FCC Test Report

FCC ID	:	**2AJOTTA-1113**
Equipment	:	**Smart Phone**
Brand Name	:	**NOKIA**
Model Name	:	**TA-1113**
Applicant	:	**HMD Global Oy** **Bertel Jungin aukio 9, 02600 Espoo, Finland**
Manufacturer	:	**HMD Global Oy** **Bertel Jungin aukio 9, 02600 Espoo, Finland**
Standard	:	**47 CFR FCC Part 15.247**

The product was received on Jul. 23, 2018, and testing was started from Aug. 21, 2018 and completed on Aug. 31, 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.)

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PHOTOGRAPHS OF EUT V01

History of this test report

Report No.	Version	Description	Issued Date
FR871938AD	01	Initial issue of report	Sep. 26, 2018

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

Reviewed by: Jackson 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.	Port	Brand	Model Name	Antenna Type	Connector
1	1	-	32ROOW0051A	Monopole	mini Murata

Ant.	Port	Gain (dBi)	
		2.4G	BT
1	1	0.64	0.64

For 2.4GHz function:

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

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

For BT function:

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

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

1.1.3 EUT Information

Operational Condition				
EUT Power Type	From AC Adapter/Battery			
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)	0.766	1.158	2.884m	1k
BT-EDR(2Mbps)	0.767	1.152	2.888m	1k
BT-EDR(3Mbps)	0.773	1.118	2.891m	1k

1.1.5 Table for Multiple Listing

There are two sample of EUT.

Sample No.	Description
Sample 1	Dual SIM with Battery 1 for Model TA-1113
Sample 2	Dual SIM with Battery 2 for Model TA-1113

Note: Sample1 configuration was measured during the test.

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
- Public Notice DA 00-705
- 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
RF Conducted	TH06-HY	Tim	26.5°C / 65%	23/Aug/2018
Radiated	03CH03-HY	Jeff	25°C / 59%	21/Aug/2018
AC Conduction	CO04-HY	Jerry	24.5°C / 55.5%	31/Aug/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)	3.6 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	3.0 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	3.8V

2.2 Test Channel Mode

Test Software	-

Mode	PowerSetting
BT-BR(1Mbps)	-
2402MHz	default
2441MHz	default
2480MHz	default
BT-EDR(2Mbps)	-
2402MHz	default
2441MHz	default
2480MHz	default
BT-EDR(3Mbps)	-
2402MHz	default
2441MHz	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 without earphone
2	Adapter Mode with earphone
Mode 1 configuration was tested and found to be the worst case and measured during the test.	

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 Receiver Radiated Unwanted Emissions		
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	CTX		
1	Adapter Mode without earphone		
2	Adapter Mode with earphone		
Mode 1 configuration was tested and found to be the worst case and measured during the test.			
Orthogonal Planes of EUT	**X Plane**	**Y Plane**	**Z Plane**
Worst Planes of EUT	V		

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis
Test Condition	Radiated measurement
Operating Mode	Normal Link
1	Bluetooth+WLAN 2.4GHz
Refer to Sporton Test Report No.: Appendix H for Radiated Emission Co-location.	

2.4 Accessories

Accessories				
AC Adapter 1	Brand Name	Salcomp	Model Name	AD-10WU
	Power Rating	I/P: 100 - 240 Vac, 0.3 A, O/P: 5 Vdc, 2 A		
AC Adapter 2	Brand Name	Salcomp	Model Name	FC0102
	Power Rating	I/P: 100 - 240 Vac, 0.3 A, O/P: 5 Vdc, 2 A		
AC Adapter 3	Brand Name	DVE	Model Name	AD-10WU
	Power Rating	I/P: 100 - 240 Vac, 0.3 A, O/P: 5 Vdc, 2 A		
Battery 1	Brand Name	SCUD	Model Name	HE362
	Power Rating	4.4 Vdc, 3400 mAh	Type	Li-ion
Battery 2	Brand Name	McNair	Model Name	HE363
	Power Rating	4.4 Vdc, 3400 mAh	Type	Li-ion
Earphone 1	Brand Name	OBO	Model Name	WH-108
	Signal Line	1.5 meter, non-shielded cable, w/o ferrite core		
Earphone 2	Brand Name	FIT	Model Name	WH-108
	Signal Line	1.5 meter, non-shielded cable, w/o ferrite core		
USB Cable 1	Brand Name	Fuconn	Model Name	JCT022-F001
	Signal Line	1.0 meter, non-shielded cable, w/o ferrite core		
USB Cable 2	Brand Name	FIT	Model Name	CUBB01M-FA014-DH
	Signal Line	1.0 meter, non-shielded cable, w/o ferrite core		

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

2.5 Support Equipment

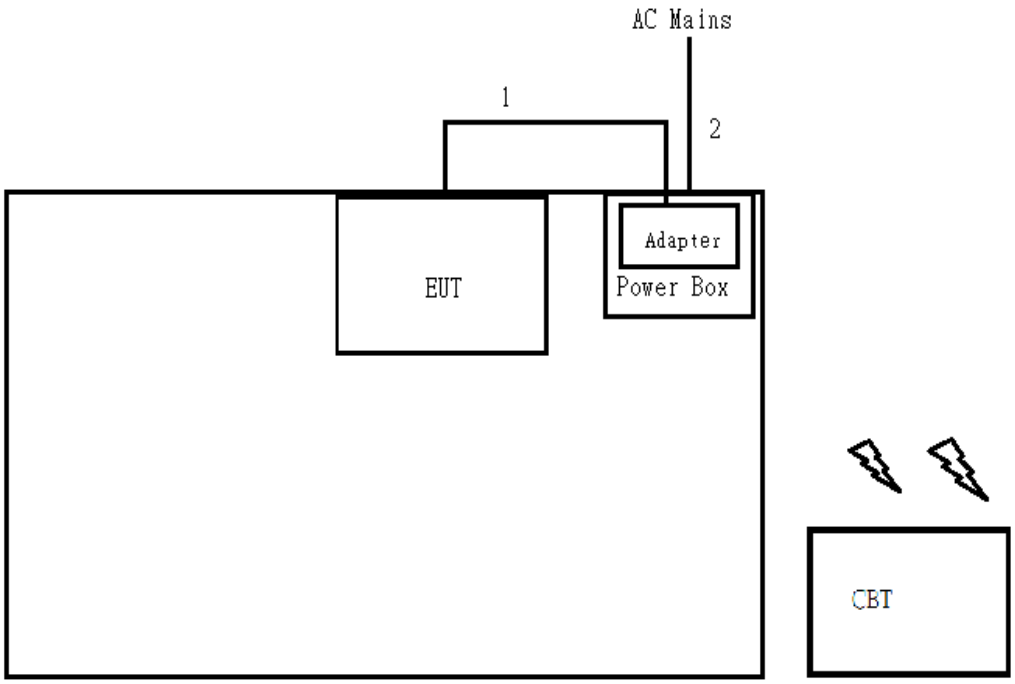
Support Equipment – RF Conducted				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	DC Power Supply	GW	GPS-3030DD	-
2	Bluetooth Tester	R&S	CBT	-

Support Equipment – AC Conduction				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	Bluetooth Tester	R&S	CBT	-

Support Equipment – Radiated Emission				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	Bluetooth Tester	R&S	CBT	-

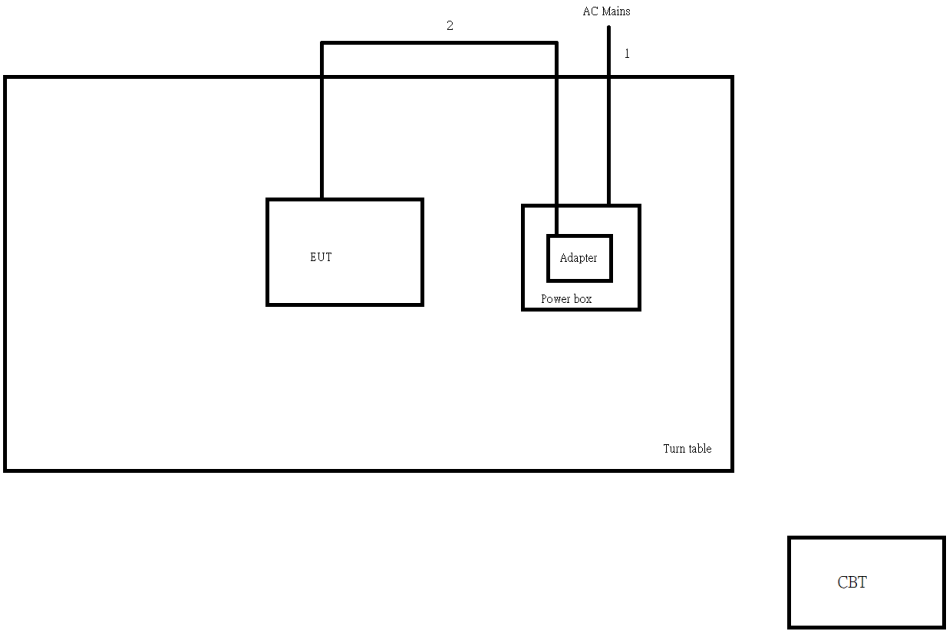
2.6 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



Item	Connection	Shielded	Length(m)	Remark
1	USB Cable	No	1.0	-
2	AC Power line	No	1.5	-

Test Setup Diagram - Radiated Test



Item	Connection	Shielded	Length(m)	Remark
1	AC Power line	No	1.5	-
2	USB Cable	No	1.0	-

3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

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

3.1.2 Measuring Instruments

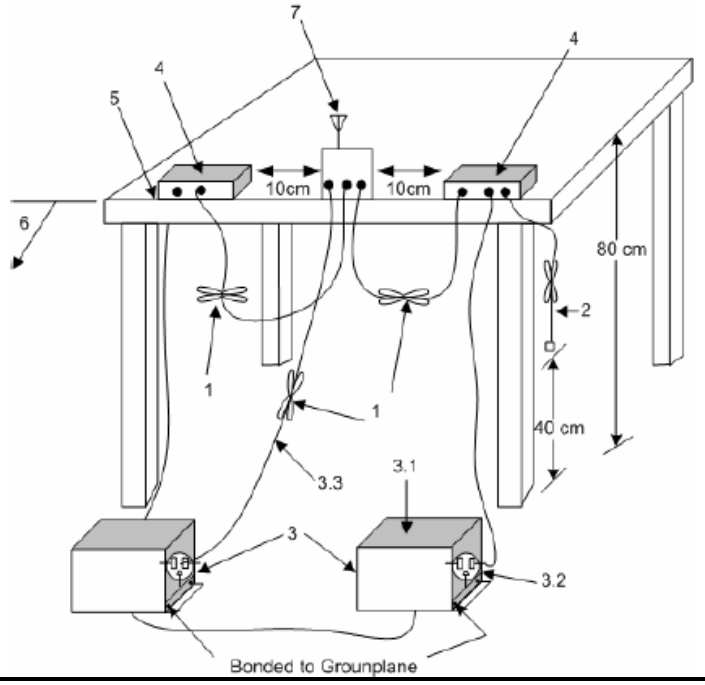
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

