

FCC Test Report

FCC ID : 2ACIX-PX5
Equipment : Wireless Headphones
Brand Name : Bowers & Wilkins
Model Name : PX5
Applicant/ Manufacturer : B&W Group Ltd
Dale Road, Worthing, West Sussex. BN11 2BH,
United Kingdom
Standard : 47 CFR FCC Part 15.247

The product was received on May 23, 2019, and testing was started from Jun. 06, 2019 and completed on Jun. 21, 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.


Approved by: Allen Lin

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

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

Table of Contents

HISTORY OF THIS TEST REPORT	3
SUMMARY OF TEST RESULT	4
1 GENERAL DESCRIPTION	5
1.1 Information.....	5
1.2 Testing Applied Standards	7
1.3 Testing Location Information	7
1.4 Measurement Uncertainty	7
2 TEST CONFIGURATION OF EUT.....	8
2.1 Test Condition	8
2.2 Test Channel Mode	8
2.3 The Worst Case Measurement Configuration.....	9
2.4 Accessories and Support Equipment	10
2.5 Test Setup Diagram	11
3 TRANSMITTER TEST RESULT	13
3.1 AC Power-line Conducted Emissions	13
3.2 20dB Bandwidth and Carrier Frequency Separation.....	14
3.3 Maximum Conducted Output Power	15
3.4 Number of Hopping Frequencies and Hopping Bandedge	16
3.5 Time of Occupancy (Dwell Time)	17
3.6 Emissions in Non-restricted Frequency Bands	18
3.7 Emissions in Restricted Frequency Bands.....	19
4 TEST EQUIPMENT AND CALIBRATION DATA.....	22
APPENDIX A. TEST RESULTS OF AC POWER-LINE CONDUCTED EMISSIONS	
APPENDIX B. TEST RESULTS OF 20DB BANDWIDTH AND CARRIER FREQUENCY SEPARATION	
APPENDIX C. TEST RESULTS OF MAXIMUM CONDUCTED OUTPUT POWER	
APPENDIX D. TEST RESULTS OF NUMBER OF HOPPING FREQUENCIES AND HOPPING BANDEDGE	
APPENDIX E. TEST RESULTS OF TIME OF OCCUPANCY (DWELL TIME)	
APPENDIX F. TEST RESULTS OF EMISSIONS IN NON-RESTRICTED FREQUENCY BANDS	
APPENDIX G. TEST RESULTS OF EMISSIONS IN RESTRICTED FREQUENCY BANDS	
APPENDIX H. TEST PHOTOS	
PHOTOGRAPHS OF EUT V01	



History of this test report

[illegible]

Summary of Test Result

Report Clause	Ref. Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	FCC 15.203
3.1	15.207	AC Power-line Conducted Emissions	PASS	FCC 15.207
3.2	15.247(a)	20dB Bandwidth	PASS	15.247(a)
3.2	15.247(a)	Carrier Frequency Separation	PASS	15.247(a)
3.3	15.247(b)	Maximum Conducted Output Power	PASS	15.247(b)
3.4	15.247(a)	Number of Hopping Frequencies and Hopping Bandedge	PASS	15.247(a)
3.5	15.247(a)	Time of Occupancy (Dwell Time)	PASS	15.247(a)
3.6	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	15.247(d)
3.7	15.247(d)	Emissions in Restricted Frequency Bands	PASS	Restricted Bands: FCC 15.209

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: Jackson Tsai

Report Producer: Amber Chiu

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 $\pi/4$ -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	Peak Gain (dBi)
1	ADVANCED-CONNECTEK INC.	ABP6Y-100000	Dipole antenna	Mini i-Pex	0.45

For BT function:

For IEEE 802.15.1 Bluetooth mode (1TX/1RX)

Ant. 1 could transmit/receive simultaneously.

1.1.3 EUT Information

Operational Condition			
EUT Power Type	From Host System / Battery / AC Adapter		
EUT Function	<input checked="" type="checkbox"/> Point-to-multipoint	<input type="checkbox"/> Point-to-point	
Type of EUT			
<input checked="" type="checkbox"/>	Stand-alone		
<input type="checkbox"/>	Combined (EUT where the radio part is fully integrated within another device)		
	Combined Equipment - Brand Name / Model No.: ...		
<input type="checkbox"/>	Plug-in radio (EUT intended for a variety of host systems)		
	Host System - Brand Name / Model No.: ...		
<input type="checkbox"/>	Other:		

1.1.4 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
BT-BR(1Mbps)	0.771	1.13	2.89m	1k
BT-EDR(2Mbps)	0.773	1.12	2.897m	1k
BT-EDR(3Mbps)	0.773	1.12	2.898m	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

1.3 Testing Location Information

Testing Location			
<input checked="" type="checkbox"/>	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.			
<input type="checkbox"/>	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
AC Conduction	CO04-HY	Jeff	22.1~25.1°C / 54.7~56.2%	21/Jun/2019
RF Conducted	TH06-HY	Gary	23.2~26°C / 62~66%	06/Jun/2019~ 12/Jun/2019
Radiated	03CH01-HY	Edward	24.2~27.5°C / 51.4~66.7%	13/Jun/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	25°C
-	Vnom	3.8V

2.2 Test Channel Mode




Test Software Version	Blue Test3
-----------------------	------------

Mode	PowerSetting
BT-BR(1Mbps)	-
2402MHz	6
2441MHz	6
2480MHz	5
BT-EDR(2Mbps)	-
2402MHz	6
2441MHz	6
2480MHz	5
BT-EDR(3Mbps)	-
2402MHz	6
2441MHz	6
2480MHz	6

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		

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 $3.37 \times 1.185 = 4$ 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 $13.33 \times 8 = 106.6$ within 8 seconds.

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

2.4 Accessories and Support Equipment

Accessories				
Battery	Brand Name	VDL	Model Name	493035
	Manufacturer	-	SN	-
	Power Rating	3.8 Vdc, 600mAh	Type	Li-ion, Y
Type C USB Cable	Brand Name	Liang Gang	Model Name	TG-D10031-0082
	Signal Line	1.2 meter, shielded cable, w/o ferrite core		
Audio Cable	Brand Name	B&W	Model Name	4021XW01844ZAG
	Signal Line	1.1 meter, non-shielded cable, w/o ferrite core		

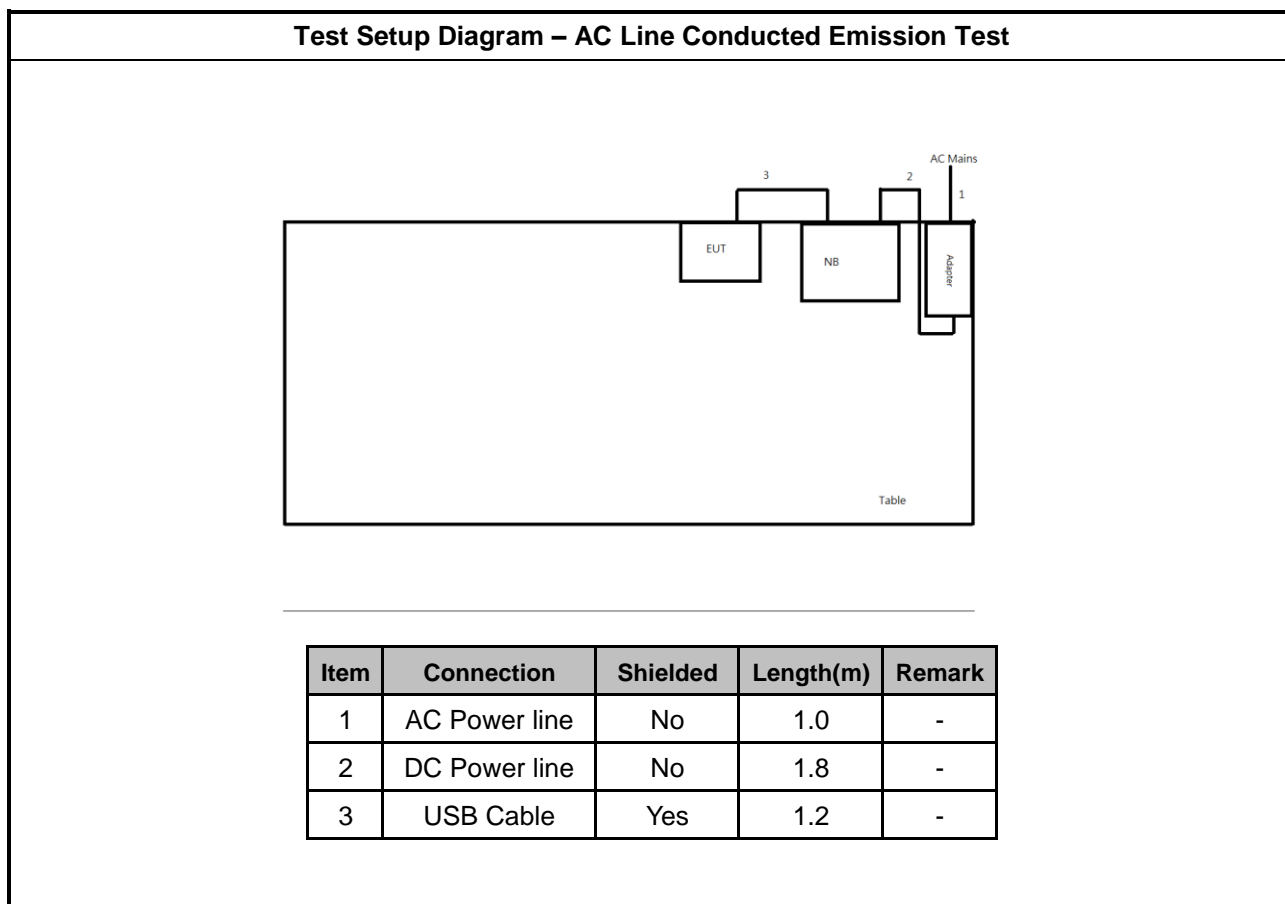
Reminder: Regarding to more detail and other information, please refer to user manual.

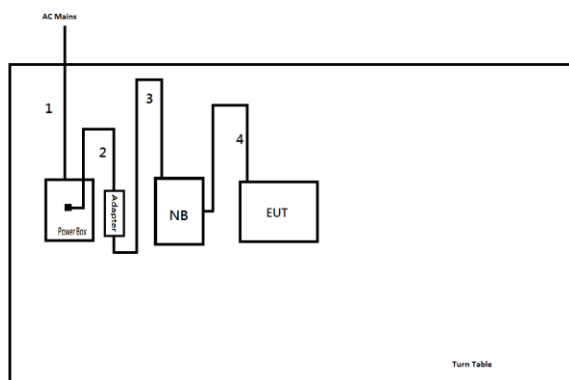
Support Equipment – AC Conduction				
No.	Equipment	Brand Name	Model Name	FCC ID
1	iPod	Apple	A1285	N/A
2	Notebook	Dell	E5570	N/A
3	AC Adapter for NB	Dell	LA90PM111	N/A
4	Mouse(USB)	Dell	MS116P	N/A

Support Equipment – RF Conducted				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E5410	DoC
2	Adapter for NB	DELL	HA65NM130	DoC

Support Equipment – Radiated Emission				
No.	Equipment	Brand Name	Model Name	FCC ID
1	iPod	Apple	A1285	N/A
2	Notebook	Dell	E5570	N/A
3	AC Adapter for NB	Dell	LA90PM111	N/A
	Mouse(USB)	Dell	MS116P	N/A

2.5 Test Setup Diagram



Test Setup Diagram - Radiated Test


Item	Connection	Shielded	Length(m)	Remark
1	AC Power line	No	1.8	-
2	AC Power line	No	1.0	-
3	DC Power line	No	2.0	-
4	USB Cable	Yes	1.2	-

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.

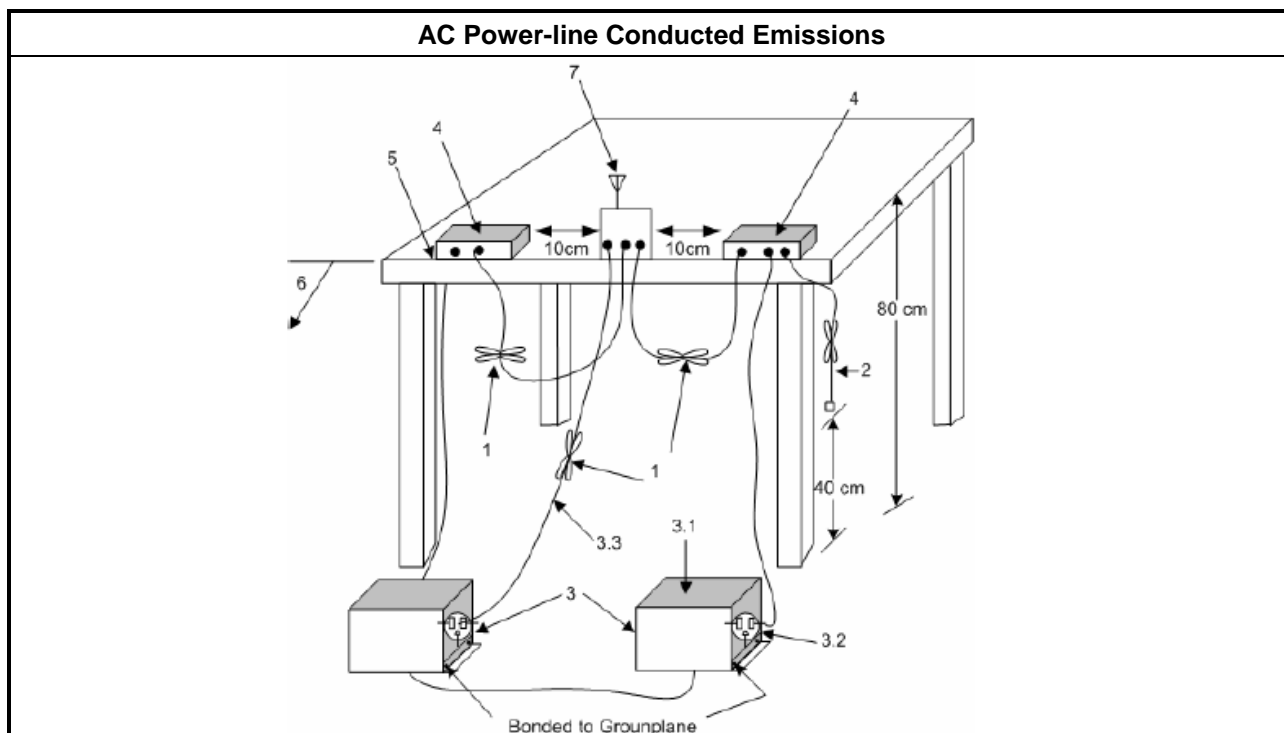
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

Test Method
<ul style="list-style-type: none"> Refer as ANSI C63.10-2013, clause 6.2 foray power-line conducted emissions.

3.1.4 Test Setup



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	
<ul style="list-style-type: none"> 2400-2483.5 MHz Band: 	
	<ul style="list-style-type: none"> $N \geq 75$ and $ChS \geq MAX$ (20 dB bandwidth, 25 kHz).
	<ul style="list-style-type: none"> $75 > N \geq 15$ and $ChS \geq MAX$ (20 dB bandwidth 2/3, 25 kHz).
N: Number of Hopping Frequencies; ChS: Hopping Channel Separation	

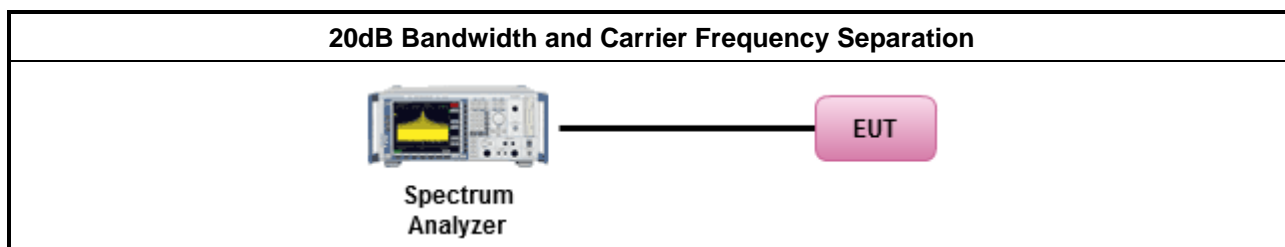
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method
<ul style="list-style-type: none"> Refer as ANSI C63.10-2013, clause 6.9.2 for 20 dB bandwidth measurement.
<ul style="list-style-type: none"> Refer as ANSI C63.10-2013, clause 7.8.2 for carrier frequency separation measurement.

3.2.4 Test Setup



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	
<ul style="list-style-type: none"> 2400-2483.5 MHz Band: 	
	<ul style="list-style-type: none"> $N \geq 75$; Power 30dBm; EIRP 36dBm
	<ul style="list-style-type: none"> $75 > N \geq 15$; Power 21dBm; EIRP 27dBm
N: Number of Hopping Frequencies	

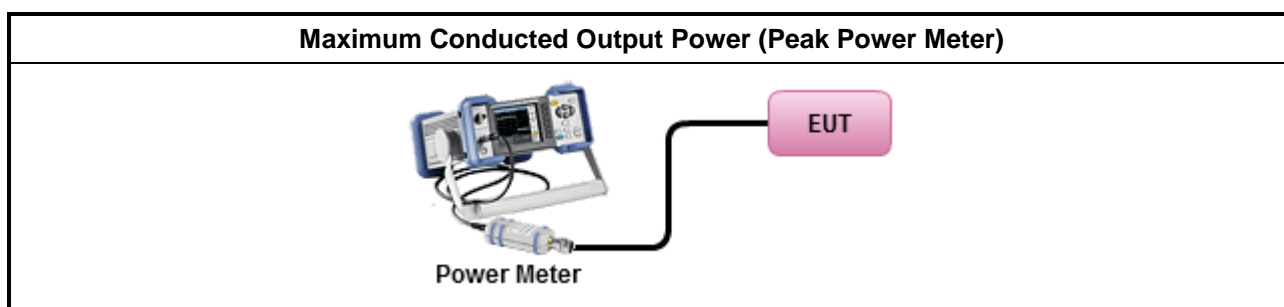
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method
<ul style="list-style-type: none"> Refer as ANSI C63.10-2013, clause 7.8.5 for output power measurement.

3.3.4 Test Setup



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	
<ul style="list-style-type: none"> 2400-2483.5 MHz Band: 	
	<ul style="list-style-type: none"> $N \geq 75$ and $ChS \geq MAX$ (20 dB bandwidth, 25 kHz).
	<ul style="list-style-type: none"> $75 > N \geq 15$ and $ChS \geq MAX$ (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

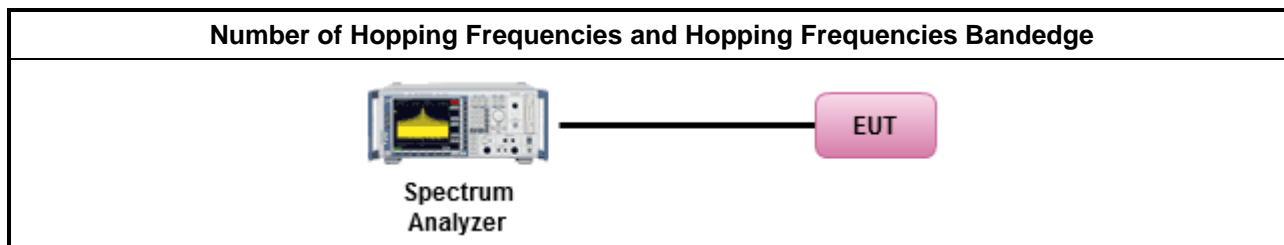
3.4.3 Measuring Instruments

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

3.4.4 Test Procedures

Test Method
<ul style="list-style-type: none"> Refer as ANSI C63.10-2013, clause 7.8.3 for number of hopping frequencies measurement.
<ul style="list-style-type: none"> Refer as ANSI C63.10-2013, clause 7.8.6 for hopping frequencies Bandedge measurement.

3.4.5 Test Setup



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	
<ul style="list-style-type: none"> 2400-2483.5 MHz Band: 	
	<ul style="list-style-type: none"> $N \geq 75$; 0.4s in $N \times 0.4$ period
	<ul style="list-style-type: none"> $75 > N \geq 15$; 0.4s in $N \times 0.4$ period
N: Number of Hopping Frequencies	

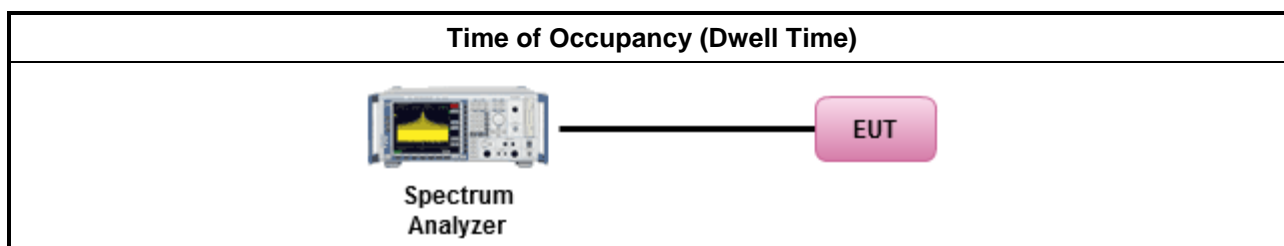
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> Refer as ANSI C63.10-2013, clause 7.8.4 for dwell time measurement. 	
<ul style="list-style-type: none"> 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. 	
	<ul style="list-style-type: none"> 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



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.	

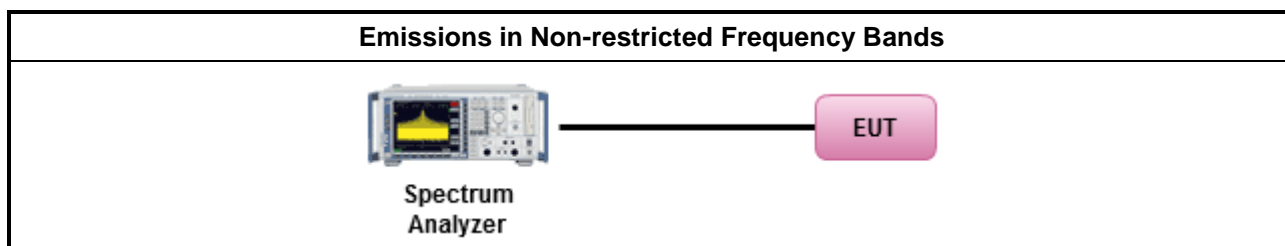
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

Test Method
<ul style="list-style-type: none"> Refer as ANSI C63.10-2013, clause 7.8.8 for unwanted emissions into non-restricted bands.

3.6.4 Test Setup



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 below 30 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.

