FCC Test Report

FCC ID	:	**2ACIA-TTBT010**
Equipment	:	**Wireless Audio System**
Model Name	:	**A-1447K**
Applicant	:	**Ten Tronics Co., Ltd No.33, Lane 347, Chung-San S. Road, Young-Kang District**
Manufacturer	:	**Ten Tronics Co., Ltd No.33, Lane 347, Chung-San S. Road, Young-Kang District**
Standard	:	**47 CFR FCC Part 15.247**

The product was received on May 15, 2020, and testing was started from Aug. 16, 2020 and completed on Aug. 24, 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.)

Table of Contents

History of this test report

Report No.	Version	Description	Issued Date
FR022423AD	01	Initial issue of report	Sep. 22, 2020

Summary of Test Result

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

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and explanations:
None

Reviewed by: Sam Tsai

Report Producer: Ann Hou

1 General Description

1.1 Information

1.1.1 RF General Information

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

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

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

1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector
1	Cortec	AN2400-92140BRS	Dipole	SMA
2	Ten-tronics	IFA-1	PCB	N/A

Ant.	Port	Gain (dBi)	
		SRD 2.4G	BT
1	1	4.87	-
2	1	-	1.1

Note 1: The EUT has two antennas.

For SRD 2.4GHz function:

For SRD 2.4G mode (1TX/1RX)

Ant. 1 (port 1) could transmit/receive.

For BT function:

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

Ant. 2 (port 1) could transmit/receive.

1.1.3 EUT Information

Operational Condition				
EUT Power Type	From Host system			
EUT Function	☒	Point-to-multipoint	☐	Point-to-point

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

1.1.4 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
BT-BR(1Mbps)	0.751	1.24	2.918m	1k
BT-EDR(2Mbps)	0.753	1.23	2.925m	1k
BT-EDR(3Mbps)	0.835	0.78	2.926m	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
- 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			
☒	HWA YA	ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)	
		TEL : 886-3-327-3456	FAX : 886-3-327-0973
Test site Designation No. TW1190 with FCC.			
☐	JHUBEI	ADD : No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County, Taiwan (R.O.C.)	
		TEL : 886-3-656-9065	FAX : 886-3-656-9085
Test site Designation No. TW0006 with FCC.			
☐	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	23.5~25.8°C / 52~57%	20/Aug/2020
RF Conducted	TH06-HY	Raven	22.5~23.8°C / 58~72%	17/Aug/2020~ 21/Aug/2020
Radiated	03CH03-HY	Edward	22.5~25.4°C / 52~54%	16/Aug/2020~ 24/Aug/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	nstallBlueSuite_2_6_4_1046

Mode	Power Setting
BT-BR(1Mbps)	-
2402MHz	63
2440MHz	63
2480MHz	63
BT-EDR(2Mbps)	-
2402MHz	63
2440MHz	63
2480MHz	63
BT-EDR(3Mbps)	-
2402MHz	63
2440MHz	63
2480MHz	63

2.3 The Worst Case Measurement Configuration

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

The Worst Case Mode for Following Conformance Tests	
Tests Item	20dB Bandwidth Carrier Frequency Separation Maximum Conducted Output Power Number of Hopping Frequencies Hopping Bandedge Time of Occupancy (Dwell Time) Emissions in Non-restricted Frequency Bands
Test Condition	Conducted measurement at transmit chains ☒ Non-adaptive frequency hopping systems (Non-AFH) ☒ 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		
Operating Mode > 1GHz	CTX		
Orthogonal Planes of EUT	**X Plane**	**Y Plane**	**Z Plane**
			
Worst Planes of EUT		V	

2.4 Support Equipment

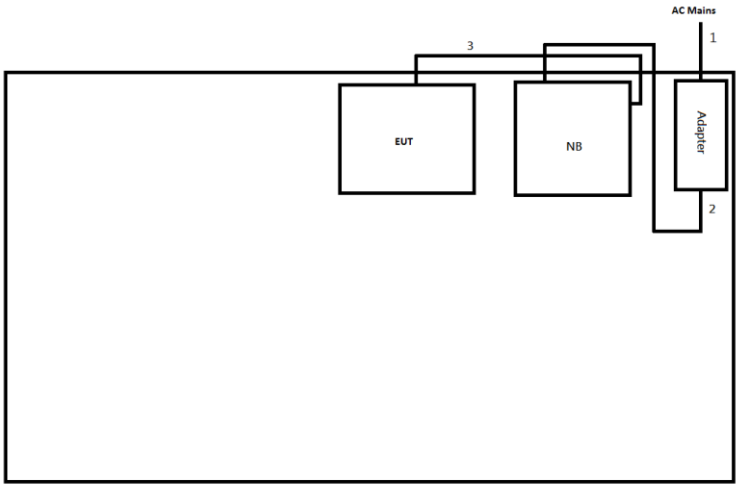
Support Equipment – AC Conduction					
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**	**Remark**
1	Notebook	HP	5220m	-	-
2	AC Adapter for Notebook	HP	PPP012H-S	-	-
3	USB Cable	Hawk	04-HTE120	-	-

Support Equipment – Conducted					
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**	**Remark**
1	Notebook	DELL	E5410	-	-
2	AC Adapter for Notebook	DELL	HA65NM130	-	-
3	Fixture	-	-	-	Customer provide
4	USB Cable	Hawk	04-HTE120	-	-

Support Equipment – Radiated					
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**	**Remark**
1	Notebook	HP	5220m	-	-
2	AC Adapter for Notebook	HP	PPP012H-S	-	-
3	USB Cable	Hawk	04-HTE120	-	-

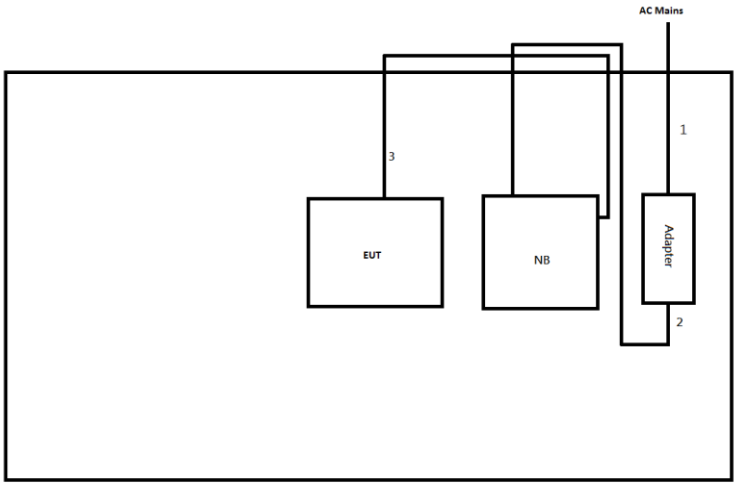
2.5 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



Item	Connection	Shielded	Length (m)
1	AC Power cable	No	1.8
2	DC Power cable	No	1.5
3	USB Cable	No	1.0

Test Setup Diagram - Radiated Test



Item	Connection	Shielded	Length (m)
1	AC Power cable	No	1.8
2	DC Power cable	No	1.5
3	USB Cable	NO	1.0

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

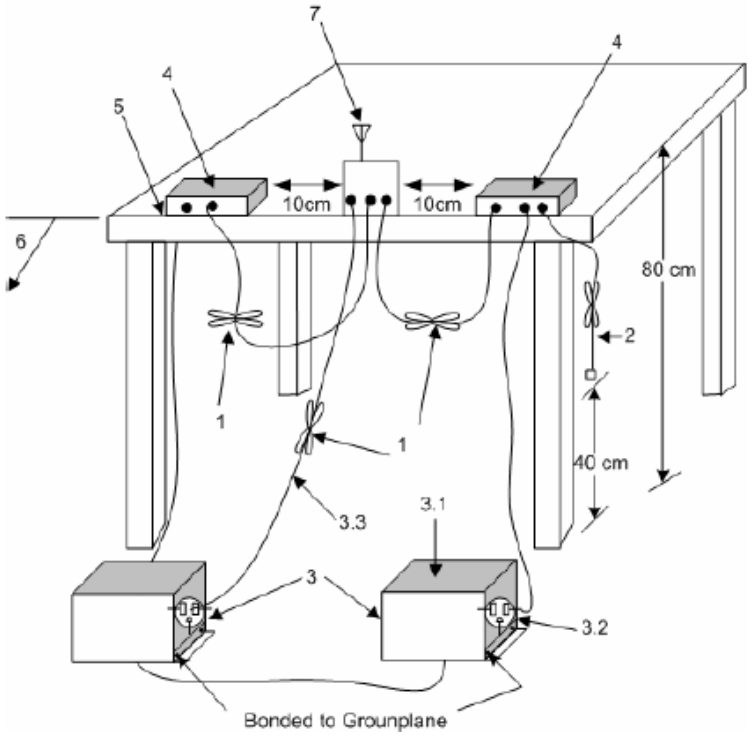
Test Method
▪ Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

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

AC Power-line Conducted Emissions



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

3.1.6 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	
▪ 2400-2483.5 MHz Band:	
	▪ N ≥75 and ChS ≥ MAX (20 dB bandwidth, 25 kHz).
	▪ 75>N ≥ 15 and ChS ≥ MAX (20 dB bandwidth 2/3,25 kHz).
N:Number of Hopping Frequencies; **ChS**: Hopping Channel Separation	

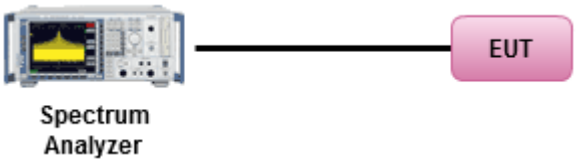
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

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

3.2.4 Test Setup

20dB Bandwidth and Carrier Frequency Separation


3.2.5 Test Result of 20dB Bandwidth

Refer as Appendix B

3.2.6 Test Result of Carrier Frequency Separation

Refer as Appendix B

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

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

3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

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

3.3.4 Test Setup

Maximum Conducted Output Power (Peak Power Meter)


3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

3.4 Number of Hopping Frequencies and Hopping Bandedge

3.4.1 Number of Hopping Frequencies Limit

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

3.4.2 Hopping Bandedge Limit

Refer clause 3.6.1 and clause 3.7.1

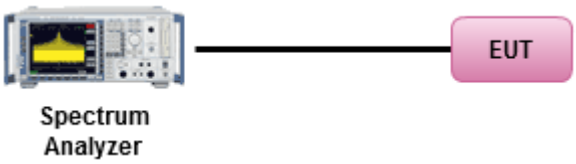
3.4.3 Measuring Instruments

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

3.4.4 Test Procedures

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

3.4.5 Test Setup

Number of Hopping Frequencies and Hopping Frequencies Bandedge


3.4.6 Test Result of Number of Hopping Frequencies

Refer as Appendix D

3.4.7 Test Result of Number of Hopping Frequencies Bandedge

Refer as Appendix D

3.5 Time of Occupancy (Dwell Time)

3.5.1 Time of Occupancy (Dwell Time) Limit

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

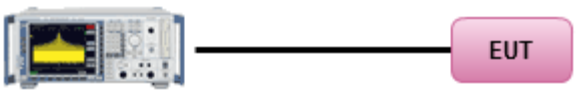
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

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

3.5.4 Test Setup

Time of Occupancy (Dwell Time)
 Spectrum Analyzer

3.5.5 Test Result of Time of Occupancy (Dwell Time)

Refer as Appendix E

3.6 Emissions in Non-restricted Frequency Bands

3.6.1 Emissions in Non-restricted Frequency Bands Limit

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

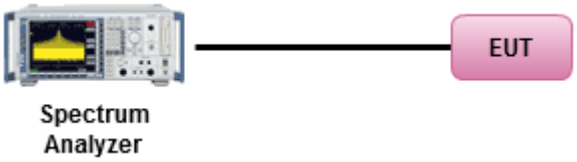
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

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

3.6.4 Test Setup

Emissions in Non-restricted Frequency Bands


3.6.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix F

3.7 Emissions in Restricted Frequency Bands

3.7.1 Emissions in Restricted Frequency Bands Limit

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

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

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

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

3.7.2 Measuring Instruments

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

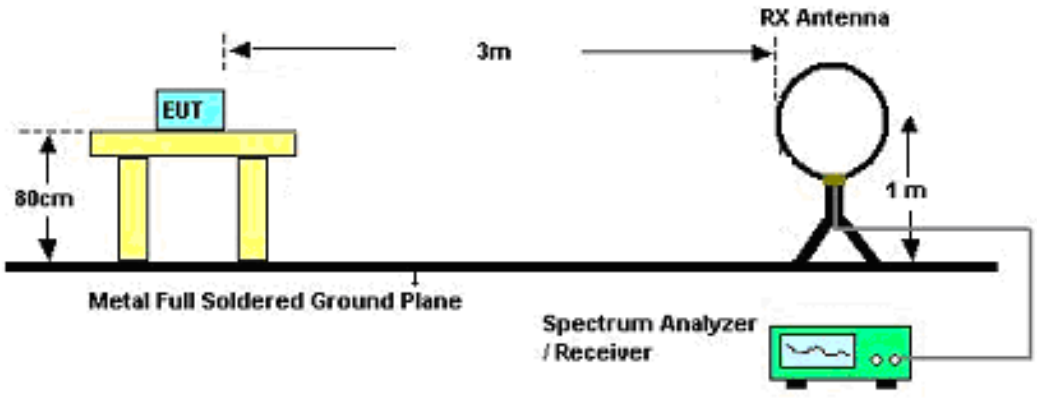
3.7.3 Test Procedures

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

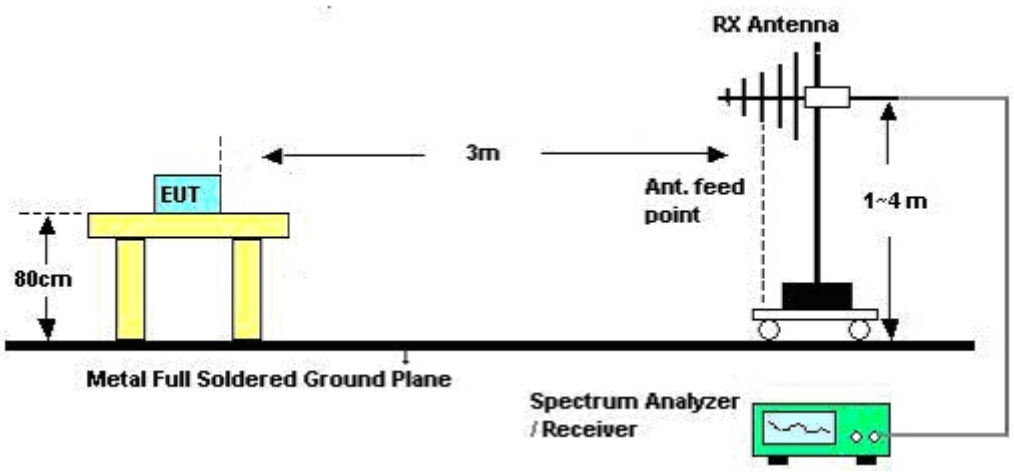
3.7.4 Measurement Results Calculation

The measured Level is calculated using:
Corrected Reading: Raw(Read Level) + AF(Antenna Factor) + CL(Cable Loss) - PA(Preamp Factor)

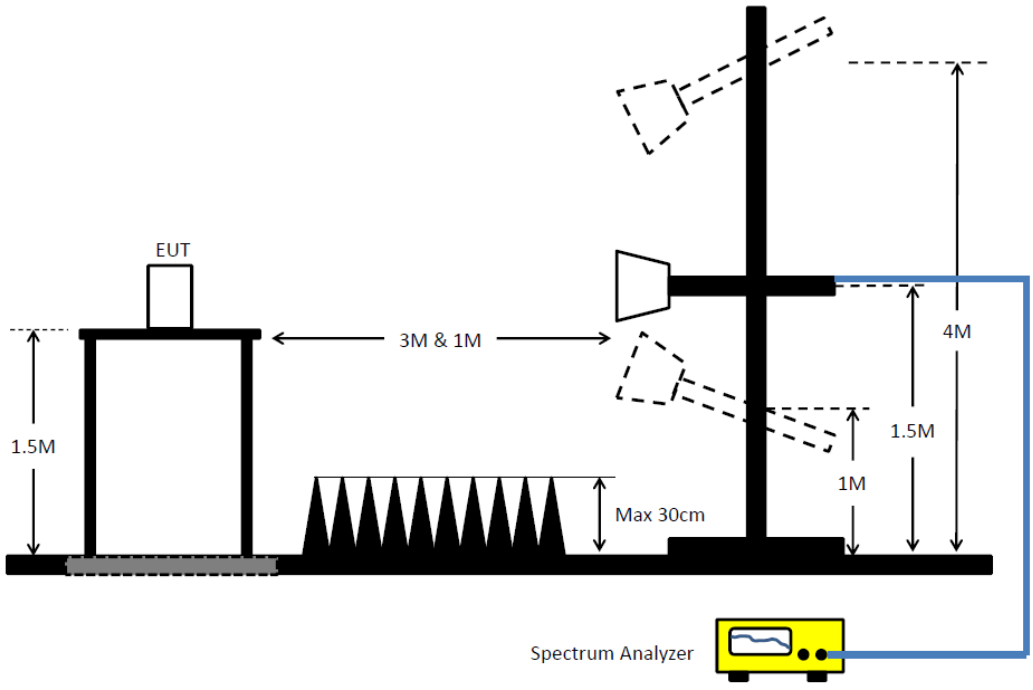
3.7.5 Test Setup

Emissions in Restricted Frequency Bands
9kHz ~30MHz


30MHz~1GHz



Above 1GHz



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	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	23/Sep/2019	22/Sep/2020
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9kHz ~ 30MHz	24/Sep/2019	23/Sep/2020

NCR : Non-Calibration Require

Instrument for Conducted Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Signal Analyzer	R&S	FSV 40	101029	10kHz ~ 40GHz	01/Oct/2019	30/Sep/2020
SMB100A Signal Generator	R&S	SMB100A03	181147	100kHz~40GHz	12/Nov/2018	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	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30MHz~1GHz 3m	06/Aug/2020	05/Aug/2021
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	1GHz~18GHz 3m	04/Aug/2020	03/Aug/2021
Signal Analyzer	R&S	FSV 40	101515	10Hz~40GHz	15/Feb/2020	14/Feb/2021
Amplifier	HP	8447D	2944A08033	10kHz~1.3GHz	14/Apr/2020	13/Apr/2021
Microwave System Preamplifier	KEYSIGHT	83017A	MY53270196	1GHz~26.5GHz	09/Sep/2019	08/Sep/2020
Bilog Antenna & 6dB Attenuator	SCHAFFNER / EMCI	CBL6112B / N-6-05	22237 / AT-N-0603	30MHz~1GHz	19/Apr/2020	18/Apr/2021
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1531	1GHz~18GHz	26/Mar/2020	25/Mar/2021
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz~30MHz	19/Jun/2020	18/Jun/2021
RF Cable-R03m	Jye Bao	RG142	CB021	30MHz~1GHz	18/Mar/2020	17/Mar/2021
RF CABLE 5+6m	HUBER+SUHNER	SUOFLEX 104	SN MY38596/4+SN 804300/4	1GHz~40GHz	04/Aug/2020	03/Aug/2021
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170221	18GHz~40GHz	13/Mar/2020	12/Mar/2021
Preamplifier	MITEQ	TTA1840-35-HG	1864481	18GHz~40GHz	10/Mar/2020	09/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

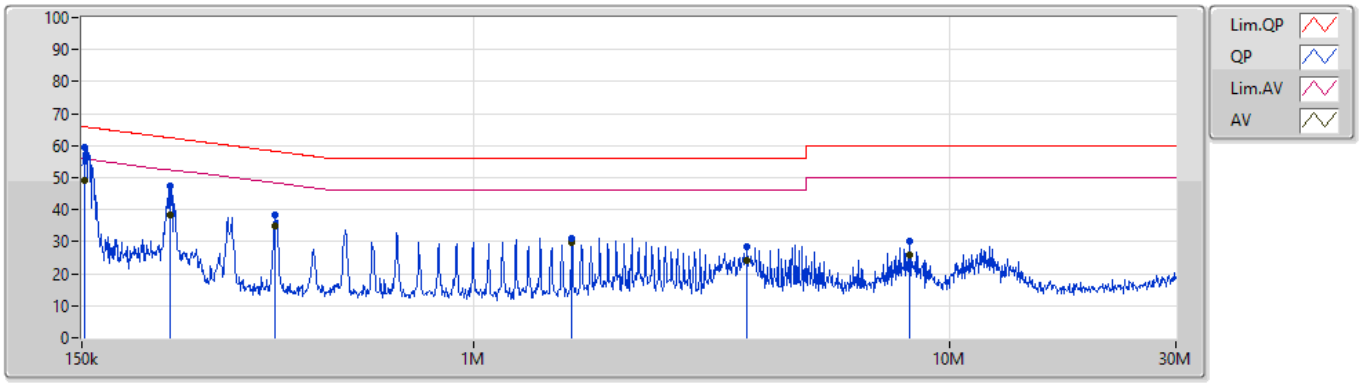
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	152.414k	59.43	65.87	-6.44	Line

Mode Configure

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition	Comments
Mode 1	Pass	QP	152.414k	59.43	65.87	-6.44	Line	"Worst"
Mode 1	Pass	AV	152.414k	49.17	55.87	-6.70	Line	-
Mode 1	Pass	QP	229.932k	47.47	62.44	-14.97	Line	-
Mode 1	Pass	AV	229.932k	38.51	52.44	-13.93	Line	-
Mode 1	Pass	QP	383.278k	38.22	58.20	-19.98	Line	-
Mode 1	Pass	AV	383.278k	34.80	48.20	-13.40	Line	-
Mode 1	Pass	QP	1.613M	30.95	56.00	-25.05	Line	-
Mode 1	Pass	AV	1.613M	29.77	46.00	-16.23	Line	-
Mode 1	Pass	QP	3.76M	28.48	56.00	-27.52	Line	-
Mode 1	Pass	AV	3.76M	24.13	46.00	-21.87	Line	-
Mode 1	Pass	QP	8.288M	30.07	60.00	-29.93	Line	-
Mode 1	Pass	AV	8.288M	26.07	50.00	-23.93	Line	-
Mode 1	Pass	QP	154.251k	59.09	65.77	-6.68	Neutral	"Worst"
Mode 1	Pass	AV	154.251k	48.44	55.77	-7.33	Neutral	-
Mode 1	Pass	QP	229.932k	47.52	62.44	-14.92	Neutral	-
Mode 1	Pass	AV	229.932k	38.10	52.44	-14.34	Neutral	-
Mode 1	Pass	QP	538.12k	33.27	56.00	-22.73	Neutral	-
Mode 1	Pass	AV	538.12k	31.68	46.00	-14.32	Neutral	-
Mode 1	Pass	QP	1.84M	31.40	56.00	-24.60	Neutral	-
Mode 1	Pass	AV	1.84M	29.57	46.00	-16.43	Neutral	-
Mode 1	Pass	QP	8.06M	28.21	60.00	-31.79	Neutral	-
Mode 1	Pass	AV	8.06M	24.60	50.00	-25.40	Neutral	-
Mode 1	Pass	QP	12.355M	30.55	60.00	-29.45	Neutral	-
Mode 1	Pass	AV	12.355M	25.85	50.00	-24.15	Neutral	-