Test Method
▪ Refer as ANSI C63.10-2013, clause 6.2 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	

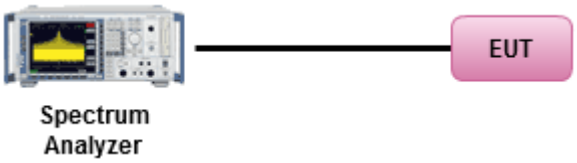
3.2.2 Measuring Instruments

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

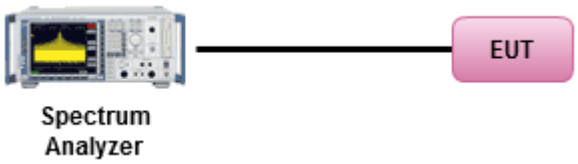
3.4.3 Measuring Instruments

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


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	

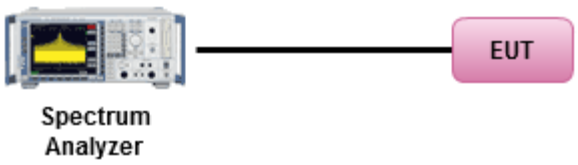
3.5.2 Measuring Instruments

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

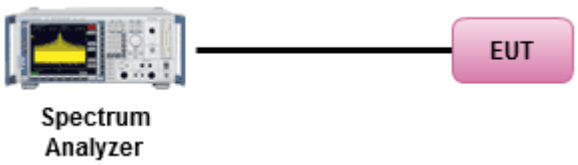
Refer a test equipment and calibration data table in this test report.

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.

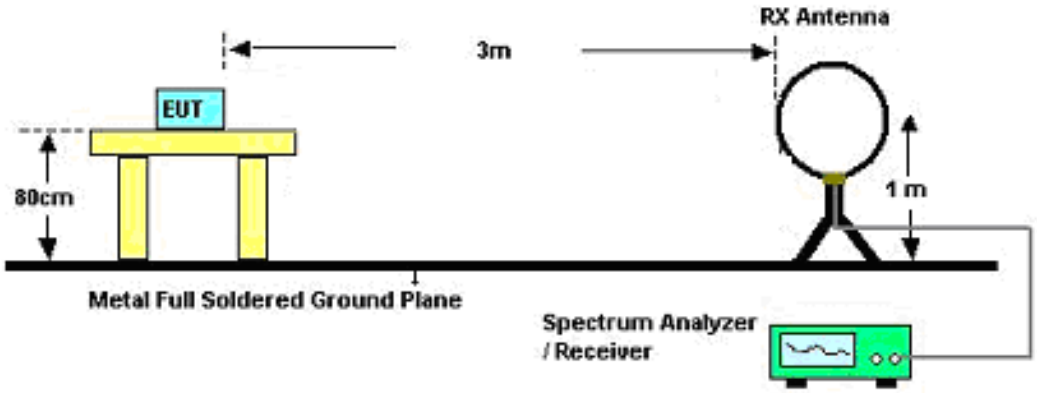
3.7.3 Test Procedures

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.

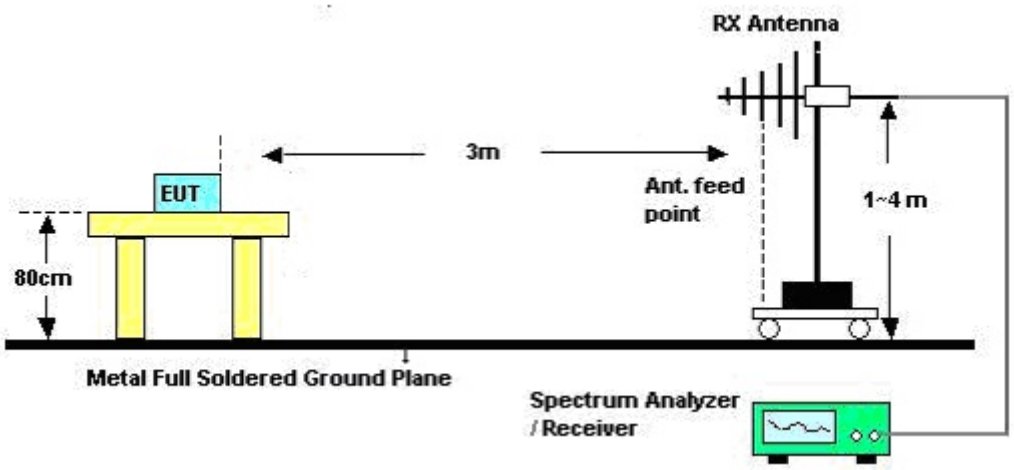
3.7.4 Test Setup

Emissions in Restricted Frequency Bands

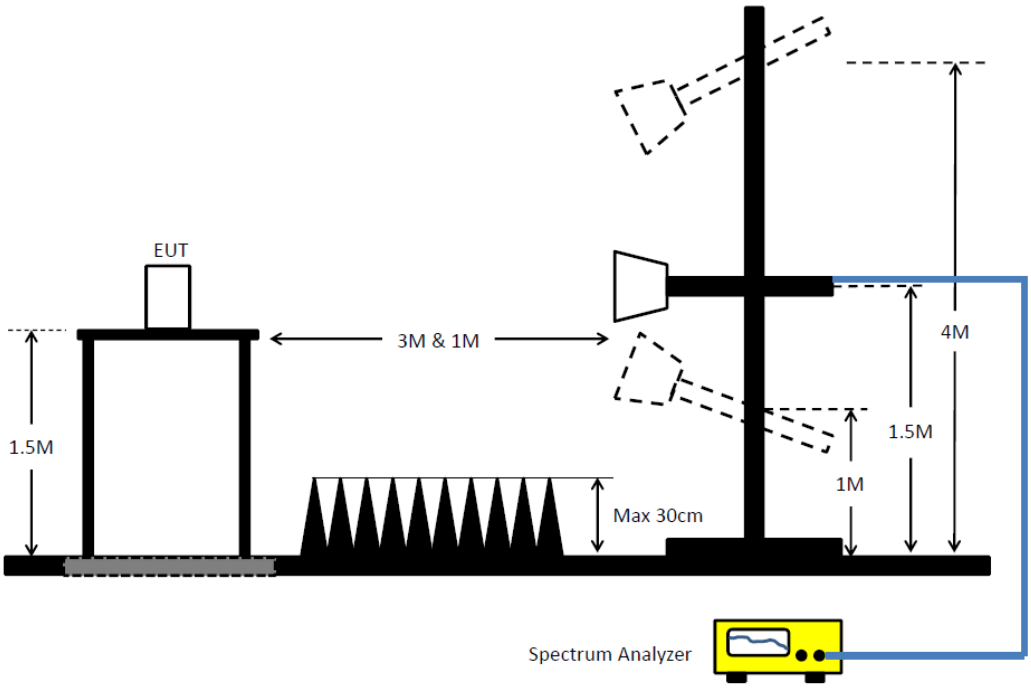
9kHz ~30MHz



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	HUBER+SUHNER	RG213/U	07611832020001	9kHz ~ 30MHz	06/Oct/2017	05/Oct/2018
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/2017	11/Oct/2018

NCR : Non-Calibration Require.

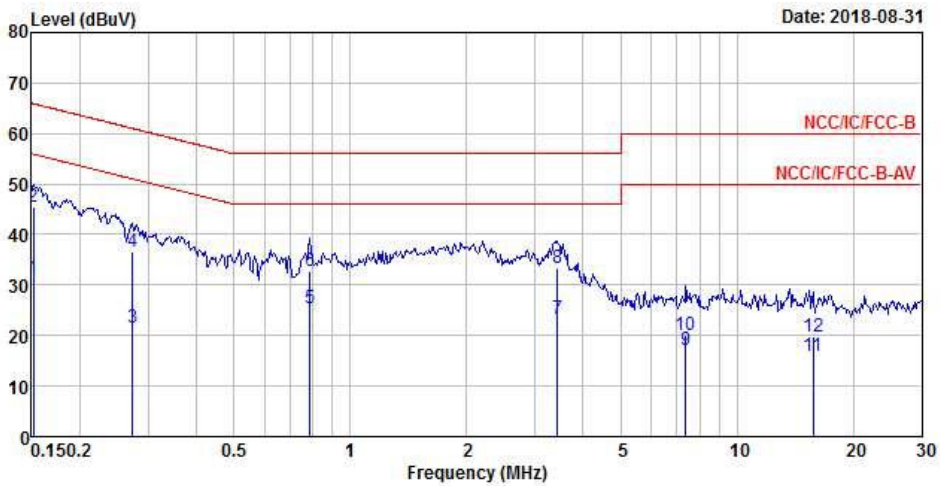
Instrument for Radiated Test

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	31/Oct/2017	30/Oct/2018
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	1GHz ~ 18GHz 3m	01/Nov/2017	31/Oct/2018
Amplifier	HP	8447D	2944A08033	10kHz ~ 1.3GHz	23/Apr/2018	19/Apr/2019
Microwave System Preamplifier	KEYSIGHT	83017A	MY53270196	1GHz ~ 26.5GHz	31/Aug/2017	30/Aug/2018
Signal Analyzer	R&S	FSP40	100305	10Hz ~ 40GHz	04/Jan/2018	03/Jan/2019
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz ~ 1GHz	29/Jan/2018	28/Jan/2019
RF Cable-high	SUHNER	SUCOFLEX 106	CB222	1GHz ~ 40GHz	29/Jan/2018	28/Jan/2019
Bilog Antenna	SCHAFFNER	CBL 6112B	2723	30MHz ~ 1GHz	09/Sep/2017	08/Sep/2018
Receiver	R&S	ESCS 30	100354	9kHz ~ 2.75GHz	08/Dec/2017	07/Dec/2018
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170154	18GHz ~ 40GHz	06/Feb/ 2018	05/Feb/2019
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1531	1GHz ~ 18GHz	18/Apr/ 2018	17/Apr/2019
Loop Antenna	TESEQ	HLA 6120	31244	9kHz ~ 30MHz	28/Mar/2018	27/Mar/2019

Instrument for Conducted Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV 40	101013	9kHz~40GHz	29/Dec/2017	28/Dec/2018
Signal Generator	R&S	SMR 40	100116	10MHz ~ 40GHz	23/Jul/2018	22/Jul/2019
Pulse Power Sensor	Anritsu	MA2411B	1027452	300MHz ~ 40GHz	27/Feb/2018	26/Feb/2019
Power Meter	Anritsu	ML2495A	1124009	300MHz ~ 40GHz	27/Feb/2018	26/Feb/2019
CABLE 0.2m	HUBER	MY37960/4	RF Cable - 17	1 to 18GHz	17/Jan/2018	16/Jan/2019
CABLE 0.2m	HUBER	MY37960/4	RF Cable - 17	30 to 1000MHz	17/Jan/2018	16/Jan/2019
CABLE 0.5m	HUBER	MY37963/4	RF Cable - 22	1 to 18GHz	17/Jan/2018	16/Jan/2019

