

FCC Test Report

FCC ID : TTUBEOPLAYHX
Equipment : Bluetooth Headphone
Brand Name : Bang & Olufsen
Model Name : Beoplay HX
Applicant : Bang & Olufsen A/S
Bang og Olufsen Allé 1, 7600 Struer, Denmark
Manufacturer : Bang & Olufsen A/S
Bang og Olufsen Allé 1, 7600 Struer, Denmark
Standard : 47 CFR FCC Part 15.247

The product was received on Sep. 02, 2020, and testing was started from Sep. 16, 2020 and completed on Sep. 30, 2020. 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 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	-
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	-
3.5	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: 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	Gain (dBi)
1	Sage Elephant Tech co., Ltd.	S306300001000-A	Chip Antenna	N/A	0.81

For Bluetooth function:

For Bluetooth mode (1TX/1RX)

Only Ant. 1 (port 1) can be used as transmitting/receiving antenna.

1.1.3 EUT Information

Operational Condition	
EUT Power Type	From Host System / Battery
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)	0.743	1.29	2.893m	1k
BT-EDR(2Mbps)	0.745	1.28	2.899m	1k
BT-EDR(3Mbps)	0.806	0.94	2.9m	1k

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

1.1.5 Table for Multiple Listing

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

EUT	Color	Description
Sample 1	Black	All the Samples are identical, The Bluetooth chip and Antenna layout are the same. The only difference is different color.
Sample 2	Brown	
Sample 3	Gray	

Note : The Sample 1 was chosen and measured during the test. The information from manufacturer.

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
- ◆ ANSI C63.10-2013

The following reference test guidance is not within the scope of accreditation of TAF:

- ◆ KDB 558074 D01 v05r02
- ◆ 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.		
<input checked="" type="checkbox"/>	Wen Shan	ADD : No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) TEL : 886-3-318-0787 FAX : 886-3-318-0287
Test site Designation No. TW1097 with FCC.		

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
AC Conduction	CO04-HY	Edward Wang	22.8~23.6°C / 56~60%	30/Sep/2020
RF Conducted	TH06-HY	Alan Chien	20.1~26.9°C / 50~60%	16/Sep/2020~ 29/Sep/2020
Radiated	03CH09-HY	Lego Lin	22.3~24.8°C / 50~60%	18/Sep/2020~ 28/Sep/2020

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)	0.9 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	2.4 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.0 dB	Confidence levels of 95%
Temperature	0.41 °C	Confidence levels of 95%
Humidity	3.4 %	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	BlueTest3
-----------------------	-----------

Mode	Power Setting
BT-BR(1Mbps)	-
2402MHz	0
2440MHz	0
2480MHz	0
BT-EDR(2Mbps)	-
2402MHz	0
2440MHz	0
2480MHz	0
BT-EDR(3Mbps)	-
2402MHz	0
2440MHz	0
2480MHz	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 ; CTX
2	Adapter Mode ; Charging

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 <input checked="" type="checkbox"/> Non-adaptive frequency hopping systems (Non-AFH) <input checked="" type="checkbox"/> adaptive frequency hopping systems (AFH)
Non-AFH Mode configuration was found to be the worst case and measured during the test.	

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

2.4 Accessories

Accessories				
Battery	Brand Name	Synergy	Model Name	AHB723938PCT
	Power Rating	3.7 Vdc, 1110 mAh	Type	Lithium-ion Polymer Battery Pack
USB Cable	Brand Name	Bang & Olufsen	Model Name	4021HW01810JAU
	Signal Line	1.25 meter, D-shielded cable, w/o ferrite core		
Audio Cable	Brand Name	Bang & Olufsen	Model Name	4021XW01611JAS
	Signal Line	1.25 meter, non-shielded cable, w/o ferrite core		

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

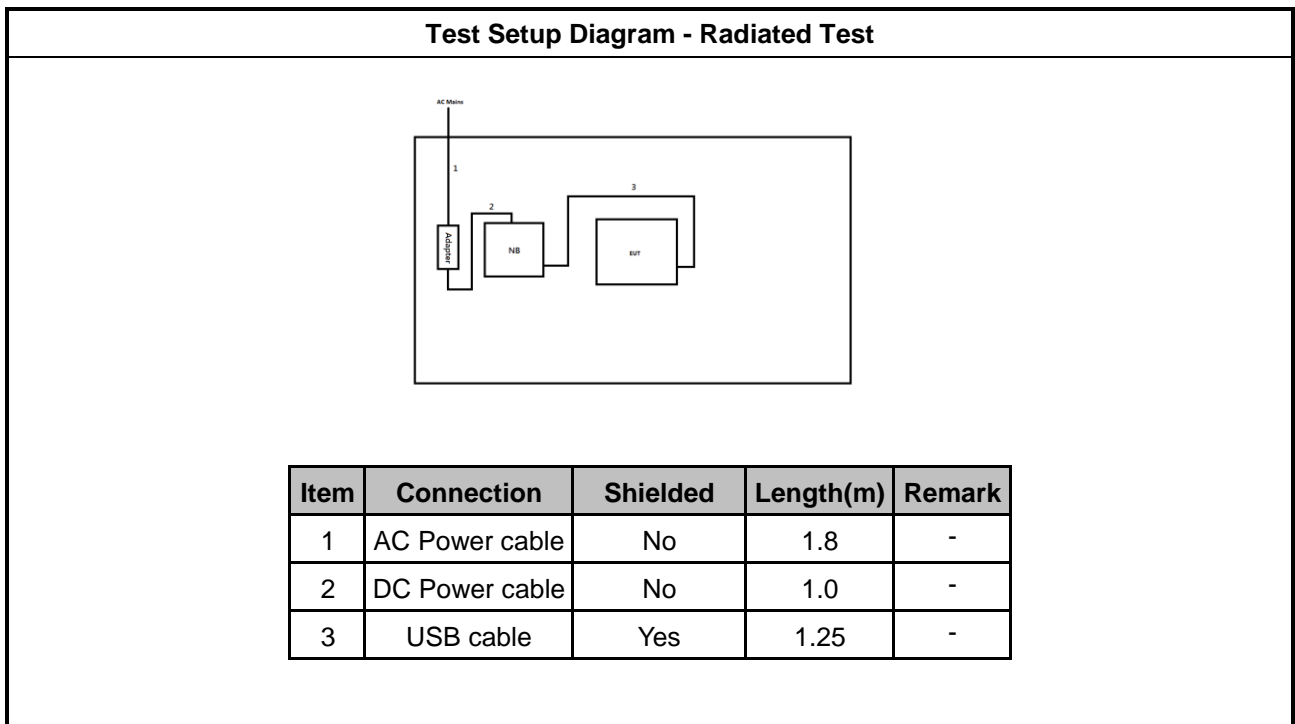
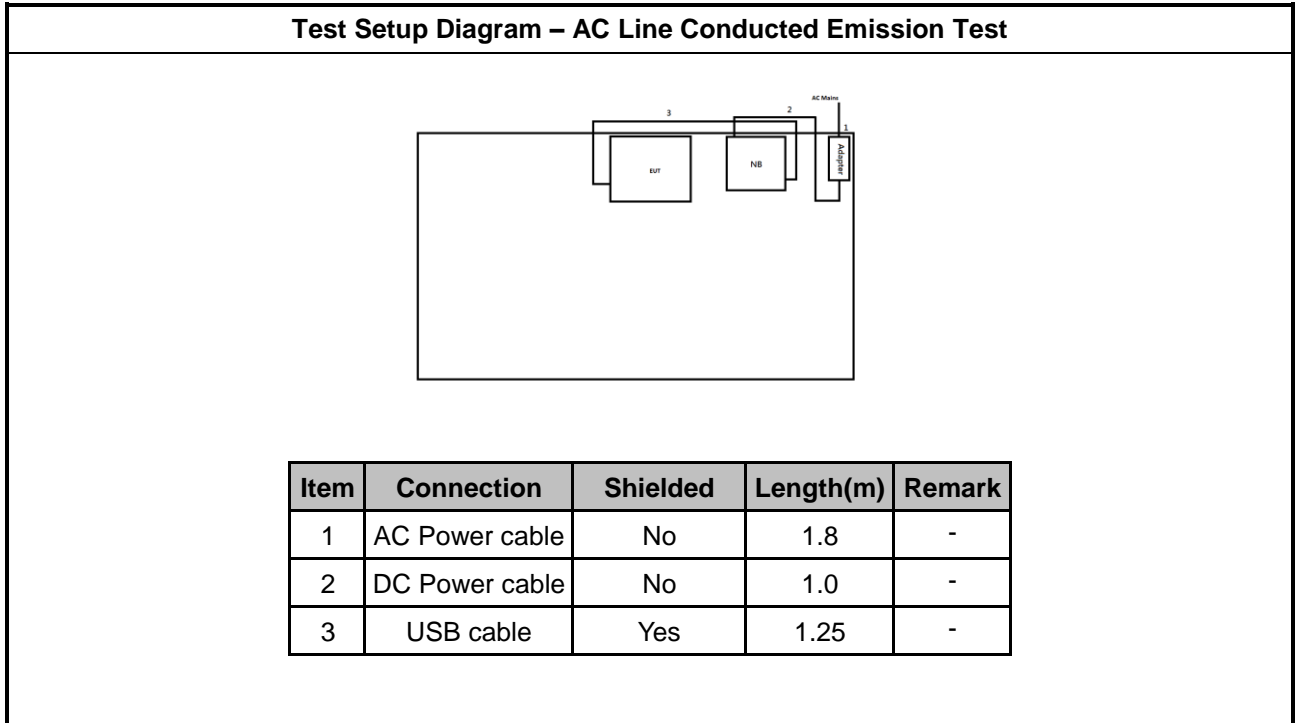
2.5 Support Equipment

Support Equipment – AC Conduction					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Notebook	Acer	ZQS	-	-
2	AC Adapter for NB	Chicony	A10-090P3A	-	-
3	Mouse(USB)	lenovo	MOGOUO	-	-
4	iPod	Apple	A1199	-	-
5	AC Adapter	Apple	A1385	-	-
6	30-pin to USB Original Cable	Apple	MA591GC	-	-

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

Support Equipment – Radiated					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Notebook	Acer	ZQS	-	-
2	AC Adapter for NB	Chicony	A10-090P3A	-	-
3	Mouse(USB)	lenovo	MOGOUO	-	-
4	iPod	Apple	A1199	-	-
5	AC Adapter	Apple	A1385	-	-
6	30-pin to USB Original Cable	Apple	MA591GC	-	-

2.6 Test Setup Diagram



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

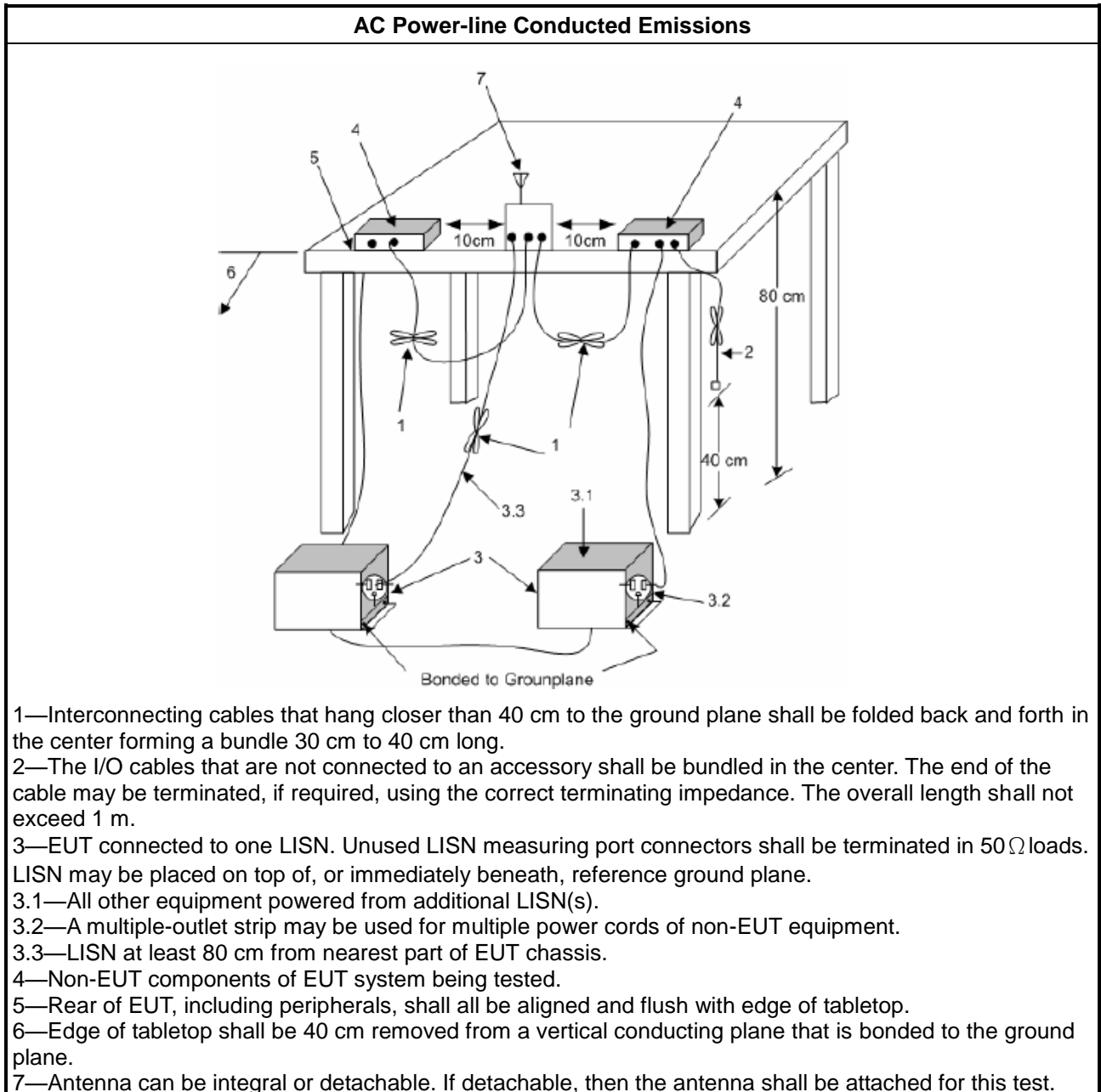
Test Method
<ul style="list-style-type: none"> Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

3.1.4 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Raw(Read Level) + LISN(LISN Factor) + CL(Cable Loss) + AT(Attenuator).

3.1.5 Test Setup



3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 20dB Bandwidth and Carrier Frequency Separation

3.2.1 20dB Bandwidth and Carrier Frequency Separation Limit

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

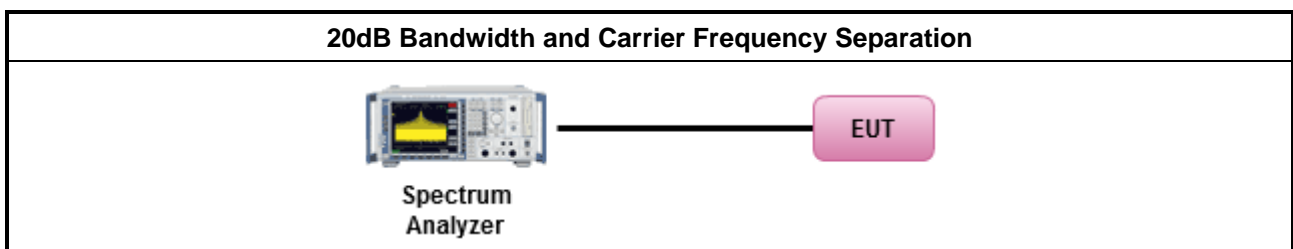
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

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

3.2.4 Test Setup



3.2.5 Test Result of 20dB Bandwidth

Refer as Appendix B

3.2.6 Test Result of Carrier Frequency Separation

Refer as Appendix B

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

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

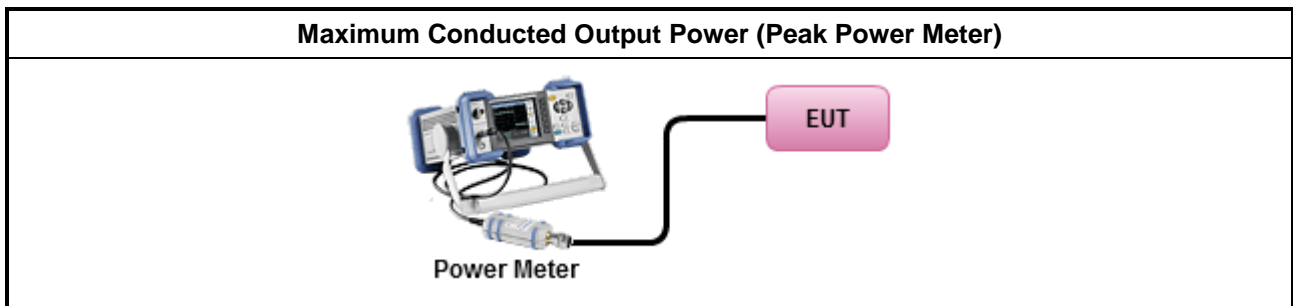
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

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

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

3.4 Number of Hopping Frequencies and Hopping Bandedge

3.4.1 Number of Hopping Frequencies Limit

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

3.4.2 Hopping Bandedge Limit

Refer clause 3.6.1 and clause 3.7.1

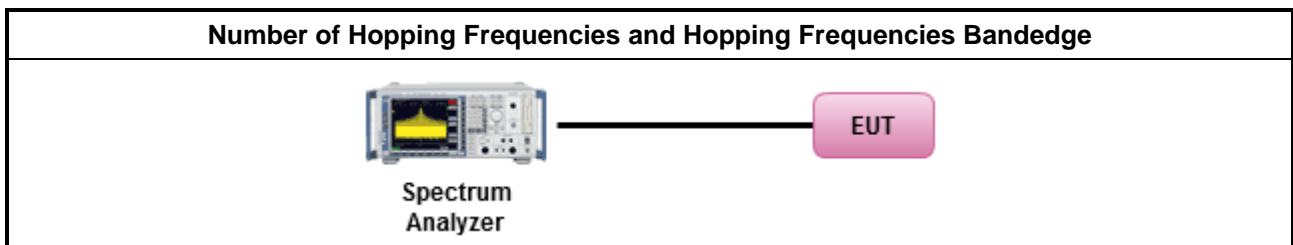
3.4.3 Measuring Instruments

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

3.4.4 Test Procedures

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

3.4.5 Test Setup



3.4.6 Test Result of Number of Hopping Frequencies

Refer as Appendix D

3.4.7 Test Result of Number of Hopping Frequencies Bandedge

Refer as Appendix D

3.5 Time of Occupancy (Dwell Time)

3.5.1 Time of Occupancy (Dwell Time) Limit

Time of Occupancy (Dwell Time) Limit for Frequency Hopping Systems	
<ul style="list-style-type: none"> 2400-2483.5 MHz Band: 	
	<ul style="list-style-type: none"> $N \geq 75$; 0.4s in $N \times 0.4$ period
	<ul style="list-style-type: none"> $75 > N \geq 15$; 0.4s in $N \times 0.4$ period
N: Number of Hopping Frequencies	

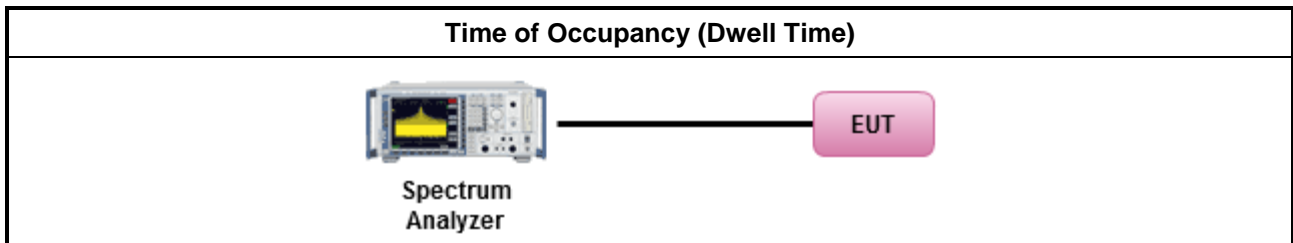
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> Refer as ANSI C63.10-2013, clause 7.8.4 for dwell time measurement. 	
<ul style="list-style-type: none"> Bluetooth ACL packets can be 1, 3, or 5 time slots. Following as dwell time. Operate DH5 at maximum dwell time and maximum duty cycle. 	
	<ul style="list-style-type: none"> The DH5 packet can cover up to 5 time slots. Operate DH5 at maximum dwell time and maximum duty cycle. A maximum length packet has duration of 5 time slots. The hopping rate is 1600 hops/second so the maximum dwell time is $5/1600$ seconds, or 3.125ms. DH5 Packet permit maximum $1600 / 79 / 6 = 3.37$ hops per second in each channel.

3.5.4 Test Setup



3.5.5 Test Result of Time of Occupancy (Dwell Time)

Refer as Appendix E

3.6 Emissions in Non-restricted Frequency Bands

3.6.1 Emissions in Non-restricted Frequency Bands Limit

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

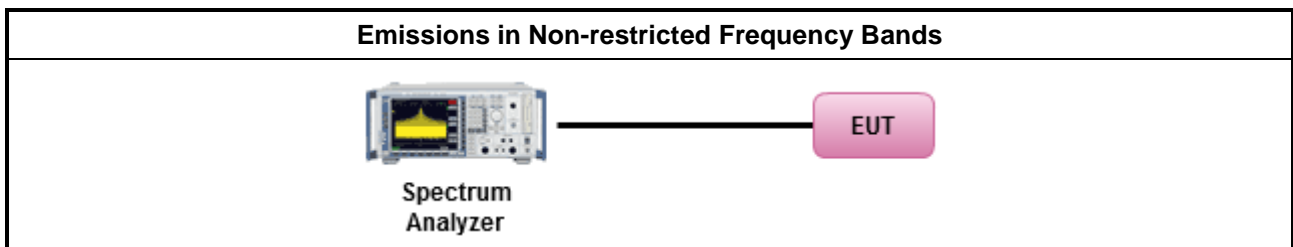
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

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

3.6.4 Test Setup



3.6.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix F

3.7 Emissions in Restricted Frequency Bands

3.7.1 Emissions in Restricted Frequency Bands Limit

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

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

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

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

3.7.2 Measuring Instruments

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

3.7.3 Test Procedures

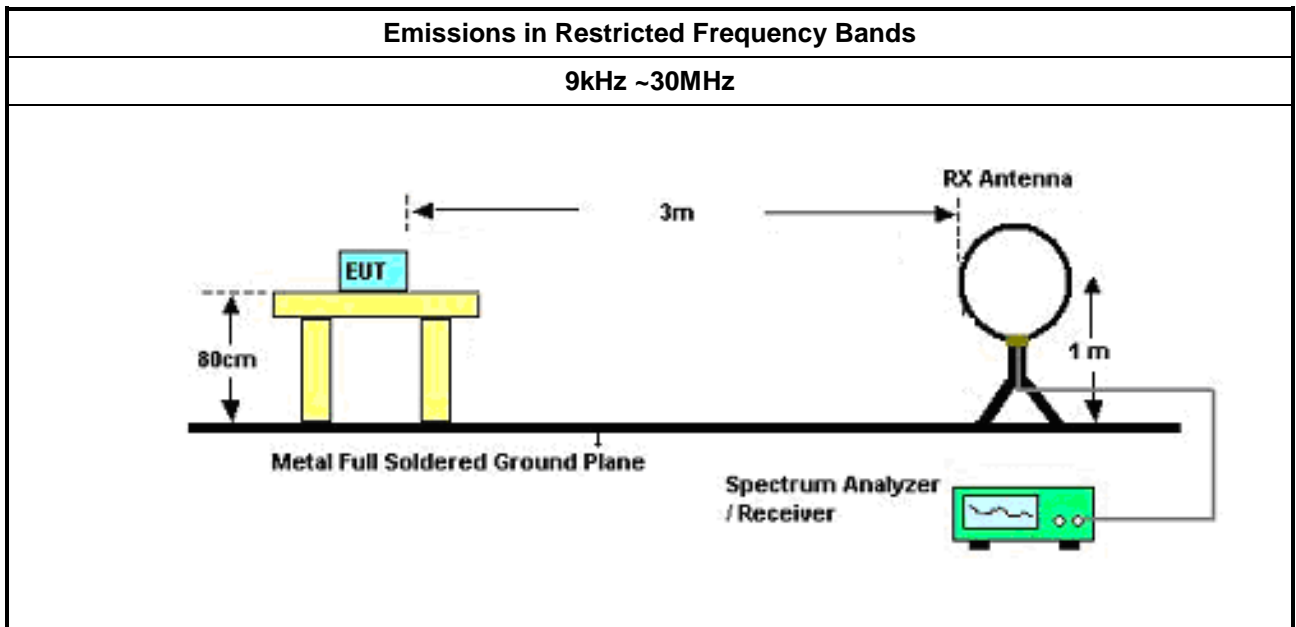
Test Method	
<ul style="list-style-type: none"> The average emission levels shall be measured in [hopping duty factor]. 	
<ul style="list-style-type: none"> Refer as ANSI C63.10; clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band. 	
<ul style="list-style-type: none"> For the transmitter unwanted emissions shall be measured using following options below: 	
	<ul style="list-style-type: none"> Refer as ANSI C63.10, clause 4.1.4.2.1 QP value.
	<ul style="list-style-type: none"> Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak.
	<ul style="list-style-type: none"> Refer as ANSI C63.10, clause 4.1.4.2.4 average value of hopping pulsed emissions.
<ul style="list-style-type: none"> KDB 414788 Open-Field Test Sites and Chamber Correlation Justification. 	
<ul style="list-style-type: none"> 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. 	
<ul style="list-style-type: none"> Open-field site and chamber correlation testing had been performed and chamber measured test result is the worst case test result. 	

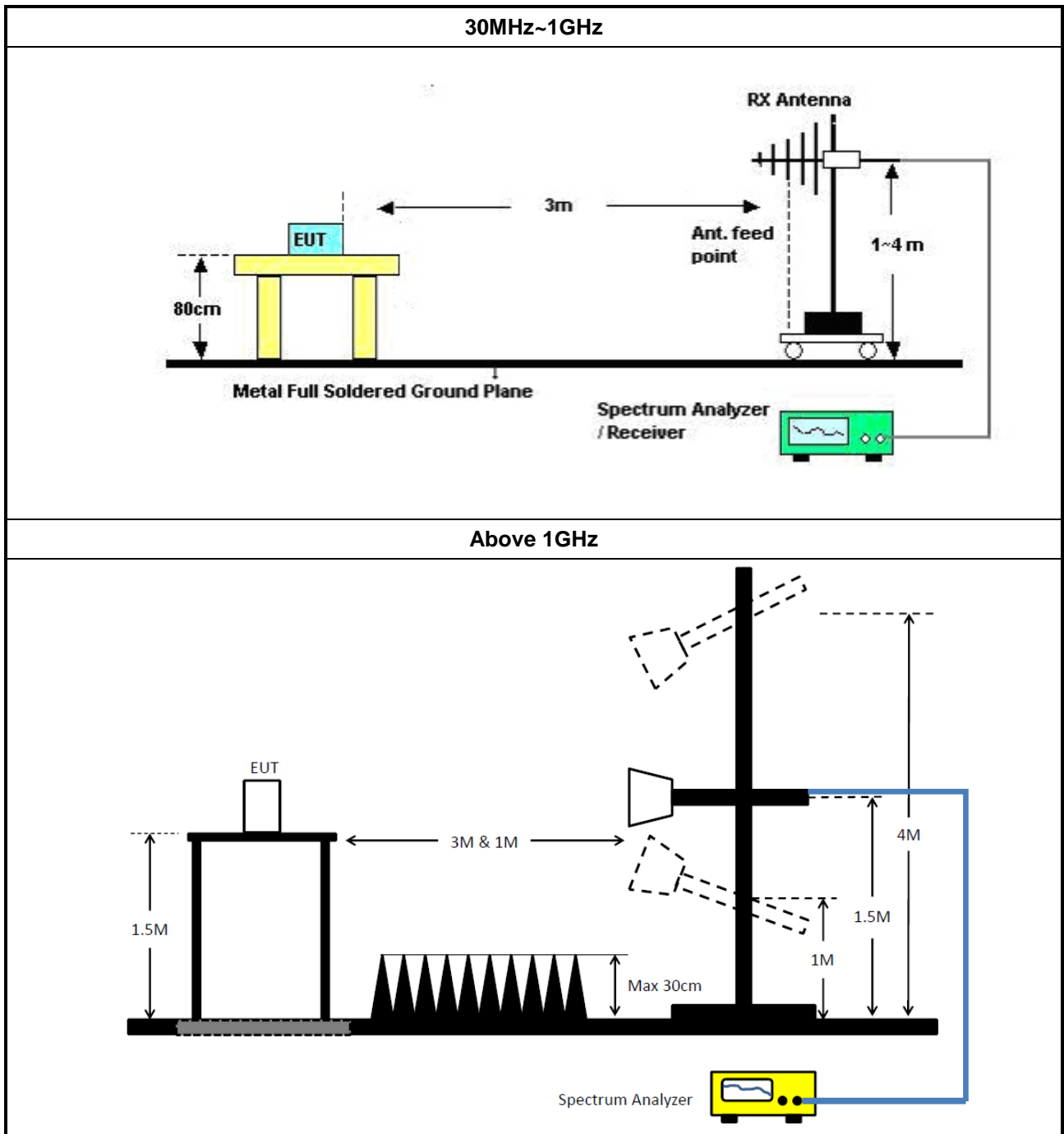
3.7.4 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Raw(Read Level) + AF(Antenna Factor) + CL(Cable Loss) - PA(Preamp Factor)

3.7.5 Test Setup





3.7.6 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.

