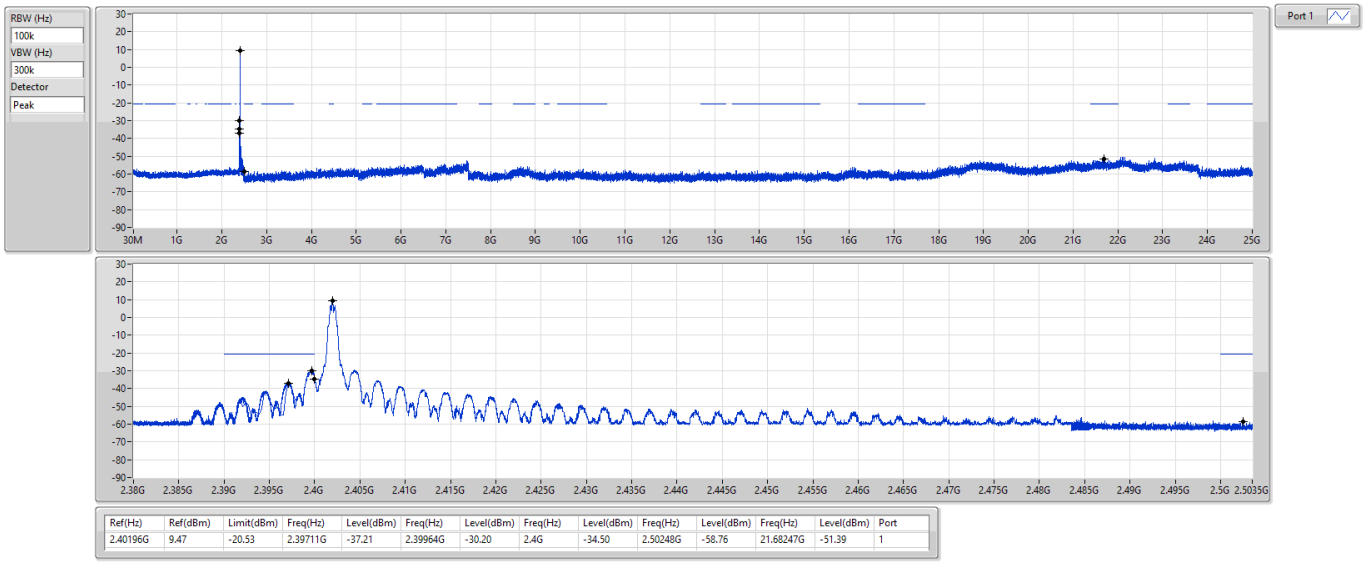


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	2483.50	41.93	54.00	-12.07	45.85	-3.92	Average	118	162
2	2483.50	68.50	74.00	-5.50	72.42	-3.92	Peak	118	162
3	2485.00	39.73	54.00	-14.27	43.67	-3.94	Average	118	162
4	2485.00	70.94	74.00	-3.06	74.88	-3.94	Peak	118	162
5	4960.00	31.34	54.00	-22.66	31.25	0.09	Average	100	156
6	4960.00	44.46	74.00	-29.54	44.37	0.09	Peak	100	156
7	7440.00	36.64	54.00	-17.36	31.34	5.30	Average	100	205
8	7440.00	49.84	74.00	-24.16	44.54	5.30	Peak	100	205

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).

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

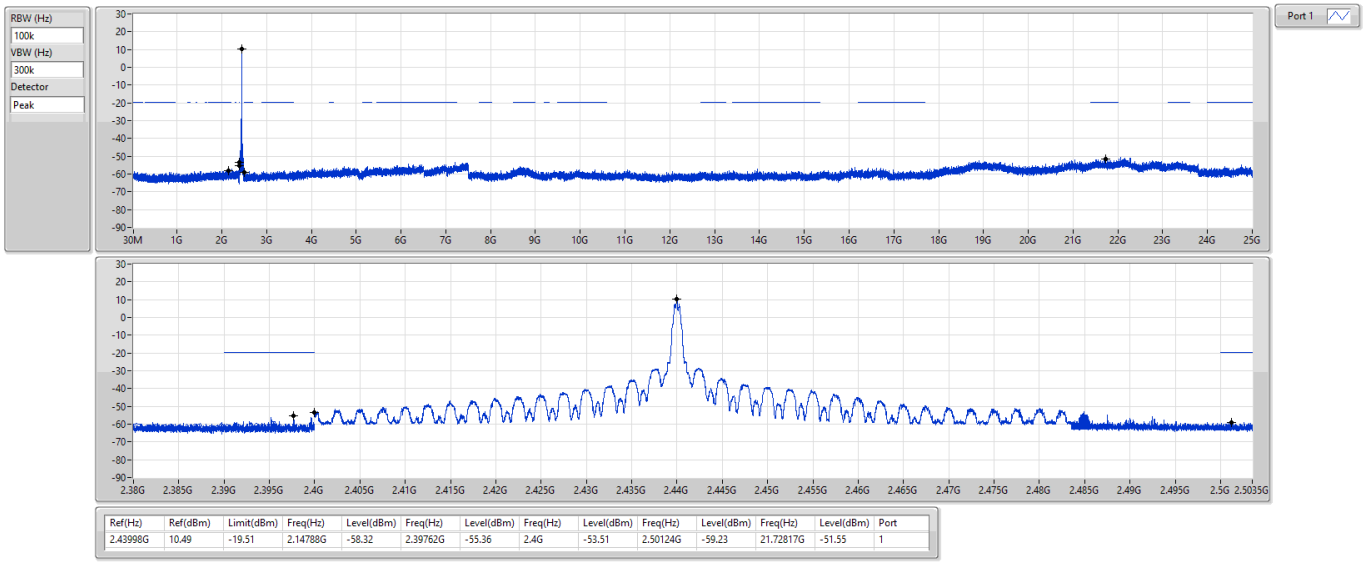
2402MHz



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
2.40196G	9.47	-20.53	2.39711G	-37.21	2.39964G	-30.20	2.4G	-34.50	2.50248G	-58.76	21.68247G	-51.39	1

