

FCC Test Report

FCC ID : SQG-SONAIF573
Equipment : Sona IF573 802.11ax Wi-Fi 6E Module with Bluetooth 5.4
Model No. : Sona IF573
Brand Name : Laird Connectivity
Applicant : Laird Connectivity LLC
Address : W66N220 Commerce Court, Cedarburg, WI 53012 United States Of America
Standard : 47 CFR FCC Part 15.247
Received Date : Jan. 17, 2023
Tested Date : Apr. 13 ~ May 23, 2023

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

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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
FR311701AE	Rev. 01	Initial issue	Jul. 28, 2023

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	AC Power Line Conducted Emissions	[dBuV]: 0.500MHz 39.17 (Margin -6.83dB) - AV	Pass
15.247(d) 15.209	Unwanted Emissions	[dBuV/m at 3m]: 4000.00MHz 50.95 (Margin -3.05dB - AV	Pass
15.247(b)(3)	Conducted Output Power	Power [dBm]: 8.83	Pass
15.247(a)(2)	6dB Bandwidth	Meet the requirement of limit	Pass
15.247(e)	Power Spectral Density	Meet the requirement of limit	Pass
15.203	Antenna Requirement	Meet the requirement of limit	Pass

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

1 General Description

1.1 Information

1.1.1 Product Details

The four configurations of the EUT are shown on the following:

Model Name	Part No.	Description
Sona IF573	453-00117	Module, Sona IF573, MIMO, MHF4
	453-00118	Module, Sona IF573, MIMO, Trace Pin
	453-00119	Module, Sona IF573, MIMO, M.2, Key E, SDIO, UART
	453-00120	Module, Sona IF573, MIMO, M.2, Key E, PCIe, UART

1.1.2 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: Bluetooth LE (Low energy) uses GFSK modulation.

1.1.3 Antenna Details

Ant. No.	Manufacturer	Model	Part Number	Type	Connector	Gain (dBi)
1	JOYMAX	TWX-100BRSAX-2001	NA	Dipole	RP-SMA	2
2	Laird	FlexMIMO 6E	EFD2471A3S-10 MH4L	PIFA	MHF4L	2.2
3	Laird	Mini NanoBlade Flex 6 GHz	EMF2471A3S-10 MH4L	PCB Dipole	MHF4L	2.4
4	Laird	FlexPIFA 6E	EFB2471A3S-10 MH4L	PIFA	MHF4L	2.2

1.1.4 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	3.3Vdc from host
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1.1.5 Accessories

N/A

1.1.6 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

1.1.7 Test Tool and Duty Cycle

Test Tool	Tera Term, V4.8	
Modulation Mode	Duty Cycle Of Test Signal (%)	Duty Factor (dB)
BT-LE(125kbps)	84.39%	0.74
BT-LE(500kbps)	36.89%	4.33
BT-LE(1Mbps)	64.58%	1.90
BT-LE(2Mbps)	33.57%	4.74

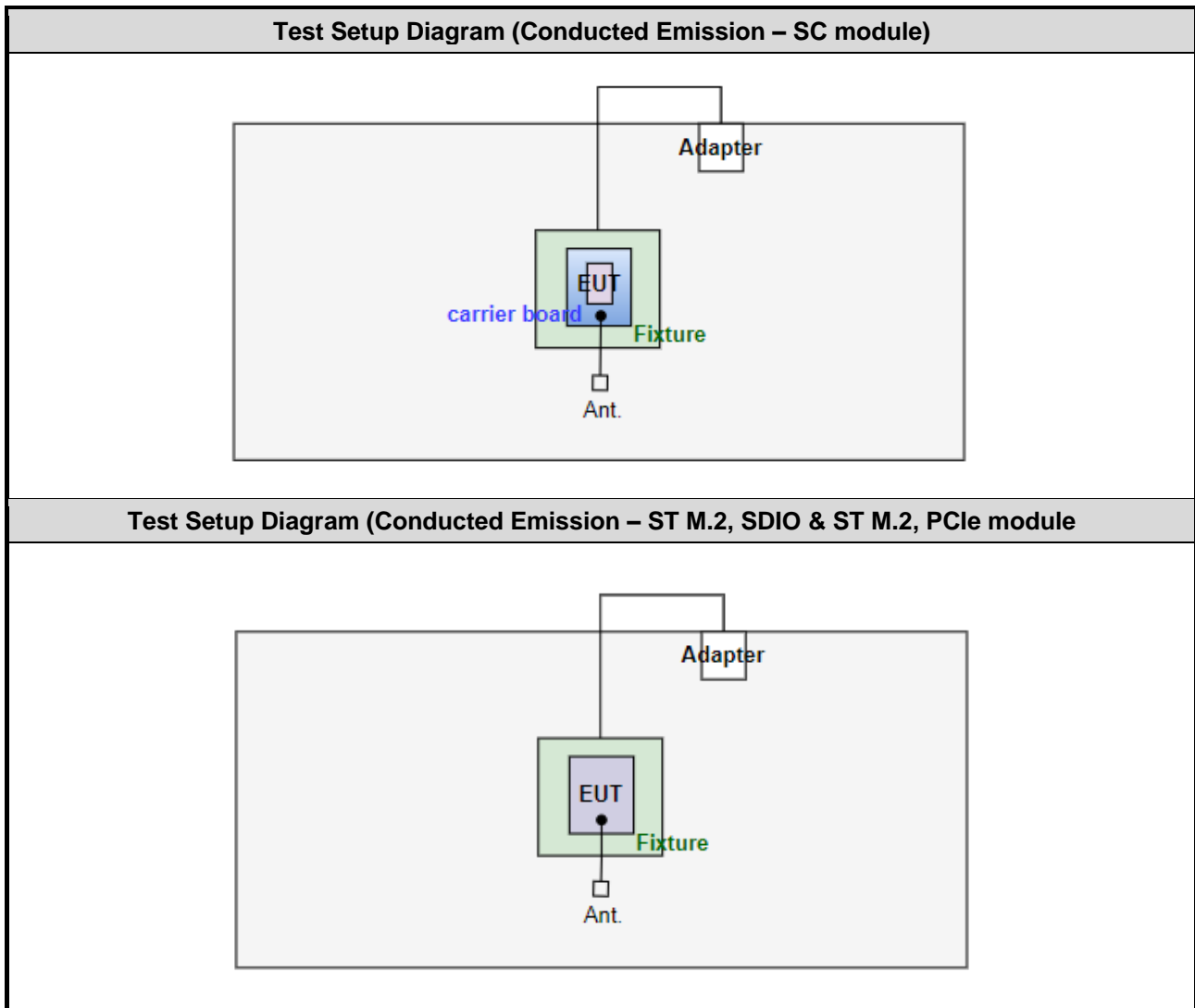
1.1.8 Power Index of Test Tool

Modulation Mode	Test Frequency (MHz)		
	2402	2440	2480
BT-LE(125kbps)	Default	Default	Default
BT-LE(500kbps)	Default	Default	Default
BT-LE(1Mbps)	Default	Default	Default
BT-LE(2Mbps)	Default	Default	Default

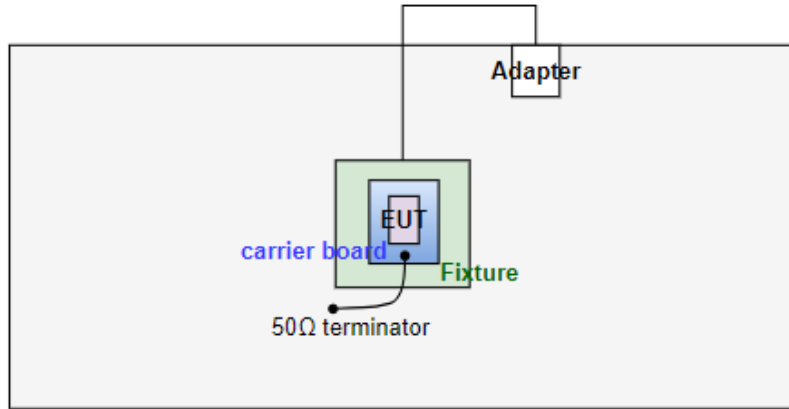
1.2 Local Support Equipment List

Support Equipment List					
No.	Equipment	Brand	Model	FCC ID	Remarks
1	Laptop	DELL	Latitude 5400	DoC	---
2	Fixture	---	700-46370 REV B	---	Provided by applicant.
3	Fixture's adapter	---	EA1045CR	---	Provided by applicant. I/P: 100-240Vac,1.5A,50-60Hz O/P: 5.0V 3.0A
4	50Ω terminator	---	---	---	---

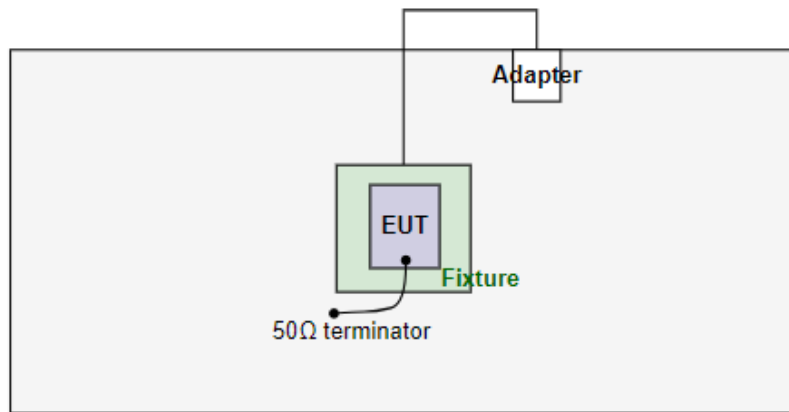
1.3 Test Setup Chart



Test Setup Diagram (Radiated Emission – SC module)



Test Setup Diagram (Radiated Emission – ST M.2, SDIO & ST M.2, PCIe module)



1.4 Test Equipment List and Calibration Data

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
Tested Date	May 23, 2023				
Instrument	Brand	Model No.	Serial No.	Calibration Date	Calibration Until
Receiver	R&S	ESR3	101658	Feb. 17, 2023	Feb. 16, 2024
LISN	R&S	ENV216	101295	Jan. 31, 2023	Jan. 30, 2024
LISN (Support Unit)	SCHWARZBECK	Schwarzbeck 8127	8127667	Jan. 03, 2023	Jan. 02, 2024
RF Cable-CON	Woken	CFD200-NL	CFD200-NL-001	Oct. 17, 2022	Oct. 16, 2023
50 ohm terminal (Support Unit)	NA	50	03	Jun. 08, 2022	Jun. 07, 2023
Measurement S/W	AUDIX	e3	6.120210k	NA	NA
Measurement S/W	Sporton	SENSE-EMI	V5.10.8.7	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	Radiated Emission				
Test Site	966 chamber1 / (03CH01-WS)				
Tested Date	Apr. 13 ~ Apr. 27, 2023				
Instrument	Brand	Model No.	Serial No.	Calibration Date	Calibration Until
Receiver	R&S	ESR3	101657	Mar. 03, 2023	Mar. 02, 2024
Spectrum Analyzer	R&S	FSV40	101498	Nov. 21, 2022	Nov. 20, 2023
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 01, 2022	Oct. 31, 2023
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Aug. 03, 2022	Aug. 02, 2023
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Nov. 25, 2022	Nov. 24, 2023
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Oct. 27, 2022	Oct. 26, 2023
Preamplifier	EMC	EMC02325	980225	Jun. 28, 2022	Jun. 27, 2023
Preamplifier	EMC	EMC118A45SE	980898	Jul. 16, 2022	Jul. 15, 2023
Preamplifier	EMC	EMC184045SE	980903	Jul. 16, 2022	Jul. 15, 2023
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Oct. 04, 2022	Oct. 03, 2023
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Oct. 04, 2022	Oct. 03, 2023
LF cable 11M	EMC	EMCCFD400-NW-NW-11000	200801	Oct. 04, 2022	Oct. 03, 2023
LF cable 1M	EMC	EMCCFD400-NM-NM-1000	160502	Oct. 04, 2022	Oct. 03, 2023
RF Cable	EMC	EMC104-35M-35M-8000	210920	Oct. 04, 2022	Oct. 03, 2023
RF Cable	EMC	EMC104-35M-35M-3000	210922	Oct. 04, 2022	Oct. 03, 2023
HIGHPASS FILTER 3.1-18G	WHK	WHK3.1/18G-10SS	39	Oct. 06, 2022	Oct. 05, 2023
Attenuator	woken	PE7013-10	10-1	Oct. 14, 2022	Oct. 13, 2023
Measurement S/W	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	Apr. 14, 2023				
Instrument	Brand	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101498	Nov. 21, 2022	Nov. 20, 2023
Power Meter	Anritsu	ML2495A	1241002	Nov. 23, 2022	Nov. 22, 2023
Power Sensor	Anritsu	MA2411B	1207366	Nov. 23, 2022	Nov. 22, 2023
HIGHPASS FILTER 3.1-18G	WHK	WHK3.1/18G-10SS	39	Oct. 06, 2022	Oct. 05, 2023
LOWPASS FILTER	WI	WLKS1100-12SS	2	Oct. 06, 2022	Oct. 05, 2023
Attenuator	woken	PE7013-10	10-1	Oct. 14, 2022	Oct. 13, 2023
Measurement S/W	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	±3.41 dB
Unwanted Emission > 1GHz	±4.59 dB

2 Test Configuration

2.1 Testing Facility

Test Laboratory	International Certification Corporation
Test Site	CO01-WS, 03CH01-WS, TH01-WS
Address of Test Site	No.3-1, Lane 6, Wen San 3rd St., Kwei Shan Dist., Tao Yuan City 33381, Taiwan (R.O.C.)

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

2.2 The Worst Test Modes and Channel Details

Test item	Modulation Mode	Test Frequency (MHz)	Test method	Mode	Test Configuration	Note
AC Power Line Conducted Emissions	BT-LE(1Mbps)	2480	Conducted	TX	1, 2, 3	-
Unwanted Emissions ≤ 1GHz	BT-LE(1Mbps)	2480	Radiated	TX	1, 2, 3	Note 2
Unwanted Emissions > 1GHz	BT-LE(1Mbps) BT-LE(2Mbps)	2402, 2440, 2480 2402, 2440, 2480	Radiated	TX	1	Note 2
	BT-LE(1Mbps)	2440	Radiated	TX	3	Note 2
Unwanted Emissions ≤ 1GHz	BT-LE(1Mbps)	2480	Conducted	TX	1, 3	-
Unwanted Emissions > 1GHz	BT-LE(1Mbps) BT-LE(2Mbps)	2402, 2440, 2480 2402, 2440, 2480	Conducted	TX	1	-
	BT-LE(1Mbps)	2480	Conducted	TX	3	-
Conducted Output Power	BT-LE(125kbps)	2402, 2440, 2480	Conducted	TX	1, 3	-
	BT-LE(500kbps)	2402, 2440, 2480				
	BT-LE(1Mbps)	2402, 2440, 2480				
	BT-LE(2Mbps)	2402, 2440, 2480				
6dB bandwidth Power spectral density	BT-LE(125kbps)	2402, 2440, 2480	Conducted	TX	1	-
	BT-LE(500kbps)	2402, 2440, 2480				
	BT-LE(1Mbps)	2402, 2440, 2480				
	BT-LE(2Mbps)	2402, 2440, 2480				

NOTE:

- The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The **Y-plane** result was found as the worst case and was shown in this report.
- The 50Ω terminator is connected to antenna port of EUT for radiated emission measurement.
- Test configurations are listed as below:
 Configuration 1: Laird part number: 453-00117 (SC module)
 Configuration 2: Laird part number: 453-00119 (ST M.2, SDIO Module)
 Configuration 3: Laird part number: 453-00120 (ST M.2, PCIe Module)

3 Transmitter Test Results

3.1 6dB and Occupied Bandwidth

3.1.1 Limit of 6dB Bandwidth

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

3.1.2 Test Procedures

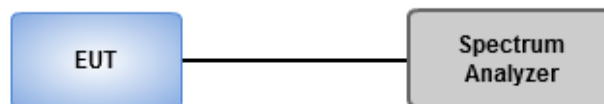
6dB Bandwidth

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

Occupied Bandwidth

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

3.1.3 Test Setup



3.1.4 Test Results

Ambient Condition	26°C / 66%	Tested By	Akun Chung
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Refer to Appendix A.

3.2 Conducted Output Power

3.2.1 Limit of Conducted Output Power

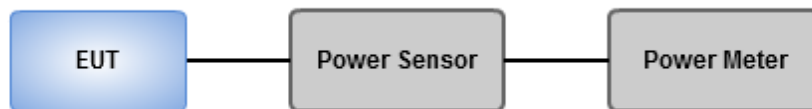
Conducted power shall not exceed 1Watt.

Antenna gain $\leq 6\text{dBi}$, no any corresponding reduction is in output power limit.

3.2.2 Test Procedures

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

3.2.3 Test Setup



3.2.4 Test Results

Ambient Condition	26°C / 66%	Tested By	Akun Chung
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Refer to Appendix B.

3.3 Power Spectral Density

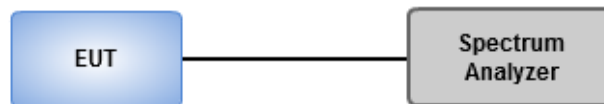
3.3.1 Limit of Power Spectral Density

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

3.3.2 Test Procedures

1. Set the RBW = 3 kHz, VBW = 10 kHz.
2. Detector = Peak, Sweep time = auto couple.
3. Trace mode = max hold, allow trace to fully stabilize.
4. Use the peak marker function to determine the maximum amplitude level.

3.3.3 Test Setup



3.3.4 Test Results

Ambient Condition	26°C / 66%	Tested By	Akun Chung
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Refer to Appendix C.

3.4 Unwanted Emissions in Restricted Frequency Bands

3.4.1 Limit of Unwanted Emissions in Restricted Frequency Bands

Restricted Band Emissions Limit			
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

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

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

3.4.2 Test Procedures

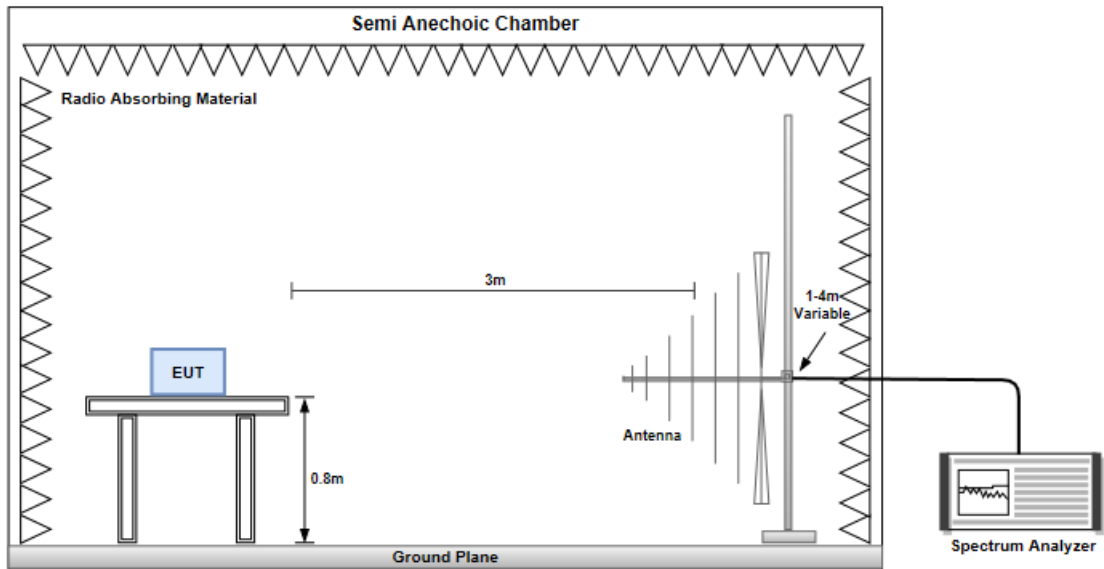
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission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

Note:

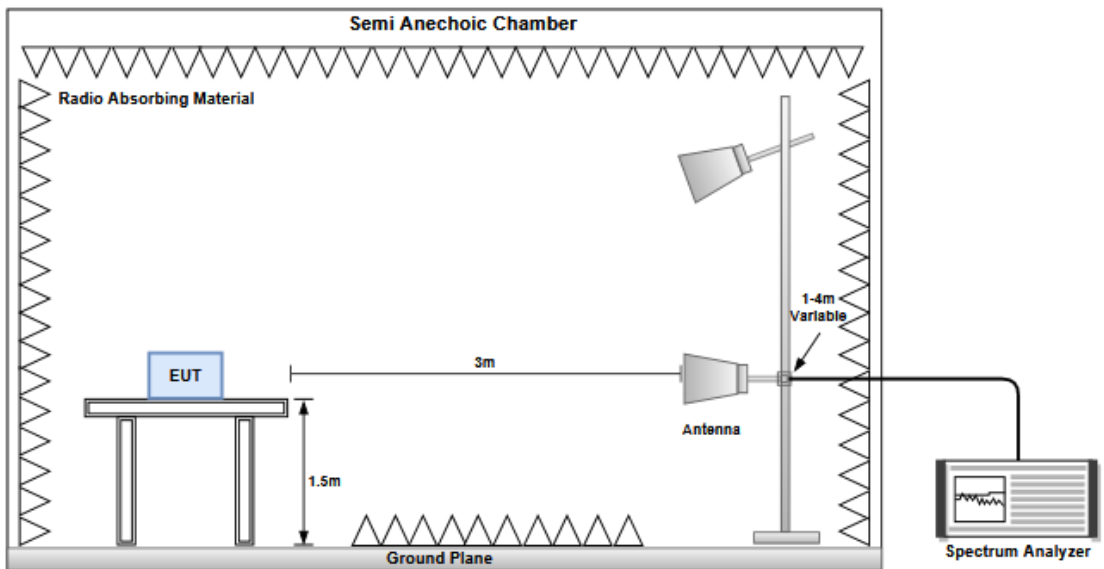
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.4.3 Test Setup

Radiated Emissions below 1 GHz



Radiated Emissions above 1 GHz



3.4.4 Test Results

Refer to Appendix D.

3.5 Emissions in non-restricted Frequency Bands

3.5.1 Emissions in non-restricted frequency bands limit

Peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz.

3.5.2 Test Procedures

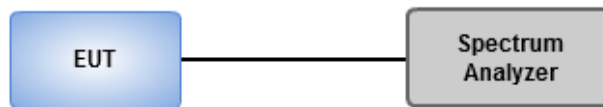
Reference level measurement

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

Emission level measurement

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

3.5.3 Test Setup



3.5.4 Test Results

Ambient Condition	26°C / 66%	Tested By	Akun Chung
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Refer to Appendix E.

3.6 AC Power Line Conducted Emissions

3.6.1 Limit of AC Power Line Conducted Emissions

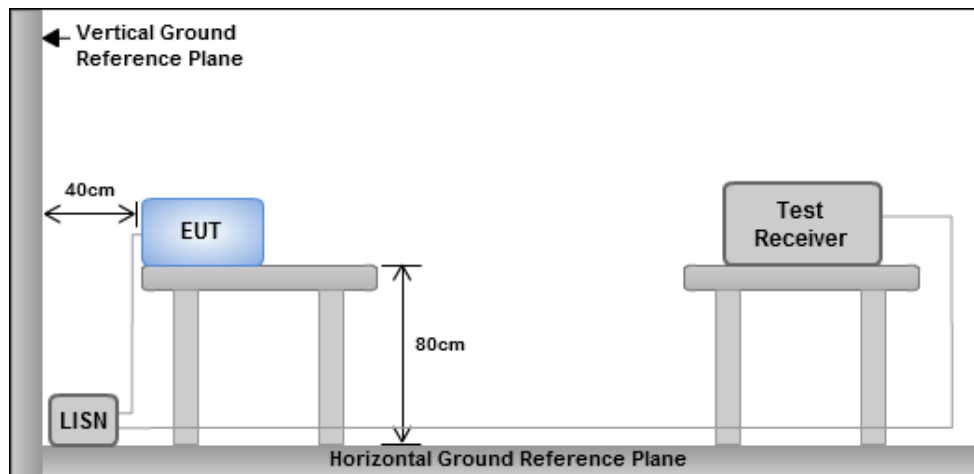
Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

Note 1: * Decreases with the logarithm of the frequency.

3.6.2 Test Procedures

1. The device is placed on a test table, raised 80 cm above the reference ground plane. The vertical conducting plane is located 40 cm to the rear of the device.
2. The device is connected to line impedance stabilization network (LISN) and other accessories are connected to other LISN. Measured levels of AC power line conducted emission are across the 50 Ω LISN port.
3. AC conducted emission measurements is made over frequency range from 150 kHz to 30 MHz.
4. This measurement was performed with AC 120V/60Hz

3.6.3 Test Setup



- Note: 1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

3.6.4 Test Results

Refer to Appendix F.

4 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corporation (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan District. Location map can be found on our website <http://www.icertifi.com.tw>.

Linkou

Tel: 886-2-2601-1640

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

Kwei Shan

Tel: 886-3-271-8666

No.3-1, Lane 6, Wen San 3rd
St., Kwei Shan Dist., Tao Yuan
City 33381, Taiwan (R.O.C.)
No.2-1, Lane 6, Wen San 3rd
St., Kwei Shan Dist., Tao Yuan
City 33381, Taiwan (R.O.C.)

Kwei Shan Site II

Tel: 886-3-271-8640

No.14-1, Lane 19, Wen San 3rd
St., Kwei Shan Dist., Tao Yuan
City 33381, Taiwan (R.O.C.)

If you have any suggestion, please feel free to contact us as below information.

Tel: 886-3-271-8666

Fax: 886-3-318-0155

Email: ICC_Service@icertifi.com.tw

==END==

**Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
BT-LE(125kbps)	697.5k	1.074M	1M07F1D	695k	1.073M
BT-LE(500kbps)	667.5k	1.038M	1M04F1D	666.25k	1.037M
BT-LE(1Mbps)	675k	1.041M	1M04F1D	672.5k	1.041M
BT-LE(2Mbps)	1.255M	2.039M	2M04F1D	1.253M	2.036M

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	697.5k	1.073M
2440MHz	Pass	500k	697.5k	1.074M
2480MHz	Pass	500k	695k	1.074M
BT-LE(500kbps)	-	-	-	-
2402MHz	Pass	500k	666.25k	1.037M
2440MHz	Pass	500k	667.5k	1.038M
2480MHz	Pass	500k	666.25k	1.038M
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	672.5k	1.041M
2440MHz	Pass	500k	675k	1.041M
2480MHz	Pass	500k	673.75k	1.041M
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	500k	1.253M	2.036M
2440MHz	Pass	500k	1.255M	2.039M
2480MHz	Pass	500k	1.253M	2.039M

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

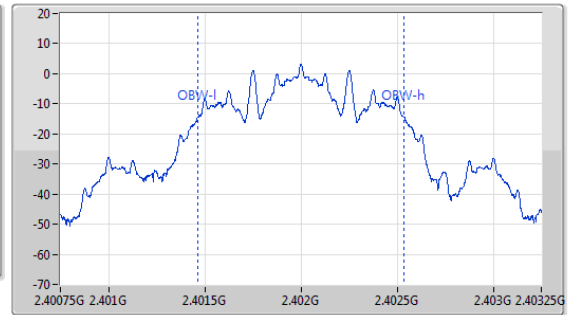
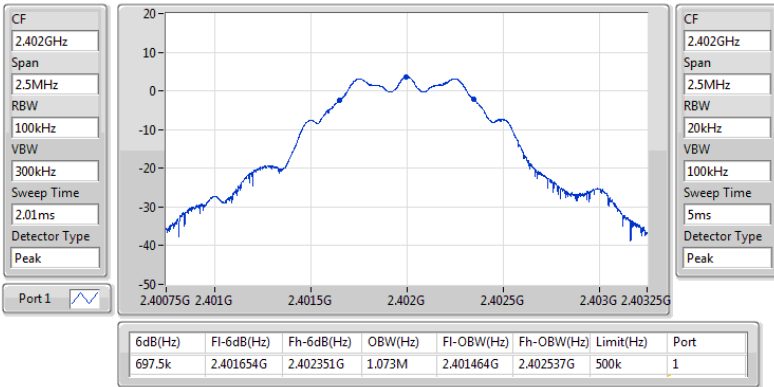
Port X-OBW = Port X 99% occupied bandwidth



2.4-2.4835GHz_BT-LE(125kbps)

EBW-DTS

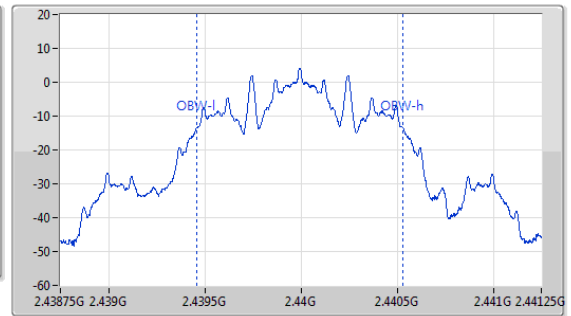
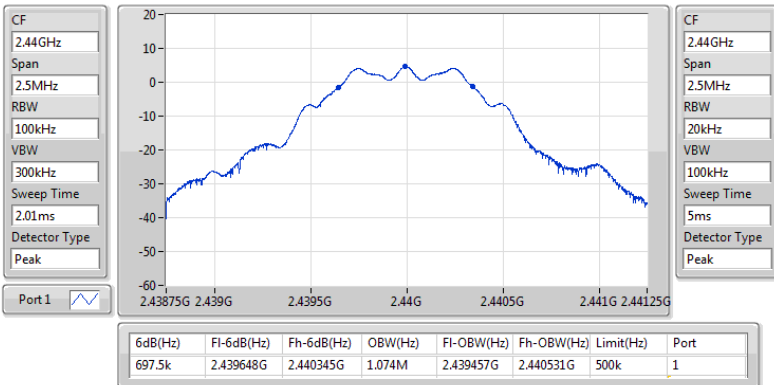
2402MHz



2.4-2.4835GHz_BT-LE(125kbps)

EBW-DTS

2440MHz

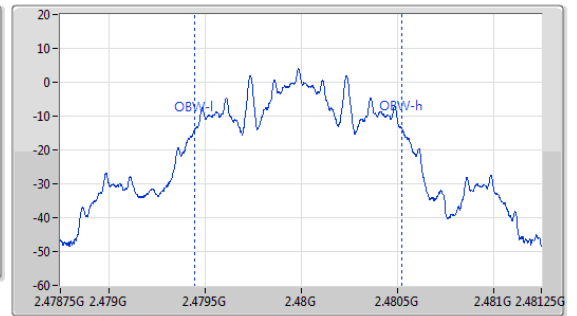
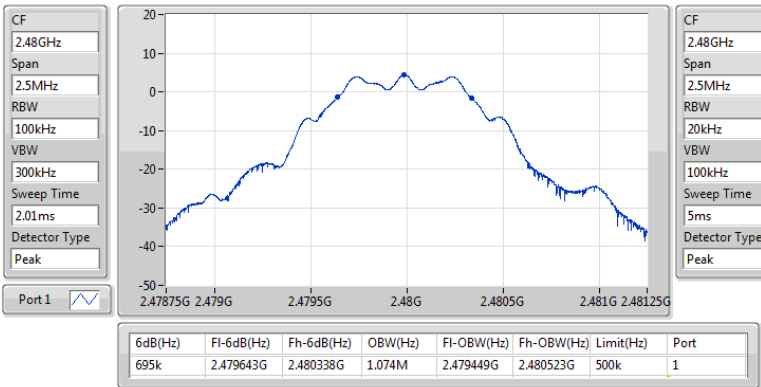




