FCC Test Report

FCC ID	:	**PPQ-3509R38BT**
Equipment	:	**802.11a/b/g/n 2Tx2R + BT5.0 USB WLAN Module**
Brand Name	:	**LITE-ON**
Model Name	:	**WCBN3509R(38BT)**
Applicant	:	**Lite-On Technology Corp. Bldg. C, 90, Chien 1 Road, Chung Ho, New Taipei City 23585, Taiwan, R.O.C**
Manufacturer	:	**LITE-ON TECHNOLOGY (Changzhou) CO., LTD A9 Building,No.88 Yanghu Road, Wujin Hi-Tech Industrial Development Zone , Changzhou City, Jiangsu Province 213100 China**
Standard	:	**47 CFR FCC Part 15.247**

The product was received on Oct. 24, 2019, and testing was started from Oct. 31, 2019 and completed on Nov. 27, 2019. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Allen Lin

Approved by: Allen Lin

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

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History of this test report

Report No.	Version	Description	Issued Date
FR9O2329AD	01	Initial issue of report	Dec. 25, 2019
FR9O2329AD	02	Revised typo This report is the latest version replacing for the report issued on Dec. 25, 2019	Dec. 25, 2019

Summary of Test Result

Report Clause	Ref. Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
3.2	15.247(a)	20dB Bandwidth	PASS	-
3.2	15.247(a)	Carrier Frequency Separation	PASS	-
3.3	15.247(b)	Maximum Conducted Output Power	PASS	-
3.4	15.247(a)	Number of Hopping Frequencies and Hopping Bandedge	PASS	-
3.5	15.247(a)	Time of Occupancy (Dwell Time)	PASS	-
3.6	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	-
3.7	15.247(d)	Emissions in Restricted Frequency Bands	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:
None

Reviewed by: Sam Tsai

Report Producer: Kate Lo

1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	Bluetooth Version	Ch. Frequency (MHz)	Channel Number
2400-2483.5	BR / EDR	2402-2480	0-78 [79]

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	BT-BR(1Mbps)	1	1TX
2.4-2.4835GHz	BT-EDR(2Mbps)	1	1TX
2.4-2.4835GHz	BT-EDR(3Mbps)	1	1TX

Note:
- Bluetooth BR uses a GFSK (1Mbps).
- Bluetooth EDR uses a combination of π/4-DQPSK (2Mbps) and 8DPSK (3Mbps).
- Bluetooth BR/EDR uses as a system using FHSS modulation.
- BWch is the nominal channel bandwidth.

1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector	Support	Remark
1	HONGBO	290-10569	PIFA	I-Pex	2.4G+5G	Group 1
2	HONGBO	290-10569	PIFA	I-Pex	2.4G+5G	
3	HONGBO	290-10569	PIFA	I-Pex	BT	
4	PSA	RFMTA401030IMLB702	PIFA	I-Pex	2.4G+5G	Group 2
5	PSA	RFMTA401030IMLB702	PIFA	I-Pex	2.4G+5G	
6	PSA	RFMTA401030IMLB702	PIFA	I-Pex	BT	
7	HONGBO	290-10843	PIFA	I-Pex	2.4G+5G	Group 3
8	HONGBO	290-10843	PIFA	I-Pex	2.4G+5G	
9	HONGBO	290-10843	PIFA	I-Pex	BT	
10	PSA	RFMTA401050IMLB706	PIFA	I-Pex	2.4G+5G	Group 4
11	PSA	RFMTA401050IMLB706	PIFA	I-Pex	2.4G+5G	
12	PSA	RFMTA401050IMLB706	PIFA	I-Pex	BT	

Ant.	Brand	Model Name	Antenna Type	Connector	Support	Remark
13	HONGBO	290-10844	PIFA	I-Pex	2.4G+5G	Group 5
14	HONGBO	290-10844	PIFA	I-Pex	2.4G+5G	
15	HONGBO	290-10844	PIFA	I-Pex	BT	
16	PSA	RFMTA401080IMLB704	PIFA	I-Pex	2.4G+5G	Group 6
17	PSA	RFMTA401080IMLB704	PIFA	I-Pex	2.4G+5G	
18	PSA	RFMTA401080IMLB704	PIFA	I-Pex	BT	
19	PSA	RFMTA340730IMLB305	PIFA	I-Pex	2.4G+5G	Group 7
20	PSA	RFMTA340715IMLB302	PIFA	I-Pex	2.4G+5G	
21	PSA	RFMTA340715IMLB305	PIFA	I-Pex	BT	

Ant.	Port	Gain (dBi)			Remark
		2.4G	5G	BT	
1	1	**3.74**	**3.8**	**-**	**Group 1**
2	2	**3.74**	**3.8**	**-**	
3	3	**-**	**-**	**3.74**	
4	1	3.74	3.8	-	Group 2
5	2	3.74	3.8	-	
6	3	-	-	3.74	
7	1	3.05	1.59	-	Group 3
8	2	3.05	1.59	-	
9	3	-	-	3.05	
10	1	3.05	1.59	-	Group 4
11	2	3.05	1.59	-	
12	3	-	-	3.05	
13	1	2.38	1.49	-	Group 5
14	2	2.38	1.49	-	
15	3	-	-	2.38	
16	1	1.72	1.25	-	Group 6
17	2	1.72	1.25	-	
18	3	-	-	1.72	

Ant.	Port	Gain (dBi)			Remark
		2.4G	5G	BT	
19	1	-0.5	3.28	-	Group 7
20	2	-1.68	3.08	-	
21	3	-	-	-0.5	

Note 1: The EUT has twenty one antennas.
Note 2: EUT can match with above antennas for using. Group 1 was used to perform the worst configuration and result of that was recorded as the final test result.

For 2.4GHz function:
For IEEE 802.11 b/g/n mode (2TX/2RX)
Port 1 and Port 2 could transmit/receive simultaneously.
For BT function:
For IEEE 802.15.1 Bluetooth mode (1TX/1RX)
Port 3 could transmit/receive.
For 5GHz function:
For IEEE 802.11 a/n mode (2TX/2RX)
Port 1 and Port 2 could transmit/receive simultaneously.

1.1.3 EUT Information

Operational Condition				
EUT Power Type	From host system(NB)			
EUT Function	☒	Point-to-multipoint	☐	Point-to-point
AFH Function	☒	Non-AFH	☒	AFH

Note.
Non-AFH: DH5 Packet permit maximum 1600/ 79 / 6 = 3.37 hops per second in each channel (5 time slots RX, 1 time slot TX). So, the dwell time is the time duration of the pulse times 3.37 x 1.185 = 4 within 1.185 seconds.
AFH: DH5 Packet permit maximum 800/ 20 / 6 = 6.67 hops per second in each channel (5 time slots RX, 1 time slot TX). So, the dwell time is the time duration of the pulse times 13.33 x 8 = 106.6 within 8 seconds.

Under the above conditions, Non-AFH Mode configuration was found to be the worst case and measured during the test.

Type of EUT		
☒	Stand-alone	
☐	Combined (EUT where the radio part is fully integrated within another device)	
	Combined Equipment - Brand Name / Model No.:	…
☐	Plug-in radio (EUT intended for a variety of host systems)	
	Host System - Brand Name / Model No.:	…
☐	Other:	

1.1.4 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
BT-BR(1Mbps)	0.575	2.4	2.876m	1k
BT-EDR(2Mbps)	0.576	2.4	2.88m	1k
BT-EDR(3Mbps)	0.577	2.39	2.883m	1k

Note. If DC < 0.98, the DCF was added while measuring Output power and PSD.

1.2 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR FCC Part 15
- KDB 558074 D01 v05r02
- ANSI C63.10-2013
- KDB 414788 D01 v01r01

1.3 Testing Location Information

Testing Location			
☒	HWA YA	ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)	
		TEL : 886-3-327-3456	FAX : 886-3-327-0973
Test site Designation No. TW1190 with FCC.			
☐	JHUBEI	ADD : No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County, Taiwan (R.O.C.)	
		TEL : 886-3-656-9065	FAX : 886-3-656-9085
Test site Designation No. TW0006 with FCC.			

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH06-HY	Tim	23~25°C / 61~67%	03/Nov/2019~ 20/Nov/2019
Radiated	03CH03-HY	Justin	18.7~24.3°C / 53.8~61.2%	31/Oct/2019~ 20/Nov/2019
AC Conduction	CO04-HY	Edward	20.9~22.1°C / 60.4~64.2%	04/Nov/2019~ 27/Nov/2019

1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.54 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	1.6 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.9 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.3 dB	Confidence levels of 95%
Temperature	0.7 °C	Confidence levels of 95%
Humidity	4 %	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Condition

RF Conducted	Abbreviation	Remark
TnomVnom	Tnom	20°C
-	Vnom	5V

2.2 Test Channel Mode

Test Software Version	WCN_Combo_Tool 1747

Mode	PowerSetting
BT-BR(1Mbps)	-
2402MHz	7
2441MHz	7
2480MHz	7
BT-EDR(2Mbps)	-
2402MHz	7
2441MHz	7
2480MHz	7
BT-EDR(3Mbps)	-
2402MHz	7
2441MHz	7
2480MHz	7

2.3 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral
Operating Mode	CTX
1	USB mode

The Worst Case Mode for Following Conformance Tests	
Tests Item	20dB Bandwidth Carrier Frequency Separation Maximum Conducted Output Power Number of Hopping Frequencies Hopping Bandedge Time of Occupancy (Dwell Time) Emissions in Non-restricted Frequency Bands
Test Condition	Conducted measurement at transmit chains

The Worst Case Mode for Following Conformance Tests			
Tests Item	Emissions in Restricted Frequency Bands		
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.		
Operating Mode < 1GHz	CTX		
1	USB mode		
Operating Mode > 1GHz	CTX		
Orthogonal Planes of EUT	**X Plane**	**Y Plane**	**Z Plane**
			
Worst Planes of EUT			V

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis
Operating Mode	CTX
1	WLAN 2.4GHz+Bluetooth
2	WLAN 5GHz+Bluetooth
Refer to Sporton Test Report No.: FA9O2329 for Co-location RF Exposure Evaluation.	

2.4 Support Equipment

Support Equipment – RF Conducted				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	Notebook	DELL	E5410	DoC
2	Adapter for NB	DELL	HA65NM130	DoC
3	Fixture	LITE-ON	TB001	-

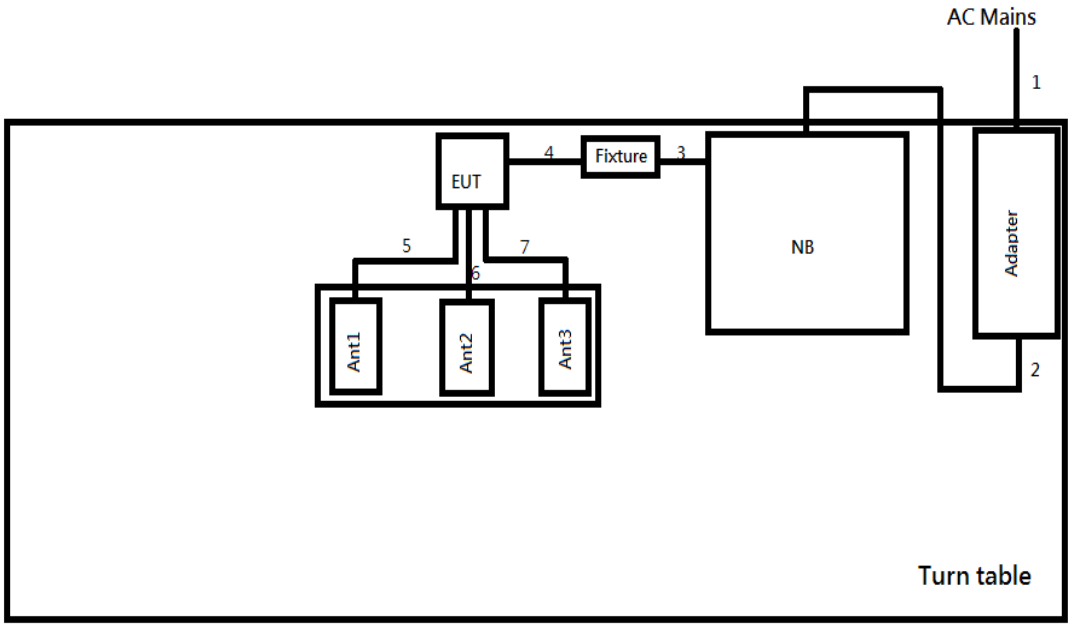
Note: Support equipment No.3 was provided by customer.

Support Equipment –AC Conduction and Radiated Emission				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	Notebook	DELL	E4300	-
2	Adapter	DELL	LA90PM111	-
3	Fixture	LITE-ON	TB001	-

Note: Support equipment No.3 was provided by customer.

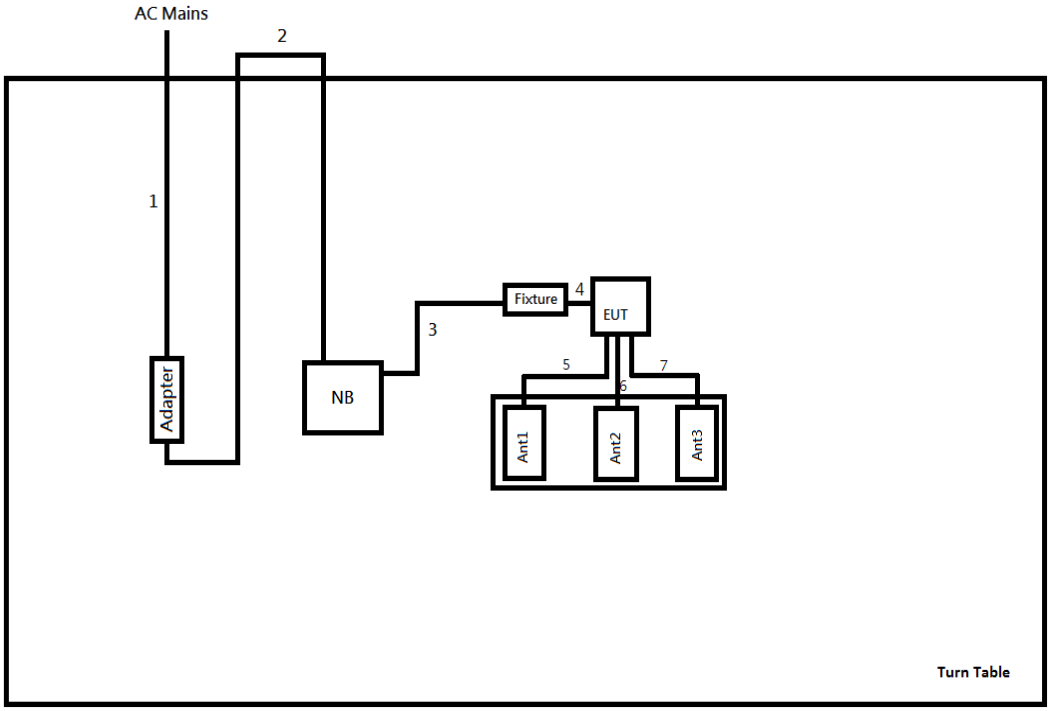
2.5 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



Item	Connection	Shielded	Length(m)	Remark
1	AC Power Cable	No	1.8	-
2	DC Power Cable	No	2.0	-
3	USB Cable	No	0.1	-
4	DATA Cable	No	0.05	-
5	RF cable	No	0.3	-
6	RF cable	No	0.3	-
7	RF cable	No	0.3	-

Test Setup Diagram - Radiated Test



Item	Connection	Shielded	Length(m)	Remark
1	AC Power Cable	No	1.8	-
2	DC Power Cable	No	2.0	-
3	USB Cable	No	0.1	-
4	Fixture Cable	No	0.05	-
5	Antenna cable	No	0.3	-
6	Antenna cable	No	0.3	-
7	Antenna cable	No	0.3	-

3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line 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.		

3.1.2 Measuring Instruments

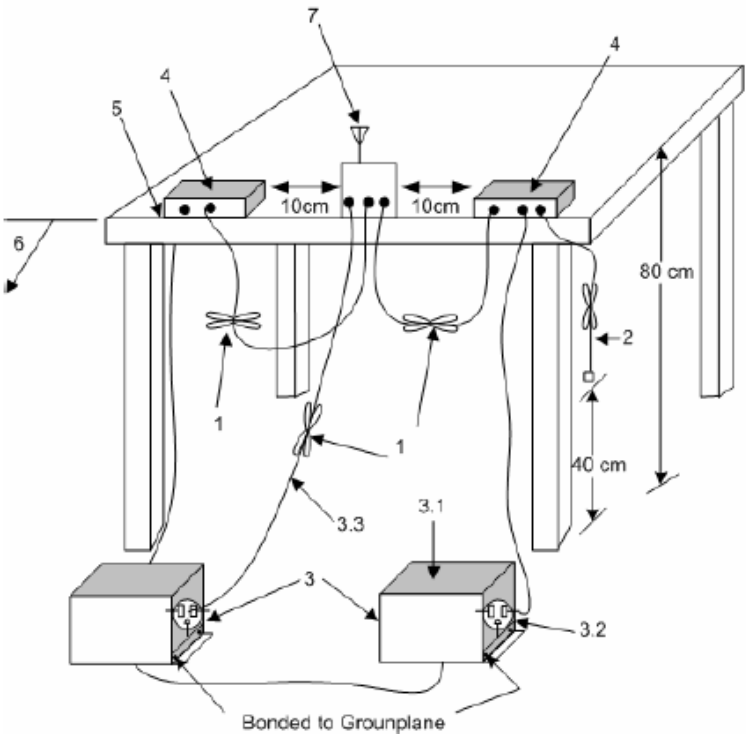
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

Test Method
▪ Refer as ANSI C63.10-2013, clause 6.2 foray power-line conducted emissions.

3.1.4 Test Setup

AC Power-line Conducted Emissions



1—Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 cm to 40 cm long.
2—The I/O cables that are not connected to an accessory shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
3—EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50Ω loads. LISN may be placed on top of, or immediately beneath, reference ground plane.
3.1—All other equipment powered from additional LISN(s).
3.2—A multiple-outlet strip may be used for multiple power cords of non-EUT equipment.
3.3—LISN at least 80 cm from nearest part of EUT chassis.
4—Non-EUT components of EUT system being tested.
5—Rear of EUT, including peripherals, shall all be aligned and flush with edge of tabletop.
6—Edge of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.
7—Antenna can be integral or detachable. If detachable, then the antenna shall be attached for this test.

3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 20dB Bandwidth and Carrier Frequency Separation

3.2.1 20dB Bandwidth and Carrier Frequency Separation Limit

20dB Bandwidth and Carrier Frequency Separation Limit for Frequency Hopping Systems	
▪ 2400-2483.5 MHz Band:	
	▪ N ≥75 and ChS ≥ MAX (20 dB bandwidth, 25 kHz).
	▪ 75>N ≥ 15 and ChS ≥ MAX (20 dB bandwidth 2/3,25 kHz).
N:Number of Hopping Frequencies; **ChS**: Hopping Channel Separation	

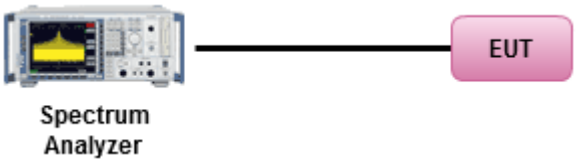
3.2.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

Test Method
▪ Refer as ANSI C63.10-2013, clause 6.9.2 for 20 dB bandwidth measurement.
▪ Refer as ANSI C63.10-2013, clause 7.8.2 for carrier frequency separation measurement.

3.2.4 Test Setup

20dB Bandwidth and Carrier Frequency Separation


3.2.5 Test Result of 20dB Bandwidth

Refer as Appendix B

3.2.6 Test Result of Carrier Frequency Separation

Refer as Appendix B

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
▪ 2400-2483.5 MHz Band:	
	▪ N ≥ 75; Power 30dBm; EIRP 36dBm
	▪ 75 >N ≥ 15; Power 21dBm; EIRP 27dBm
N:Number of Hopping Frequencies	

3.3.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedures

Test Method
▪ Refer as ANSI C63.10-2013, clause 7.8.5 for output power measurement.

