FCC Test Report

FCC ID	:	**SWX-UVPT**
Equipment	:	**UniFi VoIP Phone Touch**
Brand Name	:	**UBIQUITI**
Model Name	:	**UVP-Touch**
Applicant	:	**Ubiquiti Networks, Inc. 685 Third Avenue, 27th Floor New York, New York 10017 USA**
Manufacturer	:	**Ubiquiti Networks, Inc. 685 Third Avenue, 27th Floor New York, New York 10017 USA**
Standard	:	**47 CFR FCC Part 15.247**

The product was received on Nov. 08, 2018, and testing was started from Nov. 13, 2018 and completed on Dec. 28, 2018. 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.

Allen Lin

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
FR5O0205-02AD	01	Initial issue of report	Feb. 27, 2019

Summary of Test Result

Report Clause	Ref. Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	FCC 15.203
3.1	15.207	AC Power-line Conducted Emissions	PASS	FCC 15.207
3.2	15.247(a)	20dB Bandwidth	PASS	15.247(a)
3.2	15.247(a)	Carrier Frequency Separation	PASS	15.247(a)
3.3	15.247(b)	Maximum Conducted Output Power	PASS	15.247(b)
3.4	15.247(a)	Number of Hopping Frequencies and Hopping Bandedge	PASS	15.247(a)
3.5	15.247(a)	Time of Occupancy (Dwell Time)	PASS	15.247(a)
3.6	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	15.247(d)
3.7	15.247(d)	Emissions in Restricted Frequency Bands	PASS	Restricted Bands: FCC 15.209

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

Reviewed by: Jackson Tsai

Report Producer: 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	-	-	internal antenna	Murata

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

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 simultaneously.

For 5GHz function:

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

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

For BT function:

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

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

1.1.3 EUT Information

Operational Condition				
EUT Power Type	From 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)	0.784	1.057	2.887m	1k
BT-EDR(2Mbps)	0.764	1.169	2.889m	1k
BT-EDR(3Mbps)	0.773	1.118	2.891m	1k

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

1.2 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR FCC Part 15
- KDB 558074 D01 v05
- ANSI C63.10-2013

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.			

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
AC Conduction	CO04-HY	Andy	23°C / 61%	13/Nov/2018
RF Conducted	TH01-HY	Streak	23.4°C / 64%	28/Dec/2018
Radiated	03CH02-HY	Lego	23°C / 63%	28/Dec/2018

1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.54 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	1.6 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.9 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.3 dB	Confidence levels of 95%
Temperature	0.7 °C	Confidence levels of 95%
Humidity	4 %	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Condition

RF Conducted	Abbreviation	Remark
TnomVnom	Tnom	20°C
-	Vnom	110V

2.2 Test Channel Mode

Test Software Version	QDART-V 100038

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	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

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

Note.
Non-AFH: DH5 Packet permit maximum 1600/ 79 / 6 = 3.37 hops per second in each channel (5 time slots RX, 1 time slot TX). So, the dwell time is the time duration of the pulse times 3.37 x 1.185 = 4 within 1.185 seconds.
AFH: DH5 Packet permit maximum 800/ 20 / 6 = 6.67 hops per second in each channel (5 time slots RX, 1 time slot TX). So, the dwell time is the time duration of the pulse times 13.33 x 8 = 106.6 within 8 seconds.
Under the above conditions, Non-AFH Mode configuration was found to be the worst case and measured during the test.

2.4 Support Equipment

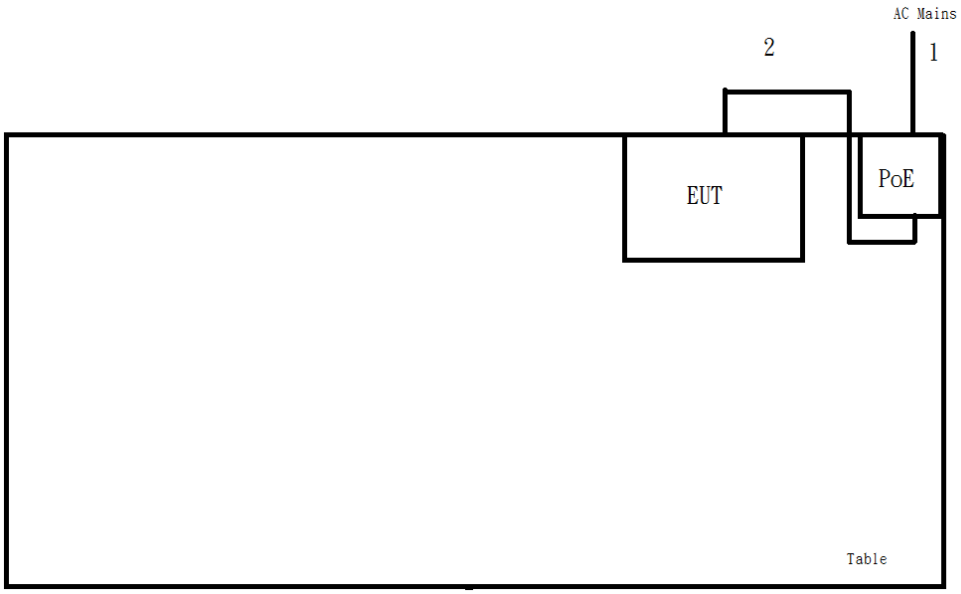
Support Equipment – AC Conduction				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	PoE	UBNT	GP-C500-120G	N/A

Support Equipment – RF Conducted				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	Notebook	DELL	E5410	DoC
2	Adapter for NB	N/A	N/A	DoC

Support Equipment – Radiated Emission				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	PoE(Remote)	UBNT	GP-C500-120G	N/A

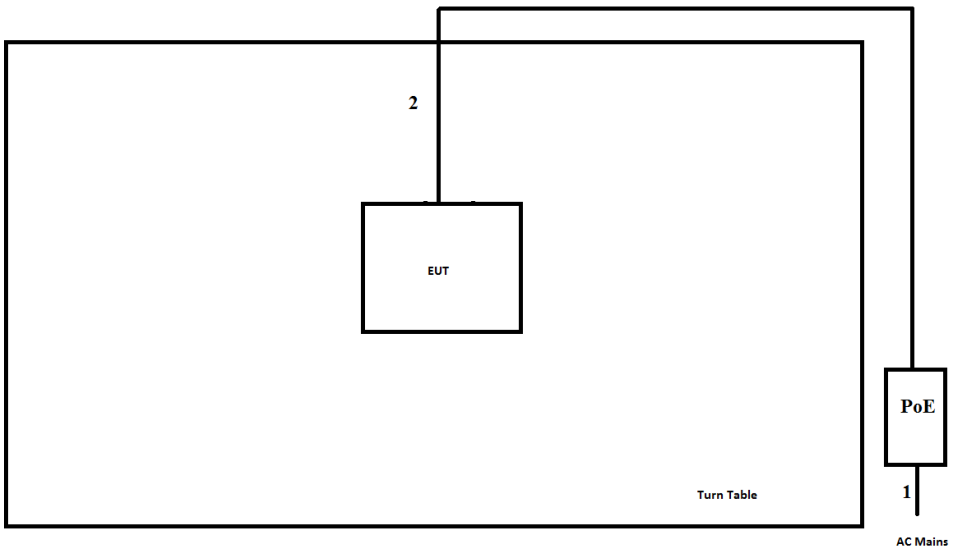
2.5 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



Item	Connection	Shielded	Length
1	AC Power line	No	1.8 m
2	RJ45 Cable	No	1.0 m

Test Setup Diagram - Radiated Test



Item	Connection	Shielded	Length
1	RJ45 Cable	No	10 m
2	AC Power line	No	0.1 m

3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	**Quasi-Peak**	**Average**
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50
Note 1: * Decreases with the logarithm of the frequency.		

3.1.2 Measuring Instruments

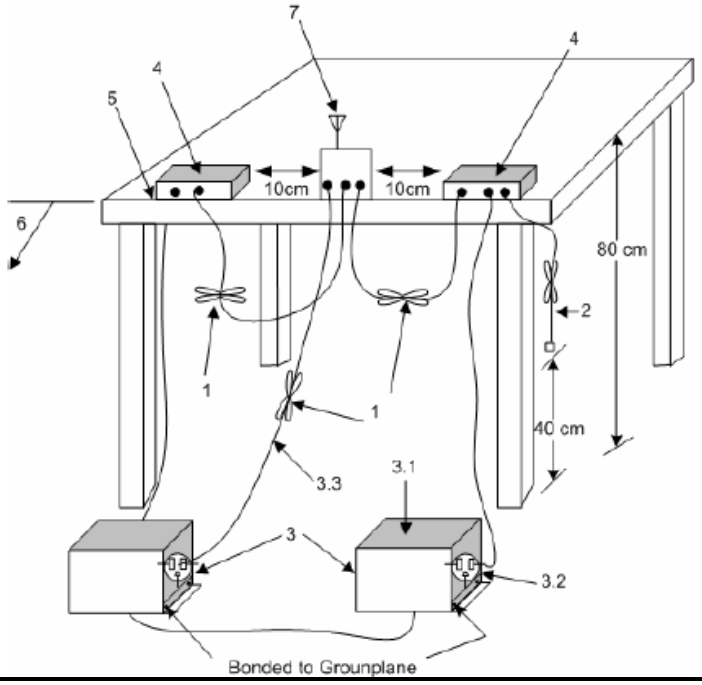
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

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

3.1.4 Test Setup

AC Power-line Conducted Emissions



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	

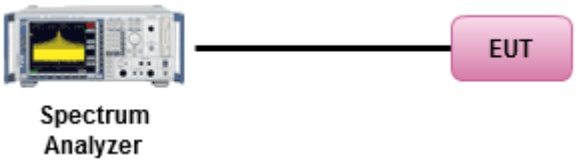
3.2.2 Measuring Instruments

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

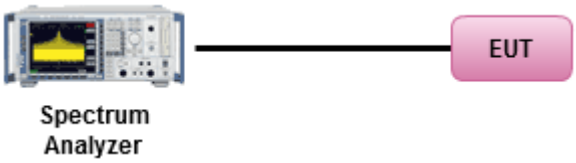
3.4.3 Measuring Instruments

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
 Spectrum Analyzer

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	

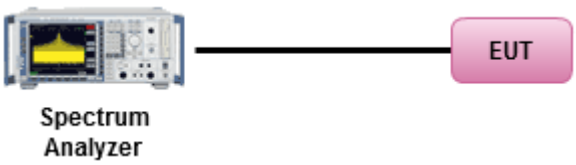
3.5.2 Measuring Instruments

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)


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.	

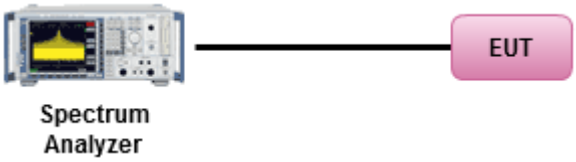
3.6.2 Measuring Instruments

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.

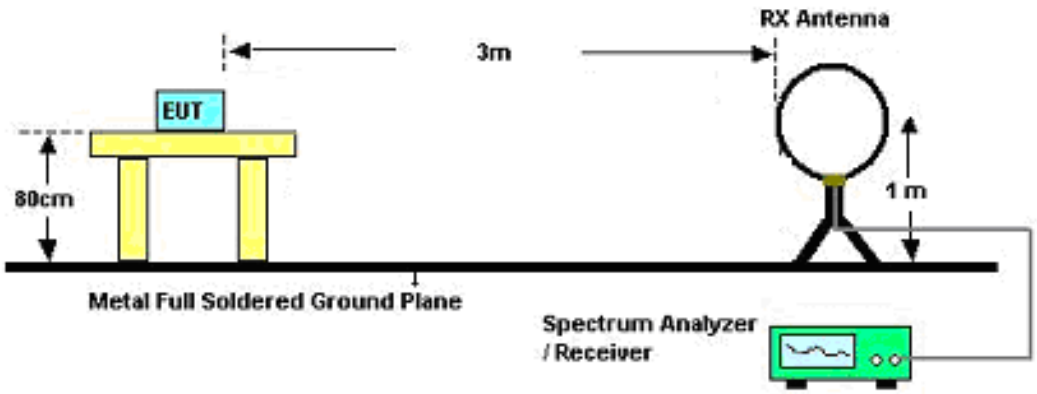
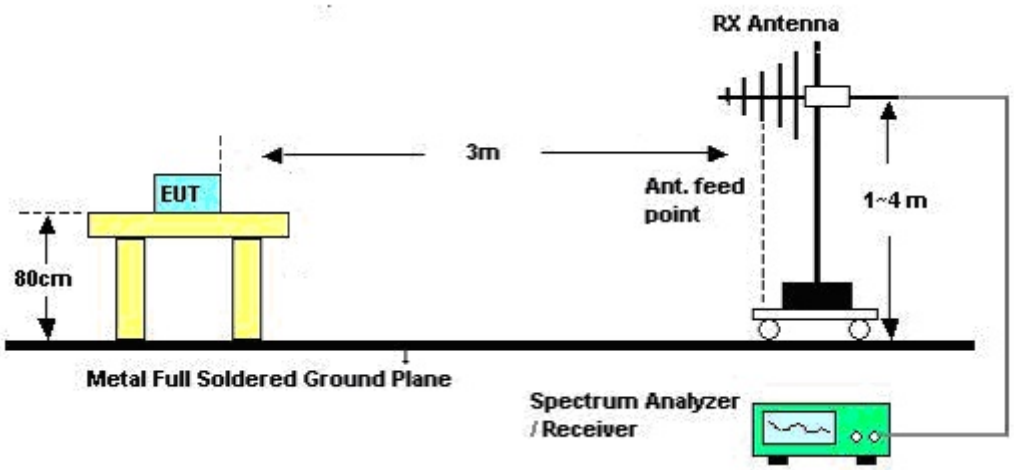
3.7.2 Measuring Instruments

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

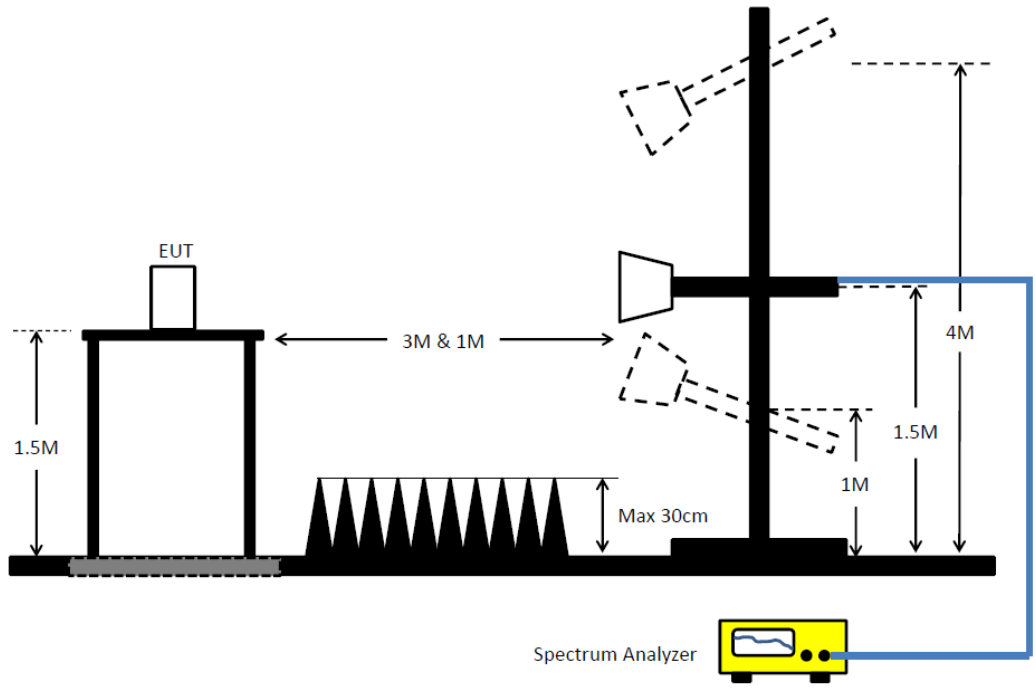
3.7.3 Test Procedures

Test Method	
▪ The average emission levels shall be measured in [hopping duty factor].	
▪ Refer as ANSI C63.10; clause 6.9.2.2 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.