2.4-2.4835GHz_BT-LE(125kbps)

EBW-DTS

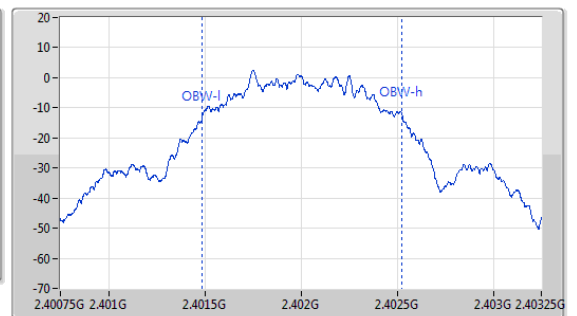
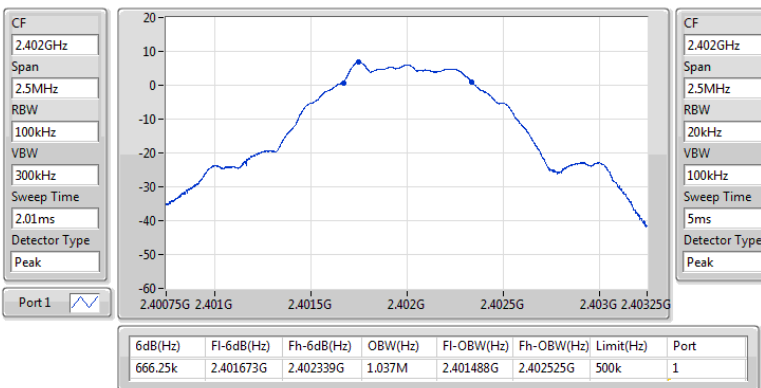
2480MHz



2.4-2.4835GHz_BT-LE(500kbps)

EBW-DTS

2402MHz

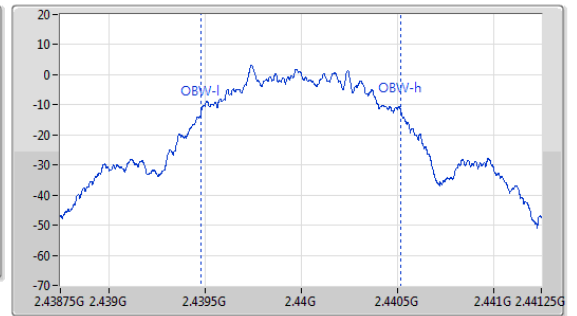
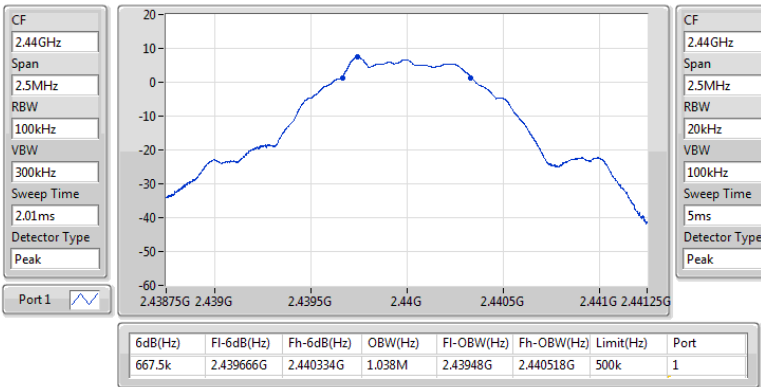




2.4-2.4835GHz_BT-LE(500kbps)

EBW-DTS

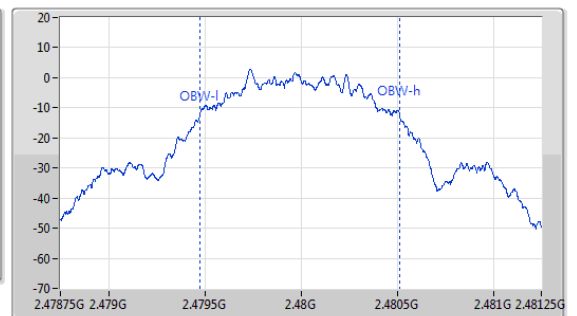
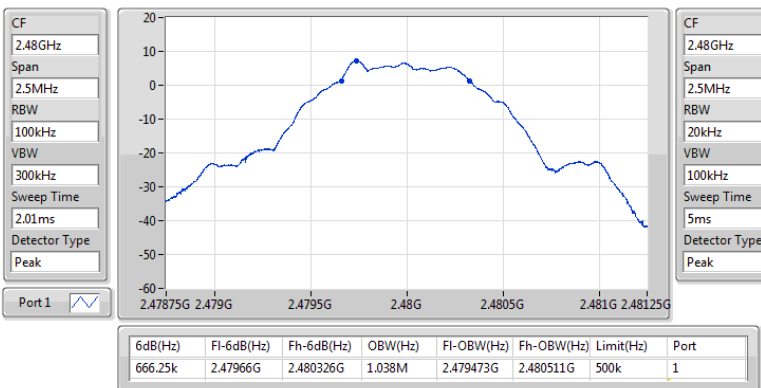
2440MHz



2.4-2.4835GHz_BT-LE(500kbps)

EBW-DTS

2480MHz

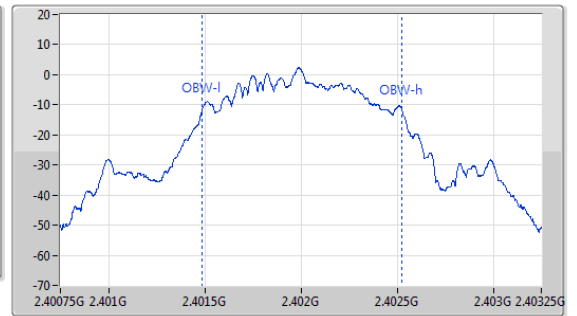
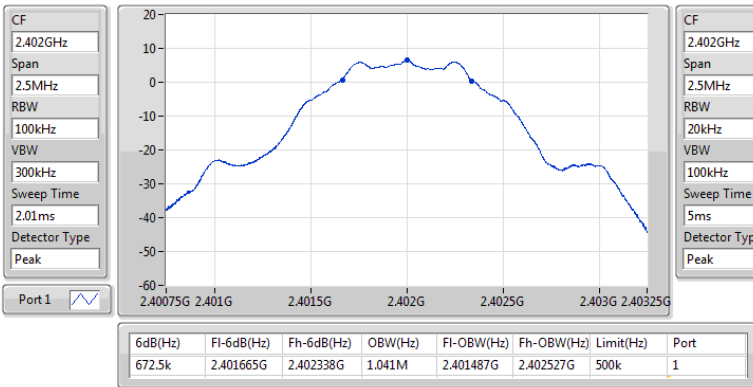




2.4-2.4835GHz_BT-LE(1Mbps)

EBW-DTS

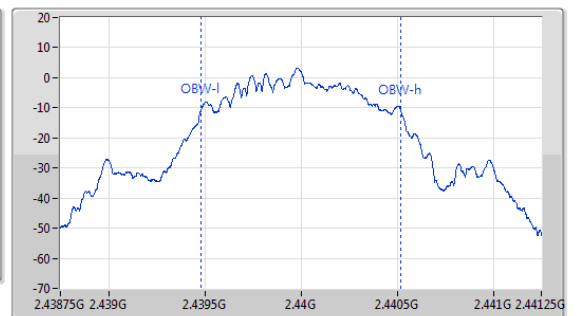
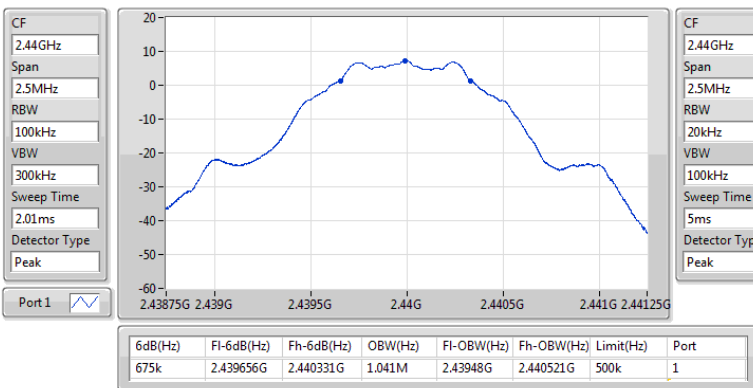
2402MHz



2.4-2.4835GHz_BT-LE(1Mbps)

EBW-DTS

2440MHz

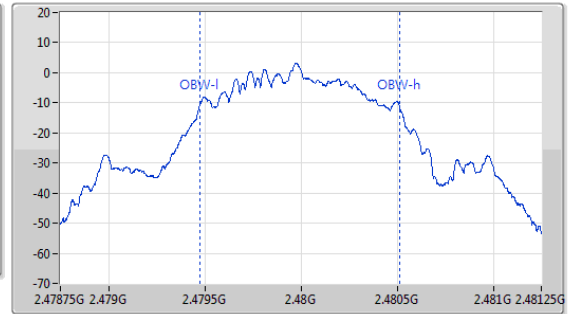
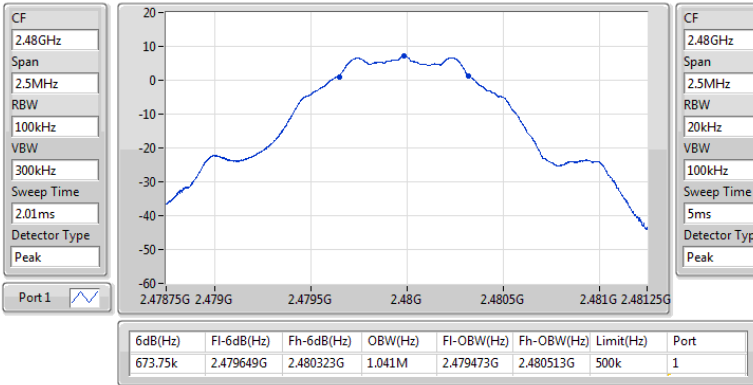




2.4-2.4835GHz_BT-LE(1Mbps)

EBW-DTS

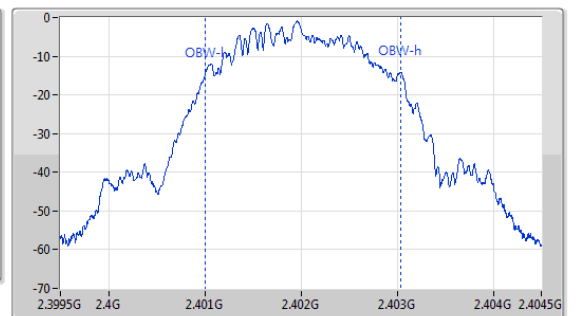
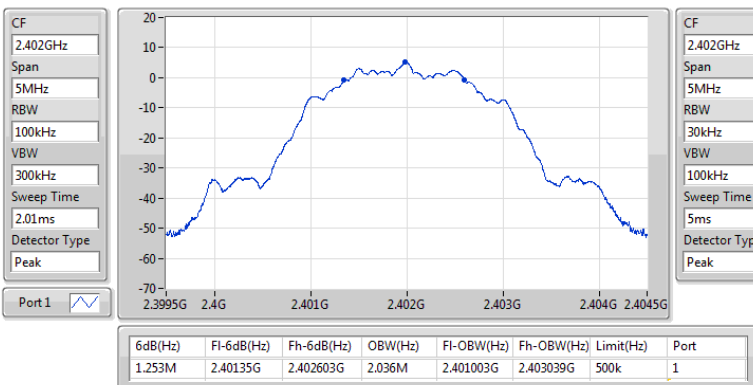
2480MHz



2.4-2.4835GHz_BT-LE(2Mbps)

EBW-DTS

2402MHz

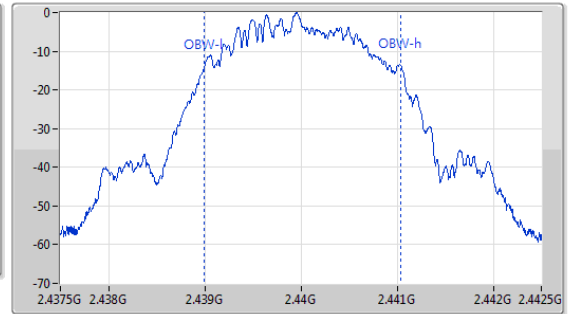
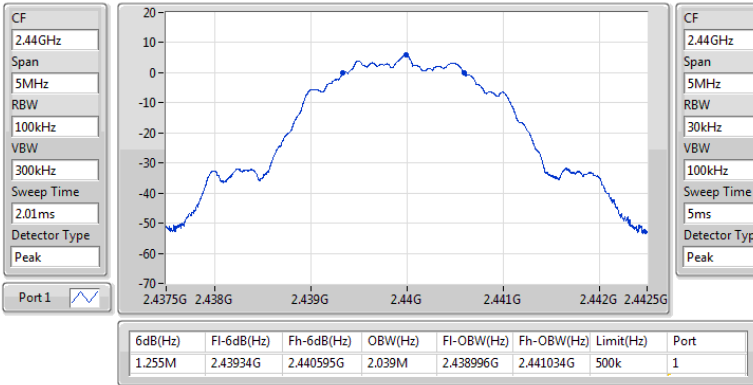




2.4-2.4835GHz_BT-LE(2Mbps)

EBW-DTS

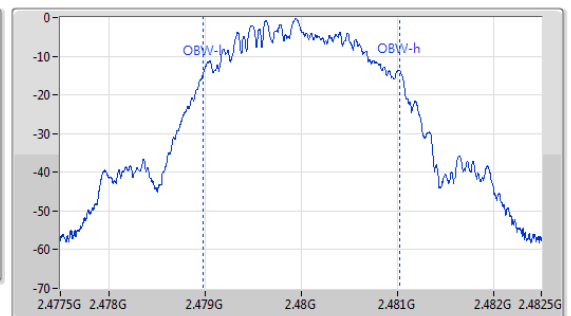
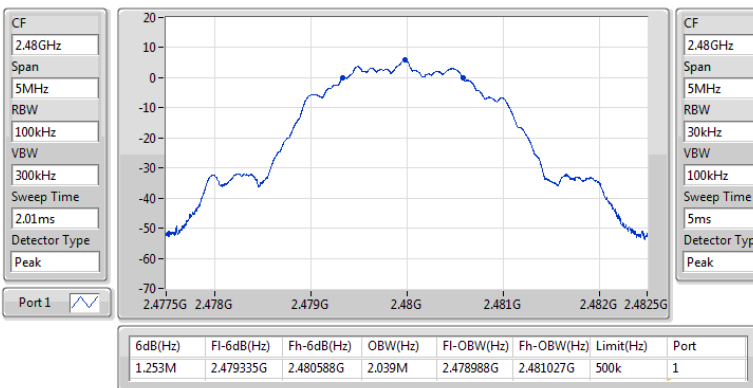
2440MHz



2.4-2.4835GHz_BT-LE(2Mbps)

EBW-DTS

2480MHz





Conducted Output Power (Peak) - SC Module

Appendix B.1

Summary

Mode	Total Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(125kbps)	8.53	0.00713
BT-LE(500kbps)	8.37	0.00687
BT-LE(1Mbps)	8.55	0.00716
BT-LE(2Mbps)	8.83	0.00764

Result

Mode	Result	Antenna Gain (dBi)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
BT-LE(125kbps)	-	-	-	-	-	-
2402MHz	Pass	2.40	7.45	30.00	9.85	36.00
2440MHz	Pass	2.40	8.17	30.00	10.57	36.00
2480MHz	Pass	2.40	8.53	30.00	10.93	36.00
BT-LE(500kbps)	-	-	-	-	-	-
2402MHz	Pass	2.40	7.33	30.00	9.73	36.00
2440MHz	Pass	2.40	8.02	30.00	10.42	36.00
2480MHz	Pass	2.40	8.37	30.00	10.77	36.00
BT-LE(1Mbps)	-	-	-	-	-	-
2402MHz	Pass	2.40	7.55	30.00	9.95	36.00
2440MHz	Pass	2.40	8.22	30.00	10.62	36.00
2480MHz	Pass	2.40	8.55	30.00	10.95	36.00
BT-LE(2Mbps)	-	-	-	-	-	-
2402MHz	Pass	2.40	7.87	30.00	10.27	36.00
2440MHz	Pass	2.40	8.51	30.00	10.91	36.00
2480MHz	Pass	2.40	8.83	30.00	11.23	36.00



Conducted Output Power (Average) - SC Module

Appendix B.2

Summary

Mode	Total Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(125kbps)	8.21	0.00662
BT-LE(500kbps)	8.12	0.00649
BT-LE(1Mbps)	8.24	0.00667
BT-LE(2Mbps)	8.16	0.00655

Result

Mode	Result	Antenna Gain (dBi)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
BT-LE(125kbps)	-	-	-	-	-	-
2402MHz	Pass	2.40	7.08	-	9.48	-
2440MHz	Pass	2.40	7.76	-	10.16	-
2480MHz	Pass	2.40	8.21	-	10.61	-
BT-LE(500kbps)	-	-	-	-	-	-
2402MHz	Pass	2.40	7.01	-	9.41	-
2440MHz	Pass	2.40	7.81	-	10.21	-
2480MHz	Pass	2.40	8.12	-	10.52	-
BT-LE(1Mbps)	-	-	-	-	-	-
2402MHz	Pass	2.40	7.08	-	9.48	-
2440MHz	Pass	2.40	7.81	-	10.21	-
2480MHz	Pass	2.40	8.24	-	10.64	-
BT-LE(2Mbps)	-	-	-	-	-	-
2402MHz	Pass	2.40	7.12	-	9.52	-
2440MHz	Pass	2.40	7.81	-	10.21	-
2480MHz	Pass	2.40	8.16	-	10.56	-

Note: Average power is for reference only.

**Summary**

Mode	Total Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(125kbps)	8.32	0.00679
BT-LE(500kbps)	8.29	0.00675
BT-LE(1Mbps)	8.35	0.00684
BT-LE(2Mbps)	8.66	0.00735

Result

Mode	Result	Antenna Gain (dBi)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
BT-LE(125kbps)	-	-	-	-	-	-
2402MHz	Pass	2.40	7.33	30.00	9.73	36.00
2440MHz	Pass	2.40	8.02	30.00	10.42	36.00
2480MHz	Pass	2.40	8.32	30.00	10.72	36.00
BT-LE(500kbps)	-	-	-	-	-	-
2402MHz	Pass	2.40	7.31	30.00	9.71	36.00
2440MHz	Pass	2.40	7.91	30.00	10.31	36.00
2480MHz	Pass	2.40	8.29	30.00	10.69	36.00
BT-LE(1Mbps)	-	-	-	-	-	-
2402MHz	Pass	2.40	7.39	30.00	9.79	36.00
2440MHz	Pass	2.40	8.05	30.00	10.45	36.00
2480MHz	Pass	2.40	8.35	30.00	10.75	36.00
BT-LE(2Mbps)	-	-	-	-	-	-
2402MHz	Pass	2.40	7.66	30.00	10.06	36.00
2440MHz	Pass	2.40	8.29	30.00	10.69	36.00
2480MHz	Pass	2.40	8.66	30.00	11.06	36.00

**Summary**

Mode	Total Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(125kbps)	7.92	0.00619
BT-LE(500kbps)	7.88	0.00614
BT-LE(1Mbps)	7.94	0.00622
BT-LE(2Mbps)	7.83	0.00607

Result

Mode	Result	Antenna Gain (dBi)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
BT-LE(125kbps)	-	-	-	-	-	-
2402MHz	Pass	2.40	6.96	-	9.36	-
2440MHz	Pass	2.40	7.63	-	10.03	-
2480MHz	Pass	2.40	7.92	-	10.32	-
BT-LE(500kbps)	-	-	-	-	-	-
2402MHz	Pass	2.40	6.93	-	9.33	-
2440MHz	Pass	2.40	7.61	-	10.01	-
2480MHz	Pass	2.40	7.88	-	10.28	-
BT-LE(1Mbps)	-	-	-	-	-	-
2402MHz	Pass	2.40	7.00	-	9.40	-
2440MHz	Pass	2.40	7.65	-	10.05	-
2480MHz	Pass	2.40	7.94	-	10.34	-
BT-LE(2Mbps)	-	-	-	-	-	-
2402MHz	Pass	2.40	6.91	-	9.31	-
2440MHz	Pass	2.40	7.56	-	9.96	-
2480MHz	Pass	2.40	7.83	-	10.23	-

Note: Average power is for reference only.

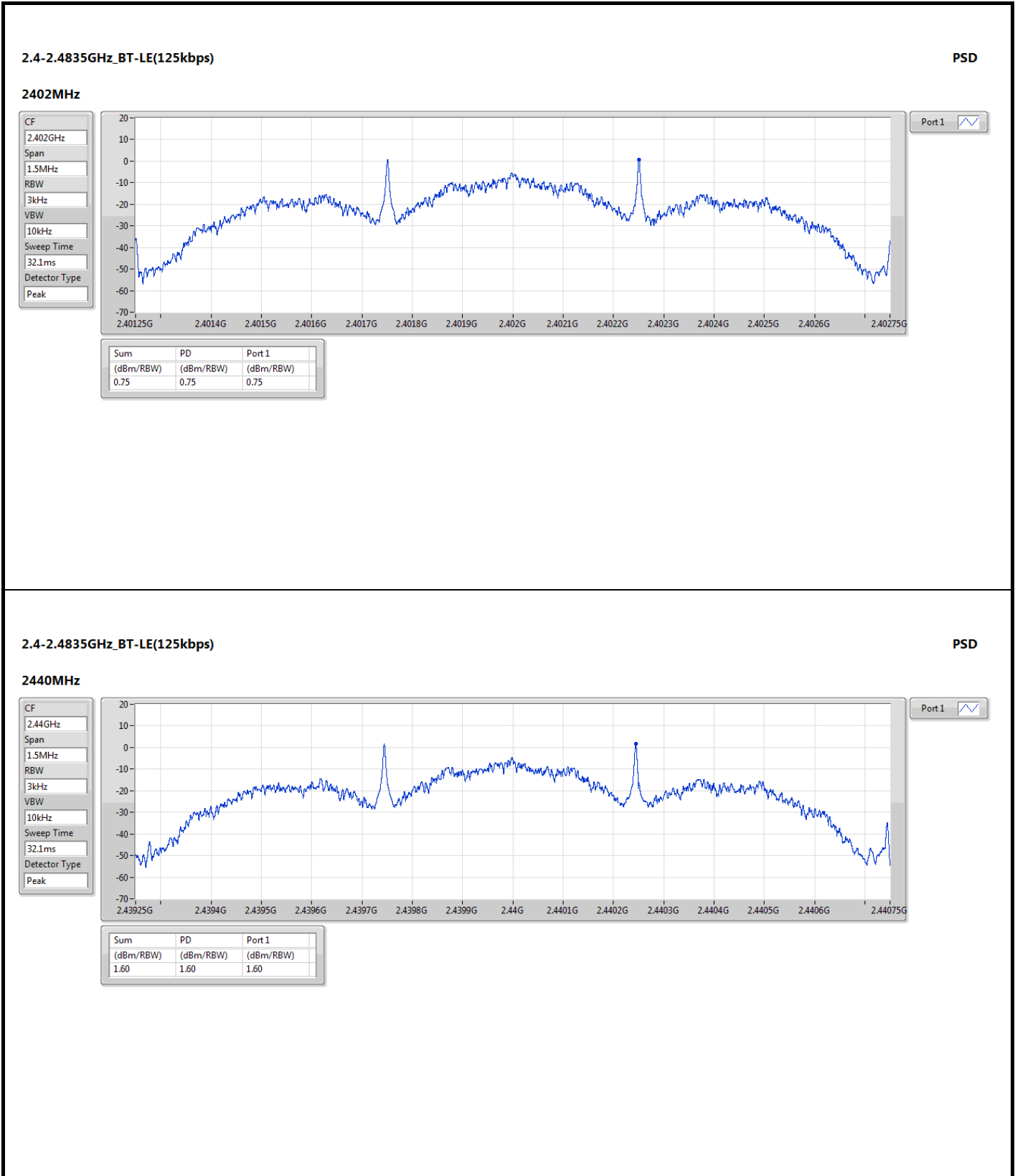


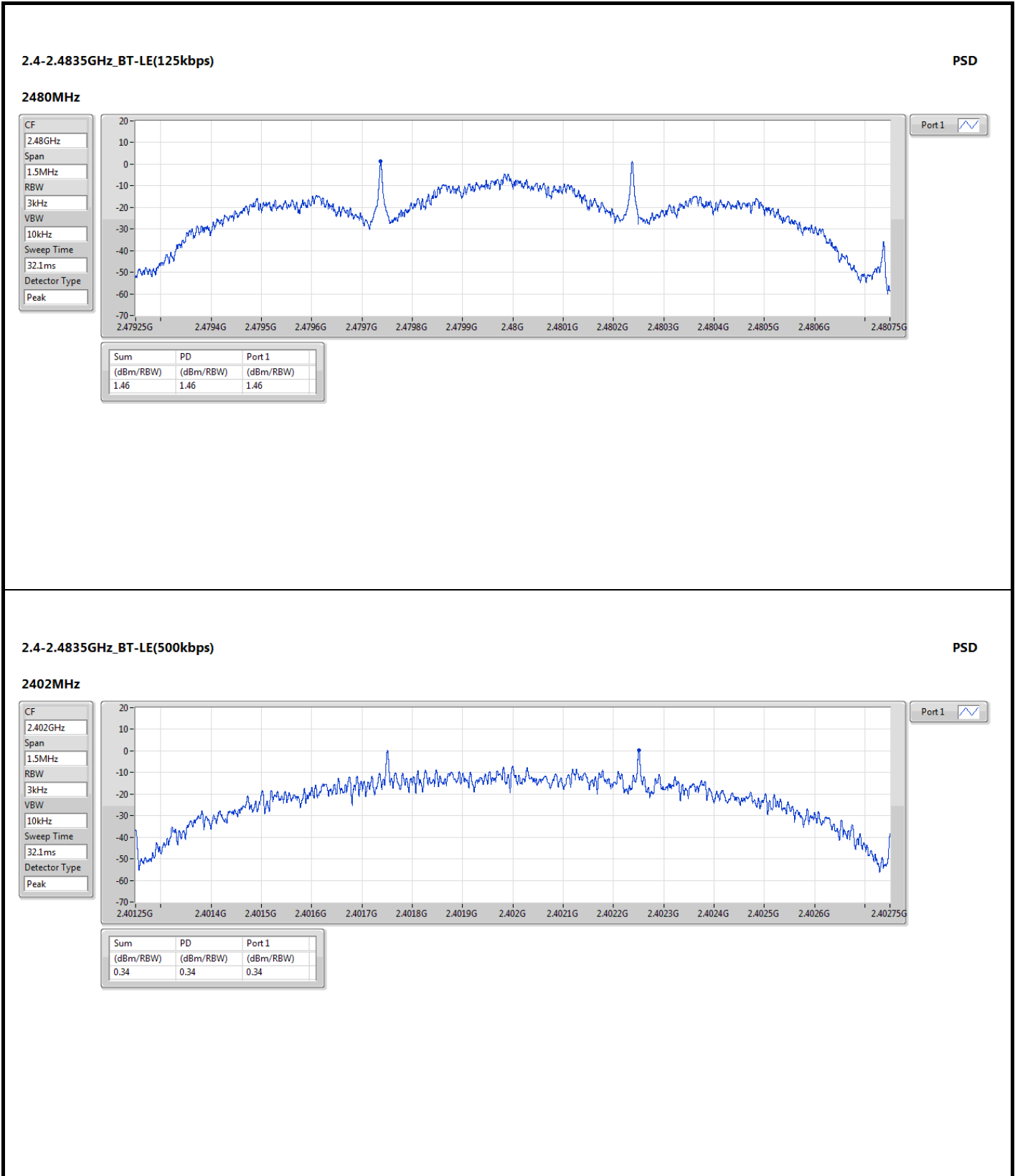
Summary

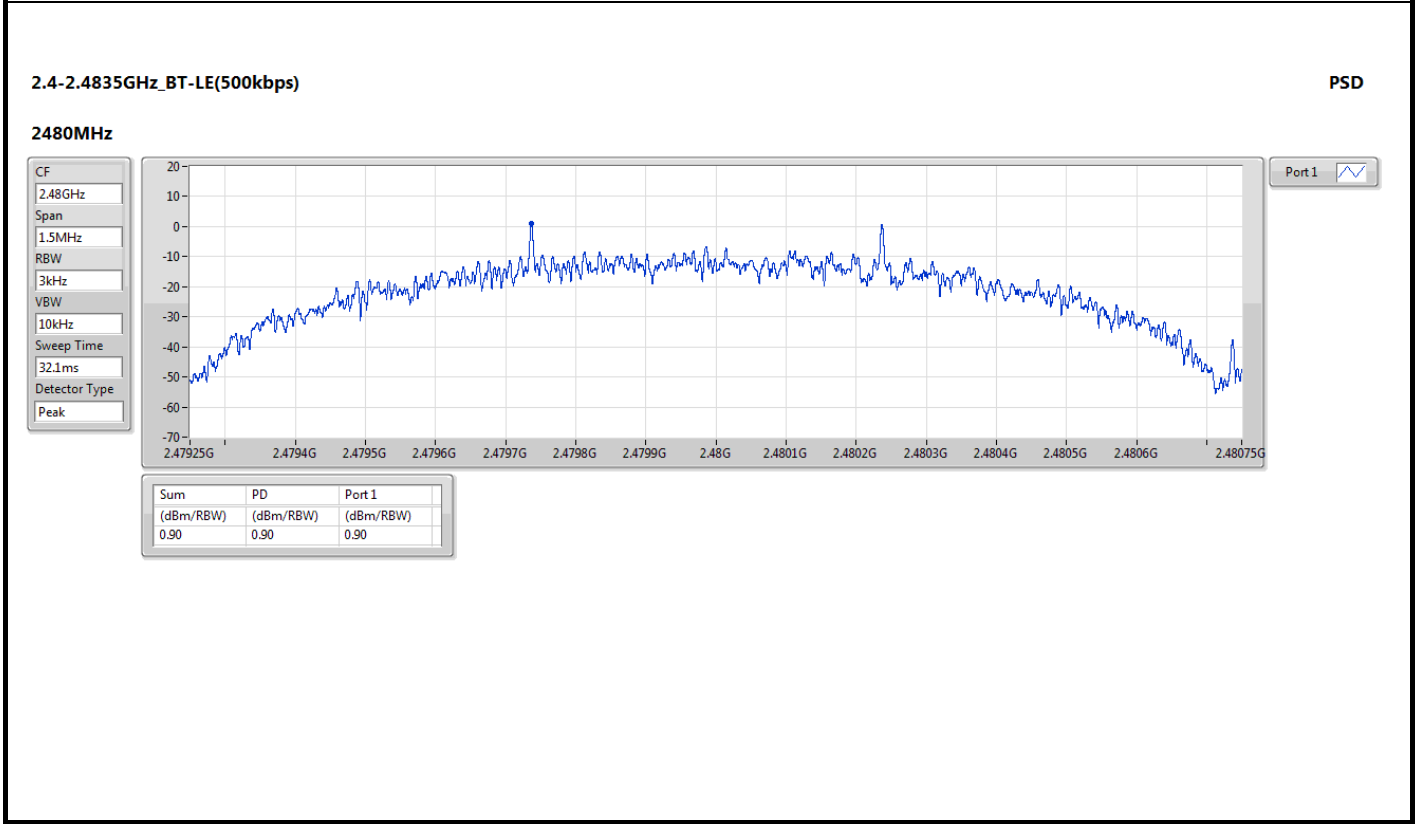
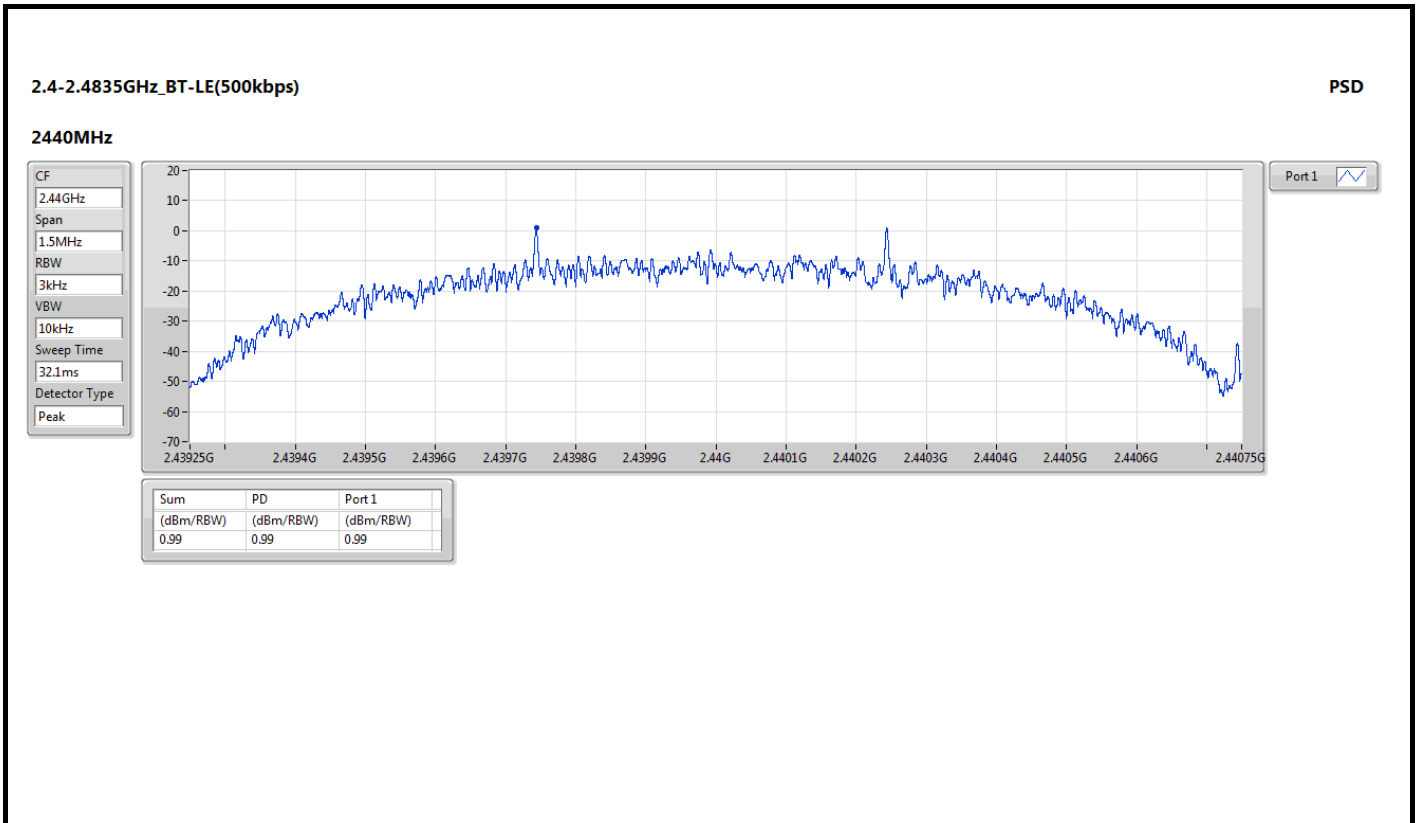
Mode	PD (dBm/3kHz)
2.4-2.4835GHz	-
BT-LE(125kbps)	1.60
BT-LE(500kbps)	0.99
BT-LE(1Mbps)	-6.71
BT-LE(2Mbps)	-10.69