3.7.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix G

4 Test Equipment and Calibration Data

Instrument for AC Conduction

Instrument	Manufacturer/Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
EMI Test Receiver	R&S	ESR3	102051	9kHz ~ 3.6GHz	29/May/2020	28/May/2021
LISN	R&S	ENV216	101295	9kHz ~ 30MHz	05/Nov/2019	04/Nov/2020
RF Cable-CON	MTJ	RG142	CB002-CO	9kHz ~ 200MHz	31/Aug/2020	30/Aug/2021
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9kHz ~ 30MHz	21/Sep/2020	20/Sep/2021

Instrument for Conducted Test

Instrument	Manufacturer/Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Signal Analyzer	R&S	FSV 40	101029	10KHz ~ 40GHz	01/Oct/2019	30/Sep/2020
SMB100A Signal Generator	R&S	SMB100A03	181147	100kHz~40GHz	12/Nov/2018	11/Nov/2020
Pulse Sensor	Anritsu	MA2411B	1027452	300MHz~40GHz	18/Mar/2020	17/Mar/2021
Power Meter	Anritsu	ML2495A	1124009	300MHz~40GHz	18/Mar/2020	17/Mar/2021

Instrument for Radiated Test

Instrument	Manufacturer/Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	30MHz~1GHz 3m	27/Mar/2020	26/Mar/2021
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	1GHz~18GHz 3m	19/Mar/2020	18/Mar/2021
EXA Signal Analyzer	KEYSIGHT	N9010A	MY54200885	10Hz~44GHz	17/Aug/2020	16/Aug/2021
Amplifier	EMC	EMC9135	980232	9kHz~1GHz	14/Apr/2020	13/Apr/2021
Microwave Preamplifier	Agilent	8449B	3008A02096	1GHz~26.5GHz	24/Jun/2020	23/Jun/2021
Bilog Antenna & 5dB Attenuator	TESEQ & MTJ	CBL6111D&MT J6102-05	35418 & 3	30MHz~1GHz	30/Sep/2019	29/Sep/2020
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA9120 D 1534	1GHz~18GHz	28/May/2020	27/May/2021
RF Cable-low	Jye Bao	RG142	CB031+324530/4	9kHz~30MHz	03/Sep/2020	02/Sep/2021
RF Cable-low	Jye Bao	RG142	CB031+324530/4	30MHz~1GHz	12/Feb/2020	11/Feb/2021
RF Cable-R03m	HUBER+SUHNER	SUCOFLEX104	324530/4+17173/4	1GHz~40GHz	12/Feb/2020	11/Feb/2021
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170221	18GHz~40GHz	13/Mar/2020	12/Mar/2021
Loop Antenna	TESEQ	HLA 6120	31244	9kHz~30MHz	16/Mar/2020	15/Mar/2021
EMI Test Receiver	R&S	ESR3	102051	9kHz~3.6GHz	29/May/2020	28/May/2021



Summary

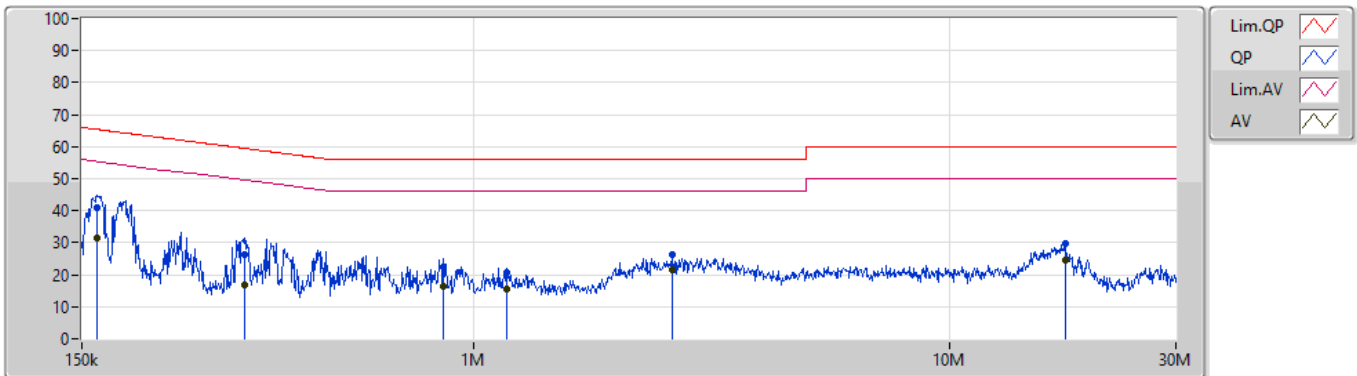
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	197.568k	37.78	53.71	-15.93	Neutral

Mode Configure

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition	Comments
Mode 1	Pass	QP	161.175k	41.01	65.41	-24.40	Line	-
Mode 1	Pass	AV	161.175k	31.54	55.41	-23.87	Line	"Worst"
Mode 1	Pass	QP	330.648k	26.50	59.44	-32.94	Line	-
Mode 1	Pass	AV	330.648k	16.97	49.44	-32.47	Line	-
Mode 1	Pass	QP	865.349k	22.34	56.00	-33.66	Line	-
Mode 1	Pass	AV	865.349k	16.57	46.00	-29.43	Line	-
Mode 1	Pass	QP	1.172M	20.63	56.00	-35.37	Line	-
Mode 1	Pass	AV	1.172M	15.68	46.00	-30.32	Line	-
Mode 1	Pass	QP	2.615M	26.11	56.00	-29.89	Line	-
Mode 1	Pass	AV	2.615M	21.51	46.00	-24.49	Line	-
Mode 1	Pass	QP	17.555M	29.79	60.00	-30.21	Line	-
Mode 1	Pass	AV	17.555M	24.56	50.00	-25.44	Line	-
Mode 1	Pass	QP	167.071k	28.88	65.10	-36.22	Neutral	-
Mode 1	Pass	AV	167.071k	18.79	55.10	-36.31	Neutral	-
Mode 1	Pass	QP	197.568k	42.03	63.71	-21.68	Neutral	-
Mode 1	Pass	AV	197.568k	37.78	53.71	-15.93	Neutral	"Worst"
Mode 1	Pass	QP	428.605k	20.94	57.28	-36.34	Neutral	-
Mode 1	Pass	AV	428.605k	16.90	47.28	-30.38	Neutral	-
Mode 1	Pass	QP	1.117M	24.25	56.00	-31.75	Neutral	-
Mode 1	Pass	AV	1.117M	19.30	46.00	-26.70	Neutral	-
Mode 1	Pass	QP	2.983M	26.83	56.00	-29.17	Neutral	-
Mode 1	Pass	AV	2.983M	22.00	46.00	-24.00	Neutral	-
Mode 1	Pass	QP	17.004M	27.63	60.00	-32.37	Neutral	-
Mode 1	Pass	AV	17.004M	22.83	50.00	-27.17	Neutral	-

Conducted Emissions at Powerline_Mode 1

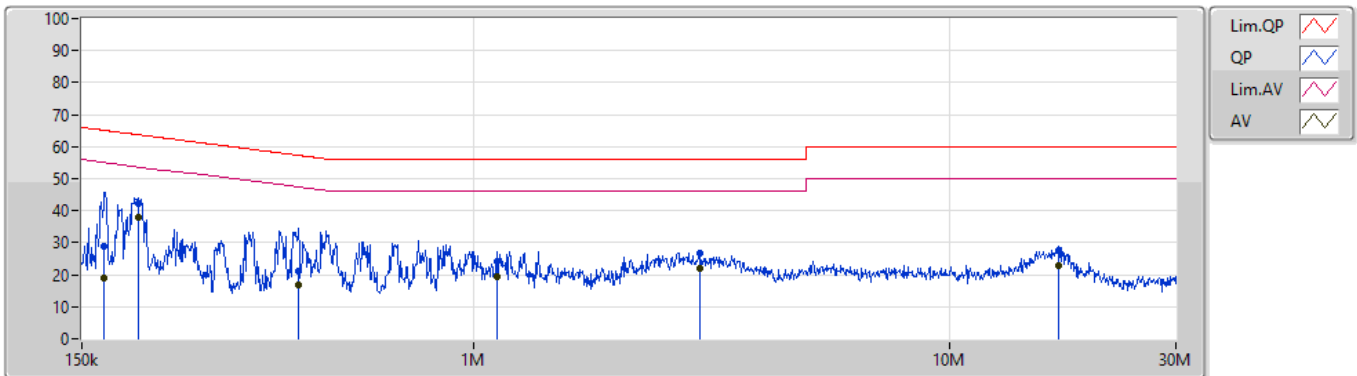
30/09/2020



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)
QP	161.175k	41.01	65.41	-24.40	19.57	Line	-	21.44	9.66	0.01	9.90
AV	161.175k	31.54	55.41	-23.87	19.57	Line	"Worst"	11.97	9.66	0.01	9.90
QP	330.648k	26.50	59.44	-32.94	19.56	Line	-	6.94	9.64	0.02	9.90
AV	330.648k	16.97	49.44	-32.47	19.56	Line	-	-2.59	9.64	0.02	9.90
QP	865.349k	22.34	56.00	-33.66	19.51	Line	-	2.83	9.64	0.05	9.82
AV	865.349k	16.57	46.00	-29.43	19.51	Line	-	-2.94	9.64	0.05	9.82
QP	1.172M	20.63	56.00	-35.37	19.50	Line	-	1.13	9.64	0.06	9.80
AV	1.172M	15.68	46.00	-30.32	19.50	Line	-	-3.82	9.64	0.06	9.80
QP	2.615M	26.11	56.00	-29.89	19.59	Line	-	6.52	9.65	0.10	9.84
AV	2.615M	21.51	46.00	-24.49	19.59	Line	-	1.92	9.65	0.10	9.84
QP	17.555M	29.79	60.00	-30.21	19.82	Line	-	9.97	9.65	0.27	9.90
AV	17.555M	24.56	50.00	-25.44	19.82	Line	-	4.74	9.65	0.27	9.90

Conducted Emissions at Powerline_Mode 1

30/09/2020



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	167.071k	28.88	65.10	-36.22	19.56	Neutral	-	9.32	9.65	0.01	9.90			
AV	167.071k	18.79	55.10	-36.31	19.56	Neutral	-	-0.77	9.65	0.01	9.90			
QP	197.568k	42.03	63.71	-21.68	19.55	Neutral	-	22.48	9.64	0.01	9.90			
AV	197.568k	37.78	53.71	-15.93	19.55	Neutral	"Worst"	18.23	9.64	0.01	9.90			
QP	428.605k	20.94	57.28	-36.34	19.54	Neutral	-	1.40	9.63	0.02	9.89			
AV	428.605k	16.90	47.28	-30.38	19.54	Neutral	-	-2.64	9.63	0.02	9.89			
QP	1.117M	24.25	56.00	-31.75	19.48	Neutral	-	4.77	9.63	0.05	9.80			
AV	1.117M	19.30	46.00	-26.70	19.48	Neutral	-	-0.18	9.63	0.05	9.80			
QP	2.983M	26.83	56.00	-29.17	19.62	Neutral	-	7.21	9.66	0.10	9.86			
AV	2.983M	22.00	46.00	-24.00	19.62	Neutral	-	2.38	9.66	0.10	9.86			
QP	17.004M	27.63	60.00	-32.37	19.89	Neutral	-	7.74	9.72	0.27	9.90			
AV	17.004M	22.83	50.00	-27.17	19.89	Neutral	-	2.94	9.72	0.27	9.90			



Summary

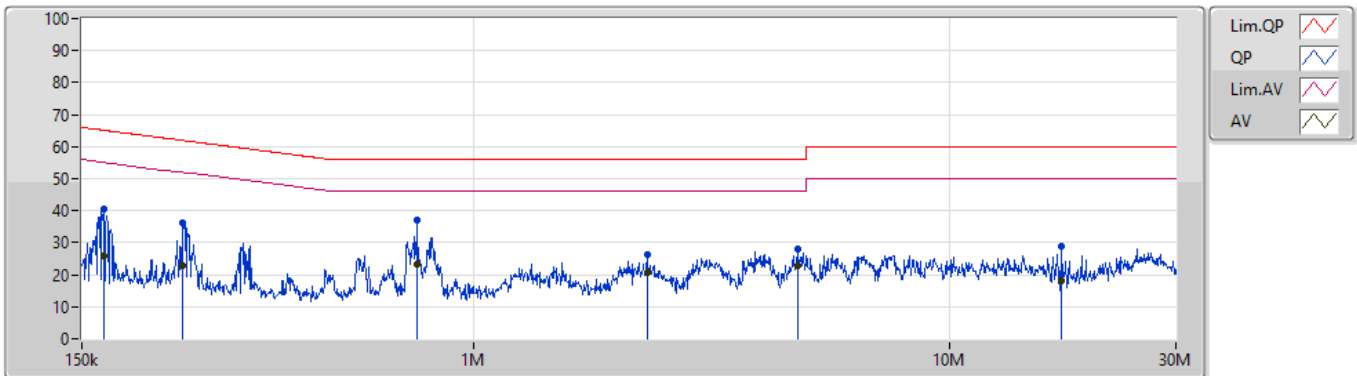
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 2	Pass	AV	746.524k	27.68	46.00	-18.32	Neutral

Mode Configure

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition	Comments
Mode 2	Pass	QP	167.071k	40.54	65.10	-24.56	Line	-
Mode 2	Pass	AV	167.071k	25.69	55.10	-29.41	Line	-
Mode 2	Pass	QP	245.097k	36.13	61.93	-25.80	Line	-
Mode 2	Pass	AV	245.097k	22.63	51.93	-29.30	Line	-
Mode 2	Pass	QP	758.54k	37.01	56.00	-18.99	Line	"Worst"
Mode 2	Pass	AV	758.54k	23.43	46.00	-22.57	Line	-
Mode 2	Pass	QP	2.32M	26.41	56.00	-29.59	Line	-
Mode 2	Pass	AV	2.32M	20.67	46.00	-25.33	Line	-
Mode 2	Pass	QP	4.797M	28.06	56.00	-27.94	Line	-
Mode 2	Pass	AV	4.797M	22.82	46.00	-23.18	Line	-
Mode 2	Pass	QP	17.277M	28.72	60.00	-31.28	Line	-
Mode 2	Pass	AV	17.277M	18.10	50.00	-31.90	Line	-
Mode 2	Pass	QP	165.743k	40.28	65.18	-24.90	Neutral	-
Mode 2	Pass	AV	165.743k	26.65	55.18	-28.53	Neutral	-
Mode 2	Pass	QP	247.062k	35.60	61.85	-26.25	Neutral	-
Mode 2	Pass	AV	247.062k	25.25	51.85	-26.60	Neutral	-
Mode 2	Pass	QP	746.524k	37.09	56.00	-18.91	Neutral	-
Mode 2	Pass	AV	746.524k	27.68	46.00	-18.32	Neutral	"Worst"
Mode 2	Pass	QP	2.099M	28.17	56.00	-27.83	Neutral	-
Mode 2	Pass	AV	2.099M	21.34	46.00	-24.66	Neutral	-
Mode 2	Pass	QP	3.898M	29.59	56.00	-26.41	Neutral	-
Mode 2	Pass	AV	3.898M	23.09	46.00	-22.91	Neutral	-
Mode 2	Pass	QP	22.485M	27.33	60.00	-32.67	Neutral	-
Mode 2	Pass	AV	22.485M	21.83	50.00	-28.17	Neutral	-

Conducted Emissions at Powerline

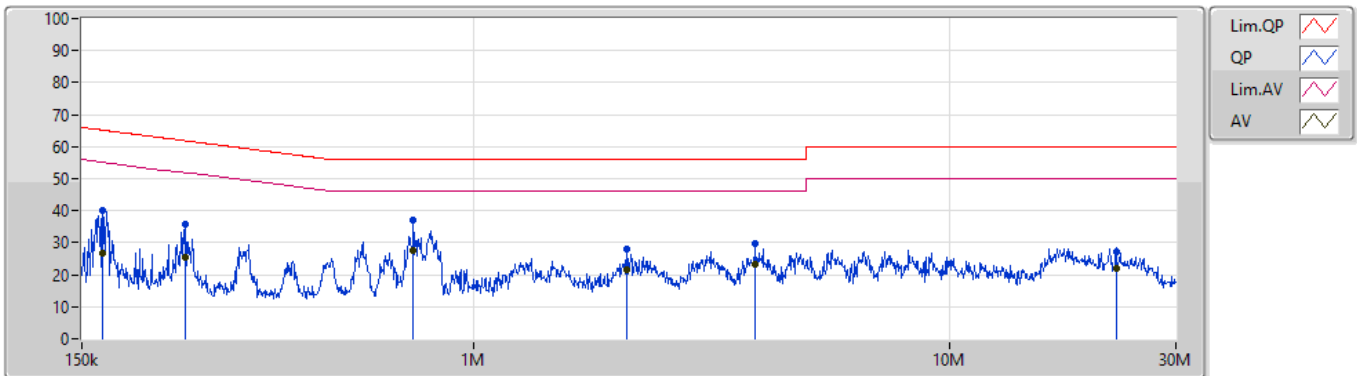
30/09/2020



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)
QP	167.071k	40.54	65.10	-24.56	19.57	Line	-	20.97	9.66	0.01	9.90
AV	167.071k	25.69	55.10	-29.41	19.57	Line	-	6.12	9.66	0.01	9.90
QP	245.097k	36.13	61.93	-25.80	19.56	Line	-	16.57	9.65	0.01	9.90
AV	245.097k	22.63	51.93	-29.30	19.56	Line	-	3.07	9.65	0.01	9.90
QP	758.54k	37.01	56.00	-18.99	19.51	Line	"Worst"	17.50	9.64	0.04	9.83
AV	758.54k	23.43	46.00	-22.57	19.51	Line	-	3.92	9.64	0.04	9.83
QP	2.32M	26.41	56.00	-29.59	19.56	Line	-	6.85	9.65	0.09	9.82
AV	2.32M	20.67	46.00	-25.33	19.56	Line	-	1.11	9.65	0.09	9.82
QP	4.797M	28.06	56.00	-27.94	19.71	Line	-	8.35	9.67	0.14	9.90
AV	4.797M	22.82	46.00	-23.18	19.71	Line	-	3.11	9.67	0.14	9.90
QP	17.277M	28.72	60.00	-31.28	19.82	Line	-	8.90	9.65	0.27	9.90
AV	17.277M	18.10	50.00	-31.90	19.82	Line	-	-1.72	9.65	0.27	9.90

Conducted Emissions at Powerline

30/09/2020



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)
QP	165.743k	40.28	65.18	-24.90	19.56	Neutral	-	20.72	9.65	0.01	9.90
AV	165.743k	26.65	55.18	-28.53	19.56	Neutral	-	7.09	9.65	0.01	9.90
QP	247.062k	35.60	61.85	-26.25	19.55	Neutral	-	16.05	9.64	0.01	9.90
AV	247.062k	25.25	51.85	-26.60	19.55	Neutral	-	5.70	9.64	0.01	9.90
QP	746.524k	37.09	56.00	-18.91	19.50	Neutral	-	17.59	9.63	0.04	9.83
AV	746.524k	27.68	46.00	-18.32	19.50	Neutral	"Worst"	8.18	9.63	0.04	9.83
QP	2.099M	28.17	56.00	-27.83	19.54	Neutral	-	8.63	9.65	0.08	9.81
AV	2.099M	21.34	46.00	-24.66	19.54	Neutral	-	1.80	9.65	0.08	9.81
QP	3.898M	29.59	56.00	-26.41	19.68	Neutral	-	9.91	9.66	0.12	9.90
AV	3.898M	23.09	46.00	-22.91	19.68	Neutral	-	3.41	9.66	0.12	9.90
QP	22.485M	27.33	60.00	-32.67	19.92	Neutral	-	7.41	9.70	0.32	9.90
AV	22.485M	21.83	50.00	-28.17	19.92	Neutral	-	1.91	9.70	0.32	9.90



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)	938.75k	870.565k	871KF1D	933.75k	870.565k
BT-EDR(2Mbps)	1.328M	1.209M	1M21G1D	1.325M	1.205M
BT-EDR(3Mbps)	1.325M	1.208M	1M21G1D	1.323M	1.207M

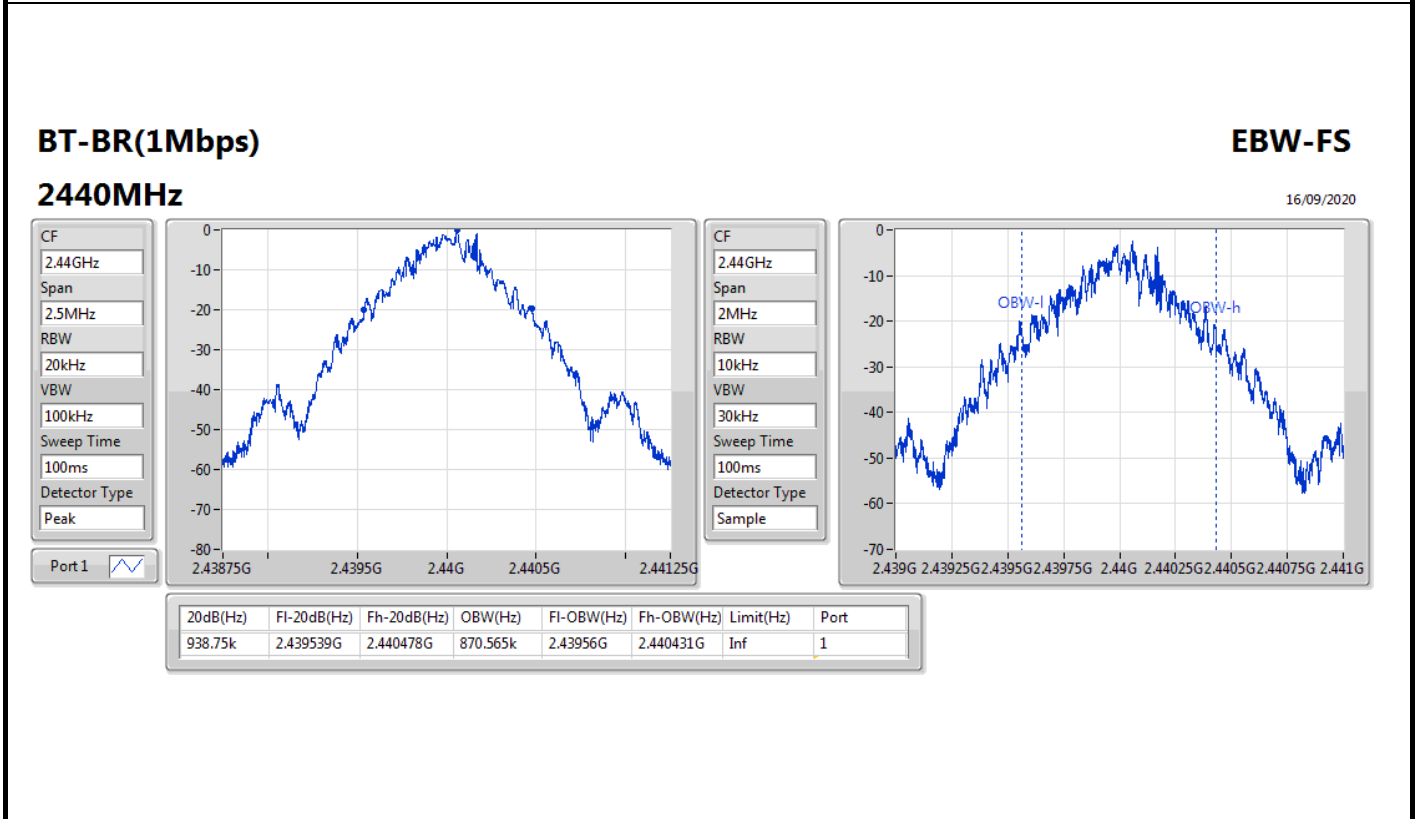
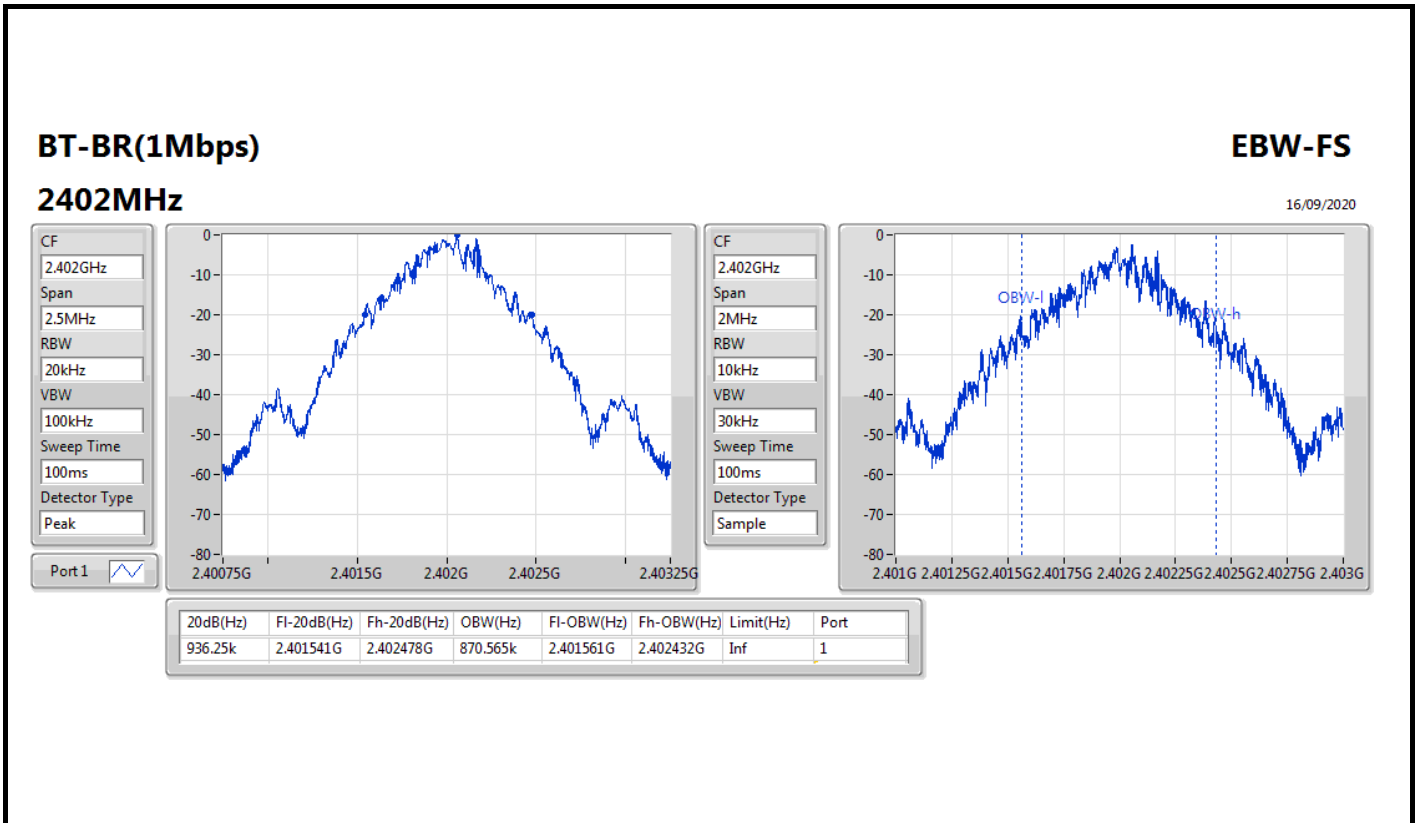
Max-N dB = Maximum 20dB down bandwidth; Max-OBW = Maximum 99% occupied bandwidth;
Min-N dB = Minimum 20dB down bandwidth; Min-OBW = Minimum 99% occupied bandwidth

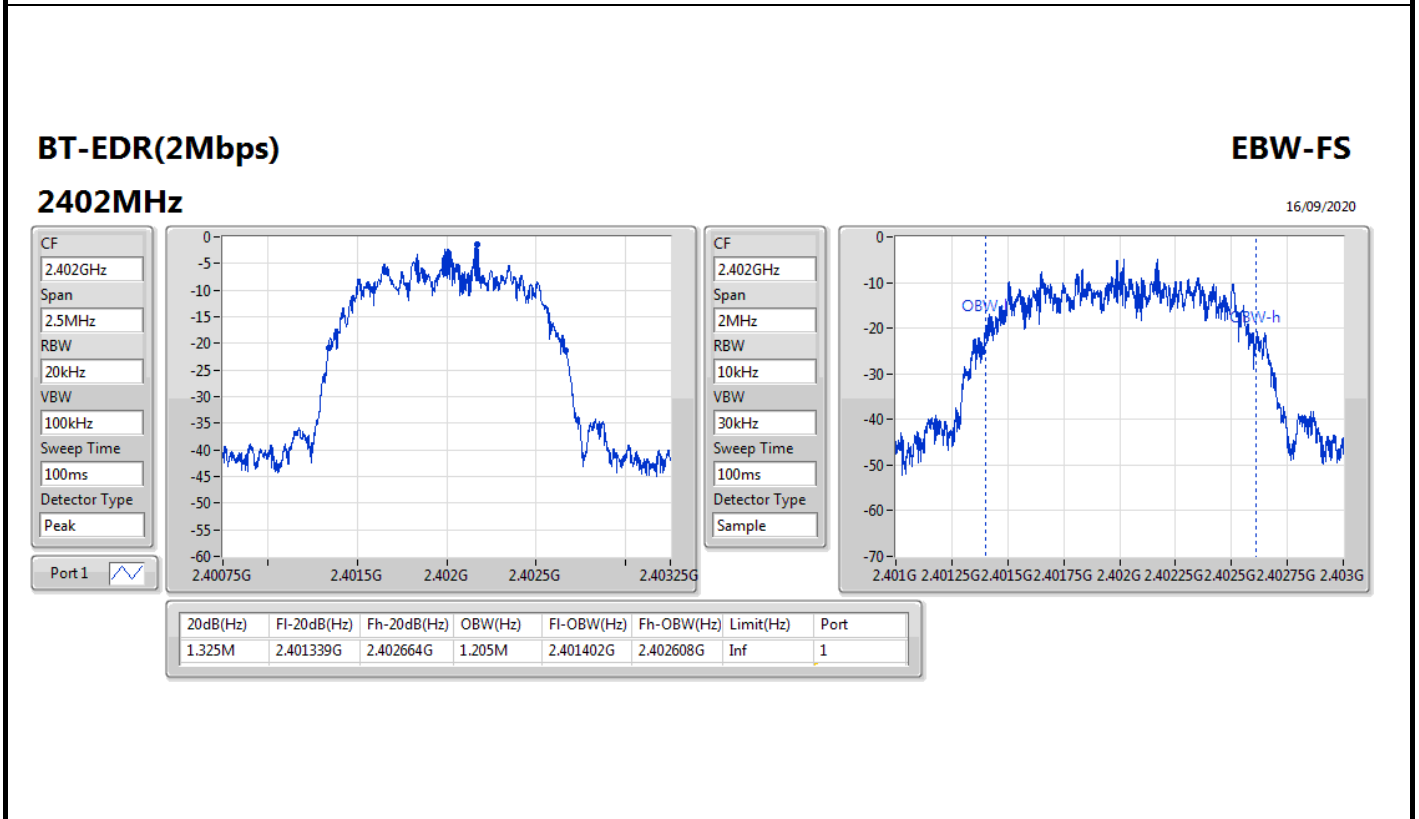
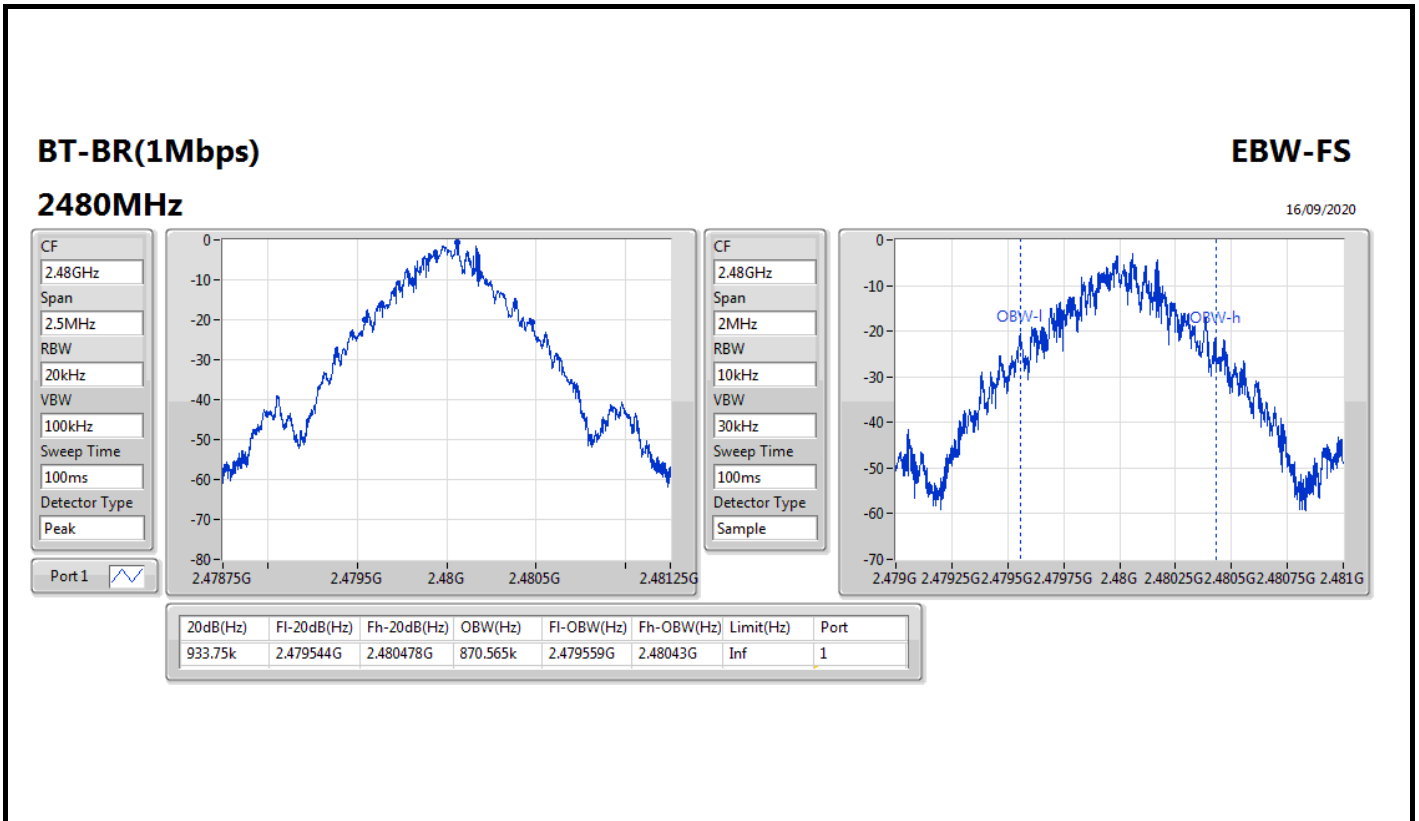