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	ESR	102051	9KHz ~ 3.6GHz	03/May/2018	02/May/2019
LISN	R&S	ENV216	101295	9kHz ~ 30MHz	17/Nov/2017	16/Nov/2018
RF Cable-CON	MTJ	RG142	CB002-CO	9kHz ~ 200MHz	17/Sep/2018	16/Sep/2019
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	12/Oct/2018	11/Oct/2019

NCR : Non-Calibration Require

Instrument for Conducted Test

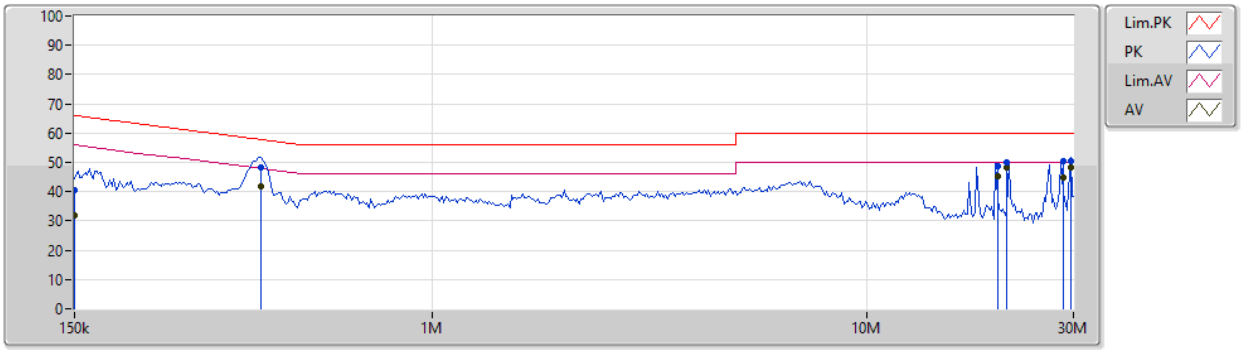
Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV 40	101013	10Hz~40GHz	05/Feb/2018	04/Feb/2019
Power Sensor	Anritsu	MA2411B	0917017	300MHz ~ 40GHz	05/Feb/2018	04/Feb/2019
Power Meter	Anritsu	ML2495A	0949003	300MHz ~ 40GHz	05/Feb/2018	04/Feb/2019
2Way Divider	Microwave	MVE8546	TH01-DV-01	1MHz~6MHz	23/Jan/2018	22/Jan/2019
Cable 0.2m	HUBER	MY10710/4	RF Cable - 01	30MHz~1G	11/Jan/2018	10/Jan/2019
Cable 0.2m	HUBER	MY10710/4	RF Cable - 01	1G~18G	11/Jan/2018	10/Jan/2019
Cable 0.5m	HUBER	MY10714/4	RF Cable – 05	30MHz~1G	11/Jan/2018	10/Jan/2019
SMB100A Signal Generator	R&S	SMB100A03	181147	100kHz~40GHz	12/Nov/2018	10/Nov/2020

Instrument for Radiated Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	30MHz ~ 1GHz 3m	19/Oct/2018	18/Oct/2019
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	1GHz ~ 18GHz 3m	17/Oct/2018	16/Oct/2019
Amplifier	Agilent	8447D	2944A11149	100kHz ~ 1.3GHz	27Jul/2018	02/Jul/2019
Microwave Preamplifier	Agilent	8449B	3008A02373	1GHz ~ 26.5GHz	23/Oct/2018	22/Oct/2019
Signal Analyzer	R&S	FSV40	101500	10Hz ~ 40GHz	18/Jul/2018	17/Jul/2019
RF Cable-R03m	Jye Bao	RG142	CB017	9kHz ~ 1GHz	19/Jan/2018	18/Jan/2019
RF Cable-high	SUHNER	SUCOFLEX104	MY34918/4	1GHz ~ 40GHz	19/Jan/2018	18/Jan/2019
Bilog Antenna & 5dB Attenuator	SCHAFFNER / MTJ	CBL 6112B / MTJ6102-05	2723 / 2	30MHz ~ 1GHz	08/Sep/2018	07/Sep/2019
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170154	18GHz ~ 40GHz	06/Feb/2018	05/Feb/2019
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120D	BBHA 9120 D 1531	1GHz ~ 18GHz	18/Apr/ 2018	17/Apr/2019
Preamplifier	MITEQ	TTA1840-35-HG	1864481	18GHz ~ 40GHz	24/Aug/2018	23/Aug/2019
EMI Test Receiver	R&S	ESR3	102052	9kHz ~ 3.6GHz	10/Apr/2018	09/Apr/2019

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

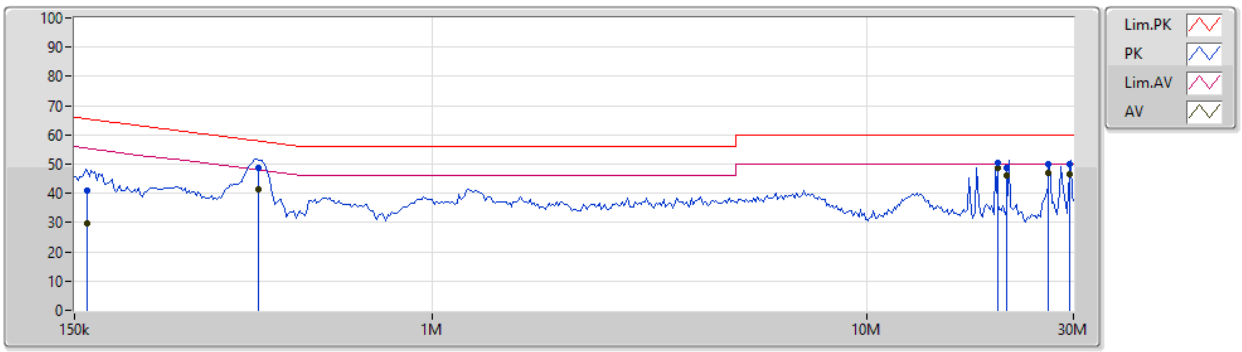
13/11/2018



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	150.036k	40.37	66.00	-25.63	19.67	Neutral	-	20.70	9.63	0.04	10.00
AV	150.036k	31.69	56.00	-24.31	19.67	Neutral	-	12.02	9.63	0.04	10.00
QP	404.385k	48.34	57.76	-9.42	19.71	Neutral	-	28.63	9.61	0.10	10.00
AV	404.385k	41.91	47.76	-5.85	19.71	Neutral	-	22.20	9.61	0.10	10.00
QP	20.095M	48.56	60.00	-11.44	19.91	Neutral	-	28.65	9.71	0.20	10.00
AV	20.095M	45.15	50.00	-4.85	19.91	Neutral	-	25.24	9.71	0.20	10.00
QP	21.038M	50.16	60.00	-9.84	19.87	Neutral	-	30.29	9.71	0.16	10.00
AV	21.038M	48.37	50.00	-1.63	19.87	Neutral	"Worst"	28.50	9.71	0.16	10.00
QP	28.375M	50.54	60.00	-9.46	19.90	Neutral	-	30.64	9.69	0.21	10.00
AV	28.375M	44.91	50.00	-5.09	19.90	Neutral	-	25.01	9.69	0.21	10.00
QP	29.558M	50.45	60.00	-9.55	19.97	Neutral	-	30.48	9.69	0.28	10.00
AV	29.558M	48.24	50.00	-1.76	19.97	Neutral	-	28.27	9.69	0.28	10.00

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

13/11/2018



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	160.311k	40.89	65.45	-24.56	19.65	Line	-	21.24	9.62	0.03	10.00
AV	160.311k	29.85	55.45	-25.60	19.65	Line	-	10.20	9.62	0.03	10.00
QP	397.561k	48.51	57.91	-9.40	19.71	Line	-	28.80	9.61	0.10	10.00
AV	397.561k	41.38	47.91	-6.53	19.71	Line	-	21.67	9.61	0.10	10.00
QP	20.099M	50.55	60.00	-9.45	19.82	Line	-	30.73	9.62	0.20	10.00
AV	20.099M	48.84	50.00	-1.16	19.82	Line	"Worst"	29.02	9.62	0.20	10.00
QP	21.044M	48.82	60.00	-11.18	19.77	Line	-	29.05	9.61	0.16	10.00
AV	21.044M	46.13	50.00	-3.87	19.77	Line	-	26.36	9.61	0.16	10.00
QP	26.254M	50.19	60.00	-9.81	19.62	Line	-	30.57	9.54	0.08	10.00
AV	26.254M	46.98	50.00	-3.02	19.62	Line	-	27.36	9.54	0.08	10.00
QP	29.324M	50.10	60.00	-9.90	19.77	Line	-	30.33	9.51	0.26	10.00
AV	29.324M	46.65	50.00	-3.35	19.77	Line	-	26.88	9.51	0.26	10.00

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
BT-BR(1Mbps)	918.75k	897.051k	897KF1D	915k	893.303k
BT-EDR(2Mbps)	1.278M	1.187M	1M19G1D	1.256M	1.183M
BT-EDR(3Mbps)	1.255M	1.192M	1M19G1D	1.254M	1.188M

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;

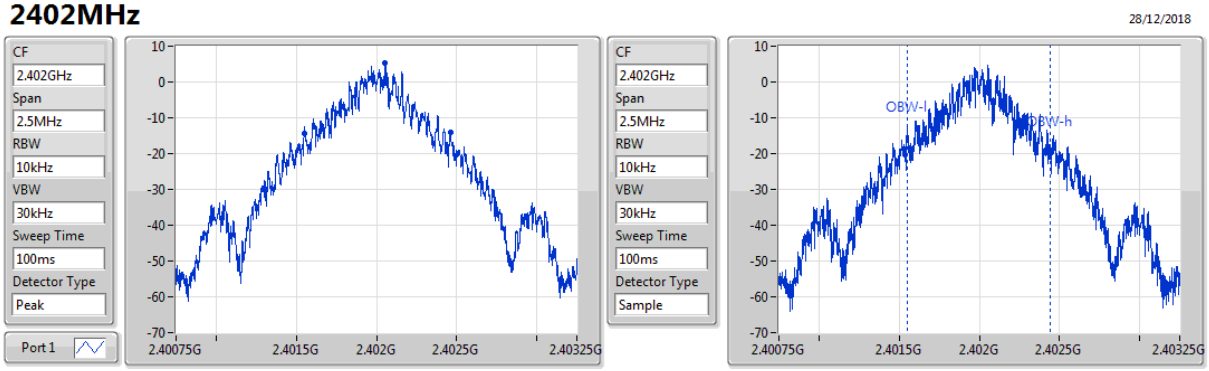
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	Inf	915k	894.553k
2441MHz	Pass	Inf	918.75k	897.051k
2480MHz	Pass	Inf	916.25k	893.303k
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.256M	1.183M
2441MHz	Pass	Inf	1.278M	1.187M
2480MHz	Pass	Inf	1.256M	1.184M
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.254M	1.192M
2441MHz	Pass	Inf	1.255M	1.188M
2480MHz	Pass	Inf	1.254M	1.192M

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

BT-BR(1Mbps) **EBW**

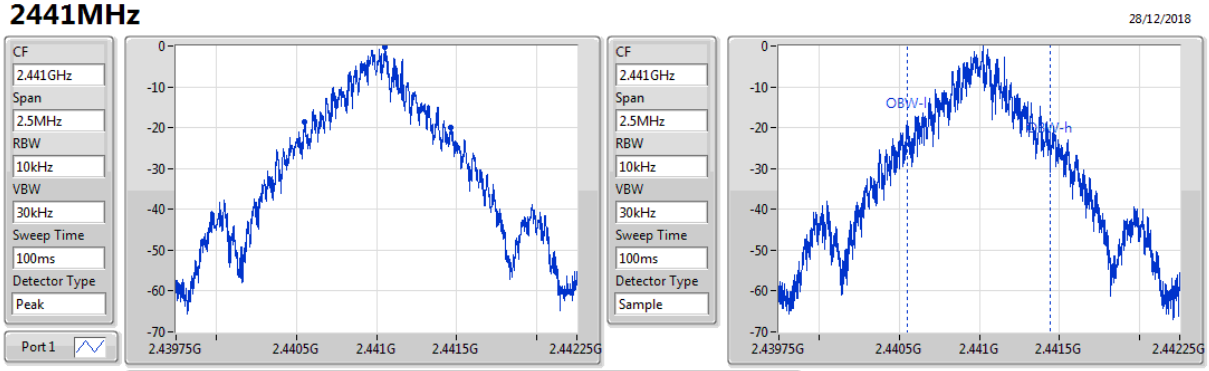
2402MHz



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
915k	2.401548G	2.402463G	894.553k	2.401548G	2.402442G	Inf	1

BT-BR(1Mbps) **EBW**

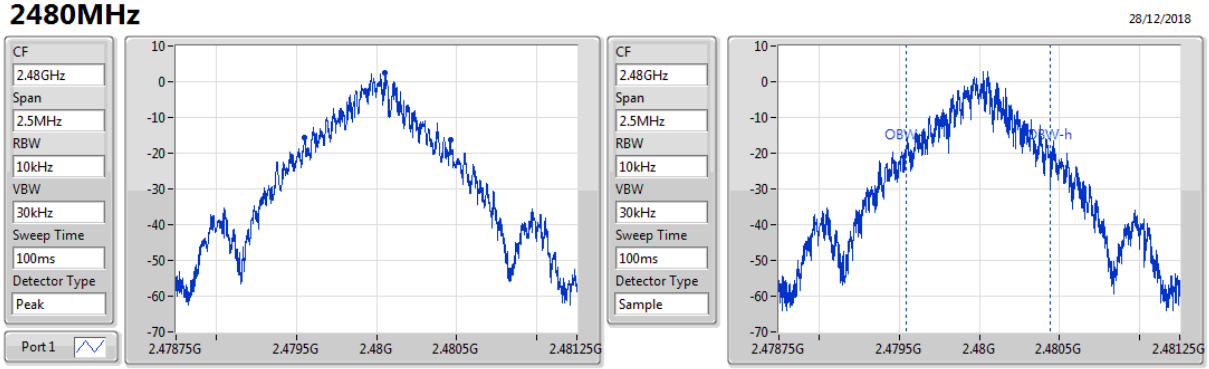
2441MHz



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
918.75k	2.440548G	2.441466G	897.051k	2.440548G	2.441445G	Inf	1

BT-BR(1Mbps) **EBW**

2480MHz

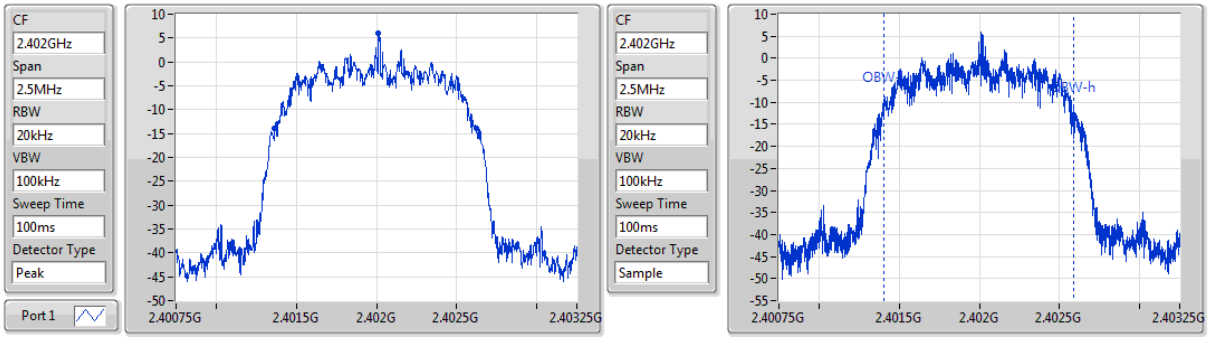


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
916.25k	2.479548G	2.480464G	893.303k	2.479546G	2.48044G	Inf	1

BT-EDR(2Mbps) **EBW**

2402MHz

28/12/2018

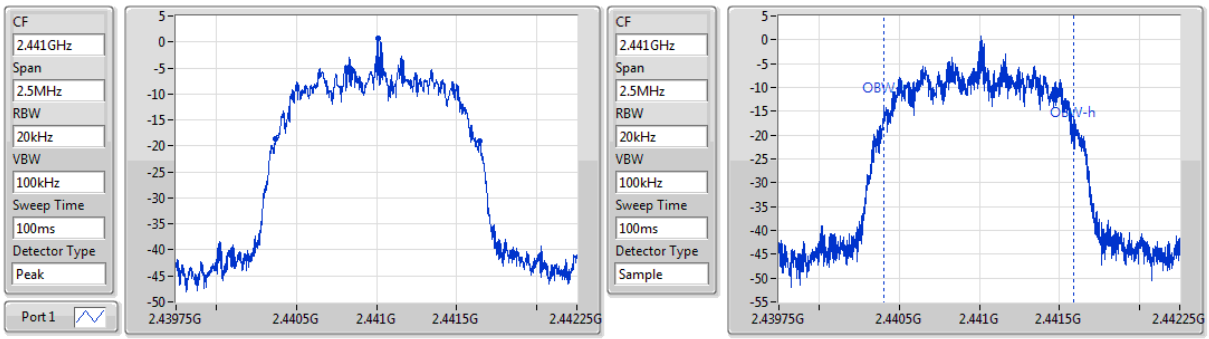


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.256M	2.401366G	2.402623G	1.183M	2.401403G	2.402586G	Inf	1

BT-EDR(2Mbps) **EBW**

2441MHz

28/12/2018

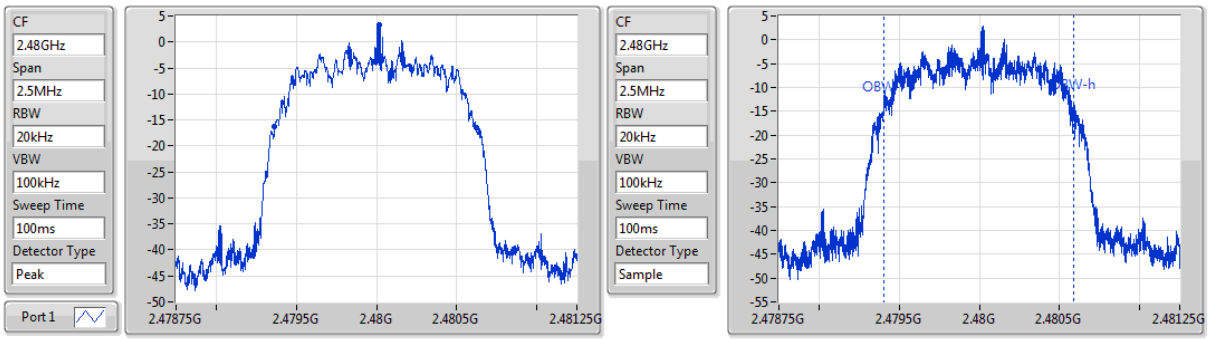


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.278M	2.440368G	2.441645G	1.187M	2.440402G	2.441588G	Inf	1

BT-EDR(2Mbps) **EBW**

2480MHz

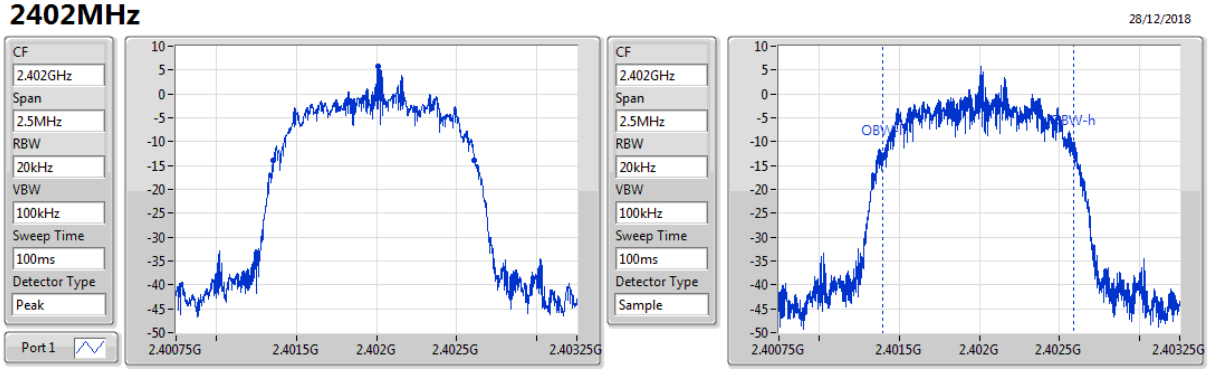
28/12/2018



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.256M	2.479366G	2.480623G	1.184M	2.479404G	2.480588G	Inf	1