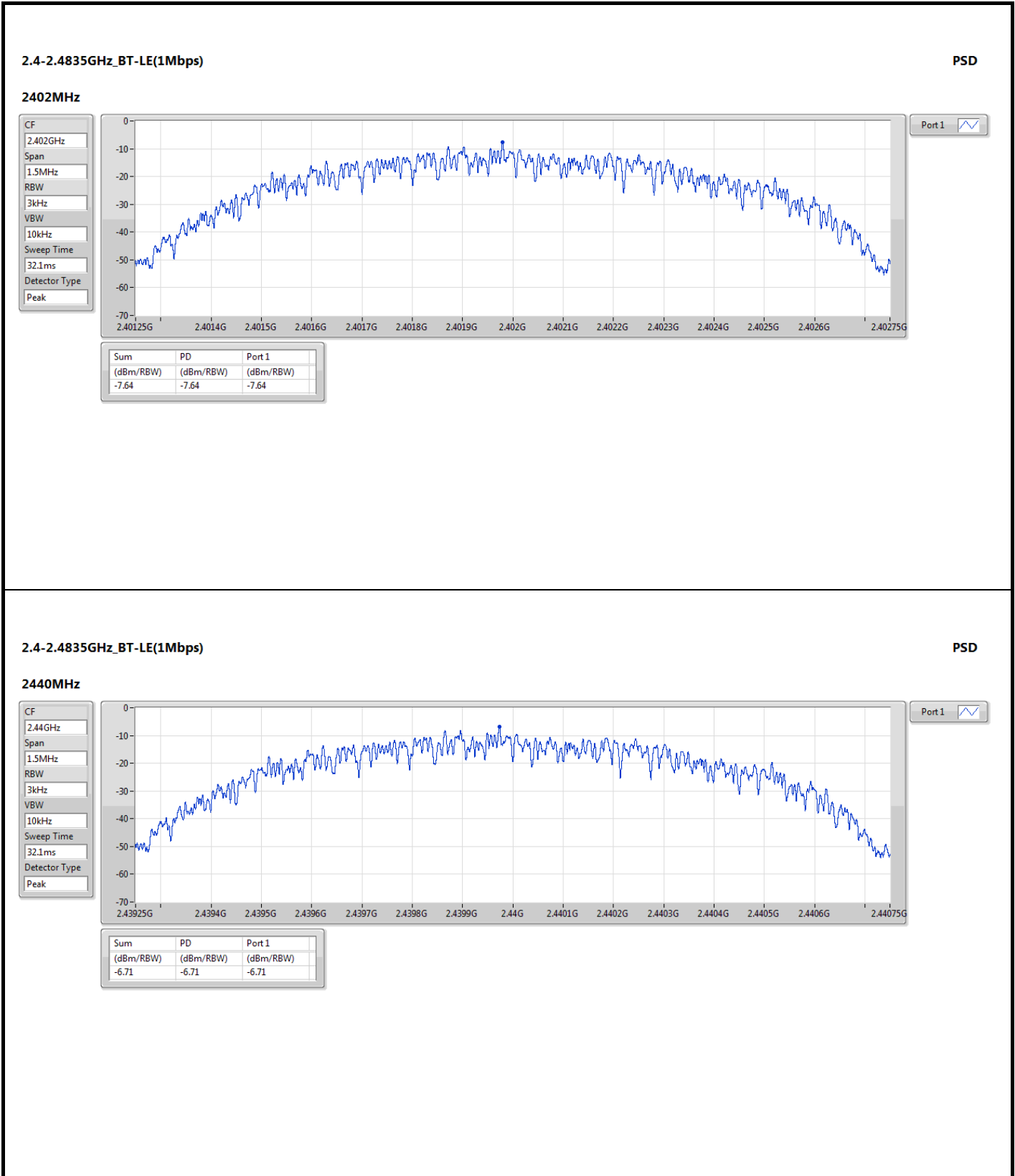
Result

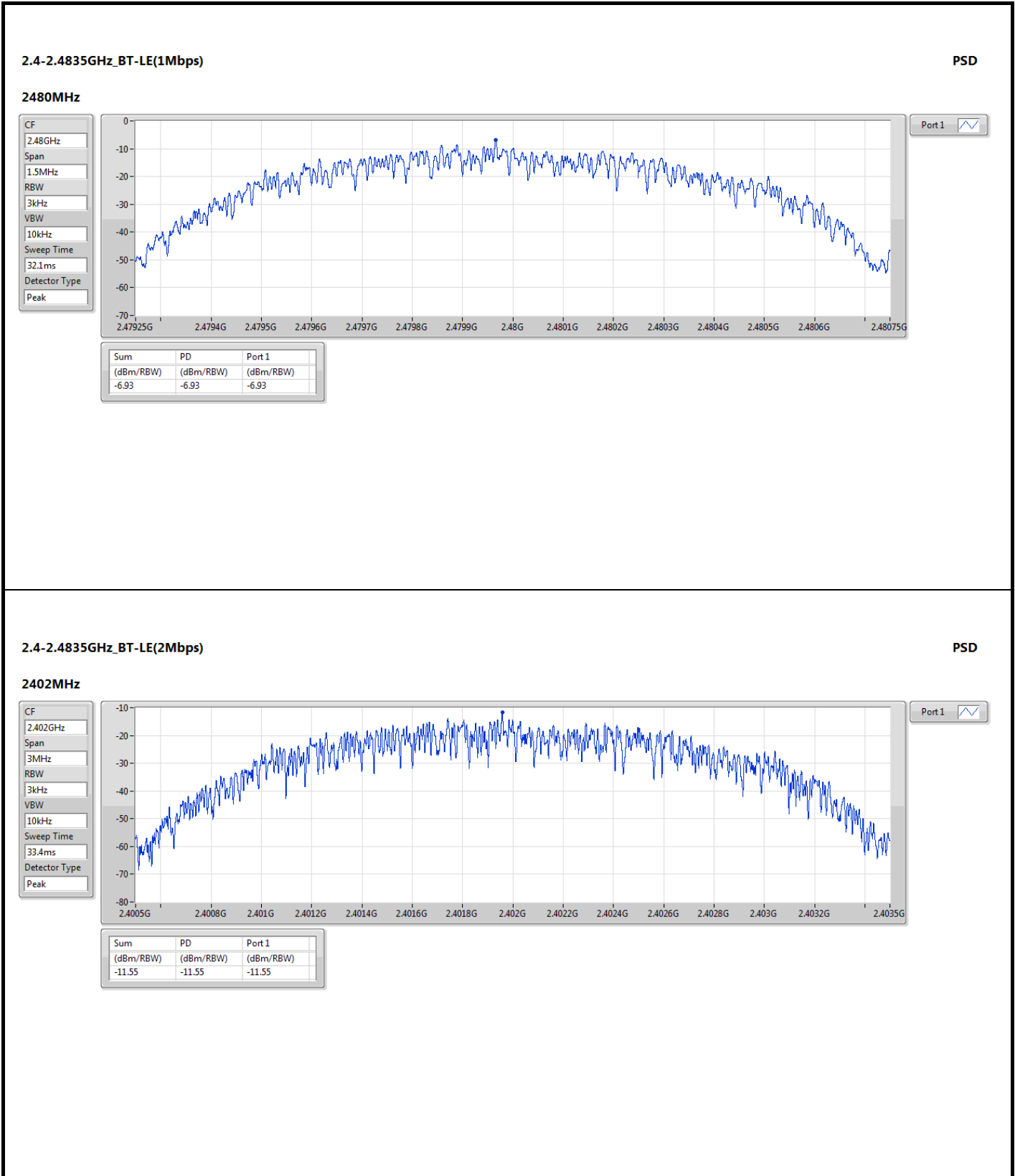
Mode	Result	Antenna Gain (dBi)	Power Density (dBm/3kHz)	Power Density Limit (dBm/3kHz)
BT-LE(125kbps)	-	-	-	-
2402MHz	Pass	2.40	0.75	8.00
2440MHz	Pass	2.40	1.60	8.00
2480MHz	Pass	2.40	1.46	8.00
BT-LE(500kbps)	-	-	-	-
2402MHz	Pass	2.40	0.34	8.00
2440MHz	Pass	2.40	0.99	8.00
2480MHz	Pass	2.40	0.90	8.00
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.40	-7.64	8.00
2440MHz	Pass	2.40	-6.71	8.00
2480MHz	Pass	2.40	-6.93	8.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	2.40	-11.55	8.00
2440MHz	Pass	2.40	-10.69	8.00
2480MHz	Pass	2.40	-10.83	8.00

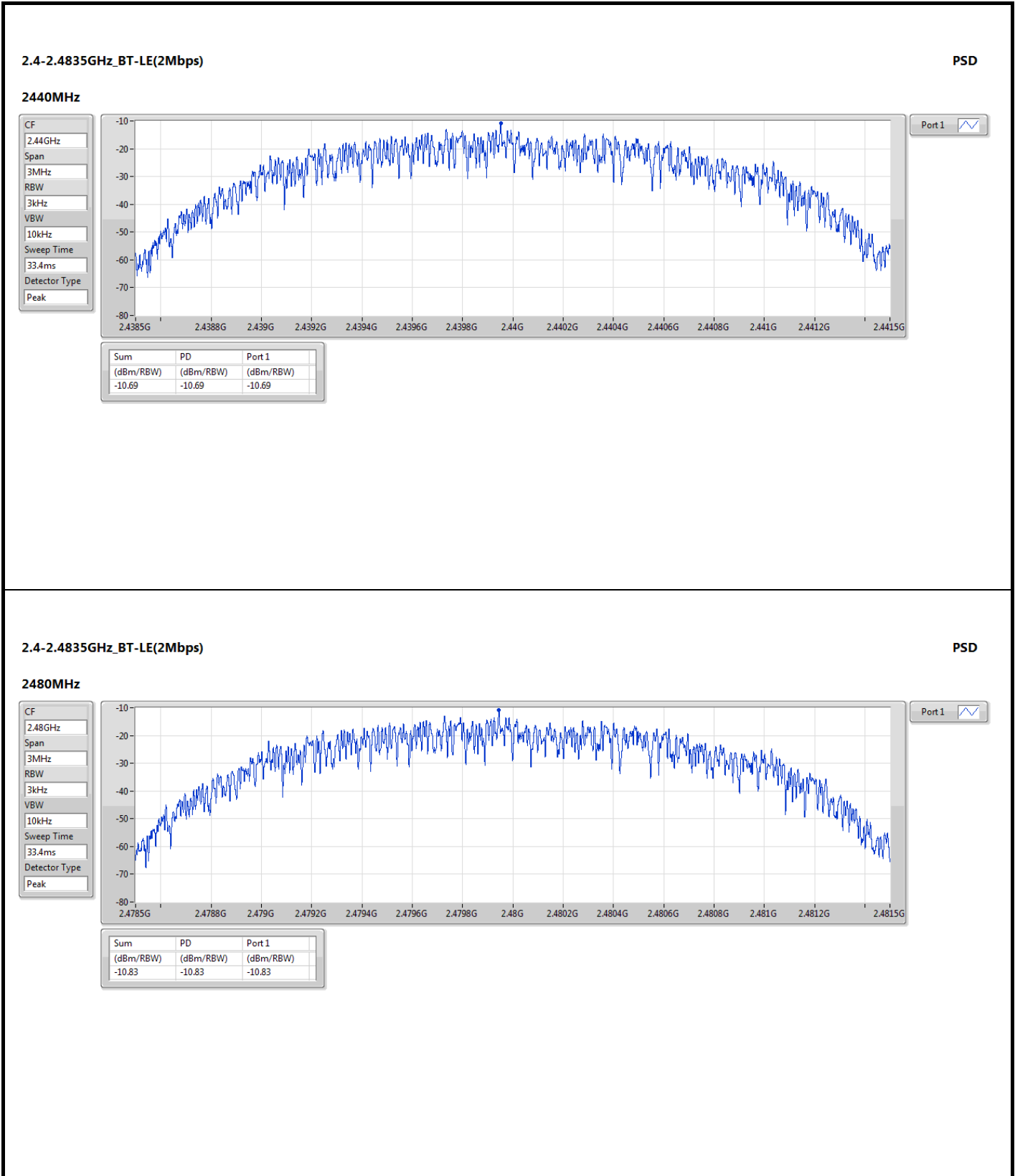














Summary

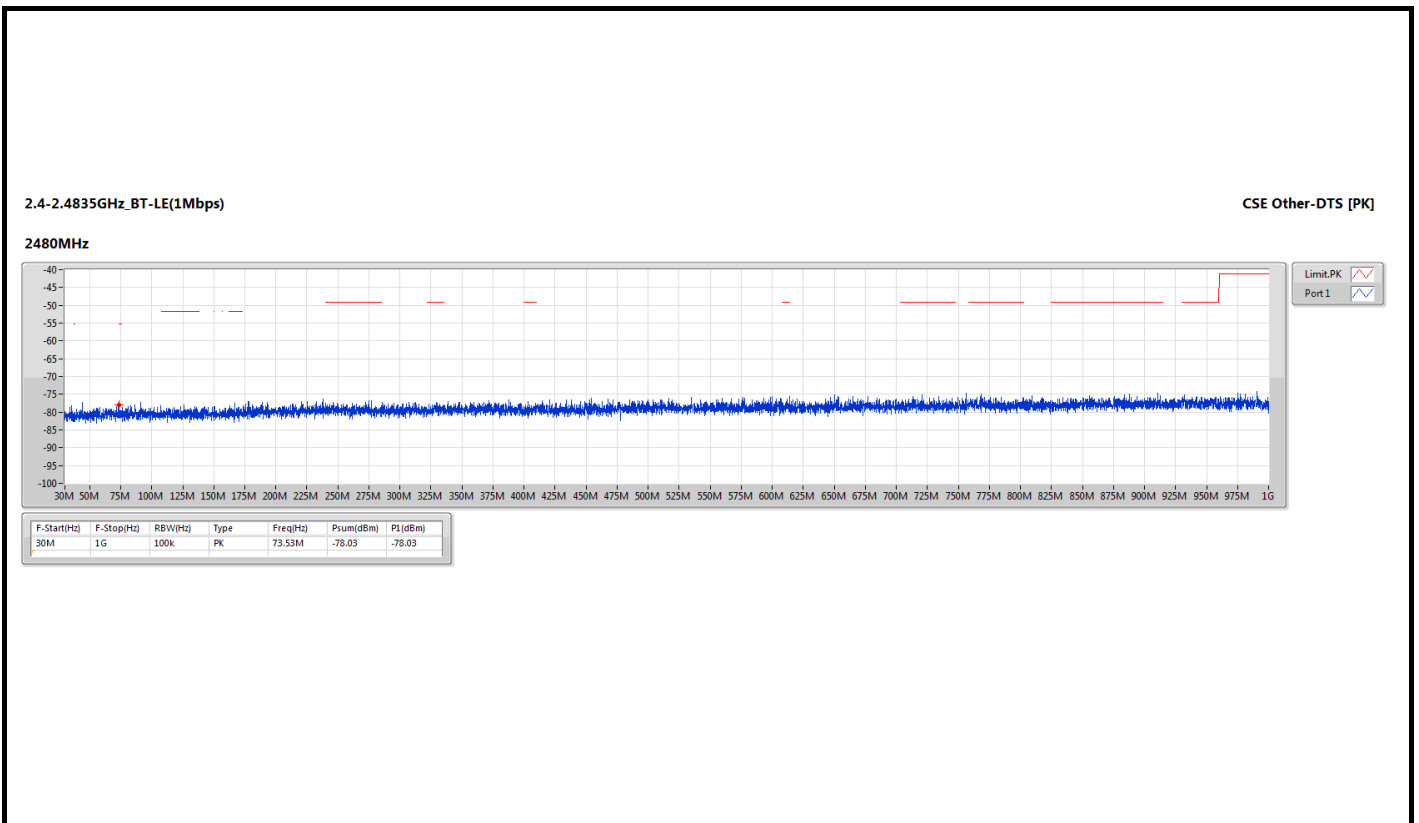
Mode	Result	F-Start (Hz)	F-Stop (Hz)	Type	Freq (Hz)	DG (dBi)	Psum (dBm)	GRF (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	30M	1G	PK	73.53M	2.40	-78.03	4.7	-70.93	-55.20	-15.73

DG = Directional Gain ; PX=Port X; Psum=P1+P2+...PX

Result

Mode	Result	F-Start (Hz)	F-Stop (Hz)	Type	Freq (Hz)	DG (dBi)	Psum (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-
2480MHz	Pass	30M	1G	PK	73.53M	2.40	-78.03	-70.93	-55.20	-15.73

DG = Directional Gain ; PX=Port X; Psum=P1+P2+...PX





Unwanted Conducted Emissions into Restricted Frequency Bands 1GHz~3.1GHz - SC Module

Appendix D.2

Summary

Mode	Result	F-Start (Hz)	F-Stop (Hz)	Type	Freq (Hz)	DG (dBi)	Psum (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	2.4835G	2.5G	AV	2.4835G	2.40	-59.08	-56.68	-41.20	-15.48
BT-LE(2Mbps)	Pass	2.4835G	2.5G	AV	2.48364G	2.40	-59.48	-57.08	-41.20	-15.88

DG = Directional Gain ; PX=Port X; Psum=P1+P2+...PX

Result

Mode	Result	F-Start (Hz)	F-Stop (Hz)	Type	Freq (Hz)	DG (dBi)	Psum (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	1G	2.31G	AV	2.11645G	2.40	-62.94	-60.54	-41.20	-19.34
2402MHz	Pass	2.31G	2.39G	AV	2.3886G	2.40	-62.87	-60.47	-41.20	-19.27
2402MHz	Pass	2.4835G	2.5G	AV	2.49067G	2.40	-62.18	-59.78	-41.20	-18.58
2402MHz	Pass	2.5G	3.1G	AV	2.6368G	2.40	-61.85	-59.45	-41.20	-18.25
2402MHz	Pass	1G	2.31G	PK	2.14363G	2.40	-52.26	-49.86	-21.20	-28.66
2402MHz	Pass	2.31G	2.39G	PK	2.3388G	2.40	-52.37	-49.97	-21.20	-28.77
2402MHz	Pass	2.4835G	2.5G	PK	2.4877G	2.40	-51.51	-49.11	-21.20	-27.91
2402MHz	Pass	2.5G	3.1G	PK	2.8252G	2.40	-51.07	-48.67	-21.20	-27.47
2440MHz	Pass	1G	2.31G	AV	2.2933G	2.40	-62.91	-60.51	-41.20	-19.31
2440MHz	Pass	2.31G	2.39G	AV	2.31932G	2.40	-62.86	-60.46	-41.20	-19.26
2440MHz	Pass	2.4835G	2.5G	AV	2.48785G	2.40	-62.00	-59.60	-41.20	-18.40
2440MHz	Pass	2.5G	3.1G	AV	2.8198G	2.40	-61.88	-59.48	-41.20	-18.28
2440MHz	Pass	1G	2.31G	PK	1.96351G	2.40	-52.34	-49.94	-21.20	-28.74
2440MHz	Pass	2.31G	2.39G	PK	2.35544G	2.40	-52.20	-49.80	-21.20	-28.60
2440MHz	Pass	2.4835G	2.5G	PK	2.48552G	2.40	-50.94	-48.54	-21.20	-27.34
2440MHz	Pass	2.5G	3.1G	PK	2.5144G	2.40	-51.33	-48.93	-21.20	-27.73
2480MHz	Pass	1G	2.31G	AV	2.16213G	2.40	-62.64	-60.24	-41.20	-19.04
2480MHz	Pass	2.31G	2.39G	AV	2.38388G	2.40	-62.89	-60.49	-41.20	-19.29
2480MHz	Pass	2.4835G	2.5G	AV	2.4835G	2.40	-59.08	-56.68	-41.20	-15.48
2480MHz	Pass	2.5G	3.1G	AV	2.6878G	2.40	-61.62	-59.22	-41.20	-18.02
2480MHz	Pass	1G	2.31G	PK	1.9622G	2.40	-52.29	-49.89	-21.20	-28.69
2480MHz	Pass	2.31G	2.39G	PK	2.32436G	2.40	-52.15	-49.75	-21.20	-28.55
2480MHz	Pass	2.4835G	2.5G	PK	2.48407G	2.40	-49.40	-47.00	-21.20	-25.80
2480MHz	Pass	2.5G	3.1G	PK	2.7508G	2.40	-51.47	-49.07	-21.20	-27.87
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	1G	2.31G	AV	2.29723G	2.40	-62.89	-60.49	-41.20	-19.29
2402MHz	Pass	2.31G	2.39G	AV	2.39G	2.40	-62.86	-60.46	-41.20	-19.26
2402MHz	Pass	2.4835G	2.5G	AV	2.49538G	2.40	-61.97	-59.57	-41.20	-18.37
2402MHz	Pass	2.5G	3.1G	AV	2.83915G	2.40	-61.91	-59.51	-41.20	-18.31
2402MHz	Pass	1G	2.31G	PK	2.12857G	2.40	-52.96	-50.56	-21.20	-29.36
2402MHz	Pass	2.31G	2.39G	PK	2.32632G	2.40	-51.54	-49.14	-21.20	-27.94
2402MHz	Pass	2.4835G	2.5G	PK	2.49767G	2.40	-50.90	-48.50	-21.20	-27.30
2402MHz	Pass	2.5G	3.1G	PK	2.8672G	2.40	-50.93	-48.53	-21.20	-27.33



**Unwanted Conducted Emissions into Restricted
Frequency Bands 1GHz~3.1GHz - SC Module**

Appendix D.2

Mode	Result	F-Start (Hz)	F-Stop (Hz)	Type	Freq (Hz)	DG (dBi)	Psum (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
2440MHz	Pass	1G	2.31G	AV	2.29788G	2.40	-63.08	-60.68	-41.20	-19.48
2440MHz	Pass	2.31G	2.39G	AV	2.36616G	2.40	-63.07	-60.67	-41.20	-19.47
2440MHz	Pass	2.4835G	2.5G	AV	2.4998G	2.40	-61.96	-59.56	-41.20	-18.36
2440MHz	Pass	2.5G	3.1G	AV	2.6413G	2.40	-61.83	-59.43	-41.20	-18.23
2440MHz	Pass	1G	2.31G	PK	2.22878G	2.40	-52.35	-49.95	-21.20	-28.75
2440MHz	Pass	2.31G	2.39G	PK	2.34464G	2.40	-52.19	-49.79	-21.20	-28.59
2440MHz	Pass	2.4835G	2.5G	PK	2.49244G	2.40	-50.82	-48.42	-21.20	-27.22
2440MHz	Pass	2.5G	3.1G	PK	2.7088G	2.40	-52.01	-49.61	-21.20	-28.41
2480MHz	Pass	1G	2.31G	AV	2.12971G	2.40	-63.08	-60.68	-41.20	-19.48
2480MHz	Pass	2.31G	2.39G	AV	2.32528G	2.40	-62.88	-60.48	-41.20	-19.28
2480MHz	Pass	2.4835G	2.5G	AV	2.48364G	2.40	-59.48	-57.08	-41.20	-15.88
2480MHz	Pass	2.5G	3.1G	AV	2.8327G	2.40	-61.70	-59.30	-41.20	-18.10
2480MHz	Pass	1G	2.31G	PK	2.26874G	2.40	-52.24	-49.84	-21.20	-28.64
2480MHz	Pass	2.31G	2.39G	PK	2.31096G	2.40	-51.89	-49.49	-21.20	-28.29
2480MHz	Pass	2.4835G	2.5G	PK	2.48382G	2.40	-49.16	-46.76	-21.20	-25.56
2480MHz	Pass	2.5G	3.1G	PK	2.722G	2.40	-51.17	-48.77	-21.20	-27.57

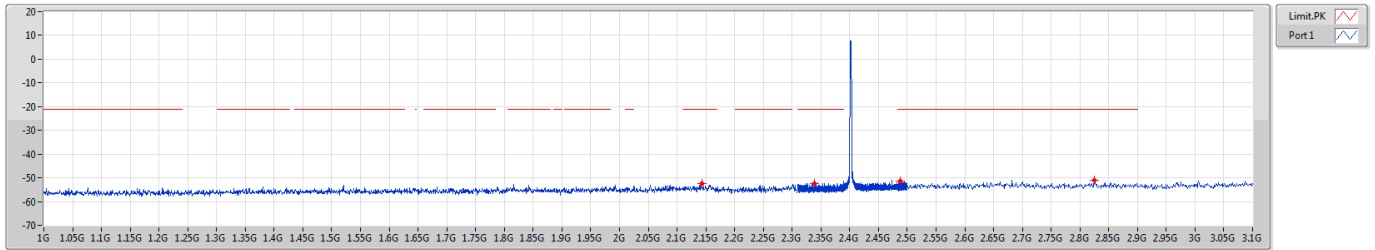
DG = Directional Gain ; PX=Port X; Psum=P1+P2+...PX



2.4-2.4835GHz_BT-LE(1Mbps)

CSE Bandedge-DTS [PK]

2402MHz

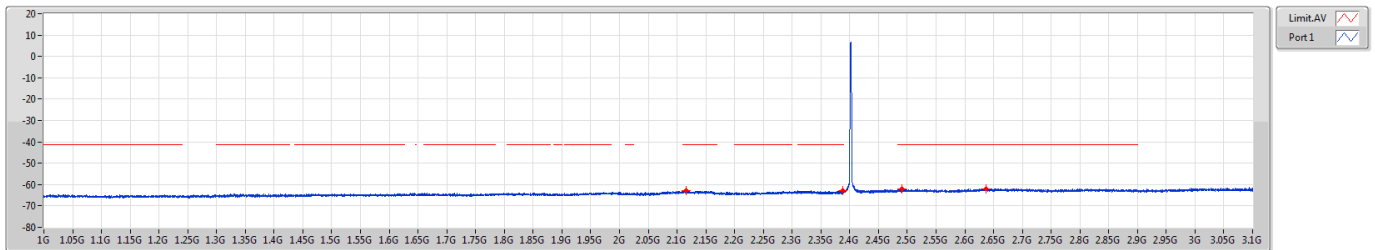


F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	Psum(dBm)	P1(dBm)
1G	2.31G	1M	PK	2.14363G	-52.26	-52.26
2.31G	2.39G	1M	PK	2.3388G	-52.37	-52.37
2.4835G	2.5G	1M	PK	2.4877G	-51.51	-51.51
2.5G	3.1G	1M	PK	2.8252G	-51.07	-51.07

2.4-2.4835GHz_BT-LE(1Mbps)

CSE Bandedge-DTS [AV]