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

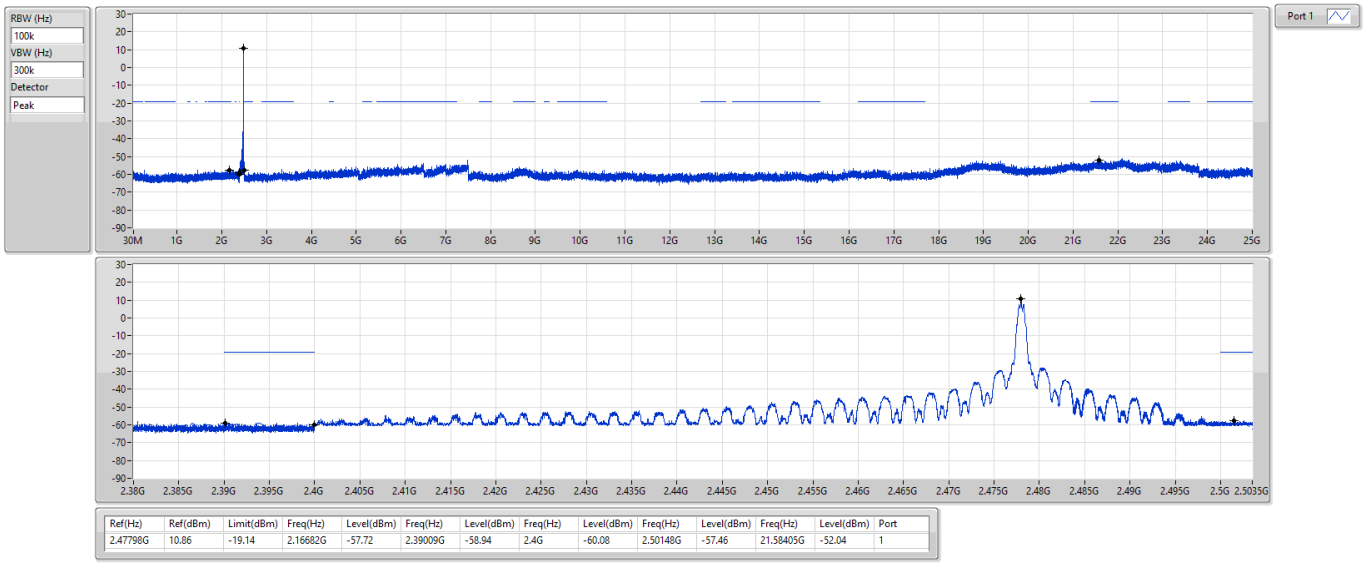
2440MHz



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
2.43998G	10.49	-19.51	2.14788G	-58.32	2.39762G	-55.36	2.4G	-53.51	2.50124G	-59.23	21.72817G	-51.55	1

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

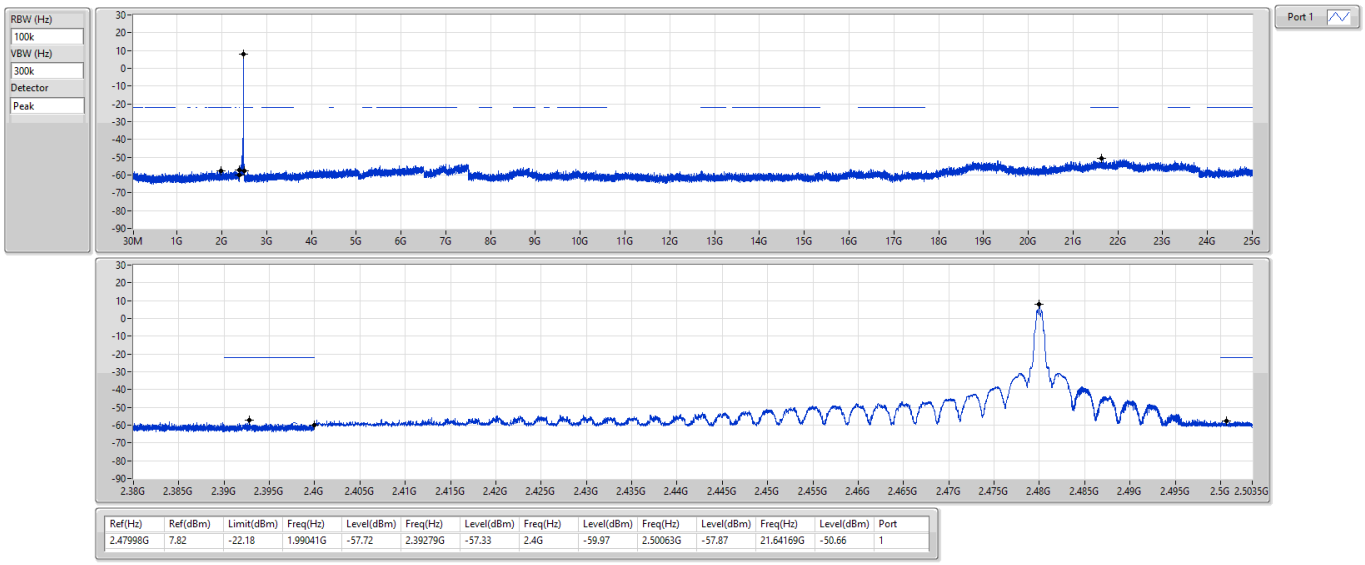
2478MHz



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
2.47798G	10.86	-19.14	2.16682G	-57.72	2.39009G	-58.94	2.4G	-60.08	2.50148G	-57.46	21.58405G	-52.04	1

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

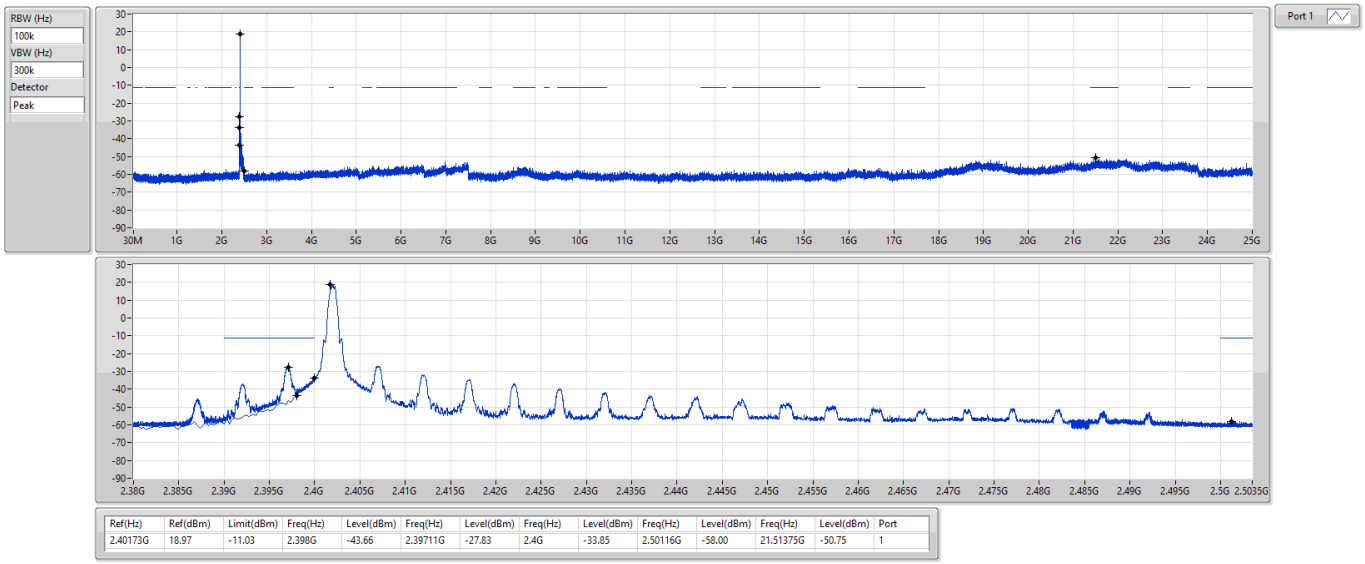
2480MHz



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
2.47998G	7.82	-22.18	1.99041G	-57.72	2.39279G	-57.33	2.4G	-59.97	2.50063G	-57.87	21.64169G	-50.66	1

