FCC Test Report

FCC ID	:	**VUI-DPCP700X**
Equipment	:	**IP Desktop Phone**
Brand Name	:	**Unify**
Model Name	:	**OpenScape Desk Phone CP700X**
Applicant	:	**PEGATRON CORPORATION 5F., NO. 76, LIGONG ST., BEITOU DISTRICT, TAIPEI CITY 11259 Taiwan**
Manufacturer	:	**PEGATRON CORPORATION 5F., NO. 76, LIGONG ST., BEITOU DISTRICT, TAIPEI CITY 11259 Taiwan**
Standard	:	**47 CFR FCC Part 15.247**

The product was received on Mar. 12, 2020, and testing was started from Mar. 22, 2020 and completed on Apr. 18, 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 report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Approved by: Allen Lin

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

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

Table of Contents

History of this test report

Report No.	Version	Description	Issued Date
FR021914AD	01	Initial issue of report	May 21, 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: Michelle Tsai

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	-	-	Printed	N/A

Ant.	Port	Gain (dBi)		
		2.4G	5G	BT
1	1	3.37	2.59	3.37

Note 1: The EUT has one antenna.

For 2.4GHz function:

For IEEE 802.11 b/g/n mode (1TX/1RX)

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

For BT function:

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

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

For 5GHz function:

For IEEE 802.11 a/n/ac mode (1TX/1RX)

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

1.1.3 EUT Information

Operational Condition				
EUT Power Type	From AC Adapter / PoE			
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)	0.434	3.63	2.898m	1k
BT-EDR(2Mbps)	0.497	3.04	2.901m	1k
BT-EDR(3Mbps)	0.498	3.03	2.903m	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 Wang	21.4~22.5°C / 58~62%	23/Mar/2020~18/Apr/2020
RF Conducted	TH06-HY	Edward Wang	20.1~24.2°C / 57~63%	23/Mar/2020~25/Mar/2020
Radiated	03CH03-HY	Jeff Lin	21.4~25.5°C / 51~61%	22/Mar/2020~16/Apr/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	CBT

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

2.3 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral
Operating Mode	CTX
1	Adapter Mode
2	PoE 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	Adapter Mode		
2	PoE Mode		
Operating Mode > 1GHz	CTX		
Orthogonal Planes of EUT	**X Plane**	**Y Plane**	**Z Plane**
			
Worst Planes of EUT			V

2.4 Accessories

Accessories		
4P4C Cable	Power Cord	4.0 meter, Non-shielded cable

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	PoE	CERIO	POE-S48G2	DoC	Note 1
2	Adapter for PoE	L.T.E	LTE36ES-S5-1	DoC	
3	AC Adapter	Salom Electric	S30122-H7726-X	DoC	
4	Bluetooth Tester (Remote)	R&S	CBT	-	-

Note 1: Support equipment was provided by customer.

Support Equipment – Radiated					
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**	**Remark**
1	AC Adapter	Salom Electric	S30122-H7726-X	DoC	Note 1
2	PoE (Remote)	CERIO	POE-S48G2	DoC	
3	Adapter for PoE (Remote)	L.T.E	LTE36ES-S5-1	DoC	
4	Bluetooth Tester (Remote)	R&S	CBT	-	-

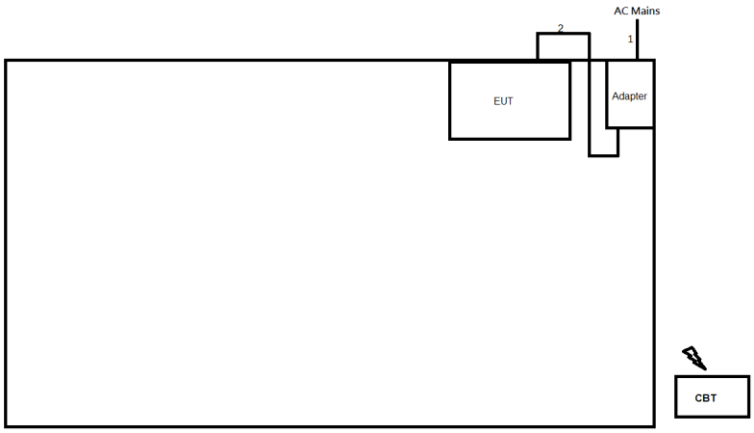
Note 1: Support equipment was provided by customer.

Support Equipment – Conducted					
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**	**Remark**
1	Notebook	DELL	E5410	DoC	-
2	Adapter for NB	DELL	HA65NM130	DoC	-
3	Bluetooth Tester	R&S	CBT	-	-
4	Fixture	-	-	-	Note 1

Note 1: Support equipment was provided by customer.

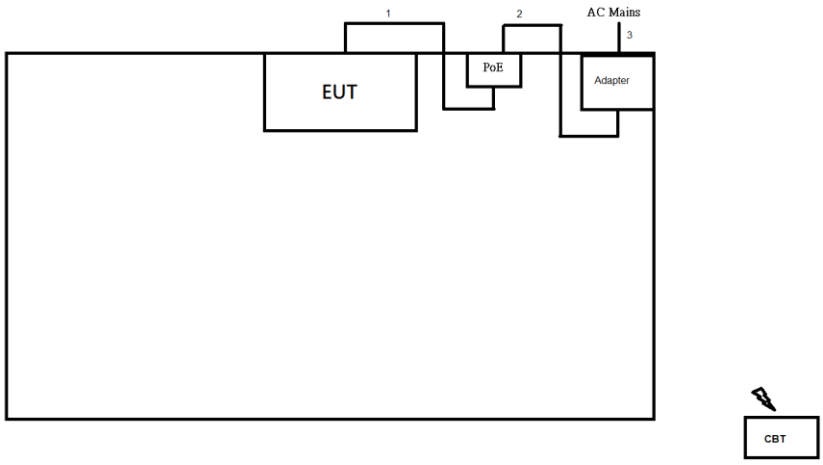
2.6 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test (Adapter Mode)



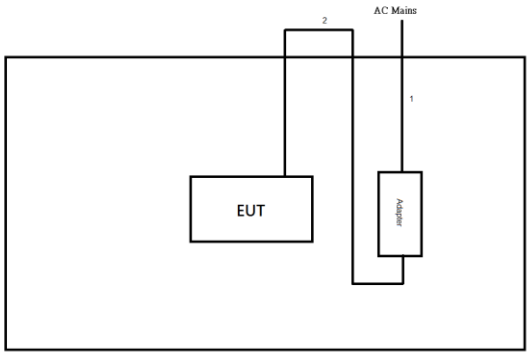
Item	Connection	Shielded	Length(m)	Remark
1	AC Power Cable	No	1.5	-
2	RJ-11 Cable	No	2.0	-

Test Setup Diagram – AC Line Conducted Emission Test (PoE Mode)



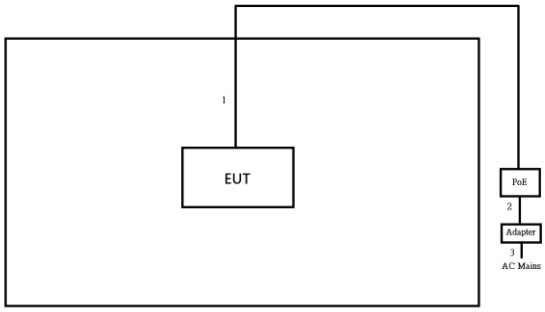
Item	Connection	Shielded	Length(m)	Remark
1	RJ45 cable	No	10.0	-
2	DC Power cable	No	1.8	-
3	AC Power cable	No	1.8	-

Test Setup Diagram - Radiated Test (Adapter Mode)



Item	Connection	Shielded	Length(m)	Remark
1	AC Power Cable	No	1.5	-
2	RJ-11 Cable	No	2.0	-

Test Setup Diagram - Radiated Test (PoE Mode)



Item	Connection	Shielded	Length(m)	Remark
1	RJ45 cable	No	10.0	-
2	DC Power cable	No	1.8	-
3	AC Power cable	No	1.8	-

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

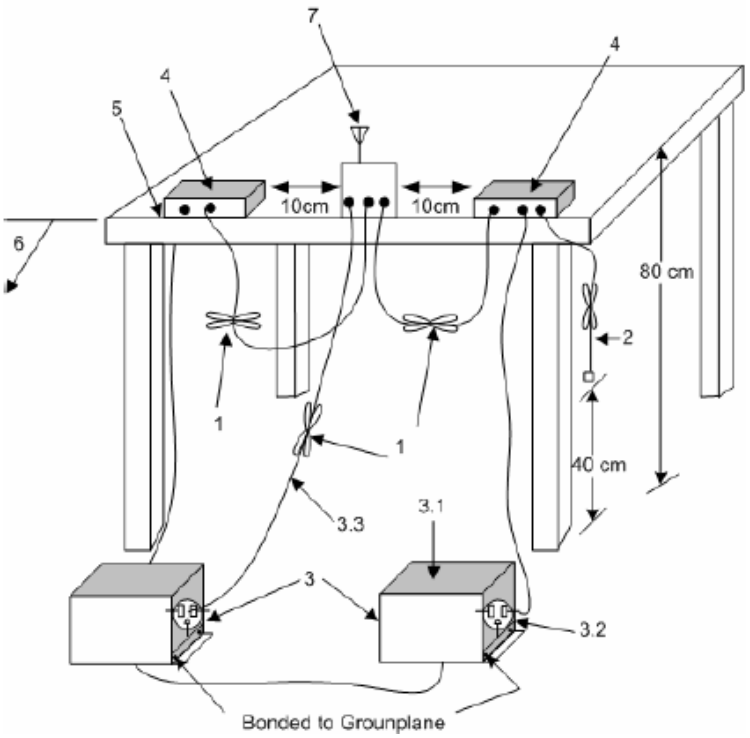
Refer a test equipment and calibration data table in this test report.

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 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 50Ωloads. 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.

3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 20dB Bandwidth and Carrier Frequency Separation

3.2.1 20dB Bandwidth and Carrier Frequency Separation Limit

20dB Bandwidth and Carrier Frequency Separation Limit for Frequency Hopping Systems	
▪ 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	

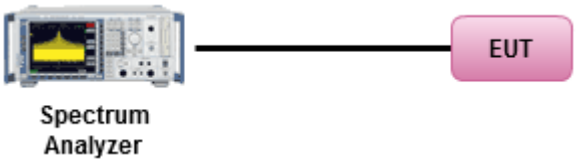
3.2.2 Measuring Instruments

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

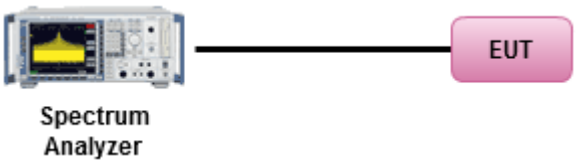
3.4.3 Measuring Instruments

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	

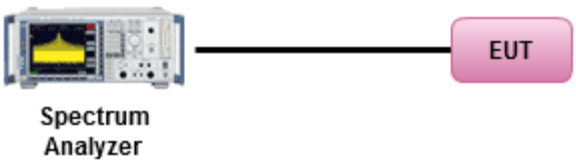
3.5.2 Measuring Instruments

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.	

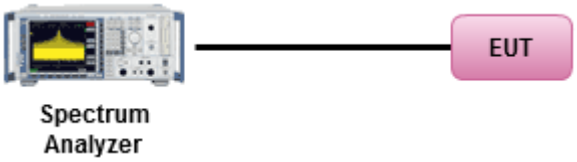
3.6.2 Measuring Instruments

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.

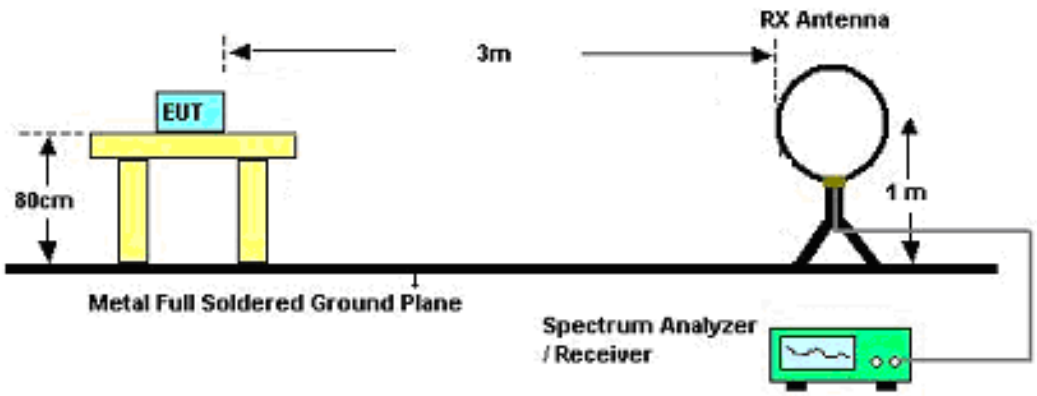
3.7.2 Measuring Instruments

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

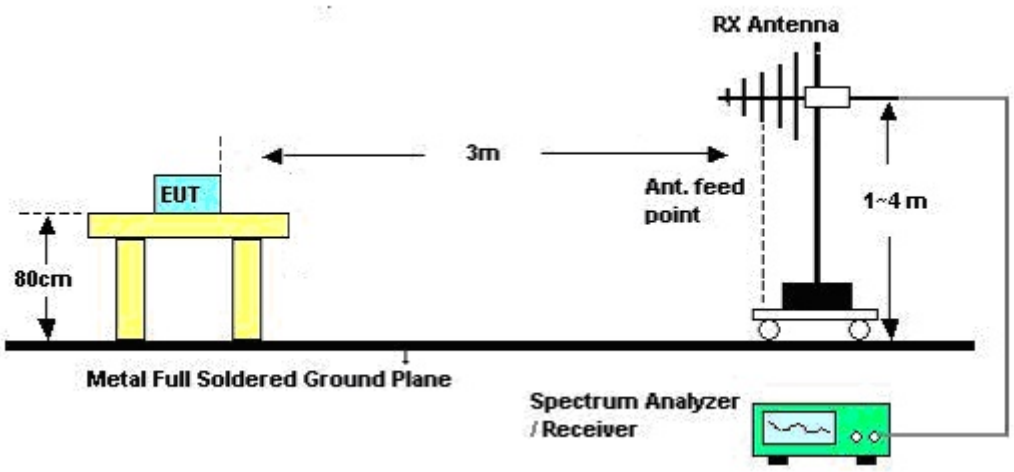
3.7.3 Test Procedures

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.

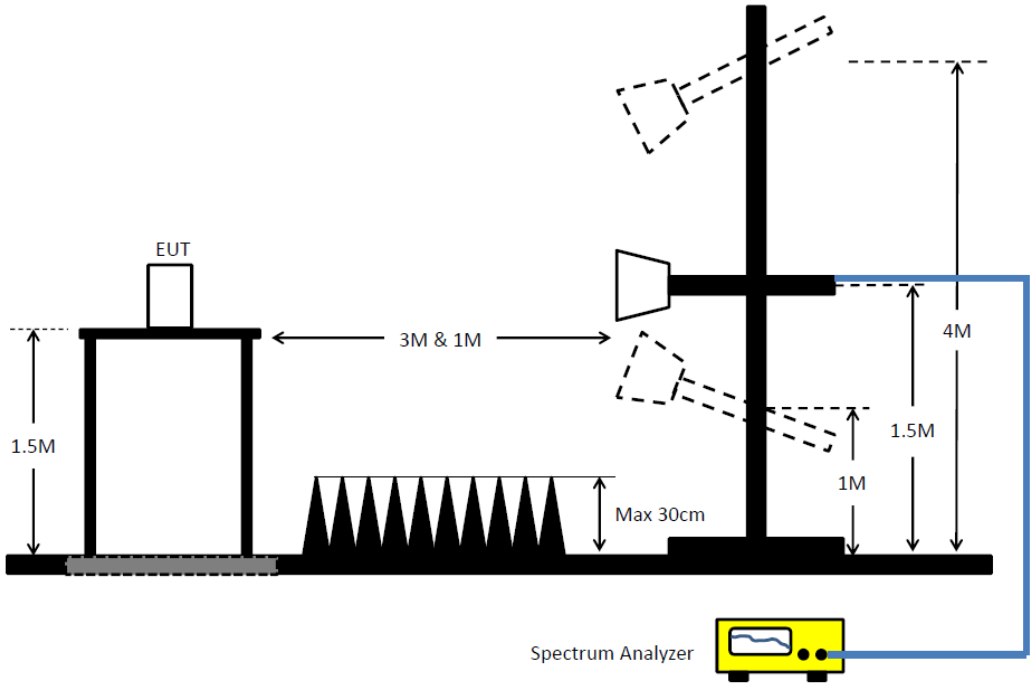
3.7.4 Test Setup

Emissions in Restricted Frequency Bands
9kHz ~30MHz


30MHz~1GHz



Above 1GHz



3.7.5 Test Result of Emissions in Restricted Frequency Bands (Below 30MHz)

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

3.7.6 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix G

4 Test Equipment and Calibration Data

Instrument for AC Conduction

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
EMC Receiver	R&S	ESR3	102051	9kHz ~ 3.6GHz	28/May/2019	27/May/2020
LISN	R&S	ENV216	101295	9kHz ~ 30MHz	04/Nov/2019	05/Nov/2020
RF Cable-CON	MTJ	RG142	CB002-CO	9kHz ~ 200MHz	12/Sep/2019	11/Sep/2020
AC POWER	APC	AFC-11005G	F310050055	47Hz~63Hz 5~300V	NCR	NCR
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9 kHz ~ 30 MHz	24/Sep/2019	23/Sep/2020

NCR : Non-Calibration Require

Instrument for Radiated Test

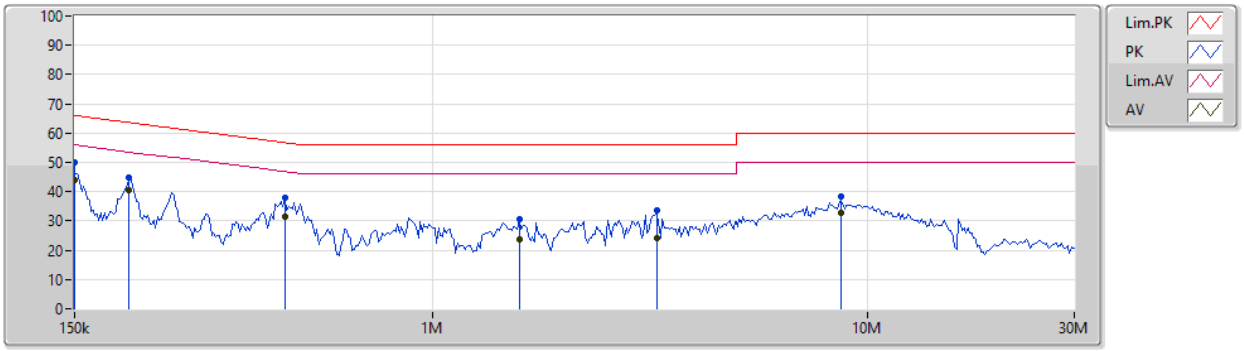
Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30MHz ~ 1GHz 3m	30/Aug/2019	29/Aug/2020
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	1GHz ~ 18GHz 3m	30/Aug/2019	29/Aug/2020
Amplifier	HP	8447D	2944A08033	10kHz ~ 1.3GHz	14/Apr/2020	13/Apr/2021
Amplifier	HP	8447D	2944A08033	10kHz ~ 1.3GHz	22/Apr/2019	21/Apr/2020
EMI Test Receiver	R&S	ESR3	102051	9kHz ~ 3.6GHz	28/May/2019	27/May/2020
Bilog Antenna & 5dB Attenuator	SCHAFFNER / MTJ	CBL 6112D / MTJ6102-05	2723 / 2	30MHz ~ 1GHz	28/Feb/2020	27/Feb/2021
Microwave System Preamplifier	KEYSIGHT	83017A	MY53270196	1GHz ~ 26.5GHz	09/Sep/2019	08/Sep/2020
Signal Analyzer	R&S	FSV40	101500	10Hz ~ 40GHz	15/Aug/2019	14/Aug/2020
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz ~ 1GHz	18/Mar/2020	17/Mar/2021
RF CABLE 5+6m	HUBER+SUHNER	SUOFLEX 104	SN 805801/4+SN 804300/4	1GHz ~ 40GHz	18/Mar/2020	17/Mar/2021
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170614	18GHz~40GHz	22/May/2019	21/May/2020
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1543	1GHz ~ 18GHz	02/Jun/2019	01/Jun/2020
Preamplifier	MITEQ	TTA1840-35-H G	1864481	18GHz ~ 40GHz	10/Mar/2020	09/Mar/2021
Loop Antenna	TESEQ	HLA 6120	31244	9kHz ~ 30MHz	16/Mar/2020	15/Mar/2021

Instrument for Conducted Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV 40	101029	10kHz ~ 40GHz	01/Oct/2019	30/Sep/2020
Pulse Power 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
SMB100A Signal Generator	R&S	SMB100A03	181147	100kHz~40GHz	12/Nov/2018	10/Nov/2020

AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Neutral
Operating Function	Adapter Mode		

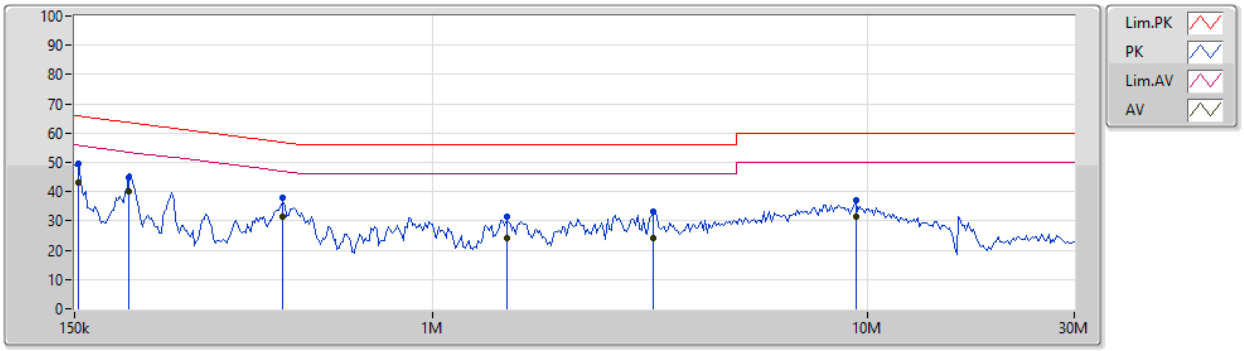
23/03/2020



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	150k	49.82	66.00	-16.18	19.63	Neutral	-	30.19	9.65	0.11	9.87
AV	150k	44.05	56.00	-11.95	19.63	Neutral	"Worst"	24.42	9.65	0.11	9.87
QP	200.176k	44.98	63.61	-18.63	19.62	Neutral	-	25.36	9.64	0.11	9.87
AV	200.176k	40.58	53.61	-13.03	19.62	Neutral	-	20.96	9.64	0.11	9.87
QP	457.178k	37.96	56.75	-18.79	19.63	Neutral	-	18.33	9.63	0.13	9.87
AV	457.178k	31.33	46.75	-15.42	19.63	Neutral	-	11.70	9.63	0.13	9.87
QP	1.586M	30.64	56.00	-25.36	19.65	Neutral	-	10.99	9.64	0.14	9.87
AV	1.586M	23.74	46.00	-22.26	19.65	Neutral	-	4.09	9.64	0.14	9.87
QP	3.279M	33.73	56.00	-22.27	19.72	Neutral	-	14.01	9.66	0.18	9.88
AV	3.279M	24.08	46.00	-21.92	19.72	Neutral	-	4.36	9.66	0.18	9.88
QP	8.694M	38.16	60.00	-21.84	19.83	Neutral	-	18.33	9.69	0.26	9.88
AV	8.694M	32.55	50.00	-17.45	19.83	Neutral	-	12.72	9.69	0.26	9.88

AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Line
Operating Function	Adapter Mode		

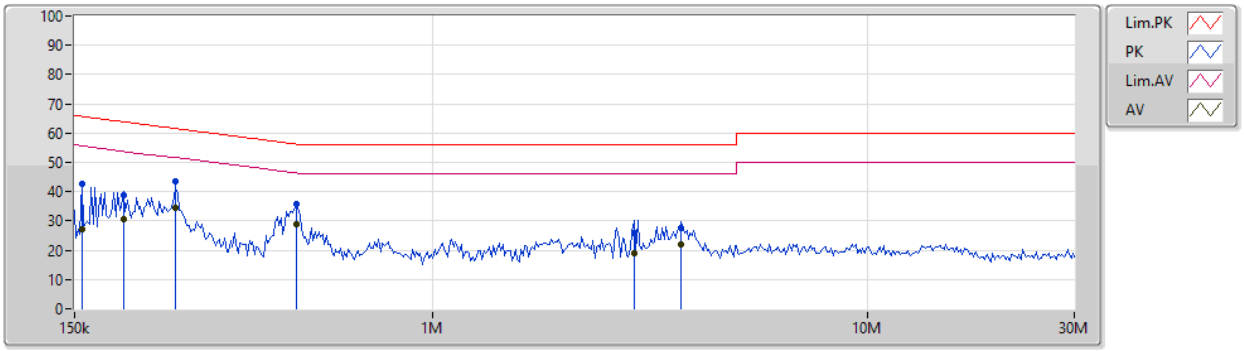
23/03/2020



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	153.015k	49.68	65.83	-16.15	19.64	Line	-	30.04	9.66	0.11	9.87
AV	153.015k	43.02	55.83	-12.81	19.64	Line	"Worst"	23.38	9.66	0.11	9.87
QP	200.176k	45.01	63.61	-18.60	19.63	Line	-	25.38	9.65	0.11	9.87
AV	200.176k	40.08	53.61	-13.53	19.63	Line	-	20.45	9.65	0.11	9.87
QP	452.651k	37.96	56.82	-18.86	19.64	Line	-	18.32	9.64	0.13	9.87
AV	452.651k	31.33	46.82	-15.49	19.64	Line	-	11.69	9.64	0.13	9.87
QP	1.479M	31.26	56.00	-24.74	19.65	Line	-	11.61	9.65	0.13	9.87
AV	1.479M	24.20	46.00	-21.80	19.65	Line	-	4.55	9.65	0.13	9.87
QP	3.214M	33.31	56.00	-22.69	19.72	Line	-	13.59	9.66	0.18	9.88
AV	3.214M	24.06	46.00	-21.94	19.72	Line	-	4.34	9.66	0.18	9.88
QP	9.414M	37.05	60.00	-22.95	19.83	Line	-	17.22	9.69	0.26	9.88
AV	9.414M	31.68	50.00	-18.32	19.83	Line	-	11.85	9.69	0.26	9.88

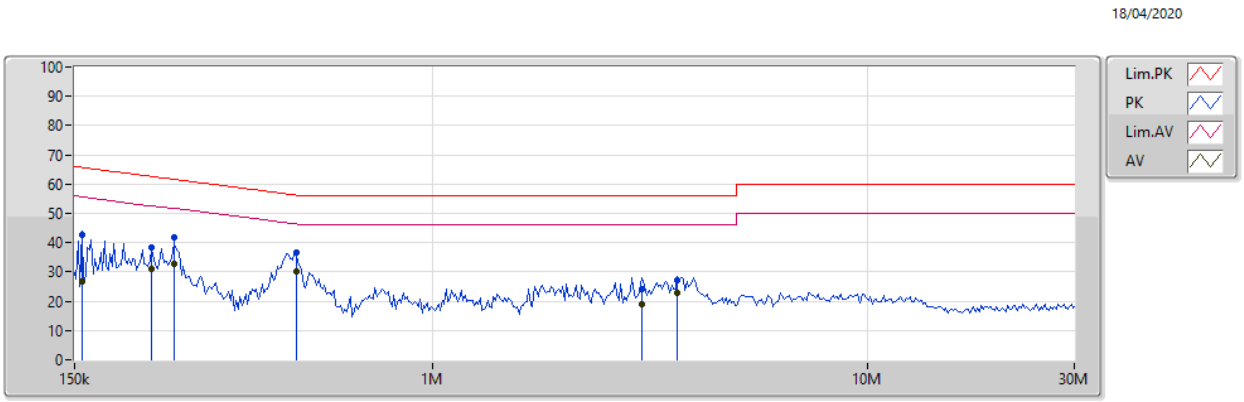
AC Power-line Conducted Emissions Result			
Operating Mode	2	**Power Phase**	Neutral
Operating Function	PoE Mode		

18/04/2020



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	156.091k	42.78	65.67	-22.89	19.63	Neutral	-	23.15	9.65	0.11	9.87
AV	156.091k	27.22	55.67	-28.45	19.63	Neutral	-	7.59	9.65	0.11	9.87
QP	194.288k	38.64	63.86	-25.22	19.62	Neutral	-	19.02	9.64	0.11	9.87
AV	194.288k	30.50	53.86	-23.36	19.62	Neutral	-	10.88	9.64	0.11	9.87
QP	256.712k	43.57	61.54	-17.97	19.63	Neutral	-	23.94	9.64	0.12	9.87
AV	256.712k	34.34	51.54	-17.20	19.63	Neutral	"Worst"	14.71	9.64	0.12	9.87
QP	485.303k	35.98	56.25	-20.27	19.63	Neutral	-	16.35	9.63	0.13	9.87
AV	485.303k	29.04	46.25	-17.21	19.63	Neutral	-	9.41	9.63	0.13	9.87
QP	2.91M	26.01	56.00	-29.99	19.71	Neutral	-	6.30	9.66	0.17	9.88
AV	2.91M	18.88	46.00	-27.12	19.71	Neutral	-	-0.83	9.66	0.17	9.88
QP	3.732M	27.58	56.00	-28.42	19.72	Neutral	-	7.86	9.66	0.18	9.88
AV	3.732M	22.09	46.00	-23.91	19.72	Neutral	-	2.37	9.66	0.18	9.88

AC Power-line Conducted Emissions Result			
Operating Mode	2	**Power Phase**	Line
Operating Function	PoE Mode		



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	156.091k	42.61	65.67	-23.06	19.64	Line	-	22.97	9.66	0.11	9.87
AV	156.091k	26.74	55.67	-28.93	19.64	Line	-	7.10	9.66	0.11	9.87
QP	225.563k	38.26	62.62	-24.36	19.64	Line	-	18.62	9.65	0.12	9.87
AV	225.563k	31.15	52.62	-21.47	19.64	Line	-	11.51	9.65	0.12	9.87
QP	254.17k	41.77	61.62	-19.85	19.64	Line	-	22.13	9.65	0.12	9.87
AV	254.17k	32.74	51.62	-18.88	19.64	Line	-	13.10	9.65	0.12	9.87
QP	485.303k	36.81	56.25	-19.44	19.64	Line	-	17.17	9.64	0.13	9.87
AV	485.303k	30.08	46.25	-16.17	19.64	Line	"Worst"	10.44	9.64	0.13	9.87
QP	3.028M	24.02	56.00	-31.98	19.71	Line	-	4.31	9.66	0.17	9.88
AV	3.028M	19.03	46.00	-26.97	19.71	Line	-	-0.68	9.66	0.17	9.88
QP	3.658M	27.17	56.00	-28.83	19.72	Line	-	7.45	9.66	0.18	9.88
AV	3.658M	22.77	46.00	-23.23	19.72	Line	-	3.05	9.66	0.18	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)	922.5k	908.296k	908KF1D	920k	894.553k
BT-EDR(2Mbps)	1.326M	1.226M	1M23G1D	1.315M	1.222M
BT-EDR(3Mbps)	1.366M	1.231M	1M23G1D	1.336M	1.226M

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

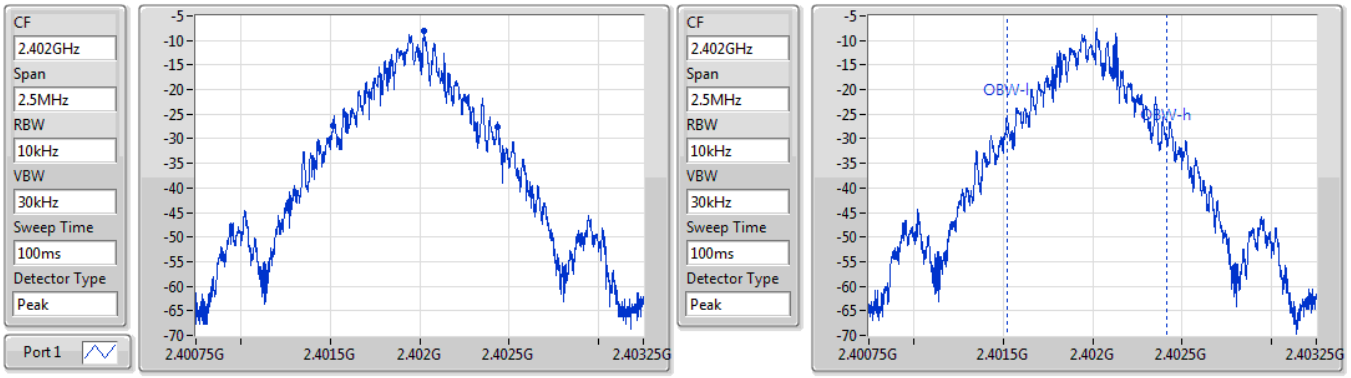
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	Inf	922.5k	894.553k
2440MHz	Pass	Inf	921.25k	908.296k
2480MHz	Pass	Inf	920k	895.802k
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.315M	1.223M
2440MHz	Pass	Inf	1.326M	1.222M
2480MHz	Pass	Inf	1.319M	1.226M
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.34M	1.226M
2440MHz	Pass	Inf	1.336M	1.231M
2480MHz	Pass	Inf	1.366M	1.228M

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

BT-BR(1Mbps) EBW

2402MHz

25/03/2020

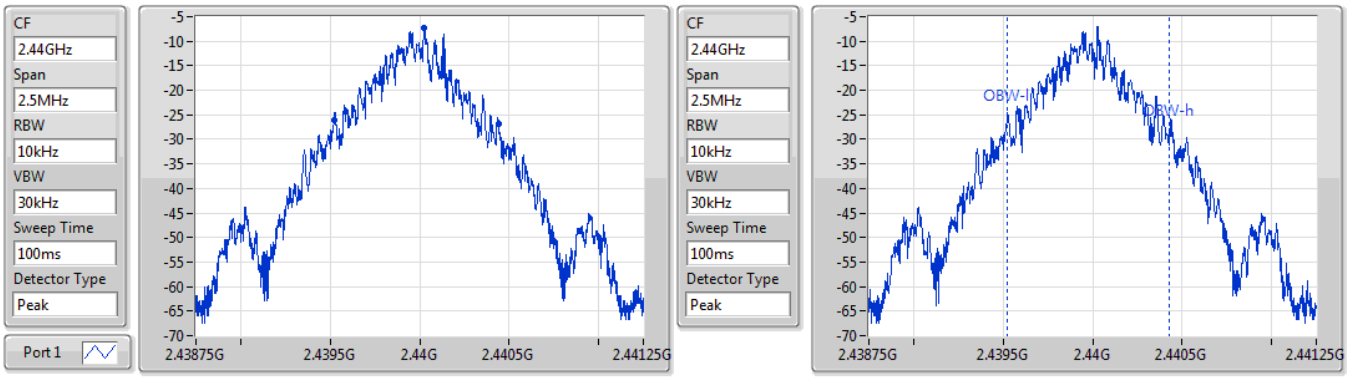


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
922.5k	2.401515G	2.402438G	894.553k	2.401521G	2.402416G	Inf	1

BT-BR(1Mbps) EBW

2440MHz

25/03/2020

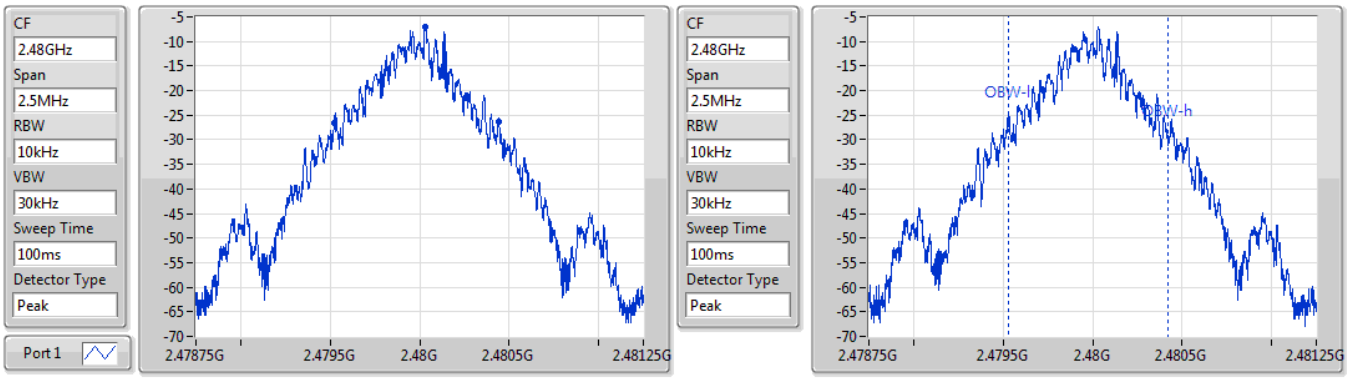


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
921.25k	2.43952G	2.440441G	908.296k	2.43952G	2.440429G	Inf	1

BT-BR(1Mbps) EBW

2480MHz

25/03/2020

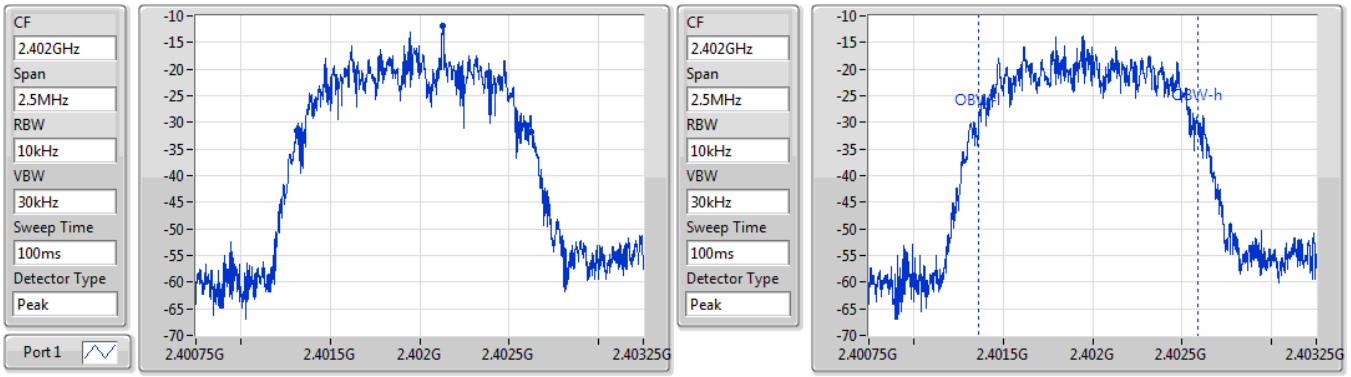


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
920k	2.479524G	2.480444G	895.802k	2.479526G	2.480422G	Inf	1

BT-EDR(2Mbps) EBW

2402MHz

25/03/2020

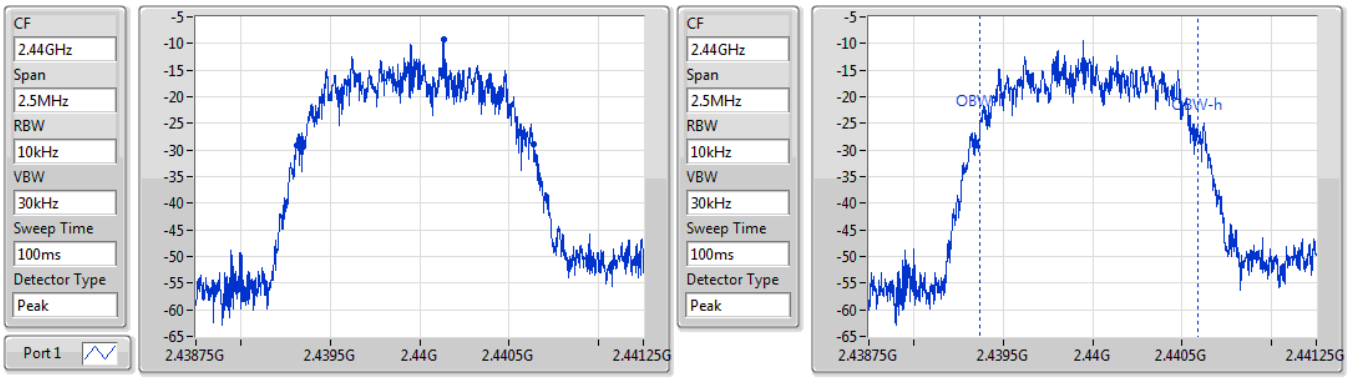


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.315M	2.401311G	2.402626G	1.223M	2.401363G	2.402586G	Inf	1

BT-EDR(2Mbps) EBW

2440MHz

25/03/2020

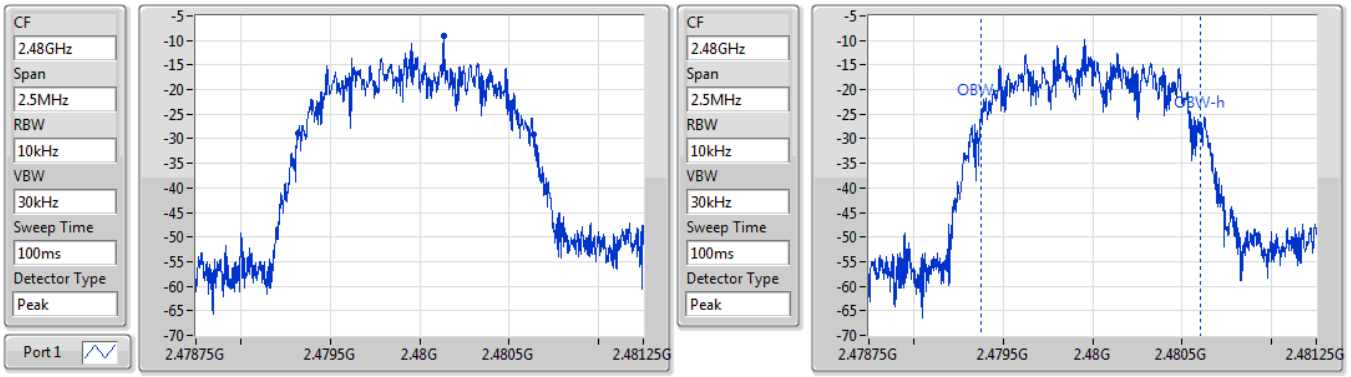


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.326M	2.439311G	2.440638G	1.222M	2.439369G	2.440591G	Inf	1

BT-EDR(2Mbps) EBW

2480MHz

25/03/2020

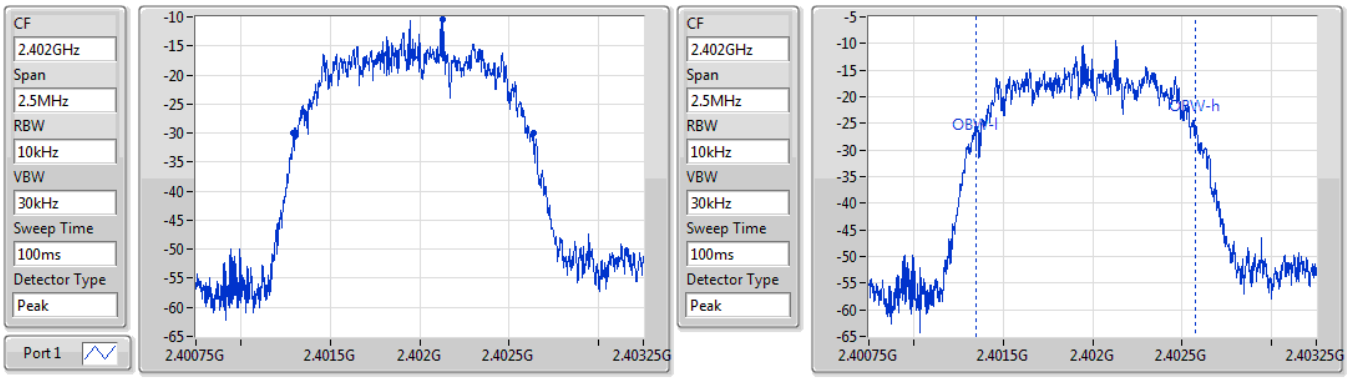


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.319M	2.479319G	2.480638G	1.226M	2.479377G	2.480602G	Inf	1

BT-EDR(3Mbps) EBW

2402MHz

25/03/2020

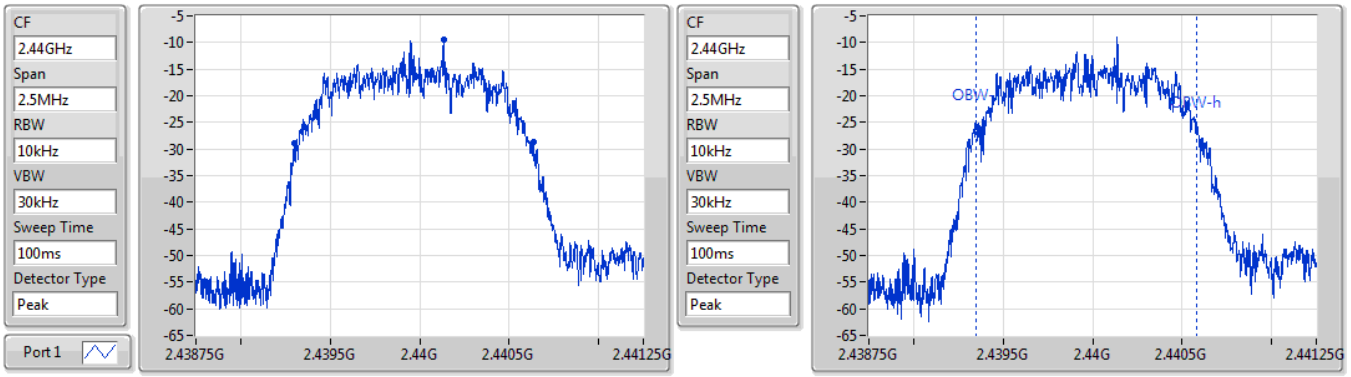


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.34M	2.401294G	2.402634G	1.226M	2.40135G	2.402576G	Inf	1