Conducted Emissions at Powerline_Mode 1

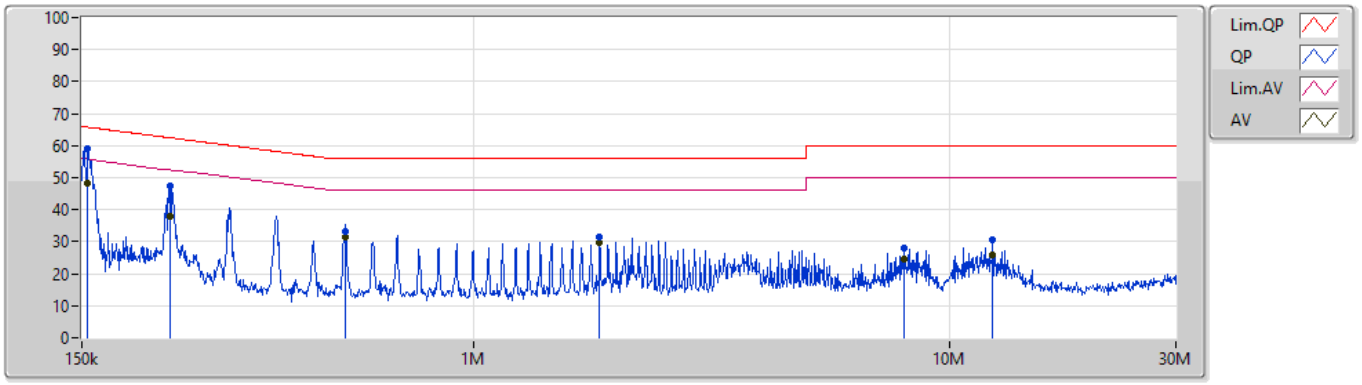
20/08/2020



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	152.414k	59.43	65.87	-6.44	19.64	Line	"Worst"	39.79	9.66	0.11	9.87
AV	152.414k	49.17	55.87	-6.70	19.64	Line	-	29.53	9.66	0.11	9.87
QP	229.932k	47.47	62.44	-14.97	19.63	Line	-	27.84	9.65	0.11	9.87
AV	229.932k	38.51	52.44	-13.93	19.63	Line	-	18.88	9.65	0.11	9.87
QP	383.278k	38.22	58.20	-19.98	19.64	Line	-	18.58	9.64	0.13	9.87
AV	383.278k	34.80	48.20	-13.40	19.64	Line	-	15.16	9.64	0.13	9.87
QP	1.613M	30.95	56.00	-25.05	19.65	Line	-	11.30	9.65	0.13	9.87
AV	1.613M	29.77	46.00	-16.23	19.65	Line	-	10.12	9.65	0.13	9.87
QP	3.76M	28.48	56.00	-27.52	19.72	Line	-	8.76	9.66	0.18	9.88
AV	3.76M	24.13	46.00	-21.87	19.72	Line	-	4.41	9.66	0.18	9.88
QP	8.288M	30.07	60.00	-29.93	19.81	Line	-	10.26	9.68	0.25	9.88
AV	8.288M	26.07	50.00	-23.93	19.81	Line	-	6.26	9.68	0.25	9.88

Conducted Emissions at Powerline_Mode 1

20/08/2020



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	154.251k	59.09	65.77	-6.68	19.63	Neutral	"Worst"	39.46	9.65	0.11	9.87
AV	154.251k	48.44	55.77	-7.33	19.63	Neutral	-	28.81	9.65	0.11	9.87
QP	229.932k	47.52	62.44	-14.92	19.62	Neutral	-	27.90	9.64	0.11	9.87
AV	229.932k	38.10	52.44	-14.34	19.62	Neutral	-	18.48	9.64	0.11	9.87
QP	538.12k	33.27	56.00	-22.73	19.62	Neutral	-	13.65	9.63	0.12	9.87
AV	538.12k	31.68	46.00	-14.32	19.62	Neutral	-	12.06	9.63	0.12	9.87
QP	1.84M	31.40	56.00	-24.60	19.66	Neutral	-	11.74	9.65	0.14	9.87
AV	1.84M	29.57	46.00	-16.43	19.66	Neutral	-	9.91	9.65	0.14	9.87
QP	8.06M	28.21	60.00	-31.79	19.82	Neutral	-	8.39	9.69	0.25	9.88
AV	8.06M	24.60	50.00	-25.40	19.82	Neutral	-	4.78	9.69	0.25	9.88
QP	12.355M	30.55	60.00	-29.45	19.88	Neutral	-	10.67	9.71	0.29	9.88
AV	12.355M	25.85	50.00	-24.15	19.88	Neutral	-	5.97	9.71	0.29	9.88

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	926.25k	868.566k
BT-EDR(2Mbps)	1.331M	1.288M	1M29G1D	1.235M	1.192M
BT-EDR(3Mbps)	1.281M	1.271M	1M27G1D	1.249M	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

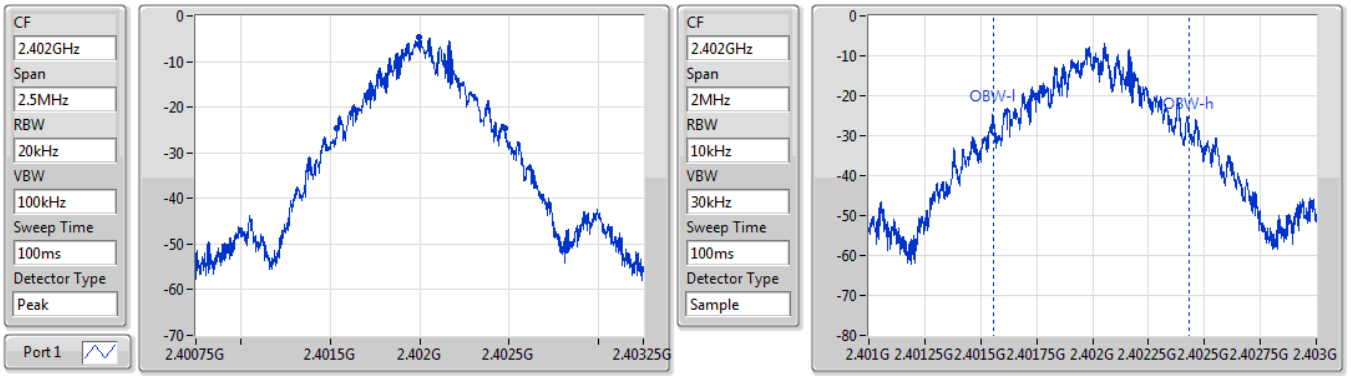
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	Inf	938.75k	870.565k
2440MHz	Pass	Inf	926.25k	868.566k
2480MHz	Pass	Inf	927.5k	870.565k
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.235M	1.192M
2440MHz	Pass	Inf	1.275M	1.246M
2480MHz	Pass	Inf	1.331M	1.288M
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.249M	1.207M
2440MHz	Pass	Inf	1.279M	1.242M
2480MHz	Pass	Inf	1.281M	1.271M

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

BT-BR(1Mbps) EBW-FS

2402MHz

17/08/2020

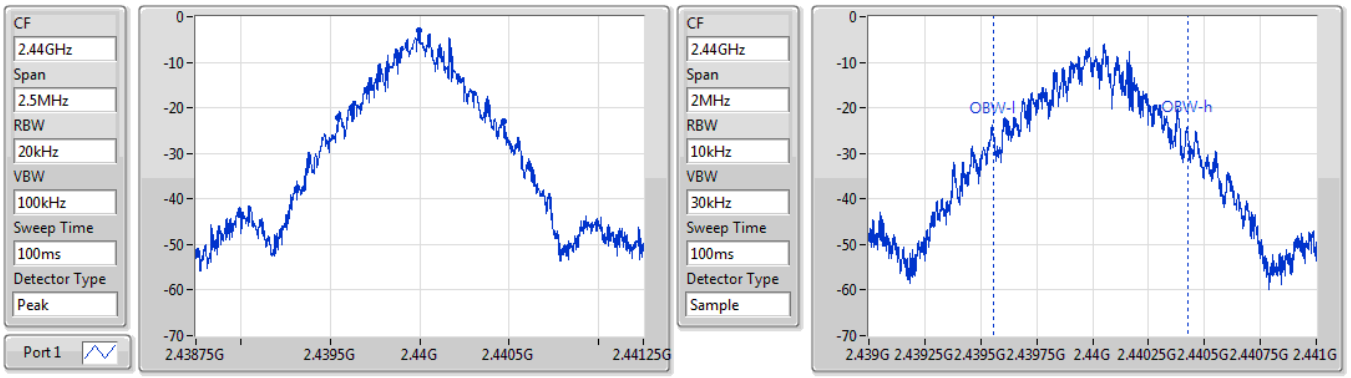


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
938.75k	2.401538G	2.402476G	870.565k	2.401559G	2.40243G	Inf	1

BT-BR(1Mbps) EBW-FS

2440MHz

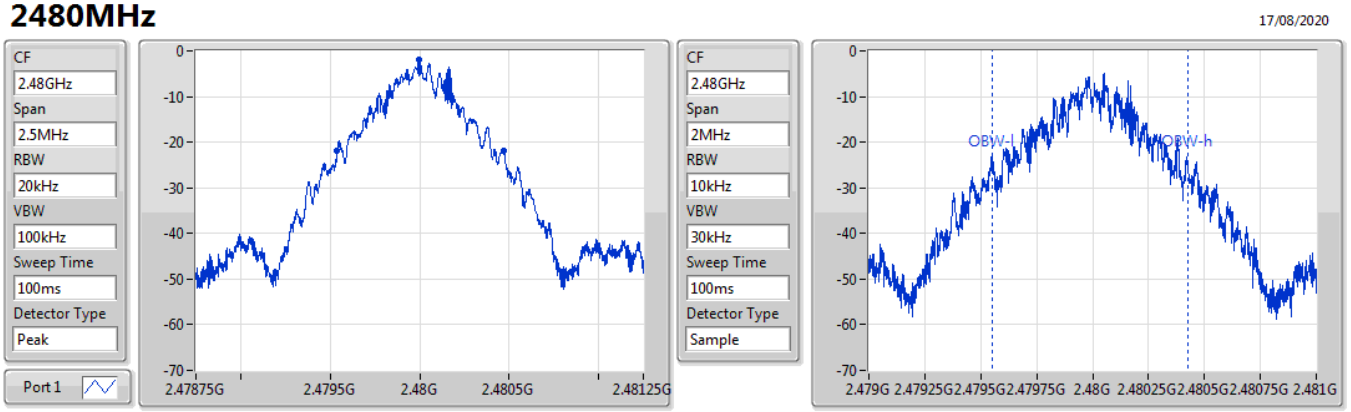
17/08/2020



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
926.25k	2.439543G	2.440469G	868.566k	2.439556G	2.440425G	Inf	1

BT-BR(1Mbps) EBW-FS

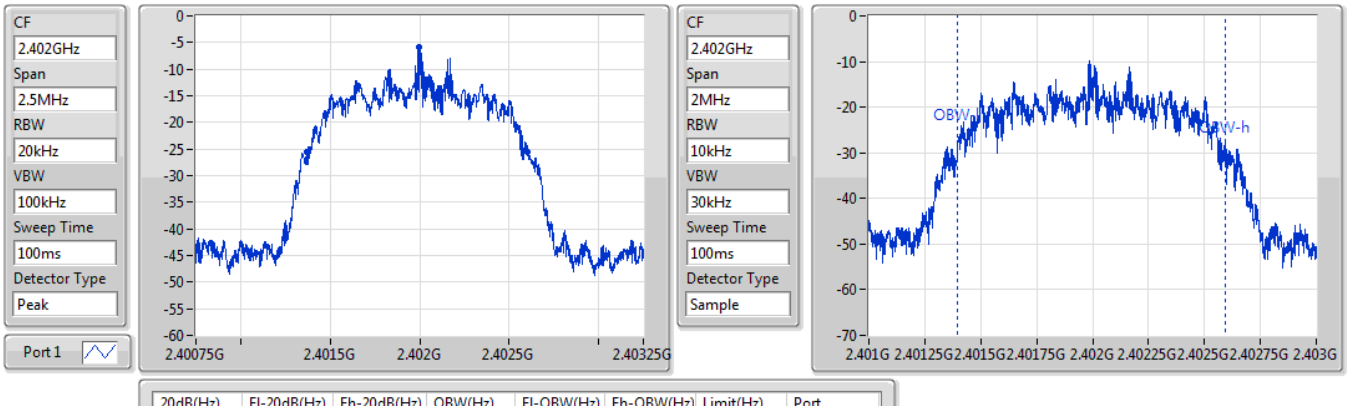
2480MHz



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
927.5k	2.47954G	2.480468G	870.565k	2.479553G	2.480424G	Inf	1

BT-EDR(2Mbps) EBW-FS

2402MHz

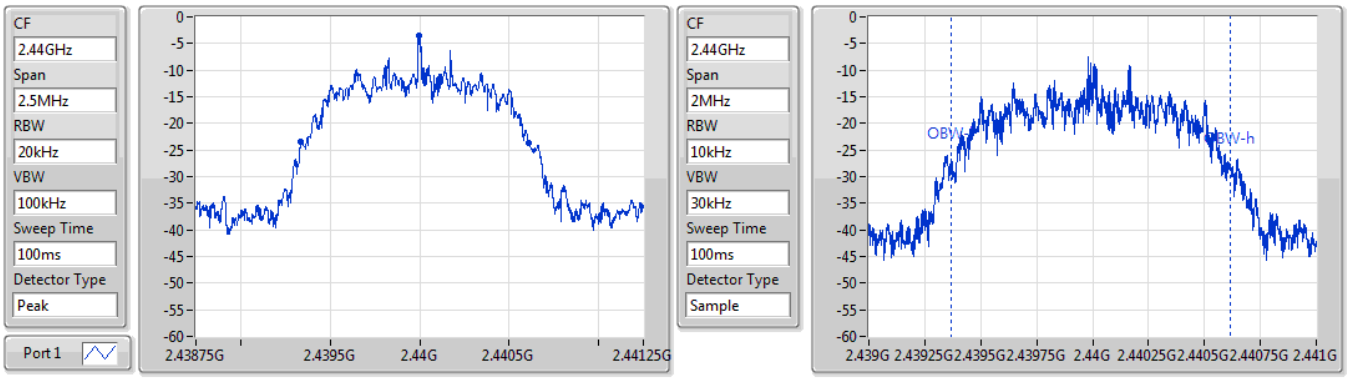


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.235M	2.40137G	2.402605G	1.192M	2.401398G	2.402591G	Inf	1

BT-EDR(2Mbps) EBW-FS

2440MHz

17/08/2020

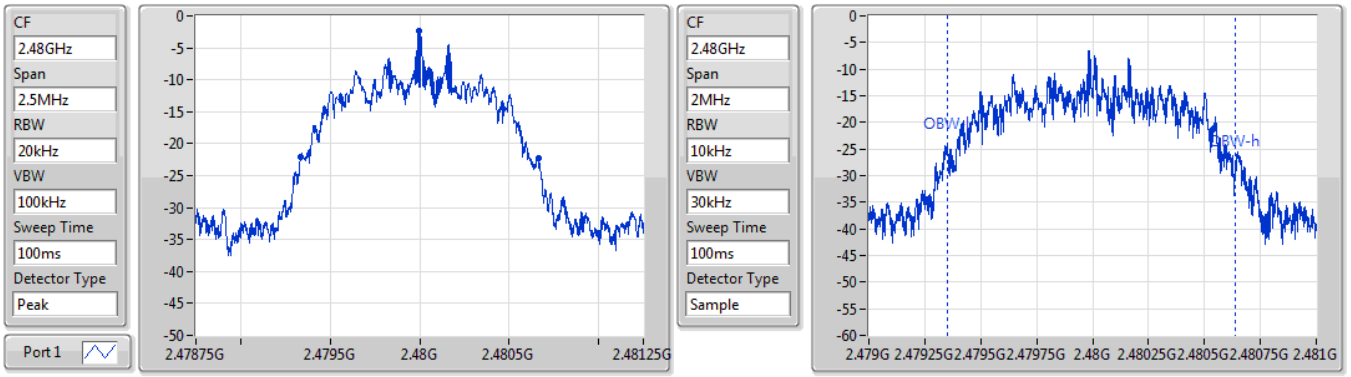


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.275M	2.439338G	2.440613G	1.246M	2.439368G	2.440615G	Inf	1

BT-EDR(2Mbps) EBW-FS

2480MHz

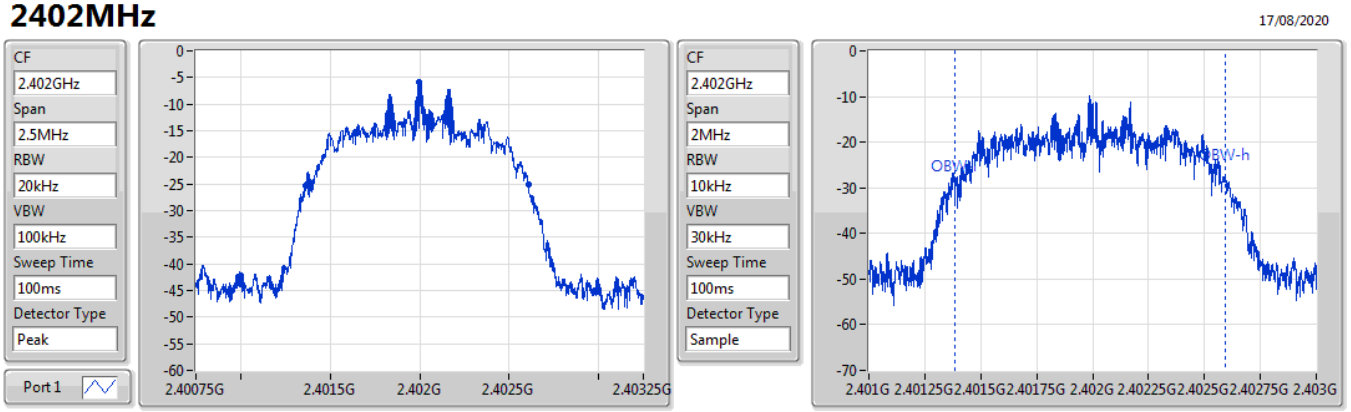
17/08/2020



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.331M	2.479334G	2.480665G	1.288M	2.47935G	2.480639G	Inf	1

BT-EDR(3Mbps) EBW-FS

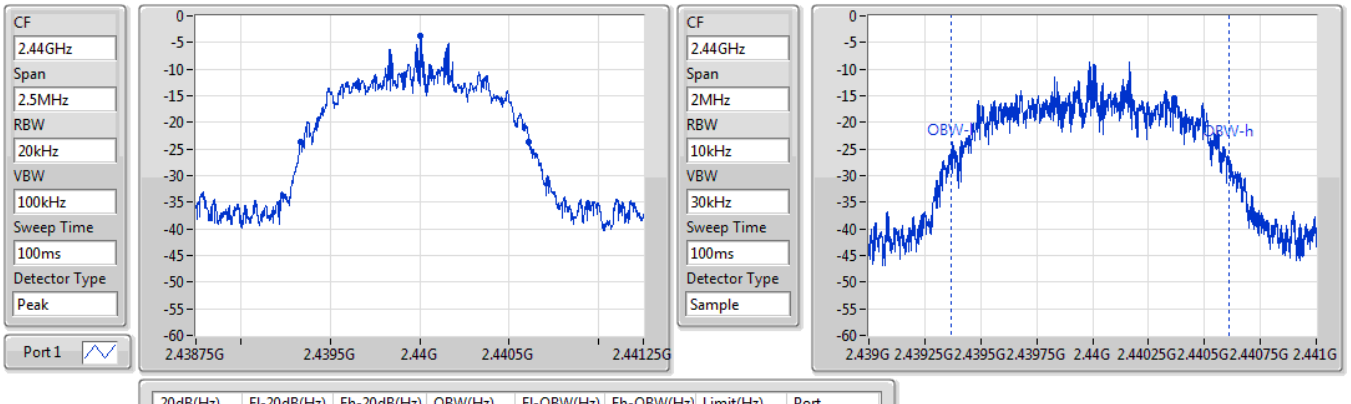
2402MHz



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.249M	2.40136G	2.402609G	1.207M	2.401383G	2.402591G	Inf	1

BT-EDR(3Mbps) EBW-FS

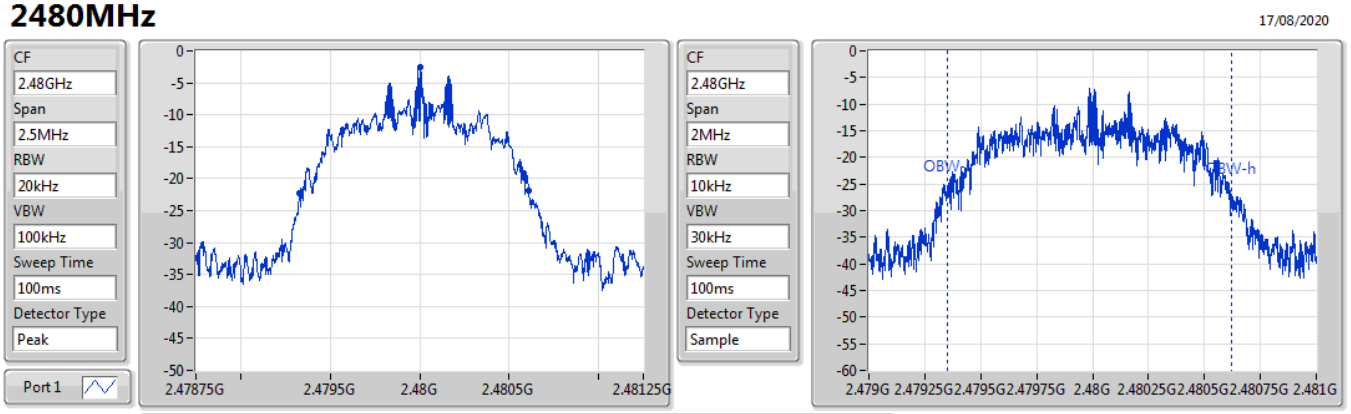
2440MHz



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.279M	2.439333G	2.440611G	1.242M	2.439365G	2.440608G	Inf	1

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

2480MHz



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.281M	2.479329G	2.48061G	1.271M	2.47935G	2.480622G	Inf	1

Summary

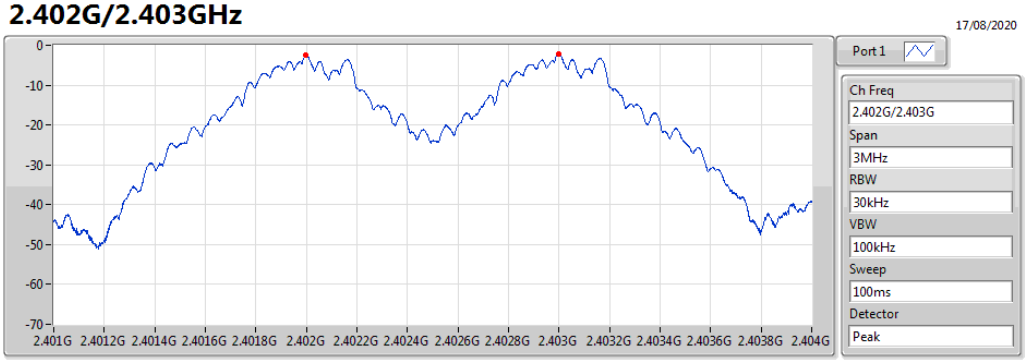
Mode	Max-Space (Hz)	Min-Space (Hz)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	999k	997.5k
BT-EDR(2Mbps)	1.0005M	999k
BT-EDR(3Mbps)	1.0005M	997.5k