3.3.4 Test Setup

Maximum Conducted Output Power (Peak Power Meter)


3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

3.4 Number of Hopping Frequencies and Hopping Bandedge

3.4.1 Number of Hopping Frequencies Limit

Number of Hopping Frequencies Limit	
▪ 2400-2483.5 MHz Band:	
	▪ N ≥ 75 and ChS ≥ MAX (20 dB bandwidth, 25 kHz).
	▪ 75 >N ≥ 15 and ChS ≥ MAX (20 dB bandwidth 2/3,25 kHz).
N:Number of Hopping Frequencies; **ChS** : Hopping Channel Separation	

3.4.2 Hopping Bandedge Limit

Refer clause 3.6.1 and clause 3.7.1

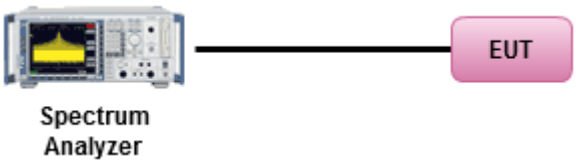
3.4.3 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.4.4 Test Procedures

Test Method
▪ Refer as ANSI C63.10-2013, clause 7.8.3 for number of hopping frequencies measurement.
▪ Refer as ANSI C63.10-2013, clause 7.8.6 for hopping frequencies Bandedge measurement.

3.4.5 Test Setup

Number of Hopping Frequencies and Hopping Frequencies Bandedge


3.4.6 Test Result of Number of Hopping Frequencies

Refer as Appendix D

3.4.7 Test Result of Number of Hopping Frequencies Bandedge

Refer as Appendix D

3.5 Time of Occupancy (Dwell Time)

3.5.1 Time of Occupancy (Dwell Time) Limit

Time of Occupancy (Dwell Time) Limit for Frequency Hopping Systems	
▪ 2400-2483.5 MHz Band:	
	▪ N ≥ 75; 0.4s in N x 0.4 period
	▪ 75 >N ≥ 15; 0.4s in N x 0.4 period
N:Number of Hopping Frequencies	

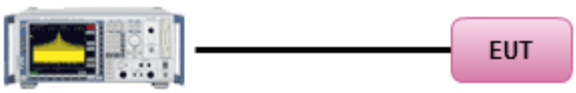
3.5.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

Test Method	
▪ Refer as ANSI C63.10-2013, clause 7.8.4 for dwell time measurement.	
▪ Bluetooth ACL packets can be 1, 3, or 5 time slots. Following as dwell time. Operate DH5 at maximum dwell time and maximum duty cycle.	
	▪ The DH5 packet can cover up to 5 time slots. Operate DH5 at maximum dwell time and maximum duty cycle. A maximum length packet has duration of 5 time slots. The hopping rate is 1600 hops/second so the maximum dwell time is 5/1600 seconds, or 3.125ms.DH5 Packet permit maximum 1600/ 79 / 6 = 3.37 hops per second in each channel.

3.5.4 Test Setup

Time of Occupancy (Dwell Time)
 Spectrum Analyzer

3.5.5 Test Result of Time of Occupancy (Dwell Time)

Refer as Appendix E

3.6 Emissions in Non-restricted Frequency Bands

3.6.1 Emissions in Non-restricted Frequency Bands Limit

Un-restricted Band Emissions Limit	
RF output power procedure	**Limit (dB)**
Peak output power procedure	20
Note 1: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level.	

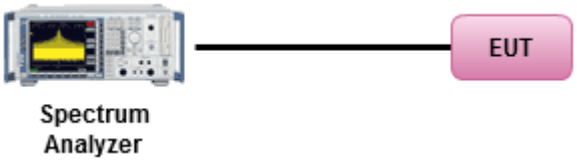
3.6.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.6.3 Test Procedures

Test Method
▪ Refer as ANSI C63.10-2013, clause 7.8.8 for unwanted emissions into non-restricted bands.

3.6.4 Test Setup

Emissions in Non-restricted Frequency Bands


3.6.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix F

3.7 Emissions in Restricted Frequency Bands

3.7.1 Emissions in Restricted Frequency Bands Limit

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: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB / decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

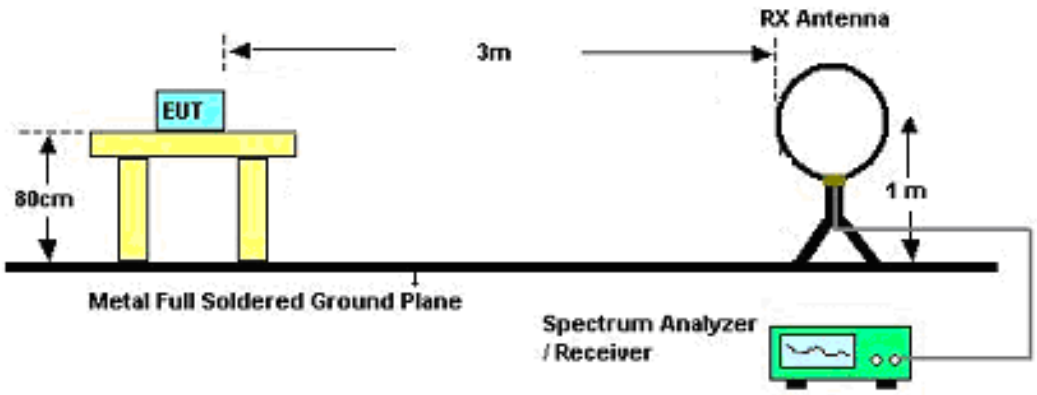
3.7.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

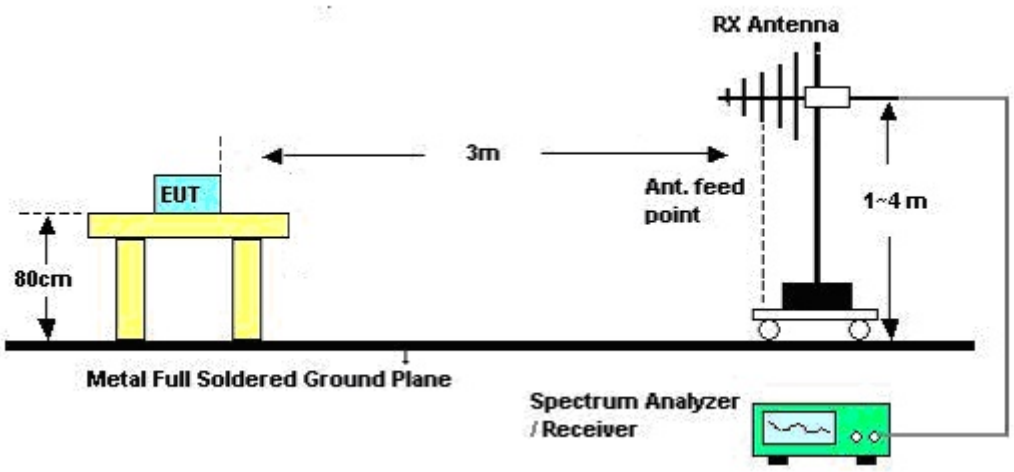
3.7.3 Test Procedures

Test Method	
▪ The average emission levels shall be measured in [hopping duty factor].	
▪ Refer as ANSI C63.10; clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.	
▪ For the transmitter unwanted emissions shall be measured using following options below:	
	▪ Refer as ANSI C63.10, clause 4.1.4.2.1 QP value.
	▪ Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak.
	▪ Refer as ANSI C63.10, clause 4.1.4.2.4 average value of hopping pulsed emissions.
▪ KDB 414788 Open-Field Test Sites and Chamber Correlation Justification.	
	▪ Based on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in regulations; however, an attempt should be made to avoid making measurements in the near field.
	▪ Open-field site and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

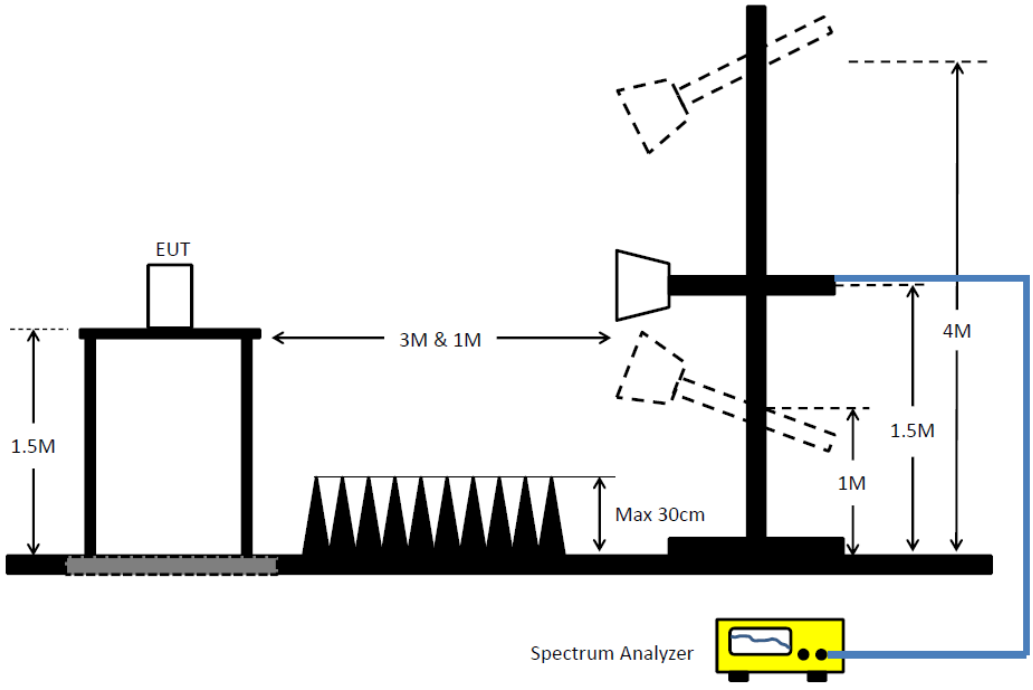
3.7.4 Test Setup

Emissions in Restricted Frequency Bands
9kHz ~30MHz


30MHz~1GHz



Above 1GHz



3.7.5 Test Result of Emissions in Restricted Frequency Bands (Below 30MHz)

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

3.7.6 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix G

4 Test Equipment and Calibration Data

Instrument for AC Conduction

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
EMC Receiver	R&S	ESR3	102052	9kHz~3.6GHz	09/Apr/2019	08/Apr/2020
LISN	R&S	ENV216	101295	9kHz~30MHz	08/Nov/2018	07/Nov/2019
LISN	R&S	ENV216	101295	9kHz ~ 30MHz	04/Nov/2019	05/Nov/2020
RF Cable-CON	MTJ	RG142	CB002-CO	9kHz~200MHz	12/Sep/2019	11/Sep/2020
AC POWER	APC	AFC-11005G	F310050055	47Hz~63Hz 5~300V	NCR	NCR
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9kHz~30MHz	24/Sep/2019	23/Sep/2020

NCR : Non-Calibration Require

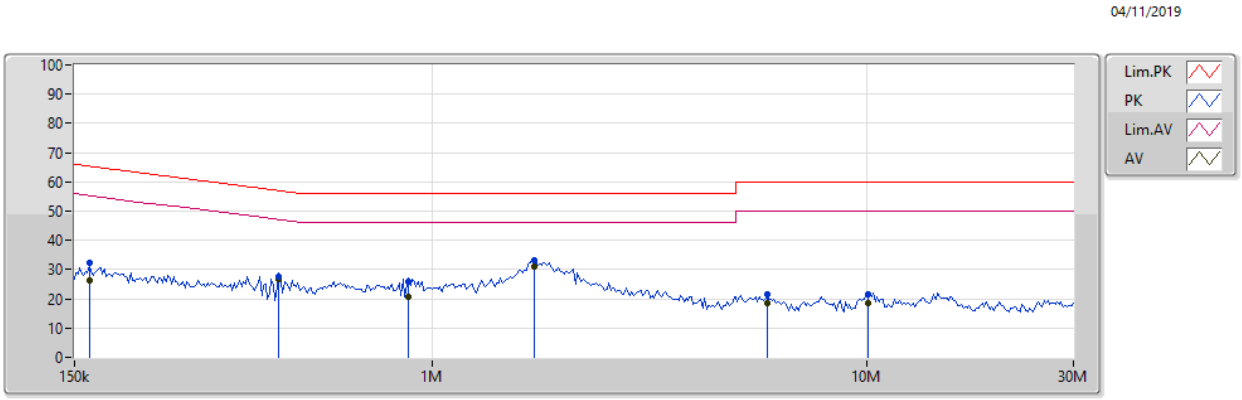
Instrument for Radiated Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30MHz ~ 1GHz 3m	30/Aug/2019	29/Aug/2020
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	1GHz ~ 18GHz 3m	30/Aug/2019	29/Aug/2020
Amplifier	HP	8447D	2944A08033	10kHz ~ 1.3GHz	22/Apr/2019	21/Apr/2020
EMI Test Receiver	R&S	ESR3	102052	9kHz ~ 3.6GHz	09/Apr/2019	08/Apr/2020
Bilog Antenna & 5db Attenuator	SCHAFFNER/MTJ	CBL6112D / MTJ6102-05	2678 / 001	30MHz ~ 2GHz	06/Jul/2019	05/Jul/2020
Microwave System Preamplifier	KEYSIGHT	83017A	MY53270196	1GHz ~ 26.5GHz	09/Sep/2019	08/Sep/2020
Signal Analyzer	R&S	FSV40	101500	10Hz ~ 40GHz	15/Aug/2019	14/Aug/2020
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz ~ 1GHz	22/Mar/2019	21/Mar/2020
RF CABLE 6m	HUBER+SUHNER	SUOFLEX 104	SN 805801/4	1GHz ~ 40GHz	21/Mar/2019	20/Mar/2020
RF CABLE	HUBER+SUHNER	SUOFLEX 104	802378/4	1 GHz ~ 18 GHz	04/Jul/2019	03/Jul/2020
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170 339	18GHz ~ 40GHz	19/Apr/2019	18/Apr/2020
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1531	1GHz ~ 18GHz	09/Mar/2019	08/Mar/2020
Preamplifier	MITEQ	TTA1840-35-HG	1864481	18GHz ~ 40GHz	05/Aug/2019	04/Aug/2020

Instrument for Conducted Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Signal Analyzer	R&S	FSV 40	101029	10KHz~40GHz	01/Oct/2019	30/Sep/2020
SMB100A Signal Generator	R&S	SMB100A03	181147	100kHz~40GHz	12/Nov/2018	10/Nov/2020
Pulse Power Sensor	Anritsu	MA2411B	1027452	300MHz~40GHz	14/Mar/2019	13/Mar/2020
Power Meter	Anritsu	ML2495A	1124009	300MHz~40GHz	14/Mar/2019	13/Mar/2020
CABLE 0.2m	HUBER	MY37960/4	RF Cable - 17	30MHz~18G	10/Jan/2019	09/Jan/2020
CABLE 0.2m	HUBER	MY37960/4	RF Cable - 17	30MHz~18G	10/Jan/2019	09/Jan/2020
CABLE 0.5m	HUBER	MY37963/4	RF Cable - 22	30MHz~18G	10/Jan/2019	09/Jan/2020

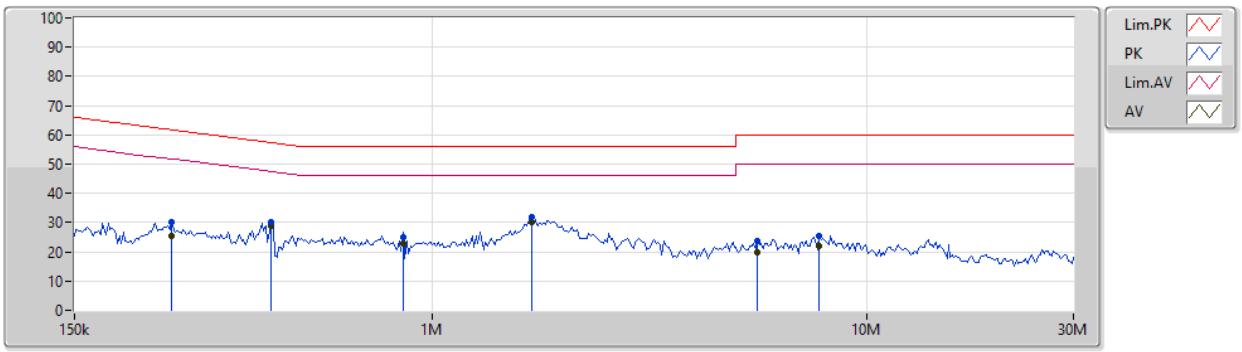
AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Neutral
Operating Function	USB Mode		



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	162.429k	32.14	65.33	-33.19	19.48	Neutral	-	12.66	9.60	0.01	9.87
AV	162.429k	26.38	55.33	-28.95	19.48	Neutral	-	6.90	9.60	0.01	9.87
QP	443.732k	27.64	56.99	-29.35	19.48	Neutral	-	8.16	9.59	0.01	9.88
AV	443.732k	26.78	46.99	-20.21	19.48	Neutral	-	7.30	9.59	0.01	9.88
QP	881.649k	25.89	56.00	-30.11	19.49	Neutral	-	6.40	9.59	0.02	9.88
AV	881.649k	20.78	46.00	-25.22	19.49	Neutral	-	1.29	9.59	0.02	9.88
QP	1.717M	33.03	56.00	-22.97	19.53	Neutral	-	13.50	9.61	0.03	9.89
AV	1.717M	31.06	46.00	-14.94	19.53	Neutral	"Worst"	11.53	9.61	0.03	9.89
QP	5.898M	21.37	60.00	-38.63	19.58	Neutral	-	1.79	9.64	0.05	9.89
AV	5.898M	18.56	50.00	-31.44	19.58	Neutral	-	-1.02	9.64	0.05	9.89
QP	10.093M	21.75	60.00	-38.25	19.63	Neutral	-	2.12	9.67	0.07	9.89
AV	10.093M	18.64	50.00	-31.36	19.63	Neutral	-	-0.99	9.67	0.07	9.89

AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Line
Operating Function	USB Mode		

04/11/2019



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	251.653k	30.05	61.70	-31.65	19.48	Line	-	10.57	9.60	0.01	9.87
AV	251.653k	25.60	51.70	-26.10	19.48	Line	-	6.12	9.60	0.01	9.87
QP	426.418k	30.32	57.32	-27.00	19.48	Line	-	10.84	9.59	0.01	9.88
AV	426.418k	28.99	47.32	-18.33	19.48	Line	-	9.51	9.59	0.01	9.88
QP	855.72k	24.80	56.00	-31.20	19.50	Line	-	5.30	9.60	0.02	9.88
AV	855.72k	23.00	46.00	-23.00	19.50	Line	-	3.50	9.60	0.02	9.88
QP	1.7M	31.94	56.00	-24.06	19.54	Line	-	12.40	9.62	0.03	9.89
AV	1.7M	30.15	46.00	-15.85	19.54	Line	"Worst"	10.61	9.62	0.03	9.89
QP	5.611M	23.92	60.00	-36.08	19.58	Line	-	4.34	9.64	0.05	9.89
AV	5.611M	20.03	50.00	-29.97	19.58	Line	-	0.45	9.64	0.05	9.89
QP	7.792M	25.58	60.00	-34.42	19.61	Line	-	5.97	9.66	0.06	9.89
AV	7.792M	22.06	50.00	-27.94	19.61	Line	-	2.45	9.66	0.06	9.89

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
BT-BR(1Mbps)	921.25k	879.56k	880KF1D	915k	879.56k
BT-EDR(2Mbps)	1.284M	1.183M	1M18G1D	1.26M	1.182M
BT-EDR(3Mbps)	1.265M	1.188M	1M19G1D	1.264M	1.186M

Max-N dB = Maximum 20dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;
Min-N dB = Minimum 20dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

Result

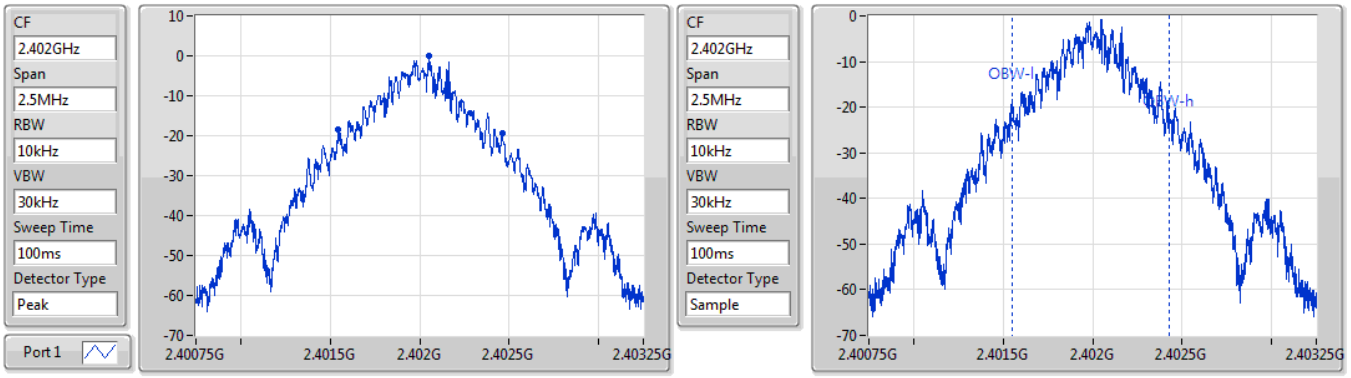
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-BR(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	Inf	915k	879.56k
2441MHz_TnomVnom	Pass	Inf	918.75k	879.56k
2480MHz_TnomVnom	Pass	Inf	921.25k	879.56k
BT-EDR(2Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	Inf	1.26M	1.182M
2441MHz_TnomVnom	Pass	Inf	1.28M	1.183M
2480MHz_TnomVnom	Pass	Inf	1.284M	1.182M
BT-EDR(3Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	Inf	1.264M	1.186M
2441MHz_TnomVnom	Pass	Inf	1.264M	1.188M
2480MHz_TnomVnom	Pass	Inf	1.265M	1.188M