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

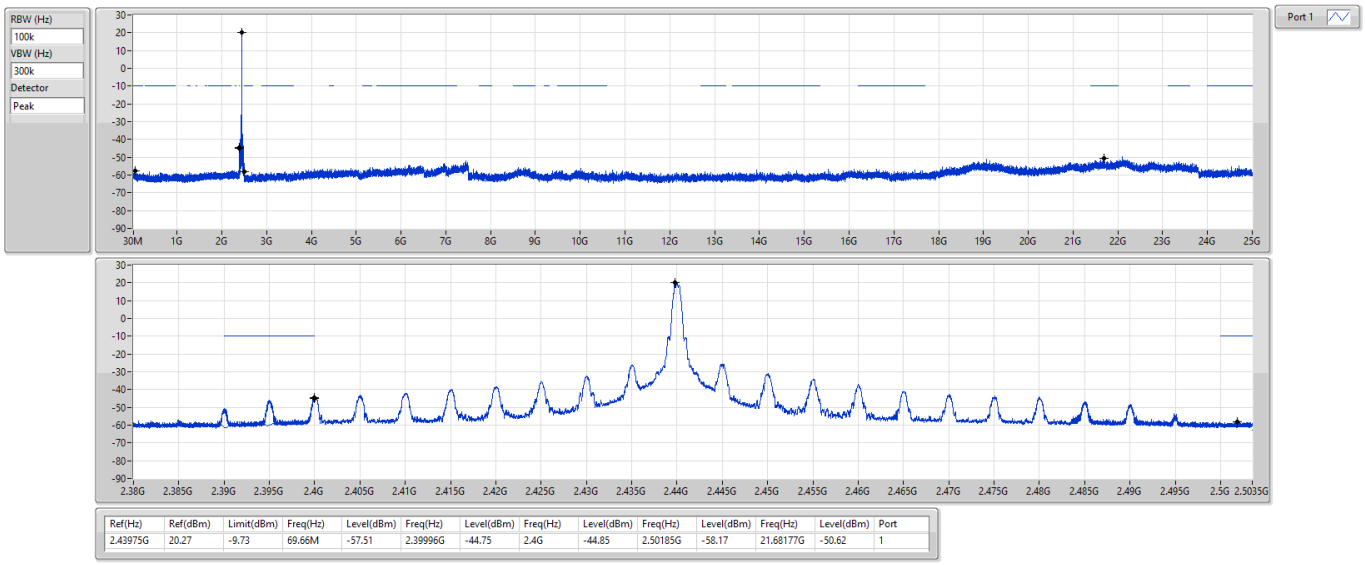
2402MHz



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
2.40173G	18.97	-11.03	2.398G	-43.66	2.39711G	-27.83	2.4G	-33.85	2.50116G	-58.00	21.51375G	-50.75	1

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

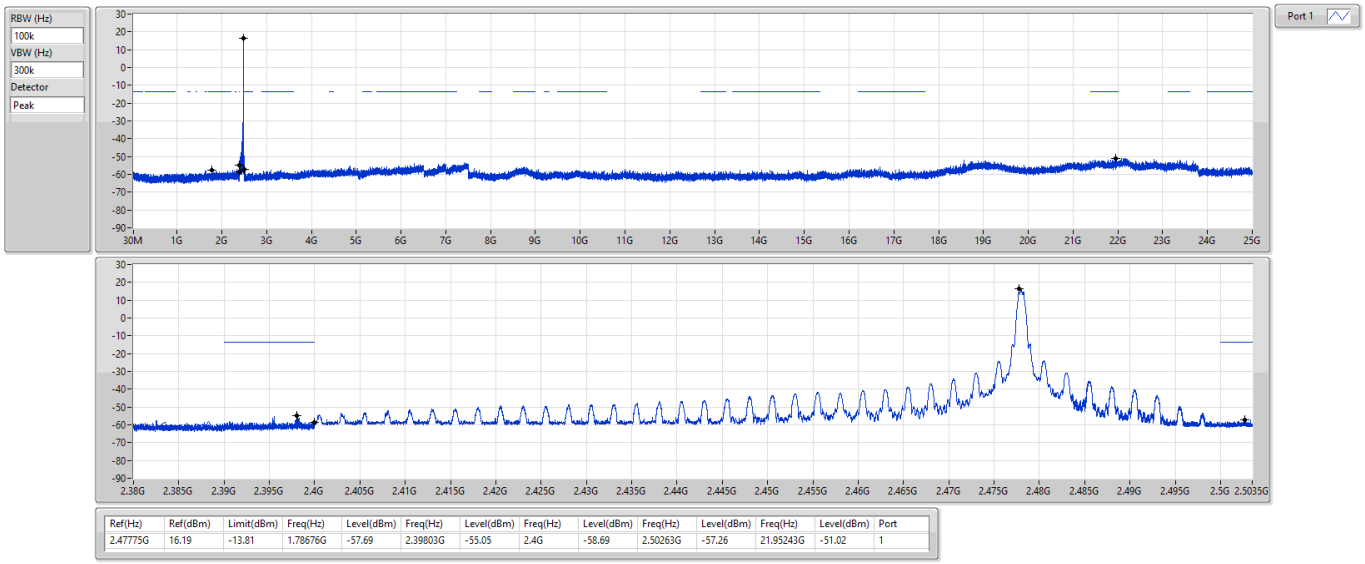
2440MHz



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
2.43975G	20.27	-9.73	69.66M	-57.51	2.39996G	-44.75	2.4G	-44.85	2.50185G	-58.17	21.68177G	-50.62	1