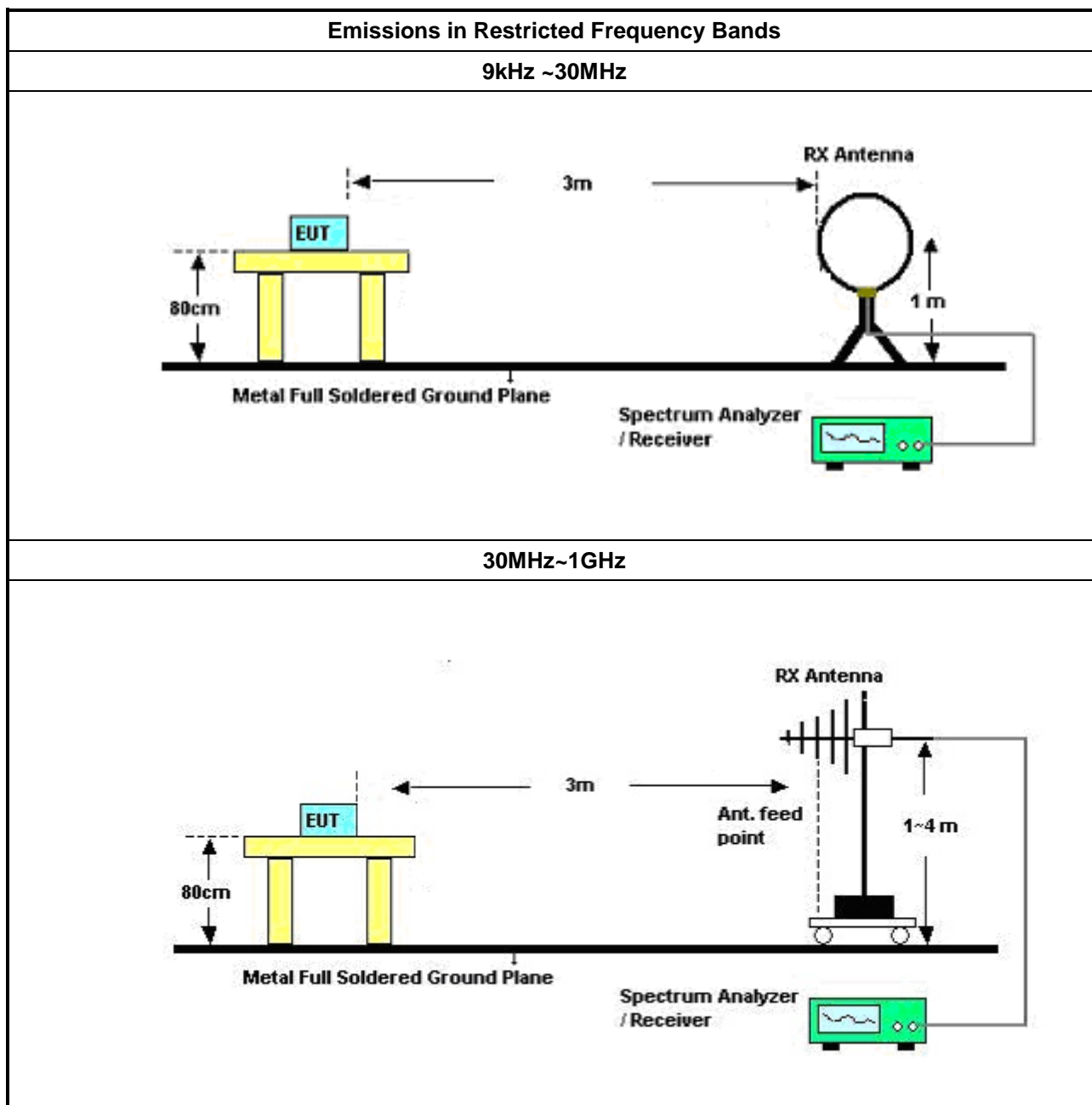
3.7.2 Measuring Instruments

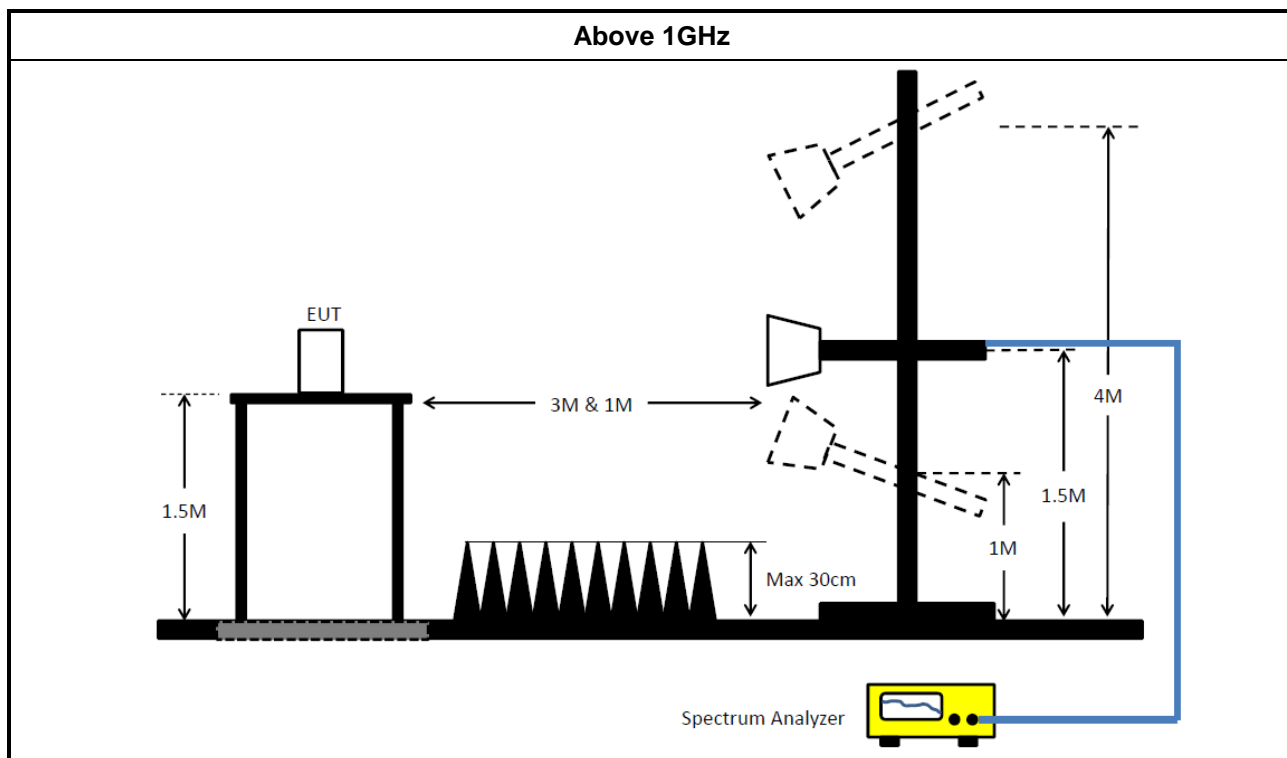
Refer a test equipment and calibration data table in this test report.

3.7.3 Test Procedures

Test Method	
<ul style="list-style-type: none">▪ The average emission levels shall be measured in [hopping duty factor].	
<ul style="list-style-type: none">▪ 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.	
<ul style="list-style-type: none">▪ For the transmitter unwanted emissions shall be measured using following options below:	
	<ul style="list-style-type: none">▪ Refer as ANSI C63.10, clause 4.1.4.2.1 QP value.
	<ul style="list-style-type: none">▪ Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak.
	<ul style="list-style-type: none">▪ Refer as ANSI C63.10, clause 4.1.4.2.4 average value of hopping pulsed emissions.

3.7.4 Test Setup





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
RF Cable-CON	MTJ	RG142	CB002-CO	9kHz ~ 200MHz	17/Sep/2018	16/Sep/2019
AC POWER	APC	AFC-11005G	F310050055	47Hz~63Hz 5~300V	NCR	NCR
Impuls Begrenzer Puls e Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9 kHz ~ 30 MHz	12/Oct/2018	11/Oct/2019

NCR : Non-Calibration Require

Instrument for Conducted Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV 40	101013	10Hz~40GHz	13/Mar/2019	12/Mar/2020
Power Sensor	Anritsu	MA2411B	1339407	300MHz ~ 40GHz	17/Nov/2018	16/Nov/2019
Power Meter	Anritsu	ML2495A	1517010	300MHz ~ 40GHz	17/Nov/2018	16/Nov/2019
Cable 0.2m	HUBER	MY10710/4	RF Cable - 01	30MHz ~18G	10/Jan/2019	09/Jan/2020
Cable 0.2m	HUBER	MY10711/4	RF Cable - 02	30MHz ~18G	10/Jan/2019	09/Jan/2020
Cable 0.5m	HUBER	MY39470/4	RF Cable - 29	30MHz ~18G	10/Jan/2019	09/Jan/2020
CABLE 1.5m	HUBER	MY33066/4	RF Cable - 30	1 to 18GHz	10/Jan/2019	09/Jan/2020
SMB100A Signal Generator	R&S	SMB100A03	181147	100kHz~40GHz	12/Nov/2018	10/Nov/2020

Instrument for Radiated Test

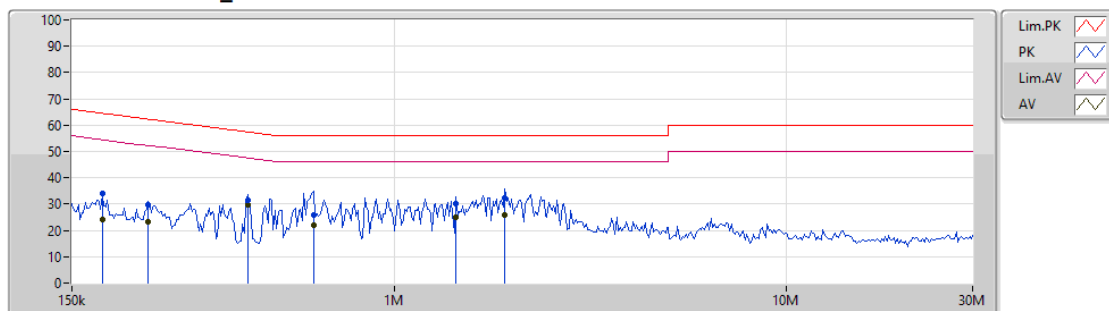
Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	Riken	SAC-3M	03CH01-HY	30MHz ~ 1GHz 3m	11/Jan/2019	10/Jan/2020
3m Semi Anechoic Chamber	Riken	SAC-3M	03CH01-HY	1GHz ~ 18GHz 3m	09/Jan/2019	08/Jan/2020
PreAmplifier	COM-POWER	PA-103	161050	1 MHz ~ 1.0GHz	24/Jul/2018	23/Jul/2019
Microwave Preamplifier	Agilent	8449B	3008A02602	1GHz ~ 26.5GHz	27/Mar/2019	26/Mar/2020
Spectrum Analyzer	R&S	FSV40	101407	10Hz ~ 40GHz	16/Aug/2018	15/Aug/2019
RF Cable-R03m	Jye Bao	RG142	CB019	9kHz ~ 1GHz	14/Dec/2018	13/Dce/2019
RF Cable-high	SUHNER	SUCOFLEX 104	SN805196/4+MY 39495	1 GHz ~ 18 GHz	13/Mar/2019	12/Mar/2020
Bilog Antenna & 5db Attenuator	SCHAFFNER/MTJ	CBL6112D / MTJ6102-05	2678 / 001	30MHz ~ 2GHz	07/Jul/2018	06/Jul/2019
EMI Test Receiver	R&S	ESU-26	100422	20Hz ~ 26.5GHz	25/Oct/2018	24/Oct/2019
Loop Antenna	TESEQ	HLA 6120	31244	9k-30MHz	15/Mar/2019	14/Mar/2020
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170339	18GHz ~ 40GHz	19/Apr/2019	18/Apr/2020
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D-1130	1GHz ~ 18GHz	26/Oct/2018	25/Oct/2019

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Neutral
Operating Function	USB mode ; BT 2.1+EDR		

AC Conduction_Mode 1

21/06/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	179.422k	34.10	64.51	-30.41	19.47	Neutral	-	14.63	9.59	0.01	9.87			
AV	179.422k	24.27	54.51	-30.24	19.47	Neutral	-	4.80	9.59	0.01	9.87			
QP	234.722k	29.66	62.27	-32.61	19.47	Neutral	-	10.19	9.59	0.01	9.87			
AV	234.722k	23.34	52.27	-28.93	19.47	Neutral	-	3.87	9.59	0.01	9.87			
QP	422.196k	31.53	57.40	-25.87	19.48	Neutral	-	12.05	9.59	0.01	9.88			
AV	422.196k	29.66	47.40	-17.74	19.48	Neutral	"Worst"	10.18	9.59	0.01	9.88			
QP	622.369k	25.96	56.00	-30.04	19.48	Neutral	-	6.48	9.59	0.01	9.88			
AV	622.369k	21.98	46.00	-24.02	19.48	Neutral	-	2.50	9.59	0.01	9.88			
QP	1.436M	29.97	56.00	-26.03	19.52	Neutral	-	10.45	9.60	0.03	9.89			
AV	1.436M	25.17	46.00	-20.83	19.52	Neutral	-	5.65	9.60	0.03	9.89			
QP	1.916M	32.30	56.00	-23.70	19.53	Neutral	-	12.77	9.61	0.03	9.89			
AV	1.916M	26.05	46.00	-19.95	19.53	Neutral	-	6.52	9.61	0.03	9.89			

Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.

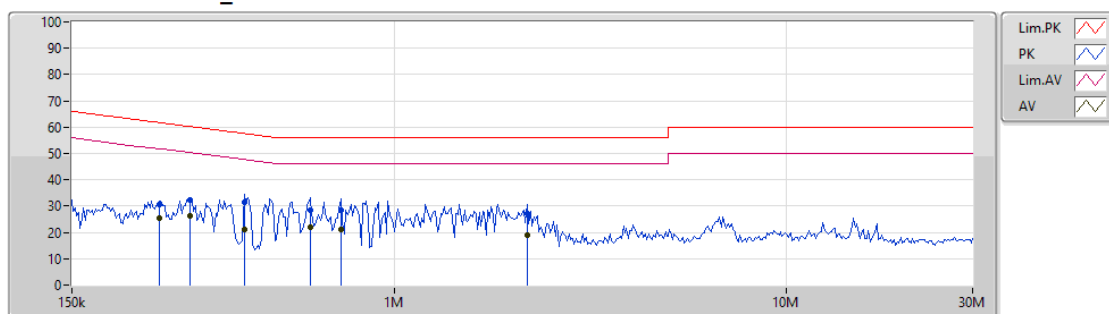
Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Line
Operating Function	USB mode ; BT 2.1+EDR		

AC Conduction_Mode 1

21/06/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	251.653k	30.61	61.70	-31.09	19.48	Line	-	11.13	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	301.015k	32.45	60.21	-27.76	19.48	Line	-	12.97	9.59	0.01	9.88			
AV	301.015k	26.45	50.21	-23.76	19.48	Line	"Worst"	6.97	9.59	0.01	9.88			
QP	413.877k	31.45	57.57	-26.12	19.48	Line	-	11.97	9.59	0.01	9.88			
AV	413.877k	21.18	47.57	-26.39	19.48	Line	-	1.70	9.59	0.01	9.88			
QP	610.106k	28.43	56.00	-27.57	19.48	Line	-	8.95	9.59	0.01	9.88			
AV	610.106k	21.77	46.00	-24.23	19.48	Line	-	2.29	9.59	0.01	9.88			
QP	729.776k	28.56	56.00	-27.44	19.50	Line	-	9.06	9.60	0.02	9.88			
AV	729.776k	21.24	46.00	-24.76	19.50	Line	-	1.74	9.60	0.02	9.88			
QP	2.18M	27.08	56.00	-28.92	19.54	Line	-	7.54	9.62	0.03	9.89			
AV	2.18M	18.82	46.00	-27.18	19.54	Line	-	-0.72	9.62	0.03	9.89			

Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)

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)	920k	873.313k	873KF1D	918.75k	870.815k
BT-EDR(2Mbps)	1.33M	1.211M	1M21G1D	1.326M	1.206M
BT-EDR(3Mbps)	1.323M	1.212M	1M21G1D	1.314M	1.208M

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;

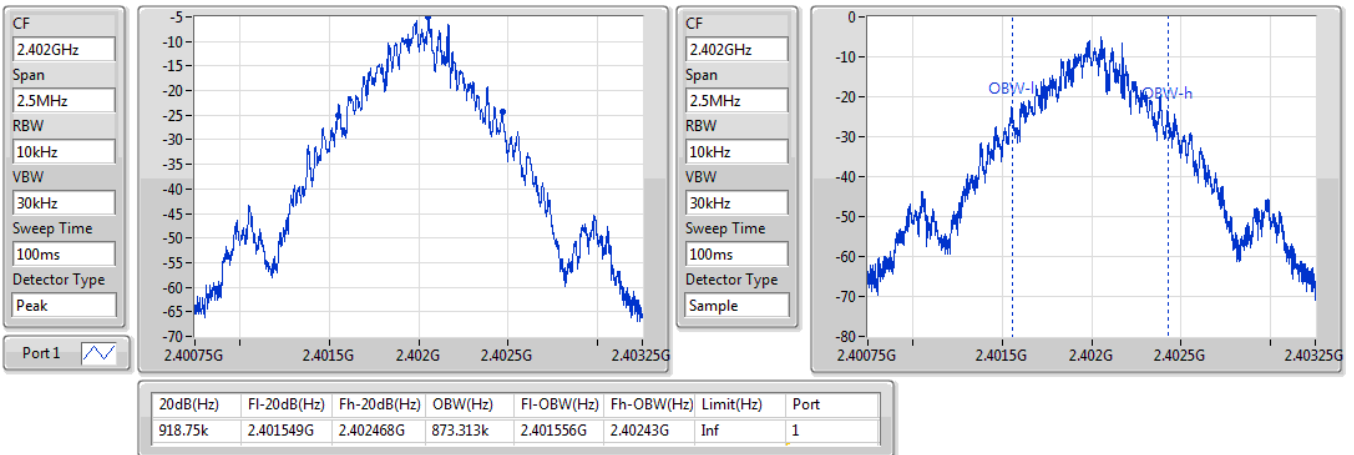
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	Inf	918.75k	873.313k
2441MHz	Pass	Inf	918.75k	870.815k
2480MHz	Pass	Inf	920k	872.064k
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.326M	1.206M
2441MHz	Pass	Inf	1.33M	1.207M
2480MHz	Pass	Inf	1.326M	1.211M
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.323M	1.208M
2441MHz	Pass	Inf	1.32M	1.208M
2480MHz	Pass	Inf	1.314M	1.212M

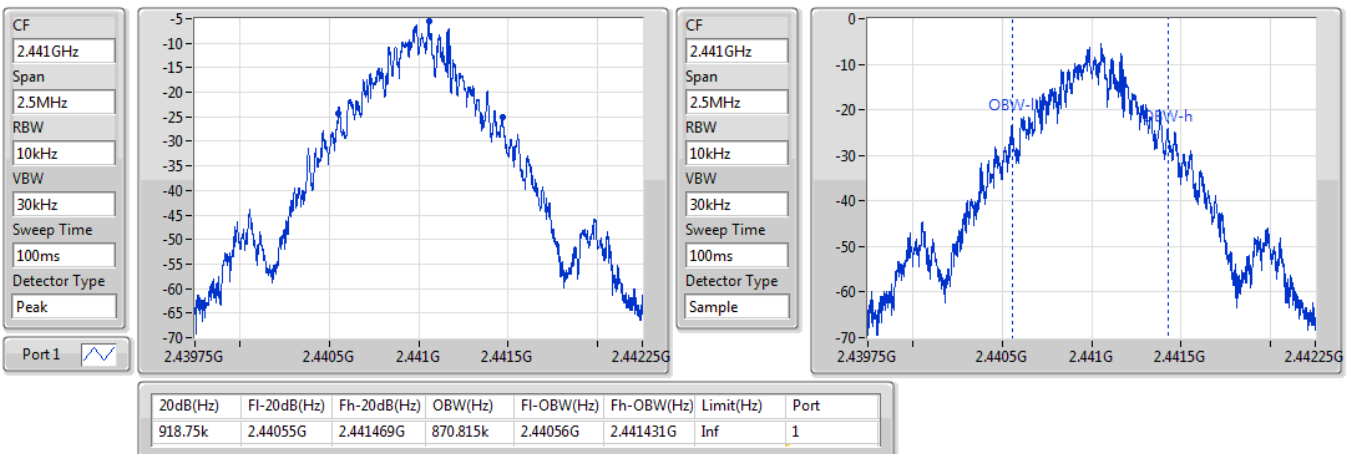
Port X-N dB = Port X 20dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