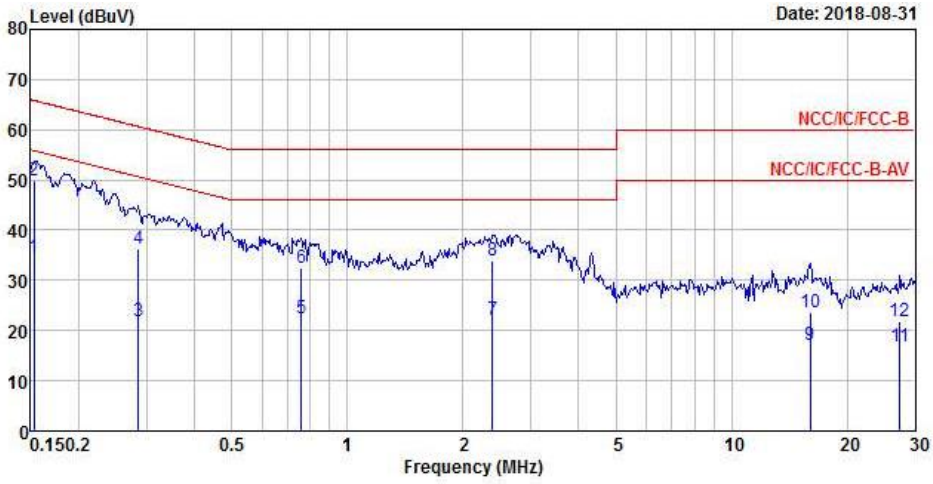
AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Neutral
Operating Function	Adapter Mode without earphone		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.15	31.24	-24.67	55.91	21.57	9.63	0.04	Average
2 MAX	0.15	45.54	-20.37	65.91	35.87	9.63	0.04	QP
3	0.27	21.61	-29.42	51.03	11.95	9.62	0.04	Average
4	0.27	36.71	-24.32	61.03	27.05	9.62	0.04	QP
5	0.79	25.45	-20.55	46.00	15.80	9.62	0.03	Average
6	0.79	32.83	-23.17	56.00	23.18	9.62	0.03	QP
7	3.44	23.44	-22.56	46.00	13.73	9.64	0.07	Average
8	3.44	33.38	-22.62	56.00	23.67	9.64	0.07	QP
9	7.37	17.26	-32.74	50.00	7.43	9.67	0.16	Average
10	7.37	20.05	-39.95	60.00	10.22	9.67	0.16	QP
11	15.72	15.94	-34.06	50.00	6.20	9.70	0.04	Average
12	15.72	19.89	-40.11	60.00	10.15	9.70	0.04	QP

Note 1: “>20dB” means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found emissions (No emissions were detected.)

AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Line
Operating Function	Adapter Mode without earphone		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.15	34.55	-21.27	55.82	24.89	9.62	0.04	Average
2 MAX	0.15	49.79	-16.03	65.82	40.13	9.62	0.04	QP
3	0.29	21.79	-28.84	50.63	12.13	9.61	0.05	Average
4	0.29	36.44	-24.19	60.63	26.78	9.61	0.05	QP
5	0.76	22.48	-23.52	46.00	12.84	9.61	0.03	Average
6	0.76	32.53	-23.47	56.00	22.89	9.61	0.03	QP
7	2.38	22.04	-23.96	46.00	12.40	9.62	0.02	Average
8	2.38	33.97	-22.03	56.00	24.33	9.62	0.02	QP
9	16.05	17.27	-32.73	50.00	7.59	9.63	0.05	Average
10	16.05	23.48	-36.52	60.00	13.80	9.63	0.05	QP
11	27.42	16.72	-33.28	50.00	7.04	9.53	0.15	Average
12	27.42	21.85	-38.15	60.00	12.17	9.53	0.15	QP

Note 1: “>20dB” means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found emissions (No emissions were detected.)

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)	787.5k	767.116k	767KF1D	786.25k	764.618k
BT-EDR(2Mbps)	1.248M	1.179M	1M18G1D	1.238M	1.177M
BT-EDR(3Mbps)	1.249M	1.187M	1M19G1D	1.244M	1.187M

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

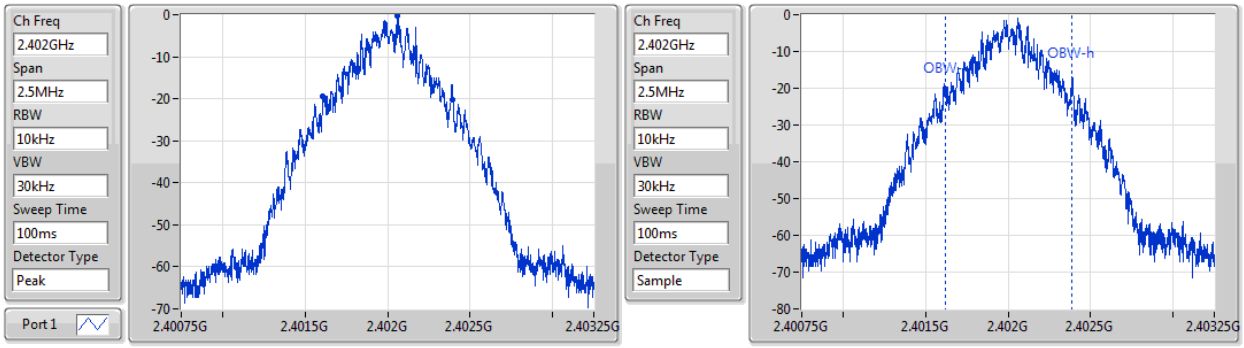
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-BR(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	Inf	787.5k	764.618k
2441MHz_TnomVnom	Pass	Inf	786.25k	765.867k
2480MHz_TnomVnom	Pass	Inf	787.5k	767.116k
BT-EDR(2Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	Inf	1.238M	1.177M
2441MHz_TnomVnom	Pass	Inf	1.243M	1.178M
2480MHz_TnomVnom	Pass	Inf	1.248M	1.179M
BT-EDR(3Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	Inf	1.244M	1.187M
2441MHz_TnomVnom	Pass	Inf	1.249M	1.187M
2480MHz_TnomVnom	Pass	Inf	1.248M	1.187M

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

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

2402MHz

23/08/2018

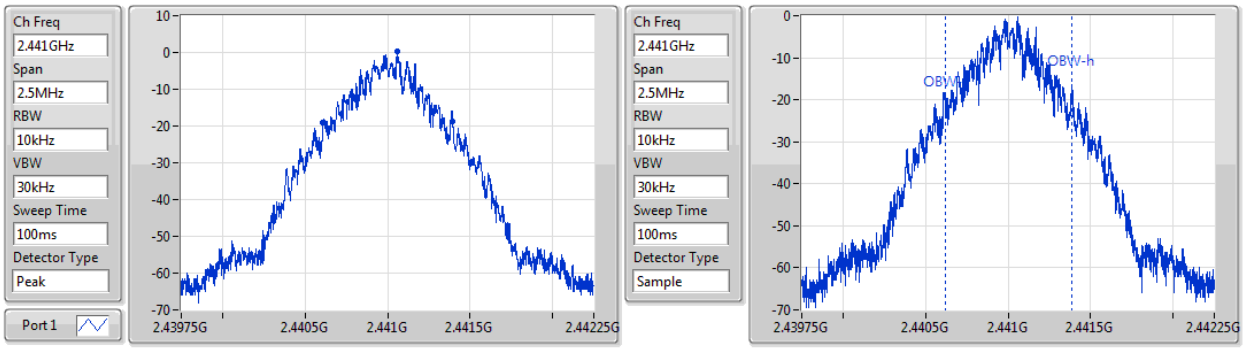


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
787.5k	2.401609G	2.402396G	764.618k	2.401623G	2.402387G	Inf	1

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

2441MHz

23/08/2018

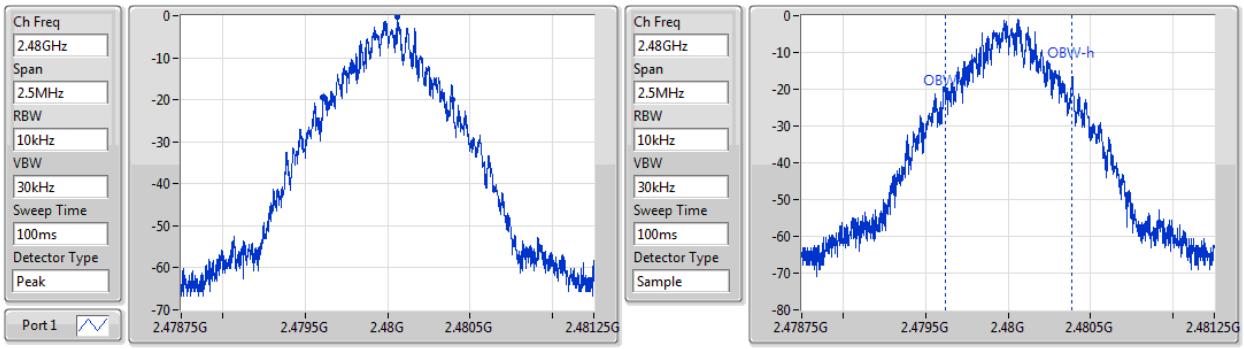


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
786.25k	2.440609G	2.441395G	765.867k	2.44062G	2.441386G	Inf	1

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

2480MHz

23/08/2018

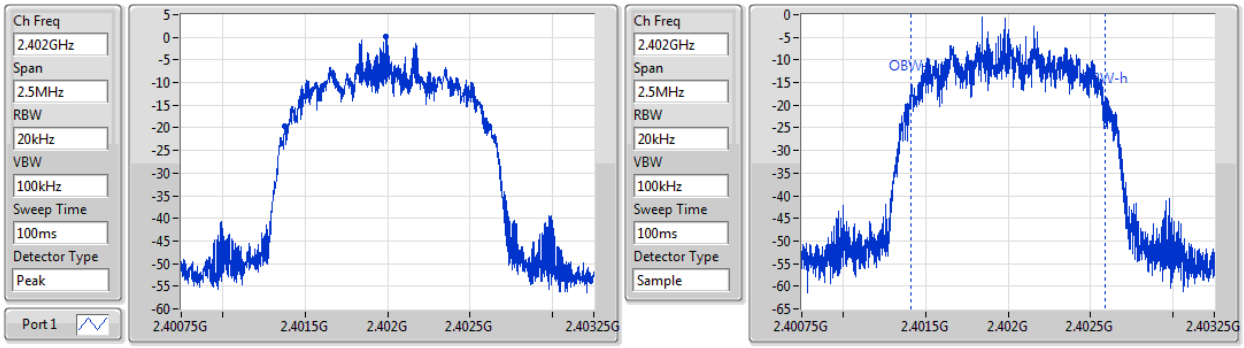


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
787.5k	2.479609G	2.480396G	767.116k	2.479621G	2.480389G	Inf	1