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

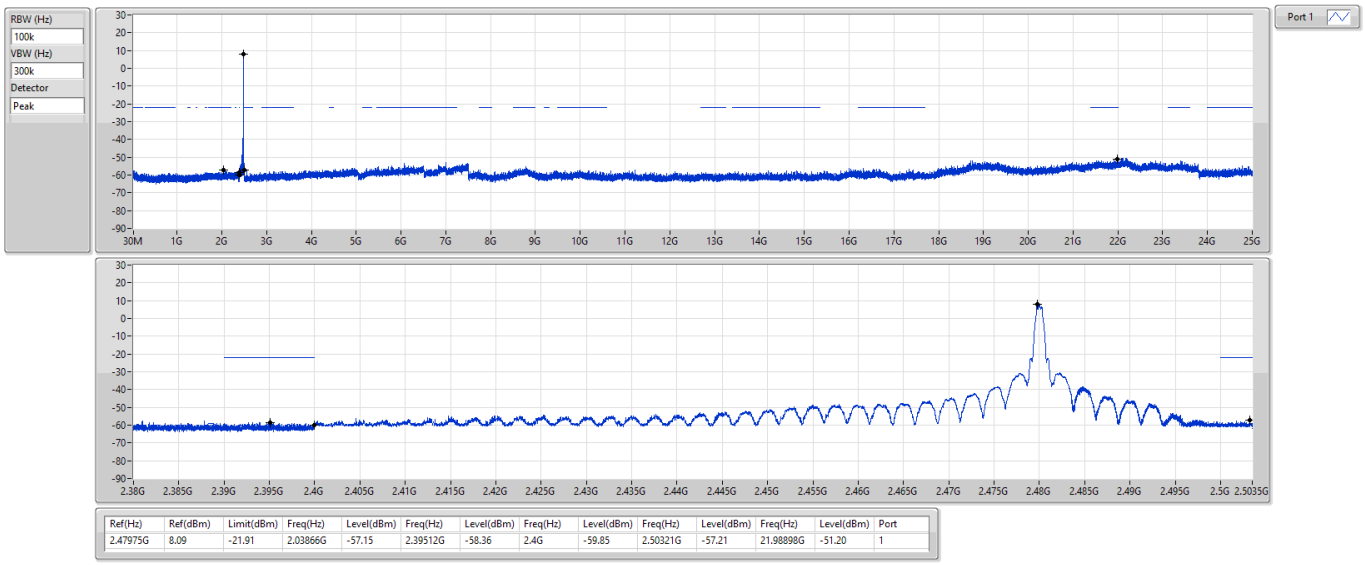
2478MHz



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
2.47775G	16.19	-13.81	1.78676G	-57.69	2.39803G	-55.05	2.4G	-58.69	2.50263G	-57.26	21.95243G	-51.02	1

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

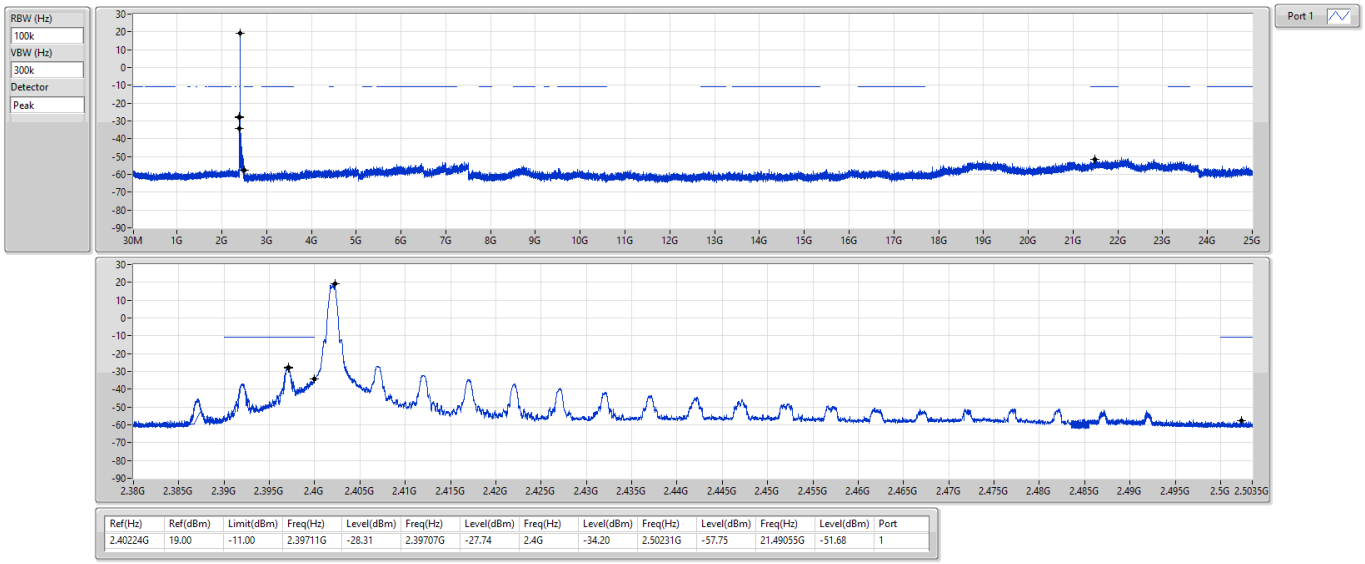
2480MHz



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
2.47975G	8.09	-21.91	2.03866G	-57.15	2.39512G	-58.36	2.4G	-59.85	2.50321G	-57.21	21.98898G	-51.20	1

