

FCC Test Report

FCC ID : 2AENP-MB01
Equipment : Wireless Headphones
Brand Name : Montblanc
Model Name : MB 01
Applicant/ Manufacturer : Montblanc-Simplo GmbH
Hellgrundweg 100, 22525 Hamburg, Germany
Standard : 47 CFR FCC Part 15.247

The product was received on Sep. 06, 2019, and testing was started from Sep. 25, 2019 and completed on Oct. 15, 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.....	15
3.3 Maximum Conducted Output Power	16
3.4 Number of Hopping Frequencies and Hopping Bandedge	17
3.5 Time of Occupancy (Dwell Time)	18
3.6 Emissions in Non-restricted Frequency Bands	19
3.7 Emissions in Restricted Frequency Bands.....	20
4 TEST EQUIPMENT AND CALIBRATION DATA.....	23
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

TEL : 886-3-3273456
FAX : 886-3-3270973
Report Template No.: HE1-C9 Ver3.6
FCC ID: 2AENP-MB01

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 $\pi/4$ -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	Gain (dBi)
1	SAGE ELEPHANT	S306300001000-A	Couple Chip Antenna	N/A	1.82

For BT function:

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

Ant. 1 could transmit/receive.

1.1.3 EUT Information

Operational Condition			
EUT Power Type	From host system (NB) / Adapter		
EUT Function	<input checked="" type="checkbox"/> Point-to-multipoint	<input type="checkbox"/> Point-to-point	
AFH Function	<input checked="" type="checkbox"/> Non-AFH	<input checked="" type="checkbox"/> AFH	
<p>Note.</p> <p>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.</p> <p>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.</p> <p>Under the above conditions, Non-AFH Mode configuration was found to be the worst case and measured during the test.</p>			
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)	0.769	1.14	2.894m	1k
BT-EDR(2Mbps)	0.777	1.1	2.891m	1k
BT-EDR(3Mbps)	0.768	1.15	2.891m	1k

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

1.1.5 Table for Multiple Listing

The model names in the following table are all refer to the identical product.

Model Name	Sample	Description
MB 01	1	<p>The EUT have three Samples.</p> <p>There are three appearance colors.</p>
	2	
	3	

Note: Sample 1 configuration was measured during the test.

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			
<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	Edward	24.2~25.3°C / 63.1~67.2%	26/Sep/2019
RF Conducted	TH07-HY	Andy	25.4~25.9°C / 55~56%	25/Sep/2019
Radiated	03CH03-HY	Justin	18.6~24.8°C / 50.1~56.7%	26/Sep/2019~15/Oct/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	Blue Test3 V3.2.1
-----------------------	-------------------

Mode	Power Setting
BT-BR(1Mbps)	-
2402MHz	9.0.0
2441MHz	9.0.0
2480MHz	9.0.0
BT-EDR(2Mbps)	-
2402MHz	9.0.0
2441MHz	9.0.0
2480MHz	9.0.0
BT-EDR(3Mbps)	-
2402MHz	9.0.0
2441MHz	9.0.0
2480MHz	9.0.0

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
2	Adapter 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		
2	Adapter mode		
Operating Mode > 1GHz	CTX		
Orthogonal Planes of EUT	X Plane	Y Plane	Z Plane
			
Worst Planes of EUT		V	

2.4 Accessories and Support Equipment

Accessories				
Battery	Brand Name	SYNergy	Model Name	AHB553436TPJT-01
	Power Rating	3.7Vdc, 730mAh	Type	Lithium-ion Polymer Battery Pack
USB Cable	Brand Name	DONG GUAN IN YUAN	Model Name	4021XW01864ZAU
	Signal Line	1.2 meter, D-shielded cable, w/o ferrite core		
Audio Cable	Brand Name	DONG GUAN IN YUAN	Model Name	4021XW01865ZAG
	Signal Line	1.5 meter, non-shielded cable, w/o ferrite core		

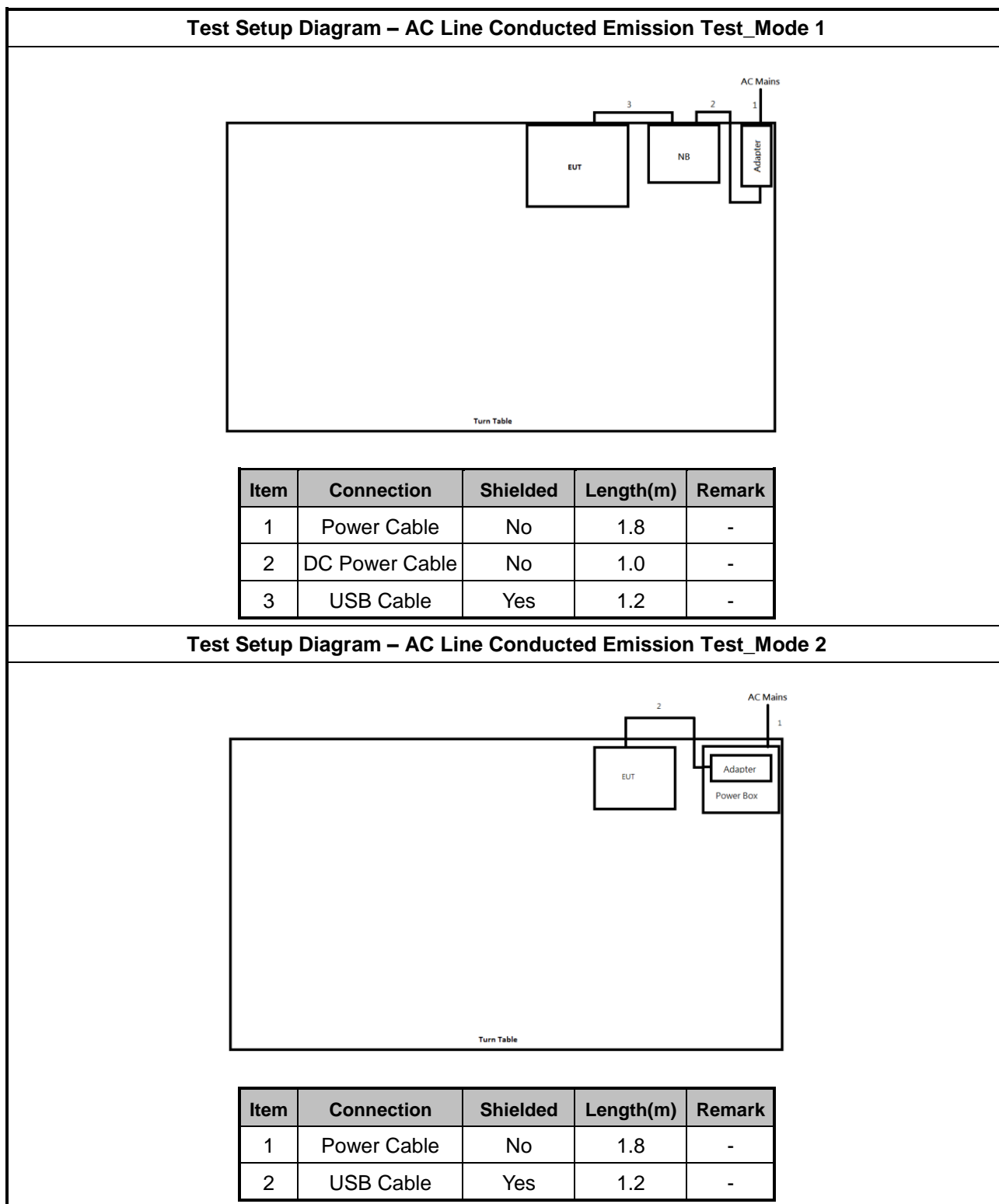
Reminder: Regarding to more detail and other information, please refer to user manual.

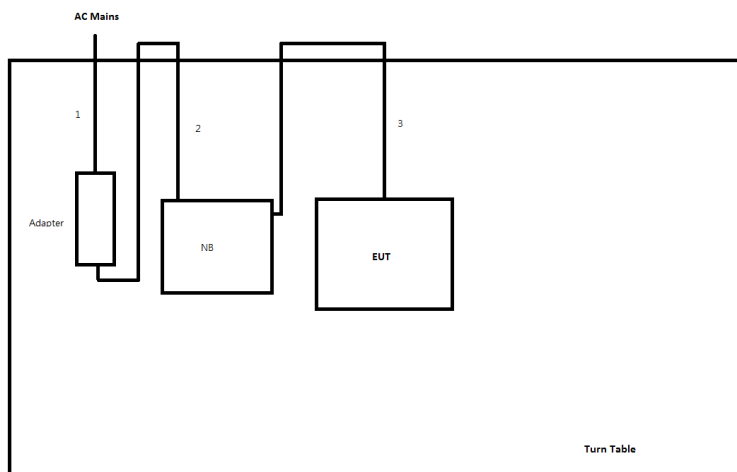
Support Equipment – AC Conduction and Radiated Emission				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Power Cable	Power sync	PW-GPC180-3	-
2	Notebook	DELL	E5570	-
3	Adapter for NB	DELL	AA90PM111	-
4	iPod	APPLE	YM719D8YVQ5	-
5	Earphone	APPLE	MD827FE/A	-
6	Adapter for EUT	SHLHY	SYS1448-1005-W2	-
7	USB Cable	DONG GUAN IN YUAN	4021XW01864ZAU	-

Note: Support equipment No.7 was provided by customer.

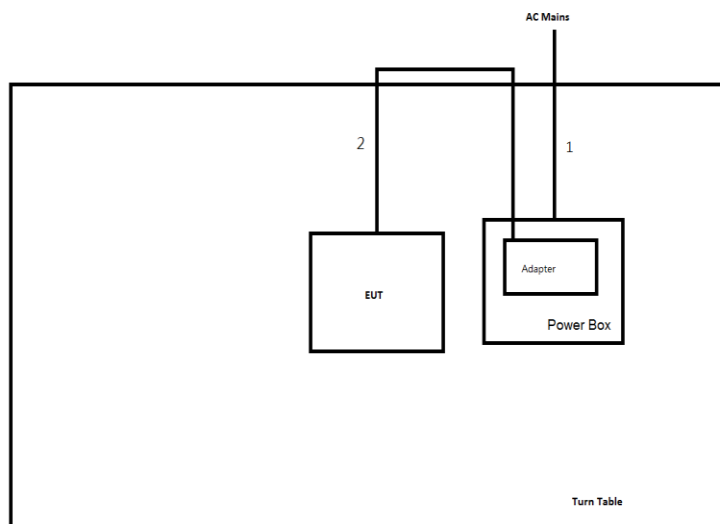
Support Equipment – RF Conducted				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E5410	DoC
2	Adapter for NB	DELL	HA65NM130	DoC
3	DC Power Supply	GW	GPS-3030DD	-

2.5 Test Setup Diagram



Test Setup Diagram - Radiated Test_Mode 1


Item	Connection	Shielded	Length(m)	Remark
1	AC Power Cable	No	1.8	-
2	DC Power Cable	No	1.8	-
3	USB cable	No	1.2	-

Test Setup Diagram - Radiated Test_Mode 2


Item	Connection	Shielded	Length(m)	Remark
1	AC Power cable	No	1.8	-
2	USB cable	No	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.		

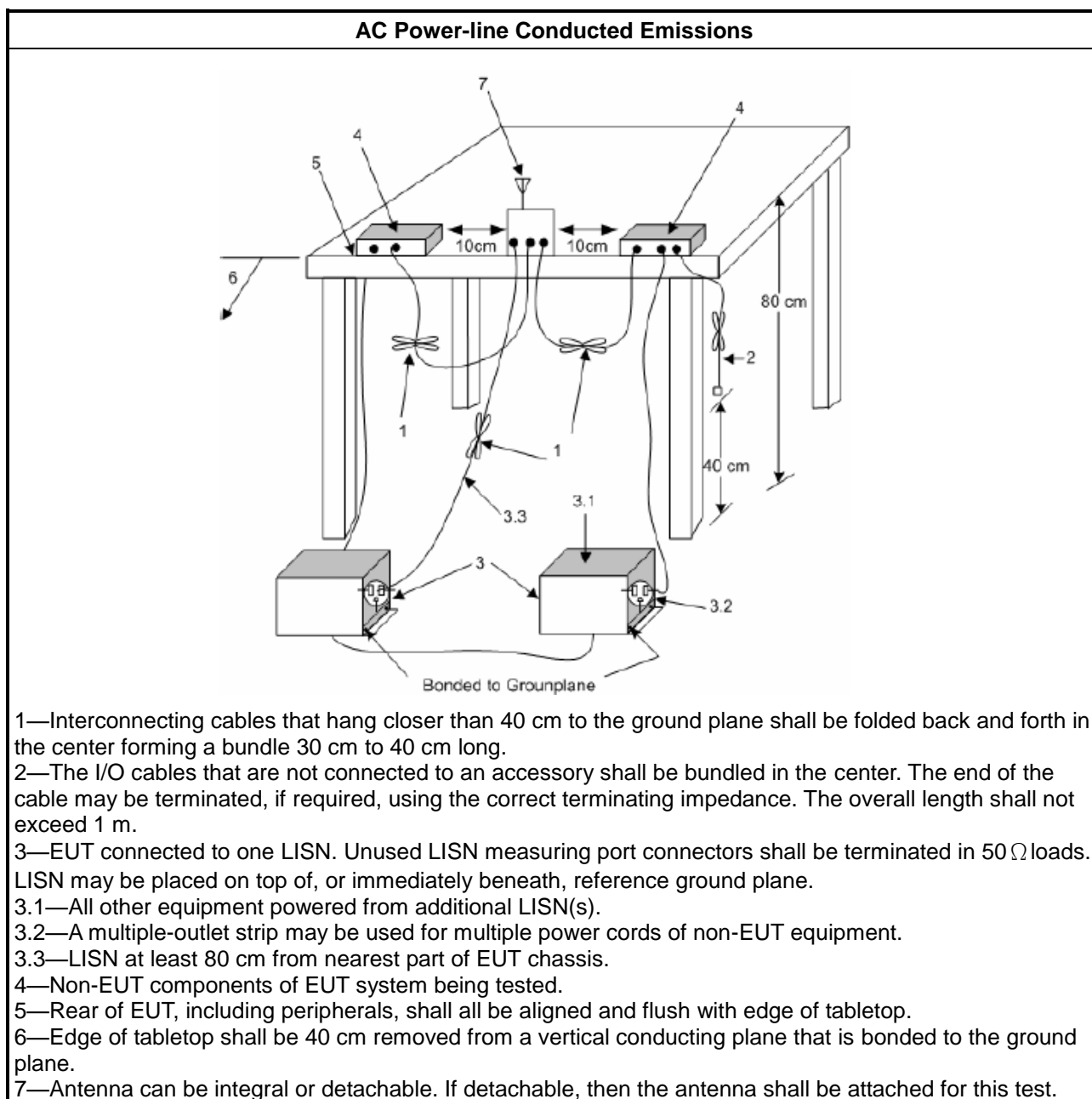
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

Test Method
▪ 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	

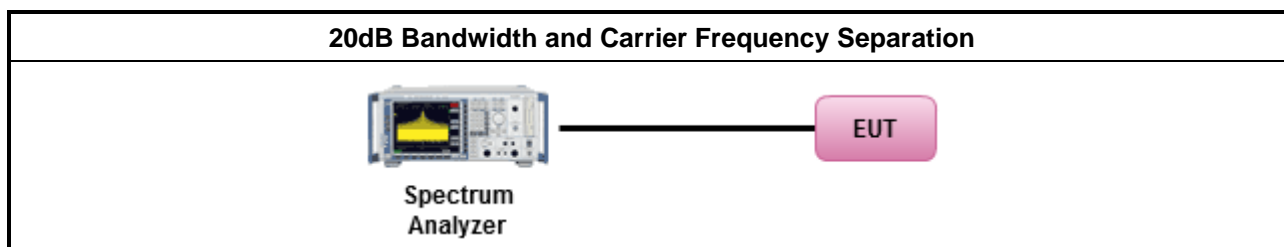
3.2.2 Measuring Instruments

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	

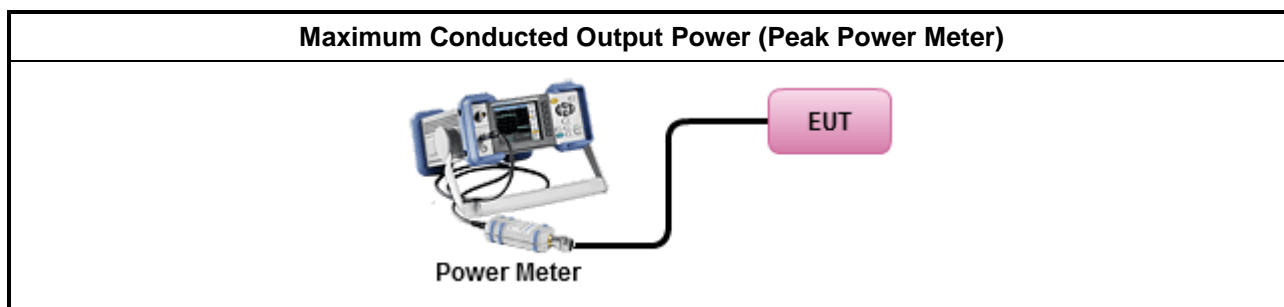
3.3.2 Measuring Instruments

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	
▪ 2400-2483.5 MHz Band:	
	▪ $N \geq 75$ and $ChS \geq MAX$ (20 dB bandwidth, 25 kHz).
	▪ $75 > N \geq 15$ 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

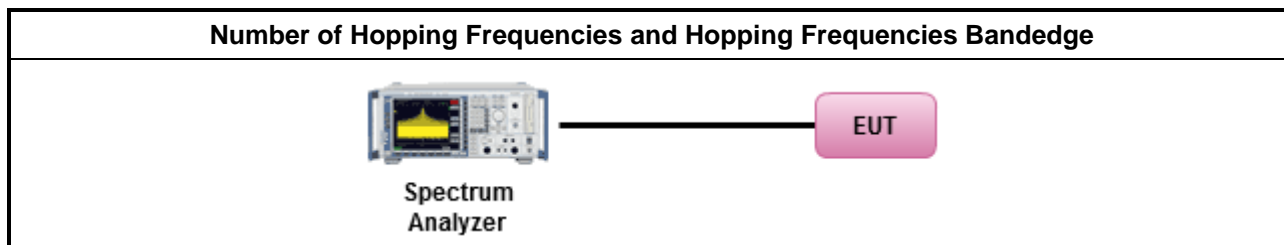
3.4.3 Measuring Instruments

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

3.4.4 Test Procedures

Test Method
▪ 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



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	

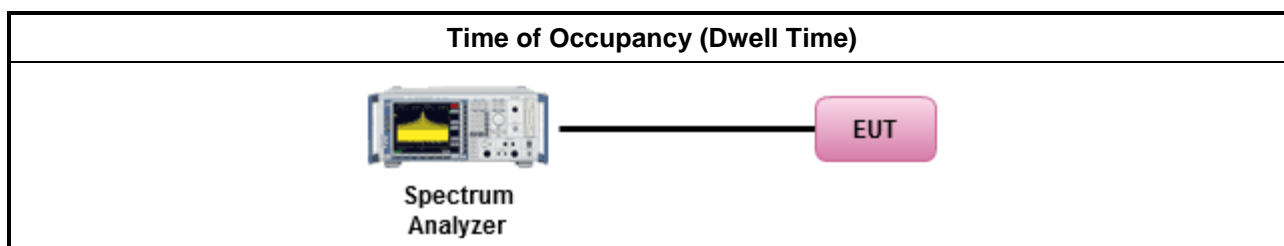
3.5.2 Measuring Instruments

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.	

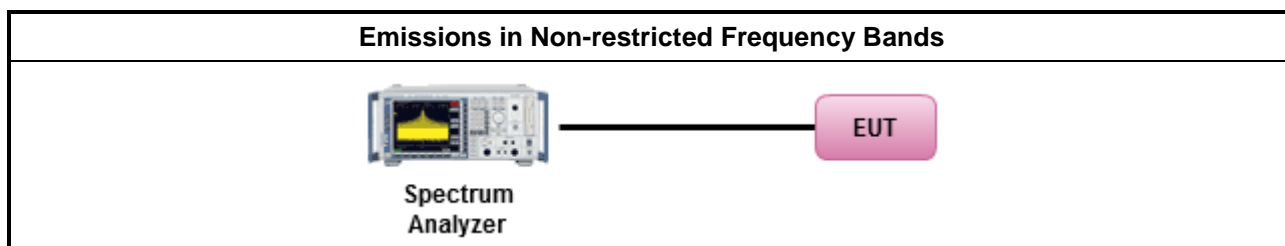
3.6.2 Measuring Instruments

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.

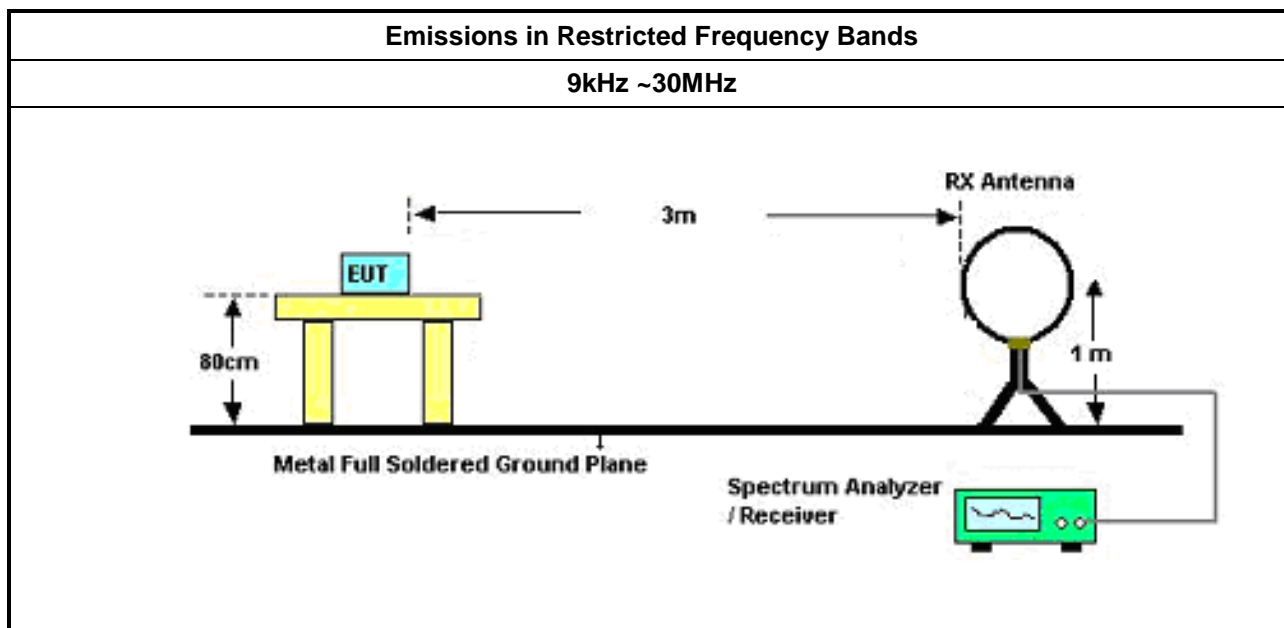
3.7.2 Measuring Instruments

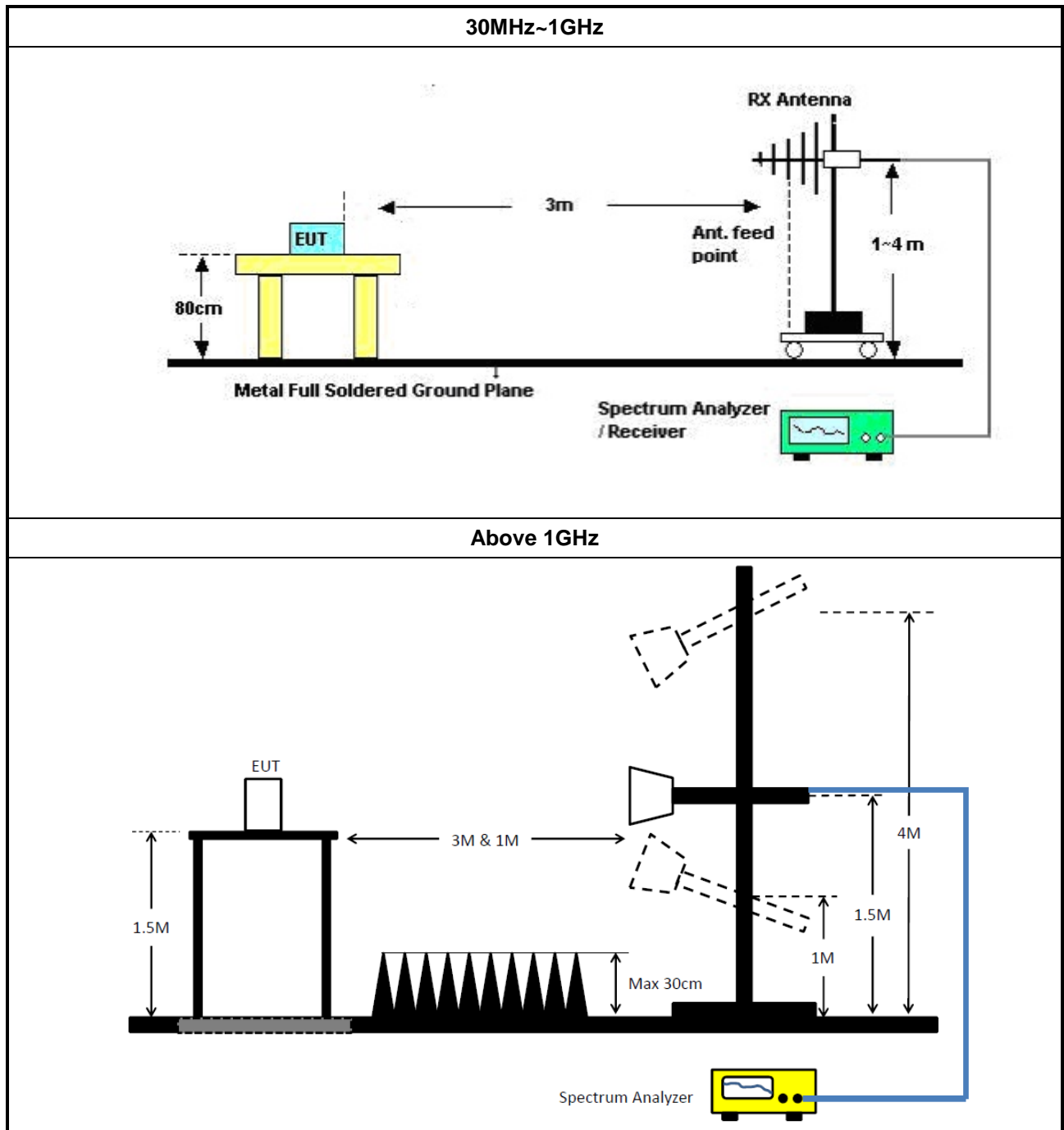
Refer a test equipment and calibration data table in this test report.