Result

Mode	Result	Fl (Hz)	Fh (Hz)	Ch.Space (Hz)	Limit (Hz)
BT-BR(1Mbps)	-	-	-	-	-
2402MHz	Pass	2.401999G	2.402998G	999k	625.2075k
2440MHz	Pass	2.439998G	2.440995G	997.5k	616.8825k
2480MHz	Pass	2.478998G	2.479997G	999k	617.715k
BT-EDR(2Mbps)	-	-	-	-	-
2402MHz	Pass	2.401999G	2.403G	1.0005M	822.51k
2440MHz	Pass	2.439998G	2.440997G	999k	849.15k
2480MHz	Pass	2.478998G	2.479998G	1.0005M	886.446k
BT-EDR(3Mbps)	-	-	-	-	-
2402MHz	Pass	2.402001G	2.402998G	997.5k	831.834k
2440MHz	Pass	2.439998G	2.440998G	1.0005M	851.814k
2480MHz	Pass	2.478998G	2.479998G	1.0005M	853.146k

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

2.402G/2.403GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.401999G	2.402998G	999k	625.2075k

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

2.44G/2.441GHz

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.439998G	2.440995G	997.5k	616.8825k

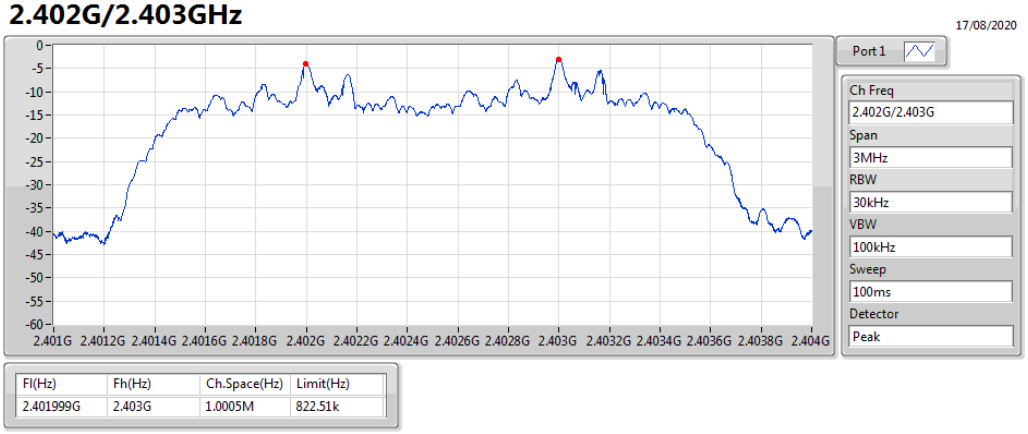
BT-BR(1Mbps) **Channel Separation-FS**

2.48G/2.479GHz

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.478998G	2.479997G	999k	617.715k

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

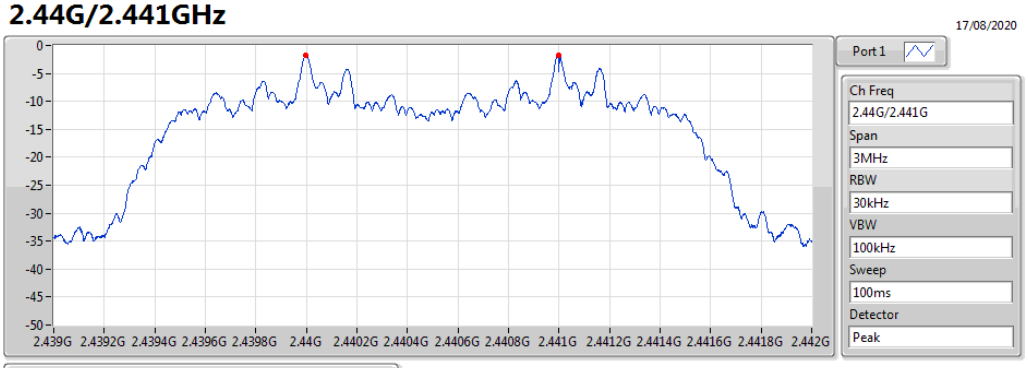
2.402G/2.403GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.401999G	2.403G	1.0005M	822.51k

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

2.44G/2.441GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.439998G	2.440997G	999k	849.15k

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

2.48G/2.479GHz

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.478998G	2.479998G	1.0005M	886.446k

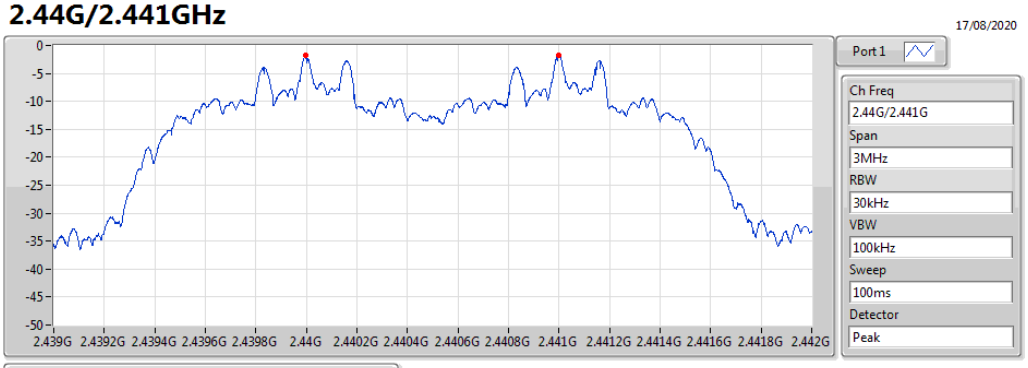
BT-EDR(3Mbps) **Channel Separation-FS**

2.402G/2.403GHz

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.402001G	2.402998G	997.5k	831.834k

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

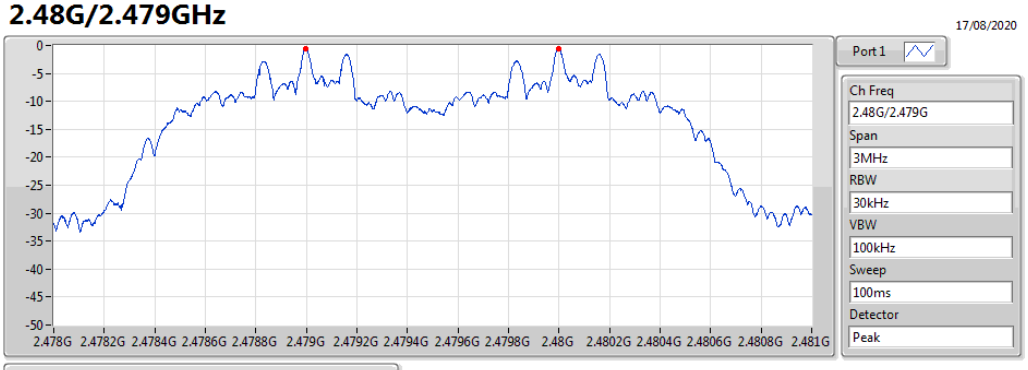
2.44G/2.441GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.439998G	2.440998G	1.0005M	851.814k

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

2.48G/2.479GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.478998G	2.479998G	1.0005M	853.146k

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	0.95	0.00124
BT-EDR(2Mbps)	0.59	0.00115
BT-EDR(3Mbps)	0.67	0.00117

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	1.10	-1.00	21.00
2440MHz	Pass	1.10	-0.02	21.00
2480MHz	Pass	1.10	0.95	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	1.10	-1.93	21.00
2440MHz	Pass	1.10	-0.43	21.00
2480MHz	Pass	1.10	0.59	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	1.10	-1.65	21.00
2440MHz	Pass	1.10	-0.32	21.00
2480MHz	Pass	1.10	0.67	21.00

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

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	0.82	0.00121
BT-EDR(2Mbps)	-0.37	0.00092
BT-EDR(3Mbps)	-0.38	0.00092

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	1.10	-1.21	21.00
2440MHz	Pass	1.10	-0.21	21.00
2480MHz	Pass	1.10	0.82	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	1.10	-4.08	21.00
2440MHz	Pass	1.10	-1.79	21.00
2480MHz	Pass	1.10	-0.37	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	1.10	-4.05	21.00
2440MHz	Pass	1.10	-1.81	21.00
2480MHz	Pass	1.10	-0.38	21.00

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

Summary

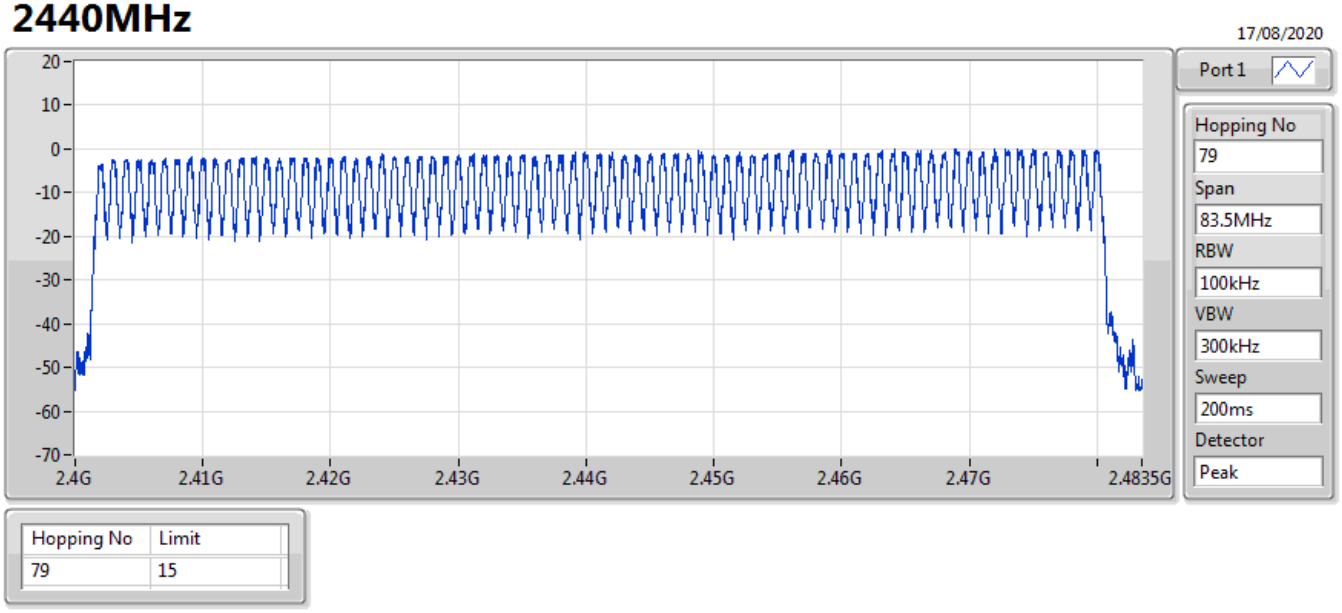
Mode	Max-Hop No
2.4-2.4835GHz	-
BT-BR(1Mbps)	79
BT-EDR(2Mbps)	79
BT-EDR(3Mbps)	79

Result

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

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

2440MHz

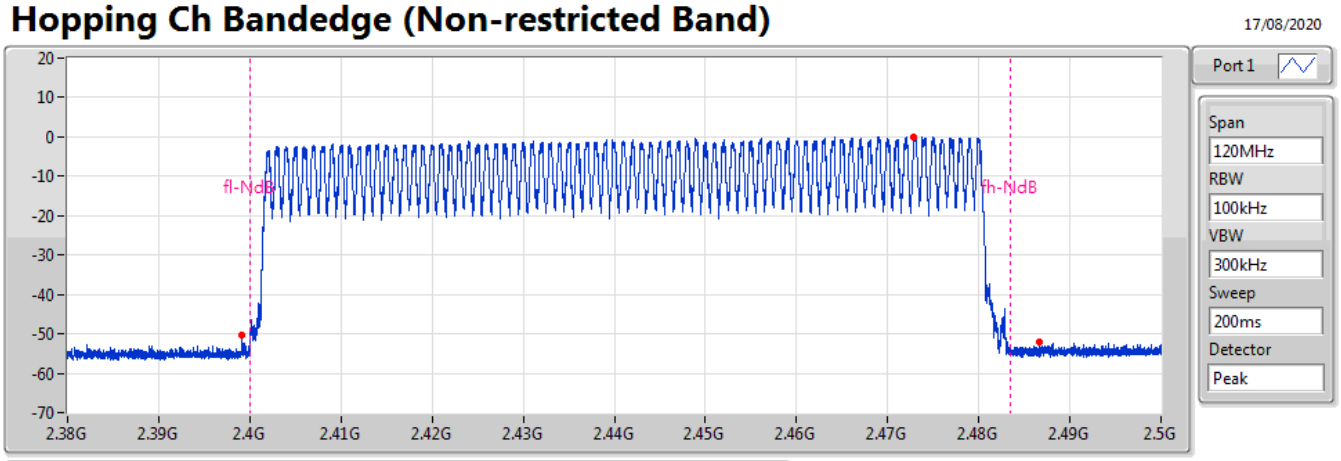


Hopping No	Limit
79	15

BT-BR(1Mbps)

2440MHz

Hopping Ch Bandedge (Non-restricted Band)

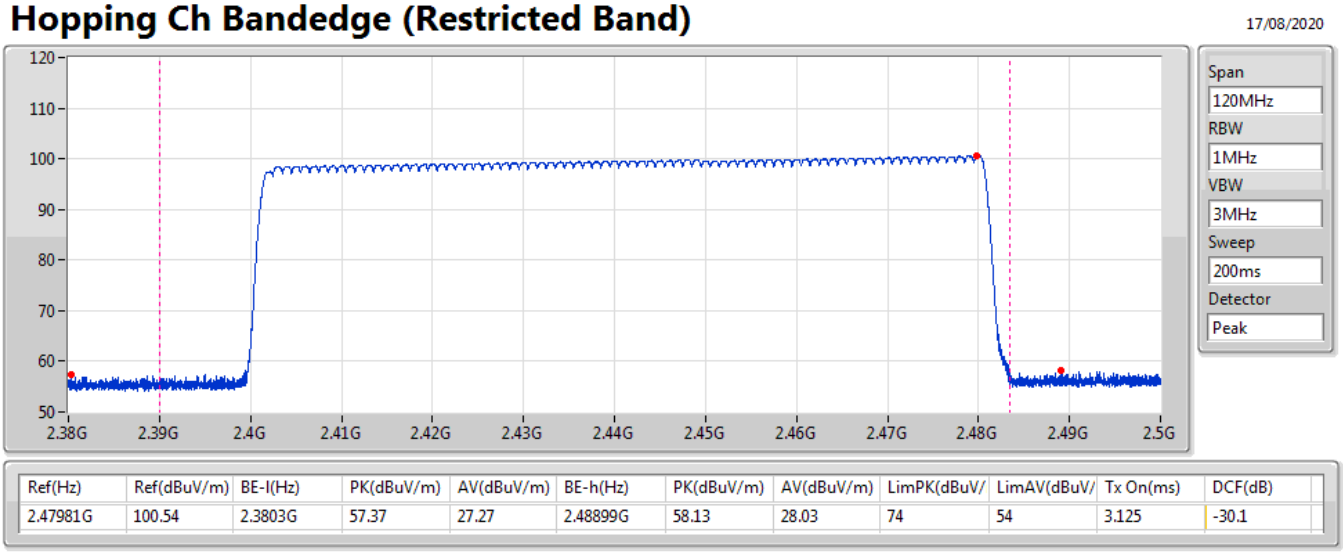


Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-19.93	2.472835G	0.07	2.39914G	-50.28	2.48671G	-52.01

BT-BR(1Mbps)

2440MHz

Hopping Ch Bandedge (Restricted Band)

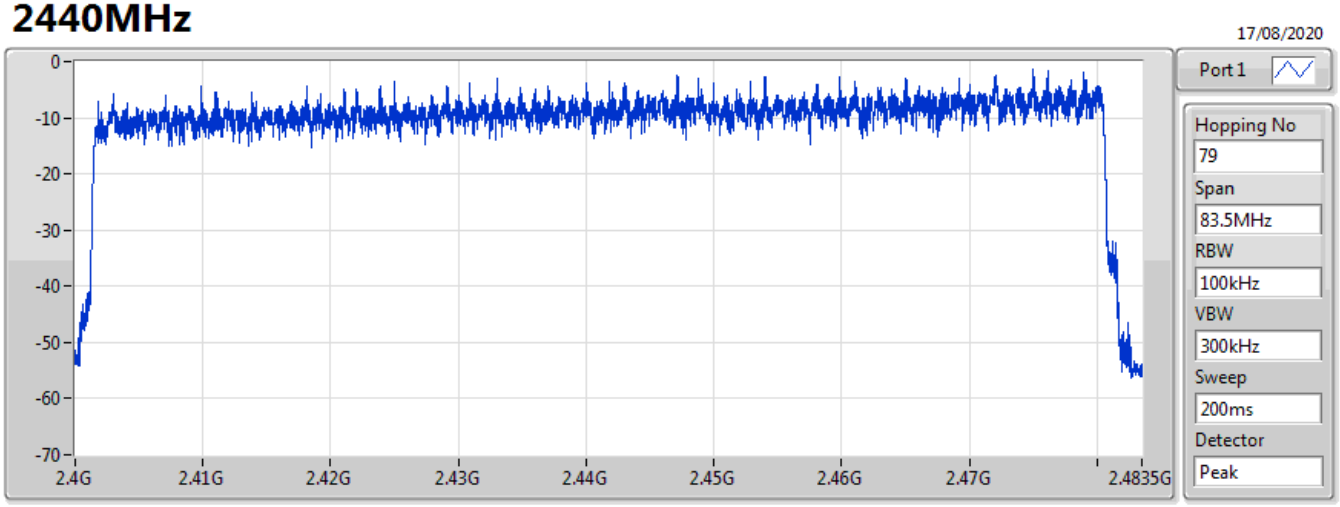


Ref(Hz)	Ref(dBuV/m)	BE-l(Hz)	PK(dBuV/m)	AV(dBuV/m)	BE-h(Hz)	PK(dBuV/m)	AV(dBuV/m)	LimPK(dBuV/	LimAV(dBuV/	Tx On(ms)	DCF(dB)
2.47981G	100.54	2.3803G	57.37	27.27	2.48899G	58.13	28.03	74	54	3.125	-30.1

BT-EDR(2Mbps)

Hopping-FS

2440MHz

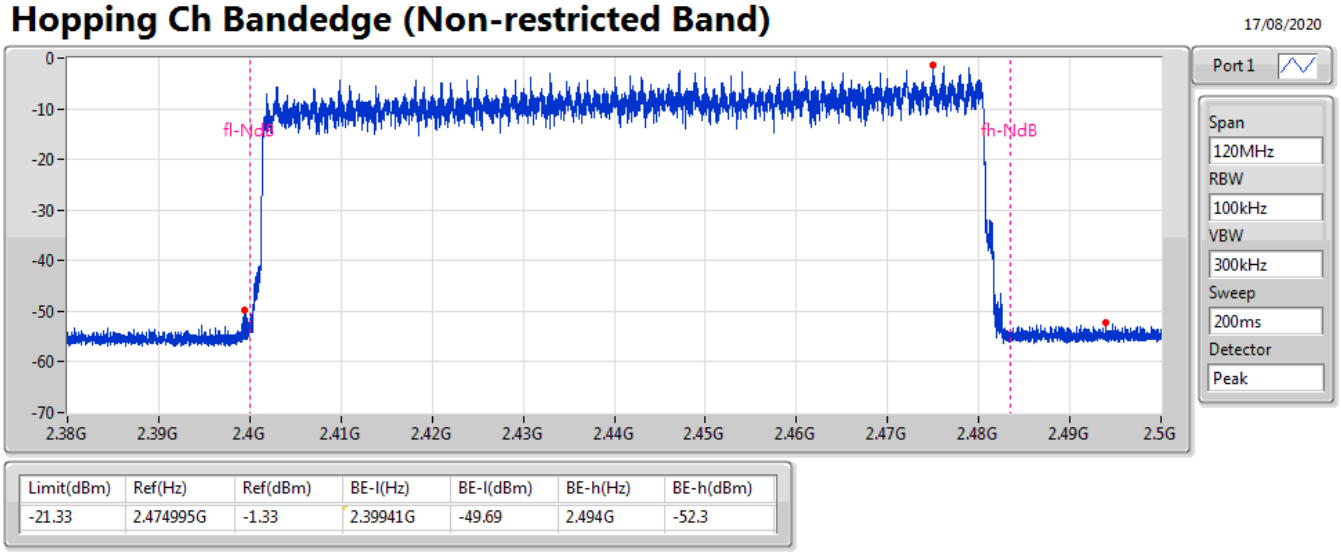


Hopping No	Limit
79	15

BT-EDR(2Mbps)

2440MHz

Hopping Ch Bandedge (Non-restricted Band)

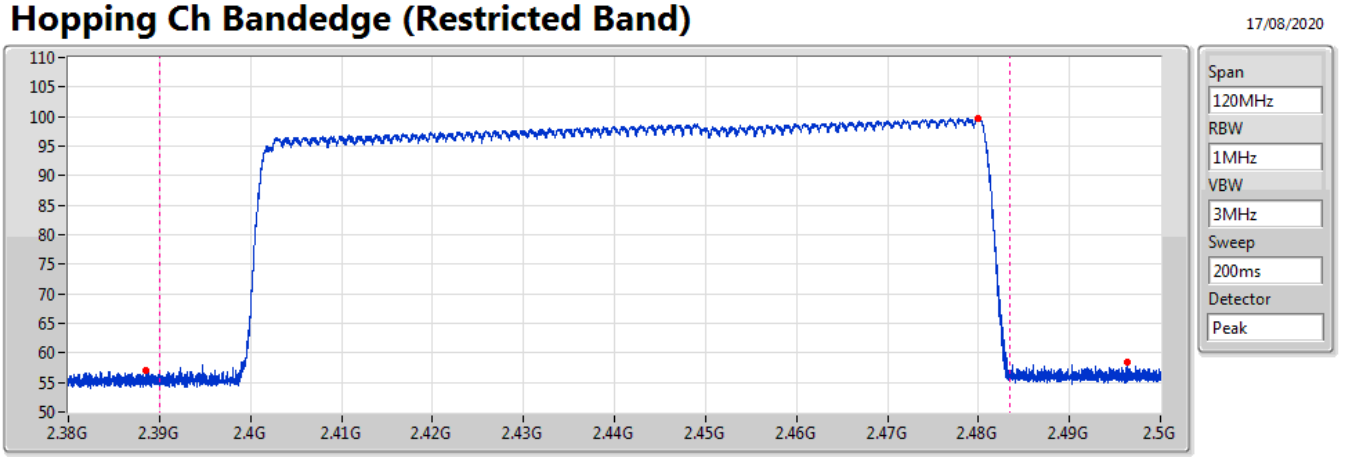


Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-21.33	2.474995G	-1.33	2.39941G	-49.69	2.494G	-52.3

BT-EDR(2Mbps)

2440MHz

Hopping Ch Bandedge (Restricted Band)