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

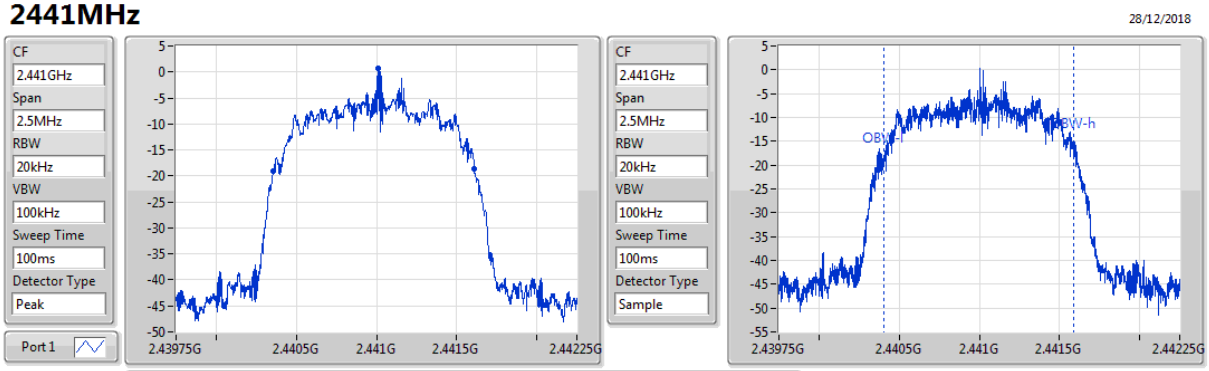
2402MHz



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.254M	2.401359G	2.402613G	1.192M	2.401397G	2.402588G	Inf	1

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

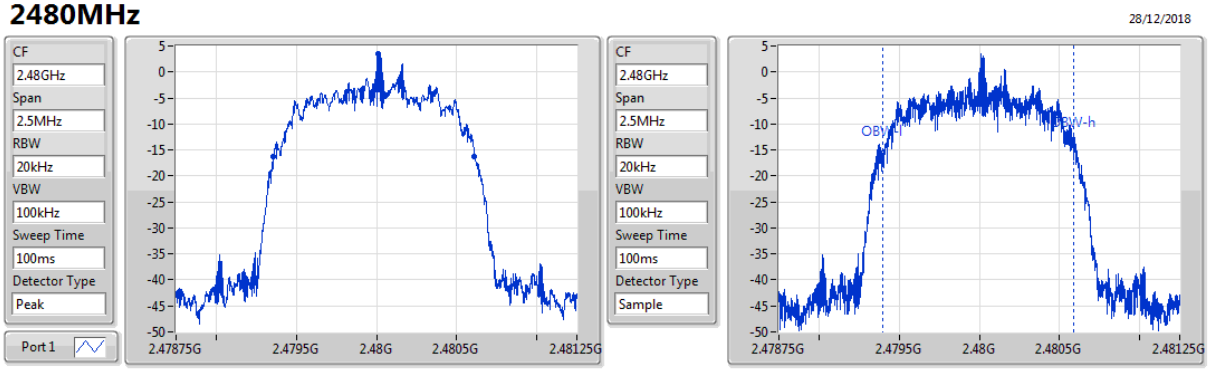
2441MHz



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.255M	2.440356G	2.441611G	1.188M	2.440402G	2.44159G	Inf	1

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

2480MHz



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.254M	2.479358G	2.480611G	1.192M	2.479398G	2.48059G	Inf	1

Summary

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

Result

Mode	Result	Fl (Hz)	Fh (Hz)	Ch.Space (Hz)	Limit (Hz)
BT-BR(1Mbps)	-	-	-	-	-
2402MHz	Pass	2.402013G	2.403012G	999k	609.39k
2441MHz	Pass	2.441011G	2.442012G	1.0005M	611.8875k
2480MHz	Pass	2.47901G	2.48001G	1.0005M	610.2225k
BT-EDR(2Mbps)	-	-	-	-	-
2402MHz	Pass	2.40201G	2.403012G	1.002M	835.83k
2441MHz	Pass	2.441011G	2.442012G	1.0005M	851.148k
2480MHz	Pass	2.47901G	2.480012G	1.002M	836.496k
BT-EDR(3Mbps)	-	-	-	-	-
2402MHz	Pass	2.402011G	2.403012G	1.0005M	835.164k
2441MHz	Pass	2.441013G	2.442012G	999k	835.83k
2480MHz	Pass	2.479011G	2.480012G	1.0005M	835.164k

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

2.402G/2.403GHz

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.402013G	2.403012G	999k	609.39k

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

2.441G/2.442GHz

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.441011G	2.442012G	1.0005M	611.8875k

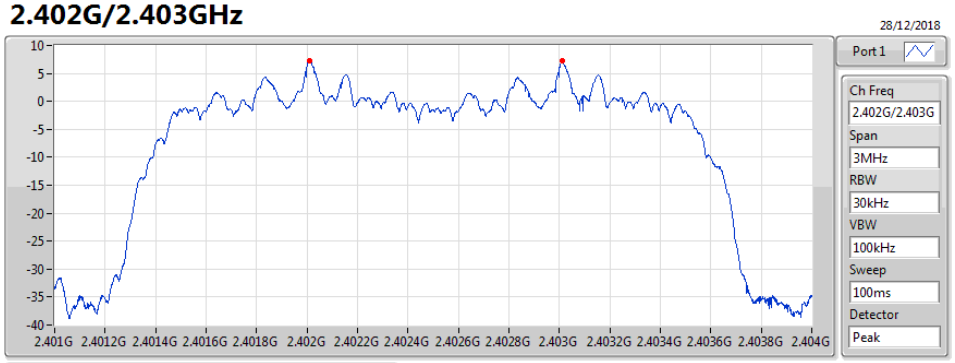
BT-BR(1Mbps) **Channel Separation**

2.48G/2.479GHz

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.47901G	2.48001G	1.0005M	610.2225k

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

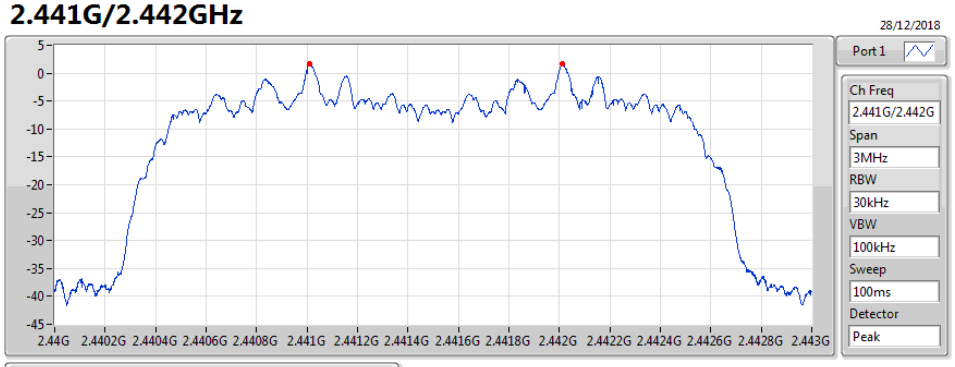
2.402G/2.403GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.40201G	2.403012G	1.002M	835.83k

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

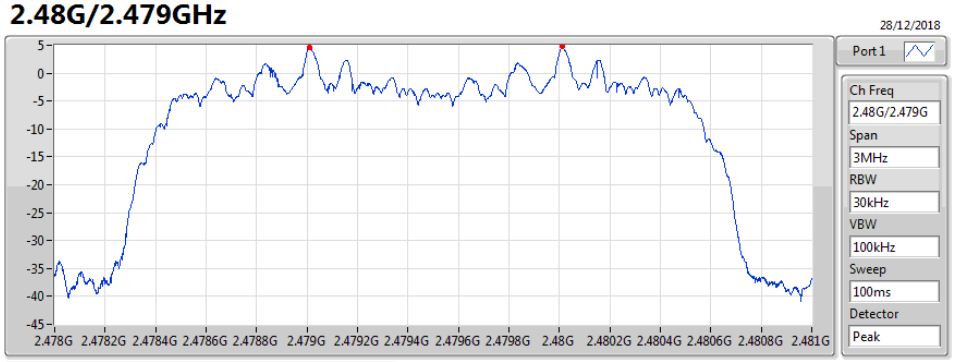
2.441G/2.442GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.441011G	2.442012G	1.0005M	851.148k

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

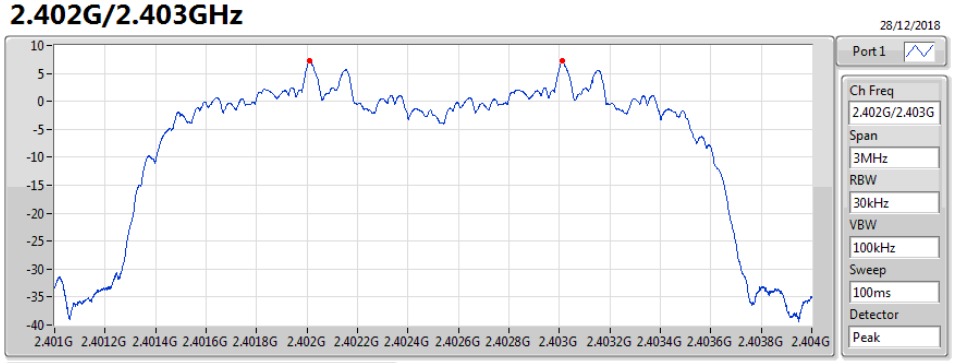
2.48G/2.479GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.47901G	2.480012G	1.002M	836.496k

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

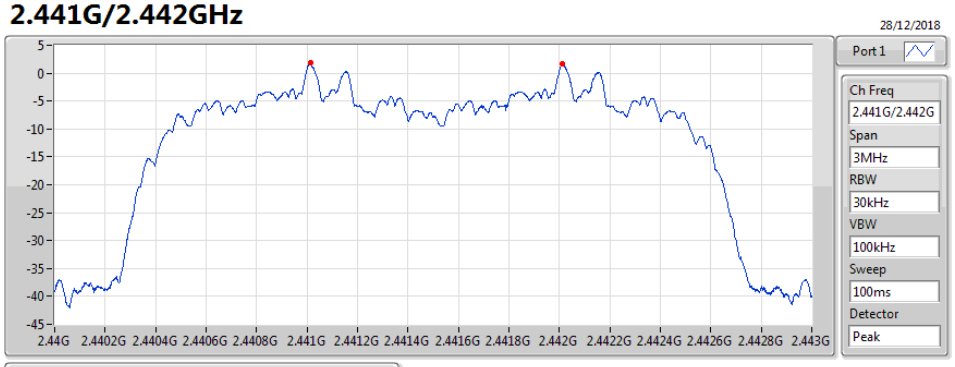
2.402G/2.403GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.402011G	2.403012G	1.0005M	835.164k

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

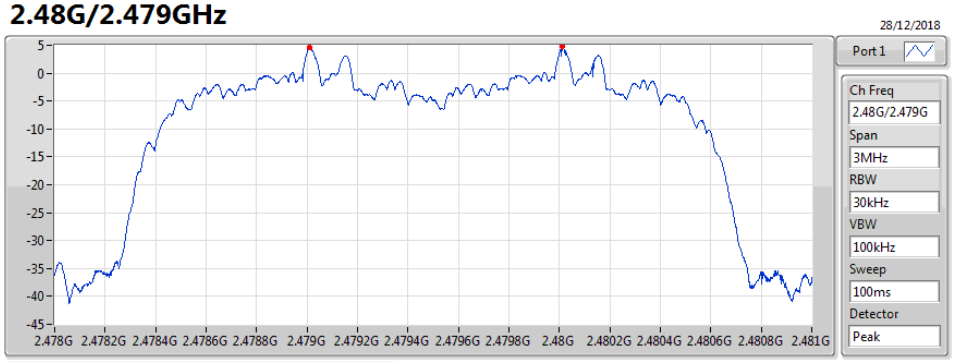
2.441G/2.442GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.441013G	2.442012G	999k	835.83k

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

2.48G/2.479GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.479011G	2.480012G	1.0005M	835.164k

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	12.03	0.01596
BT-EDR(2Mbps)	11.11	0.01291
BT-EDR(3Mbps)	11.49	0.01409

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	1.00	12.03	21.00
2441MHz	Pass	1.00	6.54	21.00
2480MHz	Pass	1.00	9.55	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	1.00	11.11	21.00
2441MHz	Pass	1.00	5.62	21.00
2480MHz	Pass	1.00	8.66	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	1.00	11.49	21.00
2441MHz	Pass	1.00	5.93	21.00
2480MHz	Pass	1.00	9.00	21.00

Summary

Mode	Power	Power
	(dBm)	(W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	11.26	0.01337
BT-EDR(2Mbps)	8.98	0.00791
BT-EDR(3Mbps)	9.00	0.00794

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	1.00	11.26	30.00
2441MHz	Pass	1.00	5.64	30.00
2480MHz	Pass	1.00	8.73	30.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	1.00	8.98	30.00
2441MHz	Pass	1.00	3.52	30.00
2480MHz	Pass	1.00	6.57	30.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	1.00	9.00	30.00
2441MHz	Pass	1.00	3.53	30.00
2480MHz	Pass	1.00	6.58	30.00

Summary

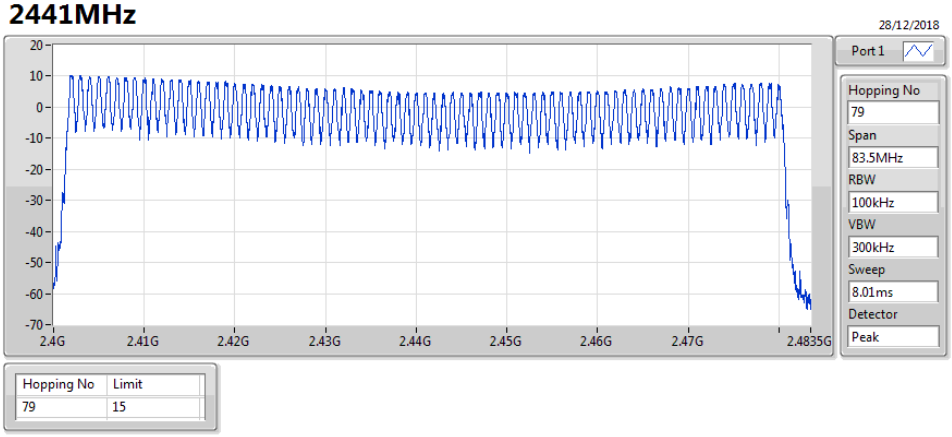
Mode	Max-Hop No
2.4-2.4835GHz	-
BT-BR(1Mbps)	79
BT-EDR(2Mbps)	79
BT-EDR(3Mbps)	79

Result

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

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

2441MHz

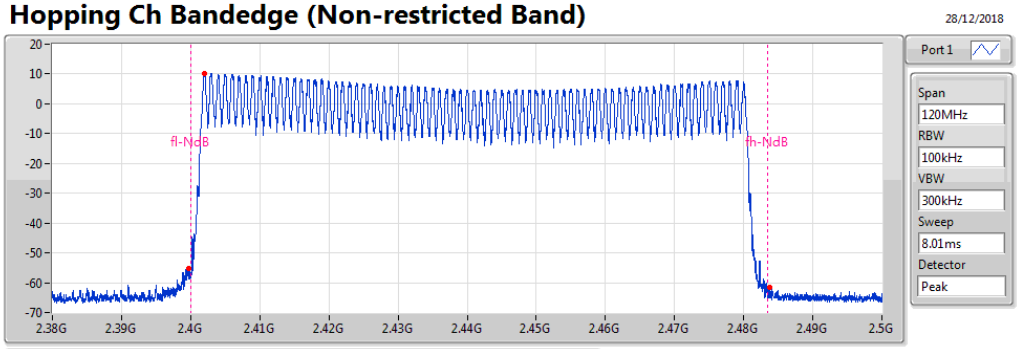


Hopping No	Limit
79	15

BT-BR(1Mbps)

2441MHz

Hopping Ch Bandedge (Non-restricted Band)

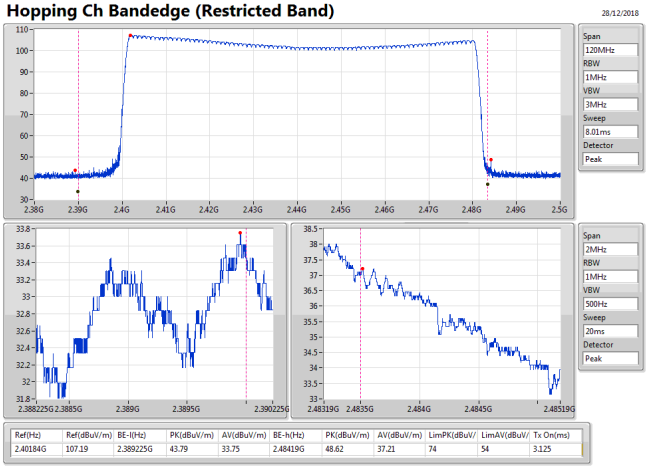


Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-9.76	2.40199G	10.24	2.39965G	-55.21	2.483725G	-61.66

BT-BR(1Mbps)

2441MHz

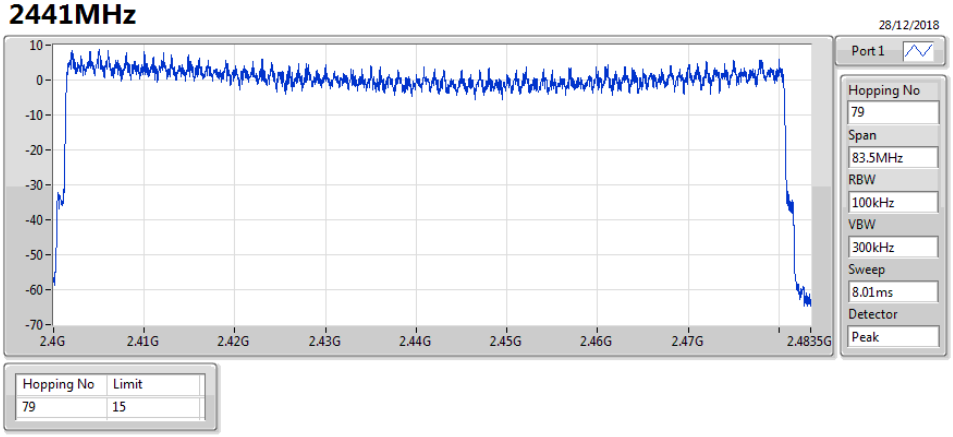
Hopping Ch Bandedge (Restricted Band)