3.7.3 Test Procedures

Test Method	
	▪ 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





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	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	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
SMB100A Signal Generator	R&S	SMB100A03	181147	100kHz~40GHz	12/Nov/2018	10/Nov/2020
Power Sensor	Anritsu	MA2411B	0917017	300MHz~40GHz	19/Feb/2019	18/Feb/2020
Power Meter	Anritsu	ML2495A	0949003	300MHz~40GHz	19/Feb/2019	18/Feb/2020
Cable 0.2m	HUBER	MY10710/4	RF Cable - 01	30MHz~18G	11/Jan/2019	10/Jan/2020
Cable 0.2m	HUBER	MY10711/4	RF Cable - 02	30MHz~18G	11/Jan/2019	10/Jan/2020
Cable 0.5m	HUBER	MY10714/4	RF Cable - 05	30MHz~18G	11/Jan/2019	10/Jan/2020

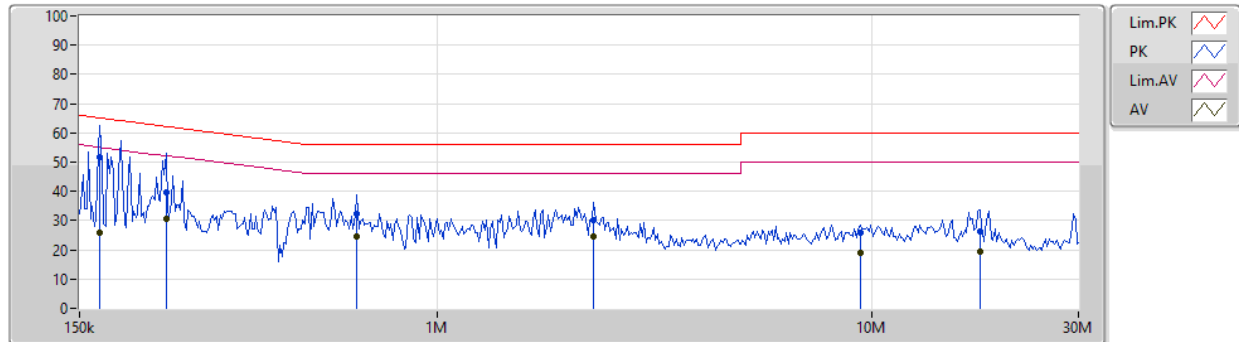
**Instrument for Radiated Test**

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/Oct/2018	29/Oct/2019
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	1GHz~18GHz 3m	30/Oct/2018	29/Oct/2019
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 with 5dB Pad	ETS	3142B & MTJ6102-05	00022055	26MHz~3GHz	19/Nov/2018	18/Nov/2019
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	1GHz~18GHz	04/Jul/2019	03/Jul/2020
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170339	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

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Neutral
Operating Function	USB Mode		

26/09/2019

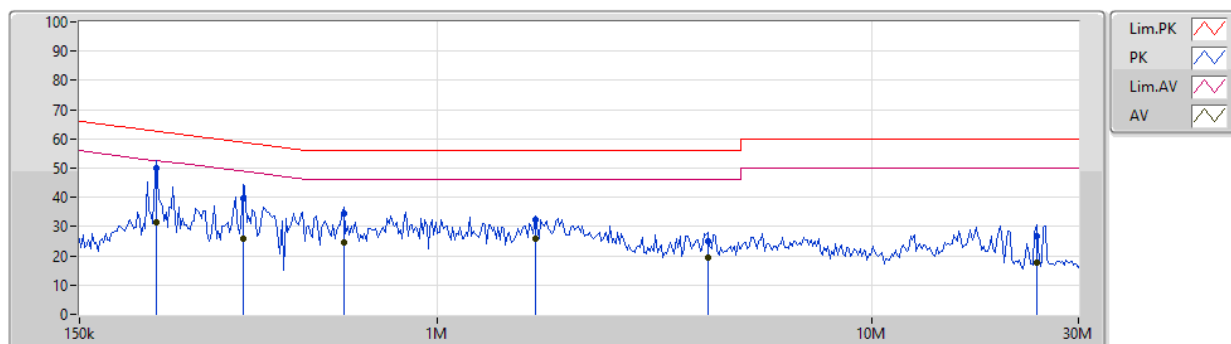


Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	167.35k	51.75	65.08	-13.33	19.48	Neutral	"Worst"	32.27	9.60	0.01	9.87			
AV	167.35k	25.82	55.08	-29.26	19.48	Neutral	-	6.34	9.60	0.01	9.87			
QP	237.069k	39.83	62.20	-22.37	19.47	Neutral	-	20.36	9.59	0.01	9.87			
AV	237.069k	30.79	52.20	-21.41	19.47	Neutral	-	11.32	9.59	0.01	9.87			
QP	654.116k	32.40	56.00	-23.60	19.48	Neutral	-	12.92	9.59	0.01	9.88			
AV	654.116k	24.45	46.00	-21.55	19.48	Neutral	-	4.97	9.59	0.01	9.88			
QP	2.292M	30.10	56.00	-25.90	19.54	Neutral	-	10.56	9.61	0.04	9.89			
AV	2.292M	24.73	46.00	-21.27	19.54	Neutral	-	5.19	9.61	0.04	9.89			
QP	9.414M	26.07	60.00	-33.93	19.63	Neutral	-	6.44	9.67	0.07	9.89			
AV	9.414M	19.00	50.00	-31.00	19.63	Neutral	-	-0.63	9.67	0.07	9.89			
QP	17.797M	26.35	60.00	-33.65	19.68	Neutral	-	6.67	9.68	0.10	9.90			
AV	17.797M	19.37	50.00	-30.63	19.68	Neutral	-	-0.31	9.68	0.10	9.90			

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Line
Operating Function	USB Mode		

26/09/2019

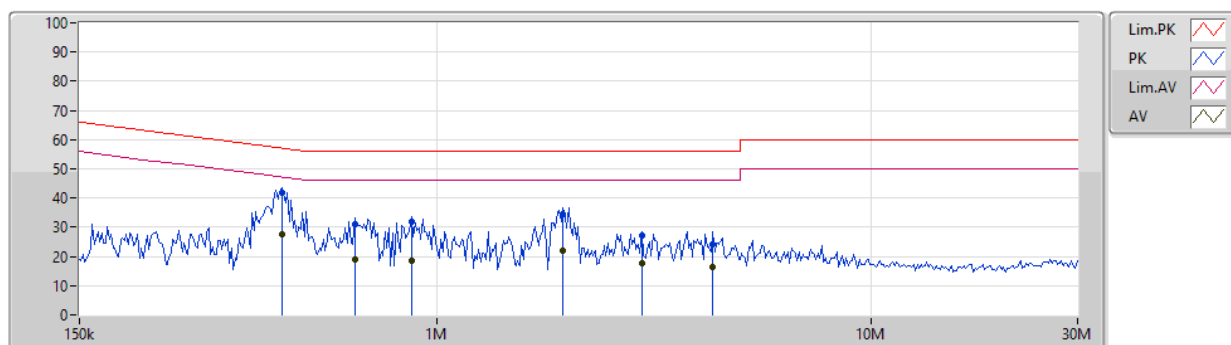


Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	225.563k	49.95	62.62	-12.67	19.48	Line	"Worst"	30.47	9.60	0.01	9.87			
AV	225.563k	31.63	52.62	-20.99	19.48	Line	-	12.15	9.60	0.01	9.87			
QP	356.493k	39.44	58.81	-19.37	19.48	Line	-	19.96	9.59	0.01	9.88			
AV	356.493k	25.88	48.81	-22.93	19.48	Line	-	6.40	9.59	0.01	9.88			
QP	610.106k	34.38	56.00	-21.62	19.48	Line	-	14.90	9.59	0.01	9.88			
AV	610.106k	24.75	46.00	-21.25	19.48	Line	-	5.27	9.59	0.01	9.88			
QP	1.683M	32.37	56.00	-23.63	19.54	Line	-	12.83	9.62	0.03	9.89			
AV	1.683M	25.76	46.00	-20.24	19.54	Line	-	6.22	9.62	0.03	9.89			
QP	4.205M	24.98	56.00	-31.02	19.57	Line	-	5.41	9.63	0.05	9.89			
AV	4.205M	19.40	46.00	-26.60	19.57	Line	-	-0.17	9.63	0.05	9.89			
QP	23.988M	26.62	60.00	-33.38	19.61	Line	-	7.01	9.59	0.12	9.90			
AV	23.988M	17.81	50.00	-32.19	19.61	Line	-	-1.80	9.59	0.12	9.90			

AC Power-line Conducted Emissions Result

Operating Mode	2	Power Phase	Neutral
Operating Function	Adapter Mode		

26/09/2019

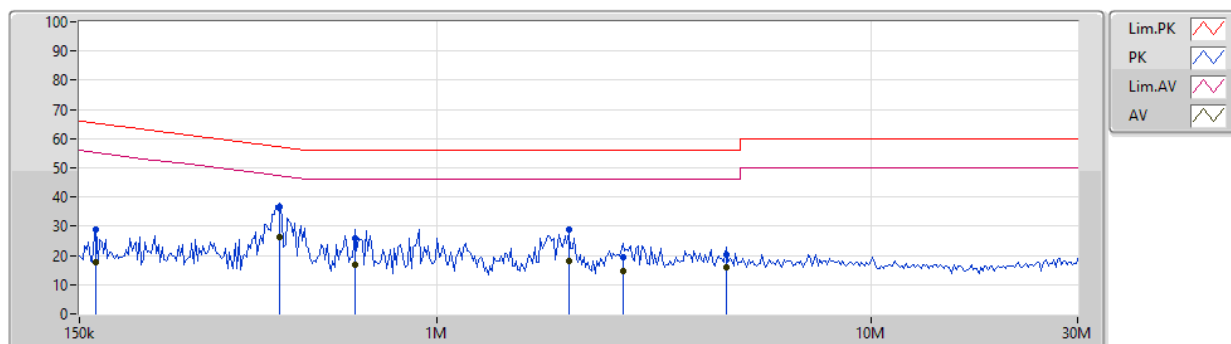


Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	439.339k	41.82	57.07	-15.25	19.48	Neutral	"Worst"	22.34	9.59	0.01	9.88			
AV	439.339k	27.55	47.07	-19.52	19.48	Neutral	-	8.07	9.59	0.01	9.88			
QP	647.639k	31.22	56.00	-24.78	19.48	Neutral	-	11.74	9.59	0.01	9.88			
AV	647.639k	19.13	46.00	-26.87	19.48	Neutral	-	-0.35	9.59	0.01	9.88			
QP	872.92k	31.88	56.00	-24.12	19.49	Neutral	-	12.39	9.59	0.02	9.88			
AV	872.92k	18.74	46.00	-27.26	19.49	Neutral	-	-0.75	9.59	0.02	9.88			
QP	1.954M	34.36	56.00	-21.64	19.53	Neutral	-	14.83	9.61	0.03	9.89			
AV	1.954M	22.02	46.00	-23.98	19.53	Neutral	-	2.49	9.61	0.03	9.89			
QP	2.968M	27.35	56.00	-28.65	19.54	Neutral	-	7.81	9.61	0.04	9.89			
AV	2.968M	17.51	46.00	-28.49	19.54	Neutral	-	-2.03	9.61	0.04	9.89			
QP	4.332M	24.28	56.00	-31.72	19.55	Neutral	-	4.73	9.61	0.05	9.89			
AV	4.332M	16.55	46.00	-29.45	19.55	Neutral	-	-3.00	9.61	0.05	9.89			

AC Power-line Conducted Emissions Result

Operating Mode	2	Power Phase	Line
Operating Function	Adapter Mode		

26/09/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	164.053k	28.89	65.25	-36.36	19.48	Line	-	9.41	9.60	0.01	9.87			
AV	164.053k	17.73	55.25	-37.52	19.48	Line	-	-1.75	9.60	0.01	9.87			
QP	434.989k	36.76	57.17	-20.41	19.48	Line	"Worst"	17.28	9.59	0.01	9.88			
AV	434.989k	26.09	47.17	-21.08	19.48	Line	-	6.61	9.59	0.01	9.88			
QP	647.639k	25.71	56.00	-30.29	19.49	Line	-	6.22	9.60	0.01	9.88			
AV	647.639k	16.65	46.00	-29.35	19.49	Line	-	-2.84	9.60	0.01	9.88			
QP	2.014M	29.06	56.00	-26.94	19.54	Line	-	9.52	9.62	0.03	9.89			
AV	2.014M	18.11	46.00	-27.89	19.54	Line	-	-1.43	9.62	0.03	9.89			
QP	2.687M	19.43	56.00	-36.57	19.55	Line	-	-0.12	9.62	0.04	9.89			
AV	2.687M	14.73	46.00	-31.27	19.55	Line	-	-4.82	9.62	0.04	9.89			
QP	4.645M	20.10	56.00	-35.90	19.58	Line	-	0.52	9.64	0.05	9.89			
AV	4.645M	15.77	46.00	-30.23	19.58	Line	-	-3.81	9.64	0.05	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)	918.75k	877.061k	877KF1D	918.75k	868.316k
BT-EDR(2Mbps)	533.75k	732.134k	732KG1D	532.5k	727.136k
BT-EDR(3Mbps)	530k	715.892k	716KG1D	530k	703.398k

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;

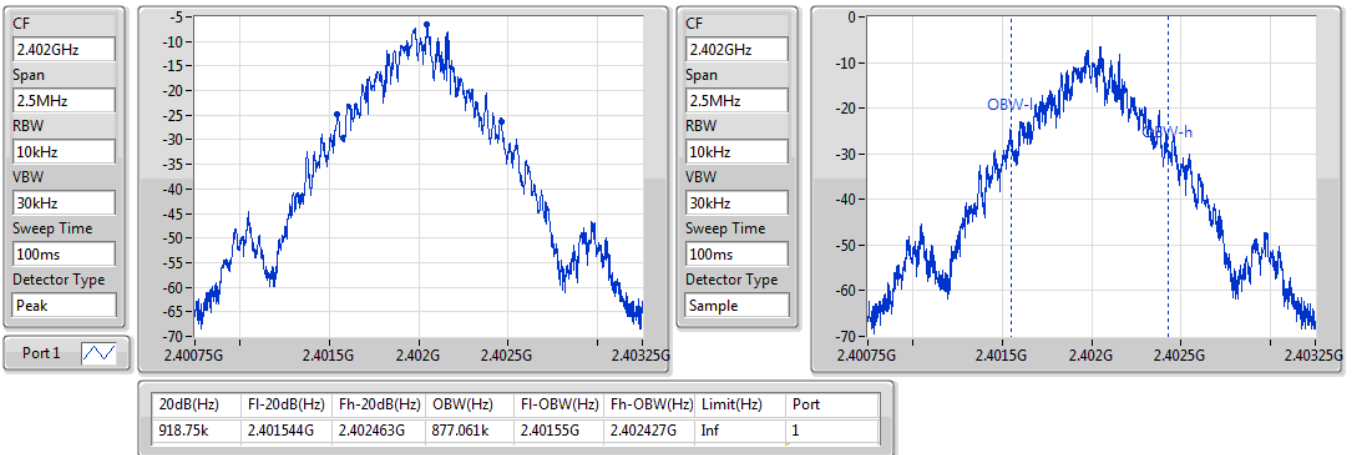
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-BR(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	Inf	918.75k	877.061k
2441MHz_TnomVnom	Pass	Inf	918.75k	873.313k
2480MHz_TnomVnom	Pass	Inf	918.75k	868.316k
BT-EDR(2Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	Inf	532.5k	732.134k
2441MHz_TnomVnom	Pass	Inf	533.75k	730.885k
2480MHz_TnomVnom	Pass	Inf	532.5k	727.136k
BT-EDR(3Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	Inf	530k	710.895k
2441MHz_TnomVnom	Pass	Inf	530k	715.892k
2480MHz_TnomVnom	Pass	Inf	530k	703.398k

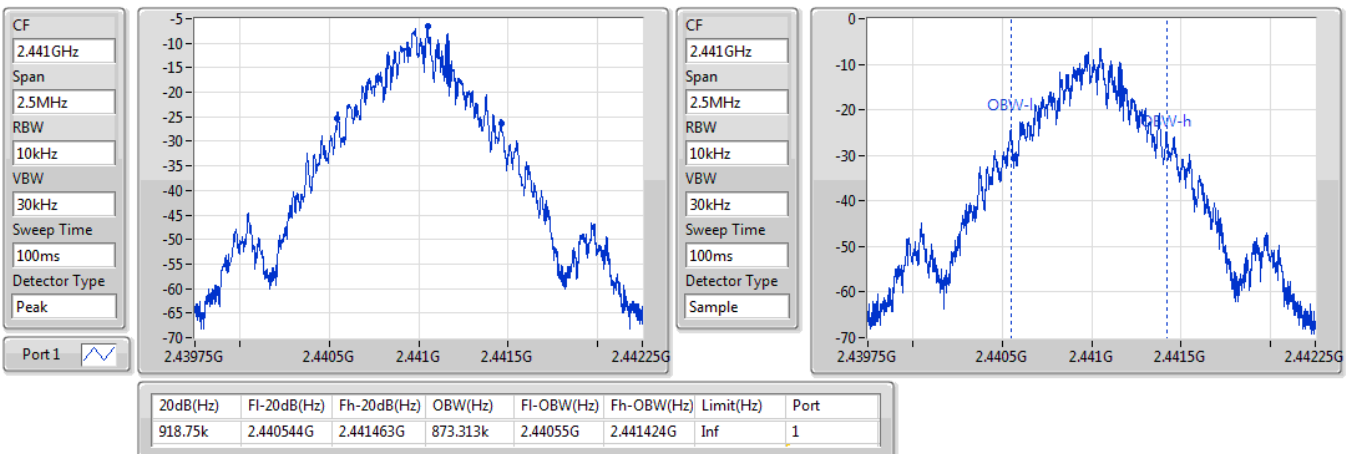
Port X-N dB = Port X 20dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