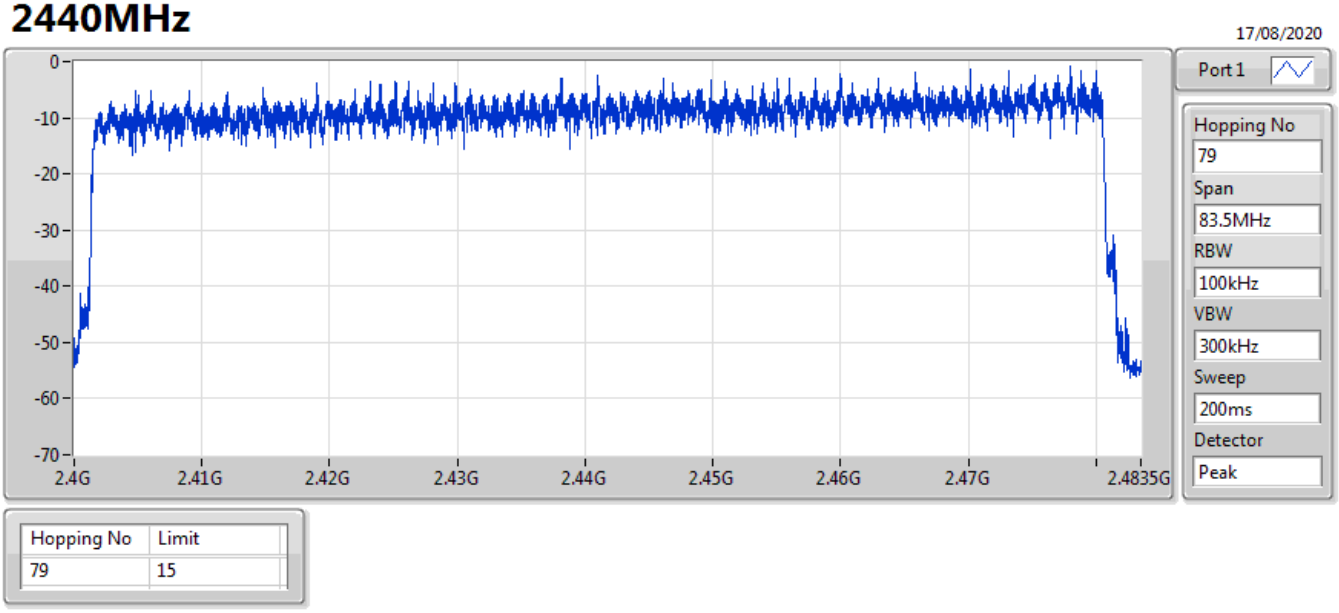


Ref(Hz)	Ref(dBuV/m)	BE-l(Hz)	PK(dBuV/m)	AV(dBuV/m)	BE-h(Hz)	PK(dBuV/m)	AV(dBuV/m)	LimPK(dBuV/	LimAV(dBuV/	Tx On(ms)	DCF(dB)
2.479915G	99.7	2.38846G	56.93	26.83	2.49628G	58.49	28.39	74	54	3.125	-30.1

BT-EDR(3Mbps)

2440MHz

Hopping-FS

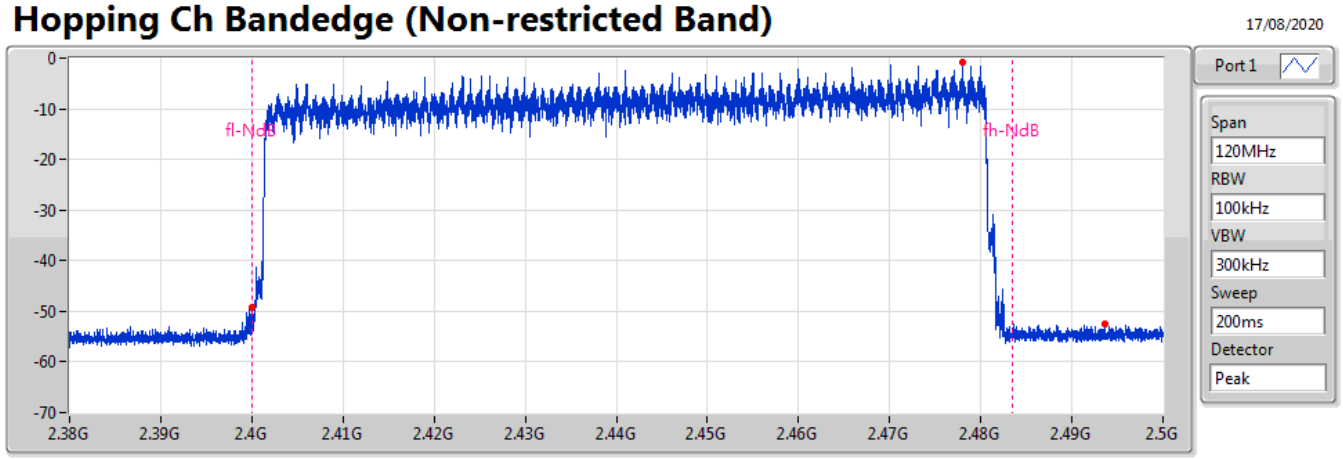


Hopping No	Limit
79	15

BT-EDR(3Mbps)

2440MHz

Hopping Ch Bandedge (Non-restricted Band)

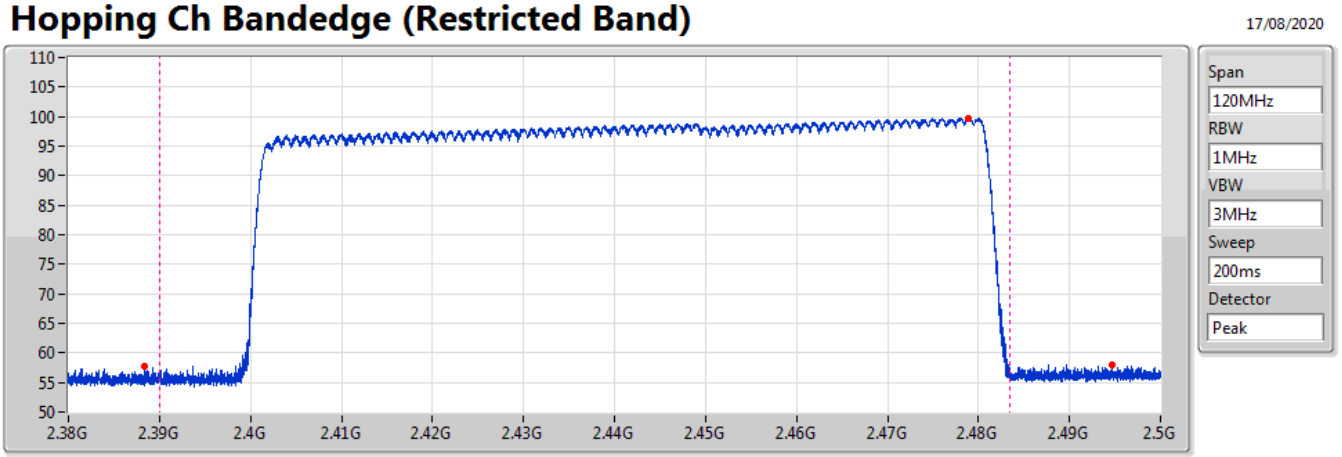


Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-20.93	2.477995G	-0.93	2.399995G	-49.25	2.49367G	-52.47

BT-EDR(3Mbps)

2440MHz

Hopping Ch Bandedge (Restricted Band)



Ref(Hz)	Ref(dBuV/m)	BE-l(Hz)	PK(dBuV/m)	AV(dBuV/m)	BE-h(Hz)	PK(dBuV/m)	AV(dBuV/m)	LimPK(dBuV/	LimAV(dBuV/	Tx On(ms)	DCF(dB)
2.47894G	99.78	2.38831G	57.64	27.54	2.494675G	57.95	27.85	74	54	3.125	-30.1

Summary

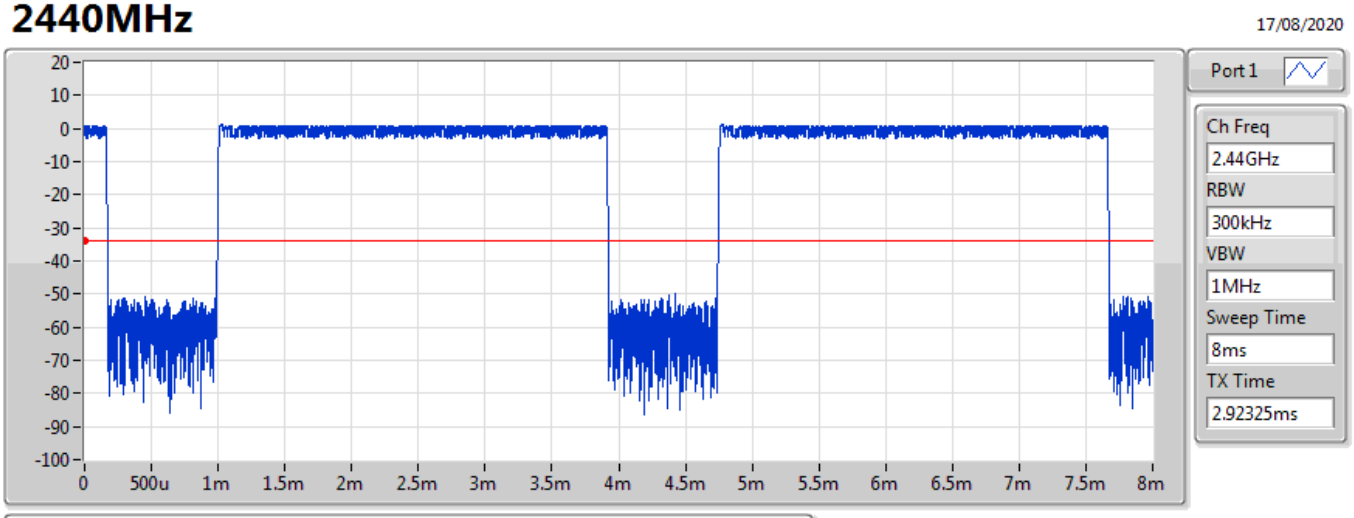
Mode	Max-Dwell (s)
2.4-2.4835GHz	-
BT-BR(1Mbps)	311.61845m_DH5
BT-EDR(2Mbps)	312.4446m_DH5
BT-EDR(3Mbps)	312.95095m_DH5

Result

Mode	Result	Period (s)	Dwell (s)	Limit (s)	Tx On (s)
BT-BR(1Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	311.61845m_DH5	400m	2.92325m
2440MHz	Pass	8	155.9025m_DH5-AFH	400m	2.925m
BT-EDR(2Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	312.4446m_DH5	400m	2.931m
2440MHz	Pass	8	156.169m_DH5-AFH	400m	2.93m
BT-EDR(3Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	312.95095m_DH5	400m	2.93575m
2440MHz	Pass	8	156.40885m_DH5-AFH	400m	2.9345m

BT-BR(1Mbps) **Dwell-FS**

2440MHz

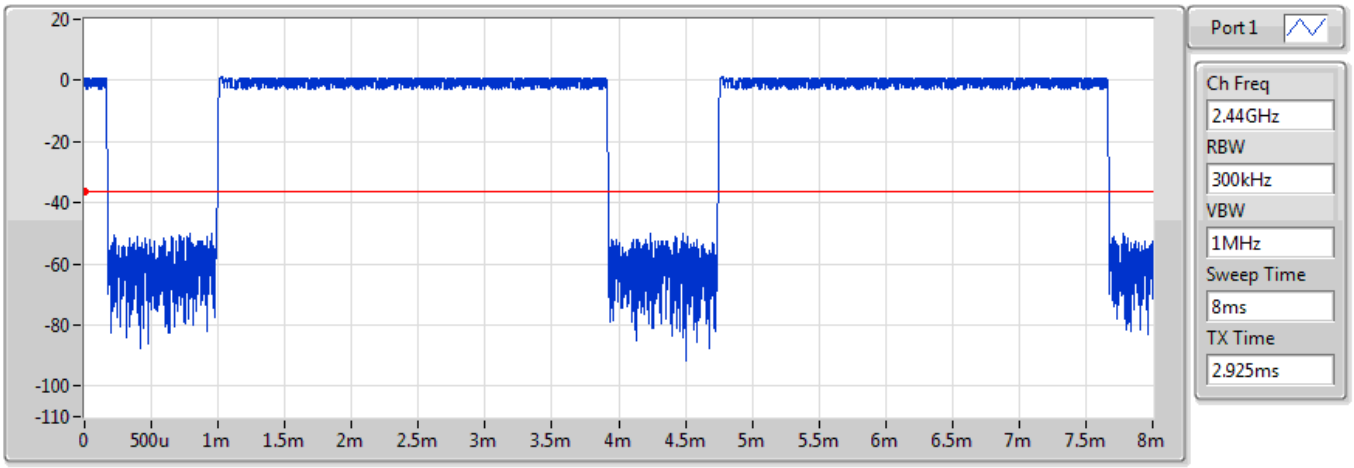


Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	311.61845m_DH5	400m	2.92325m

DH5

BT-BR(1Mbps) **Dwell-FS**

2440MHz

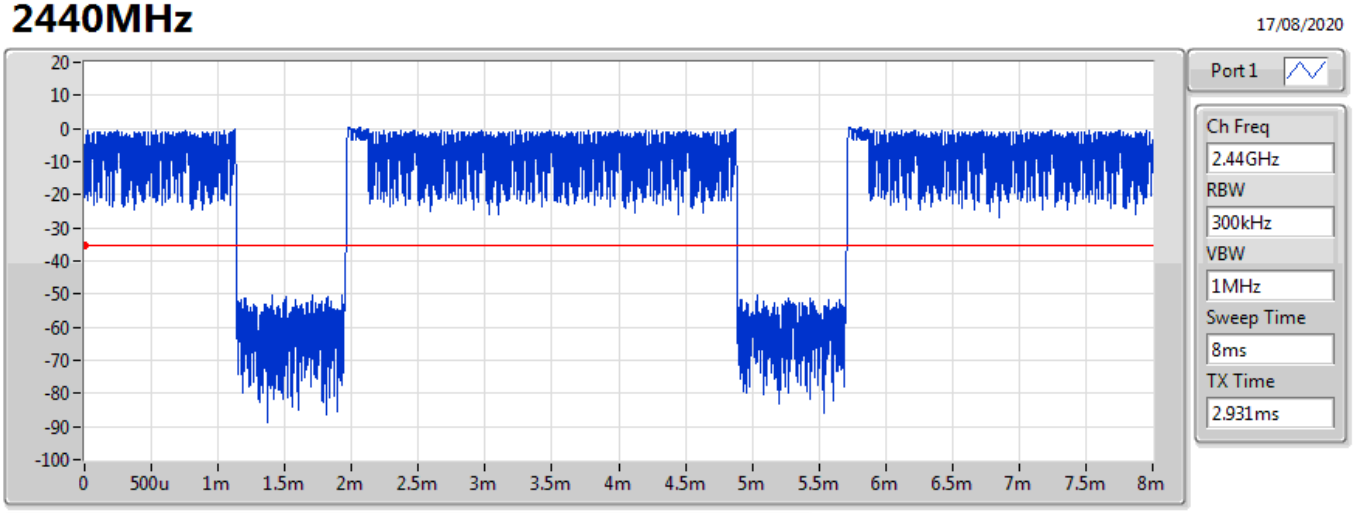


Period(s)	Dwell(s)	Limit(s)	Tx On(s)
8	155.9025m_DH5-AFH	400m	2.925m

DH5-AFH

BT-EDR(2Mbps) **Dwell-FS**

2440MHz

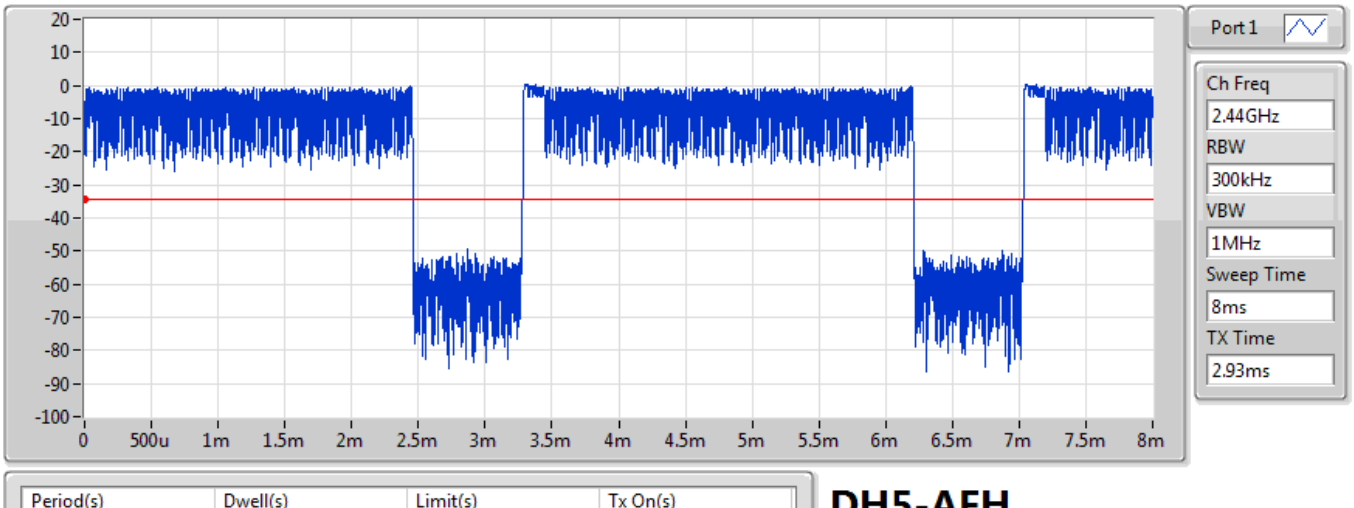


Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	312.4446m_DH5	400m	2.931m

DH5

BT-EDR(2Mbps) **Dwell-FS**

2440MHz

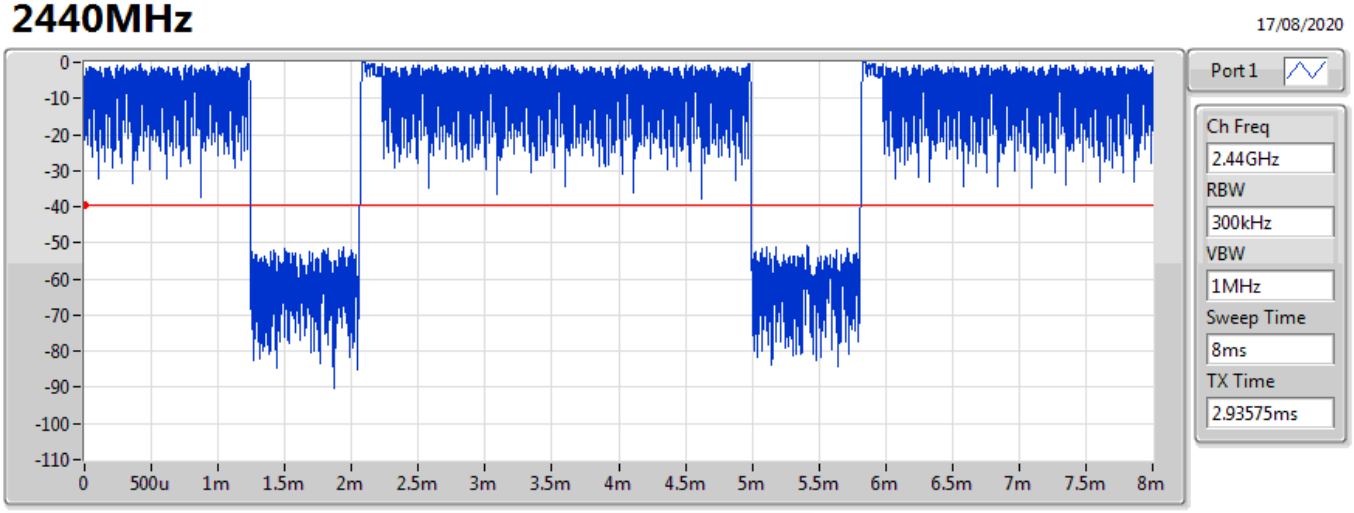


Period(s)	Dwell(s)	Limit(s)	Tx On(s)
8	156.169m_DH5-AFH	400m	2.93m

DH5-AFH

BT-EDR(3Mbps) Dwell-FS

2440MHz

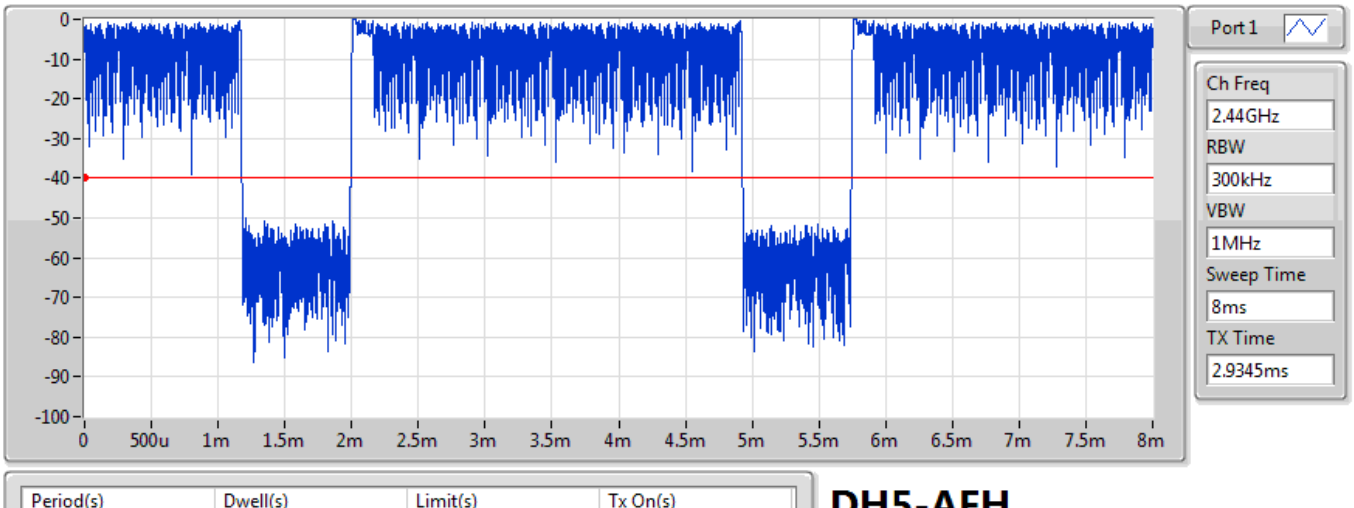


Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	312.95095m_DH5	400m	2.93575m