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)
2.40184G	107.19	2.389225G	43.79	33.75	2.48419G	48.62	37.21	74	54	3.125

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

2441MHz

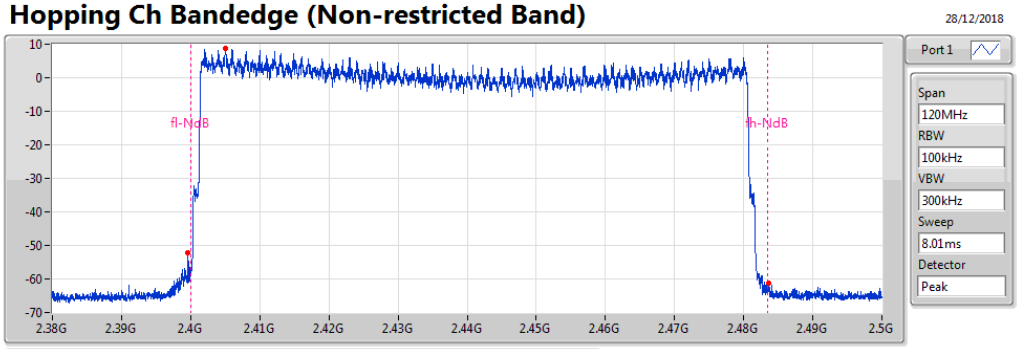


Hopping No	Limit
79	15

BT-EDR(2Mbps)

2441MHz

Hopping Ch Bandedge (Non-restricted Band)

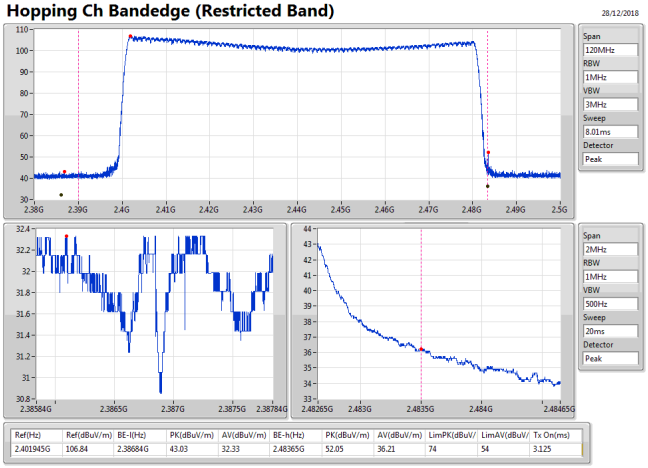


Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-11.37	2.405005G	8.63	2.399605G	-52.05	2.48365G	-61.36

BT-EDR(2Mbps)

2441MHz

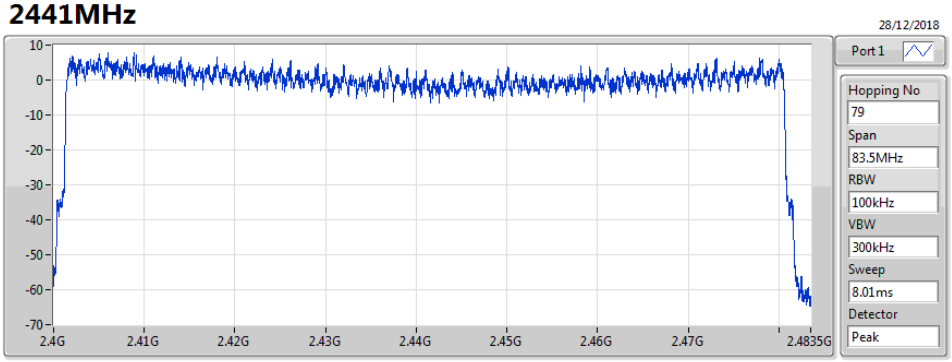
Hopping Ch Bandedge (Restricted Band)



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)
2.401945G	106.84	2.38684G	43.03	32.33	2.48365G	52.05	36.21	74	54	3.125

BT-EDR(3Mbps) **Hopping Ch**

2441MHz

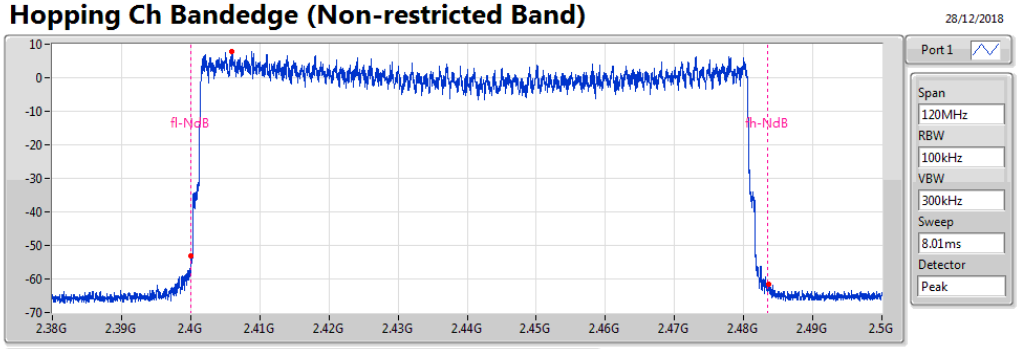


Hopping No	Limit
79	15

BT-EDR(3Mbps)

2441MHz

Hopping Ch Bandedge (Non-restricted Band)

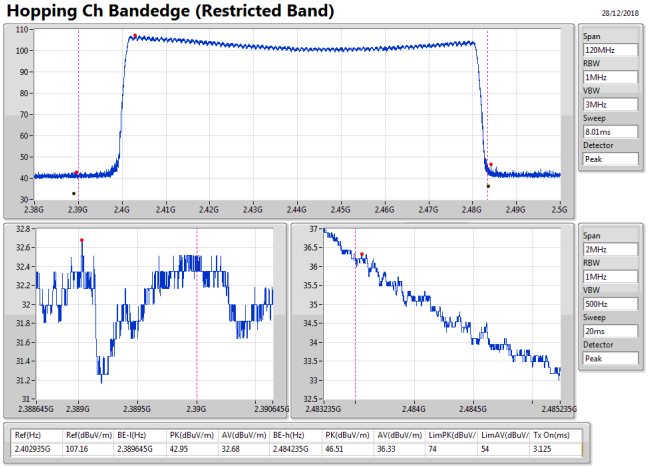


Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-12.13	2.40601G	7.87	2.399995G	-53.1	2.483665G	-61.5

BT-EDR(3Mbps)

2441MHz

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)
2.402935G	107.16	2.389645G	42.95	32.68	2.484235G	46.51	36.33	74	54	3.125

Summary

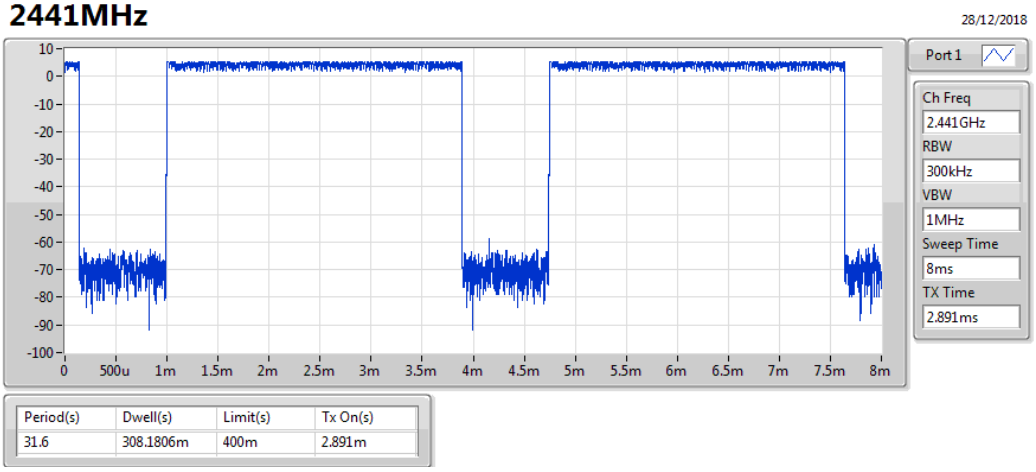
Mode	Max-Dwell (s)
2.4-2.4835GHz	-
BT-BR(1Mbps)	308.1806m
BT-EDR(2Mbps)	308.3938m
BT-EDR(3Mbps)	308.607m

Result

Mode	Result	Period (s)	Dwell (s)	Limit (s)	Tx On (s)
BT-BR(1Mbps)	-	-	-	-	-
2441MHz	Pass	31.6	308.1806m	400m	2.891m
BT-EDR(2Mbps)	-	-	-	-	-
2441MHz	Pass	31.6	308.3938m	400m	2.893m
BT-EDR(3Mbps)	-	-	-	-	-
2441MHz	Pass	31.6	308.607m	400m	2.895m

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

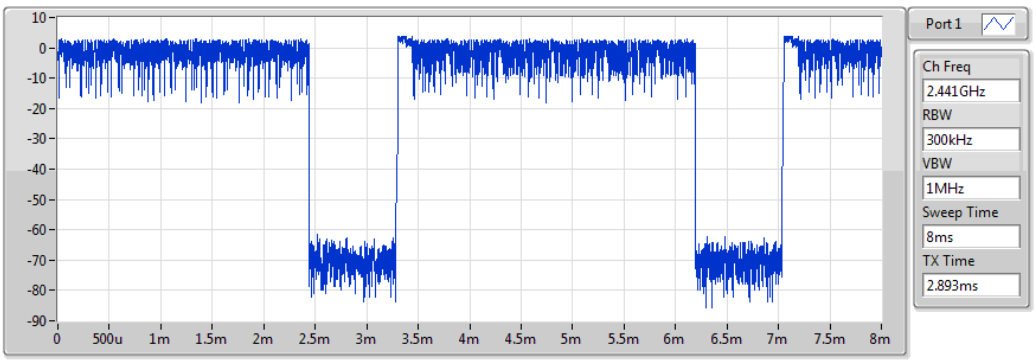
2441MHz



Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	308.1806m	400m	2.891m

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

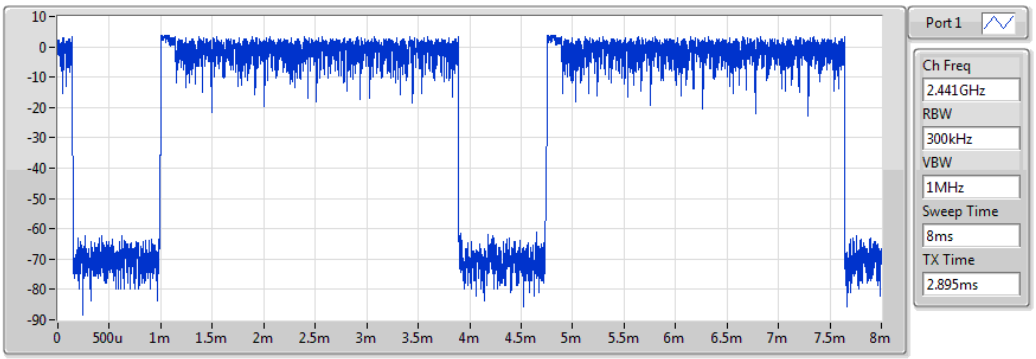
2441MHz



Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	308.3938m	400m	2.893m

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

2441MHz



Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	308.607m	400m	2.895m

Summary

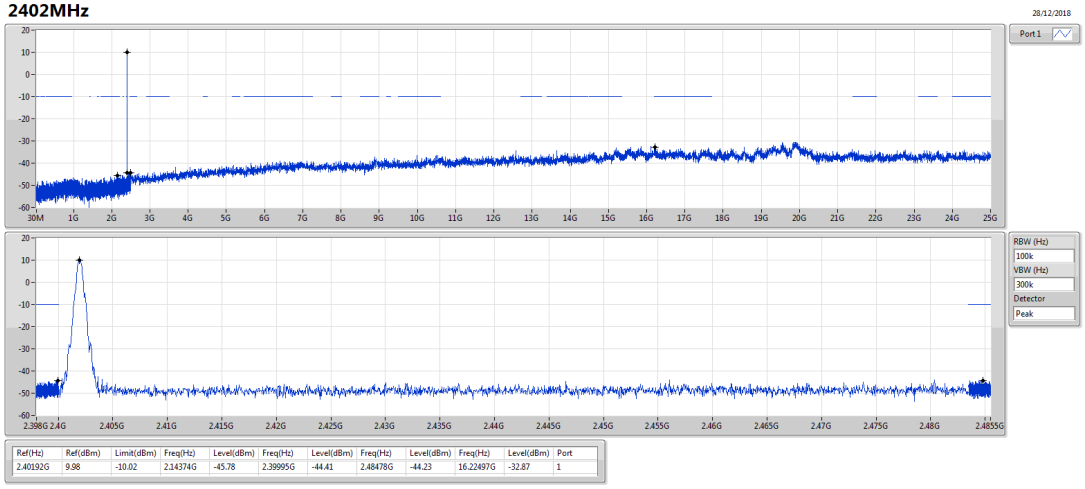
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	2.441G	4.62	-15.38	893.14M	-45.93	2.39836G	-45.15	2.48518G	-44.42	16.36006G	-32.94	1
BT-EDR(2Mbps)	Pass	2.44104G	1.21	-18.79	587.07M	-46.21	2.39834G	-45.23	2.48424G	-43.99	16.24467G	-32.70	1
BT-EDR(3Mbps)	Pass	2.44079G	1.03	-18.97	1.64261G	-46.30	2.39847G	-44.80	2.48444G	-44.42	16.22779G	-31.54	1

Result

Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40192G	9.98	-10.02	2.14374G	-45.78	2.39995G	-44.41	2.48478G	-44.23	16.22497G	-32.87	1
2441MHz	Pass	2.441G	4.62	-15.38	893.14M	-45.93	2.39836G	-45.15	2.48518G	-44.42	16.36006G	-32.94	1
2480MHz	Pass	2.47999G	7.43	-12.57	2.07151G	-44.60	2.39957G	-44.57	2.48507G	-44.40	16.24749G	-32.84	1
BT-EDR(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40217G	5.69	-14.31	1.78114G	-45.99	2.39812G	-44.04	2.48496G	-43.27	15.16679G	-32.51	1
2441MHz	Pass	2.44104G	1.21	-18.79	587.07M	-46.21	2.39834G	-45.23	2.48424G	-43.99	16.24467G	-32.70	1
2480MHz	Pass	2.47987G	6.68	-13.32	2.08838G	-45.70	2.39987G	-44.19	2.4852G	-43.47	15.26529G	-32.48	1
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40213G	5.73	-14.27	2.07832G	-45.82	2.39922G	-44.09	2.4839G	-44.27	17.44639G	-32.89	1
2441MHz	Pass	2.44079G	1.03	-18.97	1.64261G	-46.30	2.39847G	-44.80	2.48444G	-44.42	16.22779G	-31.54	1
2480MHz	Pass	2.47978G	3.62	-16.38	2.18932G	-46.39	2.39993G	-43.81	2.48481G	-43.75	16.59928G	-33.20	1

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

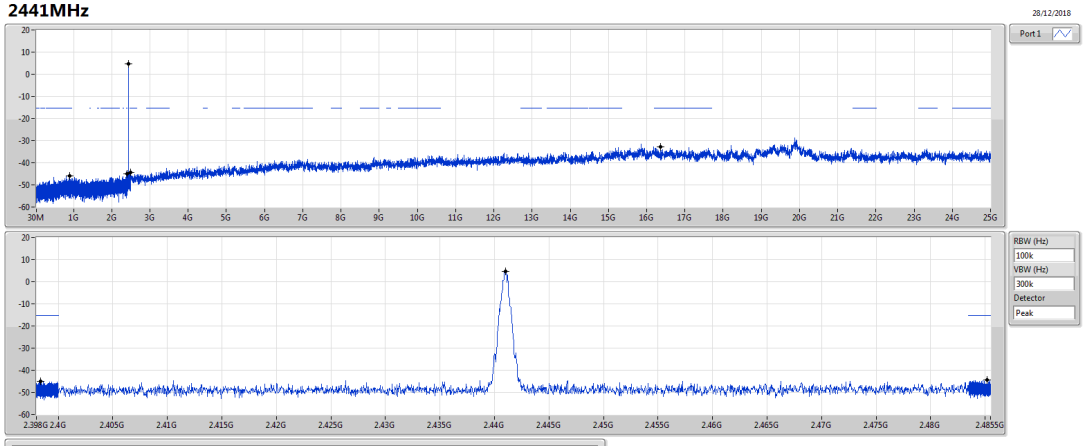
2402MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40192G	9.98	-10.02	2.14374G	-45.78	2.39995G	-44.41	2.48478G	-44.23	16.22497G	-32.87	1

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

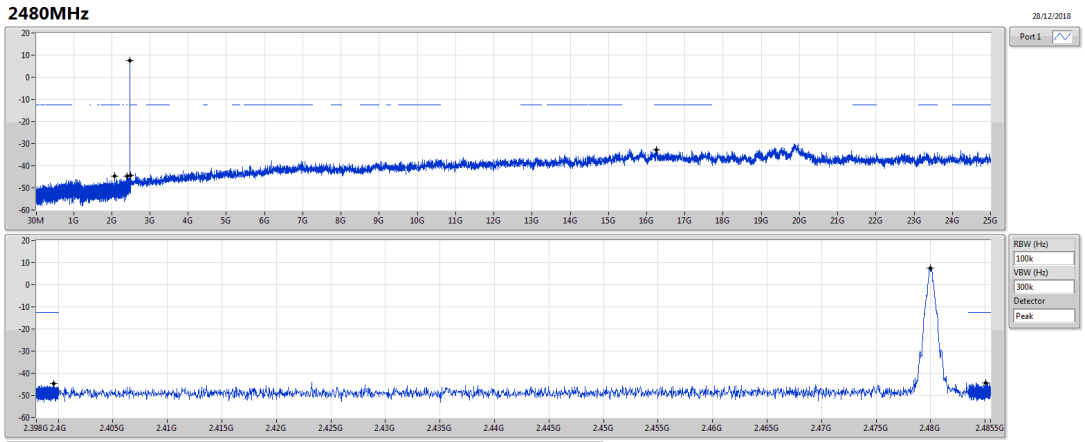
2441MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.441G	4.62	-15.38	893.14M	-45.93	2.39836G	-45.15	2.48518G	-44.42	16.36006G	-32.94	1