2402MHz



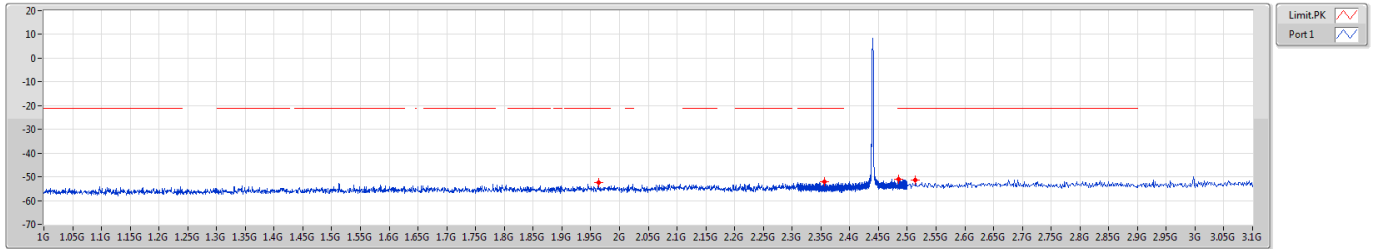
F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	Psum(dBm)	P1(dBm)
1G	2.31G	1M	AV	2.11645G	-62.94	-62.94
2.31G	2.39G	1M	AV	2.3886G	-62.87	-62.87
2.4835G	2.5G	1M	AV	2.49067G	-62.18	-62.18
2.5G	3.1G	1M	AV	2.6368G	-61.85	-61.85



2.4-2.4835GHz_BT-LE(1Mbps)

CSE Bandedge-DTS [PK]

2440MHz

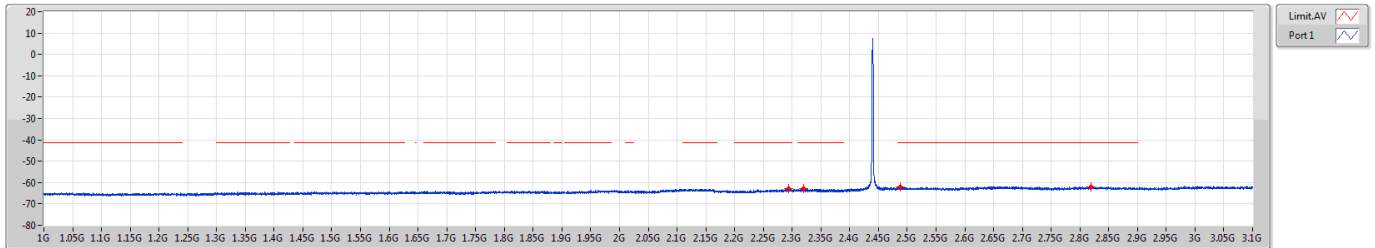


F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	Psum(dBm)	P1(dBm)
1G	2.31G	1M	PK	1.96351G	-52.34	-52.34
2.31G	2.39G	1M	PK	2.35544G	-52.20	-52.20
2.4835G	2.5G	1M	PK	2.48552G	-50.94	-50.94
2.5G	3.1G	1M	PK	2.5144G	-51.33	-51.33

2.4-2.4835GHz_BT-LE(1Mbps)

CSE Bandedge-DTS [AV]

2440MHz



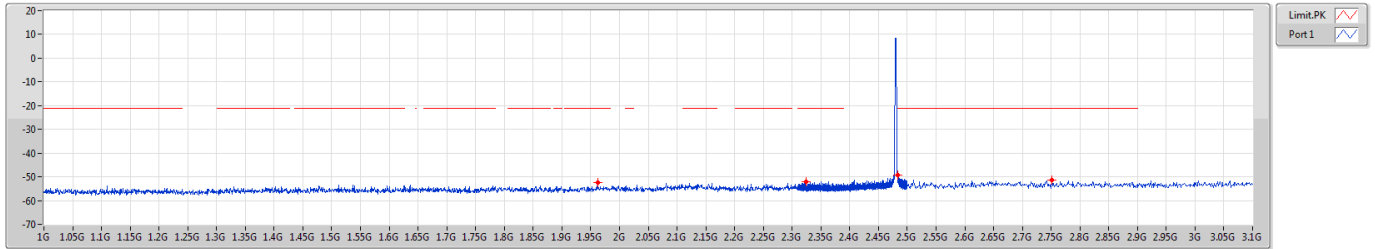
F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	Psum(dBm)	P1(dBm)
1G	2.31G	1M	AV	2.2933G	-62.91	-62.91
2.31G	2.39G	1M	AV	2.31932G	-62.86	-62.86
2.4835G	2.5G	1M	AV	2.48785G	-62.00	-62.00
2.5G	3.1G	1M	AV	2.8198G	-61.88	-61.88



2.4-2.4835GHz_BT-LE(1Mbps)

CSE Bandedge-DTS [PK]

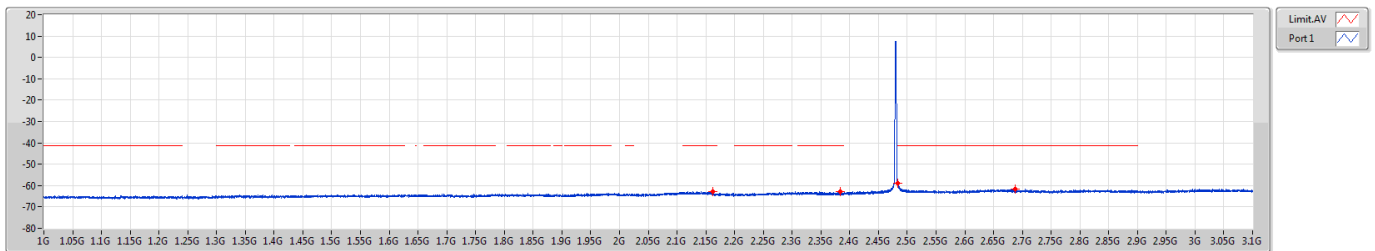
2480MHz



2.4-2.4835GHz_BT-LE(1Mbps)

CSE Bandedge-DTS [AV]

2480MHz

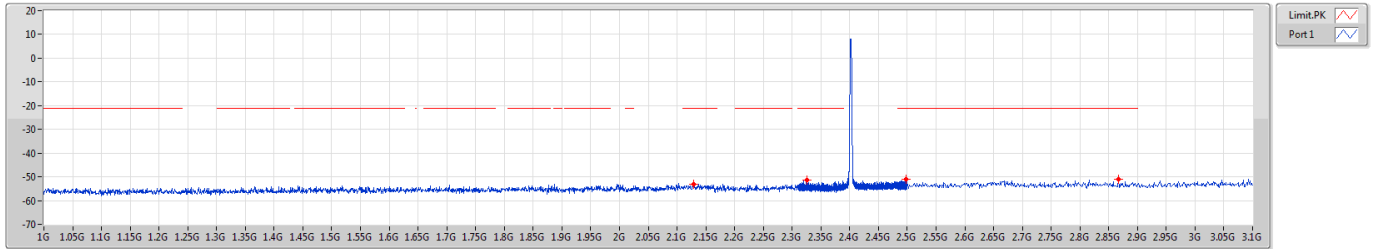




2.4-2.4835GHz_BT-LE(2Mbps)

CSE Bandedge-DTS [PK]

2402MHz

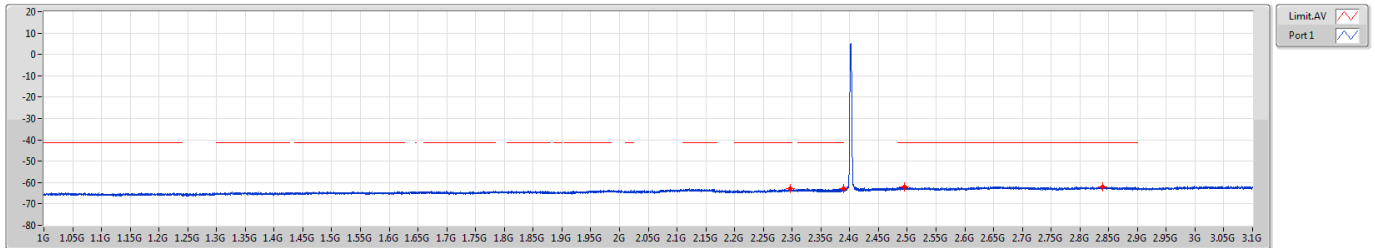


F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	Psum(dBm)	P1(dBm)
1G	2.31G	1M	PK	2.12857G	-52.96	-52.96
2.31G	2.39G	1M	PK	2.32632G	-51.54	-51.54
2.4835G	2.5G	1M	PK	2.49767G	-50.90	-50.90
2.5G	3.1G	1M	PK	2.8672G	-50.93	-50.93

2.4-2.4835GHz_BT-LE(2Mbps)

CSE Bandedge-DTS [AV]

2402MHz



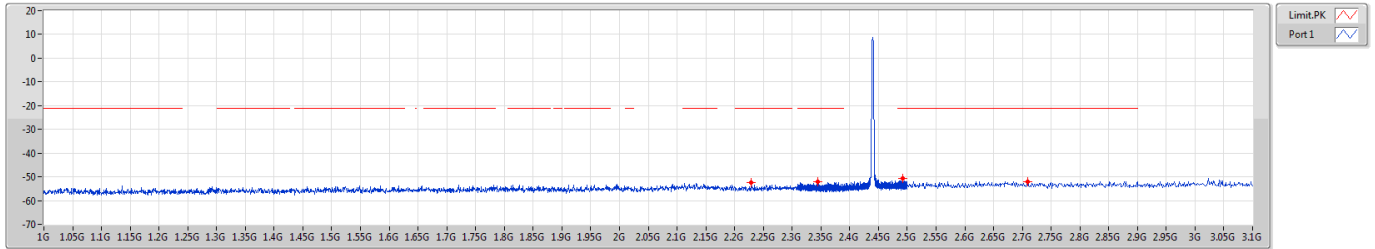
F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	Psum(dBm)	P1(dBm)
1G	2.31G	1M	AV	2.29723G	-62.89	-62.89
2.31G	2.39G	1M	AV	2.39G	-62.86	-62.86
2.4835G	2.5G	1M	AV	2.49538G	-61.97	-61.97
2.5G	3.1G	1M	AV	2.83915G	-61.91	-61.91



2.4-2.4835GHz_BT-LE(2Mbps)

CSE Bandedge-DTS [PK]

2440MHz

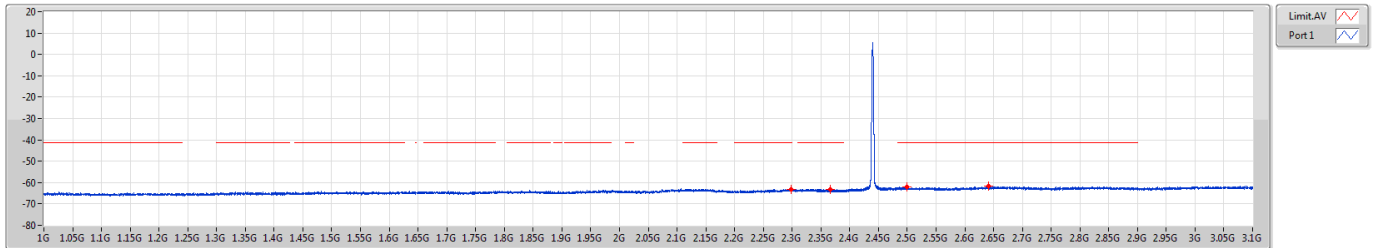


F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	Psum(dBm)	P1(dBm)
1G	2.31G	1M	PK	2.22878G	-52.35	-52.35
2.31G	2.39G	1M	PK	2.34464G	-52.19	-52.19
2.4835G	2.5G	1M	PK	2.49244G	-50.82	-50.82
2.5G	3.1G	1M	PK	2.7088G	-52.01	-52.01

2.4-2.4835GHz_BT-LE(2Mbps)

CSE Bandedge-DTS [AV]

2440MHz



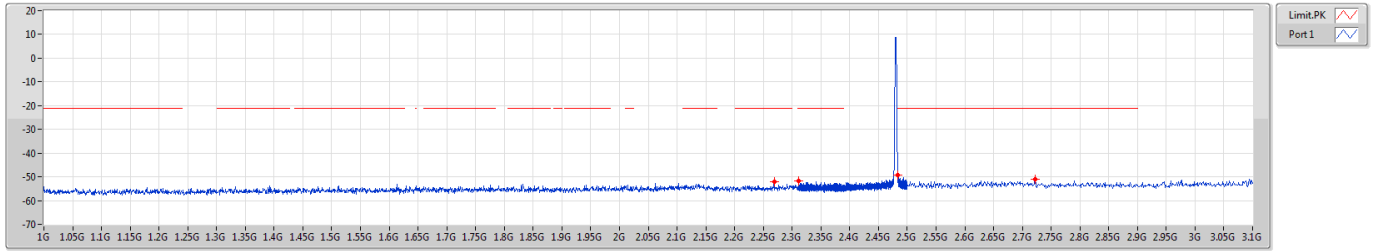
F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	Psum(dBm)	P1(dBm)
1G	2.31G	1M	AV	2.29788G	-63.08	-63.08
2.31G	2.39G	1M	AV	2.36616G	-63.07	-63.07
2.4835G	2.5G	1M	AV	2.4998G	-61.96	-61.96
2.5G	3.1G	1M	AV	2.6413G	-61.83	-61.83



2.4-2.4835GHz_BT-LE(2Mbps)

CSE Bandedge-DTS [PK]

2480MHz

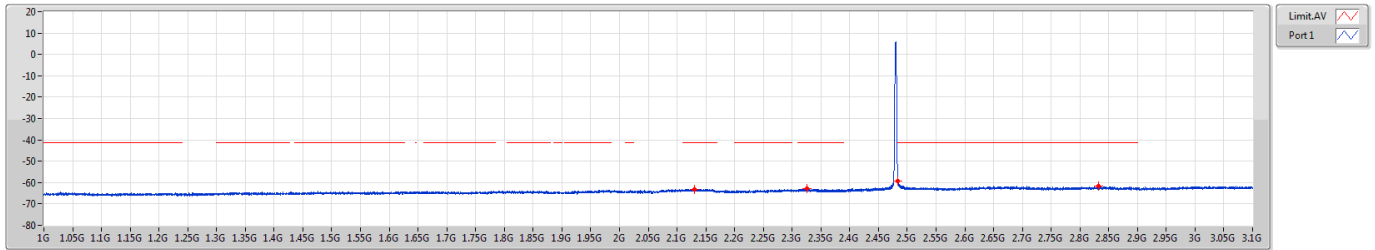


F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	Psum(dBm)	P1(dBm)
1G	2.31G	1M	PK	2.26874G	-52.24	-52.24
2.31G	2.39G	1M	PK	2.31096G	-51.89	-51.89
2.4835G	2.5G	1M	PK	2.48382G	-49.16	-49.16
2.5G	3.1G	1M	PK	2.722G	-51.17	-51.17

2.4-2.4835GHz_BT-LE(2Mbps)

CSE Bandedge-DTS [AV]

2480MHz



F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	Psum(dBm)	P1(dBm)
1G	2.31G	1M	AV	2.12971G	-63.08	-63.08
2.31G	2.39G	1M	AV	2.32528G	-62.88	-62.88
2.4835G	2.5G	1M	AV	2.48364G	-59.48	-59.48
2.5G	3.1G	1M	AV	2.8327G	-61.70	-61.70



Unwanted Conducted Emissions into Restricted Frequency Bands 3.1GHz~25GHz - SC Module

Appendix D.3

Summary

Mode	Result	F-Start (Hz)	F-Stop (Hz)	Type	Freq (Hz)	DG (dBi)	Psum (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	4G	5G	AV	4.96G	2.40	-48.81	-46.41	-41.20	-5.21
BT-LE(2Mbps)	Pass	4G	5G	AV	4.959G	2.40	-51.51	-49.11	-41.20	-7.91

DG = Directional Gain ; PX=Port X; Psum=P1+P2+...PX

Result

Mode	Result	F-Start (Hz)	F-Stop (Hz)	Type	Freq (Hz)	DG (dBi)	Psum (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	3.1G	4G	AV	3.96873G	2.40	-74.46	-72.06	-41.20	-30.86
2402MHz	Pass	4G	5G	AV	4.80375G	2.40	-53.57	-51.17	-41.20	-9.97
2402MHz	Pass	5G	7G	AV	5.2015G	2.40	-72.91	-70.51	-41.20	-29.31
2402MHz	Pass	7G	8G	AV	7.4885G	2.40	-70.31	-67.91	-41.20	-26.71
2402MHz	Pass	8G	25G	AV	19.13234G	2.40	-62.73	-60.33	-41.20	-19.13
2402MHz	Pass	3.1G	4G	PK	3.94983G	2.40	-65.46	-63.06	-21.20	-41.86
2402MHz	Pass	4G	5G	PK	4.8045G	2.40	-50.74	-48.34	-21.20	-27.14
2402MHz	Pass	5G	7G	PK	5.1855G	2.40	-64.12	-61.72	-21.20	-40.52
2402MHz	Pass	7G	8G	PK	7.4845G	2.40	-60.48	-58.08	-21.20	-36.88
2402MHz	Pass	8G	25G	PK	15.38809G	2.40	-54.22	-51.82	-21.20	-30.62
2440MHz	Pass	3.1G	4G	AV	3.98268G	2.40	-76.01	-73.61	-41.20	-32.41
2440MHz	Pass	4G	5G	AV	4.87975G	2.40	-49.07	-46.67	-41.20	-5.47
2440MHz	Pass	5G	7G	AV	5.169G	2.40	-74.21	-71.81	-41.20	-30.61
2440MHz	Pass	7G	8G	AV	7.49025G	2.40	-70.94	-68.54	-41.20	-27.34
2440MHz	Pass	8G	25G	AV	19.12491G	2.40	-62.54	-60.14	-41.20	-18.94
2440MHz	Pass	3.1G	4G	PK	3.97998G	2.40	-65.35	-62.95	-21.20	-41.75
2440MHz	Pass	4G	5G	PK	4.87975G	2.40	-45.65	-43.25	-21.20	-22.05
2440MHz	Pass	5G	7G	PK	5.3515G	2.40	-62.79	-60.39	-21.20	-39.19
2440MHz	Pass	7G	8G	PK	7.492G	2.40	-61.51	-59.11	-21.20	-37.91
2440MHz	Pass	8G	25G	PK	19.44844G	2.40	-54.04	-51.64	-21.20	-30.44
2480MHz	Pass	3.1G	4G	AV	3.97458G	2.40	-76.32	-73.92	-41.20	-32.72
2480MHz	Pass	4G	5G	AV	4.96G	2.40	-48.81	-46.41	-41.20	-5.21
2480MHz	Pass	5G	7G	AV	5.209G	2.40	-74.35	-71.95	-41.20	-30.75
2480MHz	Pass	7G	8G	AV	7.478G	2.40	-70.87	-68.47	-41.20	-27.27
2480MHz	Pass	8G	25G	AV	19.12916G	2.40	-62.64	-60.24	-41.20	-19.04
2480MHz	Pass	3.1G	4G	PK	3.9892G	2.40	-65.59	-63.19	-21.20	-41.99
2480MHz	Pass	4G	5G	PK	4.9595G	2.40	-45.50	-43.10	-21.20	-21.90
2480MHz	Pass	5G	7G	PK	5.2G	2.40	-64.03	-61.63	-21.20	-40.43
2480MHz	Pass	7G	8G	PK	7.5085G	2.40	-60.91	-58.51	-21.20	-37.31
2480MHz	Pass	8G	25G	PK	19.13447G	2.40	-53.11	-50.71	-21.20	-29.51
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	3.1G	4G	AV	3.97975G	2.40	-75.87	-73.47	-41.20	-32.27
2402MHz	Pass	4G	5G	AV	4.003G	2.40	-56.69	-54.29	-41.20	-13.09



**Unwanted Conducted Emissions into Restricted
Frequency Bands 3.1GHz~25GHz - SC Module**

Appendix D.3

Mode	Result	F-Start (Hz)	F-Stop (Hz)	Type	Freq (Hz)	DG (dBi)	Psum (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
2402MHz	Pass	4G	5G	AV	4.803G	2.40	-57.45	-55.05	-41.20	-13.85
2402MHz	Pass	5G	7G	AV	5.204G	2.40	-74.17	-71.77	-41.20	-30.57
2402MHz	Pass	7G	8G	AV	7.4935G	2.40	-70.92	-68.52	-41.20	-27.32
2402MHz	Pass	8G	25G	AV	19.135G	2.40	-62.64	-60.24	-41.20	-19.04
2402MHz	Pass	3.1G	4G	PK	3.946G	2.40	-65.28	-62.88	-21.20	-41.68
2402MHz	Pass	4G	5G	PK	4.803G	2.40	-50.01	-47.61	-21.20	-26.41
2402MHz	Pass	5G	7G	PK	5.0085G	2.40	-64.11	-61.71	-21.20	-40.51
2402MHz	Pass	7G	8G	PK	7.4795G	2.40	-60.74	-58.34	-21.20	-37.14
2402MHz	Pass	8G	25G	PK	19.16528G	2.40	-53.99	-51.59	-21.20	-30.39
2440MHz	Pass	3.1G	4G	AV	4G	2.40	-76.12	-73.72	-41.20	-32.52
2440MHz	Pass	4G	5G	AV	4.879G	2.40	-51.72	-49.32	-41.20	-8.12
2440MHz	Pass	5G	7G	AV	5.2005G	2.40	-74.37	-71.97	-41.20	-30.77
2440MHz	Pass	7G	8G	AV	7.498G	2.40	-71.03	-68.63	-41.20	-27.43
2440MHz	Pass	8G	25G	AV	19.14669G	2.40	-62.76	-60.36	-41.20	-19.16
2440MHz	Pass	3.1G	4G	PK	3.79615G	2.40	-65.54	-63.14	-21.20	-41.94
2440MHz	Pass	4G	5G	PK	4.87925G	2.40	-44.55	-42.15	-21.20	-20.95
2440MHz	Pass	5G	7G	PK	5.2025G	2.40	-63.57	-61.17	-21.20	-39.97
2440MHz	Pass	7G	8G	PK	7.4995G	2.40	-60.92	-58.52	-21.20	-37.32
2440MHz	Pass	8G	25G	PK	19.11959G	2.40	-53.68	-51.28	-21.20	-30.08
2480MHz	Pass	3.1G	4G	AV	3.9856G	2.40	-75.98	-73.58	-41.20	-32.38
2480MHz	Pass	4G	5G	AV	4.959G	2.40	-51.51	-49.11	-41.20	-7.91
2480MHz	Pass	5G	7G	AV	5.1905G	2.40	-74.26	-71.86	-41.20	-30.66
2480MHz	Pass	7G	8G	AV	7.49975G	2.40	-70.76	-68.36	-41.20	-27.16
2480MHz	Pass	8G	25G	AV	19.12438G	2.40	-62.63	-60.23	-41.20	-19.03
2480MHz	Pass	3.1G	4G	PK	3.57768G	2.40	-65.93	-63.53	-21.20	-42.33
2480MHz	Pass	4G	5G	PK	4.95925G	2.40	-44.52	-42.12	-21.20	-20.92
2480MHz	Pass	5G	7G	PK	5.214G	2.40	-63.93	-61.53	-21.20	-40.33
2480MHz	Pass	7G	8G	PK	7.487G	2.40	-61.54	-59.14	-21.20	-37.94
2480MHz	Pass	8G	25G	PK	18.80084G	2.40	-54.56	-52.16	-21.20	-30.96

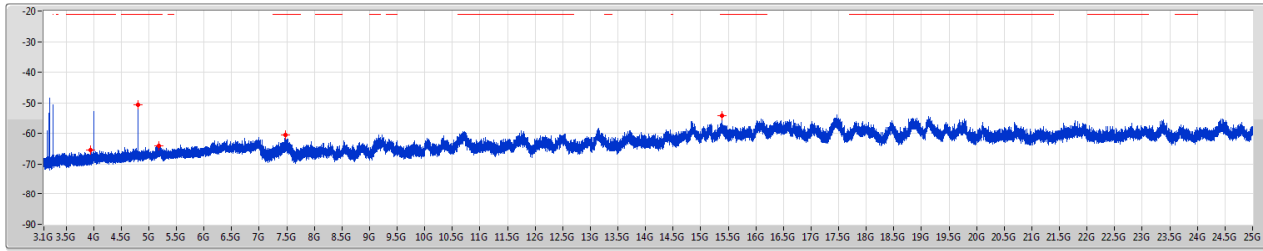
DG = Directional Gain ; PX=Port X; Psum=P1+P2+...PX



2.4-2.4835GHz_BT-LE(1Mbps)

CSE-DTS [PK]

2402MHz



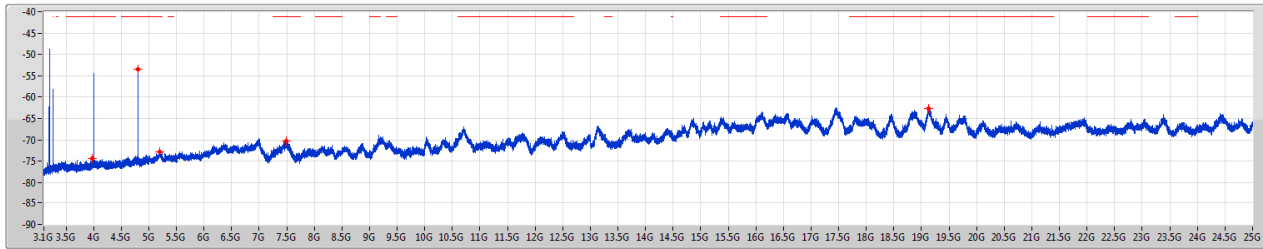
LimitPK
Port1

F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	Psum(dBm)	P1(dBm)
3.1G	4G	1M	PK	3.94963G	-65.46	-65.46
4G	5G	1M	PK	4.8045G	-50.74	-50.74
5G	7G	1M	PK	5.1855G	-64.12	-64.12
7G	8G	1M	PK	7.4845G	-60.48	-60.48
8G	25G	1M	PK	15.38809G	-54.22	-54.22

2.4-2.4835GHz_BT-LE(1Mbps)

CSE-DTS [AV]

2402MHz



LimitAV
Port1

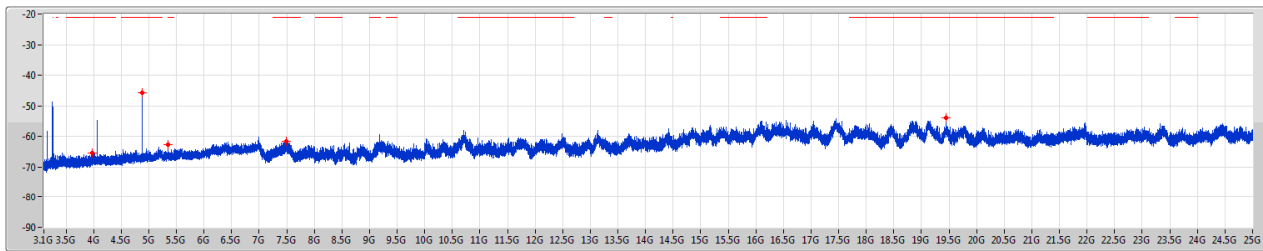
F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	Psum(dBm)	P1(dBm)
3.1G	4G	1M	AV	3.96373G	-74.46	-74.46
4G	5G	1M	AV	4.80375G	-53.57	-53.57
5G	7G	1M	AV	5.2015G	-72.91	-72.91
7G	8G	1M	AV	7.4885G	-70.31	-70.31
8G	25G	1M	AV	19.13234G	-62.73	-62.73



2.4-2.4835GHz_BT-LE(1Mbps)

CSE-DTS [PK]

2440MHz



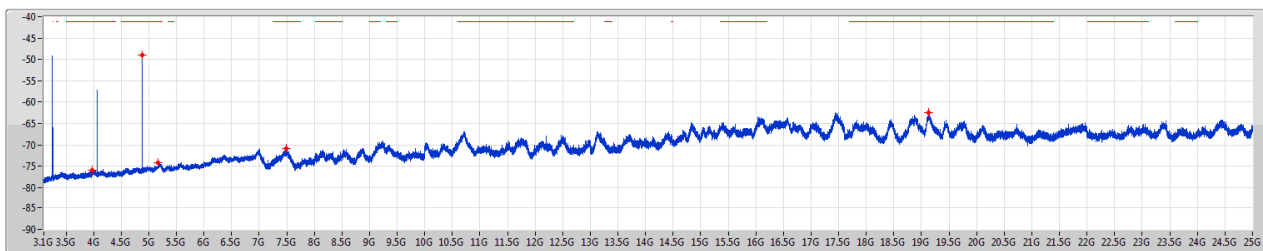
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Port:1

F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	Psum(dBm)	PI(dBm)
3.1G	4G	1M	PK	3.97998G	-65.35	-65.35
4G	5G	1M	PK	4.87975G	-49.65	-49.65
5G	7G	1M	PK	5.3515G	-62.79	-62.79
7G	8G	1M	PK	7.492G	-61.51	-61.51
8G	25G	1M	PK	19.44844G	-54.04	-54.04

2.4-2.4835GHz_BT-LE(1Mbps)

CSE-DTS [AV]

2440MHz



Limit:AV
Port:1

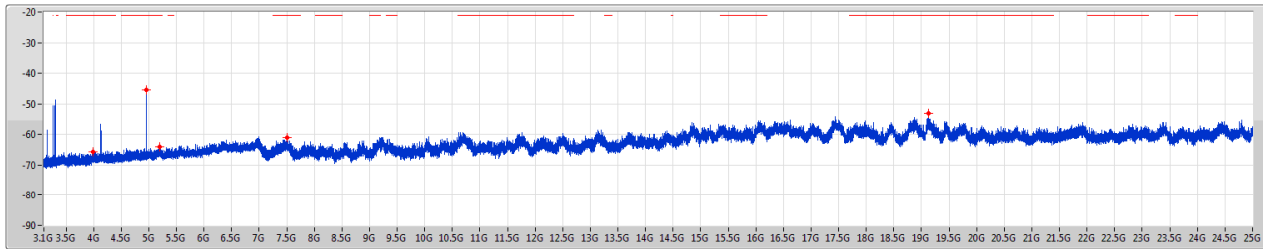
F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	Psum(dBm)	PI(dBm)
3.1G	4G	1M	AV	3.98268G	-76.01	-76.01
4G	5G	1M	AV	4.87975G	-49.07	-49.07
5G	7G	1M	AV	5.169G	-74.21	-74.21
7G	8G	1M	AV	7.49025G	-70.94	-70.94
8G	25G	1M	AV	19.12491G	-62.54	-62.54



2.4-2.4835GHz_BT-LE(1Mbps)

CSE-DTS [PK]

2480MHz



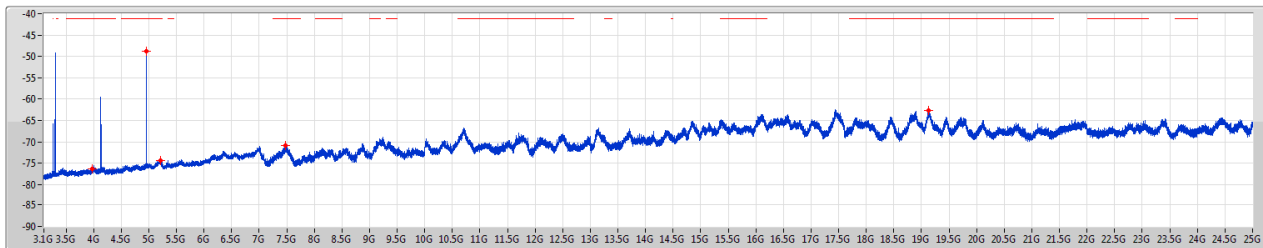
Limit:PK
Port1

F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	Psum(dBm)	PI(dBm)
3.1G	4G	1M	PK	3.9892G	-65.59	-65.59
4G	5G	1M	PK	4.9995G	-45.30	-45.30
5G	7G	1M	PK	5.2G	-64.03	-64.03
7G	8G	1M	PK	7.5085G	-60.91	-60.91
8G	25G	1M	PK	19.13447G	-53.11	-53.11