BT-BR(1Mbps)
2402MHz
EBW

25/09/2019

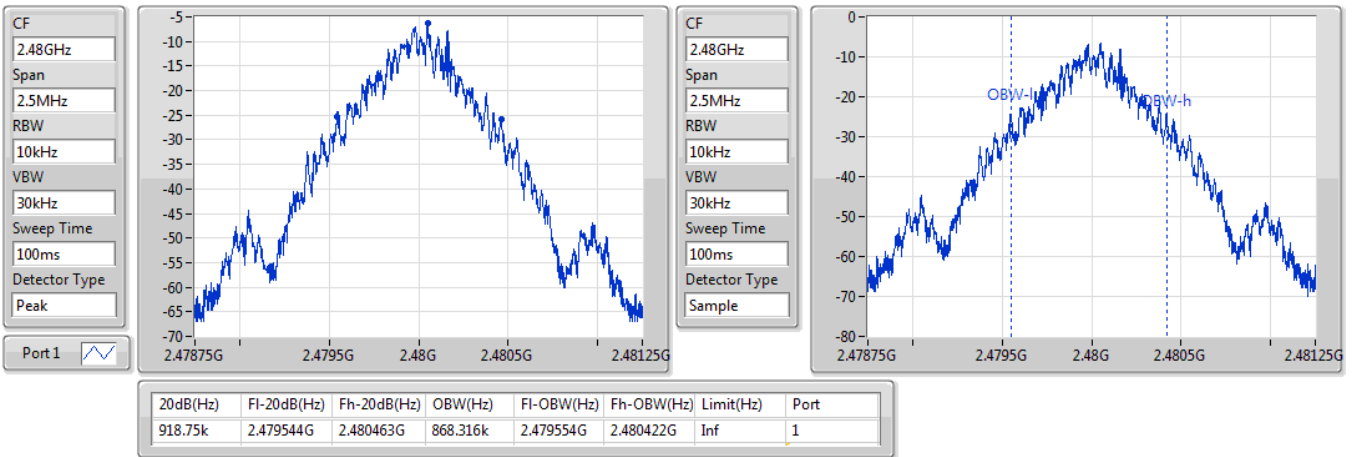

BT-BR(1Mbps)
2441MHz
EBW

25/09/2019

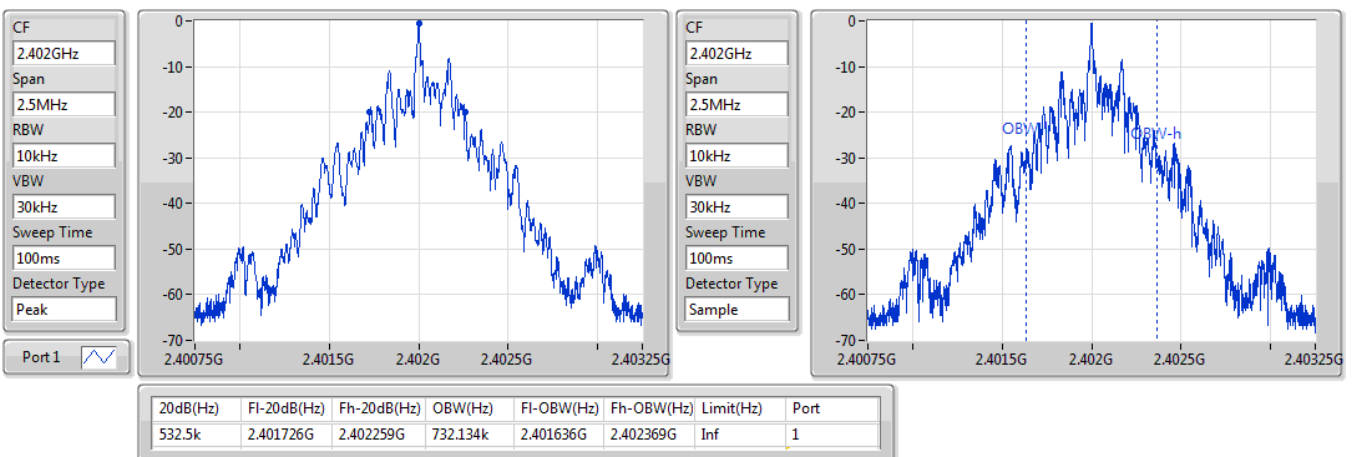


BT-BR(1Mbps)
EBW
2480MHz

25/09/2019

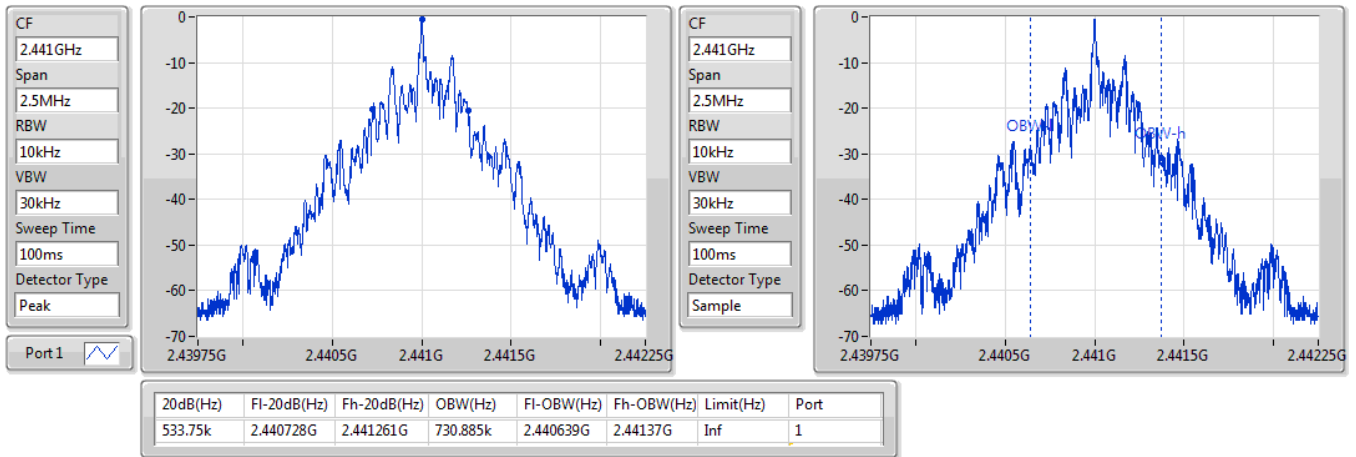

BT-EDR(2Mbps)
EBW
2402MHz

25/09/2019

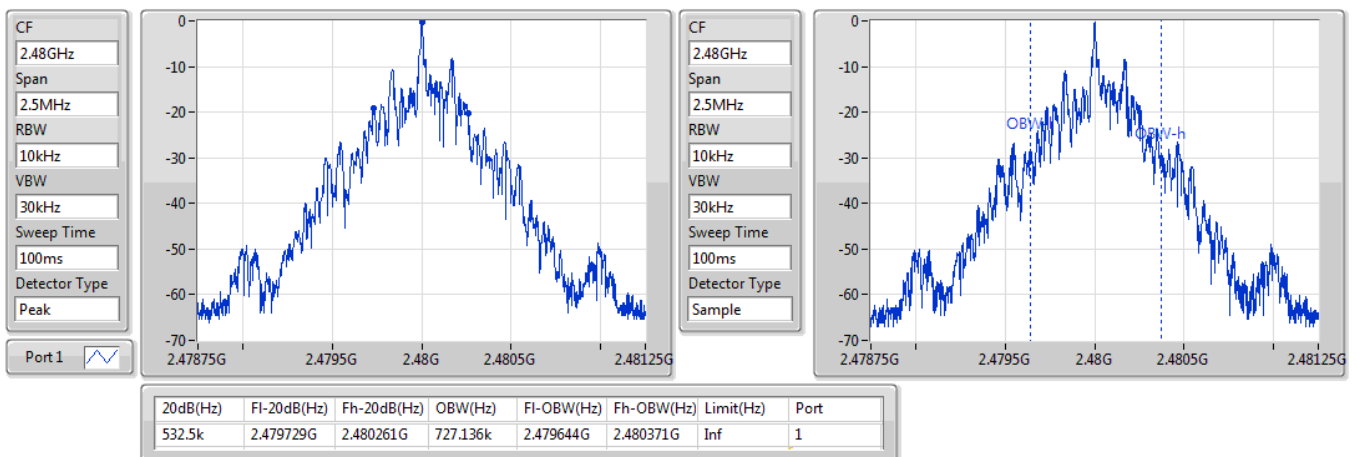


BT-EDR(2Mbps)
EBW
2441MHz

25/09/2019

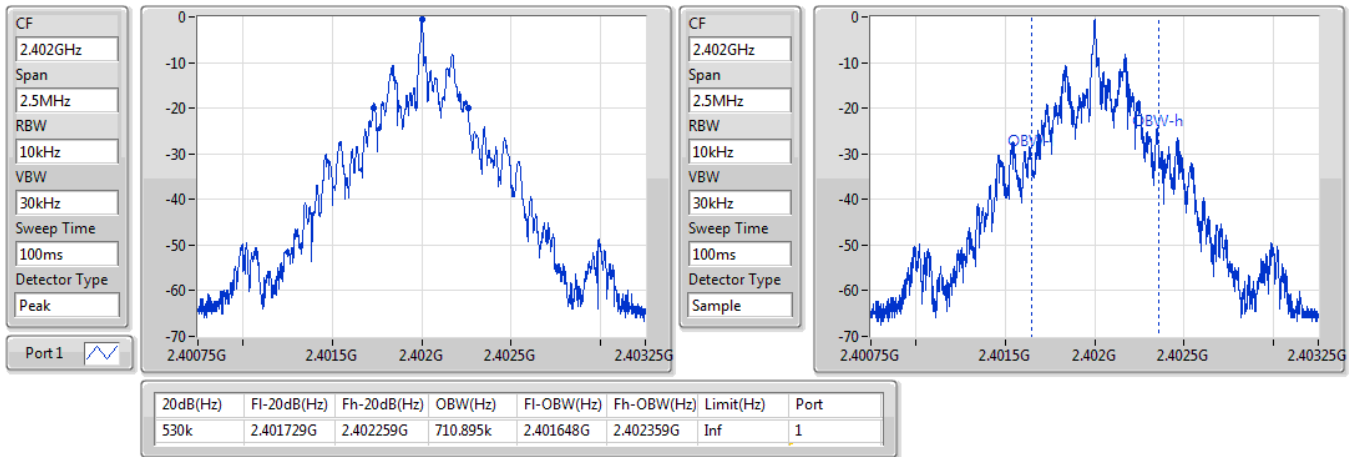

BT-EDR(2Mbps)
EBW
2480MHz

25/09/2019

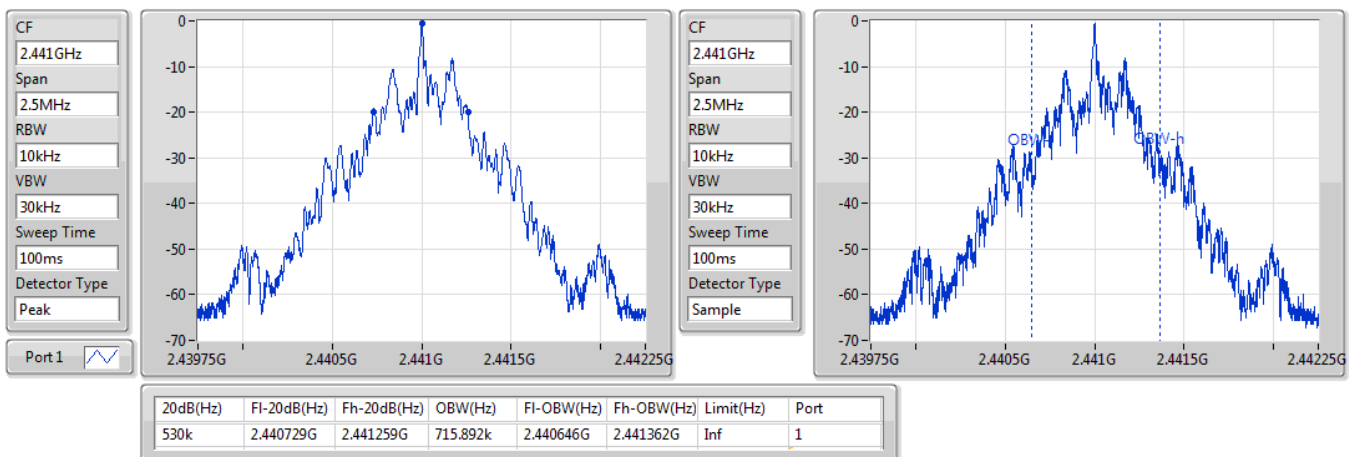


BT-EDR(3Mbps)
EBW
2402MHz

25/09/2019


BT-EDR(3Mbps)
EBW
2441MHz

25/09/2019

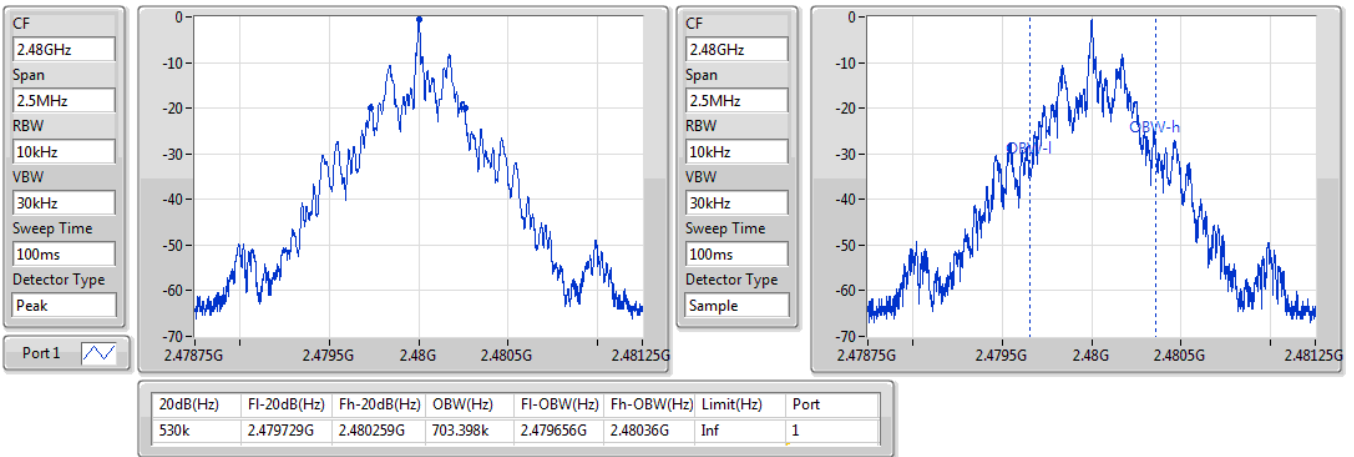


BT-EDR(3Mbps)

2480MHz

EBW

25/09/2019





Summary

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

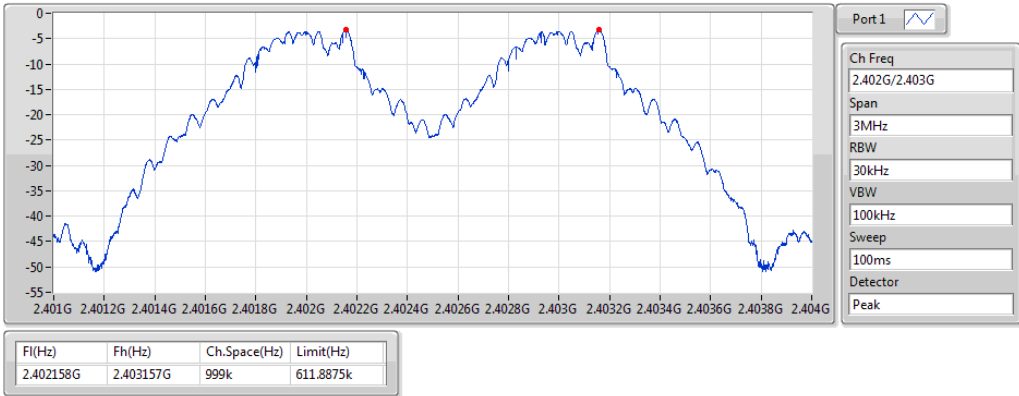
Result

Mode	Result	Fl (Hz)	Fh (Hz)	Ch.Space (Hz)	Limit (Hz)
BT-BR(1Mbps)	-	-	-	-	-
2402MHz_TnomVnom	Pass	2.402158G	2.403157G	999k	611.8875k
2441MHz_TnomVnom	Pass	2.441158G	2.442157G	999k	611.8875k
2480MHz_TnomVnom	Pass	2.479157G	2.480159G	1.002M	611.8875k
BT-EDR(2Mbps)	-	-	-	-	-
2402MHz_TnomVnom	Pass	2.401999G	2.403G	1.0005M	354.645k
2441MHz_TnomVnom	Pass	2.441001G	2.442001G	1.0005M	355.4775k
2480MHz_TnomVnom	Pass	2.479001G	2.480001G	1.0005M	354.645k
BT-EDR(3Mbps)	-	-	-	-	-
2402MHz_TnomVnom	Pass	2.402001G	2.403001G	1.0005M	352.98k
2441MHz_TnomVnom	Pass	2.441001G	2.442001G	1.0005M	352.98k
2480MHz_TnomVnom	Pass	2.479001G	2.480001G	1.0005M	352.98k

BT-BR(1Mbps)

Channel Separation

2.402G/2.403GHz



BT-BR(1Mbps)

Channel Separation

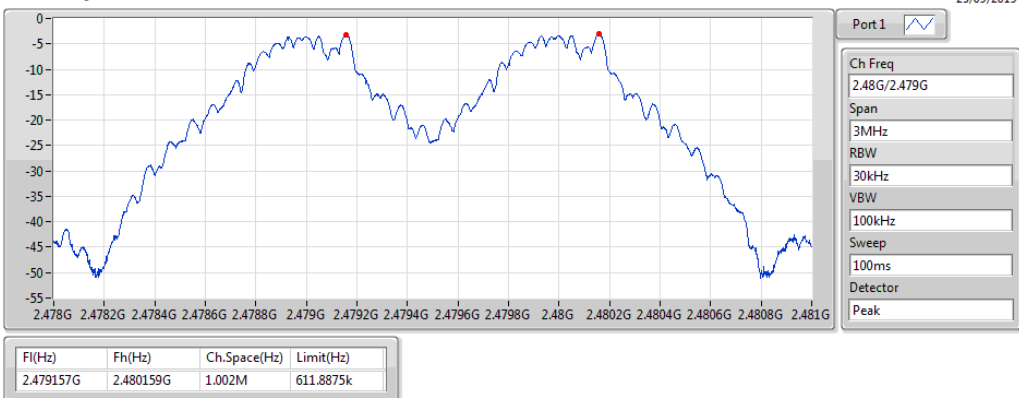
2.441G/2.442GHz



BT-BR(1Mbps)

Channel Separation

2.48G/2.479GHz

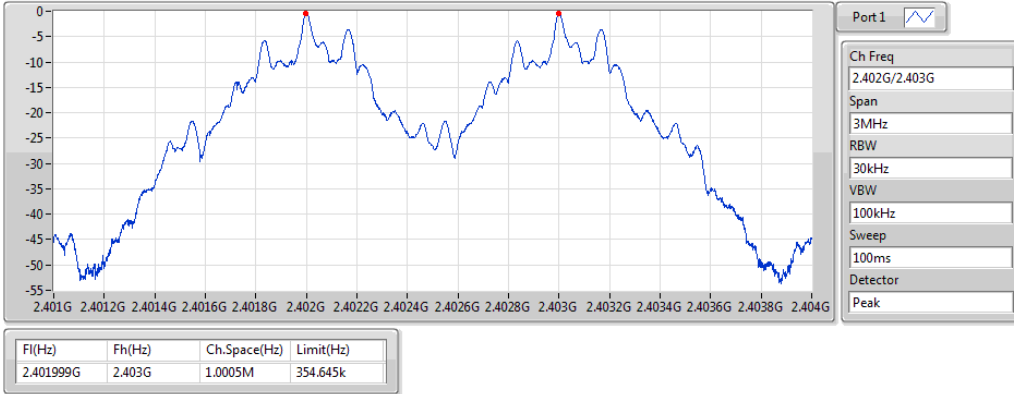


BT-EDR(2Mbps)

2.402G/2.403GHz

Channel Separation

25/09/2019

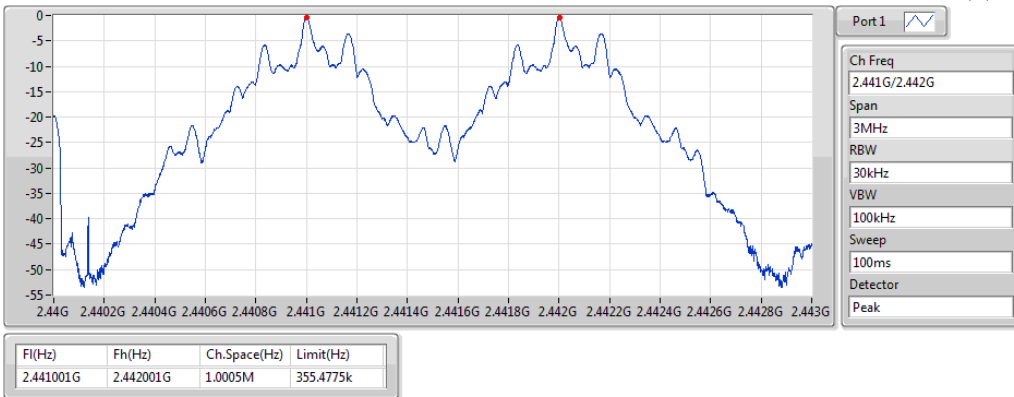


BT-EDR(2Mbps)

2.441G/2.442GHz

Channel Separation

25/09/2019

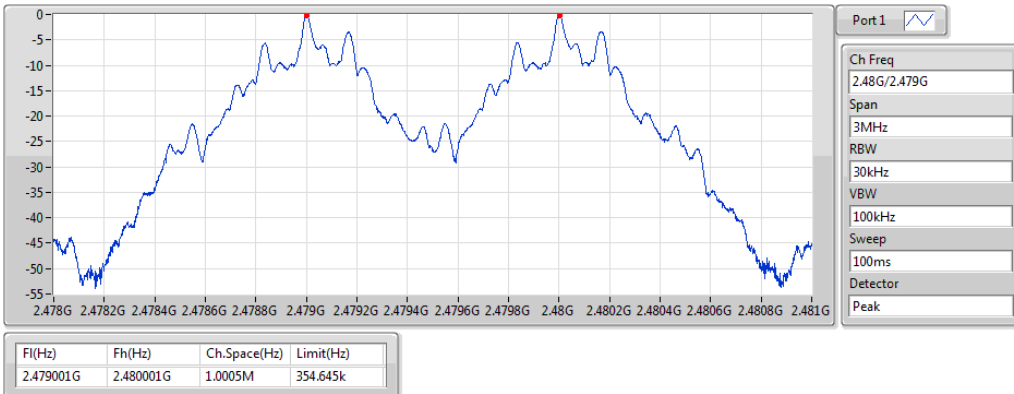


BT-EDR(2Mbps)

2.48G/2.479GHz

Channel Separation

25/09/2019

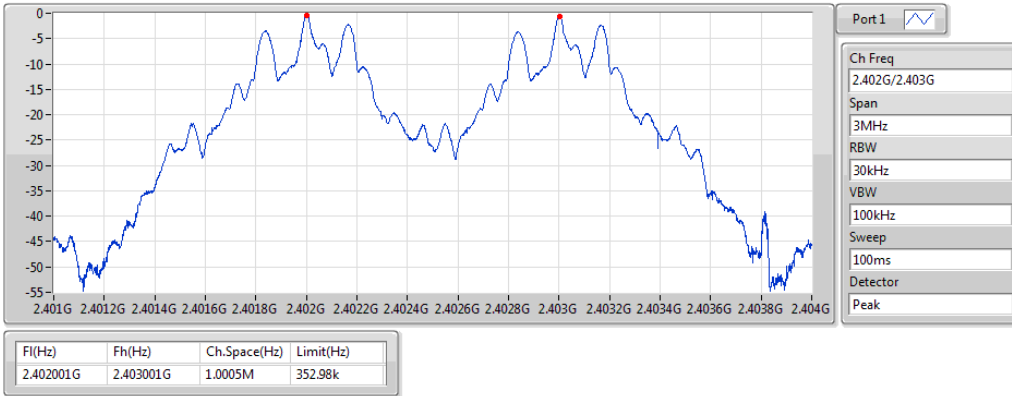


BT-EDR(3Mbps)

2.402G/2.403GHz

Channel Separation

25/09/2019

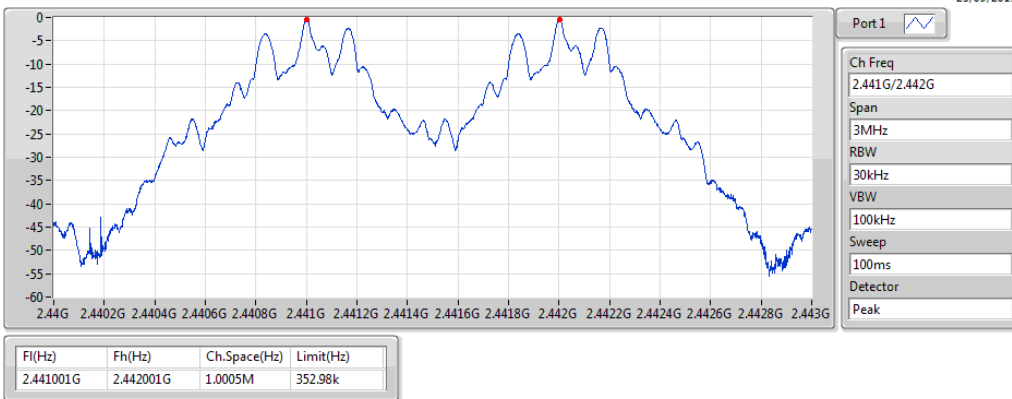


BT-EDR(3Mbps)

2.441G/2.442GHz

Channel Separation

25/09/2019

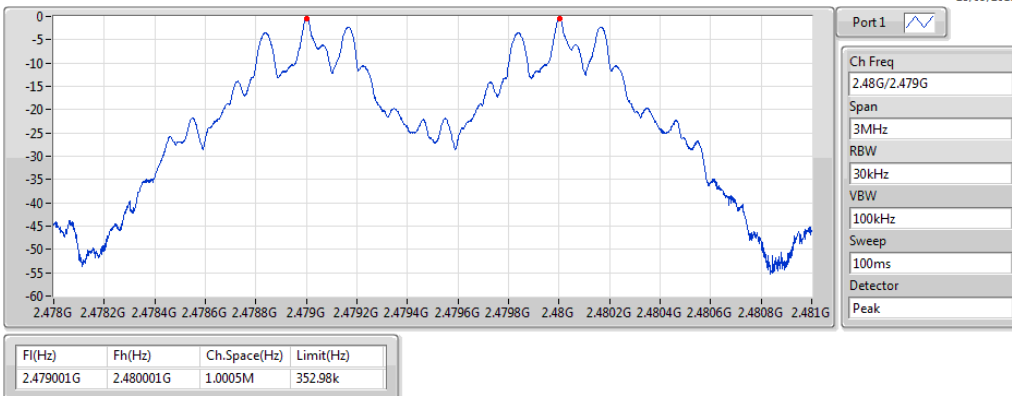


BT-EDR(3Mbps)

2.48G/2.479GHz

Channel Separation

25/09/2019





Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	0.21	0.00105
BT-EDR(2Mbps)	0.31	0.00107
BT-EDR(3Mbps)	0.14	0.00103

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	1.82	-0.07	21.00
2441MHz_TnomVnom	Pass	1.82	0.09	21.00
2480MHz_TnomVnom	Pass	1.82	0.21	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	1.82	-0.05	21.00
2441MHz_TnomVnom	Pass	1.82	0.10	21.00
2480MHz_TnomVnom	Pass	1.82	0.31	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	1.82	0.00	21.00
2441MHz_TnomVnom	Pass	1.82	0.06	21.00
2480MHz_TnomVnom	Pass	1.82	0.14	21.00

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



Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	-0.35	0.00092
BT-EDR(2Mbps)	-0.22	0.00095
BT-EDR(3Mbps)	-0.41	0.00091

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	1.82	-0.63	21.00
2441MHz_TnomVnom	Pass	1.82	-0.55	21.00
2480MHz_TnomVnom	Pass	1.82	-0.35	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	1.82	-0.62	21.00
2441MHz_TnomVnom	Pass	1.82	-0.53	21.00
2480MHz_TnomVnom	Pass	1.82	-0.22	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	1.82	-0.60	21.00
2441MHz_TnomVnom	Pass	1.82	-0.53	21.00
2480MHz_TnomVnom	Pass	1.82	-0.41	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