BT-EDR(3Mbps) EBW

2440MHz

25/03/2020

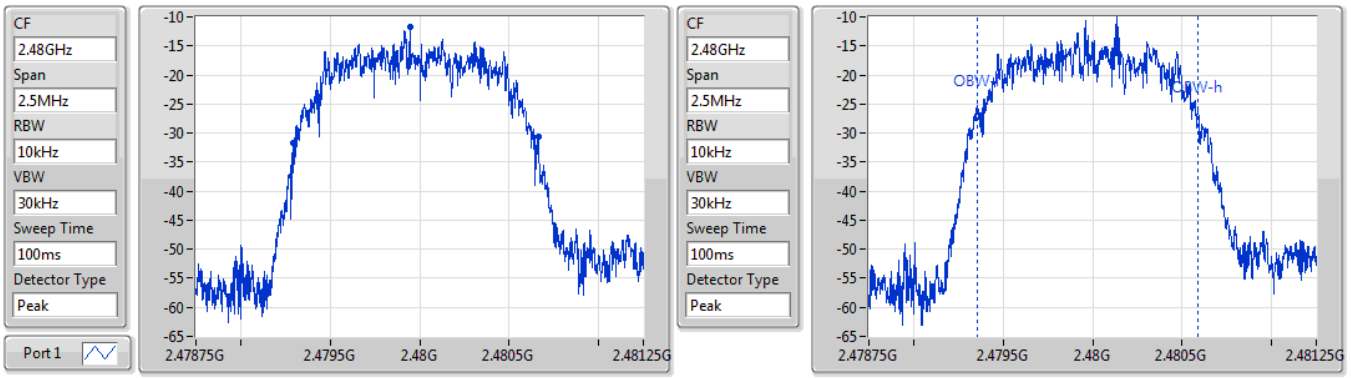


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.336M	2.4393G	2.440636G	1.231M	2.439352G	2.440582G	Inf	1

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

2480MHz

25/03/2020



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.366M	2.479296G	2.480663G	1.228M	2.479358G	2.480586G	Inf	1

Summary

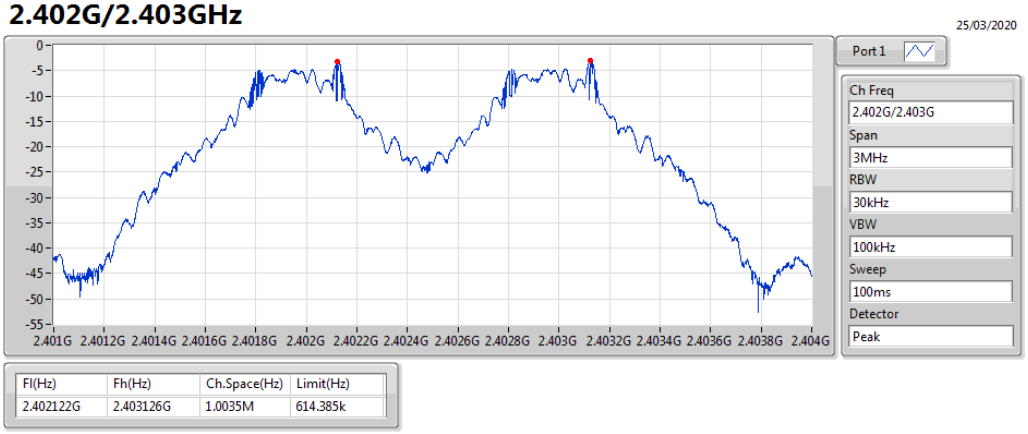
Mode	Max-Space (Hz)	Min-Space (Hz)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	1.0035M	1.0005M
BT-EDR(2Mbps)	1.0065M	997.5k
BT-EDR(3Mbps)	1.002M	993k

Result

Mode	Result	Fl (Hz)	Fh (Hz)	Ch.Space (Hz)	Limit (Hz)
BT-BR(1Mbps)	-	-	-	-	-
2402MHz	Pass	2.402122G	2.403126G	1.0035M	614.385k
2440MHz	Pass	2.44013G	2.441132G	1.002M	613.5525k
2480MHz	Pass	2.479133G	2.480133G	1.0005M	612.72k
BT-EDR(2Mbps)	-	-	-	-	-
2402MHz	Pass	2.402125G	2.403132G	1.0065M	875.79k
2440MHz	Pass	2.440131G	2.441129G	997.5k	883.116k
2480MHz	Pass	2.479134G	2.480136G	1.002M	878.454k
BT-EDR(3Mbps)	-	-	-	-	-
2402MHz	Pass	2.402121G	2.403123G	1.002M	846.486k
2440MHz	Pass	2.44013G	2.441132G	1.002M	909.09k
2480MHz	Pass	2.479137G	2.48013G	993k	909.756k

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

2.402G/2.403GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.402122G	2.403126G	1.0035M	614.385k

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

2.44G/2.441GHz

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.44013G	2.441132G	1.002M	613.5525k

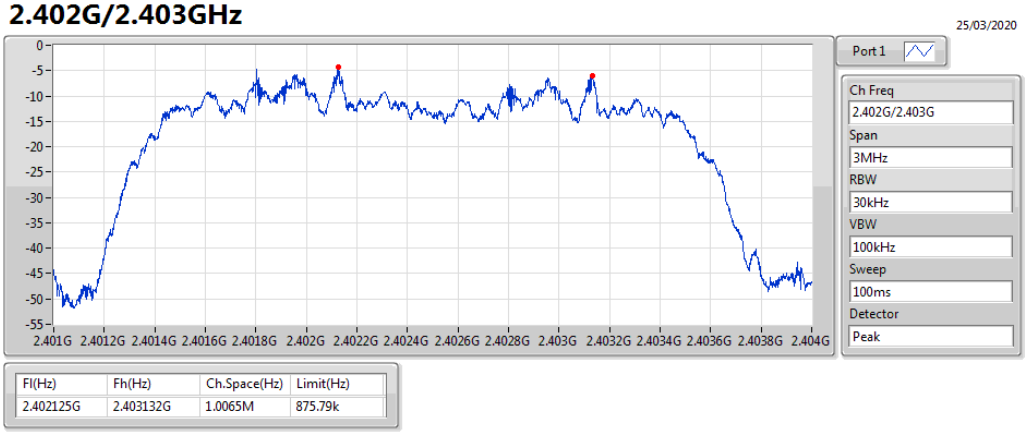
BT-BR(1Mbps) **Channel Separation**

2.48G/2.479GHz

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.479133G	2.480133G	1.0005M	612.72k

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

2.402G/2.403GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.402125G	2.403132G	1.0065M	875.79k

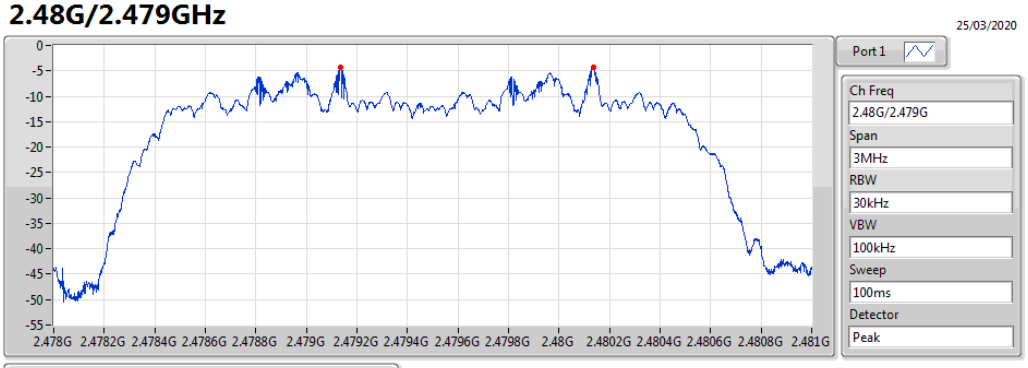
BT-EDR(2Mbps) **Channel Separation**

2.44G/2.441GHz

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.440131G	2.441129G	997.5k	883.116k

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

2.48G/2.479GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.479134G	2.480136G	1.002M	878.454k

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

2.402G/2.403GHz

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.402121G	2.403123G	1.002M	846.486k

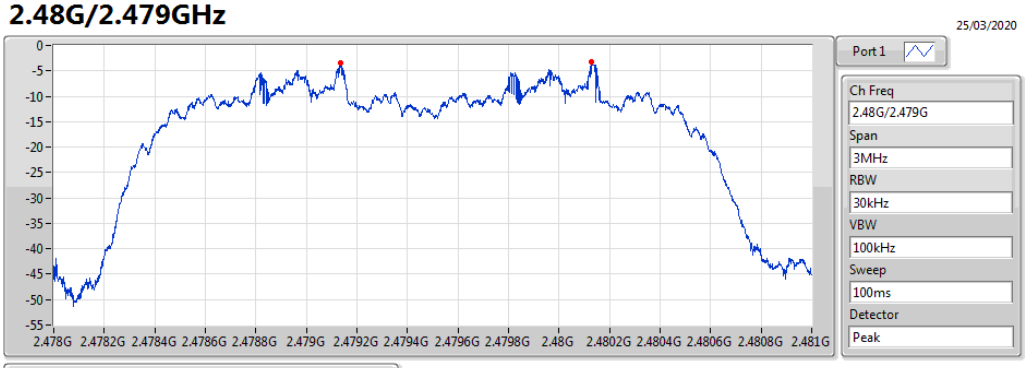
BT-EDR(3Mbps) **Channel Separation**

2.44G/2.441GHz

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.44013G	2.441132G	1.002M	909.09k

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

2.48G/2.479GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.479137G	2.48013G	993k	909.756k

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	0.58	0.00114
BT-EDR(2Mbps)	1.94	0.00156
BT-EDR(3Mbps)	2.07	0.00161

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	3.37	-0.28	21.00
2440MHz	Pass	3.37	0.25	21.00
2480MHz	Pass	3.37	0.58	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	3.37	1.17	21.00
2440MHz	Pass	3.37	1.57	21.00
2480MHz	Pass	3.37	1.94	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	3.37	0.72	21.00
2440MHz	Pass	3.37	1.65	21.00
2480MHz	Pass	3.37	2.07	21.00

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

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	-0.37	0.00092
BT-EDR(2Mbps)	-0.74	0.00084
BT-EDR(3Mbps)	-0.63	0.00086

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	3.37	-1.34	21.00
2440MHz	Pass	3.37	-0.83	21.00
2480MHz	Pass	3.37	-0.37	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	3.37	-1.56	21.00
2440MHz	Pass	3.37	-1.26	21.00
2480MHz	Pass	3.37	-0.74	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	3.37	-2.26	21.00
2440MHz	Pass	3.37	-1.18	21.00
2480MHz	Pass	3.37	-0.63	21.00

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

Summary

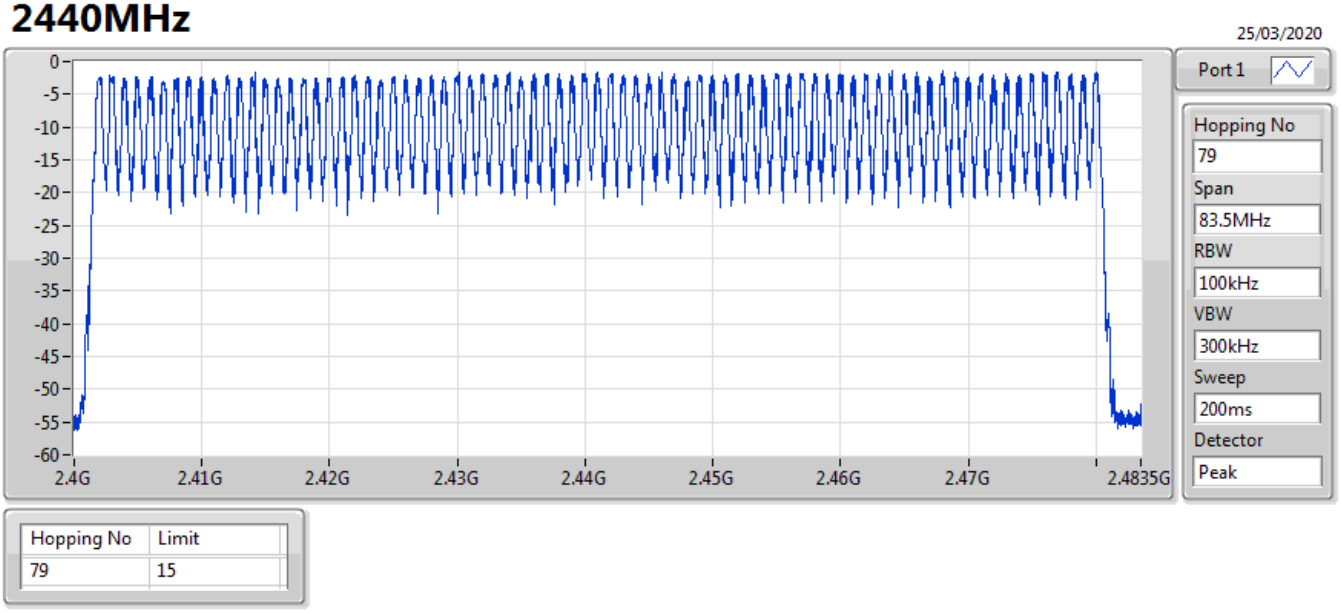
Mode	Max-Hop No
2.4-2.4835GHz	-
BT-BR(1Mbps)	79
BT-EDR(2Mbps)	79
BT-EDR(3Mbps)	79

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 Ch**

2440MHz

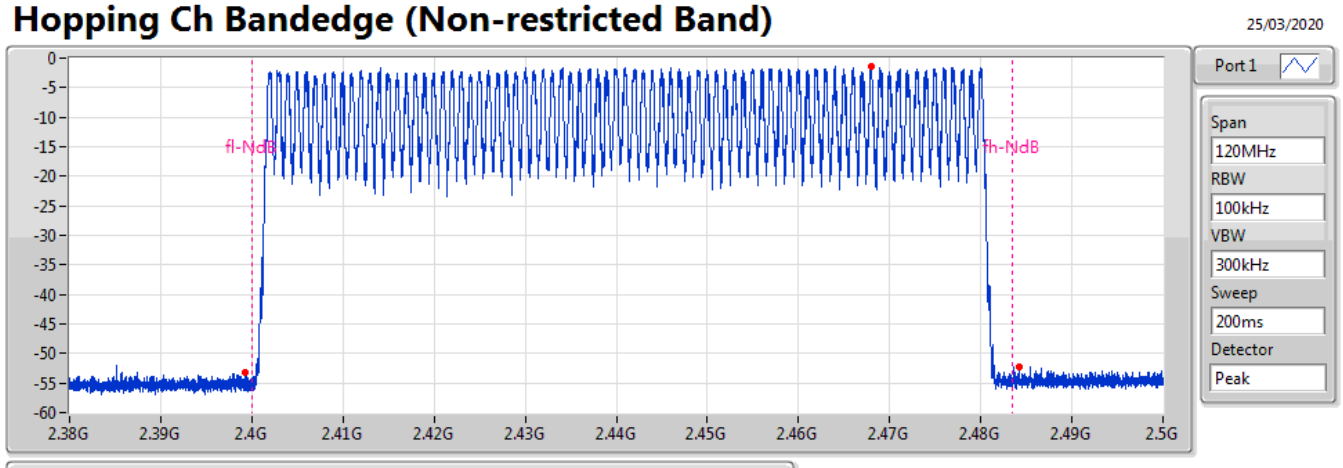


Hopping No	Limit
79	15

BT-BR(1Mbps)

2440MHz

Hopping Ch Bandedge (Non-restricted Band)

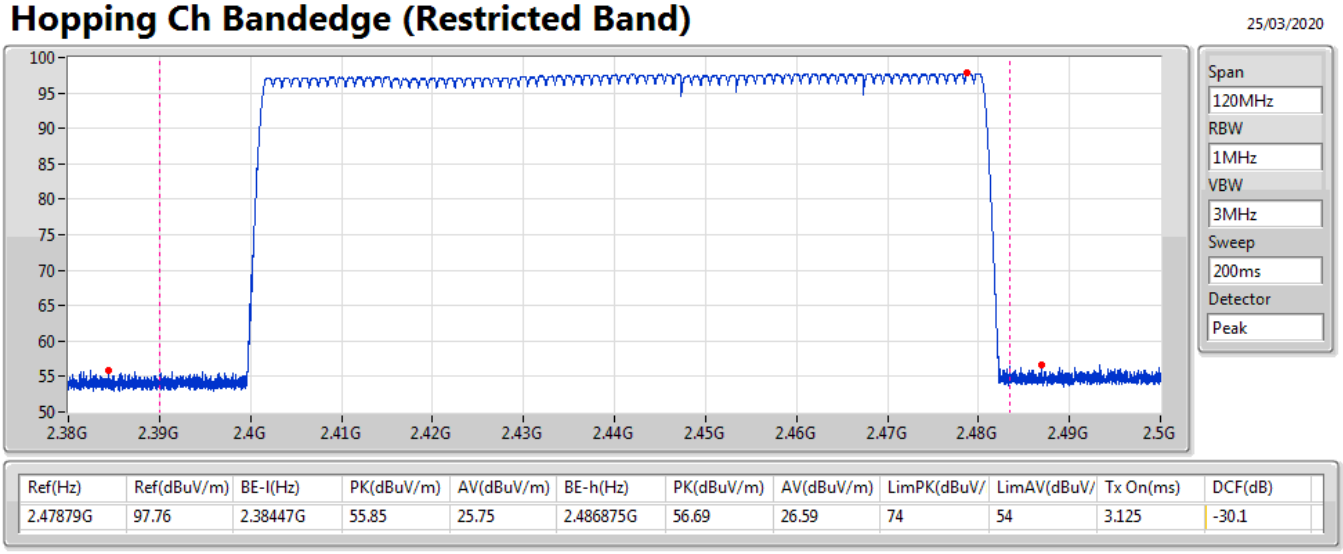


Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-21.49	2.467975G	-1.49	2.399305G	-53.25	2.484265G	-52.33

BT-BR(1Mbps)

2440MHz

Hopping Ch Bandedge (Restricted Band)

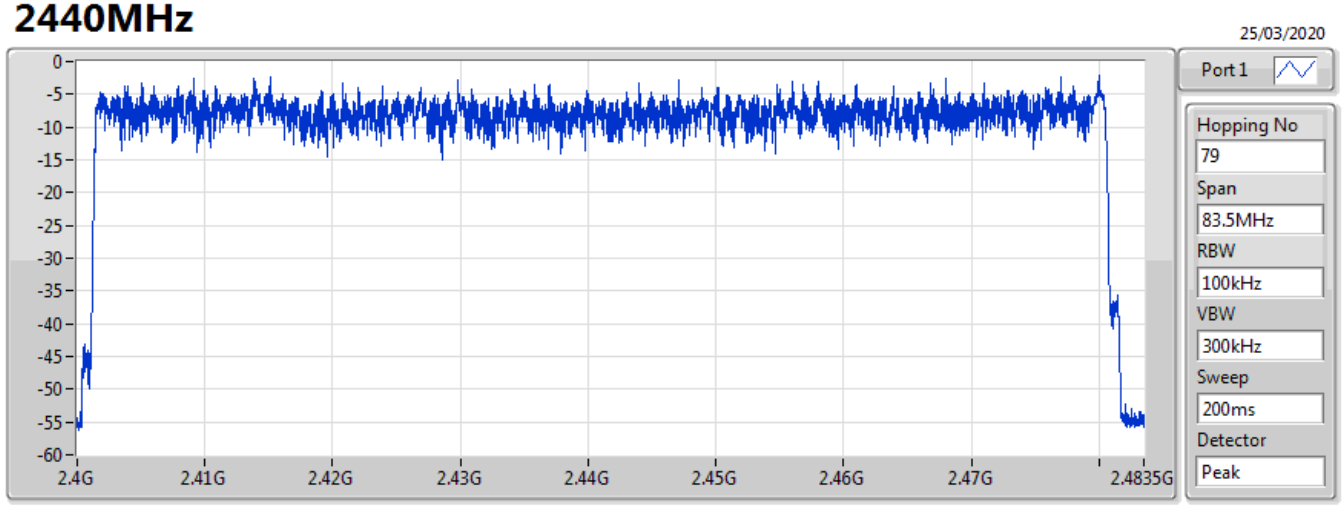


Ref(Hz)	Ref(dBuV/m)	BE-l(Hz)	PK(dBuV/m)	AV(dBuV/m)	BE-h(Hz)	PK(dBuV/m)	AV(dBuV/m)	LimPK(dBuV/	LimAV(dBuV/	Tx On(ms)	DCF(dB)
2.47879G	97.76	2.38447G	55.85	25.75	2.486875G	56.69	26.59	74	54	3.125	-30.1

BT-EDR(2Mbps)

2440MHz

Hopping Ch

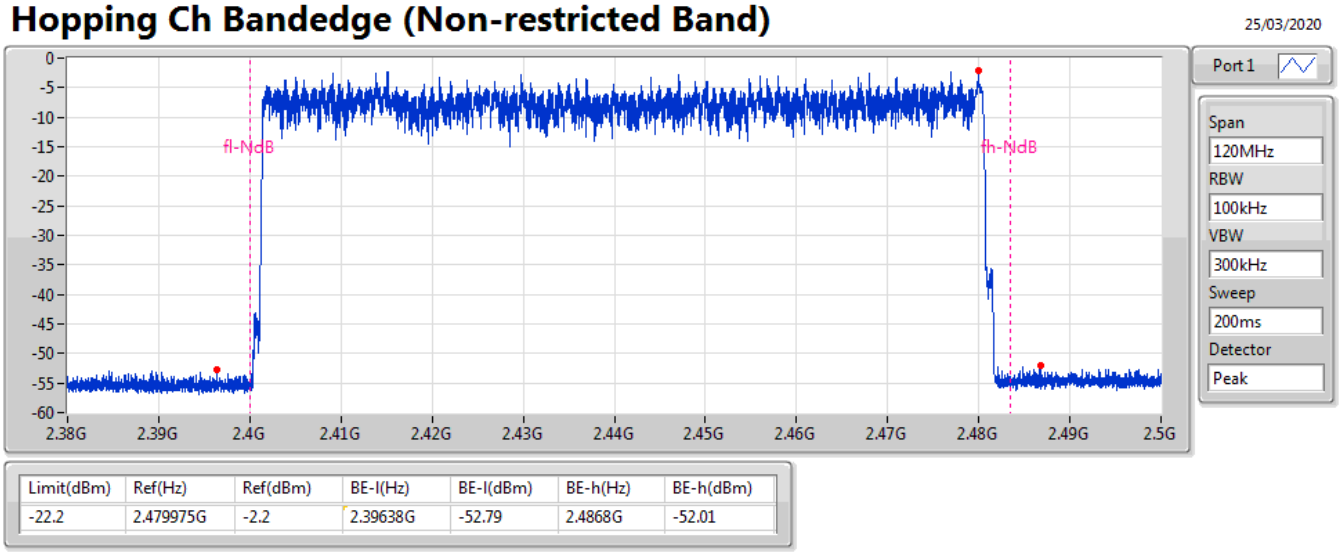


Hopping No	Limit
79	15

BT-EDR(2Mbps)

