

FCC Test Report

FCC ID : PPQ-V723
Equipment : Wi-Fi Outdoor Bullet Camera
Brand Name : ALARM.COM
Model Name : ADC-V723
Applicant : LITE-ON Technology Corp.
Bldg. C, 90, Chien 1 Rd., Chung-Ho, New Taipei City,
23585 Taiwan
Manufacturer : Lite-On Network Communication (Dongguan) Limited
30#Keji Rd., Yin Hu Industrial Area, Qingxi
Town, DongGuan City, Guangdong, China
Standard : 47 CFR FCC Part 15.247

The product was received on Dec. 17, 2018, and testing was started from May 04, 2019 and completed on May 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.)



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PHOTOGRAPHS OF EUT V01



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
1	Lite-on	3010001121L7	Dipole antenna	I-PEX
2	Lite-on	3010001122L7	Dipole antenna	I-PEX

Ant.	Port	Gain (dBi)		
		2.4G	5G	BT
1	1	5.1	5.6	5.1
2	2	3.5	5.5	-

Note 1: The EUT has two antennas.

For 2.4GHz function:

For IEEE 802.11 b/g/n mode (2TX/2RX)

Support diversity function and pre-tested on each single chain, the worst case was Ant. 1(port 1) and it was record in this test report.

For BT function:

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

Support diversity function, the Ant. 1 (port 1) was declared to be tested only by customer.

For 5GHz function:

For IEEE 802.11 a/an/ac mode (2TX/2RX)

Support diversity function, Support diversity function and pre-tested on each single chain, the worst case was Ant. 1(port 1) and it was record in this test report.



1.1.3 EUT Information

Operational Condition	
EUT Power Type	From 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) ≥ 1/T
BT-BR(1Mbps)	0.935	0.29	2.87m	1k
BT-EDR(2Mbps)	0.934	0.3	2.881m	1k
BT-EDR(3Mbps)	0.934	0.3	2.885m	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
RF Conducted	TH01-HY	Clara	23.3~23.9°C / 63~66%	06/May/2019
Radiated	03CH02-HY	Patrick	23.5~24.9°C / 52.3~54.5%	04/May/2019~14/May/2019
AC Conduction	CO01-HY	Jeff	22.2-25.8°C / 52.2-57.1%	21/May/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	120V

2.2 Test Channel Mode




Test Software Version	Dos
-----------------------	-----

Mode	PowerSetting
BT-BR(1Mbps)	-
2402MHz	23
2441MHz	21
2480MHz	23
BT-EDR(2Mbps)	-
2402MHz	23
2441MHz	23
2480MHz	23
BT-EDR(3Mbps)	-
2402MHz	23
2441MHz	23
2480MHz	23

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	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	Adapter 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

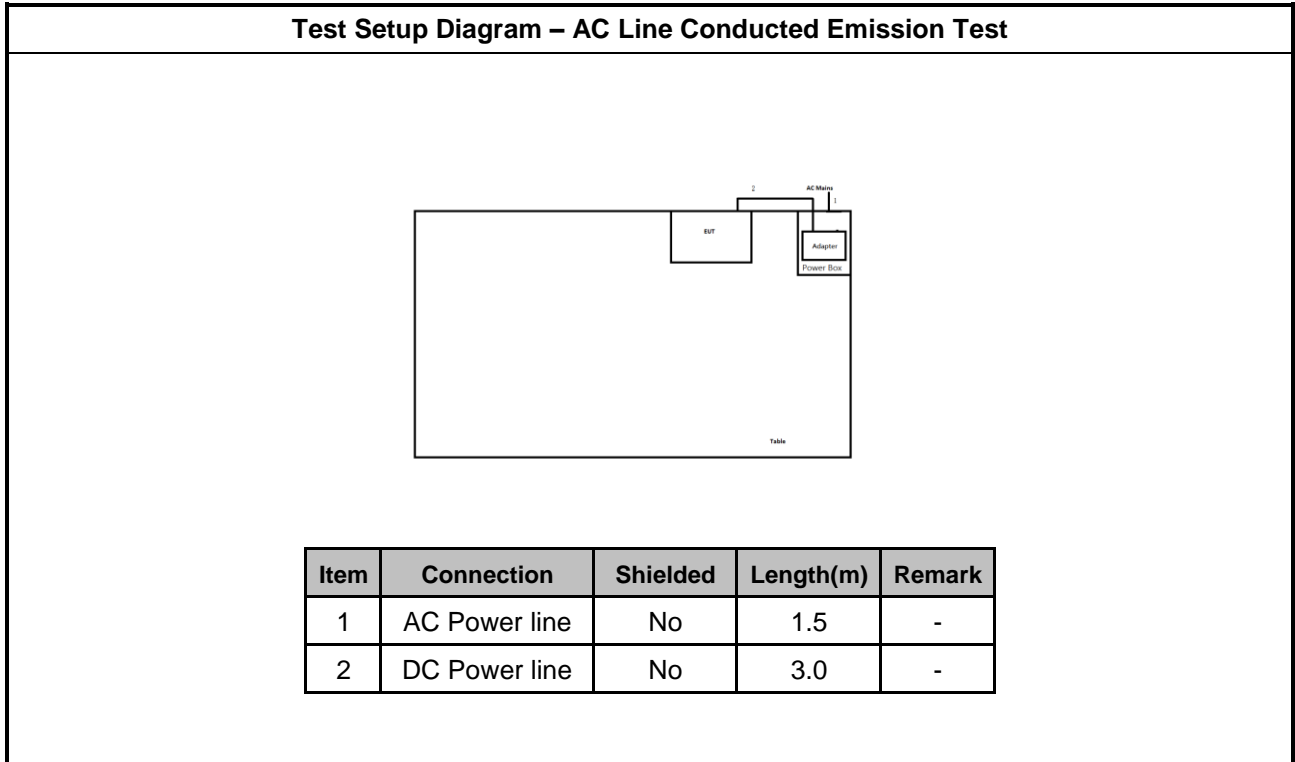
Accessories				
AC Adapter	Brand Name	Asian Power Devices Inc.	Model Name	WB-12G12FU
	Power Rating	I/P: 100 - 240Vac, 0.3 A Max, O/P: 12 Vdc, 1A		
	Power Cord	3 meter, non-shielded cable, w/o ferrite core		

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

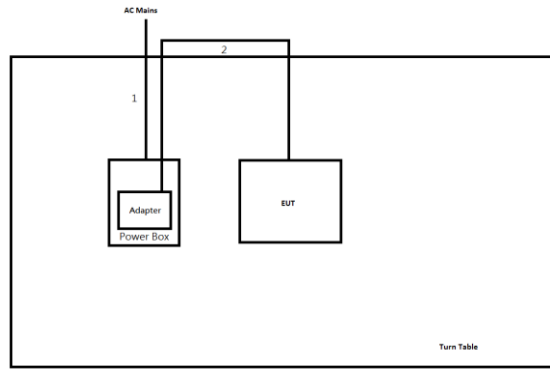
Support Equipment - RF Conducted				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E5410	DoC
2	Adapter for NB	DELL	HA65NM130	DoC
3	Fixture	-	-	-

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

2.5 Test Setup Diagram



Test Setup Diagram - Radiated Test < 1GHz



Item	Connection	Shielded	Length(m)	Remark
1	AC Power line	No	1.5	-
2	DC Power line	No	3.0	-

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.

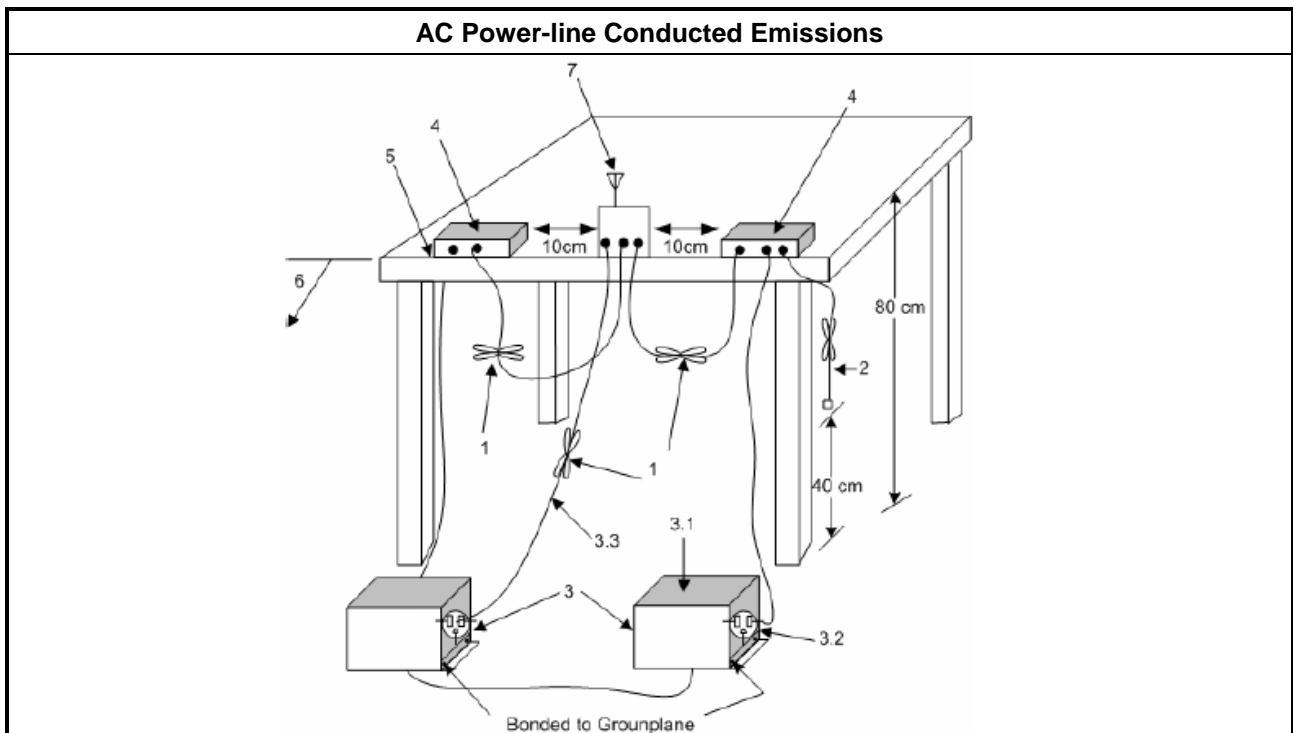
3.1.2 Measuring Instruments

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	

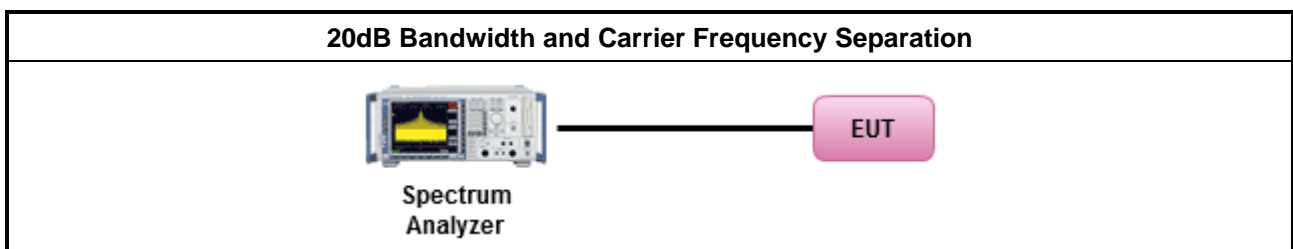
3.2.2 Measuring Instruments

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	

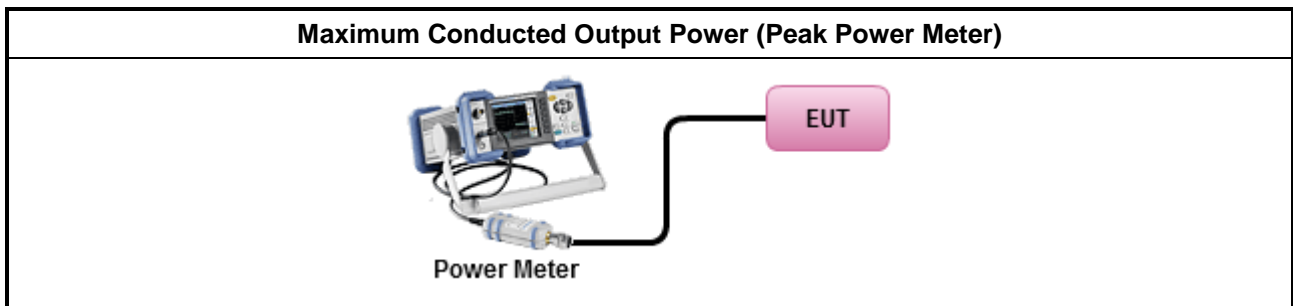
3.3.2 Measuring Instruments

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

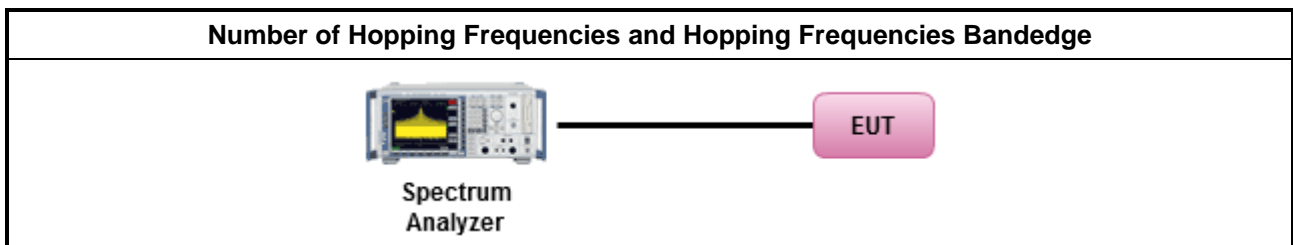
3.4.3 Measuring Instruments

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	

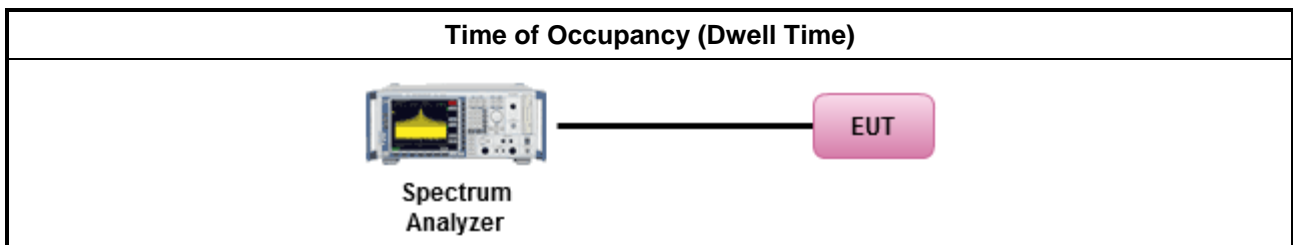
3.5.2 Measuring Instruments

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.	

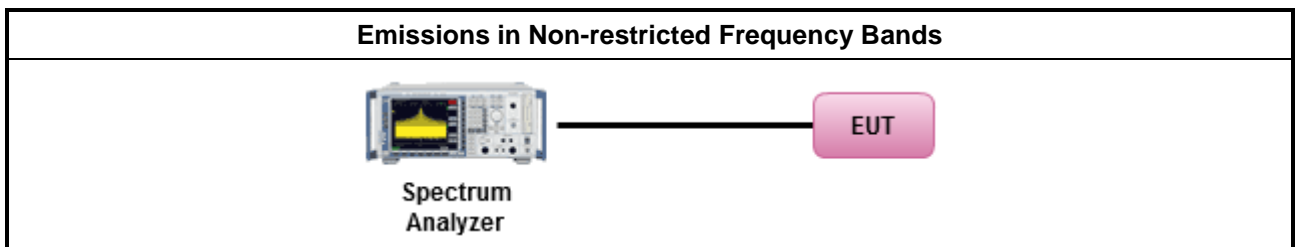
3.6.2 Measuring Instruments

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.

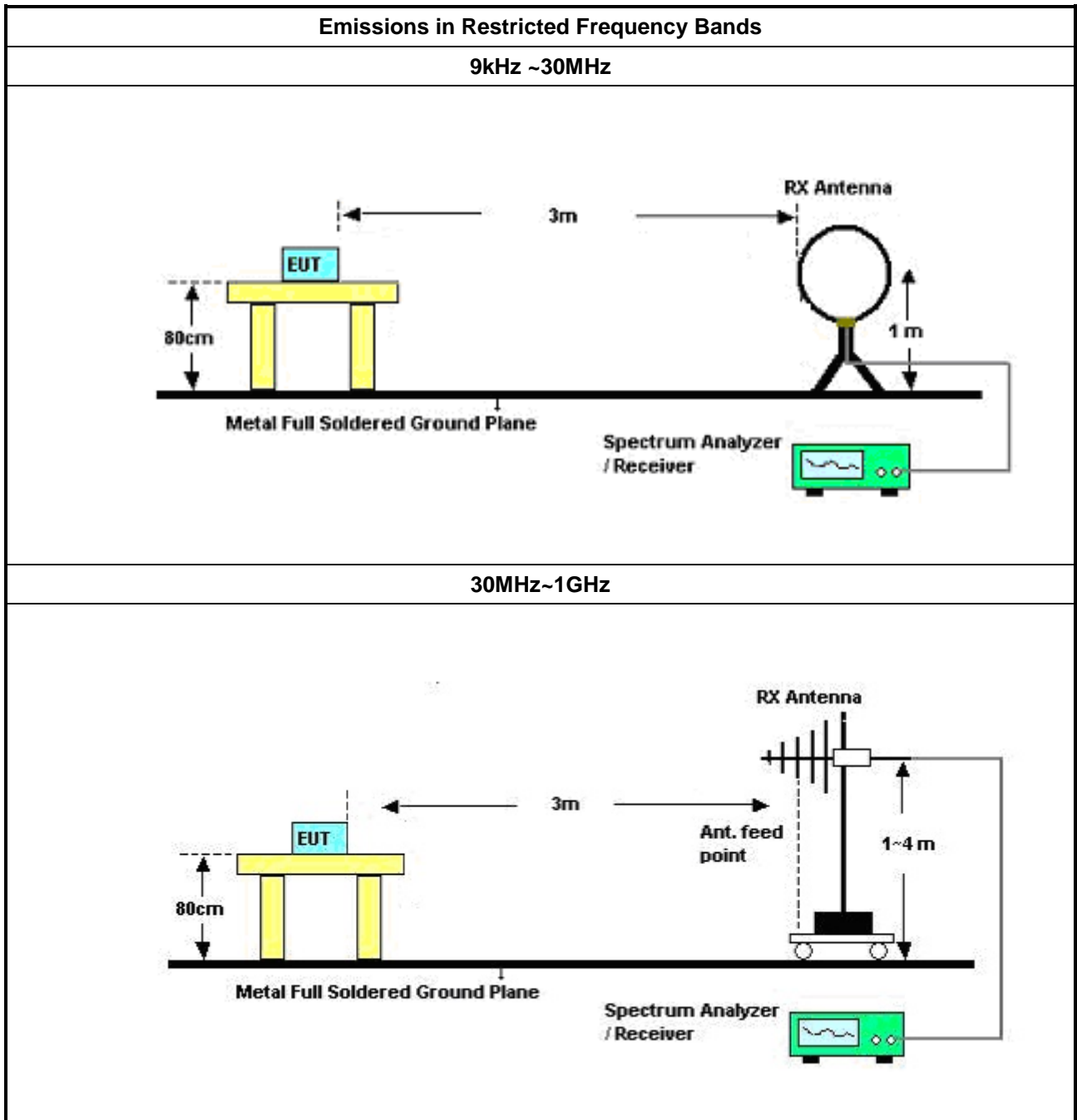
3.7.2 Measuring Instruments

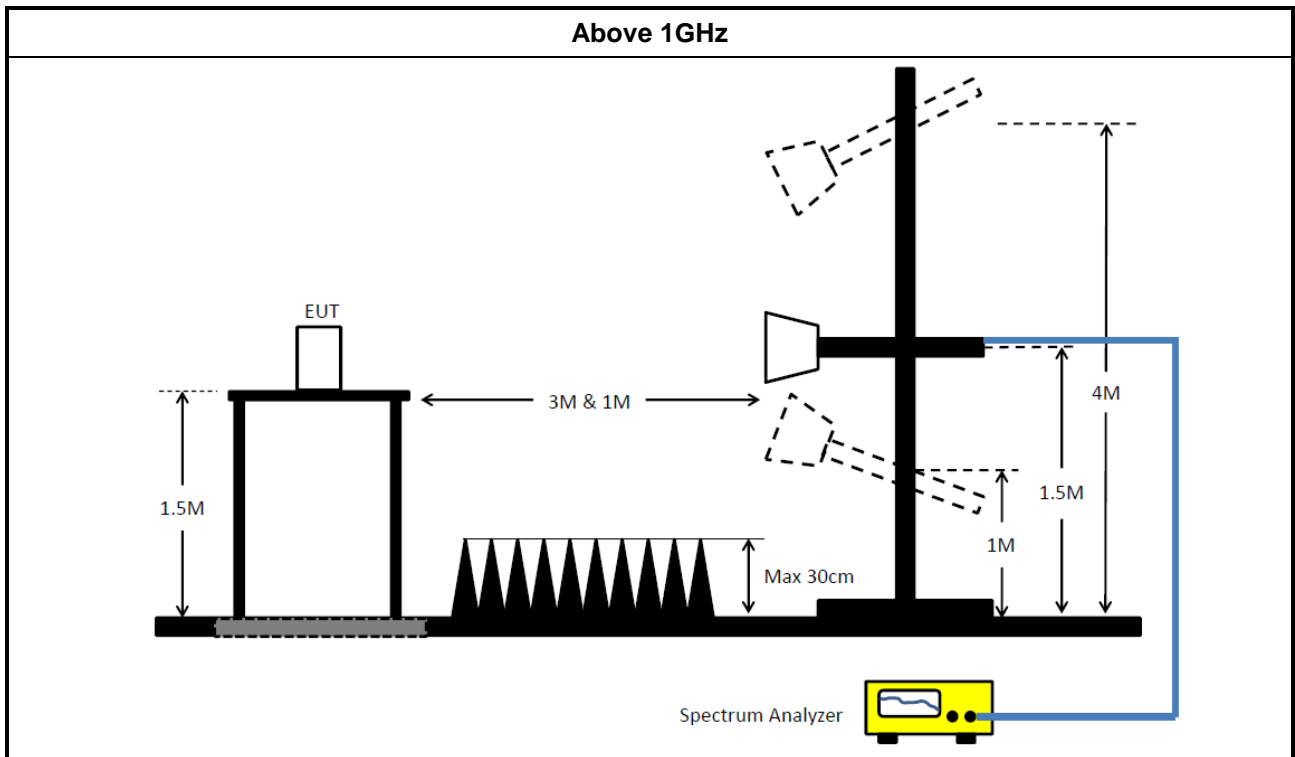
Refer a test equipment and calibration data table in this test report.

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. ▪ 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.

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	ENV 216	101274	9kHz ~ 30MHz	12/Jun/2018	11/Jun/2019
RF Cable-CON	MTJ	RG142	CB001-CO	9kHz ~ 30MHz	17/Sep/2018	16/Sep/2019
AC POWER	APC	AFC-11003G	F308010045	47Hz~63Hz 5~300V	NCR	NCR
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561F	9495	9kHz ~ 30MHz	11/Oct/2018	10/Oct/2019

NCR : Non-Calibration Require

Instrument for Radiated Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	30MHz ~ 1GHz 3m	19/Oct/2018	18/Oct/2019
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	1GHz ~ 18GHz 3m	17/Oct/2018	16/Oct/2019
Amplifier	Agilent	8447D	2944A11149	100kHz ~ 1.3GHz	27Jul/2018	02/Jul/2019
Microwave Pre-amplifier	Agilent	8449B	3008A02373	1GHz ~ 26.5GHz	23/Oct/2018	22/Oct/2019
Signal Analyzer	R&S	FSV40	101500	10Hz ~ 40GHz	18/Jul/2018	17/Jul/2019
RF Cable-R03m	Jye Bao	RG142	CB017	9kHz ~ 1GHz	18/Jan/2019	17/Jan/2020
RF Cable-high	SUHNER	SUCOFLEX104	MY34918/4	1GHz ~ 40GHz	18/Jan/2019	17/Jan/2020
Bilog Antenna	SCHAFFNER	CBL6111C	2737	30MHz ~ 1GHz	02/Oct/2018	03/Oct/2019



Instrument for Conducted Test

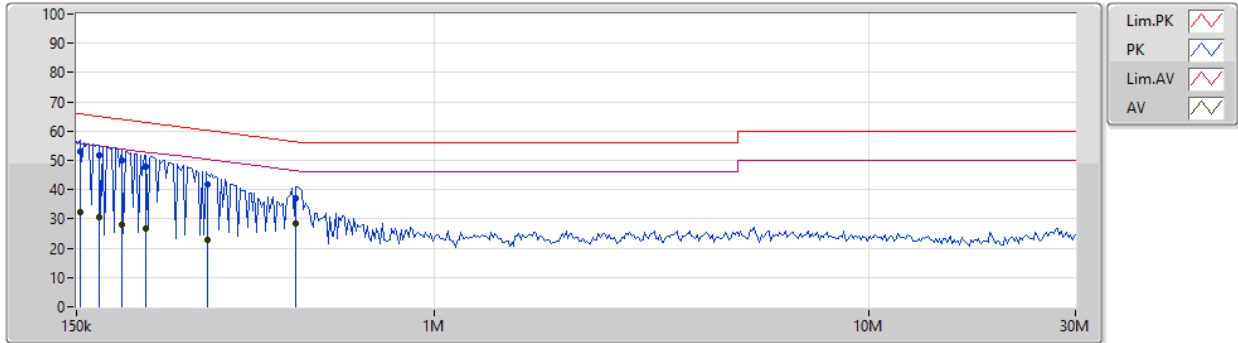
Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV 40	101013	10Hz~40GHz	13/Mar/2019	12/Mar/2020
Power Sensor	Anritsu	MA2411B	1339407	300MHz ~ 40GHz	17/Nov/2018	16/Nov/2019
Power Meter	Anritsu	ML2495A	1517010	300MHz ~ 40GHz	17/Nov/2018	16/Nov/2019
Cable 0.2m	HUBER	MY10710/4	RF Cable - 01	30MHz~18GHz	10/Jan/2019	09/Jan/2020
Cable 0.2m	HUBER	MY10711/4	RF Cable - 02	30MHz~18GHz	10/Jan/2019	09/Jan/2020
Cable 0.5m	HUBER	MY10714/4	RF Cable - 05	30MHz~18GHz	10/Jan/2019	09/Jan/2020
SMB100A Signal Generator	R&S	SMB100A03	181147	100kHz~40GHz	12/Nov/2018	10/Nov/2020



AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Neutral
Operating Function	Adapter mode		