BT-BR(1Mbps)
EBW
2402MHz

07/06/2019

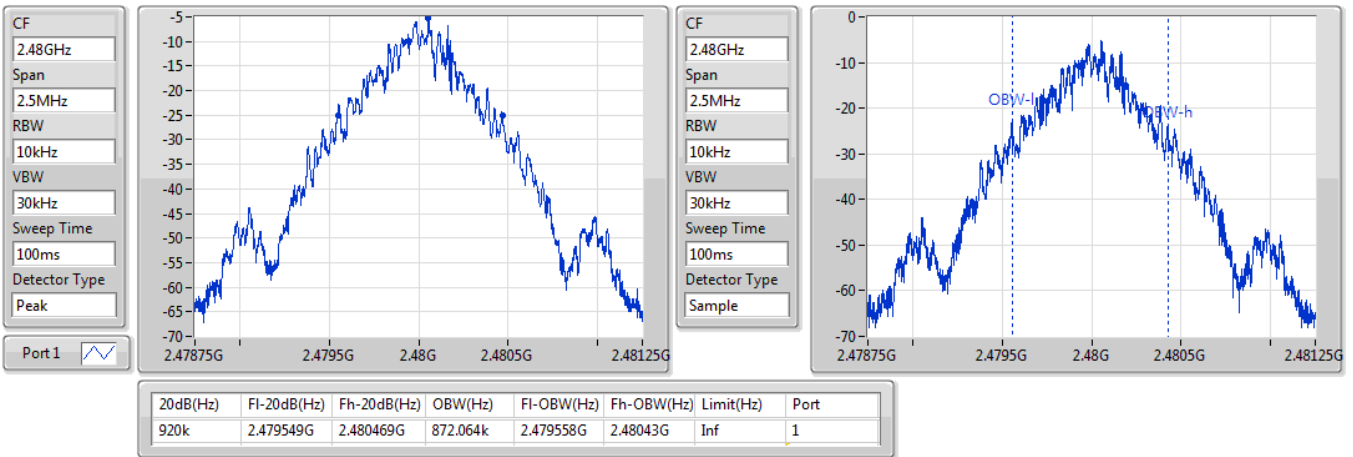

BT-BR(1Mbps)
EBW
2441MHz

07/06/2019

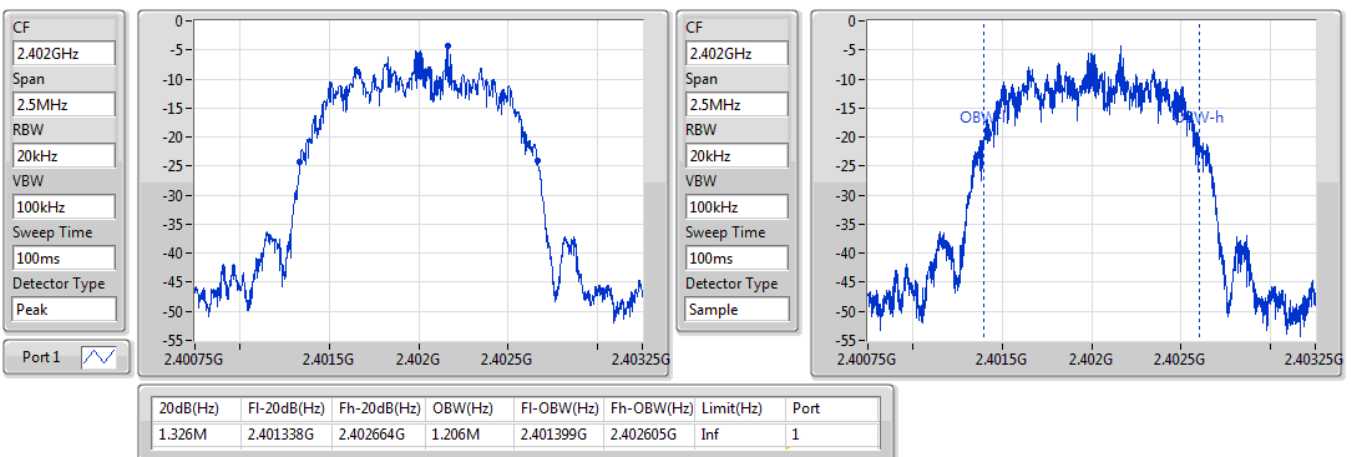


BT-BR(1Mbps)
EBW
2480MHz

07/06/2019

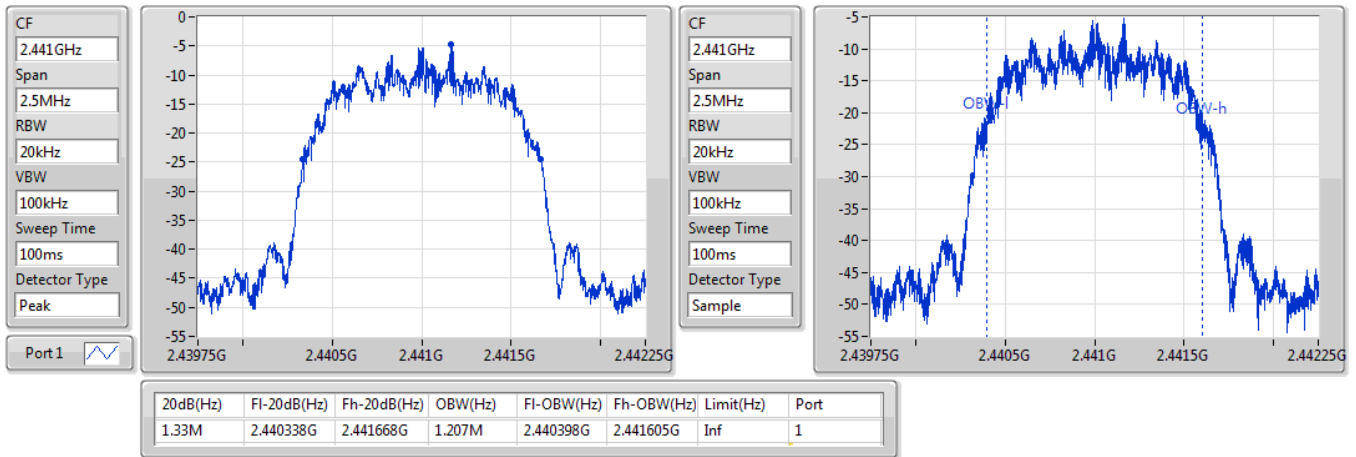

BT-EDR(2Mbps)
EBW
2402MHz

07/06/2019

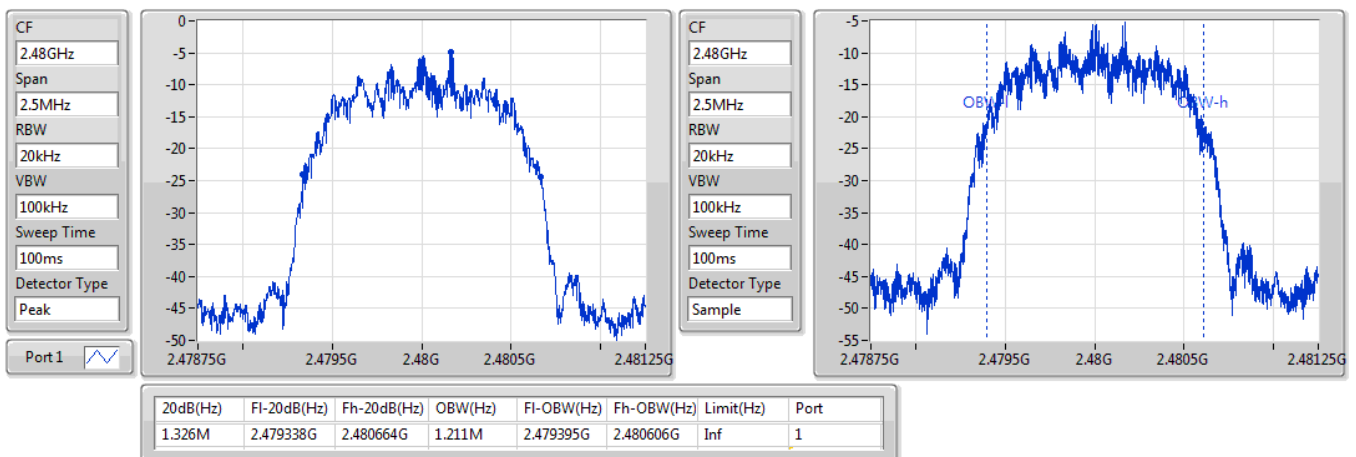


BT-EDR(2Mbps)
EBW
2441MHz

07/06/2019

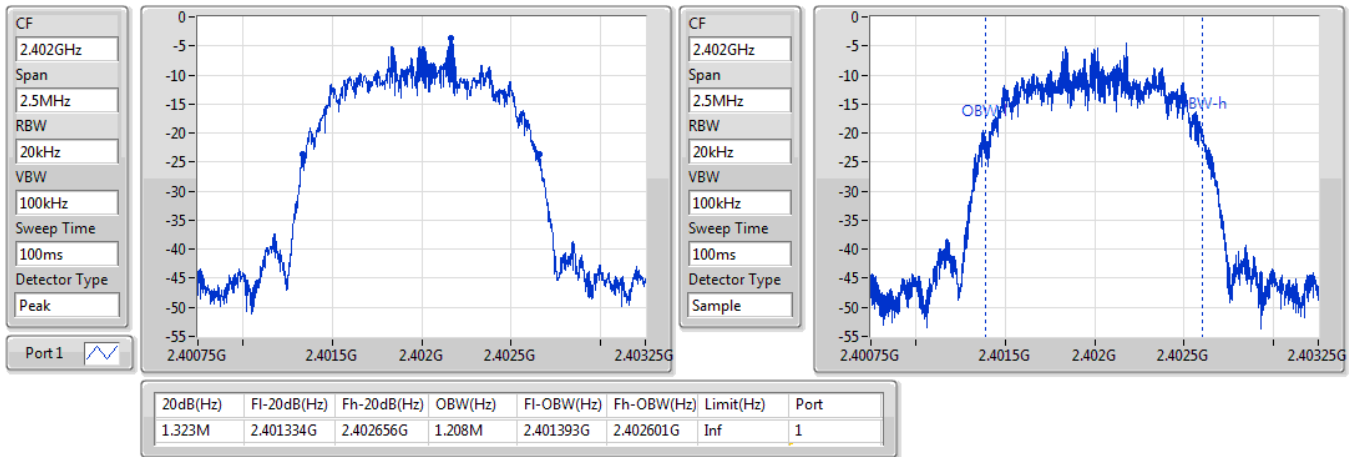

BT-EDR(2Mbps)
EBW
2480MHz

07/06/2019

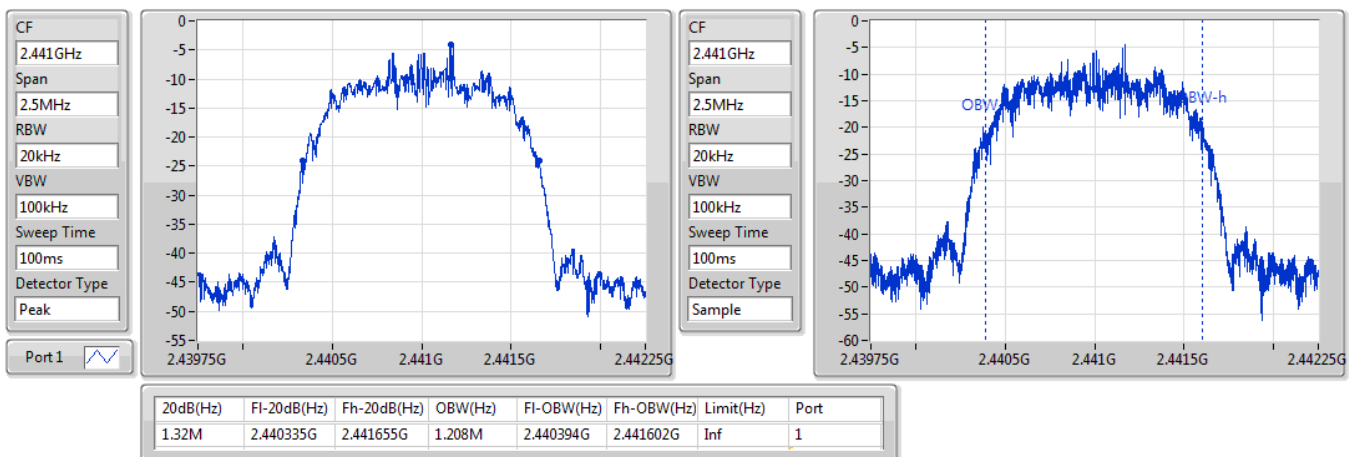


BT-EDR(3Mbps)
EBW
2402MHz

07/06/2019


BT-EDR(3Mbps)
EBW
2441MHz

07/06/2019

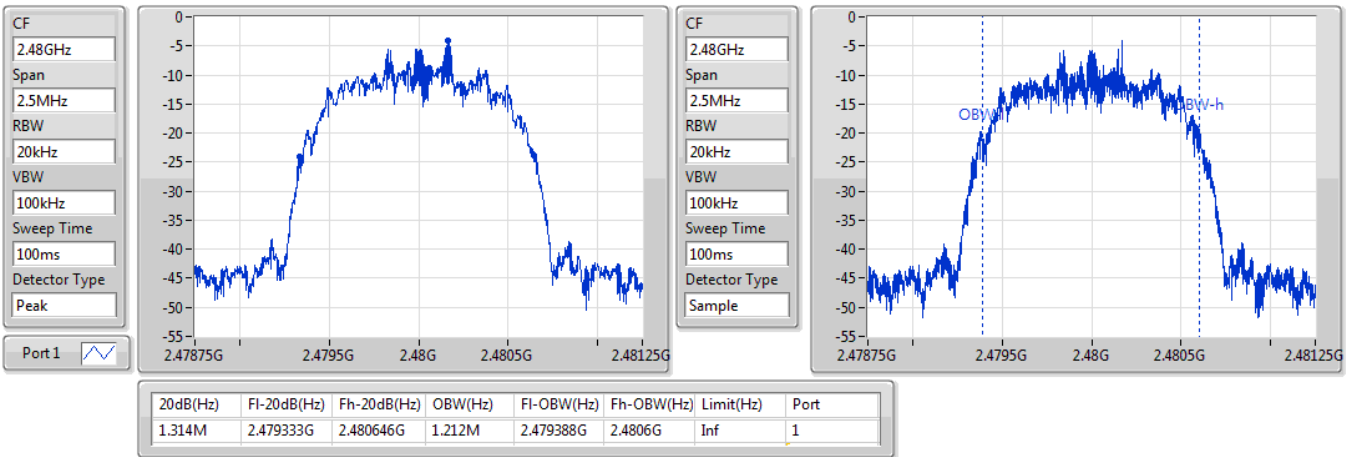


BT-EDR(3Mbps)

2480MHz

EBW

07/06/2019





Summary

Mode	Max-Space (Hz)	Min-Space (Hz)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	1.0005M	999k
BT-EDR(2Mbps)	1.002M	999k
BT-EDR(3Mbps)	1.002M	1.0005M

Result

Mode	Result	Fl (Hz)	Fh (Hz)	Ch.Space (Hz)	Limit (Hz)
BT-BR(1Mbps)	-	-	-	-	-
2402MHz	Pass	2.402164G	2.403165G	1.0005M	611.8875k
2441MHz	Pass	2.441164G	2.442163G	999k	611.8875k
2480MHz	Pass	2.479164G	2.480165G	1.0005M	612.72k
BT-EDR(2Mbps)	-	-	-	-	-
2402MHz	Pass	2.401998G	2.403G	1.002M	883.116k
2441MHz	Pass	2.440999G	2.441998G	999k	885.78k
2480MHz	Pass	2.478999G	2.479998G	999k	883.116k
BT-EDR(3Mbps)	-	-	-	-	-
2402MHz	Pass	2.401998G	2.403G	1.002M	881.118k
2441MHz	Pass	2.440999G	2.442G	1.0005M	879.12k
2480MHz	Pass	2.478998G	2.48G	1.002M	875.124k

BT-BR(1Mbps)

2.402G/2.403GHz

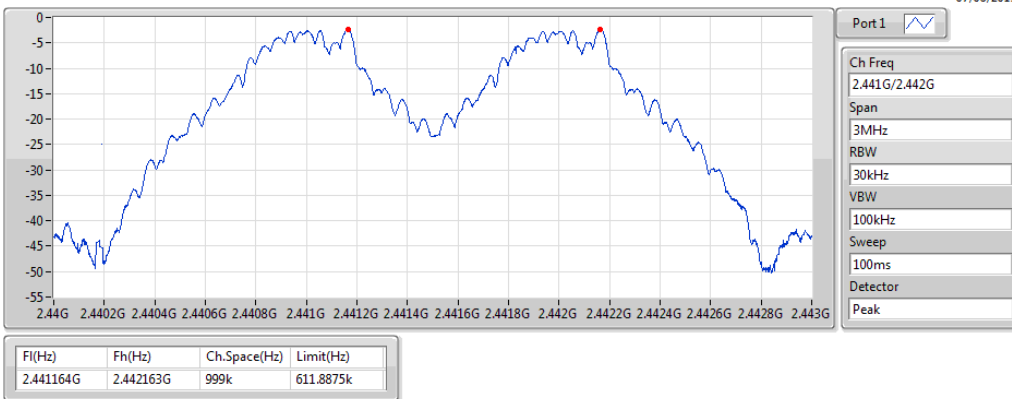
Channel Separation



BT-BR(1Mbps)

2.441G/2.442GHz

Channel Separation



BT-BR(1Mbps)

2.48G/2.479GHz

Channel Separation

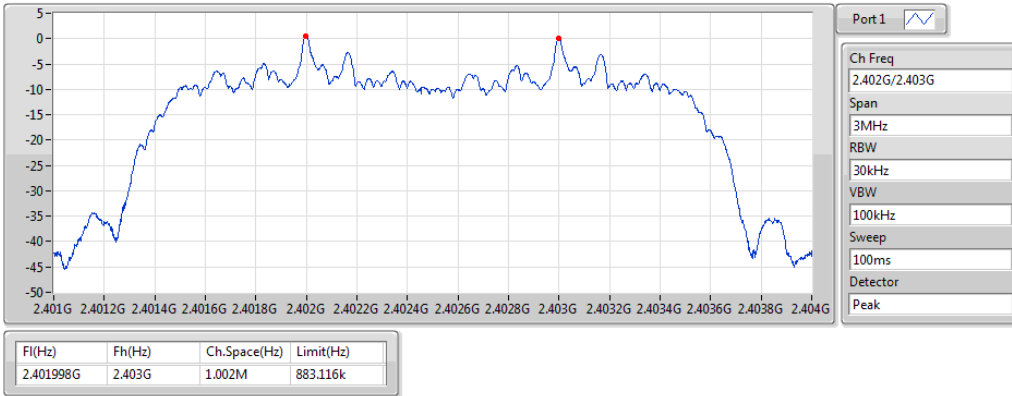


BT-EDR(2Mbps)

2.402G/2.403GHz

Channel Separation

07/06/2019

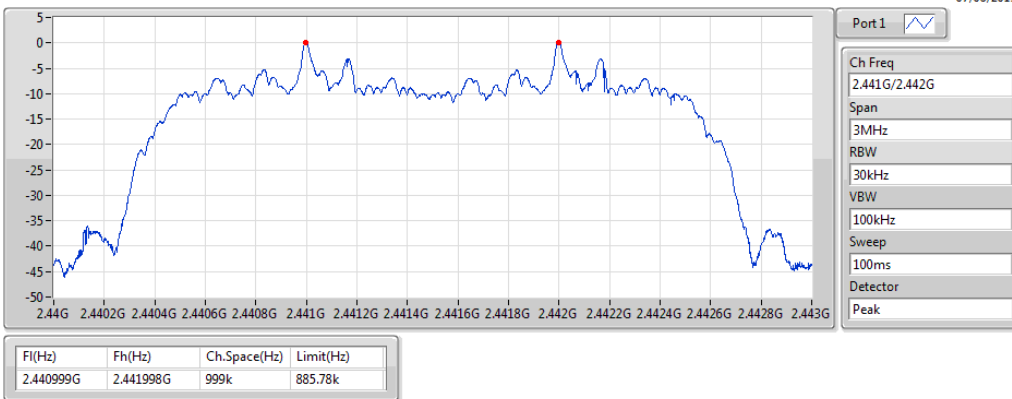


BT-EDR(2Mbps)

2.441G/2.442GHz

Channel Separation

07/06/2019

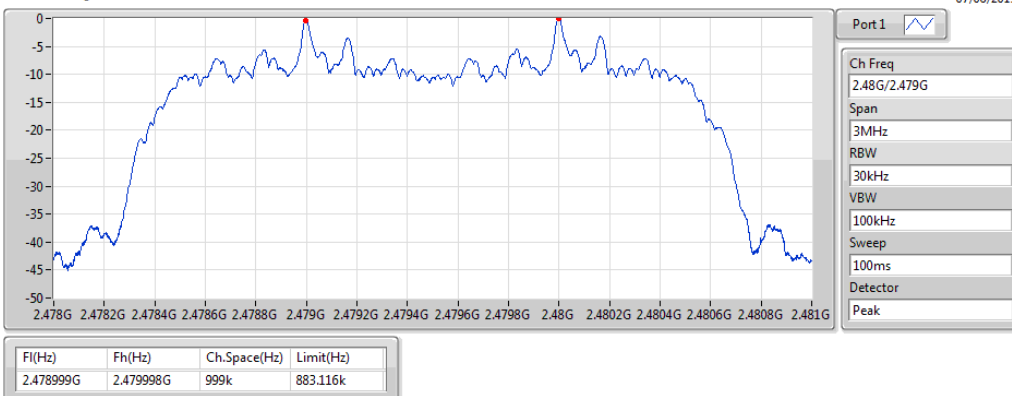


BT-EDR(2Mbps)

2.48G/2.479GHz

Channel Separation

07/06/2019

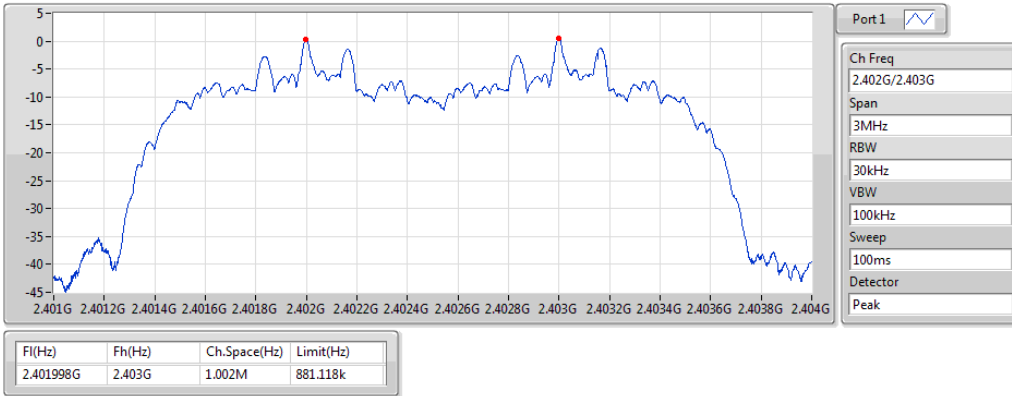


BT-EDR(3Mbps)

2.402G/2.403GHz

Channel Separation

07/06/2019

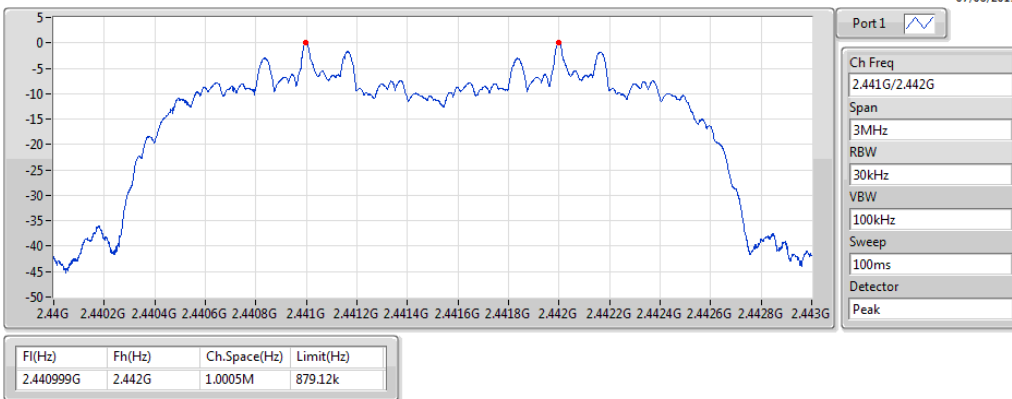


BT-EDR(3Mbps)

2.441G/2.442GHz

Channel Separation

07/06/2019

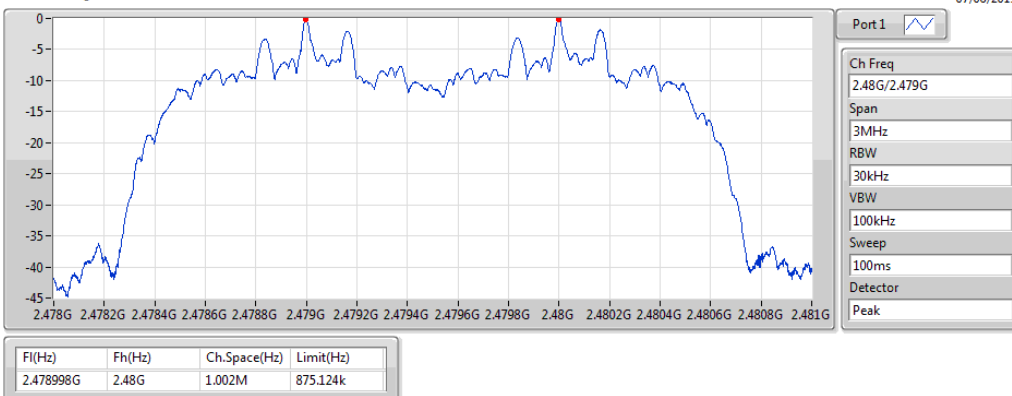


BT-EDR(3Mbps)

2.48G/2.479GHz

Channel Separation

07/06/2019





Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	3.97	0.00249
BT-EDR(2Mbps)	4.05	0.00254
BT-EDR(3Mbps)	3.57	0.00228

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	0.45	3.87	21.00
2441MHz	Pass	0.45	3.69	21.00
2480MHz	Pass	0.45	3.97	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	0.45	3.50	21.00
2441MHz	Pass	0.45	3.48	21.00
2480MHz	Pass	0.45	4.05	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	0.45	3.57	21.00
2441MHz	Pass	0.45	3.46	21.00
2480MHz	Pass	0.45	3.14	21.00

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



Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	3.50	0.00224
BT-EDR(2Mbps)	3.46	0.00222
BT-EDR(3Mbps)	3.47	0.00222

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	0.45	3.24	21.00
2441MHz	Pass	0.45	3.03	21.00
2480MHz	Pass	0.45	3.50	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	0.45	3.46	21.00
2441MHz	Pass	0.45	2.93	21.00
2480MHz	Pass	0.45	3.43	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	0.45	3.47	21.00
2441MHz	Pass	0.45	2.97	21.00
2480MHz	Pass	0.45	2.91	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

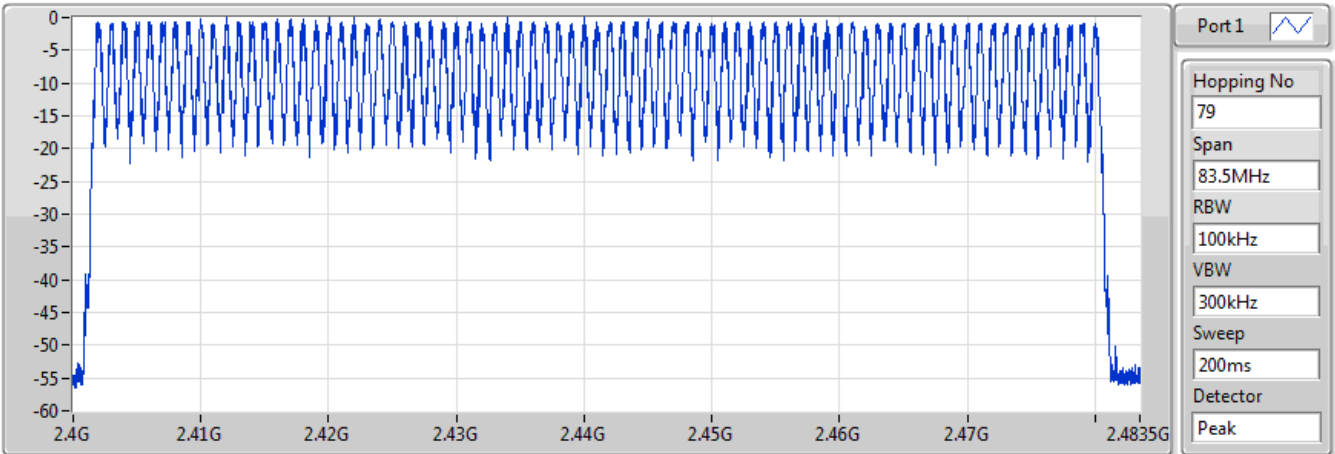
Mode	Result	Hopping No	Limit
BT-BR(1Mbps)	-	-	-
2441MHz	Pass	79	15
BT-EDR(2Mbps)	-	-	-
2441MHz	Pass	79	15
BT-EDR(3Mbps)	-	-	-
2441MHz	Pass	79	15