Port X-N dB = Port **X** 20dB down bandwidth; **Port X-OBW** = Port **X** 99% occupied bandwidth;

BT-BR(1Mbps) **EBW**

2402MHz

04/11/2019

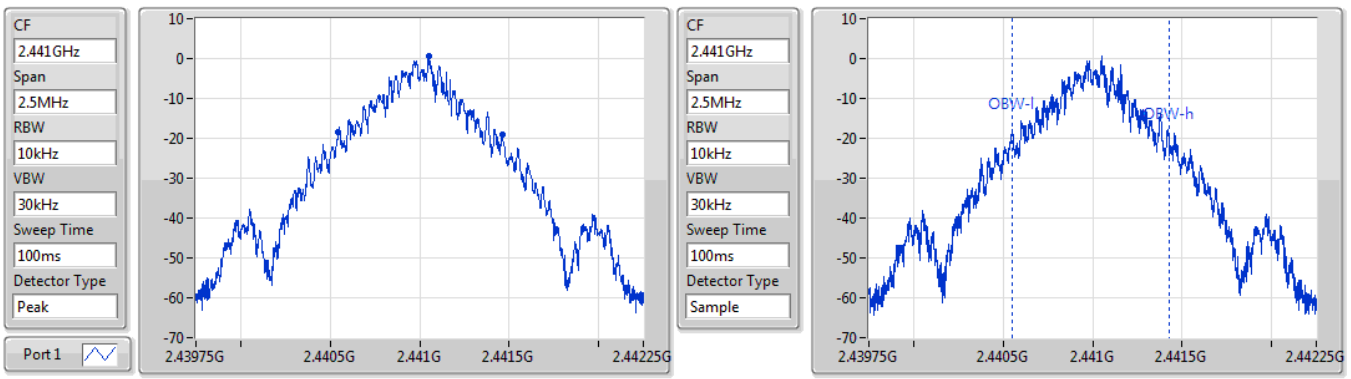


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
915k	2.401546G	2.402461G	879.56k	2.401551G	2.402431G	Inf	1

BT-BR(1Mbps) **EBW**

2441MHz

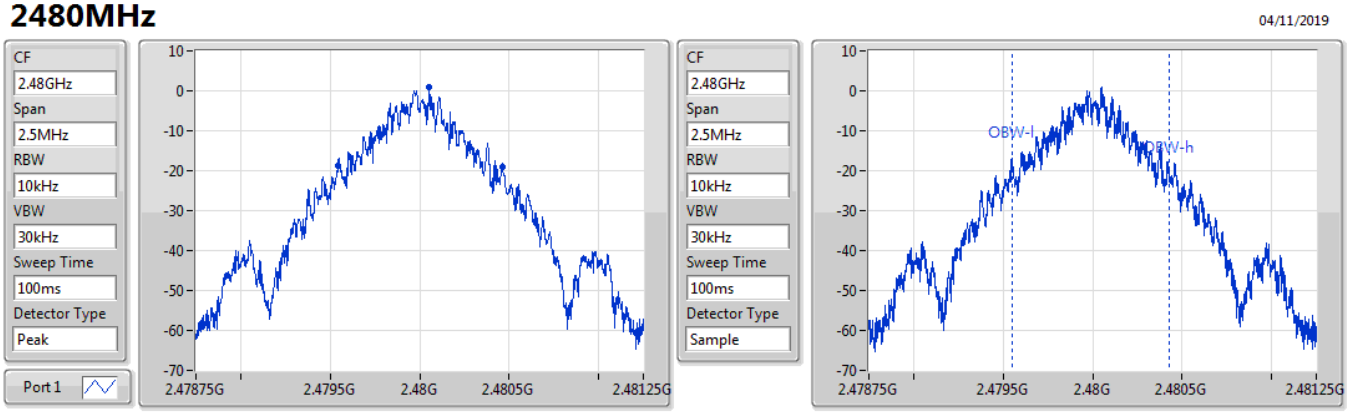
04/11/2019



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
918.75k	2.440545G	2.441464G	879.56k	2.440551G	2.441431G	Inf	1

BT-BR(1Mbps) EBW

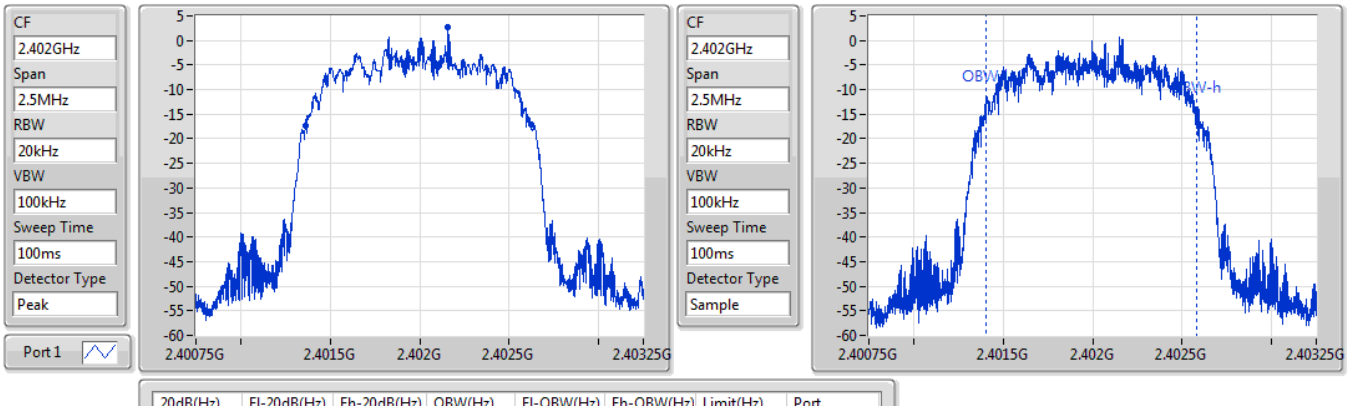
2480MHz



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
921.25k	2.479544G	2.480465G	879.56k	2.47955G	2.48043G	Inf	1

BT-EDR(2Mbps) EBW

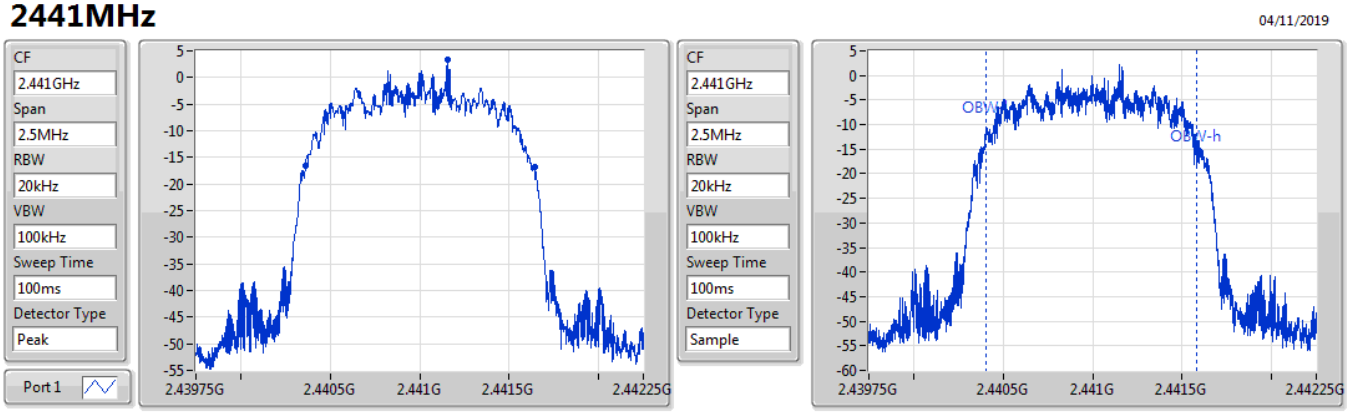
2402MHz



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.26M	2.401363G	2.402623G	1.182M	2.401403G	2.402585G	Inf	1

BT-EDR(2Mbps) EBW

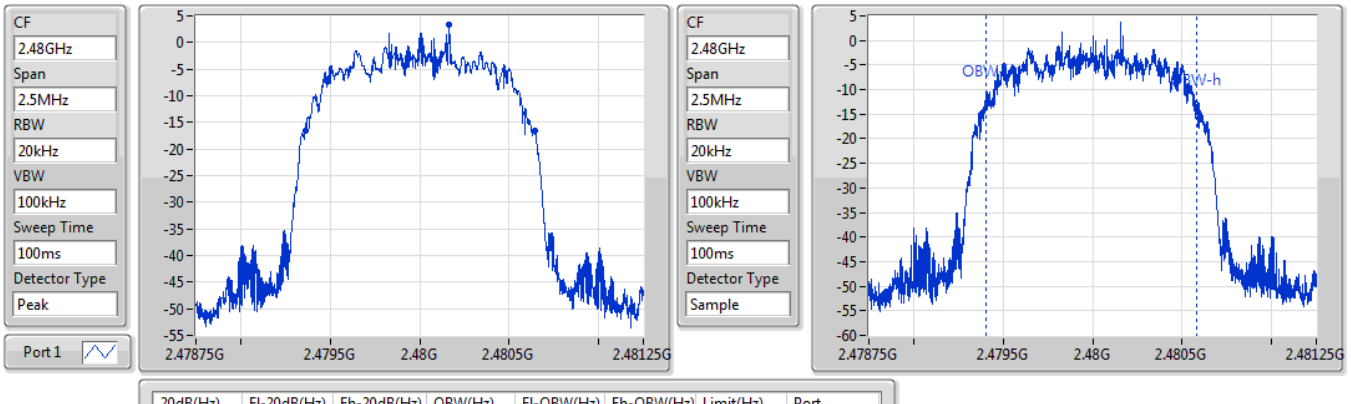
2441MHz



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.28M	2.440363G	2.441643G	1.183M	2.440402G	2.441585G	Inf	1

BT-EDR(2Mbps) EBW

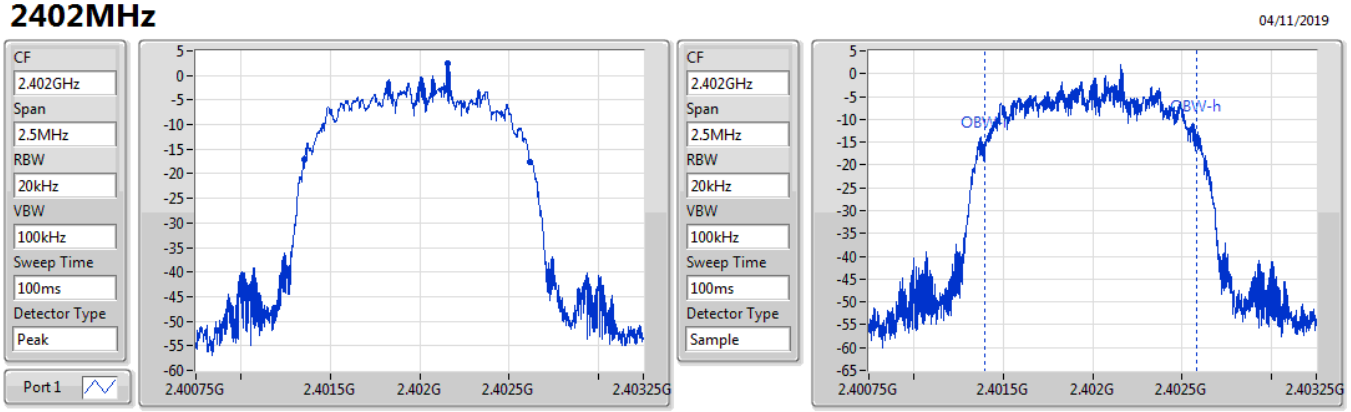
2480MHz



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.284M	2.479361G	2.480645G	1.182M	2.479402G	2.480583G	Inf	1

BT-EDR(3Mbps) EBW

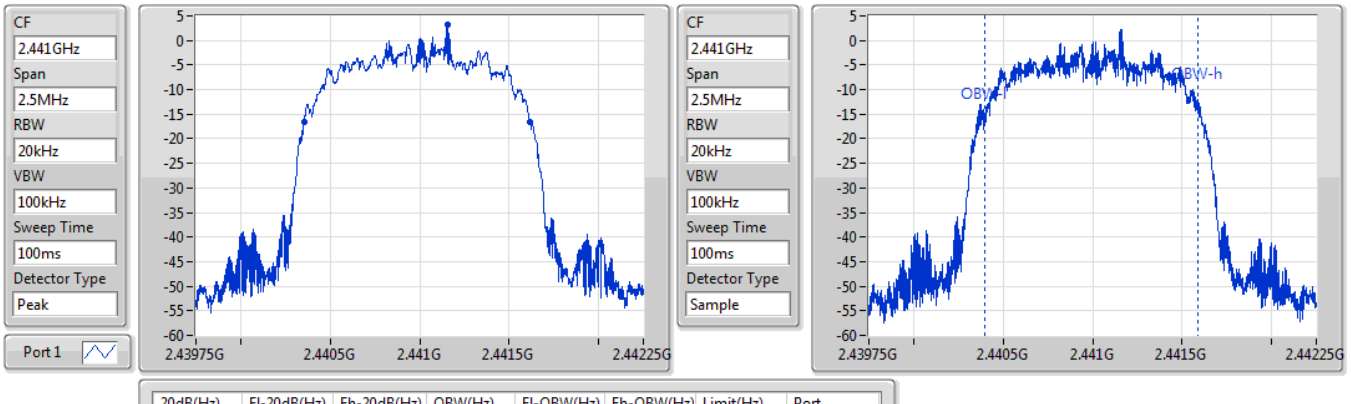
2402MHz



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.264M	2.401354G	2.402618G	1.186M	2.401399G	2.402585G	Inf	1

BT-EDR(3Mbps) EBW

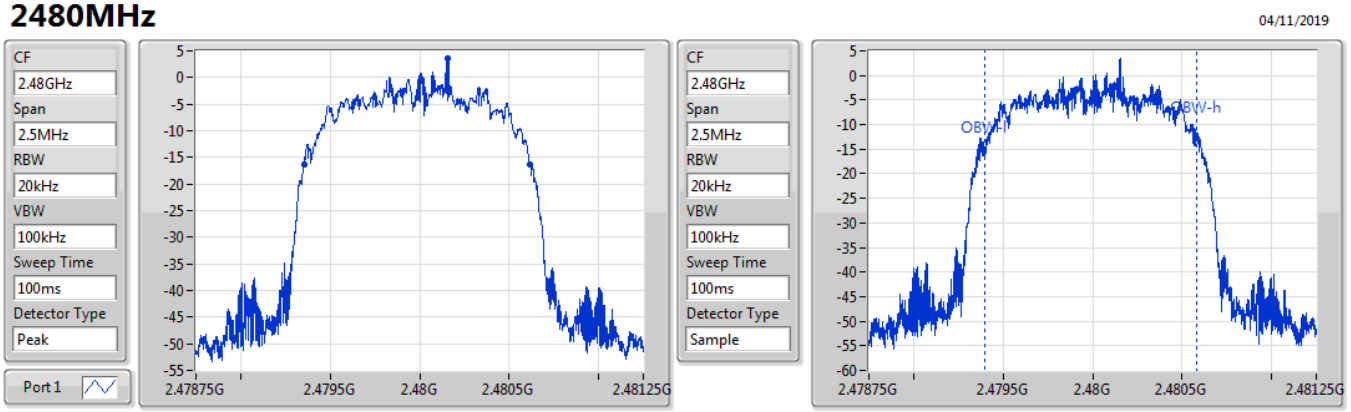
2441MHz



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.264M	2.440353G	2.441616G	1.188M	2.440398G	2.441586G	Inf	1

BT-EDR(3Mbps) **EBW**

2480MHz



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.265M	2.479353G	2.480618G	1.188M	2.479397G	2.480585G	Inf	1

Summary

Mode	Max-Space (Hz)	Min-Space (Hz)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	1.002M	999k
BT-EDR(2Mbps)	1.002M	1.002M
BT-EDR(3Mbps)	1.002M	999k

Result

Mode	Result	Fl (Hz)	Fh (Hz)	Ch.Space (Hz)	Limit (Hz)
BT-BR(1Mbps)	-	-	-	-	-
2402MHz_TnomVnom	Pass	2.402155G	2.403157G	1.002M	609.39k
2441MHz_TnomVnom	Pass	2.441157G	2.442156G	999k	611.8875k
2480MHz_TnomVnom	Pass	2.479155G	2.480156G	1.0005M	613.5525k
BT-EDR(2Mbps)	-	-	-	-	-
2402MHz_TnomVnom	Pass	2.402157G	2.403159G	1.002M	839.16k
2441MHz_TnomVnom	Pass	2.441157G	2.442159G	1.002M	852.48k
2480MHz_TnomVnom	Pass	2.479155G	2.480157G	1.002M	855.144k
BT-EDR(3Mbps)	-	-	-	-	-
2402MHz_TnomVnom	Pass	2.402157G	2.403156G	999k	841.824k
2441MHz_TnomVnom	Pass	2.441155G	2.442157G	1.002M	841.824k
2480MHz_TnomVnom	Pass	2.479155G	2.480157G	1.002M	842.49k

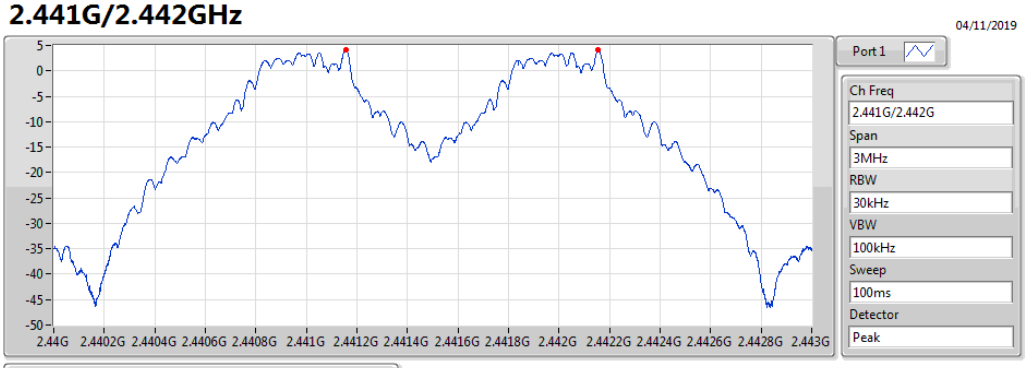
BT-BR(1Mbps) **Channel Separation**

2.402G/2.403GHz

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.402155G	2.403157G	1.002M	609.39k

BT-BR(1Mbps) **Channel Separation**

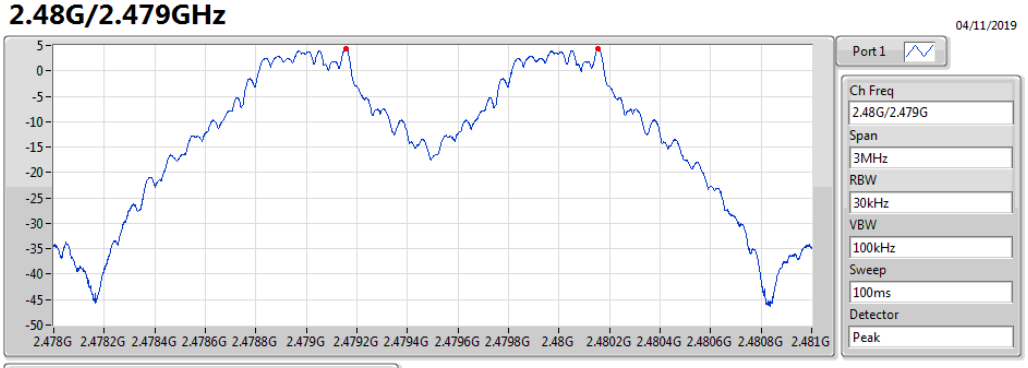
2.441G/2.442GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.441157G	2.442156G	999k	611.8875k