2.4-2.4835GHz_BT-LE(1Mbps)

CSE-DTS [AV]

2480MHz



Limit:AV
Port1

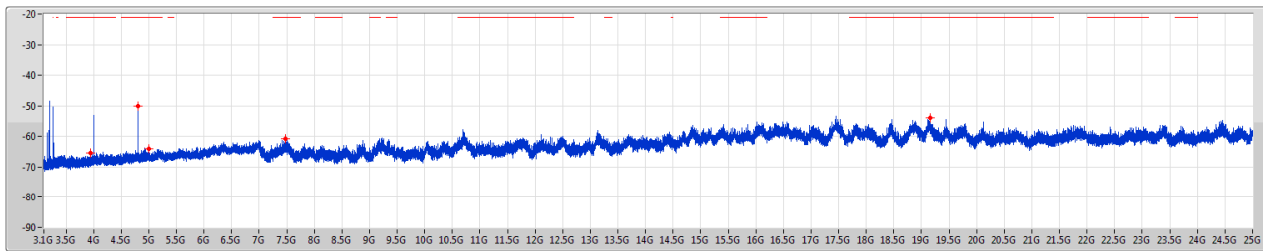
F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	Psum(dBm)	PI(dBm)
3.1G	4G	1M	AV	3.97458G	-76.32	-76.32
4G	5G	1M	AV	4.96G	-48.31	-48.31
5G	7G	1M	AV	5.209G	-74.35	-74.35
7G	8G	1M	AV	7.478G	-70.87	-70.87
8G	25G	1M	AV	19.12916G	-62.64	-62.64



2.4-2.4835GHz_BT-LE(2Mbps)

CSE-DTS [PK]

2402MHz



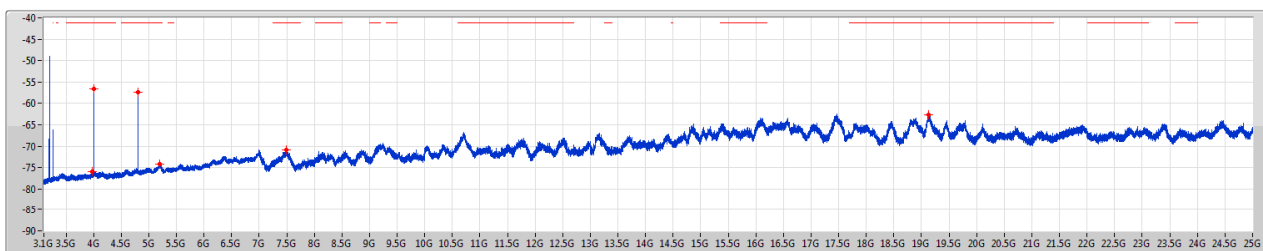
Limit PK
Port 1

F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	Psum(dBm)	P1(dBm)
3.1G	4G	1M	PK	3.946G	-65.28	-65.28
4G	5G	1M	PK	4.803G	-50.01	-50.01
5G	7G	1M	PK	5.0085G	-64.11	-64.11
7G	8G	1M	PK	7.4795G	-60.74	-60.74
8G	25G	1M	PK	19.16528G	-53.99	-53.99

2.4-2.4835GHz_BT-LE(2Mbps)

CSE-DTS [AV]

2402MHz



Limit AV
Port 1

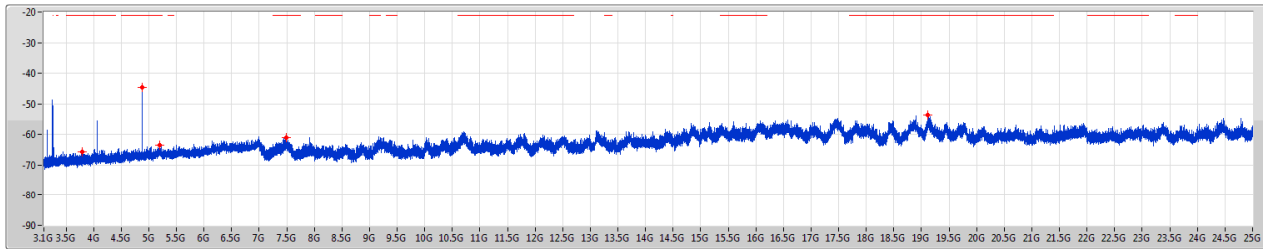
F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	Psum(dBm)	P1(dBm)
3.1G	4G	1M	AV	3.97975G	-75.87	-75.87
4G	5G	1M	AV	4.003G	-56.69	-56.69
4G	5G	1M	AV	4.803G	-57.45	-57.45
5G	7G	1M	AV	5.204G	-74.17	-74.17
7G	8G	1M	AV	7.4895G	-70.92	-70.92
8G	25G	1M	AV	19.135G	-62.64	-62.64



2.4-2.4835GHz_BT-LE(2Mbps)

CSE-DTS [PK]

2440MHz



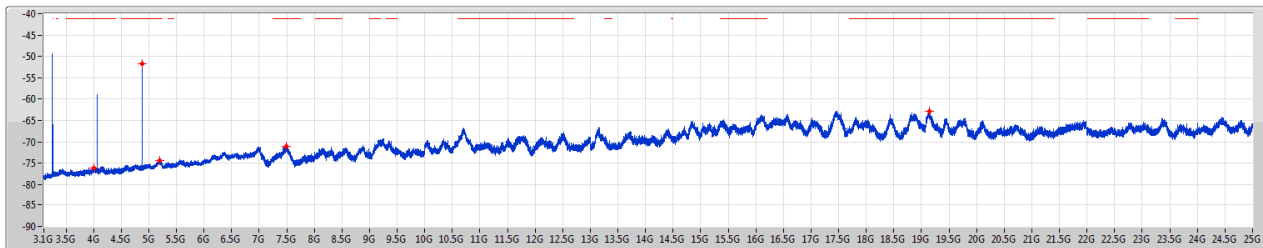
Limit.PK
Port1

F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	Psum(dBm)	PI(dBm)
3.1G	4G	1M	PK	3.79615G	-65.54	-65.54
4G	5G	1M	PK	4.87925G	-44.55	-44.55
5G	7G	1M	PK	5.2025G	-63.57	-63.57
7G	8G	1M	PK	7.4995G	-60.92	-60.92
8G	25G	1M	PK	19.11999G	-53.68	-53.68

2.4-2.4835GHz_BT-LE(2Mbps)

CSE-DTS [AV]

2440MHz



Limit.AV
Port1

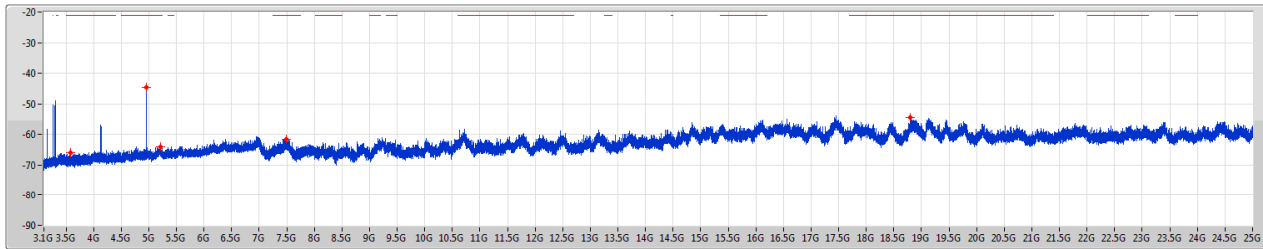
F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	Psum(dBm)	PI(dBm)
3.1G	4G	1M	AV	4G	-76.12	-76.12
4G	5G	1M	AV	4.879G	-51.72	-51.72
5G	7G	1M	AV	5.2005G	-74.37	-74.37
7G	8G	1M	AV	7.498G	-71.03	-71.03
8G	25G	1M	AV	19.14669G	-62.76	-62.76



2.4-2.4835GHz_BT-LE(2Mbps)

CSE-DTS [PK]

2480MHz

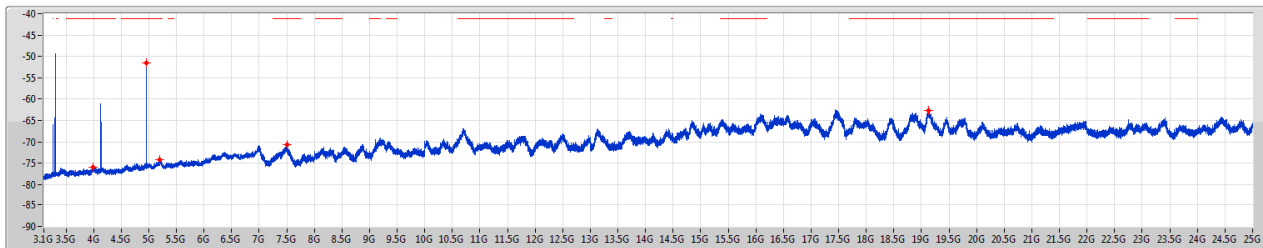


F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	Psum(dBm)	PI(dBm)
3.1G	4G	1M	PK	3.57768G	-65.93	-65.93
4G	5G	1M	PK	4.99925G	-44.52	-44.52
5G	7G	1M	PK	5.214G	-63.93	-63.93
7G	8G	1M	PK	7.487G	-61.54	-61.54
8G	25G	1M	PK	18.80084G	-54.56	-54.56

2.4-2.4835GHz_BT-LE(2Mbps)

CSE-DTS [AV]

2480MHz



F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	Psum(dBm)	PI(dBm)
3.1G	4G	1M	AV	3.9856G	-75.98	-75.98
4G	5G	1M	AV	4.919G	-51.51	-51.51
5G	7G	1M	AV	5.1905G	-74.26	-74.26
7G	8G	1M	AV	7.49975G	-70.76	-70.76
8G	25G	1M	AV	19.12438G	-62.63	-62.63



Summary

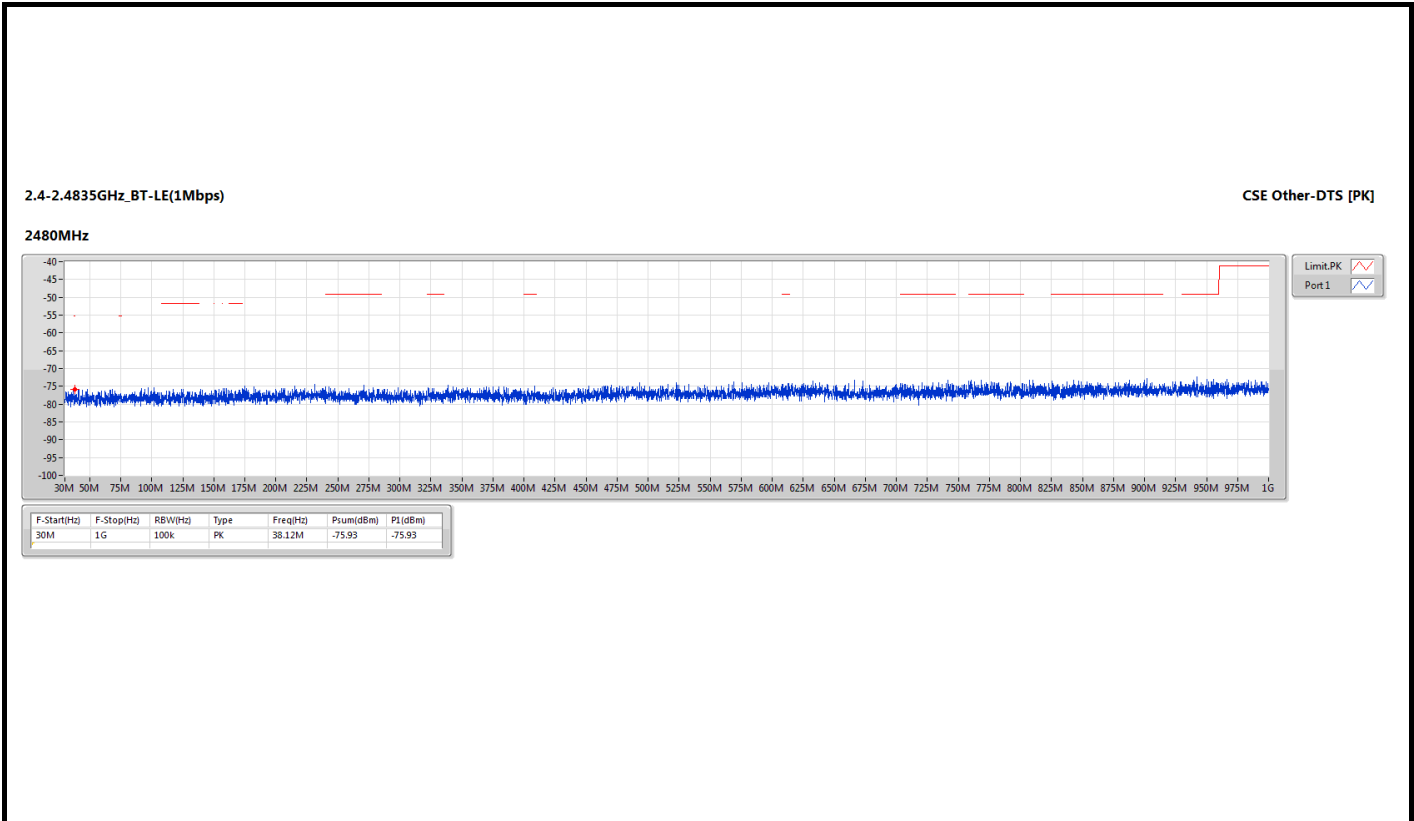
Mode	Result	F-Start (Hz)	F-Stop (Hz)	Type	Freq (Hz)	DG (dBi)	Psum (dBm)	GRF (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	30M	1G	PK	38.12M	2.40	-75.93	4.7	-68.83	-55.20	-13.63

DG = Directional Gain ; PX=Port X; Psum=P1+P2+...PX

Result

Mode	Result	F-Start (Hz)	F-Stop (Hz)	Type	Freq (Hz)	DG (dBi)	Psum (dBm)	GRF (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-
2480MHz	Pass	30M	1G	PK	38.12M	2.40	-75.93	4.7	-68.83	-55.20	-13.63

DG = Directional Gain ; PX=Port X; Psum=P1+P2+...PX





**Unwanted Conducted Emissions into Restricted
Frequency Bands 1GHz~3.1GHz - ST M.2, PCIe Module**

Appendix D.5

Summary

Mode	Result	F-Start (Hz)	F-Stop (Hz)	Type	Freq (Hz)	DG (dBi)	Psum (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	2.4835G	2.5G	AV	2.484G	2.40	-59.18	-56.78	-41.20	-15.58

DG = Directional Gain ; PX=Port X; Psum=P1+P2+...PX

Result

Mode	Result	F-Start (Hz)	F-Stop (Hz)	Type	Freq (Hz)	DG (dBi)	Psum (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-
2480MHz	Pass	1G	2.31G	AV	2.20307G	2.40	-61.48	-59.08	-41.20	-17.88
2480MHz	Pass	2.31G	2.39G	AV	2.3884G	2.40	-61.30	-58.90	-41.20	-17.70
2480MHz	Pass	2.4835G	2.5G	AV	2.484G	2.40	-59.18	-56.78	-41.20	-15.58
2480MHz	Pass	2.5G	3.1G	AV	2.8588G	2.40	-60.05	-57.65	-41.20	-16.45
2480MHz	Pass	1G	2.31G	PK	2.14232G	2.40	-51.97	-49.57	-21.20	-28.37
2480MHz	Pass	2.31G	2.39G	PK	2.35168G	2.40	-49.60	-47.20	-21.20	-26.00
2480MHz	Pass	2.4835G	2.5G	PK	2.48354G	2.40	-47.78	-45.38	-21.20	-24.18
2480MHz	Pass	2.5G	3.1G	PK	2.8468G	2.40	-50.07	-47.67	-21.20	-26.47

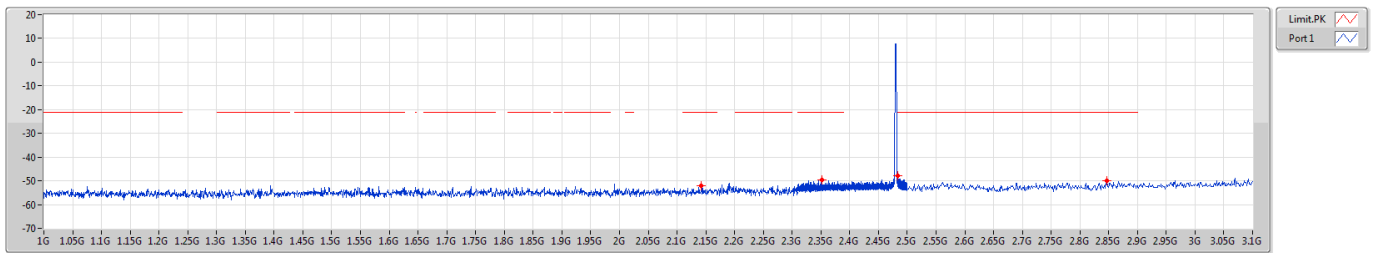
DG = Directional Gain ; PX=Port X; Psum=P1+P2+...PX



2.4-2.4835GHz_BT-LE(1Mbps)

CSE Bandedge-DTS [PK]

2480MHz

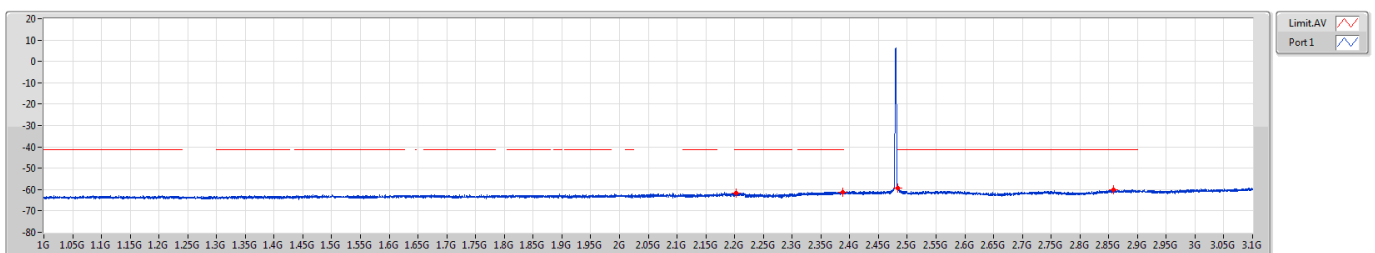


F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	Psum(dBm)	P1(dBm)
1G	2.31G	1M	PK	2.14232G	-51.97	-51.97
2.31G	2.39G	1M	PK	2.35168G	-49.60	-49.60
2.4835G	2.5G	1M	PK	2.48354G	-47.78	-47.78
2.5G	3.1G	1M	PK	2.8466G	-50.07	-50.07

2.4-2.4835GHz_BT-LE(1Mbps)

CSE Bandedge-DTS [AV]

2480MHz



F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	Psum(dBm)	P1(dBm)
1G	2.31G	1M	AV	2.20307G	-61.48	-61.48
2.31G	2.39G	1M	AV	2.3884G	-61.30	-61.30
2.4835G	2.5G	1M	AV	2.484G	-59.18	-59.18
2.5G	3.1G	1M	AV	2.8588G	-60.05	-60.05



Summary

Mode	Result	F-Start (Hz)	F-Stop (Hz)	Type	Freq (Hz)	DG (dBi)	Psum (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	4G	5G	AV	4.96G	2.40	-47.86	-45.46	-41.20	-4.26

DG = Directional Gain ; PX=Port X; Psum=P1+P2+...PX

Result

Mode	Result	F-Start (Hz)	F-Stop (Hz)	Type	Freq (Hz)	DG (dBi)	Psum (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-
2480MHz	Pass	3.1G	4G	AV	3.26245G	2.40	-74.37	-71.97	-41.20	-30.77
2480MHz	Pass	4G	5G	AV	4.96G	2.40	-47.86	-45.46	-41.20	-4.26
2480MHz	Pass	5G	7G	AV	5.4245G	2.40	-73.05	-70.65	-41.20	-29.45
2480MHz	Pass	7G	8G	AV	7.7355G	2.40	-72.36	-69.96	-41.20	-28.76
2480MHz	Pass	8G	25G	AV	19.42028G	2.40	-64.28	-61.88	-41.20	-20.68
2480MHz	Pass	3.1G	4G	PK	3.5536G	2.40	-64.03	-61.63	-21.20	-40.43
2480MHz	Pass	4G	5G	PK	4.95975G	2.40	-44.07	-41.67	-21.20	-20.47
2480MHz	Pass	5G	7G	PK	5.2345G	2.40	-63.04	-60.64	-21.20	-39.44
2480MHz	Pass	7G	8G	PK	7.67225G	2.40	-63.16	-60.76	-21.20	-39.56
2480MHz	Pass	8G	25G	PK	18.05391G	2.40	-56.06	-53.66	-21.20	-32.46

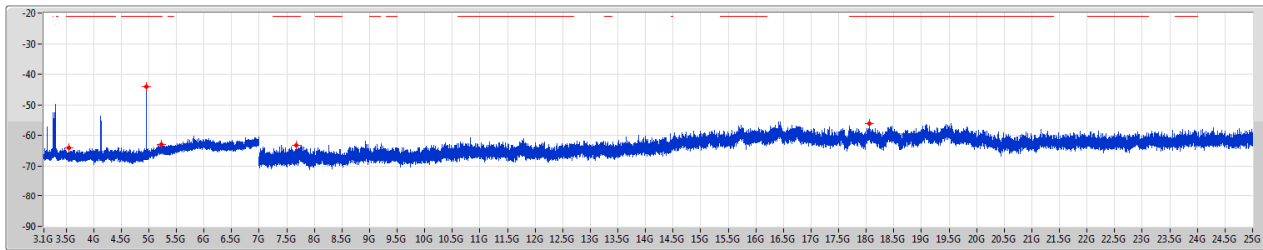
DG = Directional Gain ; PX=Port X; Psum=P1+P2+...PX



2.4-2.4835GHz_BT-LE(1Mbps)

CSE-DTS [PK]

2480MHz

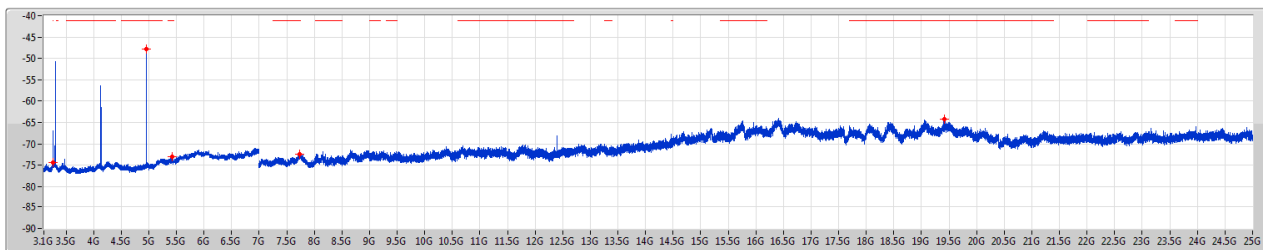


F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	Psum(dBm)	P1(dBm)
3.1G	4G	1M	PK	3.5536G	-44.03	-44.03
4G	5G	1M	PK	4.95975G	-44.07	-44.07
5G	7G	1M	PK	5.2345G	-63.04	-63.04
7G	8G	1M	PK	7.67225G	-63.16	-63.16
8G	25G	1M	PK	18.05391G	-56.06	-56.06

2.4-2.4835GHz_BT-LE(1Mbps)

CSE-DTS [AV]

2480MHz



F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	Type	Freq(Hz)	Psum(dBm)	P1(dBm)
3.1G	4G	1M	AV	3.26245G	-74.37	-74.37
4G	5G	1M	AV	4.96G	-47.86	-47.86
5G	7G	1M	AV	5.4245G	-73.05	-73.05
7G	8G	1M	AV	7.7355G	-72.36	-72.36
8G	25G	1M	AV	19.42028G	-64.28	-64.28



SC Module

Unwanted Emissions (Below 1GHz)

Modulation	BT-LE (1Mbps)	Test Freq. (MHz)	2480						
Polarization	Horizontal								
Test By : Sean Yu Temperature(°C): 25 Humidity(%): 61									
<p>The graph plots Level (dBuV/m) on the y-axis (0 to 90) against Frequency (MHz) on the x-axis (30 to 1000). A red line represents the CLASS-B emission limit, which is approximately 40 dBuV/m from 30 MHz to 100 MHz, then steps up to 45 dBuV/m from 100 MHz to 1000 MHz. Six blue vertical lines indicate measured peaks at frequencies 70.74, 132.82, 193.93, 243.40, 325.85, and 444.19 MHz. The peak levels are 30.35, 34.02, 37.96, 34.03, 35.94, and 35.55 dBuV/m respectively.</p>									
	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	70.74	30.35	40.00	-9.65	41.67	-11.32	Peak	---	---
2	132.82	34.02	43.50	-9.48	44.16	-10.14	Peak	---	---
3	193.93	37.96	43.50	-5.54	49.64	-11.68	Peak	---	---
4	243.40	34.03	46.00	-11.97	44.31	-10.28	Peak	---	---
5	325.85	35.94	46.00	-10.06	43.43	-7.49	Peak	---	---
6	444.19	35.55	46.00	-10.45	39.91	-4.36	Peak	---	---

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

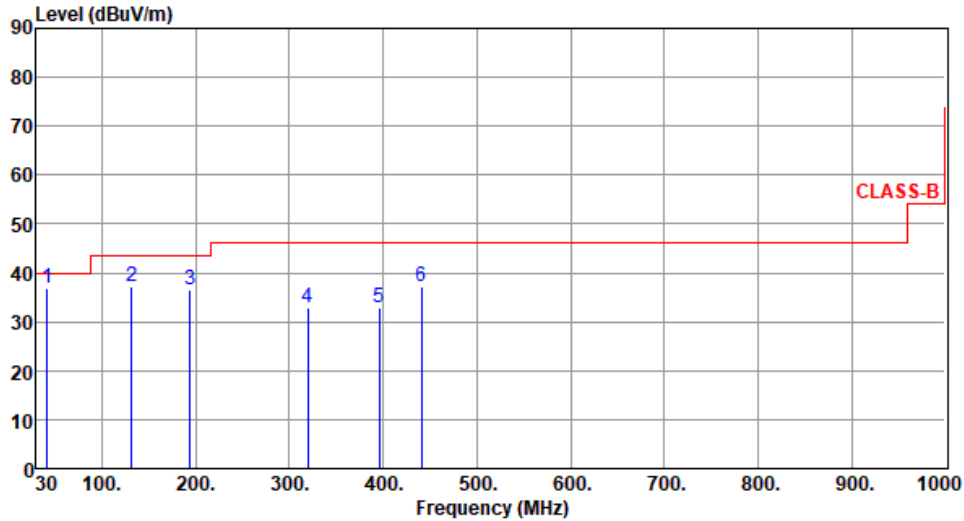


Unwanted Radiated Emissions into Restricted Frequency Bands

Appendix D.7

Modulation	BT-LE (1Mbps)	Test Freq. (MHz)	2480
Polarization	Vertical		

Test By : Sean Yu Temperature(°C): 25 Humidity(%): 61



	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	41.64	36.73	40.00	-3.27	45.39	-8.66	QP	100	177
2	131.85	37.10	43.50	-6.40	47.37	-10.27	Peak	---	---
3	193.93	36.54	43.50	-6.96	48.22	-11.68	Peak	---	---
4	320.03	32.73	46.00	-13.27	40.26	-7.53	Peak	---	---
5	395.69	32.87	46.00	-13.13	38.54	-5.67	Peak	---	---
6	441.28	37.21	46.00	-8.79	41.62	-4.41	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 (1Mbps)	Test Freq. (MHz)	2402						
Polarization	Horizontal								
Test By :Paul Lin Temperature(°C):25 Humidity(%):62									
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		cm	deg
1	4000.00	50.86	54.00	-3.14	53.10	-2.24	Average	290	131
2	4000.00	55.37	74.00	-18.63	57.61	-2.24	Peak	290	131
3	4804.00	31.65	54.00	-22.35	32.17	-0.52	Average	100	115
4	4804.00	44.71	74.00	-29.29	45.23	-0.52	Peak	100	115
5	12010.00	42.36	54.00	-11.64	36.23	6.13	Average	100	182
6	12010.00	55.50	74.00	-18.50	49.37	6.13	Peak	100	182

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

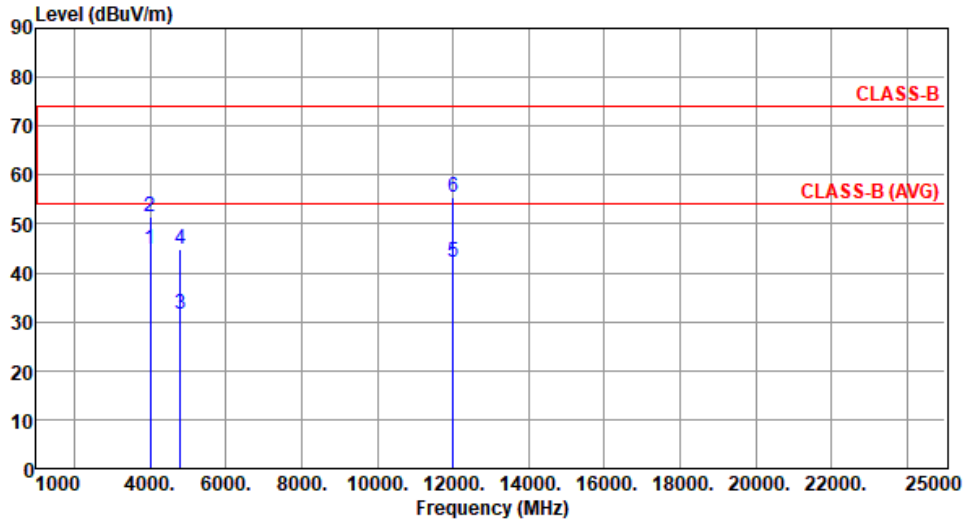


Unwanted Radiated Emissions into Restricted Frequency Bands

Appendix D.7

Modulation	BT-LE (1Mbps)	Test Freq. (MHz)	2402
Polarization	Vertical		

Test By : Paul Lin Temperature(°C): 25 Humidity(%): 62



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	4000.00	44.72	54.00	-9.28	46.96	-2.24	Average	303	204
2	4000.00	51.57	74.00	-22.43	53.81	-2.24	Peak	303	204
3	4804.00	31.66	54.00	-22.34	32.18	-0.52	Average	100	132
4	4804.00	44.82	74.00	-29.18	45.34	-0.52	Peak	100	132
5	12010.00	42.21	54.00	-11.79	36.08	6.13	Average	100	204
6	12010.00	55.51	74.00	-18.49	49.38	6.13	Peak	100	204