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

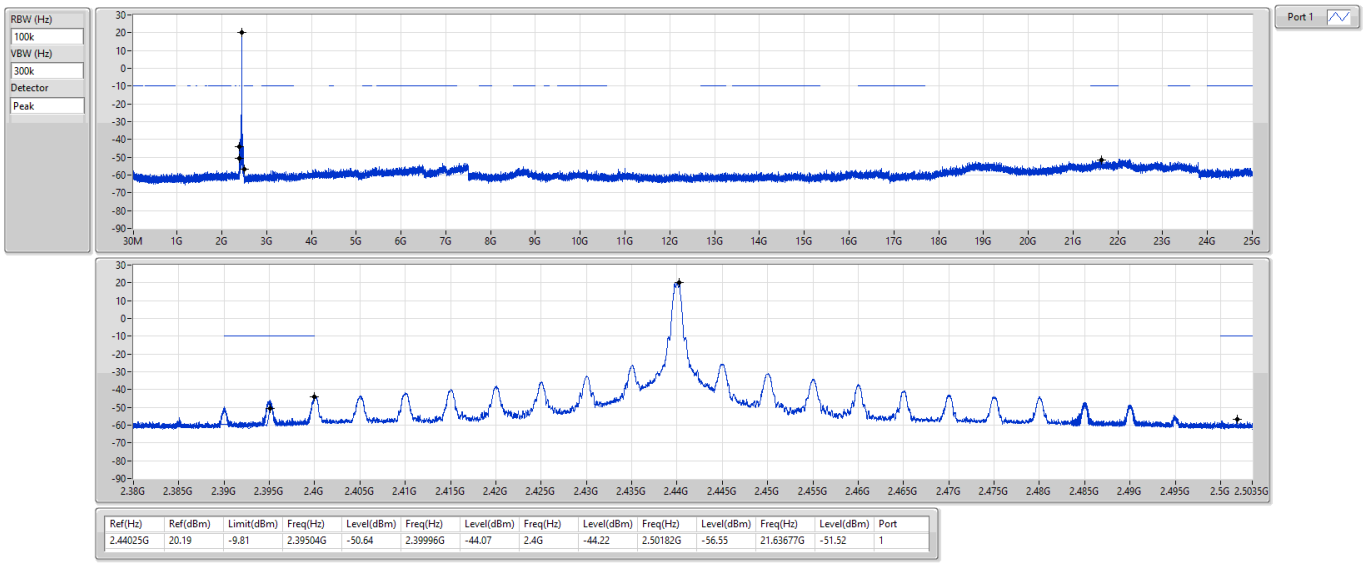
2402MHz



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
2.40224G	19.00	-11.00	2.39711G	-28.31	2.39707G	-27.74	2.4G	-34.20	2.50231G	-57.75	21.49055G	-51.68	1

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

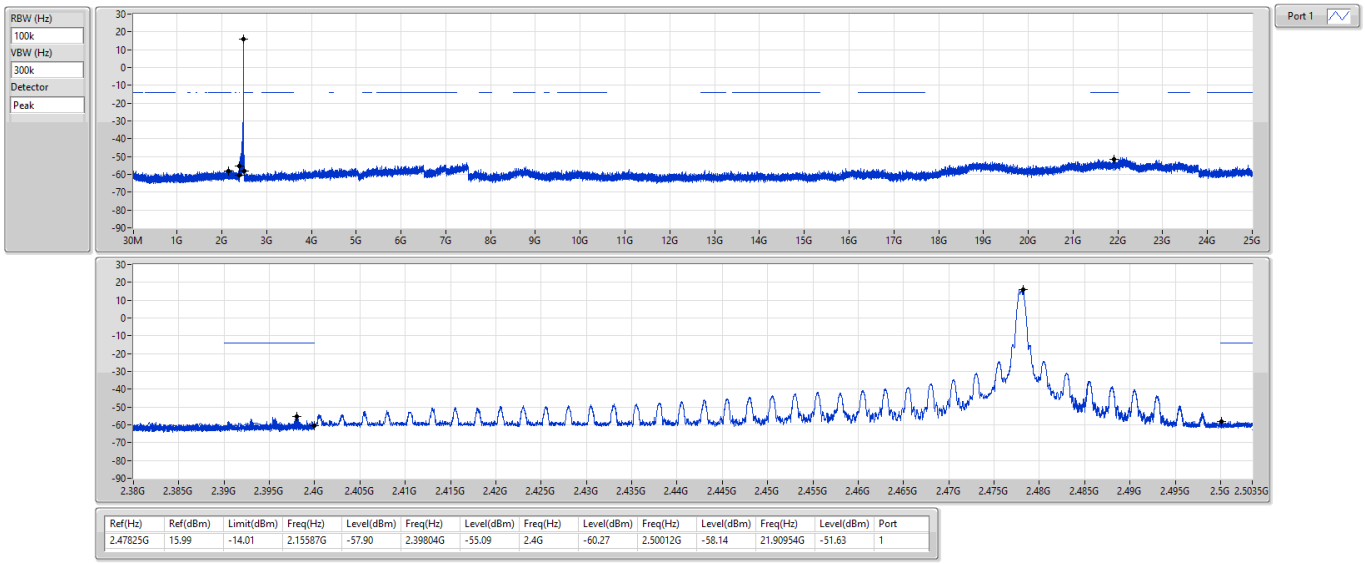
2440MHz



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
2.44025G	20.19	-9.81	2.39504G	-50.64	2.39996G	-44.07	2.4G	-44.22	2.50182G	-56.55	21.63677G	-51.52	1

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

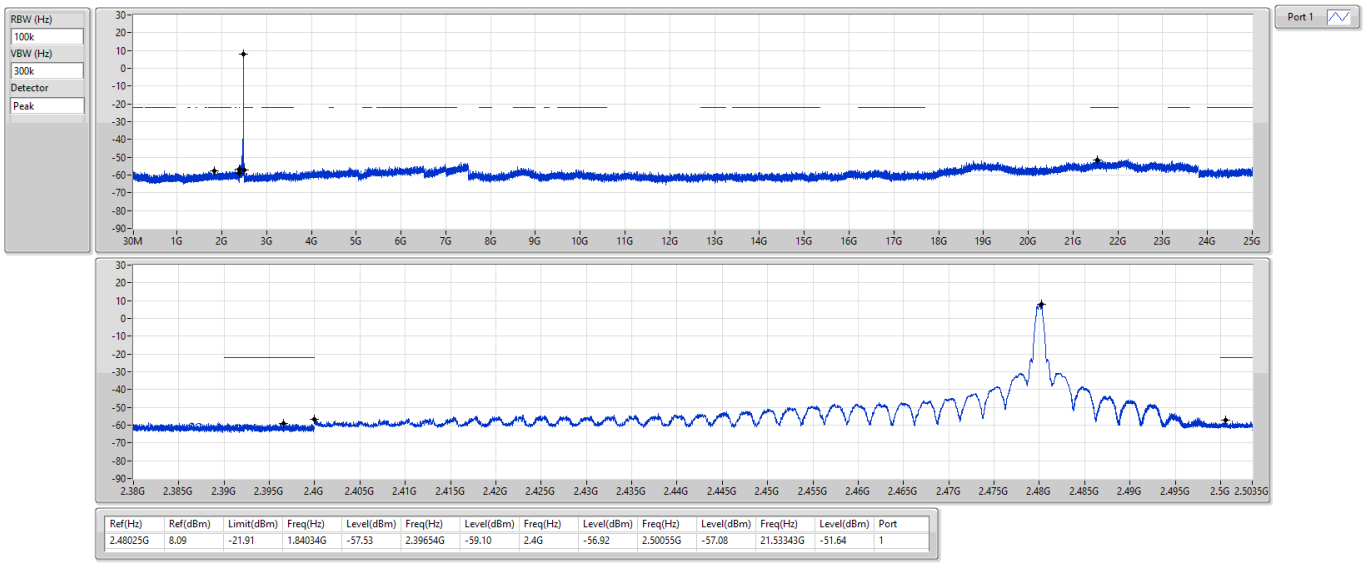
2478MHz



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
2.47825G	15.99	-14.01	2.15587G	-57.90	2.39804G	-55.09	2.4G	-60.27	2.50012G	-58.14	21.90954G	-51.63	1