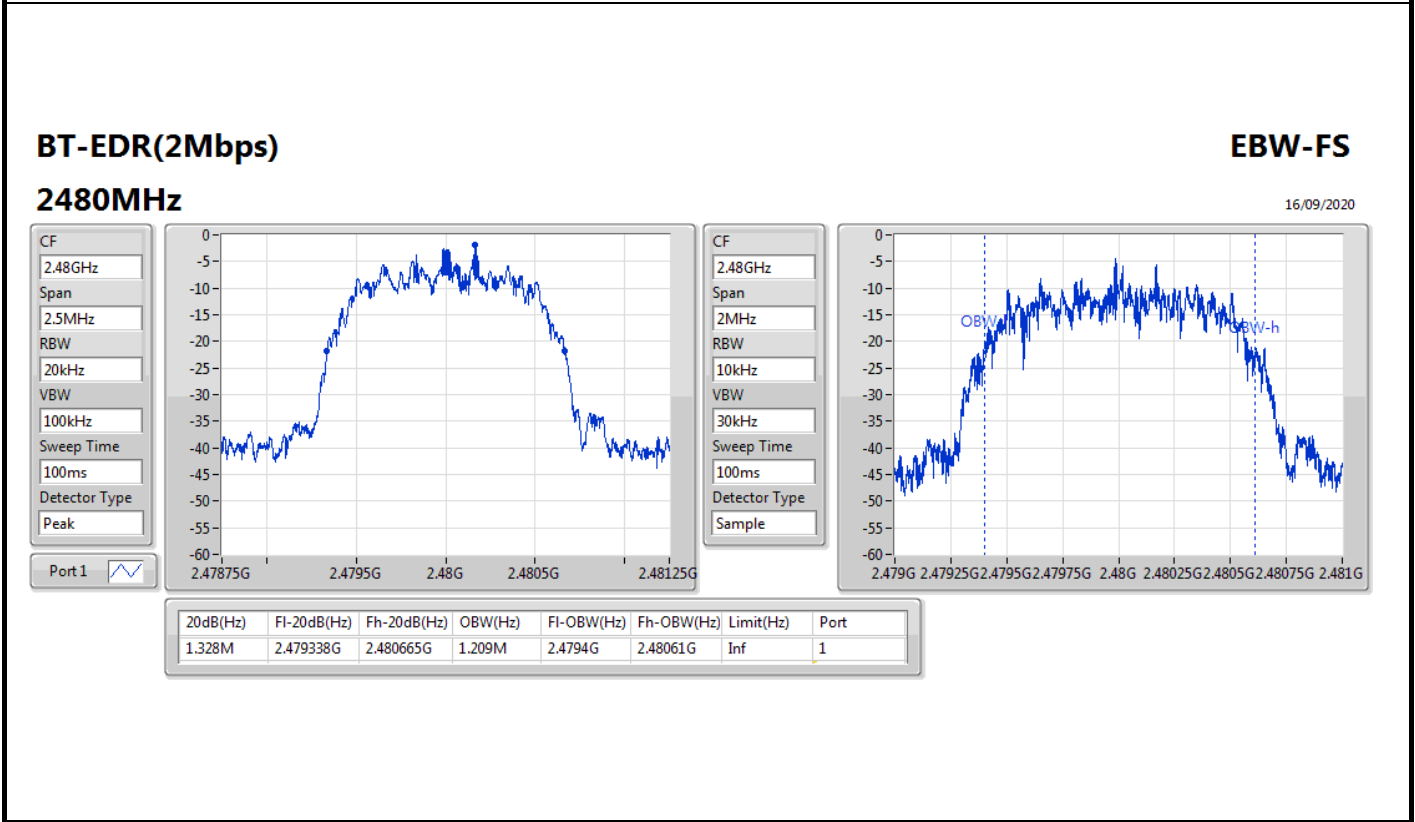
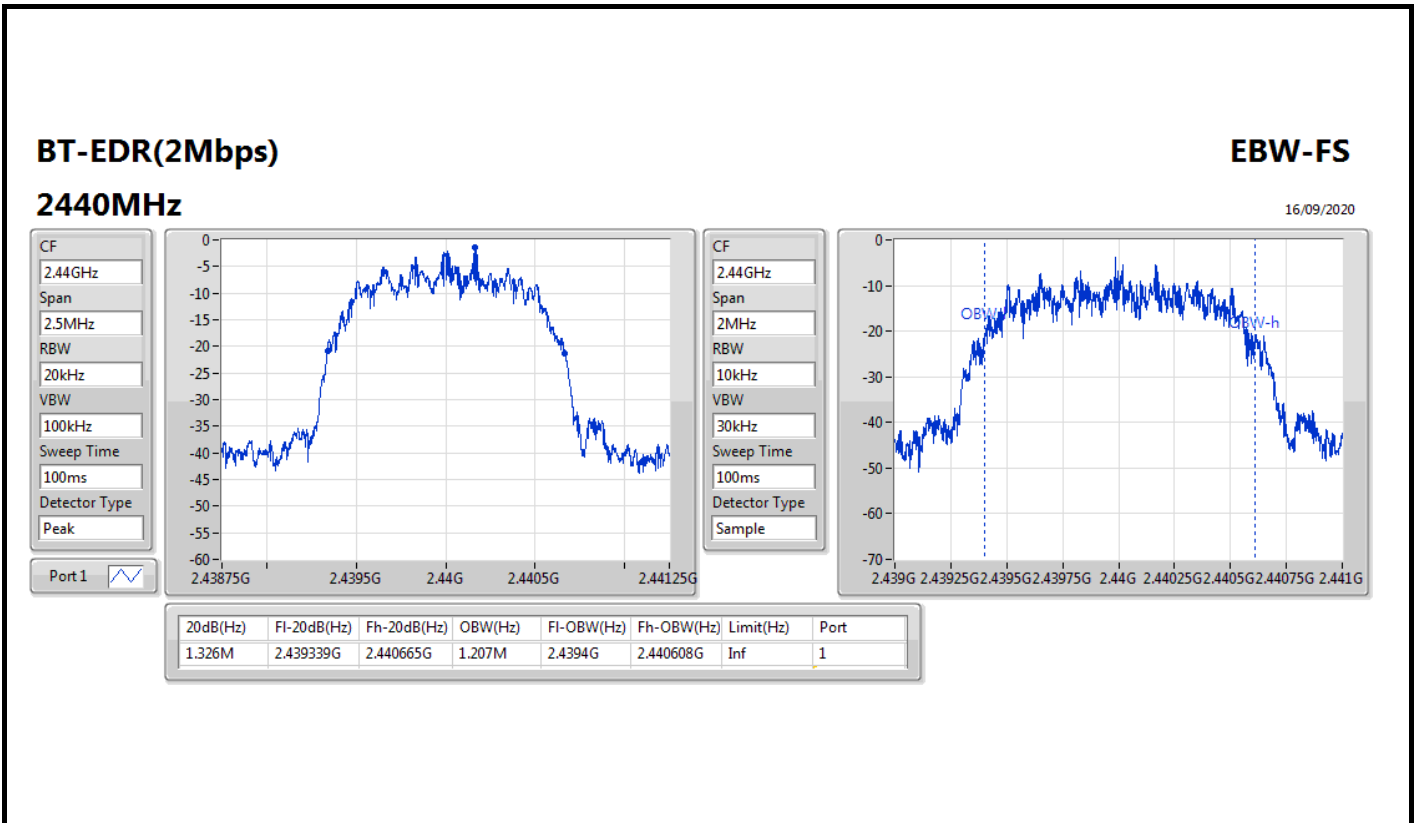
Result

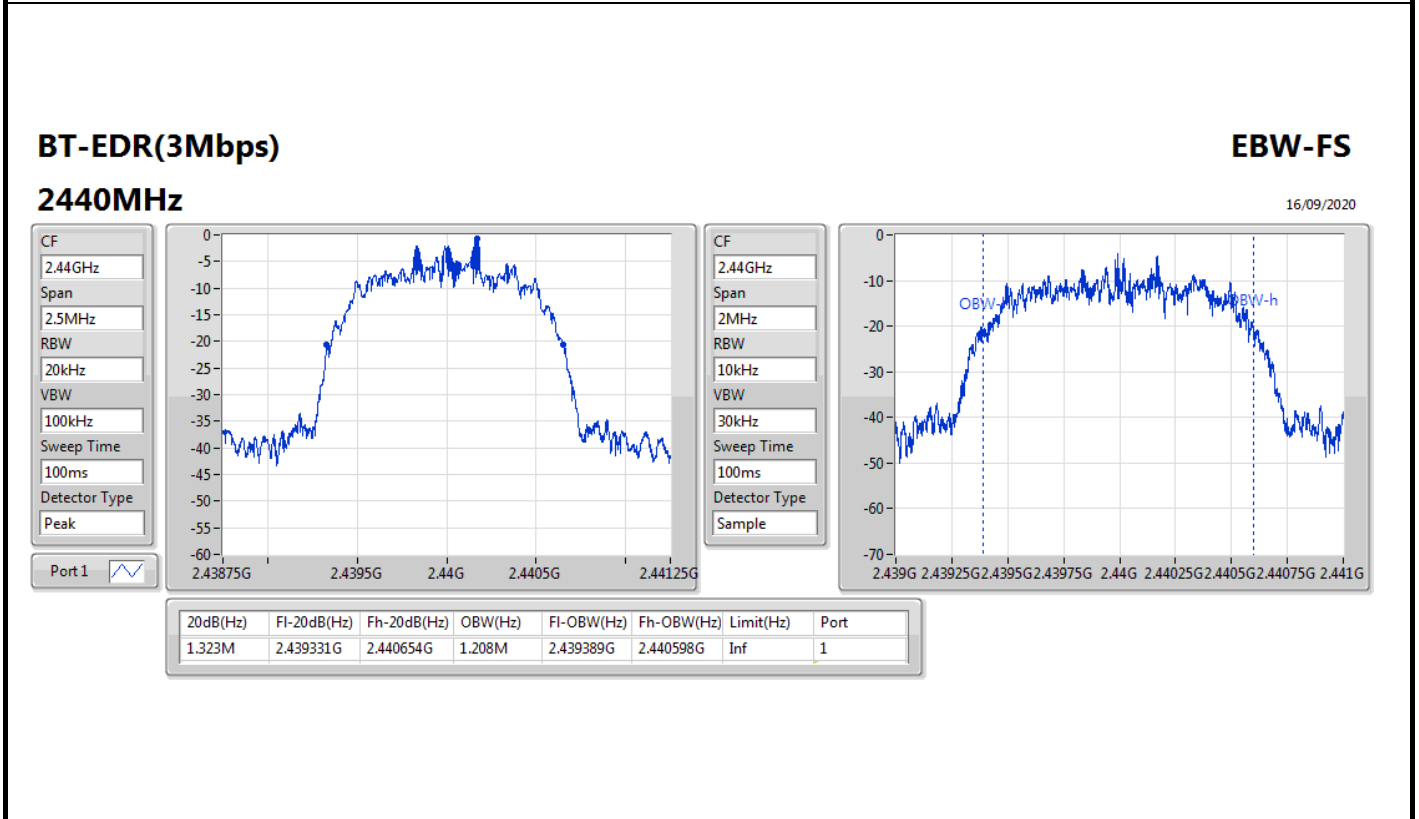
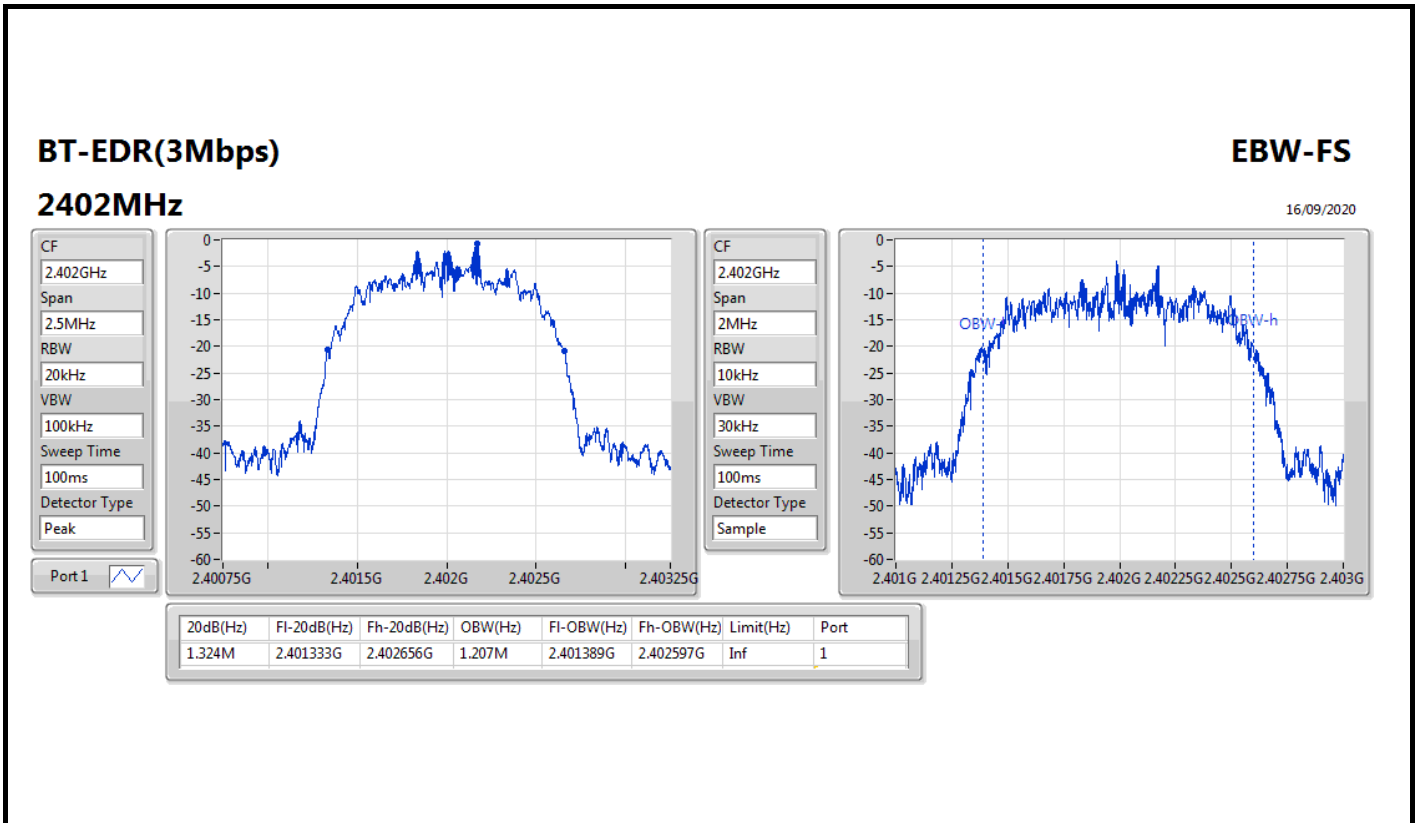
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-BR(1Mbps)	-	-	-	-
2402MHz_FHSS	Pass	Inf	936.25k	870.565k
2440MHz_FHSS	Pass	Inf	938.75k	870.565k
2480MHz_FHSS	Pass	Inf	933.75k	870.565k
BT-EDR(2Mbps)	-	-	-	-
2402MHz_FHSS	Pass	Inf	1.325M	1.205M
2440MHz_FHSS	Pass	Inf	1.326M	1.207M
2480MHz_FHSS	Pass	Inf	1.328M	1.209M
BT-EDR(3Mbps)	-	-	-	-
2402MHz_FHSS	Pass	Inf	1.324M	1.207M
2440MHz_FHSS	Pass	Inf	1.323M	1.208M
2480MHz_FHSS	Pass	Inf	1.325M	1.207M

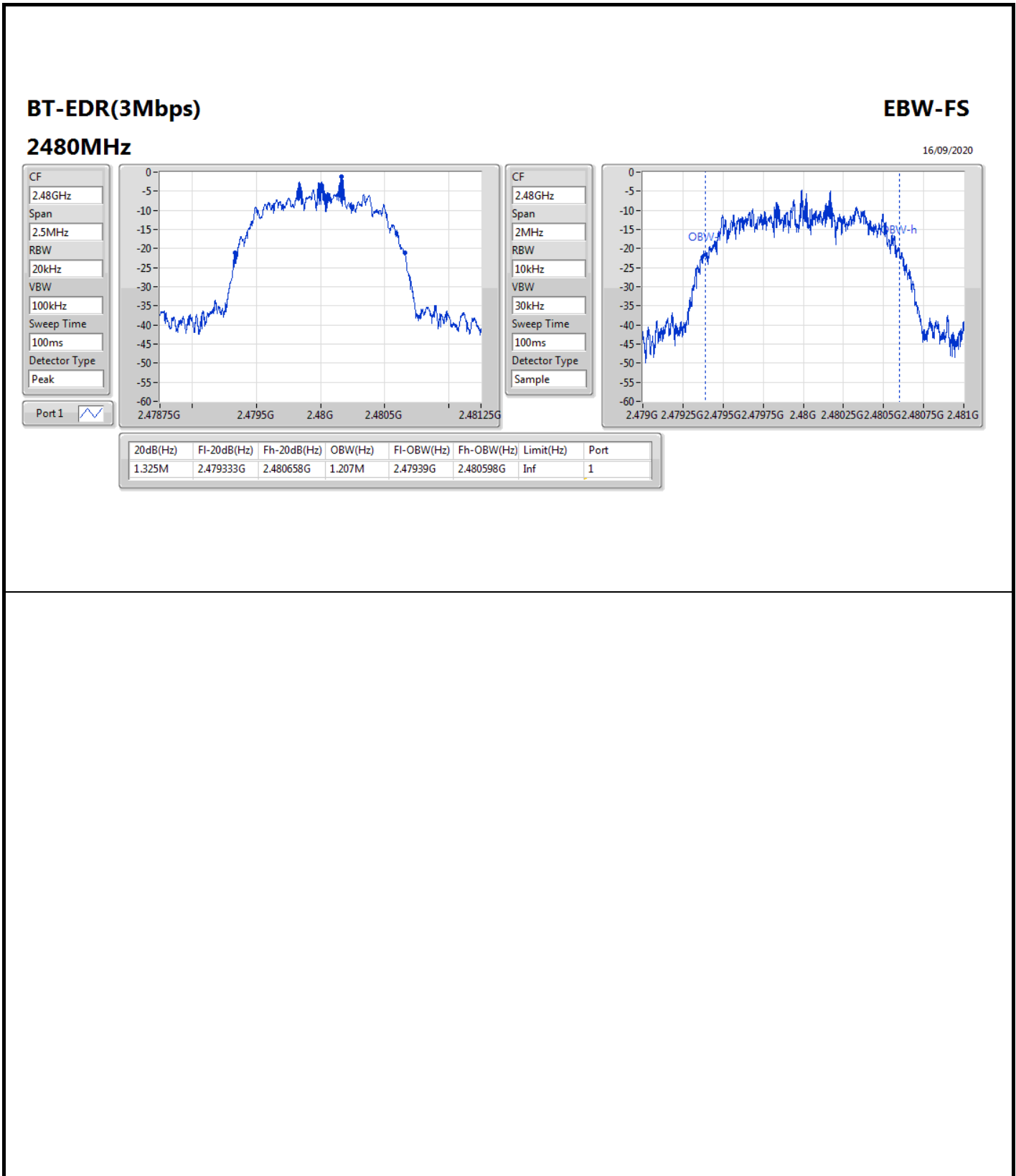
Port X-N dB = Port X 20dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth













Summary

Mode	Max-Space (Hz)	Min-Space (Hz)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	1.002M	1.0005M
BT-EDR(2Mbps)	1.002M	997.5k
BT-EDR(3Mbps)	1.0005M	999k



Result

Mode	Result	Fl (Hz)	Fh (Hz)	Ch.Space (Hz)	Limit (Hz)
BT-BR(1Mbps)	-	-	-	-	-
2402MHz_FHSS	Pass	2.402164G	2.403165G	1.0005M	623.5425k
2440MHz_FHSS	Pass	2.440164G	2.441166G	1.002M	625.2075k
2480MHz_FHSS	Pass	2.479164G	2.480165G	1.0005M	621.8775k
BT-EDR(2Mbps)	-	-	-	-	-
2402MHz_FHSS	Pass	2.402005G	2.403007G	1.002M	882.45k
2440MHz_FHSS	Pass	2.440008G	2.441006G	997.5k	883.116k
2480MHz_FHSS	Pass	2.479005G	2.480007G	1.002M	884.448k
BT-EDR(3Mbps)	-	-	-	-	-
2402MHz_FHSS	Pass	2.402164G	2.403165G	1.0005M	882.45k
2440MHz_FHSS	Pass	2.440166G	2.441166G	1.0005M	881.118k
2480MHz_FHSS	Pass	2.479164G	2.480163G	999k	882.45k

BT-BR(1Mbps)

Channel Separation-FS

2.402G/2.403GHz

16/09/2020



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.402164G	2.403165G	1.0005M	623.5425k

BT-BR(1Mbps)

Channel Separation-FS

2.44G/2.441GHz

16/09/2020



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.440164G	2.441166G	1.002M	625.2075k


BT-BR(1Mbps)

2.48G/2.479GHz

Channel Separation-FS

16/09/2020



Port 1 

Ch Freq
2.48G/2.479G

Span
3MHz

RBW
30kHz

VBW
100kHz

Sweep
100ms

Detector
Peak

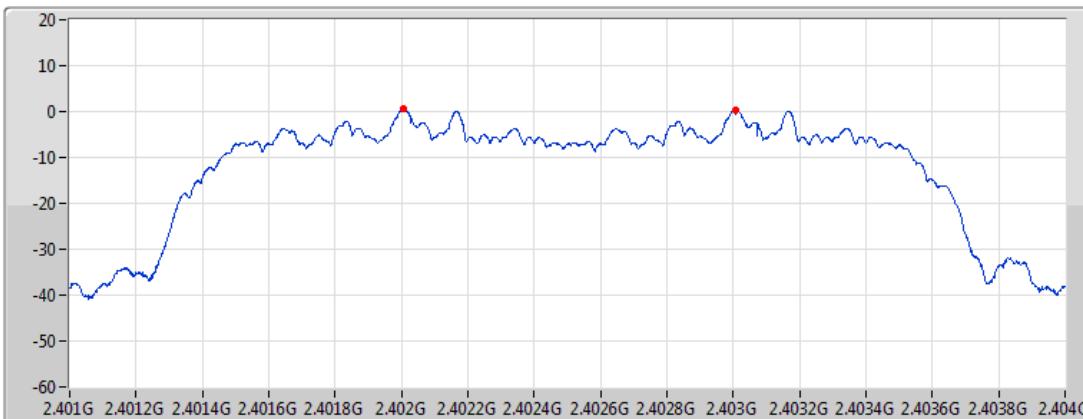
F1(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.479164G	2.480165G	1.0005M	621.8775k


BT-EDR(2Mbps)

2.402G/2.403GHz

Channel Separation-FS

16/09/2020



Port 1 

Ch Freq
2.402G/2.403G

Span
3MHz

RBW
30kHz

VBW
100kHz

Sweep
100ms

Detector
Peak

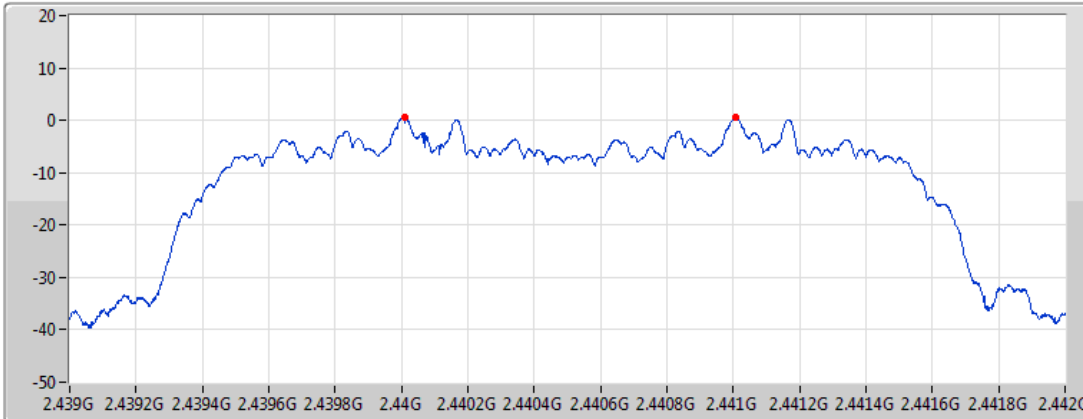
F1(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.402005G	2.403007G	1.002M	882.45k


BT-EDR(2Mbps)

Channel Separation-FS

2.44G/2.441GHz

16/09/2020



Port 1 

Ch Freq
2.44G/2.441G

Span
3MHz

RBW
30kHz

VBW
100kHz

Sweep
100ms

Detector
Peak

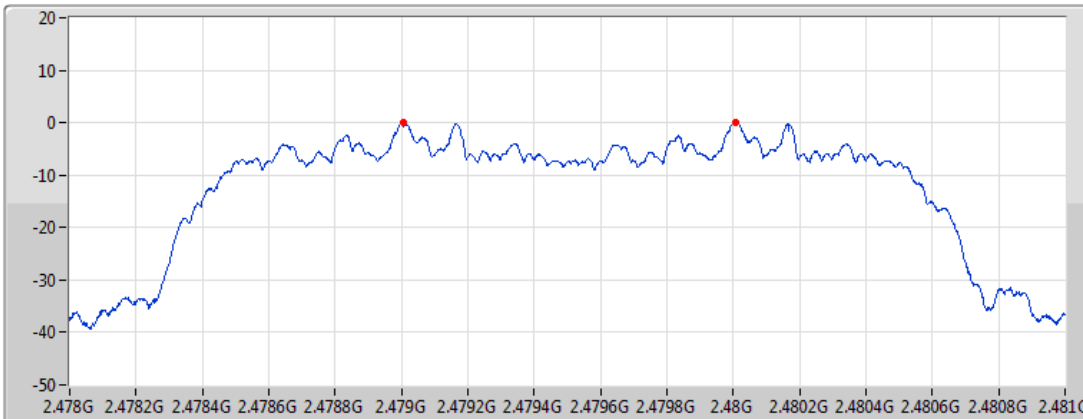
Ff(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.440008G	2.441006G	997.5k	883.116k


BT-EDR(2Mbps)

Channel Separation-FS

2.48G/2.479GHz

16/09/2020



Port 1 

Ch Freq
2.48G/2.479G

Span
3MHz

RBW
30kHz

VBW
100kHz

Sweep
100ms

Detector
Peak

Ff(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.479005G	2.480007G	1.002M	884.448k


BT-EDR(3Mbps)

Channel Separation-FS

2.402G/2.403GHz

16/09/2020



Port 1 

Ch Freq
2.402G/2.403G

Span
3MHz

RBW
30kHz

VBW
100kHz

Sweep
100ms

Detector
Peak

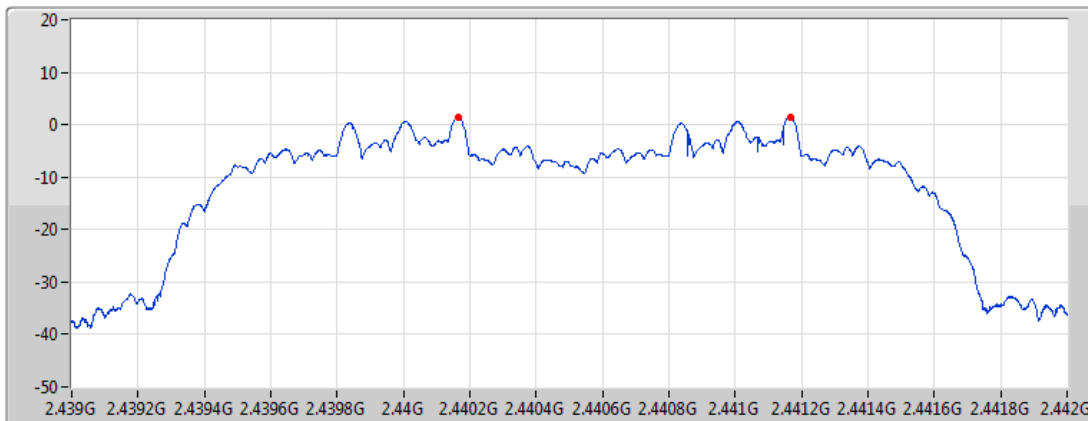
Ff(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.402164G	2.403165G	1.0005M	882.45k


BT-EDR(3Mbps)

Channel Separation-FS

2.44G/2.441GHz

16/09/2020



Port 1 

Ch Freq
2.44G/2.441G

Span
3MHz

RBW
30kHz

VBW
100kHz

Sweep
100ms

Detector
Peak

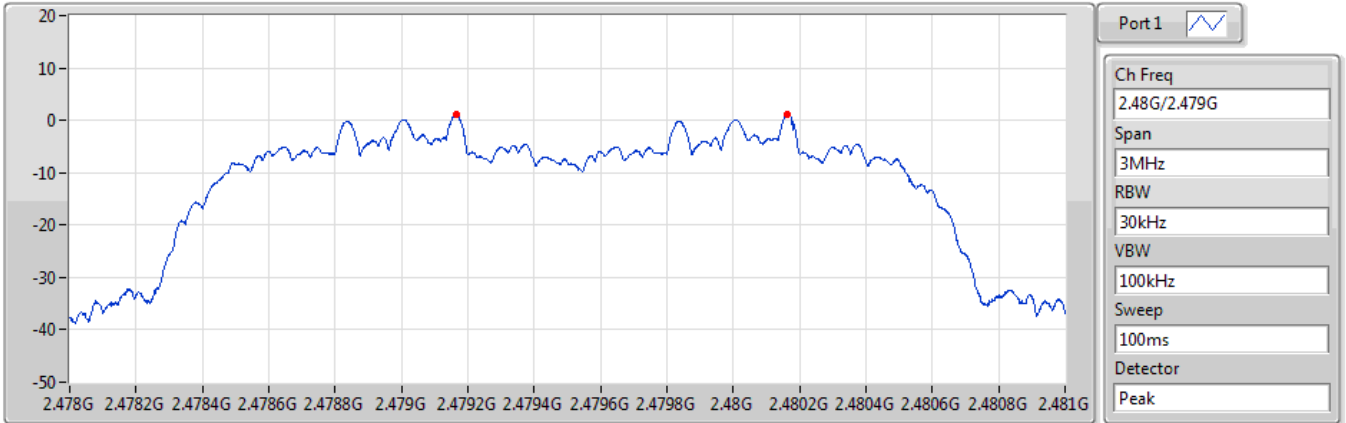
Ff(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.440166G	2.441166G	1.0005M	881.118k