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

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

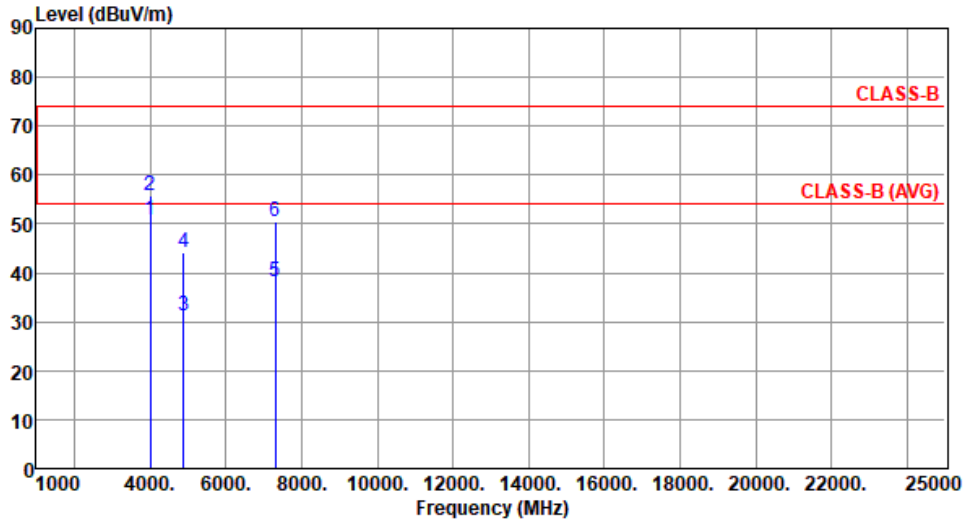


Unwanted Radiated Emissions into Restricted Frequency Bands

Appendix D.7

Modulation	BT-LE (1Mbps)	Test Freq. (MHz)	2440
Polarization	Horizontal		

Test By :Paul Lin Temperature(°C):25 Humidity(%):62



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	4000.00	50.94	54.00	-3.06	53.18	-2.24	Average	288	136
2	4000.00	55.72	74.00	-18.28	57.96	-2.24	Peak	288	136
3	4880.00	31.27	54.00	-22.73	31.81	-0.54	Average	100	213
4	4880.00	44.29	74.00	-29.71	44.83	-0.54	Peak	100	213
5	7320.00	38.33	54.00	-15.67	33.14	5.19	Average	100	176
6	7320.00	50.52	74.00	-23.48	45.33	5.19	Peak	100	176

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

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

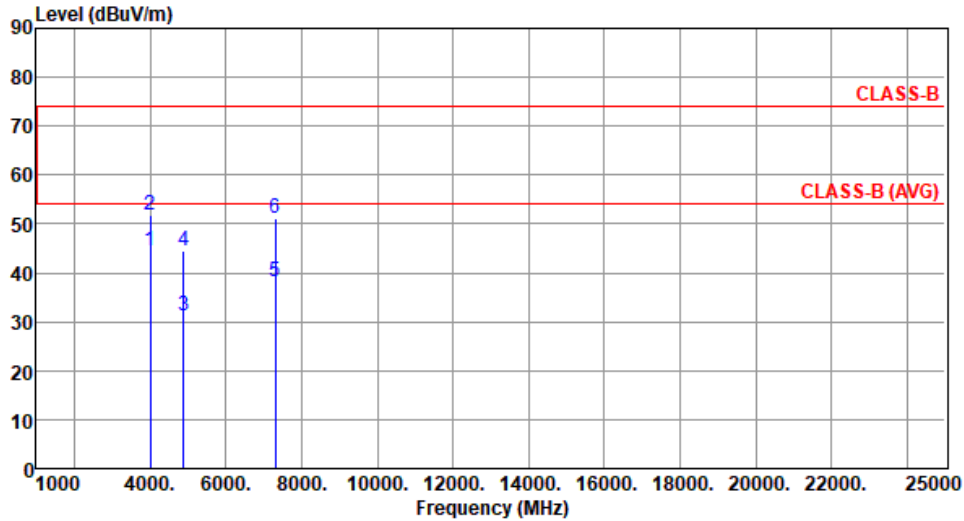


Unwanted Radiated Emissions into Restricted Frequency Bands

Appendix D.7

Modulation	BT-LE (1Mbps)	Test Freq. (MHz)	2440
Polarization	Vertical		

Test By :Paul Lin Temperature(°C):25 Humidity(%):62



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	4000.00	44.61	54.00	-9.39	46.85	-2.24	Average	303	207
2	4000.00	51.66	74.00	-22.34	53.90	-2.24	Peak	303	207
3	4880.00	31.37	54.00	-22.63	31.91	-0.54	Average	100	227
4	4880.00	44.53	74.00	-29.47	45.07	-0.54	Peak	100	227
5	7320.00	38.16	54.00	-15.84	32.97	5.19	Average	100	102
6	7320.00	51.11	74.00	-22.89	45.92	5.19	Peak	100	102

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

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

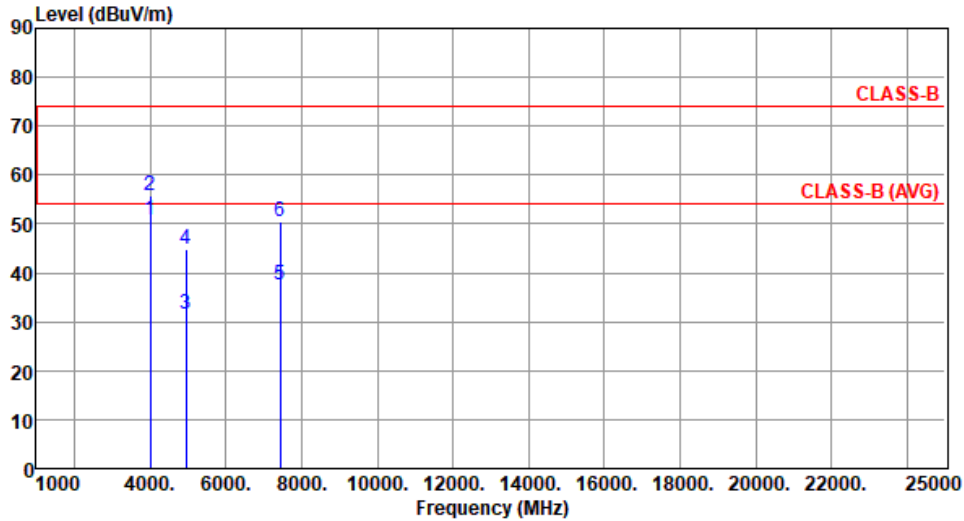


Unwanted Radiated Emissions into Restricted Frequency Bands

Appendix D.7

Modulation	BT-LE (1Mbps)	Test Freq. (MHz)	2480
Polarization	Horizontal		

Test By :Paul Lin Temperature(°C):25 Humidity(%):62



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	4000.00	50.95	54.00	-3.05	53.19	-2.24	Average	289	131
2	4000.00	55.71	74.00	-18.29	57.95	-2.24	Peak	289	131
3	4960.00	31.67	54.00	-22.33	32.11	-0.44	Average	100	155
4	4960.00	44.76	74.00	-29.24	45.20	-0.44	Peak	100	155
5	7440.00	37.49	54.00	-16.51	32.38	5.11	Average	100	175
6	7440.00	50.60	74.00	-23.40	45.49	5.11	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).



Unwanted Radiated Emissions into Restricted Frequency Bands

Appendix D.7

Modulation	BT-LE (1Mbps)	Test Freq. (MHz)	2480						
Polarization	Vertical								
Test By :Paul Lin Temperature(°C):25 Humidity(%):62									
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		cm	deg
1	4000.00	44.72	54.00	-9.28	46.96	-2.24	Average	307	204
2	4000.00	51.62	74.00	-22.38	53.86	-2.24	Peak	307	204
3	4960.00	31.66	54.00	-22.34	32.10	-0.44	Average	100	158
4	4960.00	44.92	74.00	-29.08	45.36	-0.44	Peak	100	158
5	7440.00	37.72	54.00	-16.28	32.61	5.11	Average	100	112
6	7440.00	50.55	74.00	-23.45	45.44	5.11	Peak	100	112
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m) *Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).									



Unwanted Radiated Emissions into Restricted Frequency Bands

Appendix D.7

Modulation	BT-LE (2Mbps)	Test Freq. (MHz)	2402																																																																								
Polarization	Horizontal																																																																										
Test By : Paul Lin		Temperature(°C): 25		Humidity(%): 62																																																																							
<p>The graph plots Level (dBuV/m) on the y-axis (0 to 90) against Frequency (MHz) on the x-axis (1000 to 25000). Two horizontal red lines represent limits: CLASS-B at approximately 75 dBuV/m and CLASS-B (AVG) at approximately 55 dBuV/m. Six vertical blue lines indicate emission peaks, labeled 2, 3, 4, 5, and 6. Peak 2 is at 4000 MHz, peak 3 at 4804 MHz, peak 4 at 4804 MHz, peak 5 at 12010 MHz, and peak 6 at 12010 MHz.</p>																																																																											
	<table border="1"> <thead> <tr> <th></th> <th>Freq. MHz</th> <th>Emission level dBuV/m</th> <th>Limit dBuV/m</th> <th>Margin dB</th> <th>SA reading dBuV</th> <th>Factor dB/m</th> <th>Remark</th> <th>ANT High cm</th> <th>Turn Table deg</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>4000.00</td> <td>50.94</td> <td>54.00</td> <td>-3.06</td> <td>53.18</td> <td>-2.24</td> <td>Average</td> <td>288</td> <td>136</td> </tr> <tr> <td>2</td> <td>4000.00</td> <td>55.75</td> <td>74.00</td> <td>-18.25</td> <td>57.99</td> <td>-2.24</td> <td>Peak</td> <td>288</td> <td>136</td> </tr> <tr> <td>3</td> <td>4804.00</td> <td>31.77</td> <td>54.00</td> <td>-22.23</td> <td>32.29</td> <td>-0.52</td> <td>Average</td> <td>100</td> <td>118</td> </tr> <tr> <td>4</td> <td>4804.00</td> <td>44.61</td> <td>74.00</td> <td>-29.39</td> <td>45.13</td> <td>-0.52</td> <td>Peak</td> <td>100</td> <td>118</td> </tr> <tr> <td>5</td> <td>12010.00</td> <td>42.25</td> <td>54.00</td> <td>-11.75</td> <td>36.12</td> <td>6.13</td> <td>Average</td> <td>100</td> <td>177</td> </tr> <tr> <td>6</td> <td>12010.00</td> <td>55.32</td> <td>74.00</td> <td>-18.68</td> <td>49.19</td> <td>6.13</td> <td>Peak</td> <td>100</td> <td>177</td> </tr> </tbody> </table>		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	4000.00	50.94	54.00	-3.06	53.18	-2.24	Average	288	136	2	4000.00	55.75	74.00	-18.25	57.99	-2.24	Peak	288	136	3	4804.00	31.77	54.00	-22.23	32.29	-0.52	Average	100	118	4	4804.00	44.61	74.00	-29.39	45.13	-0.52	Peak	100	118	5	12010.00	42.25	54.00	-11.75	36.12	6.13	Average	100	177	6	12010.00	55.32	74.00	-18.68	49.19	6.13	Peak	100	177				
	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	4000.00	50.94	54.00	-3.06	53.18	-2.24	Average	288	136																																																																		
2	4000.00	55.75	74.00	-18.25	57.99	-2.24	Peak	288	136																																																																		
3	4804.00	31.77	54.00	-22.23	32.29	-0.52	Average	100	118																																																																		
4	4804.00	44.61	74.00	-29.39	45.13	-0.52	Peak	100	118																																																																		
5	12010.00	42.25	54.00	-11.75	36.12	6.13	Average	100	177																																																																		
6	12010.00	55.32	74.00	-18.68	49.19	6.13	Peak	100	177																																																																		
<p>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).</p>																																																																											

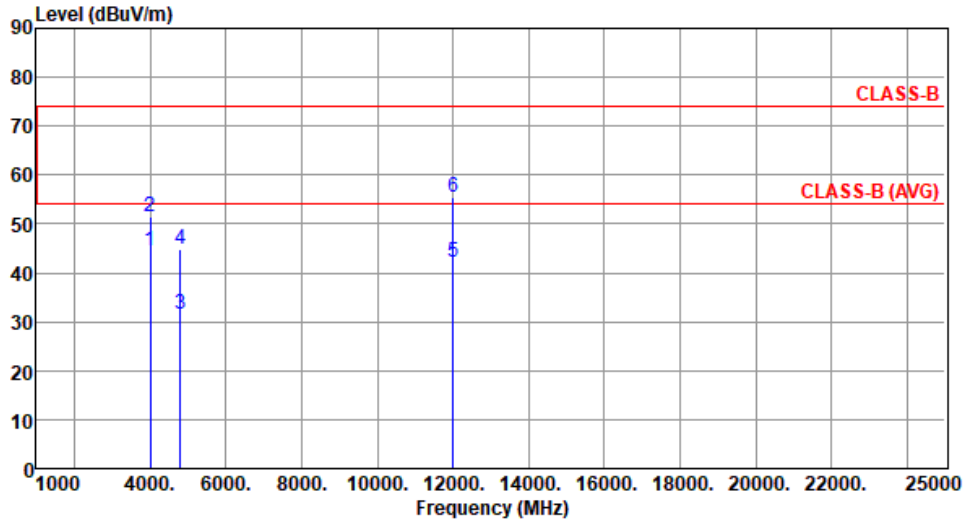


Unwanted Radiated Emissions into Restricted Frequency Bands

Appendix D.7

Modulation	BT-LE (2Mbps)	Test Freq. (MHz)	2402
Polarization	Vertical		

Test By :Paul Lin Temperature(°C):25 Humidity(%):62



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	4000.00	44.55	54.00	-9.45	46.79	-2.24	Average	305	207
2	4000.00	51.38	74.00	-22.62	53.62	-2.24	Peak	205	207
3	4804.00	31.55	54.00	-22.45	32.07	-0.52	Average	100	129
4	4804.00	44.72	74.00	-29.28	45.24	-0.52	Peak	100	129
5	12010.00	42.24	54.00	-11.76	36.11	6.13	Average	100	209
6	12010.00	55.59	74.00	-18.41	49.46	6.13	Peak	100	209

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

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

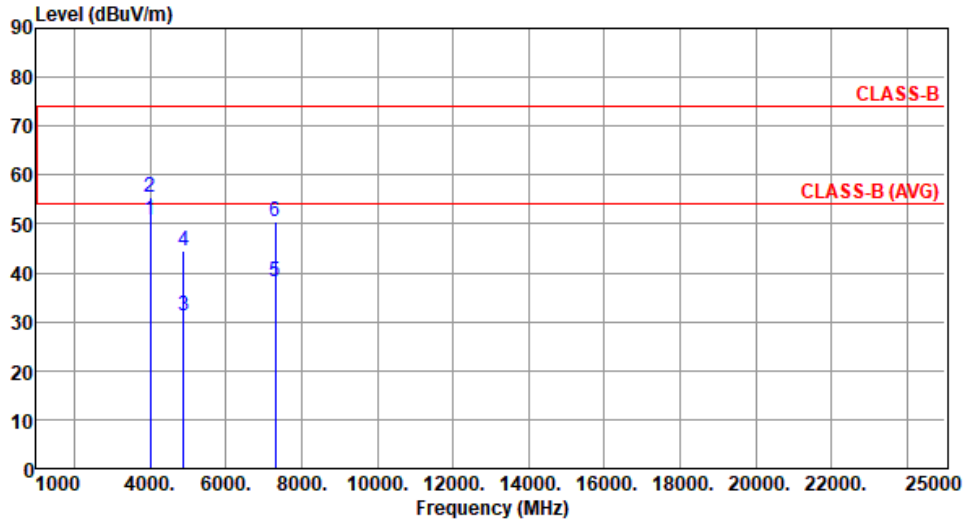


Unwanted Radiated Emissions into Restricted Frequency Bands

Appendix D.7

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

Test By :Paul Lin Temperature(°C):25 Humidity(%):62



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	4000.00	50.85	54.00	-3.15	53.09	-2.24	Average	290	132
2	4000.00	55.42	74.00	-18.58	57.66	-2.24	Peak	290	132
3	4880.00	31.17	54.00	-22.83	31.71	-0.54	Average	100	218
4	4880.00	44.51	74.00	-29.49	45.05	-0.54	Peak	100	218
5	7320.00	38.13	54.00	-15.87	32.94	5.19	Average	100	167
6	7320.00	50.34	74.00	-23.66	45.15	5.19	Peak	100	167

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

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

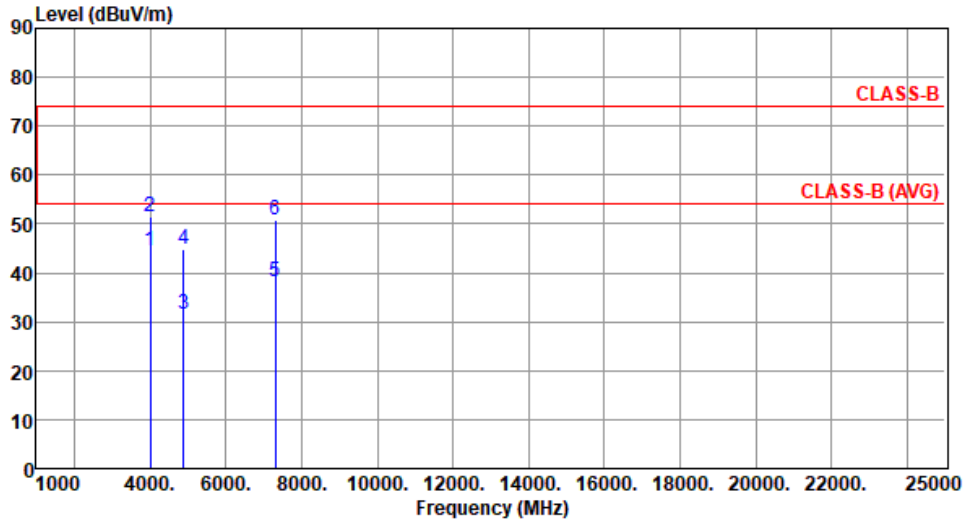


Unwanted Radiated Emissions into Restricted Frequency Bands

Appendix D.7

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

Test By :Paul Lin Temperature(°C):25 Humidity(%):62



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	4000.00	44.53	54.00	-9.47	46.77	-2.24	Average	304	205
2	4000.00	51.53	74.00	-22.47	53.77	-2.24	Peak	304	205
3	4880.00	31.70	54.00	-22.30	32.24	-0.54	Average	100	231
4	4880.00	44.81	74.00	-29.19	45.35	-0.54	Peak	100	231
5	7320.00	38.24	54.00	-15.76	33.05	5.19	Average	100	95
6	7320.00	50.95	74.00	-23.05	45.76	5.19	Peak	100	95

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

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

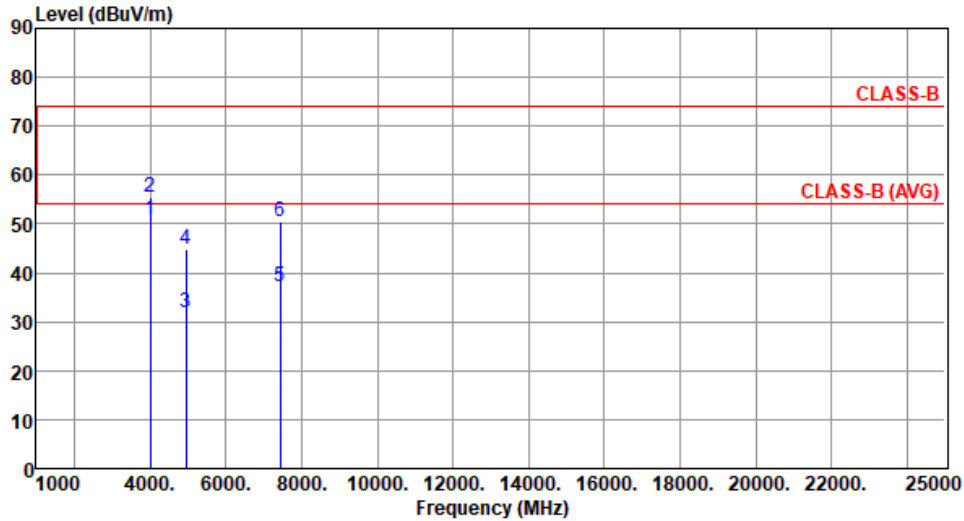


Unwanted Radiated Emissions into Restricted Frequency Bands

Appendix D.7

Modulation	BT-LE (2Mbps)	Test Freq. (MHz)	2480
Polarization	Horizontal		

Test By :Paul Lin Temperature(°C):25 Humidity(%):62



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	4000.00	50.84	54.00	-3.16	53.08	-2.24	Average	287	134
2	4000.00	55.62	74.00	-18.38	57.86	-2.24	Peak	287	134
3	4960.00	31.97	54.00	-22.03	32.41	-0.44	Average	100	144
4	4960.00	44.87	74.00	-29.13	45.31	-0.44	Peak	100	144
5	7440.00	37.28	54.00	-16.72	32.17	5.11	Average	100	182
6	7440.00	50.39	74.00	-23.61	45.28	5.11	Peak	100	182

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

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).



Unwanted Radiated Emissions into Restricted Frequency Bands

Appendix D.7

Modulation	BT-LE (2Mbps)	Test Freq. (MHz)	2480	
Polarization	Vertical			
Test By : Paul Lin		Temperature(°C): 25		Humidity(%): 62

	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	4000.00	44.60	54.00	-9.40	46.84	-2.24	Average	305	208
2	4000.00	51.53	74.00	-22.47	53.77	-2.24	Peak	305	208
3	4960.00	31.78	54.00	-22.22	32.22	-0.44	Average	100	164
4	4960.00	44.83	74.00	-29.17	45.27	-0.44	Peak	100	164
5	7440.00	37.56	54.00	-16.44	32.45	5.11	Average	100	105
6	7440.00	50.49	74.00	-23.51	45.38	5.11	Peak	100	105

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).

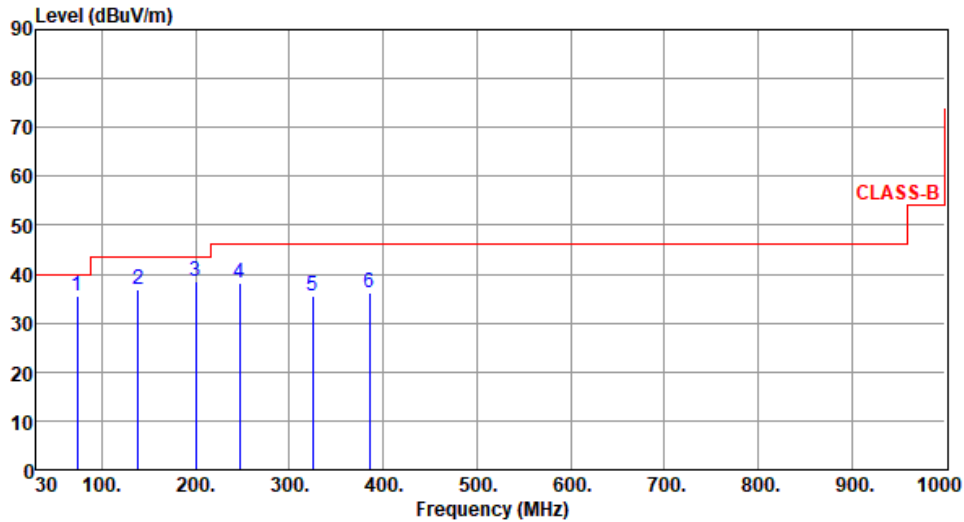


ST M.2, PCIe Module

Unwanted Emissions (Below 1GHz)

Modulation	BT-LE (1Mbps)	Test Freq. (MHz)	2480
Polarization	Horizontal		

Test By :Paul Lin Temperature(°C):24 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	73.81	35.49	40.00	-4.51	47.64	-12.15	Peak	---	---
2	138.27	36.86	43.50	-6.64	46.46	-9.60	Peak	---	---
3	199.86	38.55	43.50	-4.95	50.40	-11.85	Peak	---	---
4	246.95	38.17	46.00	-7.83	48.31	-10.14	Peak	---	---
5	325.15	35.64	46.00	-10.36	43.15	-7.51	Peak	---	---
6	385.49	36.17	46.00	-9.83	42.07	-5.90	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.

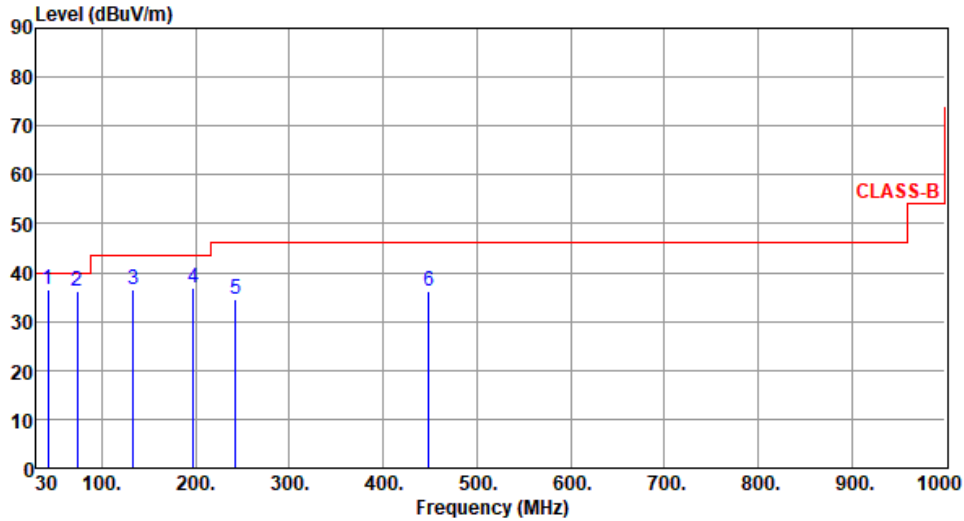


Unwanted Radiated Emissions into Restricted Frequency Bands

Appendix D.7

Modulation	BT-LE (1Mbps)	Test Freq. (MHz)	2480
Polarization	Vertical		

Test By :Paul Lin Temperature(°C):24 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	42.61	36.63	40.00	-3.37	44.97	-8.34	QP	100	132
2	73.65	36.12	40.00	-3.88	48.22	-12.10	Peak	---	---
3	133.42	36.58	43.50	-6.92	46.60	-10.02	Peak	---	---
4	197.75	36.95	43.50	-6.55	48.74	-11.79	Peak	---	---
5	242.96	34.68	46.00	-11.32	44.98	-10.30	Peak	---	---
6	448.61	36.29	46.00	-9.71	40.54	-4.25	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 (1Mbps)	Test Freq. (MHz)	2480						
Polarization	Horizontal								
Test By : Paul Lin Temperature(°C): 25 Humidity(%): 62									
<p>The graph plots Level (dBuV/m) on the y-axis (0 to 90) against Frequency (MHz) on the x-axis (1000 to 25000). Two horizontal red lines represent limits: CLASS-B at approximately 74 dBuV/m and CLASS-B (AVG) at approximately 54 dBuV/m. Three vertical blue lines indicate emission peaks at 4000 MHz (labeled 2), 4960 MHz (labeled 4), and 7440 MHz (labeled 6). Other points are labeled 3 and 5.</p>									
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		cm	deg
1	4000.00	50.82	54.00	-3.18	53.06	-2.24	Average	283	129
2	4000.00	55.58	74.00	-18.42	57.82	-2.24	Peak	283	129
3	4960.00	31.73	54.00	-22.27	32.17	-0.44	Average	100	164
4	4960.00	44.82	74.00	-29.18	45.26	-0.44	Peak	100	164
5	7440.00	37.51	54.00	-16.49	32.40	5.11	Average	100	177
6	7440.00	50.47	74.00	-23.53	45.36	5.11	Peak	100	177

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

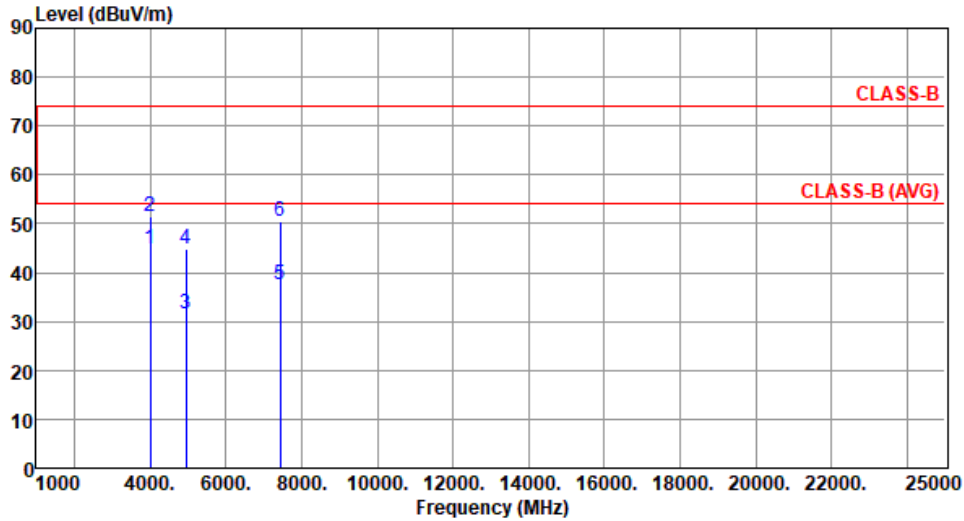


Unwanted Radiated Emissions into Restricted Frequency Bands

Appendix D.7

Modulation	BT-LE (1Mbps)	Test Freq. (MHz)	2480
Polarization	Vertical		

Test By :Paul Lin Temperature(°C):25 Humidity(%):62



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB/m	Remark	ANT High cm	Turn Table deg
1	4000.00	44.68	54.00	-9.32	46.92	-2.24	Average	313	208
2	4000.00	51.58	74.00	-22.42	53.82	-2.24	Peak	313	208
3	4960.00	31.66	54.00	-22.34	32.10	-0.44	Average	100	162
4	4960.00	44.83	74.00	-29.17	45.27	-0.44	Peak	100	162
5	7440.00	37.66	54.00	-16.34	32.55	5.11	Average	100	108
6	7440.00	50.64	74.00	-23.36	45.53	5.11	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).