2440MHz

Hopping Ch Bandedge (Non-restricted Band)

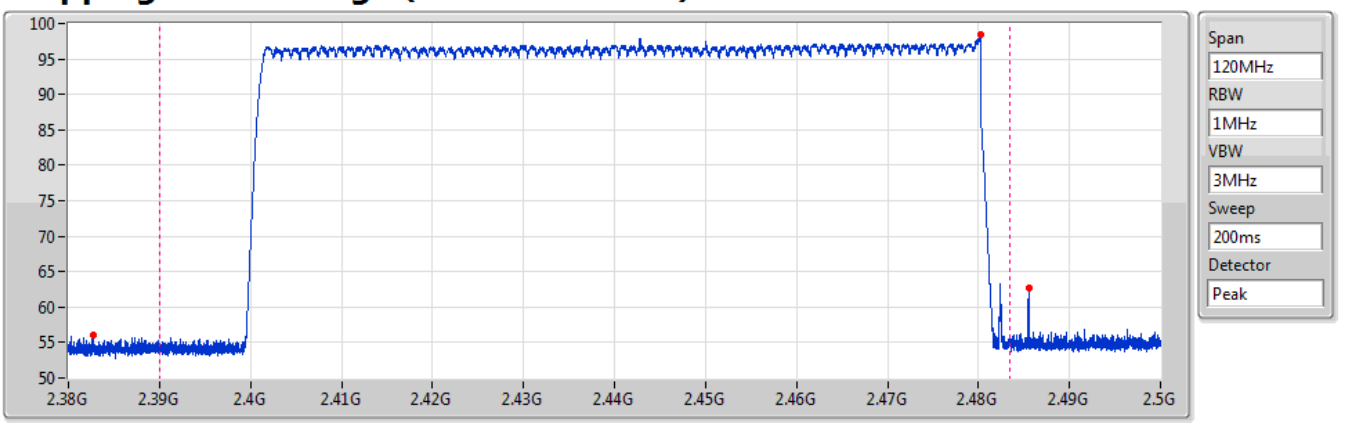


Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-22.2	2.479975G	-2.2	2.39638G	-52.79	2.4868G	-52.01

BT-EDR(2Mbps)

2440MHz

Hopping Ch Bandedge (Restricted Band)

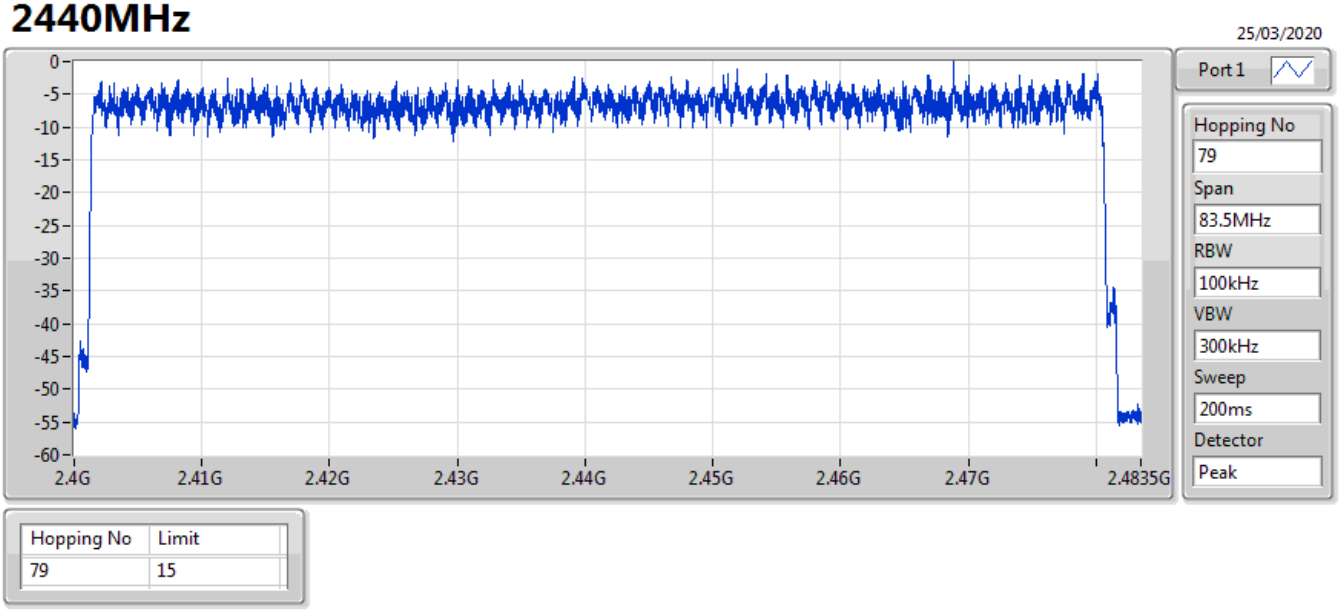


Ref(Hz)	Ref(dBuV/m)	BE-l(Hz)	PK(dBuV/m)	AV(dBuV/m)	BE-h(Hz)	PK(dBuV/m)	AV(dBuV/m)	LimPK(dBuV/	LimAV(dBuV/	Tx On(ms)	DCF(dB)
2.480215G	98.52	2.38273G	56.04	25.94	2.48551G	62.66	32.56	74	54	3.125	-30.1

BT-EDR(3Mbps)

2440MHz

Hopping Ch

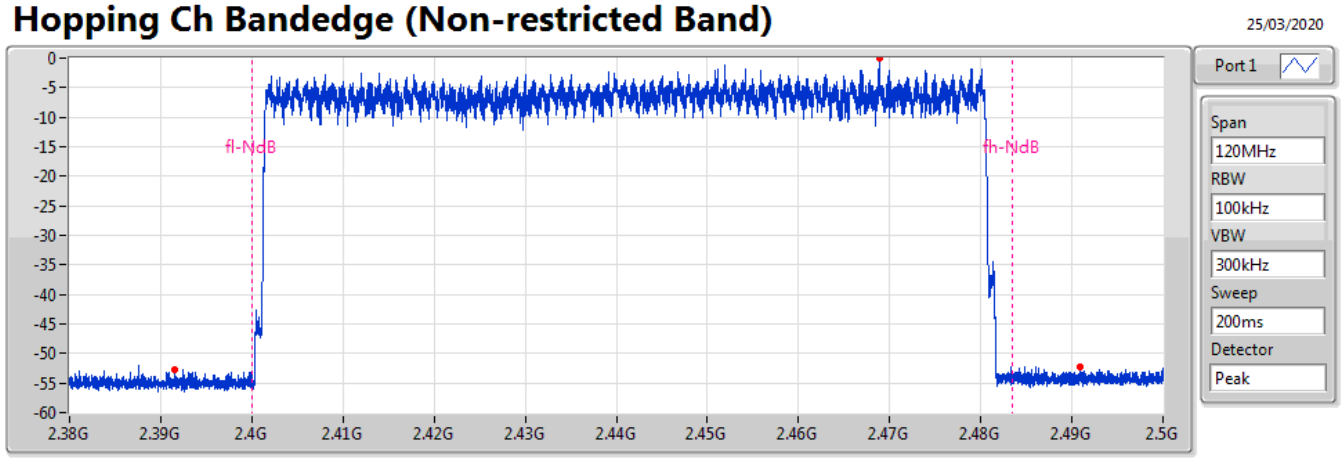


Hopping No	Limit
79	15

BT-EDR(3Mbps)

2440MHz

Hopping Ch Bandedge (Non-restricted Band)

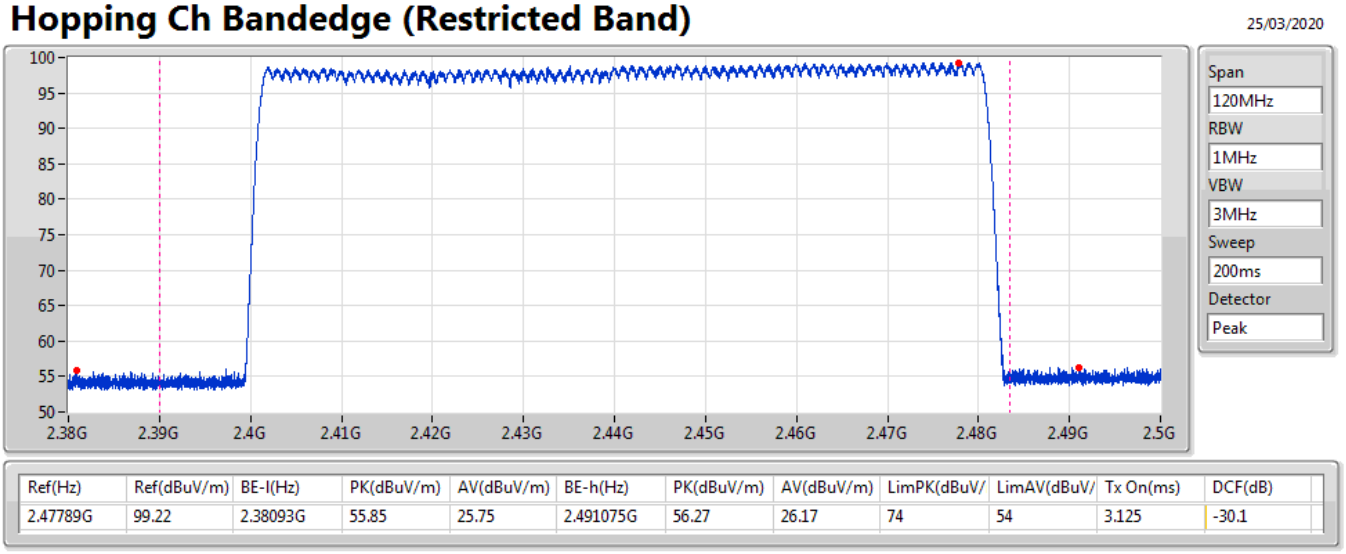


Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-20.11	2.468845G	-0.11	2.391595G	-52.82	2.49085G	-52.15

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)
2.47789G	99.22	2.38093G	55.85	25.75	2.491075G	56.27	26.17	74	54	3.125	-30.1

Summary

Mode	Max-Dwell (s)
2.4-2.4835GHz	-
BT-BR(1Mbps)	309.0867m
BT-EDR(2Mbps)	309.37985m
BT-EDR(3Mbps)	309.37985m

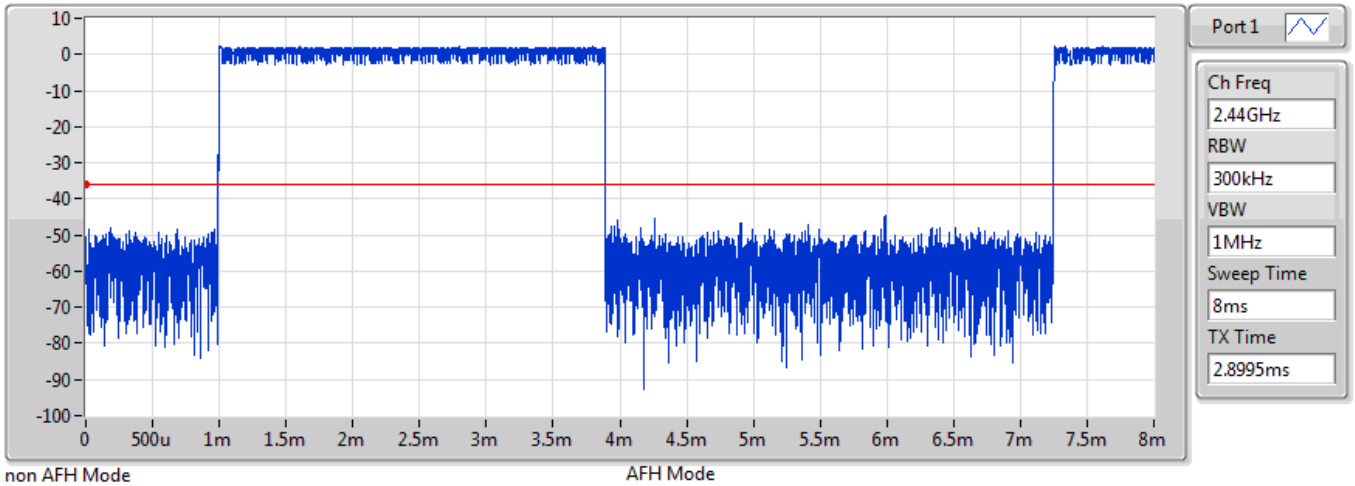
Result

Mode	Result	Period (s)	Dwell (s)	Limit (s)	Tx On (s)
BT-BR(1Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	309.0867m	400m	2.8995m
BT-EDR(2Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	309.37985m	400m	2.90225m
BT-EDR(3Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	309.37985m	400m	2.90225m

BT-BR(1Mbps) Dwell

2440MHz

25/03/2020



non AFH Mode

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	309.0867m	400m	2.8995m

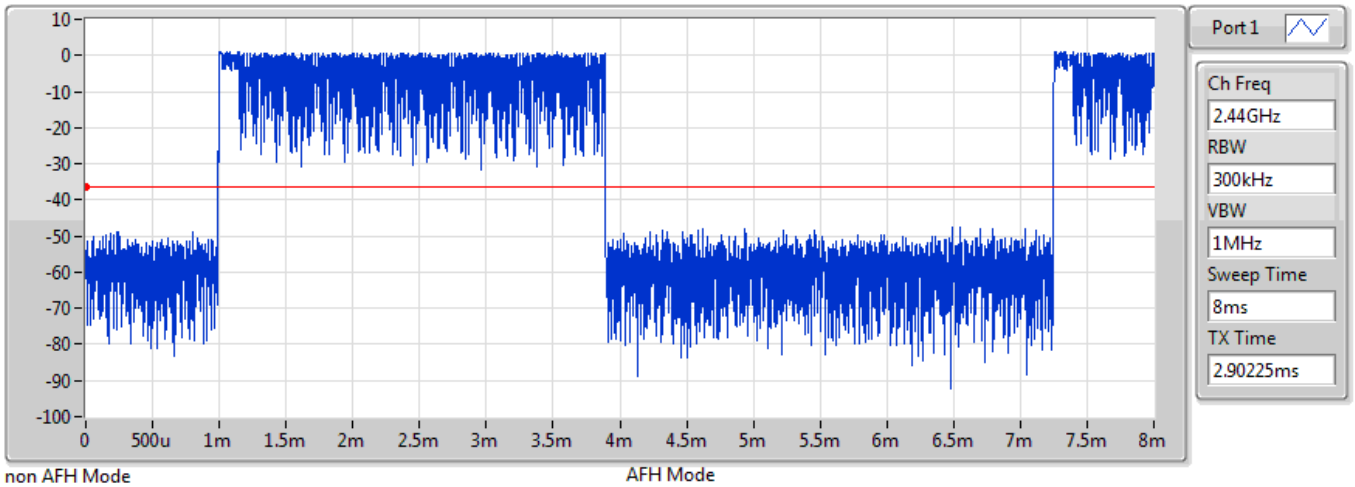
AFH Mode

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
8	154.54335m	400m	2.8995m

BT-EDR(2Mbps) Dwell

2440MHz

25/03/2020



non AFH Mode

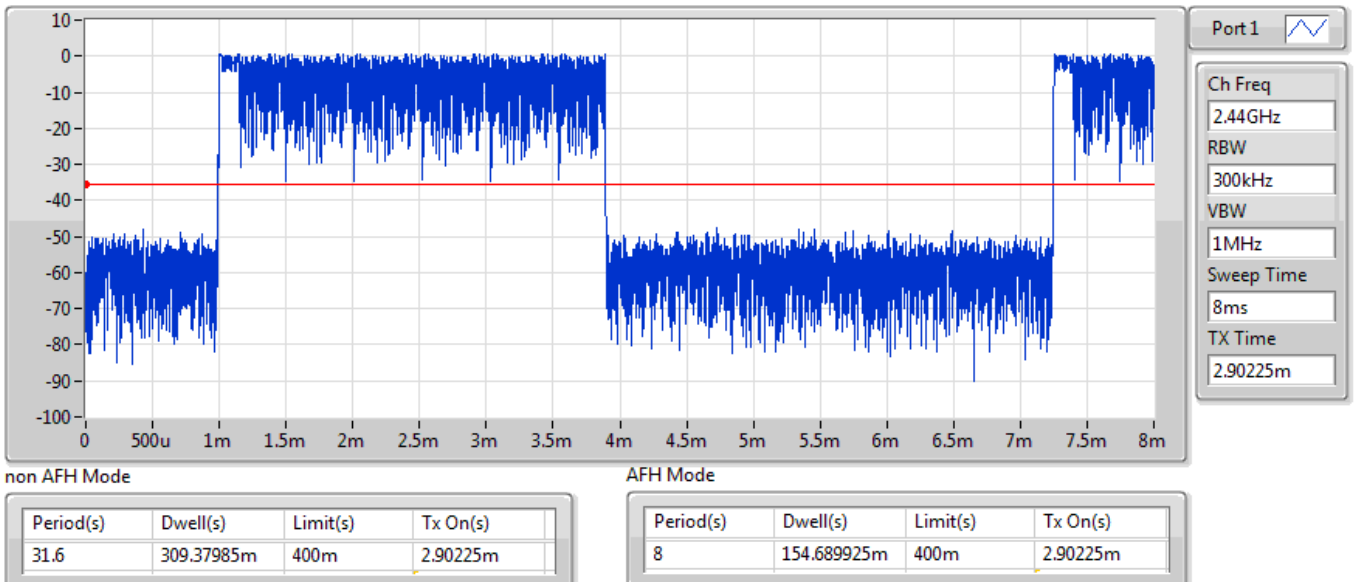
Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	309.37985m	400m	2.90225m

AFH Mode

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
8	154.689925m	400m	2.90225m

BT-EDR(3Mbps) **Dwell**

2440MHz



non AFH Mode

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	309.37985m	400m	2.90225m

AFH Mode

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
8	154.689925m	400m	2.90225m

Summary

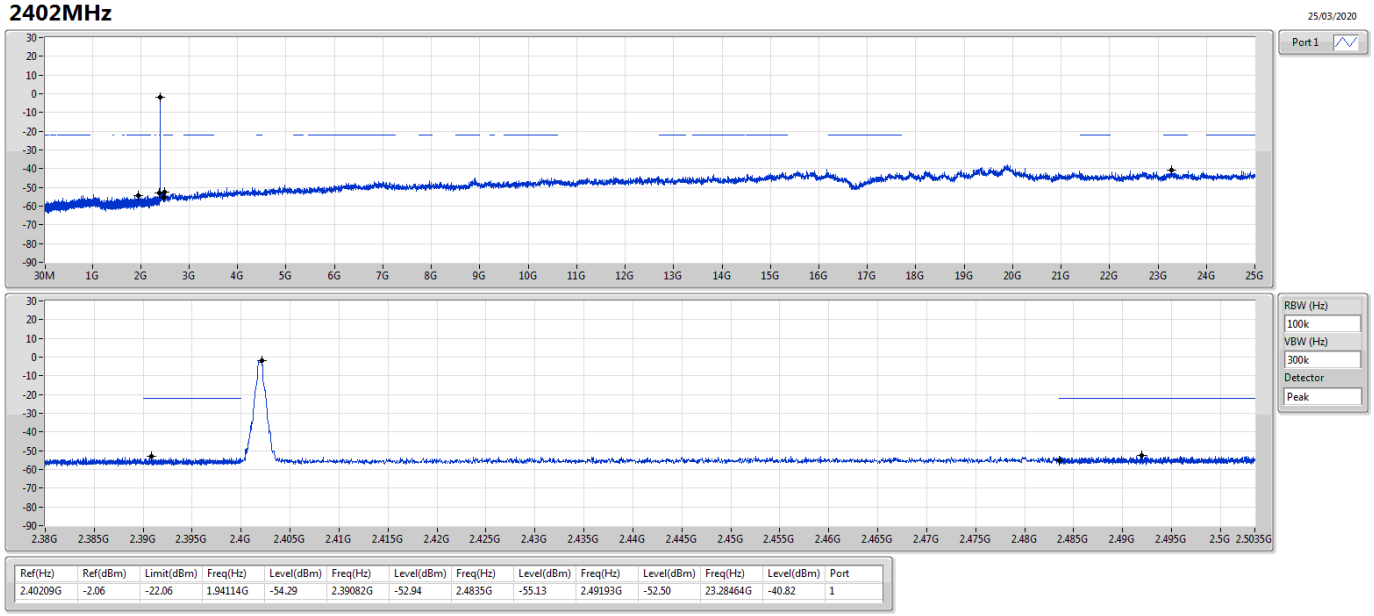
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	2.40209G	-2.06	-22.06	1.94114G	-54.29	2.39082G	-52.94	2.4835G	-55.13	2.49193G	-52.50	23.28464G	-40.82	1
BT-EDR(2Mbps)	Pass	2.4018G	-2.49	-22.49	2.19788G	-54.78	2.39913G	-53.10	2.4G	-53.16	2.48813G	-52.30	24.01859G	-41.52	1
BT-EDR(3Mbps)	Pass	2.4018G	-2.40	-22.40	2.18407G	-54.97	2.39207G	-53.39	2.4G	-54.05	2.48783G	-52.40	23.33526G	-41.13	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	2.40209G	-2.06	-22.06	1.94114G	-54.29	2.39082G	-52.94	2.4835G	-55.13	2.49193G	-52.50	23.28464G	-40.82	1
2440MHz	Pass	2.44012G	-2.08	-22.08	2.01105G	-54.47	2.39724G	-53.90	2.4G	-55.60	2.4921G	-52.89	16.22355G	-41.74	1
2480MHz	Pass	2.48016G	-1.30	-21.30	1.98226G	-54.62	2.39901G	-53.26	2.4835G	-56.09	2.50078G	-52.31	23.53492G	-40.90	1
BT-EDR(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.4018G	-2.49	-22.49	2.19788G	-54.78	2.39913G	-53.10	2.4G	-53.16	2.48813G	-52.30	24.01859G	-41.52	1
2440MHz	Pass	2.44012G	-2.11	-22.11	1.9852G	-54.44	2.39506G	-53.43	2.4835G	-55.17	2.4932G	-52.33	15.22246G	-40.84	1
2480MHz	Pass	2.47987G	-1.87	-21.87	1.92263G	-54.35	2.39918G	-52.80	2.4835G	-55.27	2.4964G	-52.48	24.64568G	-41.25	1
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.4018G	-2.40	-22.40	2.18407G	-54.97	2.39207G	-53.39	2.4G	-54.05	2.48783G	-52.40	23.33526G	-41.13	1
2440MHz	Pass	2.44012G	-2.10	-22.10	687.71M	-54.83	2.39341G	-53.53	2.4835G	-54.76	2.49905G	-52.46	16.21512G	-41.49	1
2480MHz	Pass	2.47983G	-1.49	-21.49	776.42M	-54.56	2.39138G	-53.49	2.4835G	-55.42	2.50222G	-51.78	21.90111G	-41.31	1