21/05/2019



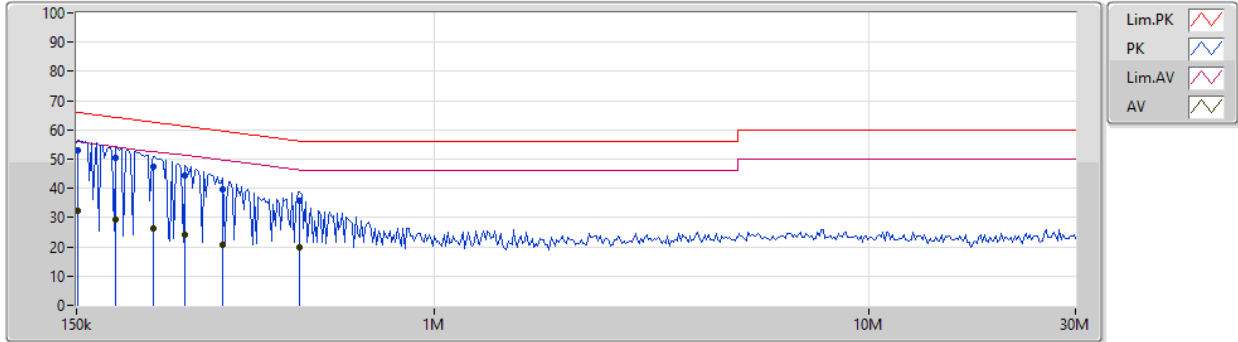
Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)
QP	153.015k	53.12	65.83	-12.71	19.52	Neutral	"Worst"	33.60	9.65	0.01	9.86
AV	153.015k	32.51	55.83	-23.32	19.52	Neutral	-	12.99	9.65	0.01	9.86
QP	169.024k	51.82	65.01	-13.19	19.52	Neutral	-	32.30	9.65	0.01	9.86
AV	169.024k	30.39	55.01	-24.62	19.52	Neutral	-	10.87	9.65	0.01	9.86
QP	190.46k	49.90	64.01	-14.11	19.51	Neutral	-	30.39	9.64	0.01	9.86
AV	190.46k	28.16	54.01	-25.85	19.51	Neutral	-	8.65	9.64	0.01	9.86
QP	216.761k	48.06	62.94	-14.88	19.51	Neutral	-	28.55	9.64	0.01	9.86
AV	216.761k	26.86	52.94	-26.08	19.51	Neutral	-	7.35	9.64	0.01	9.86
QP	301.015k	41.88	60.21	-18.33	19.51	Neutral	-	22.37	9.64	0.01	9.86
AV	301.015k	22.94	50.21	-27.27	19.51	Neutral	-	3.43	9.64	0.01	9.86
QP	480.498k	37.27	56.33	-19.06	19.51	Neutral	-	17.76	9.64	0.01	9.86
AV	480.498k	28.38	46.33	-17.95	19.51	Neutral	-	8.87	9.64	0.01	9.86



AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Line
Operating Function	Adapter mode		

21/05/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)
QP	151.5k	53.19	65.92	-12.73	19.48	Line	"Worst"	33.71	9.61	0.01	9.86
AV	151.5k	32.32	55.92	-23.60	19.48	Line	-	12.84	9.61	0.01	9.86
QP	184.859k	50.59	64.26	-13.67	19.48	Line	-	31.11	9.61	0.01	9.86
AV	184.859k	29.40	54.26	-24.86	19.48	Line	-	9.92	9.61	0.01	9.86
QP	225.563k	47.49	62.62	-15.13	19.48	Line	-	28.01	9.61	0.01	9.86
AV	225.563k	26.34	52.62	-26.28	19.48	Line	-	6.86	9.61	0.01	9.86
QP	267.135k	44.28	61.20	-16.92	19.48	Line	-	24.80	9.61	0.01	9.86
AV	267.135k	24.08	51.20	-27.12	19.48	Line	-	4.60	9.61	0.01	9.86
QP	325.956k	39.71	59.56	-19.85	19.48	Line	-	20.23	9.61	0.01	9.86
AV	325.956k	20.82	49.56	-28.74	19.48	Line	-	1.34	9.61	0.01	9.86
QP	490.156k	35.69	56.17	-20.48	19.48	Line	-	16.21	9.61	0.01	9.86
AV	490.156k	19.88	46.17	-26.29	19.48	Line	-	0.40	9.61	0.01	9.86



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)	935k	893.303k	893KF1D	930k	888.306k
BT-EDR(2Mbps)	1.333M	1.286M	1M29G1D	1.324M	1.249M
BT-EDR(3Mbps)	1.319M	1.286M	1M29G1D	1.301M	1.248M

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

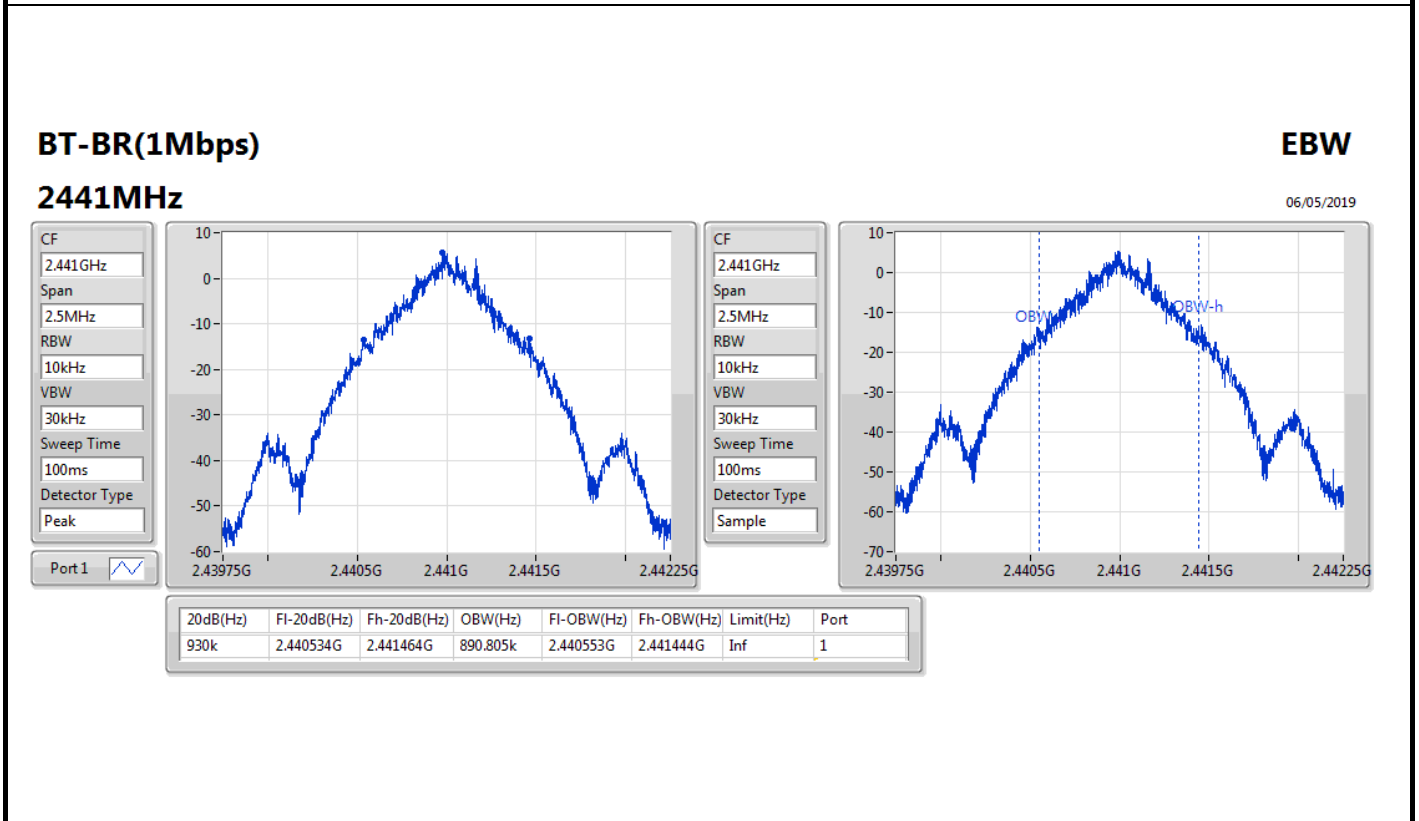
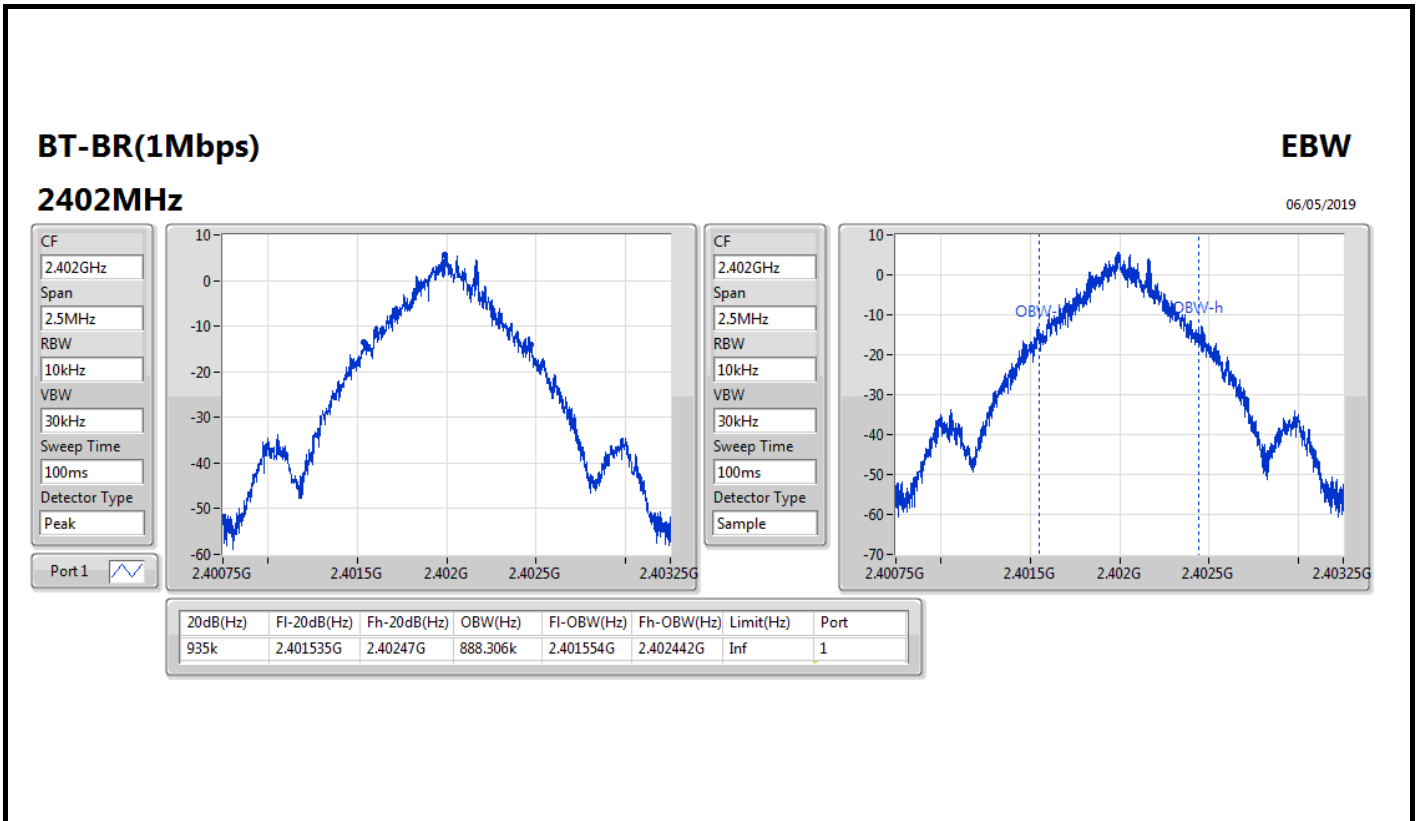
Min-N dB = Minimum 20dB down bandwidth; Min-OBW = Minimum 99% occupied bandwidth;

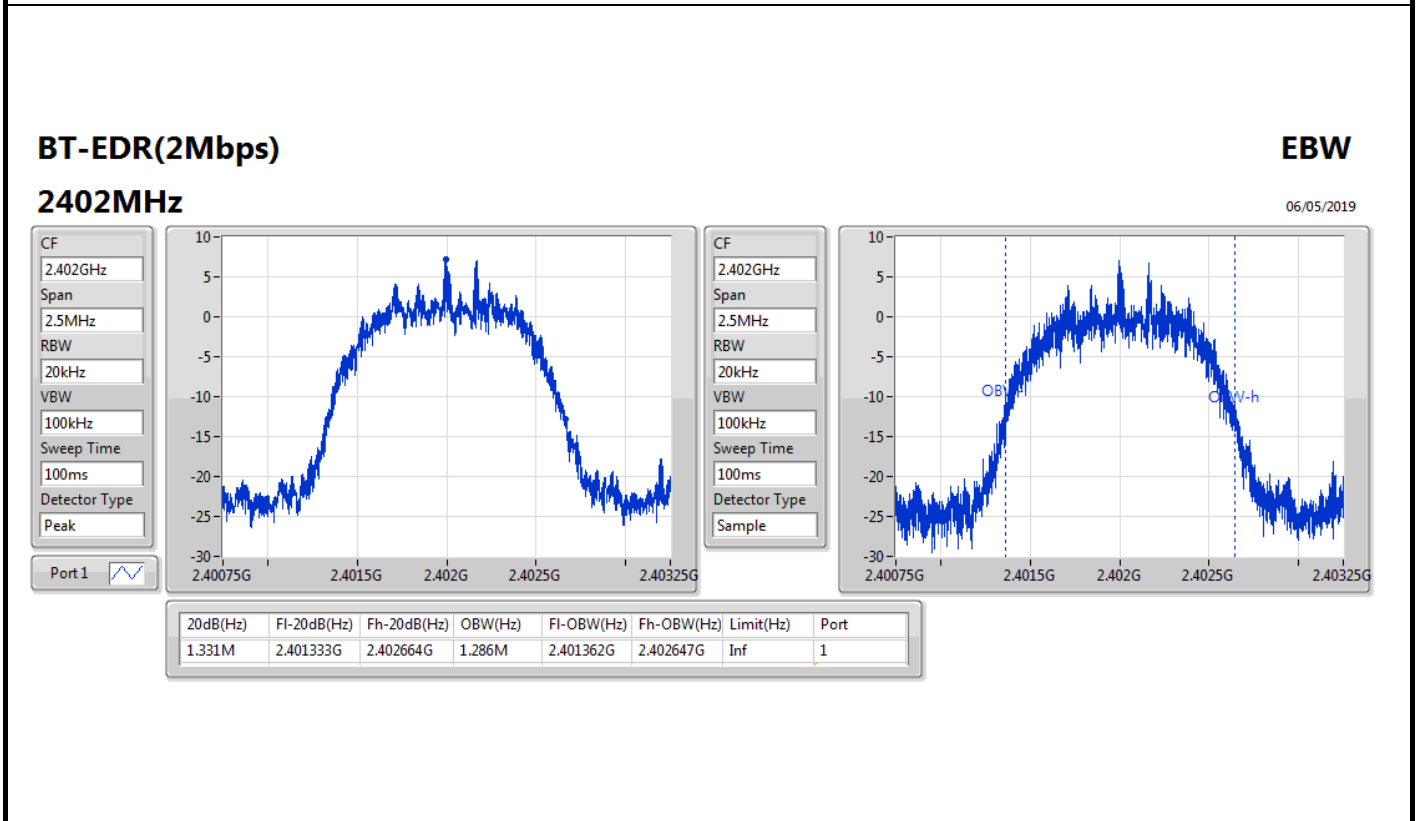
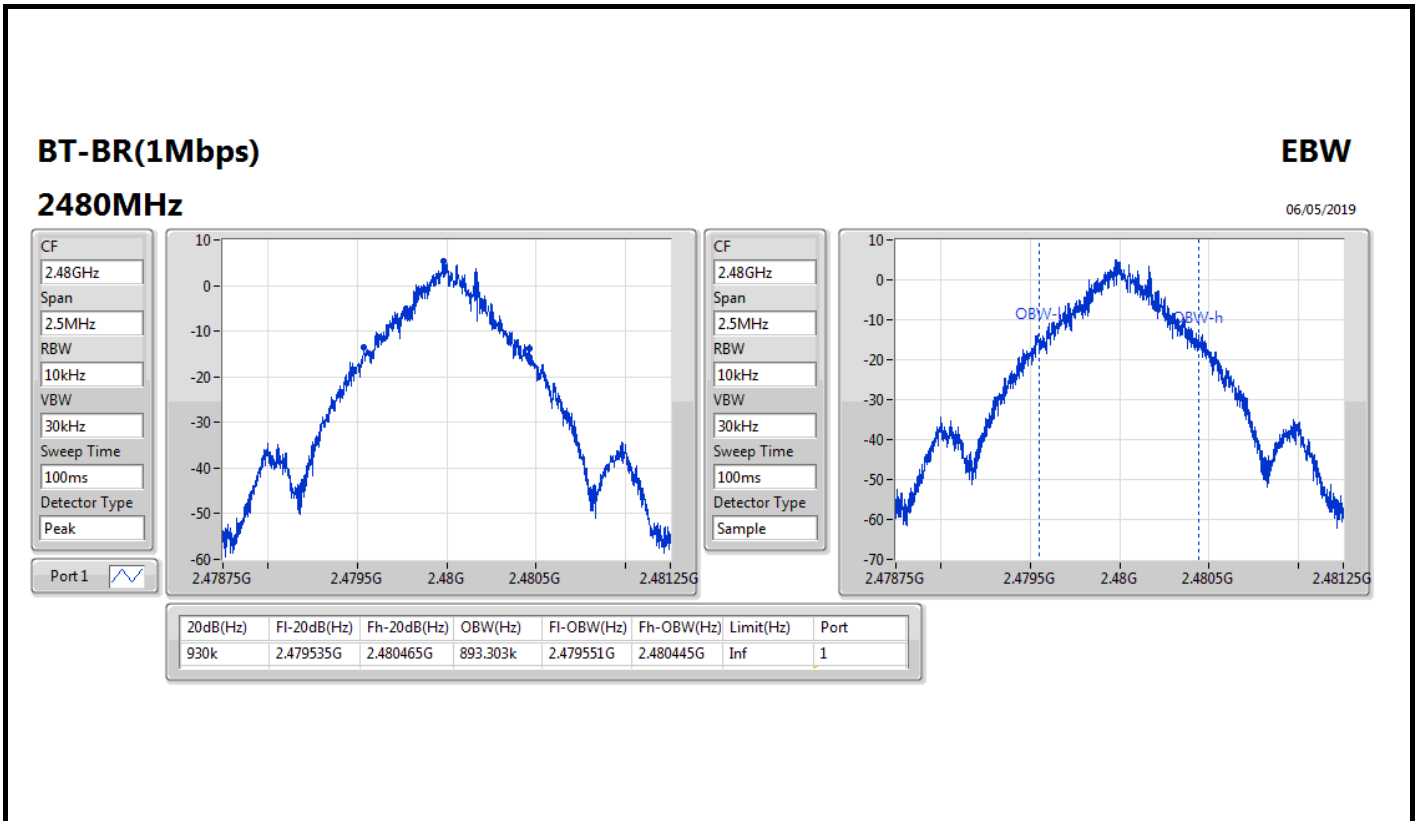


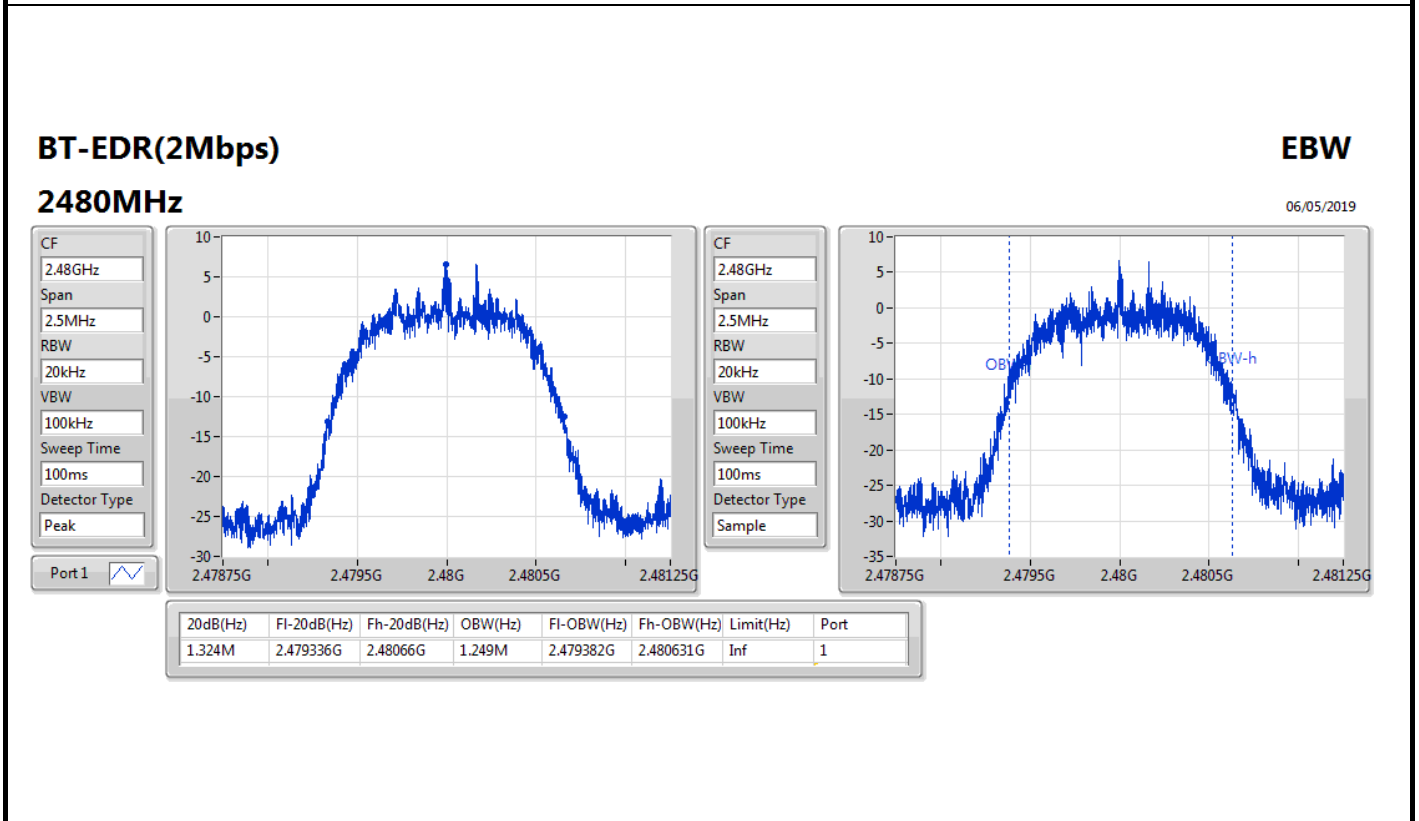
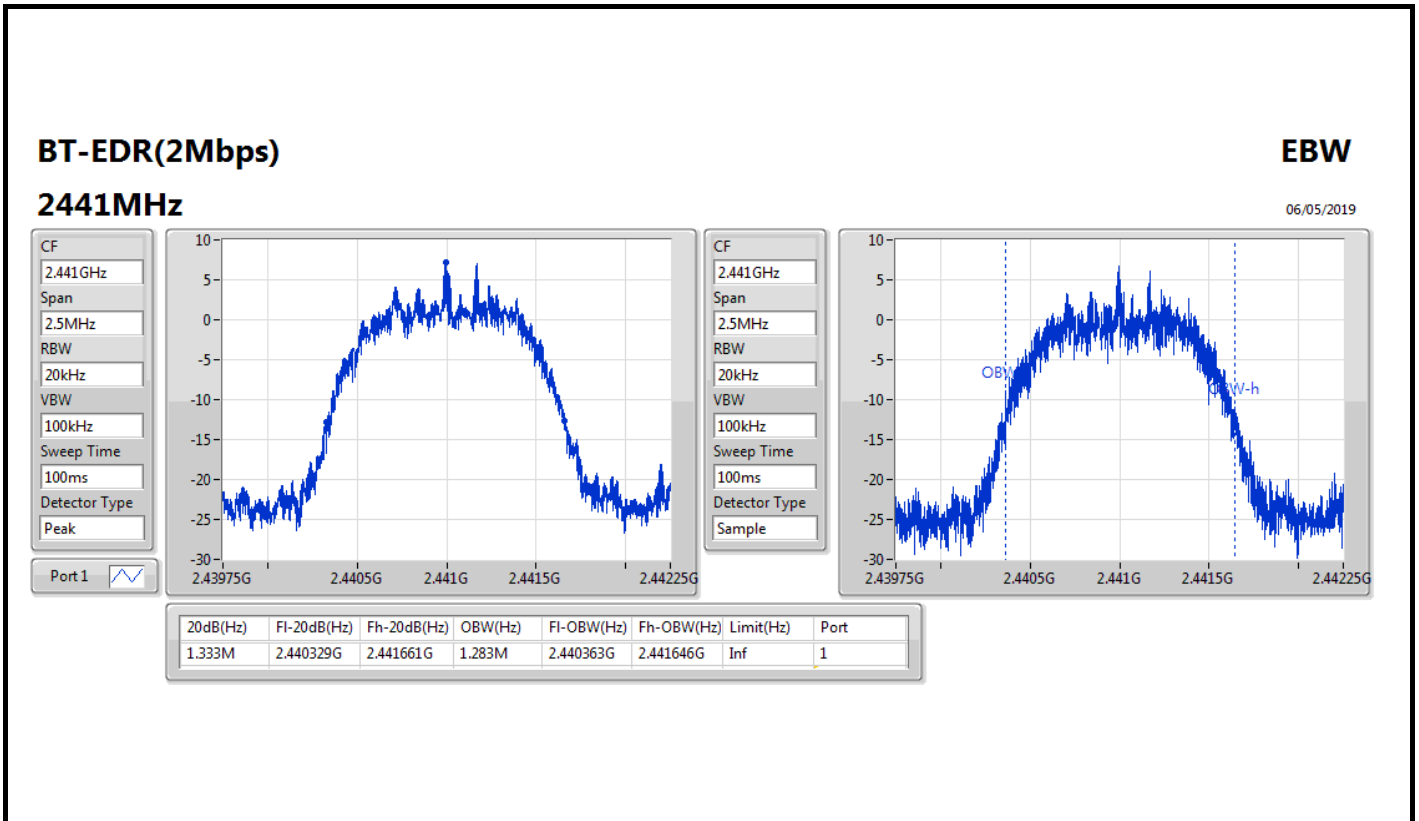
Result