BT-EDR(2Mbps) EBW

2402MHz

23/08/2018

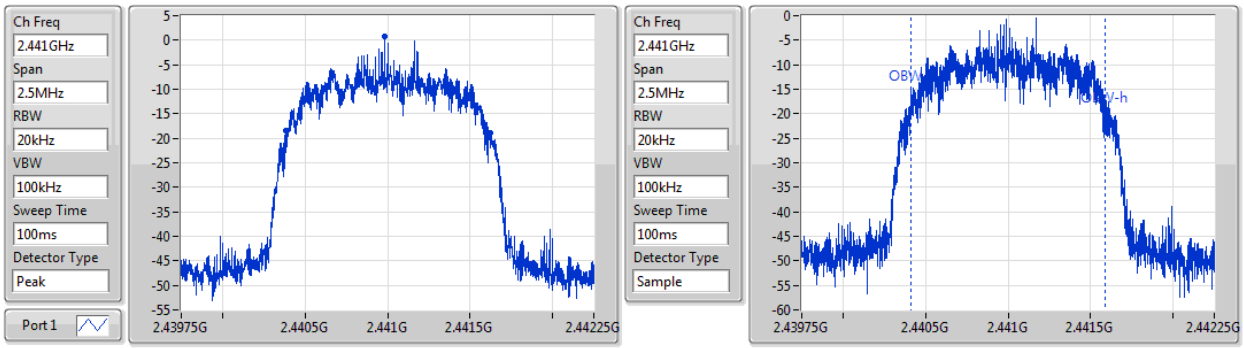


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.238M	2.40138G	2.402618G	1.177M	2.401413G	2.40259G	Inf	1

BT-EDR(2Mbps) EBW

2441MHz

23/08/2018

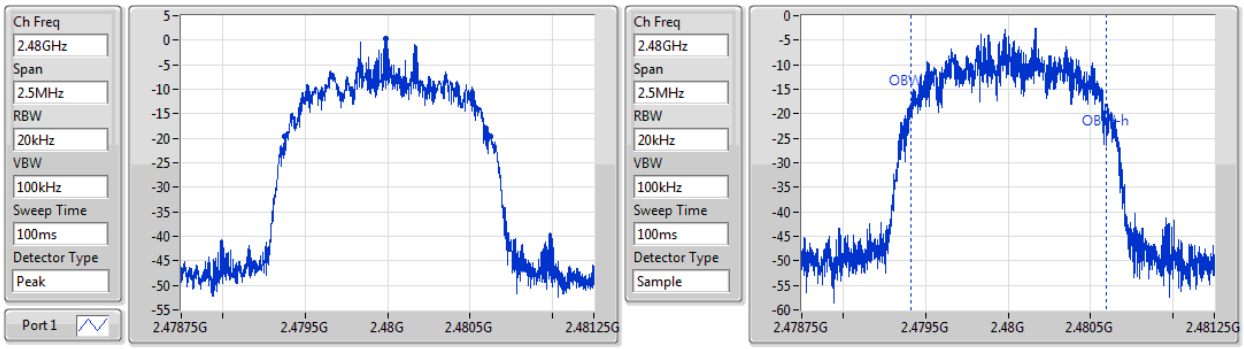


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.243M	2.440381G	2.441624G	1.178M	2.440413G	2.441591G	Inf	1

BT-EDR(2Mbps) EBW

2480MHz

23/08/2018

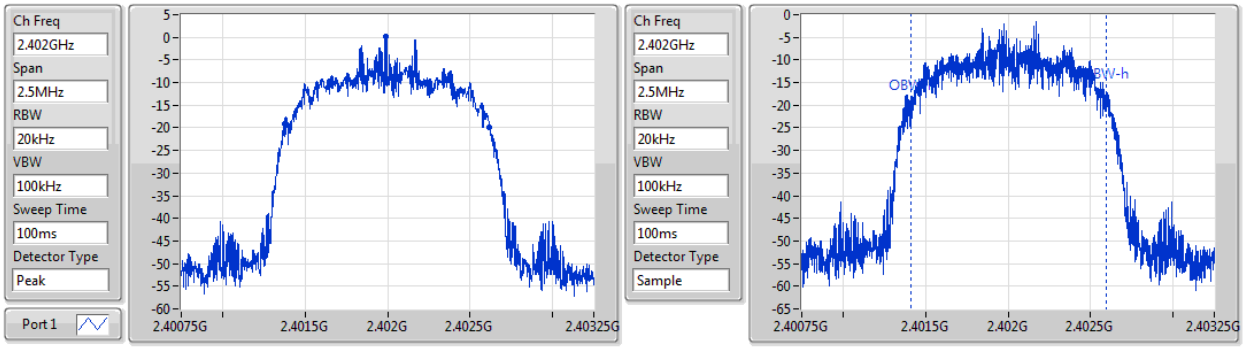


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.248M	2.479379G	2.480626G	1.179M	2.479413G	2.480592G	Inf	1

BT-EDR(3Mbps) EBW

2402MHz

23/08/2018

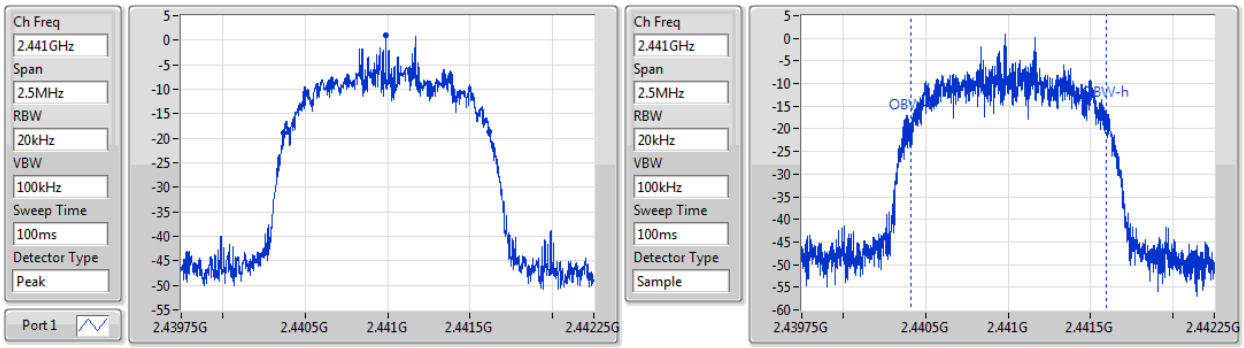


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.244M	2.401374G	2.402618G	1.187M	2.40141G	2.402597G	Inf	1

BT-EDR(3Mbps) EBW

2441MHz

23/08/2018

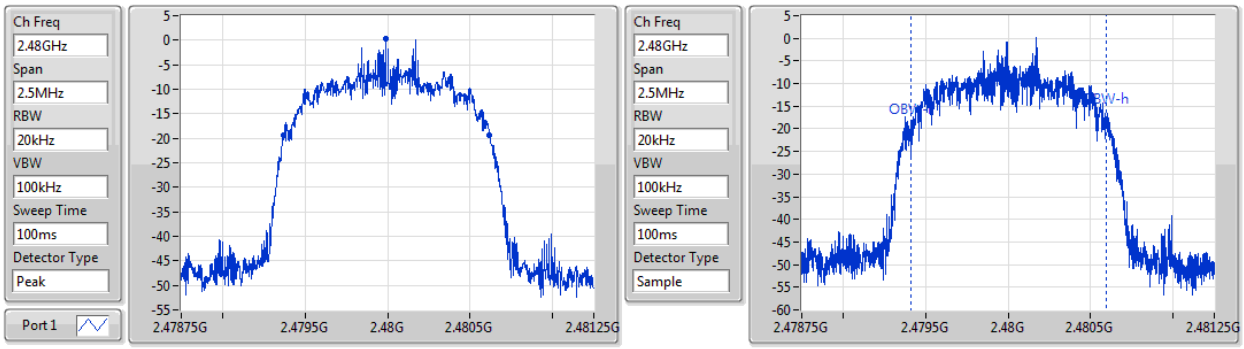


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.249M	2.440369G	2.441618G	1.187M	2.440409G	2.441596G	Inf	1

BT-EDR(3Mbps) EBW

2480MHz

23/08/2018



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.248M	2.47937G	2.480618G	1.187M	2.47941G	2.480597G	Inf	1

Summary

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

Result

Mode	Result	Fl (Hz)	Fh (Hz)	Ch.Space (Hz)	Limit (Hz)
BT-BR(1Mbps)	-	-	-	-	-
2402MHz_TnomVnom	Pass	2.401992G	2.402994G	1.002M	524.475k
2441MHz_TnomVnom	Pass	2.441061G	2.442061G	1.0005M	523.6425k
2480MHz_TnomVnom	Pass	2.479061G	2.480061G	1.0005M	524.475k
BT-EDR(2Mbps)	-	-	-	-	-
2402MHz_TnomVnom	Pass	2.401992G	2.402991G	999k	824.508k
2441MHz_TnomVnom	Pass	2.440995G	2.441994G	999k	827.838k
2480MHz_TnomVnom	Pass	2.478993G	2.479994G	1.0005M	831.168k
BT-EDR(3Mbps)	-	-	-	-	-
2402MHz_TnomVnom	Pass	2.401993G	2.402992G	999k	828.504k
2441MHz_TnomVnom	Pass	2.440993G	2.441992G	999k	831.834k
2480MHz_TnomVnom	Pass	2.478993G	2.479994G	1.0005M	831.168k

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

2.402G/2.403GHz

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.401992G	2.402994G	1.002M	524.475k

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

2.441G/2.442GHz

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.441061G	2.442061G	1.0005M	523.6425k

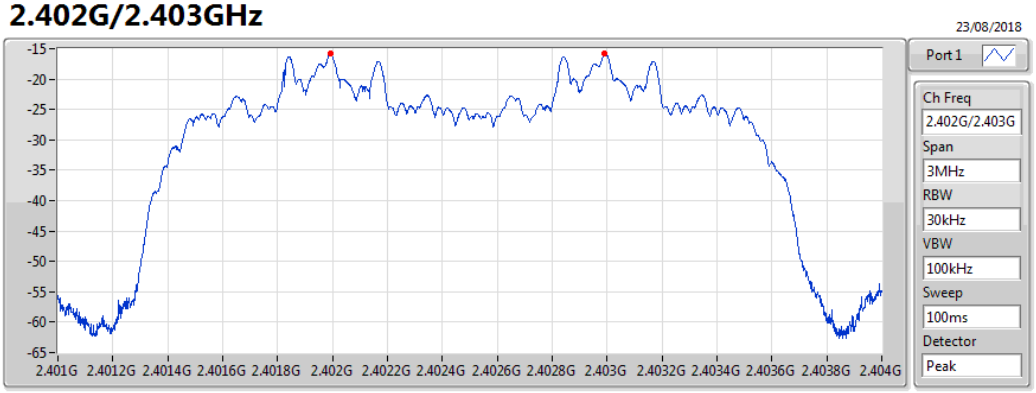
BT-BR(1Mbps) **Channel Separation**

2.48G/2.479GHz

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.479061G	2.480061G	1.0005M	524.475k