BT-BR(1Mbps) **CSE NdB**

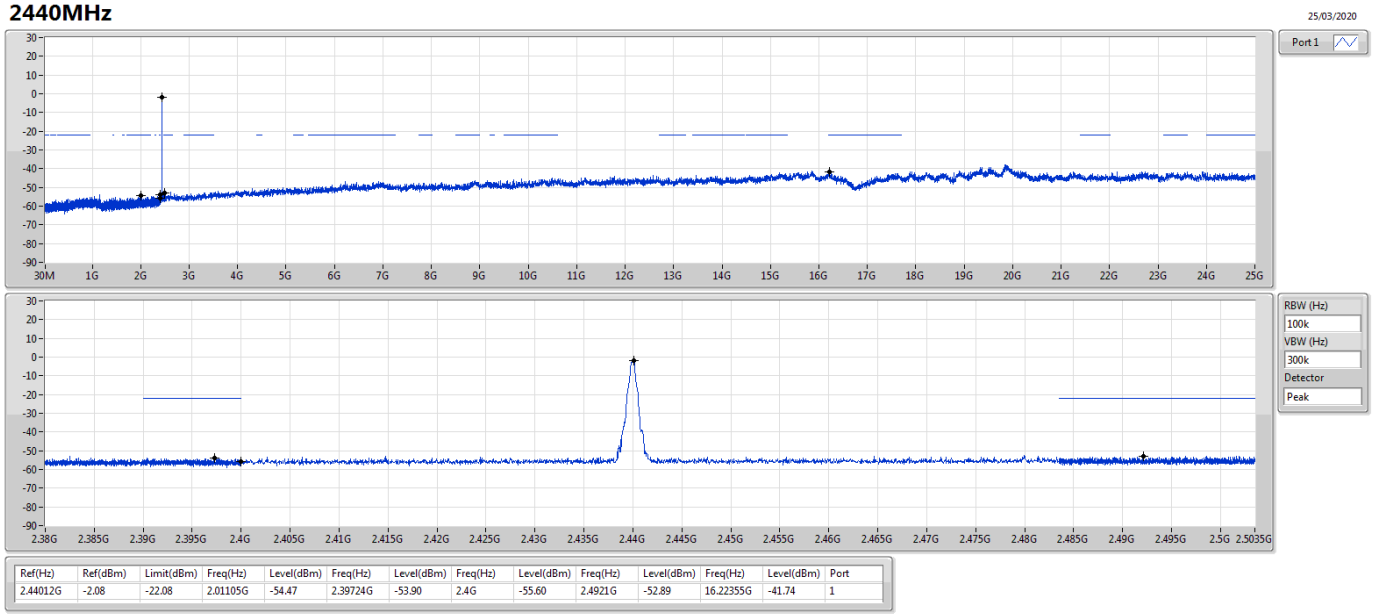
2402MHz



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
2.40209G	-2.06	-22.06	1.94114G	-54.29	2.39082G	-52.94	2.4835G	-55.13	2.49193G	-52.50	23.28464G	-40.82	1

BT-BR(1Mbps) **CSE NdB**

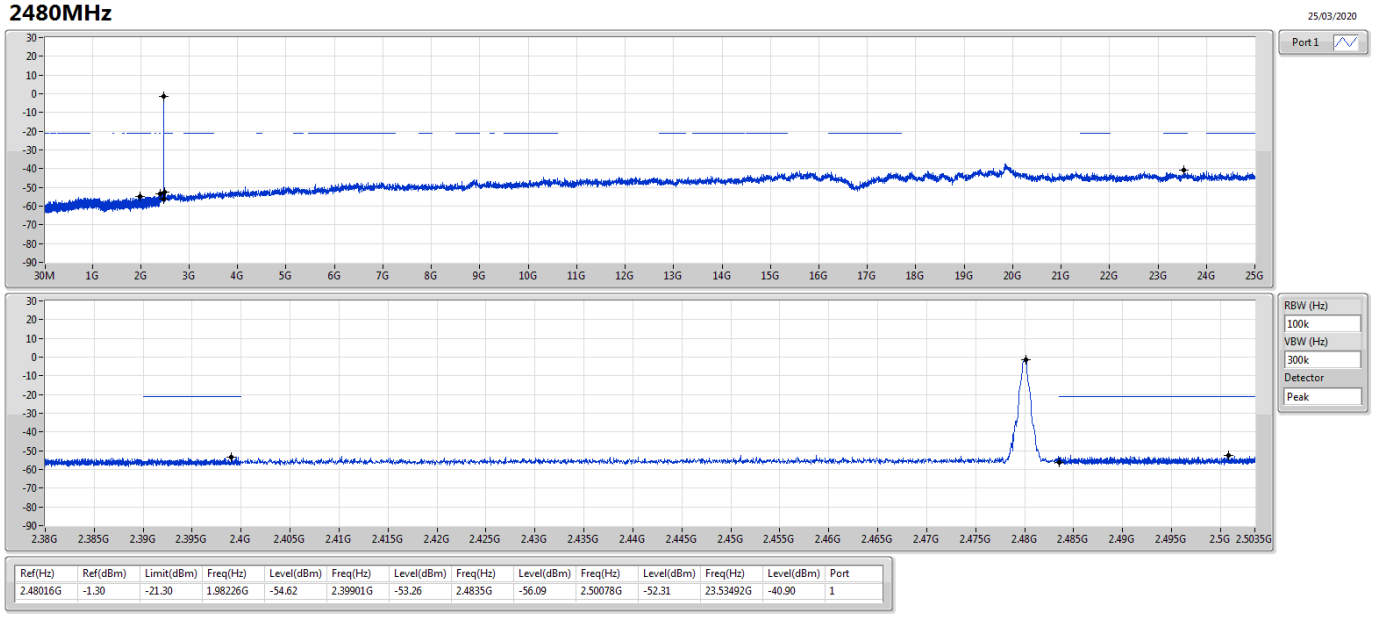
2440MHz



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
2.44012G	-2.08	-22.08	2.01105G	-54.47	2.39724G	-53.90	2.4G	-55.60	2.4921G	-52.89	16.22355G	-41.74	1

BT-BR(1Mbps) **CSE NdB**

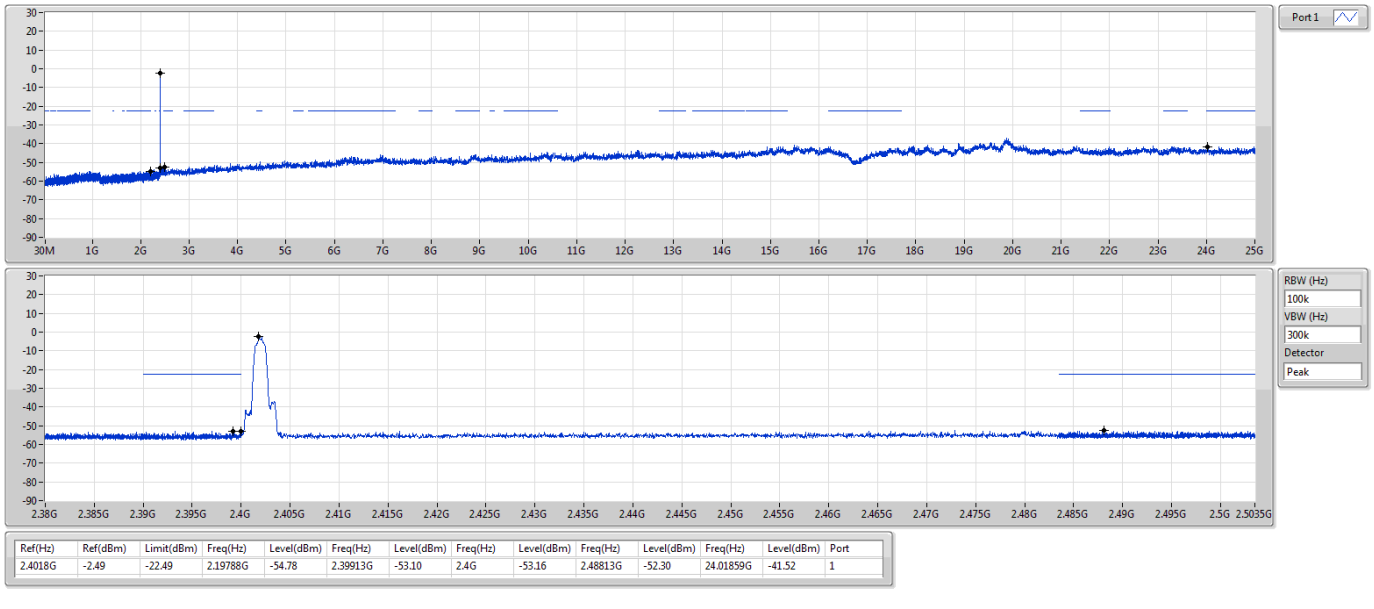
2480MHz



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	-1.30	-21.30	1.98226G	-54.62	2.39901G	-53.26	2.4835G	-56.09	2.50078G	-52.31	23.53492G	-40.90	1

BT-EDR(2Mbps) **CSE NdB**

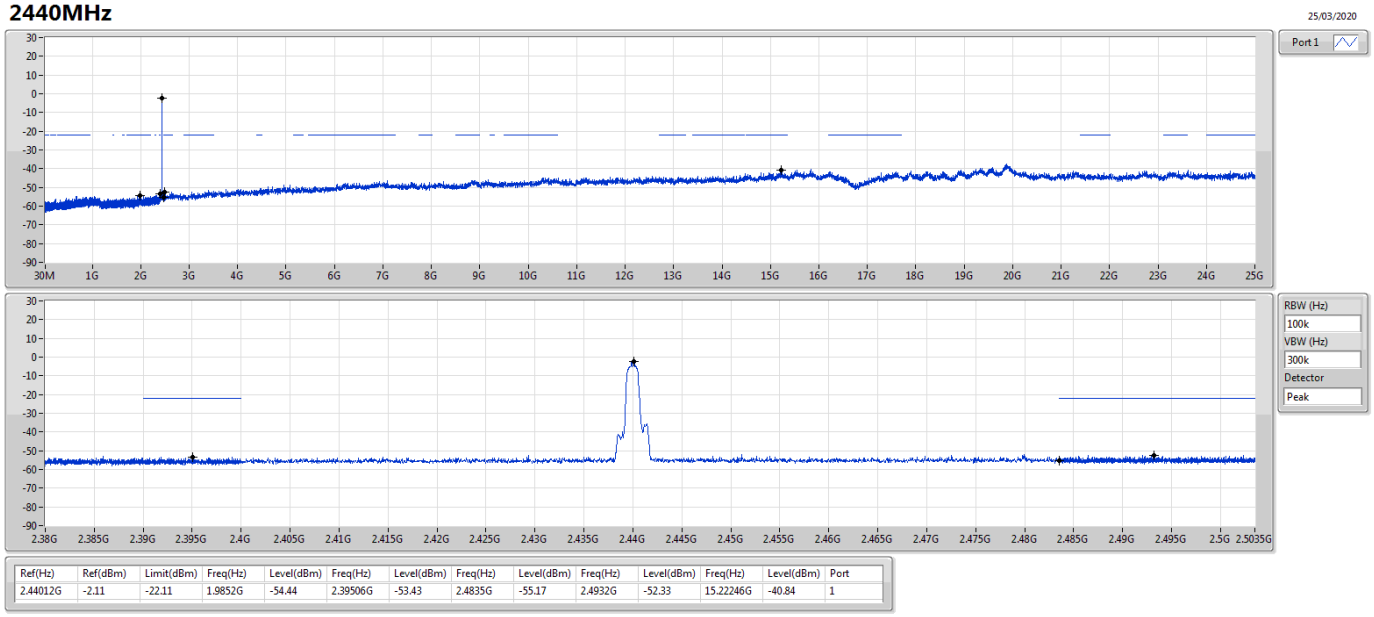
2402MHz



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
2.4018G	-2.49	-22.49	2.19788G	-54.78	2.39913G	-53.10	2.4G	-53.16	2.48813G	-52.30	24.01859G	-41.52	1

BT-EDR(2Mbps) **CSE NdB**

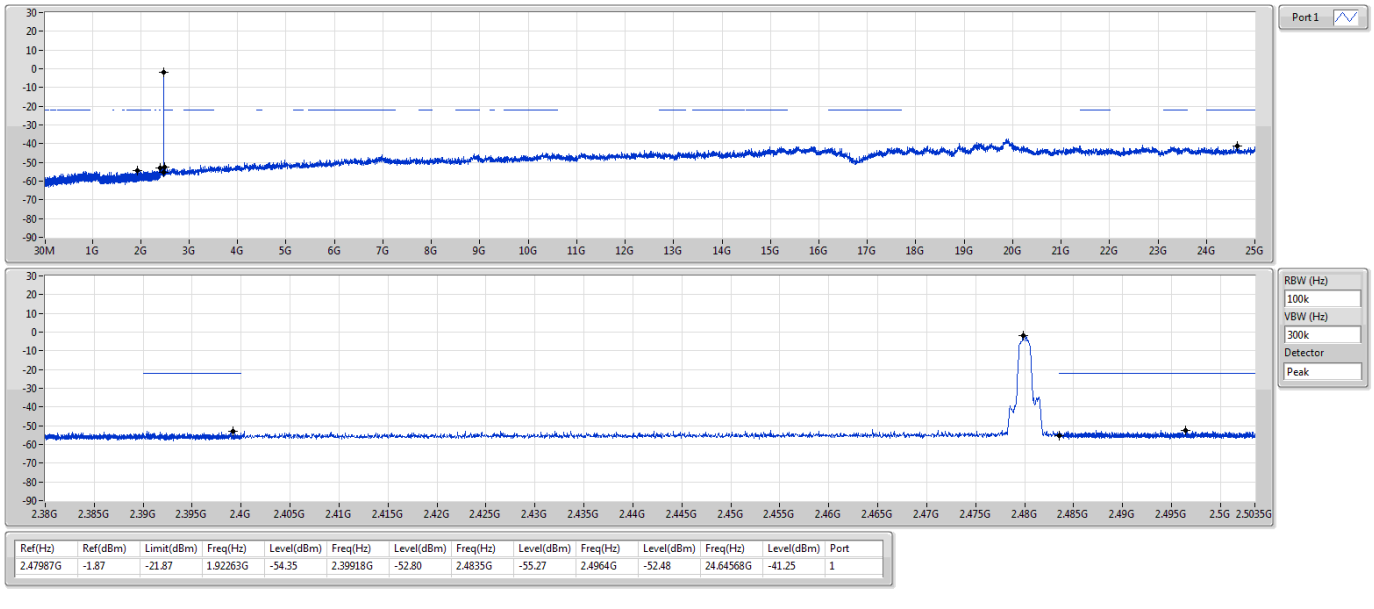
2440MHz



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
2.44012G	-2.11	-22.11	1.9852G	-54.44	2.39506G	-53.43	2.4835G	-55.17	2.4932G	-52.33	15.22246G	-40.84	1

BT-EDR(2Mbps) **CSE NdB**

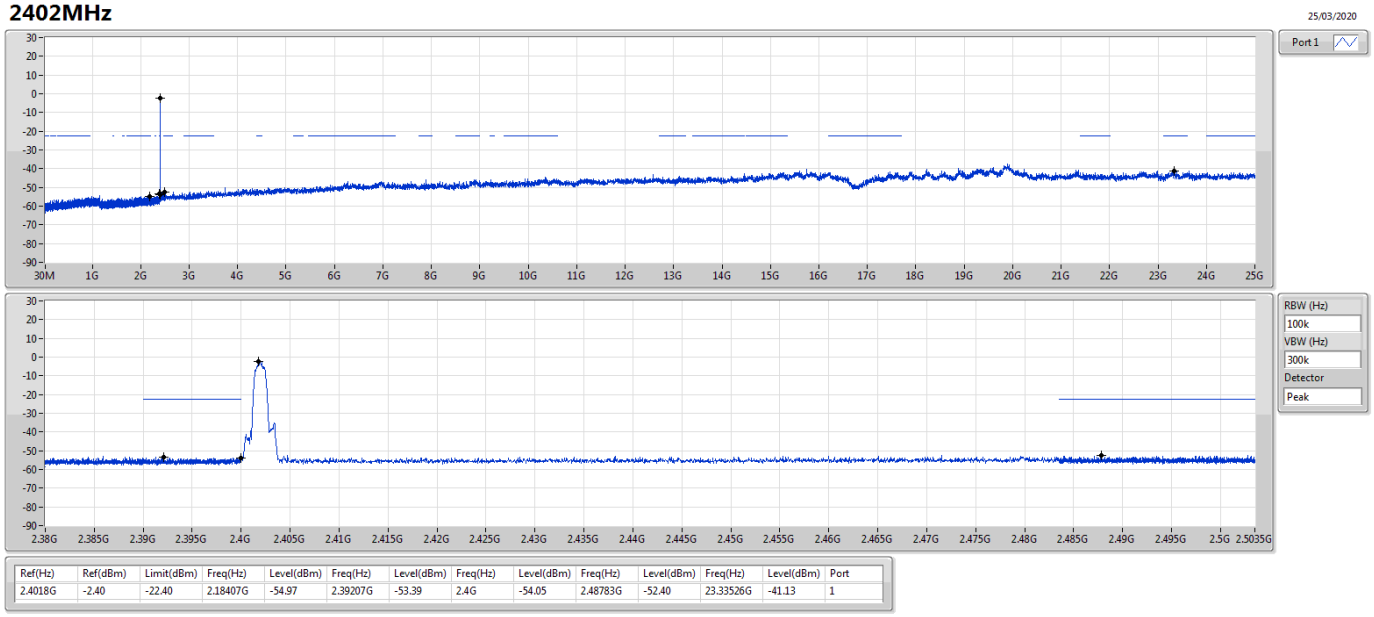
2480MHz



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	-1.87	-21.87	1.92263G	-54.35	2.39918G	-52.80	2.4835G	-55.27	2.4964G	-52.48	24.64568G	-41.25	1

BT-EDR(3Mbps) **CSE NdB**

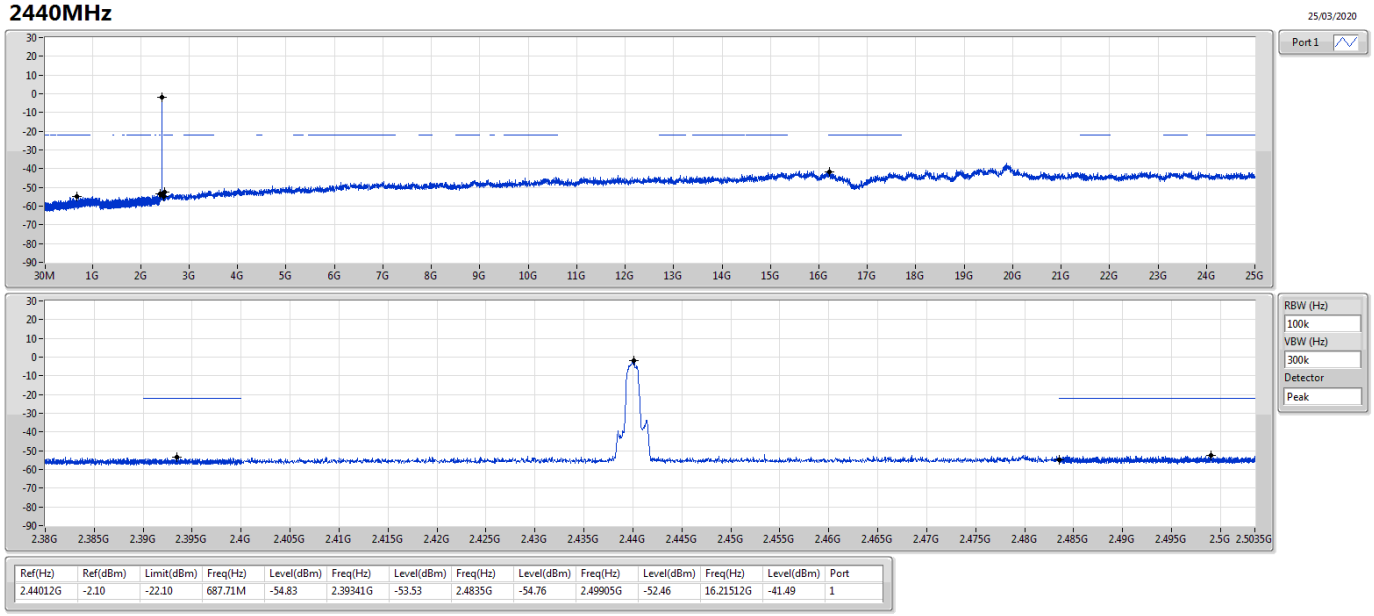
2402MHz



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
2.4018G	-2.40	-22.40	2.18407G	-54.97	2.39207G	-53.39	2.4G	-54.05	2.48783G	-52.40	23.33526G	-41.13	1

BT-EDR(3Mbps) **CSE NdB**

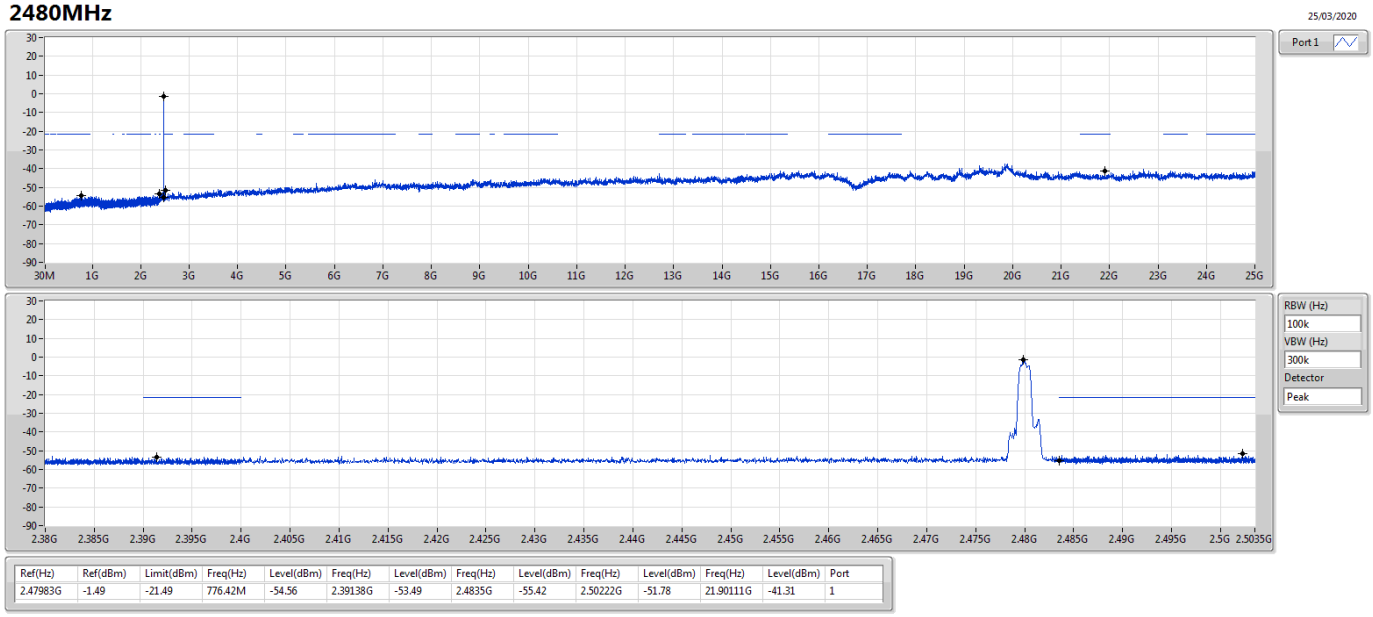
2440MHz



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
2.44012G	-2.10	-22.10	687.71M	-54.83	2.39341G	-53.53	2.4835G	-54.76	2.49905G	-52.46	16.21512G	-41.49	1