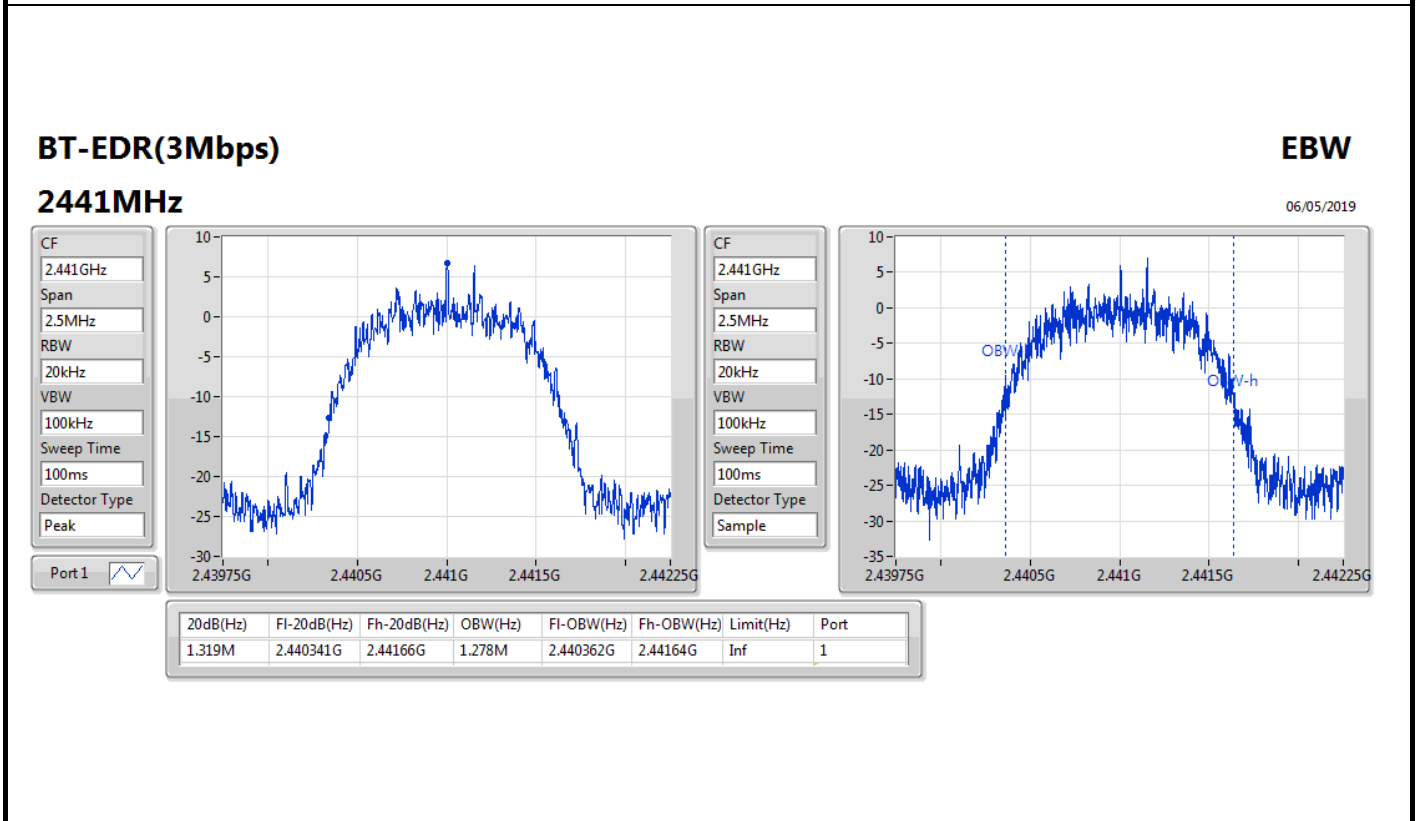
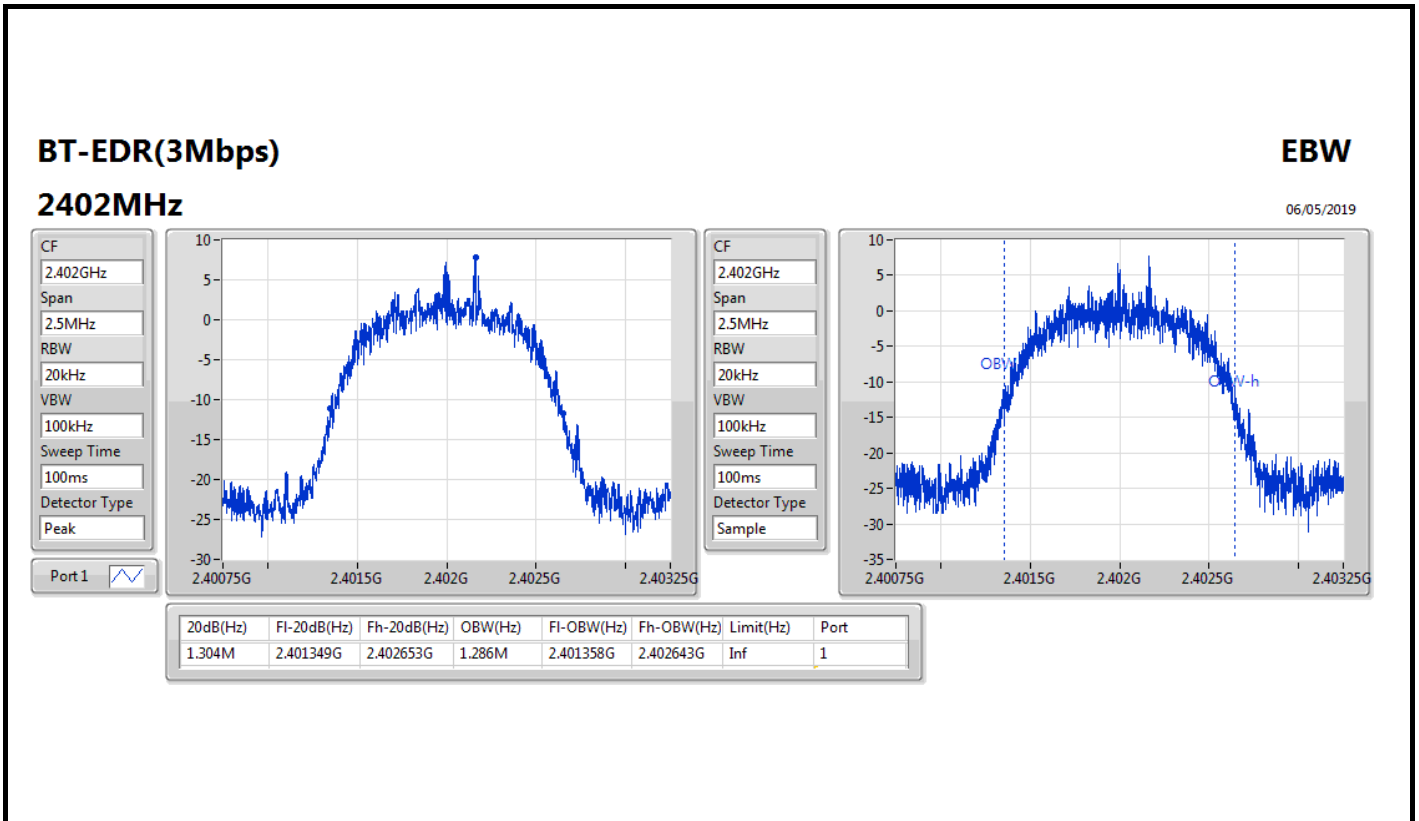
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	Inf	935k	888.306k
2441MHz	Pass	Inf	930k	890.805k
2480MHz	Pass	Inf	930k	893.303k
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.331M	1.286M
2441MHz	Pass	Inf	1.333M	1.283M
2480MHz	Pass	Inf	1.324M	1.249M
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.304M	1.286M
2441MHz	Pass	Inf	1.319M	1.278M
2480MHz	Pass	Inf	1.301M	1.248M

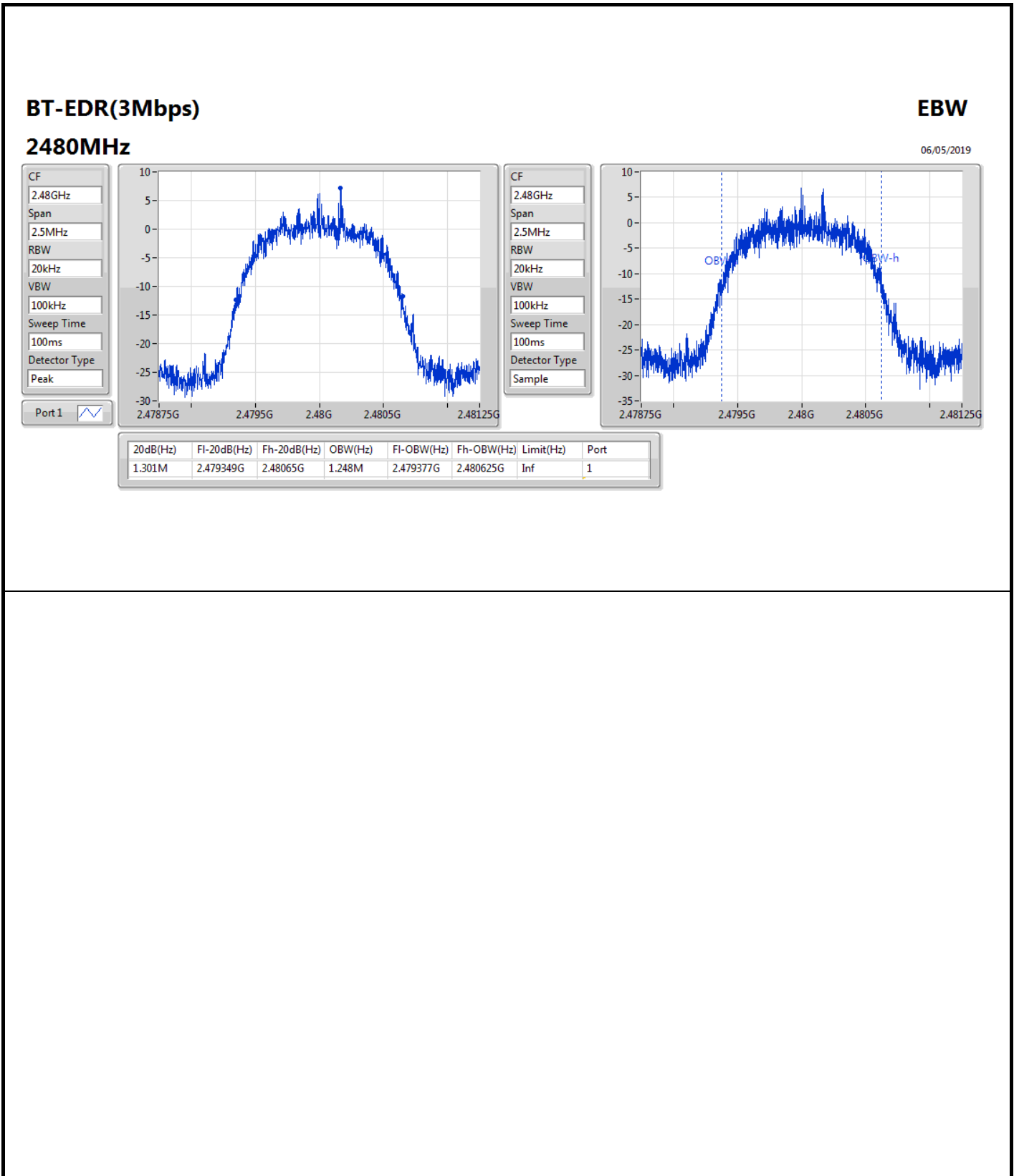
Port X-N dB = Port X 20dB down bandwidth; Port X-OBW = Port X 99% occupied bandwidth;













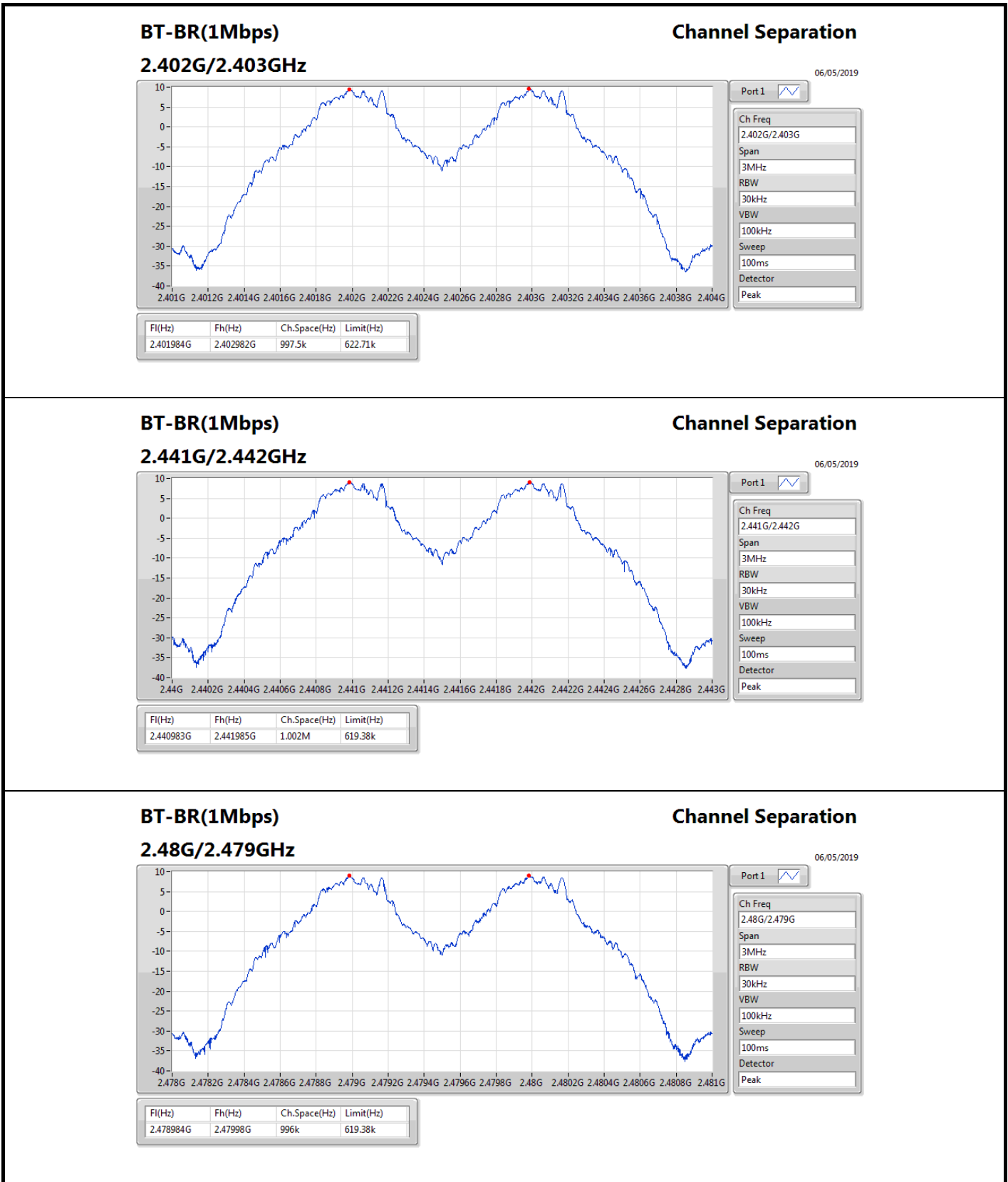
Summary

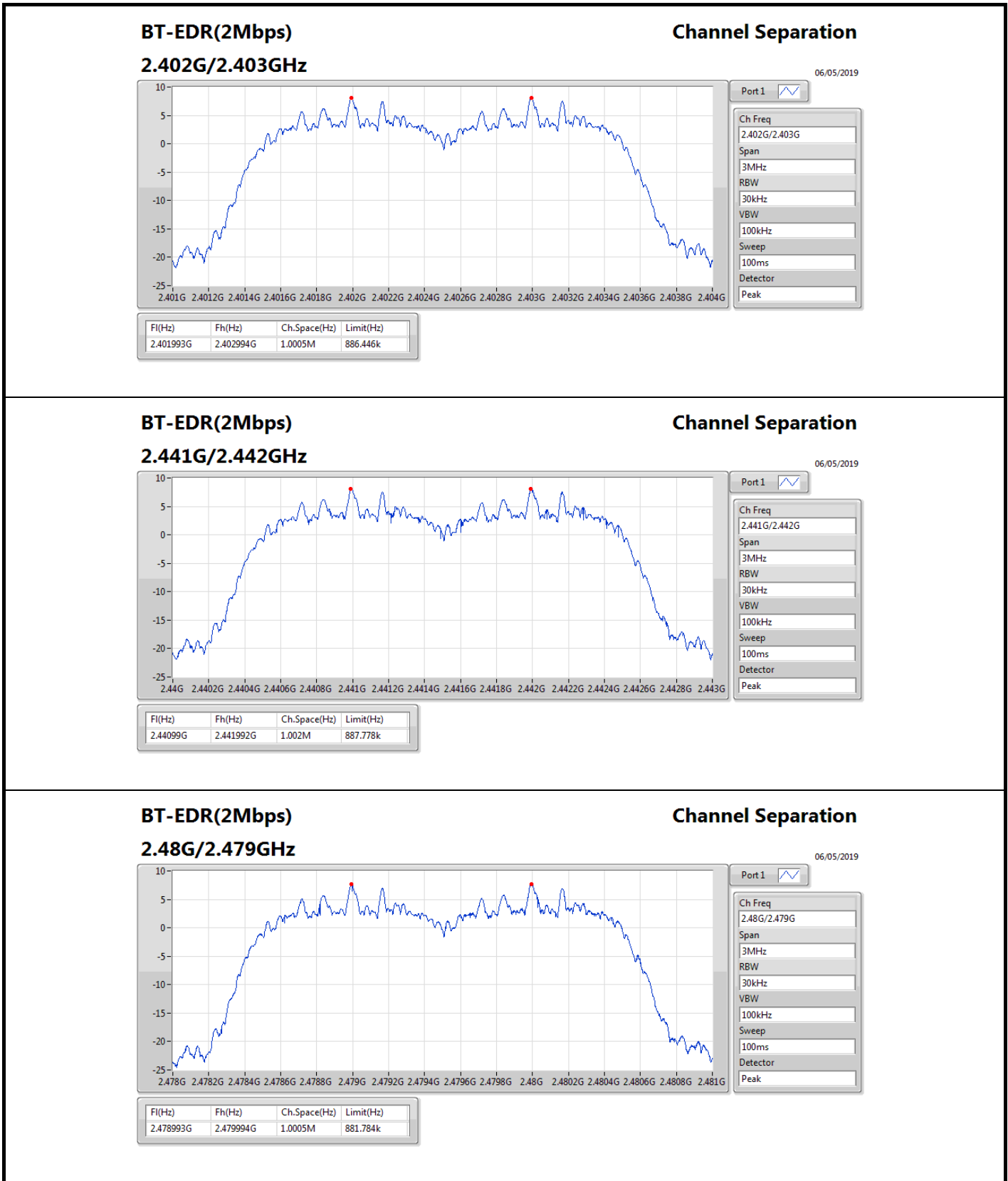
Mode	Max-Space (Hz)	Min-Space (Hz)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	1.002M	996k
BT-EDR(2Mbps)	1.002M	1.0005M
BT-EDR(3Mbps)	1.002M	999k

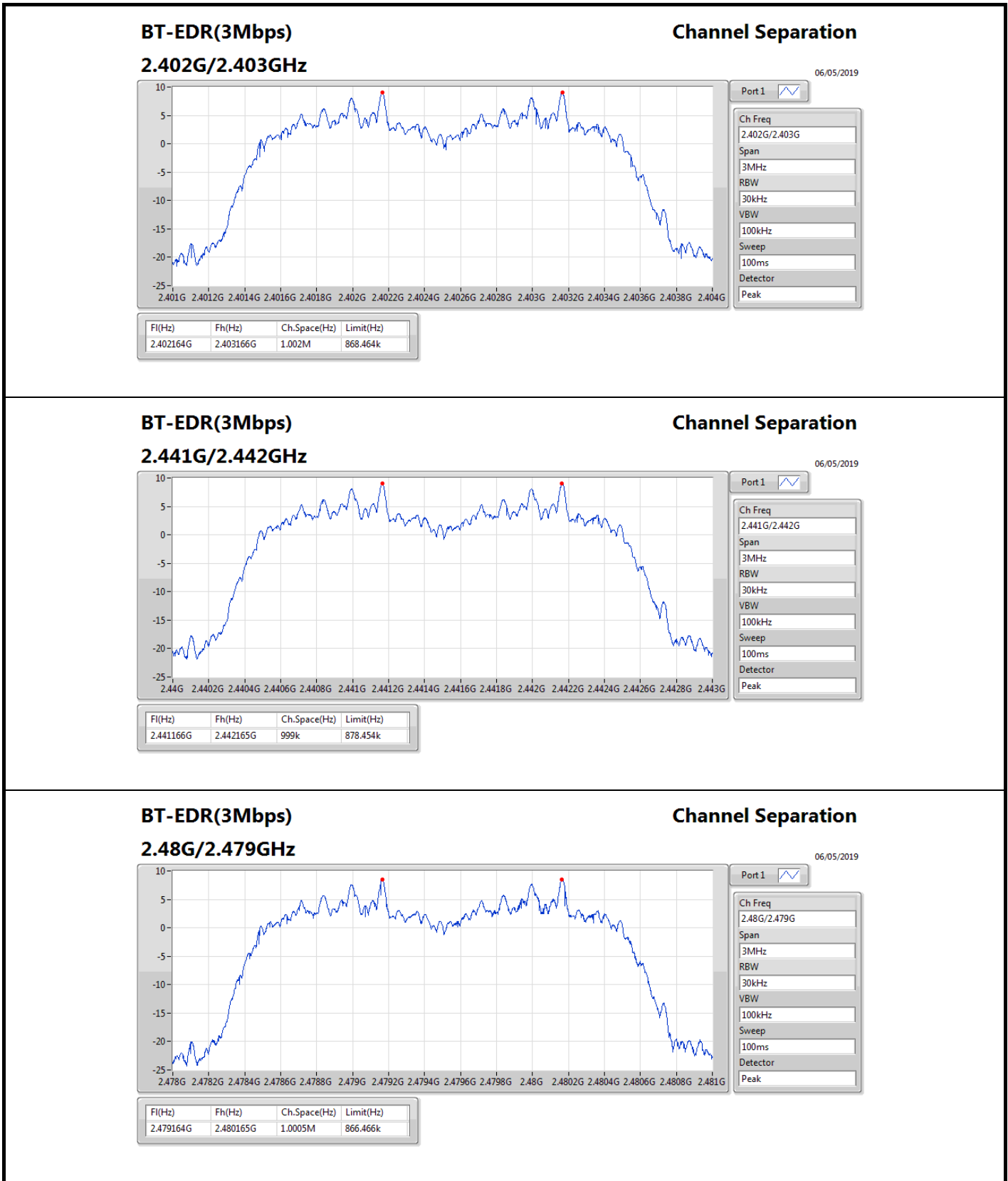


Result

Mode	Result	Fl (Hz)	Fh (Hz)	Ch.Space (Hz)	Limit (Hz)
BT-BR(1Mbps)	-	-	-	-	-
2402MHz	Pass	2.401984G	2.402982G	997.5k	622.71k
2441MHz	Pass	2.440983G	2.441985G	1.002M	619.38k
2480MHz	Pass	2.478984G	2.47998G	996k	619.38k
BT-EDR(2Mbps)	-	-	-	-	-
2402MHz	Pass	2.401993G	2.402994G	1.0005M	886.446k
2441MHz	Pass	2.440999G	2.441992G	1.002M	887.778k
2480MHz	Pass	2.478993G	2.479994G	1.0005M	881.784k
BT-EDR(3Mbps)	-	-	-	-	-
2402MHz	Pass	2.402164G	2.403166G	1.002M	868.464k
2441MHz	Pass	2.441166G	2.442165G	999k	878.454k
2480MHz	Pass	2.479164G	2.480165G	1.0005M	866.466k









Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	11.33	0.01358
BT-EDR(2Mbps)	11.65	0.01462
BT-EDR(3Mbps)	11.95	0.01567



Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	5.10	11.33	21.00
2441MHz	Pass	5.10	11.20	21.00
2480MHz	Pass	5.10	10.99	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	5.10	11.59	21.00
2441MHz	Pass	5.10	11.65	21.00
2480MHz	Pass	5.10	11.23	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	5.10	11.95	21.00
2441MHz	Pass	5.10	11.95	21.00
2480MHz	Pass	5.10	11.64	21.00

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



Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	11.26	0.01337
BT-EDR(2Mbps)	10.79	0.01199
BT-EDR(3Mbps)	10.77	0.01194



Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	5.10	11.26	21.00
2441MHz	Pass	5.10	10.98	21.00
2480MHz	Pass	5.10	10.85	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	5.10	10.79	21.00
2441MHz	Pass	5.10	10.73	21.00
2480MHz	Pass	5.10	10.17	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	5.10	10.77	21.00
2441MHz	Pass	5.10	10.71	21.00
2480MHz	Pass	5.10	10.18	21.00