BT-EDR(3Mbps)

2.48G/2.479GHz

Channel Separation-FS

16/09/2020



F1(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.479164G	2.480163G	999k	882.45k



Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	3.33	0.00215
BT-EDR(2Mbps)	5.57	0.00361
BT-EDR(3Mbps)	6.10	0.00407



Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz_FHSS	Pass	0.81	3.29	21.00
2440MHz_FHSS	Pass	0.81	3.33	21.00
2480MHz_FHSS	Pass	0.81	3.00	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz_FHSS	Pass	0.81	5.57	21.00
2440MHz_FHSS	Pass	0.81	5.56	21.00
2480MHz_FHSS	Pass	0.81	5.29	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz_FHSS	Pass	0.81	6.10	21.00
2440MHz_FHSS	Pass	0.81	6.06	21.00
2480MHz_FHSS	Pass	0.81	5.82	21.00

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



Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	3.00	0.00200
BT-EDR(2Mbps)	2.90	0.00195
BT-EDR(3Mbps)	2.92	0.00196



Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz_FHSS	Pass	0.81	2.92	21.00
2440MHz_FHSS	Pass	0.81	3.00	21.00
2480MHz_FHSS	Pass	0.81	2.66	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz_FHSS	Pass	0.81	2.89	21.00
2440MHz_FHSS	Pass	0.81	2.90	21.00
2480MHz_FHSS	Pass	0.81	2.73	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz_FHSS	Pass	0.81	2.89	21.00
2440MHz_FHSS	Pass	0.81	2.92	21.00
2480MHz_FHSS	Pass	0.81	2.62	21.00

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



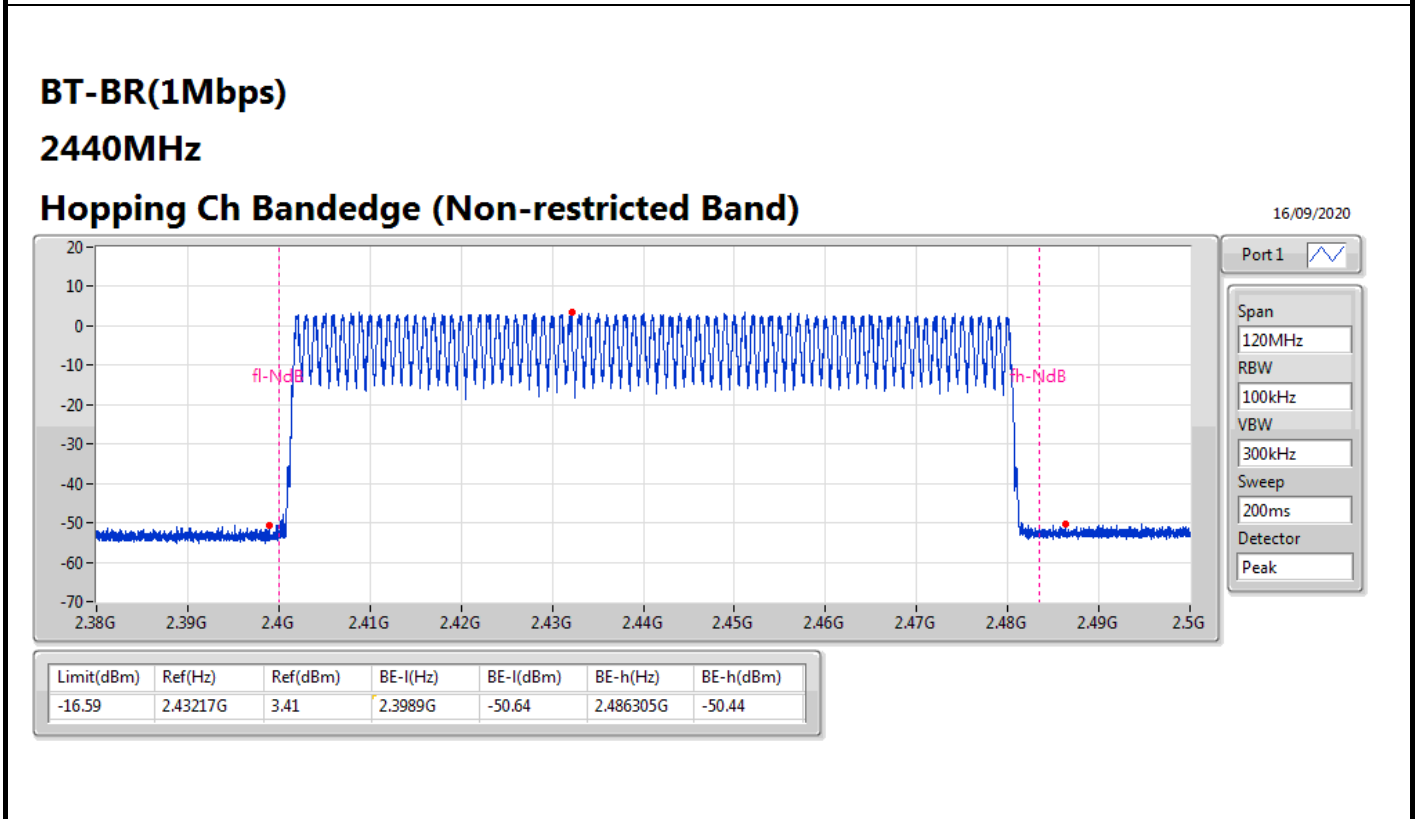
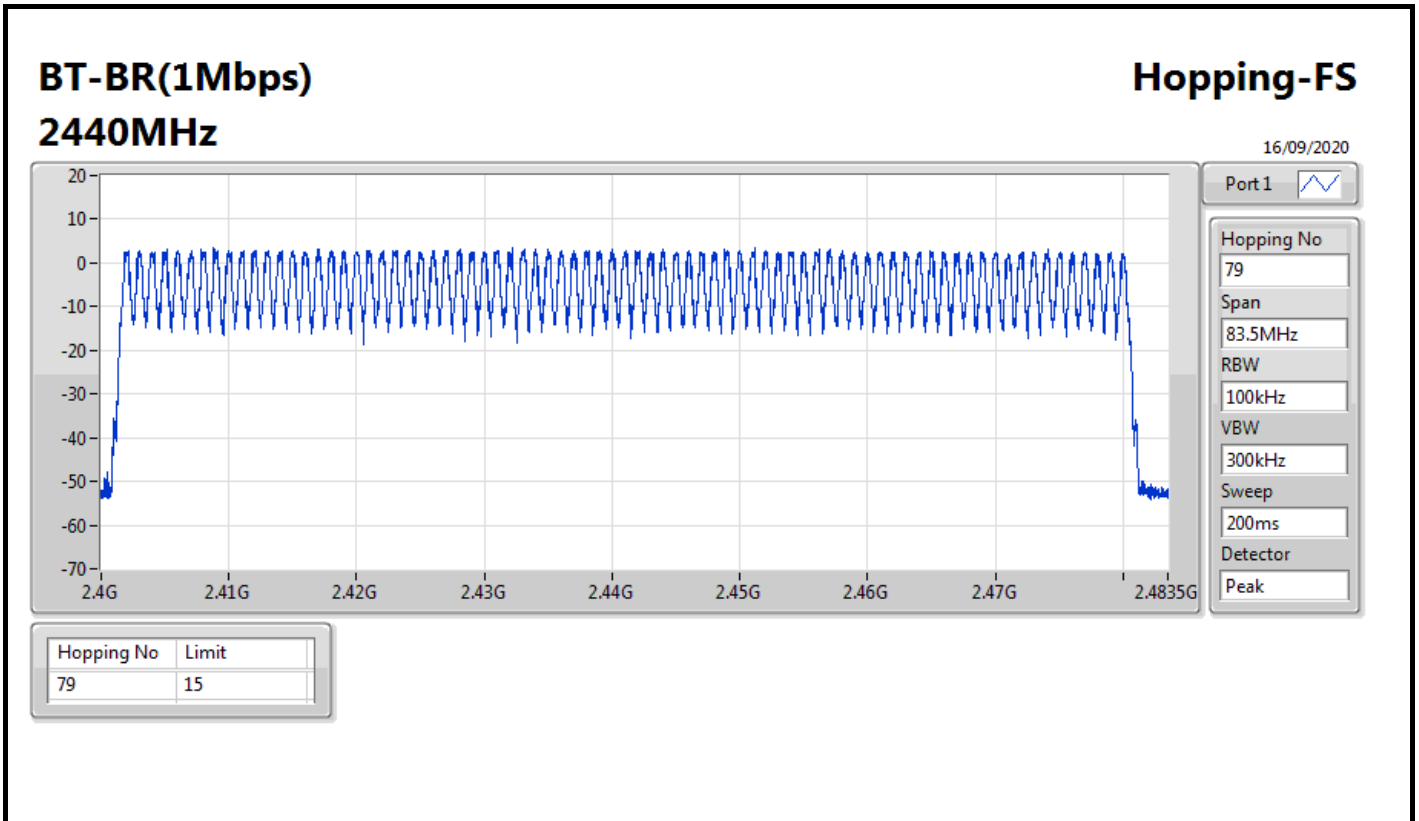
Summary

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



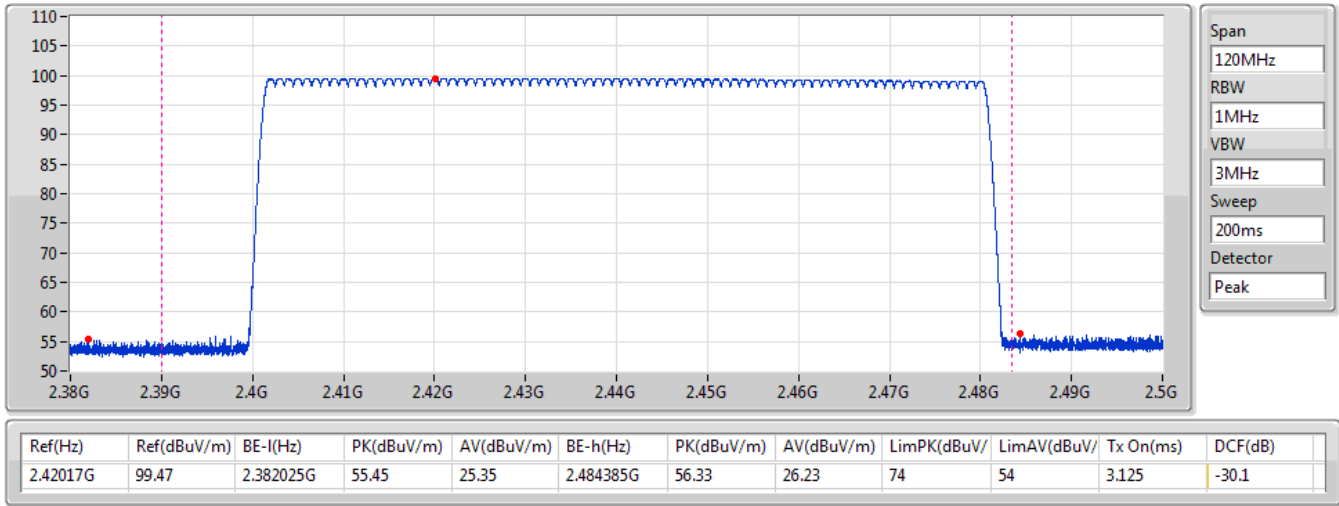
Result

Mode	Result	Hopping No	Limit
BT-BR(1Mbps)	-	-	-
2440MHz_FHSS	Pass	79	15
BT-EDR(2Mbps)	-	-	-
2440MHz_FHSS	Pass	79	15
BT-EDR(3Mbps)	-	-	-
2440MHz_FHSS	Pass	79	15



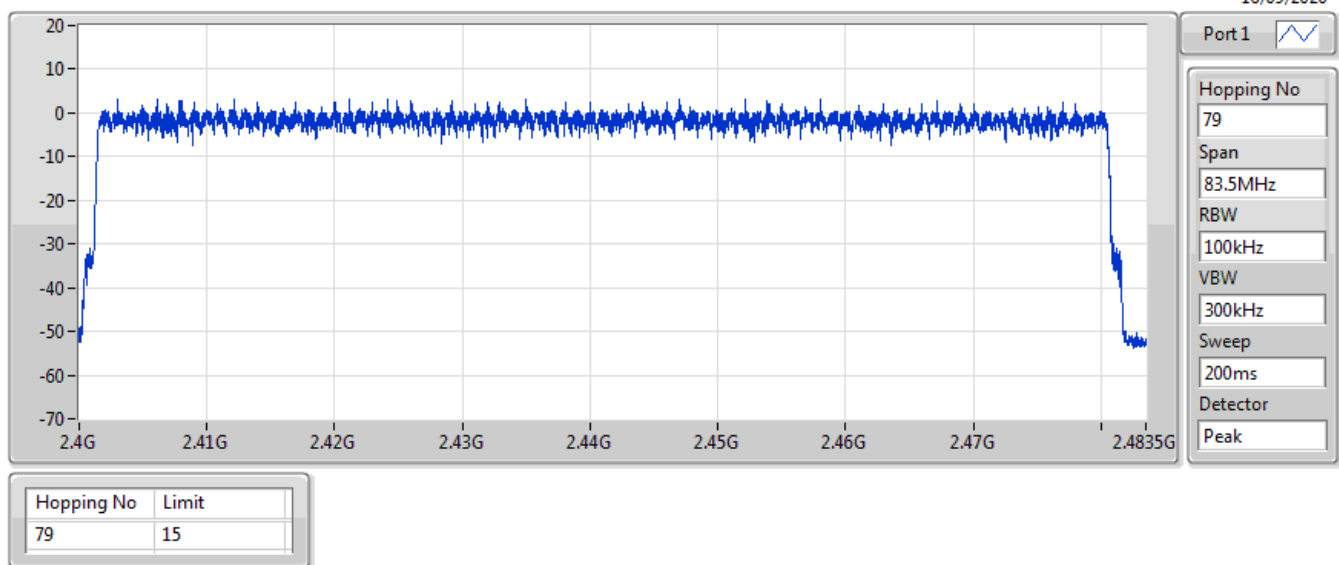
BT-BR(1Mbps)
2440MHz
Hopping Ch Bandedge (Restricted Band)

16/09/2020



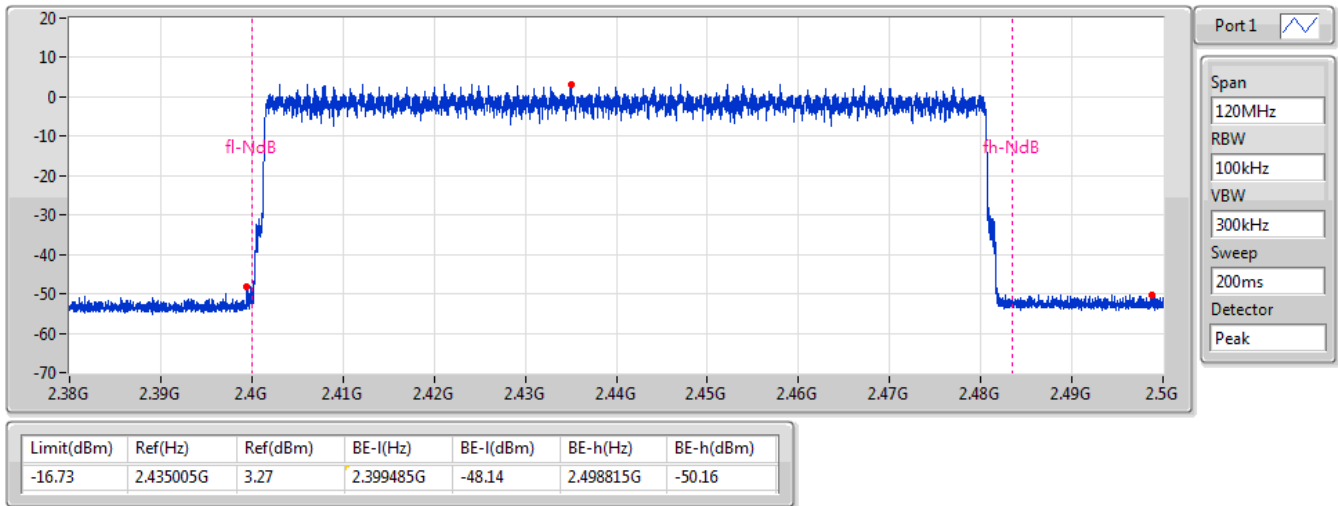
BT-EDR(2Mbps) **Hopping-FS**
2440MHz

16/09/2020



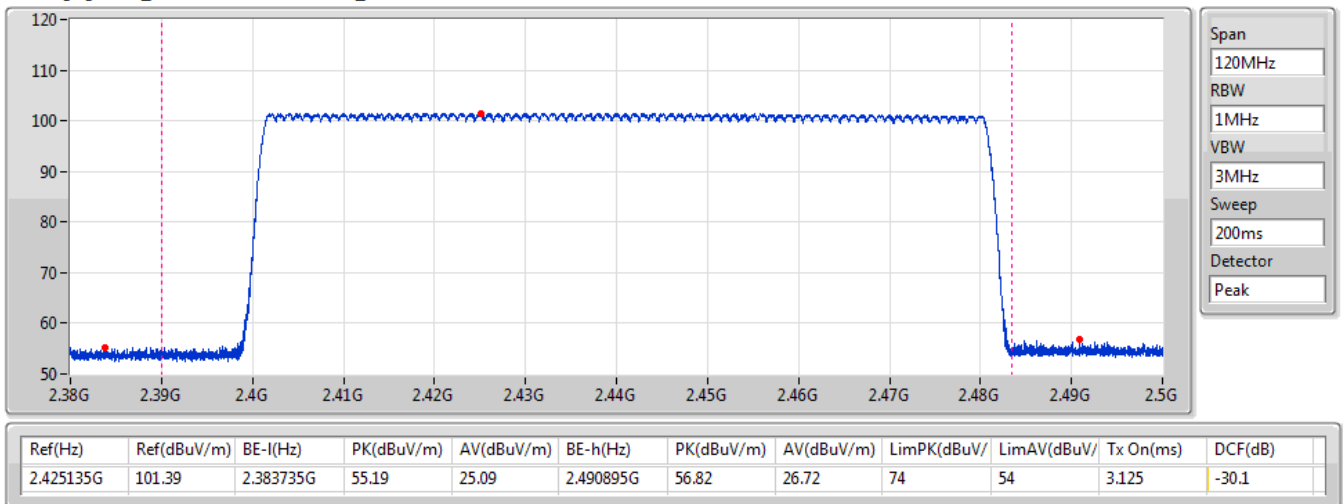
BT-EDR(2Mbps)
2440MHz
Hopping Ch Bandedge (Non-restricted Band)

16/09/2020



BT-EDR(2Mbps)
2440MHz
Hopping Ch Bandedge (Restricted Band)

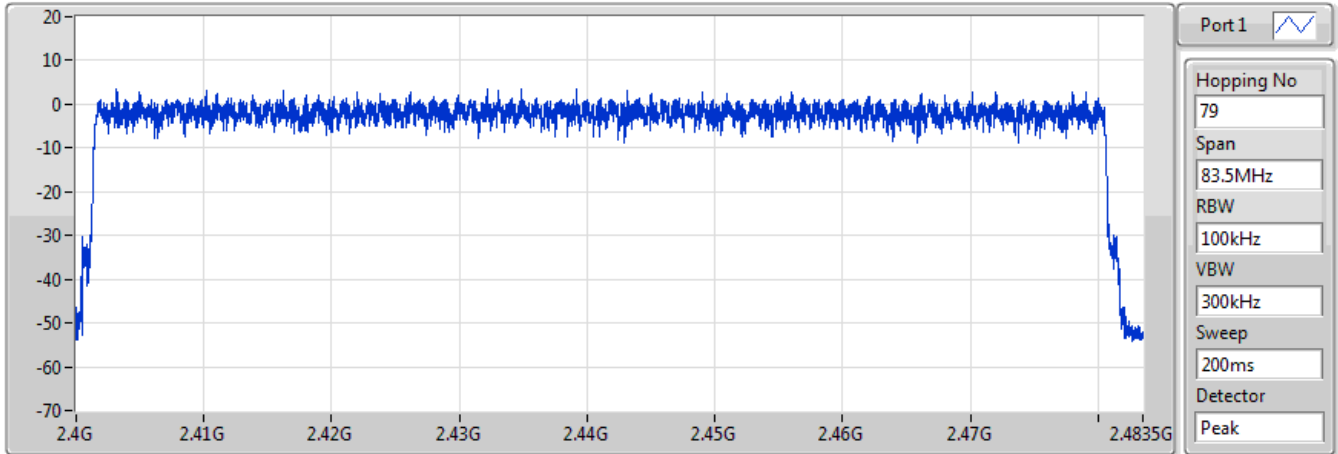
16/09/2020




**BT-EDR(3Mbps)
2440MHz**

Hopping-FS

16/09/2020



Port 1 

Hopping No
79

Span
83.5MHz

RBW
100kHz

VBW
300kHz

Sweep
200ms

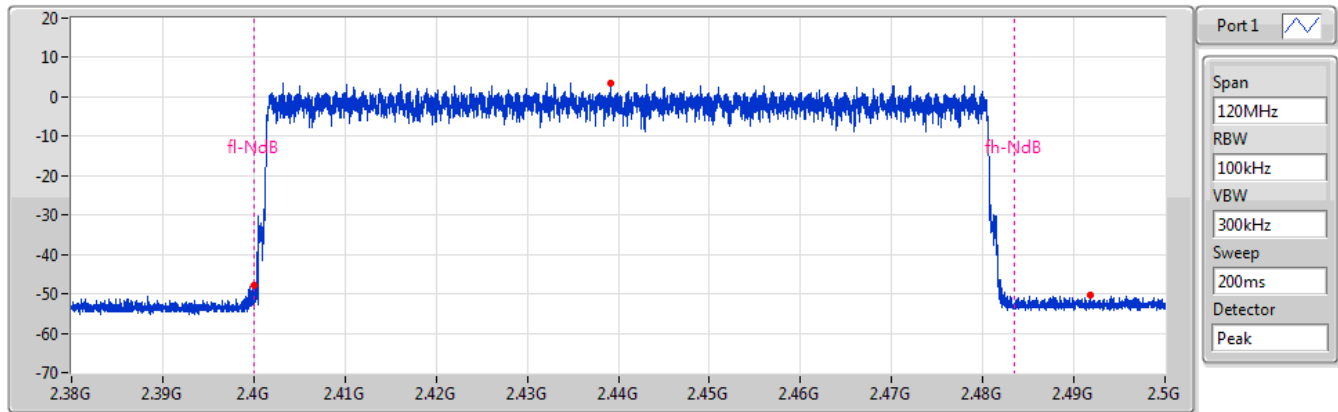
Detector
Peak


Hopping No	Limit
79	15

**BT-EDR(3Mbps)
2440MHz**

Hopping Ch Bandedge (Non-restricted Band)

16/09/2020



Port 1 

Span
120MHz

RBW
100kHz

VBW
300kHz

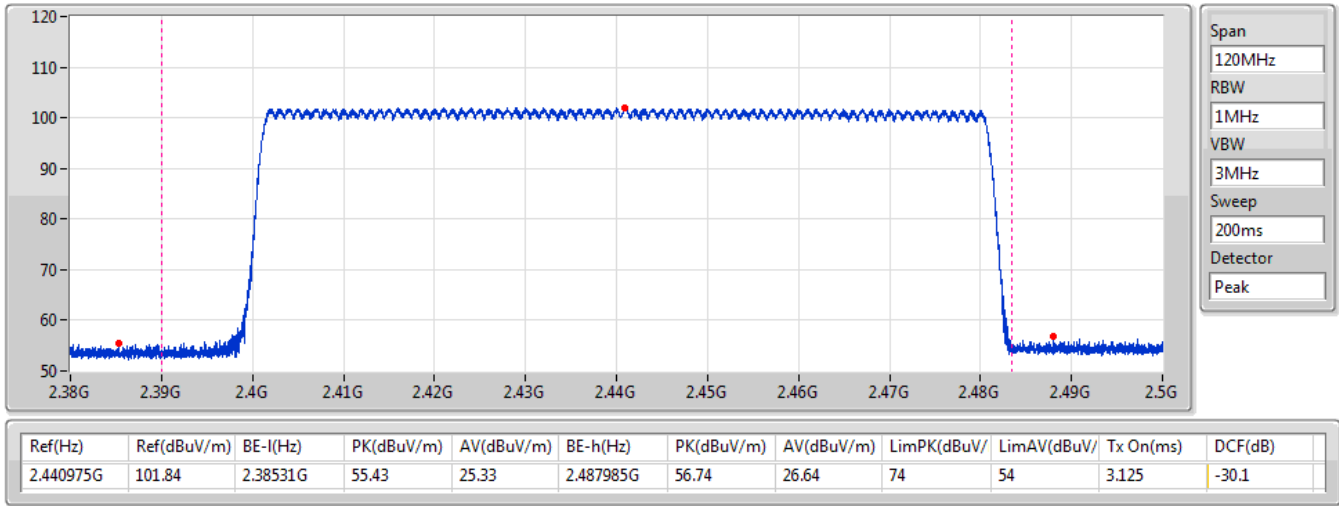
Sweep
200ms

Detector
Peak

Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-16.63	2.43916G	3.37	2.39995G	-47.69	2.49187G	-50.3

BT-EDR(3Mbps)
2440MHz
Hopping Ch Bandedge (Restricted Band)

16/09/2020





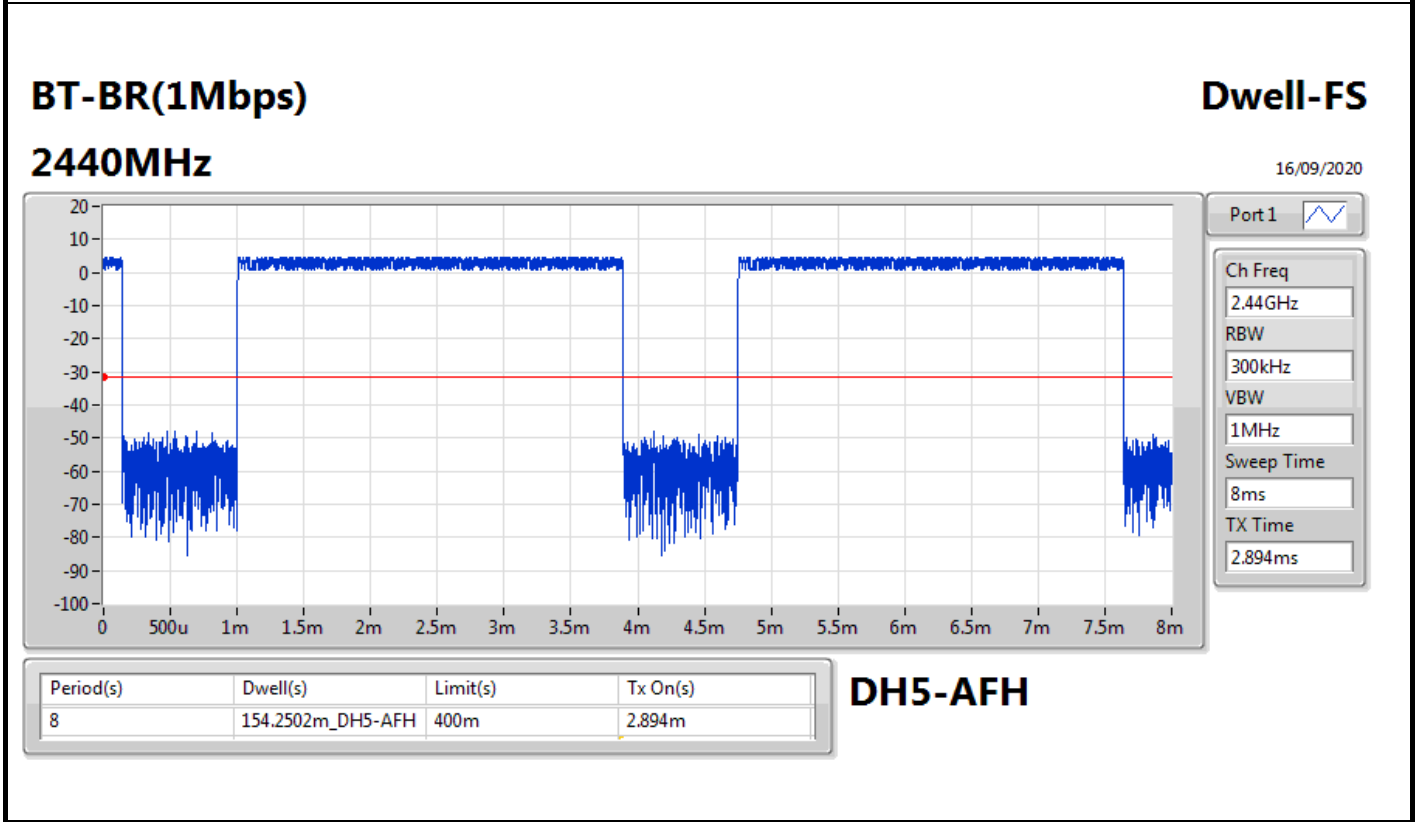
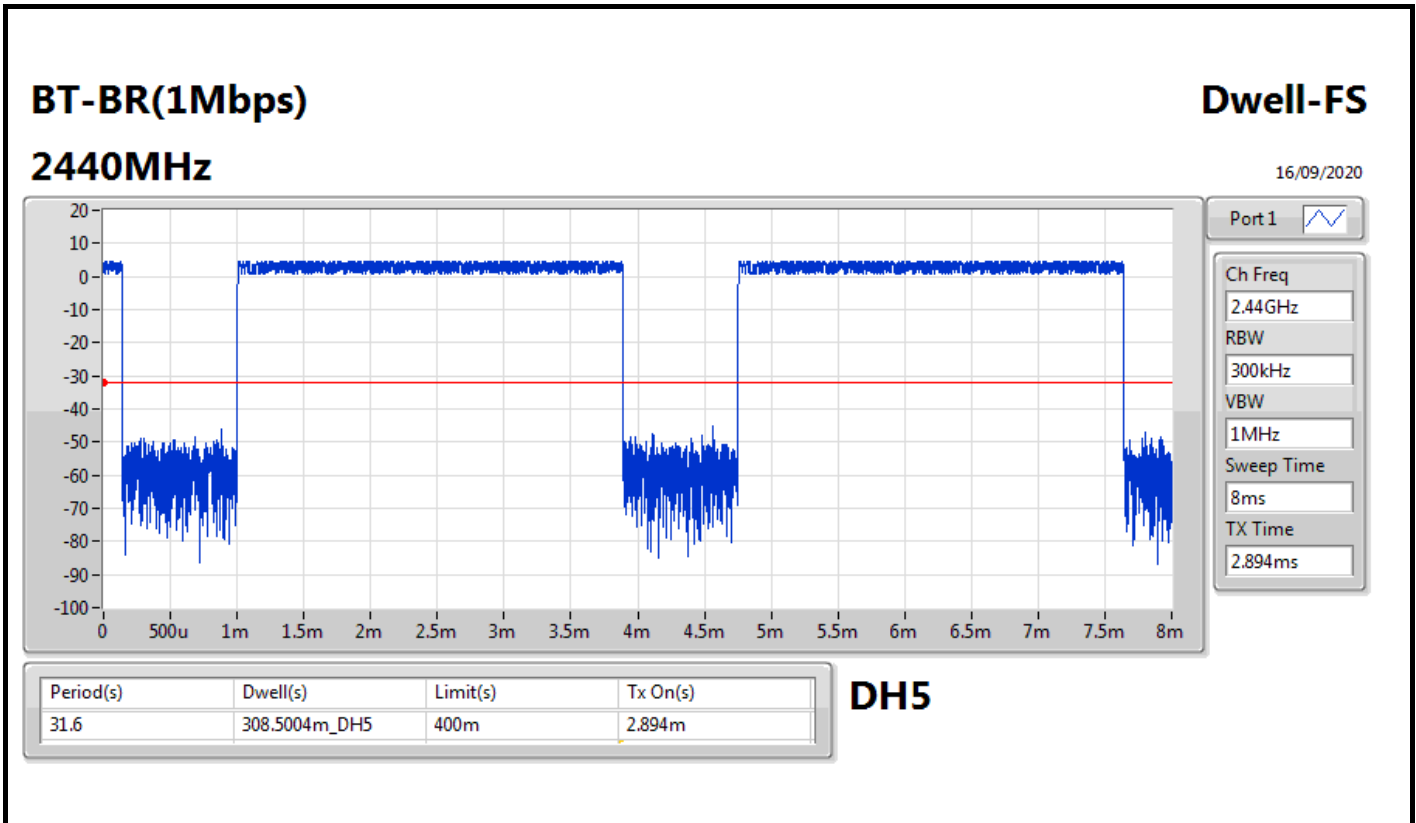
Summary