BT-EDR(3Mbps) **CSE NdB**

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
2.47983G	-1.49	-21.49	776.42M	-54.56	2.39138G	-53.49	2.4835G	-55.42	2.50222G	-51.78	21.90111G	-41.31	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-EDR(3Mbps)	Pass	PK	885.54M	42.79	46.00	-3.21	3	Vertical	360	1.00	-

Result

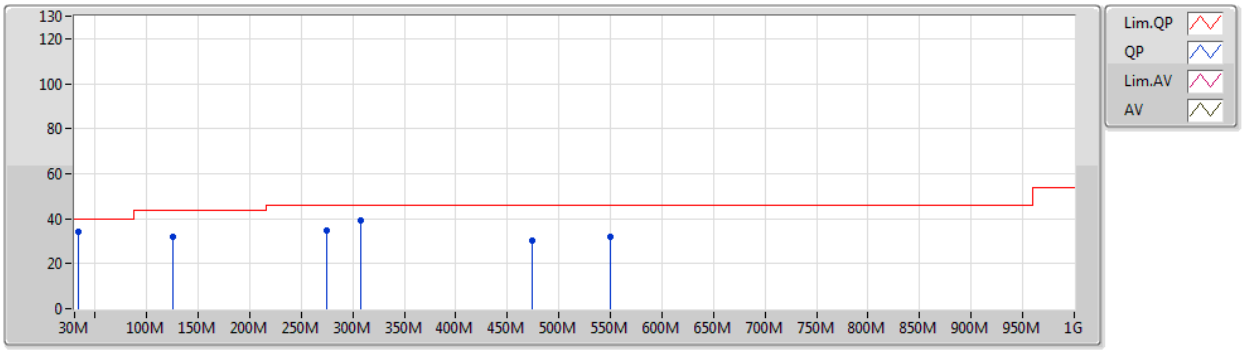
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	33.88M	33.97	40.00	-6.03	3	Vertical	360	1.00	-
2440MHz	Pass	PK	125.06M	31.71	43.50	-11.79	3	Vertical	360	1.00	-
2440MHz	Pass	PK	274.44M	34.79	46.00	-11.21	3	Vertical	360	1.00	-
2440MHz	Pass	PK	307.42M	39.31	46.00	-6.69	3	Vertical	360	1.00	-
2440MHz	Pass	PK	474.26M	30.30	46.00	-15.70	3	Vertical	360	1.00	-
2440MHz	Pass	PK	549.92M	31.83	46.00	-14.17	3	Vertical	360	1.00	-
2440MHz	Pass	PK	125.06M	34.77	43.50	-8.73	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	224M	35.53	46.00	-10.47	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	299.66M	41.86	46.00	-4.14	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	600.36M	35.61	46.00	-10.39	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	693.48M	35.57	46.00	-10.43	3	Horizontal	0	1.00	-
2440MHz	Pass	QP	317.12M	39.12	46.00	-6.88	3	Horizontal	238	1.04	-
2440MHz	Pass	PK	47.46M	30.70	40.00	-9.30	3	Vertical	360	1.00	-
2440MHz	Pass	PK	74.62M	32.19	40.00	-7.81	3	Vertical	360	1.00	-
2440MHz	Pass	PK	299.66M	39.31	46.00	-6.69	3	Vertical	360	1.00	-
2440MHz	Pass	PK	375.32M	28.77	46.00	-17.23	3	Vertical	360	1.00	-
2440MHz	Pass	PK	730.34M	37.11	46.00	-8.89	3	Vertical	360	1.00	-
2440MHz	Pass	PK	885.54M	42.79	46.00	-3.21	3	Vertical	360	1.00	-
2440MHz	Pass	PK	74.62M	21.42	40.00	-18.58	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	148.34M	24.16	43.50	-19.34	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	375.32M	35.36	46.00	-10.64	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	600.36M	36.04	46.00	-9.96	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	800.18M	40.38	46.00	-5.62	3	Horizontal	0	1.00	-
2440MHz	Pass	QP	299.66M	42.64	46.00	-3.36	3	Horizontal	186	1.00	-

Level (dBuV/m) = Raw(Read Level) + AF(Antenna Factor) + CL(Cable Loss) - PA(Preamp Factor)

BT-EDR(3Mbps)

2440MHz_PoE

16/04/2020

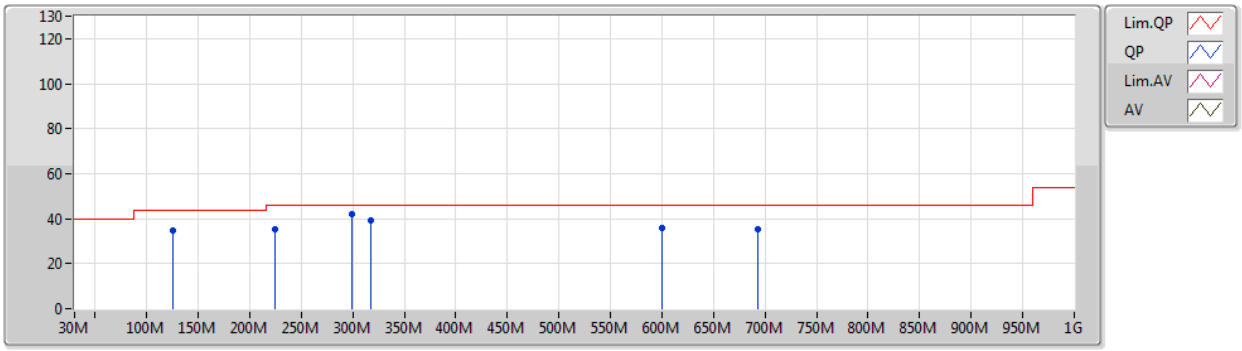


Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	33.88M	33.97	40.00	-6.03	39.30	3	Vertical	360	1.00	-	21.37	0.86	27.56
PK	125.06M	31.71	43.50	-11.79	40.08	3	Vertical	360	1.00	-	17.20	1.72	27.29
PK	274.44M	34.79	46.00	-11.21	40.88	3	Vertical	360	1.00	-	18.02	2.61	26.72
PK	307.42M	39.31	46.00	-6.69	44.66	3	Vertical	360	1.00	-	18.61	2.78	26.74
PK	474.26M	30.30	46.00	-15.70	31.88	3	Vertical	360	1.00	-	22.68	3.50	27.76
PK	549.92M	31.83	46.00	-14.17	32.08	3	Vertical	360	1.00	-	24.03	3.77	28.05

BT-EDR(3Mbps)

2440MHz_PoE

16/04/2020

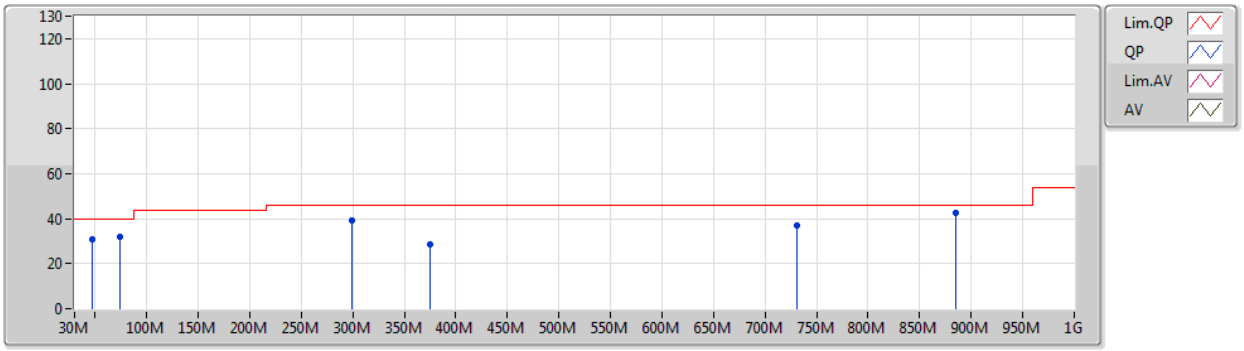


Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	125.06M	34.77	43.50	-8.73	43.14	3	Horizontal	0	1.00	-	17.20	1.72	27.29
PK	224M	35.53	46.00	-10.47	45.35	3	Horizontal	0	1.00	-	14.68	2.34	26.84
PK	299.66M	41.86	46.00	-4.14	47.40	3	Horizontal	0	1.00	-	18.41	2.75	26.70
PK	600.36M	35.61	46.00	-10.39	35.81	3	Horizontal	0	1.00	-	23.77	4.08	28.05
PK	693.48M	35.57	46.00	-10.43	35.25	3	Horizontal	0	1.00	-	24.04	4.33	28.05
QP	317.12M	39.12	46.00	-6.88	44.36	3	Horizontal	238	1.04	-	18.73	2.83	26.80

BT-EDR(3Mbps)

2440MHz_Adapter

23/03/2020

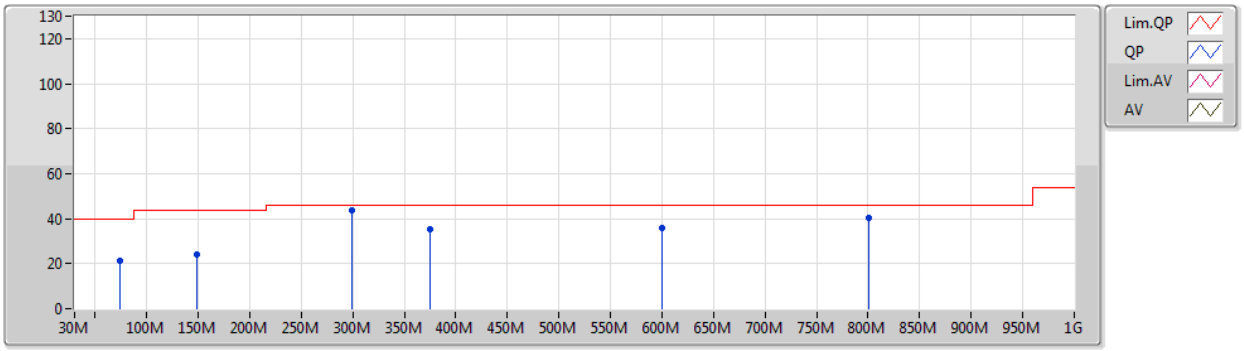


Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	47.46M	30.70	40.00	-9.30	42.97	3	Vertical	360	1.00	-	14.23	1.02	27.52
PK	74.62M	32.19	40.00	-7.81	46.82	3	Vertical	360	1.00	-	11.51	1.30	27.44
PK	299.66M	39.31	46.00	-6.69	44.85	3	Vertical	360	1.00	-	18.41	2.75	26.70
PK	375.32M	28.77	46.00	-17.23	32.73	3	Vertical	360	1.00	-	20.10	3.08	27.14
PK	730.34M	37.11	46.00	-8.89	36.10	3	Vertical	360	1.00	-	24.60	4.45	28.04
PK	885.54M	42.79	46.00	-3.21	39.83	3	Vertical	360	1.00	-	25.58	4.95	27.57

BT-EDR(3Mbps)

2440MHz_Adapter

23/03/2020



Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	74.62M	21.42	40.00	-18.58	36.05	3	Horizontal	0	1.00	-	11.51	1.30	27.44
PK	148.34M	24.16	43.50	-19.34	33.80	3	Horizontal	0	1.00	-	15.67	1.88	27.19
PK	375.32M	35.36	46.00	-10.64	39.32	3	Horizontal	0	1.00	-	20.10	3.08	27.14
PK	600.36M	36.04	46.00	-9.96	36.24	3	Horizontal	0	1.00	-	23.77	4.08	28.05
PK	800.18M	40.38	46.00	-5.62	38.61	3	Horizontal	0	1.00	-	24.88	4.75	27.86
QP	299.66M	43.64	46.00	-2.36	49.18	3	Horizontal	186	1.00	-	18.41	2.75	26.70

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	2.4882G	63.35	74.00	-10.65	3	Vertical	359	2.51	-
BT-EDR(3Mbps)	Pass	PK	2.4968G	63.23	74.00	-10.77	3	Vertical	359	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	2.3802G	38.19	54.00	-15.81	3	Vertical	360	2.95	-
2402MHz	Pass	AV	2.4018G	77.94	Inf	-Inf	3	Vertical	360	2.95	-
2402MHz	Pass	PK	2.3802G	60.69	74.00	-13.31	3	Vertical	360	2.95	-
2402MHz	Pass	PK	2.4018G	100.44	Inf	-Inf	3	Vertical	360	2.95	-
2402MHz	Pass	AV	2.3896G	38.74	54.00	-15.26	3	Horizontal	226	2.17	-
2402MHz	Pass	AV	2.4018G	78.32	Inf	-Inf	3	Horizontal	226	2.17	-
2402MHz	Pass	PK	2.3896G	61.24	74.00	-12.76	3	Horizontal	226	2.17	-
2402MHz	Pass	PK	2.4018G	100.82	Inf	-Inf	3	Horizontal	226	2.17	-
2402MHz	Pass	AV	4.96006G	26.92	54.00	-27.08	3	Vertical	66	2.20	-
2402MHz	Pass	PK	4.96006G	49.42	74.00	-24.58	3	Vertical	66	2.20	-
2402MHz	Pass	AV	4.96016G	27.52	54.00	-26.48	3	Horizontal	356	1.11	-
2402MHz	Pass	PK	4.96016G	50.02	74.00	-23.98	3	Horizontal	356	1.11	-
2440MHz	Pass	AV	2.3888G	38.28	54.00	-15.72	3	Vertical	360	2.82	-
2440MHz	Pass	AV	2.44G	78.76	Inf	-Inf	3	Vertical	360	2.82	-
2440MHz	Pass	AV	2.4992G	39.69	54.00	-14.31	3	Vertical	360	2.82	-
2440MHz	Pass	PK	2.3888G	60.78	74.00	-13.22	3	Vertical	360	2.82	-
2440MHz	Pass	PK	2.44G	101.26	Inf	-Inf	3	Vertical	360	2.82	-
2440MHz	Pass	PK	2.4992G	62.19	74.00	-11.81	3	Vertical	360	2.82	-
2440MHz	Pass	AV	2.3868G	38.67	54.00	-15.33	3	Horizontal	56	2.44	-
2440MHz	Pass	AV	2.44G	75.75	Inf	-Inf	3	Horizontal	56	2.44	-
2440MHz	Pass	AV	2.4976G	39.83	54.00	-14.17	3	Horizontal	56	2.44	-
2440MHz	Pass	PK	2.3868G	61.17	74.00	-12.83	3	Horizontal	56	2.44	-
2440MHz	Pass	PK	2.44G	98.25	Inf	-Inf	3	Horizontal	56	2.44	-
2440MHz	Pass	PK	2.4976G	62.33	74.00	-11.67	3	Horizontal	56	2.44	-
2440MHz	Pass	AV	4.95927G	27.11	54.00	-26.89	3	Vertical	357	2.34	-
2440MHz	Pass	PK	4.95927G	49.61	74.00	-24.39	3	Vertical	357	2.34	-
2440MHz	Pass	AV	4.95972G	26.48	54.00	-27.52	3	Horizontal	253	2.36	-
2440MHz	Pass	PK	4.95972G	48.98	74.00	-25.02	3	Horizontal	253	2.36	-
2480MHz	Pass	AV	2.4802G	79.24	Inf	-Inf	3	Vertical	359	2.51	-
2480MHz	Pass	AV	2.4882G	40.85	54.00	-13.15	3	Vertical	359	2.51	-
2480MHz	Pass	PK	2.4802G	101.74	Inf	-Inf	3	Vertical	359	2.51	-
2480MHz	Pass	PK	2.4882G	63.35	74.00	-10.65	3	Vertical	359	2.51	-
2480MHz	Pass	AV	2.4798G	74.94	Inf	-Inf	3	Horizontal	343	1.18	-
2480MHz	Pass	AV	2.494G	40.22	54.00	-13.78	3	Horizontal	343	1.18	-
2480MHz	Pass	PK	2.4798G	97.44	Inf	-Inf	3	Horizontal	343	1.18	-
2480MHz	Pass	PK	2.494G	62.72	74.00	-11.28	3	Horizontal	343	1.18	-
2480MHz	Pass	AV	4.95978G	27.39	54.00	-26.61	3	Vertical	211	1.84	-
2480MHz	Pass	PK	4.95978G	49.89	74.00	-24.11	3	Vertical	211	1.84	-
2480MHz	Pass	AV	4.95804G	26.67	54.00	-27.33	3	Horizontal	0	1.50	-
2480MHz	Pass	PK	4.95804G	49.17	74.00	-24.83	3	Horizontal	0	1.50	-
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3708G	39.05	54.00	-14.95	3	Vertical	360	2.95	-
2402MHz	Pass	AV	2.4018G	78.88	Inf	-Inf	3	Vertical	360	2.95	-
2402MHz	Pass	PK	2.3708G	61.55	74.00	-12.45	3	Vertical	360	2.95	-
2402MHz	Pass	PK	2.4018G	101.38	Inf	-Inf	3	Vertical	360	2.95	-
2402MHz	Pass	AV	2.3788G	38.54	54.00	-15.46	3	Horizontal	48	2.54	-
2402MHz	Pass	AV	2.4018G	77.29	Inf	-Inf	3	Horizontal	48	2.54	-

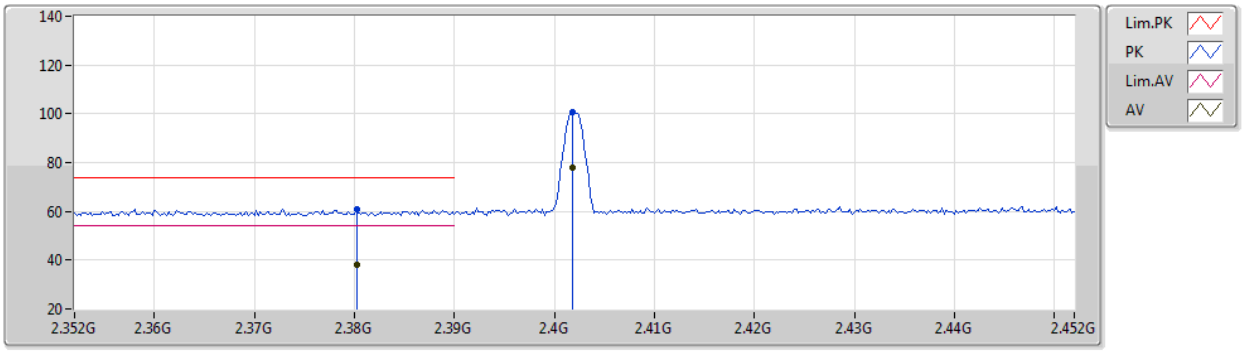
Level (dBuV/m) = Raw(Read Level) + AF(Antenna Factor) + CL(Cable Loss) - PA(Preamp Factor)

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2402MHz	Pass	PK	2.3788G	61.04	74.00	-12.96	3	Horizontal	48	2.54	-
2402MHz	Pass	PK	2.4018G	99.79	Inf	-Inf	3	Horizontal	48	2.54	-
2402MHz	Pass	AV	4.80246G	26.55	54.00	-27.45	3	Vertical	224	1.14	-
2402MHz	Pass	PK	4.80246G	49.05	74.00	-24.95	3	Vertical	224	1.14	-
2402MHz	Pass	AV	4.80338G	25.92	54.00	-28.08	3	Horizontal	151	1.78	-
2402MHz	Pass	PK	4.80338G	48.42	74.00	-25.58	3	Horizontal	151	1.78	-
2440MHz	Pass	AV	2.3568G	38.33	54.00	-15.67	3	Vertical	360	2.84	-
2440MHz	Pass	AV	2.44G	80.62	Inf	-Inf	3	Vertical	360	2.84	-
2440MHz	Pass	AV	2.49G	40.04	54.00	-13.96	3	Vertical	360	2.84	-
2440MHz	Pass	PK	2.3568G	60.83	74.00	-13.17	3	Vertical	360	2.84	-
2440MHz	Pass	PK	2.44G	103.12	Inf	-Inf	3	Vertical	360	2.84	-
2440MHz	Pass	PK	2.49G	62.54	74.00	-11.46	3	Vertical	360	2.84	-
2440MHz	Pass	AV	2.3744G	39.22	54.00	-14.78	3	Horizontal	56	2.44	-
2440MHz	Pass	AV	2.44G	77.51	Inf	-Inf	3	Horizontal	56	2.44	-
2440MHz	Pass	AV	2.4884G	39.52	54.00	-14.48	3	Horizontal	56	2.44	-
2440MHz	Pass	PK	2.3744G	61.72	74.00	-12.28	3	Horizontal	56	2.44	-
2440MHz	Pass	PK	2.44G	100.01	Inf	-Inf	3	Horizontal	56	2.44	-
2440MHz	Pass	PK	2.4884G	62.02	74.00	-11.98	3	Horizontal	56	2.44	-
2440MHz	Pass	AV	4.87881G	26.53	54.00	-27.47	3	Vertical	272	1.55	-
2440MHz	Pass	PK	4.87881G	49.03	74.00	-24.97	3	Vertical	272	1.55	-
2440MHz	Pass	AV	4.88152G	26.08	54.00	-27.92	3	Horizontal	318	2.01	-
2440MHz	Pass	PK	4.88152G	48.58	74.00	-25.42	3	Horizontal	318	2.01	-
2480MHz	Pass	AV	2.48G	80.33	Inf	-Inf	3	Vertical	359	2.50	-
2480MHz	Pass	AV	2.4968G	40.73	54.00	-13.27	3	Vertical	359	2.50	-
2480MHz	Pass	PK	2.48G	102.83	Inf	-Inf	3	Vertical	359	2.50	-
2480MHz	Pass	PK	2.4968G	63.23	74.00	-10.77	3	Vertical	359	2.50	-
2480MHz	Pass	AV	2.48G	80.83	Inf	-Inf	3	Horizontal	342	1.19	-
2480MHz	Pass	AV	2.4994G	39.23	54.00	-14.77	3	Horizontal	342	1.19	-
2480MHz	Pass	PK	2.48G	103.33	Inf	-Inf	3	Horizontal	342	1.19	-
2480MHz	Pass	PK	2.4994G	61.73	74.00	-12.27	3	Horizontal	342	1.19	-
2480MHz	Pass	AV	4.96249G	26.93	54.00	-27.07	3	Vertical	234	1.58	-
2480MHz	Pass	PK	4.96249G	49.43	74.00	-24.57	3	Vertical	234	1.58	-
2480MHz	Pass	AV	4.96029G	26.71	54.00	-27.29	3	Horizontal	237	1.18	-
2480MHz	Pass	PK	4.96029G	49.21	74.00	-24.79	3	Horizontal	237	1.18	-