DH5

BT-EDR(3Mbps) Dwell-FS

2440MHz



Period(s)	Dwell(s)	Limit(s)	Tx On(s)
8	156.40885m_DH5-AFH	400m	2.9345m

DH5-AFH

Summary

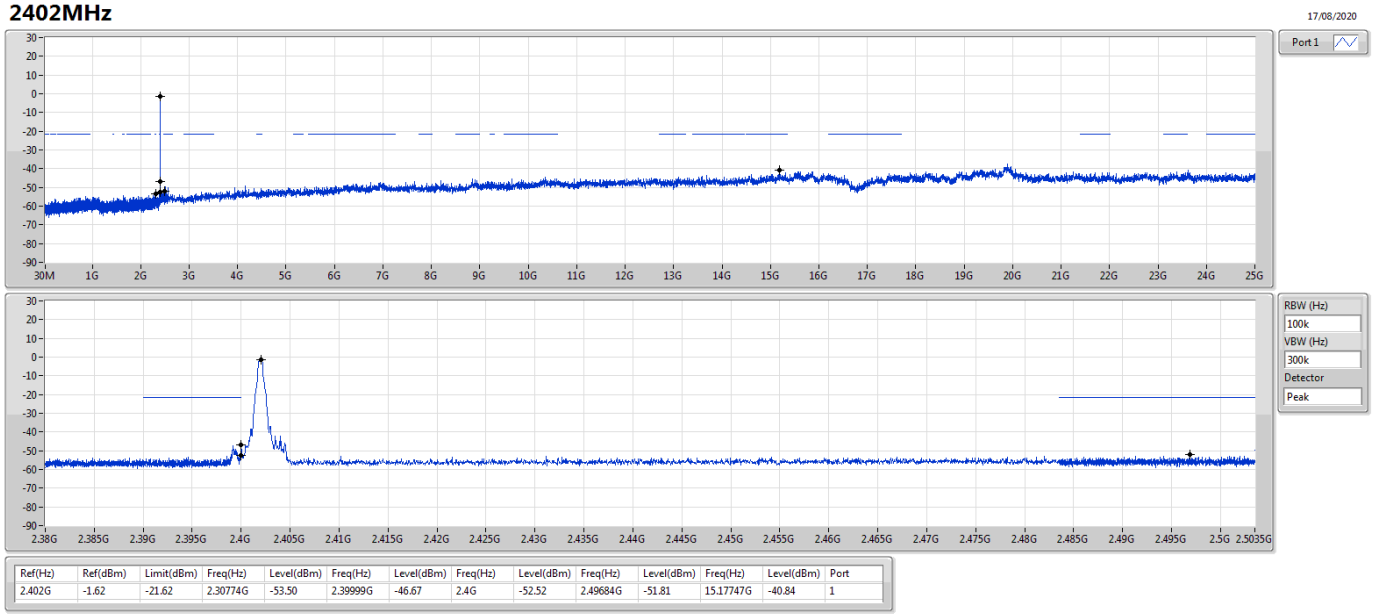
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	2.402G	-1.62	-21.62	2.30774G	-53.50	2.39999G	-46.67	2.4G	-52.52	2.49684G	-51.81	15.17747G	-40.84	1
BT-EDR(2Mbps)	Pass	2.40213G	-3.26	-23.26	2.30539G	-54.35	2.39997G	-50.83	2.4G	-49.28	2.50005G	-52.47	23.41118G	-41.26	1
BT-EDR(3Mbps)	Pass	2.402G	-4.50	-24.50	701.51M	-54.87	2.39999G	-48.05	2.4G	-52.55	2.48701G	-52.48	23.30714G	-40.38	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	Pass	2.402G	-1.62	-21.62	2.30774G	-53.50	2.39999G	-46.67	2.4G	-52.52	2.49684G	-51.81	15.17747G	-40.84	1
2440MHz	Pass	2.44016G	-0.19	-20.19	931.81M	-54.58	2.39941G	-53.02	2.4835G	-56.83	2.48975G	-52.20	16.22637G	-40.83	1
2480MHz	Pass	2.48016G	0.62	-19.38	2.14177G	-53.88	2.39748G	-53.91	2.4835G	-51.89	2.48399G	-51.58	24.00172G	-41.00	1
BT-EDR(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40213G	-3.26	-23.26	2.30539G	-54.35	2.39997G	-50.83	2.4G	-49.28	2.50005G	-52.47	23.41118G	-41.26	1
2440MHz	Pass	2.44008G	-2.70	-22.70	1.9805G	-53.88	2.39339G	-53.61	2.4G	-56.32	2.49632G	-51.57	24.99156G	-41.64	1
2480MHz	Pass	2.47987G	-0.44	-20.44	899.21M	-55.32	2.39425G	-54.15	2.4835G	-48.26	2.48352G	-49.14	24.79191G	-41.43	1
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.402G	-4.50	-24.50	701.51M	-54.87	2.39999G	-48.05	2.4G	-52.55	2.48701G	-52.48	23.30714G	-40.38	1
2440MHz	Pass	2.44004G	-1.29	-21.29	2.30803G	-55.09	2.39287G	-53.56	2.4835G	-55.22	2.49455G	-51.85	23.414G	-41.07	1
2480MHz	Pass	2.47999G	-0.53	-20.53	1.99989G	-54.88	2.3927G	-53.36	2.4835G	-45.41	2.48351G	-46.58	23.56304G	-41.61	1

BT-BR(1Mbps) **CSENdB-FS**

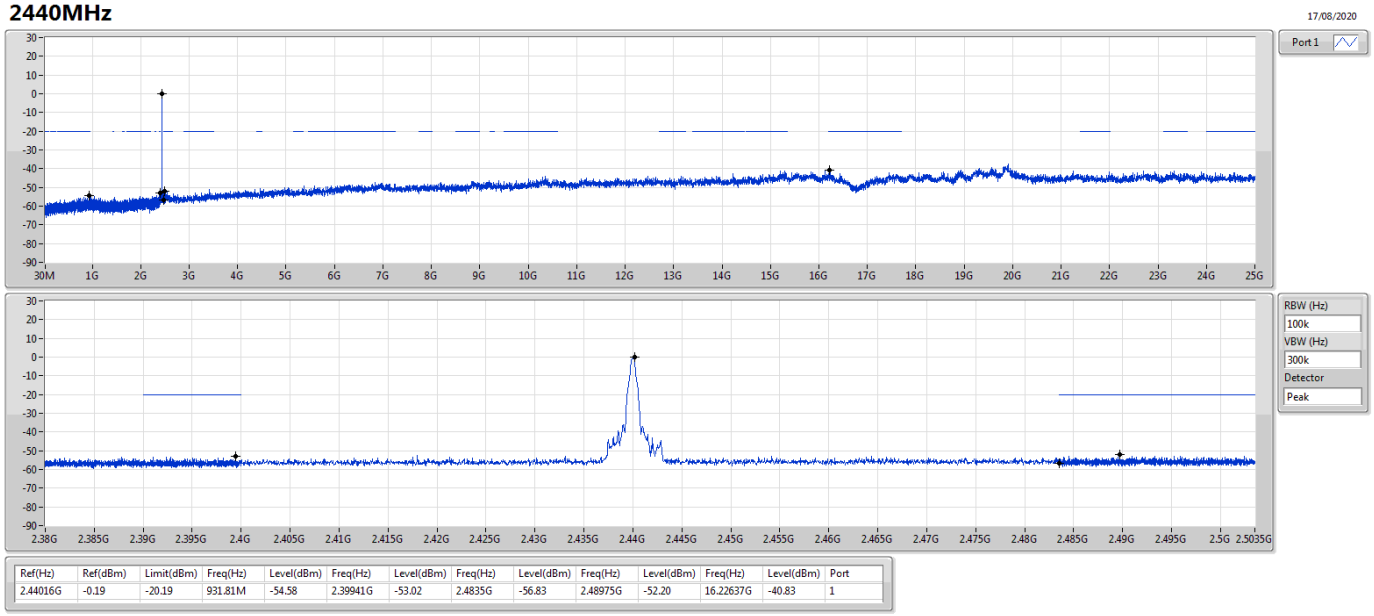
2402MHz



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
2.402G	-1.62	-21.62	2.30774G	-53.50	2.39999G	-46.67	2.4G	-52.52	2.49684G	-51.81	15.17747G	-40.84	1

BT-BR(1Mbps) **CSENdB-FS**

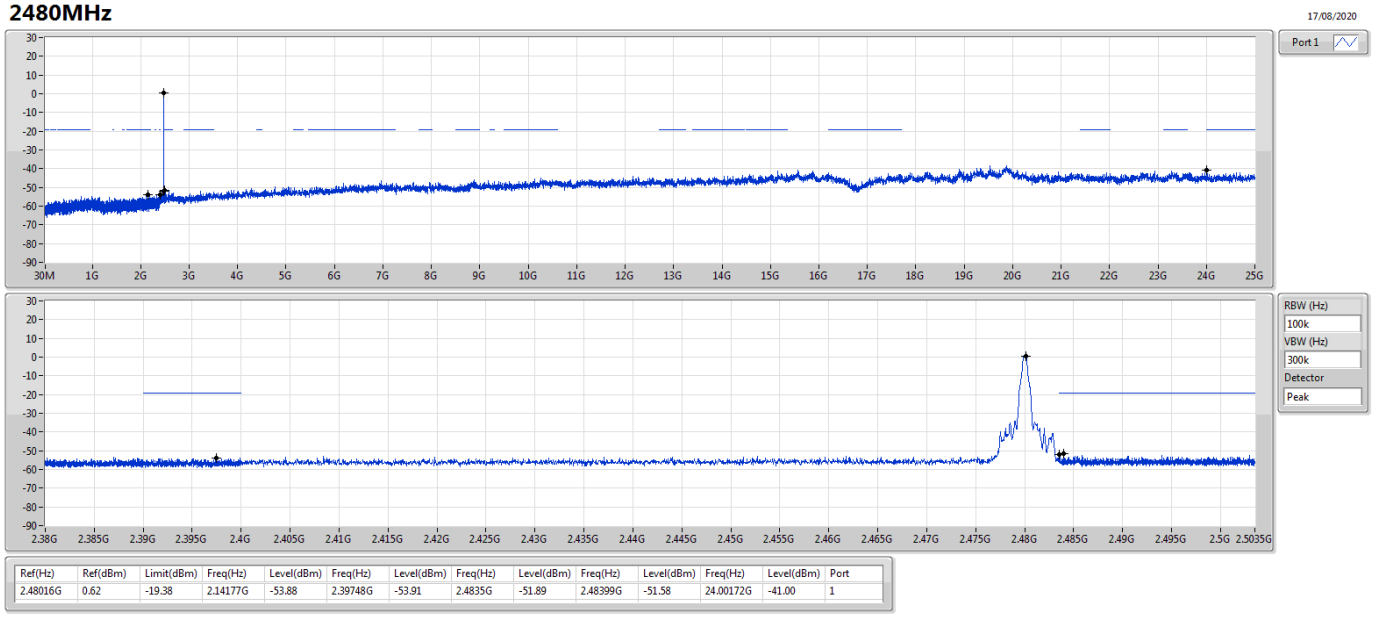
2440MHz



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
2.44016G	-0.19	-20.19	931.81M	-54.58	2.39941G	-53.02	2.4835G	-56.83	2.48975G	-52.20	16.22637G	-40.83	1

BT-BR(1Mbps) **CSENdB-FS**

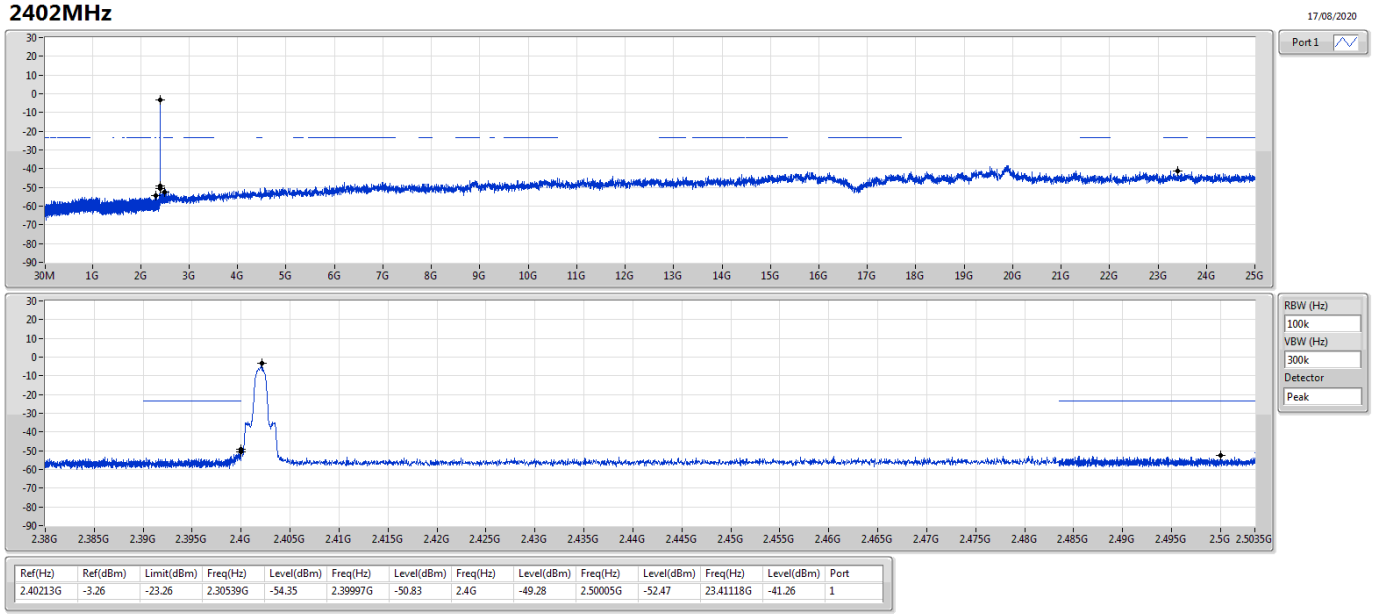
2480MHz



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
2.48016G	0.62	-19.38	2.14177G	-53.88	2.39748G	-53.91	2.4835G	-51.89	2.48399G	-51.58	24.00172G	-41.00	1

BT-EDR(2Mbps) **CSENdB-FS**

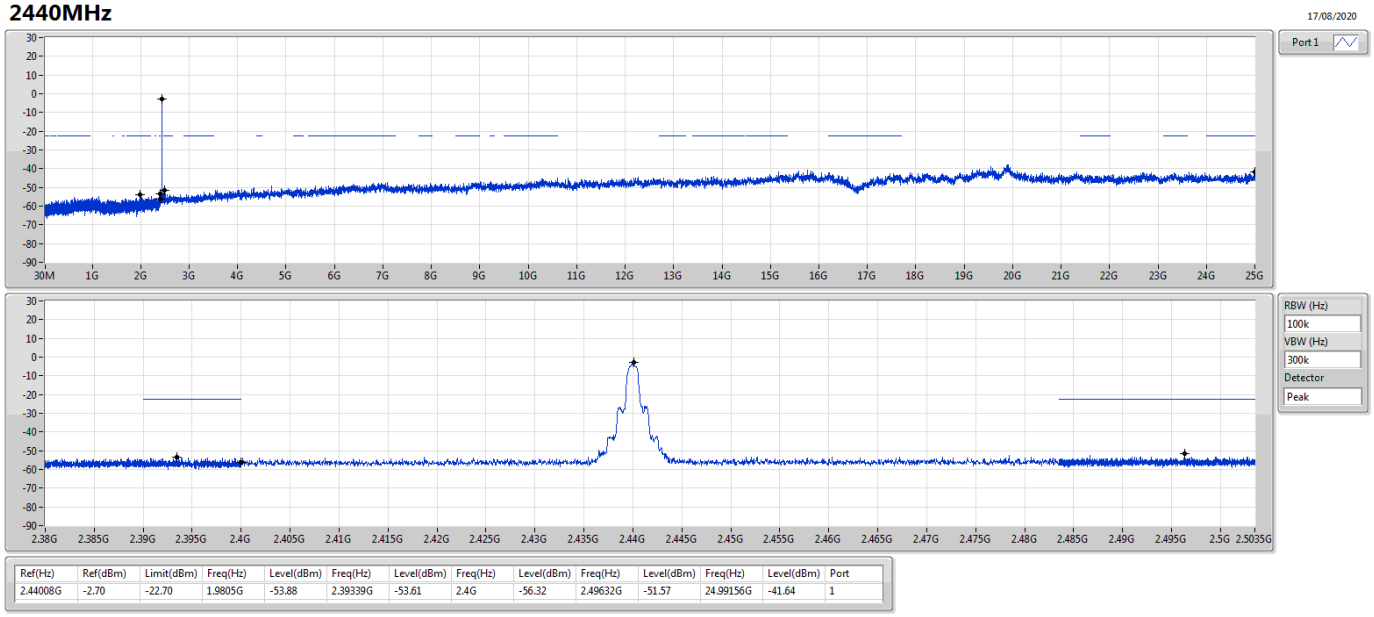
2402MHz



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
2.40213G	-3.26	-23.26	2.30539G	-54.35	2.39997G	-50.83	2.4G	-49.28	2.50005G	-52.47	23.41118G	-41.26	1

BT-EDR(2Mbps) **CSENdB-FS**

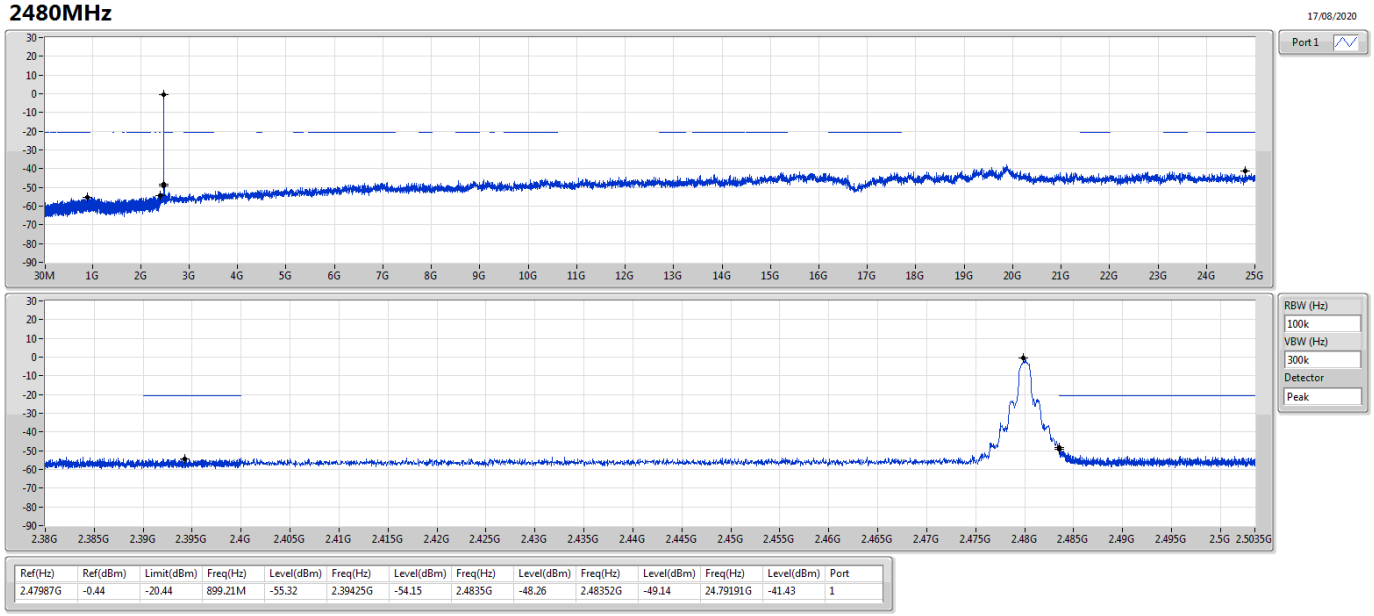
2440MHz



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
2.44008G	-2.70	-22.70	1.9805G	-53.88	2.39339G	-53.61	2.4G	-56.32	2.49632G	-51.57	24.99156G	-41.64	1

BT-EDR(2Mbps) **CSENdB-FS**

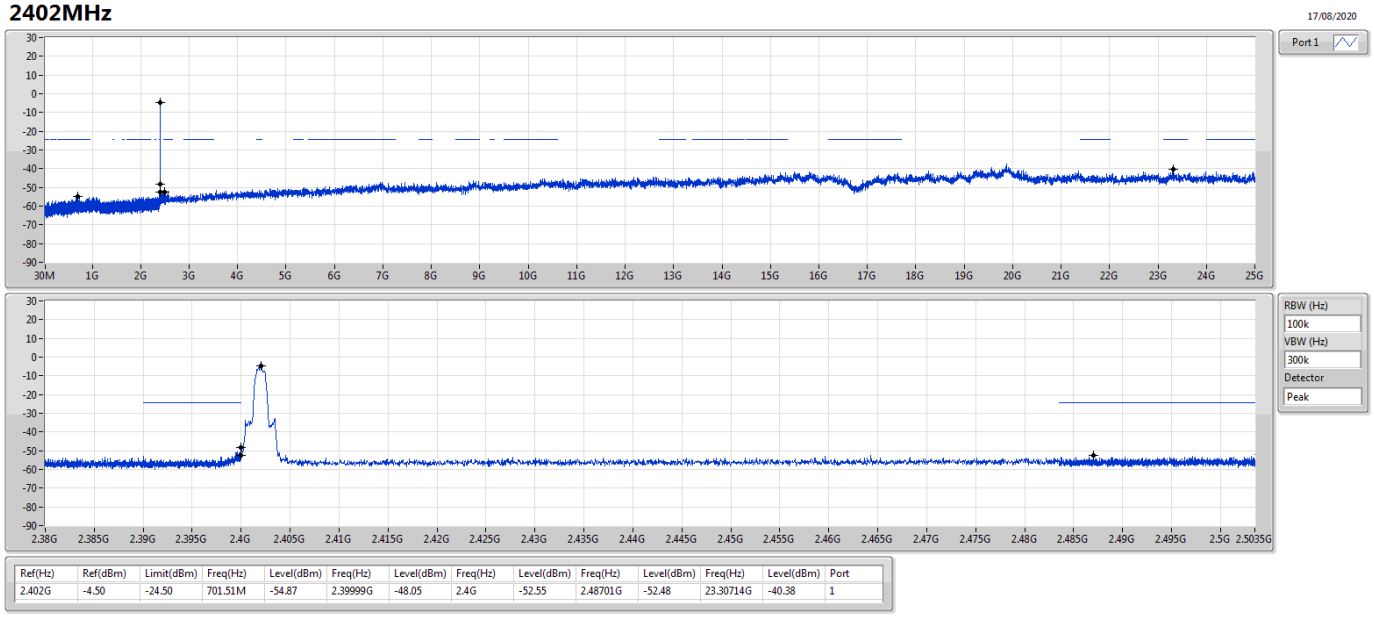
2480MHz



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
2.47987G	-0.44	-20.44	899.21M	-55.32	2.39425G	-54.15	2.4835G	-48.26	2.48352G	-49.14	24.79191G	-41.43	1

BT-EDR(3Mbps) **CSENdB-FS**

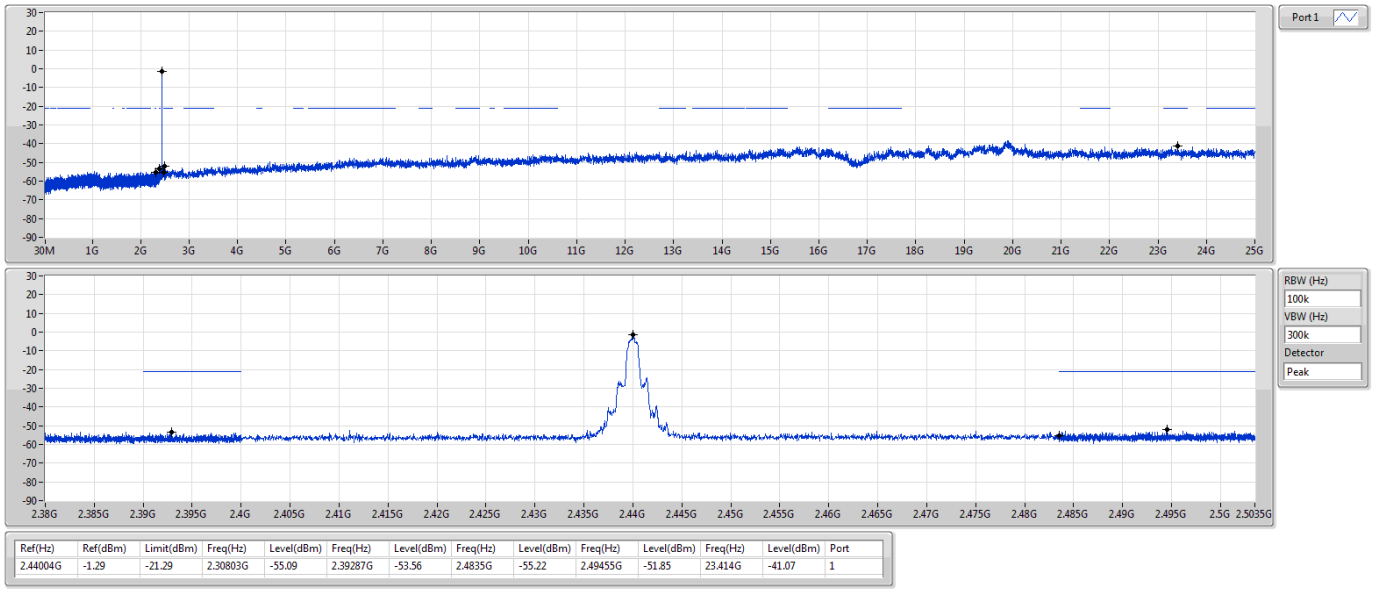
2402MHz



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
2.402G	-4.50	-24.50	701.51M	-54.87	2.39999G	-48.05	2.4G	-52.55	2.48701G	-52.48	23.30714G	-40.38	1