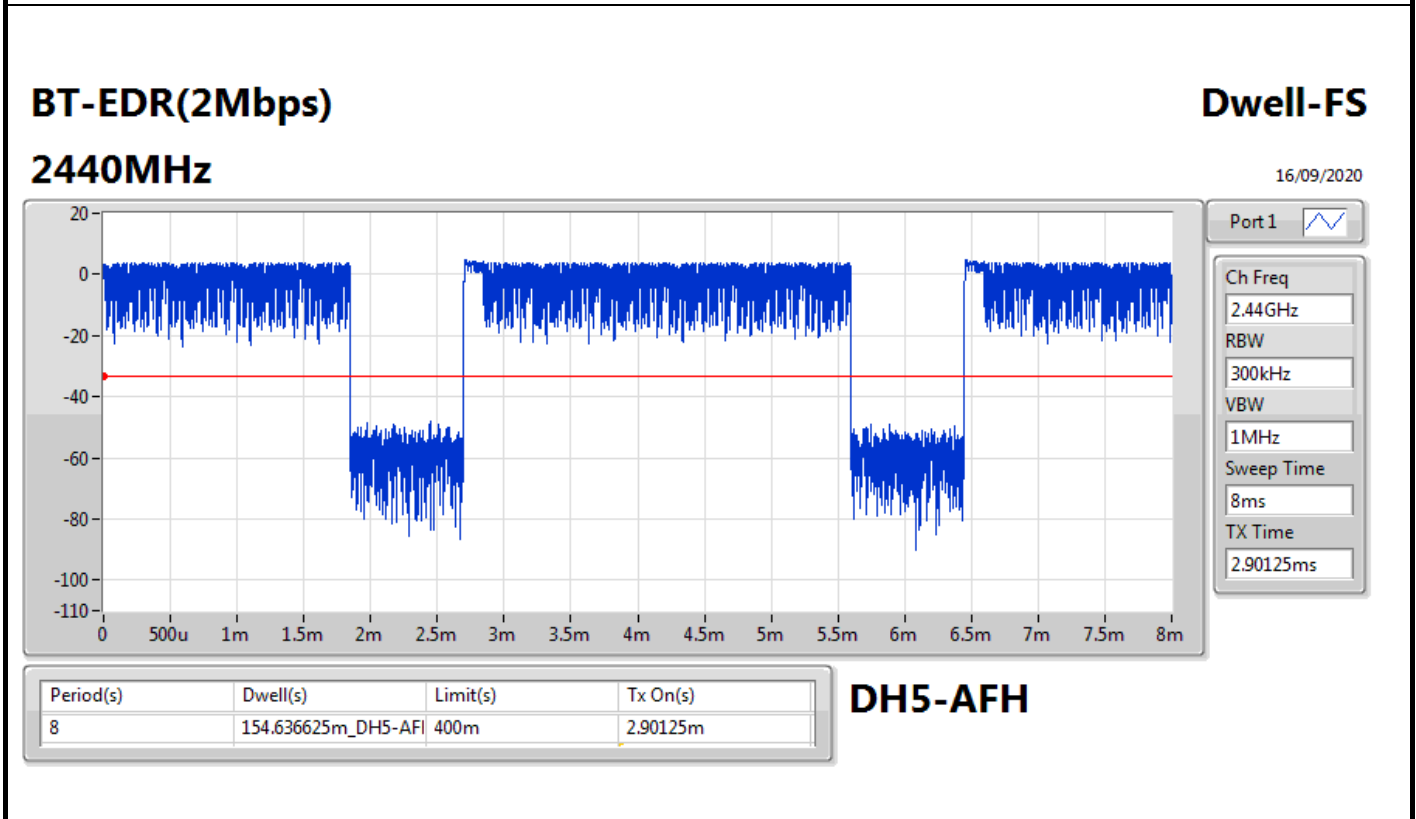
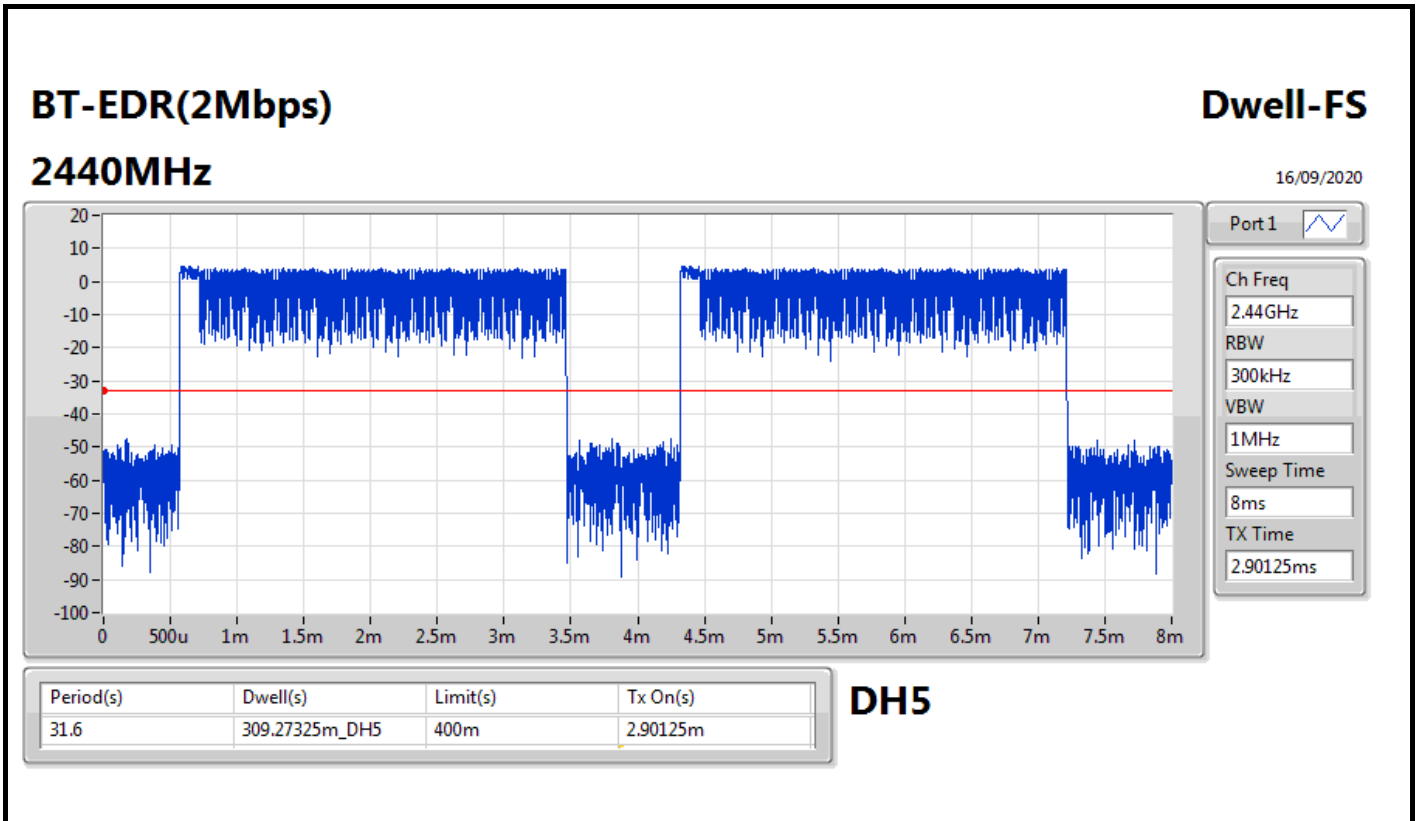
Mode	Max-Dwell (s)
2.4-2.4835GHz	-
BT-BR(1Mbps)	308.5004m_DH5
BT-EDR(2Mbps)	309.27325m_DH5
BT-EDR(3Mbps)	309.3532m_DH5

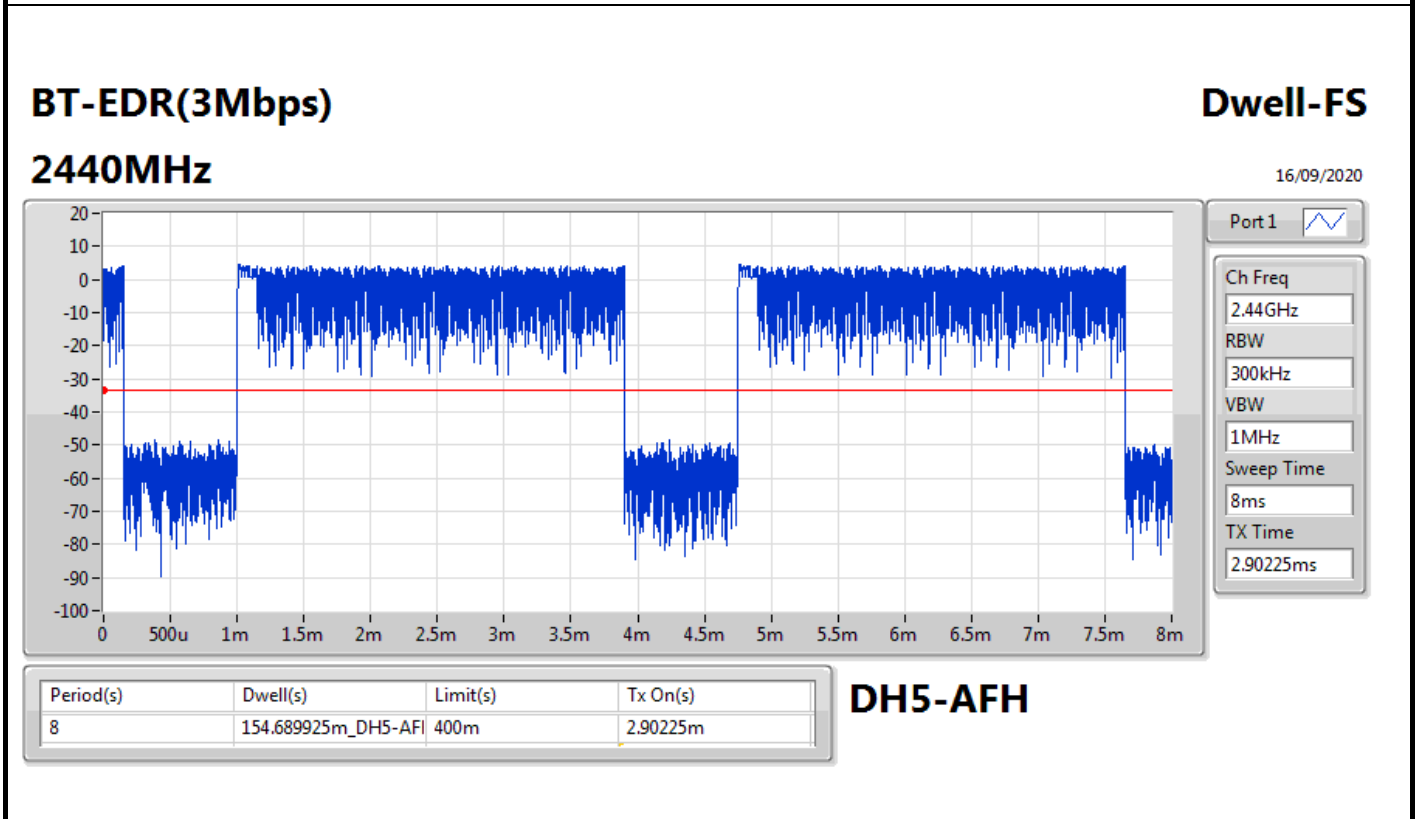
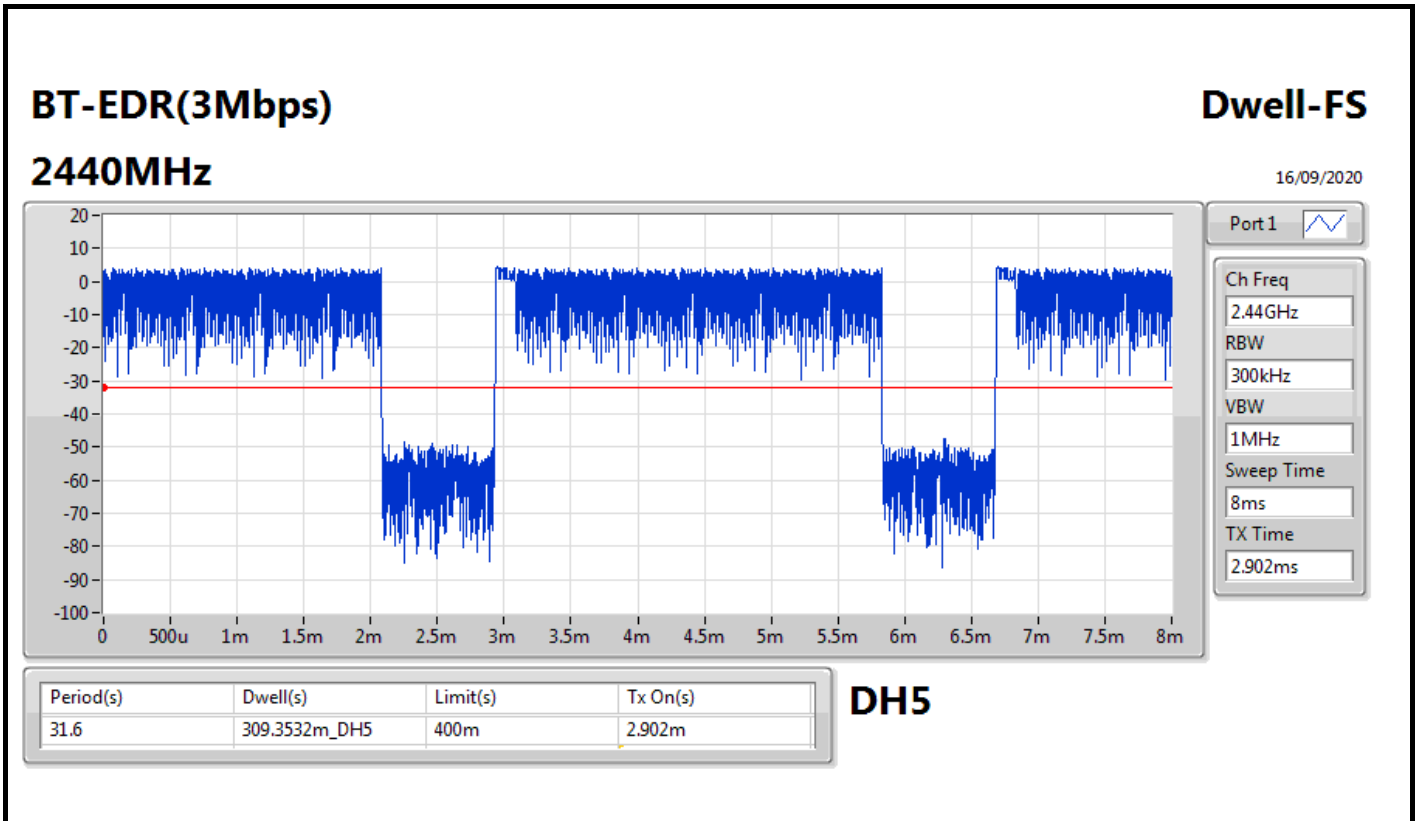


Result

Mode	Result	Period (s)	Dwell (s)	Limit (s)	Tx On (s)
BT-BR(1Mbps)	-	-	-	-	-
2440MHz_FHSS	Pass	31.6	308.5004m_DH5	400m	2.894m
2440MHz_FHSS	Pass	8	154.2502m_DH5-AFH	400m	2.894m
BT-EDR(2Mbps)	-	-	-	-	-
2440MHz_FHSS	Pass	31.6	309.27325m_DH5	400m	2.90125m
2440MHz_FHSS	Pass	8	154.636625m_DH5-AFH	400m	2.90125m
BT-EDR(3Mbps)	-	-	-	-	-
2440MHz_FHSS	Pass	31.6	309.3532m_DH5	400m	2.902m
2440MHz_FHSS	Pass	8	154.689925m_DH5-AFH	400m	2.90225m









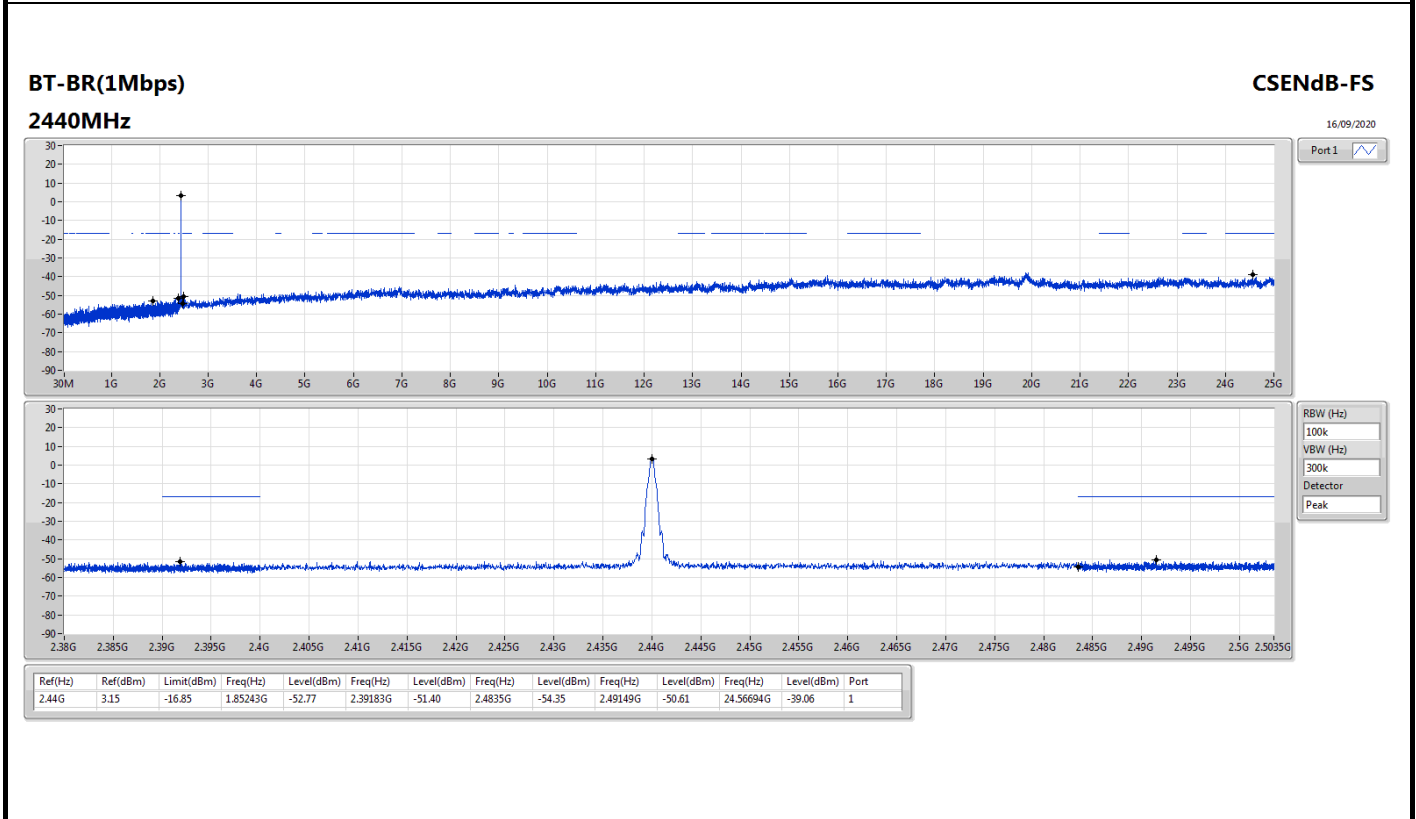
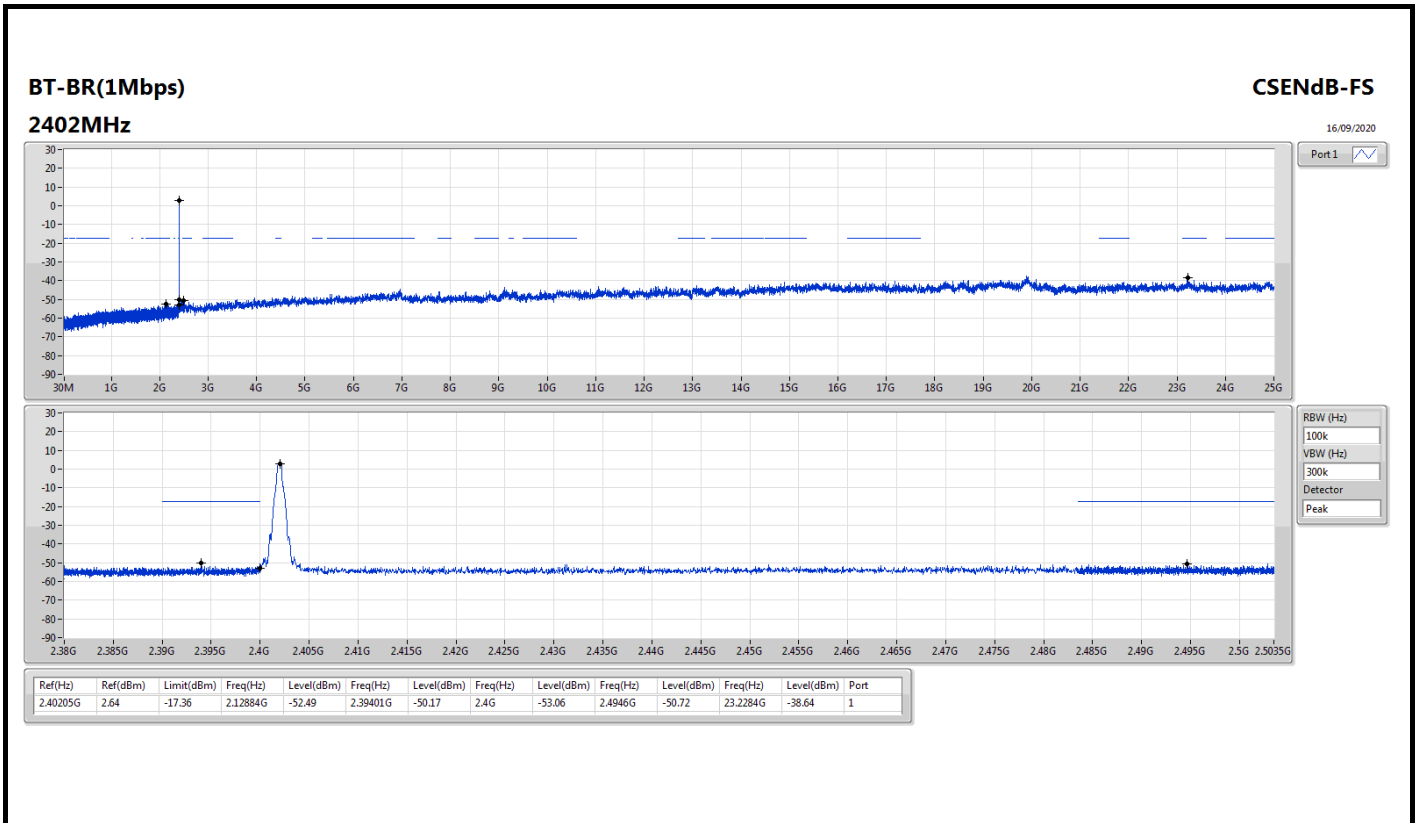
Summary

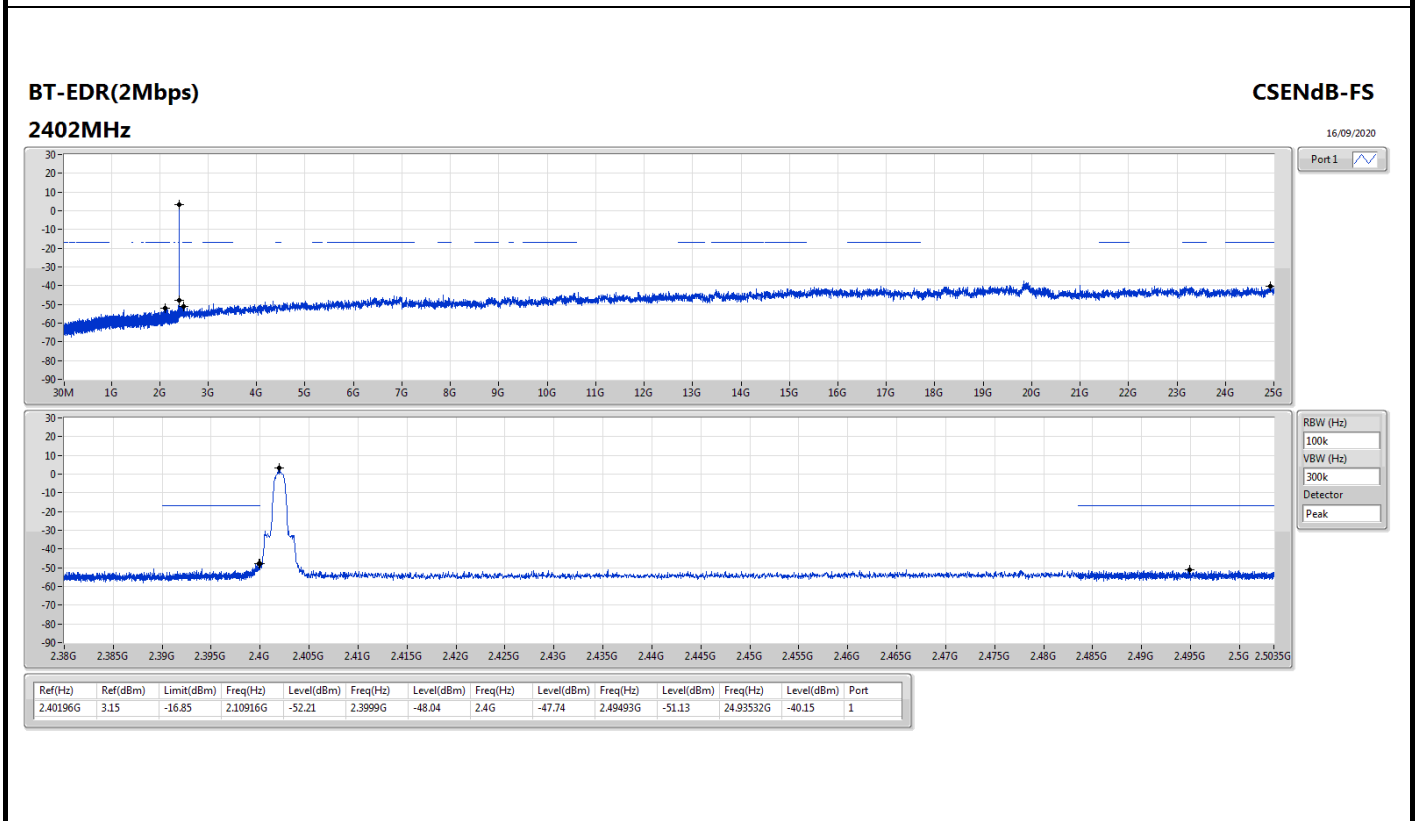
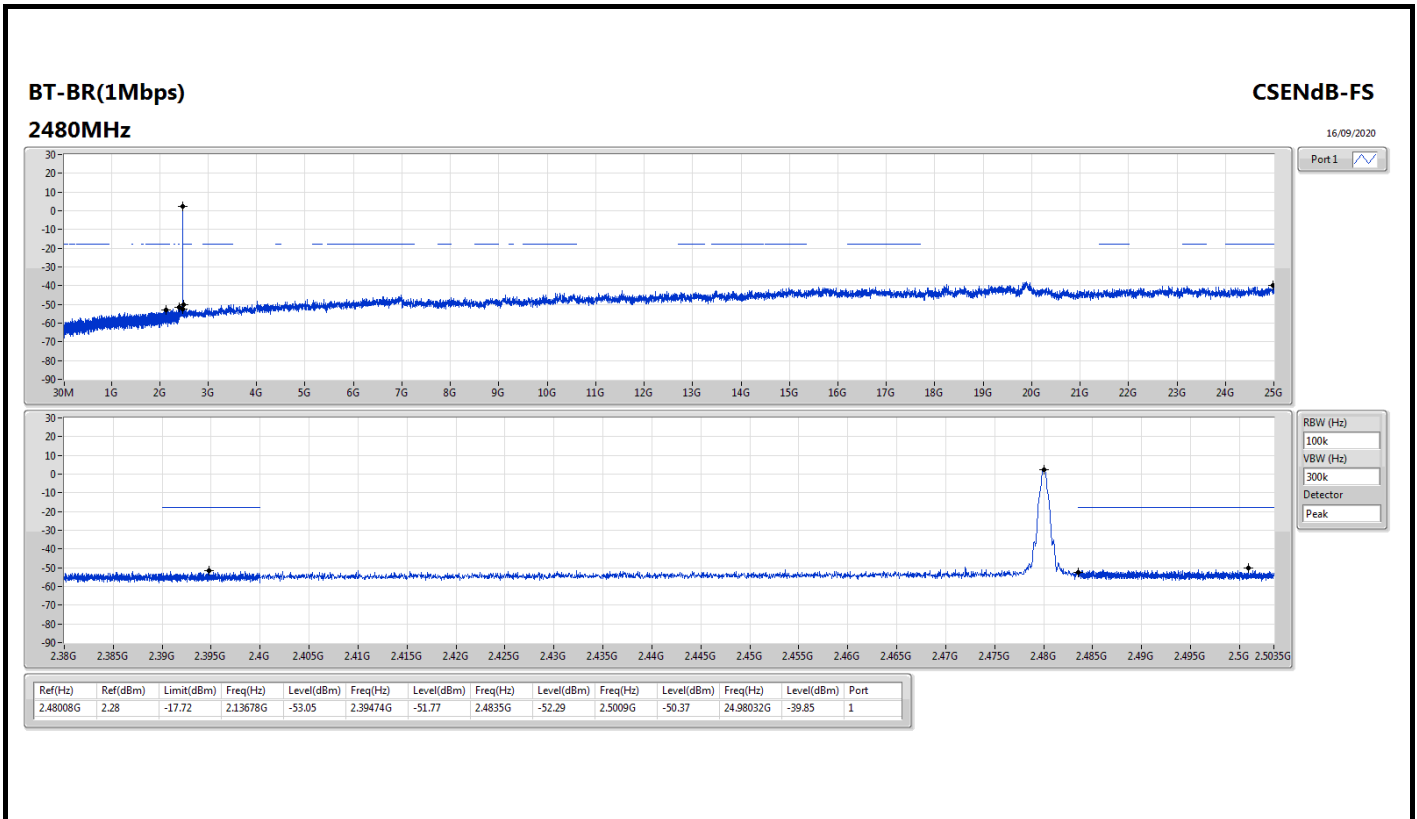
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	2.48008G	2.28	-17.72	2.13678G	-53.05	2.39474G	-51.77	2.4835G	-52.29	2.5009G	-50.37	24.98032G	-39.85	1
BT-EDR(2Mbps)	Pass	2.40196G	3.15	-16.85	2.10916G	-52.21	2.3999G	-48.04	2.4G	-47.74	2.49493G	-51.13	24.93532G	-40.15	1
BT-EDR(3Mbps)	Pass	2.40196G	2.91	-17.09	2.00106G	-52.69	2.4G	-46.38	2.4G	-46.79	2.49838G	-50.75	24.39541G	-39.37	1