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

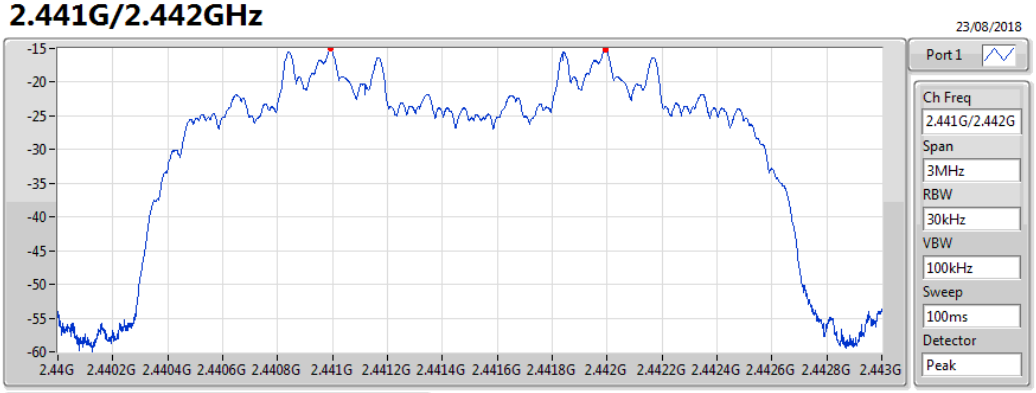
2.402G/2.403GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.401992G	2.402991G	999k	824.508k

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

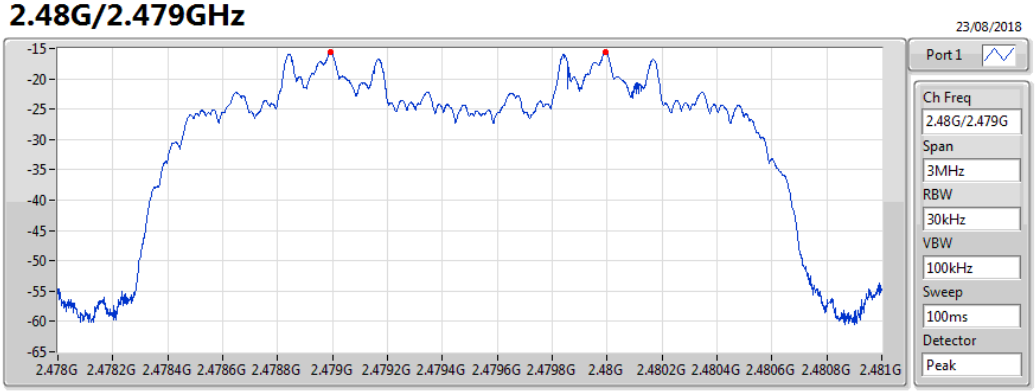
2.441G/2.442GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.440995G	2.441994G	999k	827.838k

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

2.48G/2.479GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.478993G	2.479994G	1.0005M	831.168k

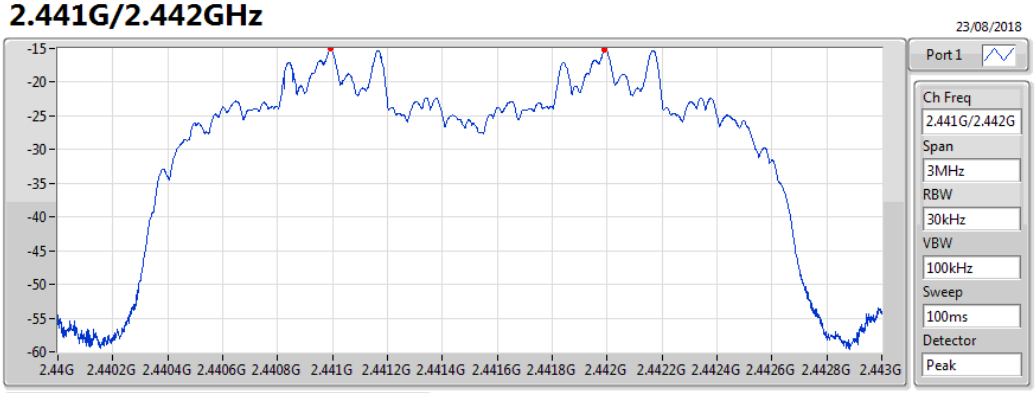
BT-EDR(3Mbps) **Channel Separation**

2.402G/2.403GHz

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.401993G	2.402992G	999k	828.504k

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

2.441G/2.442GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.440993G	2.441992G	999k	831.834k

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

2.48G/2.479GHz

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.478993G	2.479994G	1.0005M	831.168k

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	6.87	0.00486
BT-EDR(2Mbps)	6.24	0.00420
BT-EDR(3Mbps)	6.26	0.00422

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	0.64	6.14	21.00
2441MHz_TnomVnom	Pass	0.64	6.87	21.00
2480MHz_TnomVnom	Pass	0.64	6.35	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	0.64	5.42	21.00
2441MHz_TnomVnom	Pass	0.64	6.24	21.00
2480MHz_TnomVnom	Pass	0.64	5.72	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	0.64	5.39	21.00
2441MHz_TnomVnom	Pass	0.64	6.26	21.00
2480MHz_TnomVnom	Pass	0.64	5.74	21.00

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	6.47	0.00443
BT-EDR(2Mbps)	4.42	0.00276
BT-EDR(3Mbps)	4.26	0.00266

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	0.64	5.63	21.00
2441MHz_TnomVnom	Pass	0.64	6.47	21.00
2480MHz_TnomVnom	Pass	0.64	5.89	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	0.64	3.44	21.00
2441MHz_TnomVnom	Pass	0.64	4.42	21.00
2480MHz_TnomVnom	Pass	0.64	3.83	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	0.64	3.27	21.00
2441MHz_TnomVnom	Pass	0.64	4.26	21.00
2480MHz_TnomVnom	Pass	0.64	3.70	21.00

Summary

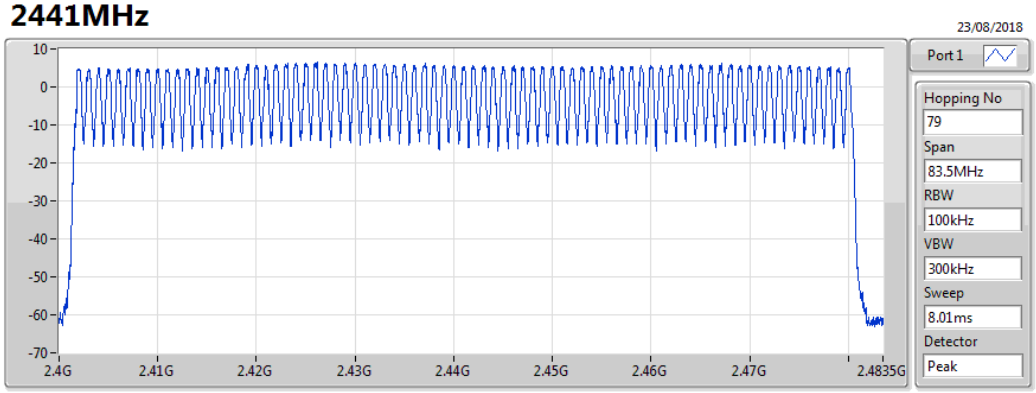
Mode	Max-Hop No
2.4-2.4835GHz	-
BT-BR(1Mbps)	79
BT-EDR(2Mbps)	79
BT-EDR(3Mbps)	79

Result

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

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

2441MHz

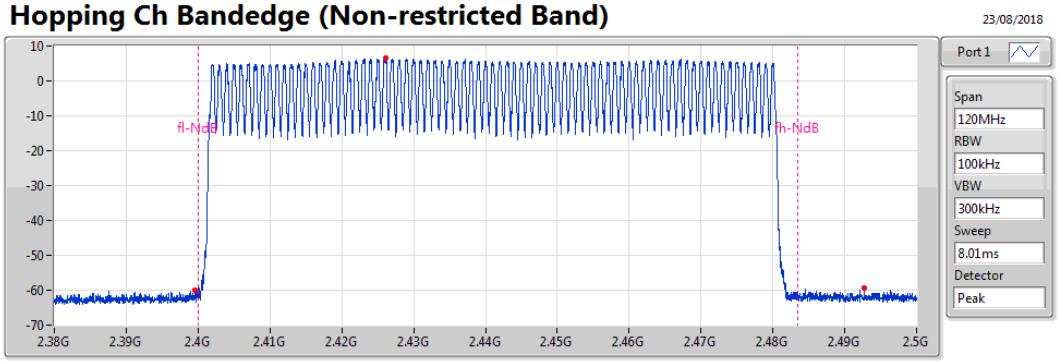


Hopping No	Limit
79	15

BT-BR(1Mbps)

2441MHz

Hopping Ch Bandedge (Non-restricted Band)

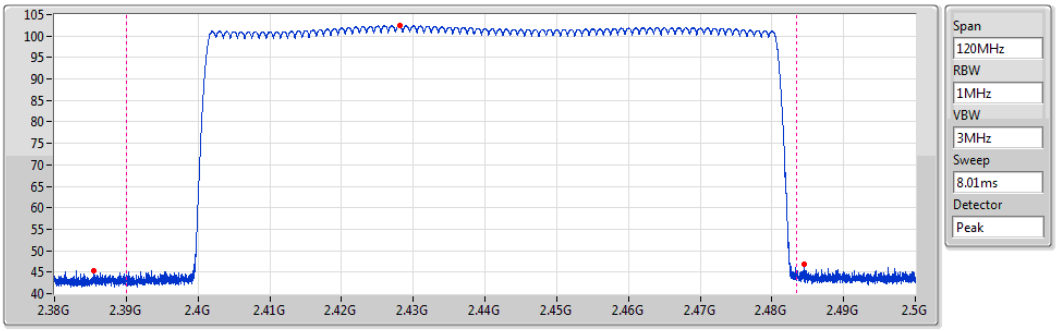


Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-13.52	2.42617G	6.48	2.399545G	-60.01	2.49274G	-59.44

BT-BR(1Mbps)

2441MHz

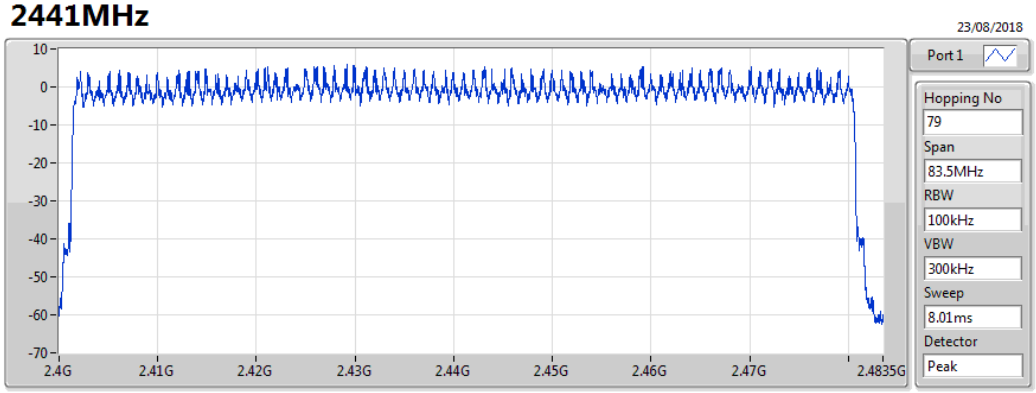
Hopping Ch Bandedge (Restricted Band)