BT-BR(1Mbps)

2441MHz

Hopping Ch

07/06/2019



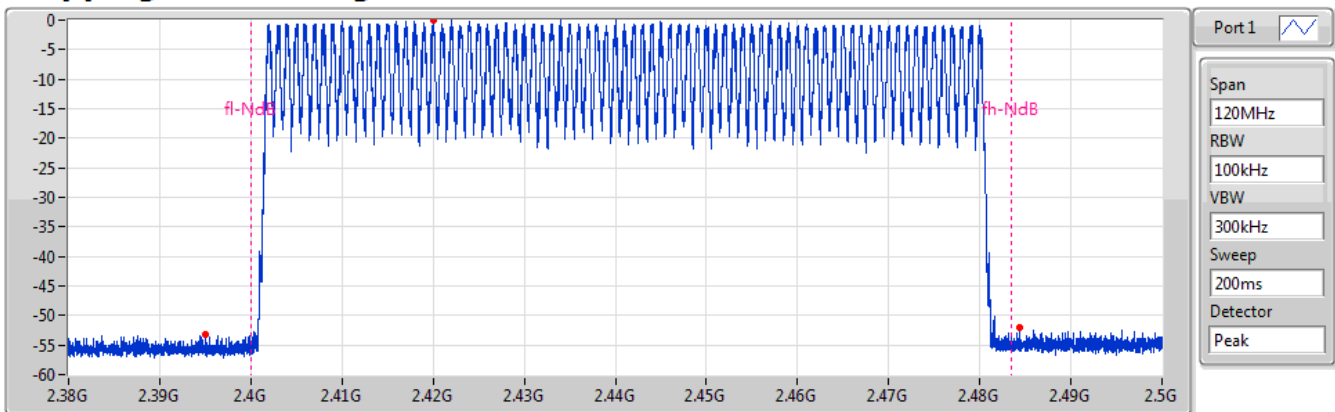
Hopping No	Limit
79	15

BT-BR(1Mbps)

2441MHz

Hopping Ch Bandedge (Non-restricted Band)

07/06/2019



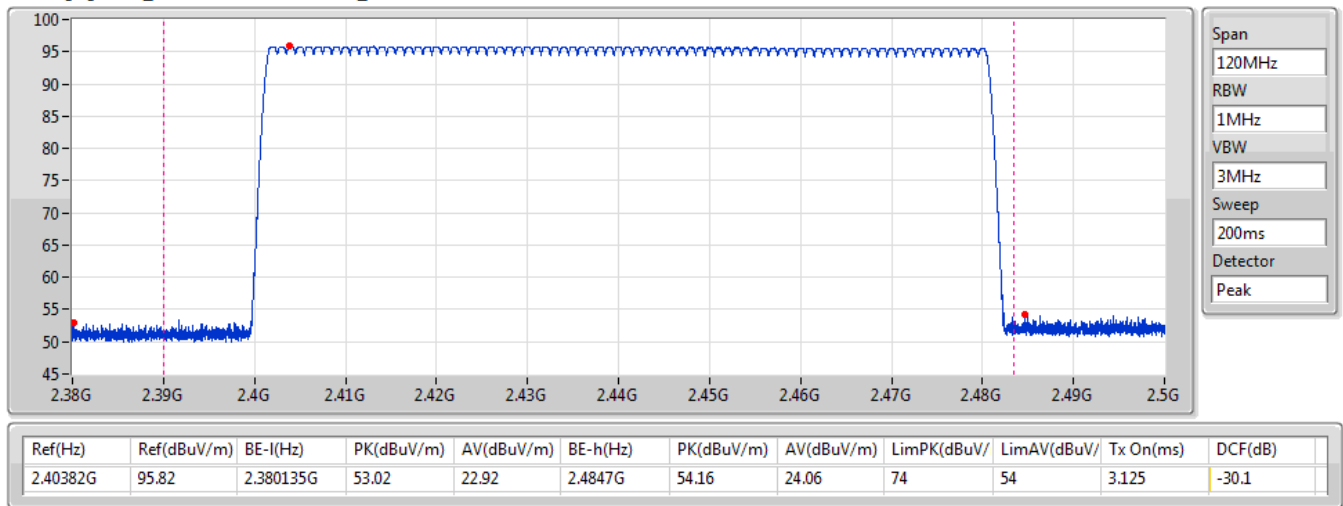
Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-20.01	2.420005G	-0.01	2.39503G	-53.21	2.484415G	-51.94

BT-BR(1Mbps)

2441MHz

Hopping Ch Bandedge (Restricted Band)

07/06/2019

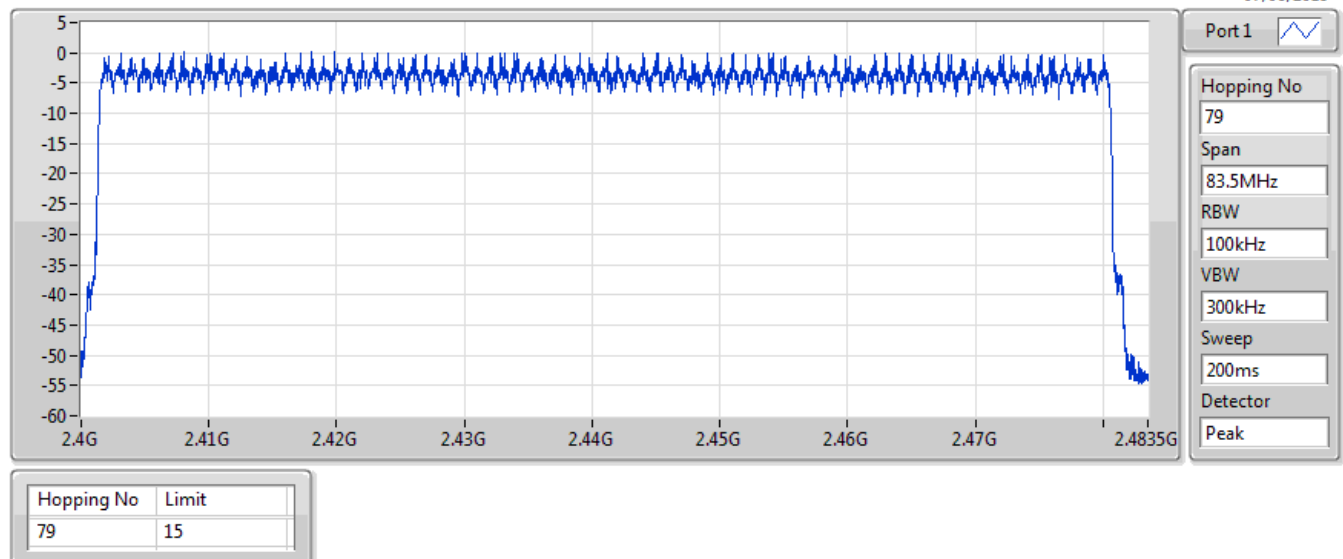


BT-EDR(2Mbps)

2441MHz

Hopping Ch

07/06/2019

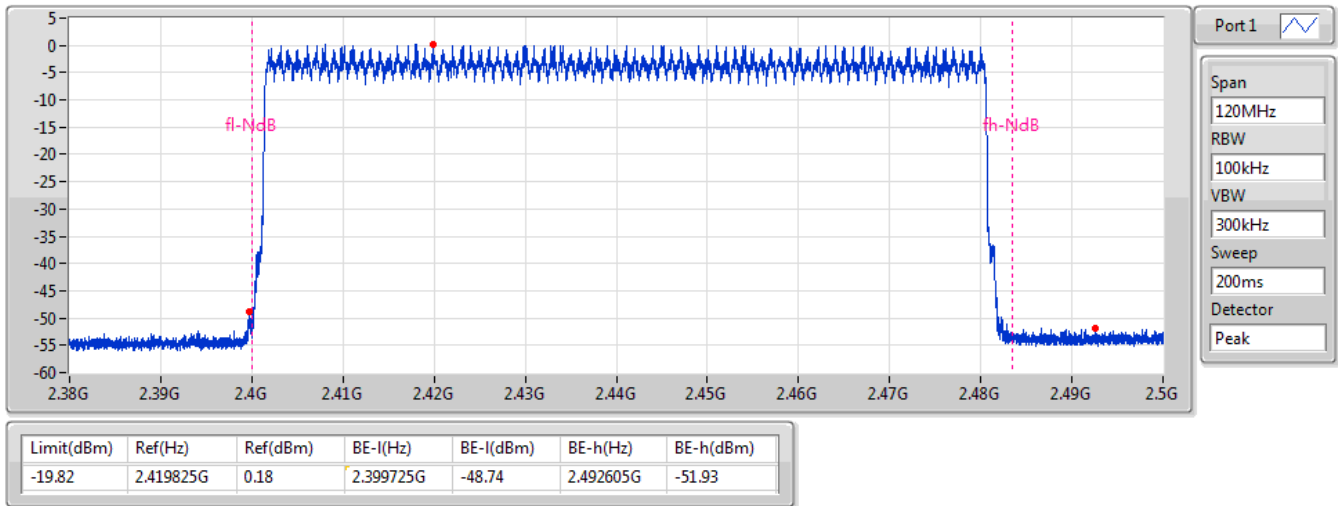


BT-EDR(2Mbps)

2441MHz

Hopping Ch Bandedge (Non-restricted Band)

07/06/2019

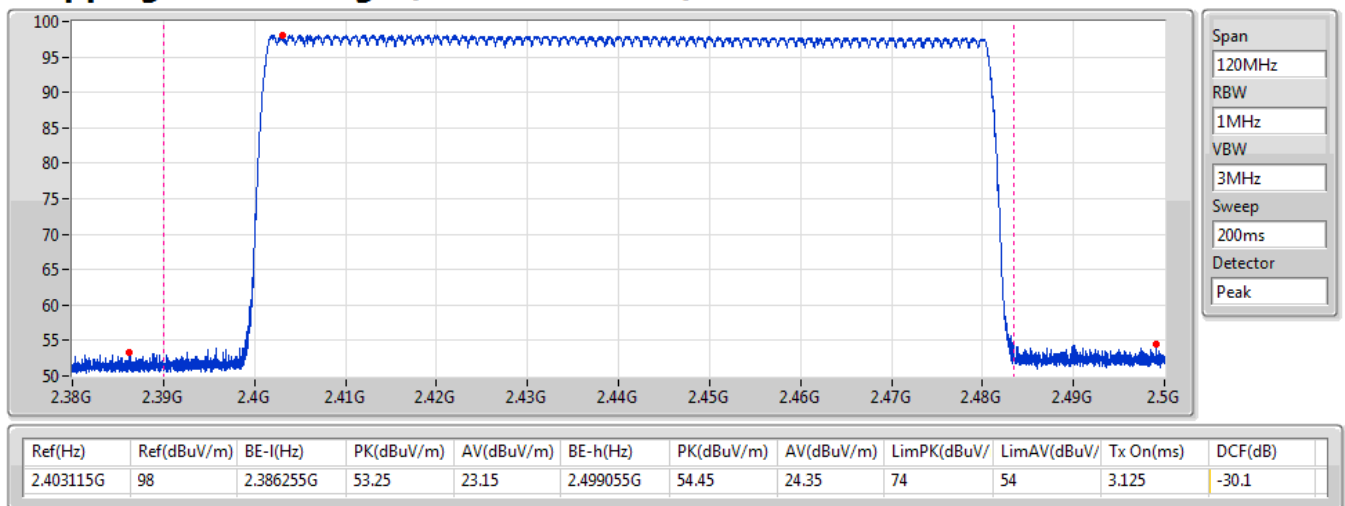


BT-EDR(2Mbps)

2441MHz

Hopping Ch Bandedge (Restricted Band)

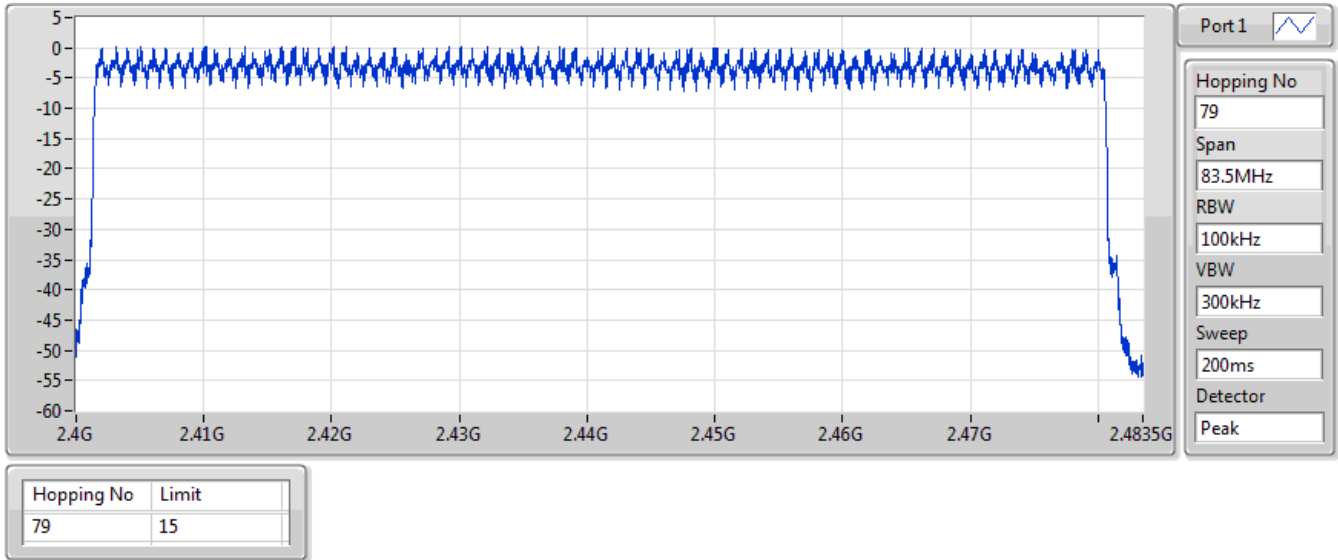
07/06/2019



BT-EDR(3Mbps) 2441MHz

Hopping Ch

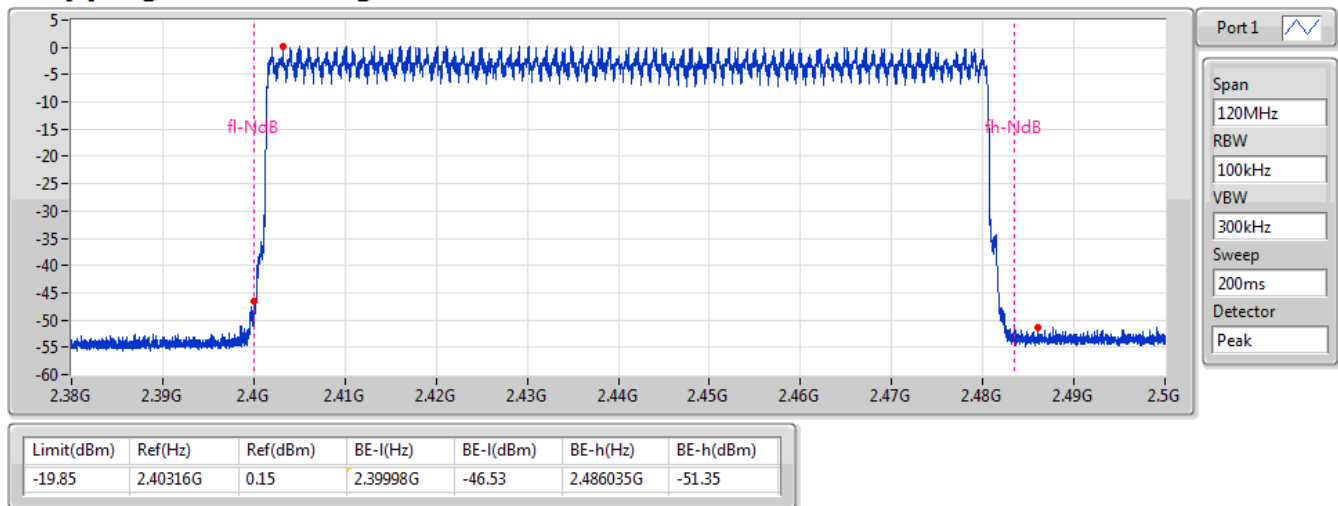
07/06/2019



BT-EDR(3Mbps) 2441MHz

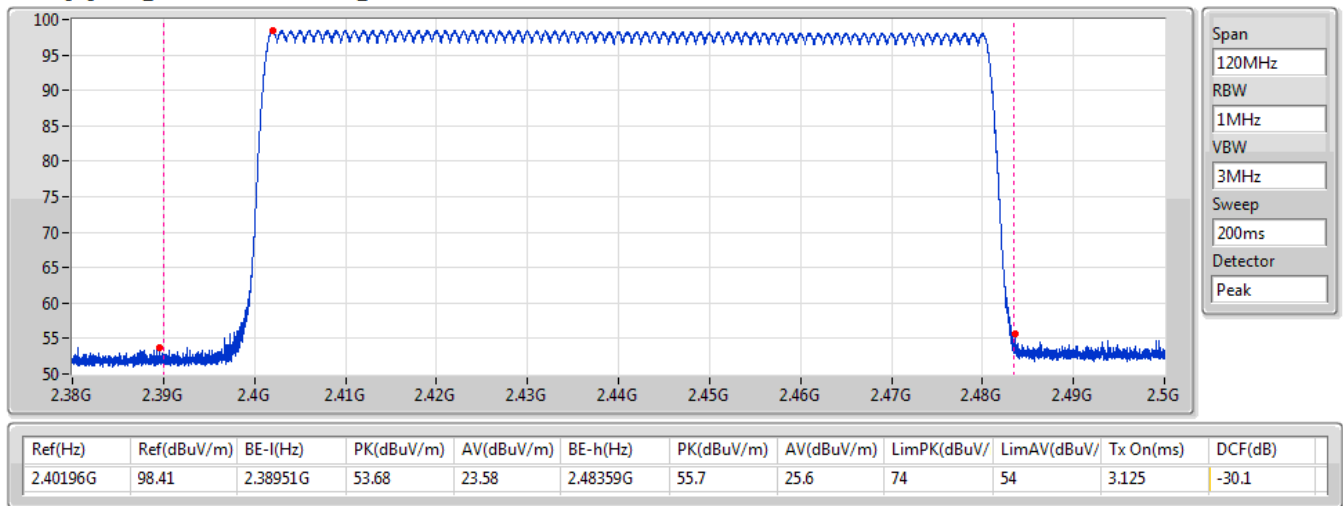
Hopping Ch Bandedge (Non-restricted Band)

07/06/2019



BT-EDR(3Mbps)**2441MHz****Hopping Ch Bandedge (Restricted Band)**

07/06/2019





Summary

Mode	Max-Dwell (s)
2.4-2.4835GHz	-
BT-BR(1Mbps)	308.2872m
BT-EDR(2Mbps)	249.2308m
BT-EDR(3Mbps)	54.366m

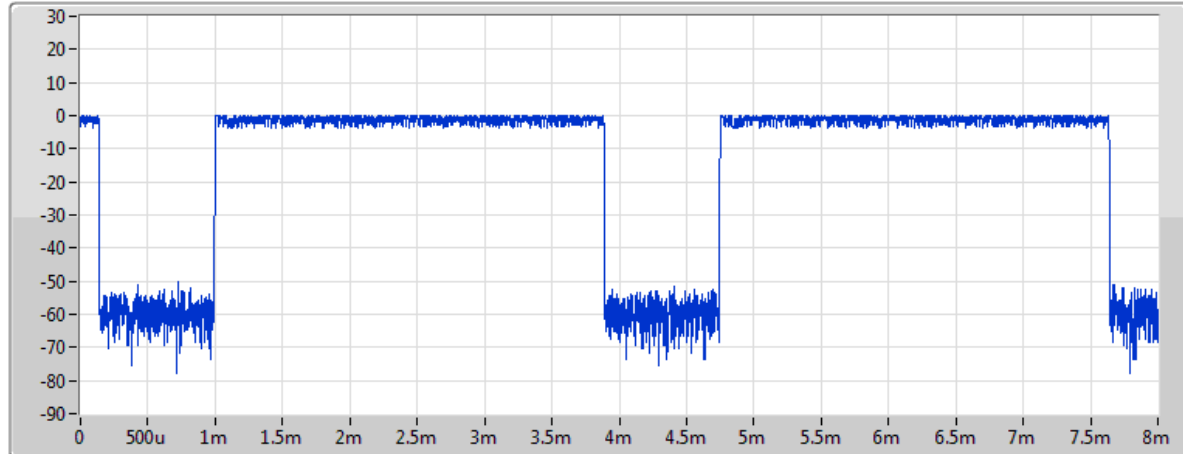
Result

Mode	Result	Period (s)	Dwell (s)	Limit (s)	Tx On (s)
BT-BR(1Mbps)	-	-	-	-	-
2441MHz	Pass	31.6	308.2872m	400m	2.892m
BT-EDR(2Mbps)	-	-	-	-	-
2441MHz	Pass	31.6	249.2308m	400m	2.338m
BT-EDR(3Mbps)	-	-	-	-	-
2441MHz	Pass	31.6	54.366m	400m	510u

BT-BR(1Mbps)

2441MHz

07/06/2019



Port1 

Ch Freq
2.441GHz

RBW
300kHz

VBW
1MHz

Sweep Time
8ms

TX Time
2.892ms

non AFH Mode

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	308.2872m	400m	2.892m

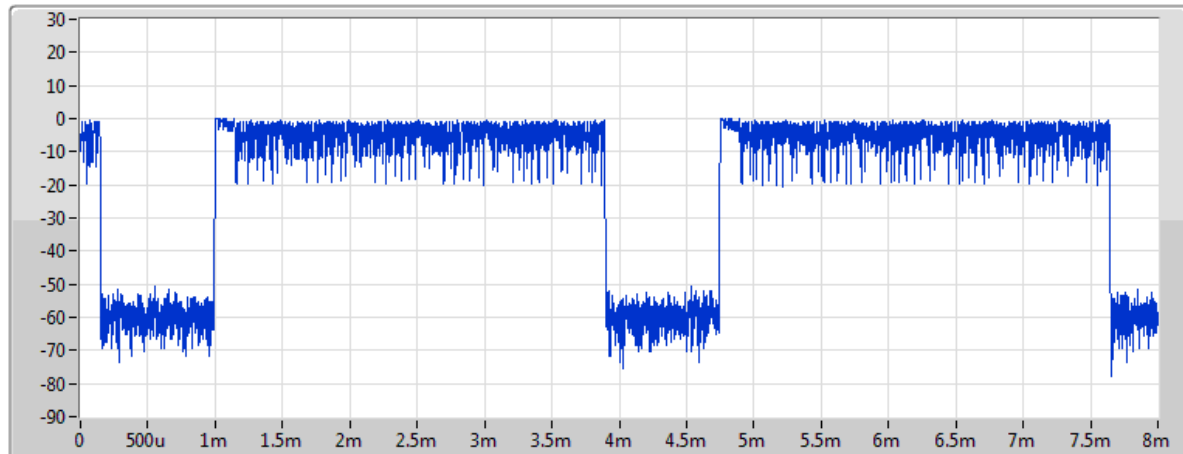
AFH Mode


Period(s)	Dwell(s)	Limit(s)	Tx On(s)
0	154.1436m	400m	2.892m

BT-EDR(2Mbps)