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



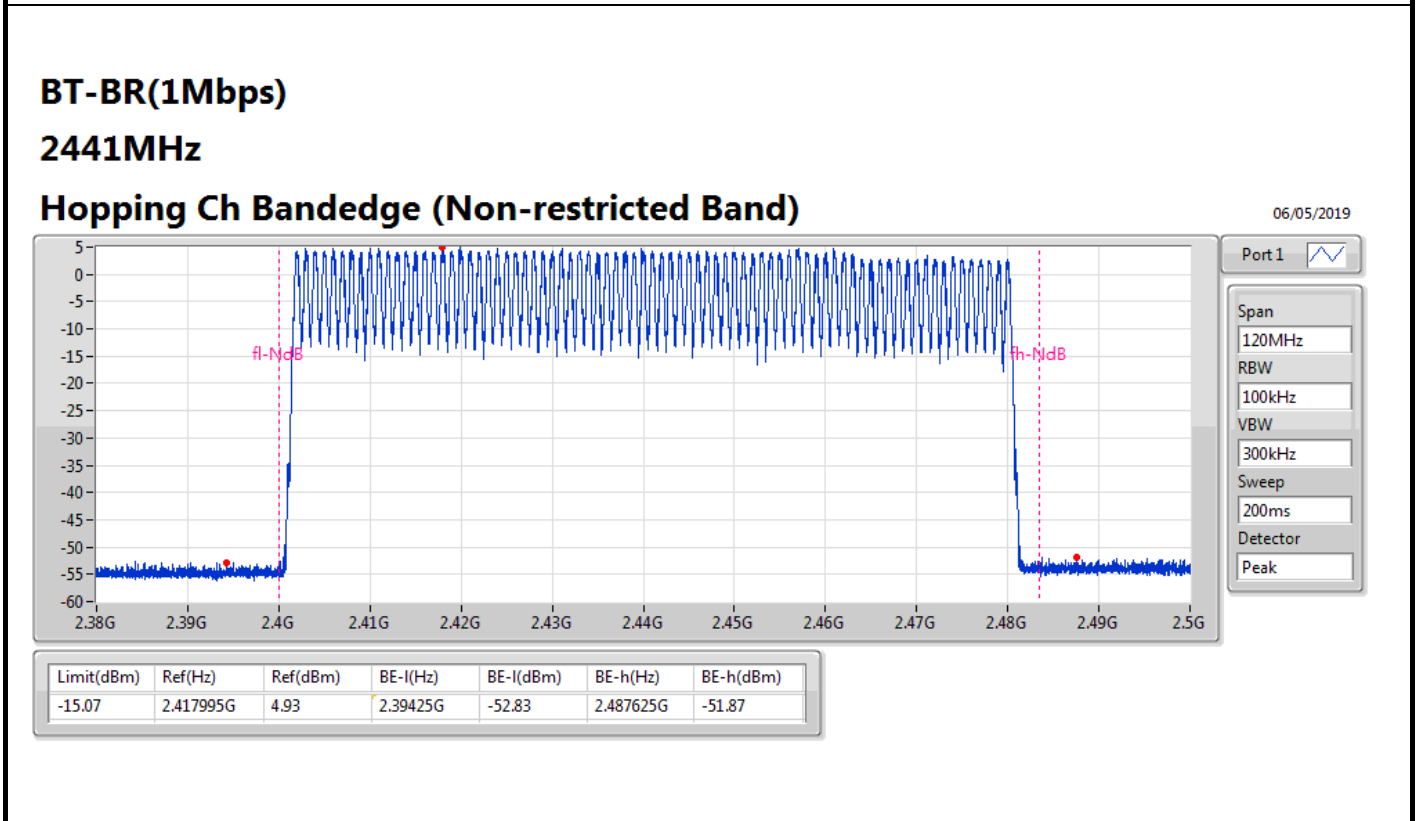
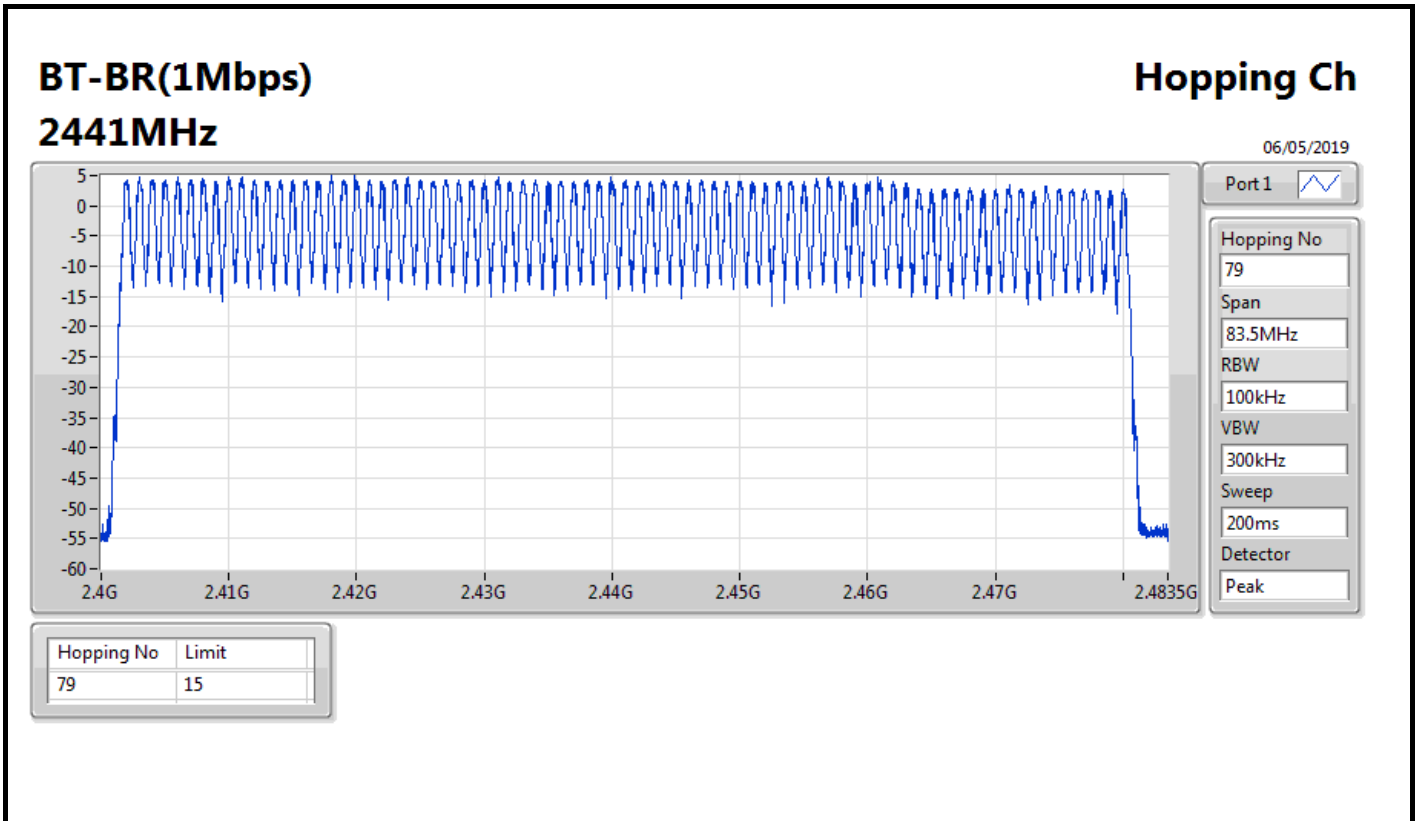
Summary

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



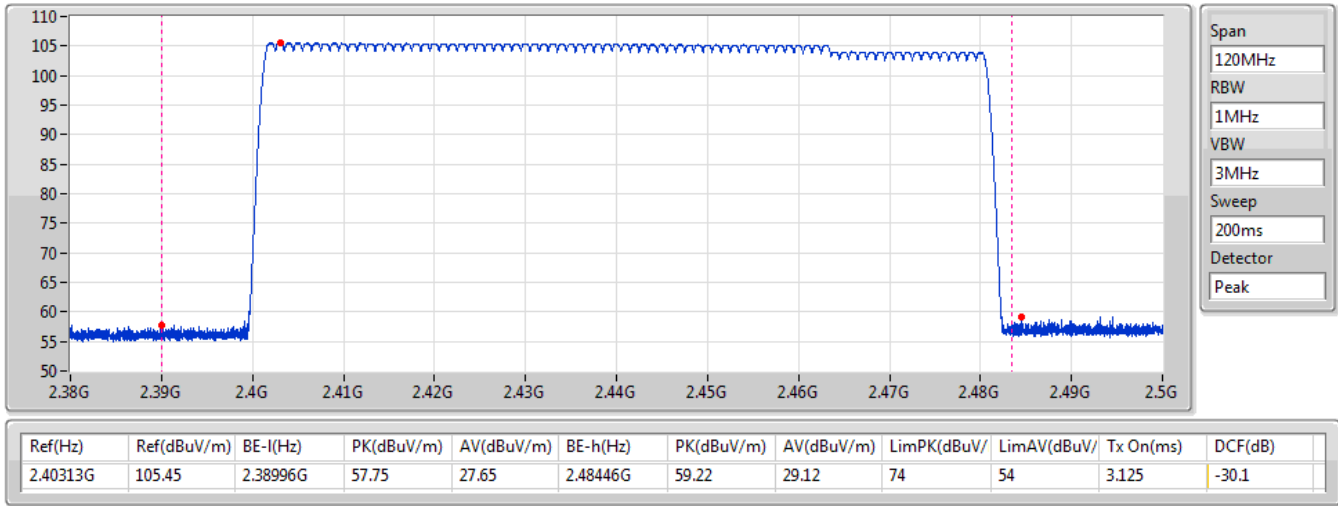
Result

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



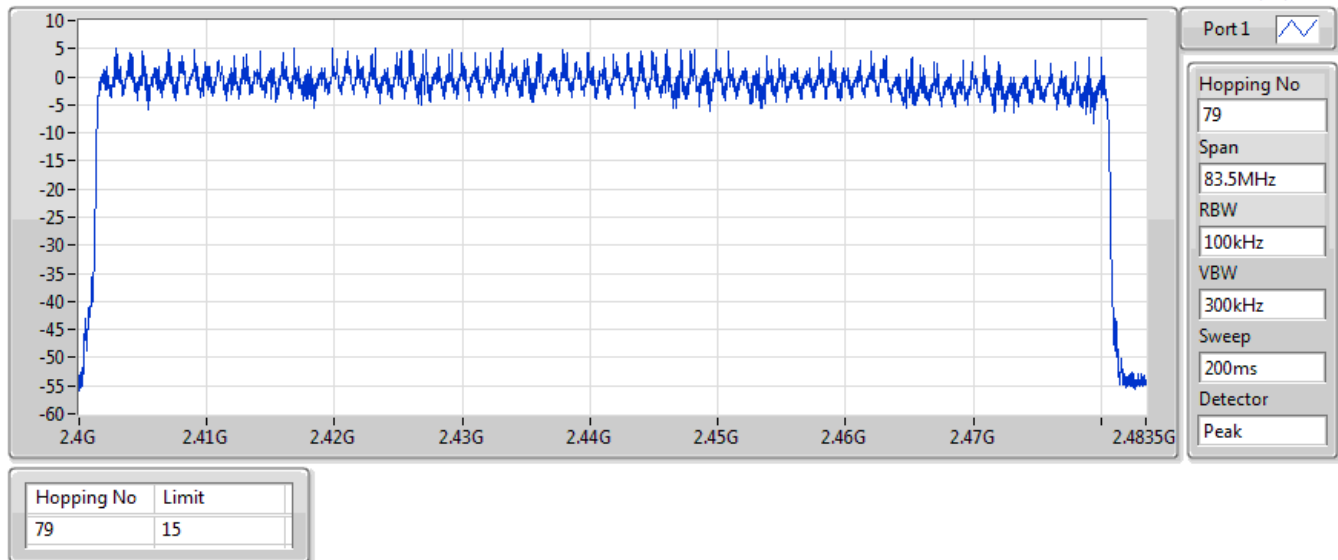
BT-BR(1Mbps)
2441MHz
Hopping Ch Bandedge (Restricted Band)

06/05/2019



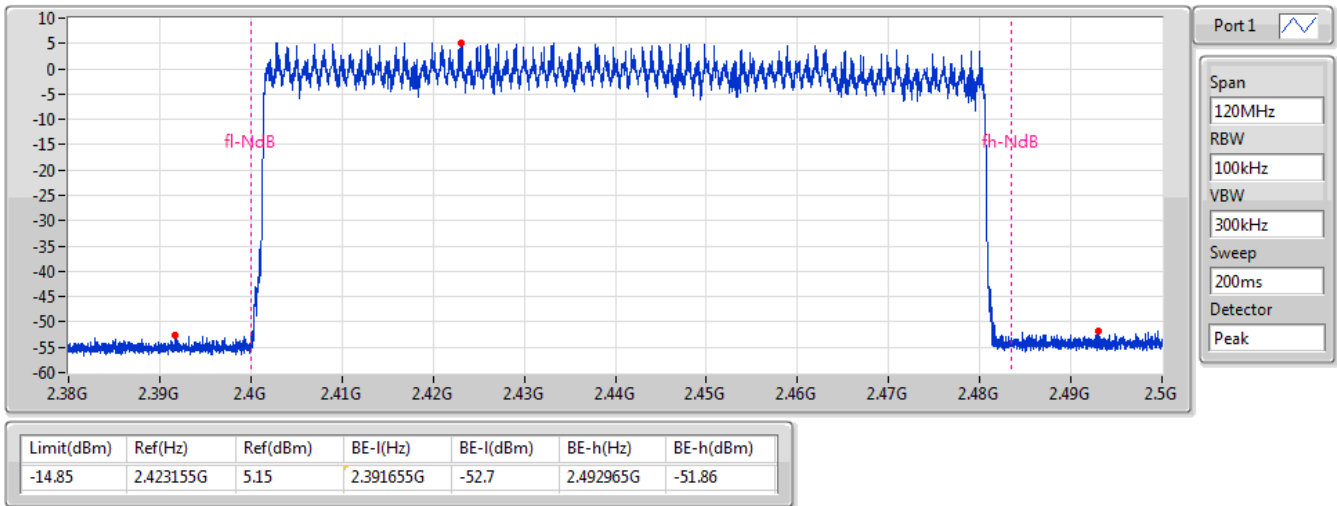
BT-EDR(2Mbps) **Hopping Ch**
2441MHz

06/05/2019



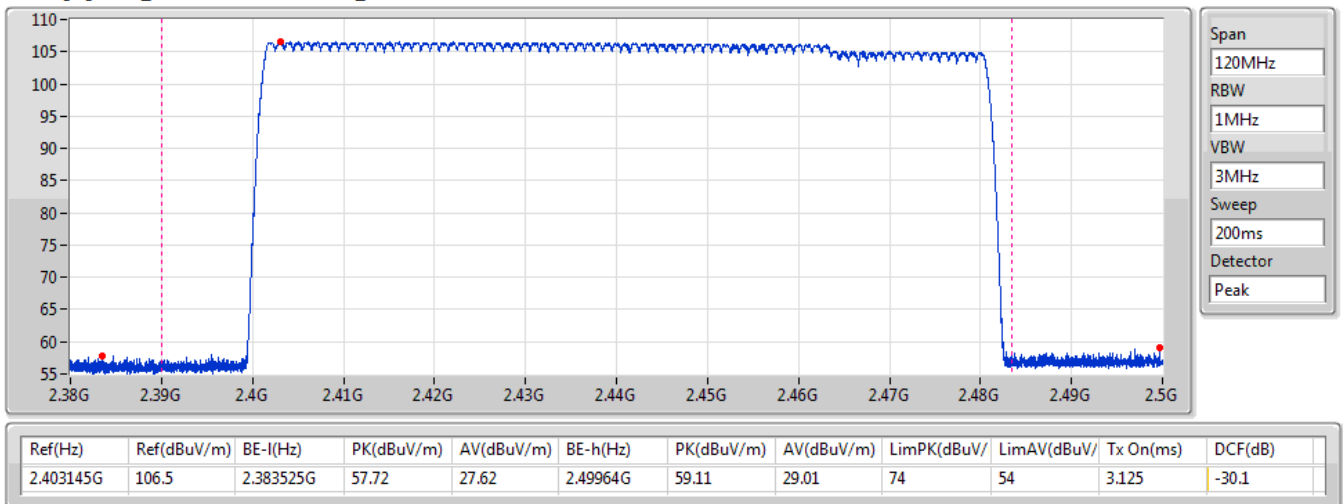
BT-EDR(2Mbps)
2441MHz
Hopping Ch Bandedge (Non-restricted Band)

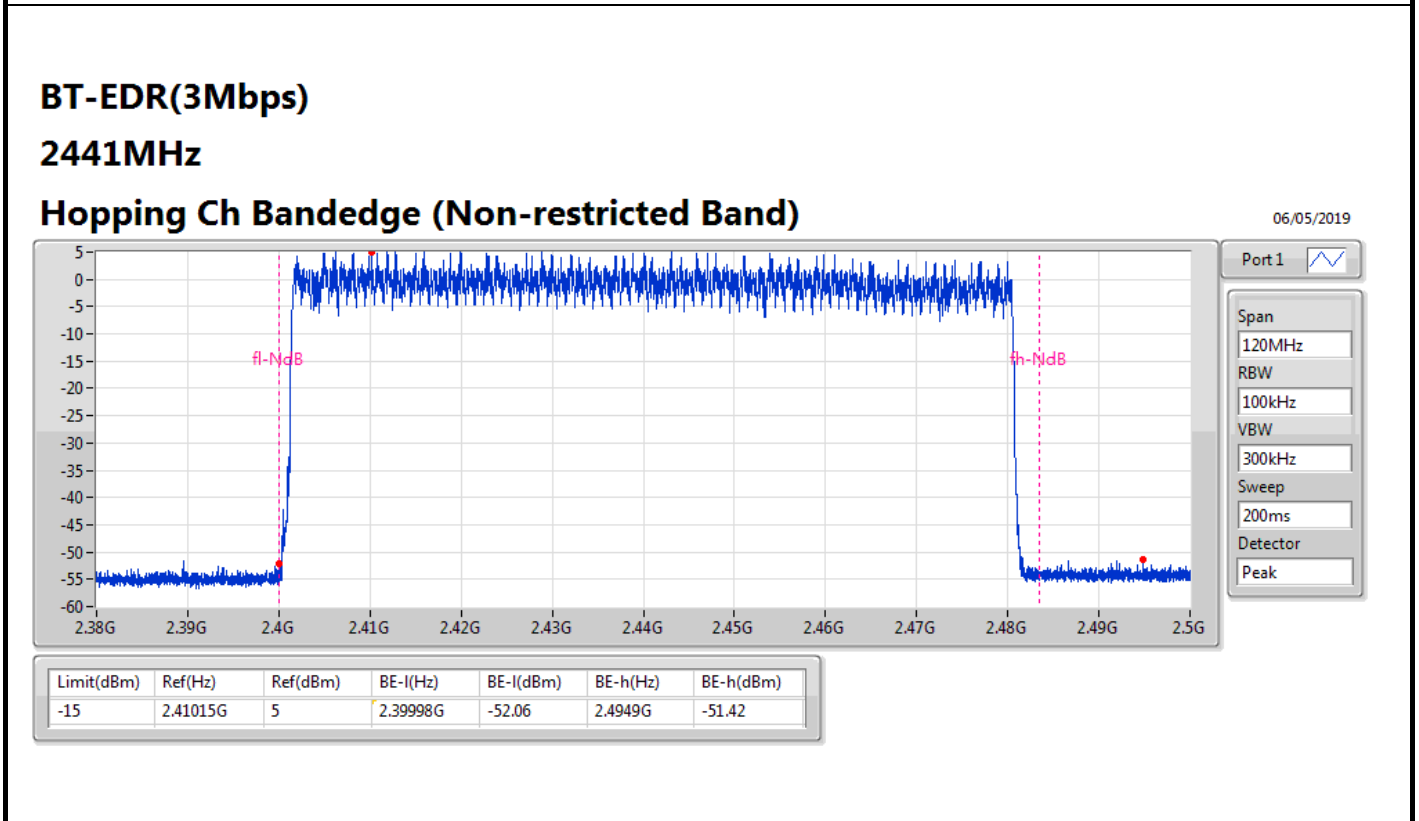
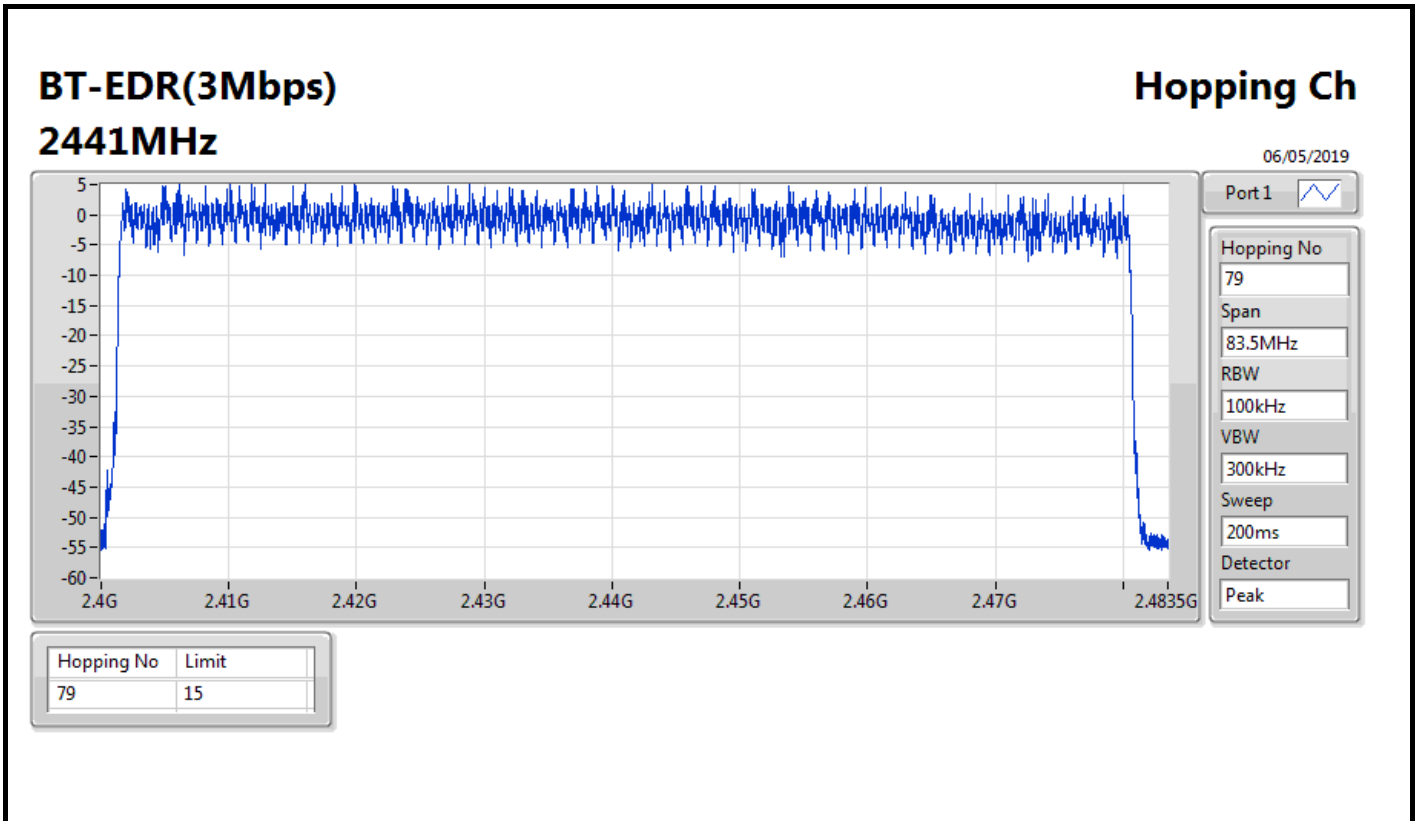
06/05/2019



BT-EDR(2Mbps)
2441MHz
Hopping Ch Bandedge (Restricted Band)

06/05/2019

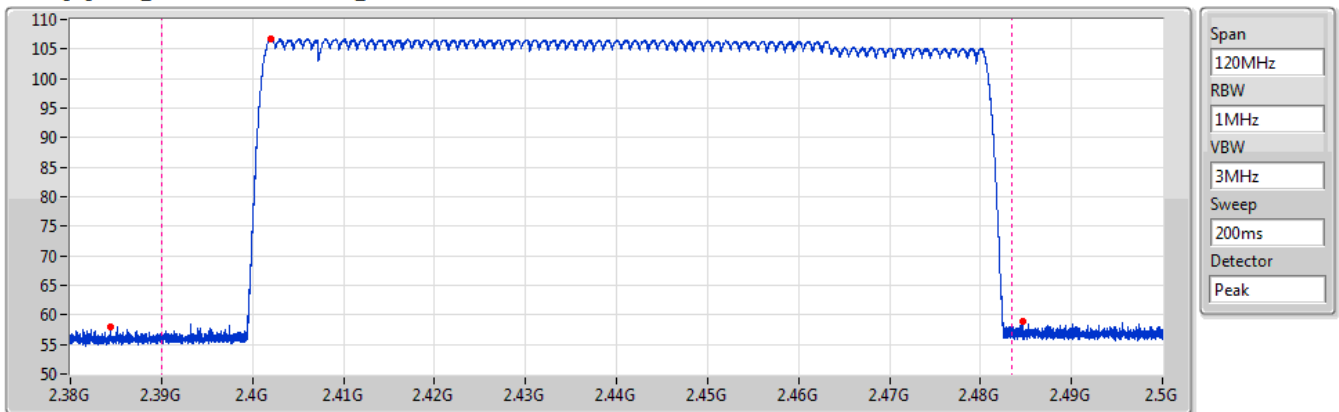






BT-EDR(3Mbps)
2441MHz
Hopping Ch Bandedge (Restricted Band)

06/05/2019



Ref(Hz)	Ref(dBuV/m)	BE-l(Hz)	PK(dBuV/m)	AV(dBuV/m)	BE-h(Hz)	PK(dBuV/m)	AV(dBuV/m)	LimPK(dBuV/	LimAV(dBuV/	Tx On(ms)	DCF(dB)
2.402035G	106.67	2.38438G	58.04	27.94	2.484655G	58.91	28.81	74	54	3.125	-30.1