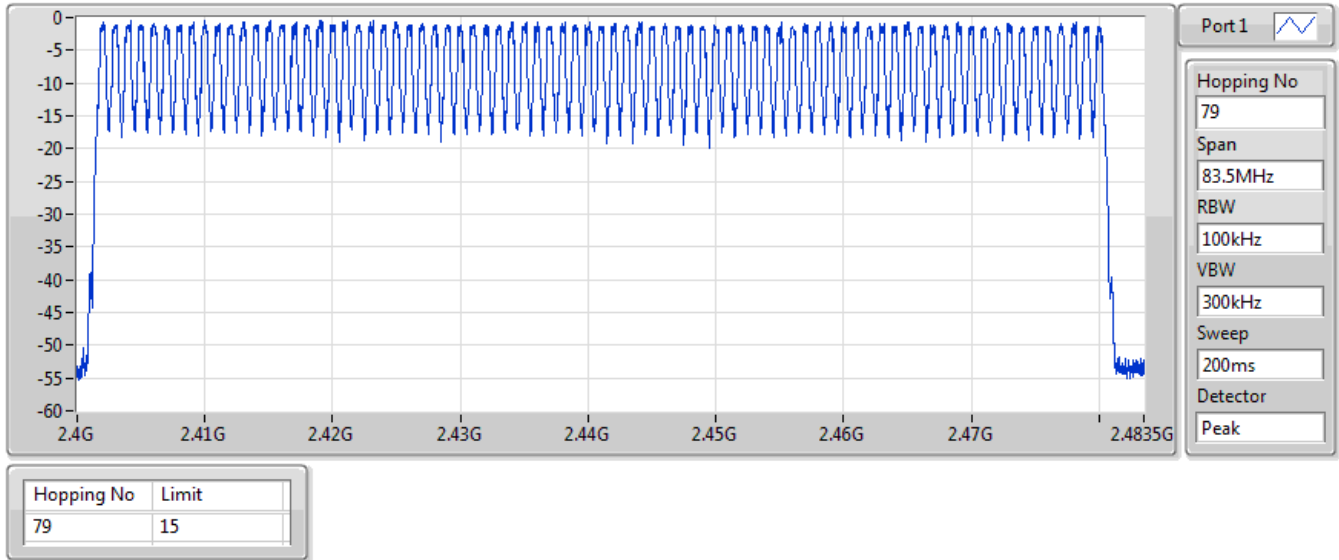
Mode	Result	Hopping No	Limit
BT-BR(1Mbps)	-	-	-
2441MHz_TnomVnom	Pass	79	15
BT-EDR(2Mbps)	-	-	-
2441MHz_TnomVnom	Pass	79	15
BT-EDR(3Mbps)	-	-	-
2441MHz_TnomVnom	Pass	79	15

BT-BR(1Mbps)

2441MHz

Hopping Ch

25/09/2019

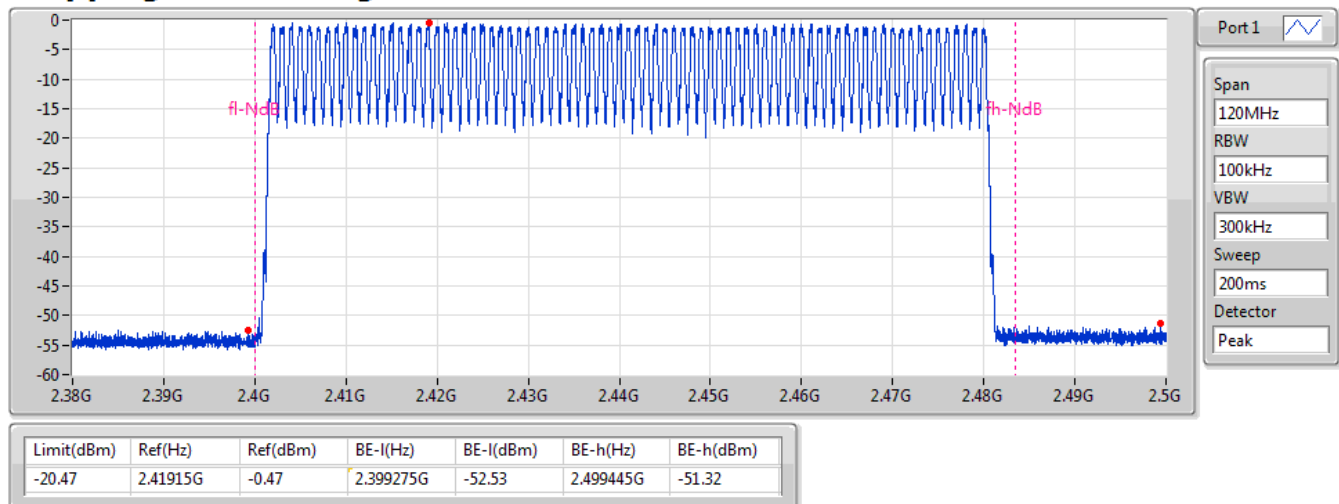


BT-BR(1Mbps)

2441MHz

Hopping Ch Bandedge (Non-restricted Band)

25/09/2019

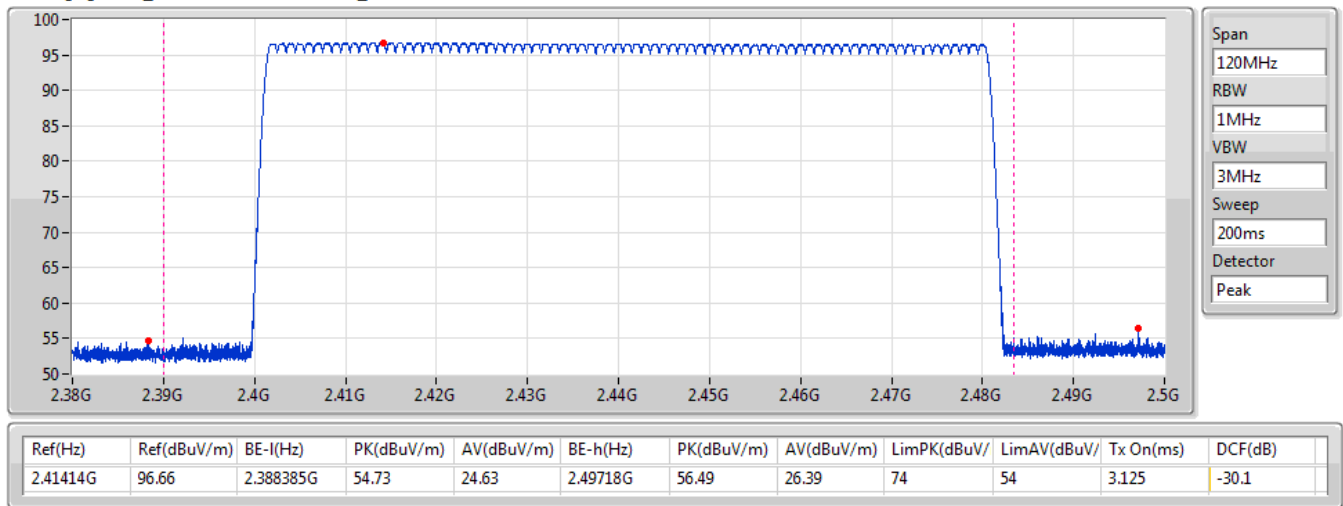


BT-BR(1Mbps)

2441MHz

Hopping Ch Bandedge (Restricted Band)

25/09/2019

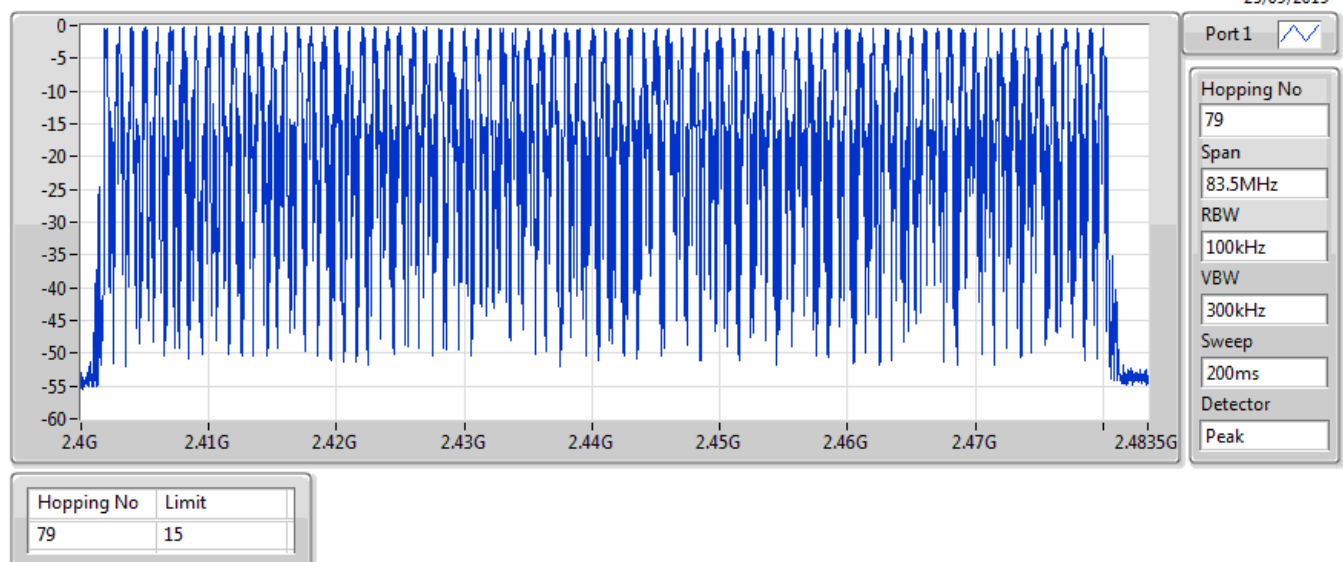


BT-EDR(2Mbps)

2441MHz

Hopping Ch

25/09/2019

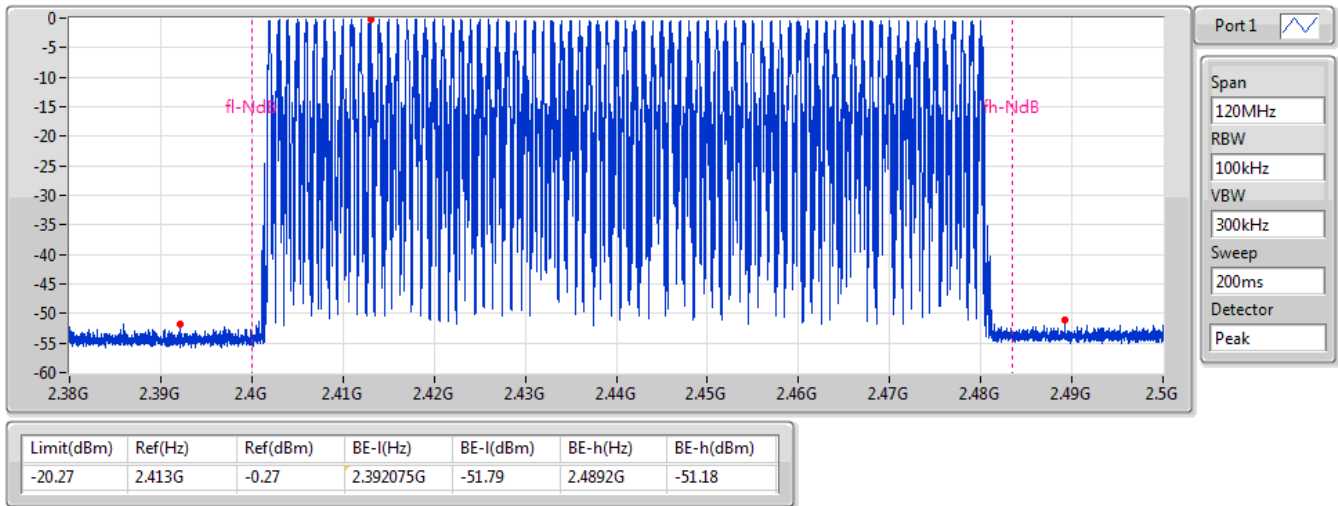


BT-EDR(2Mbps)

2441MHz

Hopping Ch Bandedge (Non-restricted Band)

25/09/2019

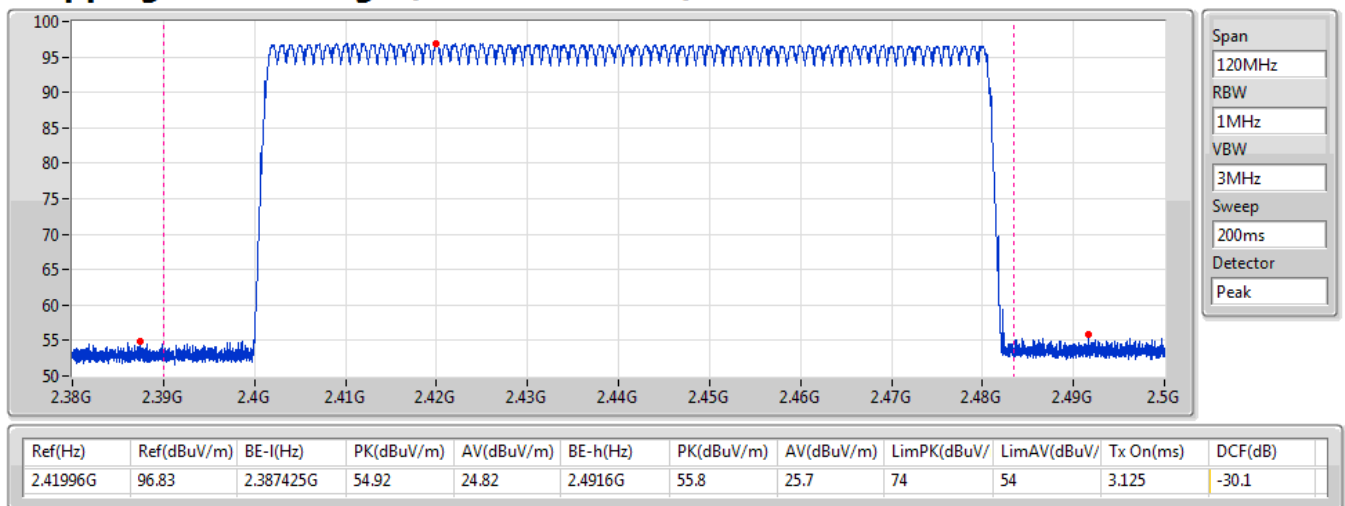


BT-EDR(2Mbps)

2441MHz

Hopping Ch Bandedge (Restricted Band)

25/09/2019

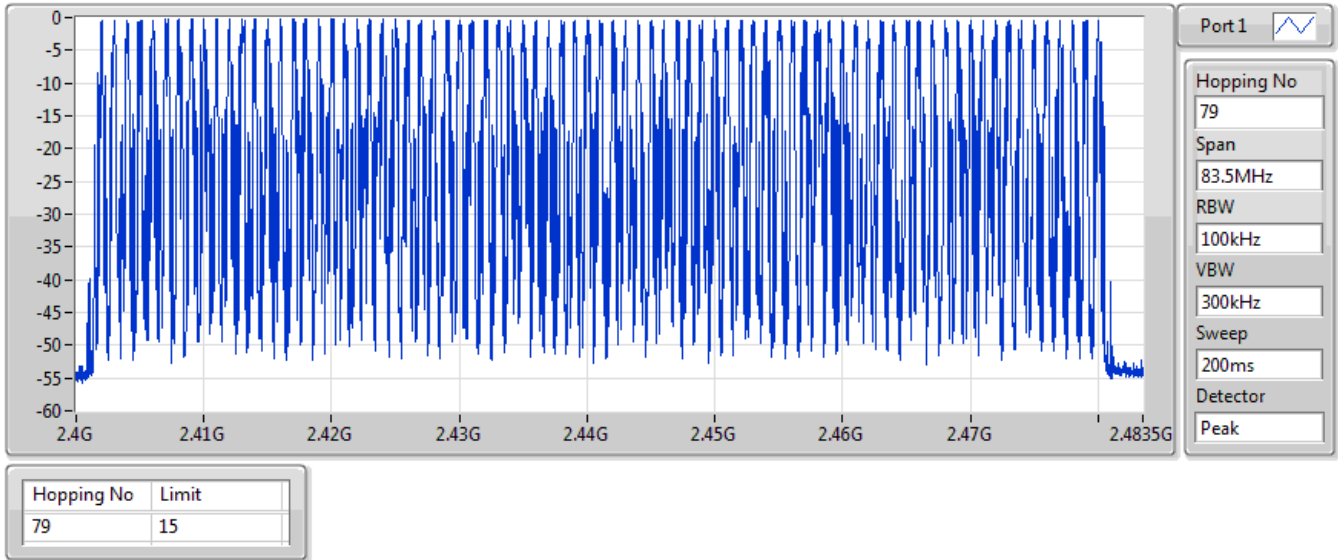


BT-EDR(3Mbps)

Hopping Ch

2441MHz

25/09/2019

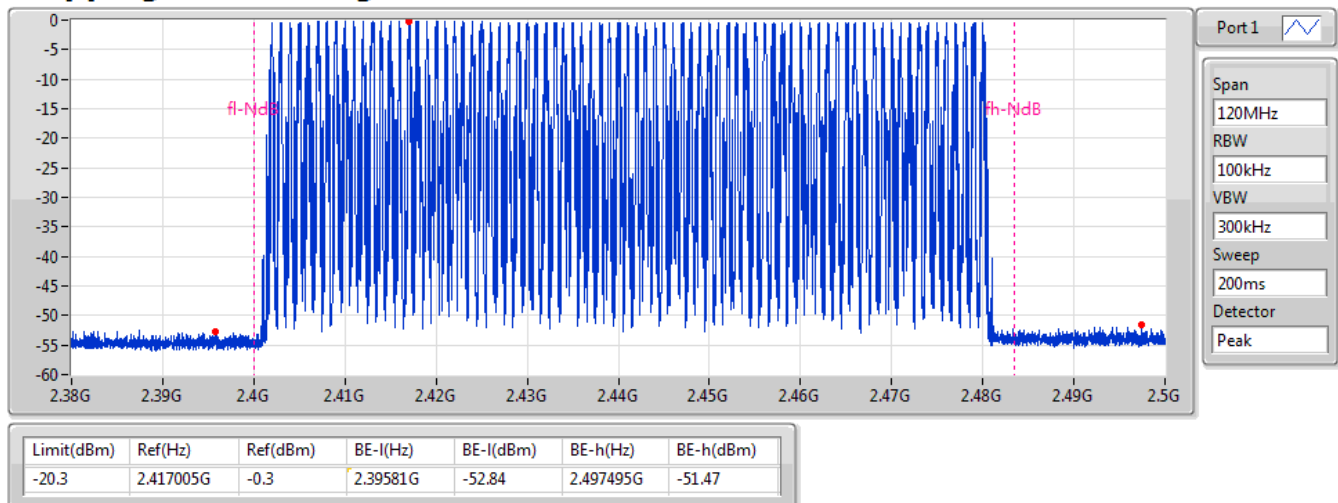


BT-EDR(3Mbps)

2441MHz

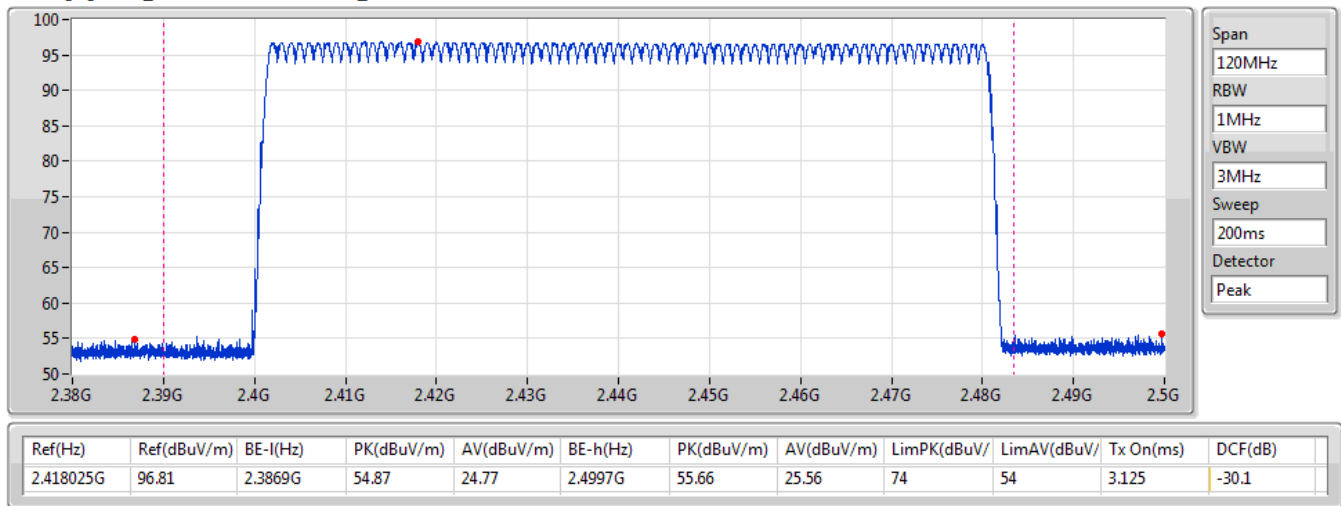
Hopping Ch Bandedge (Non-restricted Band)

25/09/2019



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

25/09/2019





Summary

Mode	Max-Dwell (s)
2.4-2.4835GHz	-
BT-BR(1Mbps)	308.2872m
BT-EDR(2Mbps)	307.9674m
BT-EDR(3Mbps)	308.2872m




Result

Mode	Result	Period (s)	Dwell (s)	Limit (s)	Tx On (s)
BT-BR(1Mbps)	-	-	-	-	-
2441MHz_TnomVnom	Pass	31.6	308.2872m	400m	2.892m
BT-EDR(2Mbps)	-	-	-	-	-
2441MHz_TnomVnom	Pass	31.6	307.9674m	400m	2.889m
BT-EDR(3Mbps)	-	-	-	-	-
2441MHz_TnomVnom	Pass	31.6	308.2872m	400m	2.892m

BT-BR(1Mbps)

2441MHz

25/09/2019

Port1 

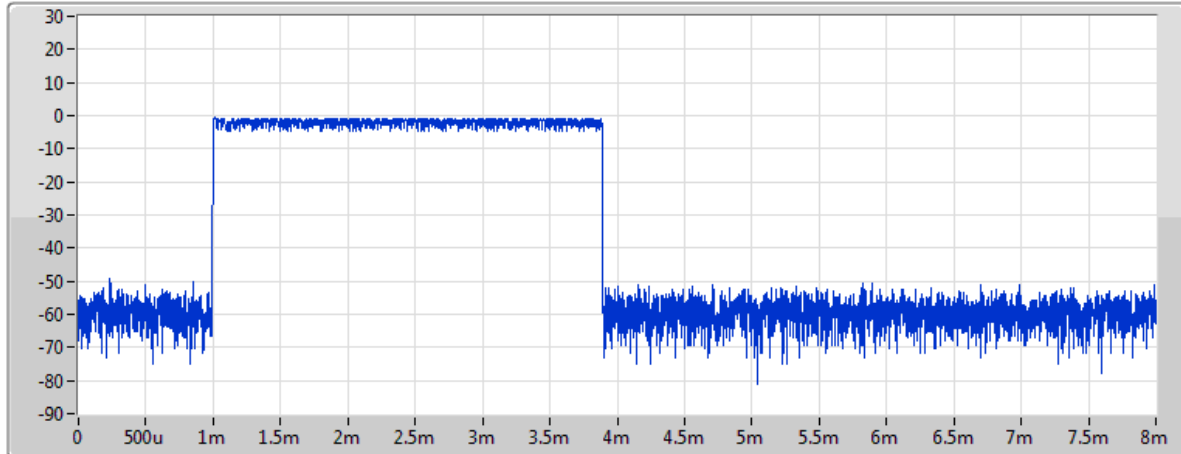
Ch Freq
2.441GHz

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)
8	154.1436m	400m	2.892m

BT-EDR(2Mbps)