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)	DCF(dB)
2.42809G	102.42	2.38549G	45.31	15.21	2.484565G	46.83	16.73	74	54	3.125	-30.1

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

2441MHz

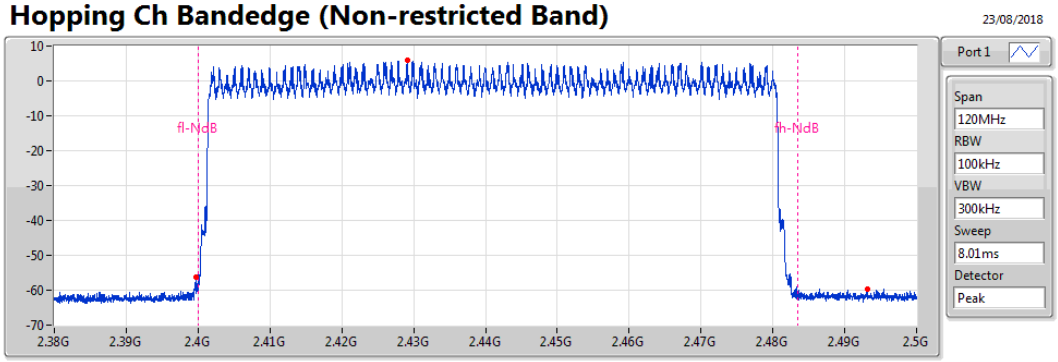


Hopping No	Limit
79	15

BT-EDR(2Mbps)

2441MHz

Hopping Ch Bandedge (Non-restricted Band)

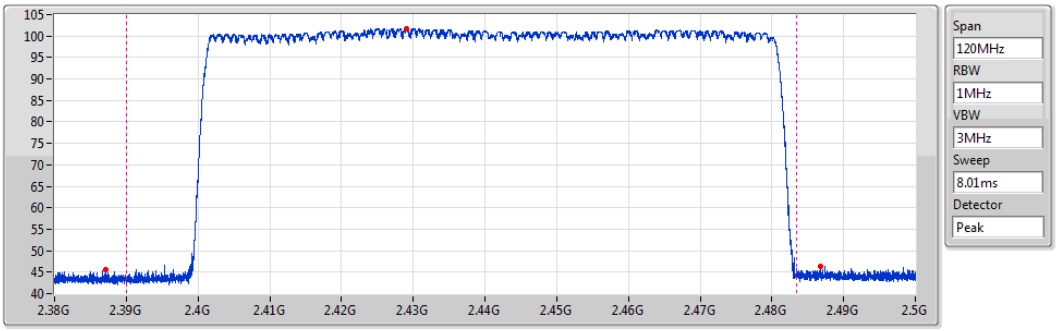


Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-14.11	2.429155G	5.89	2.39968G	-56.11	2.493115G	-59.6

BT-EDR(2Mbps)

2441MHz

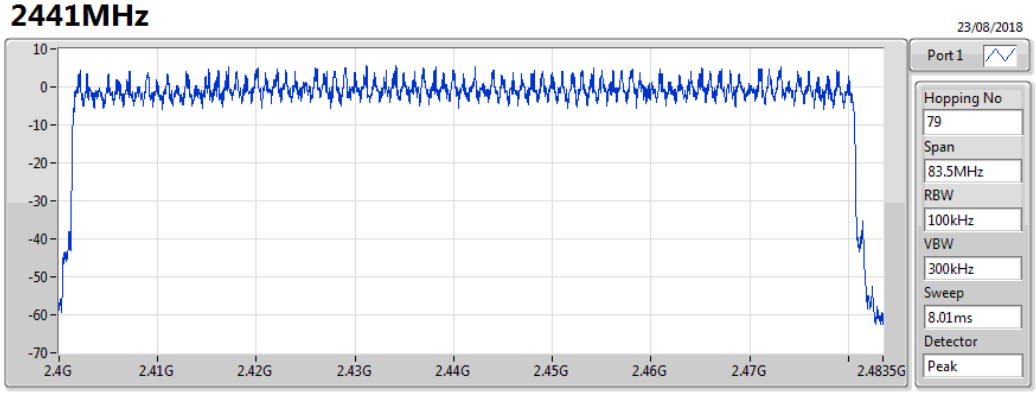
Hopping Ch Bandedge (Restricted Band)



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)	DCF(dB)
2.429125G	101.71	2.38717G	45.46	15.36	2.486785G	46.4	16.3	74	54	3.125	-30.1

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

2441MHz

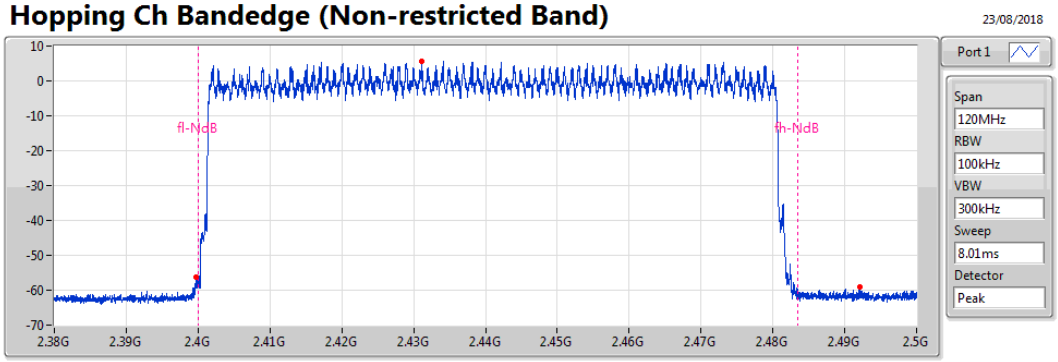


Hopping No	Limit
79	15

BT-EDR(3Mbps)

2441MHz

Hopping Ch Bandedge (Non-restricted Band)

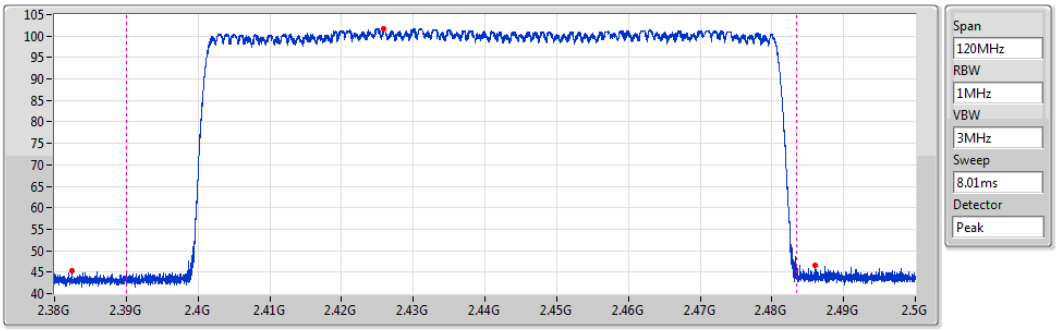


Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-14.32	2.431165G	5.68	2.39968G	-56.11	2.492065G	-59.12

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)	DCF(dB)
2.42587G	101.66	2.38246G	45.21	15.11	2.48608G	46.62	16.52	74	54	3.125	-30.1

Summary

Mode	Max-Dwell (s)
2.4-2.4835GHz	-
BT-BR(1Mbps)	307.7542m
BT-EDR(2Mbps)	308.074m
BT-EDR(3Mbps)	308.3938m

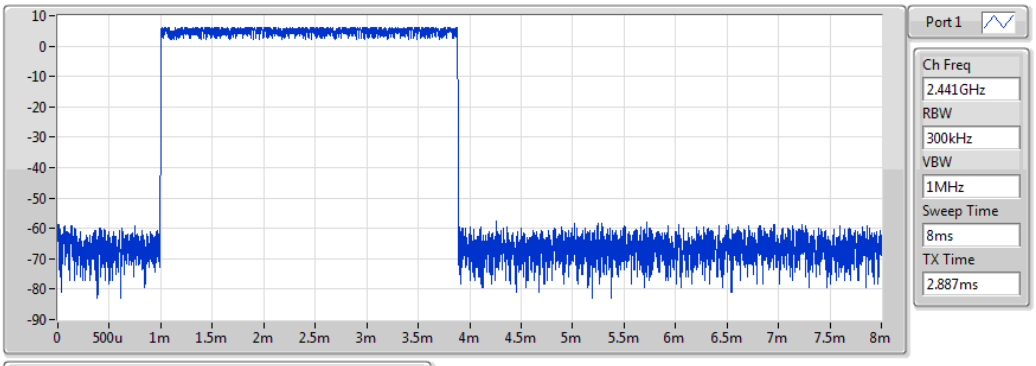
Result

Mode	Result	Period (s)	Dwell (s)	Limit (s)	Tx On (s)
BT-BR(1Mbps)	-	-	-	-	-
2441MHz_TnomVnom	Pass	31.6	307.7542m	400m	2.887m
BT-EDR(2Mbps)	-	-	-	-	-
2441MHz_TnomVnom	Pass	31.6	308.074m	400m	2.89m
BT-EDR(3Mbps)	-	-	-	-	-
2441MHz_TnomVnom	Pass	31.6	308.3938m	400m	2.893m