BT-BR(1Mbps) **Channel Separation**

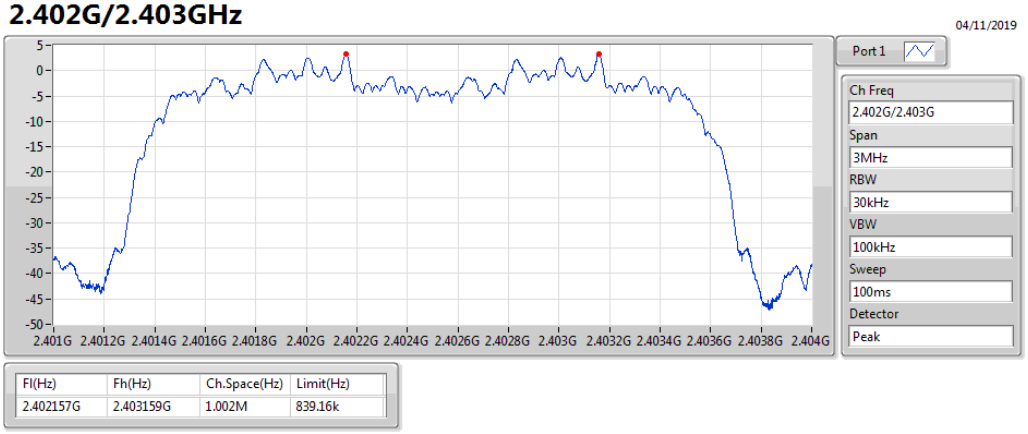
2.48G/2.479GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.479155G	2.480156G	1.0005M	613.5525k

BT-EDR(2Mbps) **Channel Separation**

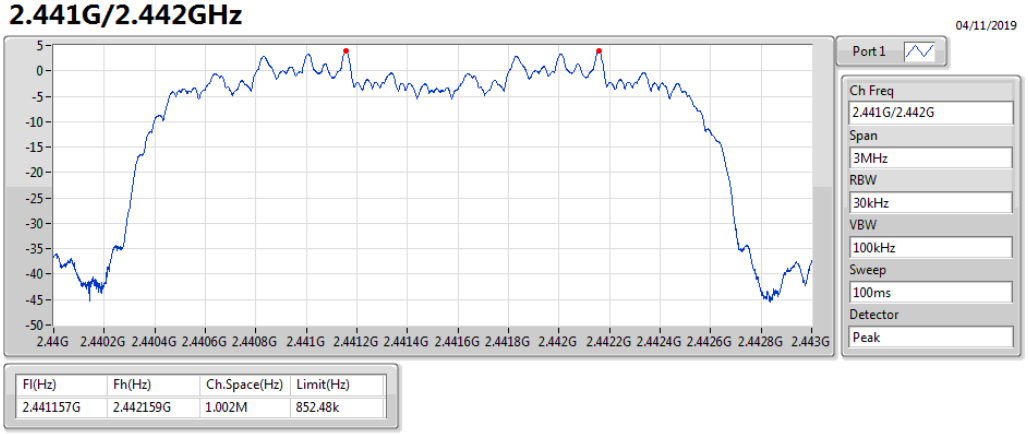
2.402G/2.403GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.402157G	2.403159G	1.002M	839.16k

BT-EDR(2Mbps) **Channel Separation**

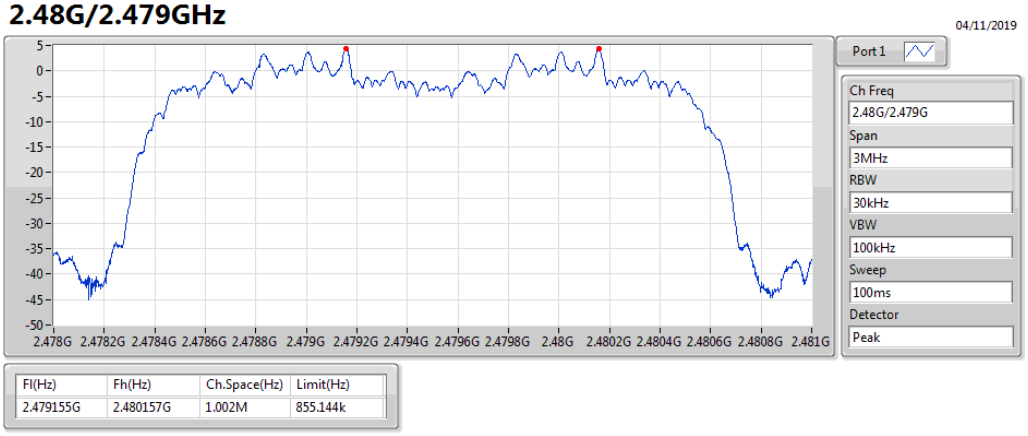
2.441G/2.442GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.441157G	2.442159G	1.002M	852.48k

BT-EDR(2Mbps) **Channel Separation**

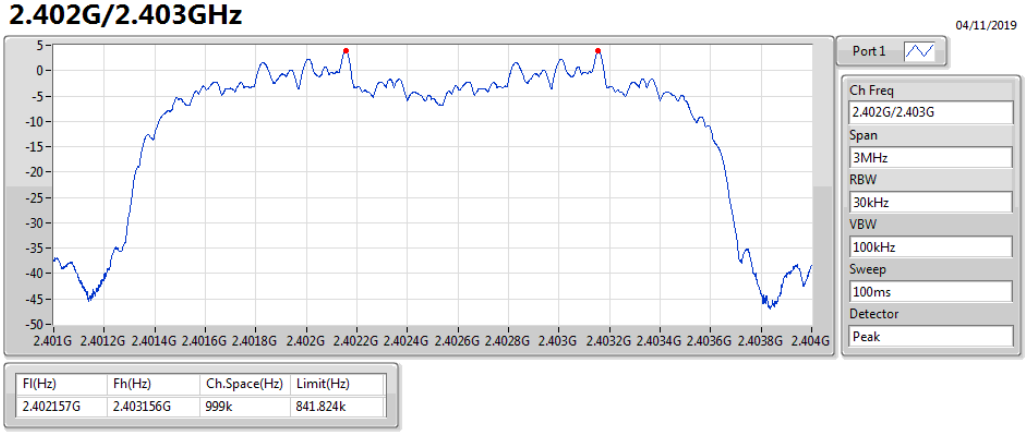
2.48G/2.479GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.479155G	2.480157G	1.002M	855.144k

BT-EDR(3Mbps) **Channel Separation**

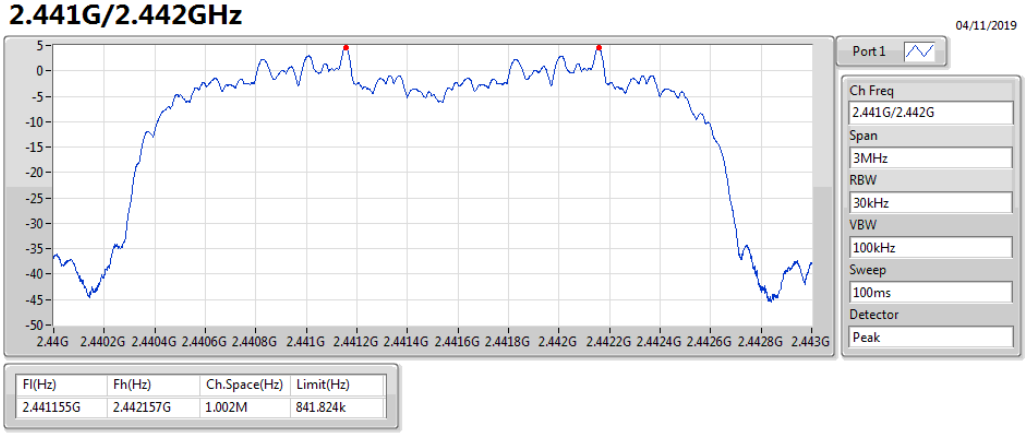
2.402G/2.403GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.402157G	2.403156G	999k	841.824k

BT-EDR(3Mbps) **Channel Separation**

2.441G/2.442GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.441155G	2.442157G	1.002M	841.824k

BT-EDR(3Mbps) **Channel Separation**

2.48G/2.479GHz

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.479155G	2.480157G	1.002M	842.49k

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	7.86	0.00611
BT-EDR(2Mbps)	10.52	0.01127
BT-EDR(3Mbps)	10.88	0.01225

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	3.74	6.80	21.00
2441MHz_TnomVnom	Pass	3.74	7.49	21.00
2480MHz_TnomVnom	Pass	3.74	7.86	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	3.74	9.37	21.00
2441MHz_TnomVnom	Pass	3.74	10.03	21.00
2480MHz_TnomVnom	Pass	3.74	10.52	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	3.74	9.74	21.00
2441MHz_TnomVnom	Pass	3.74	10.48	21.00
2480MHz_TnomVnom	Pass	3.74	10.88	21.00

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

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	7.43	0.00553
BT-EDR(2Mbps)	7.52	0.00565
BT-EDR(3Mbps)	7.47	0.00558

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	3.74	6.26	21.00
2441MHz_TnomVnom	Pass	3.74	6.97	21.00
2480MHz_TnomVnom	Pass	3.74	7.43	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	3.74	6.41	21.00
2441MHz_TnomVnom	Pass	3.74	7.12	21.00
2480MHz_TnomVnom	Pass	3.74	7.52	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	3.74	6.40	21.00
2441MHz_TnomVnom	Pass	3.74	7.05	21.00
2480MHz_TnomVnom	Pass	3.74	7.47	21.00

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

Summary

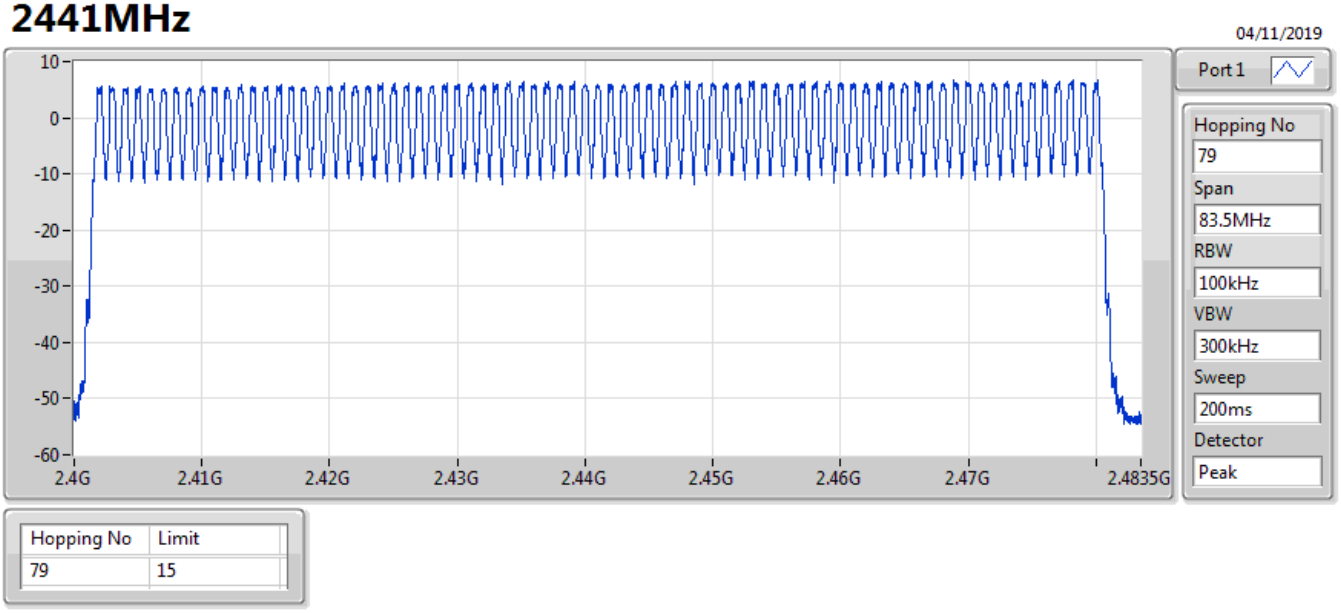
Mode	Max-Hop No
2.4-2.4835GHz	-
BT-BR(1Mbps)	79
BT-EDR(2Mbps)	79
BT-EDR(3Mbps)	79

Result

Mode	Result	Hopping No	Limit
BT-BR(1Mbps)	-	-	-
2441MHz_TnomVnom	Pass	79	15
BT-EDR(2Mbps)	-	-	-
2441MHz_TnomVnom	Pass	79	15
BT-EDR(3Mbps)	-	-	-
2441MHz_TnomVnom	Pass	79	15

BT-BR(1Mbps) **Hopping Ch**

2441MHz

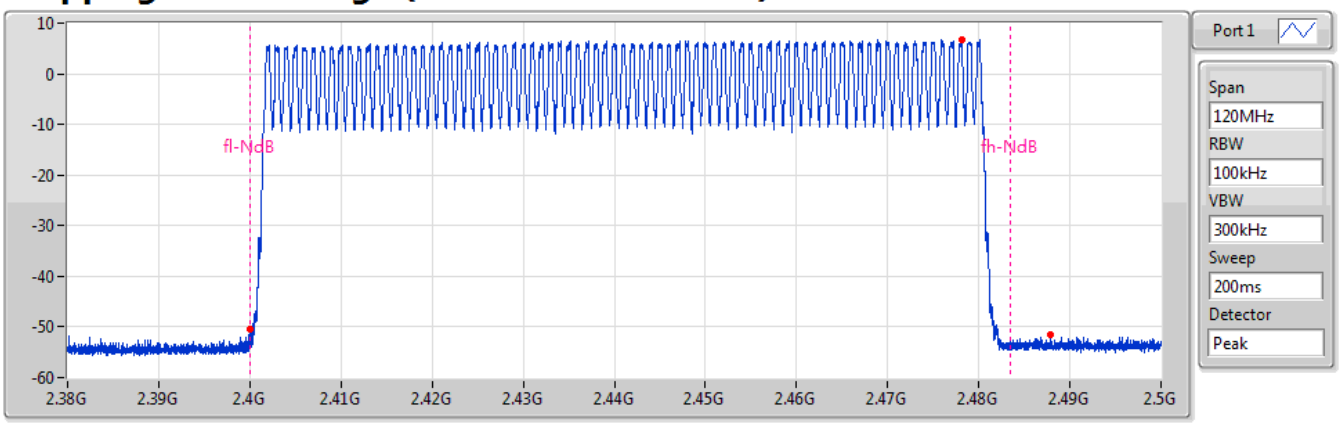


Hopping No	Limit
79	15

BT-BR(1Mbps)

2441MHz

Hopping Ch Bandedge (Non-restricted Band)

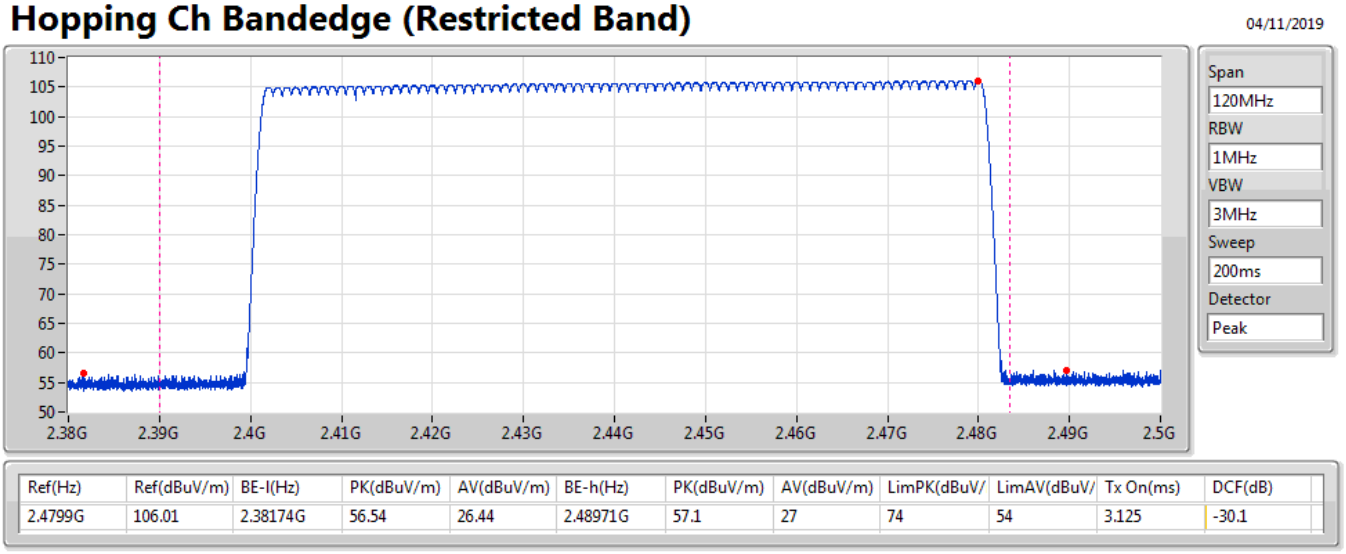


Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-13.23	2.47816G	6.77	2.399965G	-50.56	2.48785G	-51.58

BT-BR(1Mbps)

2441MHz

Hopping Ch Bandedge (Restricted Band)

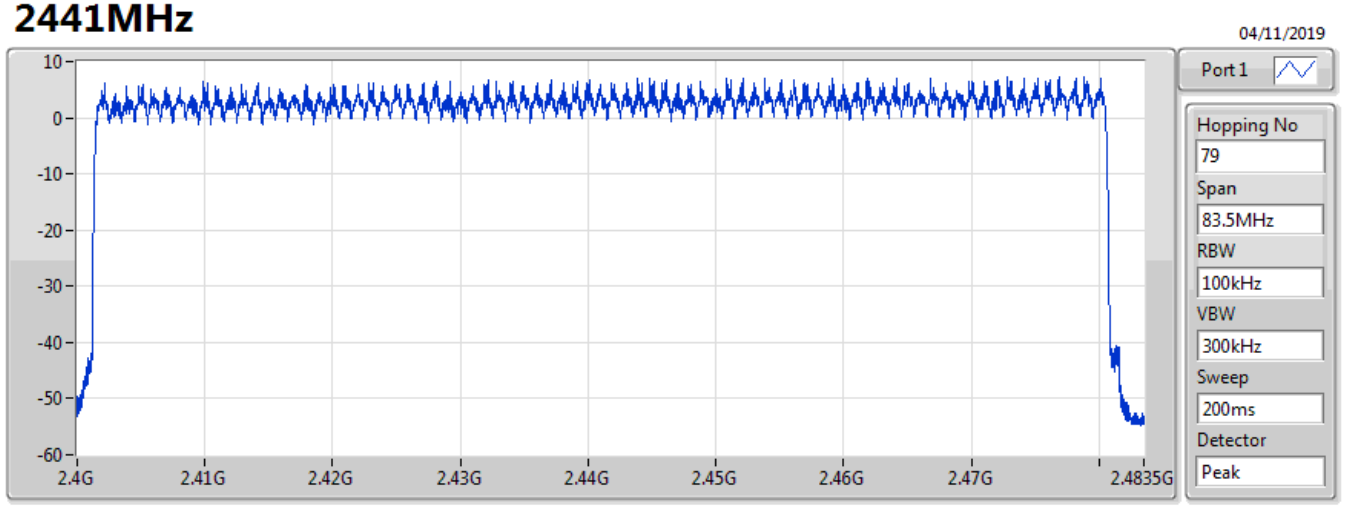


Ref(Hz)	Ref(dBuV/m)	BE-l(Hz)	PK(dBuV/m)	AV(dBuV/m)	BE-h(Hz)	PK(dBuV/m)	AV(dBuV/m)	LimPK(dBuV/	LimAV(dBuV/	Tx On(ms)	DCF(dB)
2.4799G	106.01	2.38174G	56.54	26.44	2.48971G	57.1	27	74	54	3.125	-30.1

BT-EDR(2Mbps)