2441MHz

25/09/2019

Port1 

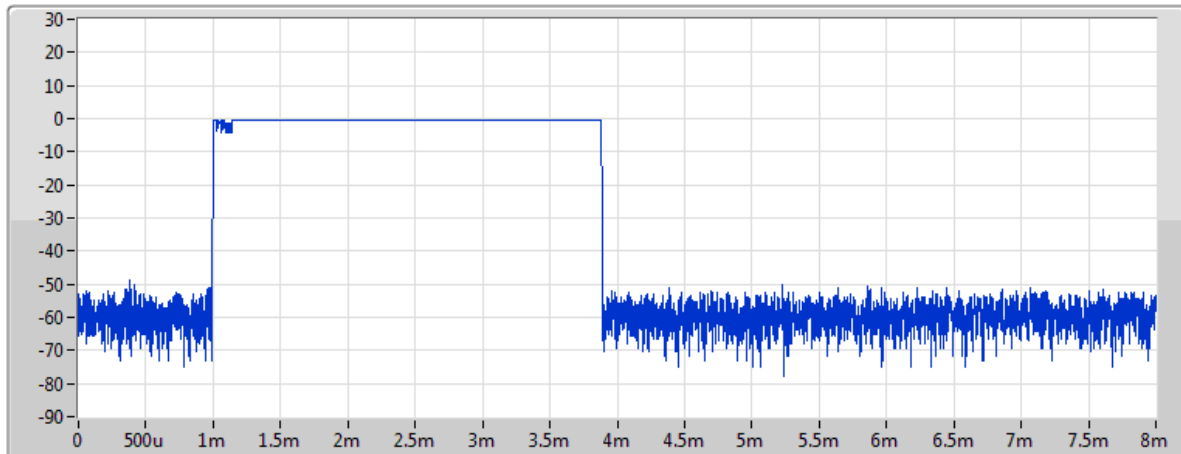
Ch Freq
2.441GHz

RBW
300kHz

VBW
1MHz

Sweep Time
8ms

TX Time
2.889ms



non AFH Mode

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	307.9674m	400m	2.889m

AFH Mode

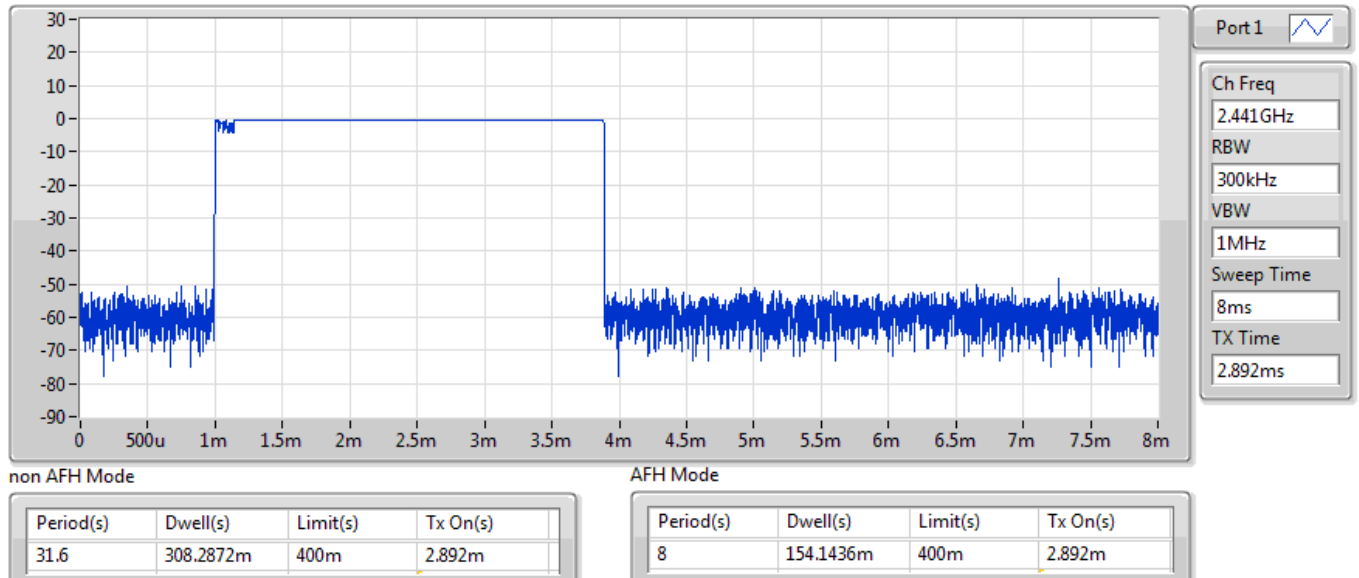
Period(s)	Dwell(s)	Limit(s)	Tx On(s)
8	153.9837m	400m	2.889m

BT-EDR(3Mbps)

2441MHz

25/09/2019

Dwell



**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	2.44083G	-1.10	-21.10	2.12894G	-54.43	2.39874G	-53.27	2.48511G	-52.89	24.44558G	-36.34	1
BT-EDR(2Mbps)	Pass	2.441G	-0.45	-20.45	2.1615G	-53.25	2.39864G	-53.19	2.48372G	-51.05	24.45121G	-35.10	1
BT-EDR(3Mbps)	Pass	2.40213G	-0.37	-20.37	2.39593G	-54.44	2.39999G	-51.14	2.48357G	-51.81	24.42025G	-35.40	1

Result

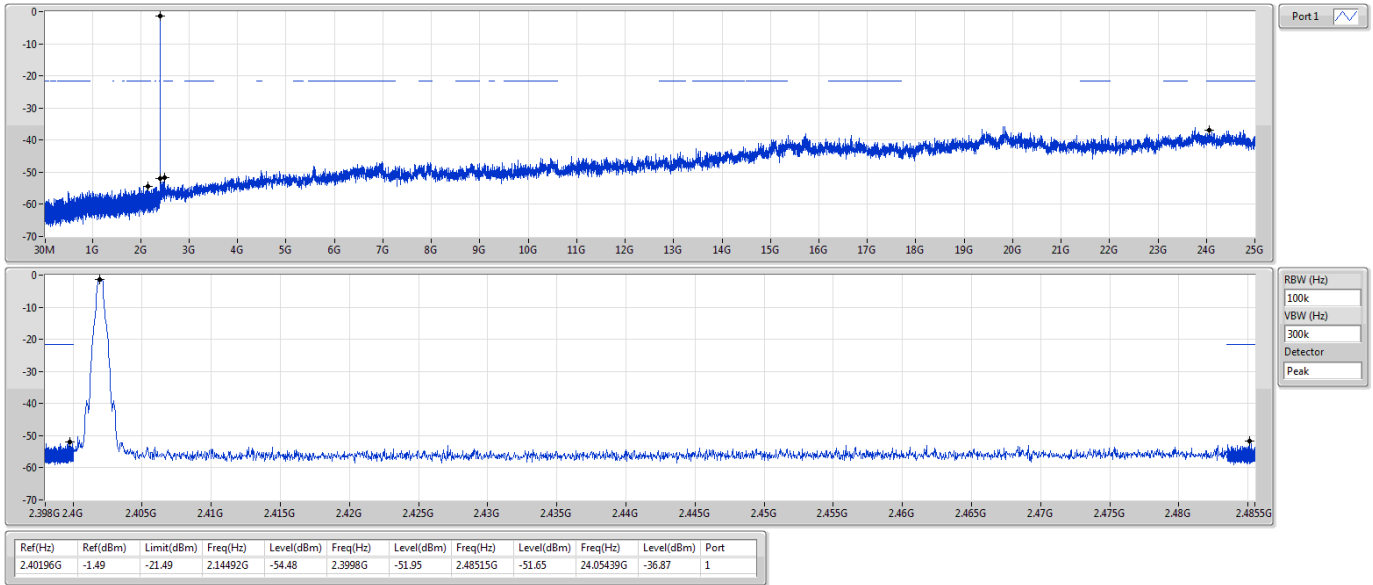
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz_TnomVnom	Pass	2.40196G	-1.49	-21.49	2.14492G	-54.48	2.3998G	-51.95	2.48515G	-51.65	24.05439G	-36.87	1
2441MHz_TnomVnom	Pass	2.44083G	-1.10	-21.10	2.12894G	-54.43	2.39874G	-53.27	2.48511G	-52.89	24.44558G	-36.34	1
2480MHz_TnomVnom	Pass	2.4802G	-0.66	-20.66	1.83619G	-53.36	2.39882G	-52.94	2.48373G	-51.42	24.40618G	-36.60	1
BT-EDR(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz_TnomVnom	Pass	2.40196G	-0.49	-20.49	2.17452G	-53.20	2.39917G	-52.57	2.48523G	-51.75	24.38929G	-36.68	1
2441MHz_TnomVnom	Pass	2.441G	-0.45	-20.45	2.1615G	-53.25	2.39864G	-53.19	2.48372G	-51.05	24.45121G	-35.10	1
2480MHz_TnomVnom	Pass	2.48003G	-0.15	-20.15	2.08779G	-54.33	2.39884G	-53.12	2.48369G	-51.69	24.43432G	-35.90	1
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz_TnomVnom	Pass	2.40213G	-0.37	-20.37	2.39593G	-54.44	2.39999G	-51.14	2.48357G	-51.81	24.42025G	-35.40	1
2441MHz_TnomVnom	Pass	2.44117G	-0.46	-20.46	2.12716G	-53.90	2.39976G	-52.89	2.48462G	-52.09	24.81144G	-36.13	1
2480MHz_TnomVnom	Pass	2.48003G	-0.44	-20.44	2.18014G	-54.13	2.39825G	-52.83	2.48434G	-51.55	24.78893G	-35.99	1

BT-BR(1Mbps)

CSE NdB

2402MHz

25/09/2019

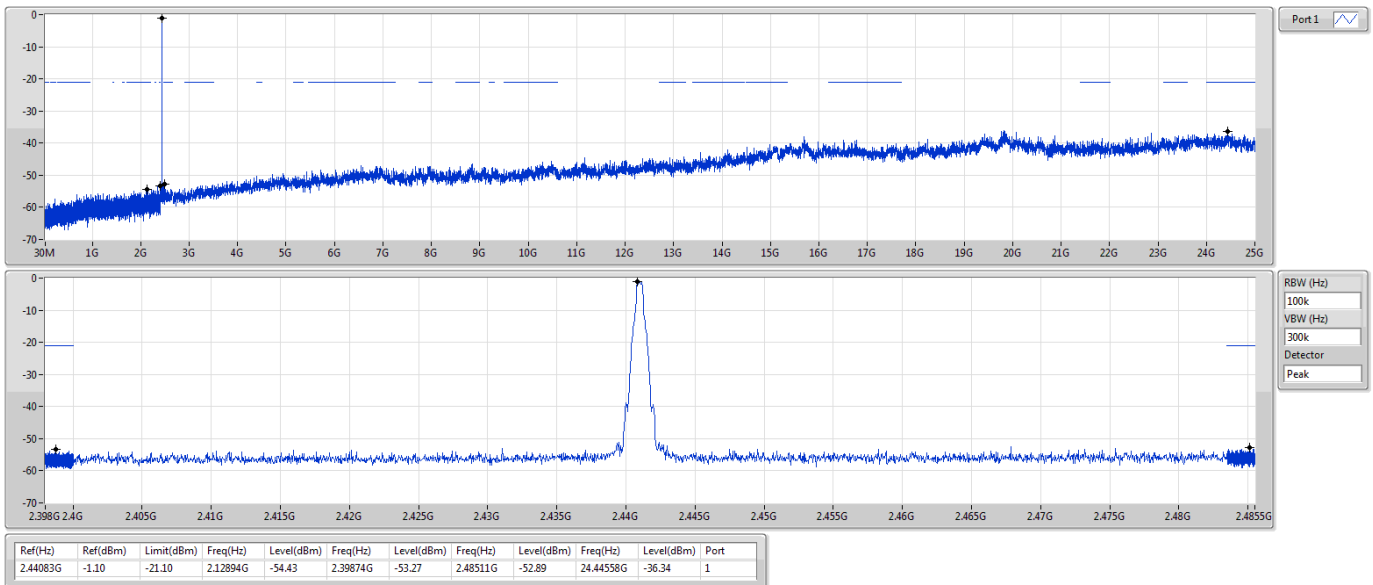


BT-BR(1Mbps)

CSE NdB

2441MHz

25/09/2019

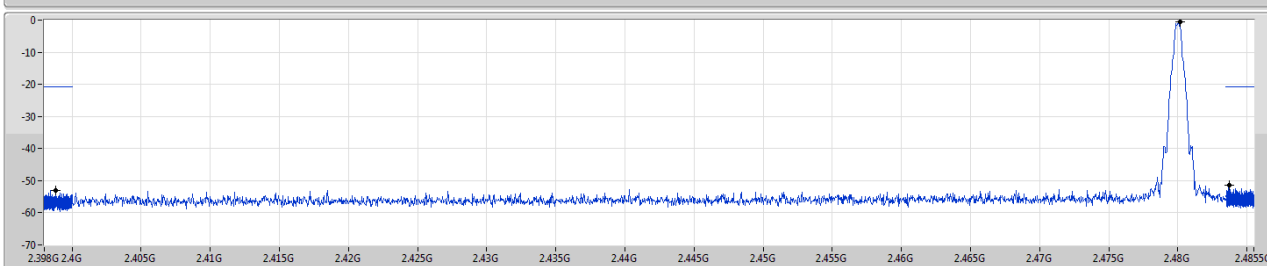
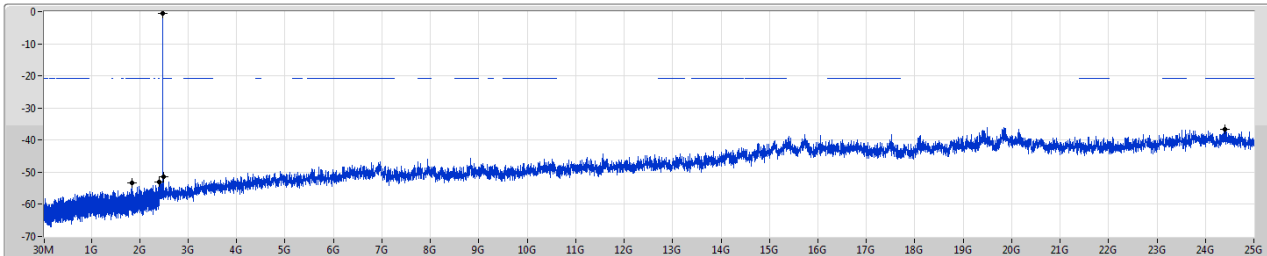


BT-BR(1Mbps)

2480MHz

CSE NdB

25/09/2019



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

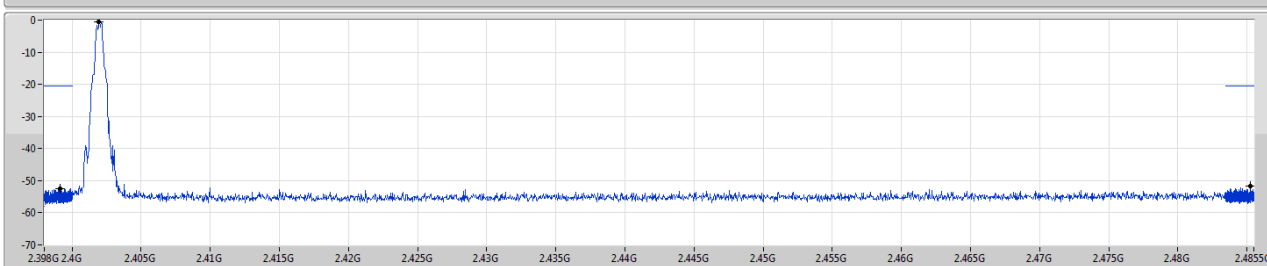
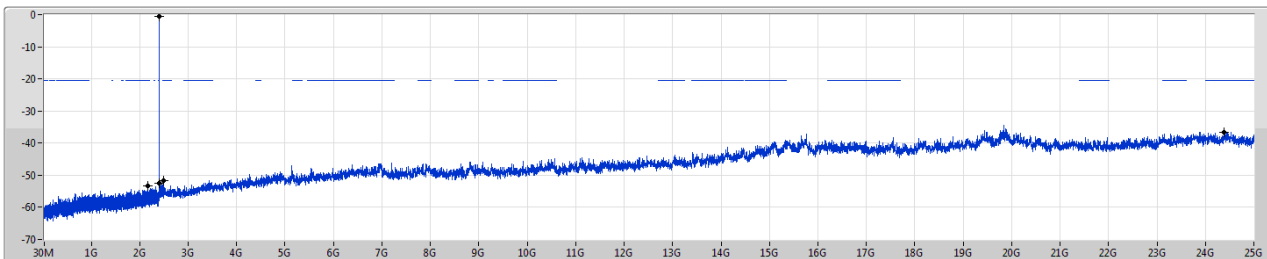
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.4802G	-0.66	-20.66	1.83619G	-53.36	2.39882G	-52.94	2.48373G	-51.42	2.40618G	-36.60	1

BT-EDR(2Mbps)

2402MHz

CSE NdB

25/09/2019



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

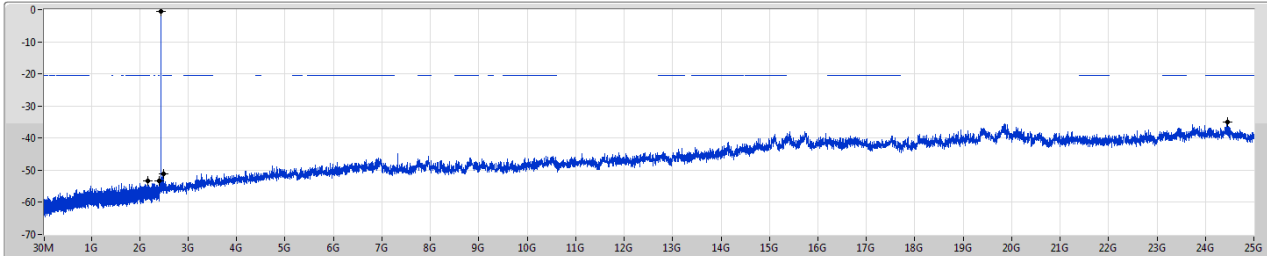
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40196G	-0.49	-20.49	2.17452G	-53.20	2.39917G	-52.57	2.48523G	-51.75	2.438929G	-36.68	1

BT-EDR(2Mbps)

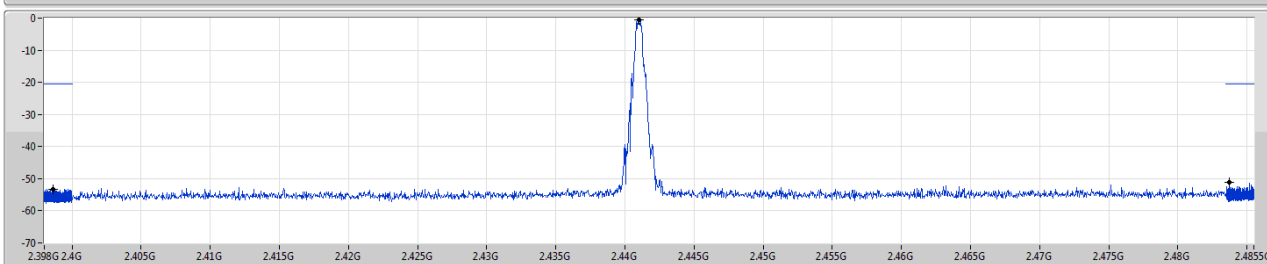
CSE NdB

2441MHz

25/09/2019



Port1



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

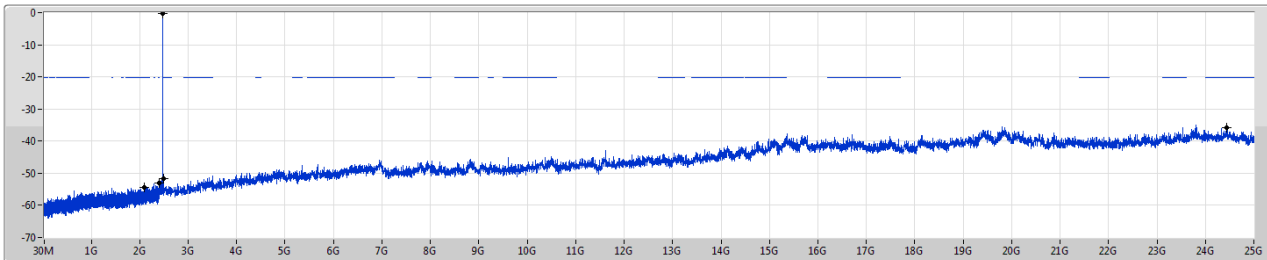
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2441G	-0.45	-20.45	2.1615G	-53.25	2.39864G	-53.19	2.48372G	-51.05	24.45121G	-35.10	1

BT-EDR(2Mbps)

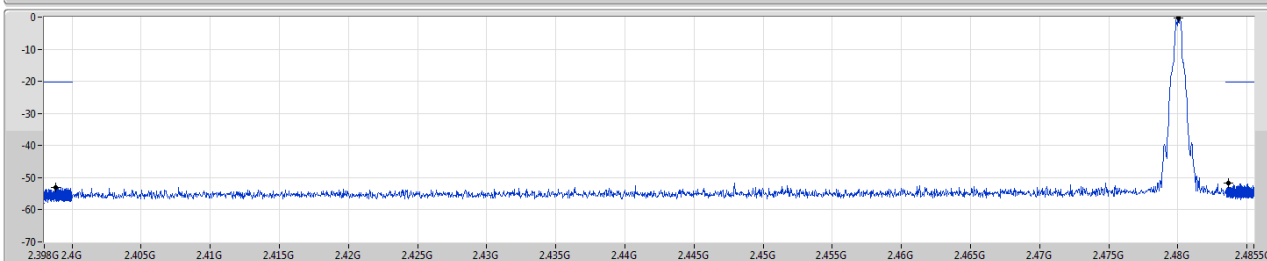
CSE NdB

2480MHz

25/09/2019



Port1



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

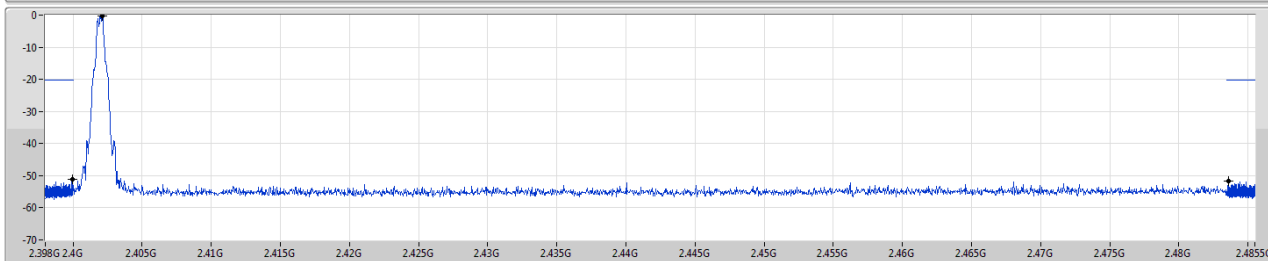
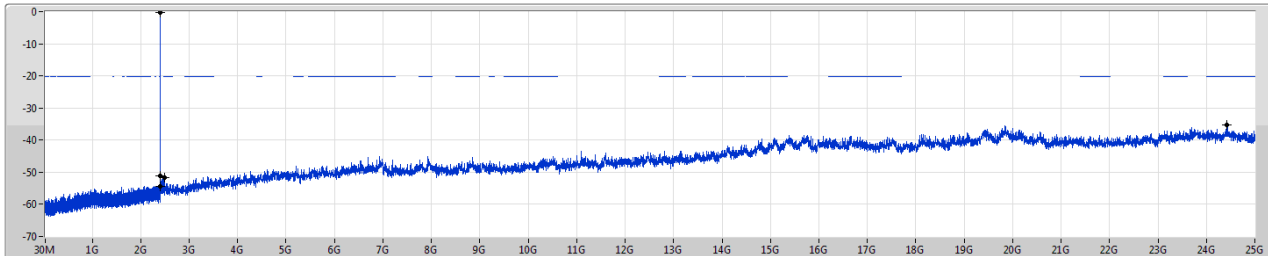
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
248003G	-0.15	-20.15	2.08779G	-54.33	2.39884G	-53.12	2.48369G	-51.69	24.43432G	-35.90	1

BT-EDR(3Mbps)

2402MHz

CSE NdB

25/09/2019



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

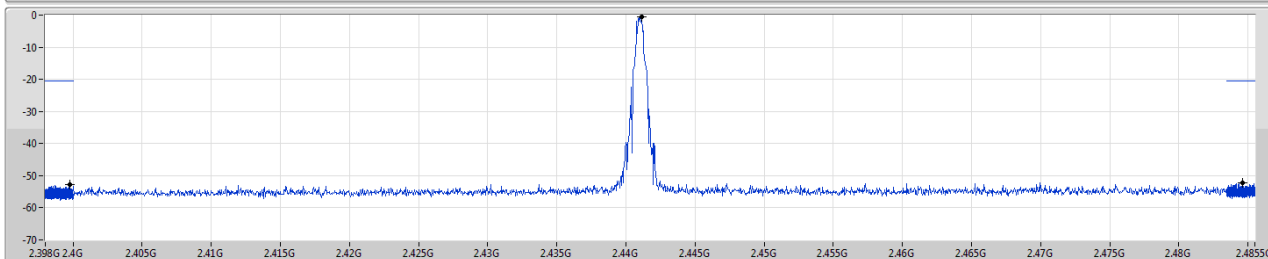
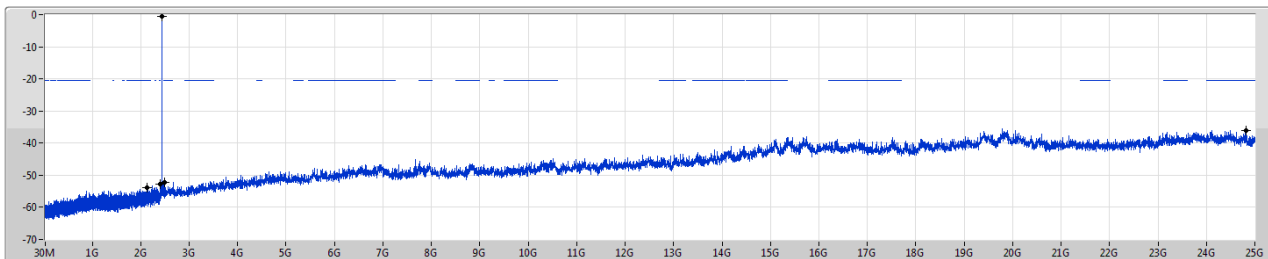
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
240213G	-0.37	-20.37	2.39593G	-54.44	2.39999G	-51.14	2.48357G	-51.81	24.42025G	-35.40	1