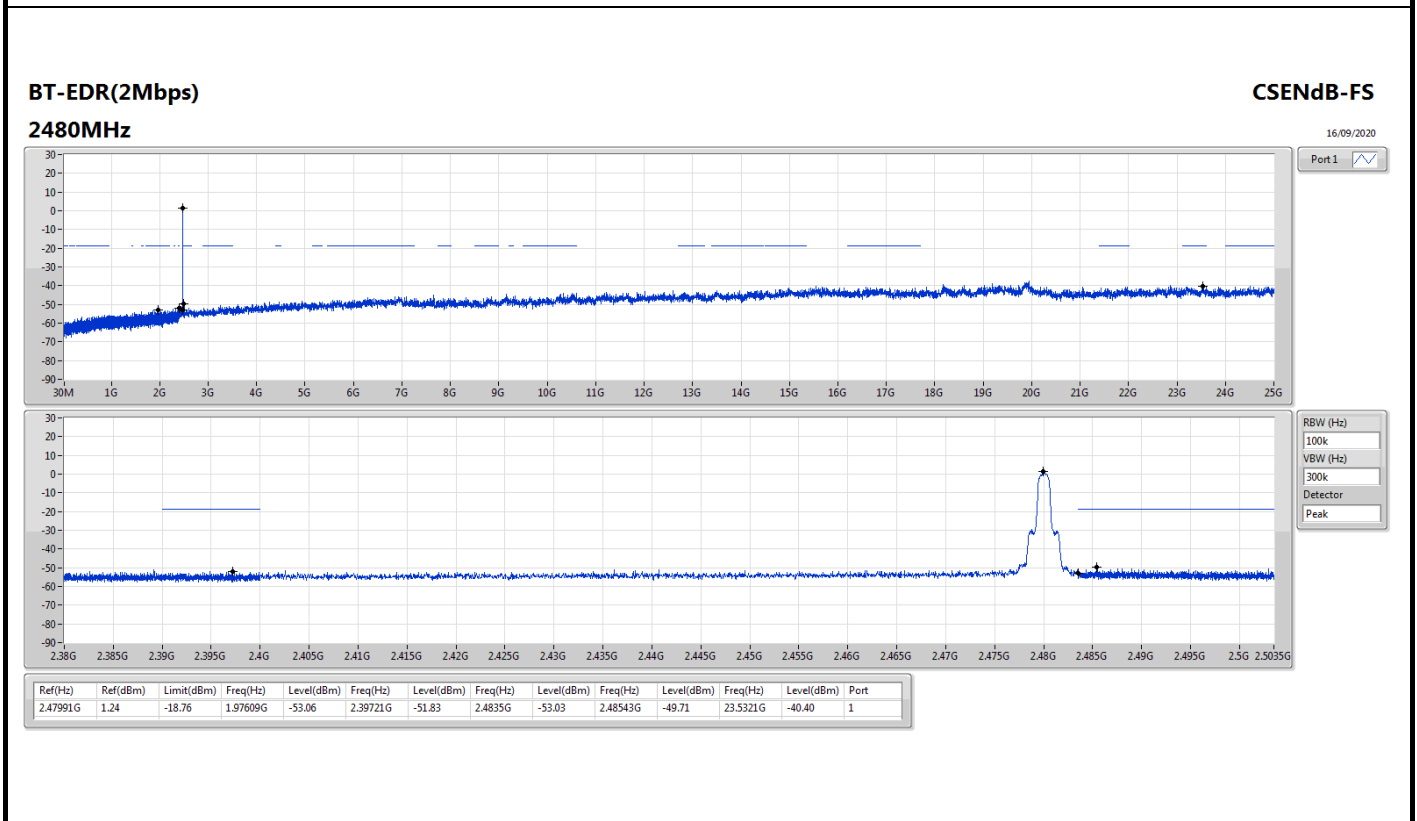
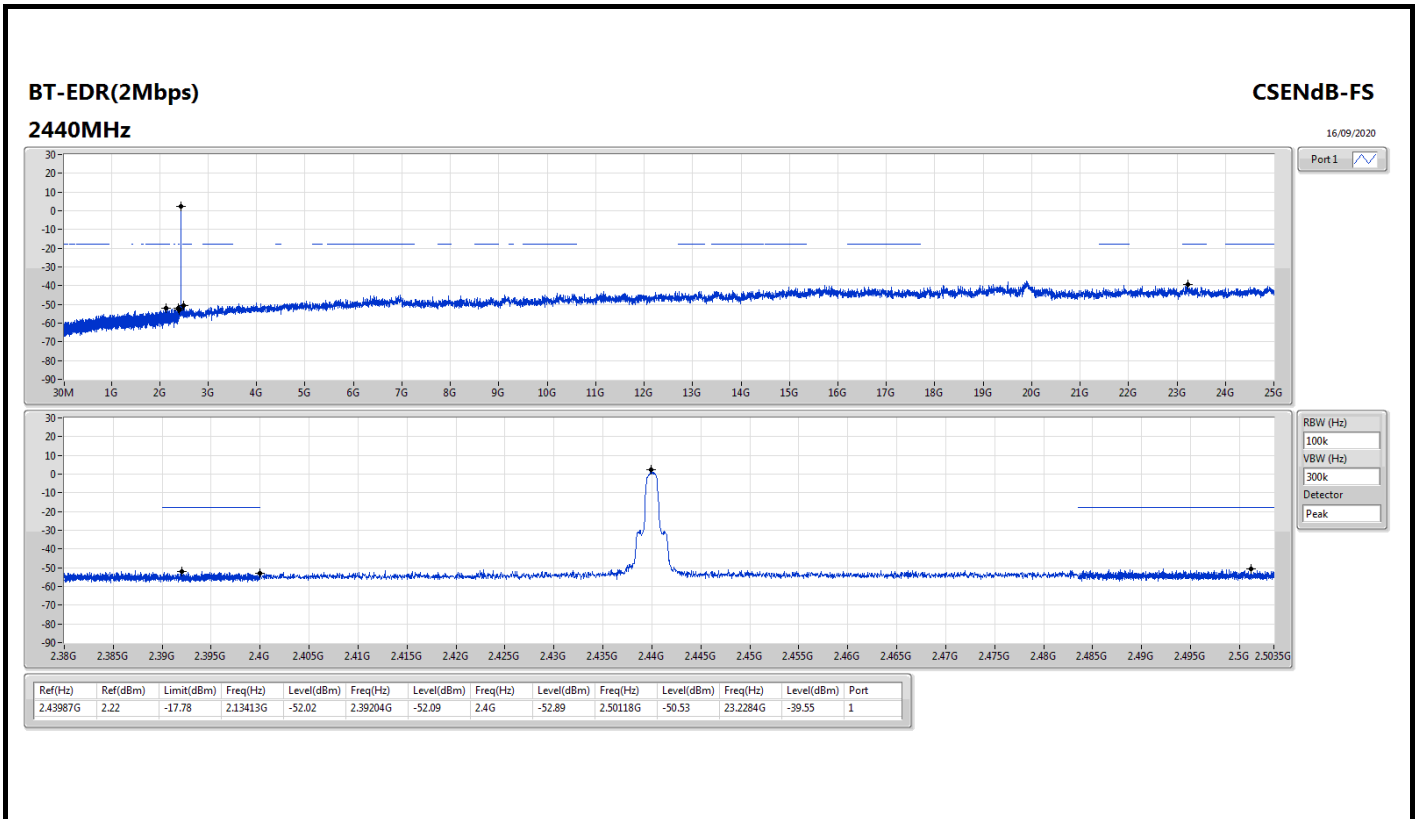


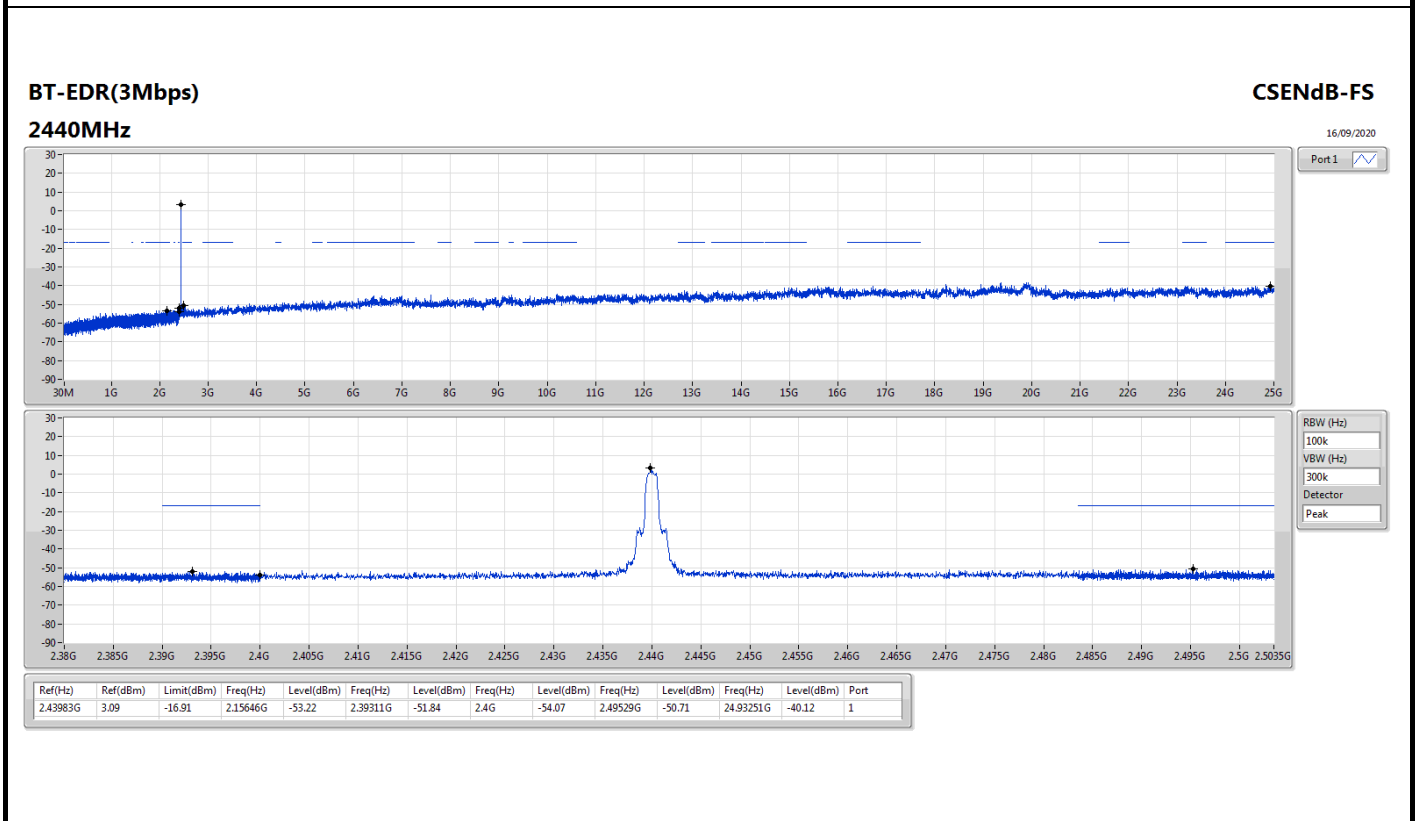
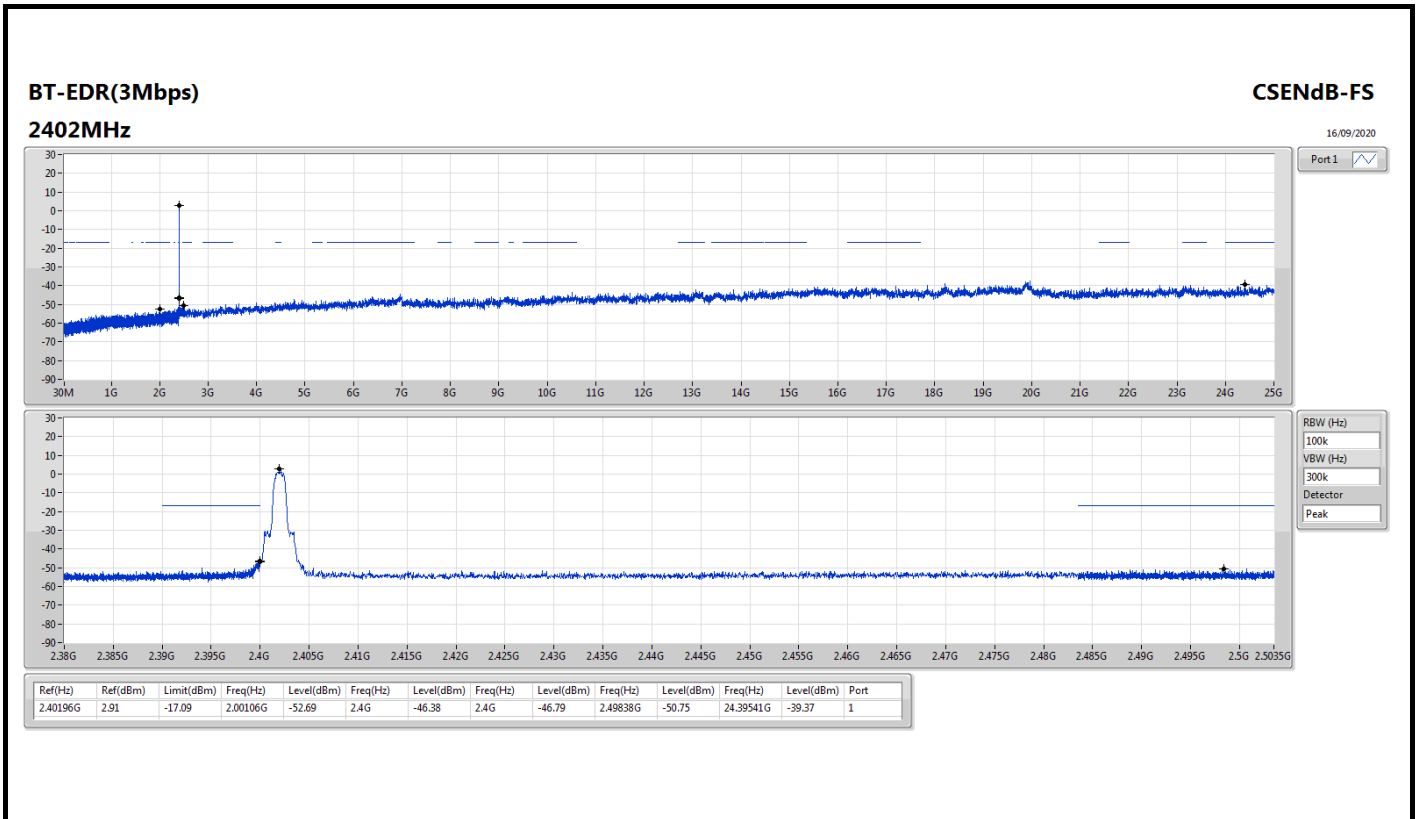
Result

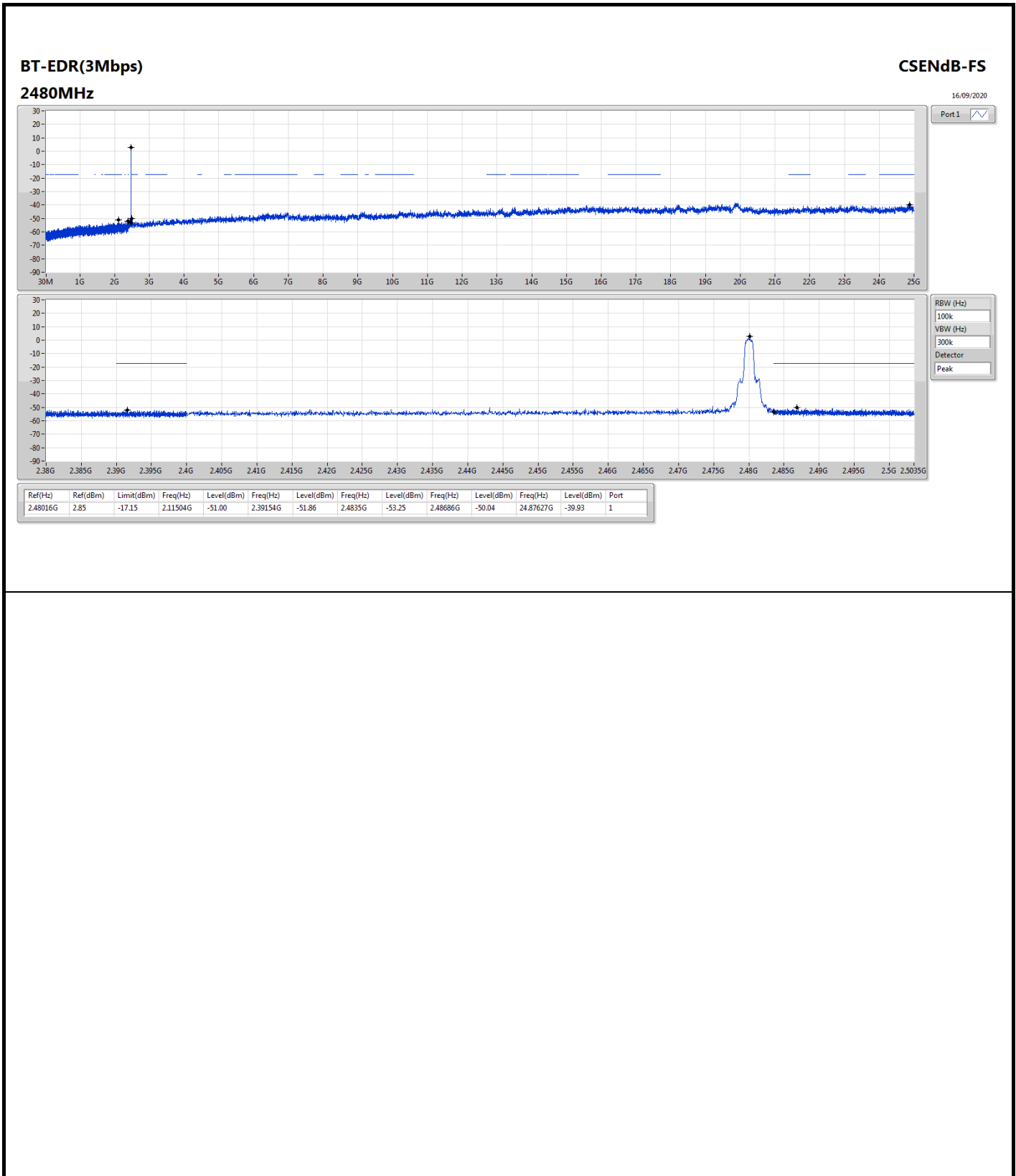
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz_FHSS	Pass	2.40205G	2.64	-17.36	2.12884G	-52.49	2.39401G	-50.17	2.4G	-53.06	2.4946G	-50.72	23.2284G	-38.64	1
2440MHz_FHSS	Pass	2.44G	3.15	-16.85	1.85243G	-52.77	2.39183G	-51.40	2.4835G	-54.35	2.49149G	-50.61	24.56694G	-39.06	1
2480MHz_FHSS	Pass	2.48008G	2.28	-17.72	2.13678G	-53.05	2.39474G	-51.77	2.4835G	-52.29	2.5009G	-50.37	24.98032G	-39.85	1
BT-EDR(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz_FHSS	Pass	2.40196G	3.15	-16.85	2.10916G	-52.21	2.3999G	-48.04	2.4G	-47.74	2.49493G	-51.13	24.93532G	-40.15	1
2440MHz_FHSS	Pass	2.43987G	2.22	-17.78	2.13413G	-52.02	2.39204G	-52.09	2.4G	-52.89	2.50118G	-50.53	23.2284G	-39.55	1
2480MHz_FHSS	Pass	2.47991G	1.24	-18.76	1.97609G	-53.06	2.39721G	-51.83	2.4835G	-53.03	2.48543G	-49.71	23.5321G	-40.40	1
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz_FHSS	Pass	2.40196G	2.91	-17.09	2.00106G	-52.69	2.4G	-46.38	2.4G	-46.79	2.49838G	-50.75	24.39541G	-39.37	1
2440MHz_FHSS	Pass	2.43983G	3.09	-16.91	2.15646G	-53.22	2.39311G	-51.84	2.4G	-54.07	2.49529G	-50.71	24.93251G	-40.12	1
2480MHz_FHSS	Pass	2.48016G	2.85	-17.15	2.11504G	-51.00	2.39154G	-51.86	2.4835G	-53.25	2.48686G	-50.04	24.87627G	-39.93	1













Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	PK	278.32M	41.50	46.00	-4.50	3	Horizontal	0	1.00	-



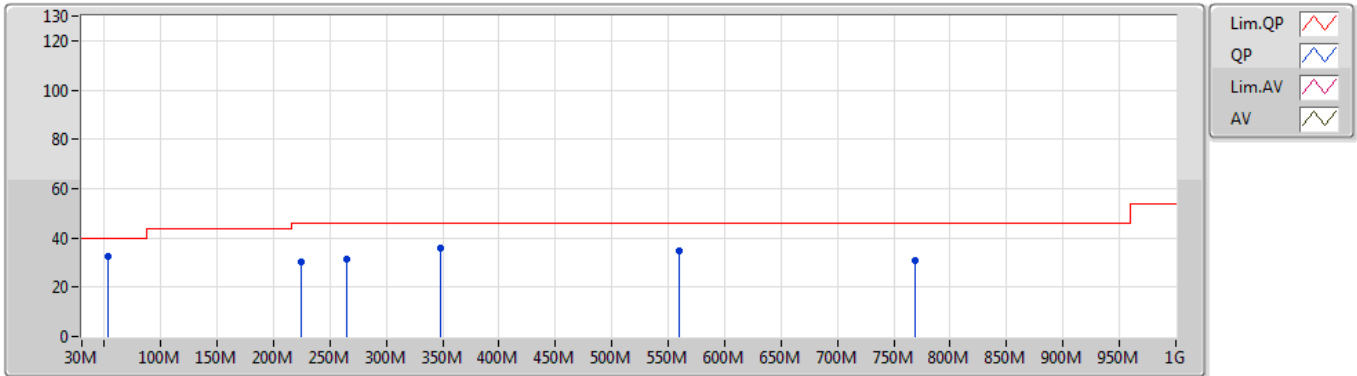
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	53.28M	32.33	40.00	-7.67	3	Vertical	360	1.00	-
2440MHz	Pass	PK	224M	30.39	46.00	-15.61	3	Vertical	360	1.00	-
2440MHz	Pass	PK	264.74M	31.35	46.00	-14.65	3	Vertical	360	1.00	-
2440MHz	Pass	PK	348.16M	36.10	46.00	-9.90	3	Vertical	360	1.00	-
2440MHz	Pass	PK	559.62M	34.51	46.00	-11.49	3	Vertical	360	1.00	-
2440MHz	Pass	PK	769.14M	30.64	46.00	-15.36	3	Vertical	360	1.00	-
2440MHz	Pass	PK	86.26M	34.26	40.00	-5.74	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	245.34M	33.19	46.00	-12.81	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	278.32M	41.50	46.00	-4.50	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	559.62M	34.79	46.00	-11.21	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	699.3M	36.39	46.00	-9.61	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	910.76M	35.87	46.00	-10.13	3	Horizontal	0	1.00	-

BT-BR(1Mbps)

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2440MHz_USB

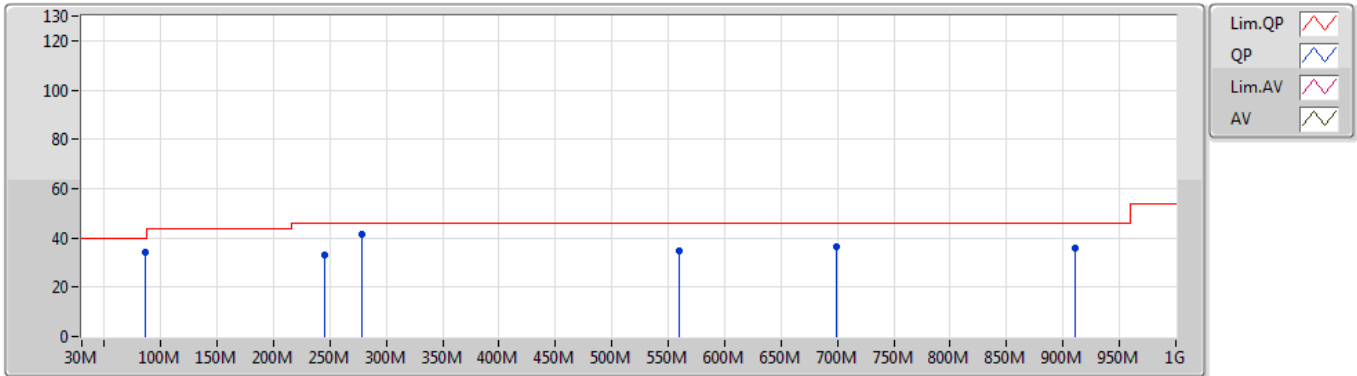


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	53.28M	32.33	40.00	-7.67	-24.58	3	Vertical	360	1.00	-	56.91	11.84	0.57	36.99
PK	224M	30.39	46.00	-15.61	-20.40	3	Vertical	360	1.00	-	50.79	14.70	1.20	36.30
PK	264.74M	31.35	46.00	-14.65	-16.03	3	Vertical	360	1.00	-	47.38	19.05	1.33	36.41
PK	348.16M	36.10	46.00	-9.90	-15.44	3	Vertical	360	1.00	-	51.54	19.55	1.50	36.49
PK	559.62M	34.51	46.00	-11.49	-9.68	3	Vertical	360	1.00	-	44.19	25.38	2.04	37.10
PK	769.14M	30.64	46.00	-15.36	-7.47	3	Vertical	360	1.00	-	38.11	27.31	2.54	37.32

BT-BR(1Mbps)

28/09/2020

2440MHz_USB



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	86.26M	34.26	40.00	-5.74	-22.61	3	Horizontal	0	1.00	-	56.87	13.36	0.70	36.67
PK	245.34M	33.19	46.00	-12.81	-18.08	3	Horizontal	0	1.00	-	51.27	17.05	1.28	36.41
PK	278.32M	41.50	46.00	-4.50	-17.17	3	Horizontal	0	1.00	-	58.67	17.85	1.36	36.38
PK	559.62M	34.79	46.00	-11.21	-9.68	3	Horizontal	0	1.00	-	44.47	25.38	2.04	37.10
PK	699.3M	36.39	46.00	-9.61	-9.12	3	Horizontal	0	1.00	-	45.51	25.75	2.40	37.27
PK	910.76M	35.87	46.00	-10.13	-6.27	3	Horizontal	0	1.00	-	42.14	28.40	2.82	37.49

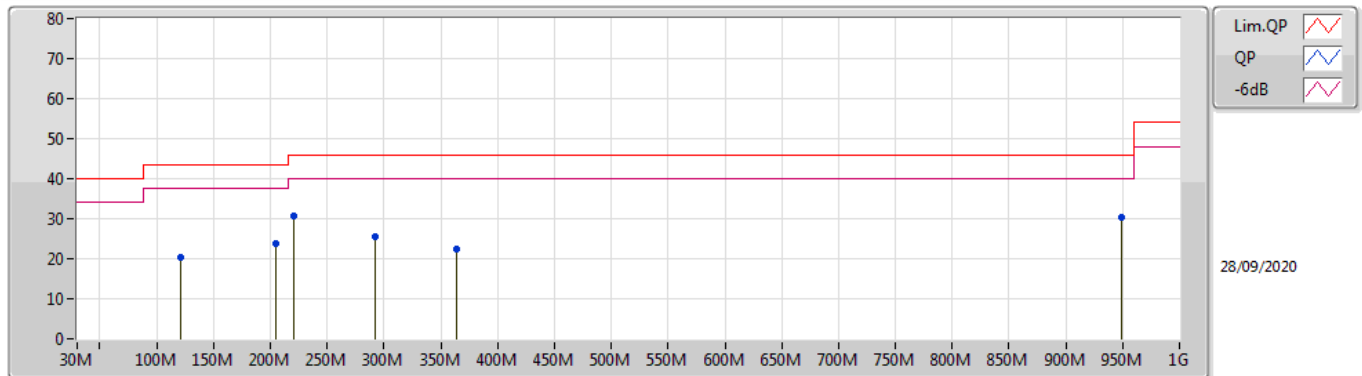


Summary

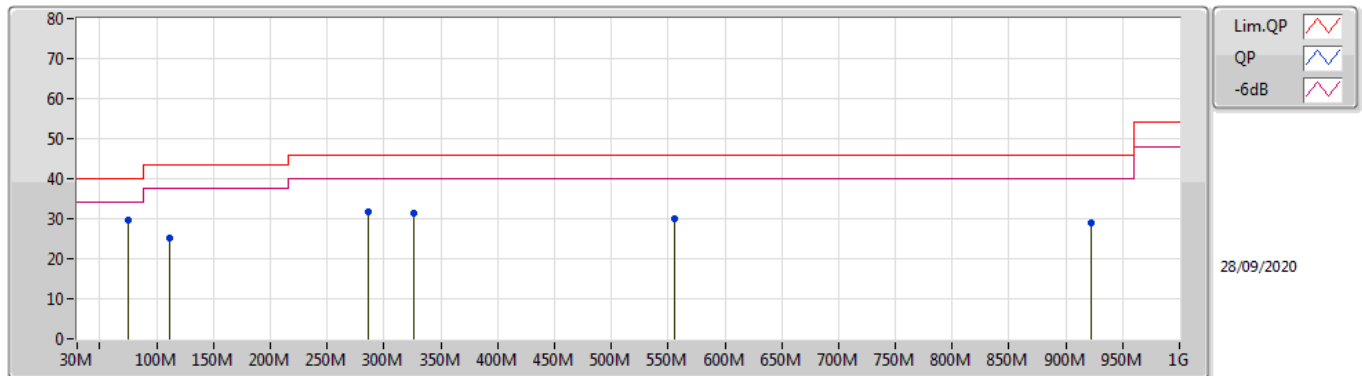
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 2	Pass	PK	315.18M	41.62	46.00	-4.38	Horizontal

Mode Configure

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
Mode 2	Pass	PK	101.78M	20.18	43.50	-23.32	3	Vertical	360	1.00	-
Mode 2	Pass	PK	231.76M	36.87	46.00	-9.13	3	Vertical	360	1.00	-
Mode 2	Pass	PK	272.5M	33.10	46.00	-12.90	3	Vertical	360	1.00	-
Mode 2	Pass	PK	288.02M	37.42	46.00	-8.58	3	Vertical	360	1.00	"Worst"
Mode 2	Pass	PK	398.6M	31.16	46.00	-14.84	3	Vertical	360	1.00	-
Mode 2	Pass	PK	559.62M	30.47	46.00	-15.53	3	Vertical	360	1.00	-
Mode 2	Pass	PK	59.1M	32.98	40.00	-7.02	3	Horizontal	0	1.00	-
Mode 2	Pass	PK	74.62M	32.38	40.00	-7.62	3	Horizontal	0	1.00	-
Mode 2	Pass	PK	315.18M	41.62	46.00	-4.38	3	Horizontal	0	1.00	"Worst"
Mode 2	Pass	PK	346.22M	37.36	46.00	-8.64	3	Horizontal	0	1.00	-
Mode 2	Pass	PK	509.18M	33.62	46.00	-12.38	3	Horizontal	0	1.00	-
Mode 2	Pass	PK	747.8M	39.25	46.00	-6.75	3	Horizontal	0	1.00	-