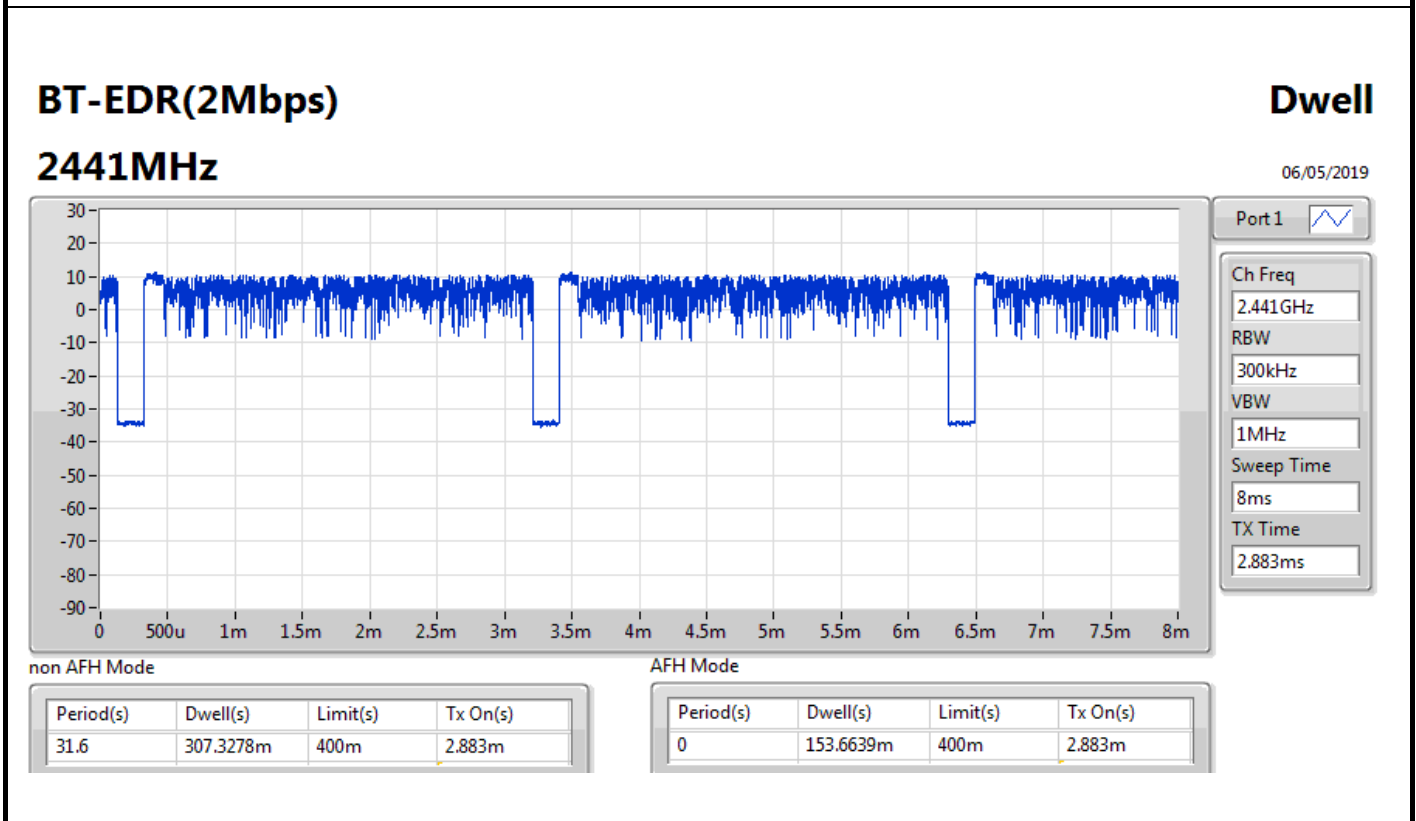
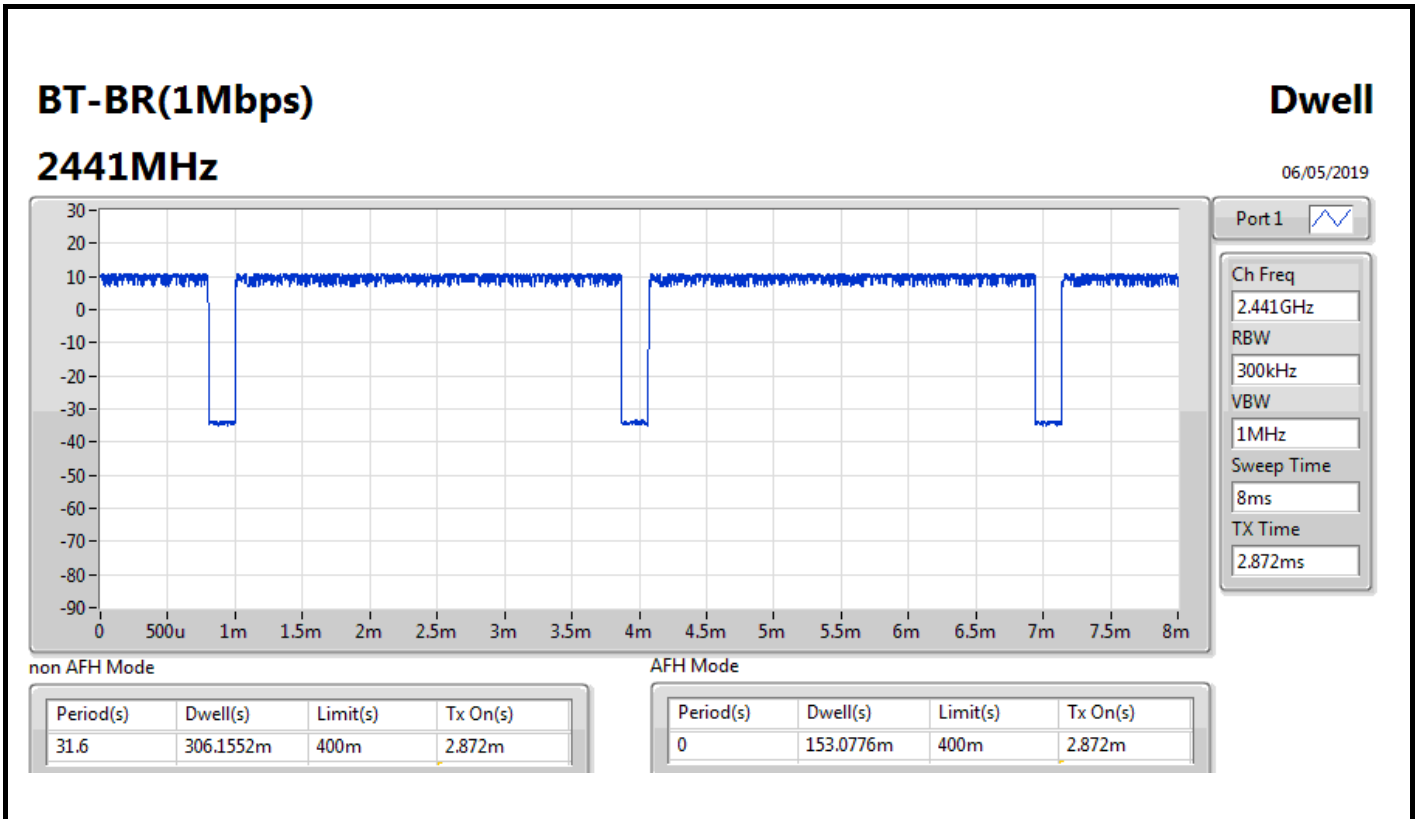
Summary

Mode	Max-Dwell (s)
2.4-2.4835GHz	-
BT-BR(1Mbps)	306.1552m
BT-EDR(2Mbps)	307.3278m
BT-EDR(3Mbps)	192.5196m



Result

Mode	Result	Period (s)	Dwell (s)	Limit (s)	Tx On (s)
BT-BR(1Mbps)	-	-	-	-	-
2441MHz	Pass	31.6	306.1552m	400m	2.872m
BT-EDR(2Mbps)	-	-	-	-	-
2441MHz	Pass	31.6	307.3278m	400m	2.883m
BT-EDR(3Mbps)	-	-	-	-	-
2441MHz	Pass	31.6	192.5196m	400m	1.806m



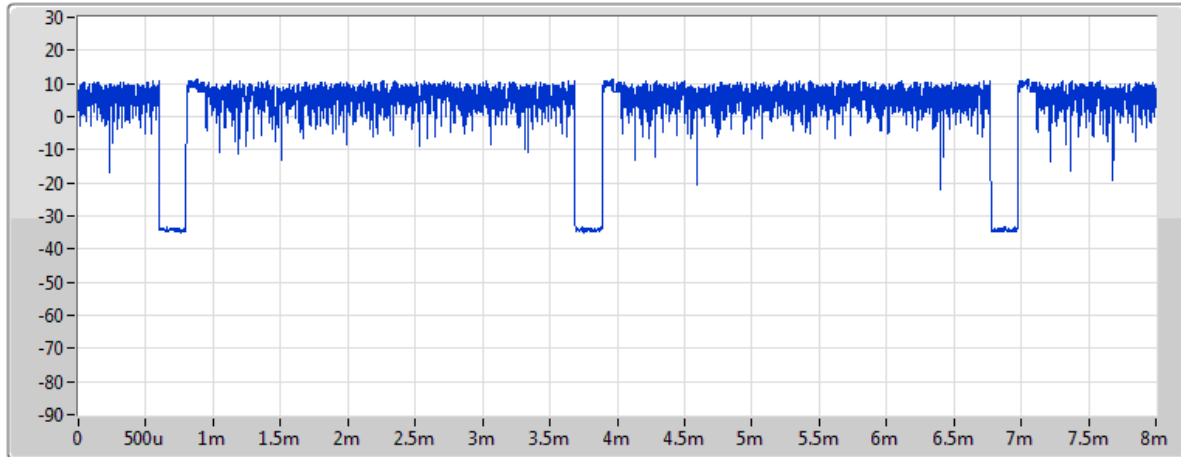


BT-EDR(3Mbps)

Dwell

2441MHz

06/05/2019



Port 1

Ch Freq
2.441GHz

RBW
300kHz

VBW
1MHz

Sweep Time
8ms

TX Time
1.806ms

non AFH Mode

AFH Mode

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	192.5196m	400m	1.806m

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
0	96.2598m	400m	1.806m



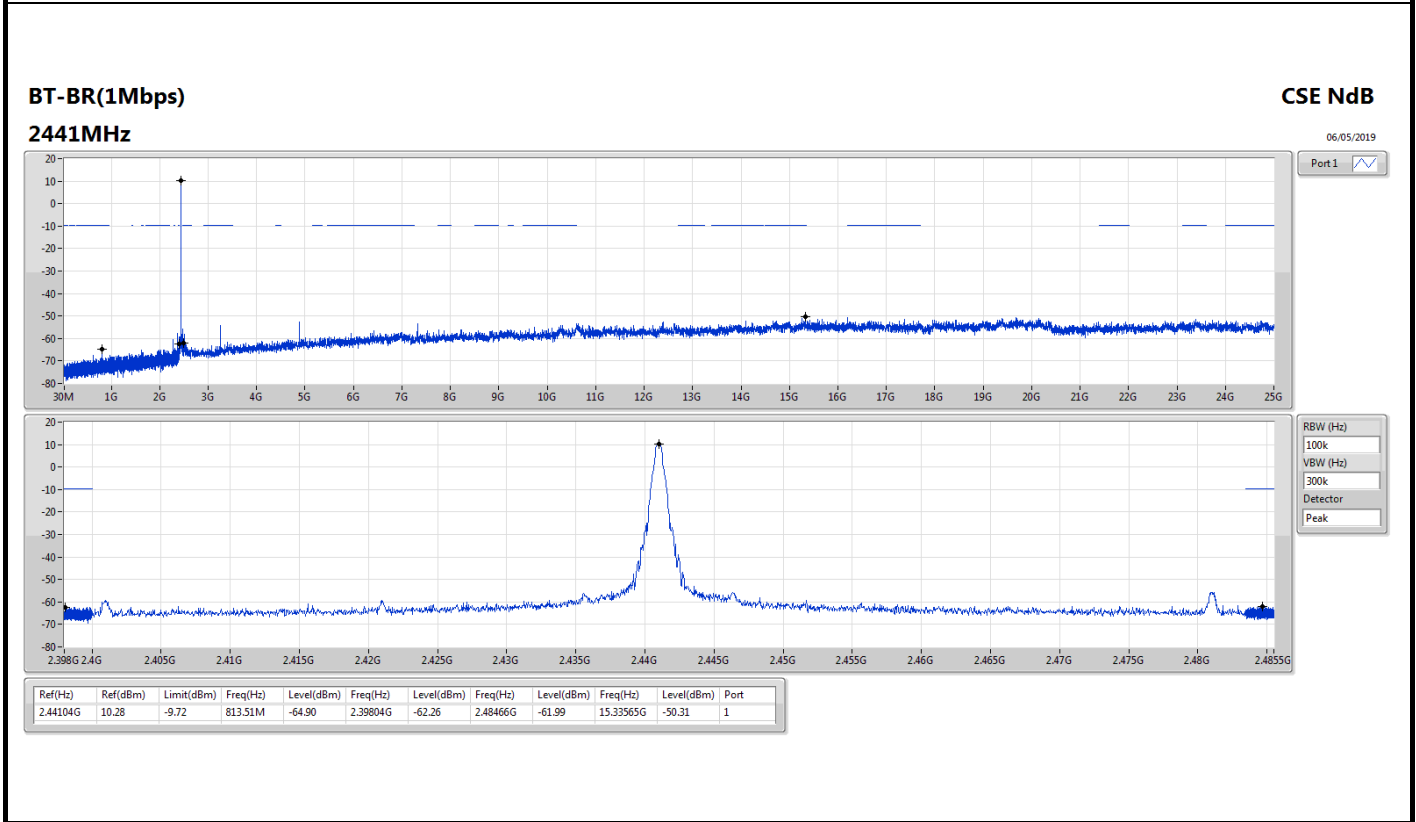
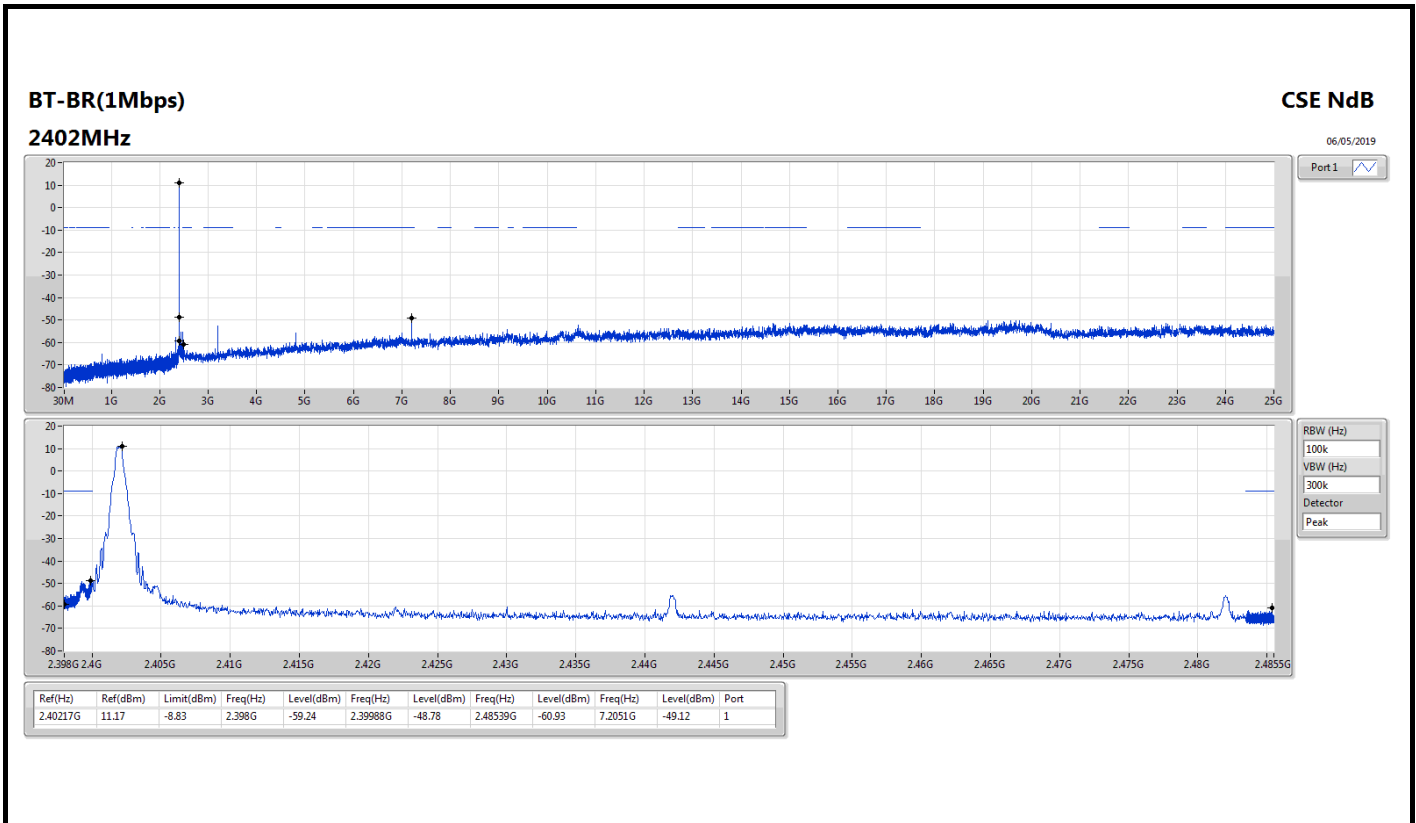
Summary

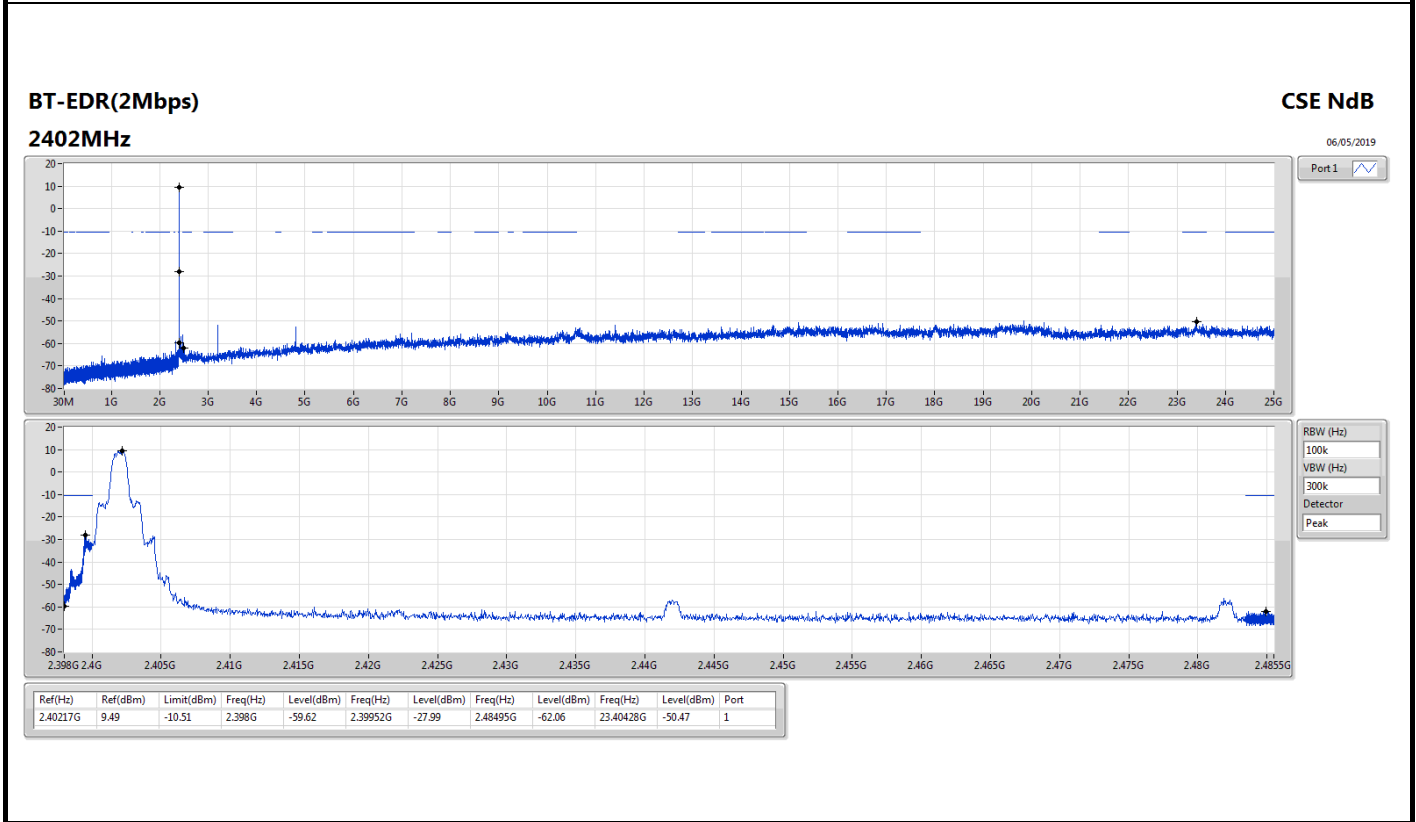
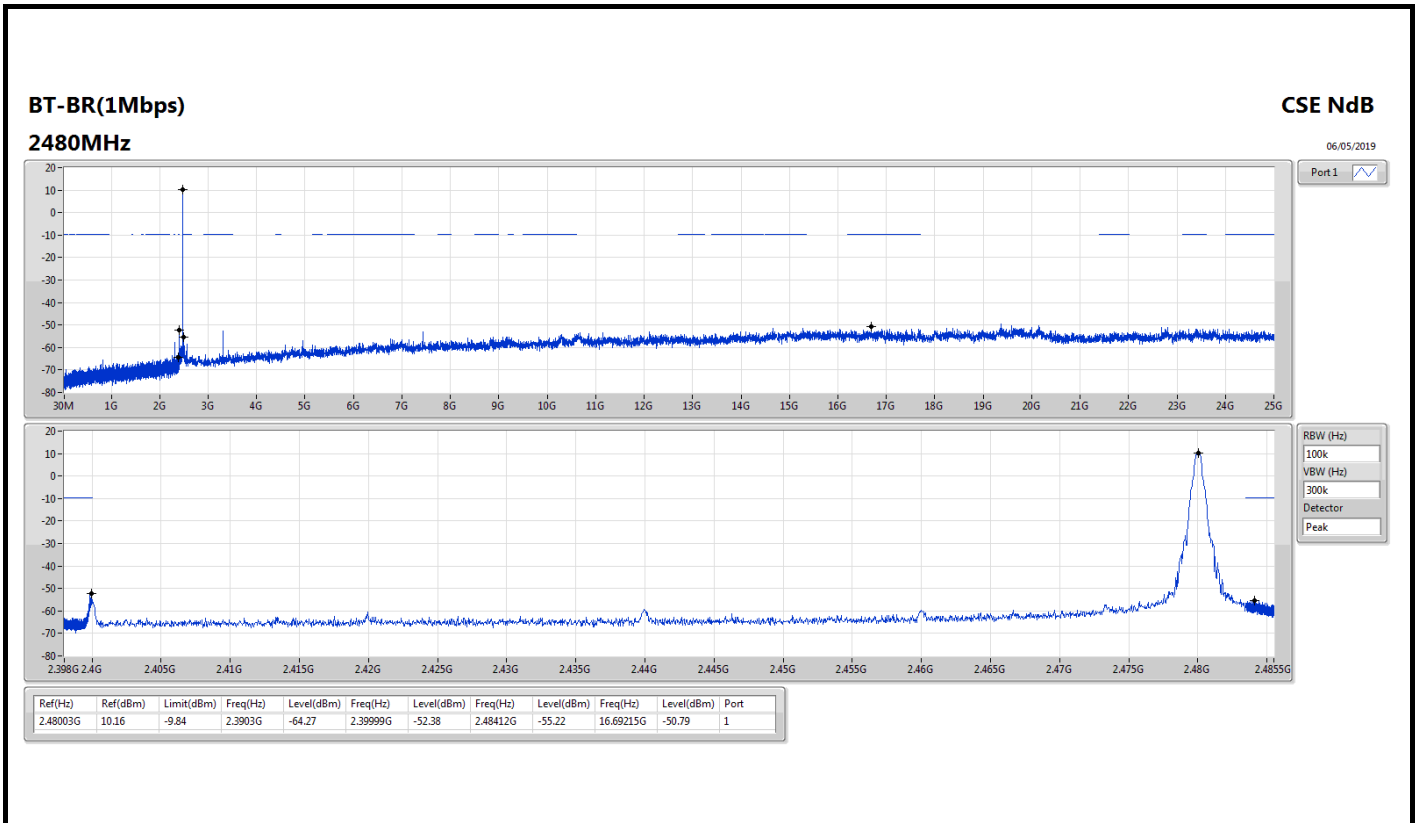
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	2.40217G	11.17	-8.83	2.398G	-59.24	2.39988G	-48.78	2.48539G	-60.93	7.2051G	-49.12	1
BT-EDR(2Mbps)	Pass	2.40217G	9.49	-10.51	2.398G	-59.62	2.39952G	-27.99	2.48495G	-62.06	23.40428G	-50.47	1
BT-EDR(3Mbps)	Pass	2.40213G	11.18	-8.82	2.3977G	-56.09	2.39956G	-26.58	2.48377G	-62.68	21.70725G	-50.94	1

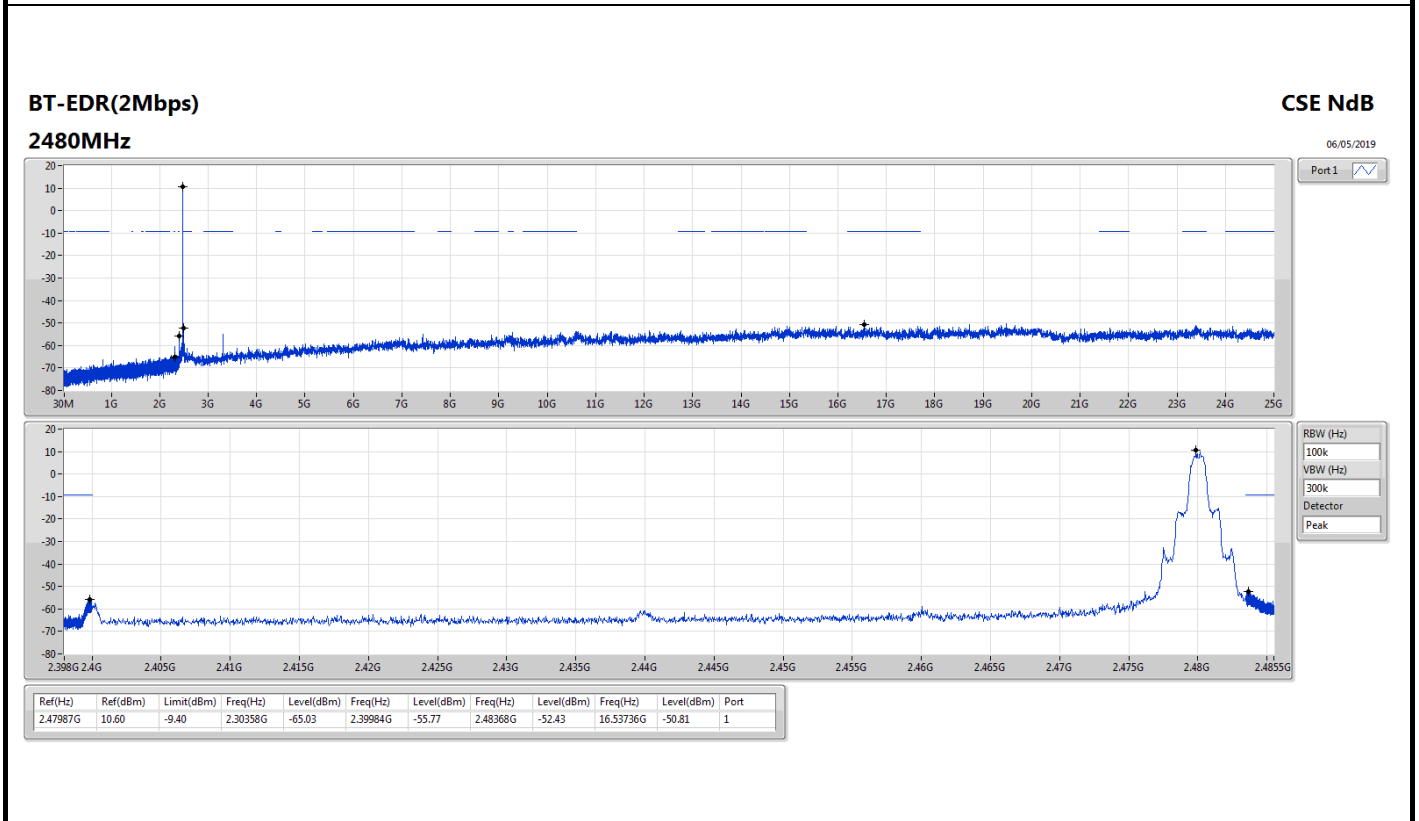
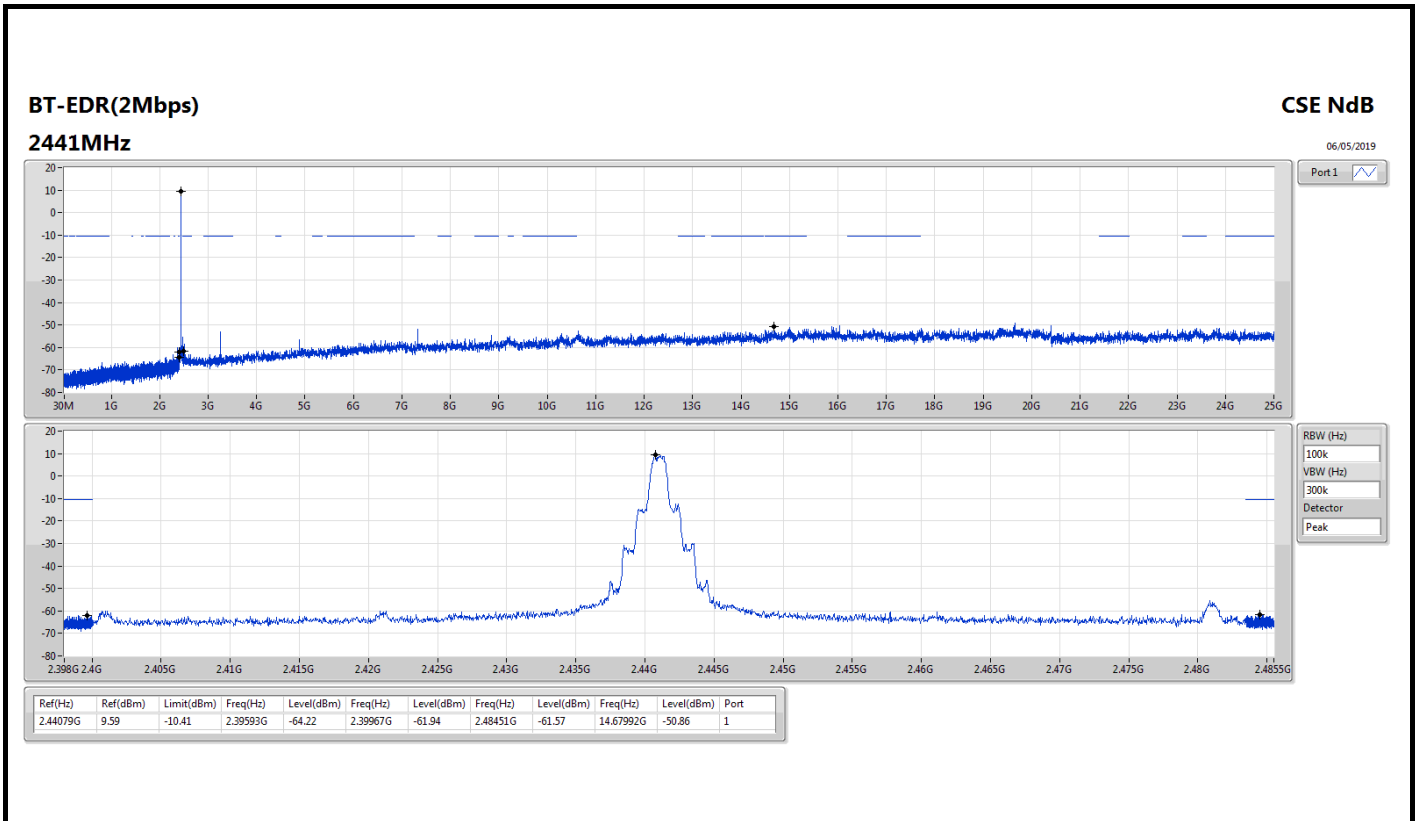