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

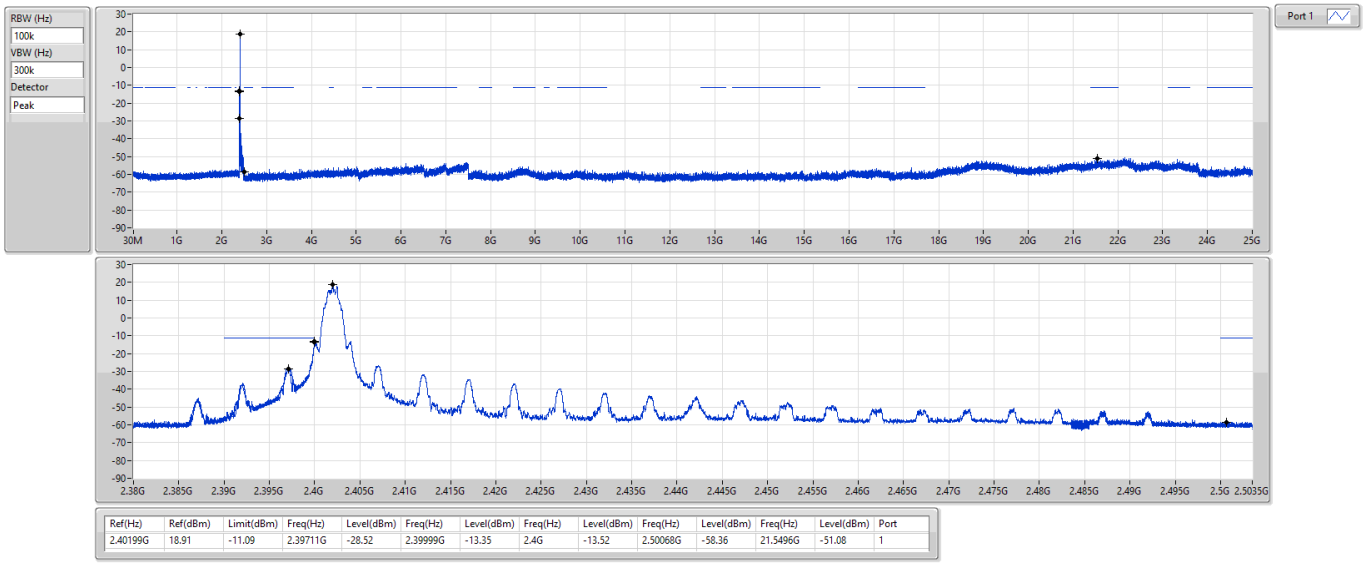
2480MHz



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
2.48025G	8.09	-21.91	1.84034G	-57.53	2.39654G	-59.10	2.4G	-56.92	2.50055G	-57.08	21.53343G	-51.64	1

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

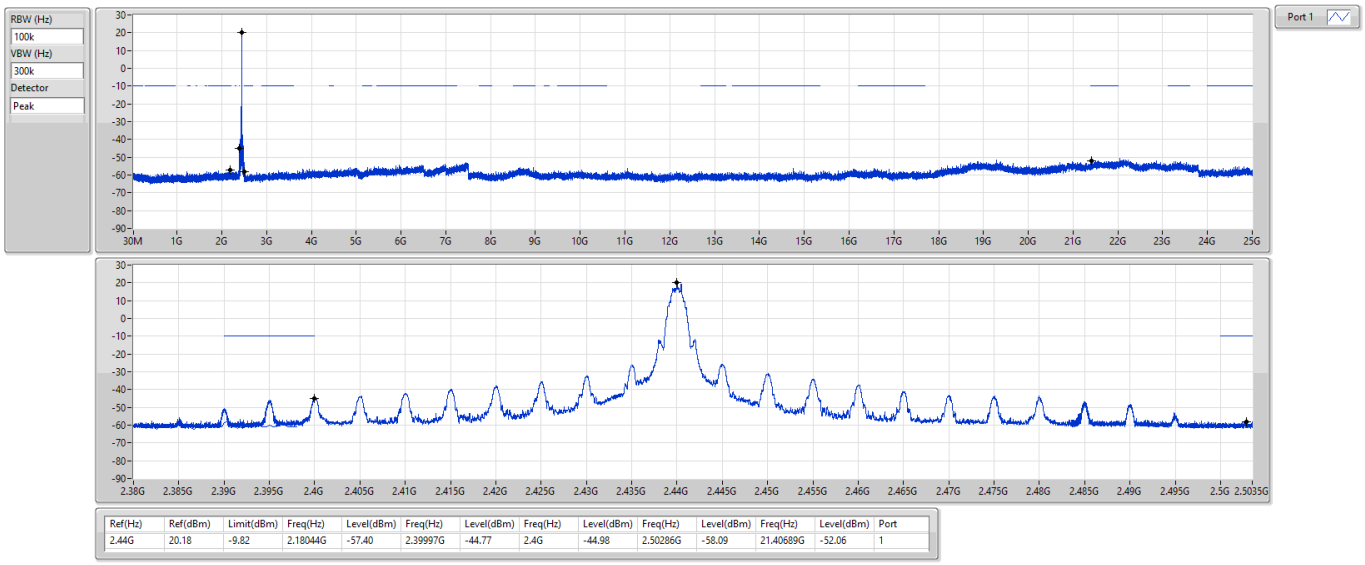
2402MHz



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
2.40199G	18.91	-11.09	2.39711G	-28.52	2.39999G	-13.35	2.4G	-13.52	2.50068G	-58.36	21.5496G	-51.08	1