2441MHz

Hopping Ch

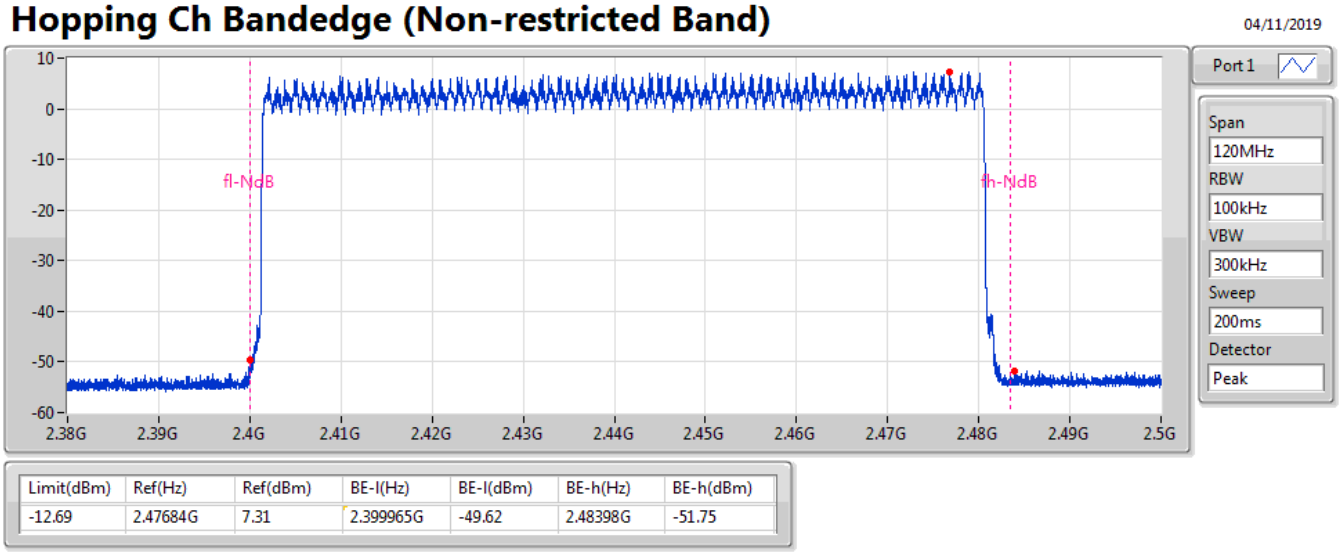


Hopping No	Limit
79	15

BT-EDR(2Mbps)

2441MHz

Hopping Ch Bandedge (Non-restricted Band)

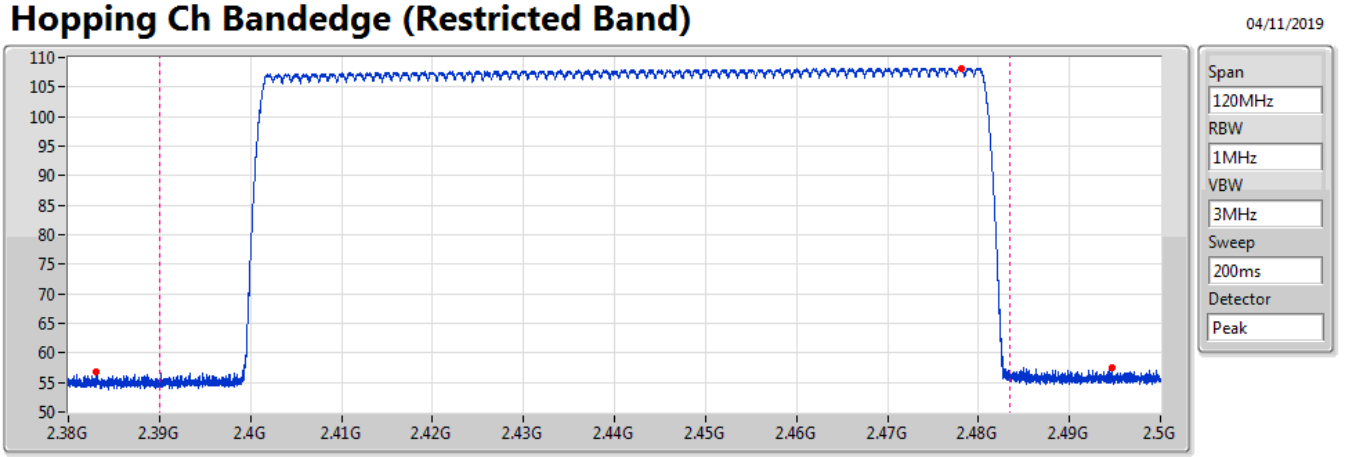


Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-12.69	2.47684G	7.31	2.399965G	-49.62	2.48398G	-51.75

BT-EDR(2Mbps)

2441MHz

Hopping Ch Bandedge (Restricted Band)

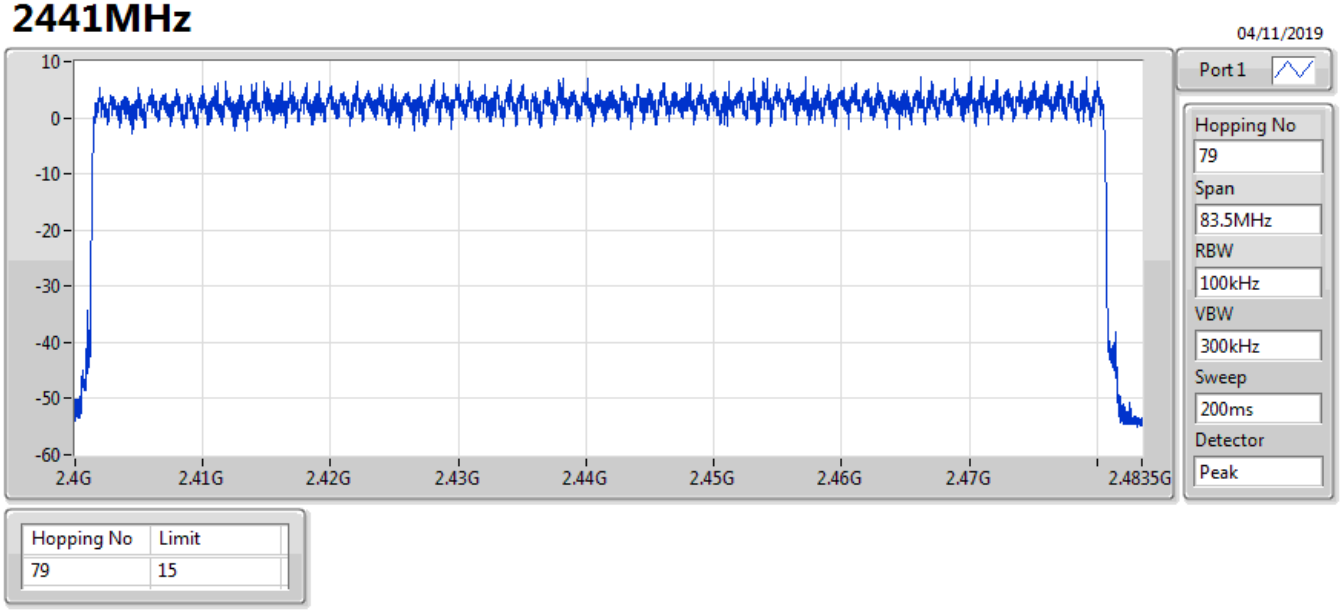


Ref(Hz)	Ref(dBuV/m)	BE-l(Hz)	PK(dBuV/m)	AV(dBuV/m)	BE-h(Hz)	PK(dBuV/m)	AV(dBuV/m)	LimPK(dBuV/	LimAV(dBuV/	Tx On(ms)	DCF(dB)
2.478145G	108.23	2.38303G	56.68	26.58	2.494735G	57.6	27.5	74	54	3.125	-30.1

BT-EDR(3Mbps)

2441MHz

Hopping Ch

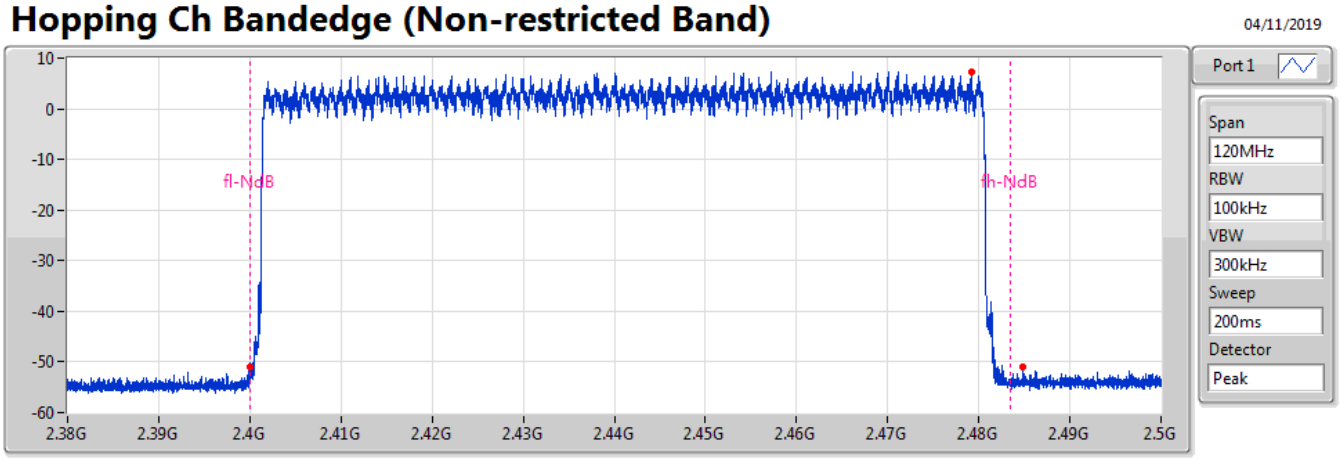


Hopping No	Limit
79	15

BT-EDR(3Mbps)

2441MHz

Hopping Ch Bandedge (Non-restricted Band)

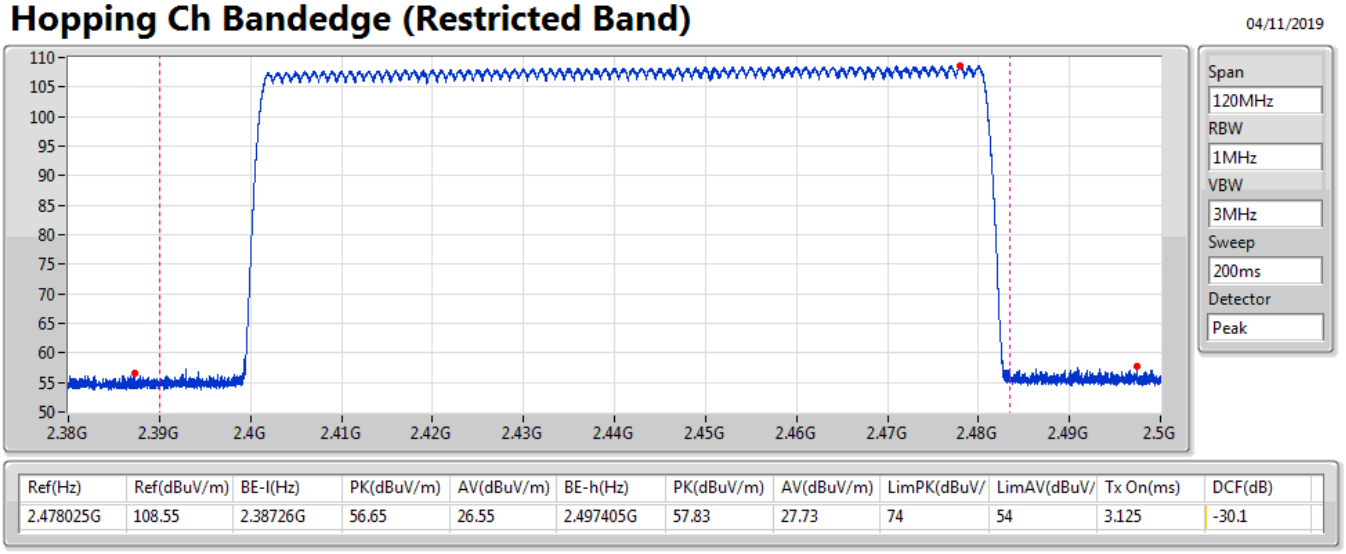


Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-12.65	2.47915G	7.35	2.39995G	-51.07	2.48479G	-51.02

BT-EDR(3Mbps)

2441MHz

Hopping Ch Bandedge (Restricted Band)



Ref(Hz)	Ref(dBuV/m)	BE-l(Hz)	PK(dBuV/m)	AV(dBuV/m)	BE-h(Hz)	PK(dBuV/m)	AV(dBuV/m)	LimPK(dBuV/	LimAV(dBuV/	Tx On(ms)	DCF(dB)
2.478025G	108.55	2.38726G	56.65	26.55	2.497405G	57.83	27.73	74	54	3.125	-30.1

Summary

Mode	Max-Dwell (s)
2.4-2.4835GHz	-
BT-BR(1Mbps)	306.7948m
BT-EDR(2Mbps)	86.4526m
BT-EDR(3Mbps)	54.366m

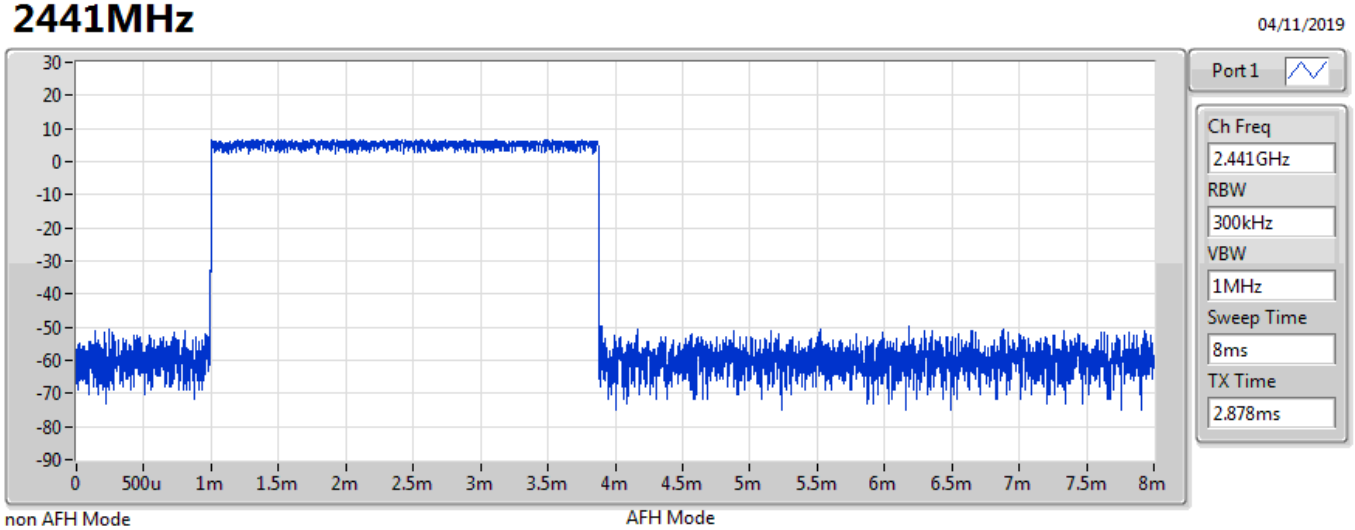
Result

Mode	Result	Period (s)	Dwell (s)	Limit (s)	Tx On (s)
BT-BR(1Mbps)	-	-	-	-	-
2441MHz_TnomVnom	Pass	31.6	306.7948m	400m	2.878m
BT-EDR(2Mbps)	-	-	-	-	-
2441MHz_TnomVnom	Pass	31.6	86.4526m	400m	811u
BT-EDR(3Mbps)	-	-	-	-	-
2441MHz_TnomVnom	Pass	31.6	54.366m	400m	510u

BT-BR(1Mbps)

Dwell

2441MHz



non AFH Mode

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	306.7948m	400m	2.878m

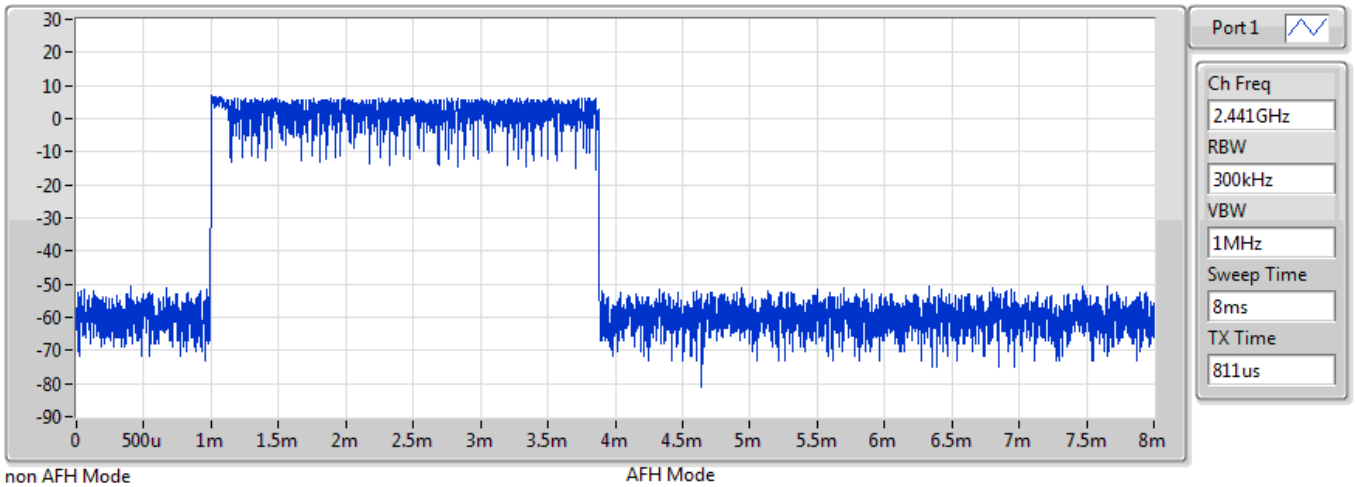
AFH Mode

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
8	153.3974m	400m	2.878m

BT-EDR(2Mbps)

Dwell

2441MHz



non AFH Mode

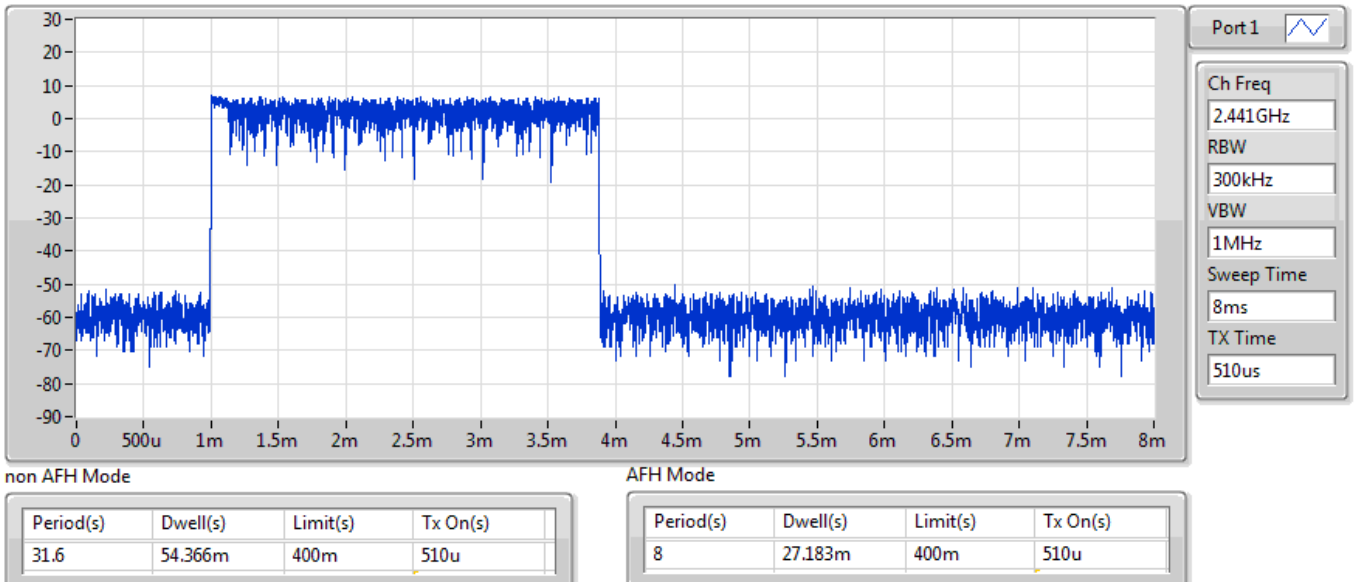
Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	86.4526m	400m	811u