2441MHz

07/06/2019



Port1 

Ch Freq
2.441GHz

RBW
300kHz

VBW
1MHz

Sweep Time
8ms

TX Time
2.338ms

non AFH Mode

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	249.2308m	400m	2.338m

AFH Mode

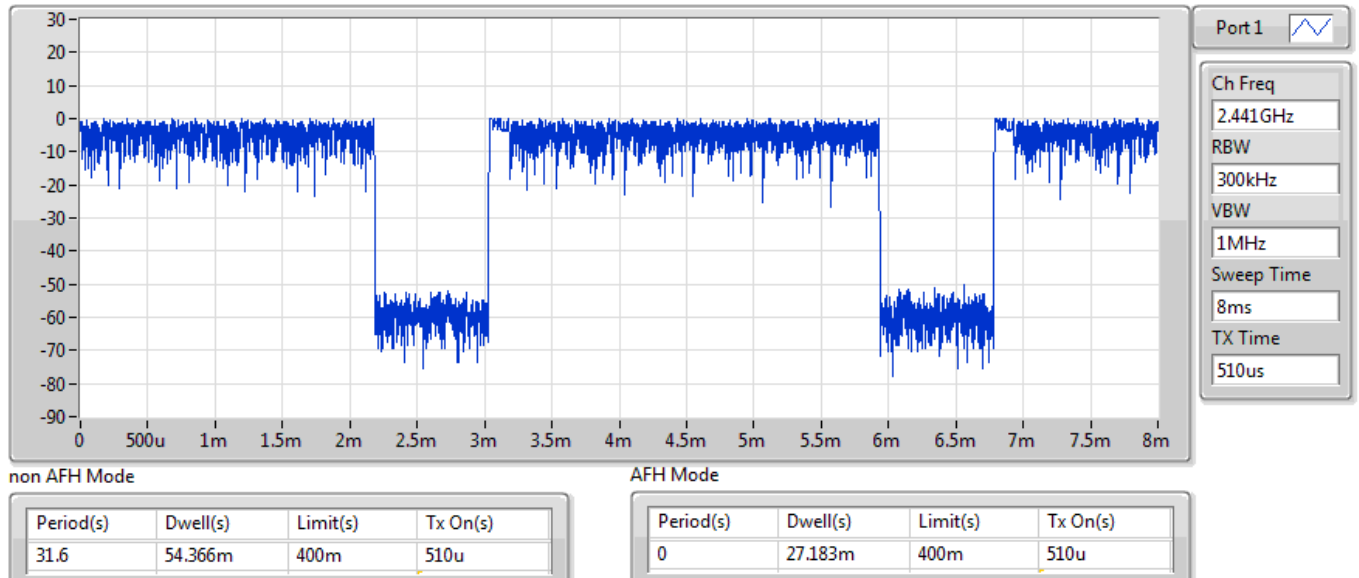
Period(s)	Dwell(s)	Limit(s)	Tx On(s)
0	124.6154m	400m	2.338m

BT-EDR(3Mbps)

2441MHz

Dwell

07/06/2019



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	2.48008G	-0.96	-20.96	1.78498G	-54.07	2.3991G	-53.72	2.48453G	-51.71	24.52438G	-40.89	1
BT-EDR(2Mbps)	Pass	2.402G	-0.04	-20.04	2.10407G	-53.81	2.39952G	-40.44	2.48495G	-52.83	23.33111G	-41.69	1
BT-EDR(3Mbps)	Pass	2.44096G	-1.01	-21.01	2.1168G	-54.49	2.3989G	-54.39	2.4854G	-52.82	16.69496G	-40.22	1

Result

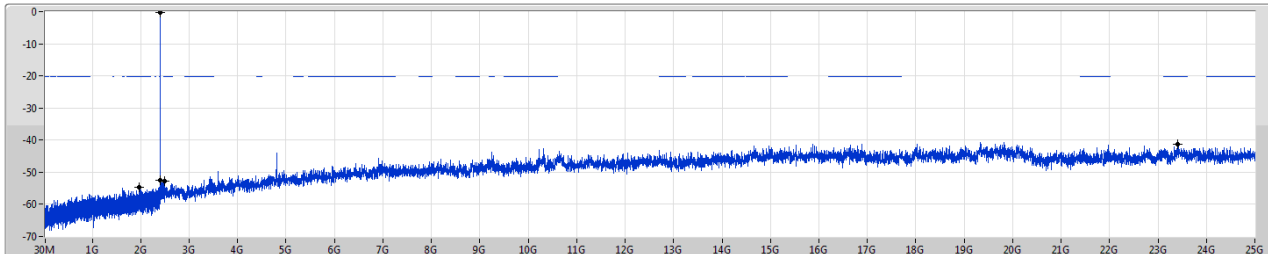
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.402G	-0.36	-20.36	1.97117G	-54.80	2.39974G	-52.39	2.48531G	-52.77	23.41554G	-41.24	1
2441MHz	Pass	2.44083G	-0.09	-20.09	1.82998G	-55.18	2.39914G	-53.18	2.48356G	-52.59	14.92758G	-41.36	1
2480MHz	Pass	2.48008G	-0.96	-20.96	1.78498G	-54.07	2.3991G	-53.72	2.48453G	-51.71	24.52438G	-40.89	1
BT-EDR(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.402G	-0.04	-20.04	2.10407G	-53.81	2.39952G	-40.44	2.48495G	-52.83	23.33111G	-41.69	1
2441MHz	Pass	2.44104G	-0.77	-20.77	1.82938G	-54.40	2.39937G	-53.10	2.48419G	-52.78	14.62363G	-41.31	1
2480MHz	Pass	2.4802G	-0.15	-20.15	2.19672G	-53.85	2.39926G	-53.28	2.48451G	-49.80	16.2109G	-40.57	1
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40196G	-0.48	-20.48	2.14433G	-53.86	2.39976G	-47.92	2.48483G	-51.03	16.22216G	-41.20	1
2441MHz	Pass	2.44096G	-1.01	-21.01	2.1168G	-54.49	2.3989G	-54.39	2.4854G	-52.82	16.69496G	-40.22	1
2480MHz	Pass	2.47983G	-0.18	-20.18	1.94216G	-54.33	2.39828G	-53.38	2.48367G	-49.09	23.5056G	-39.54	1

BT-BR(1Mbps)

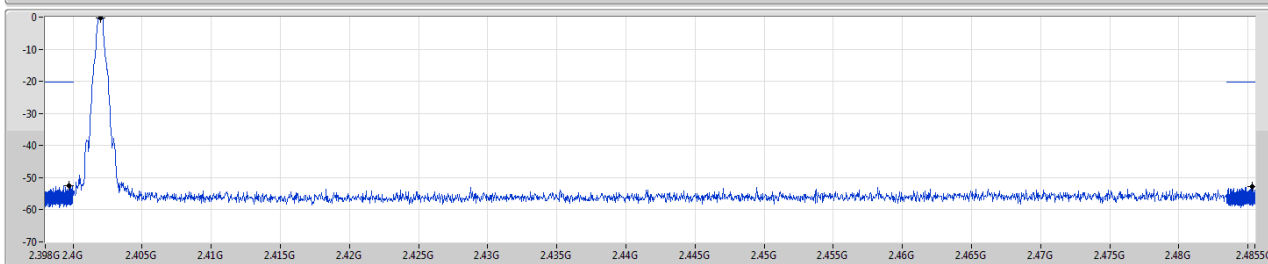
CSE NdB

2402MHz

07/06/2019



Port1



RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

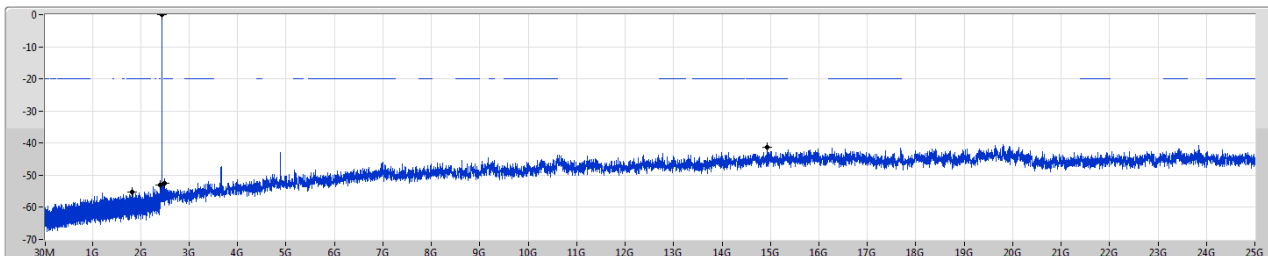
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2402G	-0.36	-20.36	1.97117G	-54.80	2.39974G	-52.39	2.48531G	-52.77	23.41554G	-41.24	1

BT-BR(1Mbps)

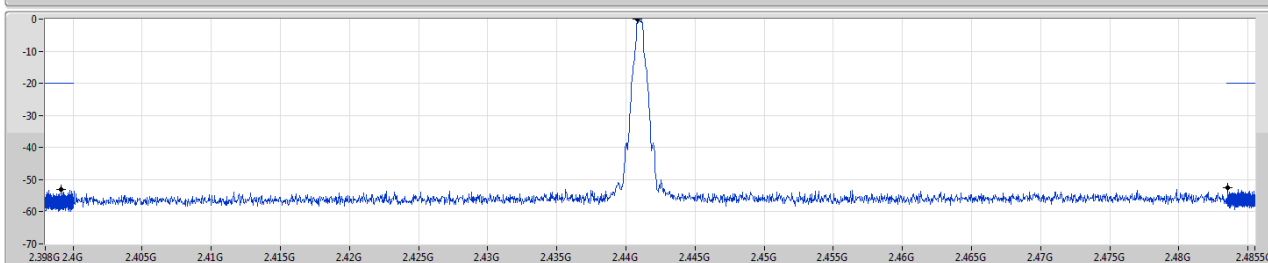
CSE NdB

2441MHz

07/06/2019



Port1



RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
244083G	-0.09	-20.09	1.82998G	-55.18	2.39914G	-53.18	2.48356G	-52.59	14.92758G	-41.36	1

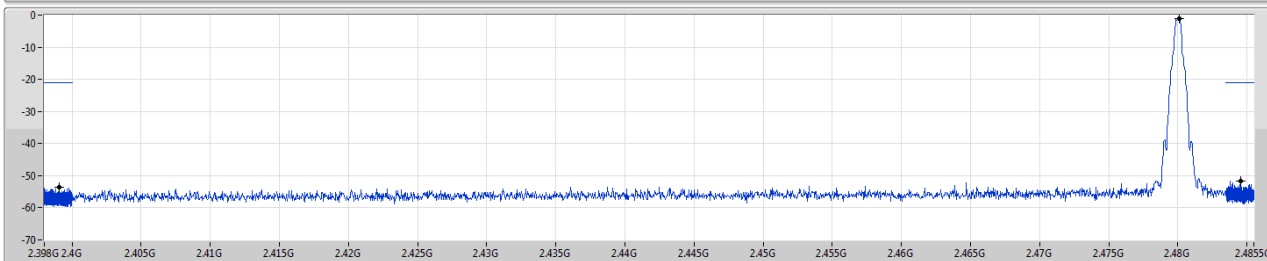
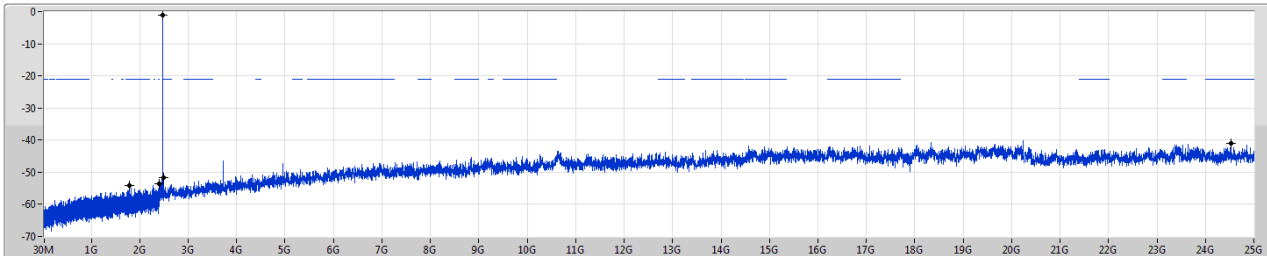
BT-BR(1Mbps)

2480MHz

CSE NdB

07/06/2019

Port1

RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

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	-0.96	-20.96	1.78498G	-54.07	2.3991G	-53.72	2.48453G	-51.71	24.52438G	-40.89	1

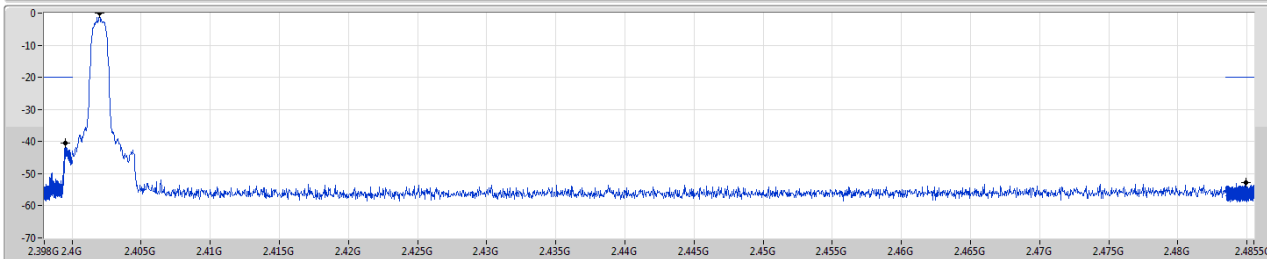
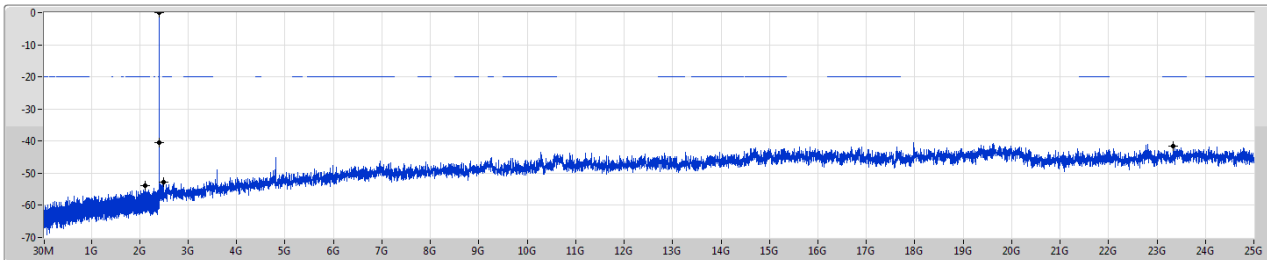
BT-EDR(2Mbps)

2402MHz

CSE NdB

07/06/2019

Port1

RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

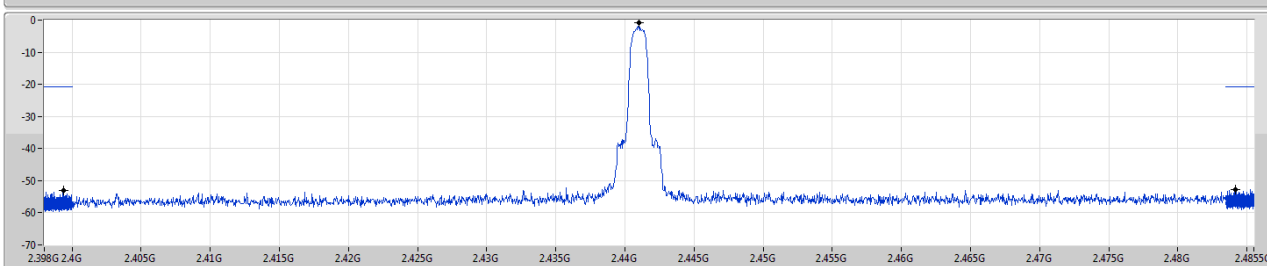
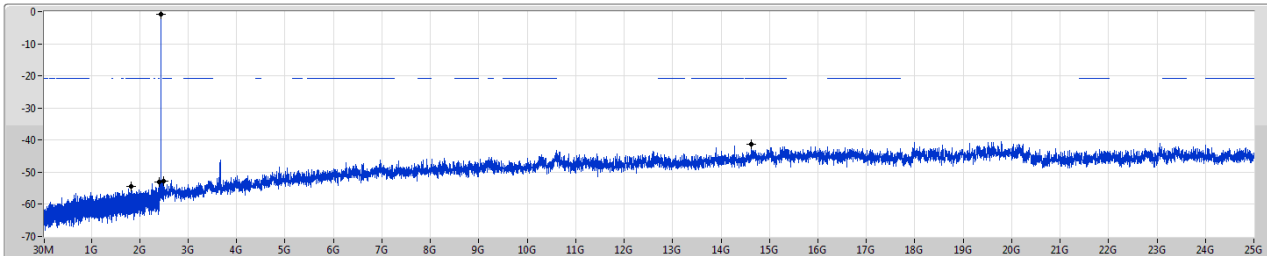
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.402G	-0.04	-20.04	2.10407G	-53.81	2.39952G	-40.44	2.48495G	-52.83	23.33111G	-41.69	1

BT-EDR(2Mbps)

2441MHz

CSE NdB

07/06/2019



RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

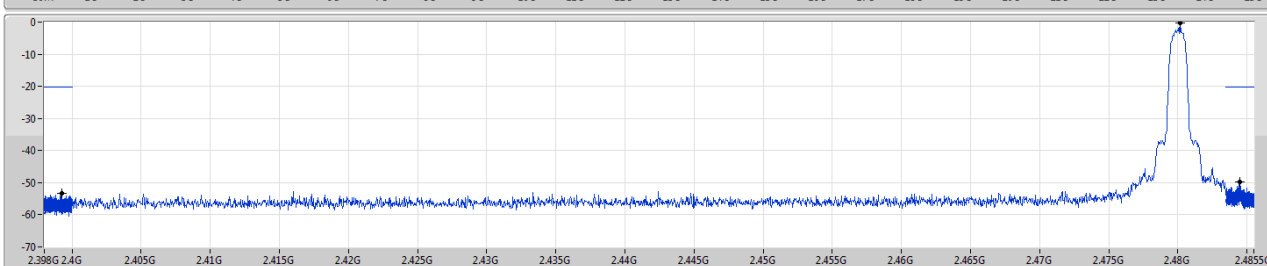
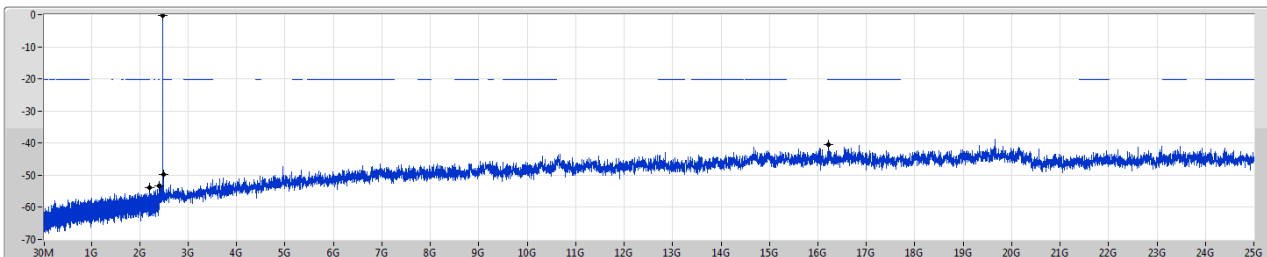
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44104G	-0.77	-20.77	1.82938G	-54.40	2.39937G	-53.10	2.48419G	-52.78	14.62363G	-41.31	1

BT-EDR(2Mbps)

2480MHz

CSE NdB

07/06/2019



RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.4802G	-0.15	-20.15	2.19672G	-53.85	2.39926G	-53.28	2.48451G	-49.80	16.2109G	-40.57	1

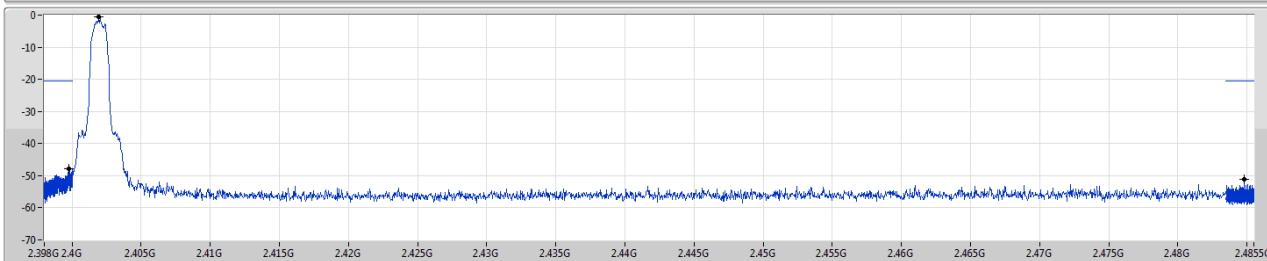
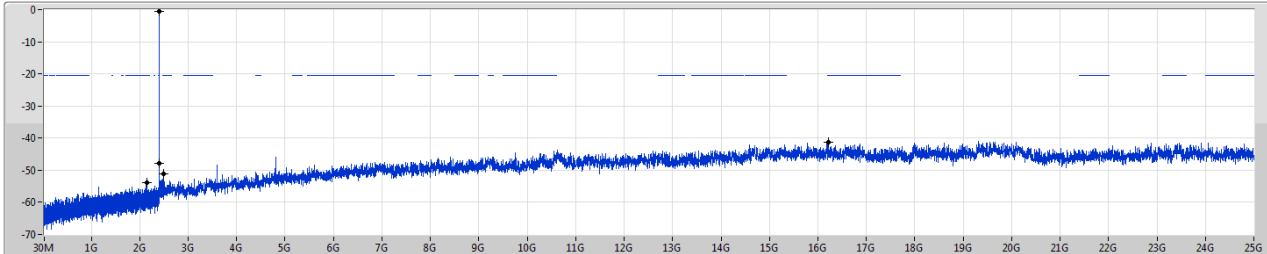
BT-EDR(3Mbps)

2402MHz

CSE NdB

07/06/2019

Port1



RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

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	-0.48	-20.48	2.14433G	-53.86	2.39976G	-47.92	2.48483G	-51.03	16.22216G	-41.20	1

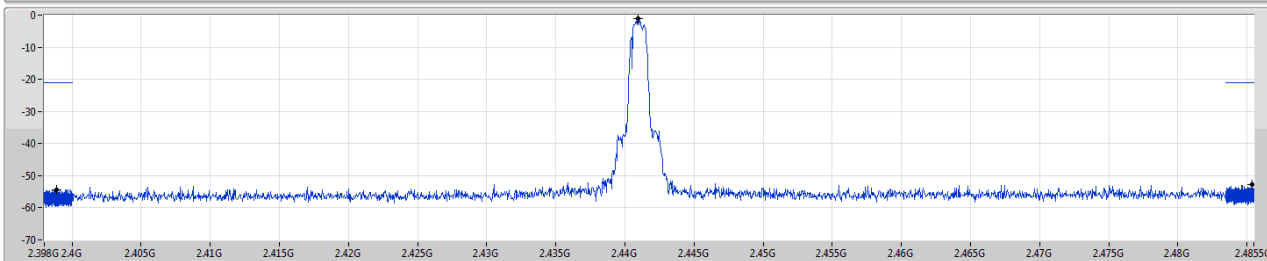
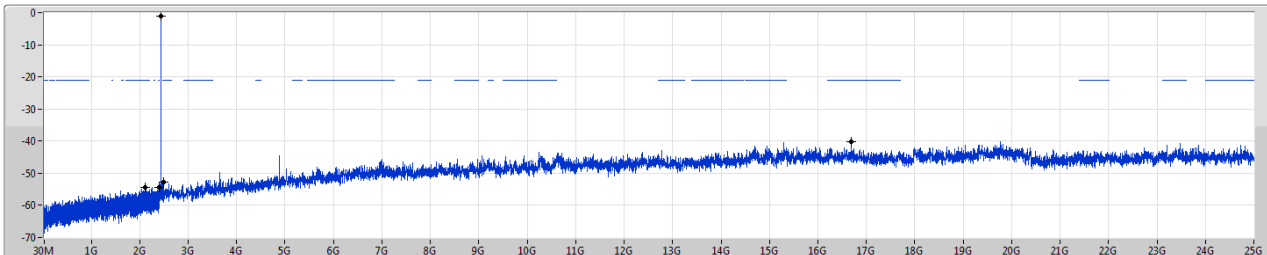
BT-EDR(3Mbps)

2441MHz

CSE NdB

07/06/2019

Port1



RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44096G	-1.01	-21.01	2.1168G	-54.49	2.3989G	-54.39	2.4854G	-52.82	16.69496G	-40.22	1