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

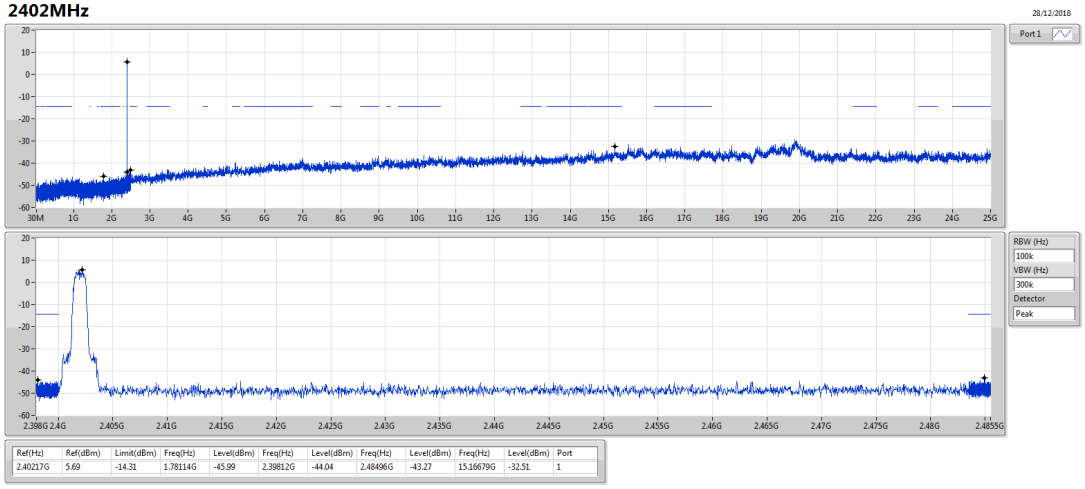
2480MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.47999G	7.43	-12.57	2.07151G	-44.60	2.39957G	-44.57	2.48507G	-44.40	16.24749G	-32.84	1

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

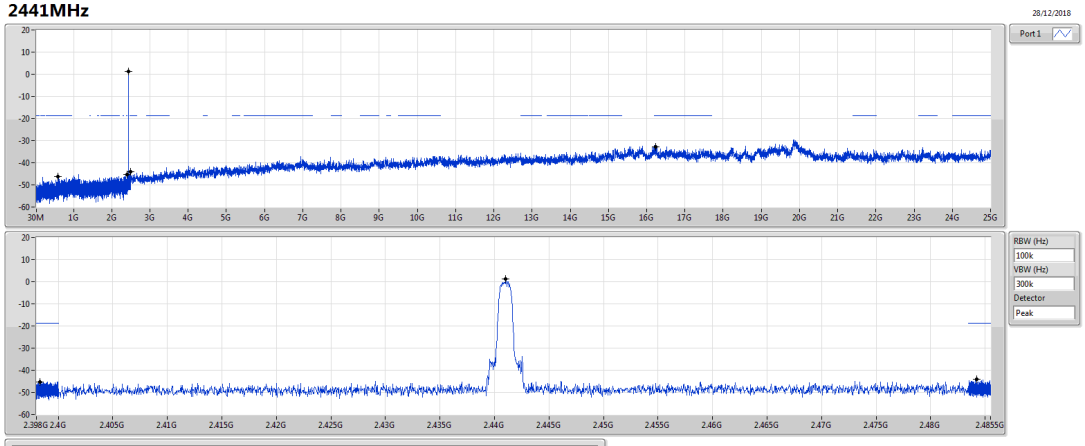
2402MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40217G	5.69	-14.31	1.78114G	-45.99	2.39812G	-44.04	2.48496G	-43.27	15.16679G	-32.51	1

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

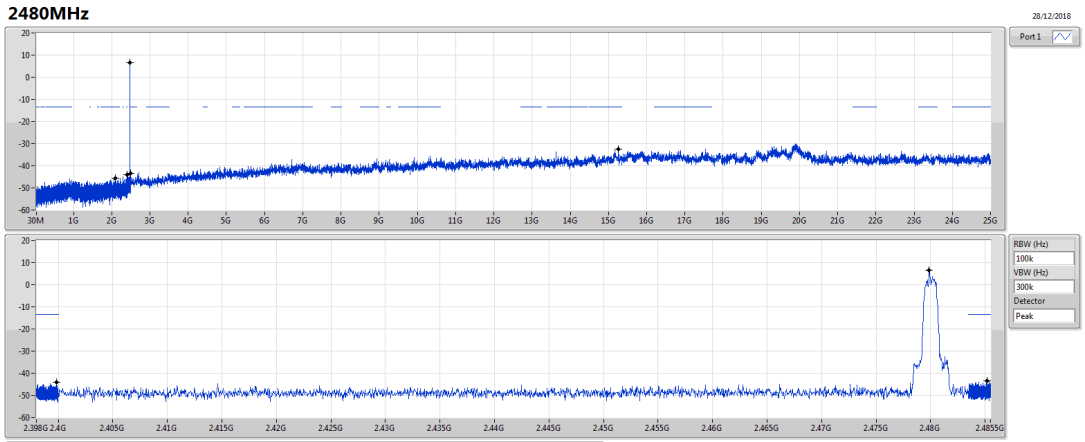
2441MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44104G	1.21	-18.79	587.07M	-46.21	2.39834G	-45.23	2.48424G	-43.99	16.24467G	-32.70	1

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

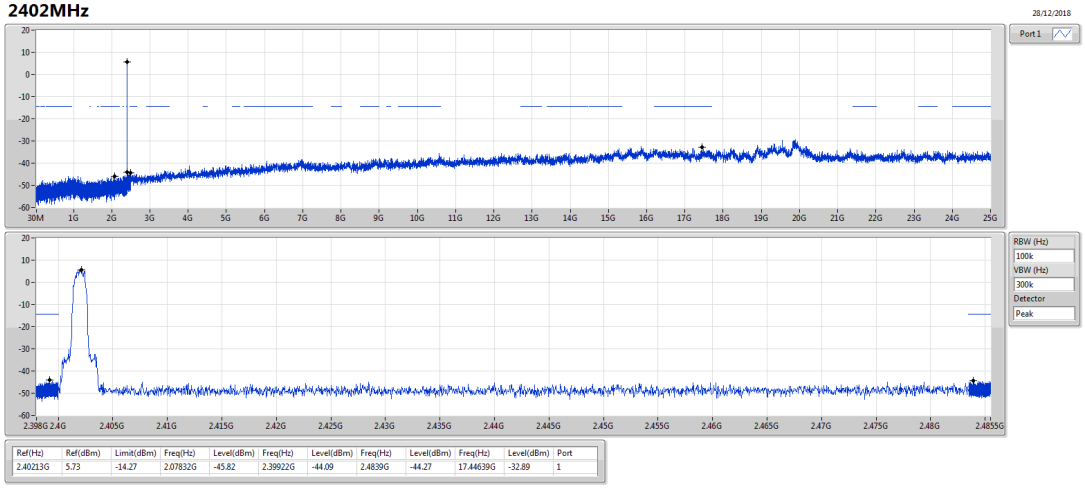
2480MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.47987G	6.68	-13.32	2.08838G	-45.70	2.39987G	-44.19	2.4852G	-43.47	15.26529G	-32.48	1

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

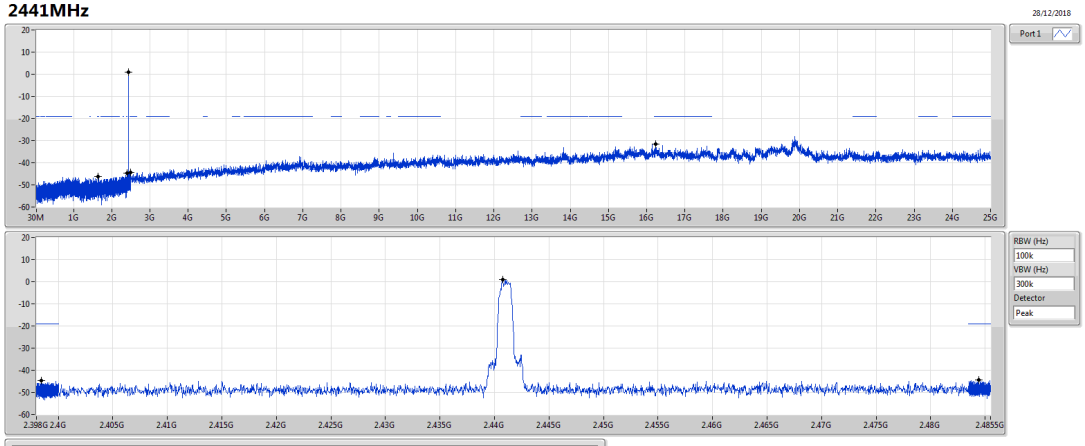
2402MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40213G	5.73	-14.27	2.07832G	-45.82	2.39922G	-44.09	2.4839G	-44.27	17.44639G	-32.89	1

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

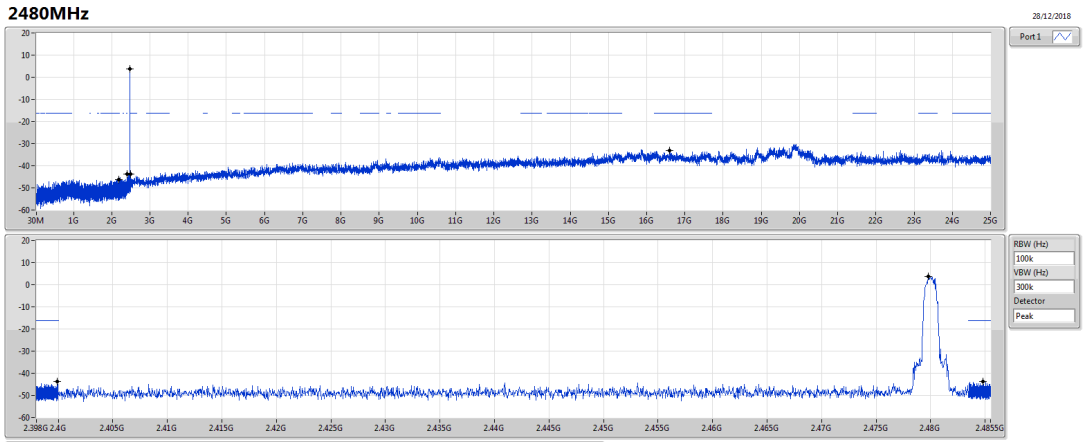
2441MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44079G	1.03	-18.97	1.64261G	-46.30	2.39847G	-44.80	2.48444G	-44.42	16.22779G	-31.54	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)	Port
2.47978G	3.62	-16.38	2.18932G	-46.39	2.39993G	-43.81	2.48481G	-43.75	16.59928G	-33.20	1

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	PK	394.72M	37.35	46.00	-8.65	-3.79	3	Horizontal	0	2.00	-

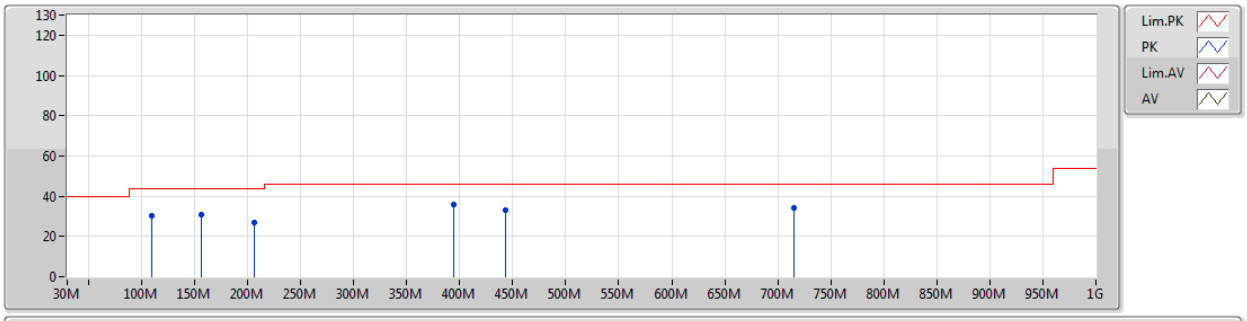
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2441MHz	Pass	PK	109.54M	30.33	43.50	-13.17	-9.15	3	Vertical	360	1.00	-
2441MHz	Pass	PK	156.1M	30.73	43.50	-12.77	-10.34	3	Vertical	360	1.00	-
2441MHz	Pass	PK	206.54M	27.04	43.50	-16.46	-10.60	3	Vertical	360	1.00	-
2441MHz	Pass	PK	394.72M	36.07	46.00	-9.93	-3.79	3	Vertical	360	1.00	-
2441MHz	Pass	PK	443.22M	32.98	46.00	-13.02	-2.93	3	Vertical	360	1.00	-
2441MHz	Pass	PK	714.82M	34.08	46.00	-11.92	0.20	3	Vertical	360	1.00	-
2441MHz	Pass	PK	123.12M	30.55	43.50	-12.95	-8.83	3	Horizontal	0	2.00	-
2441MHz	Pass	PK	210.42M	30.17	43.50	-13.33	-10.61	3	Horizontal	0	2.00	-
2441MHz	Pass	PK	247.28M	31.04	46.00	-14.96	-7.26	3	Horizontal	0	2.00	-
2441MHz	Pass	PK	394.72M	37.35	46.00	-8.65	-3.79	3	Horizontal	0	2.00	-
2441MHz	Pass	PK	575.14M	30.25	46.00	-15.75	-1.01	3	Horizontal	0	2.00	-
2441MHz	Pass	PK	716.76M	34.28	46.00	-11.72	0.25	3	Horizontal	0	2.00	-

BT-BR(1Mbps)

2441MHz_PoE

28/12/2018

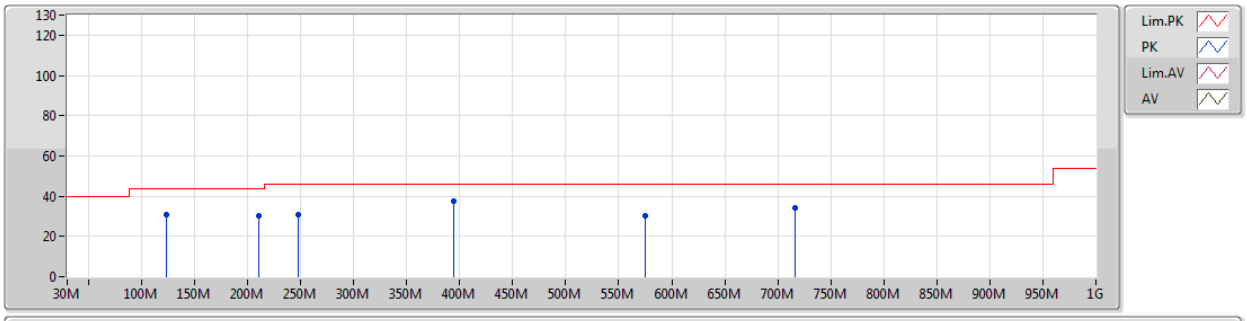


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	109.54M	30.33	43.50	-13.17	-9.15	3	Vertical	360	1.00	-
PK	156.1M	30.73	43.50	-12.77	-10.34	3	Vertical	360	1.00	-
PK	206.54M	27.04	43.50	-16.46	-10.60	3	Vertical	360	1.00	-
PK	394.72M	36.07	46.00	-9.93	-3.79	3	Vertical	360	1.00	-
PK	443.22M	32.98	46.00	-13.02	-2.93	3	Vertical	360	1.00	-
PK	714.82M	34.08	46.00	-11.92	0.20	3	Vertical	360	1.00	-

BT-BR(1Mbps)

2441MHz_PoE

28/12/2018



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	123.12M	30.55	43.50	-12.95	-8.83	3	Horizontal	0	2.00	-
PK	210.42M	30.17	43.50	-13.33	-10.61	3	Horizontal	0	2.00	-
PK	247.28M	31.04	46.00	-14.96	-7.26	3	Horizontal	0	2.00	-
PK	394.72M	37.35	46.00	-8.65	-3.79	3	Horizontal	0	2.00	-
PK	575.14M	30.25	46.00	-15.75	-1.01	3	Horizontal	0	2.00	-
PK	716.76M	34.28	46.00	-11.72	0.25	3	Horizontal	0	2.00	-

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	AV	4.88211G	46.62	54.00	-7.38	3.53	3	Vertical	219	1.50	-
BT-EDR(2Mbps)	Pass	AV	2.4835G	44.94	54.00	-9.06	32.29	3	Vertical	218	1.50	-
BT-EDR(3Mbps)	Pass	AV	2.4835G	45.16	54.00	-8.84	32.29	3	Vertical	218	1.49	-