ST M.2, SDIO Module

Unwanted Emissions (Below 1GHz)

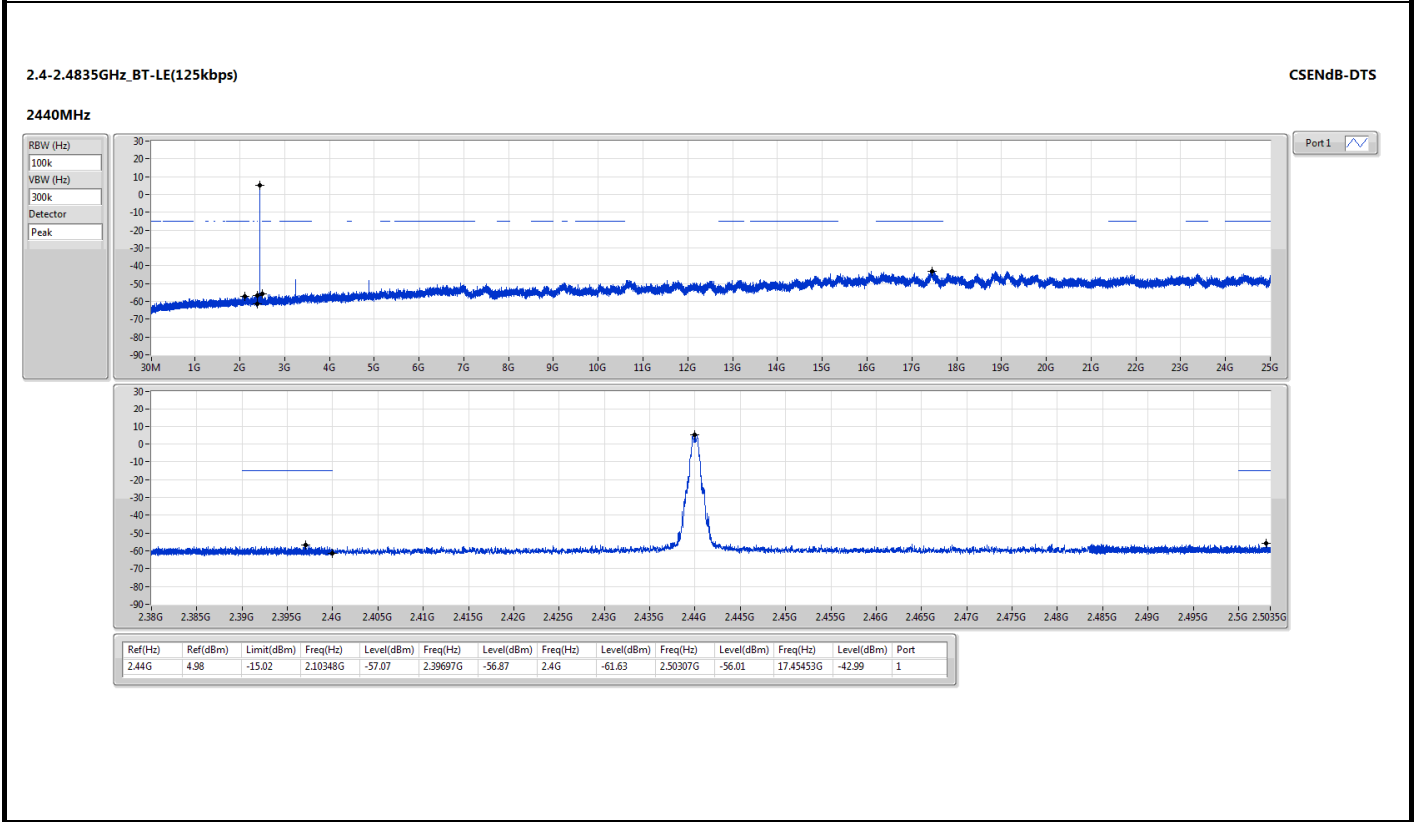
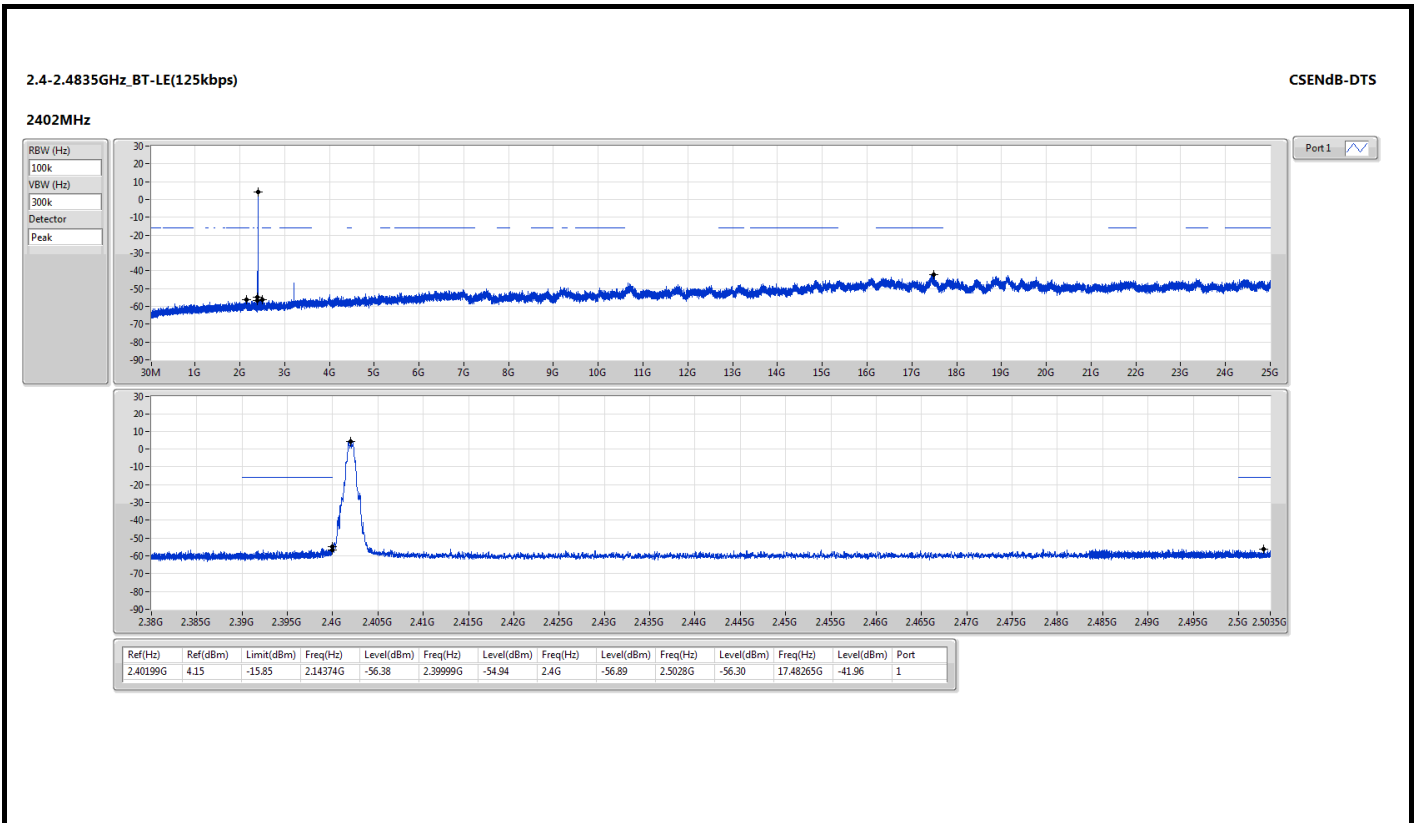
Modulation	BT-LE (1Mbps)	Test Freq. (MHz)	2480																																																																																																																										
Polarization	Horizontal																																																																																																																												
Test By :Paul Lin Temperature(°C):24 Humidity(%):66																																																																																																																													
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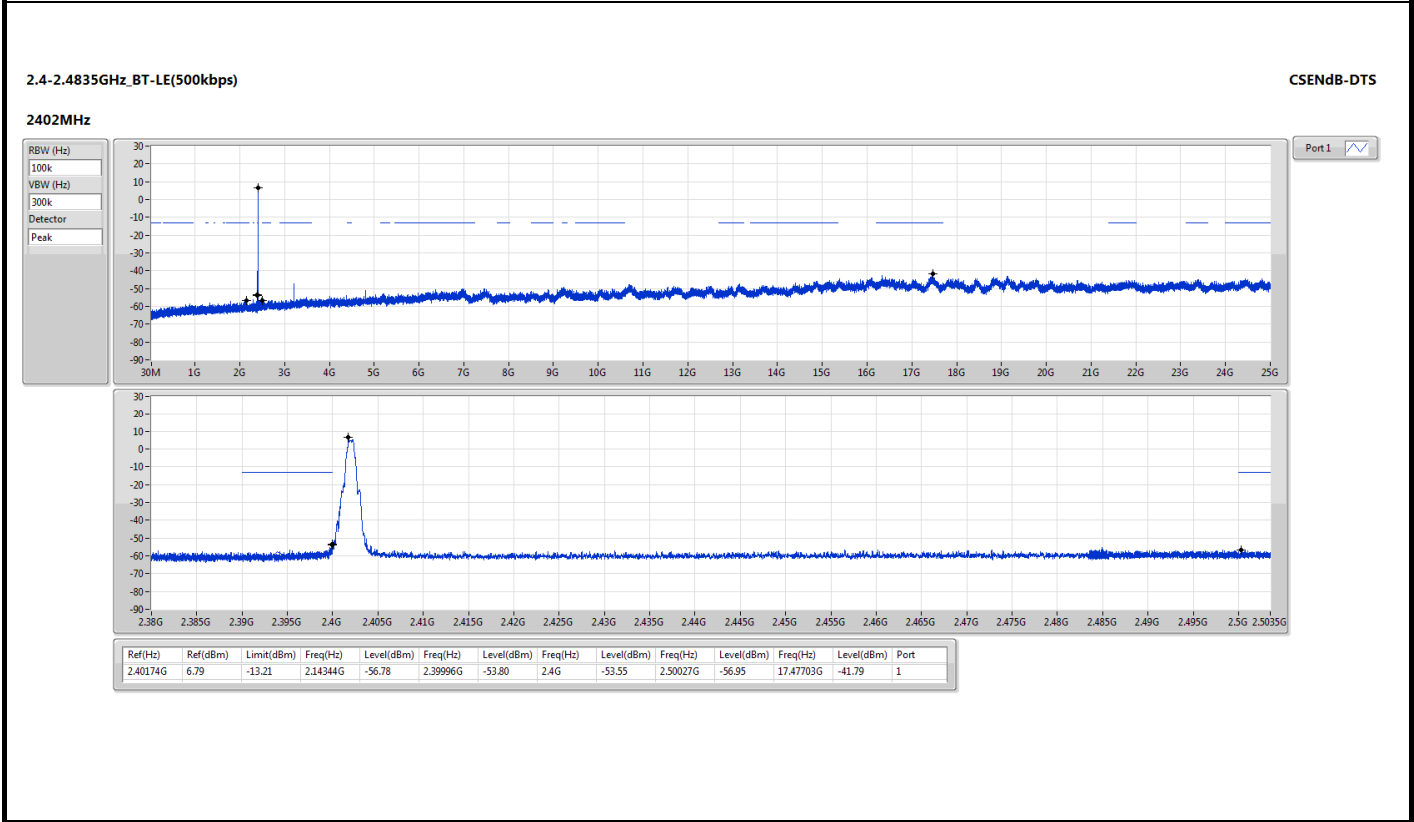
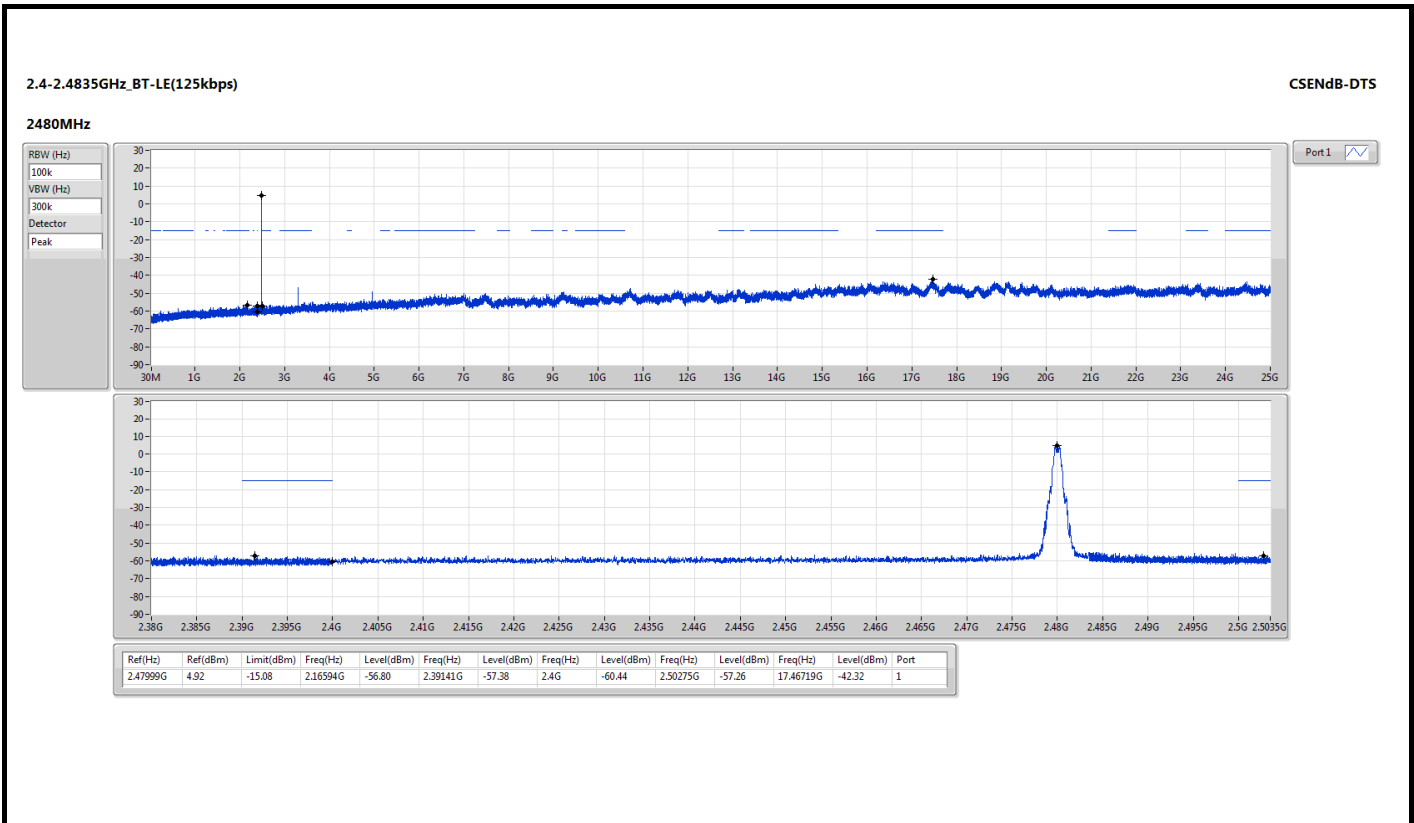


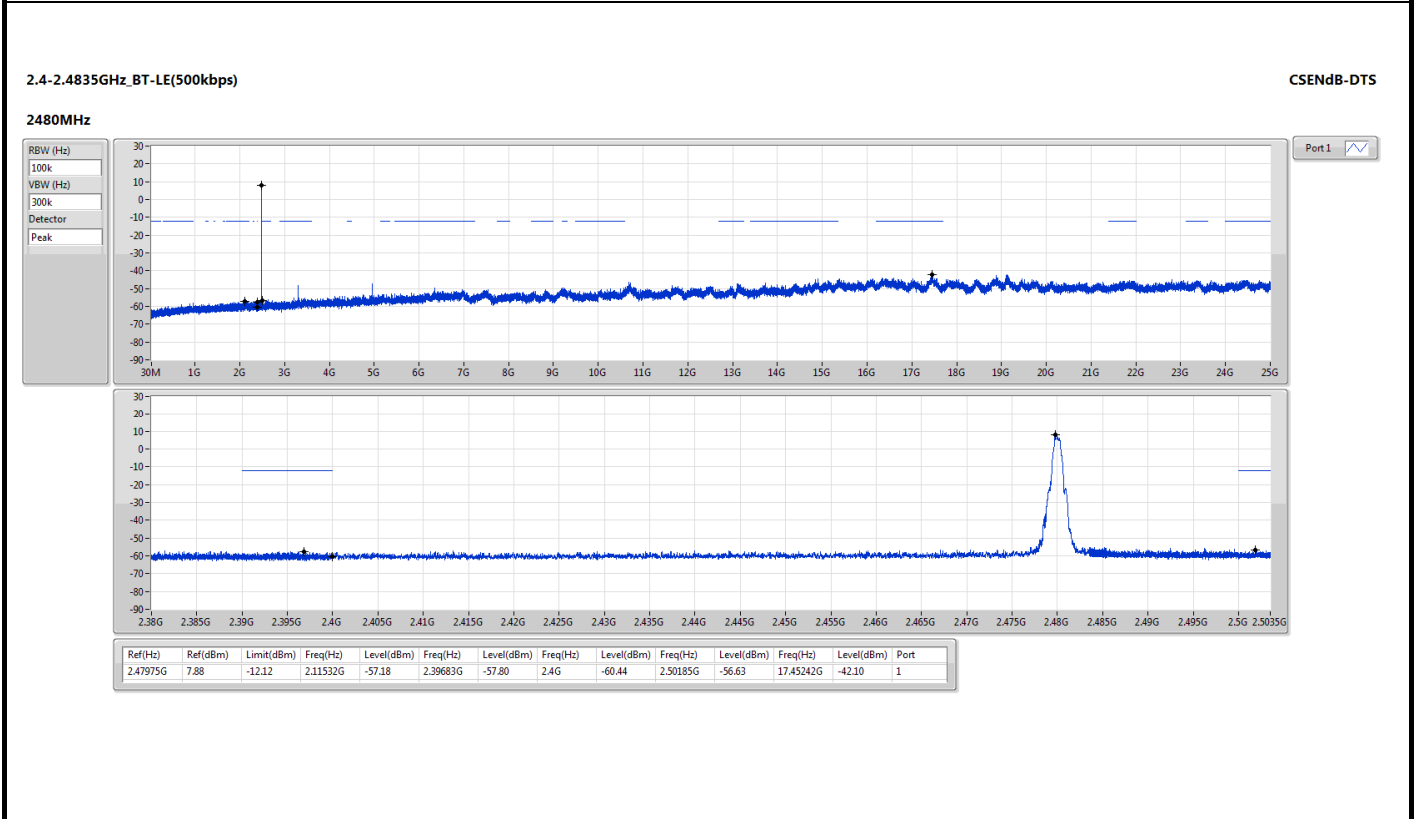
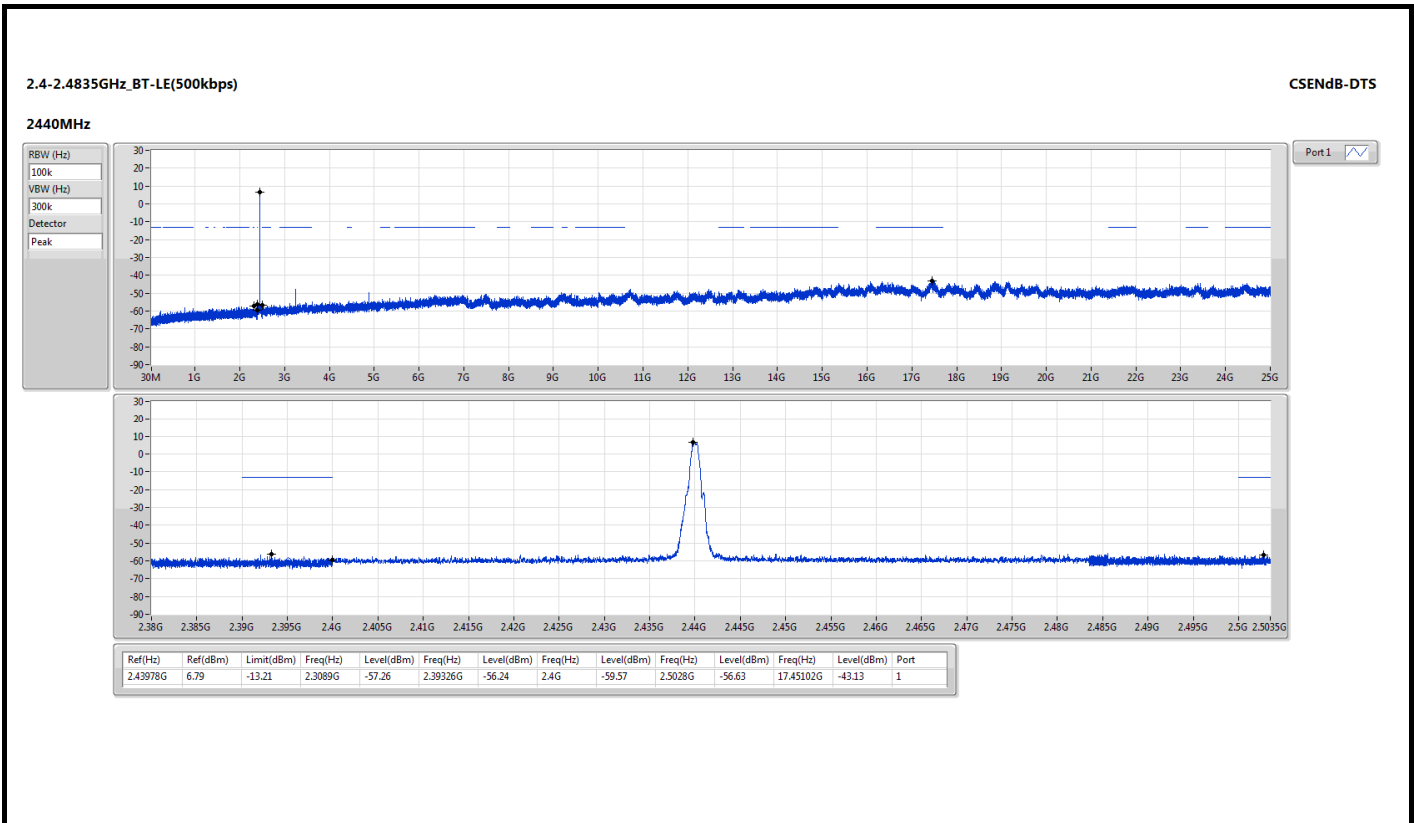
Unwanted Radiated Emissions into Restricted Frequency Bands

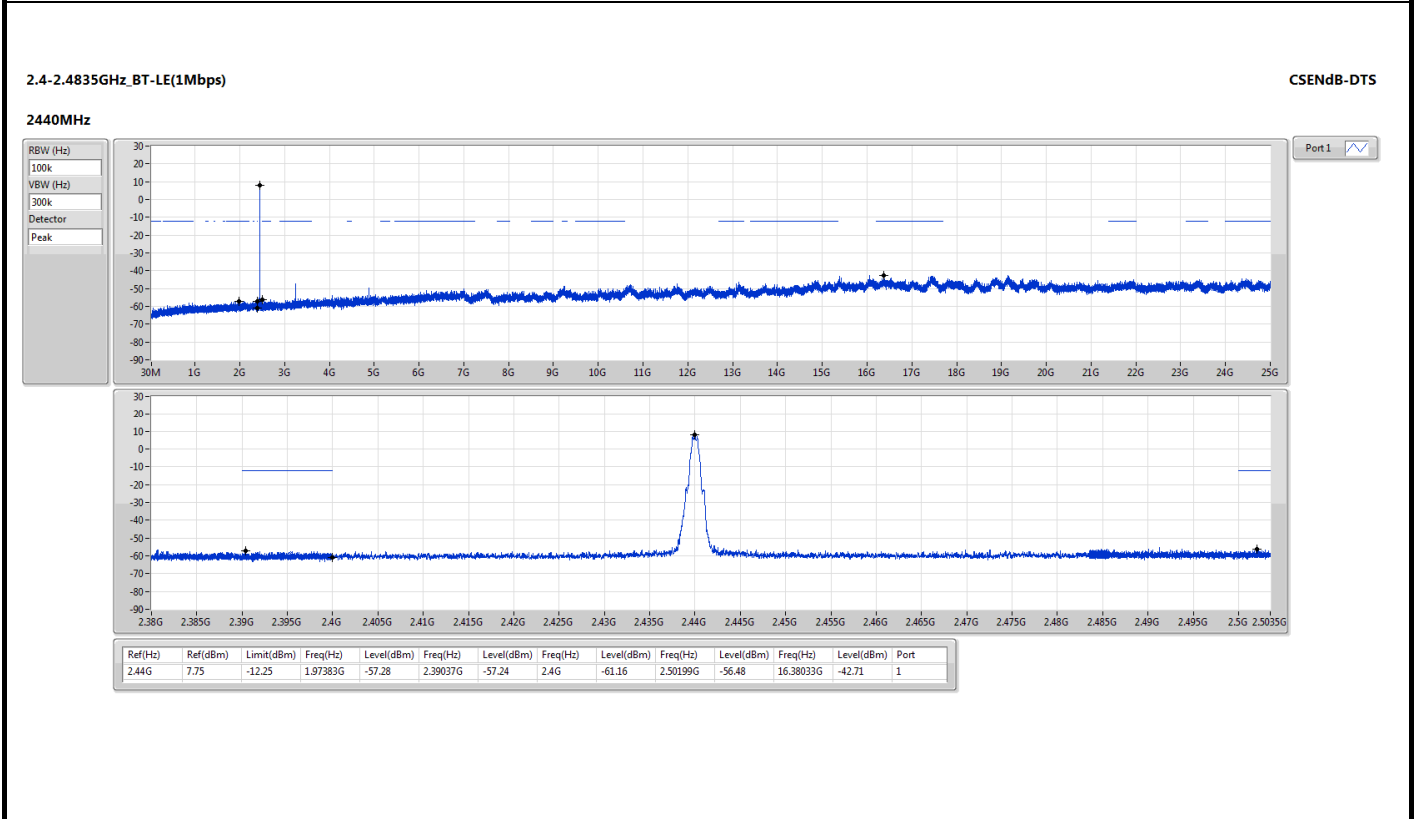
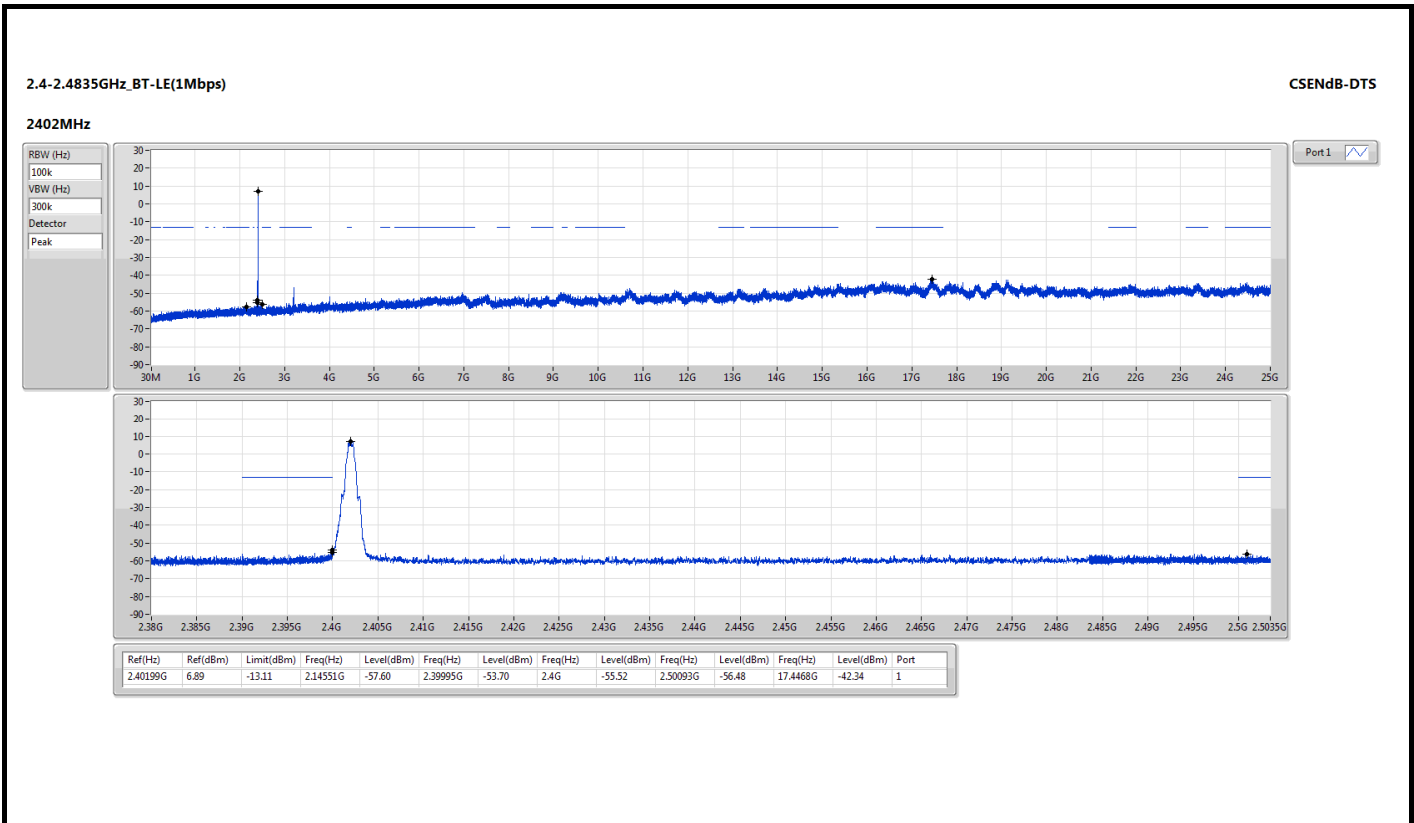
Appendix D.7