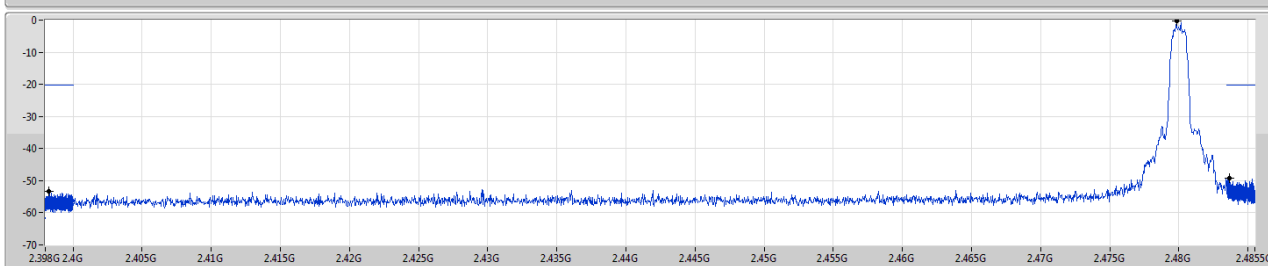
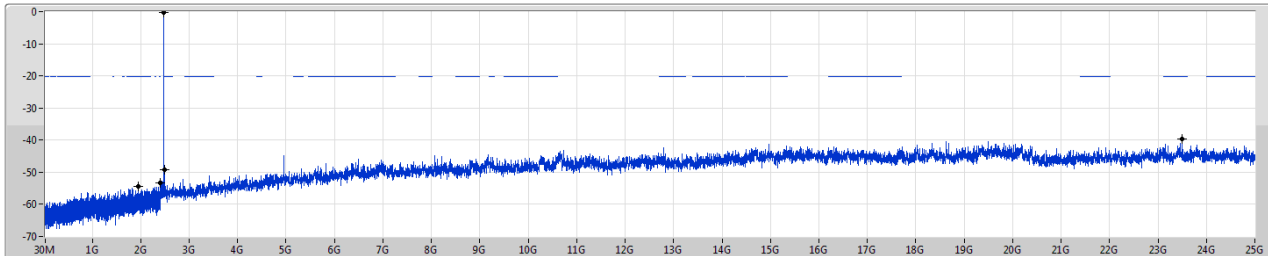
BT-EDR(3Mbps)

2480MHz

CSE NdB

07/06/2019

Port1



RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.47983G	-0.18	-20.18	1.94216G	-54.33	2.39828G	-53.38	2.48367G	-49.09	23.5056G	-39.54	1



Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	PK	90.45M	39.66	43.50	-3.84	-17.03	3	Vertical	360	1.00	-

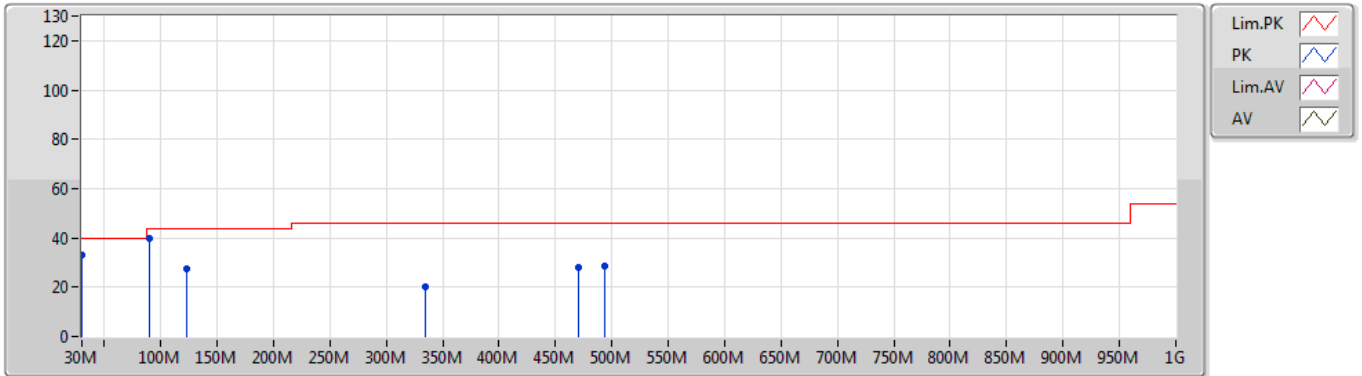
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2441MHz_USB	Pass	PK	30M	32.85	40.00	-7.15	-8.16	3	Vertical	360	1.00	-
2441MHz_USB	Pass	PK	90.45M	39.66	43.50	-3.84	-17.03	3	Vertical	360	1.00	-
2441MHz_USB	Pass	PK	122.78M	27.49	43.50	-16.01	-13.75	3	Vertical	360	1.00	-
2441MHz_USB	Pass	PK	335.06M	20.10	46.00	-25.90	-10.78	3	Vertical	360	1.00	-
2441MHz_USB	Pass	PK	470.01M	27.97	46.00	-18.03	-6.66	3	Vertical	360	1.00	-
2441MHz_USB	Pass	PK	493.91M	28.39	46.00	-17.61	-6.28	3	Vertical	360	1.00	-
2441MHz_USB	Pass	PK	30M	31.90	40.00	-8.10	-8.16	3	Horizontal	0	1.00	-
2441MHz_USB	Pass	PK	90.45M	38.95	43.50	-4.55	-17.03	3	Horizontal	0	1.00	-
2441MHz_USB	Pass	PK	122.78M	29.40	43.50	-14.10	-13.75	3	Horizontal	0	1.00	-
2441MHz_USB	Pass	PK	325.22M	25.21	46.00	-20.79	-11.04	3	Horizontal	0	1.00	-
2441MHz_USB	Pass	PK	433.46M	25.46	46.00	-20.54	-7.49	3	Horizontal	0	1.00	-
2441MHz_USB	Pass	PK	482.67M	28.13	46.00	-17.87	-6.37	3	Horizontal	0	1.00	-

BT-BR(1Mbps)

13/06/2019

2441MHz_USB

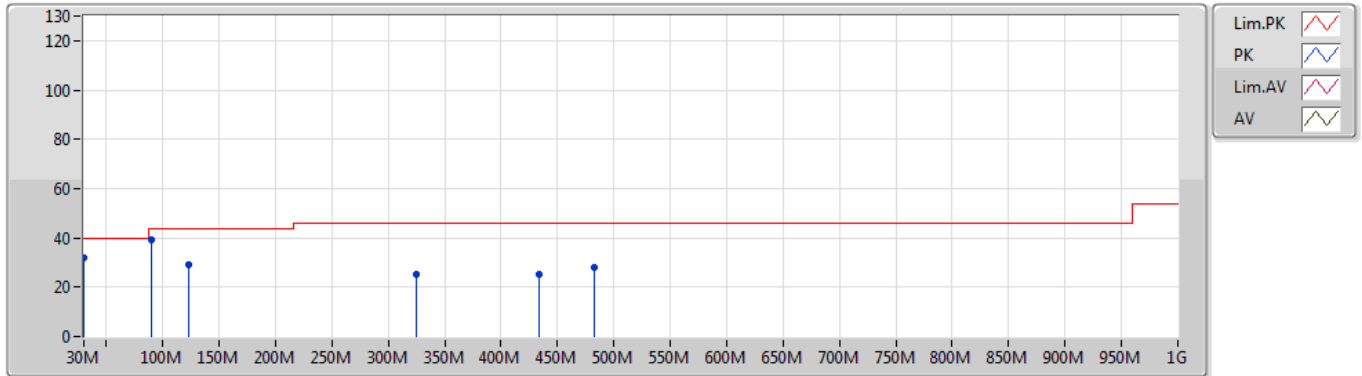


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	30M	32.85	40.00	-7.15	-8.16	3	Vertical	360	1.00	-				
PK	90.45M	39.66	43.50	-3.84	-17.03	3	Vertical	360	1.00	-				
PK	122.78M	27.49	43.50	-16.01	-13.75	3	Vertical	360	1.00	-				
PK	335.06M	20.10	46.00	-25.90	-10.78	3	Vertical	360	1.00	-				
PK	470.01M	27.97	46.00	-18.03	-6.66	3	Vertical	360	1.00	-				
PK	493.91M	28.39	46.00	-17.61	-6.28	3	Vertical	360	1.00	-				

BT-BR(1Mbps)

13/06/2019

2441MHz_USB



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment				
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)					
PK	30M	31.90	40.00	-8.10	-8.16	3	Horizontal	0	1.00	-				
PK	90.45M	38.95	43.50	-4.55	-17.03	3	Horizontal	0	1.00	-				
PK	122.78M	29.40	43.50	-14.10	-13.75	3	Horizontal	0	1.00	-				
PK	325.22M	25.21	46.00	-20.79	-11.04	3	Horizontal	0	1.00	-				
PK	433.46M	25.46	46.00	-20.54	-7.49	3	Horizontal	0	1.00	-				
PK	482.67M	28.13	46.00	-17.87	-6.37	3	Horizontal	0	1.00	-				

**Summary**

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	PK	2.5G	59.66	74.00	-14.34	31.36	3	Horizontal	34	1.82	-
BT-EDR(3Mbps)	Pass	PK	2.4835G	60.24	74.00	-13.76	31.30	3	Horizontal	33	1.52	-

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz_TX	Pass	AV	2.3588G	36.66	54.00	-17.34	30.84	3	Vertical	88	1.87	-
2402MHz_TX	Pass	AV	2.4022G	69.75	Inf	-Inf	31.00	3	Vertical	88	1.87	-
2402MHz_TX	Pass	PK	2.3588G	59.16	74.00	-14.84	30.84	3	Vertical	88	1.87	-
2402MHz_TX	Pass	PK	2.4022G	92.25	Inf	-Inf	31.00	3	Vertical	88	1.87	-
2402MHz_TX	Pass	AV	2.3856G	35.73	54.00	-18.27	30.94	3	Horizontal	169	1.71	-
2402MHz_TX	Pass	AV	2.4022G	75.14	Inf	-Inf	31.00	3	Horizontal	169	1.71	-
2402MHz_TX	Pass	PK	2.3856G	58.23	74.00	-15.77	30.94	3	Horizontal	169	1.71	-
2402MHz_TX	Pass	PK	2.4022G	97.64	Inf	-Inf	31.00	3	Horizontal	169	1.71	-
2402MHz_TX	Pass	AV	4.80394G	25.32	54.00	-28.68	1.62	3	Vertical	159	1.36	-
2402MHz_TX	Pass	PK	4.80394G	47.82	74.00	-26.18	1.62	3	Vertical	159	1.36	-
2402MHz_TX	Pass	AV	4.80442G	29.22	54.00	-24.78	1.62	3	Horizontal	10	1.49	-
2402MHz_TX	Pass	PK	4.80442G	51.72	74.00	-22.28	1.62	3	Horizontal	10	1.49	-
2441MHz_TX	Pass	AV	2.3614G	36.33	54.00	-17.67	30.85	3	Vertical	76	1.28	-
2441MHz_TX	Pass	AV	2.441G	71.62	Inf	-Inf	31.14	3	Vertical	76	1.28	-
2441MHz_TX	Pass	AV	2.4962G	36.32	54.00	-17.68	31.35	3	Vertical	76	1.28	-
2441MHz_TX	Pass	PK	2.3614G	58.83	74.00	-15.17	30.85	3	Vertical	76	1.28	-
2441MHz_TX	Pass	PK	2.441G	94.12	Inf	-Inf	31.14	3	Vertical	76	1.28	-
2441MHz_TX	Pass	PK	2.4962G	58.82	74.00	-15.18	31.35	3	Vertical	76	1.28	-
2441MHz_TX	Pass	AV	2.3446G	35.21	54.00	-18.79	30.79	3	Horizontal	22	1.00	-
2441MHz_TX	Pass	AV	2.441G	76.18	Inf	-Inf	31.14	3	Horizontal	22	1.00	-
2441MHz_TX	Pass	AV	2.4902G	35.76	54.00	-18.24	31.32	3	Horizontal	22	1.00	-
2441MHz_TX	Pass	PK	2.3446G	57.71	74.00	-16.29	30.79	3	Horizontal	22	1.00	-
2441MHz_TX	Pass	PK	2.441G	98.68	Inf	-Inf	31.14	3	Horizontal	22	1.00	-
2441MHz_TX	Pass	PK	2.4902G	58.26	74.00	-15.74	31.32	3	Horizontal	22	1.00	-
2441MHz_TX	Pass	AV	4.8817G	27.22	54.00	-26.78	1.82	3	Vertical	159	1.21	-
2441MHz_TX	Pass	AV	7.3234G	34.12	54.00	-19.88	7.51	3	Vertical	118	1.43	-
2441MHz_TX	Pass	PK	4.8817G	49.72	74.00	-24.28	1.82	3	Vertical	159	1.21	-
2441MHz_TX	Pass	PK	7.3234G	56.62	74.00	-17.38	7.51	3	Vertical	118	1.43	-
2441MHz_TX	Pass	AV	4.88172G	28.89	54.00	-25.11	1.82	3	Horizontal	0	1.37	-
2441MHz_TX	Pass	AV	7.32247G	32.79	54.00	-21.21	7.50	3	Horizontal	0	1.54	-
2441MHz_TX	Pass	PK	4.88172G	51.39	74.00	-22.61	1.82	3	Horizontal	0	1.37	-
2441MHz_TX	Pass	PK	7.32247G	55.29	74.00	-18.71	7.50	3	Horizontal	0	1.54	-
2480MHz_TX	Pass	AV	2.4798G	70.12	Inf	-Inf	31.28	3	Vertical	79	1.47	-
2480MHz_TX	Pass	AV	2.4872G	36.43	54.00	-17.57	31.31	3	Vertical	79	1.47	-
2480MHz_TX	Pass	PK	2.4798G	92.62	Inf	-Inf	31.28	3	Vertical	79	1.47	-
2480MHz_TX	Pass	PK	2.4872G	58.93	74.00	-15.07	31.31	3	Vertical	79	1.47	-
2480MHz_TX	Pass	AV	2.4798G	76.26	Inf	-Inf	31.28	3	Horizontal	34	1.82	-
2480MHz_TX	Pass	AV	2.5G	37.16	54.00	-16.84	31.36	3	Horizontal	34	1.82	-
2480MHz_TX	Pass	PK	2.4798G	98.76	Inf	-Inf	31.28	3	Horizontal	34	1.82	-
2480MHz_TX	Pass	PK	2.5G	59.66	74.00	-14.34	31.36	3	Horizontal	34	1.82	-
2480MHz_TX	Pass	AV	4.95964G	28.66	54.00	-25.34	2.02	3	Vertical	193	1.51	-
2480MHz_TX	Pass	AV	7.44027G	34.55	54.00	-19.45	7.81	3	Vertical	111	1.91	-
2480MHz_TX	Pass	PK	4.95964G	51.16	74.00	-22.84	2.02	3	Vertical	193	1.51	-
2480MHz_TX	Pass	PK	7.44027G	57.05	74.00	-16.95	7.81	3	Vertical	111	1.91	-
2480MHz_TX	Pass	AV	4.96038G	33.45	54.00	-20.55	2.02	3	Horizontal	35	1.43	-
2480MHz_TX	Pass	AV	7.44049G	34.01	54.00	-19.99	7.81	3	Horizontal	127	1.47	-
2480MHz_TX	Pass	PK	4.96038G	55.95	74.00	-18.05	2.02	3	Horizontal	35	1.43	-



Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2480MHz_TX	Pass	PK	7.44049G	56.51	74.00	-17.49	7.81	3	Horizontal	127	1.47	-
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz_TX	Pass	AV	2.3858G	36.01	54.00	-17.99	30.94	3	Vertical	50	1.87	-
2402MHz_TX	Pass	AV	2.402G	70.77	Inf	-Inf	31.00	3	Vertical	50	1.87	-
2402MHz_TX	Pass	PK	2.3858G	58.51	74.00	-15.49	30.94	3	Vertical	50	1.87	-
2402MHz_TX	Pass	PK	2.402G	93.27	Inf	-Inf	31.00	3	Vertical	50	1.87	-
2402MHz_TX	Pass	AV	2.3798G	36.21	54.00	-17.79	30.92	3	Horizontal	169	1.72	-
2402MHz_TX	Pass	AV	2.402G	76.32	Inf	-Inf	31.00	3	Horizontal	169	1.72	-
2402MHz_TX	Pass	PK	2.3798G	58.71	74.00	-15.29	30.92	3	Horizontal	169	1.72	-
2402MHz_TX	Pass	PK	2.402G	98.82	Inf	-Inf	31.00	3	Horizontal	169	1.72	-
2402MHz_TX	Pass	AV	4.8046G	23.96	54.00	-30.04	1.62	3	Vertical	189	1.50	-
2402MHz_TX	Pass	PK	4.8046G	46.46	74.00	-27.54	1.62	3	Vertical	189	1.50	-
2402MHz_TX	Pass	AV	4.80391G	27.61	54.00	-26.39	1.62	3	Horizontal	329	1.79	-
2402MHz_TX	Pass	PK	4.80391G	50.11	74.00	-23.89	1.62	3	Horizontal	329	1.79	-
2441MHz_TX	Pass	AV	2.3878G	36.09	54.00	-17.91	30.95	3	Vertical	84	1.71	-
2441MHz_TX	Pass	AV	2.441G	72.17	Inf	-Inf	31.14	3	Vertical	84	1.71	-
2441MHz_TX	Pass	AV	2.4934G	35.93	54.00	-18.07	31.33	3	Vertical	84	1.71	-
2441MHz_TX	Pass	PK	2.3878G	58.59	74.00	-15.41	30.95	3	Vertical	84	1.71	-
2441MHz_TX	Pass	PK	2.441G	94.67	Inf	-Inf	31.14	3	Vertical	84	1.71	-
2441MHz_TX	Pass	PK	2.4934G	58.43	74.00	-15.57	31.33	3	Vertical	84	1.71	-
2441MHz_TX	Pass	AV	2.3446G	35.73	54.00	-18.27	30.79	3	Horizontal	21	1.00	-
2441MHz_TX	Pass	AV	2.441G	77.69	Inf	-Inf	31.14	3	Horizontal	21	1.00	-
2441MHz_TX	Pass	AV	2.4842G	36.64	54.00	-17.36	31.31	3	Horizontal	21	1.00	-
2441MHz_TX	Pass	PK	2.3446G	58.23	74.00	-15.77	30.79	3	Horizontal	21	1.00	-
2441MHz_TX	Pass	PK	2.441G	100.19	Inf	-Inf	31.14	3	Horizontal	21	1.00	-
2441MHz_TX	Pass	PK	2.4842G	59.14	74.00	-14.86	31.31	3	Horizontal	21	1.00	-
2441MHz_TX	Pass	AV	4.88189G	27.03	54.00	-26.97	1.82	3	Vertical	158	1.22	-
2441MHz_TX	Pass	AV	7.32313G	33.47	54.00	-20.53	7.51	3	Vertical	116	1.42	-
2441MHz_TX	Pass	PK	4.88189G	49.53	74.00	-24.47	1.82	3	Vertical	158	1.22	-
2441MHz_TX	Pass	PK	7.32313G	55.97	74.00	-18.03	7.51	3	Vertical	116	1.42	-
2441MHz_TX	Pass	AV	4.88206G	29.73	54.00	-24.27	1.82	3	Horizontal	359	1.00	-
2441MHz_TX	Pass	AV	7.32301G	33.93	54.00	-20.07	7.51	3	Horizontal	126	1.57	-
2441MHz_TX	Pass	PK	4.88206G	52.23	74.00	-21.77	1.82	3	Horizontal	359	1.00	-
2441MHz_TX	Pass	PK	7.32301G	56.43	74.00	-17.57	7.51	3	Horizontal	126	1.57	-
2480MHz_TX	Pass	AV	2.48G	70.99	Inf	-Inf	31.28	3	Vertical	97	1.66	-
2480MHz_TX	Pass	AV	2.4835G	36.56	54.00	-17.44	31.30	3	Vertical	97	1.66	-
2480MHz_TX	Pass	PK	2.48G	93.49	Inf	-Inf	31.28	3	Vertical	97	1.66	-
2480MHz_TX	Pass	PK	2.4835G	59.06	74.00	-14.94	31.30	3	Vertical	97	1.66	-
2480MHz_TX	Pass	AV	2.48G	76.92	Inf	-Inf	31.28	3	Horizontal	33	1.52	-
2480MHz_TX	Pass	AV	2.4835G	37.74	54.00	-16.26	31.30	3	Horizontal	33	1.52	-
2480MHz_TX	Pass	PK	2.48G	99.42	Inf	-Inf	31.28	3	Horizontal	33	1.52	-
2480MHz_TX	Pass	PK	2.4835G	60.24	74.00	-13.76	31.30	3	Horizontal	33	1.52	-
2480MHz_TX	Pass	AV	4.95989G	29.23	54.00	-24.77	2.02	3	Vertical	194	1.53	-
2480MHz_TX	Pass	AV	7.44016G	34.03	54.00	-19.97	7.81	3	Vertical	112	1.91	-
2480MHz_TX	Pass	PK	4.95989G	51.73	74.00	-22.27	2.02	3	Vertical	194	1.53	-
2480MHz_TX	Pass	PK	7.44016G	56.53	74.00	-17.47	7.81	3	Vertical	112	1.91	-
2480MHz_TX	Pass	AV	4.95967G	32.78	54.00	-21.22	2.02	3	Horizontal	35	1.43	-
2480MHz_TX	Pass	AV	7.44002G	33.81	54.00	-20.19	7.81	3	Horizontal	126	1.49	-
2480MHz_TX	Pass	PK	4.95967G	55.28	74.00	-18.72	2.02	3	Horizontal	35	1.43	-



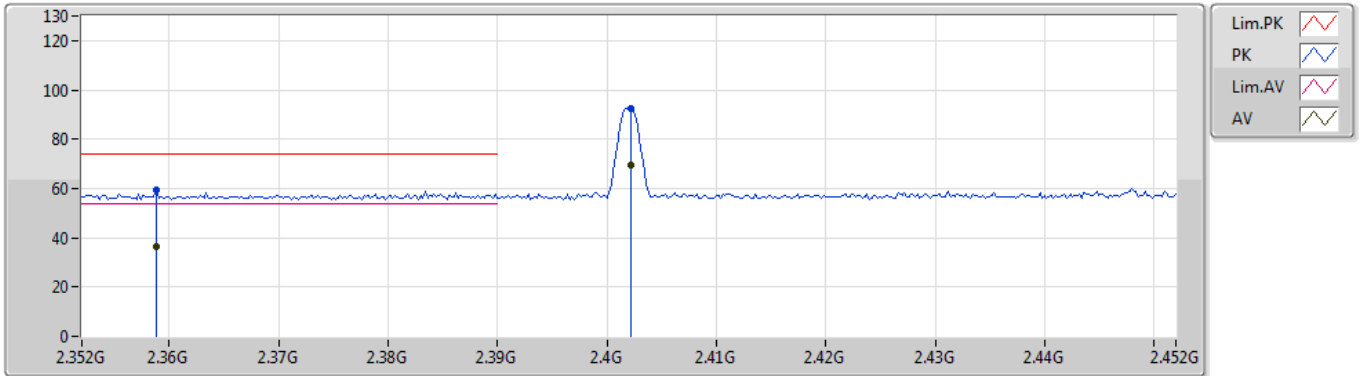
RSE TX above 1GHz

Appendix G.2

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2480MHz_TX	Pass	PK	7.44002G	56.31	74.00	-17.69	7.81	3	Horizontal	126	1.49	-

BT-BR(1Mbps)

13/06/2019

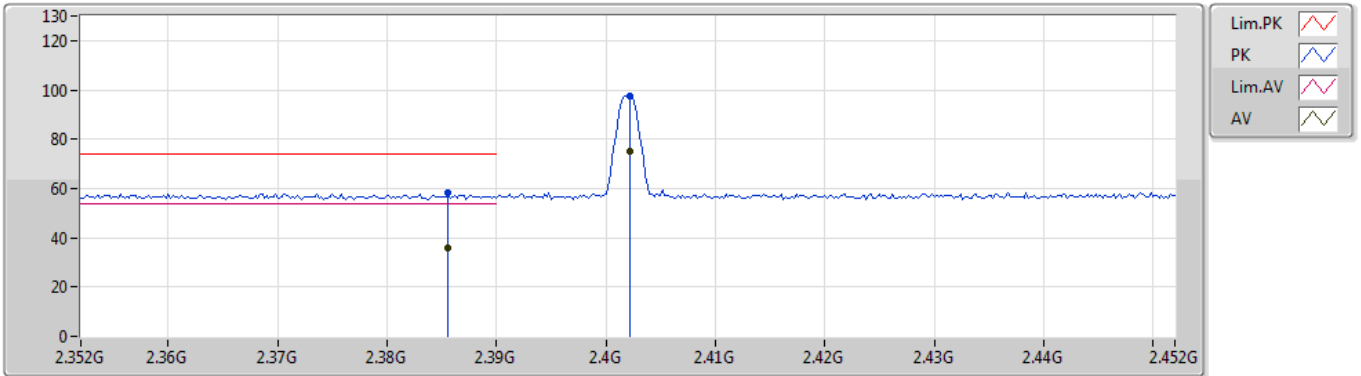
2402MHz_TX


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
AV	2.3588G	36.66	54.00	-17.34	30.84	3	Vertical	88	1.87	-				
AV	2.4022G	69.75	Inf	-Inf	31.00	3	Vertical	88	1.87	-				
PK	2.3588G	59.16	74.00	-14.84	30.84	3	Vertical	88	1.87	-				
PK	2.4022G	92.25	Inf	-Inf	31.00	3	Vertical	88	1.87	-				