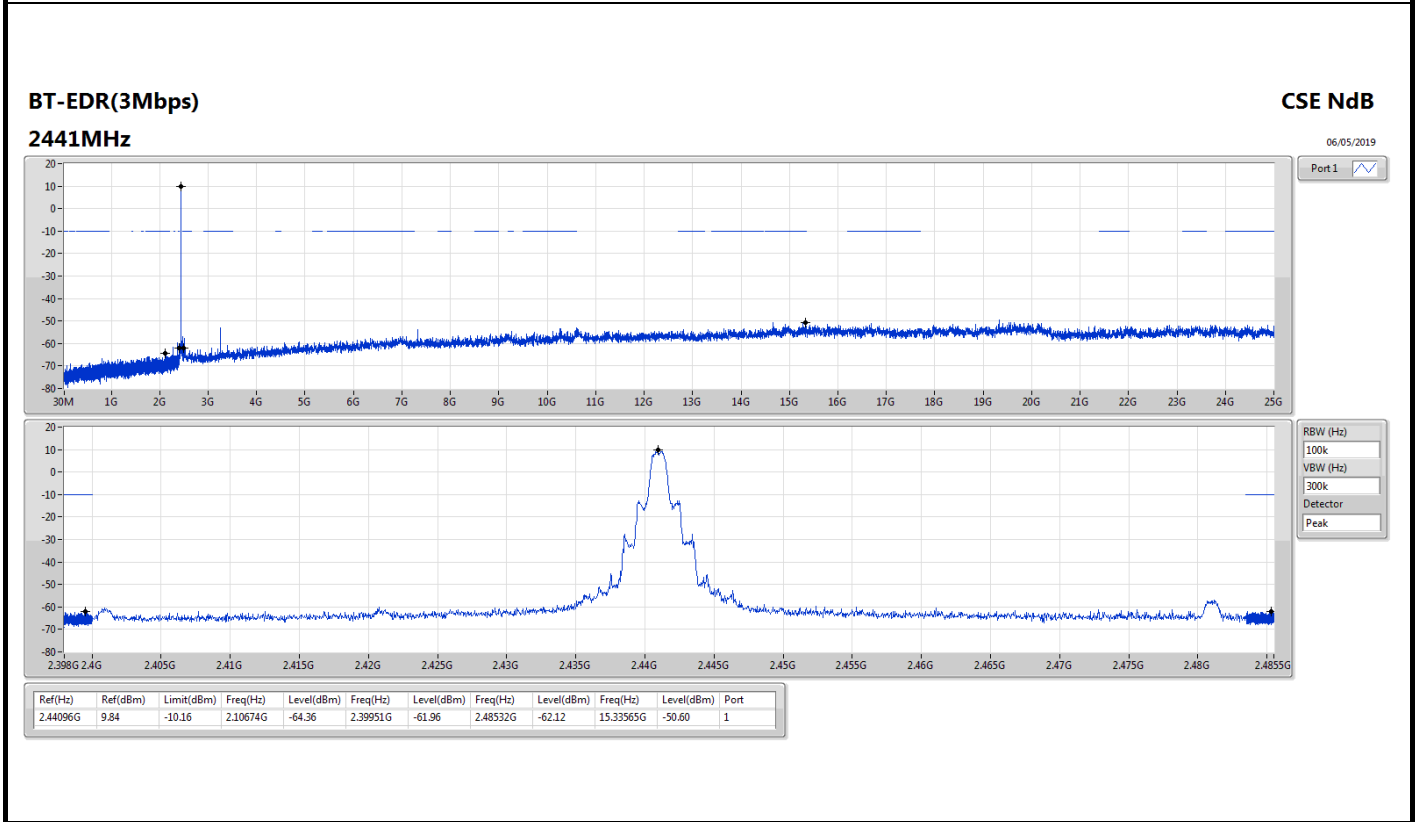
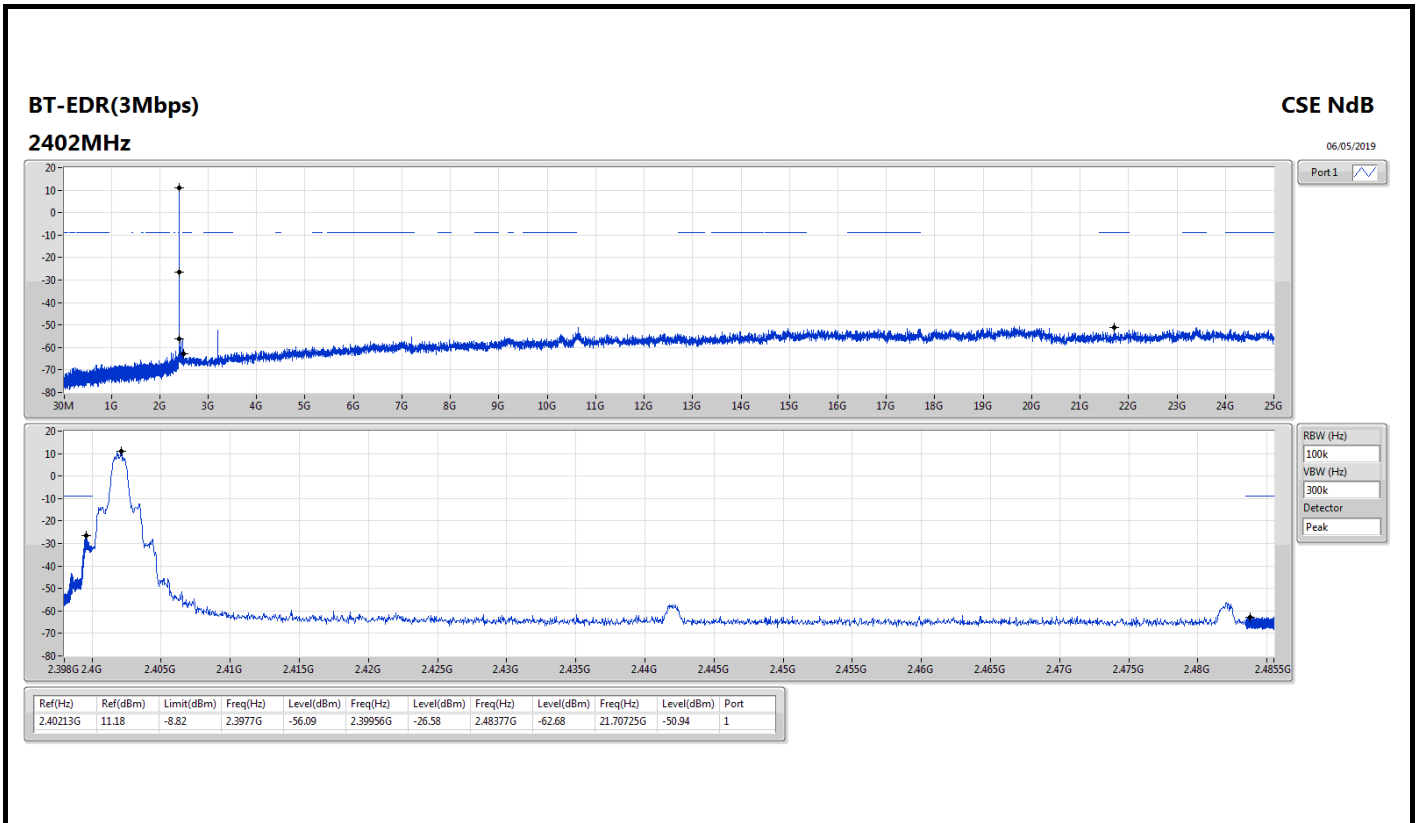
Result

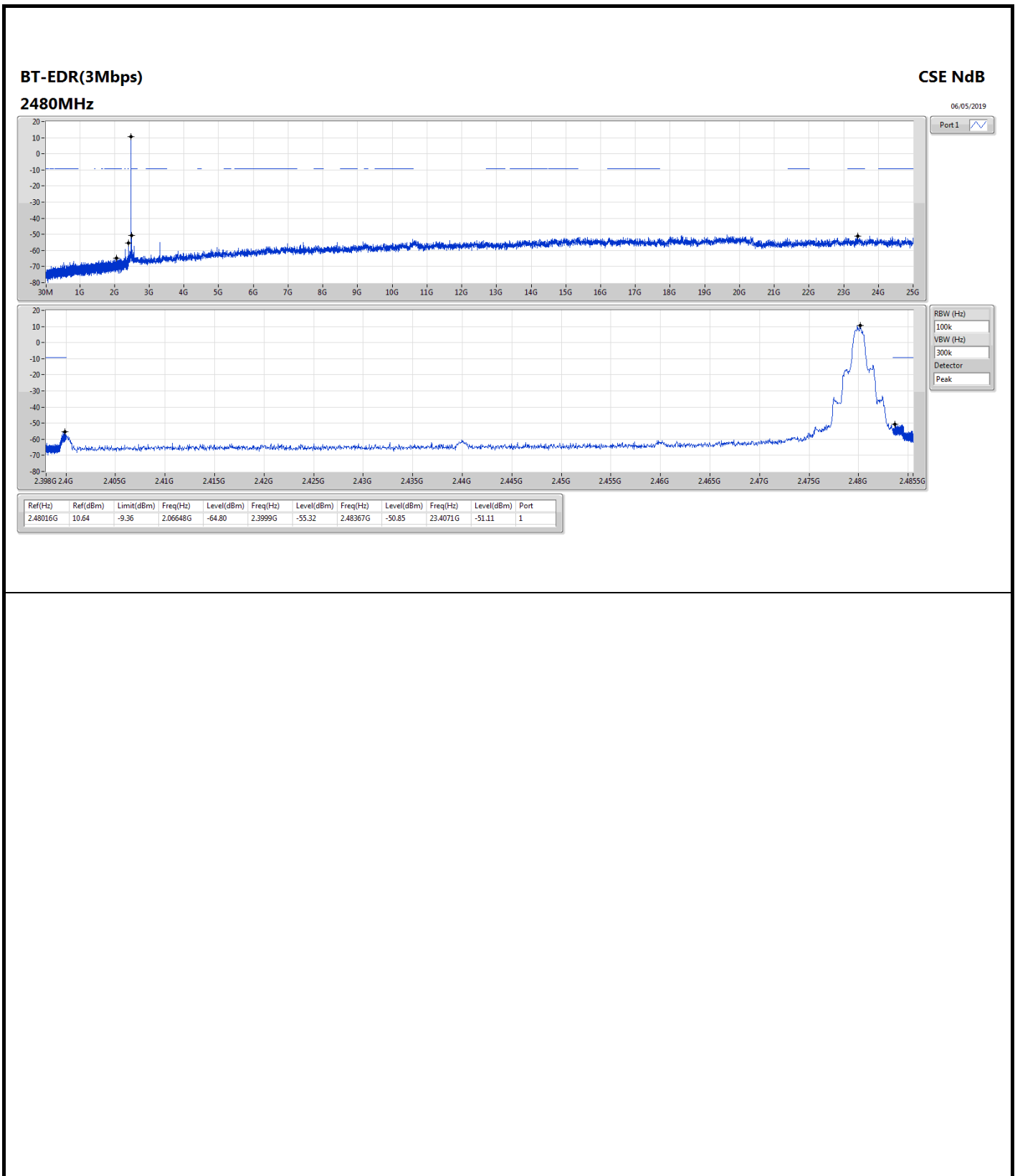
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40217G	11.17	-8.83	2.398G	-59.24	2.39988G	-48.78	2.48539G	-60.93	7.2051G	-49.12	1
2441MHz	Pass	2.44104G	10.28	-9.72	813.51M	-64.90	2.39804G	-62.26	2.48466G	-61.99	15.33565G	-50.31	1
2480MHz	Pass	2.48003G	10.16	-9.84	2.3903G	-64.27	2.39999G	-52.38	2.48412G	-55.22	16.69215G	-50.79	1
BT-EDR(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40217G	9.49	-10.51	2.398G	-59.62	2.39952G	-27.99	2.48495G	-62.06	23.40428G	-50.47	1
2441MHz	Pass	2.44079G	9.59	-10.41	2.39593G	-64.22	2.39967G	-61.94	2.48451G	-61.57	14.67992G	-50.86	1
2480MHz	Pass	2.47987G	10.60	-9.40	2.30358G	-65.03	2.39984G	-55.77	2.48368G	-52.43	16.53736G	-50.81	1
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40213G	11.18	-8.82	2.3977G	-56.09	2.39956G	-26.58	2.48377G	-62.68	21.70725G	-50.94	1
2441MHz	Pass	2.44096G	9.84	-10.16	2.10674G	-64.36	2.39951G	-61.96	2.48532G	-62.12	15.33565G	-50.60	1
2480MHz	Pass	2.48016G	10.64	-9.36	2.06648G	-64.80	2.3999G	-55.32	2.48367G	-50.85	23.4071G	-51.11	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	650.8M	42.68	46.00	-3.32	1.82	3	Horizontal	0	1.00	-



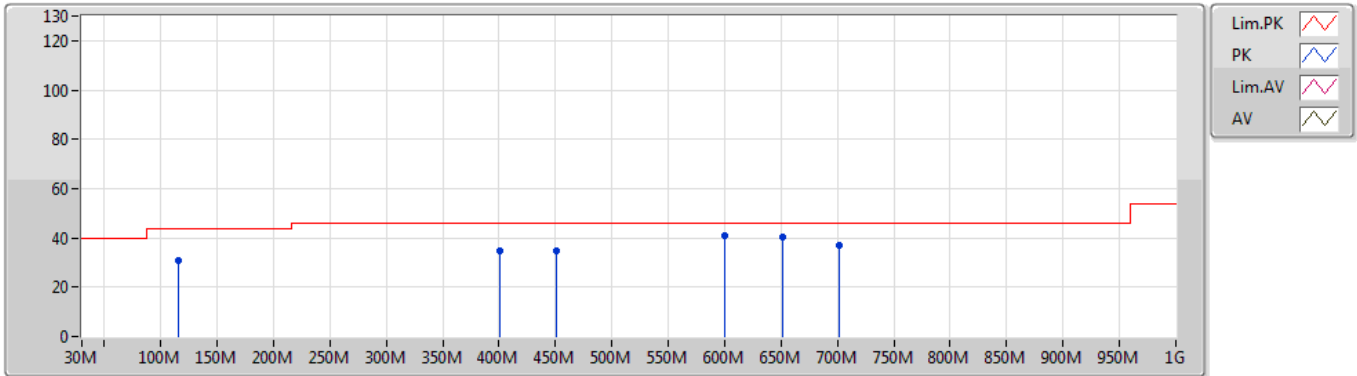
Result

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	Pass	PK	115.36M	30.87	43.50	-12.63	-8.80	3	Vertical	360	1.00	-
2441MHz	Pass	PK	400.54M	34.82	46.00	-11.18	-2.82	3	Vertical	360	1.00	-
2441MHz	Pass	PK	450.98M	34.77	46.00	-11.23	-1.73	3	Vertical	360	1.00	-
2441MHz	Pass	PK	600.36M	41.02	46.00	-4.98	0.85	3	Vertical	360	1.00	-
2441MHz	Pass	PK	650.8M	40.29	46.00	-5.71	1.82	3	Vertical	360	1.00	-
2441MHz	Pass	PK	701.24M	37.14	46.00	-8.86	2.47	3	Vertical	360	1.00	-
2441MHz	Pass	PK	128.94M	29.79	43.50	-13.71	-8.35	3	Horizontal	0	1.00	-
2441MHz	Pass	PK	350.1M	38.69	46.00	-7.31	-4.01	3	Horizontal	0	1.00	-
2441MHz	Pass	PK	450.98M	37.93	46.00	-8.07	-1.73	3	Horizontal	0	1.00	-
2441MHz	Pass	PK	549.92M	40.12	46.00	-5.88	0.31	3	Horizontal	0	1.00	-
2441MHz	Pass	PK	600.36M	39.23	46.00	-6.77	0.85	3	Horizontal	0	1.00	-
2441MHz	Pass	PK	650.8M	42.68	46.00	-3.32	1.82	3	Horizontal	0	1.00	-

BT-BR(1Mbps)

14/05/2019

2441MHz_Adapter

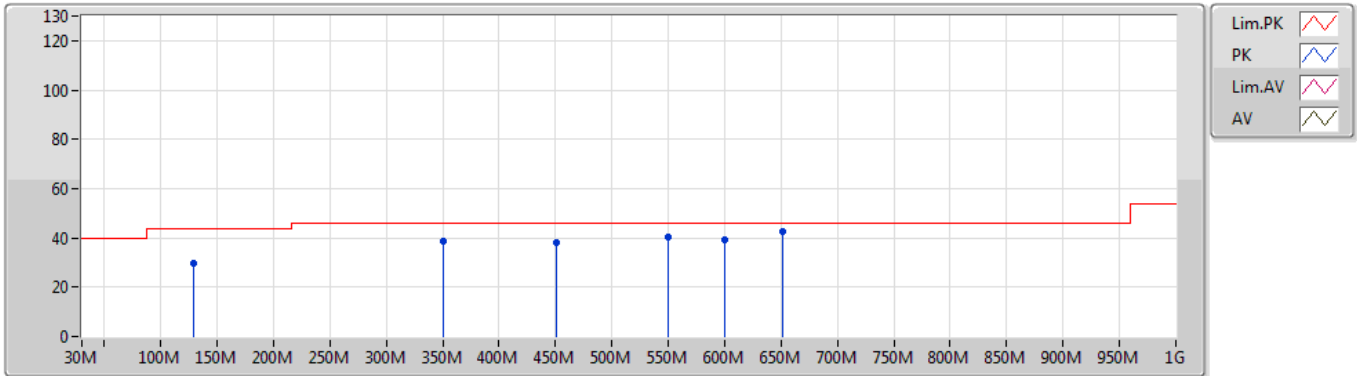


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	115.36M	30.87	43.50	-12.63	-8.80	3	Vertical	360	1.00	-
PK	400.54M	34.82	46.00	-11.18	-2.82	3	Vertical	360	1.00	-
PK	450.98M	34.77	46.00	-11.23	-1.73	3	Vertical	360	1.00	-
PK	600.36M	41.02	46.00	-4.98	0.85	3	Vertical	360	1.00	-
PK	650.8M	40.29	46.00	-5.71	1.82	3	Vertical	360	1.00	-
PK	701.24M	37.14	46.00	-8.86	2.47	3	Vertical	360	1.00	-

BT-BR(1Mbps)

14/05/2019

2441MHz_Adapter



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	128.94M	29.79	43.50	-13.71	-8.35	3	Horizontal	0	1.00	-
PK	350.1M	38.69	46.00	-7.31	-4.01	3	Horizontal	0	1.00	-
PK	450.98M	37.93	46.00	-8.07	-1.73	3	Horizontal	0	1.00	-
PK	549.92M	40.12	46.00	-5.88	0.31	3	Horizontal	0	1.00	-
PK	600.36M	39.23	46.00	-6.77	0.85	3	Horizontal	0	1.00	-
PK	650.8M	42.68	46.00	-3.32	1.82	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	AV	4.80405G	53.60	54.00	-0.40	3.40	3	Vertical	98	2.85	-
BT-EDR(3Mbps)	Pass	AV	4.88197G	52.85	54.00	-1.15	3.60	3	Vertical	108	2.93	-



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	Pass	AV	2.385G	45.85	54.00	-8.15	31.09	3	Vertical	339	1.22	-
2402MHz	Pass	AV	2.402G	99.01	Inf	-Inf	31.17	3	Vertical	339	1.22	-
2402MHz	Pass	PK	2.3886G	56.07	74.00	-17.93	31.11	3	Vertical	339	1.22	-
2402MHz	Pass	PK	2.4022G	99.21	Inf	-Inf	31.17	3	Vertical	339	1.22	-
2402MHz	Pass	AV	2.3608G	45.78	54.00	-8.22	30.99	3	Horizontal	95	1.18	-
2402MHz	Pass	AV	2.402G	104.08	Inf	-Inf	31.17	3	Horizontal	95	1.18	-
2402MHz	Pass	PK	2.3656G	56.28	74.00	-17.72	31.00	3	Horizontal	95	1.18	-
2402MHz	Pass	PK	2.4018G	104.24	Inf	-Inf	31.17	3	Horizontal	95	1.18	-
2402MHz	Pass	AV	4.80405G	53.60	54.00	-0.40	3.40	3	Vertical	98	2.85	-
2402MHz	Pass	PK	4.80392G	57.26	74.00	-16.74	3.40	3	Vertical	98	2.85	-
2402MHz	Pass	AV	4.80398G	52.64	54.00	-1.36	3.40	3	Horizontal	168	2.23	-
2402MHz	Pass	PK	4.8039G	56.55	74.00	-17.45	3.40	3	Horizontal	168	2.23	-
2441MHz	Pass	AV	2.3842G	45.67	54.00	-8.33	31.09	3	Vertical	9	1.41	-
2441MHz	Pass	AV	2.441G	100.81	Inf	-Inf	31.32	3	Vertical	9	1.41	-
2441MHz	Pass	AV	2.4978G	46.63	54.00	-7.37	31.57	3	Vertical	9	1.41	-
2441MHz	Pass	PK	2.3842G	55.91	74.00	-18.09	31.09	3	Vertical	9	1.41	-
2441MHz	Pass	PK	2.441G	101.03	Inf	-Inf	31.32	3	Vertical	9	1.41	-
2441MHz	Pass	PK	2.497G	56.20	74.00	-17.80	31.57	3	Vertical	9	1.41	-
2441MHz	Pass	AV	2.3746G	45.81	54.00	-8.19	31.05	3	Horizontal	109	1.29	-
2441MHz	Pass	AV	2.441G	105.01	Inf	-Inf	31.32	3	Horizontal	109	1.29	-
2441MHz	Pass	AV	2.4862G	46.62	54.00	-7.38	31.52	3	Horizontal	109	1.29	-
2441MHz	Pass	PK	2.3862G	55.75	74.00	-18.25	31.09	3	Horizontal	109	1.29	-
2441MHz	Pass	PK	2.441G	105.28	Inf	-Inf	31.32	3	Horizontal	109	1.29	-
2441MHz	Pass	PK	2.4846G	56.13	74.00	-17.87	31.52	3	Horizontal	109	1.29	-
2441MHz	Pass	AV	4.88199G	53.07	54.00	-0.93	3.60	3	Vertical	108	2.94	-
2441MHz	Pass	PK	4.88188G	57.11	74.00	-16.89	3.60	3	Vertical	108	2.94	-
2441MHz	Pass	AV	4.88199G	50.02	54.00	-3.98	3.60	3	Horizontal	166	2.18	-
2441MHz	Pass	PK	4.88183G	54.70	74.00	-19.30	3.60	3	Horizontal	166	2.18	-
2480MHz	Pass	AV	2.48G	100.19	Inf	-Inf	31.49	3	Vertical	344	1.17	-
2480MHz	Pass	AV	2.4944G	46.73	54.00	-7.27	31.55	3	Vertical	344	1.17	-
2480MHz	Pass	PK	2.4798G	100.43	Inf	-Inf	31.49	3	Vertical	344	1.17	-
2480MHz	Pass	PK	2.4864G	57.05	74.00	-16.95	31.52	3	Vertical	344	1.17	-
2480MHz	Pass	AV	2.48G	106.44	Inf	-Inf	31.49	3	Horizontal	93	1.08	-
2480MHz	Pass	AV	2.4842G	47.26	54.00	-6.74	31.52	3	Horizontal	93	1.08	-
2480MHz	Pass	PK	2.4798G	106.69	Inf	-Inf	31.49	3	Horizontal	93	1.08	-
2480MHz	Pass	PK	2.4874G	56.57	74.00	-17.43	31.52	3	Horizontal	93	1.08	-
2480MHz	Pass	AV	4.96006G	49.99	54.00	-4.01	3.73	3	Vertical	95	2.84	-
2480MHz	Pass	PK	4.96005G	54.85	74.00	-19.15	3.73	3	Vertical	95	2.84	-
2480MHz	Pass	AV	4.96003G	47.79	54.00	-6.21	3.73	3	Horizontal	176	2.16	-
2480MHz	Pass	PK	4.95979G	53.11	74.00	-20.89	3.73	3	Horizontal	176	2.16	-
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3838G	45.77	54.00	-8.23	31.08	3	Vertical	9	1.75	-
2402MHz	Pass	AV	2.402G	97.10	Inf	-Inf	31.17	3	Vertical	9	1.75	-
2402MHz	Pass	PK	2.362G	56.66	74.00	-17.34	30.99	3	Vertical	9	1.75	-
2402MHz	Pass	PK	2.4018G	98.69	Inf	-Inf	31.17	3	Vertical	9	1.75	-
2402MHz	Pass	AV	2.365G	45.86	54.00	-8.14	31.00	3	Horizontal	97	1.22	-
2402MHz	Pass	AV	2.402G	102.25	Inf	-Inf	31.17	3	Horizontal	97	1.22	-