BT-EDR(3Mbps) **CSENdB-FS**

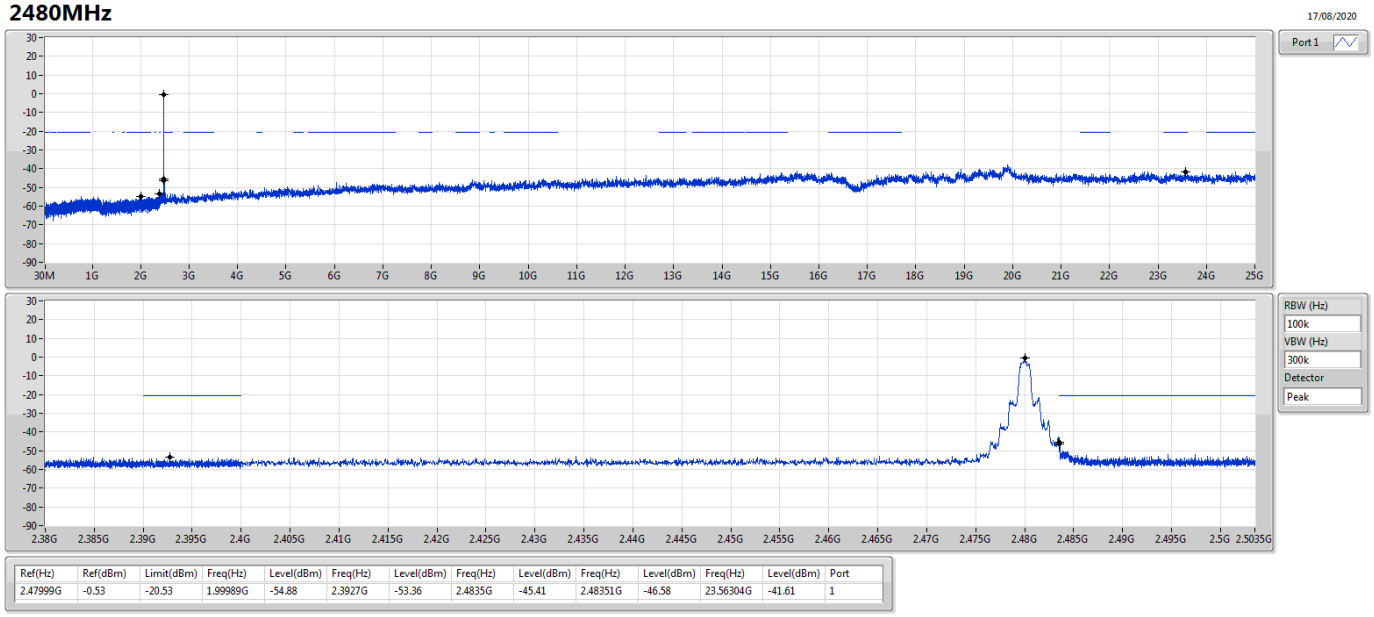
2440MHz



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
2.44004G	-1.29	-21.29	2.30803G	-55.09	2.39287G	-53.56	2.4835G	-55.22	2.49455G	-51.85	23.414G	-41.07	1

BT-EDR(3Mbps) **CSENdB-FS**

2480MHz



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
2.47999G	-0.53	-20.53	1.99989G	-54.88	2.3927G	-53.36	2.4835G	-45.41	2.48351G	-46.58	23.56304G	-41.61	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	30M	32.22	40.00	-7.78	3	Horizontal	360	1.00	-

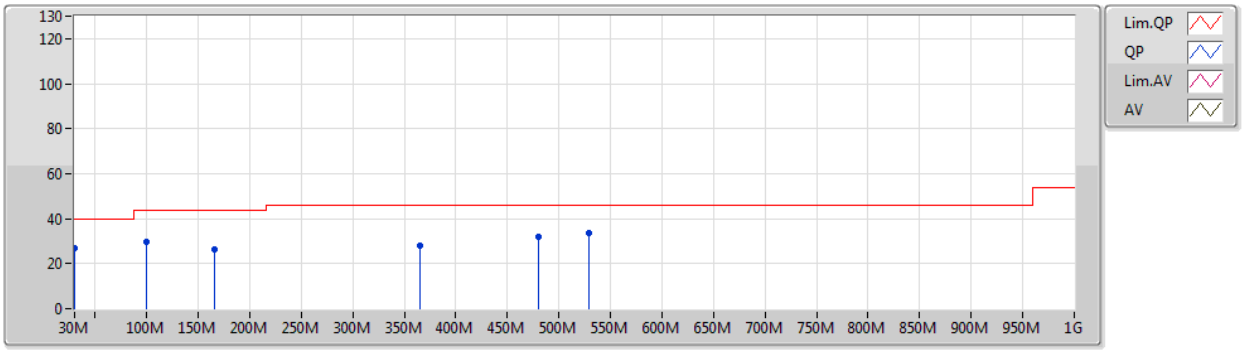
Result

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	30M	27.07	40.00	-12.93	3	Vertical	0	1.00	-
2440MHz	Pass	PK	99.84M	29.81	43.50	-13.69	3	Vertical	0	1.00	-
2440MHz	Pass	PK	165.8M	26.52	43.50	-16.98	3	Vertical	0	1.00	-
2440MHz	Pass	PK	365.62M	28.11	46.00	-17.89	3	Vertical	0	1.00	-
2440MHz	Pass	PK	480.08M	31.95	46.00	-14.05	3	Vertical	0	1.00	-
2440MHz	Pass	PK	528.58M	33.49	46.00	-12.51	3	Vertical	0	1.00	-
2440MHz	Pass	PK	30M	32.22	40.00	-7.78	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	99.84M	28.99	43.50	-14.51	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	144.46M	31.14	43.50	-12.36	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	355.92M	28.07	46.00	-17.93	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	480.08M	34.56	46.00	-11.44	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	627.52M	37.94	46.00	-8.06	3	Horizontal	360	1.00	-

BT-BR(1Mbps)

2440MHz_USB

16/08/2020

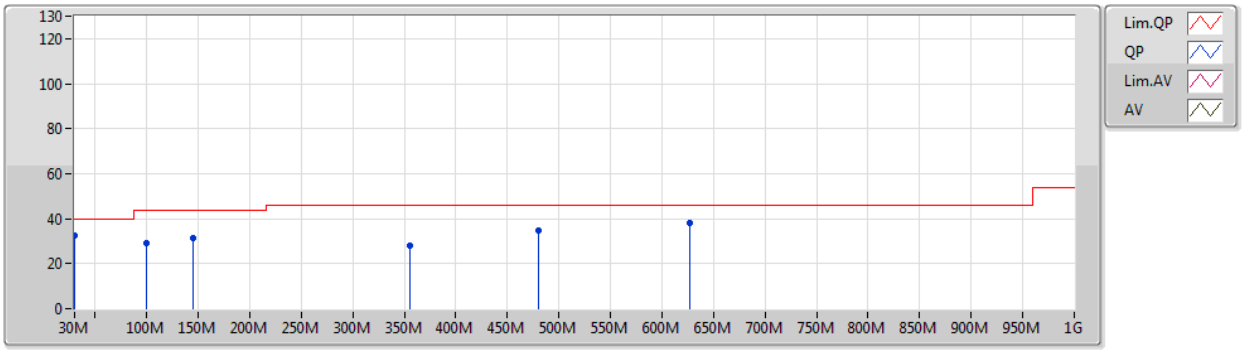


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
PK	30M	27.07	40.00	-12.93	-3.44	3	Vertical	0	1.00	-	30.51	23.33	0.81	27.58
PK	99.84M	29.81	43.50	-13.69	-9.86	3	Vertical	0	1.00	-	39.67	15.93	1.60	27.39
PK	165.8M	26.52	43.50	-16.98	-10.41	3	Vertical	0	1.00	-	36.93	14.63	2.06	27.10
PK	365.62M	28.11	46.00	-17.89	-4.01	3	Vertical	0	1.00	-	32.12	19.87	3.16	27.04
PK	480.08M	31.95	46.00	-14.05	-1.72	3	Vertical	0	1.00	-	33.67	22.45	3.58	27.75
PK	528.58M	33.49	46.00	-12.51	-1.24	3	Vertical	0	1.00	-	34.73	22.87	3.81	27.92

BT-BR(1Mbps)

2440MHz_USB

16/08/2020



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
PK	30M	32.22	40.00	-7.78	-3.44	3	Horizontal	360	1.00	-	35.66	23.33	0.81	27.58
PK	99.84M	28.99	43.50	-14.51	-9.86	3	Horizontal	360	1.00	-	38.85	15.93	1.60	27.39
PK	144.46M	31.14	43.50	-12.36	-9.56	3	Horizontal	360	1.00	-	40.70	15.73	1.92	27.21
PK	355.92M	28.07	46.00	-17.93	-4.17	3	Horizontal	360	1.00	-	32.24	19.69	3.12	26.98
PK	480.08M	34.56	46.00	-11.44	-1.72	3	Horizontal	360	1.00	-	36.28	22.45	3.58	27.75
PK	627.52M	37.94	46.00	-8.06	0.03	3	Horizontal	360	1.00	-	37.91	23.88	4.21	28.06

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	2.4942G	60.47	74.00	-13.53	3	Vertical	274	1.15	-
BT-EDR(3Mbps)	Pass	PK	2.4835G	63.67	74.00	-10.33	3	Vertical	273	1.15	-

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	2.3588G	36.29	54.00	-17.71	3	Vertical	276	1.15	-
2402MHz	Pass	AV	2.4022G	77.69	Inf	-Inf	3	Vertical	276	1.15	-
2402MHz	Pass	PK	2.3588G	58.79	74.00	-15.21	3	Vertical	276	1.15	-
2402MHz	Pass	PK	2.4022G	100.19	Inf	-Inf	3	Vertical	276	1.15	-
2402MHz	Pass	AV	2.3826G	37.06	54.00	-16.94	3	Horizontal	220	1.00	-
2402MHz	Pass	AV	2.4022G	74.80	Inf	-Inf	3	Horizontal	220	1.00	-
2402MHz	Pass	PK	2.3826G	59.56	74.00	-14.44	3	Horizontal	220	1.00	-
2402MHz	Pass	PK	2.4022G	97.30	Inf	-Inf	3	Horizontal	220	1.00	-
2402MHz	Pass	AV	4.80361G	28.83	54.00	-25.17	3	Vertical	32	1.01	-
2402MHz	Pass	PK	4.80361G	51.33	74.00	-22.67	3	Vertical	32	1.01	-
2402MHz	Pass	AV	4.80439G	28.55	54.00	-25.45	3	Horizontal	210	1.05	-
2402MHz	Pass	PK	4.80439G	51.05	74.00	-22.95	3	Horizontal	210	1.05	-
2440MHz	Pass	AV	2.37G	36.67	54.00	-17.33	3	Vertical	273	1.00	-
2440MHz	Pass	AV	2.44G	78.37	Inf	-Inf	3	Vertical	273	1.00	-
2440MHz	Pass	AV	2.4896G	36.65	54.00	-17.35	3	Vertical	273	1.00	-
2440MHz	Pass	PK	2.37G	59.17	74.00	-14.83	3	Vertical	273	1.00	-
2440MHz	Pass	PK	2.44G	100.87	Inf	-Inf	3	Vertical	273	1.00	-
2440MHz	Pass	PK	2.4896G	59.15	74.00	-14.85	3	Vertical	273	1.00	-
2440MHz	Pass	AV	2.3712G	36.27	54.00	-17.73	3	Horizontal	186	1.01	-
2440MHz	Pass	AV	2.44G	74.07	Inf	-Inf	3	Horizontal	186	1.01	-
2440MHz	Pass	AV	2.4876G	36.52	54.00	-17.48	3	Horizontal	186	1.01	-
2440MHz	Pass	PK	2.3712G	58.77	74.00	-15.23	3	Horizontal	186	1.01	-
2440MHz	Pass	PK	2.44G	96.57	Inf	-Inf	3	Horizontal	186	1.01	-
2440MHz	Pass	PK	2.4876G	59.02	74.00	-14.98	3	Horizontal	186	1.01	-
2440MHz	Pass	AV	4.88G	28.88	54.00	-25.12	3	Vertical	20	1.65	-
2440MHz	Pass	AV	7.31932G	33.60	54.00	-20.40	3	Vertical	190	2.17	-
2440MHz	Pass	PK	4.88G	51.38	74.00	-22.62	3	Vertical	20	1.65	-
2440MHz	Pass	PK	7.31932G	56.10	74.00	-17.90	3	Vertical	190	2.17	-
2440MHz	Pass	AV	4.87993G	27.91	54.00	-26.09	3	Horizontal	327	2.26	-
2440MHz	Pass	AV	7.32037G	34.26	54.00	-19.74	3	Horizontal	189	1.15	-
2440MHz	Pass	PK	4.87993G	50.41	74.00	-23.59	3	Horizontal	327	2.26	-
2440MHz	Pass	PK	7.32037G	56.76	74.00	-17.24	3	Horizontal	189	1.15	-
2480MHz	Pass	AV	2.4798G	78.70	Inf	-Inf	3	Vertical	274	1.15	-
2480MHz	Pass	AV	2.4942G	37.97	54.00	-16.03	3	Vertical	274	1.15	-
2480MHz	Pass	PK	2.4798G	101.20	Inf	-Inf	3	Vertical	274	1.15	-
2480MHz	Pass	PK	2.4942G	60.47	74.00	-13.53	3	Vertical	274	1.15	-
2480MHz	Pass	AV	2.4798G	75.12	Inf	-Inf	3	Horizontal	192	1.18	-
2480MHz	Pass	AV	2.4906G	37.62	54.00	-16.38	3	Horizontal	192	1.18	-
2480MHz	Pass	PK	2.4798G	97.62	Inf	-Inf	3	Horizontal	192	1.18	-
2480MHz	Pass	PK	2.4906G	60.12	74.00	-13.88	3	Horizontal	192	1.18	-
2480MHz	Pass	AV	4.96025G	28.99	54.00	-25.01	3	Vertical	19	1.98	-
2480MHz	Pass	AV	7.43945G	34.90	54.00	-19.10	3	Vertical	355	1.07	-
2480MHz	Pass	PK	4.96025G	51.49	74.00	-22.51	3	Vertical	19	1.98	-
2480MHz	Pass	PK	7.43945G	57.40	74.00	-16.60	3	Vertical	355	1.07	-
2480MHz	Pass	AV	4.95988G	28.56	54.00	-25.44	3	Horizontal	32	2.23	-
2480MHz	Pass	AV	7.4403G	35.35	54.00	-18.65	3	Horizontal	193	1.03	-
2480MHz	Pass	PK	4.95988G	51.06	74.00	-22.94	3	Horizontal	32	2.23	-

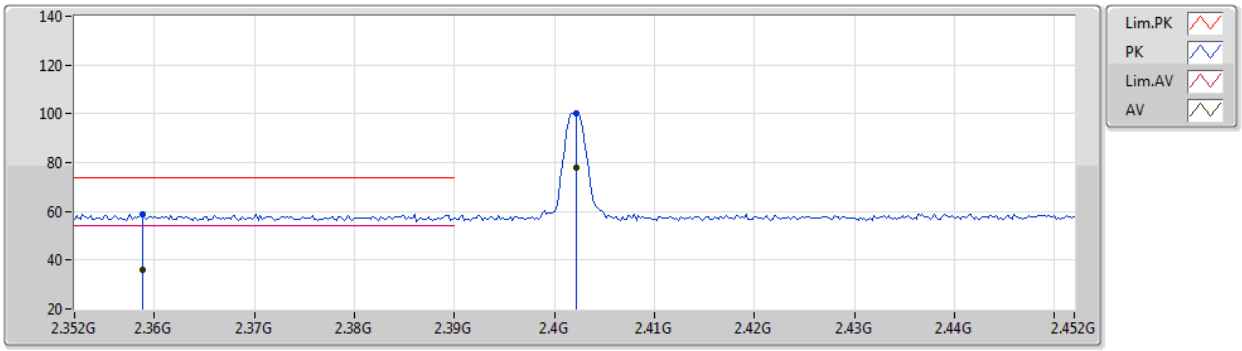
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2480MHz	Pass	PK	7.4403G	57.85	74.00	-16.15	3	Horizontal	193	1.03	-
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3556G	36.98	54.00	-17.02	3	Vertical	277	1.15	-
2402MHz	Pass	AV	2.4018G	75.47	Inf	-Inf	3	Vertical	277	1.15	-
2402MHz	Pass	PK	2.3556G	59.48	74.00	-14.52	3	Vertical	277	1.15	-
2402MHz	Pass	PK	2.4018G	97.97	Inf	-Inf	3	Vertical	277	1.15	-
2402MHz	Pass	AV	2.3662G	37.95	54.00	-16.05	3	Horizontal	247	1.12	-
2402MHz	Pass	AV	2.402G	72.12	Inf	-Inf	3	Horizontal	247	1.12	-
2402MHz	Pass	PK	2.3662G	60.45	74.00	-13.55	3	Horizontal	247	1.12	-
2402MHz	Pass	PK	2.402G	94.62	Inf	-Inf	3	Horizontal	247	1.12	-
2402MHz	Pass	AV	4.80419G	26.21	54.00	-27.79	3	Vertical	31	1.16	-
2402MHz	Pass	PK	4.80419G	48.70	74.00	-25.30	3	Vertical	31	1.16	-
2402MHz	Pass	AV	4.80368G	25.81	54.00	-28.19	3	Horizontal	329	1.47	-
2402MHz	Pass	PK	4.80368G	48.31	74.00	-25.69	3	Horizontal	329	1.47	-
2440MHz	Pass	AV	2.344G	37.62	54.00	-16.38	3	Vertical	276	1.01	-
2440MHz	Pass	AV	2.44G	77.36	Inf	-Inf	3	Vertical	276	1.01	-
2440MHz	Pass	AV	2.4896G	36.72	54.00	-17.28	3	Vertical	276	1.01	-
2440MHz	Pass	PK	2.344G	60.12	74.00	-13.88	3	Vertical	276	1.01	-
2440MHz	Pass	PK	2.44G	99.86	Inf	-Inf	3	Vertical	276	1.01	-
2440MHz	Pass	PK	2.4896G	59.22	74.00	-14.78	3	Vertical	276	1.01	-
2440MHz	Pass	AV	2.3584G	36.76	54.00	-17.24	3	Horizontal	187	1.01	-
2440MHz	Pass	AV	2.44G	72.90	Inf	-Inf	3	Horizontal	187	1.01	-
2440MHz	Pass	AV	2.4896G	36.65	54.00	-17.35	3	Horizontal	187	1.01	-
2440MHz	Pass	PK	2.3584G	59.26	74.00	-14.74	3	Horizontal	187	1.01	-
2440MHz	Pass	PK	2.44G	95.40	Inf	-Inf	3	Horizontal	187	1.01	-
2440MHz	Pass	PK	2.4896G	59.15	74.00	-14.85	3	Horizontal	187	1.01	-
2440MHz	Pass	AV	4.87966G	27.24	54.00	-26.76	3	Vertical	32	1.03	-
2440MHz	Pass	AV	7.3202G	31.95	54.00	-22.05	3	Vertical	191	2.16	-
2440MHz	Pass	PK	4.87966G	49.74	74.00	-24.26	3	Vertical	32	1.03	-
2440MHz	Pass	PK	7.3202G	54.45	74.00	-19.55	3	Vertical	191	2.16	-
2440MHz	Pass	AV	4.88038G	26.15	54.00	-27.85	3	Horizontal	30	1.16	-
2440MHz	Pass	AV	7.31982G	31.93	54.00	-22.07	3	Horizontal	190	1.17	-
2440MHz	Pass	PK	4.88038G	48.65	74.00	-25.35	3	Horizontal	30	1.16	-
2440MHz	Pass	PK	7.31982G	54.43	74.00	-19.57	3	Horizontal	190	1.17	-
2480MHz	Pass	AV	2.4798G	78.64	Inf	-Inf	3	Vertical	273	1.15	-
2480MHz	Pass	AV	2.4835G	41.17	54.00	-12.83	3	Vertical	273	1.15	-
2480MHz	Pass	PK	2.4798G	101.14	Inf	-Inf	3	Vertical	273	1.15	-
2480MHz	Pass	PK	2.4835G	63.67	74.00	-10.33	3	Vertical	273	1.15	-
2480MHz	Pass	AV	2.4798G	75.08	Inf	-Inf	3	Horizontal	192	1.19	-
2480MHz	Pass	AV	2.4835G	38.72	54.00	-15.28	3	Horizontal	192	1.19	-
2480MHz	Pass	PK	2.4798G	97.58	Inf	-Inf	3	Horizontal	192	1.19	-
2480MHz	Pass	PK	2.4835G	61.22	74.00	-12.78	3	Horizontal	192	1.19	-
2480MHz	Pass	AV	4.95994G	27.13	54.00	-26.87	3	Vertical	25	1.99	-
2480MHz	Pass	AV	7.44001G	31.89	54.00	-22.11	3	Vertical	354	1.01	-
2480MHz	Pass	PK	4.95994G	49.63	74.00	-24.37	3	Vertical	25	1.99	-
2480MHz	Pass	PK	7.44001G	54.39	74.00	-19.61	3	Vertical	354	1.01	-
2480MHz	Pass	AV	4.96054G	26.53	54.00	-27.47	3	Horizontal	29	1.49	-
2480MHz	Pass	AV	7.43995G	32.42	54.00	-21.58	3	Horizontal	192	1.23	-
2480MHz	Pass	PK	4.96054G	49.03	74.00	-24.97	3	Horizontal	29	1.49	-

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2480MHz	Pass	PK	7.43995G	54.92	74.00	-19.08	3	Horizontal	192	1.23	-

BT-BR(1Mbps)