BT-EDR(3Mbps)

2441MHz

CSE NdB

25/09/2019



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
244117G	-0.46	-20.46	2.12716G	-53.90	2.39976G	-52.89	24.8462G	-52.09	24.81144G	-36.13	1

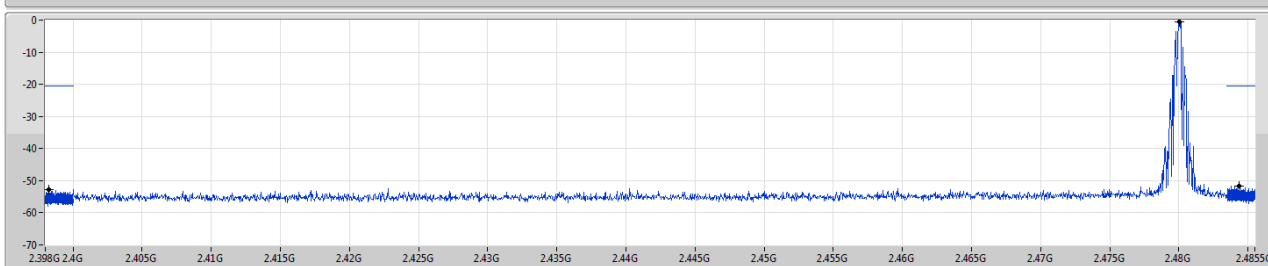
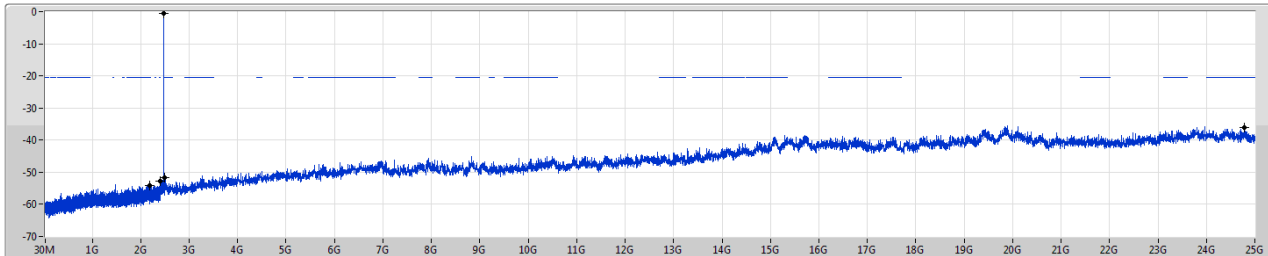
BT-EDR(3Mbps)

2480MHz

CSE NdB

25/09/2019

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
2.48003G	-0.44	-20.44	2.18014G	-54.13	2.39825G	-52.83	2.48434G	-51.55	2.478893G	-35.99	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	QP	33.88M	36.54	40.00	-3.46	3	Horizontal	356	1.00	-

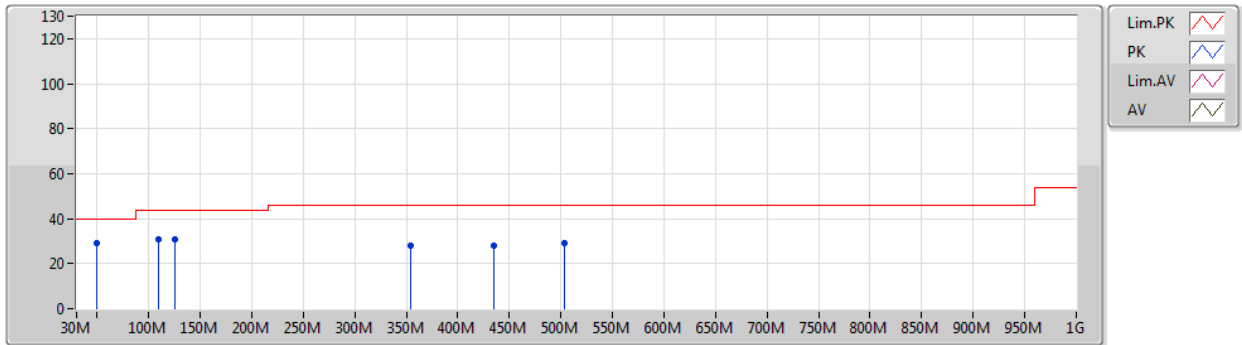
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-
2441MHz	Pass	PK	109.54M	31.06	43.50	-12.44	3	Vertical	360	1.00	-
2441MHz	Pass	PK	125.06M	30.57	43.50	-12.93	3	Vertical	360	1.00	-
2441MHz	Pass	PK	353.98M	28.04	46.00	-17.96	3	Vertical	360	1.00	-
2441MHz	Pass	PK	435.46M	27.76	46.00	-18.24	3	Vertical	360	1.00	-
2441MHz	Pass	PK	503.36M	29.13	46.00	-16.87	3	Vertical	360	1.00	-
2441MHz	Pass	QP	49.4M	29.28	40.00	-10.72	3	Vertical	261	1.00	-
2441MHz	Pass	PK	117.3M	39.26	43.50	-4.24	3	Horizontal	0	1.00	-
2441MHz	Pass	PK	286.08M	41.12	46.00	-4.88	3	Horizontal	0	1.00	-
2441MHz	Pass	PK	365.62M	31.12	46.00	-14.88	3	Horizontal	0	1.00	-
2441MHz	Pass	PK	520.82M	32.52	46.00	-13.48	3	Horizontal	0	1.00	-
2441MHz	Pass	PK	635.28M	29.08	46.00	-16.92	3	Horizontal	0	1.00	-
2441MHz	Pass	QP	33.88M	36.54	40.00	-3.46	3	Horizontal	356	1.00	-
2441MHz	Pass	PK	33.88M	35.93	40.00	-4.07	3	Vertical	0	1.00	-
2441MHz	Pass	PK	101.78M	27.41	43.50	-16.09	3	Vertical	0	1.00	-
2441MHz	Pass	PK	159.98M	21.80	43.50	-21.70	3	Vertical	0	1.00	-
2441MHz	Pass	PK	421.88M	25.04	46.00	-20.96	3	Vertical	0	1.00	-
2441MHz	Pass	PK	577.08M	27.82	46.00	-18.18	3	Vertical	0	1.00	-
2441MHz	Pass	PK	720.64M	29.10	46.00	-16.90	3	Vertical	0	1.00	-
2441MHz	Pass	PK	31.94M	34.17	40.00	-5.83	3	Horizontal	360	1.00	-
2441MHz	Pass	PK	39.7M	30.42	40.00	-9.58	3	Horizontal	360	1.00	-
2441MHz	Pass	PK	101.78M	26.03	43.50	-17.47	3	Horizontal	360	1.00	-
2441MHz	Pass	PK	503.36M	26.43	46.00	-19.57	3	Horizontal	360	1.00	-
2441MHz	Pass	PK	615.88M	29.04	46.00	-16.96	3	Horizontal	360	1.00	-
2441MHz	Pass	PK	732.28M	28.62	46.00	-17.38	3	Horizontal	360	1.00	-

BT-BR(1Mbps)

2441MHz_USB

27/09/2019

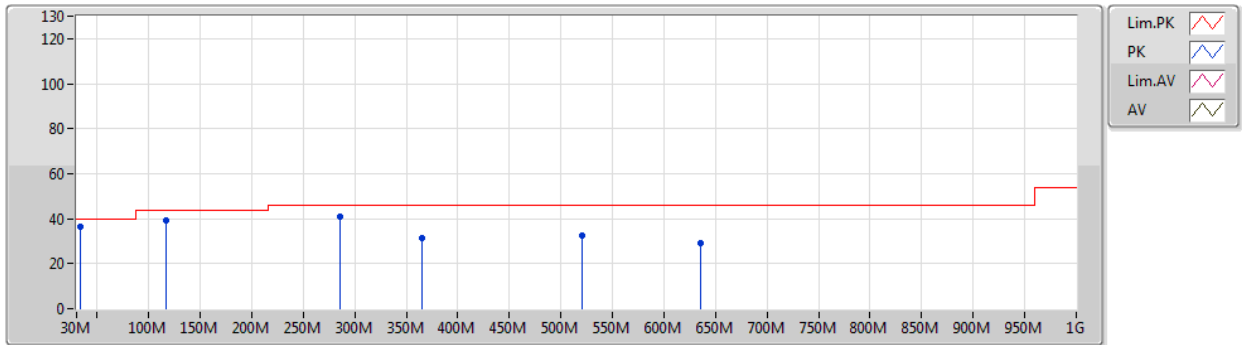


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	109.54M	31.06	43.50	-12.44	-8.87	3	Vertical	360	1.00	-	39.93	16.87	1.60	27.34
PK	125.06M	30.57	43.50	-12.93	-8.49	3	Vertical	360	1.00	-	39.06	17.08	1.72	27.29
PK	353.98M	28.04	46.00	-17.96	-4.43	3	Vertical	360	1.00	-	32.47	19.58	2.99	27.00
PK	435.46M	27.76	46.00	-18.24	-2.43	3	Vertical	360	1.00	-	30.19	21.82	3.33	27.58
PK	503.36M	29.13	46.00	-16.87	-1.54	3	Vertical	360	1.00	-	30.67	22.68	3.62	27.84
QP	49.4M	29.28	40.00	-10.72	-13.23	3	Vertical	261	1.00	-	42.51	13.25	1.04	27.52

BT-BR(1Mbps)

2441MHz_USB

27/09/2019

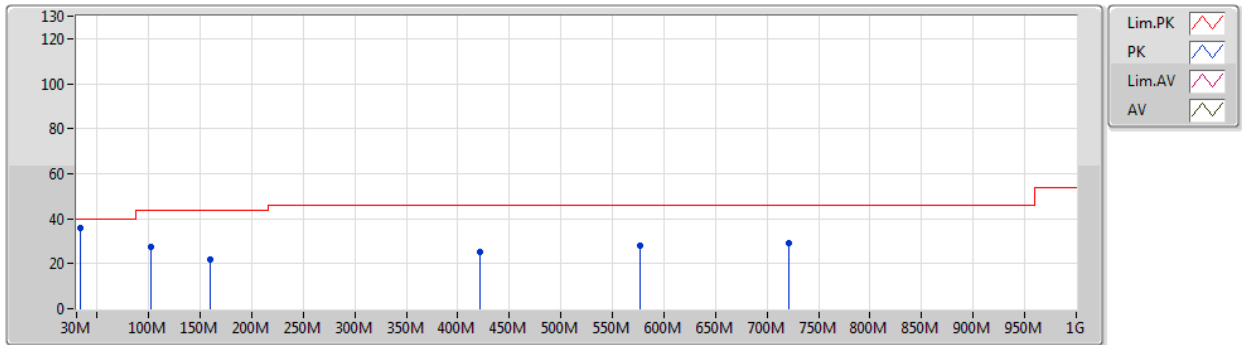


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	117.3M	39.26	43.50	-4.24	-8.52	3	Horizontal	0	1.00	-	47.78	17.14	1.66	27.32
PK	286.08M	41.12	46.00	-4.88	-5.97	3	Horizontal	0	1.00	-	47.09	18.06	2.68	26.71
PK	365.62M	31.12	46.00	-14.88	-4.13	3	Horizontal	0	1.00	-	35.25	19.91	3.03	27.07
PK	520.82M	32.52	46.00	-13.48	-1.59	3	Horizontal	0	1.00	-	34.11	22.65	3.67	27.91
PK	635.28M	29.08	46.00	-16.92	0.30	3	Horizontal	0	1.00	-	28.78	24.25	4.15	28.10
QP	33.88M	36.54	40.00	-3.46	-5.91	3	Horizontal	356	1.00	-	42.45	20.79	0.86	27.56

BT-BR(1Mbps)

2441MHz_Adapter

15/10/2019

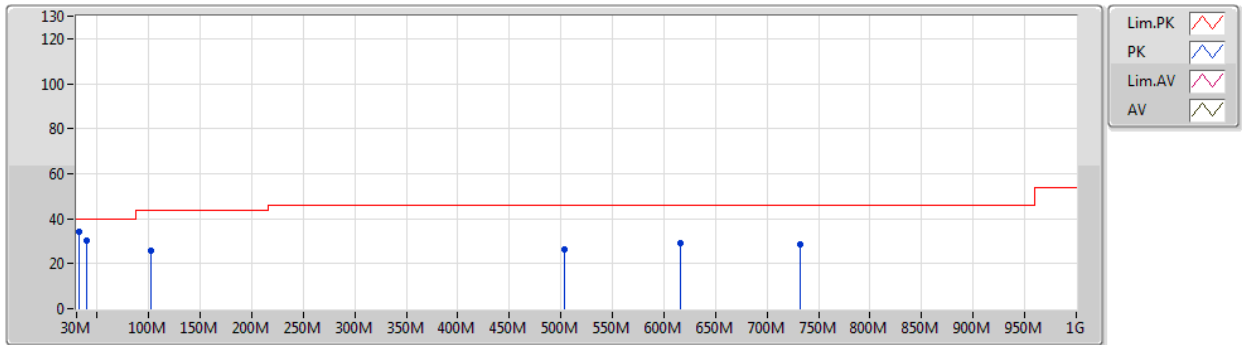


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	33.88M	35.93	40.00	-4.07	-5.91	3	Vertical	0	1.00	-	41.84	20.79	0.86	27.56
PK	101.78M	27.41	43.50	-16.09	-9.60	3	Vertical	0	1.00	-	37.01	16.24	1.53	27.37
PK	159.98M	21.80	43.50	-21.70	-10.16	3	Vertical	0	1.00	-	31.96	15.03	1.95	27.14
PK	421.88M	25.04	46.00	-20.96	-2.30	3	Vertical	0	1.00	-	27.34	21.90	3.27	27.47
PK	577.08M	27.82	46.00	-18.18	-0.67	3	Vertical	0	1.00	-	28.49	23.44	3.94	28.05
PK	720.64M	29.10	46.00	-16.90	0.75	3	Vertical	0	1.00	-	28.35	24.37	4.42	28.04

BT-BR(1Mbps)

2441MHz_Adapter

15/10/2019



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	31.94M	34.17	40.00	-5.83	-4.84	3	Horizontal	360	1.00	-	39.01	21.90	0.83	27.57
PK	39.7M	30.42	40.00	-9.58	-8.99	3	Horizontal	360	1.00	-	39.41	17.62	0.93	27.54
PK	101.78M	26.03	43.50	-17.47	-9.60	3	Horizontal	360	1.00	-	35.63	16.24	1.53	27.37
PK	503.36M	26.43	46.00	-19.57	-1.54	3	Horizontal	360	1.00	-	27.97	22.68	3.62	27.84
PK	615.88M	29.04	46.00	-16.96	0.17	3	Horizontal	360	1.00	-	28.87	24.13	4.11	28.07
PK	732.28M	28.62	46.00	-17.38	1.06	3	Horizontal	360	1.00	-	27.56	24.64	4.46	28.04



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	2.4864G	60.84	74.00	-13.16	3	Horizontal	275	2.14	-
BT-EDR(3Mbps)	Pass	PK	2.4842G	60.62	74.00	-13.38	3	Vertical	211	1.17	-

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	2.3684G	38.32	54.00	-15.68	3	Vertical	307	1.50	-
2402MHz	Pass	AV	2.4018G	64.31	Inf	-Inf	3	Vertical	307	1.50	-
2402MHz	Pass	PK	2.3684G	60.82	74.00	-13.18	3	Vertical	307	1.50	-
2402MHz	Pass	PK	2.4018G	86.81	Inf	-Inf	3	Vertical	307	1.50	-
2402MHz	Pass	AV	2.353G	37.41	54.00	-16.59	3	Horizontal	290	2.25	-
2402MHz	Pass	AV	2.4022G	67.73	Inf	-Inf	3	Horizontal	290	2.25	-
2402MHz	Pass	PK	2.353G	59.91	74.00	-14.09	3	Horizontal	290	2.25	-
2402MHz	Pass	PK	2.4022G	90.23	Inf	-Inf	3	Horizontal	290	2.25	-
2402MHz	Pass	AV	4.80378G	31.69	54.00	-22.31	3	Vertical	284	2.59	-
2402MHz	Pass	PK	4.80378G	54.19	74.00	-19.81	3	Vertical	284	2.59	-
2402MHz	Pass	AV	4.80416G	30.88	54.00	-23.12	3	Horizontal	297	2.97	-
2402MHz	Pass	PK	4.80416G	53.38	74.00	-20.62	3	Horizontal	297	2.97	-
2441MHz	Pass	AV	2.3478G	37.81	54.00	-16.19	3	Vertical	207	1.00	-
2441MHz	Pass	AV	2.441G	67.34	Inf	-Inf	3	Vertical	207	1.00	-
2441MHz	Pass	AV	2.4994G	37.92	54.00	-16.08	3	Vertical	207	1.00	-
2441MHz	Pass	PK	2.3478G	60.31	74.00	-13.69	3	Vertical	207	1.00	-
2441MHz	Pass	PK	2.441G	89.84	Inf	-Inf	3	Vertical	207	1.00	-
2441MHz	Pass	PK	2.4994G	60.42	74.00	-13.58	3	Vertical	207	1.00	-
2441MHz	Pass	AV	2.389G	37.45	54.00	-16.55	3	Horizontal	282	1.96	-
2441MHz	Pass	AV	2.441G	69.23	Inf	-Inf	3	Horizontal	282	1.96	-
2441MHz	Pass	AV	2.4906G	38.10	54.00	-15.90	3	Horizontal	282	1.96	-
2441MHz	Pass	PK	2.389G	59.95	74.00	-14.05	3	Horizontal	282	1.96	-
2441MHz	Pass	PK	2.441G	91.73	Inf	-Inf	3	Horizontal	282	1.96	-
2441MHz	Pass	PK	2.4906G	60.60	74.00	-13.40	3	Horizontal	282	1.96	-
2441MHz	Pass	AV	4.8823G	33.05	54.00	-20.95	3	Vertical	291	2.03	-
2441MHz	Pass	AV	7.32249G	34.65	54.00	-19.35	3	Vertical	264	2.06	-
2441MHz	Pass	PK	4.8823G	55.55	74.00	-18.45	3	Vertical	291	2.03	-
2441MHz	Pass	PK	7.32249G	57.15	74.00	-16.85	3	Vertical	264	2.06	-
2441MHz	Pass	AV	4.88159G	32.14	54.00	-21.86	3	Horizontal	278	1.50	-
2441MHz	Pass	AV	7.32264G	35.32	54.00	-18.68	3	Horizontal	251	1.94	-
2441MHz	Pass	PK	4.88159G	54.64	74.00	-19.36	3	Horizontal	278	1.50	-
2441MHz	Pass	PK	7.32264G	57.82	74.00	-16.18	3	Horizontal	251	1.94	-
2480MHz	Pass	AV	2.4802G	68.86	Inf	-Inf	3	Vertical	211	1.16	-
2480MHz	Pass	AV	2.49G	37.55	54.00	-16.45	3	Vertical	211	1.16	-
2480MHz	Pass	PK	2.4802G	91.36	Inf	-Inf	3	Vertical	211	1.16	-
2480MHz	Pass	PK	2.49G	60.05	74.00	-13.95	3	Vertical	211	1.16	-
2480MHz	Pass	AV	2.4802G	70.51	Inf	-Inf	3	Horizontal	275	2.14	-
2480MHz	Pass	AV	2.4864G	27.27	54.00	-26.73	3	Horizontal	275	2.14	-
2480MHz	Pass	PK	2.4802G	93.01	Inf	-Inf	3	Horizontal	275	2.14	-
2480MHz	Pass	PK	2.4864G	60.84	74.00	-13.16	3	Horizontal	275	2.14	-
2480MHz	Pass	AV	4.96009G	32.40	54.00	-21.60	3	Vertical	292	1.96	-
2480MHz	Pass	AV	7.44062G	35.17	54.00	-18.83	3	Vertical	269	2.81	-
2480MHz	Pass	PK	4.96009G	54.90	74.00	-19.10	3	Vertical	292	1.96	-
2480MHz	Pass	PK	7.44062G	57.67	74.00	-16.33	3	Vertical	269	2.81	-
2480MHz	Pass	AV	4.95968G	31.06	54.00	-22.94	3	Horizontal	279	1.50	-
2480MHz	Pass	AV	7.44031G	36.38	54.00	-17.62	3	Horizontal	240	1.95	-
2480MHz	Pass	PK	4.95968G	53.56	74.00	-20.44	3	Horizontal	279	1.50	-

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2480MHz	Pass	PK	7.44031G	58.88	74.00	-15.12	3	Horizontal	240	1.95	-
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3636G	37.71	54.00	-16.29	3	Vertical	209	1.49	-
2402MHz	Pass	AV	2.402G	65.98	Inf	-Inf	3	Vertical	209	1.49	-
2402MHz	Pass	PK	2.3636G	60.21	74.00	-13.79	3	Vertical	209	1.49	-
2402MHz	Pass	PK	2.402G	88.48	Inf	-Inf	3	Vertical	209	1.49	-
2402MHz	Pass	AV	2.3566G	37.97	54.00	-16.03	3	Horizontal	288	1.50	-
2402MHz	Pass	AV	2.402G	66.04	Inf	-Inf	3	Horizontal	288	1.50	-
2402MHz	Pass	PK	2.3566G	60.47	74.00	-13.53	3	Horizontal	288	1.50	-
2402MHz	Pass	PK	2.402G	88.54	Inf	-Inf	3	Horizontal	288	1.50	-
2402MHz	Pass	AV	4.80421G	30.21	54.00	-23.79	3	Vertical	290	2.07	-
2402MHz	Pass	PK	4.80421G	52.71	74.00	-21.29	3	Vertical	290	2.07	-
2402MHz	Pass	AV	4.80368G	29.61	54.00	-24.39	3	Horizontal	290	1.88	-
2402MHz	Pass	PK	4.80368G	52.11	74.00	-21.89	3	Horizontal	290	1.88	-
2441MHz	Pass	AV	2.3498G	37.98	54.00	-16.02	3	Vertical	222	1.00	-
2441MHz	Pass	AV	2.441G	68.16	Inf	-Inf	3	Vertical	222	1.00	-
2441MHz	Pass	AV	2.4862G	37.90	54.00	-16.10	3	Vertical	222	1.00	-
2441MHz	Pass	PK	2.3498G	60.48	74.00	-13.52	3	Vertical	222	1.00	-
2441MHz	Pass	PK	2.441G	90.66	Inf	-Inf	3	Vertical	222	1.00	-
2441MHz	Pass	PK	2.4862G	60.40	74.00	-13.60	3	Vertical	222	1.00	-
2441MHz	Pass	AV	2.345G	37.92	54.00	-16.08	3	Horizontal	278	2.44	-
2441MHz	Pass	AV	2.441G	70.67	Inf	-Inf	3	Horizontal	278	2.44	-
2441MHz	Pass	AV	2.491G	37.57	54.00	-16.43	3	Horizontal	278	2.44	-
2441MHz	Pass	PK	2.345G	60.42	74.00	-13.58	3	Horizontal	278	2.44	-
2441MHz	Pass	PK	2.441G	93.17	Inf	-Inf	3	Horizontal	278	2.44	-
2441MHz	Pass	PK	2.491G	60.07	74.00	-13.93	3	Horizontal	278	2.44	-
2441MHz	Pass	AV	4.88185G	32.83	54.00	-21.17	3	Vertical	279	3.00	-
2441MHz	Pass	AV	7.32279G	34.09	54.00	-19.91	3	Vertical	266	2.88	-
2441MHz	Pass	PK	4.88185G	55.33	74.00	-18.67	3	Vertical	279	3.00	-
2441MHz	Pass	PK	7.32279G	56.59	74.00	-17.41	3	Vertical	266	2.88	-
2441MHz	Pass	AV	4.8816G	31.62	54.00	-22.38	3	Horizontal	277	1.49	-
2441MHz	Pass	AV	7.32219G	34.47	54.00	-19.53	3	Horizontal	240	1.99	-
2441MHz	Pass	PK	4.8816G	54.12	74.00	-19.88	3	Horizontal	277	1.49	-
2441MHz	Pass	PK	7.32219G	56.97	74.00	-17.03	3	Horizontal	240	1.99	-
2480MHz	Pass	AV	2.48G	69.61	Inf	-Inf	3	Vertical	211	1.17	-
2480MHz	Pass	AV	2.4842G	38.12	54.00	-15.88	3	Vertical	211	1.17	-
2480MHz	Pass	PK	2.48G	92.11	Inf	-Inf	3	Vertical	211	1.17	-
2480MHz	Pass	PK	2.4842G	60.62	74.00	-13.38	3	Vertical	211	1.17	-
2480MHz	Pass	AV	2.48G	71.21	Inf	-Inf	3	Horizontal	277	2.13	-
2480MHz	Pass	AV	2.495G	37.45	54.00	-16.55	3	Horizontal	277	2.13	-
2480MHz	Pass	PK	2.48G	93.71	Inf	-Inf	3	Horizontal	277	2.13	-
2480MHz	Pass	PK	2.495G	59.95	74.00	-14.05	3	Horizontal	277	2.13	-
2480MHz	Pass	AV	4.95935G	31.87	54.00	-22.13	3	Vertical	290	1.94	-
2480MHz	Pass	AV	7.43985G	35.00	54.00	-19.00	3	Vertical	265	2.81	-
2480MHz	Pass	PK	4.95935G	54.37	74.00	-19.63	3	Vertical	290	1.94	-
2480MHz	Pass	PK	7.43985G	57.50	74.00	-16.50	3	Vertical	265	2.81	-
2480MHz	Pass	AV	4.96036G	30.74	54.00	-23.26	3	Horizontal	279	1.50	-
2480MHz	Pass	AV	7.44085G	35.49	54.00	-18.51	3	Horizontal	240	1.97	-
2480MHz	Pass	PK	4.96036G	53.24	74.00	-20.76	3	Horizontal	279	1.50	-