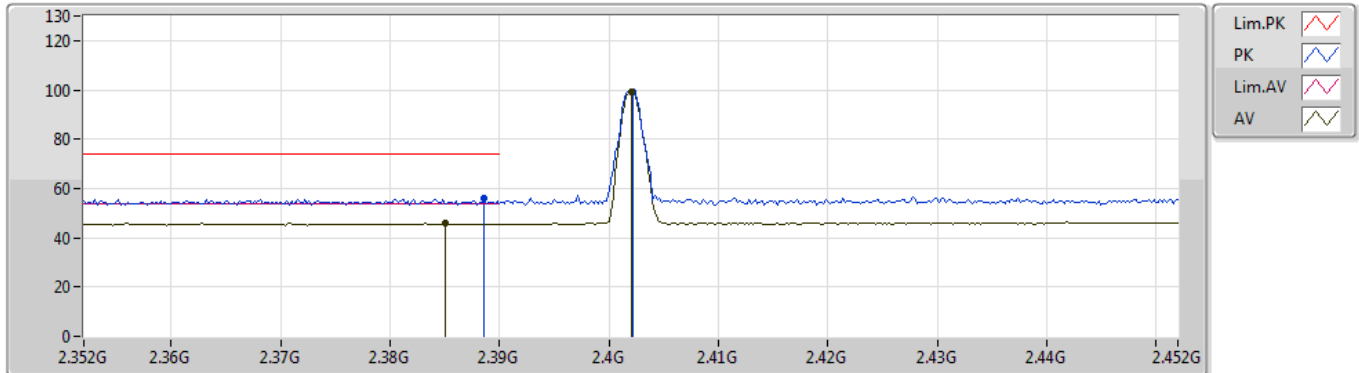


Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2402MHz	Pass	PK	2.3586G	56.45	74.00	-17.55	30.97	3	Horizontal	97	1.22	-
2402MHz	Pass	PK	2.4018G	104.16	Inf	-Inf	31.17	3	Horizontal	97	1.22	-
2402MHz	Pass	AV	4.80405G	49.68	54.00	-4.32	3.40	3	Vertical	134	1.89	-
2402MHz	Pass	PK	4.804G	55.48	74.00	-18.52	3.40	3	Vertical	134	1.89	-
2402MHz	Pass	AV	4.80405G	50.29	54.00	-3.71	3.40	3	Horizontal	180	2.25	-
2402MHz	Pass	PK	4.80428G	56.17	74.00	-17.83	3.40	3	Horizontal	180	2.25	-
2441MHz	Pass	AV	2.3734G	45.66	54.00	-8.34	31.05	3	Vertical	10	1.39	-
2441MHz	Pass	AV	2.441G	99.40	Inf	-Inf	31.32	3	Vertical	10	1.39	-
2441MHz	Pass	AV	2.4838G	46.53	54.00	-7.47	31.51	3	Vertical	10	1.39	-
2441MHz	Pass	PK	2.3878G	56.23	74.00	-17.77	31.11	3	Vertical	10	1.39	-
2441MHz	Pass	PK	2.441G	101.34	Inf	-Inf	31.32	3	Vertical	10	1.39	-
2441MHz	Pass	PK	2.4835G	56.15	74.00	-17.85	31.51	3	Vertical	10	1.39	-
2441MHz	Pass	AV	2.3582G	45.75	54.00	-8.25	30.97	3	Horizontal	111	1.27	-
2441MHz	Pass	AV	2.441G	103.98	Inf	-Inf	31.32	3	Horizontal	111	1.27	-
2441MHz	Pass	AV	2.4962G	46.66	54.00	-7.34	31.56	3	Horizontal	111	1.27	-
2441MHz	Pass	PK	2.3538G	55.71	74.00	-18.29	30.96	3	Horizontal	111	1.27	-
2441MHz	Pass	PK	2.441G	105.88	Inf	-Inf	31.32	3	Horizontal	111	1.27	-
2441MHz	Pass	PK	2.4898G	56.00	74.00	-18.00	31.54	3	Horizontal	111	1.27	-
2441MHz	Pass	AV	4.88197G	52.85	54.00	-1.15	3.60	3	Vertical	108	2.93	-
2441MHz	Pass	PK	4.88192G	58.61	74.00	-15.39	3.60	3	Vertical	108	2.93	-
2441MHz	Pass	AV	4.88196G	49.83	54.00	-4.17	3.60	3	Horizontal	167	2.17	-
2441MHz	Pass	PK	4.88196G	56.13	74.00	-17.87	3.60	3	Horizontal	167	2.17	-
2480MHz	Pass	AV	2.48G	98.79	Inf	-Inf	31.49	3	Vertical	9	1.18	-
2480MHz	Pass	AV	2.4835G	46.87	54.00	-7.13	31.51	3	Vertical	9	1.18	-
2480MHz	Pass	PK	2.4802G	100.48	Inf	-Inf	31.49	3	Vertical	9	1.18	-
2480MHz	Pass	PK	2.4872G	57.23	74.00	-16.77	31.52	3	Vertical	9	1.18	-
2480MHz	Pass	AV	2.48G	104.77	Inf	-Inf	31.49	3	Horizontal	93	1.07	-
2480MHz	Pass	AV	2.4835G	48.56	54.00	-5.44	31.51	3	Horizontal	93	1.07	-
2480MHz	Pass	PK	2.4798G	106.54	Inf	-Inf	31.49	3	Horizontal	93	1.07	-
2480MHz	Pass	PK	2.4836G	58.08	74.00	-15.92	31.51	3	Horizontal	93	1.07	-
2480MHz	Pass	AV	4.95998G	47.68	54.00	-6.32	3.73	3	Vertical	99	2.82	-
2480MHz	Pass	PK	4.95993G	54.69	74.00	-19.31	3.73	3	Vertical	99	2.82	-
2480MHz	Pass	AV	4.95998G	46.13	54.00	-7.87	3.73	3	Horizontal	177	2.20	-
2480MHz	Pass	PK	4.95983G	52.85	74.00	-21.15	3.73	3	Horizontal	177	2.20	-

BT-BR(1Mbps)

04/05/2019

2402MHz_TX

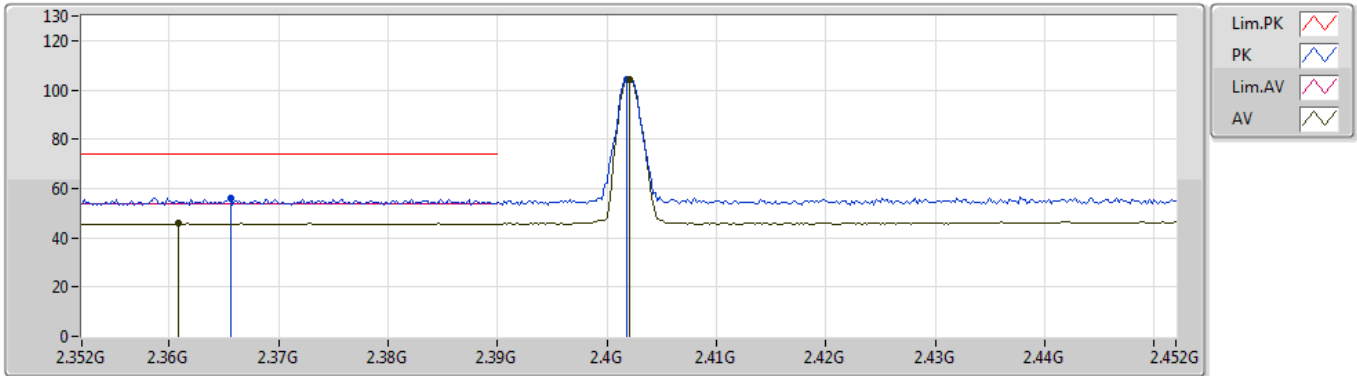


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
AV	2.385G	45.85	54.00	-8.15	31.09	3	Vertical	339	1.22	-
AV	2.402G	99.01	Inf	-Inf	31.17	3	Vertical	339	1.22	-
PK	2.3886G	56.07	74.00	-17.93	31.11	3	Vertical	339	1.22	-
PK	2.4022G	99.21	Inf	-Inf	31.17	3	Vertical	339	1.22	-

BT-BR(1Mbps)

04/05/2019

2402MHz_TX

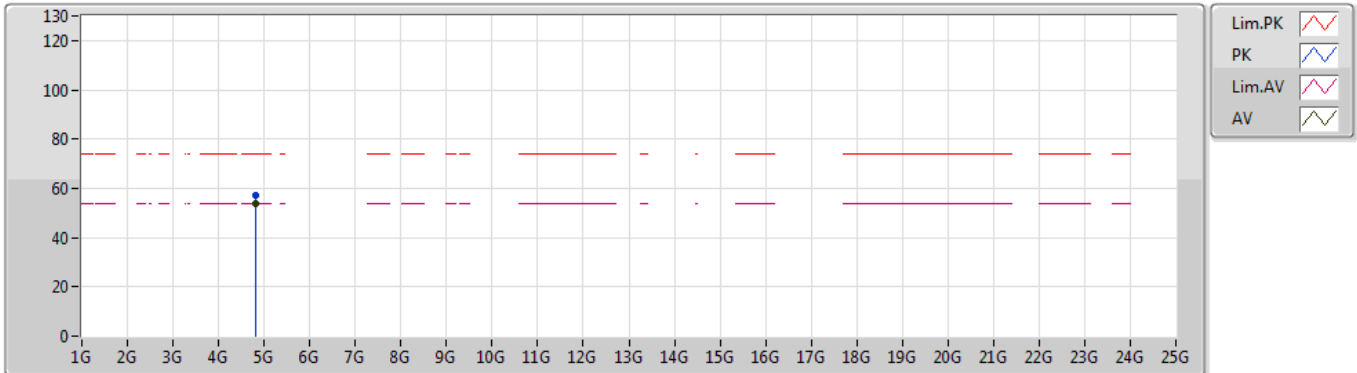


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
AV	2.3608G	45.78	54.00	-8.22	30.99	3	Horizontal	95	1.18	-
AV	2.402G	104.08	Inf	-Inf	31.17	3	Horizontal	95	1.18	-
PK	2.3656G	56.28	74.00	-17.72	31.00	3	Horizontal	95	1.18	-
PK	2.4018G	104.24	Inf	-Inf	31.17	3	Horizontal	95	1.18	-

BT-BR(1Mbps)

04/05/2019

2402MHz_TX



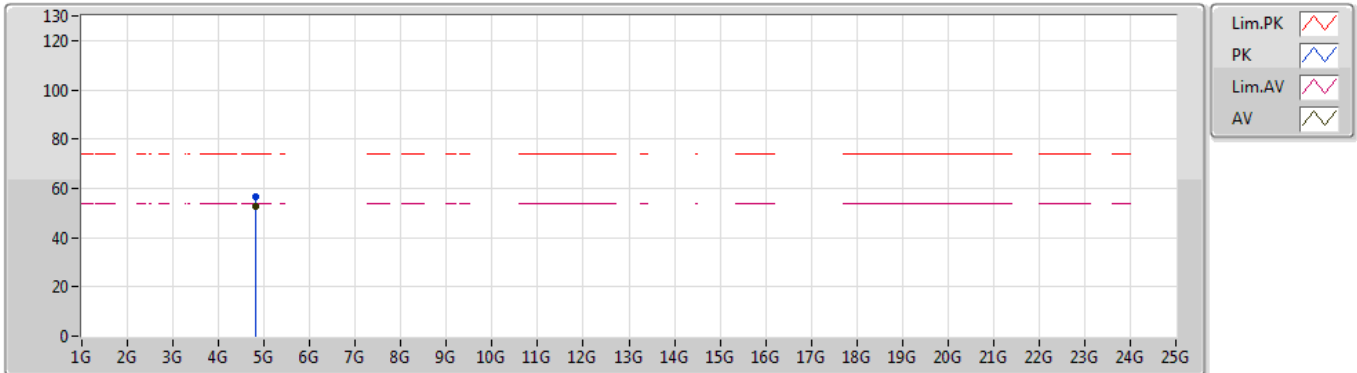
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
AV	4.80405G	53.60	54.00	-0.40	3.40	3	Vertical	98	2.85	-
PK	4.80392G	57.26	74.00	-16.74	3.40	3	Vertical	98	2.85	-



BT-BR(1Mbps)

04/05/2019

2402MHz_TX

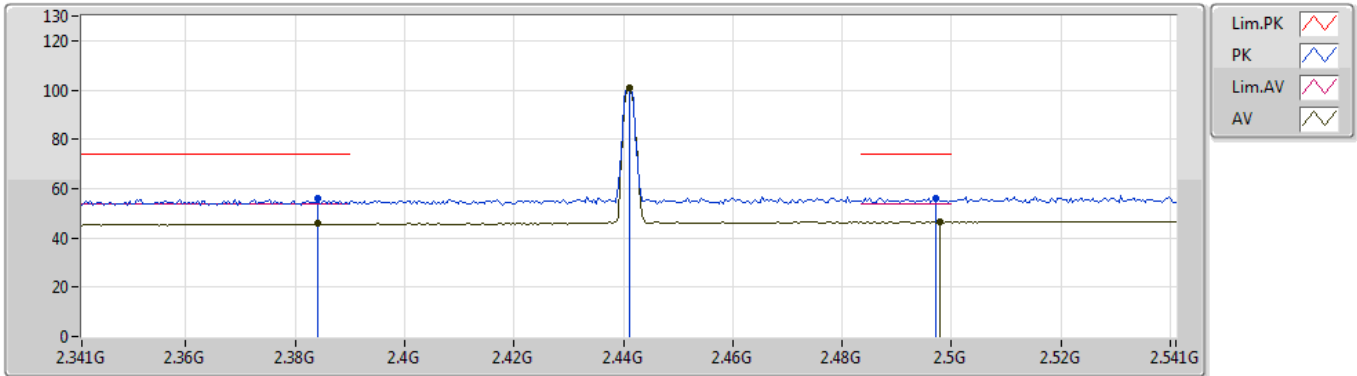


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
AV	4.80398G	52.64	54.00	-1.36	3.40	3	Horizontal	168	2.23	-
PK	4.8039G	56.55	74.00	-17.45	3.40	3	Horizontal	168	2.23	-

BT-BR(1Mbps)

04/05/2019

2441MHz_TX

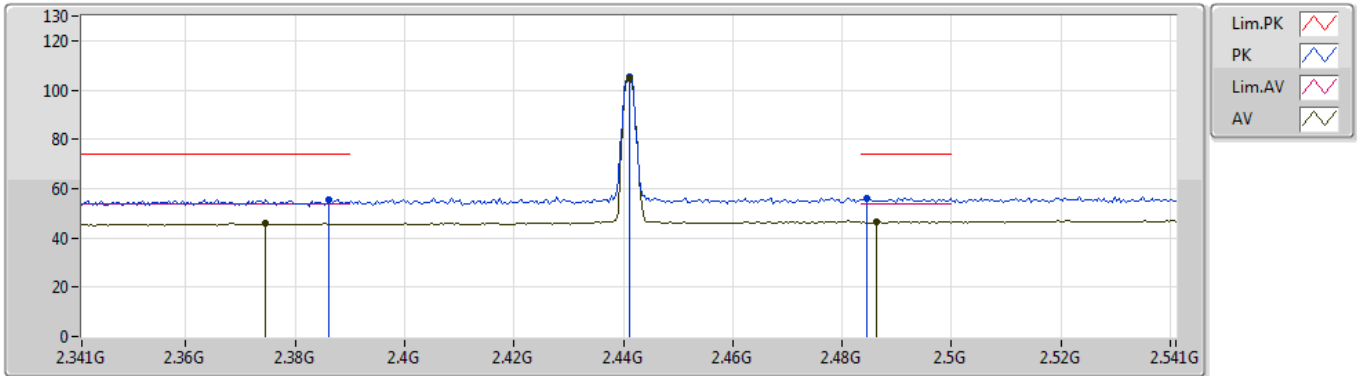


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
AV	2.3842G	45.67	54.00	-8.33	31.09	3	Vertical	9	1.41	-
AV	2.441G	100.81	Inf	-Inf	31.32	3	Vertical	9	1.41	-
AV	2.4978G	46.63	54.00	-7.37	31.57	3	Vertical	9	1.41	-
PK	2.3842G	55.91	74.00	-18.09	31.09	3	Vertical	9	1.41	-
PK	2.441G	101.03	Inf	-Inf	31.32	3	Vertical	9	1.41	-
PK	2.497G	56.20	74.00	-17.80	31.57	3	Vertical	9	1.41	-

BT-BR(1Mbps)

04/05/2019

2441MHz_TX

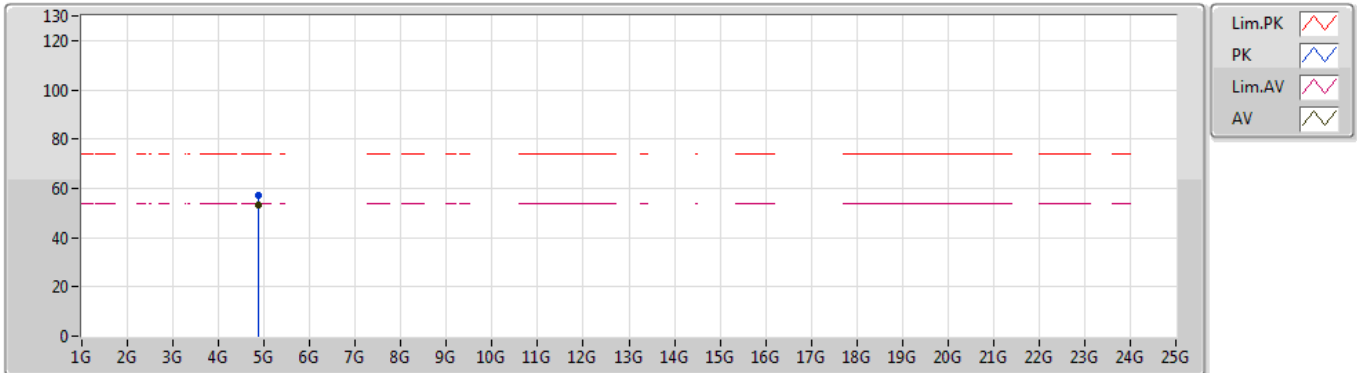


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
AV	2.3746G	45.81	54.00	-8.19	31.05	3	Horizontal	109	1.29	-
AV	2.441G	105.01	Inf	-Inf	31.32	3	Horizontal	109	1.29	-
AV	2.4862G	46.62	54.00	-7.38	31.52	3	Horizontal	109	1.29	-
PK	2.3862G	55.75	74.00	-18.25	31.09	3	Horizontal	109	1.29	-
PK	2.441G	105.28	Inf	-Inf	31.32	3	Horizontal	109	1.29	-
PK	2.4846G	56.13	74.00	-17.87	31.52	3	Horizontal	109	1.29	-

BT-BR(1Mbps)

04/05/2019

2441MHz_TX

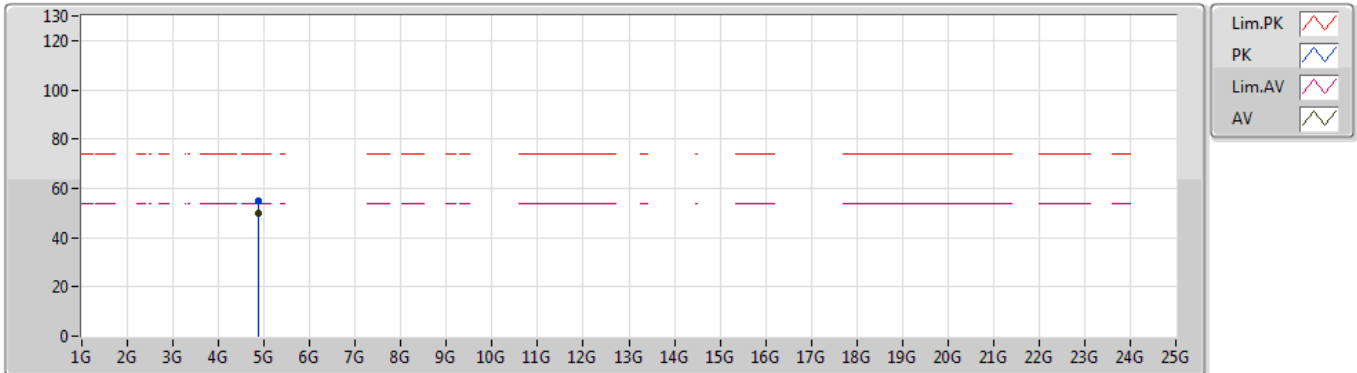


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
AV	4.88199G	53.07	54.00	-0.93	3.60	3	Vertical	108	2.94	-
PK	4.88188G	57.11	74.00	-16.89	3.60	3	Vertical	108	2.94	-

BT-BR(1Mbps)

04/05/2019

2441MHz_TX

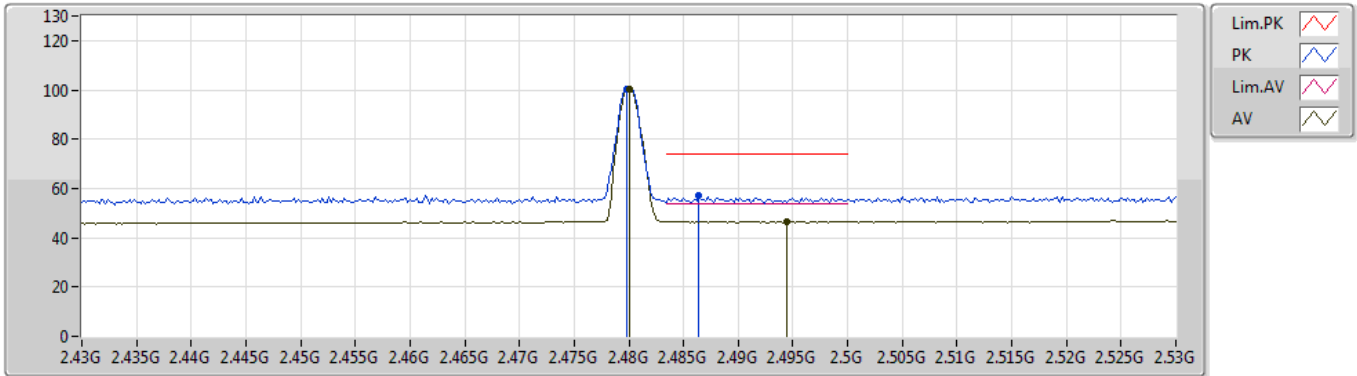


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
AV	4.88199G	50.02	54.00	-3.98	3.60	3	Horizontal	166	2.18	-
PK	4.88183G	54.70	74.00	-19.30	3.60	3	Horizontal	166	2.18	-

BT-BR(1Mbps)

04/05/2019

2480MHz_TX

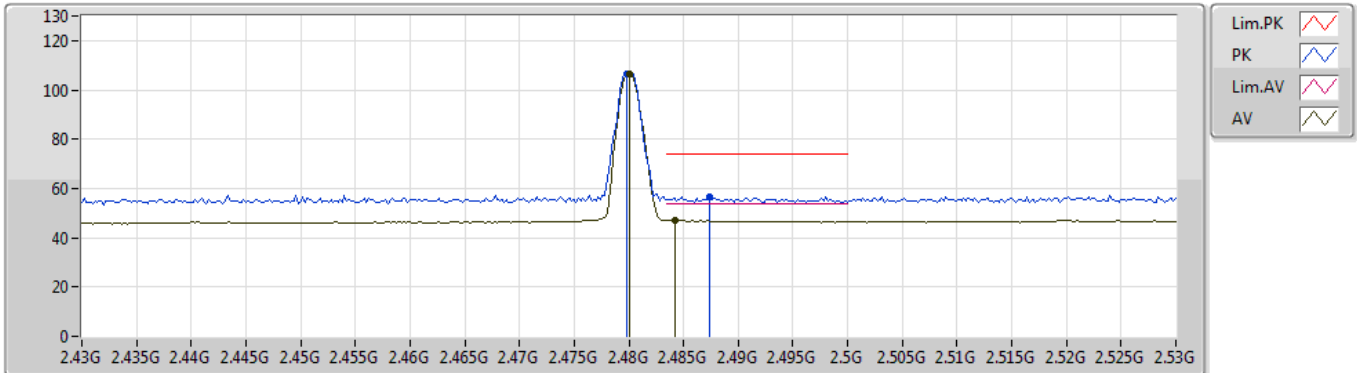


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
AV	2.48G	100.19	Inf	-Inf	31.49	3	Vertical	344	1.17	-
AV	2.4944G	46.73	54.00	-7.27	31.55	3	Vertical	344	1.17	-
PK	2.4798G	100.43	Inf	-Inf	31.49	3	Vertical	344	1.17	-
PK	2.4864G	57.05	74.00	-16.95	31.52	3	Vertical	344	1.17	-

BT-BR(1Mbps)

04/05/2019

2480MHz_TX

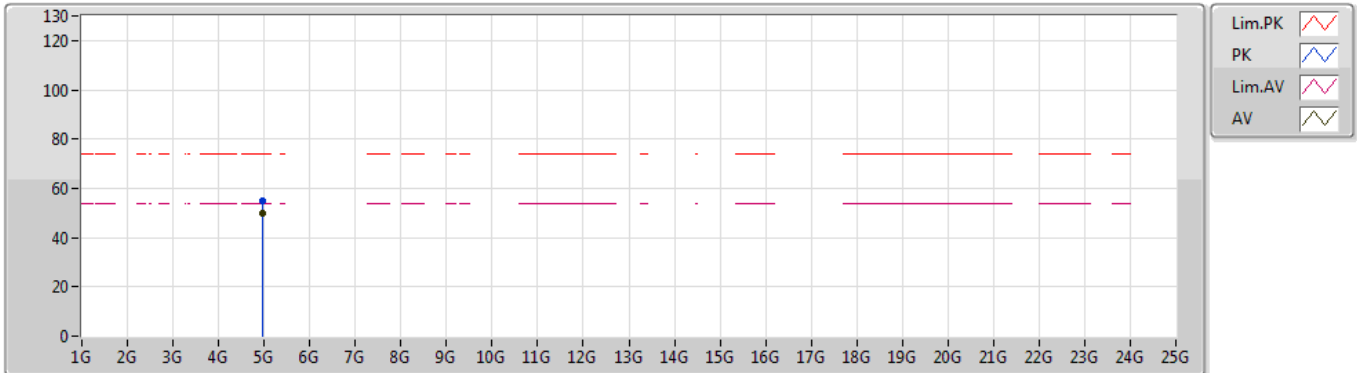


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
AV	2.48G	106.44	Inf	-Inf	31.49	3	Horizontal	93	1.08	-
AV	2.4842G	47.26	54.00	-6.74	31.52	3	Horizontal	93	1.08	-
PK	2.4798G	106.69	Inf	-Inf	31.49	3	Horizontal	93	1.08	-
PK	2.4874G	56.57	74.00	-17.43	31.52	3	Horizontal	93	1.08	-