AFH Mode

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
8	43.2263m	400m	811u

BT-EDR(3Mbps) **Dwell**

2441MHz



non AFH Mode

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	54.366m	400m	510u

AFH Mode

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
8	27.183m	400m	510u

Summary

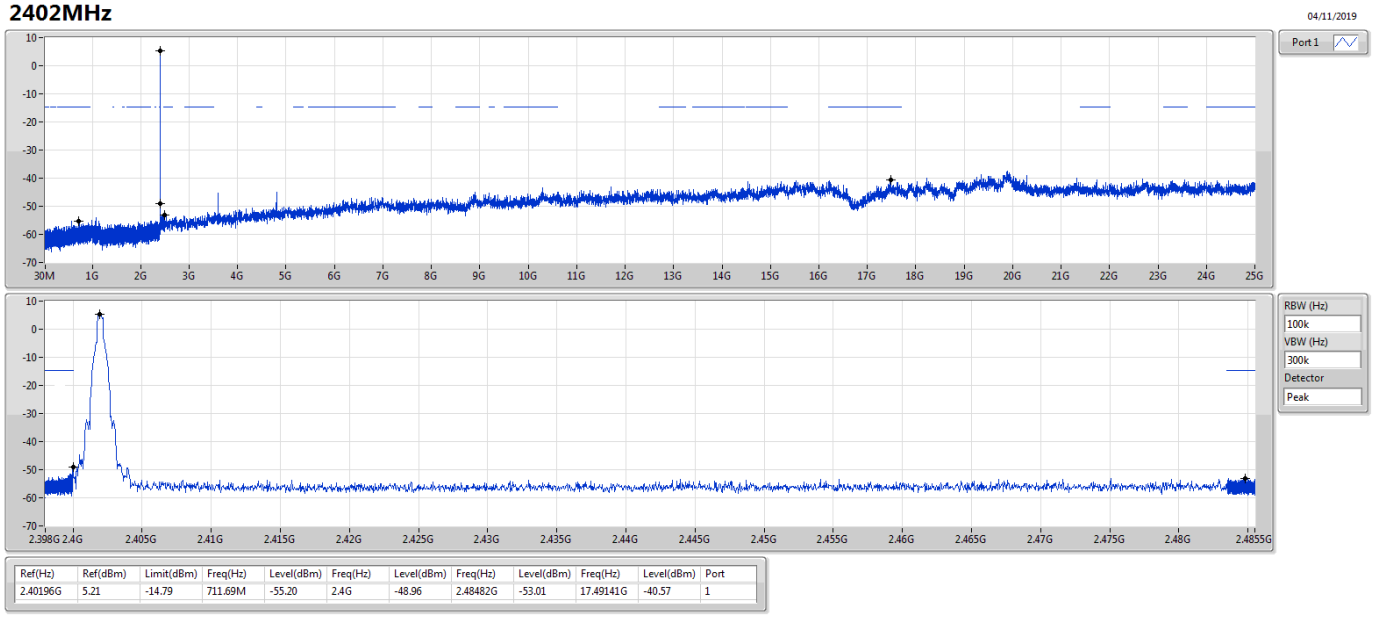
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	2.40196G	5.21	-14.79	711.69M	-55.20	2.4G	-48.96	2.48482G	-53.01	17.49141G	-40.57	1
BT-EDR(2Mbps)	Pass	2.402G	4.21	-15.79	2.09608G	-54.65	2.39993G	-50.53	2.48463G	-52.87	24.88461G	-40.14	1
BT-EDR(3Mbps)	Pass	2.40213G	5.99	-14.01	2.12479G	-54.39	2.39994G	-50.92	2.48421G	-52.90	23.33393G	-40.39	1

Result

Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz_TnomVnom	Pass	2.40196G	5.21	-14.79	711.69M	-55.20	2.4G	-48.96	2.48482G	-53.01	17.49141G	-40.57	1
2441MHz_TnomVnom	Pass	2.441G	5.92	-14.08	2.14374G	-54.53	2.39951G	-52.85	2.48424G	-52.98	23.22698G	-40.26	1
2480MHz_TnomVnom	Pass	2.48008G	6.25	-13.75	953.82M	-55.47	2.39983G	-53.82	2.48362G	-51.47	23.27201G	-40.90	1
BT-EDR(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz_TnomVnom	Pass	2.402G	4.21	-15.79	2.09608G	-54.65	2.39993G	-50.53	2.48463G	-52.87	24.88461G	-40.14	1
2441MHz_TnomVnom	Pass	2.44117G	6.80	-13.20	2.14226G	-54.68	2.39847G	-53.82	2.48458G	-52.96	23.32267G	-40.41	1
2480MHz_TnomVnom	Pass	2.48016G	7.00	-13.00	2.00669G	-55.03	2.39925G	-53.64	2.48529G	-52.03	23.31423G	-40.19	1
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz_TnomVnom	Pass	2.40213G	5.99	-14.01	2.12479G	-54.39	2.39994G	-50.92	2.48421G	-52.90	23.33393G	-40.39	1
2441MHz_TnomVnom	Pass	2.44117G	6.64	-13.36	2.05908G	-54.40	2.39841G	-52.87	2.48471G	-52.97	23.2692G	-39.76	1
2480MHz_TnomVnom	Pass	2.48008G	6.49	-13.51	2.14226G	-54.90	2.39804G	-53.19	2.48466G	-51.18	23.41273G	-40.54	1

BT-BR(1Mbps) **CSE NdB**

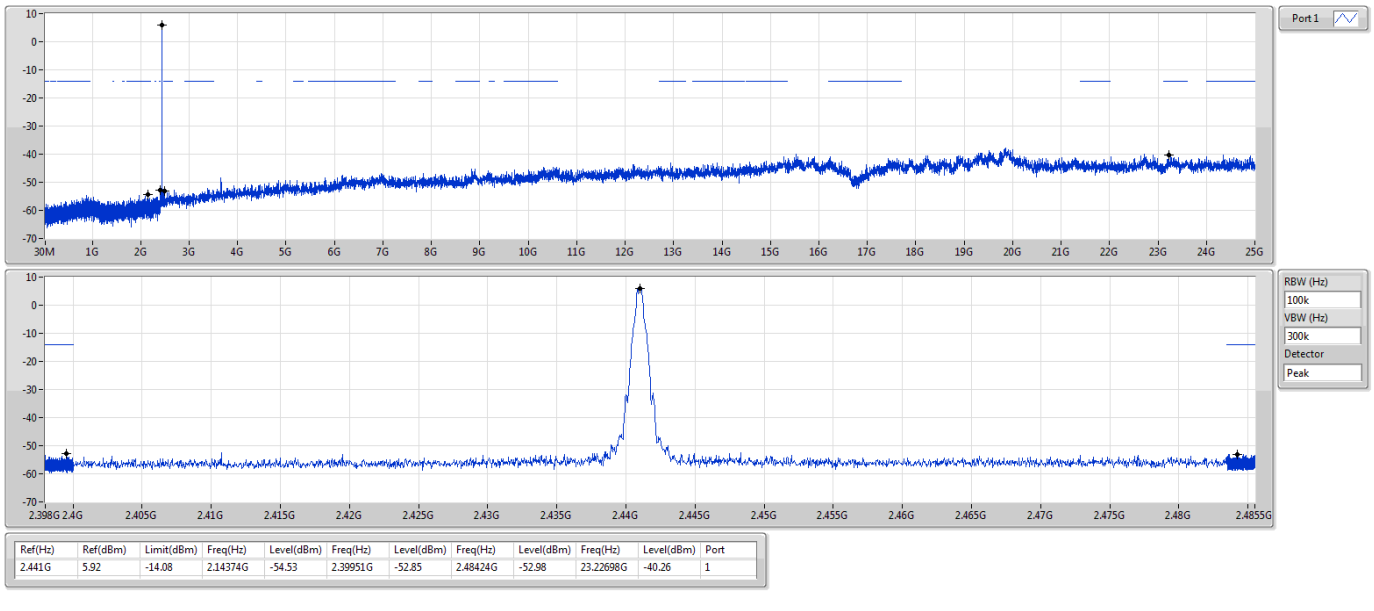
2402MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40196G	5.21	-14.79	711.69M	-55.20	2.4G	-48.96	2.48482G	-53.01	17.49141G	-40.57	1

BT-BR(1Mbps) **CSE NdB**

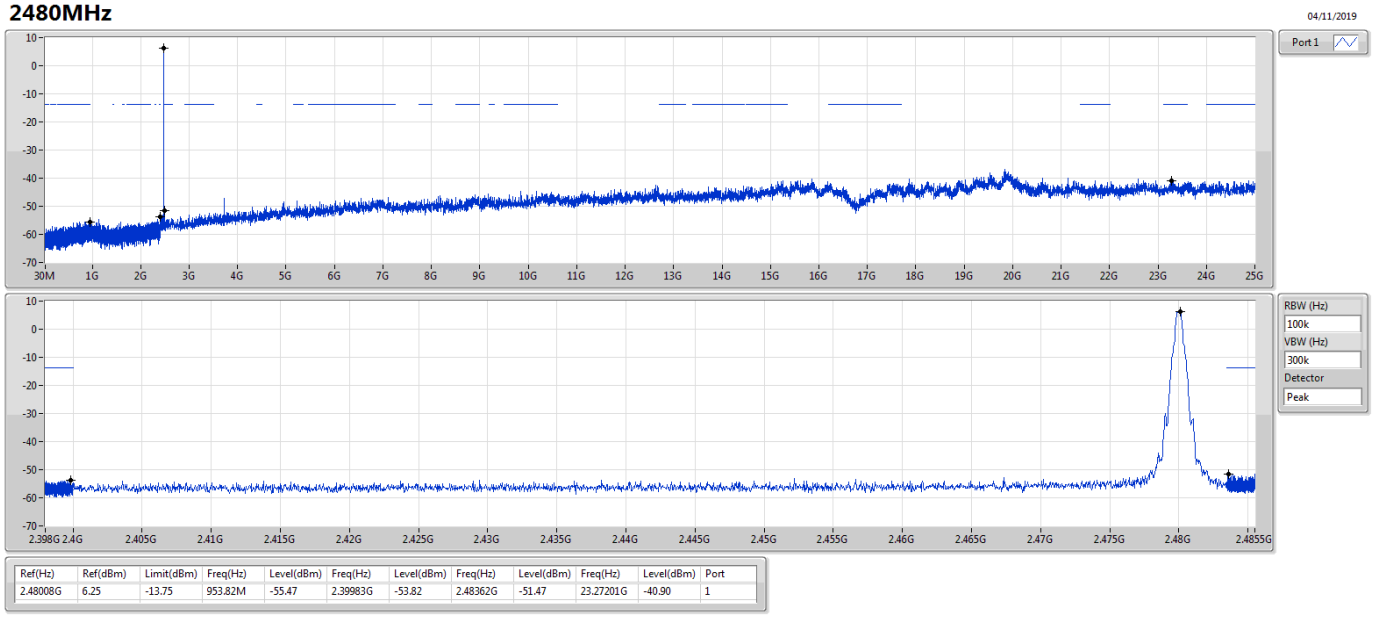
2441MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.441G	5.92	-14.08	2.14374G	-54.53	2.39951G	-52.85	2.48424G	-52.98	23.22698G	-40.26	1

BT-BR(1Mbps) **CSE NdB**

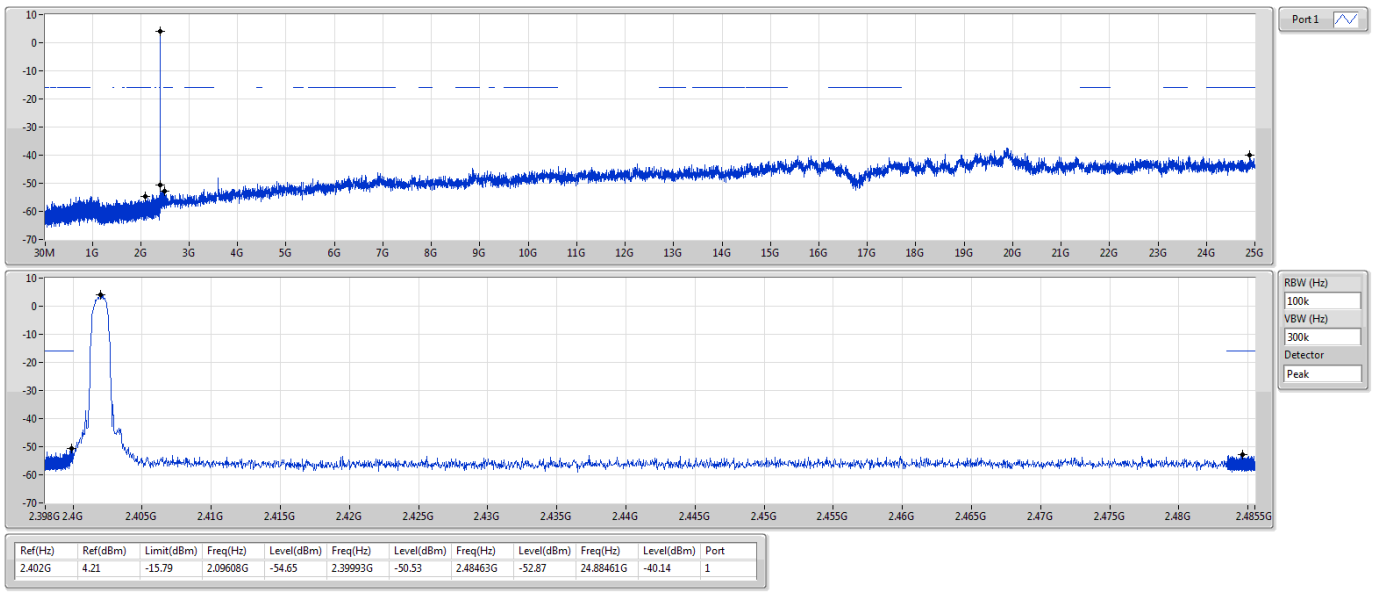
2480MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.48008G	6.25	-13.75	953.82M	-55.47	2.39983G	-53.82	2.48362G	-51.47	23.27201G	-40.90	1

BT-EDR(2Mbps) **CSE NdB**

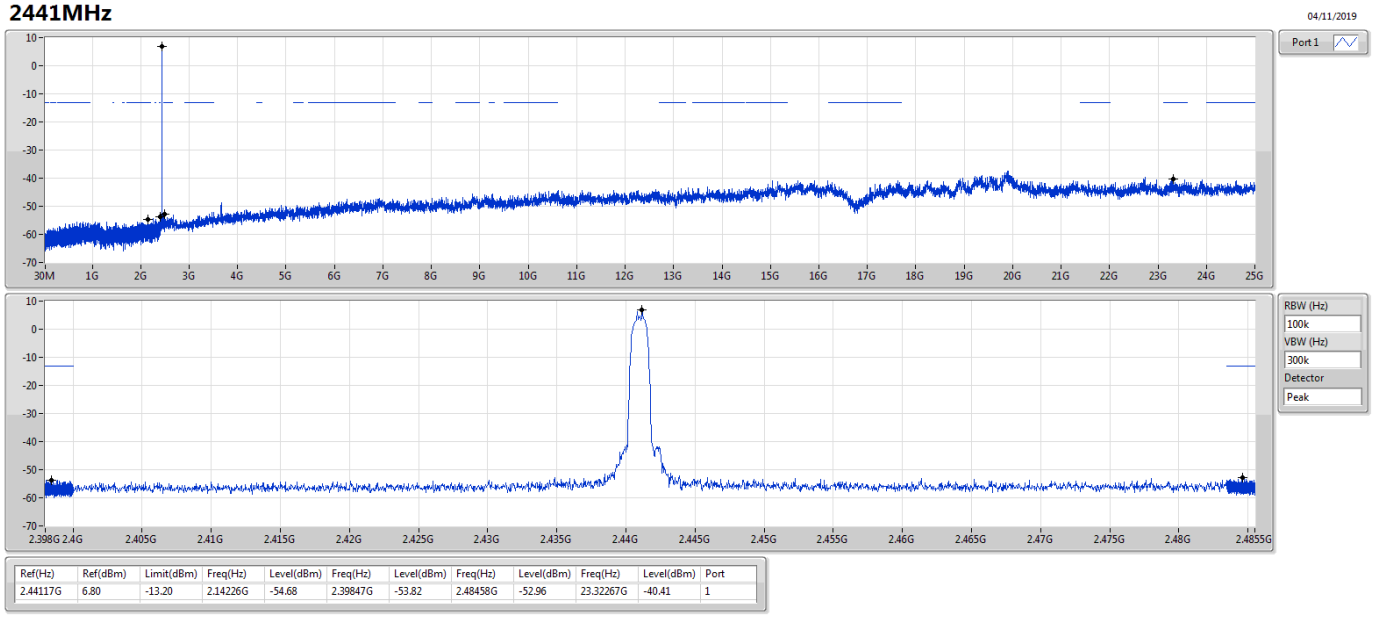
2402MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.402G	4.21	-15.79	2.09608G	-54.65	2.39993G	-50.53	2.48463G	-52.87	24.88461G	-40.14	1

BT-EDR(2Mbps) **CSE NdB**

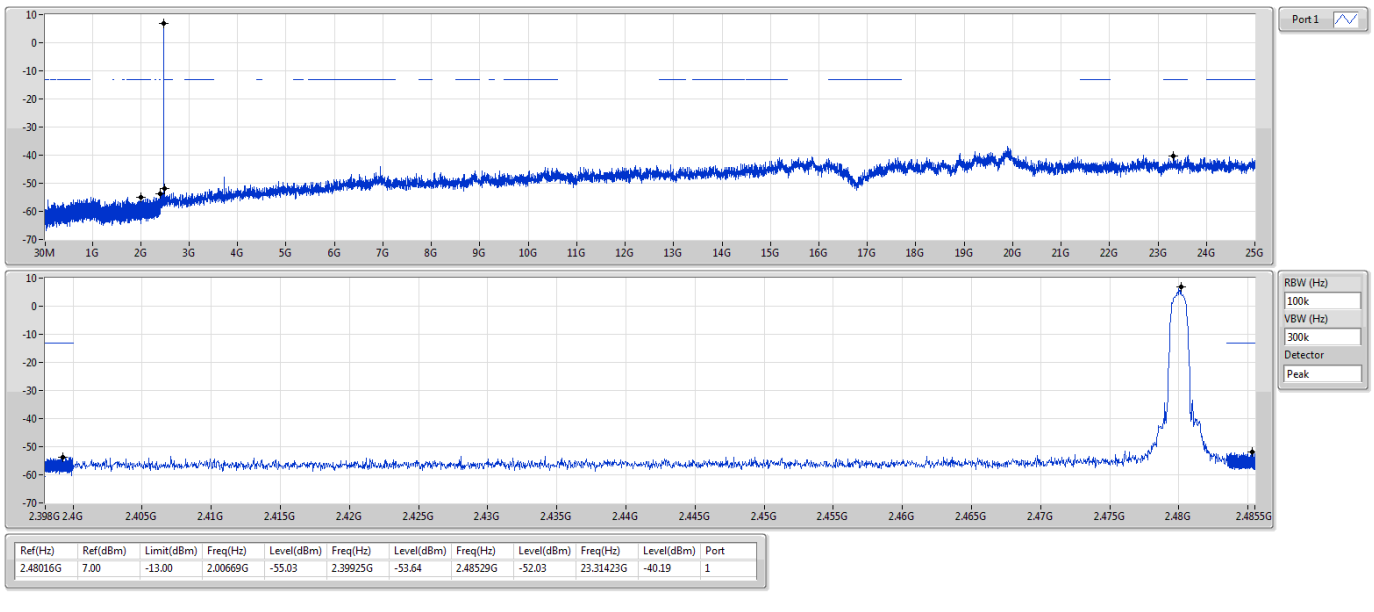
2441MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44117G	6.80	-13.20	2.14226G	-54.68	2.39847G	-53.82	2.48458G	-52.96	23.32267G	-40.41	1

BT-EDR(2Mbps) **CSE NdB**

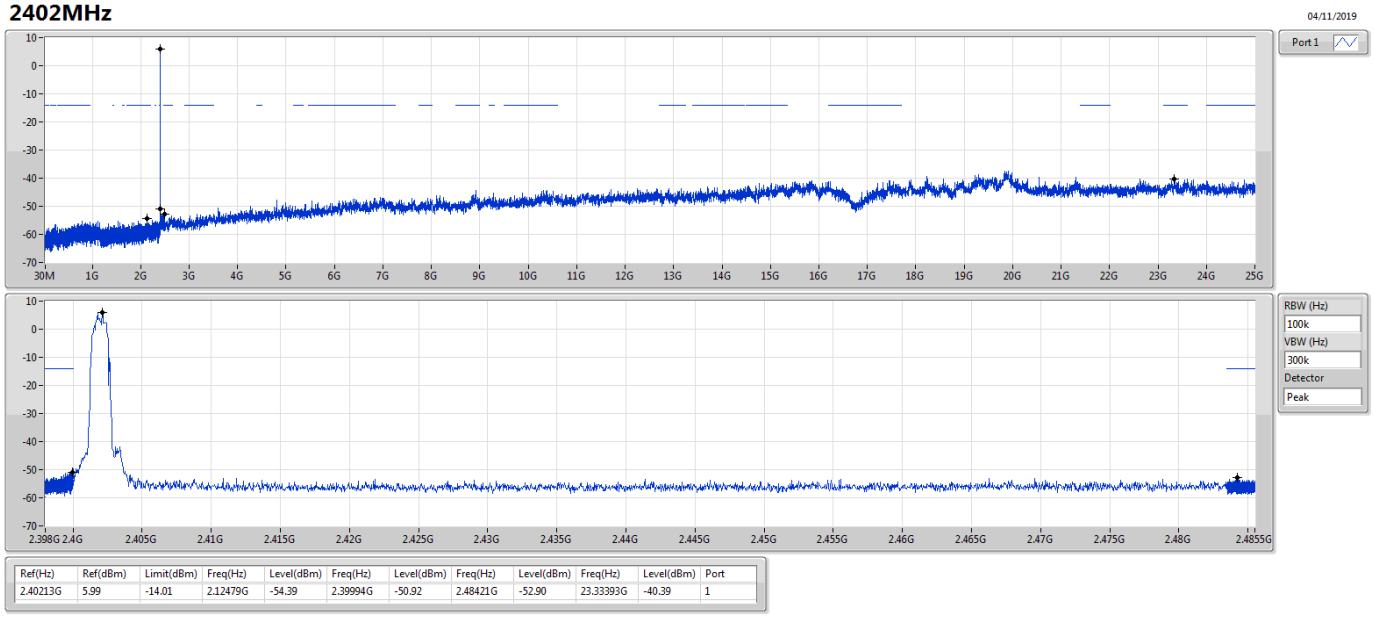
2480MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.48016G	7.00	-13.00	2.00669G	-55.03	2.39925G	-53.64	2.48529G	-52.03	23.31423G	-40.19	1