RSE TX above 1GHz

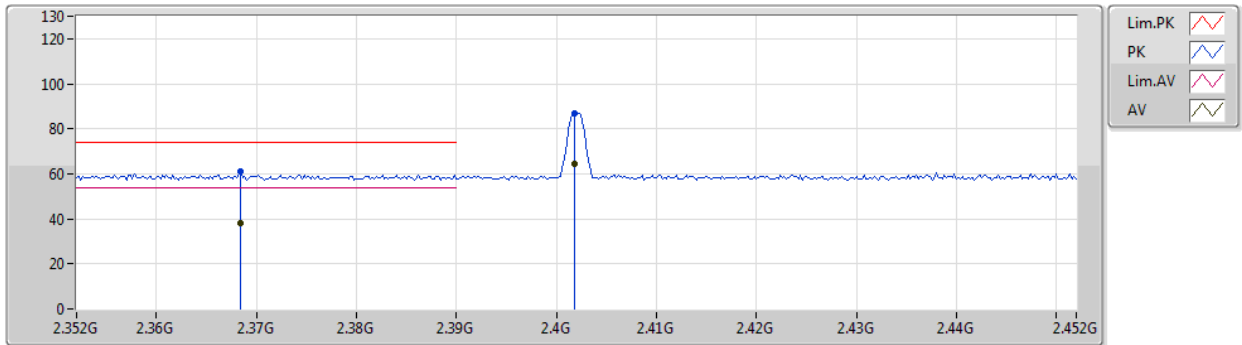
Appendix G.2

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2480MHz	Pass	PK	7.44085G	57.99	74.00	-16.01	3	Horizontal	240	1.97	-

BT-BR(1Mbps)

2402MHz_TX

26/09/2019

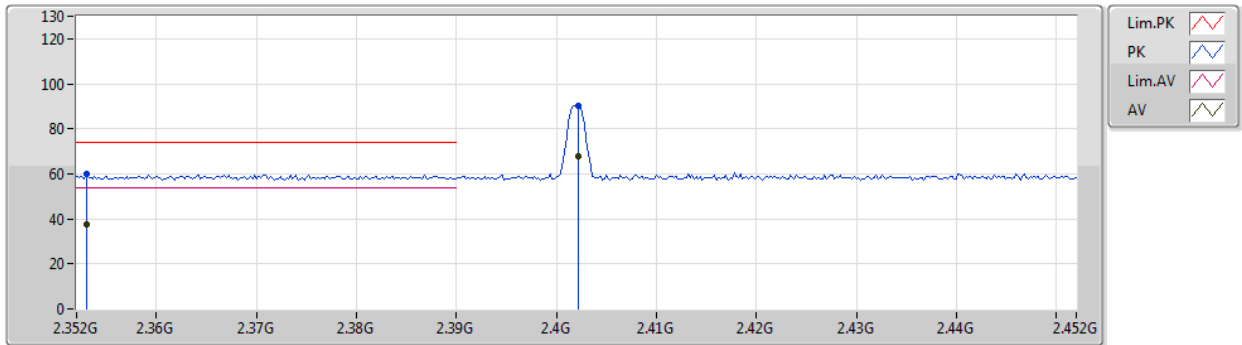


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3684G	38.32	54.00	-15.68	35.07	3	Vertical	307	1.50	-	3.25	27.73	7.34	-
AV	2.4018G	64.31	Inf	-Inf	34.93	3	Vertical	307	1.50	-	29.38	27.60	7.33	-
PK	2.3684G	60.82	74.00	-13.18	35.07	3	Vertical	307	1.50	-	25.75	27.73	7.34	-
PK	2.4018G	86.81	Inf	-Inf	34.93	3	Vertical	307	1.50	-	51.88	27.60	7.33	-

BT-BR(1Mbps)

2402MHz_TX

26/09/2019

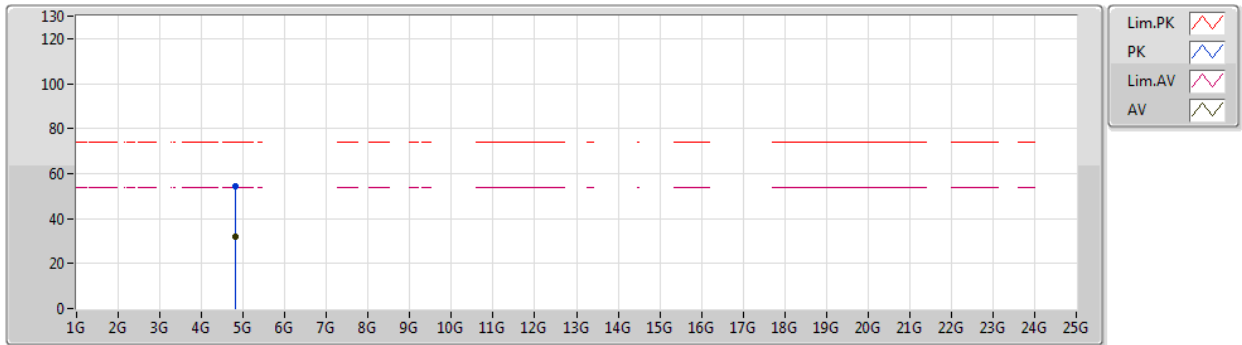


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.353G	37.41	54.00	-16.59	35.13	3	Horizontal	290	2.25	-	2.28	27.79	7.34	-
AV	2.4022G	67.73	Inf	-Inf	34.93	3	Horizontal	290	2.25	-	32.80	27.60	7.33	-
PK	2.353G	59.91	74.00	-14.09	35.13	3	Horizontal	290	2.25	-	24.78	27.79	7.34	-
PK	2.4022G	90.23	Inf	-Inf	34.93	3	Horizontal	290	2.25	-	55.30	27.60	7.33	-

BT-BR(1Mbps)

26/09/2019

2402MHz_TX

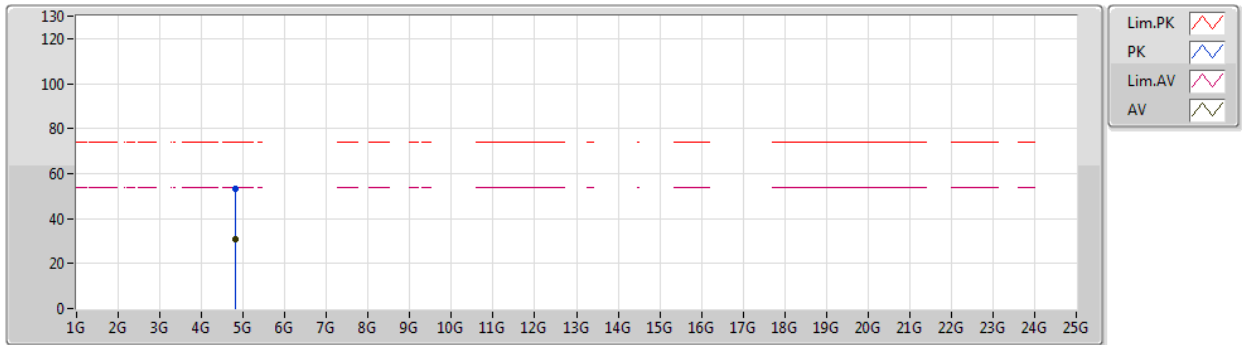


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.80378G	31.69	54.00	-22.31	6.72	3	Vertical	284	2.59	-	24.97	31.10	9.92	34.30
PK	4.80378G	54.19	74.00	-19.81	6.72	3	Vertical	284	2.59	-	47.47	31.10	9.92	34.30

BT-BR(1Mbps)

2402MHz_TX

26/09/2019

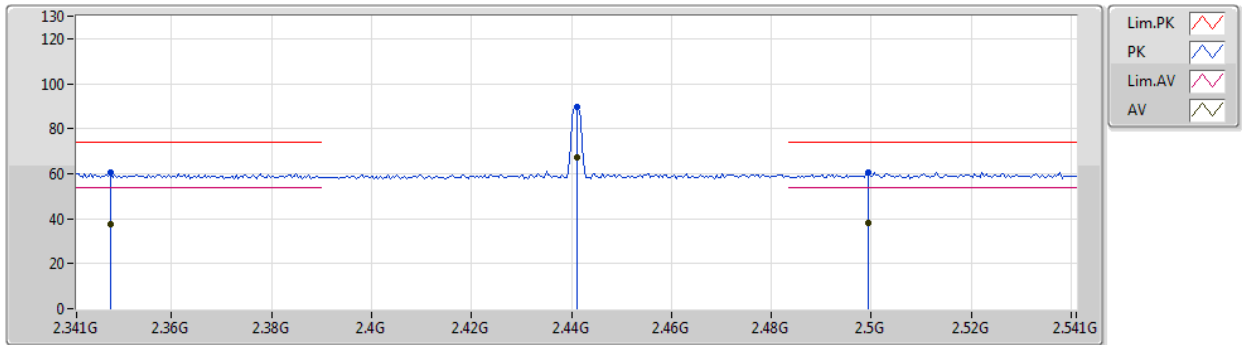


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.80416G	30.88	54.00	-23.12	6.72	3	Horizontal	297	2.97	-	24.16	31.10	9.92	34.30
PK	4.80416G	53.38	74.00	-20.62	6.72	3	Horizontal	297	2.97	-	46.66	31.10	9.92	34.30

BT-BR(1Mbps)

2441MHz_TX

26/09/2019

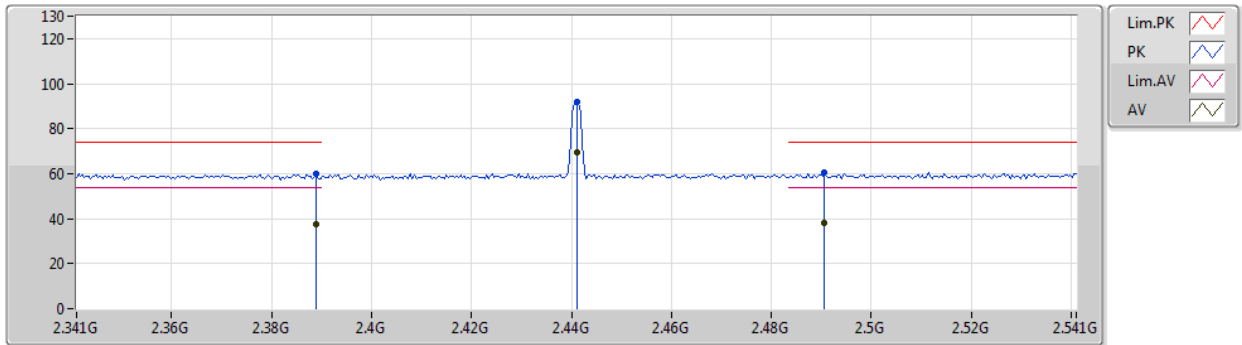


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3478G	37.81	54.00	-16.19	35.15	3	Vertical	207	1.00	-	2.66	27.81	7.34	-
AV	2.441G	67.34	Inf	-Inf	34.91	3	Vertical	207	1.00	-	32.43	27.56	7.35	-
AV	2.4994G	37.92	54.00	-16.08	34.87	3	Vertical	207	1.00	-	3.05	27.50	7.37	-
PK	2.3478G	60.31	74.00	-13.69	35.15	3	Vertical	207	1.00	-	25.16	27.81	7.34	-
PK	2.441G	89.84	Inf	-Inf	34.91	3	Vertical	207	1.00	-	54.93	27.56	7.35	-
PK	2.4994G	60.42	74.00	-13.58	34.87	3	Vertical	207	1.00	-	25.55	27.50	7.37	-

BT-BR(1Mbps)

2441MHz_TX

26/09/2019

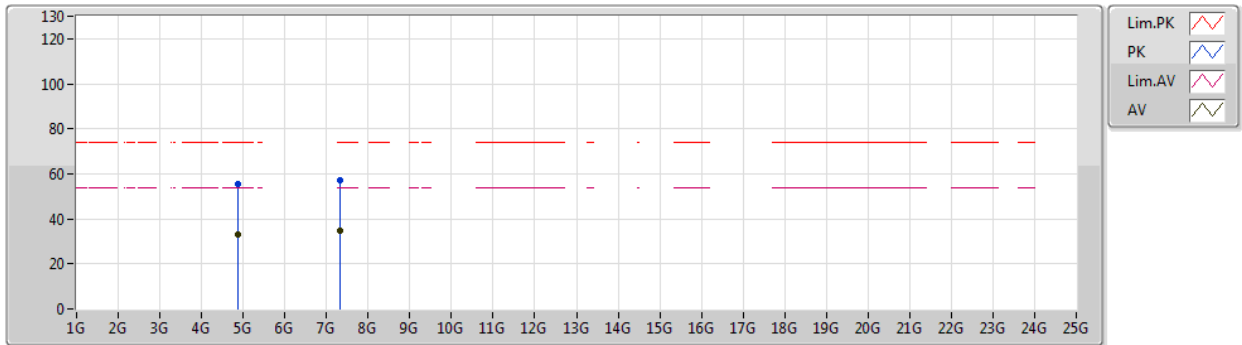


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.389G	37.45	54.00	-16.55	34.97	3	Horizontal	282	1.96	-	2.48	27.64	7.33	-
AV	2.441G	69.23	Inf	-Inf	34.91	3	Horizontal	282	1.96	-	34.32	27.56	7.35	-
AV	2.4906G	38.10	54.00	-15.90	34.88	3	Horizontal	282	1.96	-	3.22	27.51	7.37	-
PK	2.389G	59.95	74.00	-14.05	34.97	3	Horizontal	282	1.96	-	24.98	27.64	7.33	-
PK	2.441G	91.73	Inf	-Inf	34.91	3	Horizontal	282	1.96	-	56.82	27.56	7.35	-
PK	2.4906G	60.60	74.00	-13.40	34.88	3	Horizontal	282	1.96	-	25.72	27.51	7.37	-

BT-BR(1Mbps)

2441MHz_TX

26/09/2019

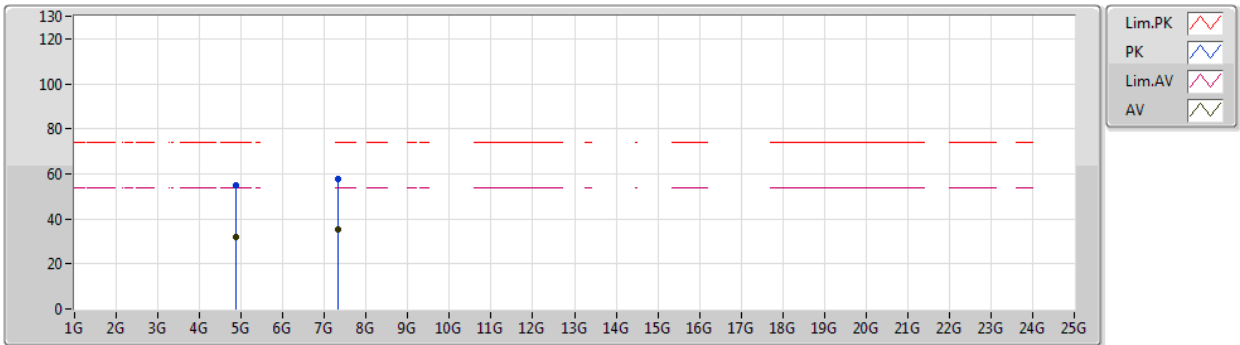


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.8823G	33.05	54.00	-20.95	6.80	3	Vertical	291	2.03	-	26.25	31.10	9.98	34.28
AV	7.32249G	34.65	54.00	-19.35	13.00	3	Vertical	264	2.06	-	21.65	36.28	11.31	34.59
PK	4.8823G	55.55	74.00	-18.45	6.80	3	Vertical	291	2.03	-	48.75	31.10	9.98	34.28
PK	7.32249G	57.15	74.00	-16.85	13.00	3	Vertical	264	2.06	-	44.15	36.28	11.31	34.59

BT-BR(1Mbps)

2441MHz_TX

26/09/2019

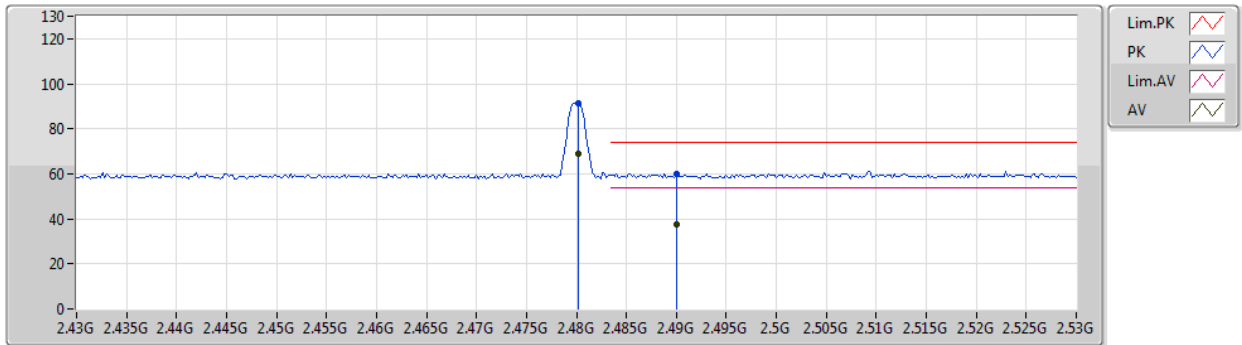


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.88159G	32.14	54.00	-21.86	6.80	3	Horizontal	278	1.50	-	25.34	31.10	9.98	34.28
AV	7.32264G	35.32	54.00	-18.68	13.00	3	Horizontal	251	1.94	-	22.32	36.28	11.31	34.59
PK	4.88159G	54.64	74.00	-19.36	6.80	3	Horizontal	278	1.50	-	47.84	31.10	9.98	34.28
PK	7.32264G	57.82	74.00	-16.18	13.00	3	Horizontal	251	1.94	-	44.82	36.28	11.31	34.59

BT-BR(1Mbps)

2480MHz_TX

26/09/2019

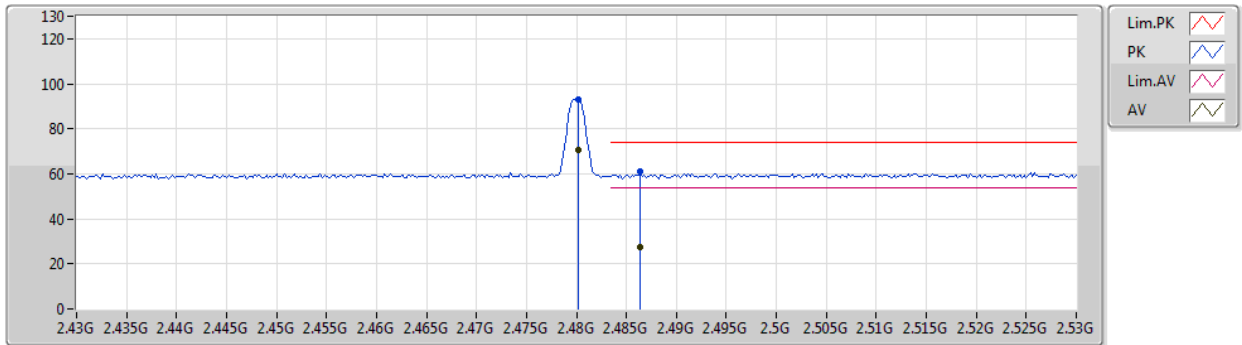


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.4802G	68.86	Inf	-Inf	34.89	3	Vertical	211	1.16	-	33.97	27.52	7.37	-
AV	2.49G	37.55	54.00	-16.45	34.88	3	Vertical	211	1.16	-	2.67	27.51	7.37	-
PK	2.4802G	91.36	Inf	-Inf	34.89	3	Vertical	211	1.16	-	56.47	27.52	7.37	-
PK	2.49G	60.05	74.00	-13.95	34.88	3	Vertical	211	1.16	-	25.17	27.51	7.37	-

BT-BR(1Mbps)

2480MHz_TX

26/09/2019

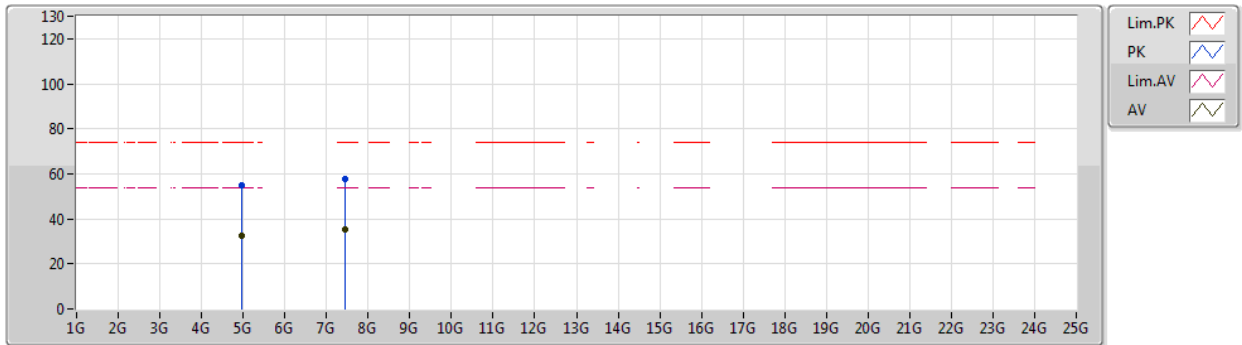


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.4802G	70.51	Inf	-Inf	34.89	3	Horizontal	275	2.14	-	35.62	27.52	7.37	-
AV	2.4864G	27.27	54.00	-26.73	34.88	3	Horizontal	275	2.14	-	-7.61	27.51	7.37	-
PK	2.4802G	93.01	Inf	-Inf	34.89	3	Horizontal	275	2.14	-	58.12	27.52	7.37	-
PK	2.4864G	60.84	74.00	-13.16	34.88	3	Horizontal	275	2.14	-	25.96	27.51	7.37	-

BT-BR(1Mbps)

2480MHz_TX

26/09/2019

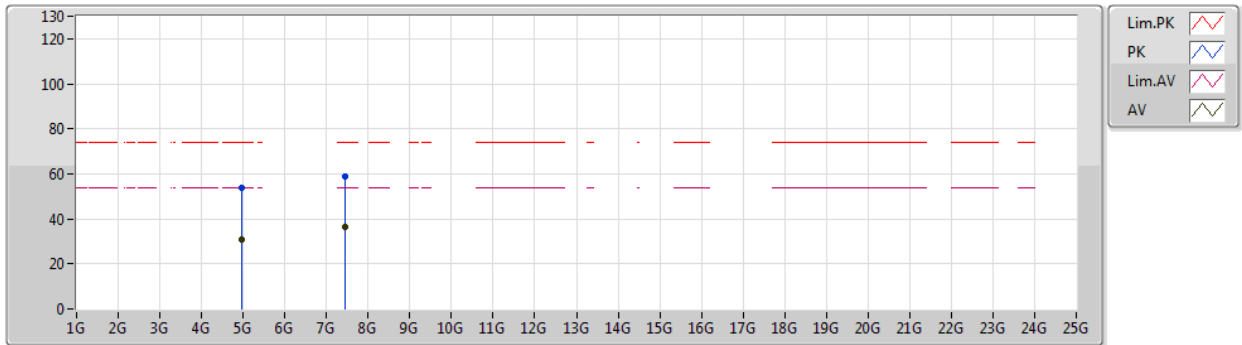


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.96009G	32.40	54.00	-21.60	7.23	3	Vertical	292	1.96	-	25.17	31.34	10.05	34.16
AV	7.44062G	35.17	54.00	-18.83	13.10	3	Vertical	269	2.81	-	22.07	36.32	11.38	34.60
PK	4.96009G	54.90	74.00	-19.10	7.23	3	Vertical	292	1.96	-	47.67	31.34	10.05	34.16
PK	7.44062G	57.67	74.00	-16.33	13.10	3	Vertical	269	2.81	-	44.57	36.32	11.38	34.60

BT-BR(1Mbps)