BT-BR(1Mbps)

2402MHz_TX

23/03/2020

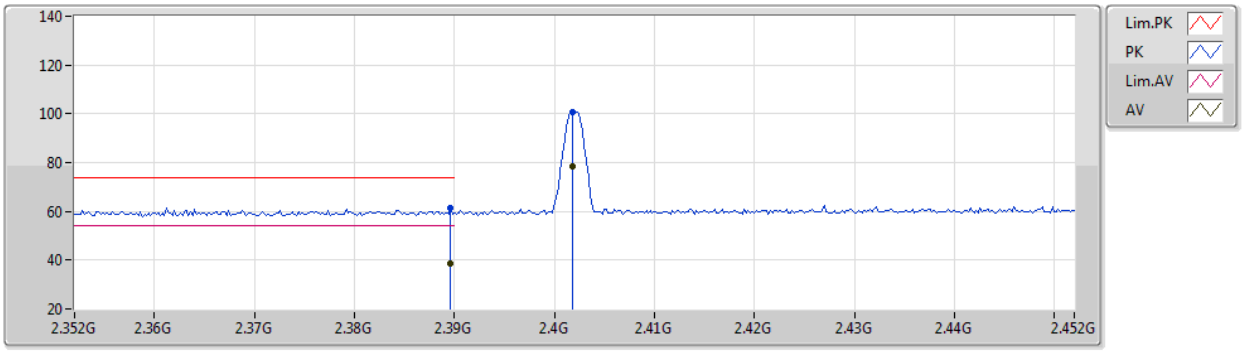


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3802G	38.19	54.00	-15.81	33.49	3	Vertical	360	2.95	-	4.70	29.50	3.99	-
AV	2.4018G	77.94	Inf	-Inf	33.71	3	Vertical	360	2.95	-	44.23	29.70	4.01	-
PK	2.3802G	60.69	74.00	-13.31	33.49	3	Vertical	360	2.95	-	27.20	29.50	3.99	-
PK	2.4018G	100.44	Inf	-Inf	33.71	3	Vertical	360	2.95	-	66.73	29.70	4.01	-

BT-BR(1Mbps)

2402MHz_TX

23/03/2020

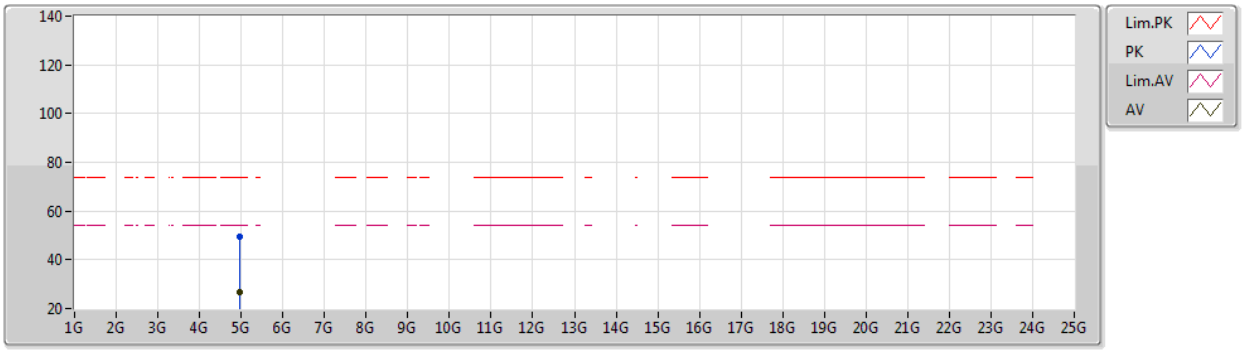


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3896G	38.74	54.00	-15.26	33.60	3	Horizontal	226	2.17	-	5.14	29.60	4.00	-
AV	2.4018G	78.32	Inf	-Inf	33.71	3	Horizontal	226	2.17	-	44.61	29.70	4.01	-
PK	2.3896G	61.24	74.00	-12.76	33.60	3	Horizontal	226	2.17	-	27.64	29.60	4.00	-
PK	2.4018G	100.82	Inf	-Inf	33.71	3	Horizontal	226	2.17	-	67.11	29.70	4.01	-

BT-BR(1Mbps)

2402MHz_TX

23/03/2020

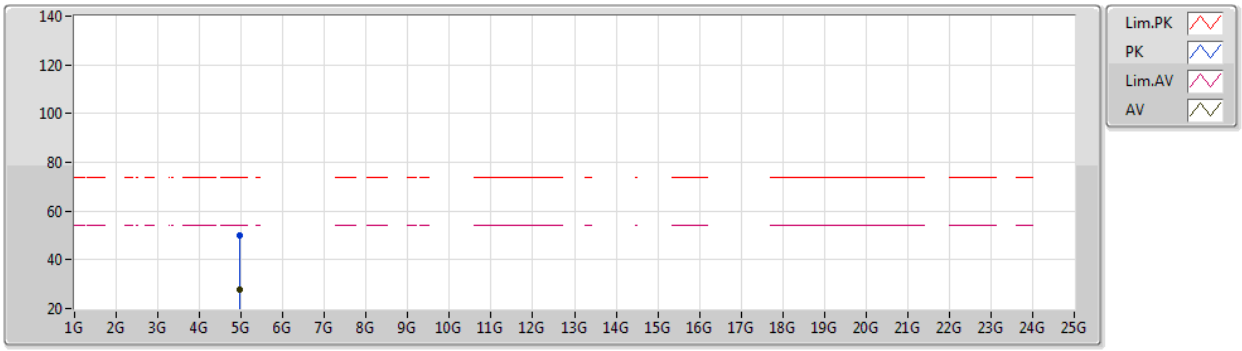


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.96006G	26.92	54.00	-27.08	10.47	3	Vertical	66	2.20	-	16.45	33.92	5.89	29.34
PK	4.96006G	49.42	74.00	-24.58	10.47	3	Vertical	66	2.20	-	38.95	33.92	5.89	29.34

BT-BR(1Mbps)

2402MHz_TX

23/03/2020

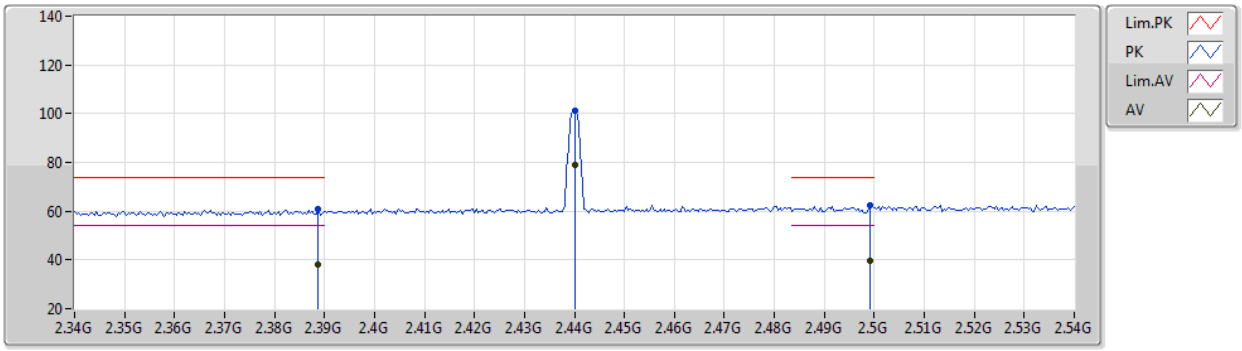


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.96016G	27.52	54.00	-26.48	10.47	3	Horizontal	356	1.11	-	17.05	33.92	5.89	29.34
PK	4.96016G	50.02	74.00	-23.98	10.47	3	Horizontal	356	1.11	-	39.55	33.92	5.89	29.34

BT-BR(1Mbps)

2440MHz_TX

23/03/2020

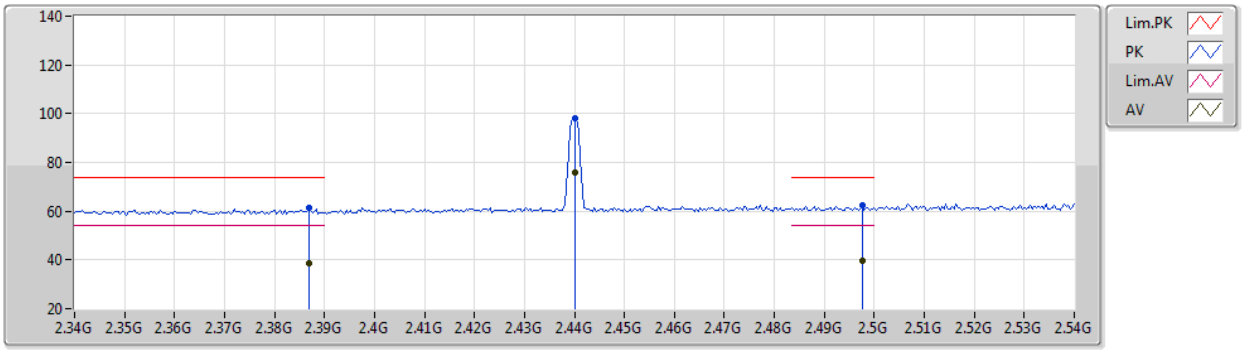


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3888G	38.28	54.00	-15.72	33.59	3	Vertical	360	2.82	-	4.69	29.59	4.00	-
AV	2.44G	78.76	Inf	-Inf	33.82	3	Vertical	360	2.82	-	44.94	29.78	4.04	-
AV	2.4992G	39.69	54.00	-14.31	34.29	3	Vertical	360	2.82	-	5.40	30.19	4.10	-
PK	2.3888G	60.78	74.00	-13.22	33.59	3	Vertical	360	2.82	-	27.19	29.59	4.00	-
PK	2.44G	101.26	Inf	-Inf	33.82	3	Vertical	360	2.82	-	67.44	29.78	4.04	-
PK	2.4992G	62.19	74.00	-11.81	34.29	3	Vertical	360	2.82	-	27.90	30.19	4.10	-

BT-BR(1Mbps)

2440MHz_TX

23/03/2020

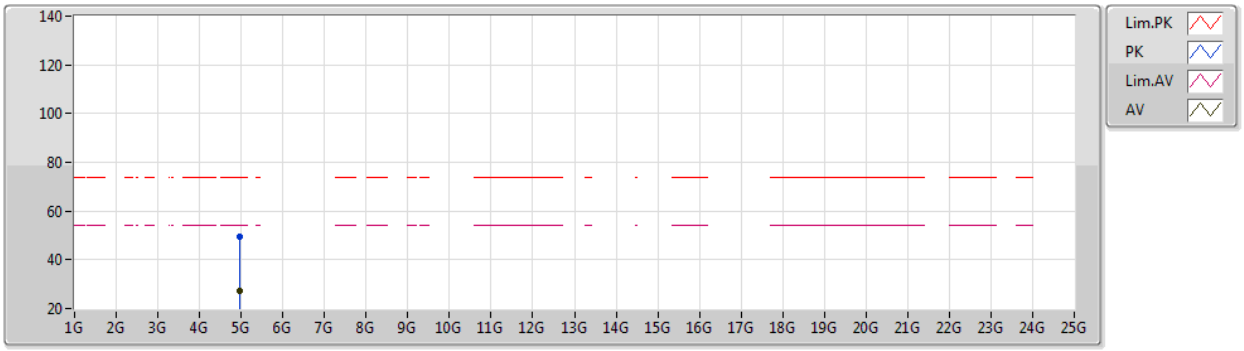


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3868G	38.67	54.00	-15.33	33.56	3	Horizontal	56	2.44	-	5.11	29.57	3.99	-
AV	2.44G	75.75	Inf	-Inf	33.82	3	Horizontal	56	2.44	-	41.93	29.78	4.04	-
AV	2.4976G	39.83	54.00	-14.17	34.28	3	Horizontal	56	2.44	-	5.55	30.18	4.10	-
PK	2.3868G	61.17	74.00	-12.83	33.56	3	Horizontal	56	2.44	-	27.61	29.57	3.99	-
PK	2.44G	98.25	Inf	-Inf	33.82	3	Horizontal	56	2.44	-	64.43	29.78	4.04	-
PK	2.4976G	62.33	74.00	-11.67	34.28	3	Horizontal	56	2.44	-	28.05	30.18	4.10	-

BT-BR(1Mbps)

2440MHz_TX

23/03/2020



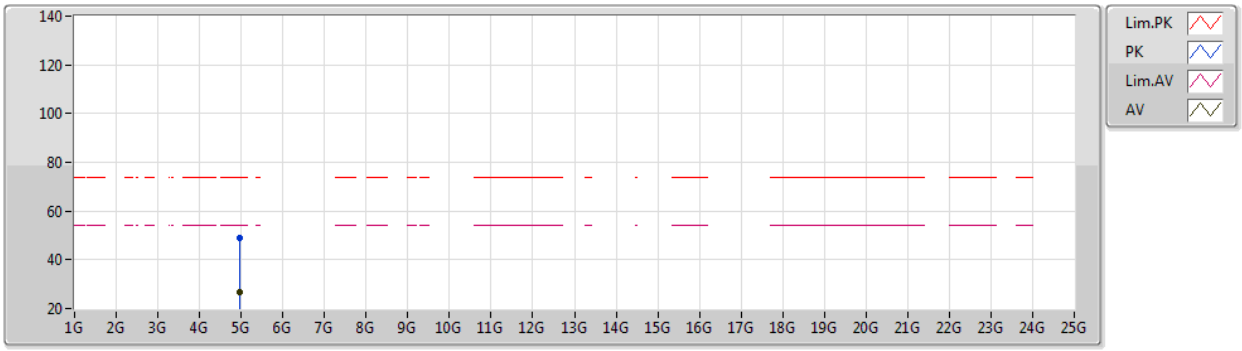
Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.95927G	27.11	54.00	-26.89	10.47	3	Vertical	357	2.34	-	16.64	33.92	5.89	29.34
PK	4.95927G	49.61	74.00	-24.39	10.47	3	Vertical	357	2.34	-	39.14	33.92	5.89	29.34

Level (dBuV/m) = Raw(Read Level) + AF(Antenna Factor) + CL(Cable Loss) - PA(Preamp Factor)

BT-BR(1Mbps)

2440MHz_TX

23/03/2020

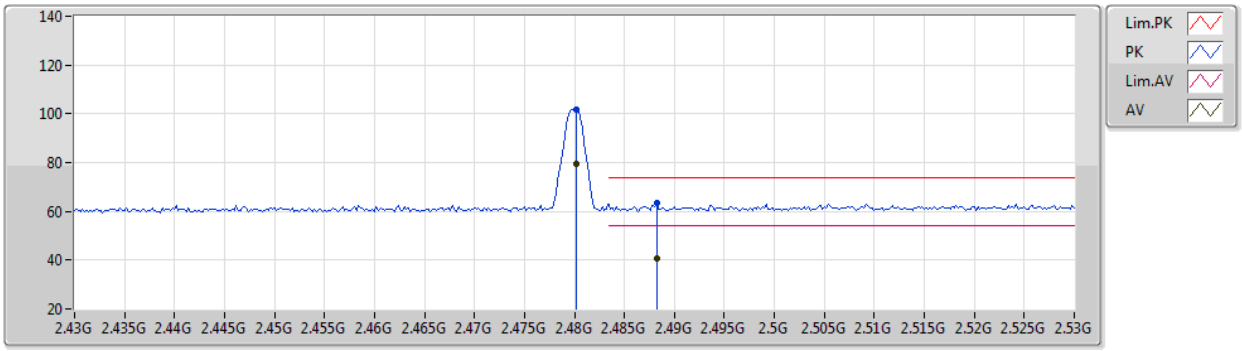


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.95972G	26.48	54.00	-27.52	10.47	3	Horizontal	253	2.36	-	16.01	33.92	5.89	29.34
PK	4.95972G	48.98	74.00	-25.02	10.47	3	Horizontal	253	2.36	-	38.51	33.92	5.89	29.34

BT-BR(1Mbps)

2480MHz_TX

23/03/2020

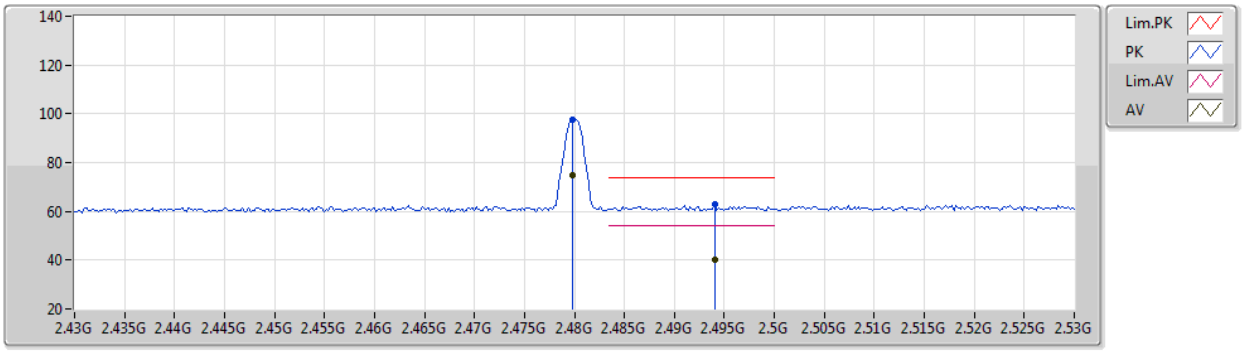


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.4802G	79.24	Inf	-Inf	34.12	3	Vertical	359	2.51	-	45.12	30.04	4.08	-
AV	2.4882G	40.85	54.00	-13.15	34.20	3	Vertical	359	2.51	-	6.65	30.11	4.09	-
PK	2.4802G	101.74	Inf	-Inf	34.12	3	Vertical	359	2.51	-	67.62	30.04	4.08	-
PK	2.4882G	63.35	74.00	-10.65	34.20	3	Vertical	359	2.51	-	29.15	30.11	4.09	-

BT-BR(1Mbps)

2480MHz_TX

23/03/2020

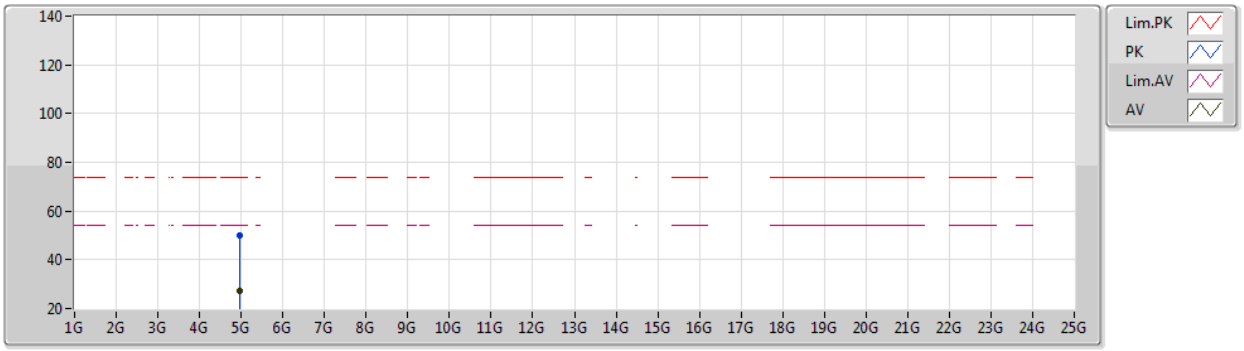


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.4798G	74.94	Inf	-Inf	34.12	3	Horizontal	343	1.18	-	40.82	30.04	4.08	-
AV	2.494G	40.22	54.00	-13.78	34.24	3	Horizontal	343	1.18	-	5.98	30.15	4.09	-
PK	2.4798G	97.44	Inf	-Inf	34.12	3	Horizontal	343	1.18	-	63.32	30.04	4.08	-
PK	2.494G	62.72	74.00	-11.28	34.24	3	Horizontal	343	1.18	-	28.48	30.15	4.09	-

BT-BR(1Mbps)

2480MHz_TX

23/03/2020

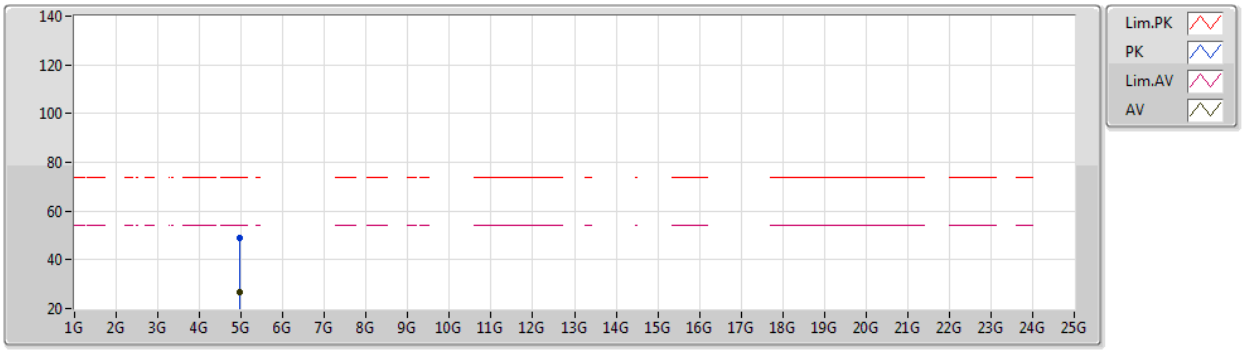


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.95978G	27.39	54.00	-26.61	10.47	3	Vertical	211	1.84	-	16.92	33.92	5.89	29.34
PK	4.95978G	49.89	74.00	-24.11	10.47	3	Vertical	211	1.84	-	39.42	33.92	5.89	29.34

BT-BR(1Mbps)