BT-EDR(3Mbps) **CSE NdB**

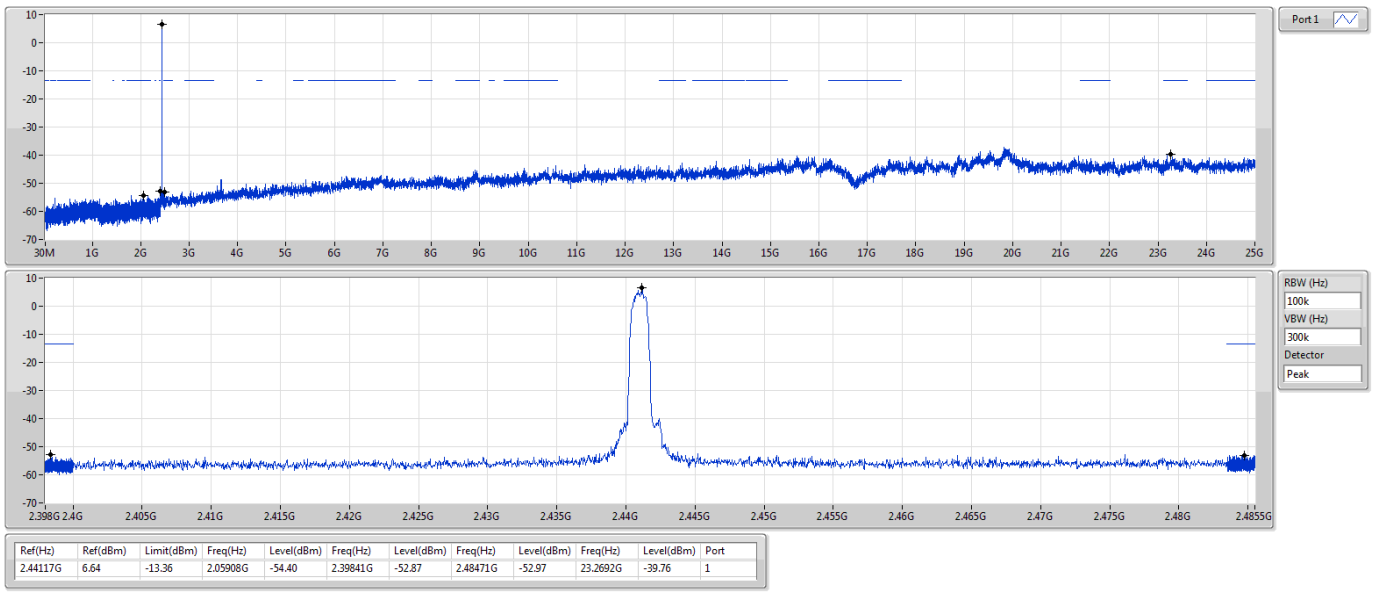
2402MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40213G	5.99	-14.01	2.12479G	-54.39	2.39994G	-50.92	2.48421G	-52.90	23.33393G	-40.39	1

BT-EDR(3Mbps) **CSE NdB**

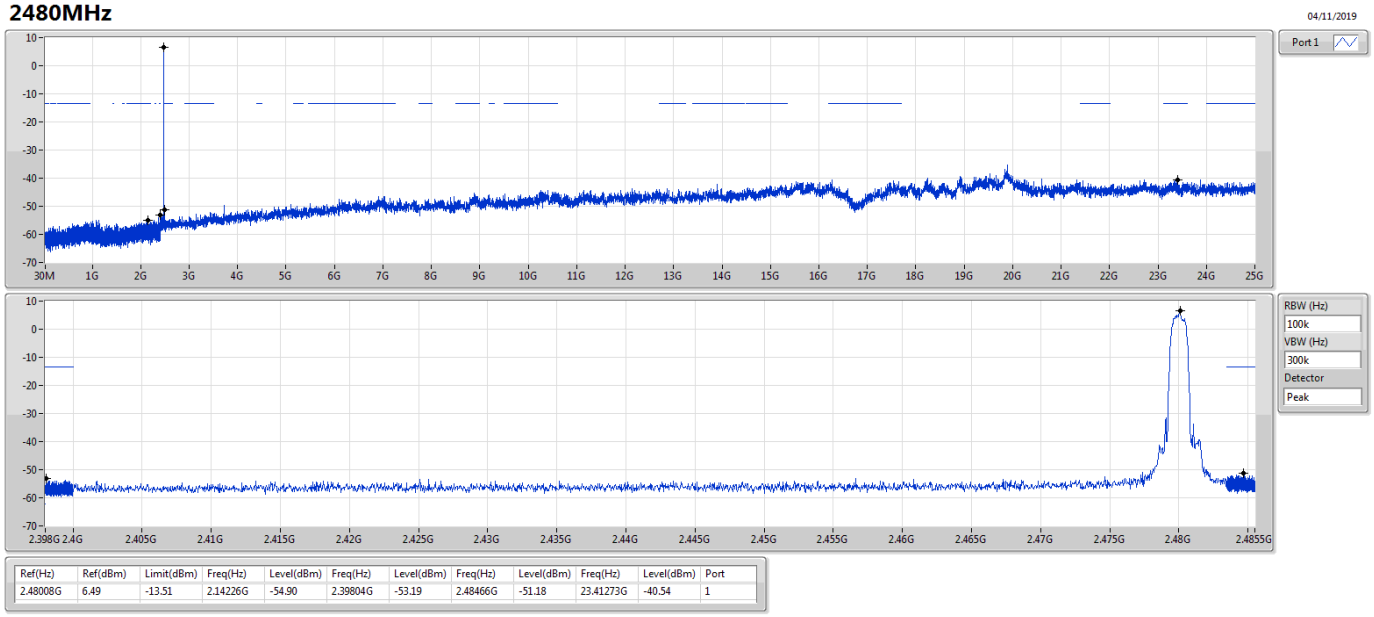
2441MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44117G	6.64	-13.36	2.05908G	-54.40	2.39841G	-52.87	2.48471G	-52.97	23.2692G	-39.76	1

BT-EDR(3Mbps) **CSE NdB**

2480MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.48008G	6.49	-13.51	2.14226G	-54.90	2.39804G	-53.19	2.48466G	-51.18	23.41273G	-40.54	1

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	PK	103.72M	41.64	43.50	-1.86	3	Horizontal	0	1.00	-

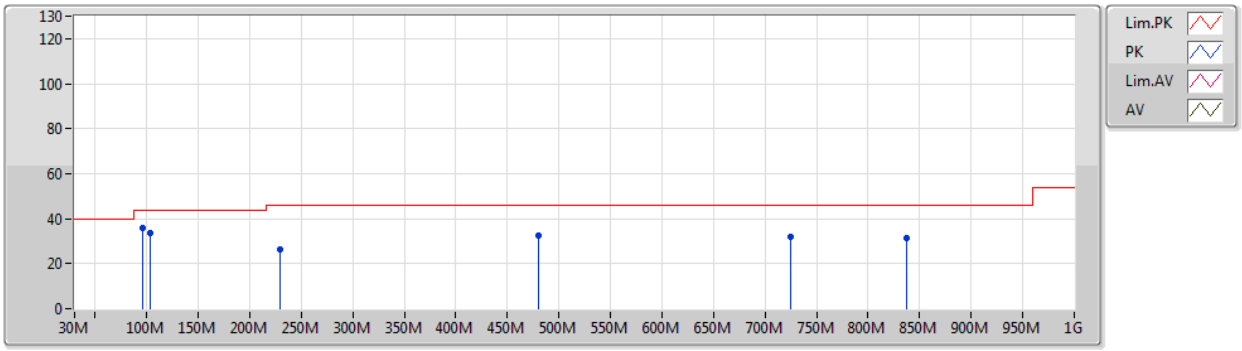
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-
2441MHz_USB	Pass	PK	95.96M	36.05	43.50	-7.45	3	Vertical	360	1.00	-
2441MHz_USB	Pass	PK	103.72M	33.69	43.50	-9.81	3	Vertical	360	1.00	-
2441MHz_USB	Pass	PK	229.82M	26.59	46.00	-19.41	3	Vertical	360	1.00	-
2441MHz_USB	Pass	PK	480.08M	32.34	46.00	-13.66	3	Vertical	360	1.00	-
2441MHz_USB	Pass	PK	724.52M	32.20	46.00	-13.80	3	Vertical	360	1.00	-
2441MHz_USB	Pass	PK	837.04M	31.55	46.00	-14.45	3	Vertical	360	1.00	-
2441MHz_USB	Pass	PK	103.72M	41.64	43.50	-1.86	3	Horizontal	0	1.00	-
2441MHz_USB	Pass	PK	264.74M	33.68	46.00	-12.32	3	Horizontal	0	1.00	-
2441MHz_USB	Pass	PK	293.84M	34.79	46.00	-11.21	3	Horizontal	0	1.00	-
2441MHz_USB	Pass	PK	315.18M	33.07	46.00	-12.93	3	Horizontal	0	1.00	-
2441MHz_USB	Pass	PK	344.28M	32.89	46.00	-13.11	3	Horizontal	0	1.00	-
2441MHz_USB	Pass	PK	482.02M	34.70	46.00	-11.30	3	Horizontal	0	1.00	-

BT-BR(1Mbps)

2441MHz_USB

02/11/2019

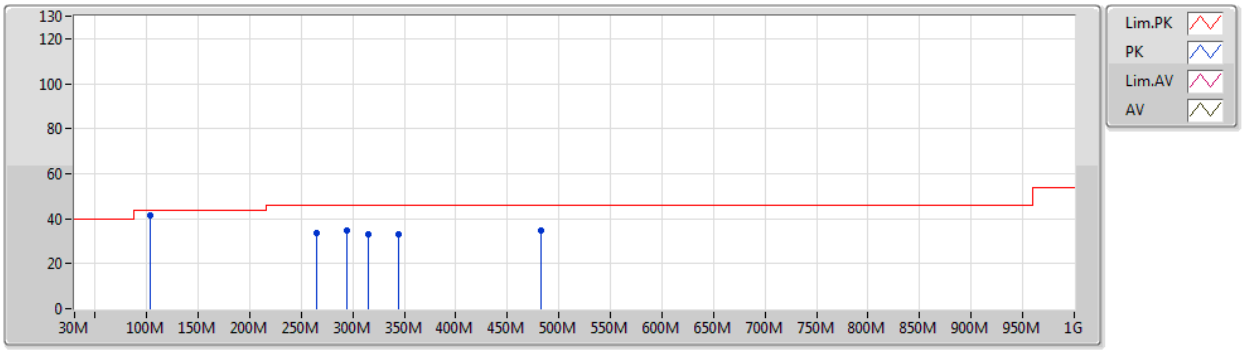


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
PK	95.96M	36.05	43.50	-7.45	-10.64	3	Vertical	360	1.00	-	46.69	15.27	1.48	27.39
PK	103.72M	33.69	43.50	-9.81	-9.42	3	Vertical	360	1.00	-	43.11	16.40	1.55	27.37
PK	229.82M	26.59	46.00	-19.41	-9.14	3	Vertical	360	1.00	-	35.73	15.31	2.37	26.82
PK	480.08M	32.34	46.00	-13.66	-1.60	3	Vertical	360	1.00	-	33.94	22.65	3.52	27.77
PK	724.52M	32.20	46.00	-13.80	0.85	3	Vertical	360	1.00	-	31.35	24.46	4.43	28.04
PK	837.04M	31.55	46.00	-14.45	2.35	3	Vertical	360	1.00	-	29.20	25.28	4.84	27.77

BT-BR(1Mbps)

2441MHz_USB

02/11/2019



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
PK	103.72M	41.64	43.50	-1.86	-9.42	3	Horizontal	0	1.00	-	51.06	16.40	1.55	27.37
PK	264.74M	33.68	46.00	-12.32	-5.65	3	Horizontal	0	1.00	-	39.33	18.52	2.56	26.73
PK	293.84M	34.79	46.00	-11.21	-5.81	3	Horizontal	0	1.00	-	40.60	18.18	2.72	26.71
PK	315.18M	33.07	46.00	-12.93	-5.36	3	Horizontal	0	1.00	-	38.43	18.61	2.82	26.79
PK	344.28M	32.89	46.00	-13.11	-4.86	3	Horizontal	0	1.00	-	37.75	19.14	2.95	26.95
PK	482.02M	34.70	46.00	-11.30	-1.60	3	Horizontal	0	1.00	-	36.30	22.65	3.53	27.78

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	PK	2.3896G	61.27	74.00	-12.73	3	Horizontal	157	1.71	-

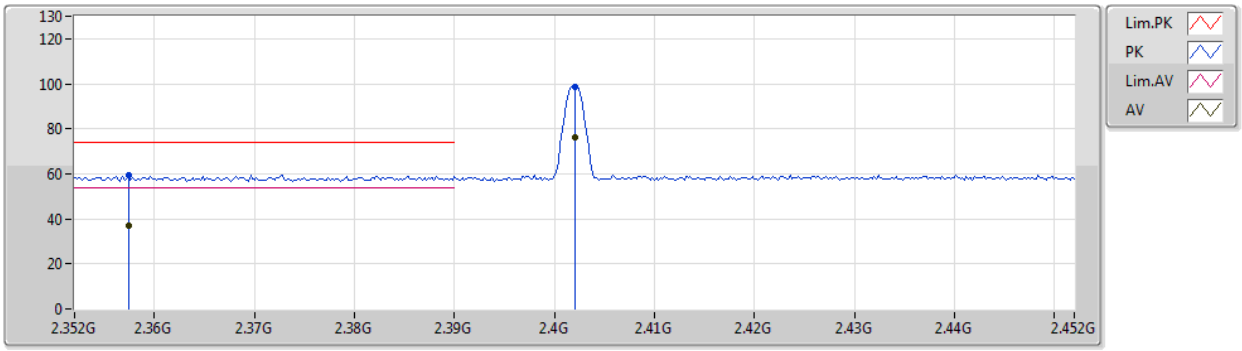
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3574G	36.87	54.00	-17.13	3	Vertical	151	1.59	-
2402MHz	Pass	AV	2.402G	76.14	Inf	-Inf	3	Vertical	151	1.59	-
2402MHz	Pass	PK	2.3574G	59.37	74.00	-14.63	3	Vertical	151	1.59	-
2402MHz	Pass	PK	2.402G	98.64	Inf	-Inf	3	Vertical	151	1.59	-
2402MHz	Pass	AV	2.3896G	38.77	54.00	-15.23	3	Horizontal	157	1.71	-
2402MHz	Pass	AV	2.4018G	80.39	Inf	-Inf	3	Horizontal	157	1.71	-
2402MHz	Pass	PK	2.3896G	61.27	74.00	-12.73	3	Horizontal	157	1.71	-
2402MHz	Pass	PK	2.4018G	102.89	Inf	-Inf	3	Horizontal	157	1.71	-
2402MHz	Pass	AV	4.80408G	29.69	54.00	-24.31	3	Vertical	163	2.63	-
2402MHz	Pass	PK	4.80408G	52.19	74.00	-21.81	3	Vertical	163	2.63	-
2402MHz	Pass	AV	4.80398G	33.48	54.00	-20.52	3	Horizontal	238	2.29	-
2402MHz	Pass	PK	4.80386G	55.98	74.00	-18.02	3	Horizontal	238	2.29	-
2441MHz	Pass	AV	2.3798G	36.50	54.00	-17.50	3	Vertical	161	1.73	-
2441MHz	Pass	AV	2.441G	76.37	Inf	-Inf	3	Vertical	161	1.73	-
2441MHz	Pass	AV	2.4978G	36.74	54.00	-17.26	3	Vertical	161	1.73	-
2441MHz	Pass	PK	2.3798G	59.00	74.00	-15.00	3	Vertical	161	1.73	-
2441MHz	Pass	PK	2.441G	98.87	Inf	-Inf	3	Vertical	161	1.73	-
2441MHz	Pass	PK	2.4978G	59.24	74.00	-14.76	3	Vertical	161	1.73	-
2441MHz	Pass	AV	2.3474G	36.77	54.00	-17.23	3	Horizontal	168	1.49	-
2441MHz	Pass	AV	2.441G	81.17	Inf	-Inf	3	Horizontal	168	1.49	-
2441MHz	Pass	AV	2.4842G	37.04	54.00	-16.96	3	Horizontal	168	1.49	-
2441MHz	Pass	PK	2.3474G	59.27	74.00	-14.73	3	Horizontal	168	1.49	-
2441MHz	Pass	PK	2.441G	103.67	Inf	-Inf	3	Horizontal	168	1.49	-
2441MHz	Pass	PK	2.4842G	59.54	74.00	-14.46	3	Horizontal	168	1.49	-
2441MHz	Pass	AV	4.88193G	27.49	54.00	-26.51	3	Vertical	225	1.39	-
2441MHz	Pass	PK	4.88193G	49.99	74.00	-24.01	3	Vertical	225	1.39	-
2441MHz	Pass	AV	4.88209G	30.51	54.00	-23.49	3	Horizontal	154	1.48	-
2441MHz	Pass	PK	4.88209G	53.01	74.00	-20.99	3	Horizontal	154	1.48	-
2480MHz	Pass	AV	2.4802G	76.41	Inf	-Inf	3	Vertical	163	1.71	-
2480MHz	Pass	AV	2.4872G	37.40	54.00	-16.60	3	Vertical	163	1.71	-
2480MHz	Pass	PK	2.4802G	98.91	Inf	-Inf	3	Vertical	163	1.71	-
2480MHz	Pass	PK	2.4872G	59.90	74.00	-14.10	3	Vertical	163	1.71	-
2480MHz	Pass	AV	2.4798G	80.19	Inf	-Inf	3	Horizontal	177	1.52	-
2480MHz	Pass	AV	2.4874G	36.82	54.00	-17.18	3	Horizontal	177	1.52	-
2480MHz	Pass	PK	2.4798G	102.69	Inf	-Inf	3	Horizontal	177	1.52	-
2480MHz	Pass	PK	2.4874G	59.32	74.00	-14.68	3	Horizontal	177	1.52	-
2480MHz	Pass	AV	4.96019G	28.33	54.00	-25.67	3	Vertical	171	2.65	-
2480MHz	Pass	PK	4.96019G	50.83	74.00	-23.17	3	Vertical	171	2.65	-
2480MHz	Pass	AV	4.96006G	30.90	54.00	-23.10	3	Horizontal	153	1.43	-
2480MHz	Pass	PK	4.96006G	53.40	74.00	-20.60	3	Horizontal	153	1.43	-

BT-BR(1Mbps)

2402MHz_TX

01/11/2019

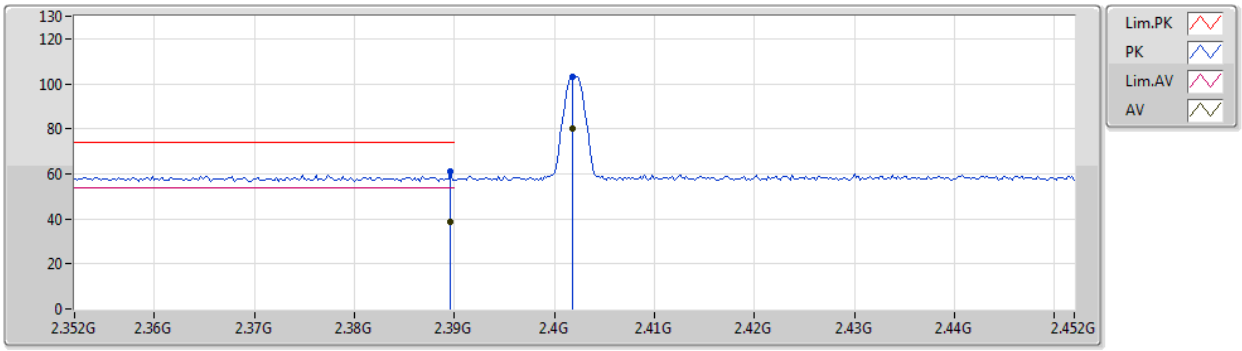


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3574G	36.87	54.00	-17.13	31.64	3	Vertical	151	1.59	-	5.23	27.67	3.97	-
AV	2.402G	76.14	Inf	-Inf	31.51	3	Vertical	151	1.59	-	44.63	27.50	4.01	-
PK	2.3574G	59.37	74.00	-14.63	31.64	3	Vertical	151	1.59	-	27.73	27.67	3.97	-
PK	2.402G	98.64	Inf	-Inf	31.51	3	Vertical	151	1.59	-	67.13	27.50	4.01	-