2480MHz_TX

26/09/2019

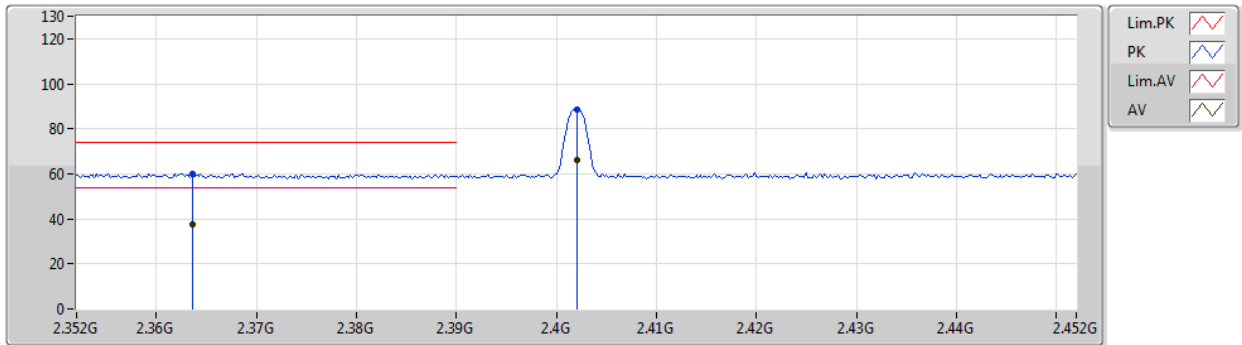


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.95968G	31.06	54.00	-22.94	7.23	3	Horizontal	279	1.50	-	23.83	31.34	10.05	34.16
AV	7.44031G	36.38	54.00	-17.62	13.10	3	Horizontal	240	1.95	-	23.28	36.32	11.38	34.60
PK	4.95968G	53.56	74.00	-20.44	7.23	3	Horizontal	279	1.50	-	46.33	31.34	10.05	34.16
PK	7.44031G	58.88	74.00	-15.12	13.10	3	Horizontal	240	1.95	-	45.78	36.32	11.38	34.60

BT-EDR(3Mbps)

2402MHz_TX

26/09/2019

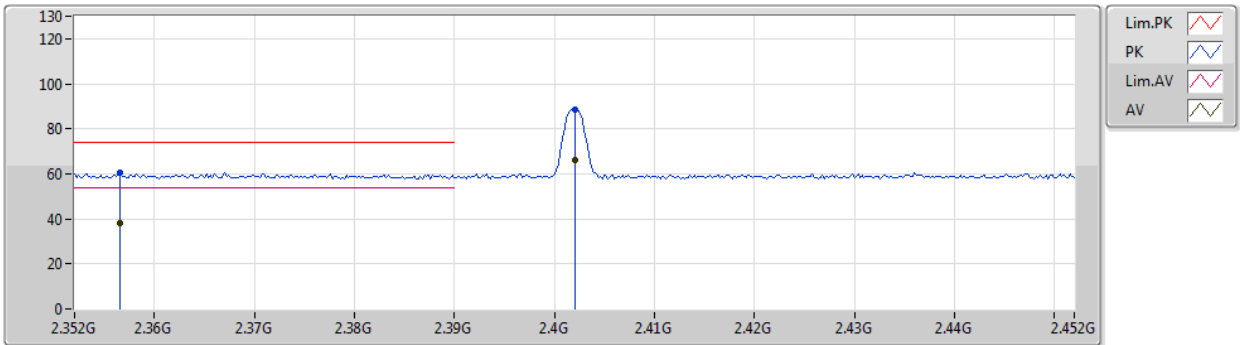


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3636G	37.71	54.00	-16.29	35.09	3	Vertical	209	1.49	-	2.62	27.75	7.34	-
AV	2.402G	65.98	Inf	-Inf	34.93	3	Vertical	209	1.49	-	31.05	27.60	7.33	-
PK	2.3636G	60.21	74.00	-13.79	35.09	3	Vertical	209	1.49	-	25.12	27.75	7.34	-
PK	2.402G	88.48	Inf	-Inf	34.93	3	Vertical	209	1.49	-	53.55	27.60	7.33	-

BT-EDR(3Mbps)

26/09/2019

2402MHz_TX

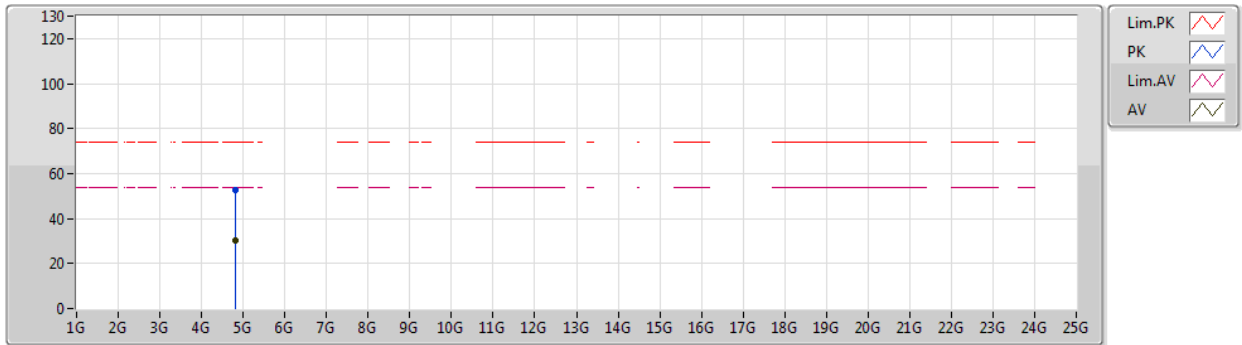


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3566G	37.97	54.00	-16.03	35.11	3	Horizontal	288	1.50	-	2.86	27.77	7.34	-
AV	2.402G	66.04	Inf	-Inf	34.93	3	Horizontal	288	1.50	-	31.11	27.60	7.33	-
PK	2.3566G	60.47	74.00	-13.53	35.11	3	Horizontal	288	1.50	-	25.36	27.77	7.34	-
PK	2.402G	88.54	Inf	-Inf	34.93	3	Horizontal	288	1.50	-	53.61	27.60	7.33	-

BT-EDR(3Mbps)

26/09/2019

2402MHz_TX

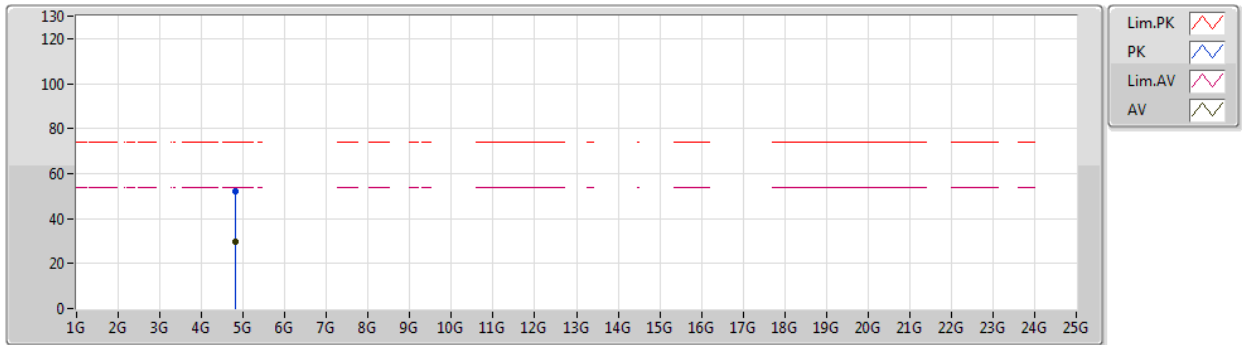


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.80421G	30.21	54.00	-23.79	6.72	3	Vertical	290	2.07	-	23.49	31.10	9.92	34.30
PK	4.80421G	52.71	74.00	-21.29	6.72	3	Vertical	290	2.07	-	45.99	31.10	9.92	34.30

BT-EDR(3Mbps)

26/09/2019

2402MHz_TX

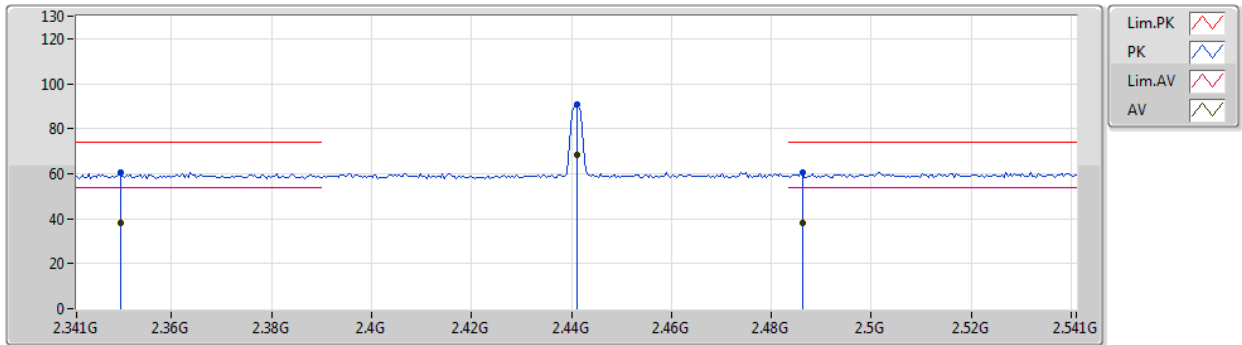


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.80368G	29.61	54.00	-24.39	6.72	3	Horizontal	290	1.88	-	22.89	31.10	9.92	34.30
PK	4.80368G	52.11	74.00	-21.89	6.72	3	Horizontal	290	1.88	-	45.39	31.10	9.92	34.30

BT-EDR(3Mbps)

2441MHz_TX

26/09/2019

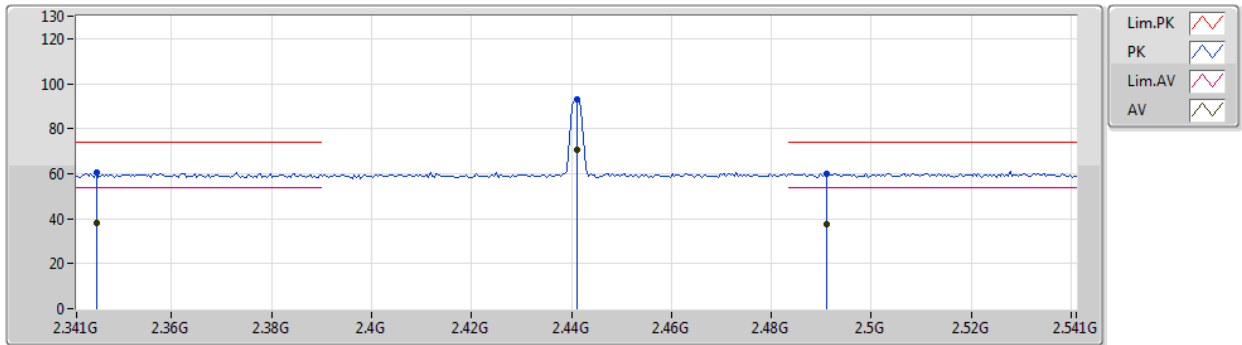


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3498G	37.98	54.00	-16.02	35.14	3	Vertical	222	1.00	-	2.84	27.80	7.34	-
AV	2.441G	68.16	Inf	-Inf	34.91	3	Vertical	222	1.00	-	33.25	27.56	7.35	-
AV	2.4862G	37.90	54.00	-16.10	34.88	3	Vertical	222	1.00	-	3.02	27.51	7.37	-
PK	2.3498G	60.48	74.00	-13.52	35.14	3	Vertical	222	1.00	-	25.34	27.80	7.34	-
PK	2.441G	90.66	Inf	-Inf	34.91	3	Vertical	222	1.00	-	55.75	27.56	7.35	-
PK	2.4862G	60.40	74.00	-13.60	34.88	3	Vertical	222	1.00	-	25.52	27.51	7.37	-

BT-EDR(3Mbps)

2441MHz_TX

26/09/2019

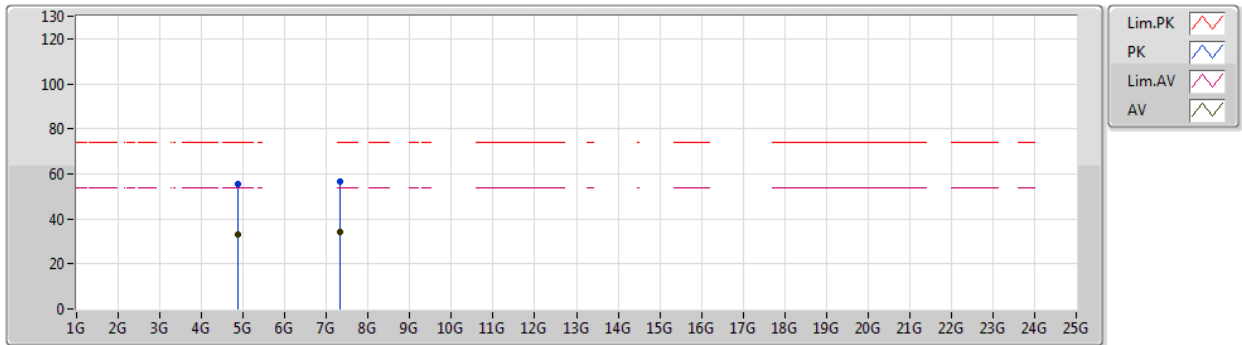


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.345G	37.92	54.00	-16.08	35.16	3	Horizontal	278	2.44	-	2.76	27.82	7.34	-
AV	2.441G	70.67	Inf	-Inf	34.91	3	Horizontal	278	2.44	-	35.76	27.56	7.35	-
AV	2.491G	37.57	54.00	-16.43	34.88	3	Horizontal	278	2.44	-	2.69	27.51	7.37	-
PK	2.345G	60.42	74.00	-13.58	35.16	3	Horizontal	278	2.44	-	25.26	27.82	7.34	-
PK	2.441G	93.17	Inf	-Inf	34.91	3	Horizontal	278	2.44	-	58.26	27.56	7.35	-
PK	2.491G	60.07	74.00	-13.93	34.88	3	Horizontal	278	2.44	-	25.19	27.51	7.37	-

BT-EDR(3Mbps)

26/09/2019

2441MHz_TX

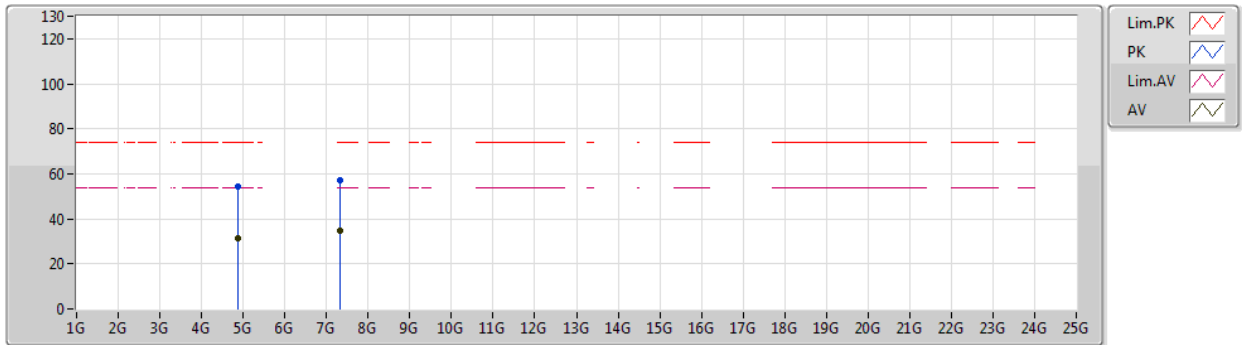


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.88185G	32.83	54.00	-21.17	6.80	3	Vertical	279	3.00	-	26.03	31.10	9.98	34.28
AV	7.32279G	34.09	54.00	-19.91	13.00	3	Vertical	266	2.88	-	21.09	36.28	11.31	34.59
PK	4.88185G	55.33	74.00	-18.67	6.80	3	Vertical	279	3.00	-	48.53	31.10	9.98	34.28
PK	7.32279G	56.59	74.00	-17.41	13.00	3	Vertical	266	2.88	-	43.59	36.28	11.31	34.59

BT-EDR(3Mbps)

26/09/2019

2441MHz_TX

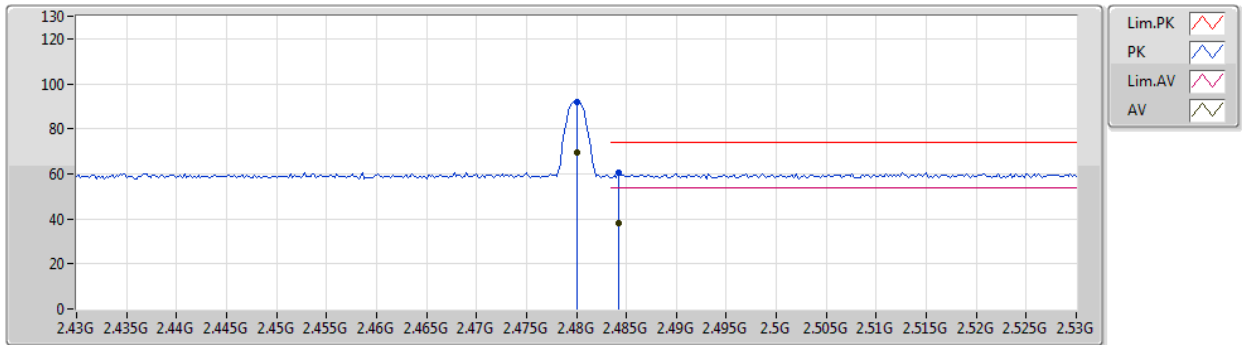


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.8816G	31.62	54.00	-22.38	6.80	3	Horizontal	277	1.49	-	24.82	31.10	9.98	34.28
AV	7.32219G	34.47	54.00	-19.53	13.00	3	Horizontal	240	1.99	-	21.47	36.28	11.31	34.59
PK	4.8816G	54.12	74.00	-19.88	6.80	3	Horizontal	277	1.49	-	47.32	31.10	9.98	34.28
PK	7.32219G	56.97	74.00	-17.03	13.00	3	Horizontal	240	1.99	-	43.97	36.28	11.31	34.59

BT-EDR(3Mbps)

2480MHz_TX

26/09/2019

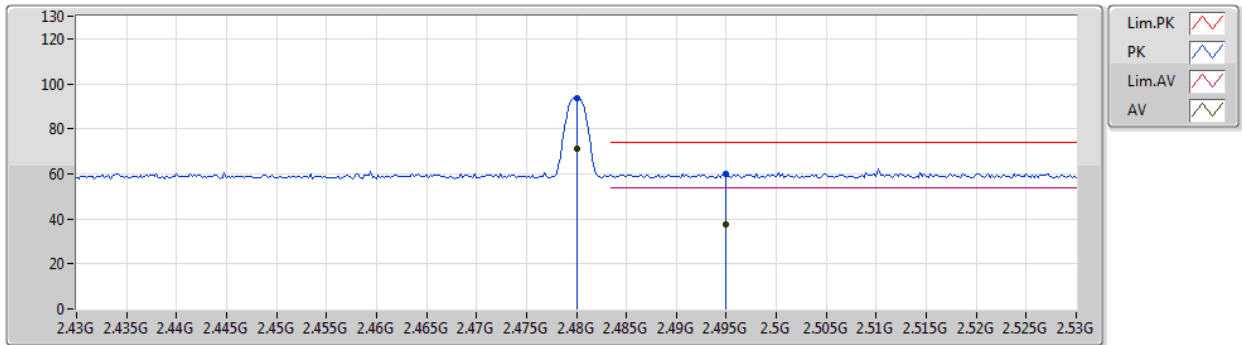


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.48G	69.61	Inf	-Inf	34.89	3	Vertical	211	1.17	-	34.72	27.52	7.37	-
AV	2.4842G	38.12	54.00	-15.88	34.89	3	Vertical	211	1.17	-	3.23	27.52	7.37	-
PK	2.48G	92.11	Inf	-Inf	34.89	3	Vertical	211	1.17	-	57.22	27.52	7.37	-
PK	2.4842G	60.62	74.00	-13.38	34.89	3	Vertical	211	1.17	-	25.73	27.52	7.37	-

BT-EDR(3Mbps)

2480MHz_TX

26/09/2019

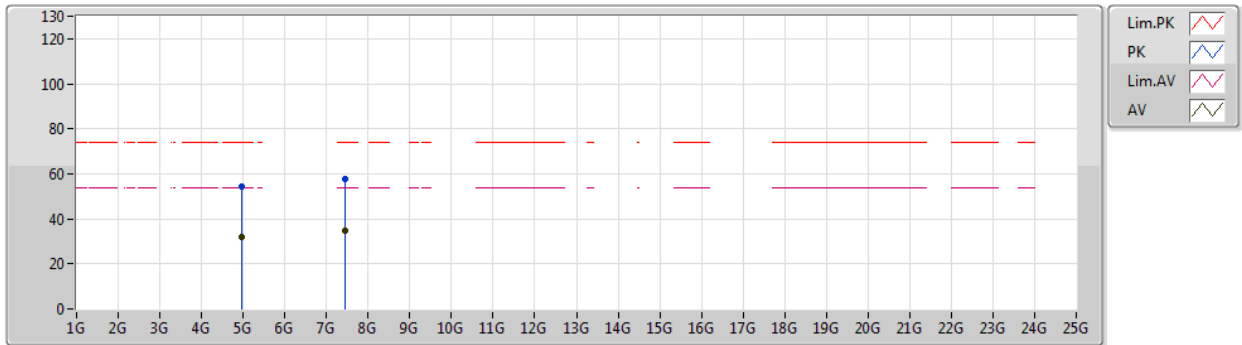


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.48G	71.21	Inf	-Inf	34.89	3	Horizontal	277	2.13	-	36.32	27.52	7.37	-
AV	2.495G	37.45	54.00	-16.55	34.87	3	Horizontal	277	2.13	-	2.58	27.50	7.37	-
PK	2.48G	93.71	Inf	-Inf	34.89	3	Horizontal	277	2.13	-	58.82	27.52	7.37	-
PK	2.495G	59.95	74.00	-14.05	34.87	3	Horizontal	277	2.13	-	25.08	27.50	7.37	-

BT-EDR(3Mbps)

2480MHz_TX

26/09/2019

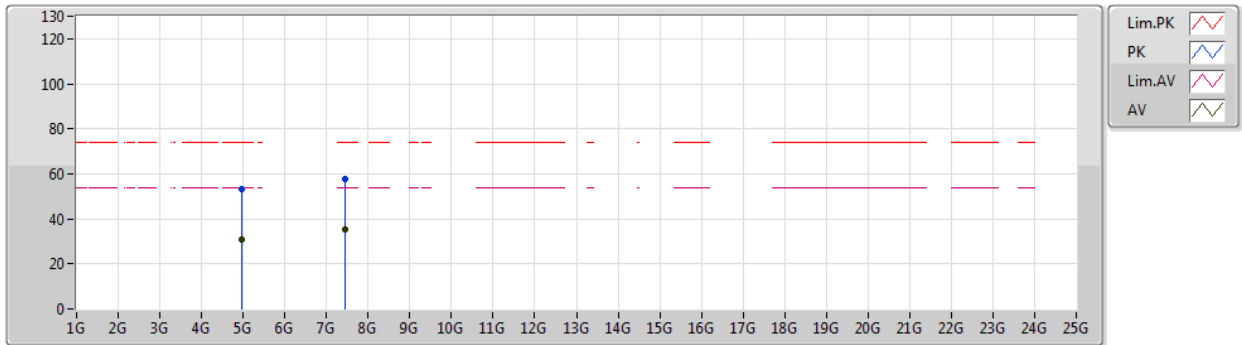


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.95935G	31.87	54.00	-22.13	7.23	3	Vertical	290	1.94	-	24.64	31.34	10.05	34.16
AV	7.43985G	35.00	54.00	-19.00	13.10	3	Vertical	265	2.81	-	21.90	36.32	11.38	34.60
PK	4.95935G	54.37	74.00	-19.63	7.23	3	Vertical	290	1.94	-	47.14	31.34	10.05	34.16
PK	7.43985G	57.50	74.00	-16.50	13.10	3	Vertical	265	2.81	-	44.40	36.32	11.38	34.60

BT-EDR(3Mbps)

26/09/2019

2480MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.96036G	30.74	54.00	-23.26	7.23	3	Horizontal	279	1.50	-	23.51	31.34	10.05	34.16
AV	7.44085G	35.49	54.00	-18.51	13.10	3	Horizontal	240	1.97	-	22.39	36.32	11.38	34.60
PK	4.96036G	53.24	74.00	-20.76	7.23	3	Horizontal	279	1.50	-	46.01	31.34	10.05	34.16
PK	7.44085G	57.99	74.00	-16.01	13.10	3	Horizontal	240	1.97	-	44.89	36.32	11.38	34.60