2402MHz_TX

16/08/2020

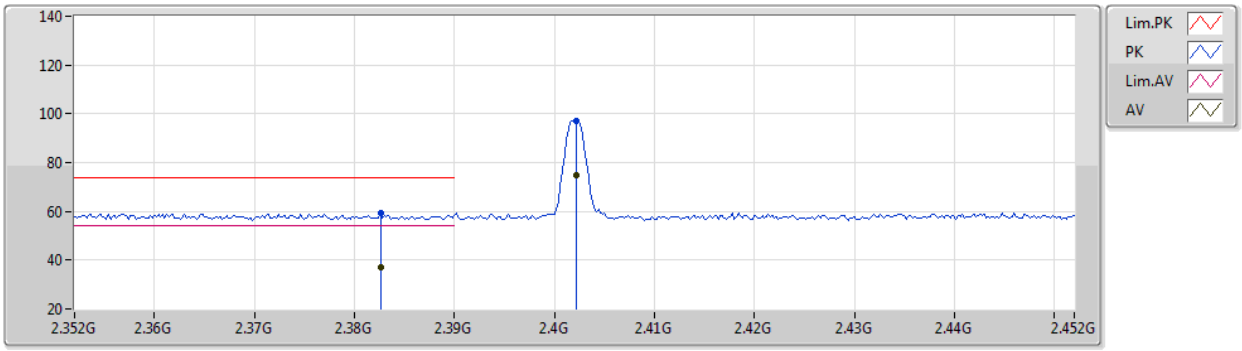


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3588G	36.29	54.00	-17.71	31.94	3	Vertical	276	1.15	-	4.35	27.68	4.26	-
AV	2.4022G	77.69	Inf	-Inf	31.90	3	Vertical	276	1.15	-	45.79	27.60	4.30	-
PK	2.3588G	58.79	74.00	-15.21	31.94	3	Vertical	276	1.15	-	26.85	27.68	4.26	-
PK	2.4022G	100.19	Inf	-Inf	31.90	3	Vertical	276	1.15	-	68.29	27.60	4.30	-

BT-BR(1Mbps)

2402MHz_TX

16/08/2020

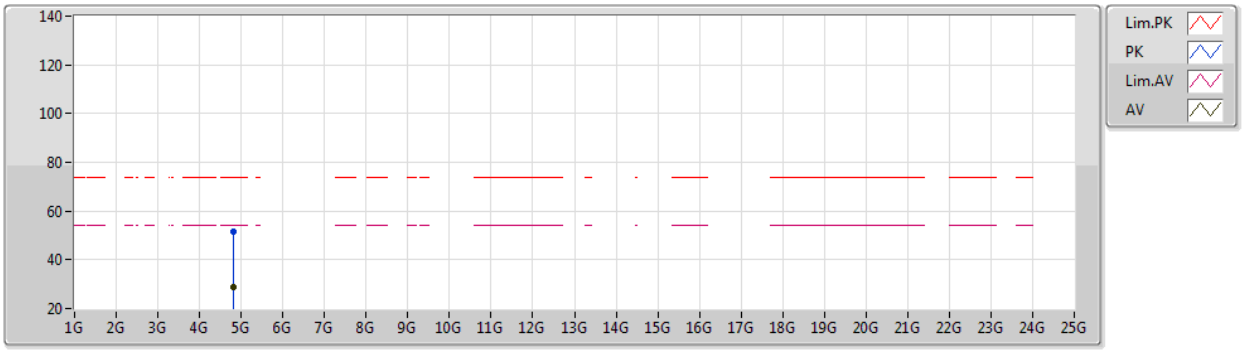


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3826G	37.06	54.00	-16.94	31.91	3	Horizontal	220	1.00	-	5.15	27.63	4.28	-
AV	2.4022G	74.80	Inf	-Inf	31.90	3	Horizontal	220	1.00	-	42.90	27.60	4.30	-
PK	2.3826G	59.56	74.00	-14.44	31.91	3	Horizontal	220	1.00	-	27.65	27.63	4.28	-
PK	2.4022G	97.30	Inf	-Inf	31.90	3	Horizontal	220	1.00	-	65.40	27.60	4.30	-

BT-BR(1Mbps)

2402MHz_TX

16/08/2020

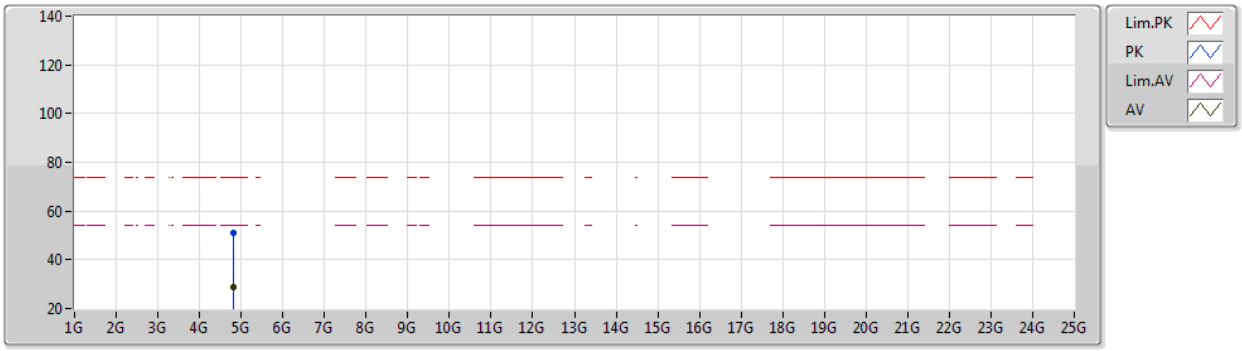


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.80361G	28.83	54.00	-25.17	8.19	3	Vertical	32	1.01	-	20.64	31.10	6.50	29.41
PK	4.80361G	51.33	74.00	-22.67	8.19	3	Vertical	32	1.01	-	43.14	31.10	6.50	29.41

BT-BR(1Mbps)

2402MHz_TX

16/08/2020

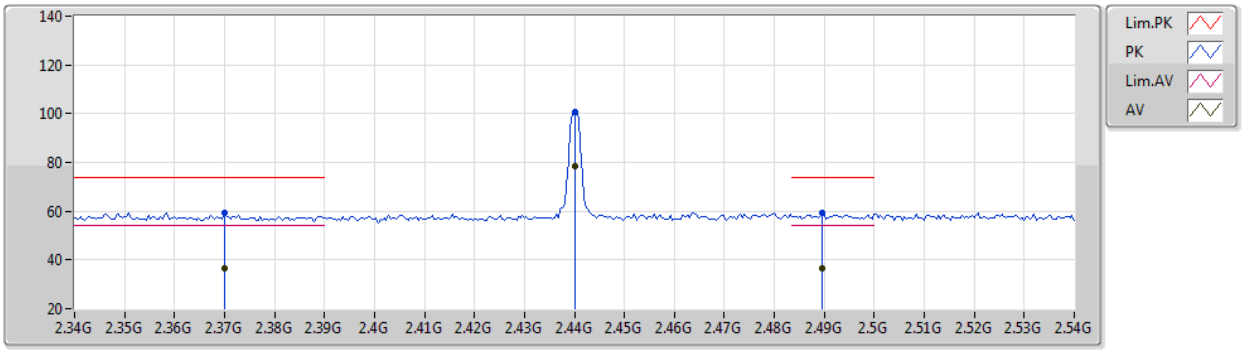


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.80439G	28.55	54.00	-25.45	8.19	3	Horizontal	210	1.05	-	20.36	31.10	6.50	29.41
PK	4.80439G	51.05	74.00	-22.95	8.19	3	Horizontal	210	1.05	-	42.86	31.10	6.50	29.41

BT-BR(1Mbps)

2440MHz_TX

16/08/2020

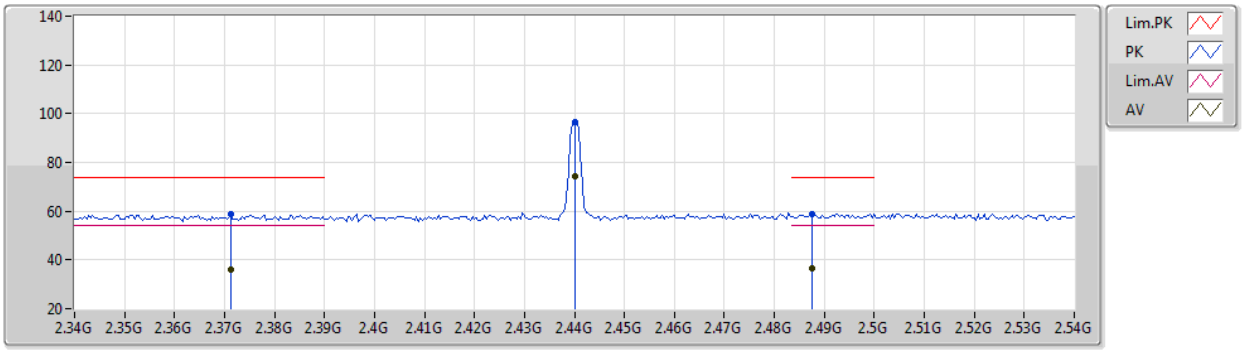


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.37G	36.67	54.00	-17.33	31.93	3	Vertical	273	1.00	-	4.74	27.66	4.27	-
AV	2.44G	78.37	Inf	-Inf	31.86	3	Vertical	273	1.00	-	46.51	27.52	4.34	-
AV	2.4896G	36.65	54.00	-17.35	31.81	3	Vertical	273	1.00	-	4.84	27.42	4.39	-
PK	2.37G	59.17	74.00	-14.83	31.93	3	Vertical	273	1.00	-	27.24	27.66	4.27	-
PK	2.44G	100.87	Inf	-Inf	31.86	3	Vertical	273	1.00	-	69.01	27.52	4.34	-
PK	2.4896G	59.15	74.00	-14.85	31.81	3	Vertical	273	1.00	-	27.34	27.42	4.39	-

BT-BR(1Mbps)

2440MHz_TX

16/08/2020

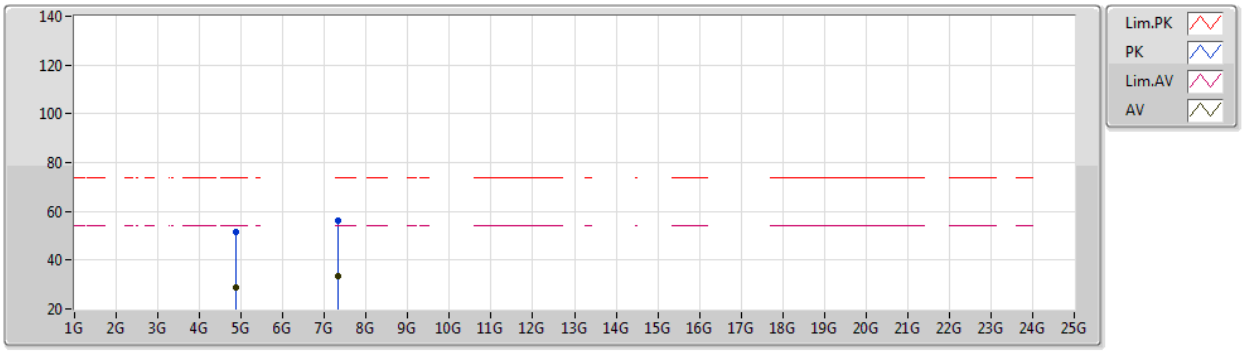


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3712G	36.27	54.00	-17.73	31.93	3	Horizontal	186	1.01	-	4.34	27.66	4.27	-
AV	2.44G	74.07	Inf	-Inf	31.86	3	Horizontal	186	1.01	-	42.21	27.52	4.34	-
AV	2.4876G	36.52	54.00	-17.48	31.81	3	Horizontal	186	1.01	-	4.71	27.42	4.39	-
PK	2.3712G	58.77	74.00	-15.23	31.93	3	Horizontal	186	1.01	-	26.84	27.66	4.27	-
PK	2.44G	96.57	Inf	-Inf	31.86	3	Horizontal	186	1.01	-	64.71	27.52	4.34	-
PK	2.4876G	59.02	74.00	-14.98	31.81	3	Horizontal	186	1.01	-	27.21	27.42	4.39	-

BT-BR(1Mbps)

2440MHz_TX

16/08/2020

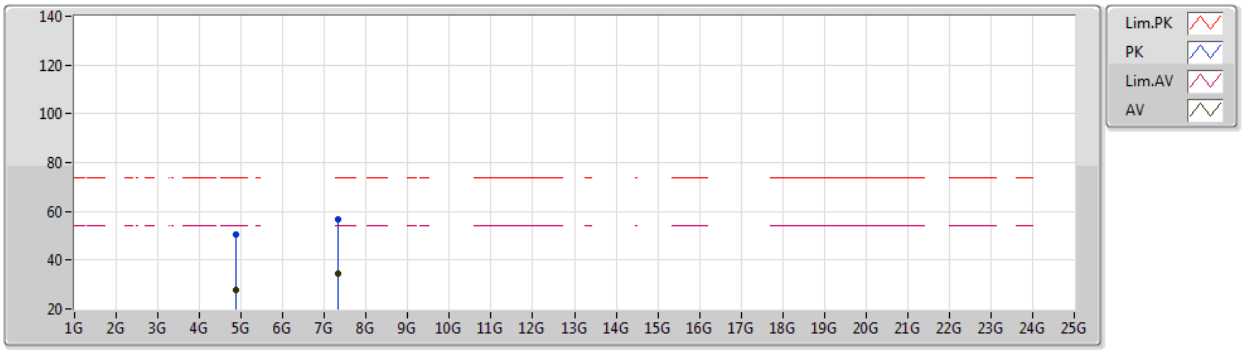


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.88G	28.88	54.00	-25.12	8.30	3	Vertical	20	1.65	-	20.58	31.10	6.58	29.38
AV	7.31932G	33.60	54.00	-20.40	13.58	3	Vertical	190	2.17	-	20.02	36.34	7.60	30.36
PK	4.88G	51.38	74.00	-22.62	8.30	3	Vertical	20	1.65	-	43.08	31.10	6.58	29.38
PK	7.31932G	56.10	74.00	-17.90	13.58	3	Vertical	190	2.17	-	42.52	36.34	7.60	30.36

BT-BR(1Mbps)

2440MHz_TX

16/08/2020

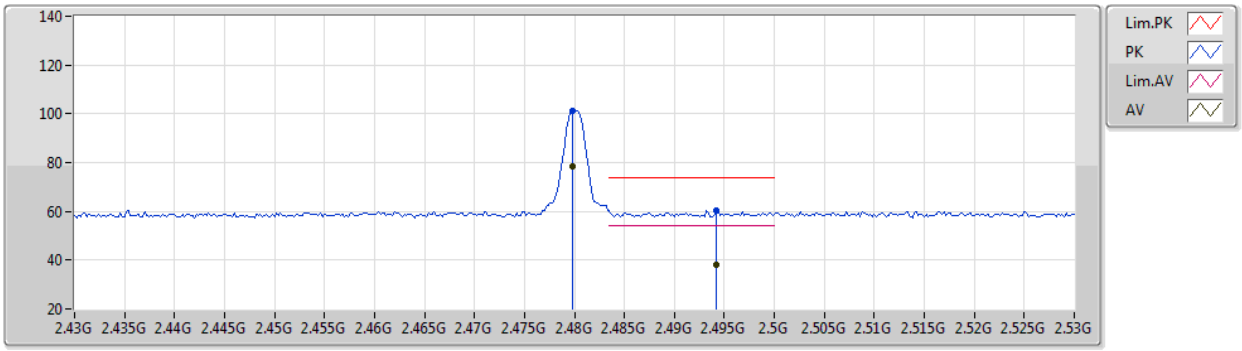


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.87993G	27.91	54.00	-26.09	8.30	3	Horizontal	327	2.26	-	19.61	31.10	6.58	29.38
AV	7.32037G	34.26	54.00	-19.74	13.57	3	Horizontal	189	1.15	-	20.69	36.34	7.60	30.37
PK	4.87993G	50.41	74.00	-23.59	8.30	3	Horizontal	327	2.26	-	42.11	31.10	6.58	29.38
PK	7.32037G	56.76	74.00	-17.24	13.57	3	Horizontal	189	1.15	-	43.19	36.34	7.60	30.37

BT-BR(1Mbps)

2480MHz_TX

16/08/2020

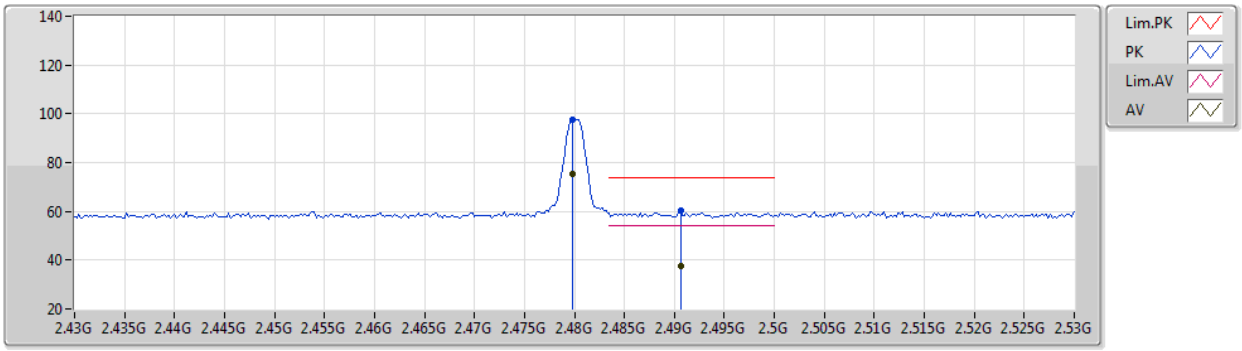


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.4798G	78.70	Inf	-Inf	31.82	3	Vertical	274	1.15	-	46.88	27.44	4.38	-
AV	2.4942G	37.97	54.00	-16.03	31.80	3	Vertical	274	1.15	-	6.17	27.41	4.39	-
PK	2.4798G	101.20	Inf	-Inf	31.82	3	Vertical	274	1.15	-	69.38	27.44	4.38	-
PK	2.4942G	60.47	74.00	-13.53	31.80	3	Vertical	274	1.15	-	28.67	27.41	4.39	-

BT-BR(1Mbps)

2480MHz_TX

16/08/2020

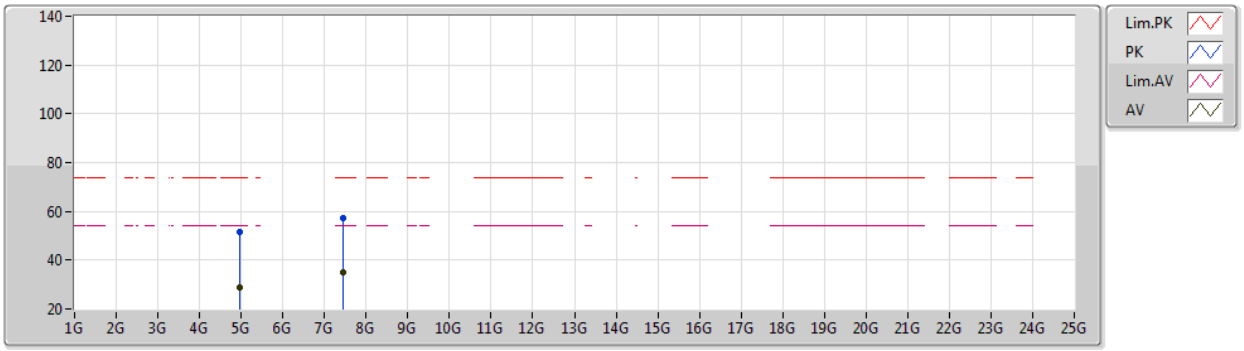


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.4798G	75.12	Inf	-Inf	31.82	3	Horizontal	192	1.18	-	43.30	27.44	4.38	-
AV	2.4906G	37.62	54.00	-16.38	31.81	3	Horizontal	192	1.18	-	5.81	27.42	4.39	-
PK	2.4798G	97.62	Inf	-Inf	31.82	3	Horizontal	192	1.18	-	65.80	27.44	4.38	-
PK	2.4906G	60.12	74.00	-13.88	31.81	3	Horizontal	192	1.18	-	28.31	27.42	4.39	-

BT-BR(1Mbps)

2480MHz_TX

16/08/2020

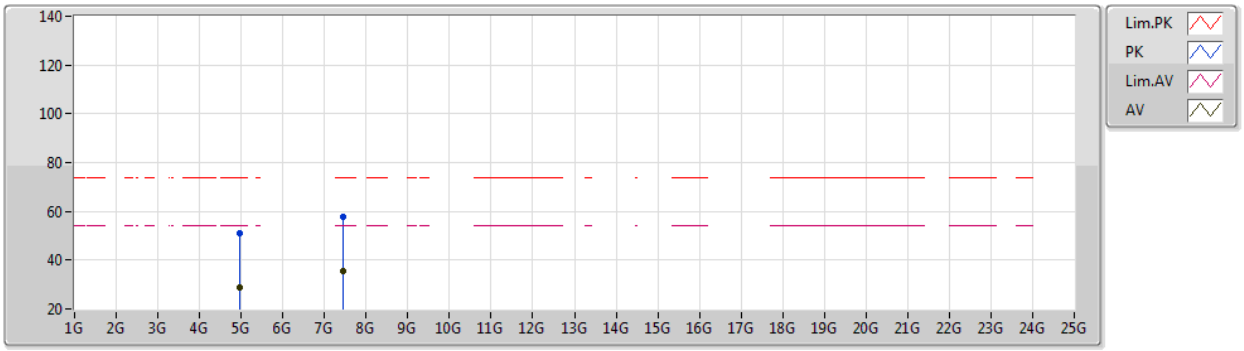


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.96025G	28.99	54.00	-25.01	8.52	3	Vertical	19	1.98	-	20.47	31.20	6.66	29.34
AV	7.43945G	34.90	54.00	-19.10	13.41	3	Vertical	355	1.07	-	21.49	36.24	7.64	30.47
PK	4.96025G	51.49	74.00	-22.51	8.52	3	Vertical	19	1.98	-	42.97	31.20	6.66	29.34
PK	7.43945G	57.40	74.00	-16.60	13.41	3	Vertical	355	1.07	-	43.99	36.24	7.64	30.47

BT-BR(1Mbps)

2480MHz_TX

16/08/2020

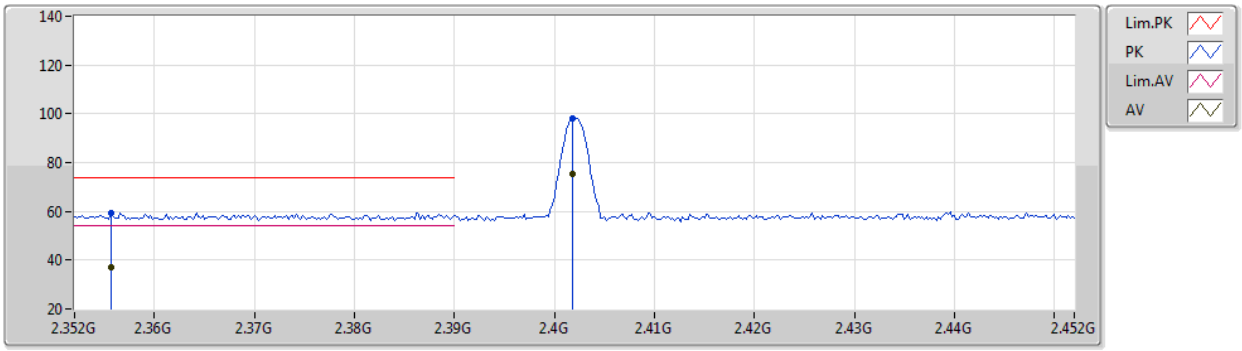


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.95988G	28.56	54.00	-25.44	8.52	3	Horizontal	32	2.23	-	20.04	31.20	6.66	29.34
AV	7.4403G	35.35	54.00	-18.65	13.41	3	Horizontal	193	1.03	-	21.94	36.24	7.64	30.47
PK	4.95988G	51.06	74.00	-22.94	8.52	3	Horizontal	32	2.23	-	42.54	31.20	6.66	29.34
PK	7.4403G	57.85	74.00	-16.15	13.41	3	Horizontal	193	1.03	-	44.44	36.24	7.64	30.47