BT-BR(1Mbps)

2402MHz_TX

01/11/2019

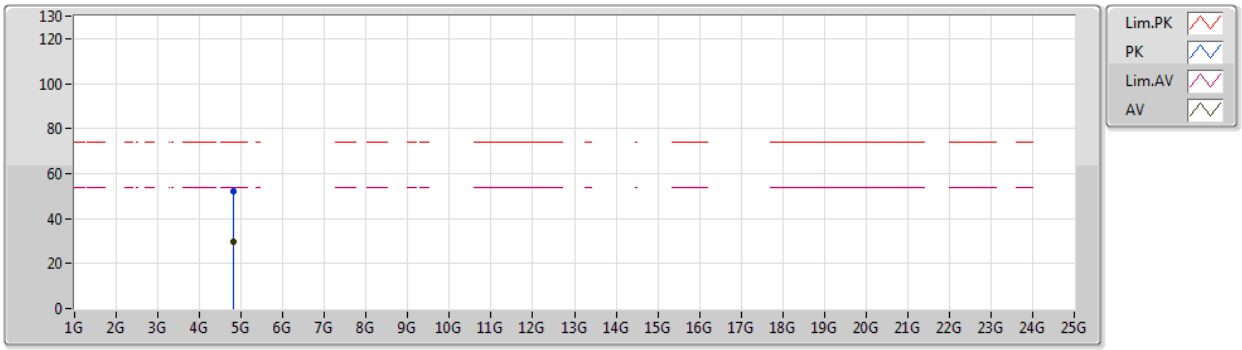


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3896G	38.77	54.00	-15.23	31.54	3	Horizontal	157	1.71	-	7.23	27.54	4.00	-
AV	2.4018G	80.39	Inf	-Inf	31.51	3	Horizontal	157	1.71	-	48.88	27.50	4.01	-
PK	2.3896G	61.27	74.00	-12.73	31.54	3	Horizontal	157	1.71	-	29.73	27.54	4.00	-
PK	2.4018G	102.89	Inf	-Inf	31.51	3	Horizontal	157	1.71	-	71.38	27.50	4.01	-

BT-BR(1Mbps)

2402MHz_TX

01/11/2019

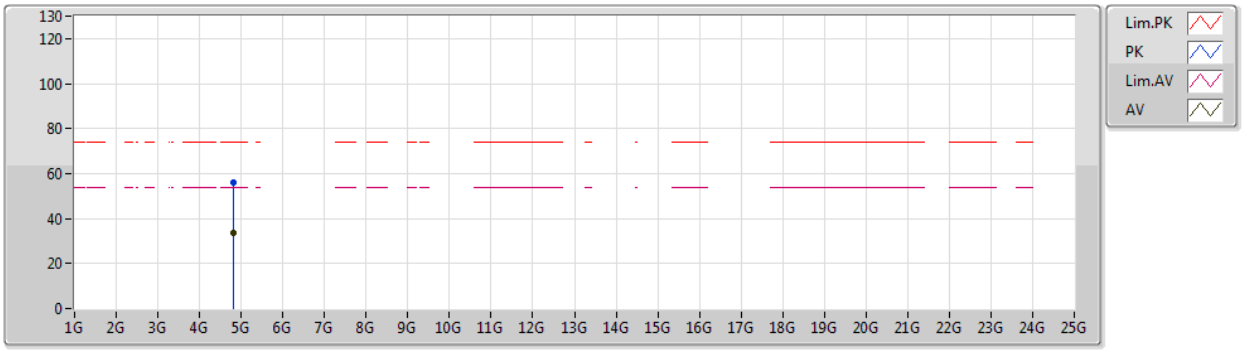


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.80408G	29.69	54.00	-24.31	7.47	3	Vertical	163	2.63	-	22.22	31.10	5.78	29.41
PK	4.80408G	52.19	74.00	-21.81	7.47	3	Vertical	163	2.63	-	44.72	31.10	5.78	29.41

BT-BR(1Mbps)

2402MHz_TX

01/11/2019

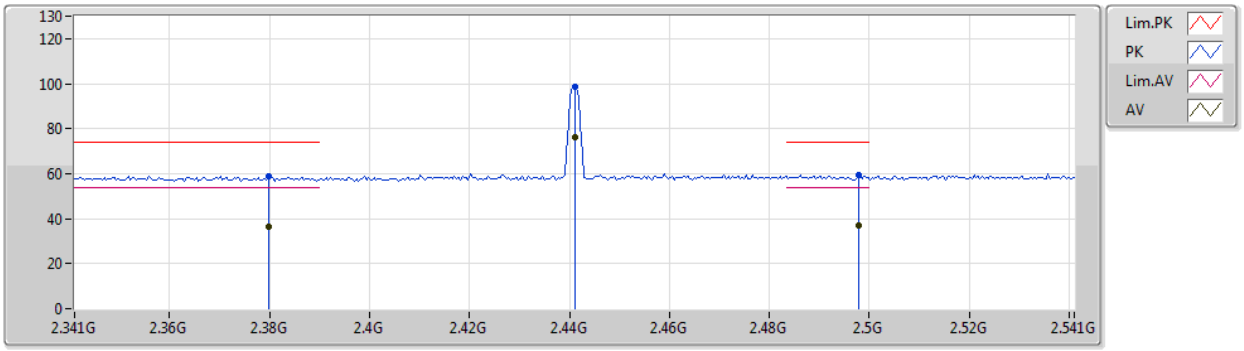


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.80398G	33.48	54.00	-20.52	7.47	3	Horizontal	238	2.29	-	26.01	31.10	5.78	29.41
PK	4.80386G	55.98	74.00	-18.02	7.47	3	Horizontal	238	2.29	-	48.51	31.10	5.78	29.41

BT-BR(1Mbps)

2441MHz_TX

01/11/2019

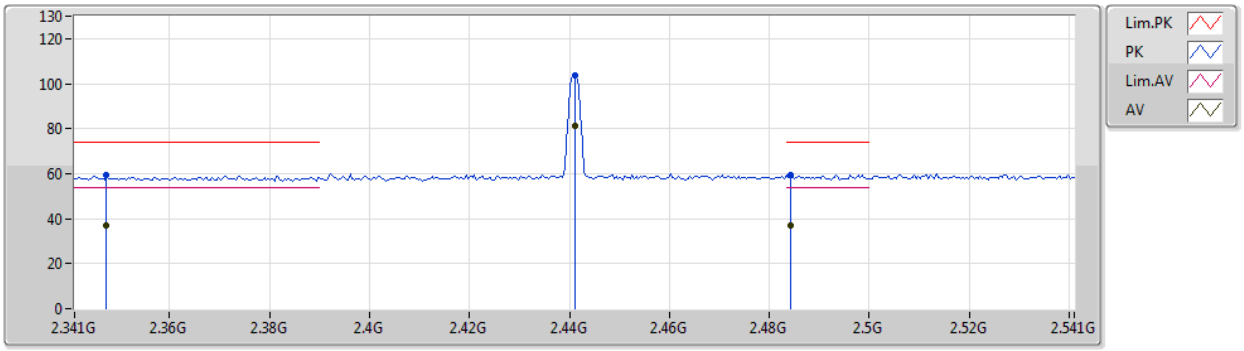


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3798G	36.50	54.00	-17.50	31.57	3	Vertical	161	1.73	-	4.93	27.58	3.99	-
AV	2.441G	76.37	Inf	-Inf	31.46	3	Vertical	161	1.73	-	44.91	27.42	4.04	-
AV	2.4978G	36.74	54.00	-17.26	31.40	3	Vertical	161	1.73	-	5.34	27.30	4.10	-
PK	2.3798G	59.00	74.00	-15.00	31.57	3	Vertical	161	1.73	-	27.43	27.58	3.99	-
PK	2.441G	98.87	Inf	-Inf	31.46	3	Vertical	161	1.73	-	67.41	27.42	4.04	-
PK	2.4978G	59.24	74.00	-14.76	31.40	3	Vertical	161	1.73	-	27.84	27.30	4.10	-

BT-BR(1Mbps)

2441MHz_TX

01/11/2019

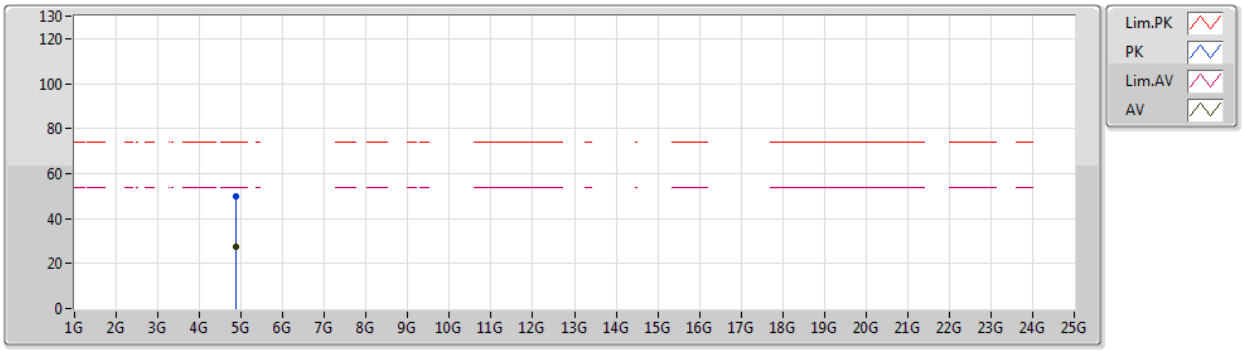


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3474G	36.77	54.00	-17.23	31.67	3	Horizontal	168	1.49	-	5.10	27.71	3.96	-
AV	2.441G	81.17	Inf	-Inf	31.46	3	Horizontal	168	1.49	-	49.71	27.42	4.04	-
AV	2.4842G	37.04	54.00	-16.96	31.42	3	Horizontal	168	1.49	-	5.62	27.33	4.09	-
PK	2.3474G	59.27	74.00	-14.73	31.67	3	Horizontal	168	1.49	-	27.60	27.71	3.96	-
PK	2.441G	103.67	Inf	-Inf	31.46	3	Horizontal	168	1.49	-	72.21	27.42	4.04	-
PK	2.4842G	59.54	74.00	-14.46	31.42	3	Horizontal	168	1.49	-	28.12	27.33	4.09	-

BT-BR(1Mbps)

2441MHz_TX

01/11/2019

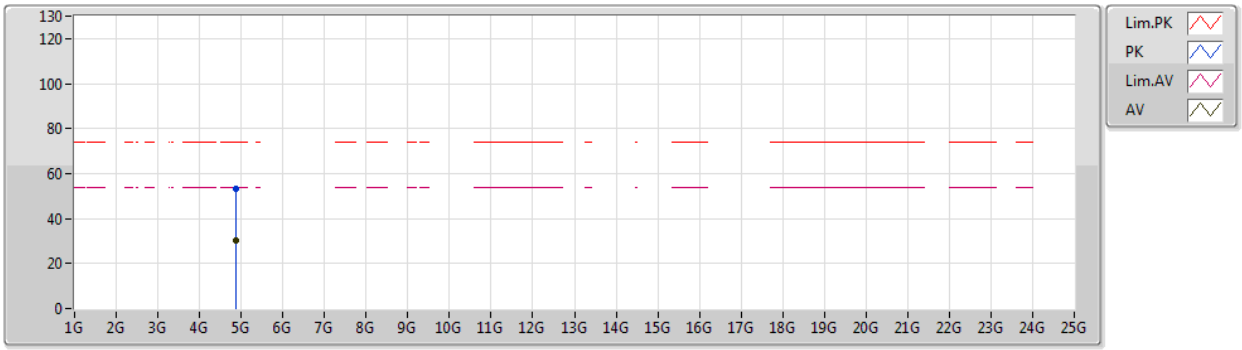


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.88193G	27.49	54.00	-26.51	7.64	3	Vertical	225	1.39	-	19.85	31.18	5.83	29.37
PK	4.88193G	49.99	74.00	-24.01	7.64	3	Vertical	225	1.39	-	42.35	31.18	5.83	29.37

BT-BR(1Mbps)

2441MHz_TX

01/11/2019

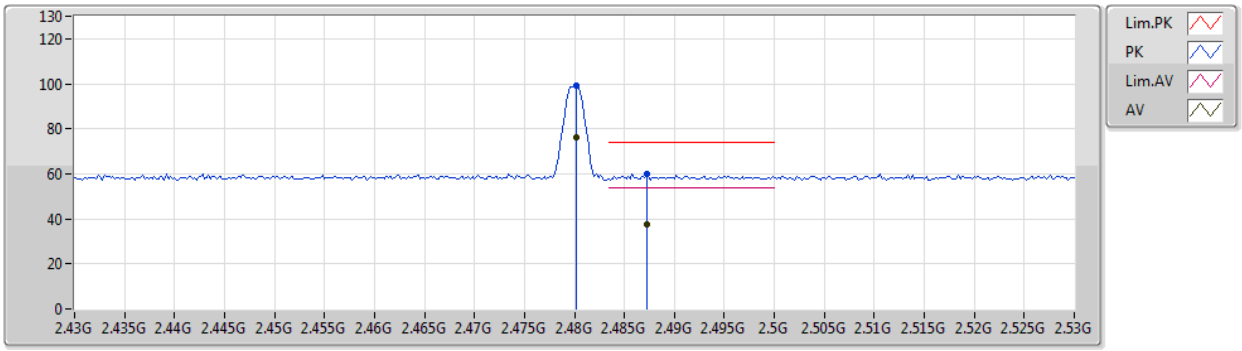


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.88209G	30.51	54.00	-23.49	7.65	3	Horizontal	154	1.48	-	22.86	31.18	5.84	29.37
PK	4.88209G	53.01	74.00	-20.99	7.65	3	Horizontal	154	1.48	-	45.36	31.18	5.84	29.37

BT-BR(1Mbps)

2480MHz_TX

01/11/2019

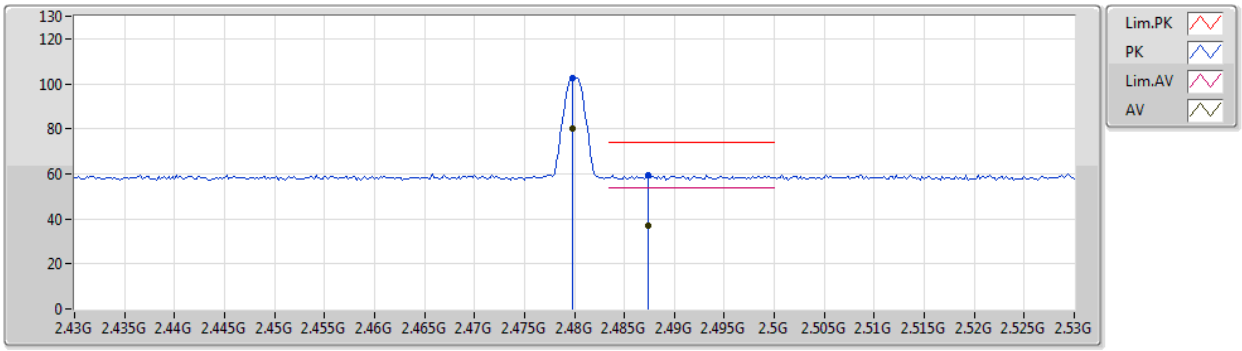


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.4802G	76.41	Inf	-Inf	31.42	3	Vertical	163	1.71	-	44.99	27.34	4.08	-
AV	2.4872G	37.40	54.00	-16.60	31.42	3	Vertical	163	1.71	-	5.98	27.33	4.09	-
PK	2.4802G	98.91	Inf	-Inf	31.42	3	Vertical	163	1.71	-	67.49	27.34	4.08	-
PK	2.4872G	59.90	74.00	-14.10	31.42	3	Vertical	163	1.71	-	28.48	27.33	4.09	-

BT-BR(1Mbps)

2480MHz_TX

01/11/2019

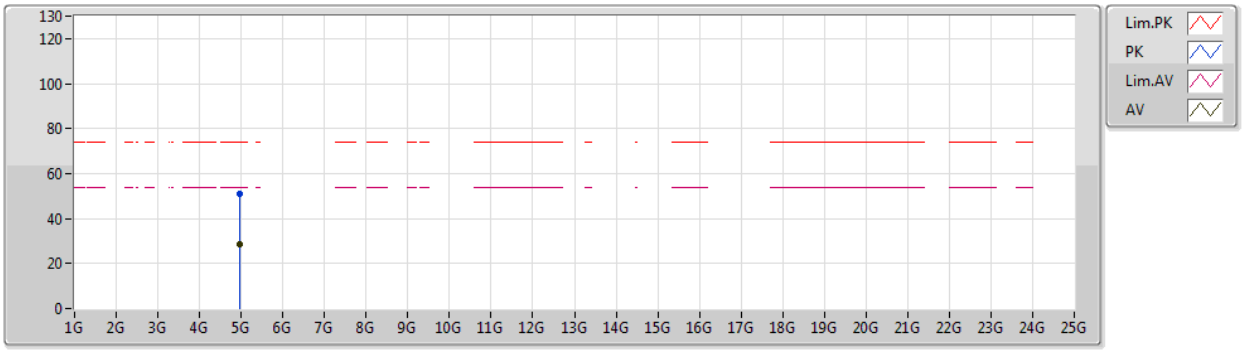


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.4798G	80.19	Inf	-Inf	31.42	3	Horizontal	177	1.52	-	48.77	27.34	4.08	-
AV	2.4874G	36.82	54.00	-17.18	31.42	3	Horizontal	177	1.52	-	5.40	27.33	4.09	-
PK	2.4798G	102.69	Inf	-Inf	31.42	3	Horizontal	177	1.52	-	71.27	27.34	4.08	-
PK	2.4874G	59.32	74.00	-14.68	31.42	3	Horizontal	177	1.52	-	27.90	27.33	4.09	-

BT-BR(1Mbps)

2480MHz_TX

01/11/2019

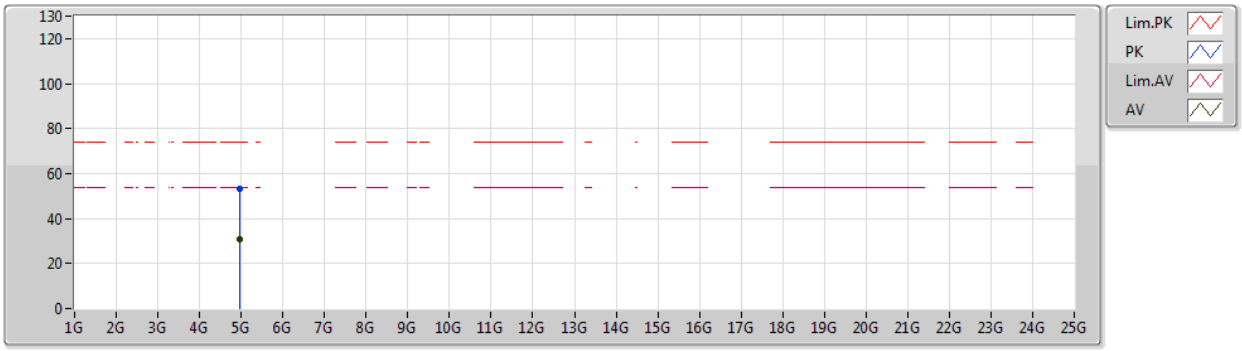


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.96019G	28.33	54.00	-25.67	7.93	3	Vertical	171	2.65	-	20.40	31.38	5.89	29.34
PK	4.96019G	50.83	74.00	-23.17	7.93	3	Vertical	171	2.65	-	42.90	31.38	5.89	29.34

BT-BR(1Mbps)

2480MHz_TX

01/11/2019



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.96006G	30.90	54.00	-23.10	7.93	3	Horizontal	153	1.43	-	22.97	31.38	5.89	29.34
PK	4.96006G	53.40	74.00	-20.60	7.93	3	Horizontal	153	1.43	-	45.47	31.38	5.89	29.34