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3572G	44.37	54.00	-9.63	31.90	3	Vertical	193	1.50	-
2402MHz	Pass	AV	2.402G	100.33	Inf	-Inf	32.04	3	Vertical	193	1.50	-
2402MHz	Pass	PK	2.385G	56.31	74.00	-17.69	31.99	3	Vertical	193	1.50	-
2402MHz	Pass	PK	2.4022G	101.25	Inf	-Inf	32.05	3	Vertical	193	1.50	-
2402MHz	Pass	AV	2.3522G	44.45	54.00	-9.55	31.88	3	Horizontal	201	1.16	-
2402MHz	Pass	AV	2.402G	100.76	Inf	-Inf	32.04	3	Horizontal	201	1.16	-
2402MHz	Pass	PK	2.374G	57.05	74.00	-16.95	31.95	3	Horizontal	201	1.16	-
2402MHz	Pass	PK	2.4022G	101.63	Inf	-Inf	32.05	3	Horizontal	201	1.16	-
2402MHz	Pass	AV	4.80406G	41.93	54.00	-12.07	3.34	3	Vertical	164	1.50	-
2402MHz	Pass	PK	4.80415G	50.08	74.00	-23.92	3.34	3	Vertical	164	1.50	-
2402MHz	Pass	AV	4.80396G	34.37	54.00	-19.63	3.34	3	Horizontal	70	1.50	-
2402MHz	Pass	PK	4.80412G	46.07	74.00	-27.93	3.34	3	Horizontal	70	1.50	-
2441MHz	Pass	AV	2.3446G	44.40	54.00	-9.60	31.85	3	Vertical	219	1.49	-
2441MHz	Pass	AV	2.441G	92.40	Inf	-Inf	32.16	3	Vertical	219	1.49	-
2441MHz	Pass	AV	2.4898G	44.45	54.00	-9.55	32.31	3	Vertical	219	1.49	-
2441MHz	Pass	PK	2.3466G	56.76	74.00	-17.24	31.86	3	Vertical	219	1.49	-
2441MHz	Pass	PK	2.4414G	93.24	Inf	-Inf	32.16	3	Vertical	219	1.49	-
2441MHz	Pass	PK	2.4894G	56.58	74.00	-17.42	32.30	3	Vertical	219	1.49	-
2441MHz	Pass	AV	2.3442G	44.49	54.00	-9.51	31.85	3	Horizontal	87	1.22	-
2441MHz	Pass	AV	2.441G	90.55	Inf	-Inf	32.16	3	Horizontal	87	1.22	-
2441MHz	Pass	AV	2.499G	44.44	54.00	-9.56	32.34	3	Horizontal	87	1.22	-
2441MHz	Pass	PK	2.343G	57.58	74.00	-16.42	31.84	3	Horizontal	87	1.22	-
2441MHz	Pass	PK	2.441G	91.48	Inf	-Inf	32.16	3	Horizontal	87	1.22	-
2441MHz	Pass	PK	2.4914G	56.08	74.00	-17.92	32.31	3	Horizontal	87	1.22	-
2441MHz	Pass	AV	4.88211G	46.62	54.00	-7.38	3.53	3	Vertical	219	1.50	-
2441MHz	Pass	PK	4.88215G	52.50	74.00	-21.50	3.53	3	Vertical	219	1.50	-
2441MHz	Pass	AV	4.88203G	40.27	54.00	-13.73	3.53	3	Horizontal	72	1.01	-
2441MHz	Pass	PK	4.88187G	48.98	74.00	-25.02	3.53	3	Horizontal	72	1.01	-
2480MHz	Pass	AV	2.48G	92.93	Inf	-Inf	32.28	3	Vertical	218	1.49	-
2480MHz	Pass	AV	2.4835G	45.19	54.00	-8.81	32.29	3	Vertical	218	1.49	-
2480MHz	Pass	PK	2.4802G	93.86	Inf	-Inf	32.28	3	Vertical	218	1.49	-
2480MHz	Pass	PK	2.4966G	55.94	74.00	-18.06	32.33	3	Vertical	218	1.49	-
2480MHz	Pass	AV	2.48G	91.07	Inf	-Inf	32.28	3	Horizontal	102	1.21	-
2480MHz	Pass	AV	2.4835G	44.87	54.00	-9.13	32.29	3	Horizontal	102	1.21	-
2480MHz	Pass	PK	2.4802G	91.97	Inf	-Inf	32.28	3	Horizontal	102	1.21	-
2480MHz	Pass	PK	2.4972G	55.64	74.00	-18.36	32.33	3	Horizontal	102	1.21	-
2480MHz	Pass	AV	4.96007G	43.19	54.00	-10.81	3.71	3	Vertical	216	1.50	-
2480MHz	Pass	PK	4.96032G	50.68	74.00	-23.32	3.71	3	Vertical	216	1.50	-
2480MHz	Pass	AV	4.96006G	37.14	54.00	-16.86	3.71	3	Horizontal	74	1.01	-
2480MHz	Pass	PK	4.95971G	47.66	74.00	-26.34	3.71	3	Horizontal	74	1.01	-
BT-EDR(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3736G	44.41	54.00	-9.59	31.95	3	Vertical	192	1.49	-
2402MHz	Pass	AV	2.402G	96.51	Inf	-Inf	32.04	3	Vertical	192	1.49	-
2402MHz	Pass	PK	2.3586G	56.96	74.00	-17.04	31.90	3	Vertical	192	1.49	-
2402MHz	Pass	PK	2.4022G	100.50	Inf	-Inf	32.05	3	Vertical	192	1.49	-
2402MHz	Pass	AV	2.3866G	44.47	54.00	-9.53	32.00	3	Horizontal	201	1.16	-
2402MHz	Pass	AV	2.402G	96.28	Inf	-Inf	32.04	3	Horizontal	201	1.16	-

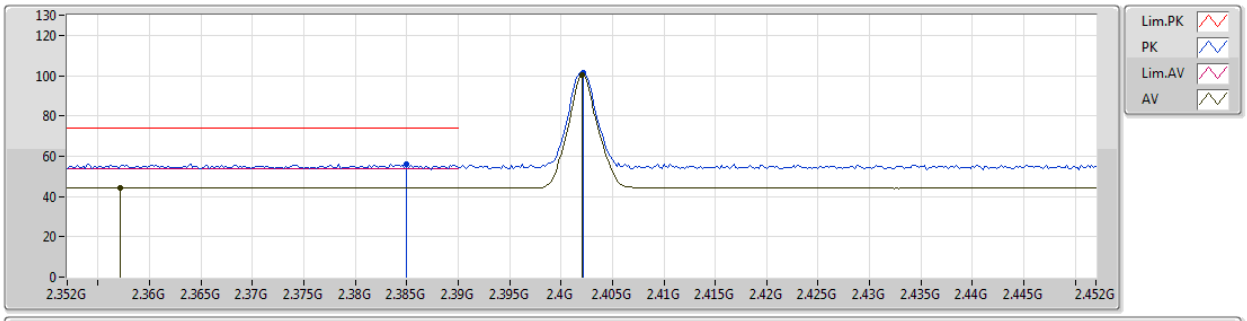
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2402MHz	Pass	PK	2.36G	56.22	74.00	-17.78	31.90	3	Horizontal	201	1.16	-
2402MHz	Pass	PK	2.4022G	100.24	Inf	-Inf	32.05	3	Horizontal	201	1.16	-
2441MHz	Pass	AV	2.3574G	44.48	54.00	-9.52	31.90	3	Vertical	220	1.50	-
2441MHz	Pass	AV	2.441G	89.14	Inf	-Inf	32.16	3	Vertical	220	1.50	-
2441MHz	Pass	AV	2.4942G	44.58	54.00	-9.42	32.33	3	Vertical	220	1.50	-
2441MHz	Pass	PK	2.3498G	56.37	74.00	-17.63	31.87	3	Vertical	220	1.50	-
2441MHz	Pass	PK	2.4414G	92.92	Inf	-Inf	32.16	3	Vertical	220	1.50	-
2441MHz	Pass	PK	2.485G	56.47	74.00	-17.53	32.29	3	Vertical	220	1.50	-
2441MHz	Pass	AV	2.3658G	44.49	54.00	-9.51	31.93	3	Horizontal	87	1.22	-
2441MHz	Pass	AV	2.441G	86.53	Inf	-Inf	32.16	3	Horizontal	87	1.22	-
2441MHz	Pass	AV	2.4986G	44.52	54.00	-9.48	32.34	3	Horizontal	87	1.22	-
2441MHz	Pass	PK	2.3446G	56.73	74.00	-17.27	31.85	3	Horizontal	87	1.22	-
2441MHz	Pass	PK	2.4414G	90.40	Inf	-Inf	32.16	3	Horizontal	87	1.22	-
2441MHz	Pass	PK	2.4862G	55.97	74.00	-18.03	32.30	3	Horizontal	87	1.22	-
2480MHz	Pass	AV	2.48G	88.79	Inf	-Inf	32.28	3	Vertical	218	1.50	-
2480MHz	Pass	AV	2.4835G	44.94	54.00	-9.06	32.29	3	Vertical	218	1.50	-
2480MHz	Pass	PK	2.4802G	92.68	Inf	-Inf	32.28	3	Vertical	218	1.50	-
2480MHz	Pass	PK	2.4836G	55.76	74.00	-18.24	32.29	3	Vertical	218	1.50	-
2480MHz	Pass	AV	2.48G	86.25	Inf	-Inf	32.28	3	Horizontal	104	1.46	-
2480MHz	Pass	AV	2.4835G	44.77	54.00	-9.23	32.29	3	Horizontal	104	1.46	-
2480MHz	Pass	PK	2.4802G	90.25	Inf	-Inf	32.28	3	Horizontal	104	1.46	-
2480MHz	Pass	PK	2.495G	56.06	74.00	-17.94	32.33	3	Horizontal	104	1.46	-
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3834G	44.55	54.00	-9.45	31.98	3	Vertical	193	1.49	-
2402MHz	Pass	AV	2.402G	96.21	Inf	-Inf	32.04	3	Vertical	193	1.49	-
2402MHz	Pass	PK	2.389G	55.89	74.00	-18.11	32.00	3	Vertical	193	1.49	-
2402MHz	Pass	PK	2.402G	100.27	Inf	-Inf	32.04	3	Vertical	193	1.49	-
2402MHz	Pass	AV	2.3858G	44.47	54.00	-9.53	32.00	3	Horizontal	201	1.17	-
2402MHz	Pass	AV	2.402G	96.18	Inf	-Inf	32.04	3	Horizontal	201	1.17	-
2402MHz	Pass	PK	2.3752G	56.64	74.00	-17.36	31.96	3	Horizontal	201	1.17	-
2402MHz	Pass	PK	2.402G	100.16	Inf	-Inf	32.04	3	Horizontal	201	1.17	-
2441MHz	Pass	AV	2.3426G	44.55	54.00	-9.45	31.84	3	Vertical	192	1.50	-
2441MHz	Pass	AV	2.441G	88.72	Inf	-Inf	32.16	3	Vertical	192	1.50	-
2441MHz	Pass	AV	2.4982G	44.56	54.00	-9.44	32.34	3	Vertical	192	1.50	-
2441MHz	Pass	PK	2.3682G	56.52	74.00	-17.48	31.93	3	Vertical	192	1.50	-
2441MHz	Pass	PK	2.441G	92.64	Inf	-Inf	32.16	3	Vertical	192	1.50	-
2441MHz	Pass	PK	2.499G	55.54	74.00	-18.46	32.34	3	Vertical	192	1.50	-
2441MHz	Pass	AV	2.3566G	44.48	54.00	-9.52	31.90	3	Horizontal	87	1.23	-
2441MHz	Pass	AV	2.441G	86.49	Inf	-Inf	32.16	3	Horizontal	87	1.23	-
2441MHz	Pass	AV	2.4954G	44.60	54.00	-9.40	32.33	3	Horizontal	87	1.23	-
2441MHz	Pass	PK	2.379G	56.51	74.00	-17.49	31.97	3	Horizontal	87	1.23	-
2441MHz	Pass	PK	2.441G	90.41	Inf	-Inf	32.16	3	Horizontal	87	1.23	-
2441MHz	Pass	PK	2.4974G	55.58	74.00	-18.42	32.33	3	Horizontal	87	1.23	-
2480MHz	Pass	AV	2.4802G	89.12	Inf	-Inf	32.28	3	Vertical	218	1.49	-
2480MHz	Pass	AV	2.4835G	45.16	54.00	-8.84	32.29	3	Vertical	218	1.49	-
2480MHz	Pass	PK	2.4802G	93.08	Inf	-Inf	32.28	3	Vertical	218	1.49	-
2480MHz	Pass	PK	2.4894G	56.56	74.00	-17.44	32.30	3	Vertical	218	1.49	-
2480MHz	Pass	AV	2.48G	86.75	Inf	-Inf	32.28	3	Horizontal	102	1.21	-
2480MHz	Pass	AV	2.4835G	44.78	54.00	-9.22	32.29	3	Horizontal	102	1.21	-

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2480MHz	Pass	PK	2.4802G	90.69	Inf	-Inf	32.28	3	Horizontal	102	1.21	-
2480MHz	Pass	PK	2.4838G	56.33	74.00	-17.67	32.29	3	Horizontal	102	1.21	-

BT-BR(1Mbps)

2402MHz_TX

28/12/2018

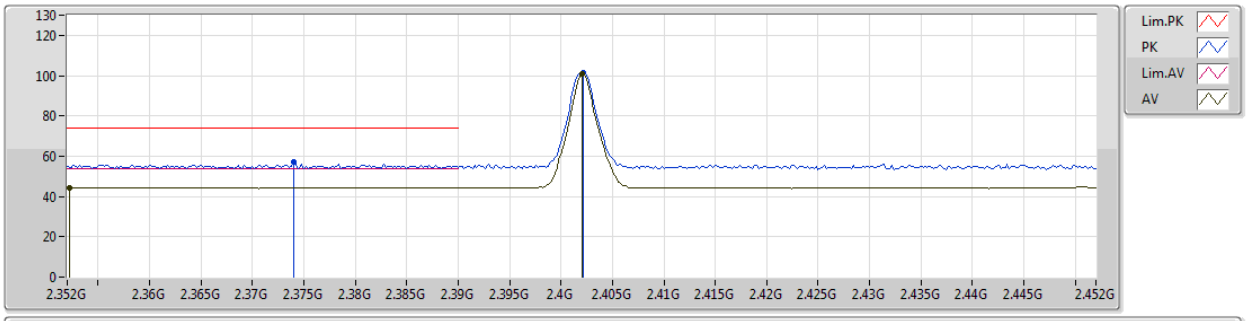


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3572G	44.37	54.00	-9.63	31.90	3	Vertical	193	1.50	-
AV	2.402G	100.33	Inf	-Inf	32.04	3	Vertical	193	1.50	-
PK	2.385G	56.31	74.00	-17.69	31.99	3	Vertical	193	1.50	-
PK	2.4022G	101.25	Inf	-Inf	32.05	3	Vertical	193	1.50	-

BT-BR(1Mbps)

2402MHz_TX

28/12/2018

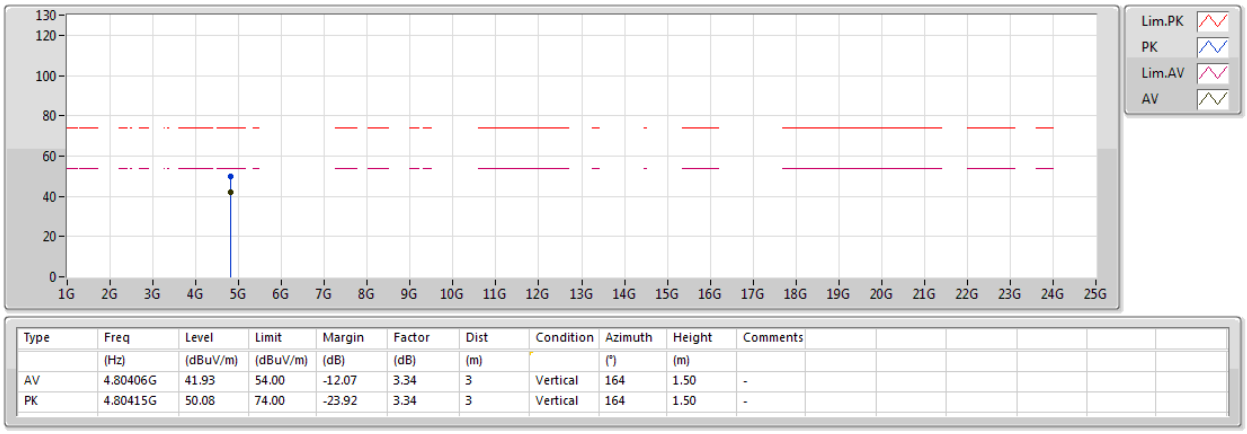


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3522G	44.45	54.00	-9.55	31.88	3	Horizontal	201	1.16	-
AV	2.402G	100.76	Inf	-Inf	32.04	3	Horizontal	201	1.16	-
PK	2.374G	57.05	74.00	-16.95	31.95	3	Horizontal	201	1.16	-
PK	2.4022G	101.63	Inf	-Inf	32.05	3	Horizontal	201	1.16	-

BT-BR(1Mbps)

2402MHz_TX

28/12/2018

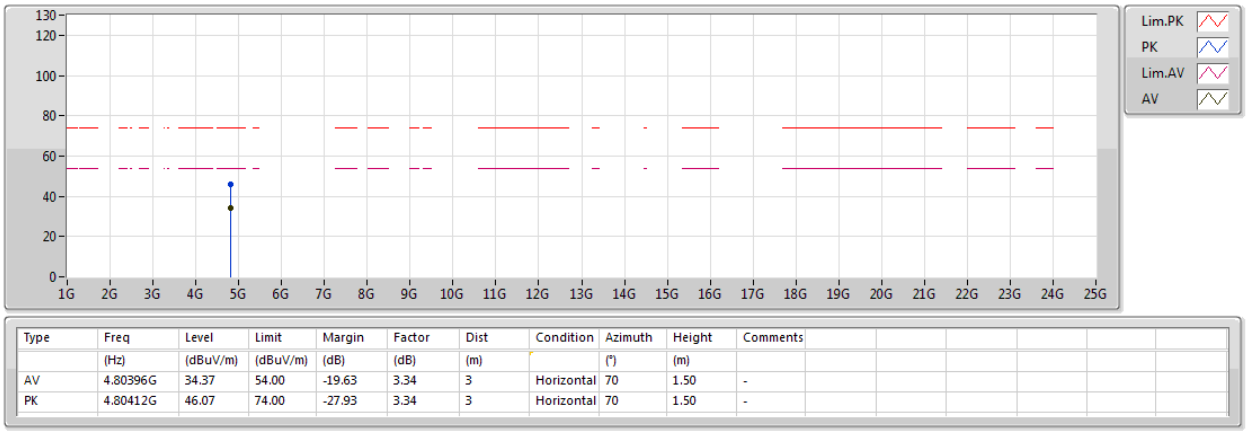


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.80406G	41.93	54.00	-12.07	3.34	3	Vertical	164	1.50	-
PK	4.80415G	50.08	74.00	-23.92	3.34	3	Vertical	164	1.50	-

BT-BR(1Mbps)