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

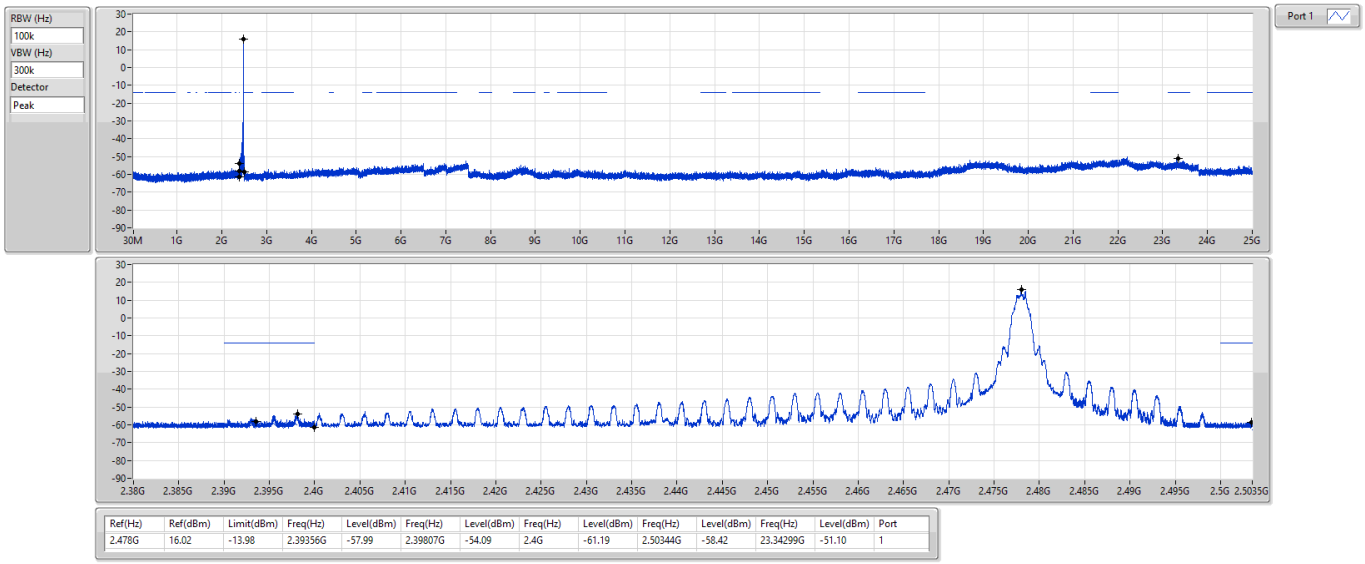
2440MHz



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
2.44G	20.18	-9.82	2.18044G	-57.40	2.39997G	-44.77	2.4G	-44.98	2.50286G	-58.09	21.40689G	-52.06	1

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

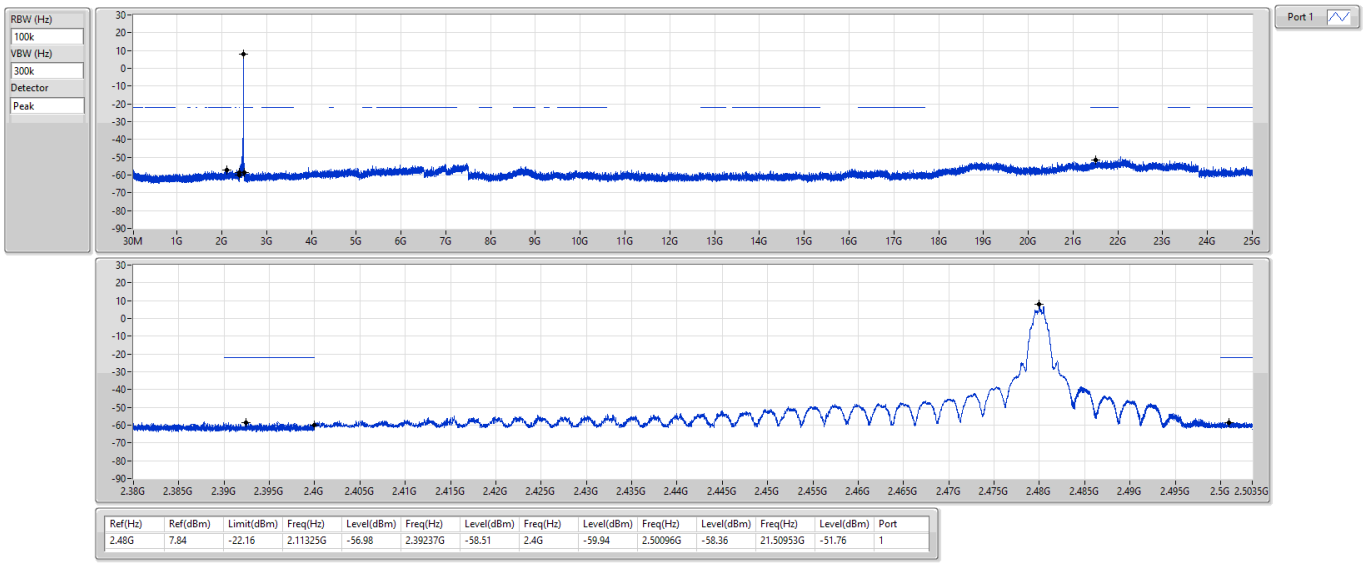
2478MHz



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
2.478G	16.02	-13.98	2.39356G	-57.99	2.39807G	-54.09	2.4G	-61.19	2.50344G	-58.42	23.34299G	-51.10	1

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

2480MHz

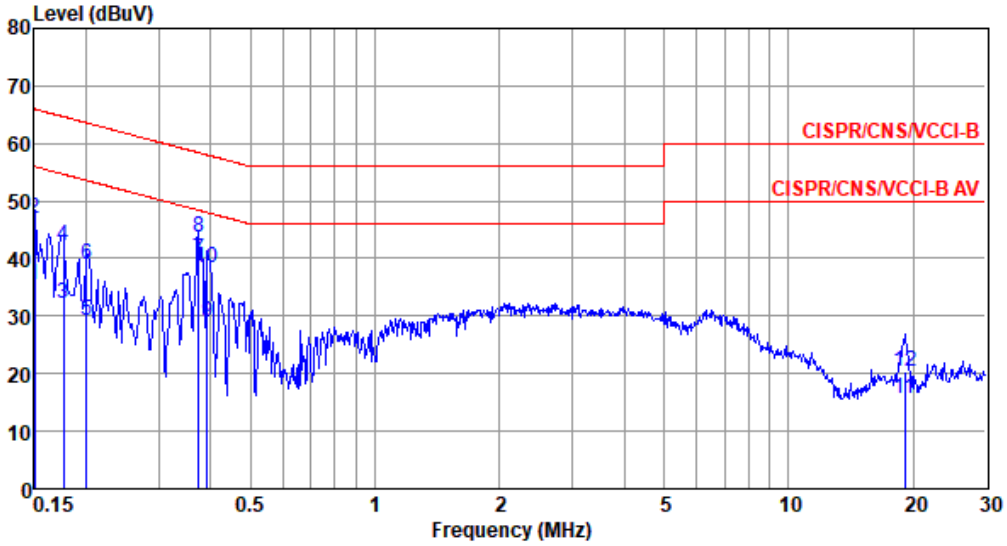


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.48G	7.84	-22.16	2.11325G	-56.98	2.39237G	-58.51	2.4G	-59.94	2.50096G	-58.36	21.50953G	-51.76	1