BT-BR(1Mbps)

2402MHz_TX

13/06/2019

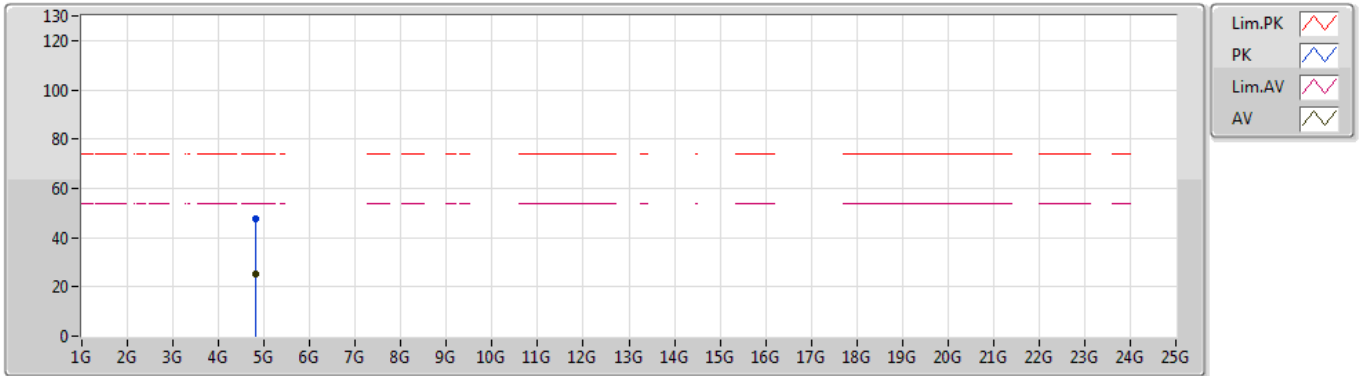


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
AV	2.3856G	35.73	54.00	-18.27	30.94	3	Horizontal	169	1.71	-				
AV	2.4022G	75.14	Inf	-Inf	31.00	3	Horizontal	169	1.71	-				
PK	2.3856G	58.23	74.00	-15.77	30.94	3	Horizontal	169	1.71	-				
PK	2.4022G	97.64	Inf	-Inf	31.00	3	Horizontal	169	1.71	-				

BT-BR(1Mbps)

13/06/2019

2402MHz_TX

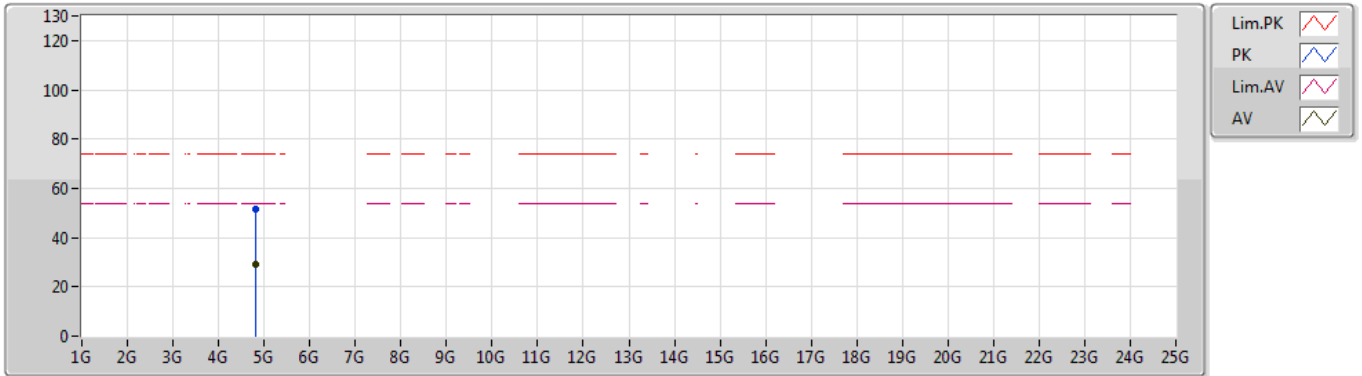


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
AV	4.80394G	25.32	54.00	-28.68	1.62	3	Vertical	159	1.36	-				
PK	4.80394G	47.82	74.00	-26.18	1.62	3	Vertical	159	1.36	-				

BT-BR(1Mbps)

13/06/2019

2402MHz_TX

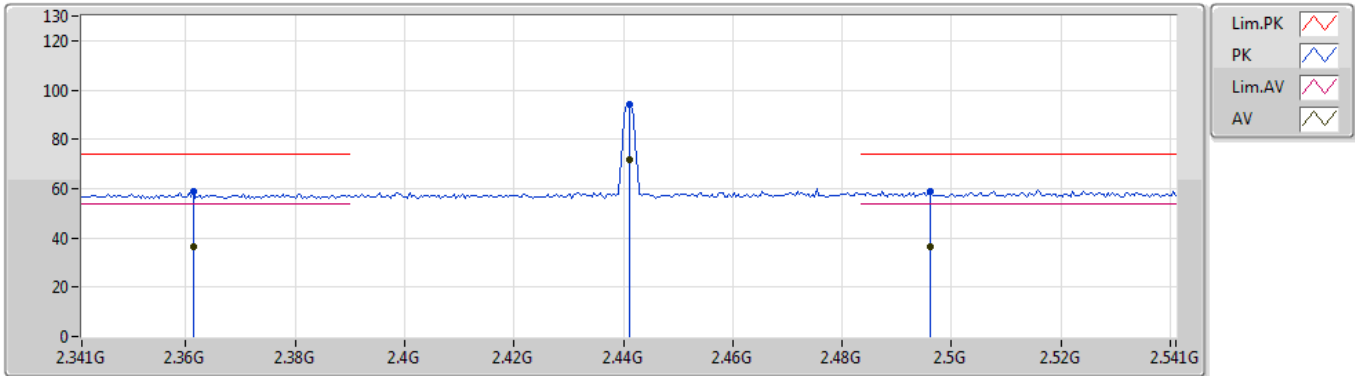


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
AV	4.80442G	29.22	54.00	-24.78	1.62	3	Horizontal	10	1.49	-				
PK	4.80442G	51.72	74.00	-22.28	1.62	3	Horizontal	10	1.49	-				

BT-BR(1Mbps)

13/06/2019

2441MHz_TX

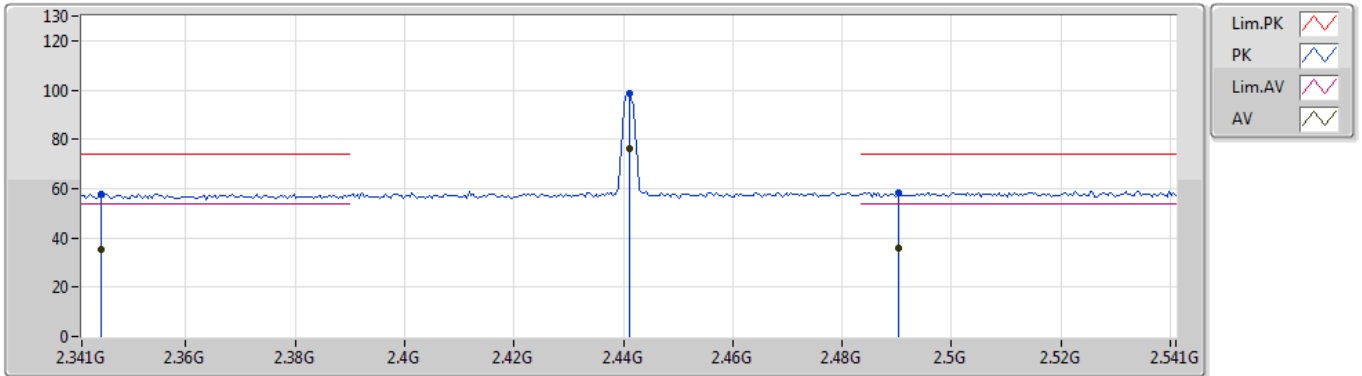


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
AV	2.3614G	36.33	54.00	-17.67	30.85	3	Vertical	76	1.28	-				
AV	2.441G	71.62	Inf	-Inf	31.14	3	Vertical	76	1.28	-				
AV	2.4962G	36.32	54.00	-17.68	31.35	3	Vertical	76	1.28	-				
PK	2.3614G	58.83	74.00	-15.17	30.85	3	Vertical	76	1.28	-				
PK	2.441G	94.12	Inf	-Inf	31.14	3	Vertical	76	1.28	-				
PK	2.4962G	58.82	74.00	-15.18	31.35	3	Vertical	76	1.28	-				

BT-BR(1Mbps)

13/06/2019

2441MHz_TX

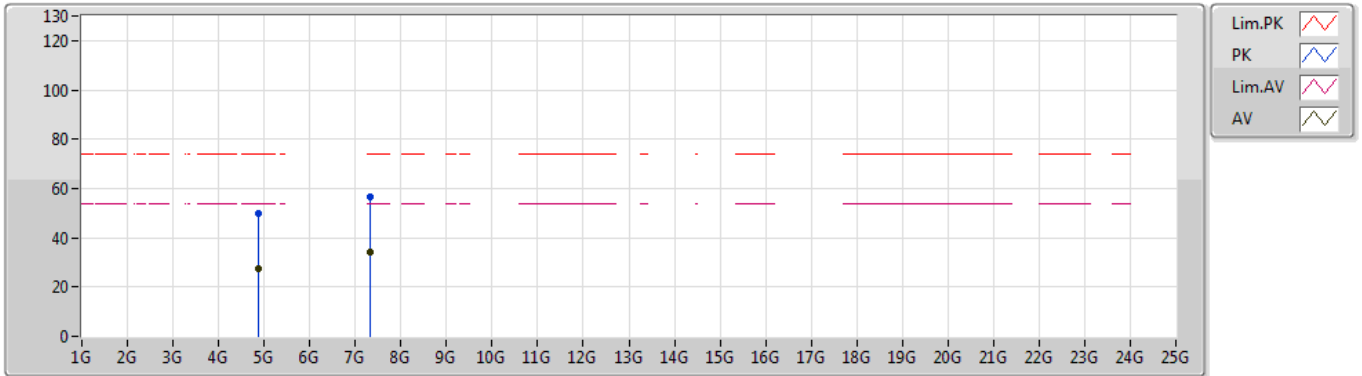


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
AV	2.3446G	35.21	54.00	-18.79	30.79	3	Horizontal	22	1.00	-				
AV	2.441G	76.18	Inf	-Inf	31.14	3	Horizontal	22	1.00	-				
AV	2.4902G	35.76	54.00	-18.24	31.32	3	Horizontal	22	1.00	-				
PK	2.3446G	57.71	74.00	-16.29	30.79	3	Horizontal	22	1.00	-				
PK	2.441G	98.68	Inf	-Inf	31.14	3	Horizontal	22	1.00	-				
PK	2.4902G	58.26	74.00	-15.74	31.32	3	Horizontal	22	1.00	-				

BT-BR(1Mbps)

13/06/2019

2441MHz_TX

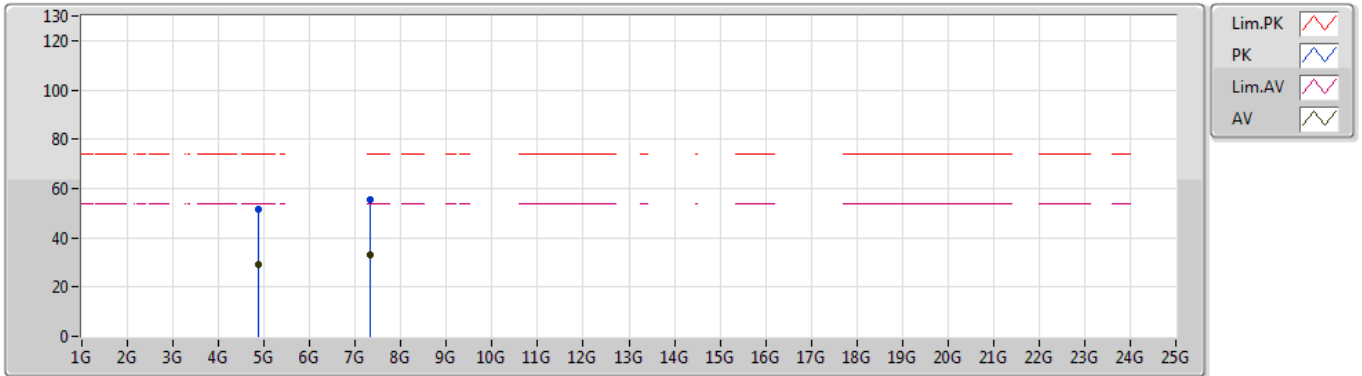


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
AV	4.8817G	27.22	54.00	-26.78	1.82	3	Vertical	159	1.21	-				
AV	7.3234G	34.12	54.00	-19.88	7.51	3	Vertical	118	1.43	-				
PK	4.8817G	49.72	74.00	-24.28	1.82	3	Vertical	159	1.21	-				
PK	7.3234G	56.62	74.00	-17.38	7.51	3	Vertical	118	1.43	-				

BT-BR(1Mbps)

13/06/2019

2441MHz_TX

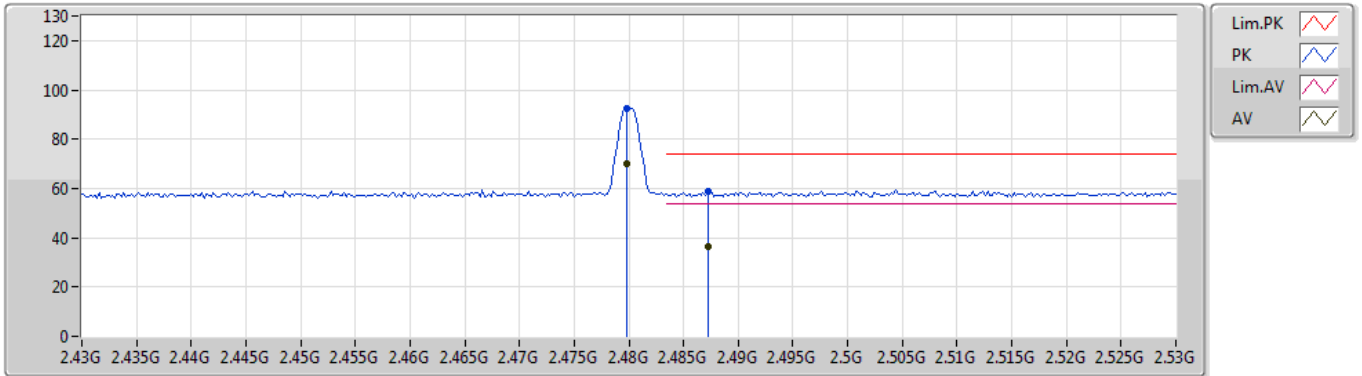


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
AV	4.88172G	28.89	54.00	-25.11	1.82	3	Horizontal	0	1.37	-				
AV	7.32247G	32.79	54.00	-21.21	7.50	3	Horizontal	0	1.54	-				
PK	4.88172G	51.39	74.00	-22.61	1.82	3	Horizontal	0	1.37	-				
PK	7.32247G	55.29	74.00	-18.71	7.50	3	Horizontal	0	1.54	-				

BT-BR(1Mbps)

13/06/2019

2480MHz_TX

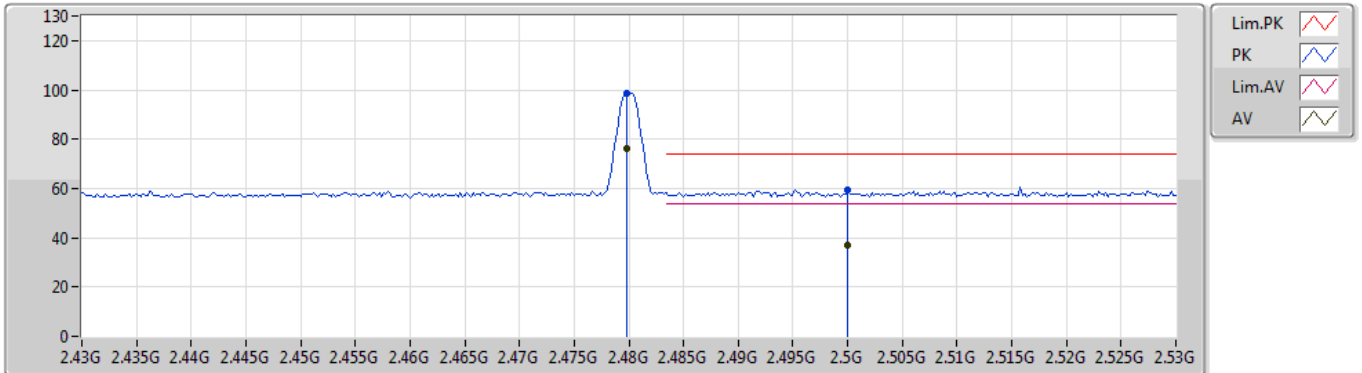


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
AV	2.4798G	70.12	Inf	-Inf	31.28	3	Vertical	79	1.47	-				
AV	2.4872G	36.43	54.00	-17.57	31.31	3	Vertical	79	1.47	-				
PK	2.4798G	92.62	Inf	-Inf	31.28	3	Vertical	79	1.47	-				
PK	2.4872G	58.93	74.00	-15.07	31.31	3	Vertical	79	1.47	-				

BT-BR(1Mbps)

13/06/2019

2480MHz_TX

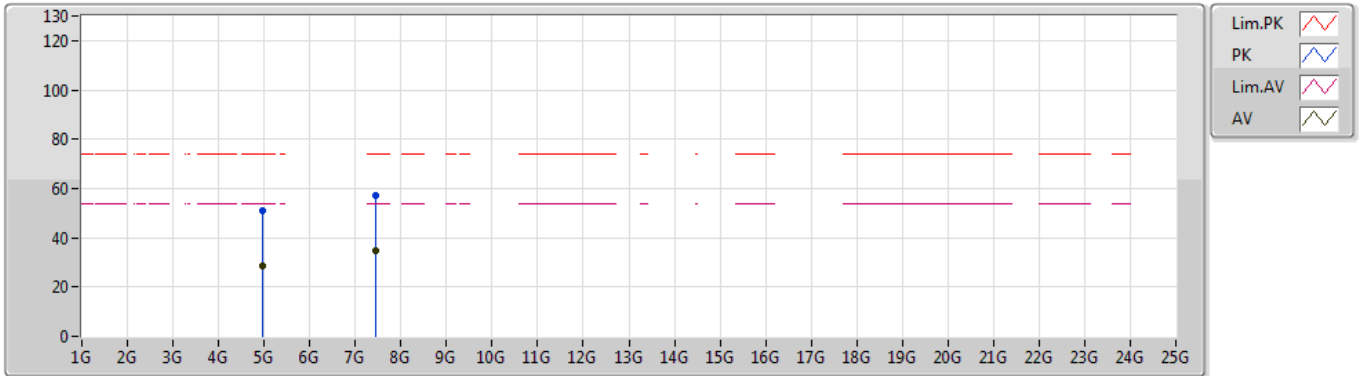


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
AV	2.4798G	76.26	Inf	-Inf	31.28	3	Horizontal	34	1.82	-				
AV	2.5G	37.16	54.00	-16.84	31.36	3	Horizontal	34	1.82	-				
PK	2.4798G	98.76	Inf	-Inf	31.28	3	Horizontal	34	1.82	-				
PK	2.5G	59.66	74.00	-14.34	31.36	3	Horizontal	34	1.82	-				

BT-BR(1Mbps)

13/06/2019

2480MHz_TX

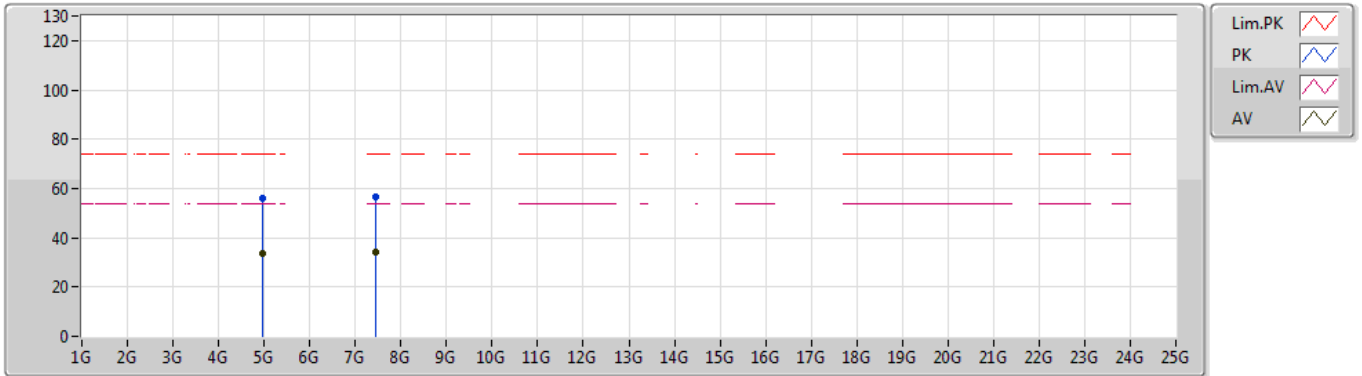


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
AV	4.95964G	28.66	54.00	-25.34	2.02	3	Vertical	193	1.51	-				
AV	7.44027G	34.55	54.00	-19.45	7.81	3	Vertical	111	1.91	-				
PK	4.95964G	51.16	74.00	-22.84	2.02	3	Vertical	193	1.51	-				
PK	7.44027G	57.05	74.00	-16.95	7.81	3	Vertical	111	1.91	-				

BT-BR(1Mbps)

13/06/2019

2480MHz_TX

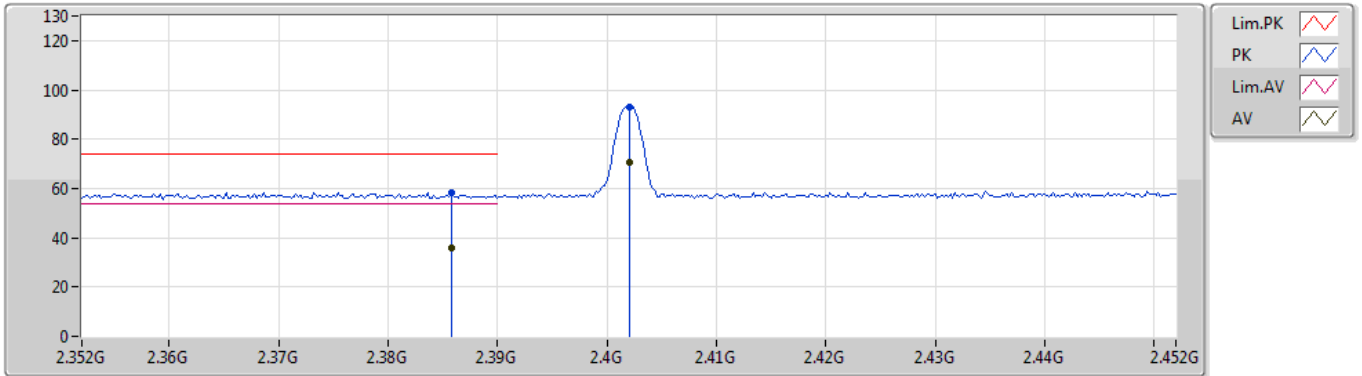


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
AV	4.96038G	33.45	54.00	-20.55	2.02	3	Horizontal	35	1.43	-				
AV	7.44049G	34.01	54.00	-19.99	7.81	3	Horizontal	127	1.47	-				
PK	4.96038G	55.95	74.00	-18.05	2.02	3	Horizontal	35	1.43	-				
PK	7.44049G	56.51	74.00	-17.49	7.81	3	Horizontal	127	1.47	-				