BT-BR(1Mbps) Dwell

2441MHz

23/08/2018

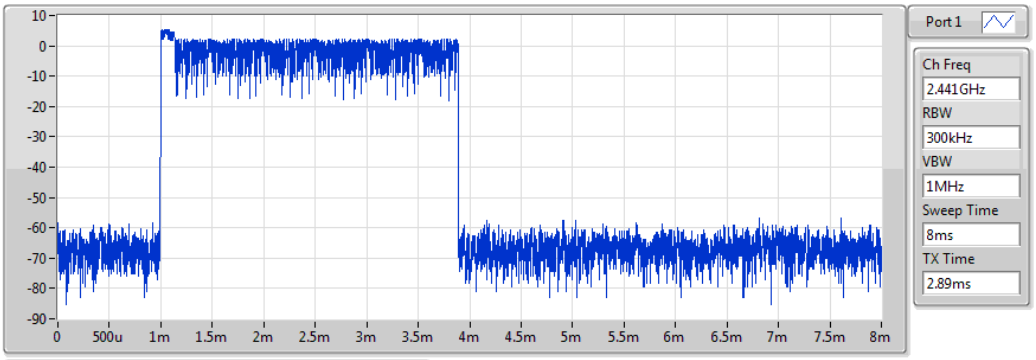


Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	307.7542m	400m	2.887m

BT-EDR(2Mbps) Dwell

2441MHz

23/08/2018

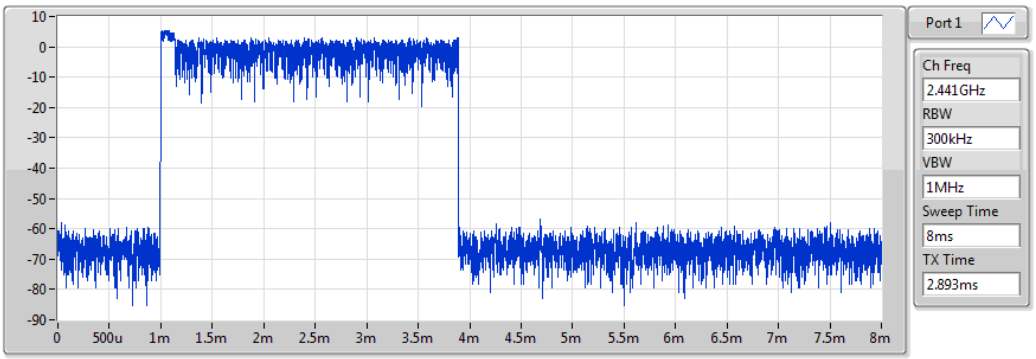


Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	308.074m	400m	2.89m

BT-EDR(3Mbps) Dwell

2441MHz

23/08/2018



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

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	2.48016G	4.78	-15.22	1.765744G	-62.94	2.399124G	-60.70	2.48456G	-59.28	16.759693G	-52.69	1
BT-EDR(2Mbps)	Pass	2.402171G	-1.22	-21.22	2.398G	-62.01	2.399808G	-55.06	2.484192G	-60.76	15.327208G	-51.76	1
BT-EDR(3Mbps)	Pass	2.401837G	0.07	-19.93	1.864016G	-62.04	2.399648G	-54.33	2.483692G	-61.13	15.338465G	-52.62	1

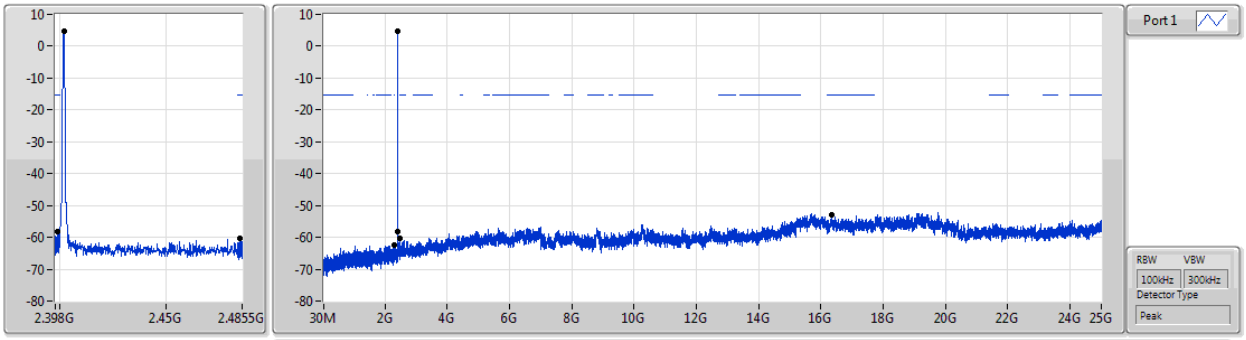
Result

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_TnomVnom	Pass	2.402004G	4.83	-15.17	2.302096G	-62.45	2.399032G	-58.10	2.484624G	-60.29	16.34036G	-53.03	1
2441MHz_TnomVnom	Pass	2.441082G	5.44	-14.56	2.398G	-61.98	2.399524G	-61.32	2.484792G	-61.10	16.759693G	-53.09	1
2480MHz_TnomVnom	Pass	2.48016G	4.78	-15.22	1.765744G	-62.94	2.399124G	-60.70	2.48456G	-59.28	16.759693G	-52.69	1
BT-EDR(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz_TnomVnom	Pass	2.402171G	-1.22	-21.22	2.398G	-62.01	2.399808G	-55.06	2.484192G	-60.76	15.327208G	-51.76	1
2441MHz_TnomVnom	Pass	2.441082G	4.38	-15.62	1.968208G	-62.37	2.399768G	-61.77	2.485244G	-60.93	15.296251G	-51.65	1
2480MHz_TnomVnom	Pass	2.479993G	-0.22	-20.22	2.148176G	-62.61	2.39876G	-61.70	2.485292G	-59.40	15.248407G	-52.59	1
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz_TnomVnom	Pass	2.401837G	0.07	-19.93	1.864016G	-62.04	2.399648G	-54.33	2.483692G	-61.13	15.338465G	-52.62	1
2441MHz_TnomVnom	Pass	2.441082G	0.91	-19.09	2.139888G	-62.01	2.399456G	-61.44	2.485128G	-60.25	16.421976G	-52.61	1
2480MHz_TnomVnom	Pass	2.479826G	3.81	-16.19	1.821392G	-62.39	2.399664G	-61.60	2.483568G	-56.96	15.34128G	-52.43	1

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

2402MHz

23/08/2018

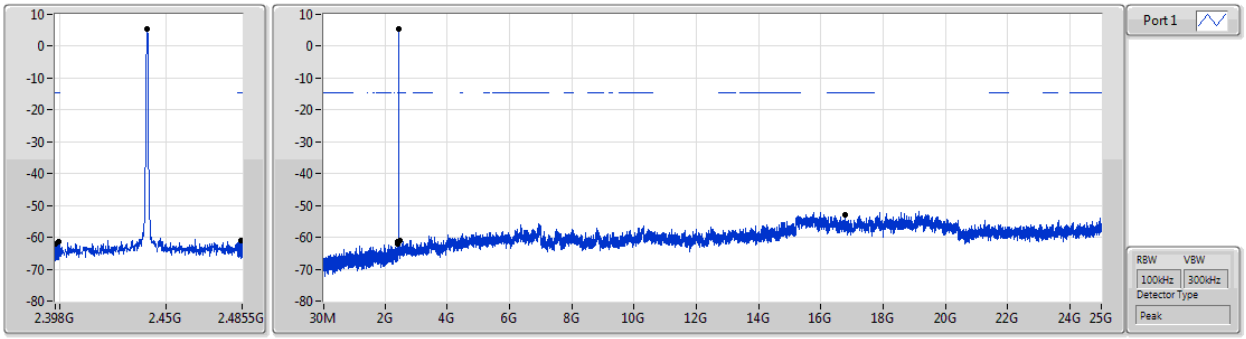


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.402004G	4.83	-15.17	2.302096G	-62.45	2.399032G	-58.10	2.484624G	-60.29	16.34036G	-53.03	1

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

2441MHz

23/08/2018

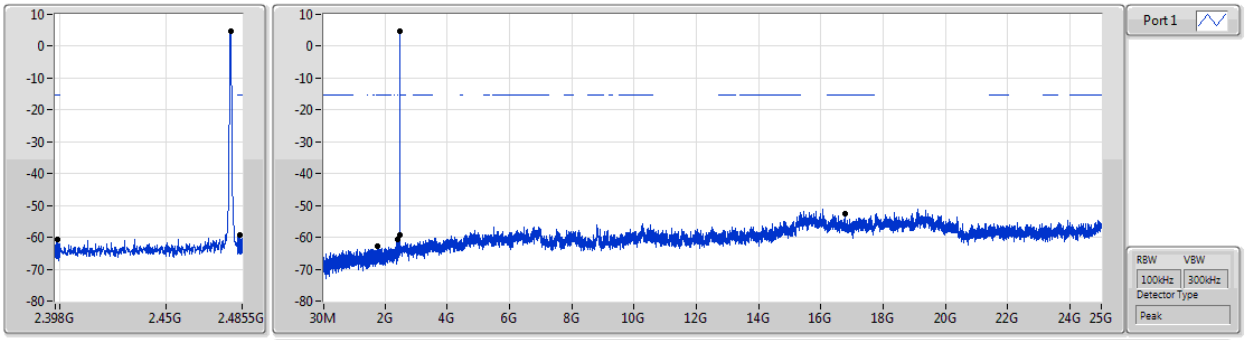


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.441082G	5.44	-14.56	2.398G	-61.98	2.399524G	-61.32	2.484792G	-61.10	16.759693G	-53.09	1

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

2480MHz

23/08/2018

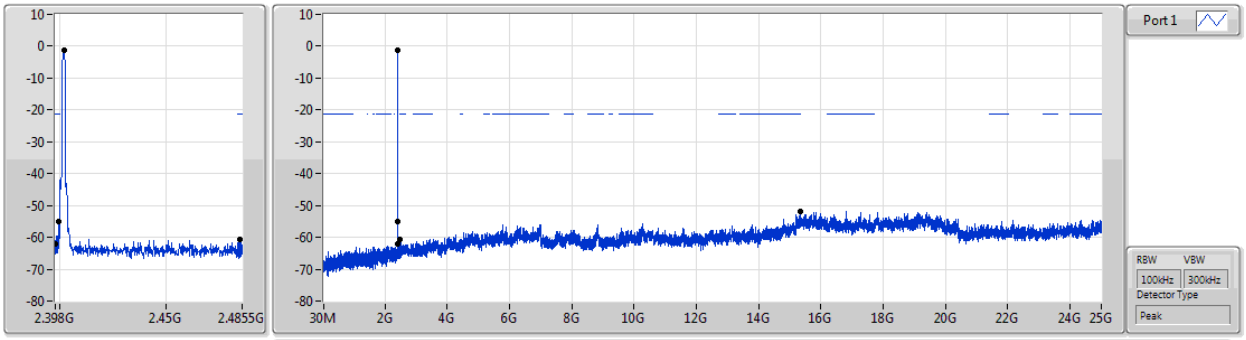


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.48016G	4.78	-15.22	1.765744G	-62.94	2.399124G	-60.70	2.48456G	-59.28	16.759693G	-52.69	1

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

2402MHz

23/08/2018

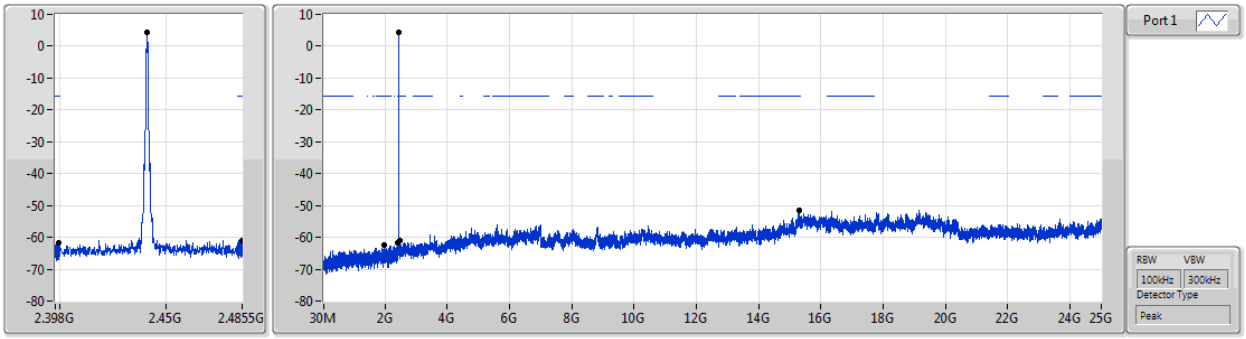


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.402171G	-1.22	-21.22	2.398G	-62.01	2.399808G	-55.06	2.484192G	-60.76	15.327208G	-51.76	1