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	121.18M	20.23	43.50	-23.27	-18.97	3	Vertical	360	1.00	-	39.20	16.70	0.81	36.48
PK	204.6M	23.82	43.50	-19.68	-20.81	3	Vertical	360	1.00	-	44.63	14.27	1.12	36.20
PK	220.12M	30.71	46.00	-15.29	-20.88	3	Vertical	360	1.00	"Worst"	51.59	14.22	1.18	36.28
PK	291.9M	25.45	46.00	-20.55	-16.80	3	Vertical	360	1.00	-	42.25	18.18	1.38	36.36
PK	363.68M	22.55	46.00	-23.45	-15.18	3	Vertical	360	1.00	-	37.73	19.75	1.55	36.48
PK	949.56M	30.29	46.00	-15.71	-4.79	3	Vertical	360	1.00	-	35.08	29.67	2.90	37.36



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	74.62M	29.60	40.00	-10.40	-24.39	3	Horizontal	0	1.00	"Worst"	53.99	11.72	0.69	36.80
PK	111.48M	25.11	43.50	-18.39	-19.71	3	Horizontal	0	1.00	-	44.82	16.01	0.80	36.52
PK	286.08M	31.77	46.00	-14.23	-16.97	3	Horizontal	0	1.00	-	48.74	18.03	1.37	36.37
PK	326.82M	31.39	46.00	-14.61	-16.32	3	Horizontal	0	1.00	-	47.71	18.66	1.45	36.43
PK	555.74M	29.85	46.00	-16.15	-10.25	3	Horizontal	0	1.00	-	40.10	24.83	2.02	37.10
PK	922.4M	28.93	46.00	-17.07	-6.18	3	Horizontal	0	1.00	-	35.11	28.43	2.84	37.45



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	2.498G	57.41	74.00	-16.59	3	Vertical	21	1.50	-
BT-EDR(3Mbps)	Pass	PK	2.498G	57.33	74.00	-16.67	3	Vertical	0	2.50	-



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	2.3678G	34.48	54.00	-19.52	3	Vertical	4	1.50	-
2402MHz	Pass	AV	2.4022G	69.62	Inf	-Inf	3	Vertical	4	1.50	-
2402MHz	Pass	PK	2.3678G	56.98	74.00	-17.02	3	Vertical	4	1.50	-
2402MHz	Pass	PK	2.4022G	92.12	Inf	-Inf	3	Vertical	4	1.50	-
2402MHz	Pass	AV	2.3616G	34.69	54.00	-19.31	3	Horizontal	266	3.00	-
2402MHz	Pass	AV	2.4018G	73.72	Inf	-Inf	3	Horizontal	266	3.00	-
2402MHz	Pass	PK	2.3616G	57.19	74.00	-16.81	3	Horizontal	266	3.00	-
2402MHz	Pass	PK	2.4018G	96.22	Inf	-Inf	3	Horizontal	266	3.00	-
2402MHz	Pass	AV	4.80375G	25.36	54.00	-28.64	3	Vertical	360	2.77	-
2402MHz	Pass	PK	4.80375G	47.86	74.00	-26.14	3	Vertical	360	2.77	-
2402MHz	Pass	AV	4.80372G	25.39	54.00	-28.61	3	Horizontal	313	2.30	-
2402MHz	Pass	PK	4.80372G	47.89	74.00	-26.11	3	Horizontal	313	2.30	-
2440MHz	Pass	AV	2.3652G	33.89	54.00	-20.11	3	Vertical	21	1.50	-
2440MHz	Pass	AV	2.44G	70.48	Inf	-Inf	3	Vertical	21	1.50	-
2440MHz	Pass	AV	2.498G	34.91	54.00	-19.09	3	Vertical	21	1.50	-
2440MHz	Pass	PK	2.3652G	56.39	74.00	-17.61	3	Vertical	21	1.50	-
2440MHz	Pass	PK	2.44G	92.98	Inf	-Inf	3	Vertical	21	1.50	-
2440MHz	Pass	PK	2.498G	57.41	74.00	-16.59	3	Vertical	21	1.50	-
2440MHz	Pass	AV	2.3672G	33.90	54.00	-20.10	3	Horizontal	266	2.92	-
2440MHz	Pass	AV	2.44G	74.52	Inf	-Inf	3	Horizontal	266	2.92	-
2440MHz	Pass	AV	2.4972G	33.83	54.00	-20.17	3	Horizontal	266	2.92	-
2440MHz	Pass	PK	2.3672G	56.40	74.00	-17.60	3	Horizontal	266	2.92	-
2440MHz	Pass	PK	2.44G	97.02	Inf	-Inf	3	Horizontal	266	2.92	-
2440MHz	Pass	PK	2.4972G	56.33	74.00	-17.67	3	Horizontal	266	2.92	-
2440MHz	Pass	AV	4.88016G	26.26	54.00	-27.74	3	Vertical	360	2.58	-
2440MHz	Pass	PK	4.88016G	48.76	74.00	-25.24	3	Vertical	360	2.58	-
2440MHz	Pass	AV	4.87939G	23.47	54.00	-30.53	3	Horizontal	149	1.94	-
2440MHz	Pass	PK	4.87939G	45.97	74.00	-28.03	3	Horizontal	149	1.94	-
2480MHz	Pass	AV	2.4798G	71.16	Inf	-Inf	3	Vertical	360	1.91	-
2480MHz	Pass	AV	2.495G	34.05	54.00	-19.95	3	Vertical	360	1.91	-
2480MHz	Pass	PK	2.4798G	93.66	Inf	-Inf	3	Vertical	360	1.91	-
2480MHz	Pass	PK	2.495G	56.55	74.00	-17.45	3	Vertical	360	1.91	-
2480MHz	Pass	AV	2.4798G	75.98	Inf	-Inf	3	Horizontal	264	2.87	-
2480MHz	Pass	AV	2.4996G	34.28	54.00	-19.72	3	Horizontal	264	2.87	-
2480MHz	Pass	PK	2.4798G	98.48	Inf	-Inf	3	Horizontal	264	2.87	-
2480MHz	Pass	PK	2.4996G	56.78	74.00	-17.22	3	Horizontal	264	2.87	-
2480MHz	Pass	AV	4.95953G	25.08	54.00	-28.92	3	Vertical	152	1.29	-
2480MHz	Pass	PK	4.95953G	47.58	74.00	-26.42	3	Vertical	152	1.29	-
2480MHz	Pass	AV	4.95959G	24.23	54.00	-29.77	3	Horizontal	309	2.36	-
2480MHz	Pass	PK	4.95959G	46.73	74.00	-27.27	3	Horizontal	309	2.36	-
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3608G	34.08	54.00	-19.92	3	Vertical	0	1.50	-
2402MHz	Pass	AV	2.402G	70.51	Inf	-Inf	3	Vertical	0	1.50	-
2402MHz	Pass	PK	2.3608G	56.58	74.00	-17.42	3	Vertical	0	1.50	-
2402MHz	Pass	PK	2.402G	93.01	Inf	-Inf	3	Vertical	0	1.50	-
2402MHz	Pass	AV	2.3668G	34.01	54.00	-19.99	3	Horizontal	262	3.00	-
2402MHz	Pass	AV	2.402G	75.08	Inf	-Inf	3	Horizontal	262	3.00	-
2402MHz	Pass	PK	2.3668G	56.51	74.00	-17.49	3	Horizontal	262	3.00	-
2402MHz	Pass	PK	2.402G	97.58	Inf	-Inf	3	Horizontal	262	3.00	-
2402MHz	Pass	PK	4.80373G	48.62	74.00	-25.38	3	Vertical	359	2.78	-
2402MHz	Pass	AV	4.80373G	26.12	54.00	-27.88	3	Vertical	359	2.78	-
2402MHz	Pass	AV	4.80371G	25.33	54.00	-28.67	3	Horizontal	309	2.22	-
2402MHz	Pass	PK	4.80371G	47.83	74.00	-26.17	3	Horizontal	309	2.22	-
2440MHz	Pass	AV	2.39G	33.99	54.00	-20.01	3	Vertical	0	2.50	-
2440MHz	Pass	AV	2.44G	72.58	Inf	-Inf	3	Vertical	0	2.50	-
2440MHz	Pass	AV	2.498G	34.83	54.00	-19.17	3	Vertical	0	2.50	-
2440MHz	Pass	PK	2.39G	56.49	74.00	-17.51	3	Vertical	0	2.50	-
2440MHz	Pass	PK	2.44G	95.08	Inf	-Inf	3	Vertical	0	2.50	-
2440MHz	Pass	PK	2.498G	57.33	74.00	-16.67	3	Vertical	0	2.50	-
2440MHz	Pass	AV	2.3512G	34.22	54.00	-19.78	3	Horizontal	264	2.93	-

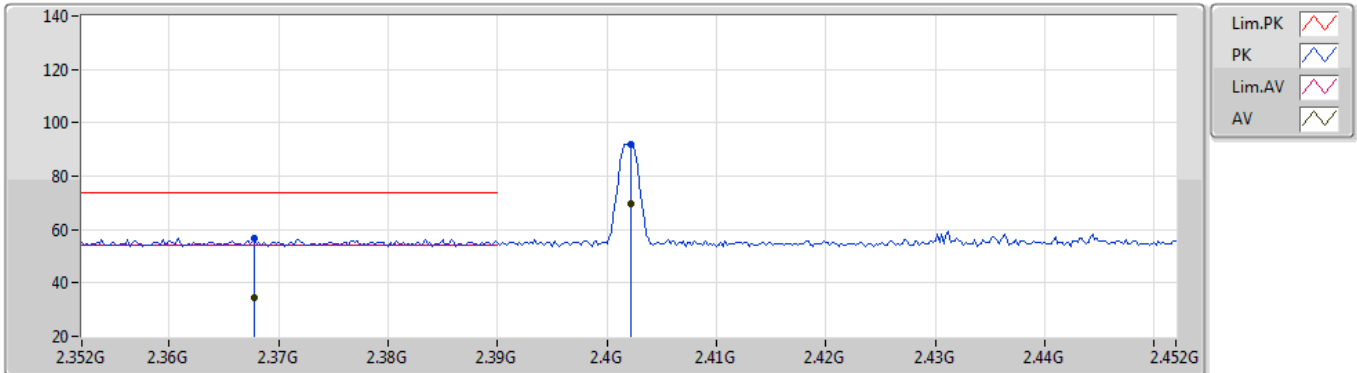


Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2440MHz	Pass	AV	2.44G	76.03	Inf	-Inf	3	Horizontal	264	2.93	-
2440MHz	Pass	AV	2.4908G	33.99	54.00	-20.01	3	Horizontal	264	2.93	-
2440MHz	Pass	PK	2.3512G	56.72	74.00	-17.28	3	Horizontal	264	2.93	-
2440MHz	Pass	PK	2.44G	98.53	Inf	-Inf	3	Horizontal	264	2.93	-
2440MHz	Pass	PK	2.4908G	56.49	74.00	-17.51	3	Horizontal	264	2.93	-
2440MHz	Pass	AV	4.87935G	26.38	54.00	-27.62	3	Vertical	360	3.00	-
2440MHz	Pass	PK	4.87935G	48.88	74.00	-25.12	3	Vertical	360	3.00	-
2440MHz	Pass	AV	4.88033G	23.41	54.00	-30.59	3	Horizontal	148	1.50	-
2440MHz	Pass	PK	4.88033G	45.91	74.00	-28.09	3	Horizontal	148	1.50	-
2480MHz	Pass	AV	2.48G	72.90	Inf	-Inf	3	Vertical	21	1.71	-
2480MHz	Pass	AV	2.4978G	34.37	54.00	-19.63	3	Vertical	21	1.71	-
2480MHz	Pass	PK	2.48G	95.40	Inf	-Inf	3	Vertical	21	1.71	-
2480MHz	Pass	PK	2.4978G	56.87	74.00	-17.13	3	Vertical	21	1.71	-
2480MHz	Pass	AV	2.48G	71.23	Inf	-Inf	3	Horizontal	277	1.36	-
2480MHz	Pass	AV	2.499G	34.25	54.00	-19.75	3	Horizontal	277	1.36	-
2480MHz	Pass	PK	2.48G	93.73	Inf	-Inf	3	Horizontal	277	1.36	-
2480MHz	Pass	PK	2.499G	56.75	74.00	-17.25	3	Horizontal	277	1.36	-
2480MHz	Pass	AV	4.96034G	24.51	54.00	-29.49	3	Vertical	169	1.48	-
2480MHz	Pass	PK	4.96034G	47.01	74.00	-26.99	3	Vertical	169	1.48	-
2480MHz	Pass	AV	4.95964G	24.70	54.00	-29.30	3	Horizontal	305	2.46	-
2480MHz	Pass	PK	4.95964G	47.20	74.00	-26.80	3	Horizontal	305	2.46	-

BT-BR(1Mbps)

17/09/2020

2402MHz_TX

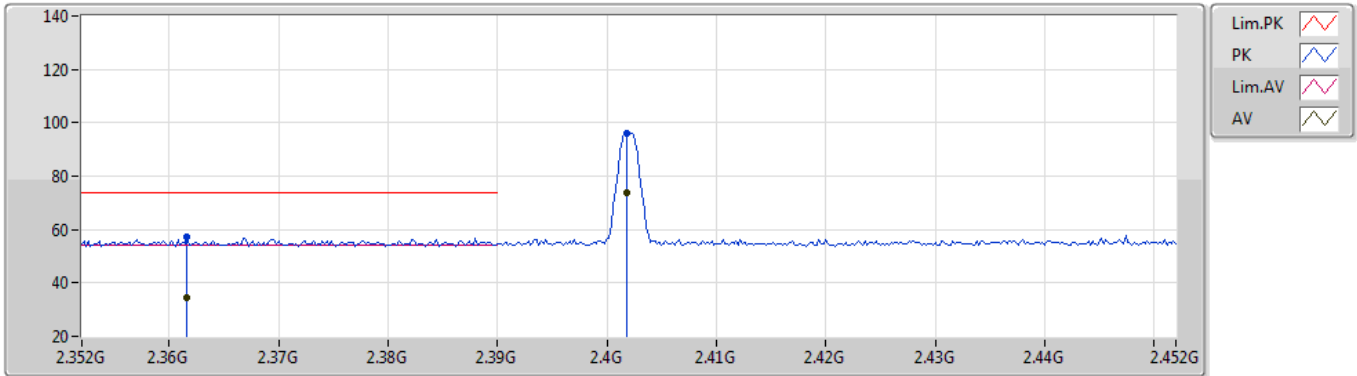


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3678G	34.48	54.00	-19.52	31.58	3	Vertical	4	1.50	-	2.90	27.73	3.85	-
AV	2.4022G	69.62	Inf	-Inf	31.50	3	Vertical	4	1.50	-	38.12	27.60	3.90	-
PK	2.3678G	56.98	74.00	-17.02	31.58	3	Vertical	4	1.50	-	25.40	27.73	3.85	-
PK	2.4022G	92.12	Inf	-Inf	31.50	3	Vertical	4	1.50	-	60.62	27.60	3.90	-

BT-BR(1Mbps)

17/09/2020

2402MHz_TX

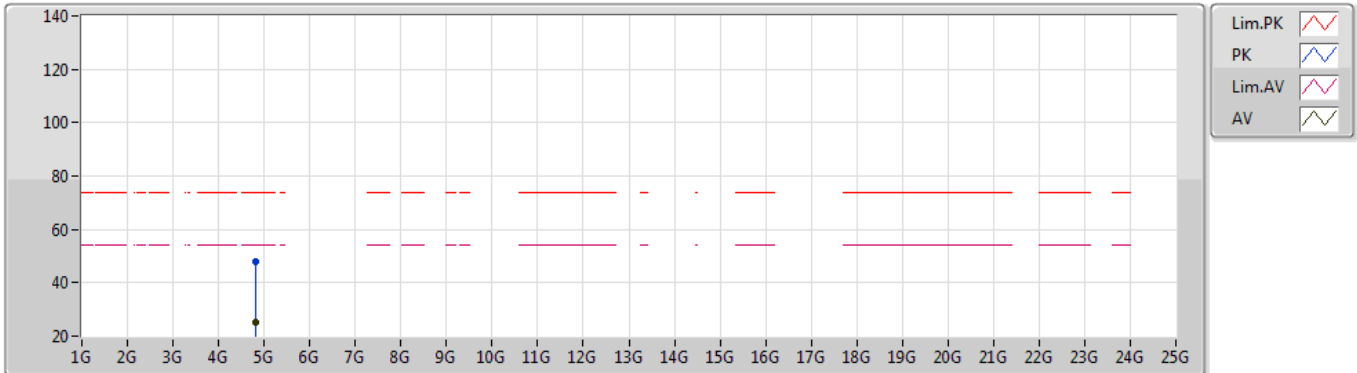


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.361G	34.69	54.00	-19.31	31.59	3	Horizontal	266	3.00	-	3.10	27.75	3.84	-
AV	2.4018G	73.72	Inf	-Inf	31.50	3	Horizontal	266	3.00	-	42.22	27.60	3.90	-
PK	2.361G	57.19	74.00	-16.81	31.59	3	Horizontal	266	3.00	-	25.60	27.75	3.84	-
PK	2.4018G	96.22	Inf	-Inf	31.50	3	Horizontal	266	3.00	-	64.72	27.60	3.90	-

BT-BR(1Mbps)

17/09/2020

2402MHz_TX

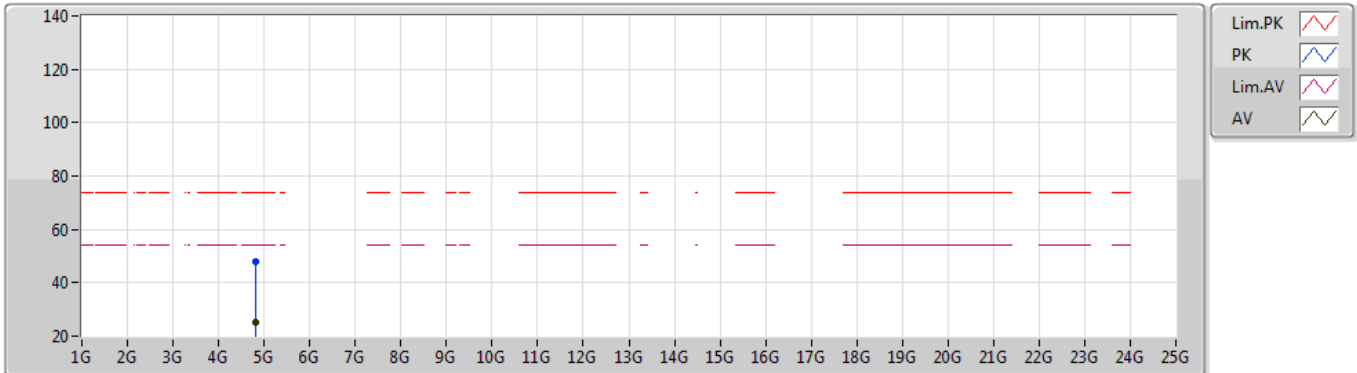


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.80375G	25.36	54.00	-28.64	1.49	3	Vertical	360	2.77	-	23.87	31.12	5.30	34.93
PK	4.80375G	47.86	74.00	-26.14	1.49	3	Vertical	360	2.77	-	46.37	31.12	5.30	34.93

BT-BR(1Mbps)

17/09/2020

2402MHz_TX

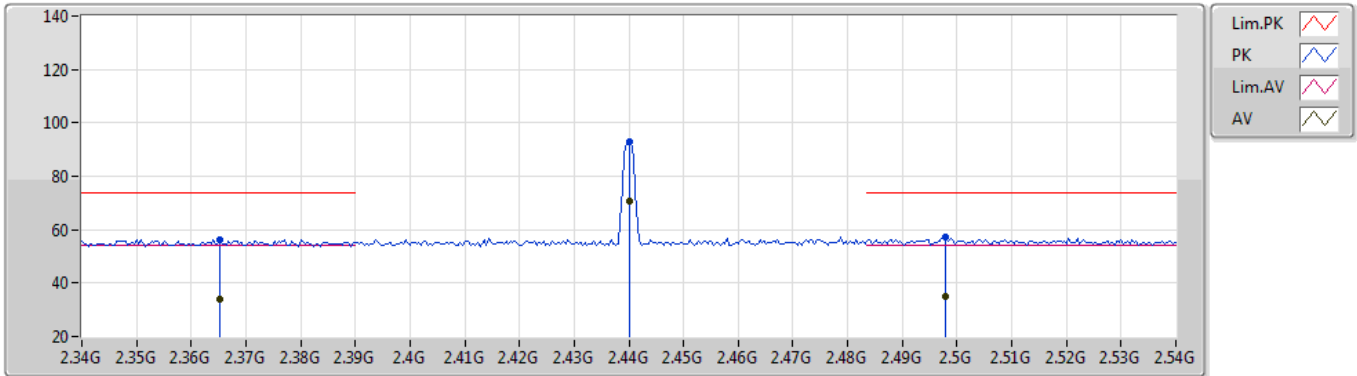


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.80372G	25.39	54.00	-28.61	1.48	3	Horizontal	313	2.30	-	23.91	31.11	5.30	34.93
PK	4.80372G	47.89	74.00	-26.11	1.48	3	Horizontal	313	2.30	-	46.41	31.11	5.30	34.93

BT-BR(1Mbps)

17/09/2020

2440MHz_TX

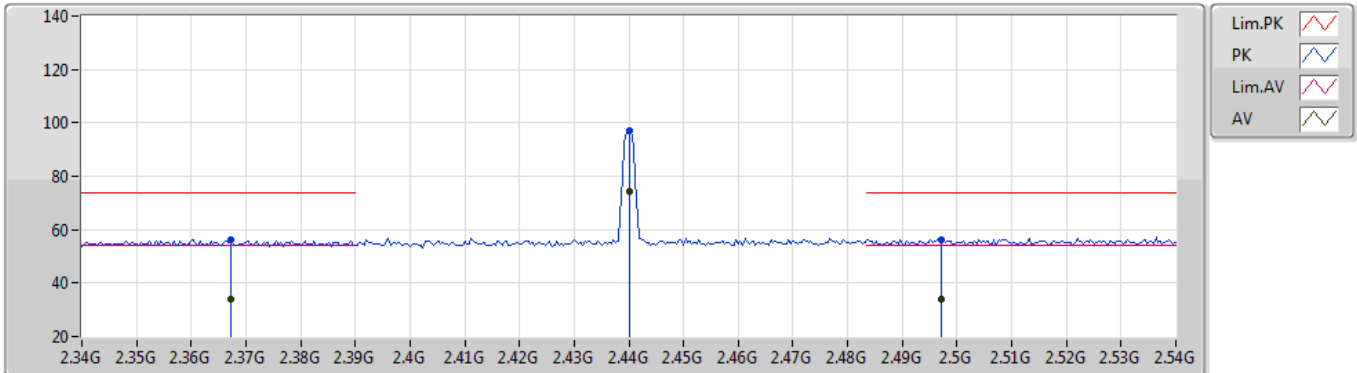


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3652G	33.89	54.00	-20.11	31.59	3	Vertical	21	1.50	-	2.30	27.74	3.85	-
AV	2.44G	70.48	Inf	-Inf	31.56	3	Vertical	21	1.50	-	38.92	27.60	3.96	-
AV	2.498G	34.91	54.00	-19.09	31.65	3	Vertical	21	1.50	-	3.26	27.60	4.05	-
PK	2.3652G	56.39	74.00	-17.61	31.59	3	Vertical	21	1.50	-	24.80	27.74	3.85	-
PK	2.44G	92.98	Inf	-Inf	31.56	3	Vertical	21	1.50	-	61.42	27.60	3.96	-
PK	2.498G	57.41	74.00	-16.59	31.65	3	Vertical	21	1.50	-	25.76	27.60	4.05	-

BT-BR(1Mbps)

17/09/2020

2440MHz_TX

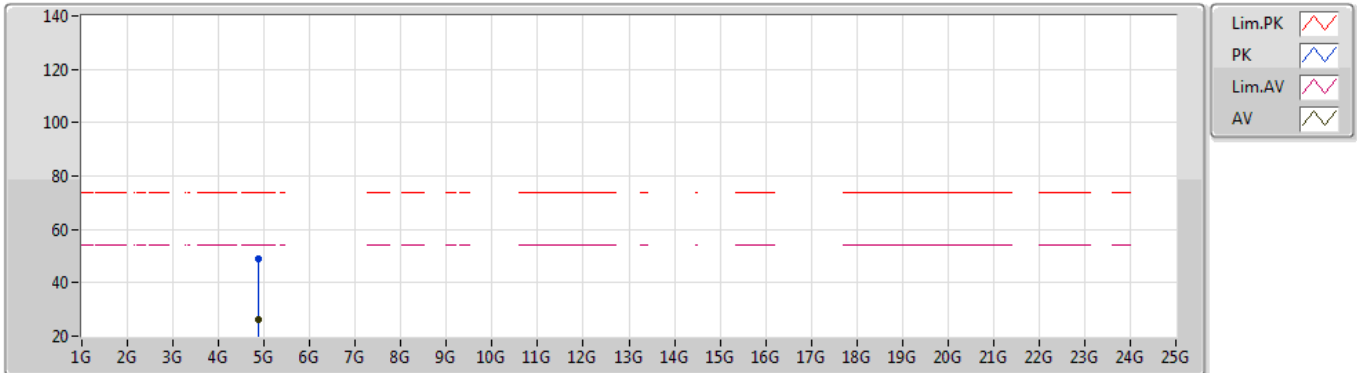


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3672G	33.90	54.00	-20.10	31.58	3	Horizontal	266	2.92	-	2.32	27.73	3.85	-
AV	2.44G	74.52	Inf	-Inf	31.56	3	Horizontal	266	2.92	-	42.96	27.60	3.96	-
AV	2.4972G	33.83	54.00	-20.17	31.65	3	Horizontal	266	2.92	-	2.18	27.60	4.05	-
PK	2.3672G	56.40	74.00	-17.60	31.58	3	Horizontal	266	2.92	-	24.82	27.73	3.85	-
PK	2.44G	97.02	Inf	-Inf	31.56	3	Horizontal	266	2.92	-	65.46	27.60	3.96	-
PK	2.4972G	56.33	74.00	-17.67	31.65	3	Horizontal	266	2.92	-	24.68	27.60	4.05	-

BT-BR(1Mbps)

17/09/2020

2440MHz_TX

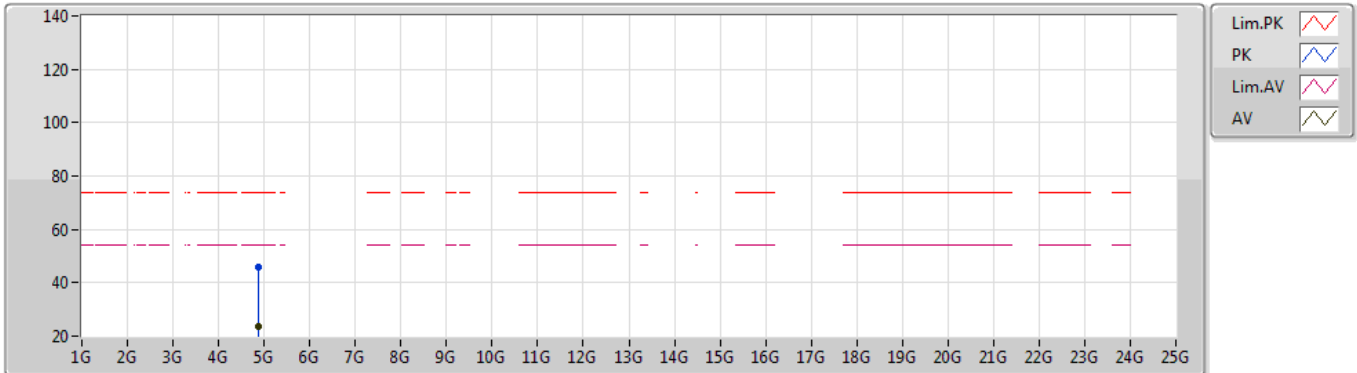


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.88016G	26.26	54.00	-27.74	1.65	3	Vertical	360	2.58	-	24.61	31.24	5.34	34.93
PK	4.88016G	48.76	74.00	-25.24	1.65	3	Vertical	360	2.58	-	47.11	31.24	5.34	34.93

BT-BR(1Mbps)

17/09/2020

2440MHz_TX

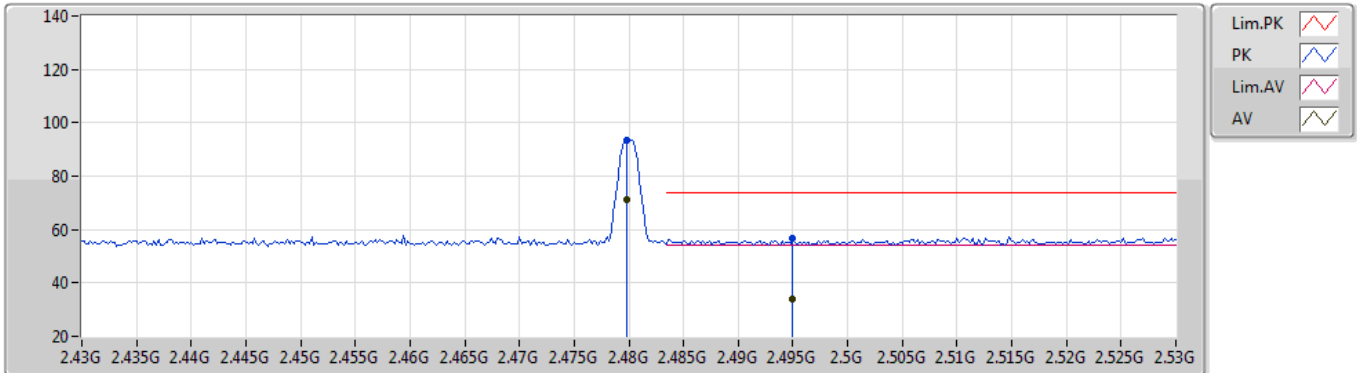


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.87939G	23.47	54.00	-30.53	1.65	3	Horizontal	149	1.94	-	21.82	31.24	5.34	34.93
PK	4.87939G	45.97	74.00	-28.03	1.65	3	Horizontal	149	1.94	-	44.32	31.24	5.34	34.93

BT-BR(1Mbps)

17/09/2020

2480MHz_TX

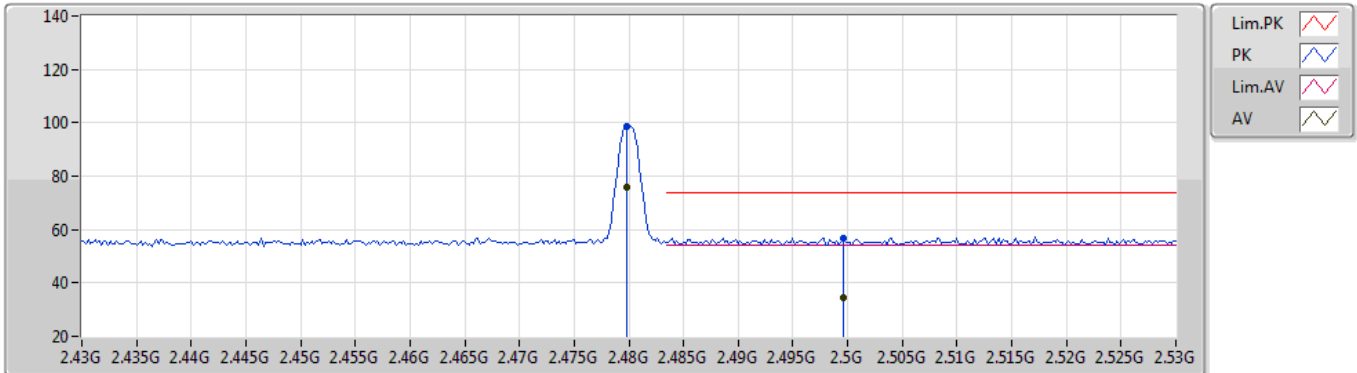


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.4798G	71.16	Inf	-Inf	31.62	3	Vertical	360	1.91	-	39.54	27.60	4.02	-
AV	2.495G	34.05	54.00	-19.95	31.64	3	Vertical	360	1.91	-	2.41	27.60	4.04	-
PK	2.4798G	93.66	Inf	-Inf	31.62	3	Vertical	360	1.91	-	62.04	27.60	4.02	-
PK	2.495G	56.55	74.00	-17.45	31.64	3	Vertical	360	1.91	-	24.91	27.60	4.04	-