BT-EDR(3Mbps)

13/06/2019

2402MHz_TX

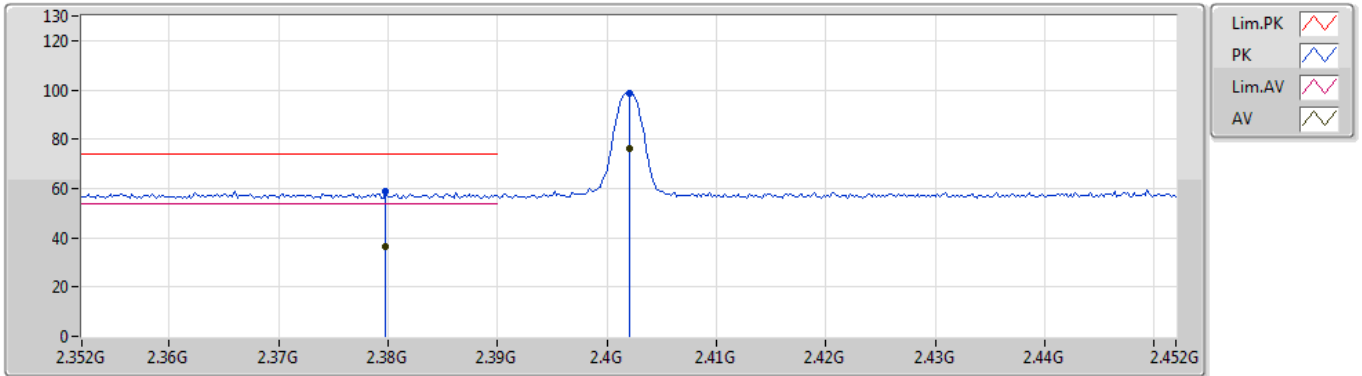


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
AV	2.3858G	36.01	54.00	-17.99	30.94	3	Vertical	50	1.87	-				
AV	2.402G	70.77	Inf	-Inf	31.00	3	Vertical	50	1.87	-				
PK	2.3858G	58.51	74.00	-15.49	30.94	3	Vertical	50	1.87	-				
PK	2.402G	93.27	Inf	-Inf	31.00	3	Vertical	50	1.87	-				

BT-EDR(3Mbps)

13/06/2019

2402MHz_TX

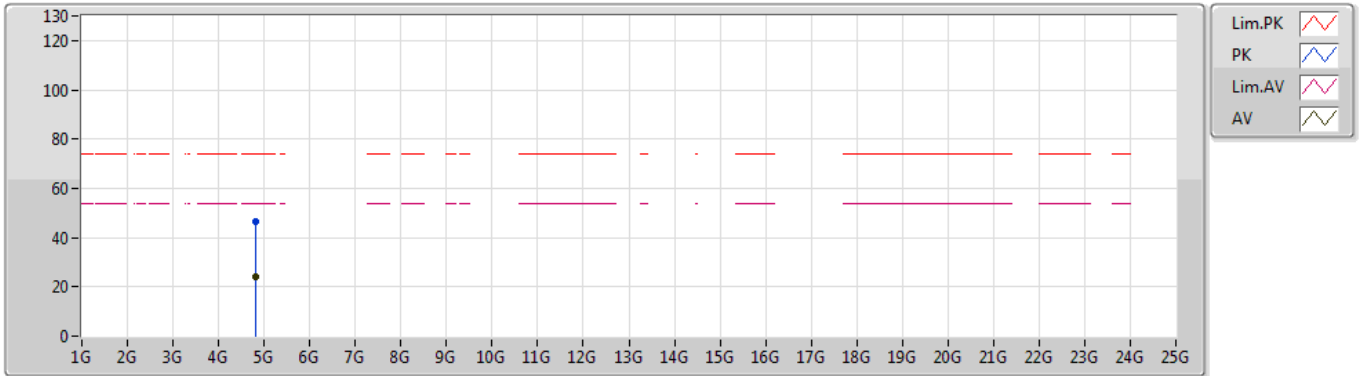


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
AV	2.3798G	36.21	54.00	-17.79	30.92	3	Horizontal	169	1.72	-				
AV	2.402G	76.32	Inf	-Inf	31.00	3	Horizontal	169	1.72	-				
PK	2.3798G	58.71	74.00	-15.29	30.92	3	Horizontal	169	1.72	-				
PK	2.402G	98.82	Inf	-Inf	31.00	3	Horizontal	169	1.72	-				

BT-EDR(3Mbps)

13/06/2019

2402MHz_TX

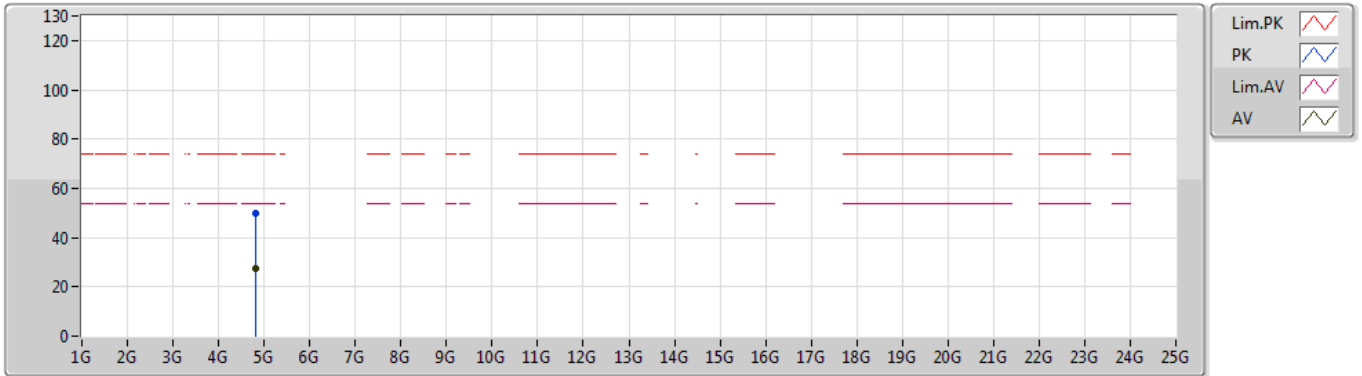


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
AV	4.8046G	23.96	54.00	-30.04	1.62	3	Vertical	189	1.50	-				
PK	4.8046G	46.46	74.00	-27.54	1.62	3	Vertical	189	1.50	-				

BT-EDR(3Mbps)

13/06/2019

2402MHz_TX

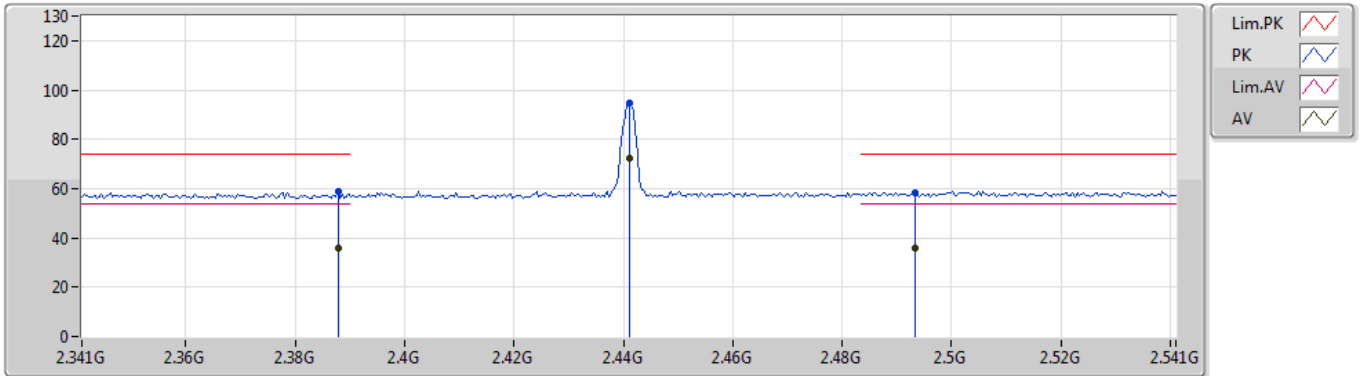


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
AV	4.80391G	27.61	54.00	-26.39	1.62	3	Horizontal	329	1.79	-				
PK	4.80391G	50.11	74.00	-23.89	1.62	3	Horizontal	329	1.79	-				

BT-EDR(3Mbps)

2441MHz_TX

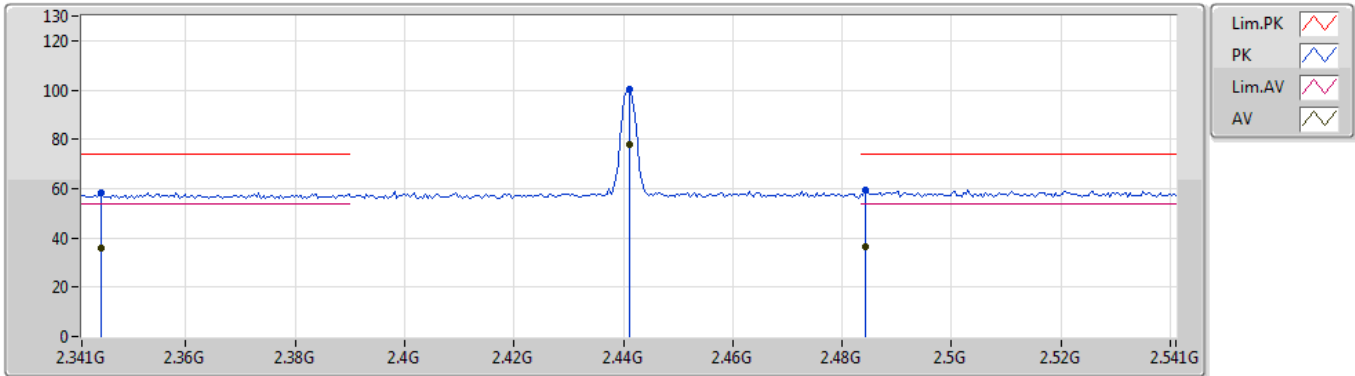
13/06/2019



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
AV	2.3878G	36.09	54.00	-17.91	30.95	3	Vertical	84	1.71	-				
AV	2.441G	72.17	Inf	-Inf	31.14	3	Vertical	84	1.71	-				
AV	2.4934G	35.93	54.00	-18.07	31.33	3	Vertical	84	1.71	-				
PK	2.3878G	58.59	74.00	-15.41	30.95	3	Vertical	84	1.71	-				
PK	2.441G	94.67	Inf	-Inf	31.14	3	Vertical	84	1.71	-				
PK	2.4934G	58.43	74.00	-15.57	31.33	3	Vertical	84	1.71	-				

BT-EDR(3Mbps)

13/06/2019

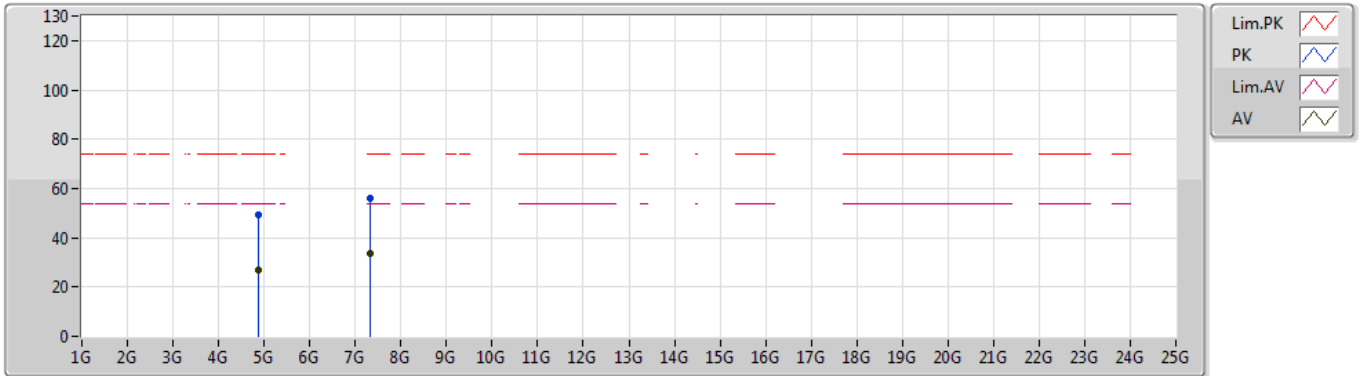
2441MHz_TX


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
AV	2.3446G	35.73	54.00	-18.27	30.79	3	Horizontal	21	1.00	-				
AV	2.441G	77.69	Inf	-Inf	31.14	3	Horizontal	21	1.00	-				
AV	2.4842G	36.64	54.00	-17.36	31.31	3	Horizontal	21	1.00	-				
PK	2.3446G	58.23	74.00	-15.77	30.79	3	Horizontal	21	1.00	-				
PK	2.441G	100.19	Inf	-Inf	31.14	3	Horizontal	21	1.00	-				
PK	2.4842G	59.14	74.00	-14.86	31.31	3	Horizontal	21	1.00	-				

BT-EDR(3Mbps)

13/06/2019

2441MHz_TX

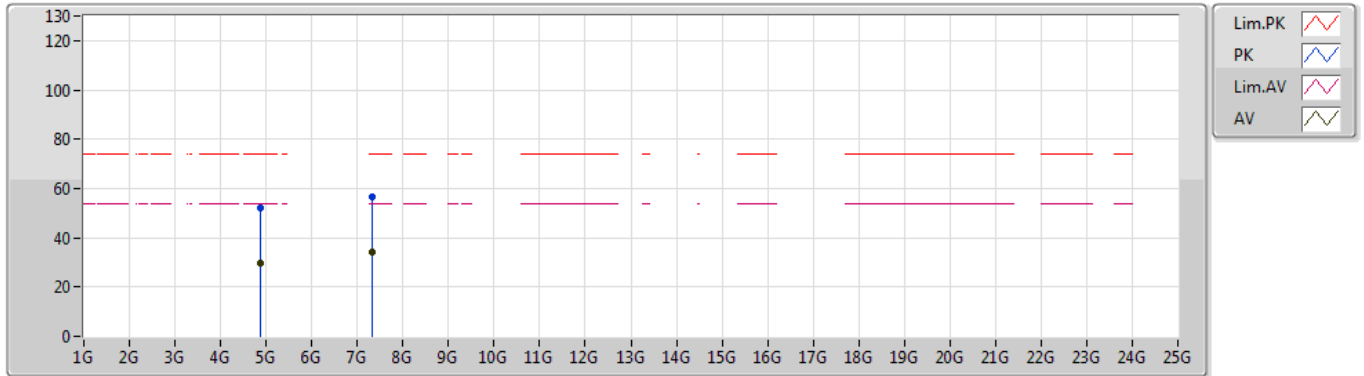


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
AV	4.88189G	27.03	54.00	-26.97	1.82	3	Vertical	158	1.22	-				
AV	7.32313G	33.47	54.00	-20.53	7.51	3	Vertical	116	1.42	-				
PK	4.88189G	49.53	74.00	-24.47	1.82	3	Vertical	158	1.22	-				
PK	7.32313G	55.97	74.00	-18.03	7.51	3	Vertical	116	1.42	-				

BT-EDR(3Mbps)

13/06/2019

2441MHz_TX

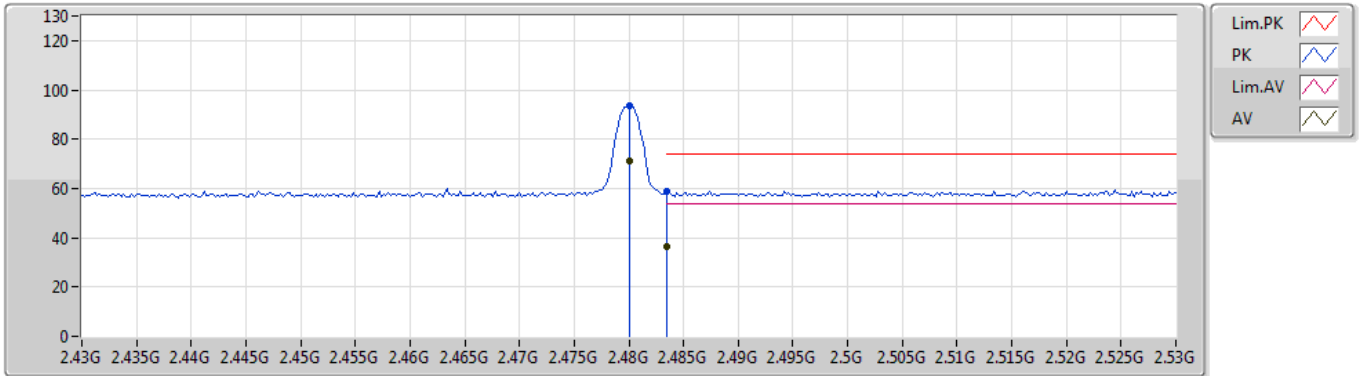


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
AV	4.88206G	29.73	54.00	-24.27	1.82	3	Horizontal	359	1.00	-				
AV	7.32301G	33.93	54.00	-20.07	7.51	3	Horizontal	126	1.57	-				
PK	4.88206G	52.23	74.00	-21.77	1.82	3	Horizontal	359	1.00	-				
PK	7.32301G	56.43	74.00	-17.57	7.51	3	Horizontal	126	1.57	-				

BT-EDR(3Mbps)

13/06/2019

2480MHz_TX

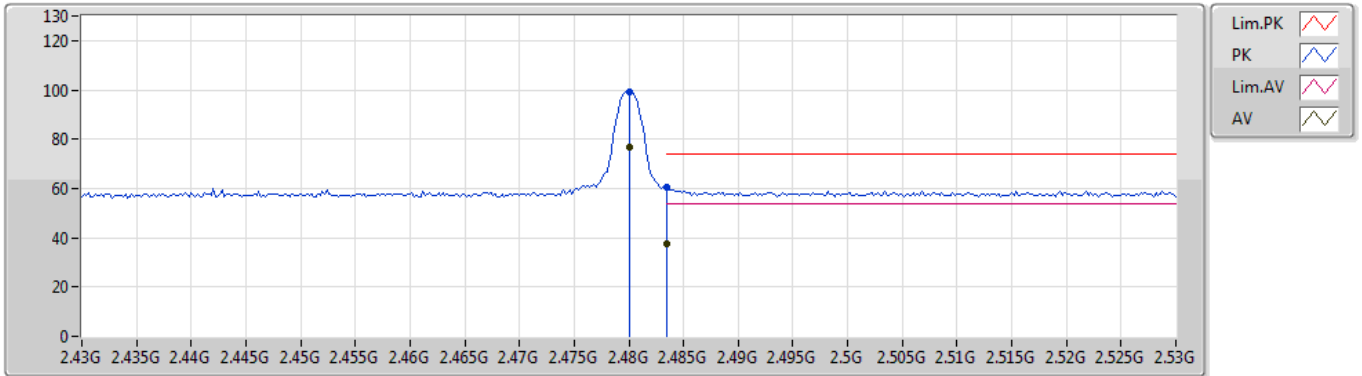


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
AV	2.48G	70.99	Inf	-Inf	31.28	3	Vertical	97	1.66	-				
AV	2.4835G	36.56	54.00	-17.44	31.30	3	Vertical	97	1.66	-				
PK	2.48G	93.49	Inf	-Inf	31.28	3	Vertical	97	1.66	-				
PK	2.4835G	59.06	74.00	-14.94	31.30	3	Vertical	97	1.66	-				

BT-EDR(3Mbps)

13/06/2019

2480MHz_TX

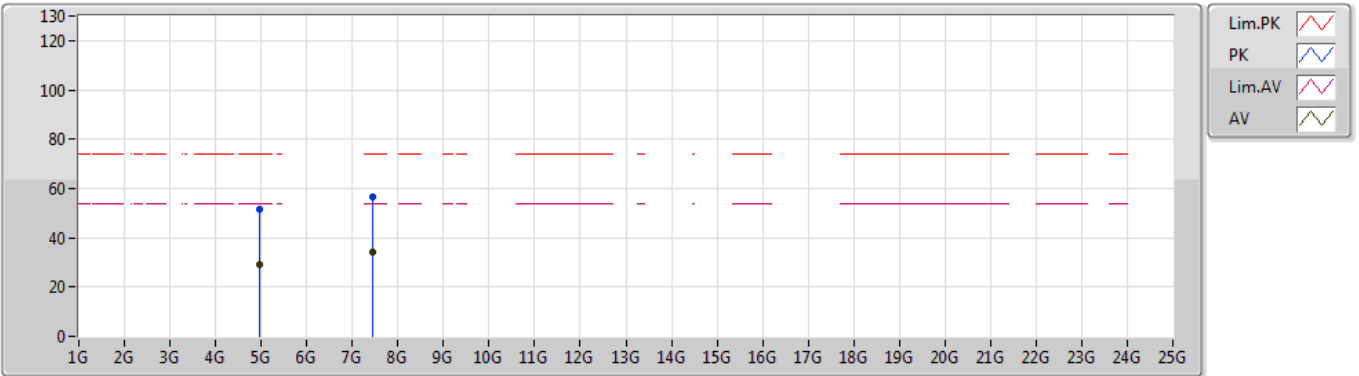


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
AV	2.48G	76.92	Inf	-Inf	31.28	3	Horizontal	33	1.52	-				
AV	2.4835G	37.74	54.00	-16.26	31.30	3	Horizontal	33	1.52	-				
PK	2.48G	99.42	Inf	-Inf	31.28	3	Horizontal	33	1.52	-				
PK	2.4835G	60.24	74.00	-13.76	31.30	3	Horizontal	33	1.52	-				

BT-EDR(3Mbps)

13/06/2019

2480MHz_TX

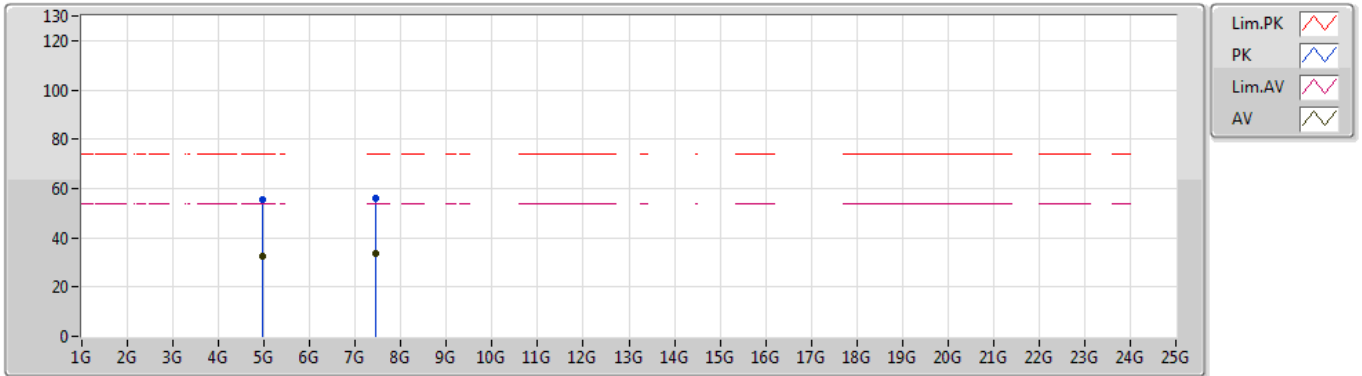


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
AV	4.95989G	29.23	54.00	-24.77	2.02	3	Vertical	194	1.53	-				
AV	7.44016G	34.03	54.00	-19.97	7.81	3	Vertical	112	1.91	-				
PK	4.95989G	51.73	74.00	-22.27	2.02	3	Vertical	194	1.53	-				
PK	7.44016G	56.53	74.00	-17.47	7.81	3	Vertical	112	1.91	-				

BT-EDR(3Mbps)

13/06/2019

2480MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
AV	4.95967G	32.78	54.00	-21.22	2.02	3	Horizontal	35	1.43	-				
AV	7.44002G	33.81	54.00	-20.19	7.81	3	Horizontal	126	1.49	-				
PK	4.95967G	55.28	74.00	-18.72	2.02	3	Horizontal	35	1.43	-				
PK	7.44002G	56.31	74.00	-17.69	7.81	3	Horizontal	126	1.49	-				