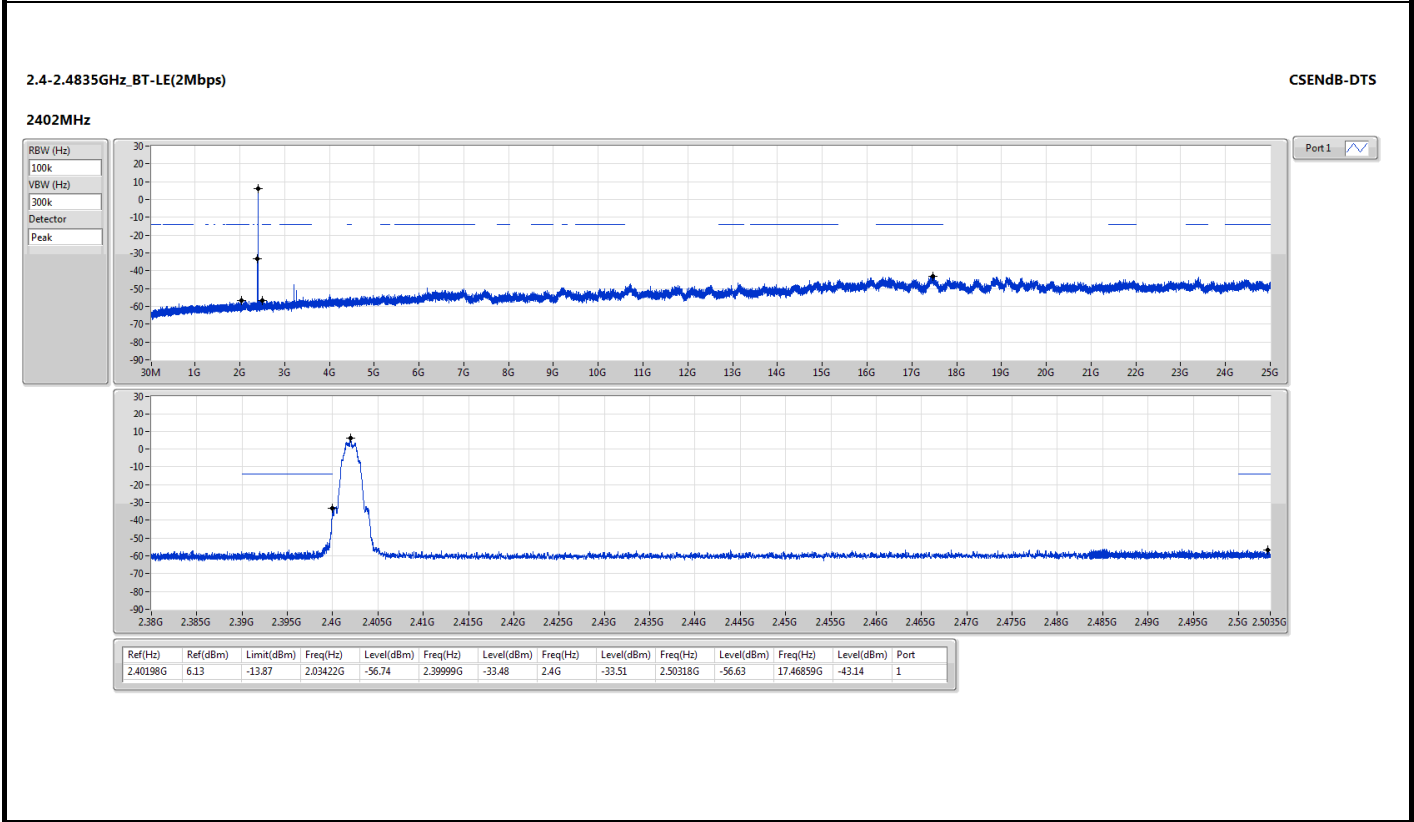
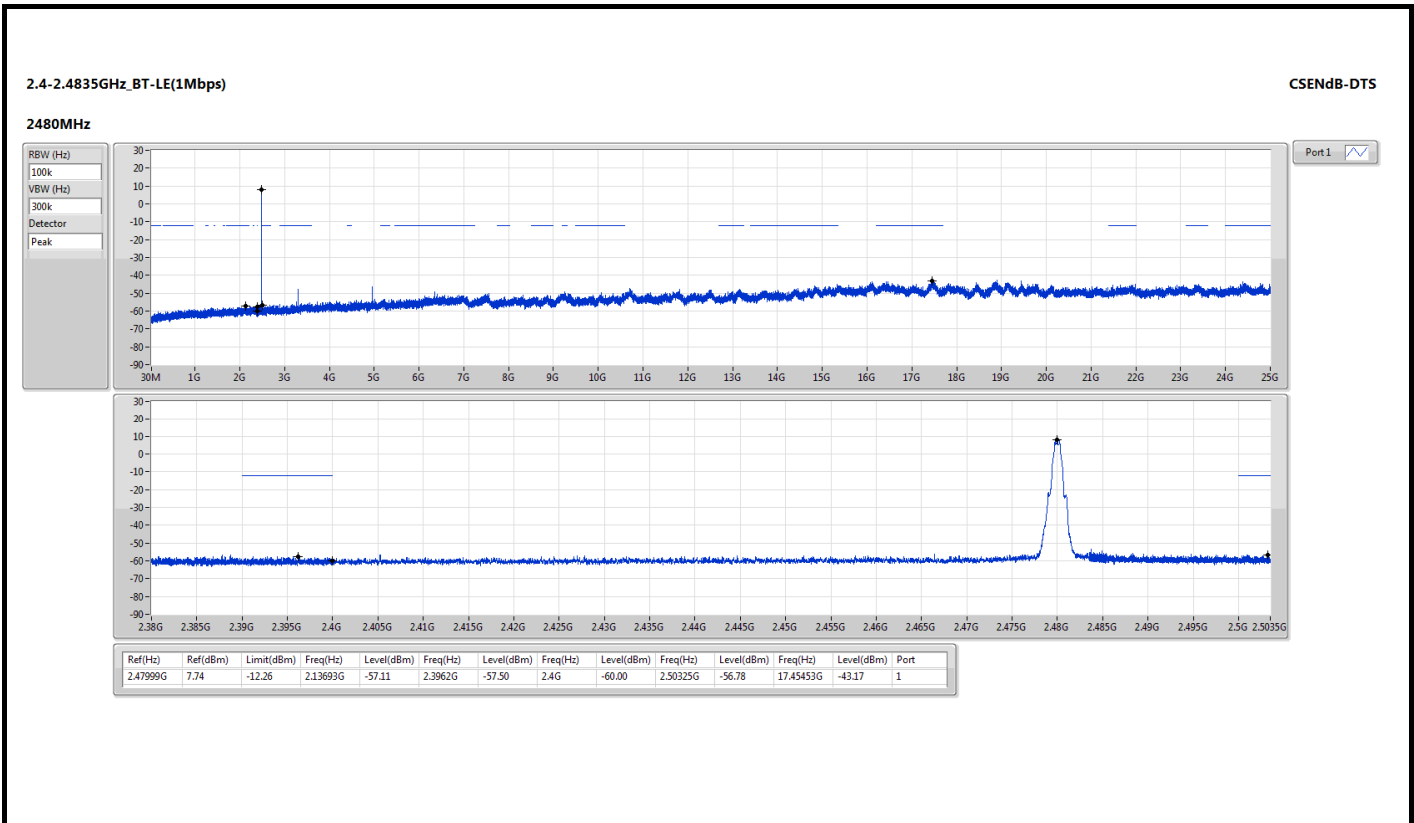
Modulation	BT-LE (1Mbps)	Test Freq. (MHz)	2480																																																																
Polarization	Vertical																																																																		
Test By : Paul Lin Temperature(°C): 24 Humidity(%): 66																																																																			
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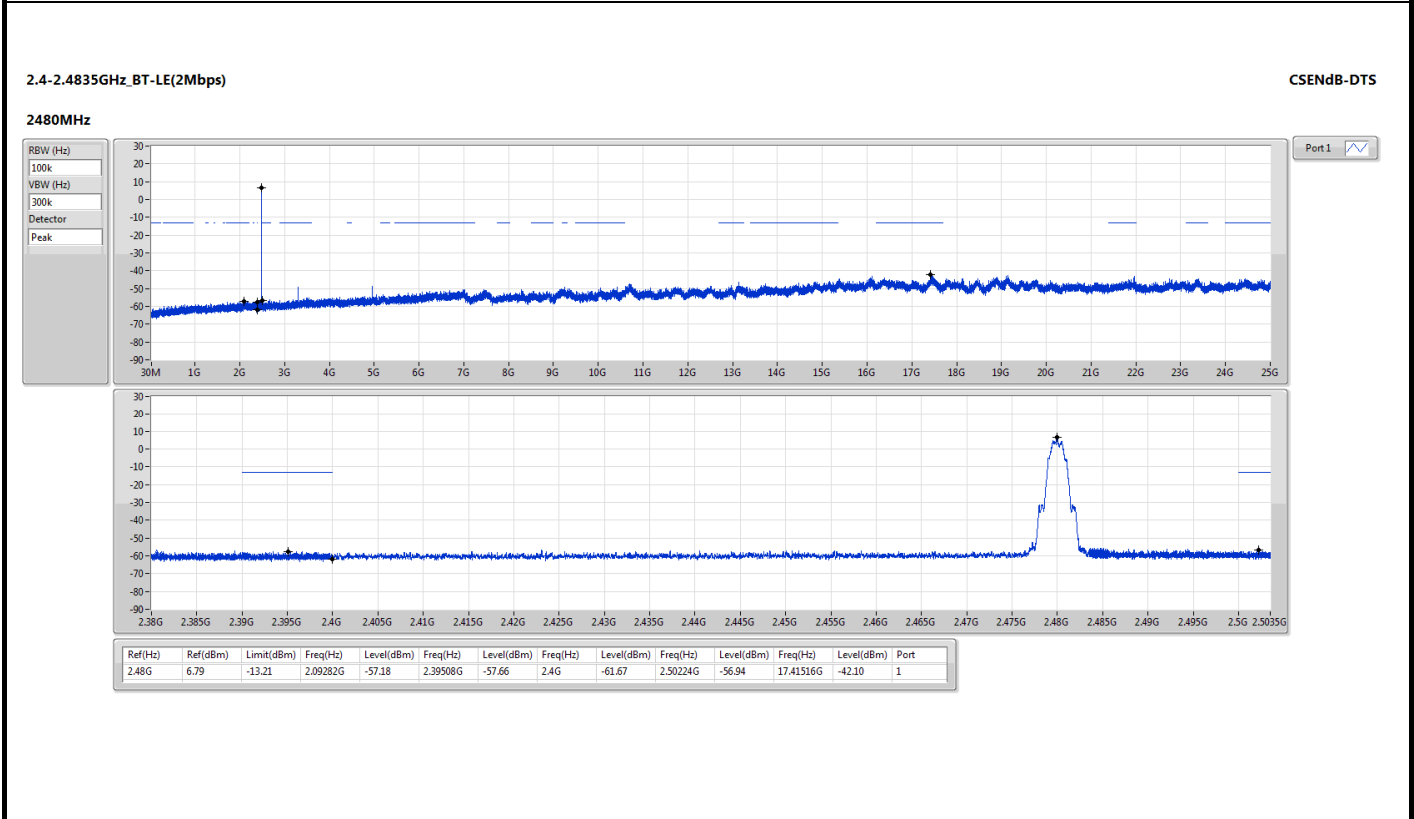
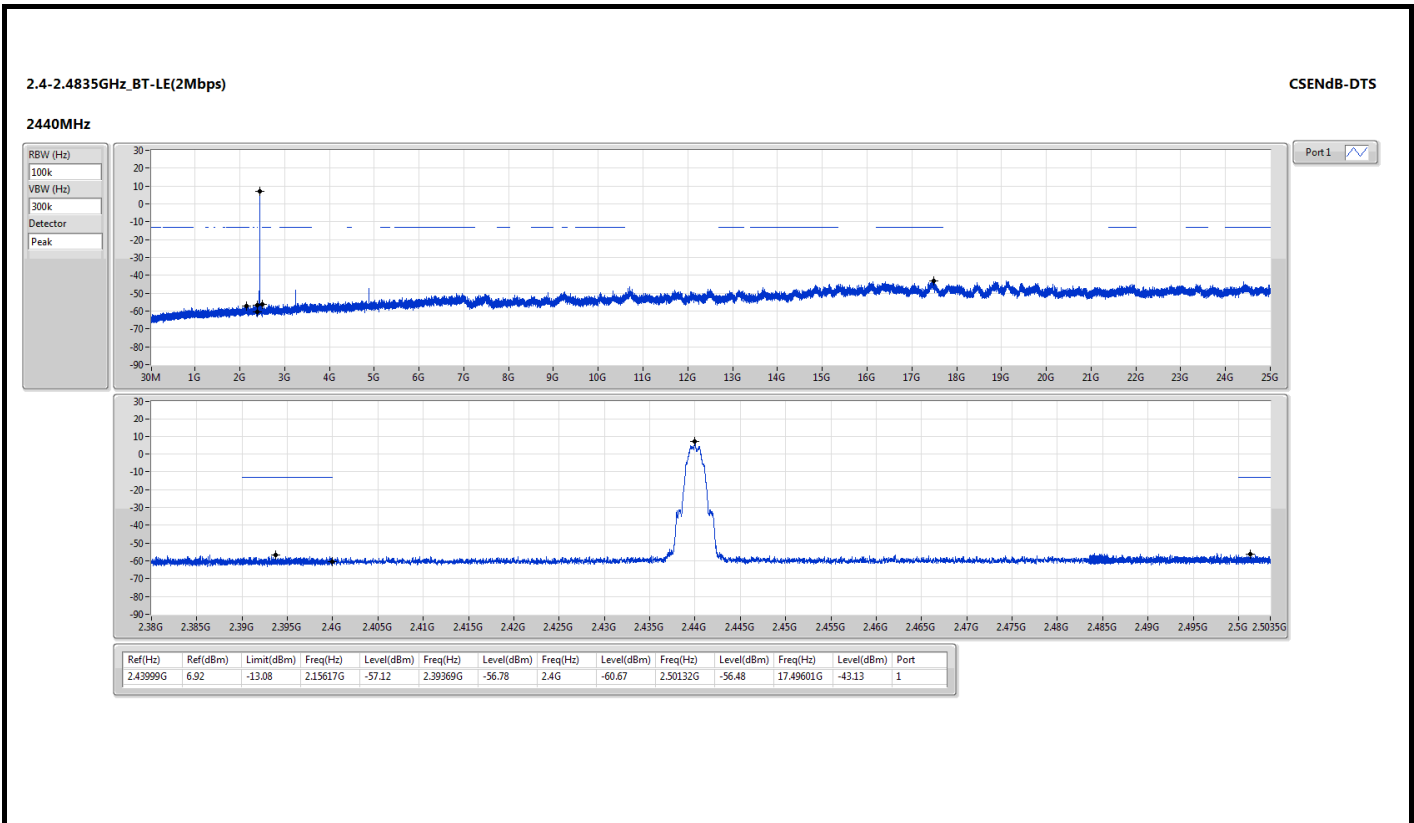










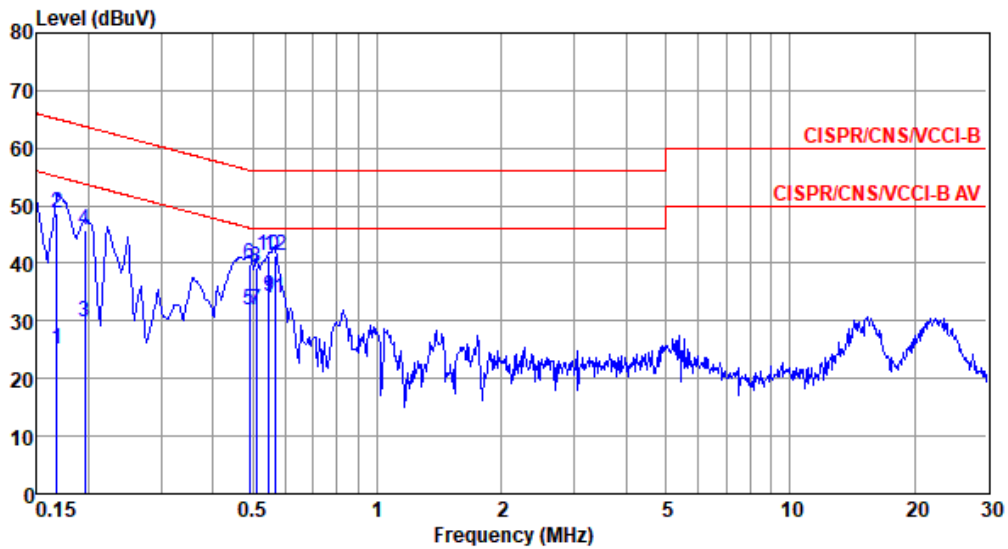




SC Module with PCB Dipole antenna

Modulation	BT-LE(1Mbps)	Test Freq. (MHz)	2480
Power Phase	Line		

Test by : Joe Liao Temperature: 22°C Humidity: 68%



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	Factor dB	Cable loss dB	Aux dB	Remark
1	0.168	25.19	55.08	-29.89	15.32	9.63	0.06	0.18	Average
2	0.168	48.75	65.08	-16.33	38.88	9.63	0.06	0.18	QP
3	0.195	29.77	53.80	-24.03	19.90	9.62	0.06	0.19	Average
4	0.195	45.69	63.80	-18.11	35.82	9.62	0.06	0.19	QP
5	0.491	31.97	46.14	-14.17	21.97	9.62	0.07	0.31	Average
6	0.491	39.96	56.14	-16.18	29.96	9.62	0.07	0.31	QP
7	0.510	32.03	46.00	-13.97	22.03	9.62	0.07	0.31	Average
8	0.510	39.33	56.00	-16.67	29.33	9.62	0.07	0.31	QP
9*	0.546	34.26	46.00	-11.74	24.25	9.62	0.08	0.31	Average
10	0.546	41.32	56.00	-14.68	31.31	9.62	0.08	0.31	QP
11	0.564	33.83	46.00	-12.17	23.82	9.62	0.08	0.31	Average
12	0.564	41.37	56.00	-14.63	31.36	9.62	0.08	0.31	QP

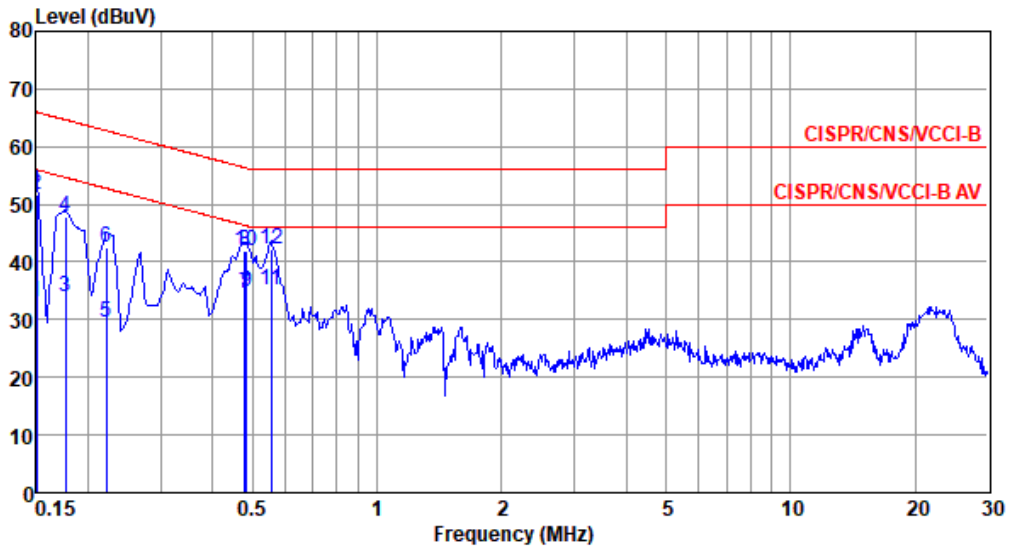
Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB) + Aux (dB).

2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).



Modulation	BT-LE(1Mbps)	Test Freq. (MHz)	2480
Power Phase	Neutral		

Test by : Joe Liao Temperature: 22°C Humidity: 68%



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	Factor dB	Cable loss dB	Aux dB	Remark
1	0.150	33.07	56.00	-22.93	23.20	9.63	0.06	0.18	Average
2	0.150	51.60	66.00	-14.40	41.73	9.63	0.06	0.18	QP
3	0.177	33.94	54.64	-20.70	24.06	9.63	0.06	0.19	Average
4	0.177	47.76	64.64	-16.88	37.88	9.63	0.06	0.19	QP
5	0.222	29.43	52.74	-23.31	19.53	9.63	0.06	0.21	Average
6	0.222	42.53	62.74	-20.21	32.63	9.63	0.06	0.21	QP
7	0.479	34.47	46.36	-11.89	24.47	9.62	0.07	0.31	Average
8	0.479	41.99	56.36	-14.37	31.99	9.62	0.07	0.31	QP
9	0.484	34.69	46.27	-11.58	24.69	9.62	0.07	0.31	Average
10	0.484	41.88	56.27	-14.39	31.88	9.62	0.07	0.31	QP
11*	0.555	35.23	46.00	-10.77	25.22	9.62	0.08	0.31	Average
12	0.555	42.27	56.00	-13.73	32.26	9.62	0.08	0.31	QP

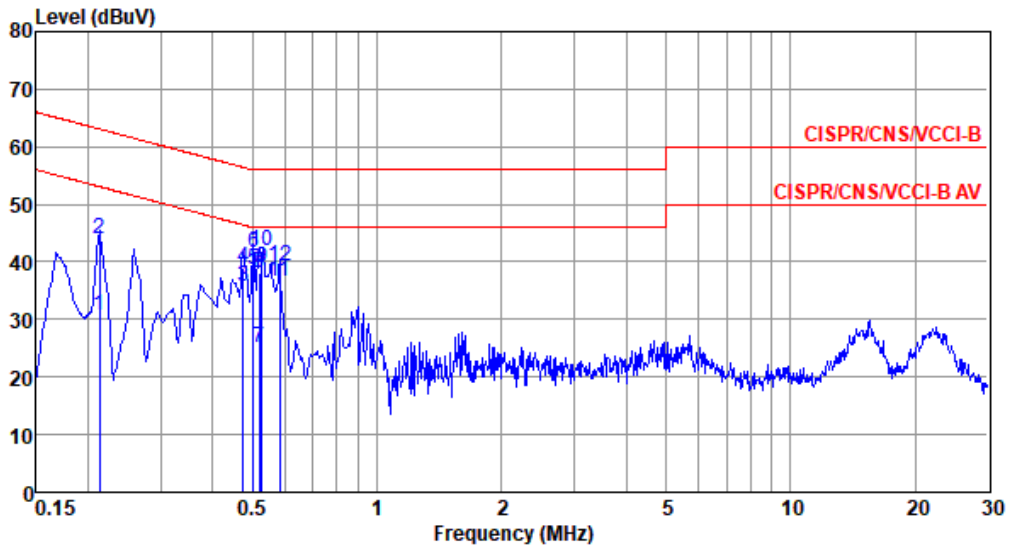
Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB) + Aux (dB).
 2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).



ST M.2, SDIO Module with PCB Dipole antenna

Modulation	BT-LE(1Mbps)	Test Freq. (MHz)	2480
Power Phase	Line		

Test by : Joe Liao Temperature: 22°C Humidity: 68%



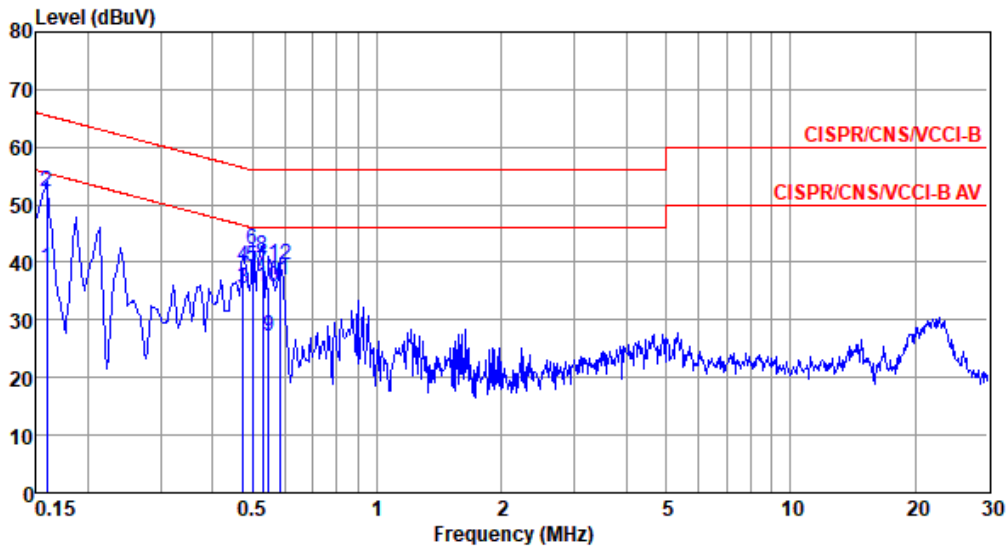
	Freq MHz	Level dBUV	Limit Line dBUV	Over Limit dB	Read Level dBUV	Factor dB	Cable loss dB	Aux dB	Remark
1	0.213	30.75	53.10	-22.35	20.87	9.62	0.06	0.20	Average
2	0.213	44.10	63.10	-19.00	34.22	9.62	0.06	0.20	QP
3	0.474	35.62	46.45	-10.83	25.62	9.62	0.07	0.31	Average
4	0.474	39.06	56.45	-17.39	29.06	9.62	0.07	0.31	QP
5	0.502	38.56	46.00	-7.44	28.56	9.62	0.07	0.31	Average
6	0.502	41.63	56.00	-14.37	31.63	9.62	0.07	0.31	QP
7	0.518	25.03	46.00	-20.97	15.03	9.62	0.07	0.31	Average
8	0.518	38.15	56.00	-17.85	28.15	9.62	0.07	0.31	QP
9*	0.527	38.95	46.00	-7.05	28.95	9.62	0.07	0.31	Average
10	0.527	42.02	56.00	-13.98	32.02	9.62	0.07	0.31	QP
11	0.582	36.63	46.00	-9.37	26.62	9.62	0.08	0.31	Average
12	0.582	39.19	56.00	-16.81	29.18	9.62	0.08	0.31	QP

Note 1: Level (dBUV) = Read Level (dBUV) + LISN Factor (dB) + Cable Loss (dB) + Aux (dB).
 2: Over Limit (dB) = Level (dBUV) – Limit Line (dBUV).



Modulation	BT-LE(1Mbps)	Test Freq. (MHz)	2480
Power Phase	Neutral		

Test by : Joe Liao Temperature: 22°C Humidity: 68%



	Freq	Level	Limit	Over	Read	Factor	Cable	Aux	Remark
	MHz	dBuV	Line	Limit	Level	dB	loss	dB	
			dBuV	dB	dBuV		dB		
1	0.159	38.91	55.52	-16.61	29.04	9.63	0.06	0.18	Average
2	0.159	52.31	65.52	-13.21	42.44	9.63	0.06	0.18	QP
3	0.474	35.41	46.45	-11.04	25.41	9.62	0.07	0.31	Average
4	0.474	39.27	56.45	-17.18	29.27	9.62	0.07	0.31	QP
5*	0.500	39.17	46.00	-6.83	29.17	9.62	0.07	0.31	Average
6	0.500	42.35	56.00	-13.65	32.35	9.62	0.07	0.31	QP
7	0.529	38.33	46.00	-7.67	28.32	9.62	0.08	0.31	Average
8	0.529	41.10	56.00	-14.90	31.09	9.62	0.08	0.31	QP
9	0.546	27.01	46.00	-18.99	17.00	9.62	0.08	0.31	Average
10	0.546	35.73	56.00	-20.27	25.72	9.62	0.08	0.31	QP
11	0.582	37.04	46.00	-8.96	27.03	9.62	0.08	0.31	Average
12	0.582	39.50	56.00	-16.50	29.49	9.62	0.08	0.31	QP

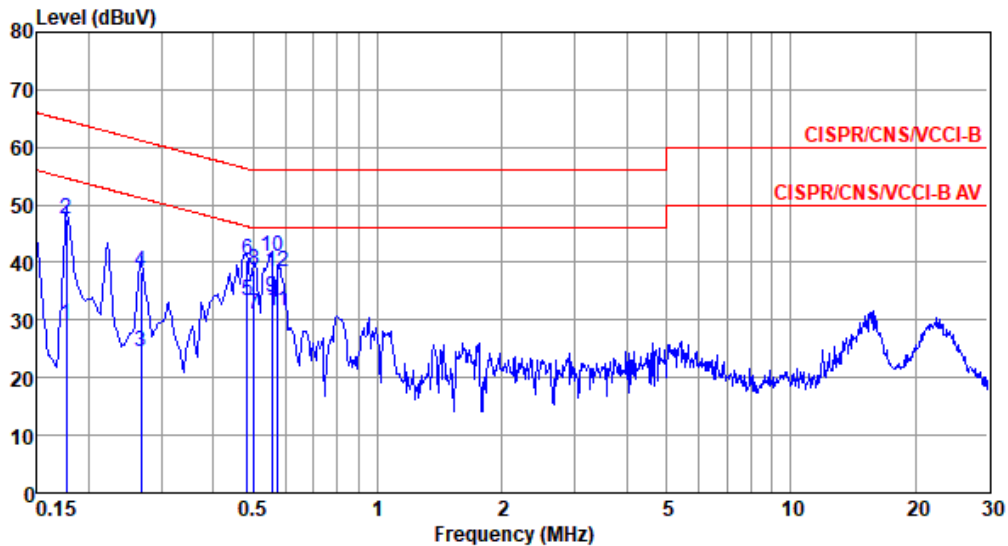
Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB) + Aux (dB).
 Note 2: Over Limit (dB) = Level (dBuV) - Limit Line (dBuV).



ST M.2, PCIe Module with PCB Dipole antenna

Modulation	BT-LE(1Mbps)	Test Freq. (MHz)	2480
Power Phase	Line		

Test by : Joe Liao Temperature: 22°C Humidity: 68%



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	Factor dB	Cable loss dB	Aux dB	Remark
1	0.177	29.31	54.64	-25.33	19.44	9.62	0.06	0.19	Average
2	0.177	47.59	64.64	-17.05	37.72	9.62	0.06	0.19	QP
3	0.267	24.63	51.20	-26.57	14.71	9.62	0.06	0.24	Average
4	0.267	38.33	61.20	-22.87	28.41	9.62	0.06	0.24	QP
5	0.484	33.23	46.27	-13.04	23.23	9.62	0.07	0.31	Average
6	0.484	40.45	56.27	-15.82	30.45	9.62	0.07	0.31	QP
7	0.502	31.04	46.00	-14.96	21.04	9.62	0.07	0.31	Average
8	0.502	38.68	56.00	-17.32	28.68	9.62	0.07	0.31	QP
9*	0.555	34.04	46.00	-11.96	24.03	9.62	0.08	0.31	Average
10	0.555	41.18	56.00	-14.82	31.17	9.62	0.08	0.31	QP
11	0.573	31.71	46.00	-14.29	21.70	9.62	0.08	0.31	Average
12	0.573	38.27	56.00	-17.73	28.26	9.62	0.08	0.31	QP

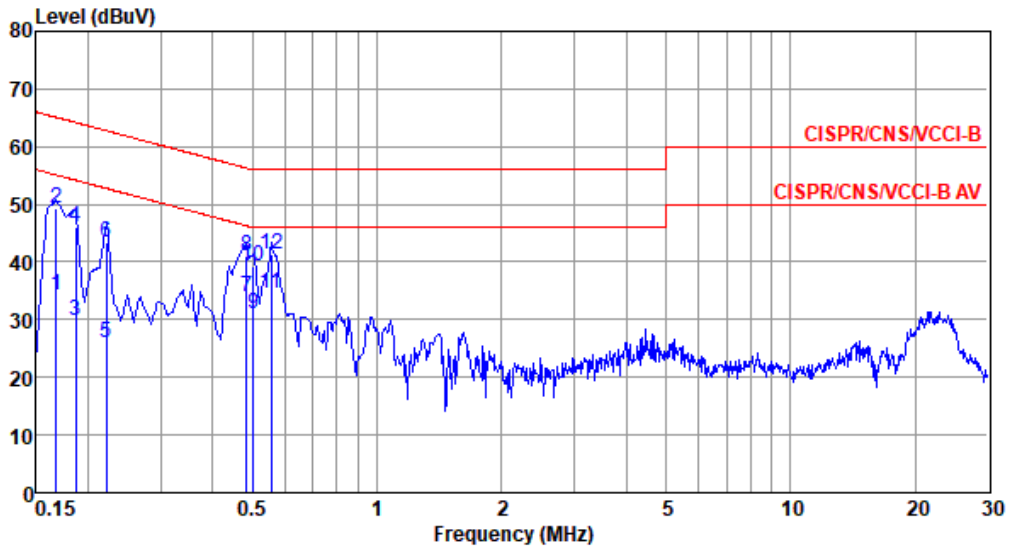
Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB) + Aux (dB).

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



Modulation	BT-LE(1Mbps)	Test Freq. (MHz)	2480
Power Phase	Neutral		

Test by : Joe Liao Temperature: 22°C Humidity: 68%



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	Factor dB	Cable loss dB	Aux dB	Remark
1	0.168	34.26	55.08	-20.82	24.39	9.63	0.06	0.18	Average
2	0.168	49.17	65.08	-15.91	39.30	9.63	0.06	0.18	QP
3	0.186	29.88	54.20	-24.32	20.00	9.63	0.06	0.19	Average
4	0.186	46.14	64.20	-18.06	36.26	9.63	0.06	0.19	QP
5	0.222	26.10	52.74	-26.64	16.20	9.63	0.06	0.21	Average
6	0.222	43.45	62.74	-19.29	33.55	9.63	0.06	0.21	QP
7	0.484	33.85	46.27	-12.42	23.85	9.62	0.07	0.31	Average
8	0.484	41.03	56.27	-15.24	31.03	9.62	0.07	0.31	QP
9	0.502	31.10	46.00	-14.90	21.10	9.62	0.07	0.31	Average
10	0.502	39.21	56.00	-16.79	29.21	9.62	0.07	0.31	QP
11*	0.555	34.51	46.00	-11.49	24.50	9.62	0.08	0.31	Average
12	0.555	41.33	56.00	-14.67	31.32	9.62	0.08	0.31	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).