BT-BR(1Mbps)

04/05/2019

2480MHz_TX

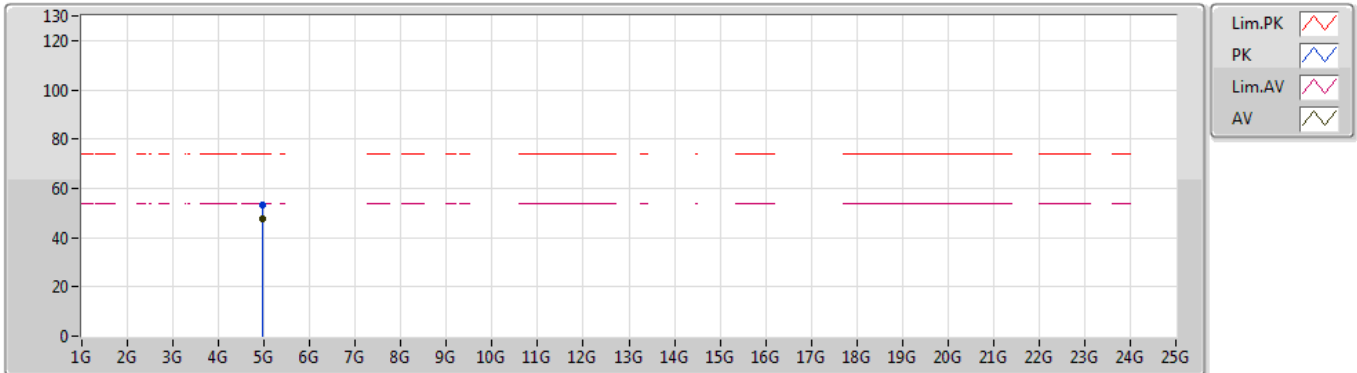


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
AV	4.96006G	49.99	54.00	-4.01	3.73	3	Vertical	95	2.84	-
PK	4.96005G	54.85	74.00	-19.15	3.73	3	Vertical	95	2.84	-

BT-BR(1Mbps)

04/05/2019

2480MHz_TX

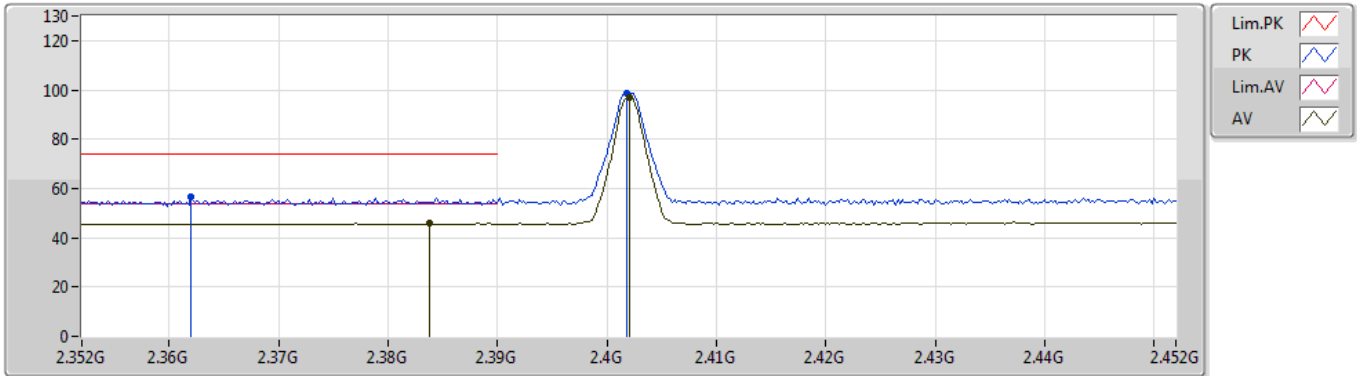


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
AV	4.96003G	47.79	54.00	-6.21	3.73	3	Horizontal	176	2.16	-
PK	4.95979G	53.11	74.00	-20.89	3.73	3	Horizontal	176	2.16	-

BT-EDR(3Mbps)

04/05/2019

2402MHz_TX

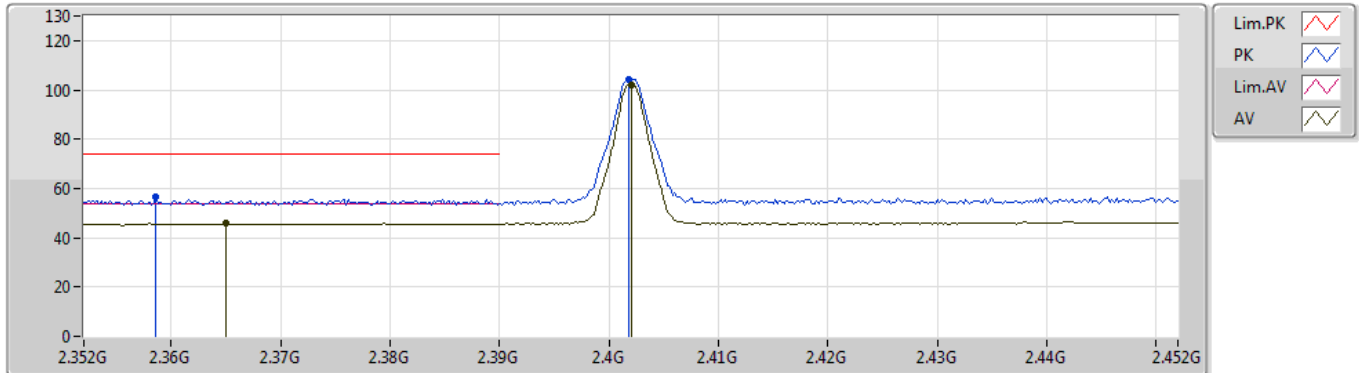


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
AV	2.3838G	45.77	54.00	-8.23	31.08	3	Vertical	9	1.75	-
AV	2.402G	97.10	Inf	-Inf	31.17	3	Vertical	9	1.75	-
PK	2.362G	56.66	74.00	-17.34	30.99	3	Vertical	9	1.75	-
PK	2.4018G	98.69	Inf	-Inf	31.17	3	Vertical	9	1.75	-

BT-EDR(3Mbps)

04/05/2019

2402MHz_TX

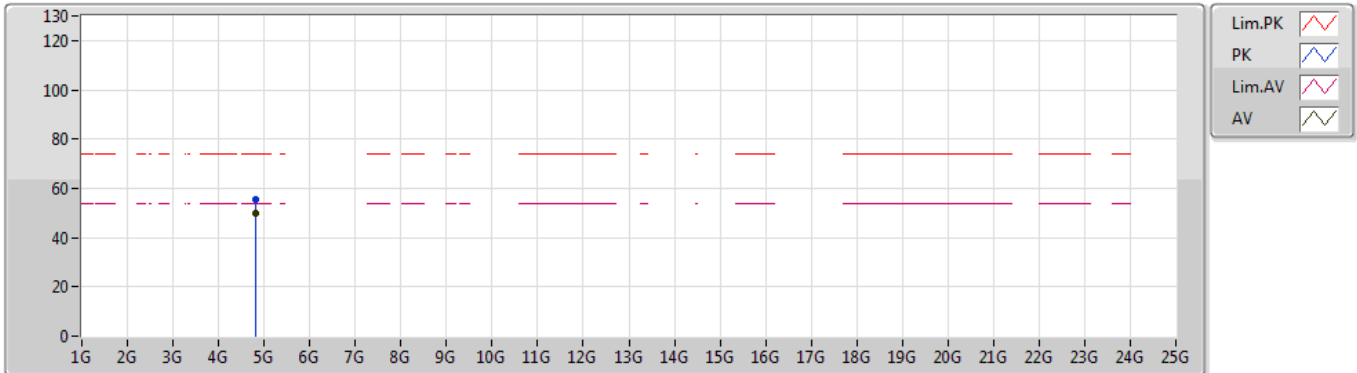


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
AV	2.365G	45.86	54.00	-8.14	31.00	3	Horizontal	97	1.22	-
AV	2.402G	102.25	Inf	-Inf	31.17	3	Horizontal	97	1.22	-
PK	2.3586G	56.45	74.00	-17.55	30.97	3	Horizontal	97	1.22	-
PK	2.4018G	104.16	Inf	-Inf	31.17	3	Horizontal	97	1.22	-

BT-EDR(3Mbps)

04/05/2019

2402MHz_TX

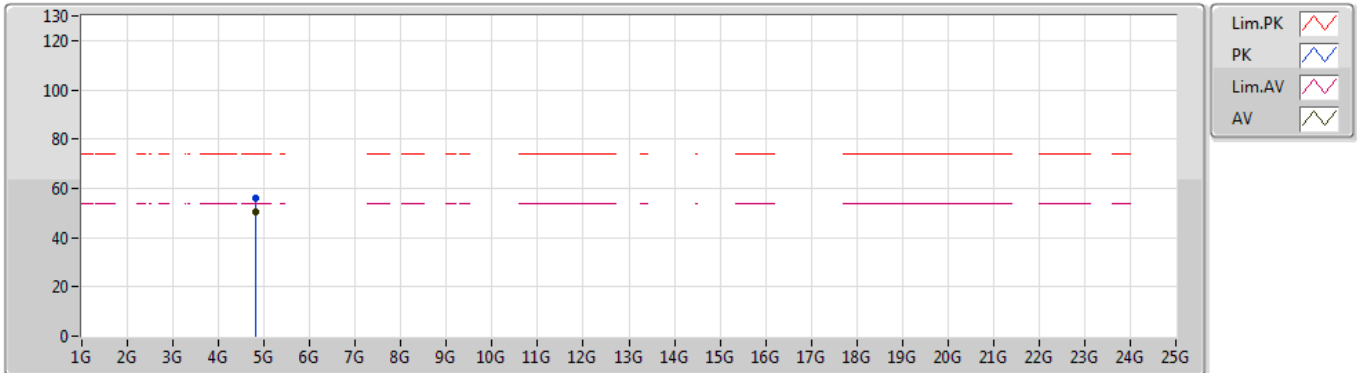


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
AV	4.80405G	49.68	54.00	-4.32	3.40	3	Vertical	134	1.89	-
PK	4.804G	55.48	74.00	-18.52	3.40	3	Vertical	134	1.89	-

BT-EDR(3Mbps)

04/05/2019

2402MHz_TX

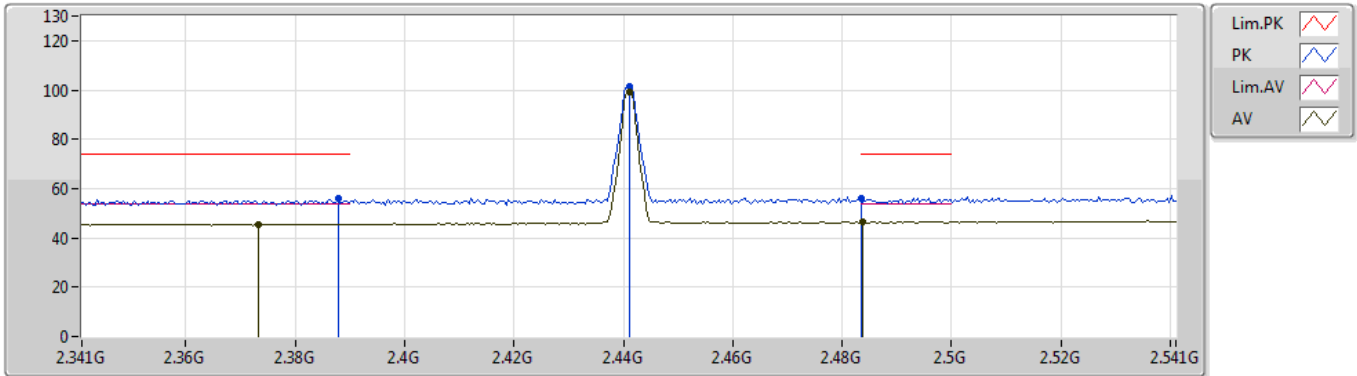


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
AV	4.80405G	50.29	54.00	-3.71	3.40	3	Horizontal	180	2.25	-
PK	4.80428G	56.17	74.00	-17.83	3.40	3	Horizontal	180	2.25	-

BT-EDR(3Mbps)

04/05/2019

2441MHz_TX

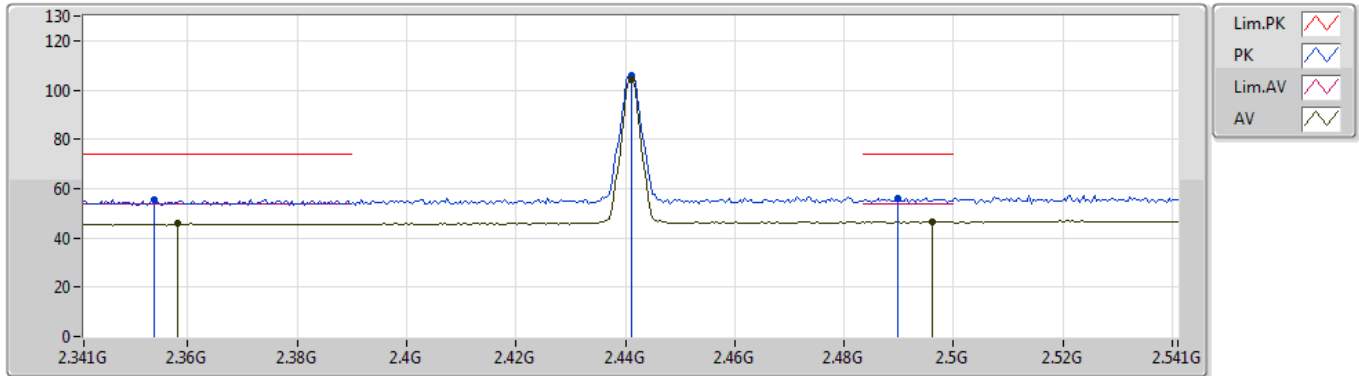


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
AV	2.3734G	45.66	54.00	-8.34	31.05	3	Vertical	10	1.39	-
AV	2.441G	99.40	Inf	-Inf	31.32	3	Vertical	10	1.39	-
AV	2.4838G	46.53	54.00	-7.47	31.51	3	Vertical	10	1.39	-
PK	2.3878G	56.23	74.00	-17.77	31.11	3	Vertical	10	1.39	-
PK	2.441G	101.34	Inf	-Inf	31.32	3	Vertical	10	1.39	-
PK	2.4835G	56.15	74.00	-17.85	31.51	3	Vertical	10	1.39	-

BT-EDR(3Mbps)

04/05/2019

2441MHz_TX

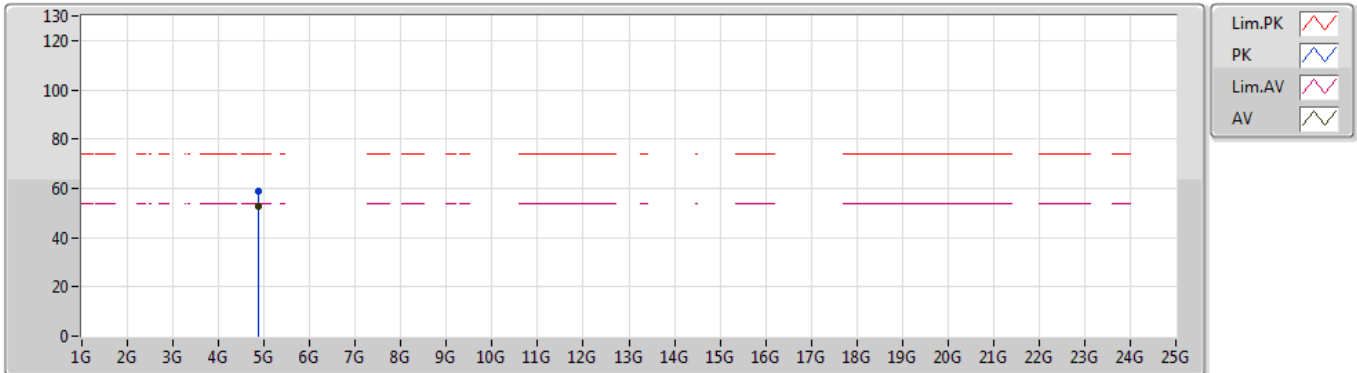


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
AV	2.3582G	45.75	54.00	-8.25	30.97	3	Horizontal	111	1.27	-
AV	2.441G	103.98	Inf	-Inf	31.32	3	Horizontal	111	1.27	-
AV	2.4962G	46.66	54.00	-7.34	31.56	3	Horizontal	111	1.27	-
PK	2.3538G	55.71	74.00	-18.29	30.96	3	Horizontal	111	1.27	-
PK	2.441G	105.88	Inf	-Inf	31.32	3	Horizontal	111	1.27	-
PK	2.4898G	56.00	74.00	-18.00	31.54	3	Horizontal	111	1.27	-

BT-EDR(3Mbps)

04/05/2019

2441MHz_TX

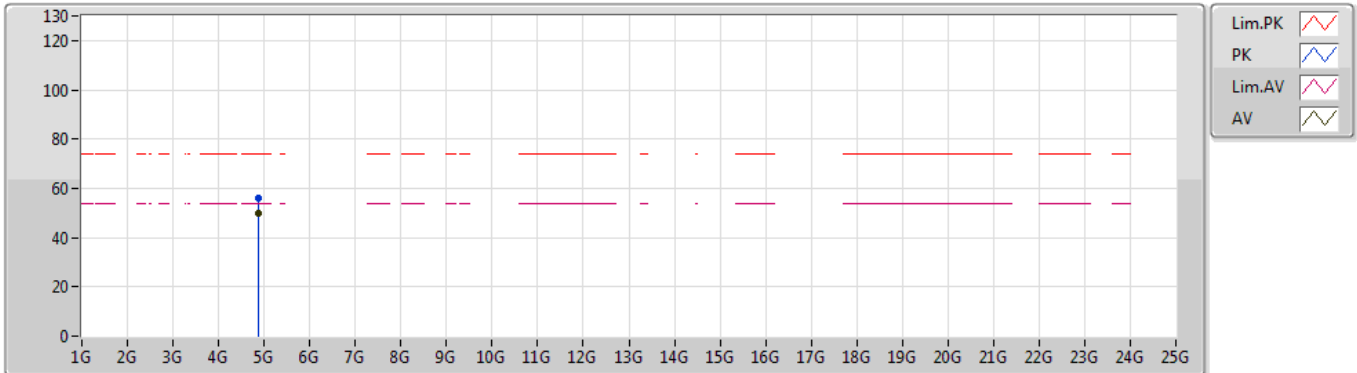


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
AV	4.88197G	52.85	54.00	-1.15	3.60	3	Vertical	108	2.93	-
PK	4.88192G	58.61	74.00	-15.39	3.60	3	Vertical	108	2.93	-

BT-EDR(3Mbps)

04/05/2019

2441MHz_TX

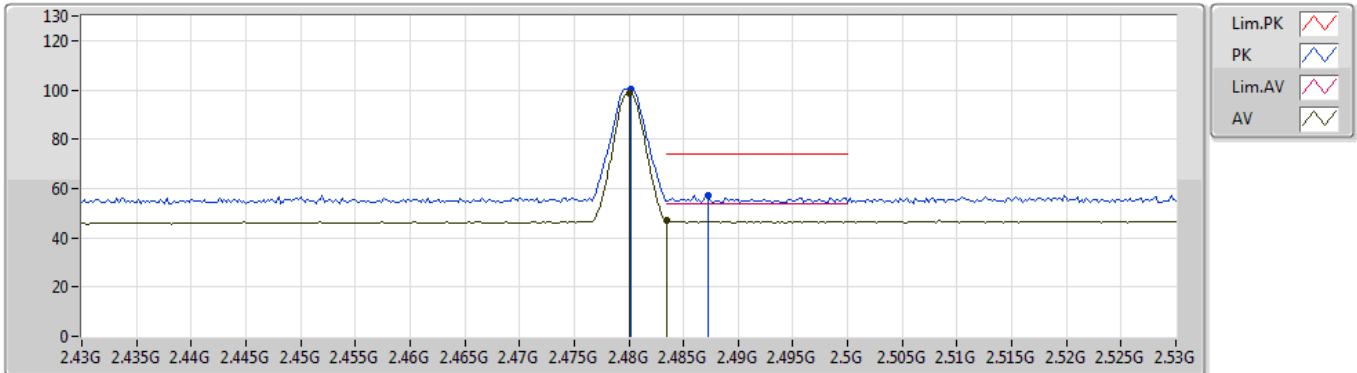


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
AV	4.88196G	49.83	54.00	-4.17	3.60	3	Horizontal	167	2.17	-
PK	4.88196G	56.13	74.00	-17.87	3.60	3	Horizontal	167	2.17	-

BT-EDR(3Mbps)

04/05/2019

2480MHz_TX

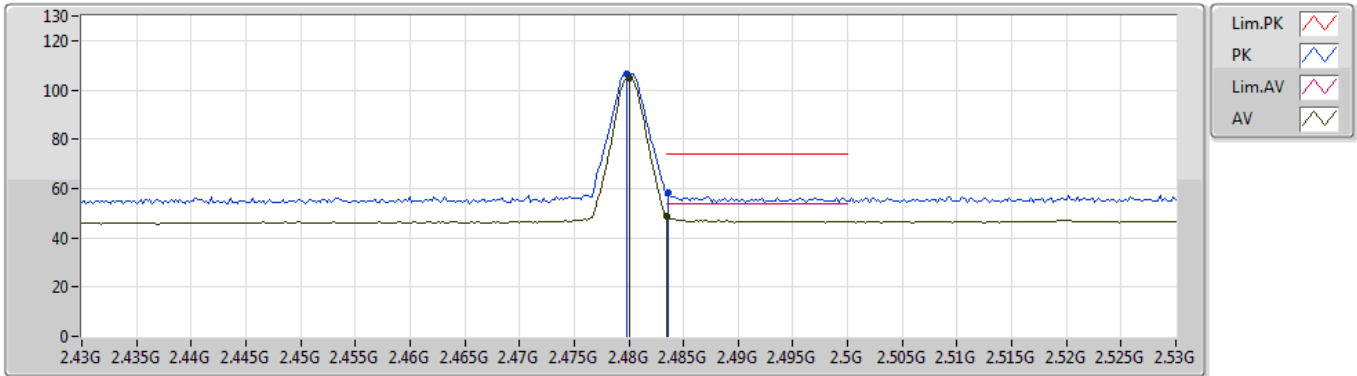


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
AV	2.48G	98.79	Inf	-Inf	31.49	3	Vertical	9	1.18	-
AV	2.4835G	46.87	54.00	-7.13	31.51	3	Vertical	9	1.18	-
PK	2.4802G	100.48	Inf	-Inf	31.49	3	Vertical	9	1.18	-
PK	2.4872G	57.23	74.00	-16.77	31.52	3	Vertical	9	1.18	-

BT-EDR(3Mbps)

04/05/2019

2480MHz_TX

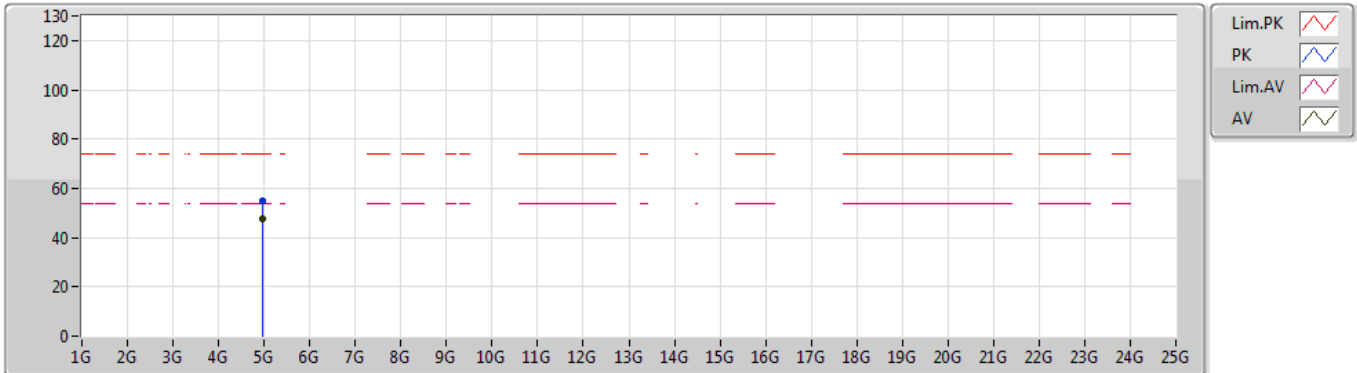


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
AV	2.48G	104.77	Inf	-Inf	31.49	3	Horizontal	93	1.07	-
AV	2.4835G	48.56	54.00	-5.44	31.51	3	Horizontal	93	1.07	-
PK	2.4798G	106.54	Inf	-Inf	31.49	3	Horizontal	93	1.07	-
PK	2.4836G	58.08	74.00	-15.92	31.51	3	Horizontal	93	1.07	-

BT-EDR(3Mbps)

04/05/2019

2480MHz_TX

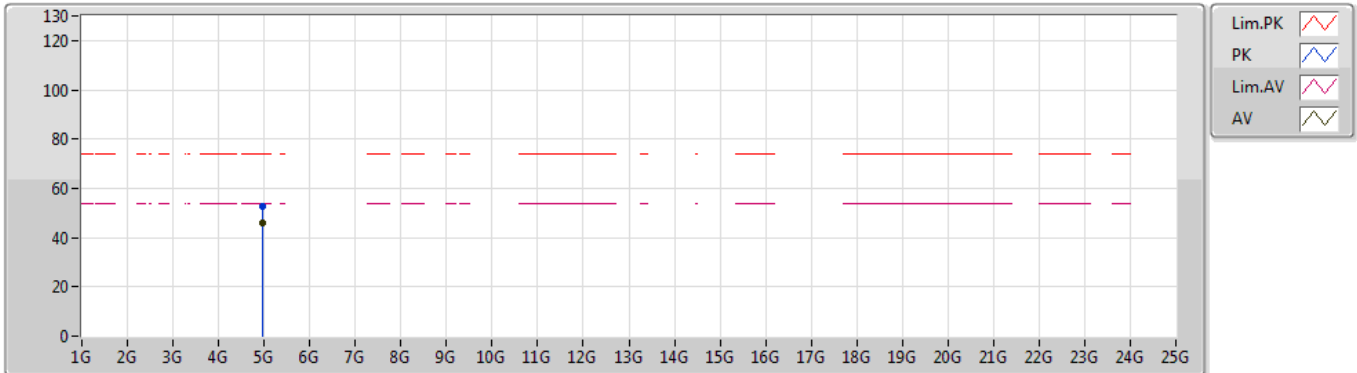


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
AV	4.95998G	47.68	54.00	-6.32	3.73	3	Vertical	99	2.82	-
PK	4.95993G	54.69	74.00	-19.31	3.73	3	Vertical	99	2.82	-

BT-EDR(3Mbps)

04/05/2019

2480MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
AV	4.95998G	46.13	54.00	-7.87	3.73	3	Horizontal	177	2.20	-
PK	4.95983G	52.85	74.00	-21.15	3.73	3	Horizontal	177	2.20	-