BT-EDR(3Mbps)

2402MHz_TX

16/08/2020

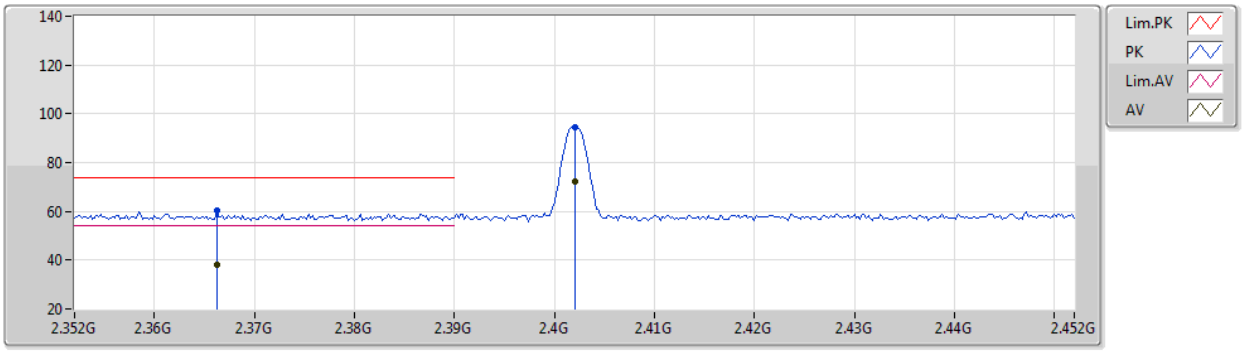


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3556G	36.98	54.00	-17.02	31.95	3	Vertical	277	1.15	-	5.03	27.69	4.26	-
AV	2.4018G	75.47	Inf	-Inf	31.90	3	Vertical	277	1.15	-	43.57	27.60	4.30	-
PK	2.3556G	59.48	74.00	-14.52	31.95	3	Vertical	277	1.15	-	27.53	27.69	4.26	-
PK	2.4018G	97.97	Inf	-Inf	31.90	3	Vertical	277	1.15	-	66.07	27.60	4.30	-

BT-EDR(3Mbps)

2402MHz_TX

16/08/2020

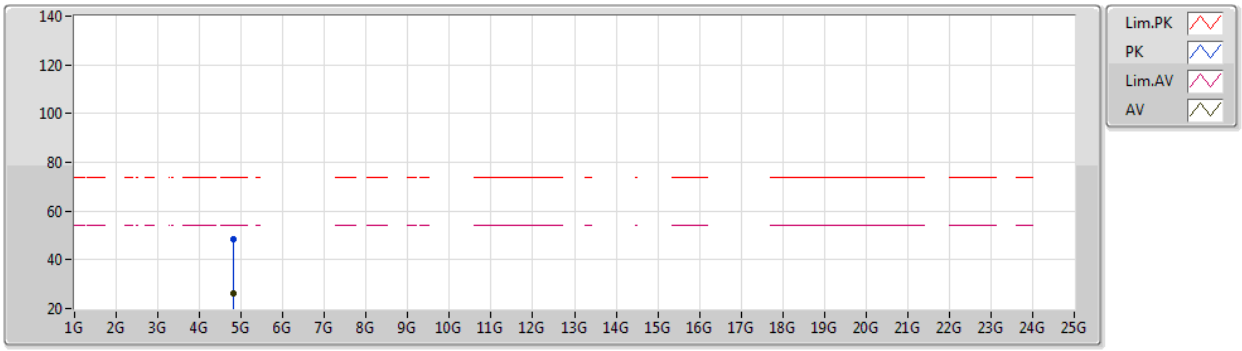


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3662G	37.95	54.00	-16.05	31.94	3	Horizontal	247	1.12	-	6.01	27.67	4.27	-
AV	2.402G	72.12	Inf	-Inf	31.90	3	Horizontal	247	1.12	-	40.22	27.60	4.30	-
PK	2.3662G	60.45	74.00	-13.55	31.94	3	Horizontal	247	1.12	-	28.51	27.67	4.27	-
PK	2.402G	94.62	Inf	-Inf	31.90	3	Horizontal	247	1.12	-	62.72	27.60	4.30	-

BT-EDR(3Mbps)

2402MHz_TX

16/08/2020

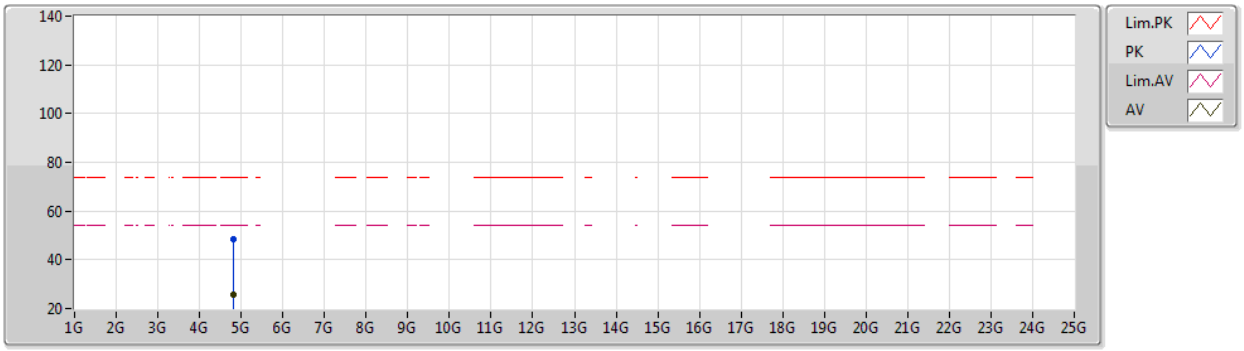


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.80419G	26.21	54.00	-27.79	8.19	3	Vertical	31	1.16	-	18.02	31.10	6.50	29.41
PK	4.80419G	48.70	74.00	-25.30	8.19	3	Vertical	31	1.16	-	40.51	31.10	6.50	29.41

BT-EDR(3Mbps)

2402MHz_TX

16/08/2020

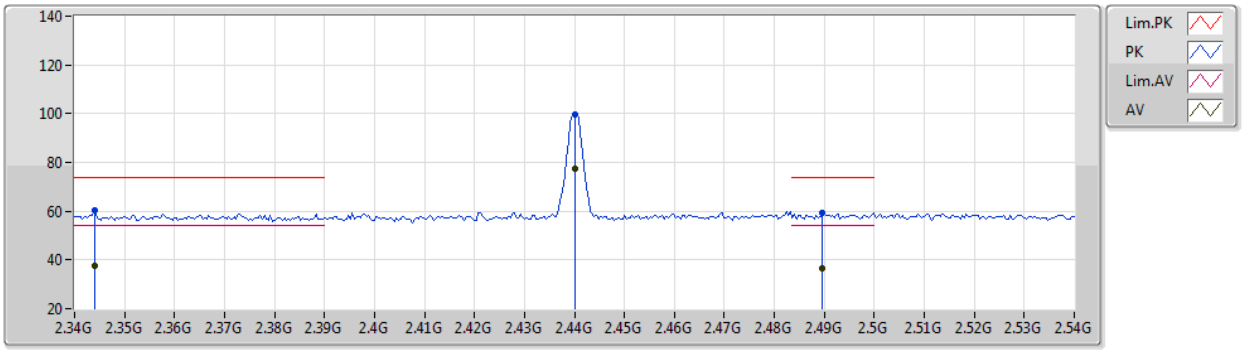


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.80368G	25.81	54.00	-28.19	8.19	3	Horizontal	329	1.47	-	17.62	31.10	6.50	29.41
PK	4.80368G	48.31	74.00	-25.69	8.19	3	Horizontal	329	1.47	-	40.12	31.10	6.50	29.41

BT-EDR(3Mbps)

2440MHz_TX

16/08/2020

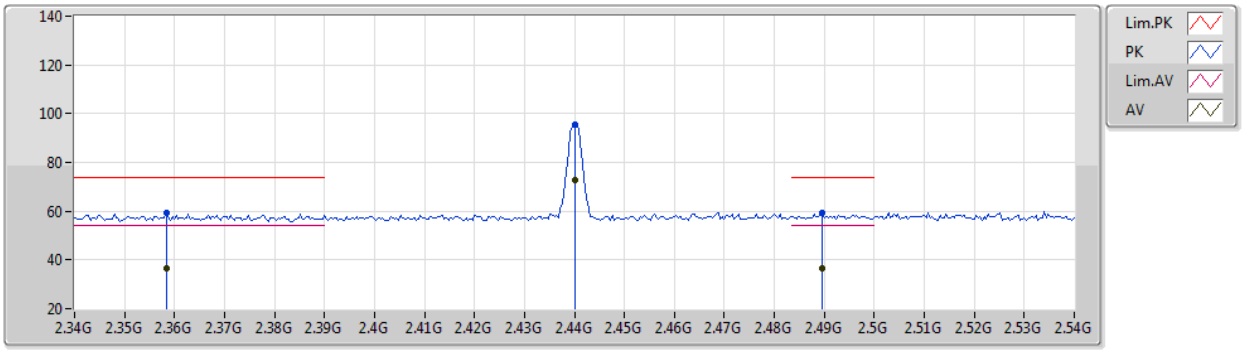


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.344G	37.62	54.00	-16.38	31.96	3	Vertical	276	1.01	-	5.66	27.72	4.24	-
AV	2.44G	77.36	Inf	-Inf	31.86	3	Vertical	276	1.01	-	45.50	27.52	4.34	-
AV	2.4896G	36.72	54.00	-17.28	31.81	3	Vertical	276	1.01	-	4.91	27.42	4.39	-
PK	2.344G	60.12	74.00	-13.88	31.96	3	Vertical	276	1.01	-	28.16	27.72	4.24	-
PK	2.44G	99.86	Inf	-Inf	31.86	3	Vertical	276	1.01	-	68.00	27.52	4.34	-
PK	2.4896G	59.22	74.00	-14.78	31.81	3	Vertical	276	1.01	-	27.41	27.42	4.39	-

BT-EDR(3Mbps)

2440MHz_TX

16/08/2020

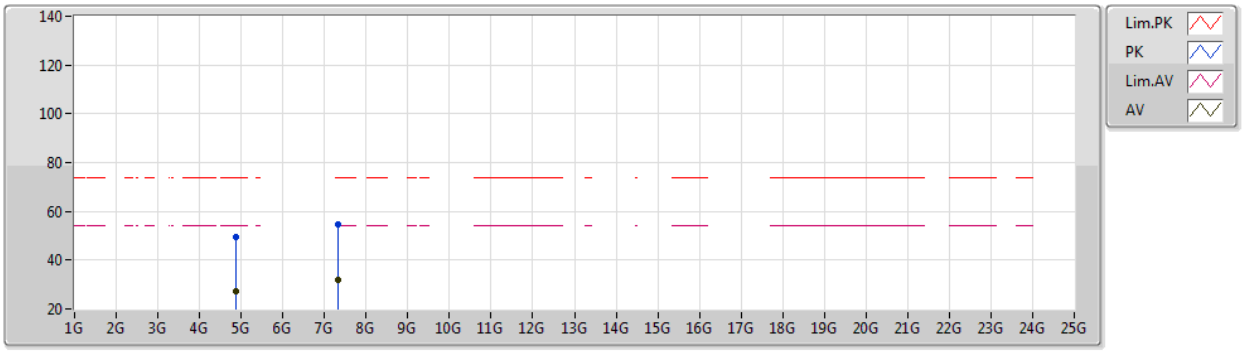


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3584G	36.76	54.00	-17.24	31.94	3	Horizontal	187	1.01	-	4.82	27.68	4.26	-
AV	2.44G	72.90	Inf	-Inf	31.86	3	Horizontal	187	1.01	-	41.04	27.52	4.34	-
AV	2.4896G	36.65	54.00	-17.35	31.81	3	Horizontal	187	1.01	-	4.84	27.42	4.39	-
PK	2.3584G	59.26	74.00	-14.74	31.94	3	Horizontal	187	1.01	-	27.32	27.68	4.26	-
PK	2.44G	95.40	Inf	-Inf	31.86	3	Horizontal	187	1.01	-	63.54	27.52	4.34	-
PK	2.4896G	59.15	74.00	-14.85	31.81	3	Horizontal	187	1.01	-	27.34	27.42	4.39	-

BT-EDR(3Mbps)

2440MHz_TX

16/08/2020

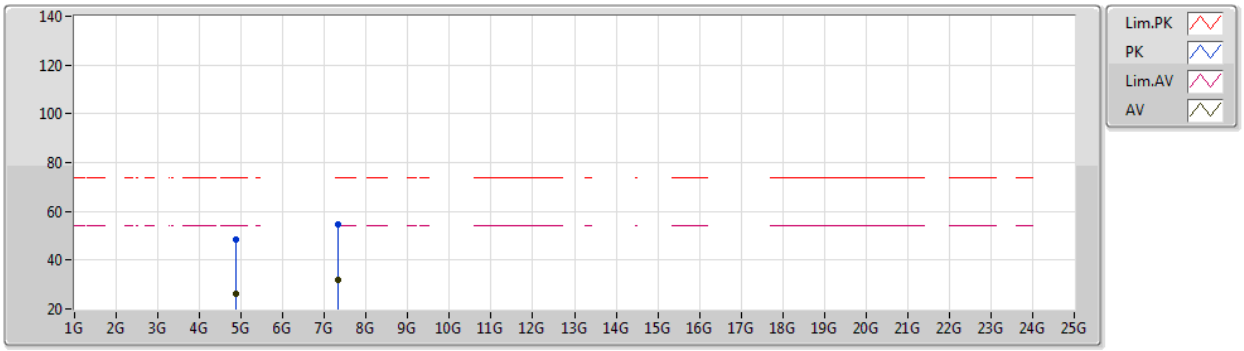


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.87966G	27.24	54.00	-26.76	8.30	3	Vertical	32	1.03	-	18.94	31.10	6.58	29.38
AV	7.3202G	31.95	54.00	-22.05	13.57	3	Vertical	191	2.16	-	18.38	36.34	7.60	30.37
PK	4.87966G	49.74	74.00	-24.26	8.30	3	Vertical	32	1.03	-	41.44	31.10	6.58	29.38
PK	7.3202G	54.45	74.00	-19.55	13.57	3	Vertical	191	2.16	-	40.88	36.34	7.60	30.37

BT-EDR(3Mbps)

2440MHz_TX

16/08/2020

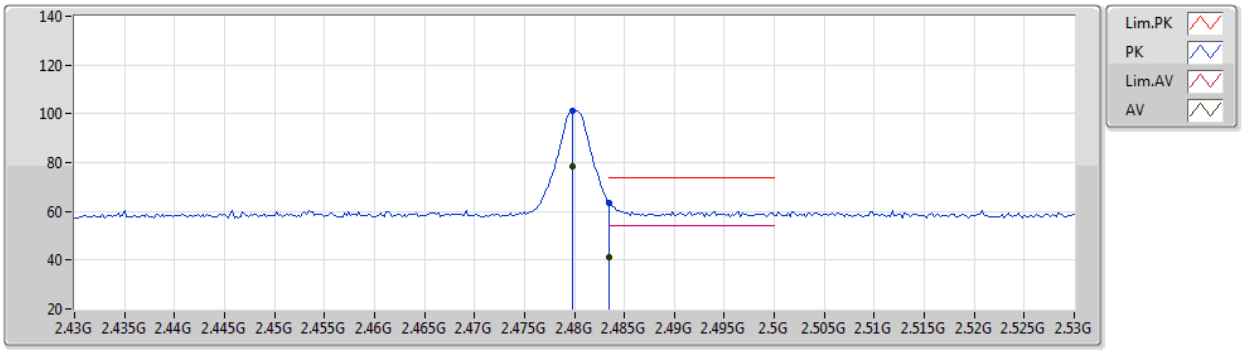


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.88038G	26.15	54.00	-27.85	8.30	3	Horizontal	30	1.16	-	17.85	31.10	6.58	29.38
AV	7.31982G	31.93	54.00	-22.07	13.57	3	Horizontal	190	1.17	-	18.36	36.34	7.60	30.37
PK	4.88038G	48.65	74.00	-25.35	8.30	3	Horizontal	30	1.16	-	40.35	31.10	6.58	29.38
PK	7.31982G	54.43	74.00	-19.57	13.57	3	Horizontal	190	1.17	-	40.86	36.34	7.60	30.37

BT-EDR(3Mbps)

2480MHz_TX

16/08/2020

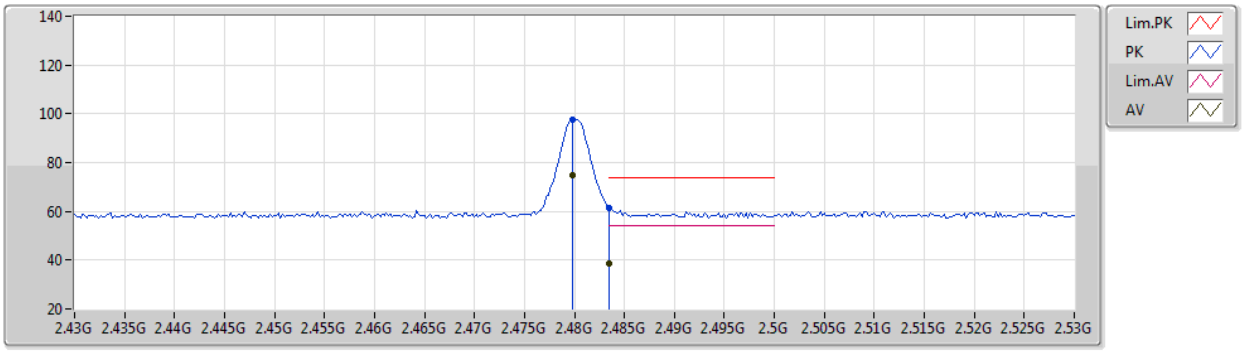


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.4798G	78.64	Inf	-Inf	31.82	3	Vertical	273	1.15	-	46.82	27.44	4.38	-
AV	2.4835G	41.17	54.00	-12.83	31.81	3	Vertical	273	1.15	-	9.36	27.43	4.38	-
PK	2.4798G	101.14	Inf	-Inf	31.82	3	Vertical	273	1.15	-	69.32	27.44	4.38	-
PK	2.4835G	63.67	74.00	-10.33	31.81	3	Vertical	273	1.15	-	31.86	27.43	4.38	-

BT-EDR(3Mbps)

2480MHz_TX

16/08/2020

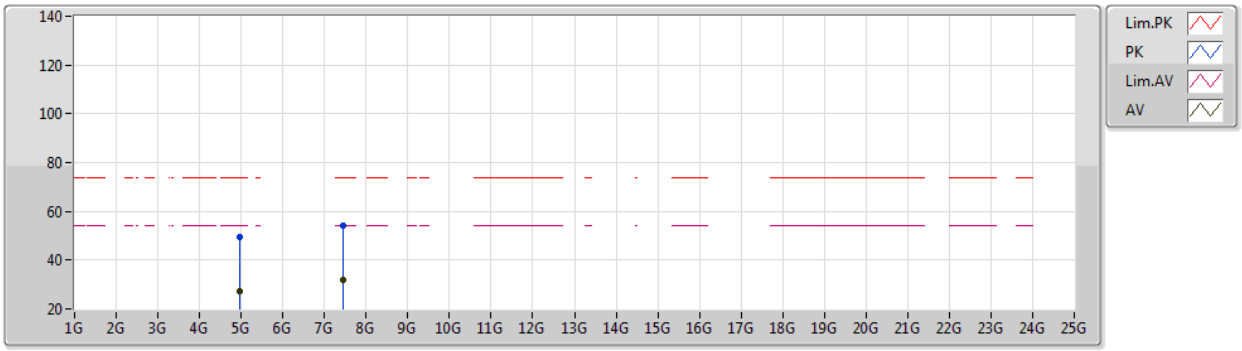


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.4798G	75.08	Inf	-Inf	31.82	3	Horizontal	192	1.19	-	43.26	27.44	4.38	-
AV	2.4835G	38.72	54.00	-15.28	31.81	3	Horizontal	192	1.19	-	6.91	27.43	4.38	-
PK	2.4798G	97.58	Inf	-Inf	31.82	3	Horizontal	192	1.19	-	65.76	27.44	4.38	-
PK	2.4835G	61.22	74.00	-12.78	31.81	3	Horizontal	192	1.19	-	29.41	27.43	4.38	-

BT-EDR(3Mbps)

2480MHz_TX

16/08/2020

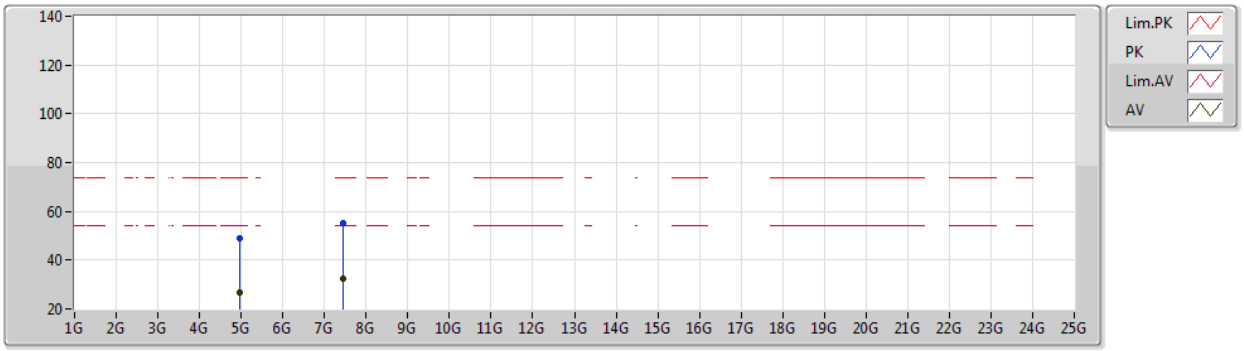


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.95994G	27.13	54.00	-26.87	8.52	3	Vertical	25	1.99	-	18.61	31.20	6.66	29.34
AV	7.44001G	31.89	54.00	-22.11	13.41	3	Vertical	354	1.01	-	18.48	36.24	7.64	30.47
PK	4.95994G	49.63	74.00	-24.37	8.52	3	Vertical	25	1.99	-	41.11	31.20	6.66	29.34
PK	7.44001G	54.39	74.00	-19.61	13.41	3	Vertical	354	1.01	-	40.98	36.24	7.64	30.47

BT-EDR(3Mbps)

2480MHz_TX

16/08/2020



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.96054G	26.53	54.00	-27.47	8.52	3	Horizontal	29	1.49	-	18.01	31.20	6.66	29.34
AV	7.43995G	32.42	54.00	-21.58	13.41	3	Horizontal	192	1.23	-	19.01	36.24	7.64	30.47
PK	4.96054G	49.03	74.00	-24.97	8.52	3	Horizontal	29	1.49	-	40.51	31.20	6.66	29.34
PK	7.43995G	54.92	74.00	-19.08	13.41	3	Horizontal	192	1.23	-	41.51	36.24	7.64	30.47