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%

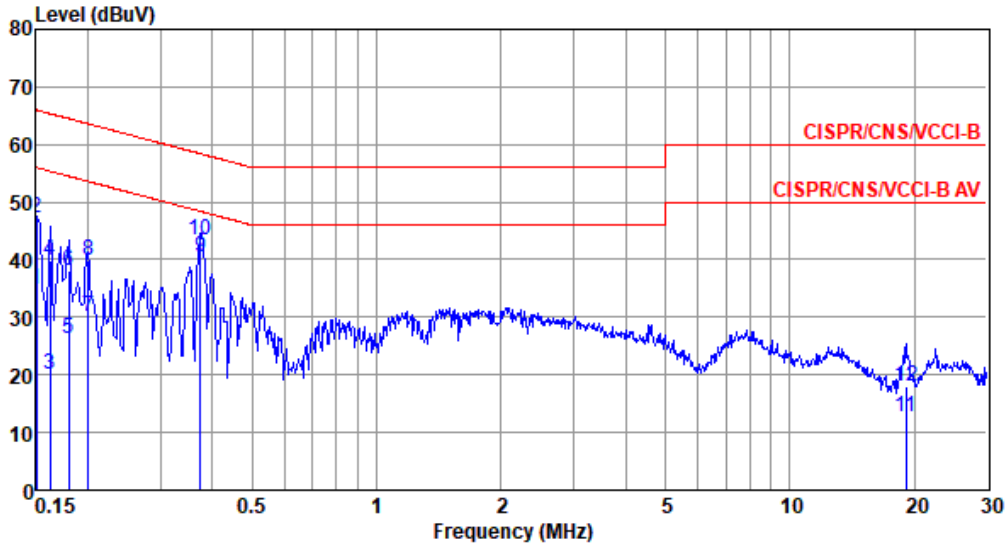


	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	Factor dB	Cable loss dB	Aux dB	Remark
1	0.150	35.30	56.00	-20.70	25.37	9.65	0.08	0.20	Average
2	0.150	46.85	66.00	-19.15	36.92	9.65	0.08	0.20	QP
3	0.177	32.09	54.64	-22.55	22.14	9.65	0.07	0.23	Average
4	0.177	42.23	64.64	-22.41	32.28	9.65	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%



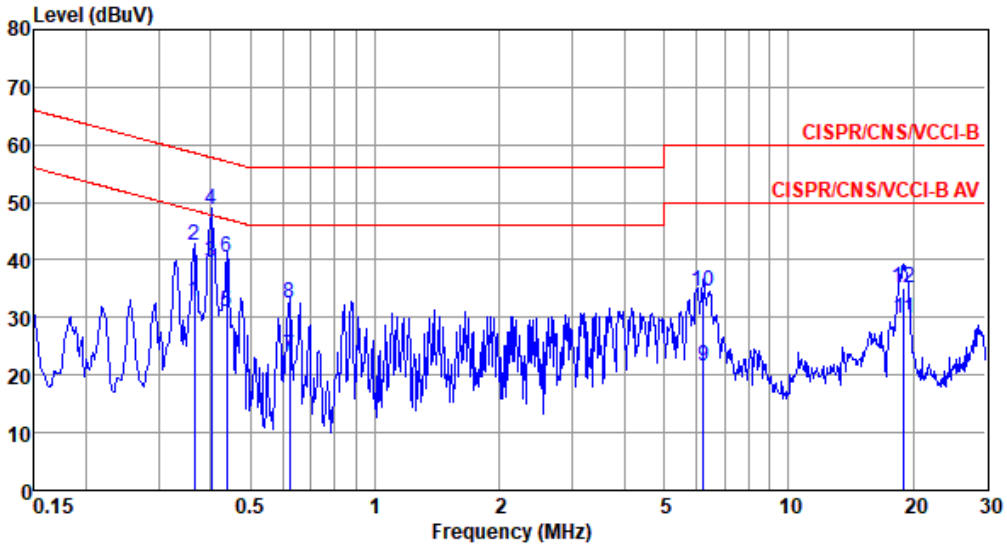
	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	Factor dB	Cable loss dB	Aux dB	Remark
1	0.150	34.81	56.00	-21.19	24.95	9.66	0.08	0.12	Average
2	0.150	47.30	66.00	-18.70	37.44	9.66	0.08	0.12	QP
3	0.162	20.15	55.34	-35.19	10.29	9.66	0.07	0.13	Average
4	0.162	39.99	65.34	-25.35	30.13	9.66	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%

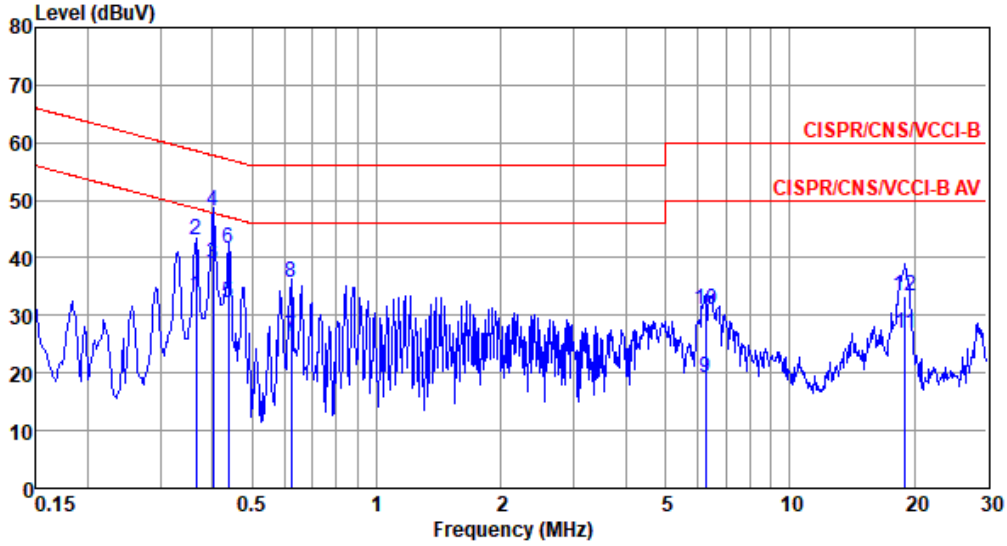


	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	Factor dB	Cable loss dB	Aux dB	Remark
1	0.365	32.79	48.61	-15.82	22.75	9.64	0.08	0.32	Average
2	0.365	42.56	58.61	-16.05	32.52	9.64	0.08	0.32	QP
3*	0.402	39.64	47.81	-8.17	29.59	9.64	0.08	0.33	Average
4	0.402	48.68	57.81	-9.13	38.63	9.64	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 MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	Factor dB	Cable loss dB	Aux dB	Remark
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).