BT-BR(1Mbps)

17/09/2020

2480MHz_TX

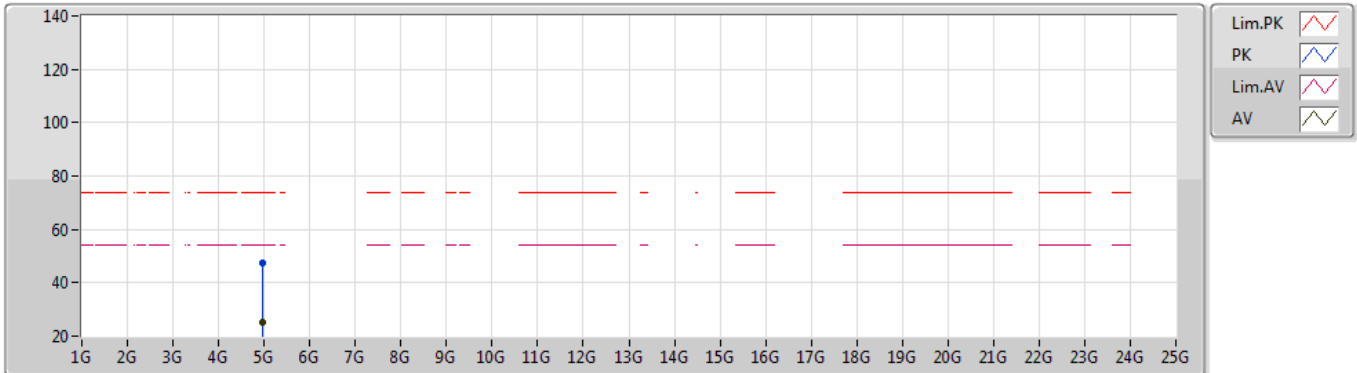


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.4798G	75.98	Inf	-Inf	31.62	3	Horizontal	264	2.87	-	44.36	27.60	4.02	-
AV	2.4996G	34.28	54.00	-19.72	31.65	3	Horizontal	264	2.87	-	2.63	27.60	4.05	-
PK	2.4798G	98.48	Inf	-Inf	31.62	3	Horizontal	264	2.87	-	66.86	27.60	4.02	-
PK	2.4996G	56.78	74.00	-17.22	31.65	3	Horizontal	264	2.87	-	25.13	27.60	4.05	-

BT-BR(1Mbps)

17/09/2020

2480MHz_TX

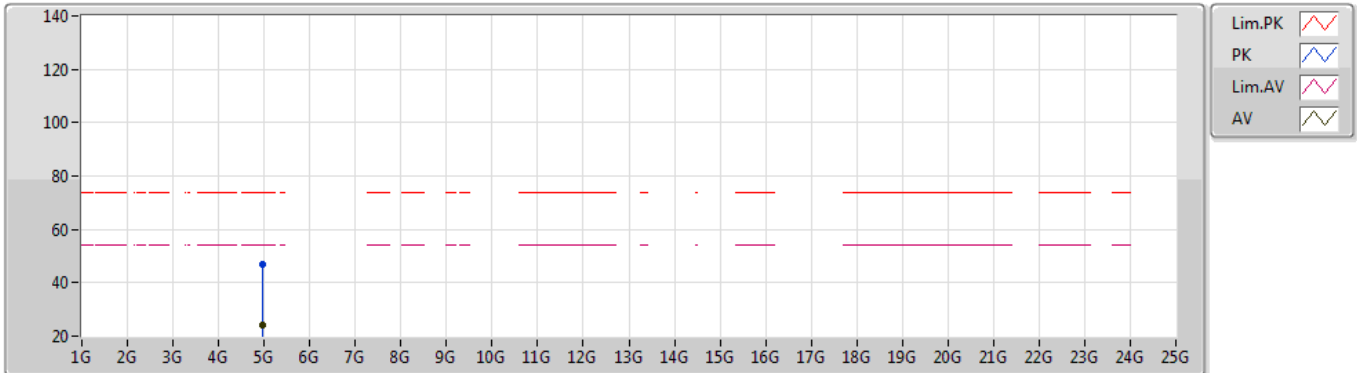


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.95953G	25.08	54.00	-28.92	1.86	3	Vertical	152	1.29	-	23.22	31.42	5.38	34.94
PK	4.95953G	47.58	74.00	-26.42	1.86	3	Vertical	152	1.29	-	45.72	31.42	5.38	34.94

BT-BR(1Mbps)

17/09/2020

2480MHz_TX

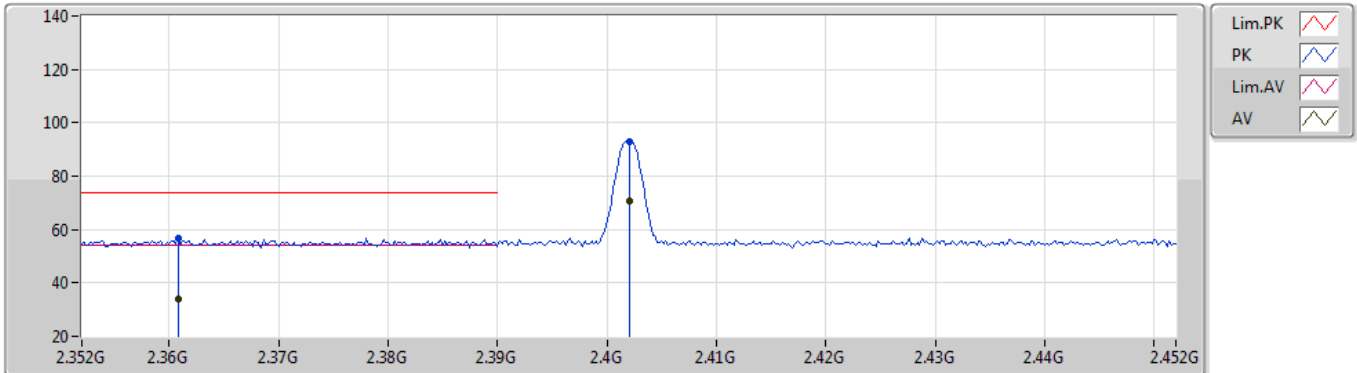


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.95959G	24.23	54.00	-29.77	1.86	3	Horizontal	309	2.36	-	22.37	31.42	5.38	34.94
PK	4.95959G	46.73	74.00	-27.27	1.86	3	Horizontal	309	2.36	-	44.87	31.42	5.38	34.94

BT-EDR(3Mbps)

17/09/2020

2402MHz_TX

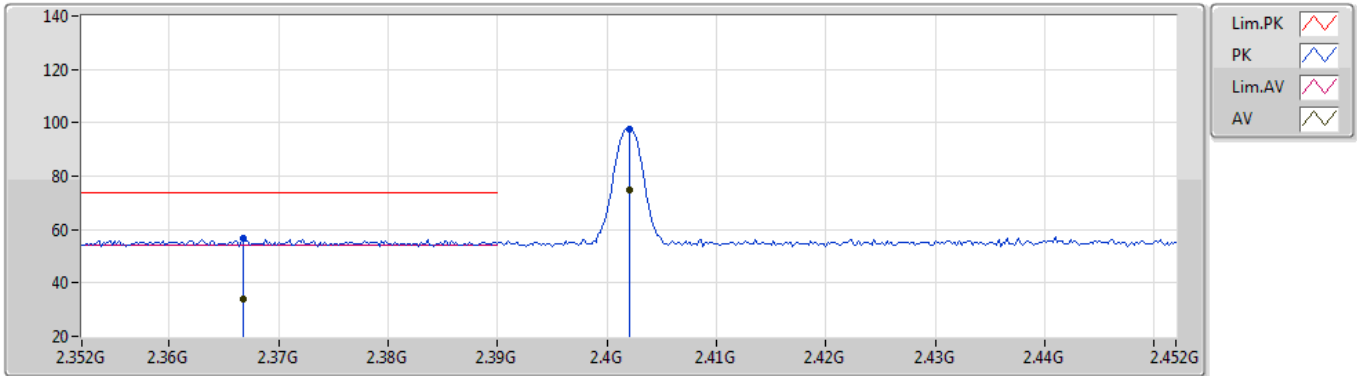


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3608G	34.08	54.00	-19.92	31.60	3	Vertical	0	1.50	-	2.48	27.76	3.84	-
AV	2.402G	70.51	Inf	-Inf	31.50	3	Vertical	0	1.50	-	39.01	27.60	3.90	-
PK	2.3608G	56.58	74.00	-17.42	31.60	3	Vertical	0	1.50	-	24.98	27.76	3.84	-
PK	2.402G	93.01	Inf	-Inf	31.50	3	Vertical	0	1.50	-	61.51	27.60	3.90	-

BT-EDR(3Mbps)

17/09/2020

2402MHz_TX

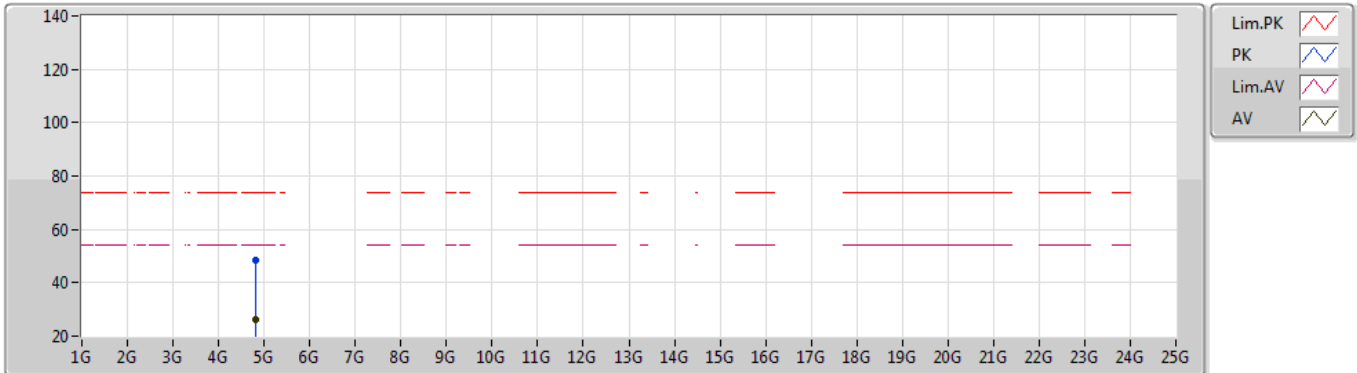


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3668G	34.01	54.00	-19.99	31.58	3	Horizontal	262	3.00	-	2.43	27.73	3.85	-
AV	2.402G	75.08	Inf	-Inf	31.50	3	Horizontal	262	3.00	-	43.58	27.60	3.90	-
PK	2.3668G	56.51	74.00	-17.49	31.58	3	Horizontal	262	3.00	-	24.93	27.73	3.85	-
PK	2.402G	97.58	Inf	-Inf	31.50	3	Horizontal	262	3.00	-	66.08	27.60	3.90	-

BT-EDR(3Mbps)

17/09/2020

2402MHz_TX

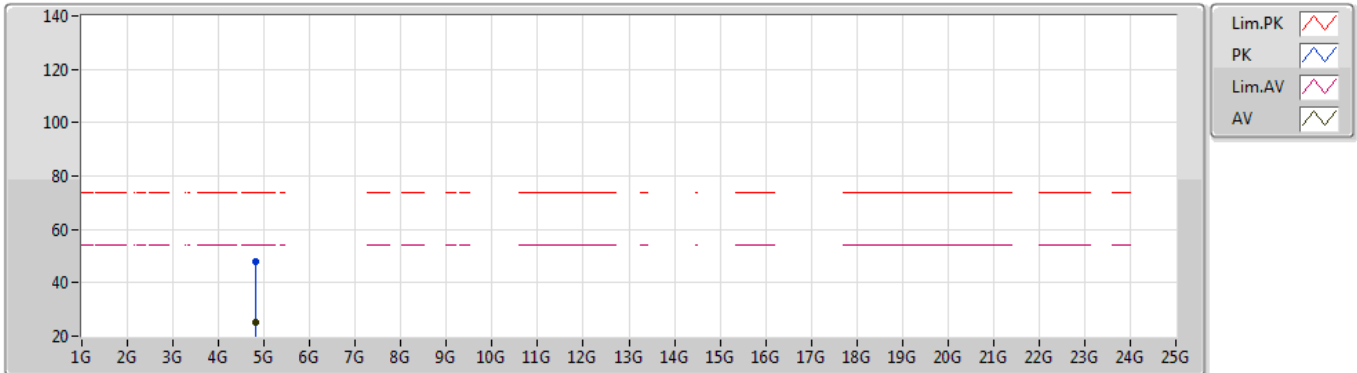


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	4.80373G	48.62	74.00	-25.38	1.48	3	Vertical	359	2.78	-	47.14	31.11	5.30	34.93
AV	4.80373G	26.12	54.00	-27.88	1.48	3	Vertical	359	2.78	-	24.64	31.11	5.30	34.93

BT-EDR(3Mbps)

17/09/2020

2402MHz_TX

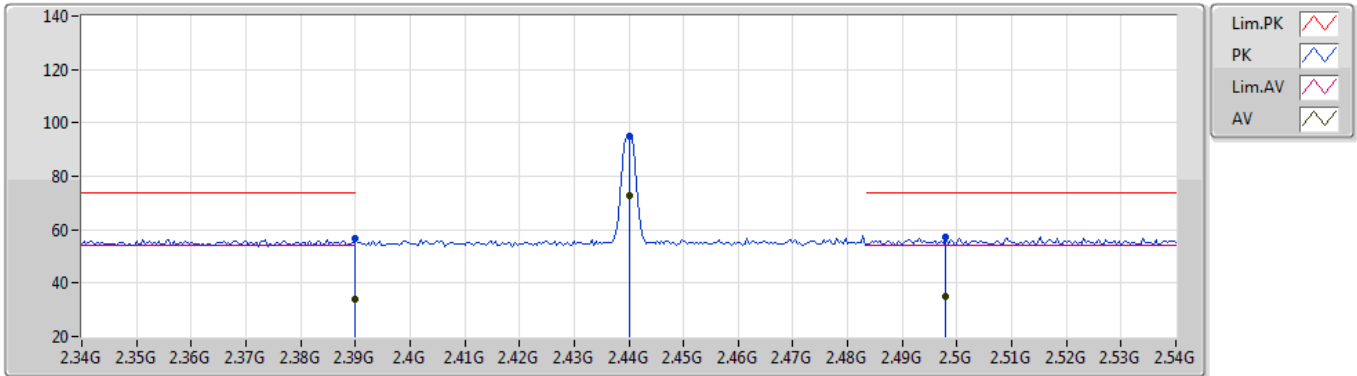


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.80371G	25.33	54.00	-28.67	1.48	3	Horizontal	309	2.22	-	23.85	31.11	5.30	34.93
PK	4.80371G	47.83	74.00	-26.17	1.48	3	Horizontal	309	2.22	-	46.35	31.11	5.30	34.93

BT-EDR(3Mbps)

17/09/2020

2440MHz_TX

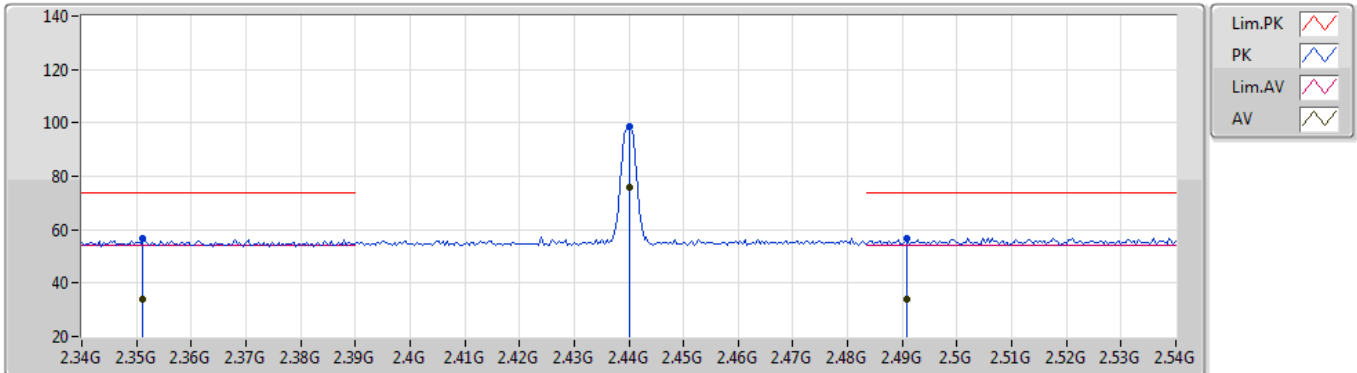


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.39G	33.99	54.00	-20.01	31.52	3	Vertical	0	2.50	-	2.47	27.64	3.88	-
AV	2.44G	72.58	Inf	-Inf	31.56	3	Vertical	0	2.50	-	41.02	27.60	3.96	-
AV	2.498G	34.83	54.00	-19.17	31.65	3	Vertical	0	2.50	-	3.18	27.60	4.05	-
PK	2.39G	56.49	74.00	-17.51	31.52	3	Vertical	0	2.50	-	24.97	27.64	3.88	-
PK	2.44G	95.08	Inf	-Inf	31.56	3	Vertical	0	2.50	-	63.52	27.60	3.96	-
PK	2.498G	57.33	74.00	-16.67	31.65	3	Vertical	0	2.50	-	25.68	27.60	4.05	-

BT-EDR(3Mbps)

17/09/2020

2440MHz_TX

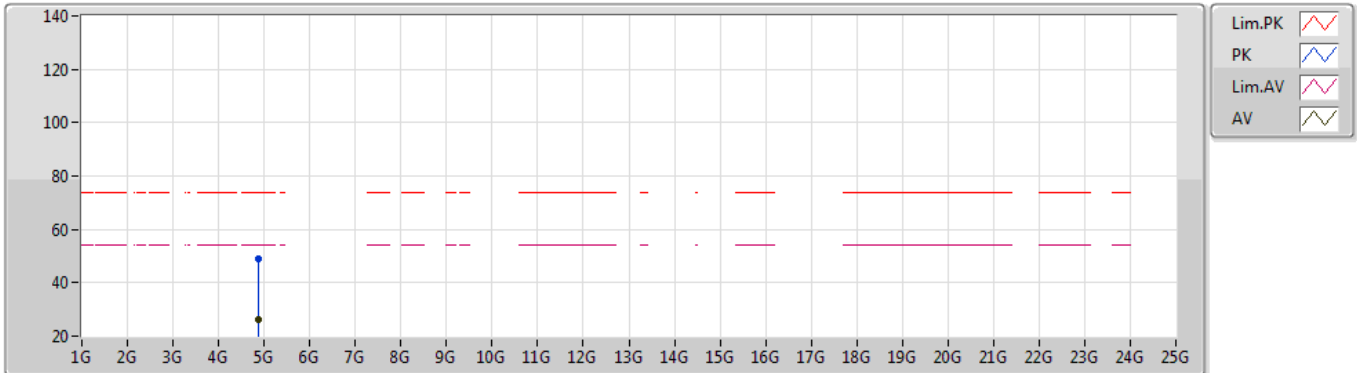


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3512G	34.22	54.00	-19.78	31.63	3	Horizontal	264	2.93	-	2.59	27.80	3.83	-
AV	2.44G	76.03	Inf	-Inf	31.56	3	Horizontal	264	2.93	-	44.47	27.60	3.96	-
AV	2.4908G	33.99	54.00	-20.01	31.64	3	Horizontal	264	2.93	-	2.35	27.60	4.04	-
PK	2.3512G	56.72	74.00	-17.28	31.63	3	Horizontal	264	2.93	-	25.09	27.80	3.83	-
PK	2.44G	98.53	Inf	-Inf	31.56	3	Horizontal	264	2.93	-	66.97	27.60	3.96	-
PK	2.4908G	56.49	74.00	-17.51	31.64	3	Horizontal	264	2.93	-	24.85	27.60	4.04	-

BT-EDR(3Mbps)

17/09/2020

2440MHz_TX

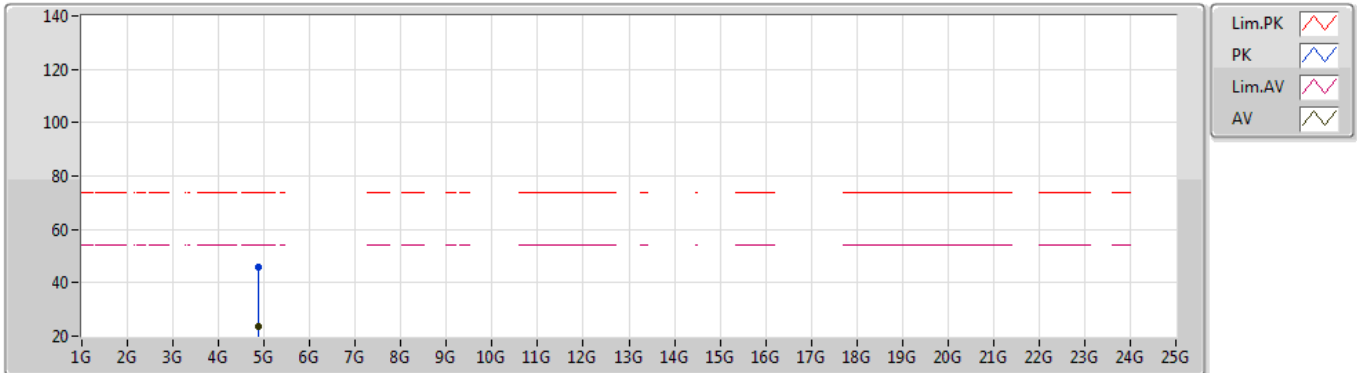


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.87935G	26.38	54.00	-27.62	1.65	3	Vertical	360	3.00	-	24.73	31.24	5.34	34.93
PK	4.87935G	48.88	74.00	-25.12	1.65	3	Vertical	360	3.00	-	47.23	31.24	5.34	34.93

BT-EDR(3Mbps)

17/09/2020

2440MHz_TX

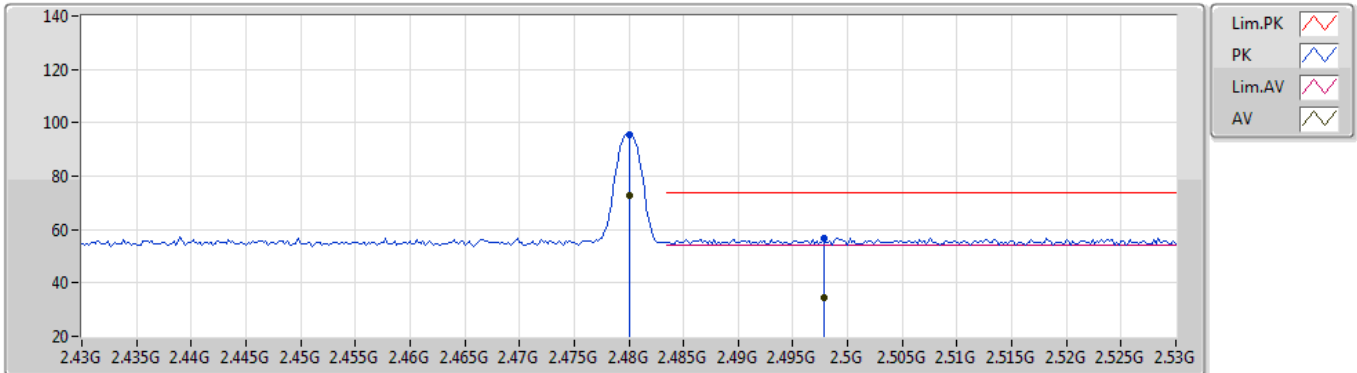


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.88033G	23.41	54.00	-30.59	1.65	3	Horizontal	148	1.50	-	21.76	31.24	5.34	34.93
PK	4.88033G	45.91	74.00	-28.09	1.65	3	Horizontal	148	1.50	-	44.26	31.24	5.34	34.93

BT-EDR(3Mbps)

17/09/2020

2480MHz_TX

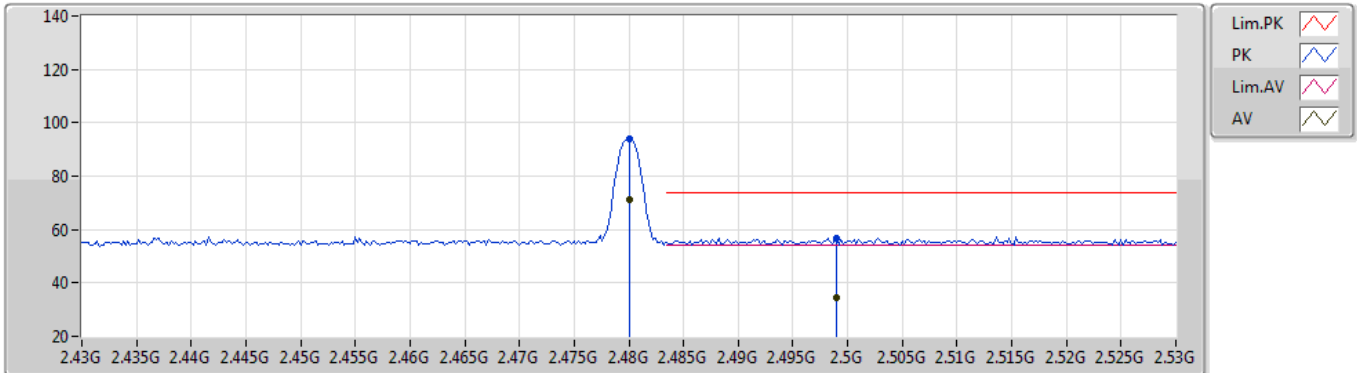


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.48G	72.90	Inf	-Inf	31.62	3	Vertical	21	1.71	-	41.28	27.60	4.02	-
AV	2.4978G	34.37	54.00	-19.63	31.65	3	Vertical	21	1.71	-	2.72	27.60	4.05	-
PK	2.48G	95.40	Inf	-Inf	31.62	3	Vertical	21	1.71	-	63.78	27.60	4.02	-
PK	2.4978G	56.87	74.00	-17.13	31.65	3	Vertical	21	1.71	-	25.22	27.60	4.05	-

BT-EDR(3Mbps)

17/09/2020

2480MHz_TX

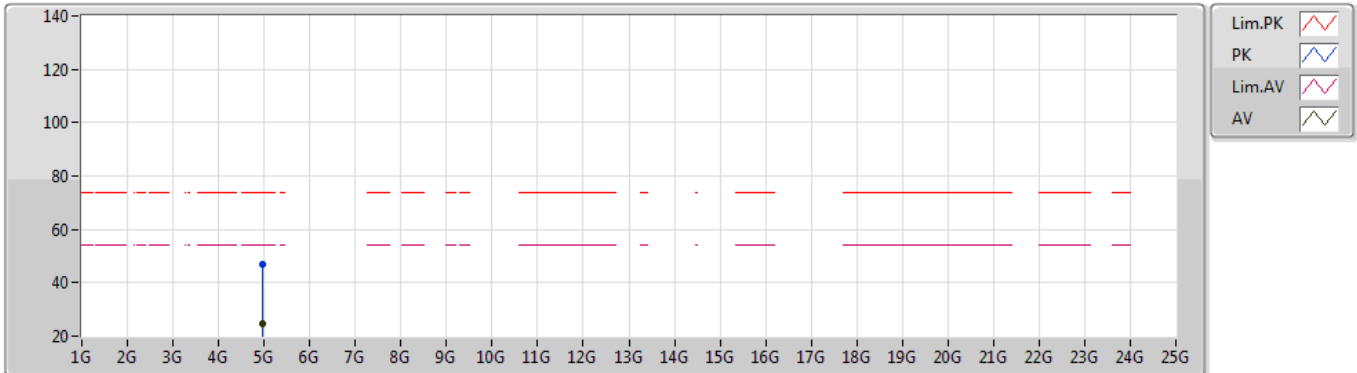


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.48G	71.23	Inf	-Inf	31.62	3	Horizontal	277	1.36	-	39.61	27.60	4.02	-
AV	2.499G	34.25	54.00	-19.75	31.65	3	Horizontal	277	1.36	-	2.60	27.60	4.05	-
PK	2.48G	93.73	Inf	-Inf	31.62	3	Horizontal	277	1.36	-	62.11	27.60	4.02	-
PK	2.499G	56.75	74.00	-17.25	31.65	3	Horizontal	277	1.36	-	25.10	27.60	4.05	-

BT-EDR(3Mbps)

17/09/2020

2480MHz_TX

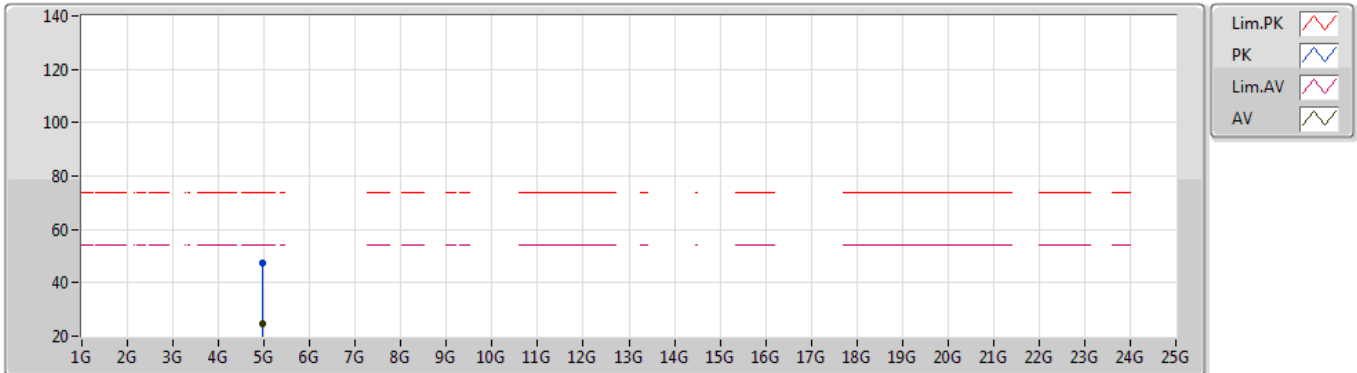


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.96034G	24.51	54.00	-29.49	1.86	3	Vertical	169	1.48	-	22.65	31.42	5.38	34.94
PK	4.96034G	47.01	74.00	-26.99	1.86	3	Vertical	169	1.48	-	45.15	31.42	5.38	34.94

BT-EDR(3Mbps)

17/09/2020

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	4.95964G	24.70	54.00	-29.30	1.86	3	Horizontal	305	2.46	-	22.84	31.42	5.38	34.94
PK	4.95964G	47.20	74.00	-26.80	1.86	3	Horizontal	305	2.46	-	45.34	31.42	5.38	34.94