2402MHz_TX

28/12/2018

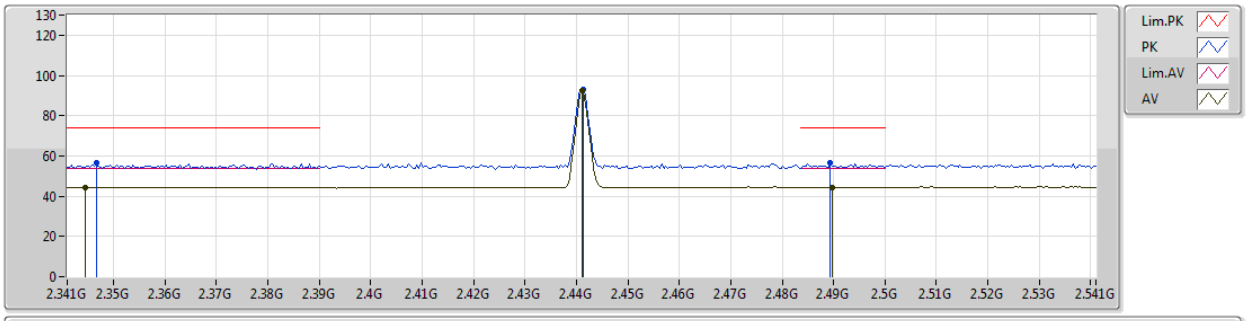


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.80396G	34.37	54.00	-19.63	3.34	3	Horizontal	70	1.50	-
PK	4.80412G	46.07	74.00	-27.93	3.34	3	Horizontal	70	1.50	-

BT-BR(1Mbps)

2441MHz_TX

28/12/2018

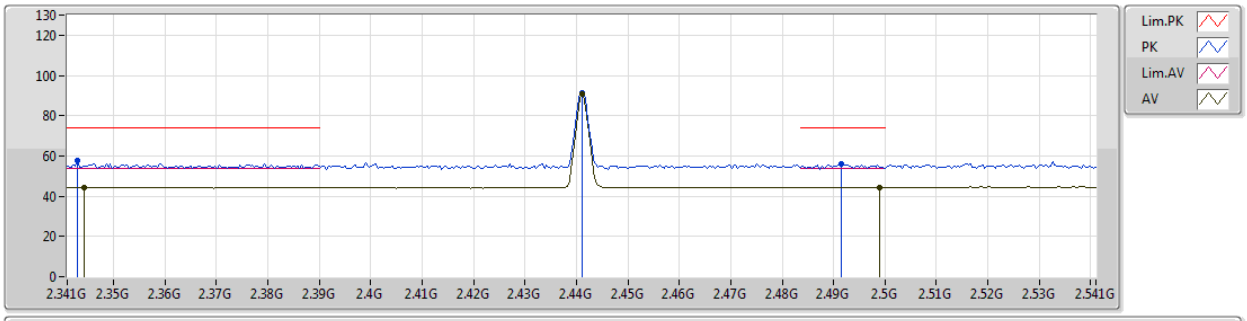


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3446G	44.40	54.00	-9.60	31.85	3	Vertical	219	1.49	-
AV	2.441G	92.40	Inf	-Inf	32.16	3	Vertical	219	1.49	-
AV	2.4898G	44.45	54.00	-9.55	32.31	3	Vertical	219	1.49	-
PK	2.3466G	56.76	74.00	-17.24	31.86	3	Vertical	219	1.49	-
PK	2.4414G	93.24	Inf	-Inf	32.16	3	Vertical	219	1.49	-
PK	2.4894G	56.58	74.00	-17.42	32.30	3	Vertical	219	1.49	-

BT-BR(1Mbps)

2441MHz_TX

28/12/2018

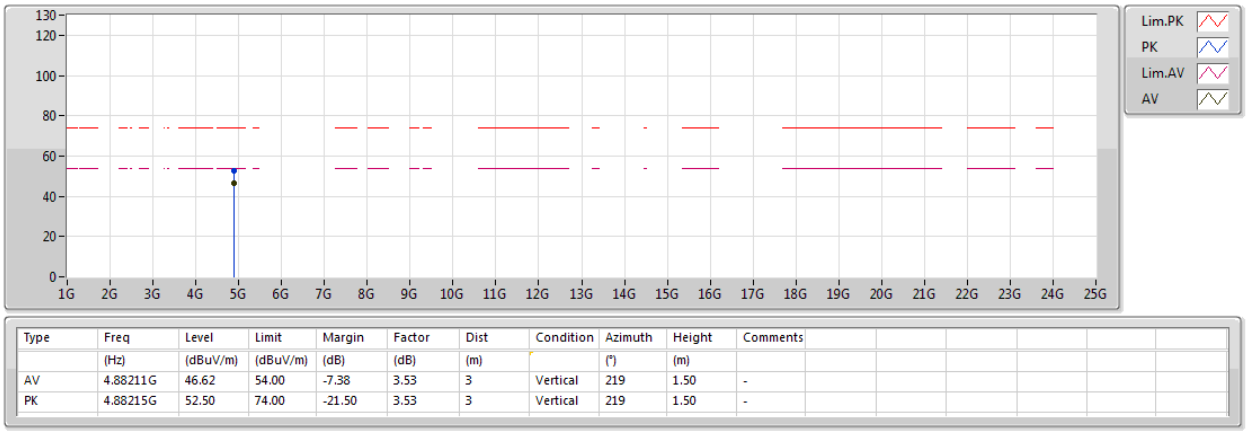


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3442G	44.49	54.00	-9.51	31.85	3	Horizontal	87	1.22	-
AV	2.441G	90.55	Inf	-Inf	32.16	3	Horizontal	87	1.22	-
AV	2.499G	44.44	54.00	-9.56	32.34	3	Horizontal	87	1.22	-
PK	2.343G	57.58	74.00	-16.42	31.84	3	Horizontal	87	1.22	-
PK	2.441G	91.48	Inf	-Inf	32.16	3	Horizontal	87	1.22	-
PK	2.4914G	56.08	74.00	-17.92	32.31	3	Horizontal	87	1.22	-

BT-BR(1Mbps)

2441MHz_TX

28/12/2018

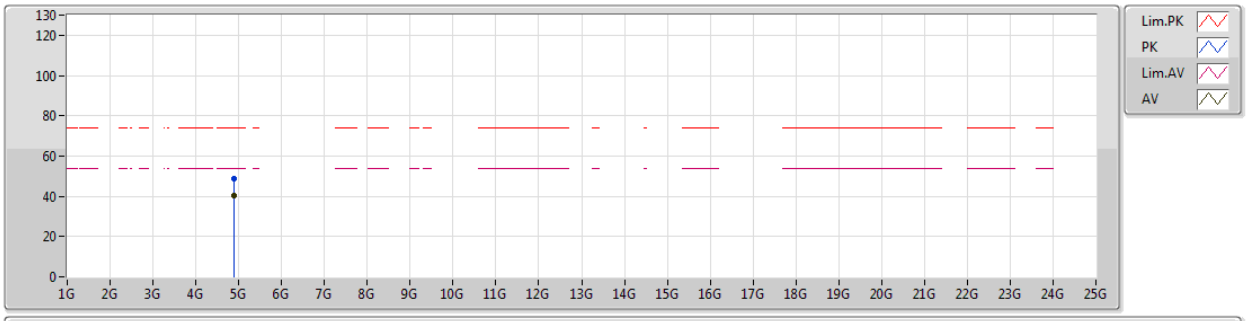


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.88211G	46.62	54.00	-7.38	3.53	3	Vertical	219	1.50	-
PK	4.88215G	52.50	74.00	-21.50	3.53	3	Vertical	219	1.50	-

BT-BR(1Mbps)

2441MHz_TX

28/12/2018

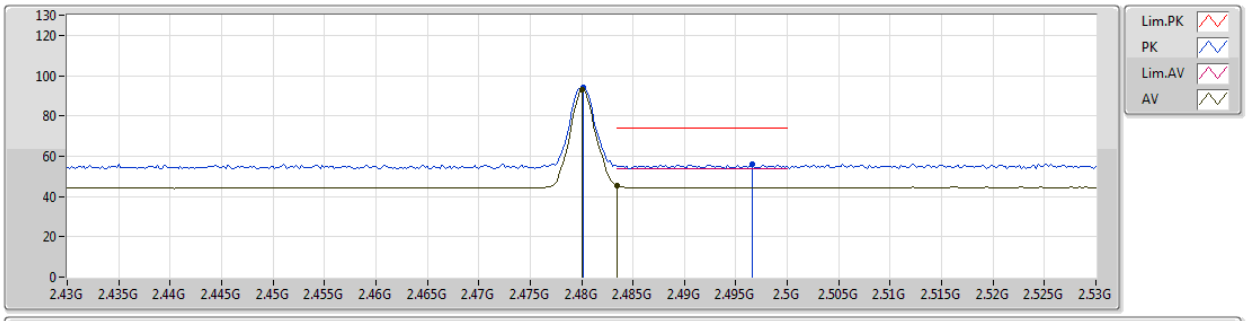


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.88203G	40.27	54.00	-13.73	3.53	3	Horizontal	72	1.01	-
PK	4.88187G	48.98	74.00	-25.02	3.53	3	Horizontal	72	1.01	-

BT-BR(1Mbps)

2480MHz_TX

28/12/2018

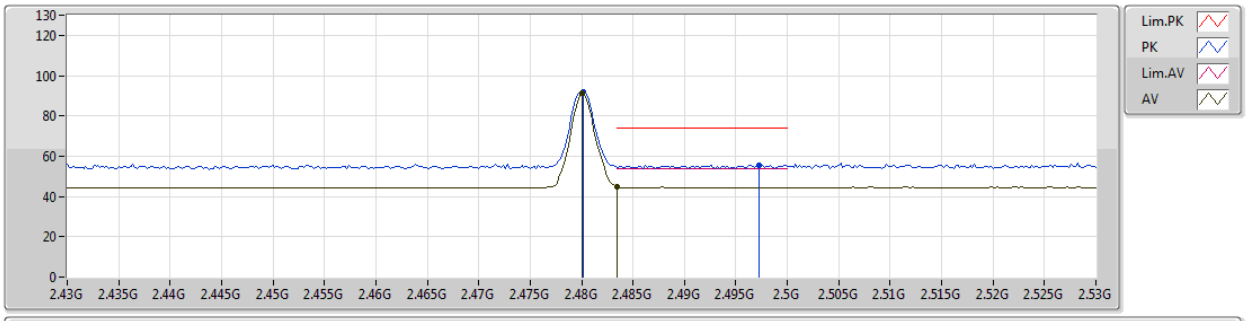


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.48G	92.93	Inf	-Inf	32.28	3	Vertical	218	1.49	-
AV	2.4835G	45.19	54.00	-8.81	32.29	3	Vertical	218	1.49	-
PK	2.4802G	93.86	Inf	-Inf	32.28	3	Vertical	218	1.49	-
PK	2.4966G	55.94	74.00	-18.06	32.33	3	Vertical	218	1.49	-

BT-BR(1Mbps)

2480MHz_TX

28/12/2018

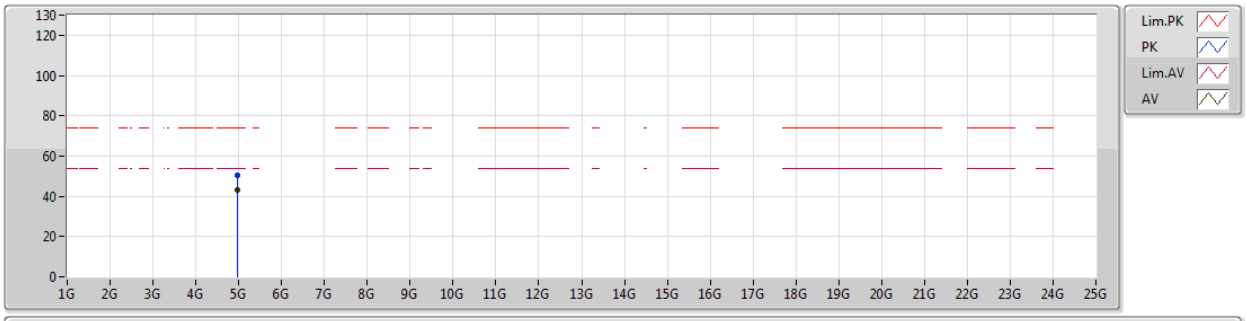


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.48G	91.07	Inf	-Inf	32.28	3	Horizontal	102	1.21	-
AV	2.4835G	44.87	54.00	-9.13	32.29	3	Horizontal	102	1.21	-
PK	2.4802G	91.97	Inf	-Inf	32.28	3	Horizontal	102	1.21	-
PK	2.4972G	55.64	74.00	-18.36	32.33	3	Horizontal	102	1.21	-

BT-BR(1Mbps)

2480MHz_TX

28/12/2018

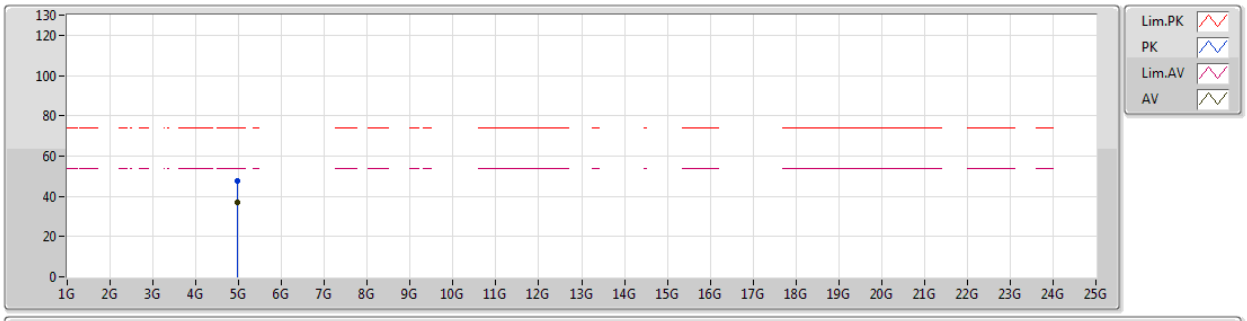


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.96007G	43.19	54.00	-10.81	3.71	3	Vertical	216	1.50	-
PK	4.96032G	50.68	74.00	-23.32	3.71	3	Vertical	216	1.50	-

BT-BR(1Mbps)

2480MHz_TX

28/12/2018

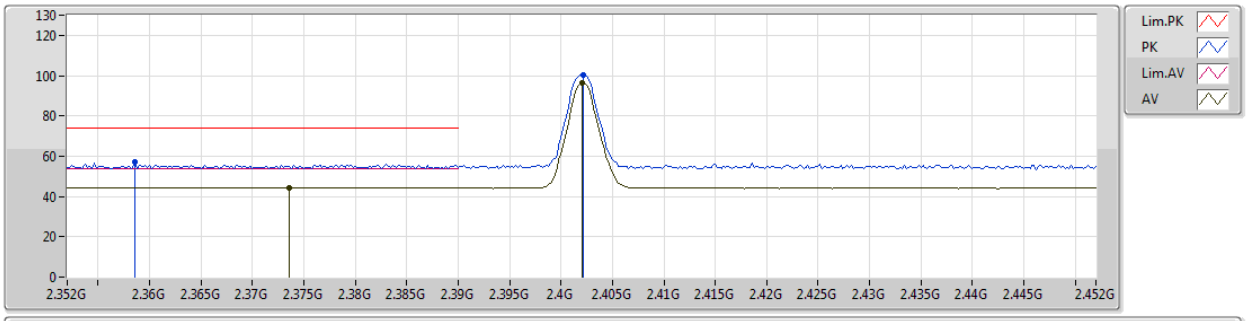


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.96006G	37.14	54.00	-16.86	3.71	3	Horizontal	74	1.01	-
PK	4.95971G	47.66	74.00	-26.34	3.71	3	Horizontal	74	1.01	-

BT-EDR(2Mbps)

2402MHz_TX

28/12/2018

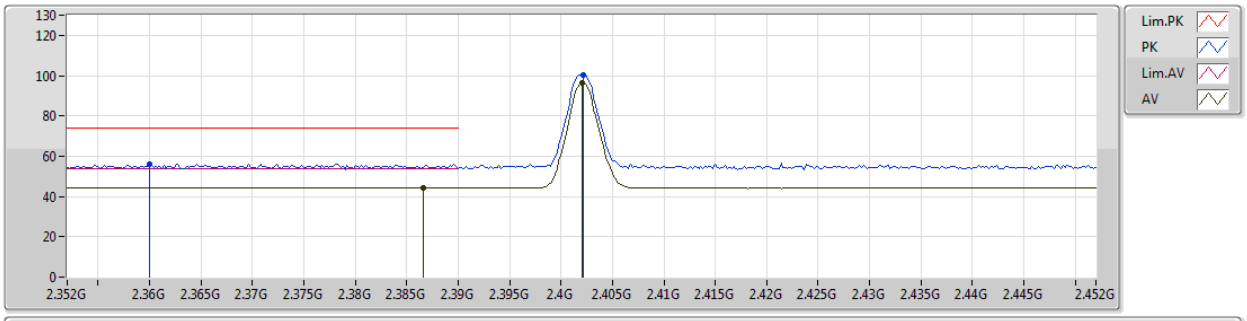


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3736G	44.41	54.00	-9.59	31.95	3	Vertical	192	1.49	-
AV	2.402G	96.51	Inf	-Inf	32.04	3	Vertical	192	1.49	-
PK	2.3586G	56.96	74.00	-17.04	31.90	3	Vertical	192	1.49	-
PK	2.4022G	100.50	Inf	-Inf	32.05	3	Vertical	192	1.49	-

BT-EDR(2Mbps)