2480MHz_TX

23/03/2020

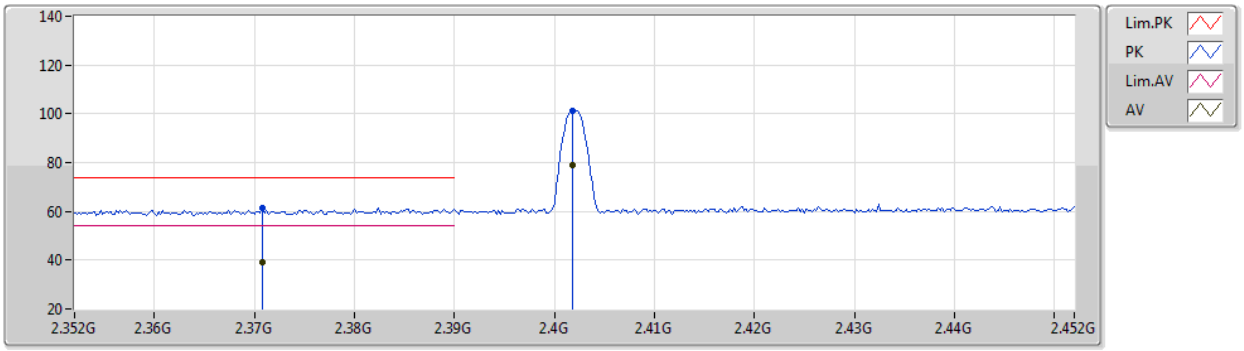


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.95804G	26.67	54.00	-27.33	10.47	3	Horizontal	0	1.50	-	16.20	33.92	5.89	29.34
PK	4.95804G	49.17	74.00	-24.83	10.47	3	Horizontal	0	1.50	-	38.70	33.92	5.89	29.34

BT-EDR(3Mbps)

2402MHz_TX

23/03/2020

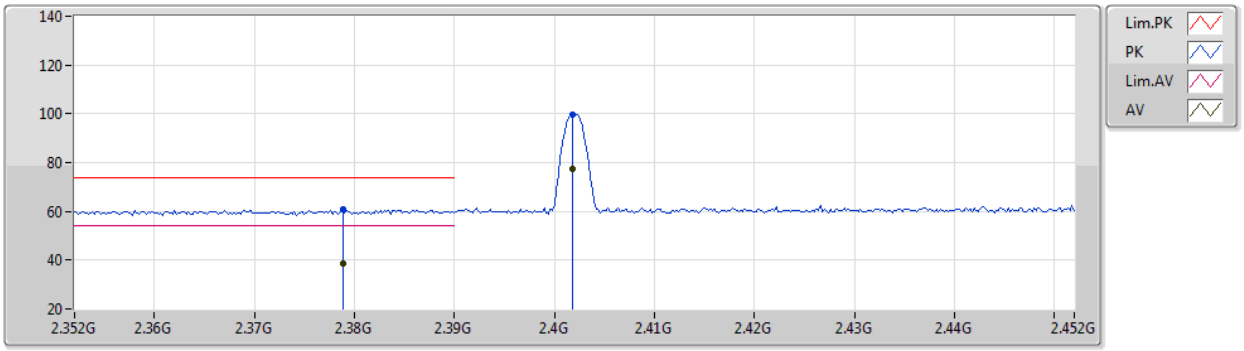


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3708G	39.05	54.00	-14.95	33.39	3	Vertical	360	2.95	-	5.66	29.41	3.98	-
AV	2.4018G	78.88	Inf	-Inf	33.71	3	Vertical	360	2.95	-	45.17	29.70	4.01	-
PK	2.3708G	61.55	74.00	-12.45	33.39	3	Vertical	360	2.95	-	28.16	29.41	3.98	-
PK	2.4018G	101.38	Inf	-Inf	33.71	3	Vertical	360	2.95	-	67.67	29.70	4.01	-

BT-EDR(3Mbps)

2402MHz_TX

23/03/2020

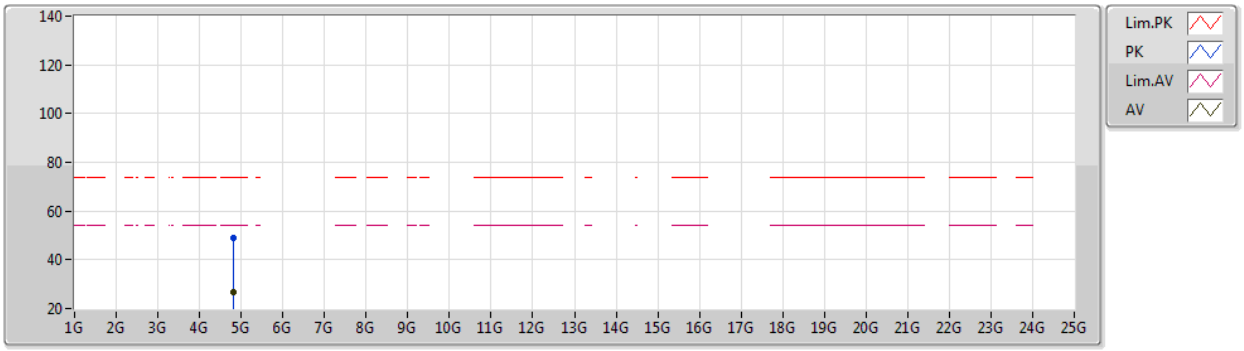


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3788G	38.54	54.00	-15.46	33.48	3	Horizontal	48	2.54	-	5.06	29.49	3.99	-
AV	2.4018G	77.29	Inf	-Inf	33.71	3	Horizontal	48	2.54	-	43.58	29.70	4.01	-
PK	2.3788G	61.04	74.00	-12.96	33.48	3	Horizontal	48	2.54	-	27.56	29.49	3.99	-
PK	2.4018G	99.79	Inf	-Inf	33.71	3	Horizontal	48	2.54	-	66.08	29.70	4.01	-

BT-EDR(3Mbps)

2402MHz_TX

23/03/2020

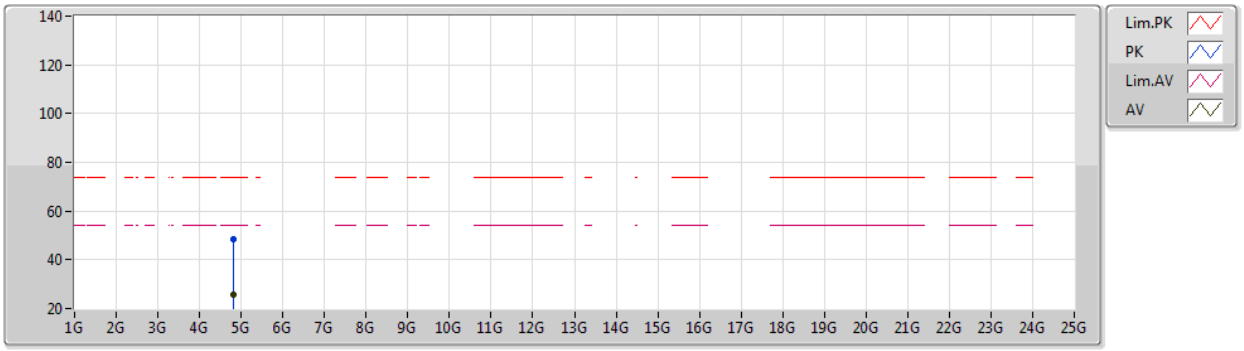


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.80246G	26.55	54.00	-27.45	9.97	3	Vertical	224	1.14	-	16.58	33.60	5.78	29.41
PK	4.80246G	49.05	74.00	-24.95	9.97	3	Vertical	224	1.14	-	39.08	33.60	5.78	29.41

BT-EDR(3Mbps)

2402MHz_TX

23/03/2020

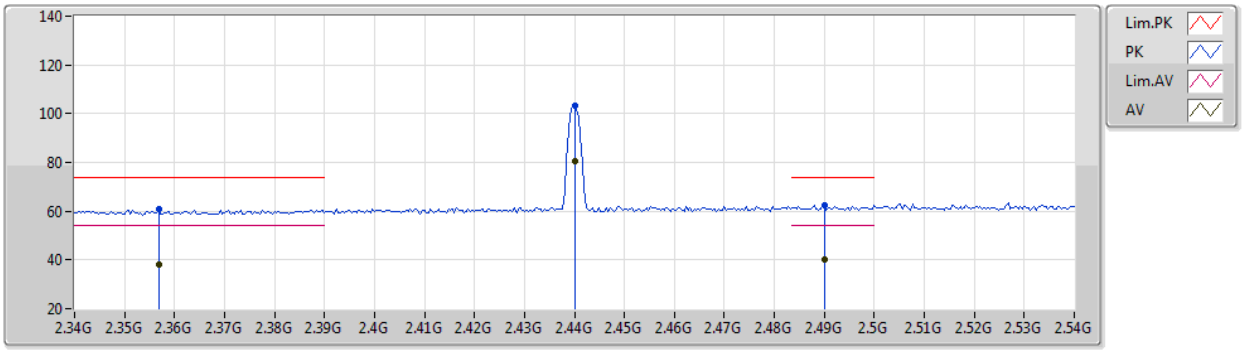


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.80338G	25.92	54.00	-28.08	9.98	3	Horizontal	151	1.78	-	15.94	33.61	5.78	29.41
PK	4.80338G	48.42	74.00	-25.58	9.98	3	Horizontal	151	1.78	-	38.44	33.61	5.78	29.41

BT-EDR(3Mbps)

2440MHz_TX

25/03/2020

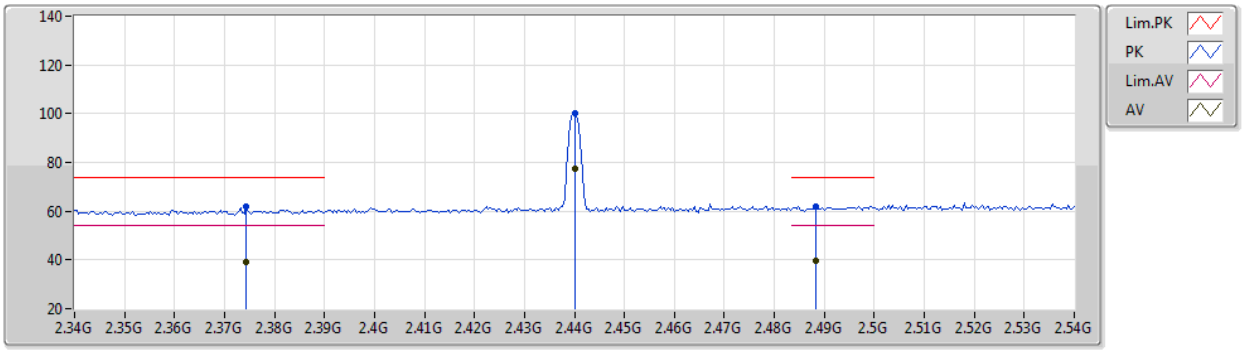


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3568G	38.33	54.00	-15.67	33.24	3	Vertical	360	2.84	-	5.09	29.27	3.97	-
AV	2.44G	80.62	Inf	-Inf	33.82	3	Vertical	360	2.84	-	46.80	29.78	4.04	-
AV	2.49G	40.04	54.00	-13.96	34.21	3	Vertical	360	2.84	-	5.83	30.12	4.09	-
PK	2.3568G	60.83	74.00	-13.17	33.24	3	Vertical	360	2.84	-	27.59	29.27	3.97	-
PK	2.44G	103.12	Inf	-Inf	33.82	3	Vertical	360	2.84	-	69.30	29.78	4.04	-
PK	2.49G	62.54	74.00	-11.46	34.21	3	Vertical	360	2.84	-	28.33	30.12	4.09	-

BT-EDR(3Mbps)

2440MHz_TX

23/03/2020

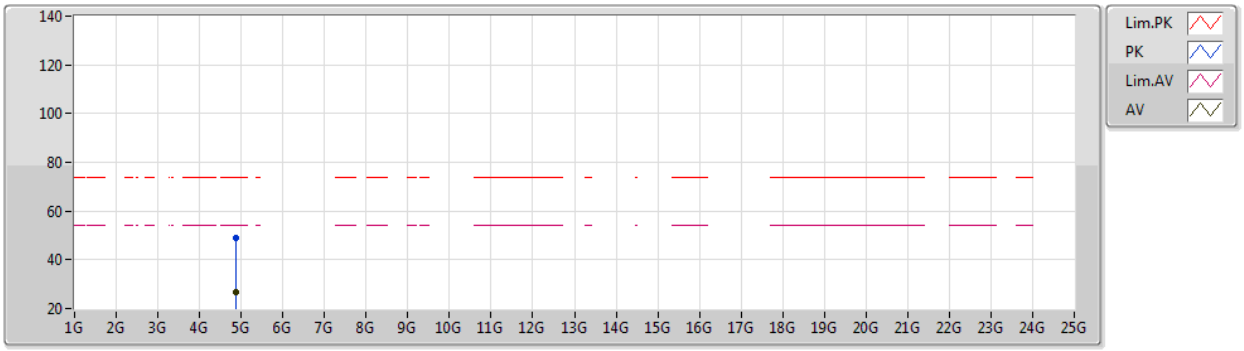


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3744G	39.22	54.00	-14.78	33.42	3	Horizontal	56	2.44	-	5.80	29.44	3.98	-
AV	2.44G	77.51	Inf	-Inf	33.82	3	Horizontal	56	2.44	-	43.69	29.78	4.04	-
AV	2.4884G	39.52	54.00	-14.48	34.20	3	Horizontal	56	2.44	-	5.32	30.11	4.09	-
PK	2.3744G	61.72	74.00	-12.28	33.42	3	Horizontal	56	2.44	-	28.30	29.44	3.98	-
PK	2.44G	100.01	Inf	-Inf	33.82	3	Horizontal	56	2.44	-	66.19	29.78	4.04	-
PK	2.4884G	62.02	74.00	-11.98	34.20	3	Horizontal	56	2.44	-	27.82	30.11	4.09	-

BT-EDR(3Mbps)

2440MHz_TX

23/03/2020

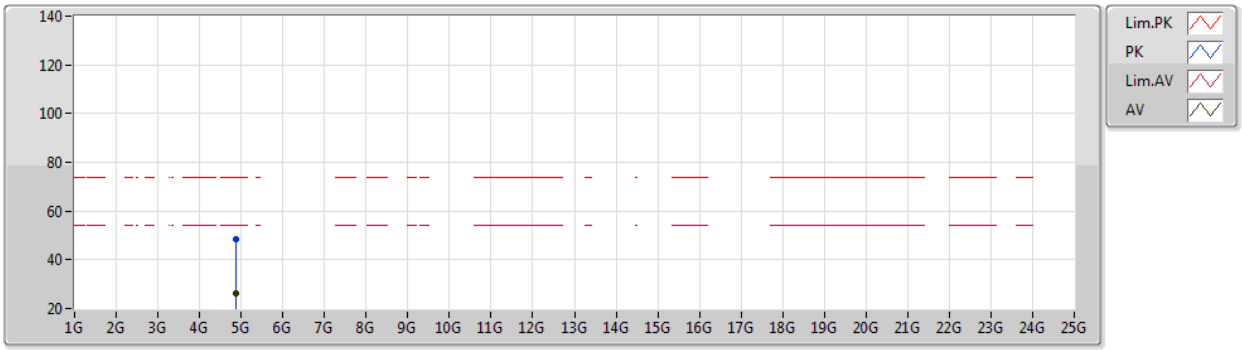


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.87881G	26.53	54.00	-27.47	10.21	3	Vertical	272	1.55	-	16.32	33.76	5.83	29.38
PK	4.87881G	49.03	74.00	-24.97	10.21	3	Vertical	272	1.55	-	38.82	33.76	5.83	29.38

BT-EDR(3Mbps)

2440MHz_TX

23/03/2020

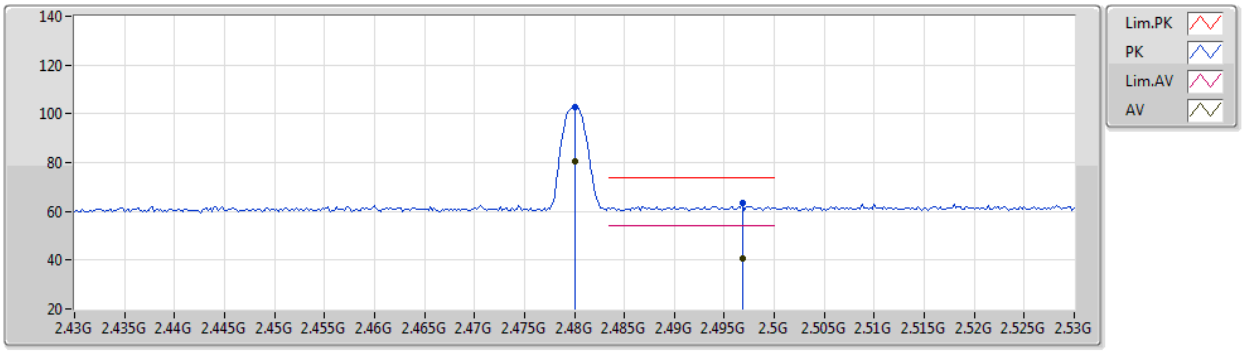


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.88152G	26.08	54.00	-27.92	10.22	3	Horizontal	318	2.01	-	15.86	33.76	5.83	29.37
PK	4.88152G	48.58	74.00	-25.42	10.22	3	Horizontal	318	2.01	-	38.36	33.76	5.83	29.37

BT-EDR(3Mbps)

2480MHz_TX

25/03/2020

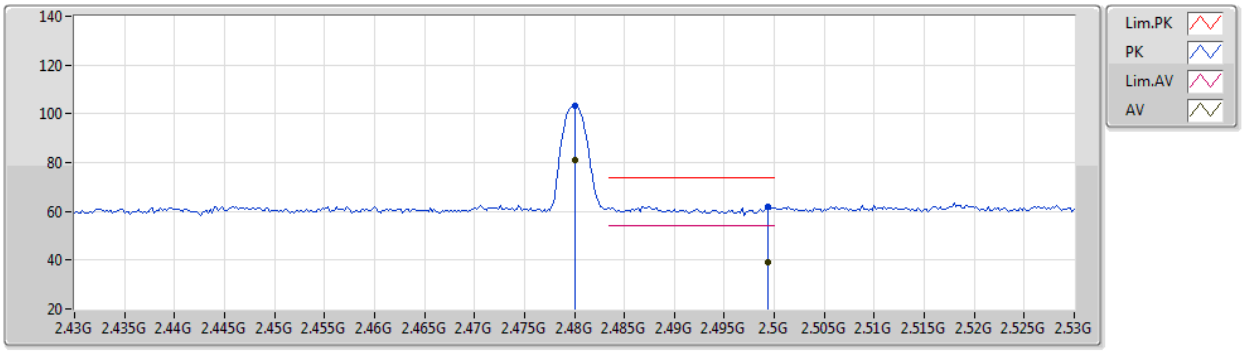


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.48G	80.33	Inf	-Inf	34.12	3	Vertical	359	2.50	-	46.21	30.04	4.08	-
AV	2.4968G	40.73	54.00	-13.27	34.27	3	Vertical	359	2.50	-	6.46	30.17	4.10	-
PK	2.48G	102.83	Inf	-Inf	34.12	3	Vertical	359	2.50	-	68.71	30.04	4.08	-
PK	2.4968G	63.23	74.00	-10.77	34.27	3	Vertical	359	2.50	-	28.96	30.17	4.10	-

BT-EDR(3Mbps)

2480MHz_TX

25/03/2020

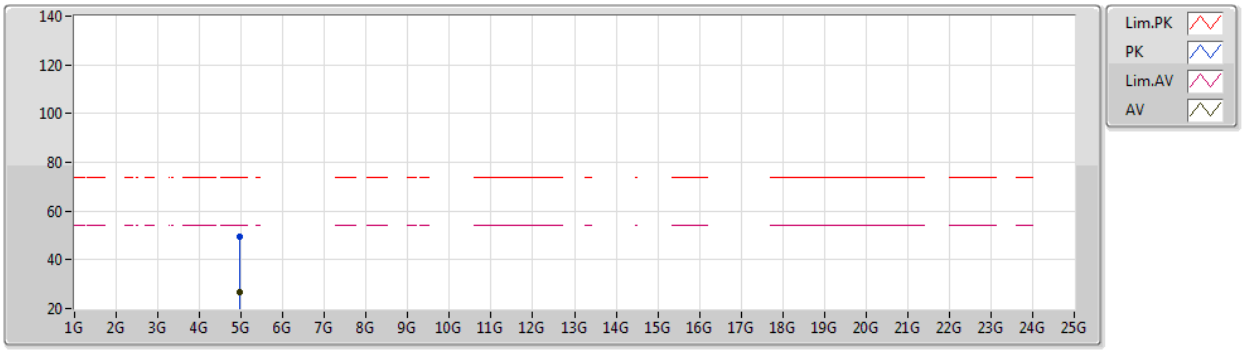


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.48G	80.83	Inf	-Inf	34.12	3	Horizontal	342	1.19	-	46.71	30.04	4.08	-
AV	2.4994G	39.23	54.00	-14.77	34.30	3	Horizontal	342	1.19	-	4.93	30.20	4.10	-
PK	2.48G	103.33	Inf	-Inf	34.12	3	Horizontal	342	1.19	-	69.21	30.04	4.08	-
PK	2.4994G	61.73	74.00	-12.27	34.30	3	Horizontal	342	1.19	-	27.43	30.20	4.10	-

BT-EDR(3Mbps)

2480MHz_TX

23/03/2020

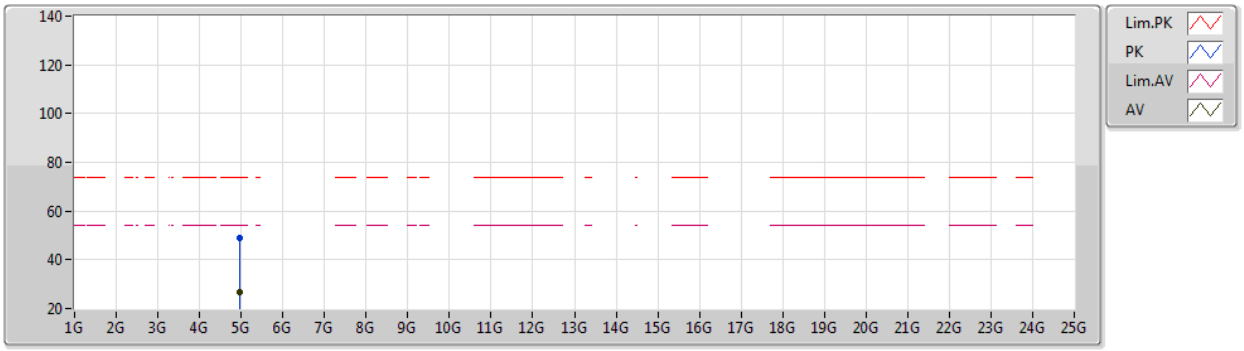


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.96249G	26.93	54.00	-27.07	10.47	3	Vertical	234	1.58	-	16.46	33.92	5.89	29.34
PK	4.96249G	49.43	74.00	-24.57	10.47	3	Vertical	234	1.58	-	38.96	33.92	5.89	29.34

BT-EDR(3Mbps)

2480MHz_TX

23/03/2020



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	4.96029G	26.71	54.00	-27.29	10.47	3	Horizontal	237	1.18	-	16.24	33.92	5.89	29.34
PK	4.96029G	49.21	74.00	-24.79	10.47	3	Horizontal	237	1.18	-	38.74	33.92	5.89	29.34