2402MHz_TX

28/12/2018

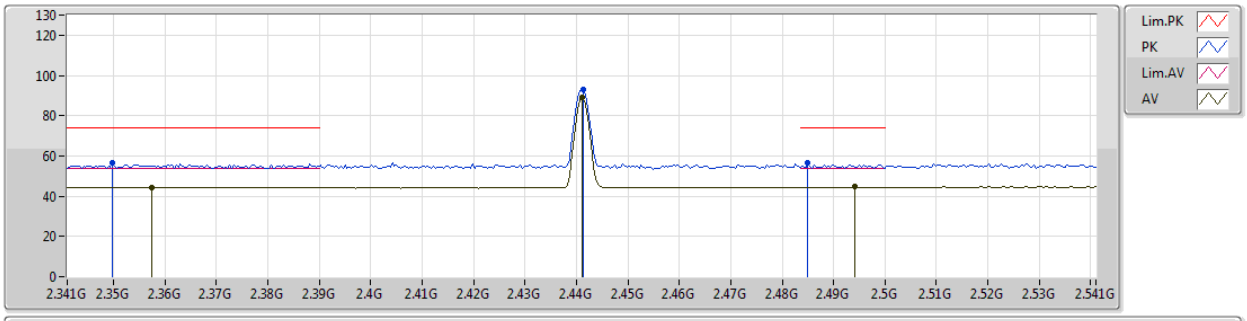


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3866G	44.47	54.00	-9.53	32.00	3	Horizontal	201	1.16	-
AV	2.402G	96.28	Inf	-Inf	32.04	3	Horizontal	201	1.16	-
PK	2.36G	56.22	74.00	-17.78	31.90	3	Horizontal	201	1.16	-
PK	2.4022G	100.24	Inf	-Inf	32.05	3	Horizontal	201	1.16	-

BT-EDR(2Mbps)

2441MHz_TX

28/12/2018

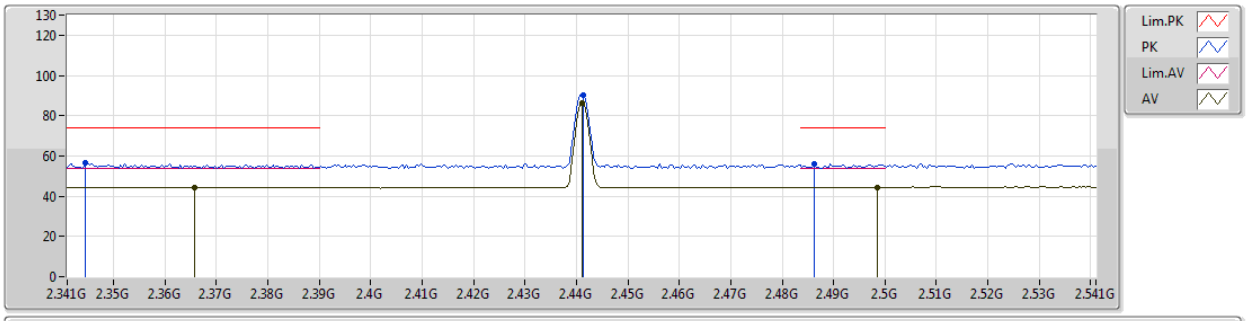


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3574G	44.48	54.00	-9.52	31.90	3	Vertical	220	1.50	-
AV	2.441G	89.14	Inf	-Inf	32.16	3	Vertical	220	1.50	-
AV	2.4942G	44.58	54.00	-9.42	32.33	3	Vertical	220	1.50	-
PK	2.3498G	56.37	74.00	-17.63	31.87	3	Vertical	220	1.50	-
PK	2.4414G	92.92	Inf	-Inf	32.16	3	Vertical	220	1.50	-
PK	2.485G	56.47	74.00	-17.53	32.29	3	Vertical	220	1.50	-

BT-EDR(2Mbps)

2441MHz_TX

28/12/2018

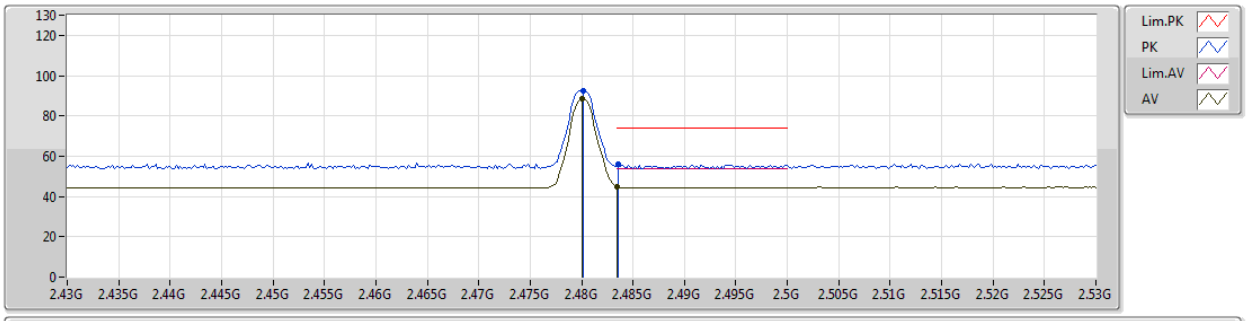


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3658G	44.49	54.00	-9.51	31.93	3	Horizontal	87	1.22	-
AV	2.441G	86.53	Inf	-Inf	32.16	3	Horizontal	87	1.22	-
AV	2.4986G	44.52	54.00	-9.48	32.34	3	Horizontal	87	1.22	-
PK	2.3446G	56.73	74.00	-17.27	31.85	3	Horizontal	87	1.22	-
PK	2.4414G	90.40	Inf	-Inf	32.16	3	Horizontal	87	1.22	-
PK	2.4862G	55.97	74.00	-18.03	32.30	3	Horizontal	87	1.22	-

BT-EDR(2Mbps)

2480MHz_TX

28/12/2018

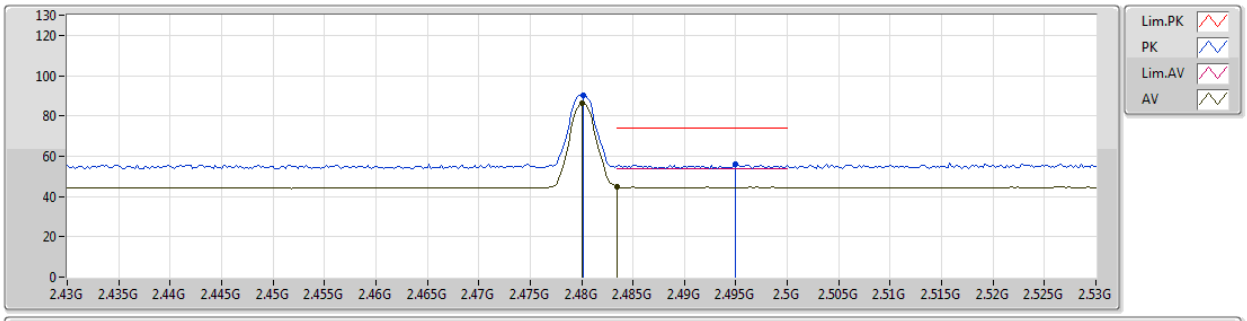


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.48G	88.79	Inf	-Inf	32.28	3	Vertical	218	1.50	-
AV	2.4835G	44.94	54.00	-9.06	32.29	3	Vertical	218	1.50	-
PK	2.4802G	92.68	Inf	-Inf	32.28	3	Vertical	218	1.50	-
PK	2.4836G	55.76	74.00	-18.24	32.29	3	Vertical	218	1.50	-

BT-EDR(2Mbps)

2480MHz_TX

28/12/2018

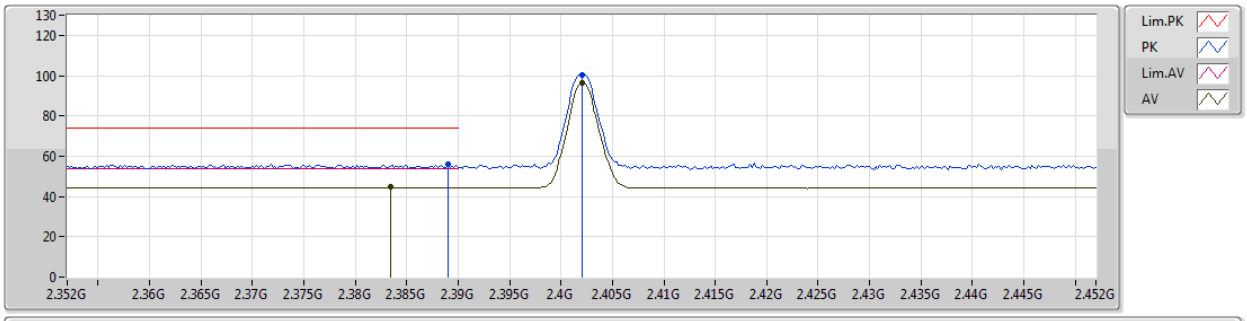


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.48G	86.25	Inf	-Inf	32.28	3	Horizontal	104	1.46	-
AV	2.4835G	44.77	54.00	-9.23	32.29	3	Horizontal	104	1.46	-
PK	2.4802G	90.25	Inf	-Inf	32.28	3	Horizontal	104	1.46	-
PK	2.495G	56.06	74.00	-17.94	32.33	3	Horizontal	104	1.46	-

BT-EDR(3Mbps)

2402MHz_TX

28/12/2018

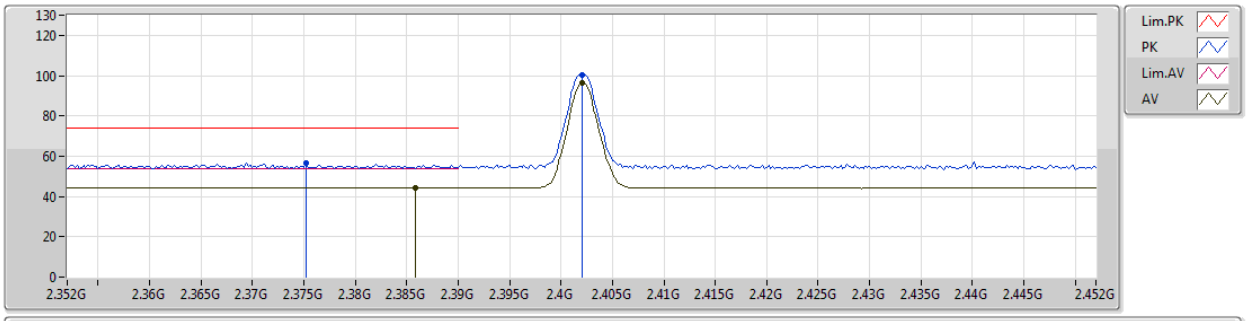


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3834G	44.55	54.00	-9.45	31.98	3	Vertical	193	1.49	-
AV	2.402G	96.21	Inf	-Inf	32.04	3	Vertical	193	1.49	-
PK	2.389G	55.89	74.00	-18.11	32.00	3	Vertical	193	1.49	-
PK	2.402G	100.27	Inf	-Inf	32.04	3	Vertical	193	1.49	-

BT-EDR(3Mbps)

2402MHz_TX

28/12/2018

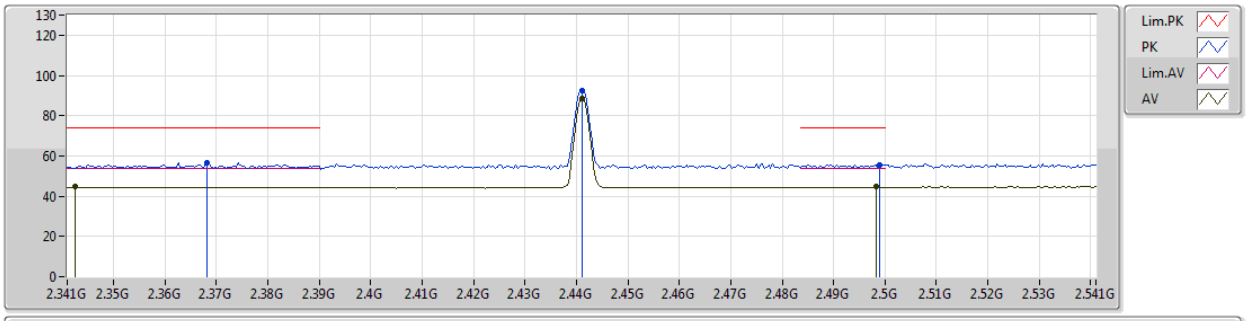


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3858G	44.47	54.00	-9.53	32.00	3	Horizontal	201	1.17	-
AV	2.402G	96.18	Inf	-Inf	32.04	3	Horizontal	201	1.17	-
PK	2.3752G	56.64	74.00	-17.36	31.96	3	Horizontal	201	1.17	-
PK	2.402G	100.16	Inf	-Inf	32.04	3	Horizontal	201	1.17	-

BT-EDR(3Mbps)

2441MHz_TX

28/12/2018

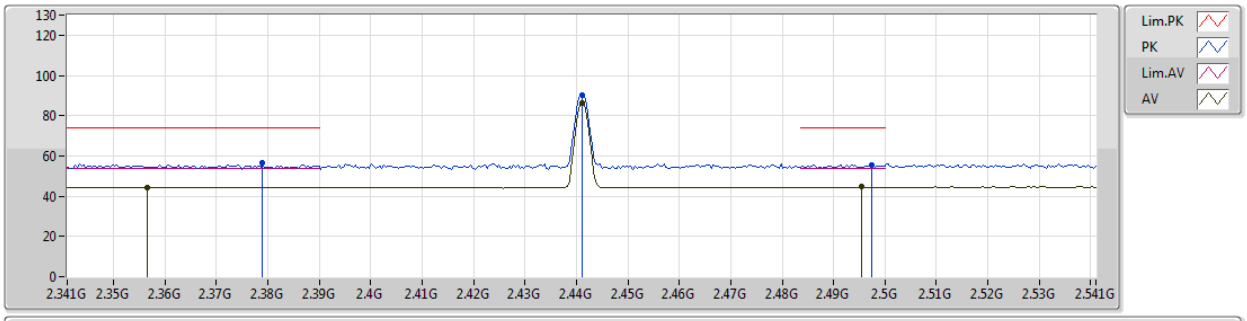


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3426G	44.55	54.00	-9.45	31.84	3	Vertical	192	1.50	-
AV	2.441G	88.72	Inf	-Inf	32.16	3	Vertical	192	1.50	-
AV	2.4982G	44.56	54.00	-9.44	32.34	3	Vertical	192	1.50	-
PK	2.3682G	56.52	74.00	-17.48	31.93	3	Vertical	192	1.50	-
PK	2.441G	92.64	Inf	-Inf	32.16	3	Vertical	192	1.50	-
PK	2.499G	55.54	74.00	-18.46	32.34	3	Vertical	192	1.50	-

BT-EDR(3Mbps)

2441MHz_TX

28/12/2018

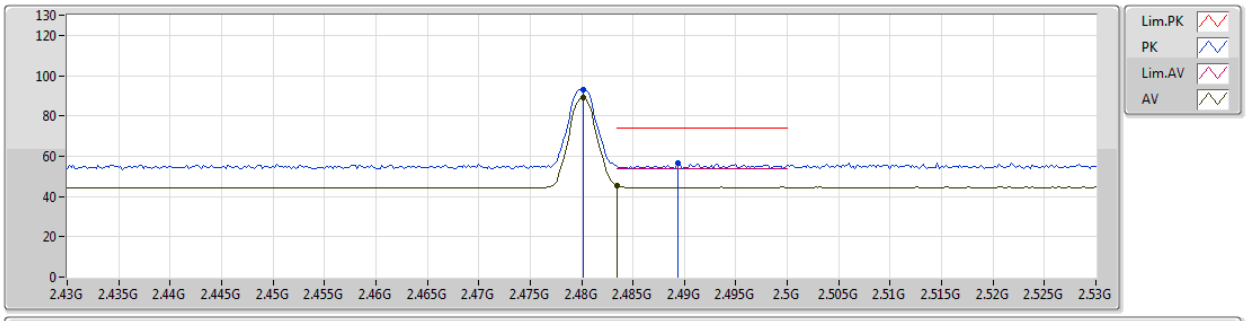


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3566G	44.48	54.00	-9.52	31.90	3	Horizontal	87	1.23	-
AV	2.441G	86.49	Inf	-Inf	32.16	3	Horizontal	87	1.23	-
AV	2.4954G	44.60	54.00	-9.40	32.33	3	Horizontal	87	1.23	-
PK	2.379G	56.51	74.00	-17.49	31.97	3	Horizontal	87	1.23	-
PK	2.441G	90.41	Inf	-Inf	32.16	3	Horizontal	87	1.23	-
PK	2.4974G	55.58	74.00	-18.42	32.33	3	Horizontal	87	1.23	-

BT-EDR(3Mbps)

2480MHz_TX

28/12/2018

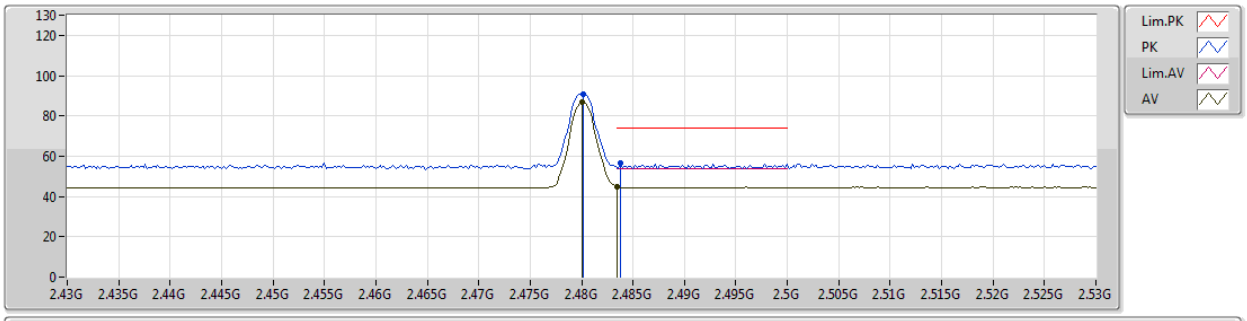


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.4802G	89.12	Inf	-Inf	32.28	3	Vertical	218	1.49	-
AV	2.4835G	45.16	54.00	-8.84	32.29	3	Vertical	218	1.49	-
PK	2.4802G	93.08	Inf	-Inf	32.28	3	Vertical	218	1.49	-
PK	2.4894G	56.56	74.00	-17.44	32.30	3	Vertical	218	1.49	-

BT-EDR(3Mbps)

2480MHz_TX

28/12/2018



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.48G	86.75	Inf	-Inf	32.28	3	Horizontal	102	1.21	-
AV	2.4835G	44.78	54.00	-9.22	32.29	3	Horizontal	102	1.21	-
PK	2.4802G	90.69	Inf	-Inf	32.28	3	Horizontal	102	1.21	-
PK	2.4838G	56.33	74.00	-17.67	32.29	3	Horizontal	102	1.21	-