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

2441MHz

23/08/2018

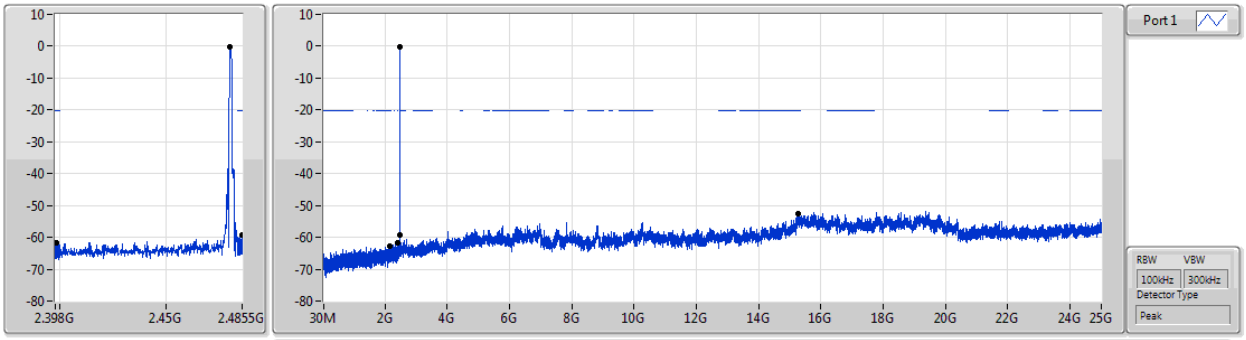


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.441082G	4.38	-15.62	1.968208G	-62.37	2.399768G	-61.77	2.485244G	-60.93	15.296251G	-51.65	1

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

2480MHz

23/08/2018

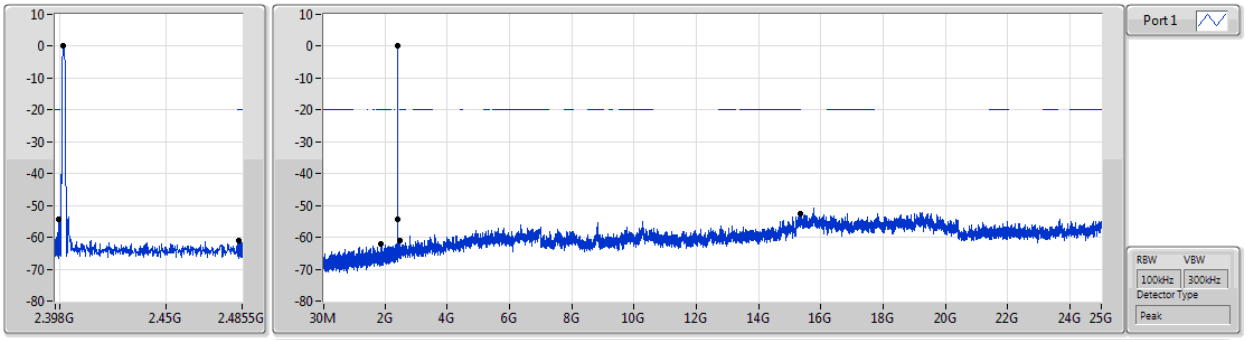


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.479993G	-0.22	-20.22	2.148176G	-62.61	2.39876G	-61.70	2.485292G	-59.40	15.248407G	-52.59	1

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

2402MHz

23/08/2018

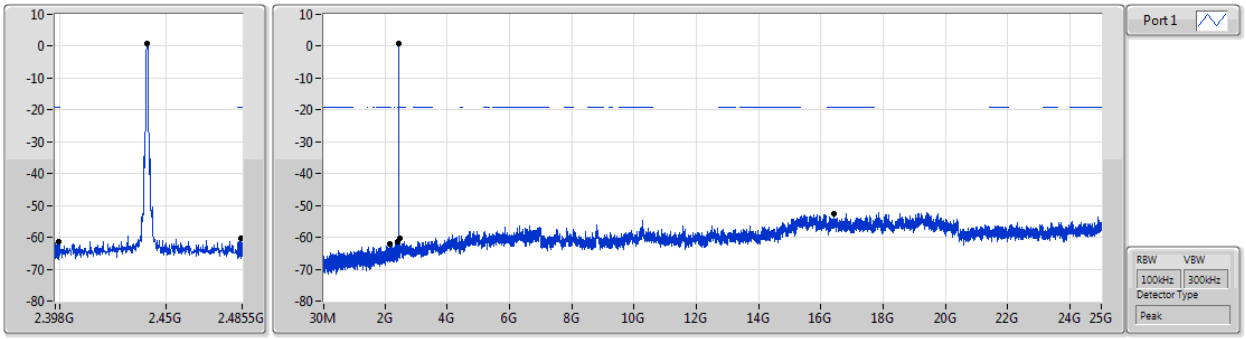


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.401837G	0.07	-19.93	1.864016G	-62.04	2.399648G	-54.33	2.483692G	-61.13	15.338465G	-52.62	1

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

2441MHz

23/08/2018

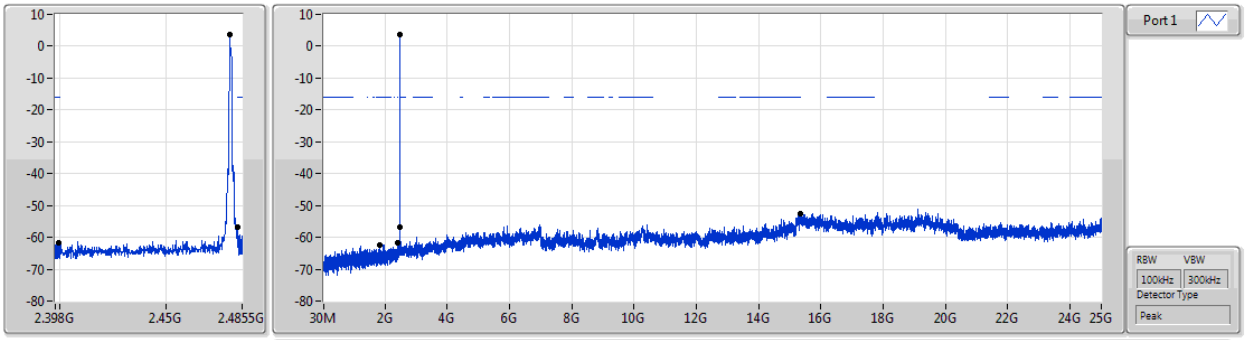


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.441082G	0.91	-19.09	2.139888G	-62.01	2.399456G	-61.44	2.485128G	-60.25	16.421976G	-52.61	1

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

2480MHz

23/08/2018



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.479826G	3.81	-16.19	1.821392G	-62.39	2.399664G	-61.60	2.483568G	-56.96	15.34128G	-52.43	1

Summary

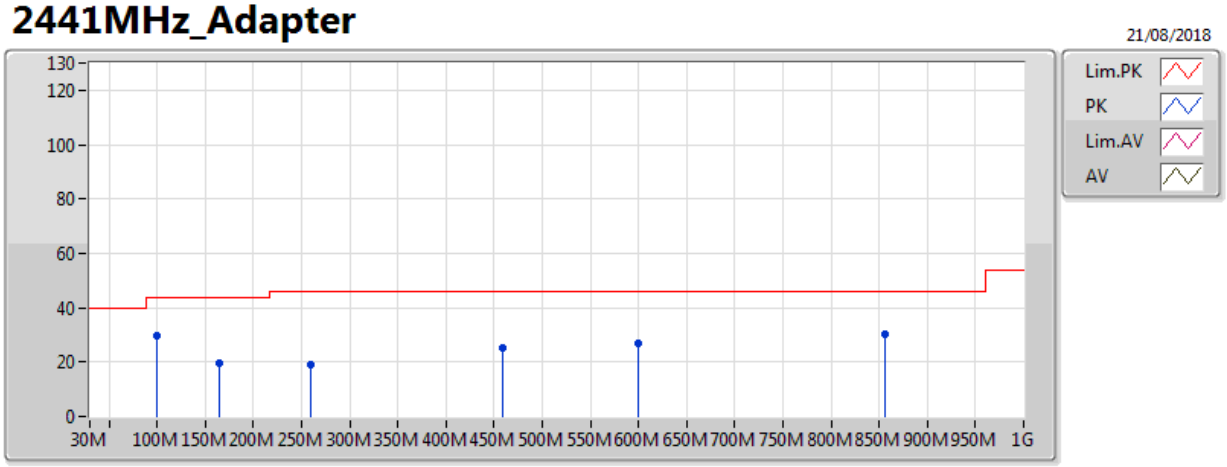
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	PK	99.84M	29.61	43.50	-13.89	-9.33	3	Vertical	360	1.00	-

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2441MHz	Pass	PK	99.84M	29.61	43.50	-13.89	-9.33	3	Vertical	360	1.00	-
2441MHz	Pass	PK	163.86M	19.64	43.50	-23.86	-9.87	3	Vertical	360	1.00	-
2441MHz	Pass	PK	258.92M	19.31	46.00	-26.69	-5.65	3	Vertical	360	1.00	-
2441MHz	Pass	PK	458.74M	25.22	46.00	-20.78	-2.16	3	Vertical	360	1.00	-
2441MHz	Pass	PK	600.36M	27.03	46.00	-18.97	-0.54	3	Vertical	360	1.00	-
2441MHz	Pass	PK	856.44M	30.31	46.00	-15.69	2.45	3	Vertical	360	1.00	-
2441MHz	Pass	PK	99.84M	19.28	43.50	-24.22	-9.33	3	Horizontal	0	1.00	-
2441MHz	Pass	PK	125.06M	17.90	43.50	-25.60	-7.79	3	Horizontal	0	1.00	-
2441MHz	Pass	PK	262.8M	18.50	46.00	-27.50	-5.73	3	Horizontal	0	1.00	-
2441MHz	Pass	PK	596.48M	27.05	46.00	-18.95	-0.56	3	Horizontal	0	1.00	-
2441MHz	Pass	PK	734.22M	27.43	46.00	-18.57	1.31	3	Horizontal	0	1.00	-
2441MHz	Pass	PK	848.68M	29.76	46.00	-16.24	2.38	3	Horizontal	0	1.00	-

BT-BR(1Mbps)

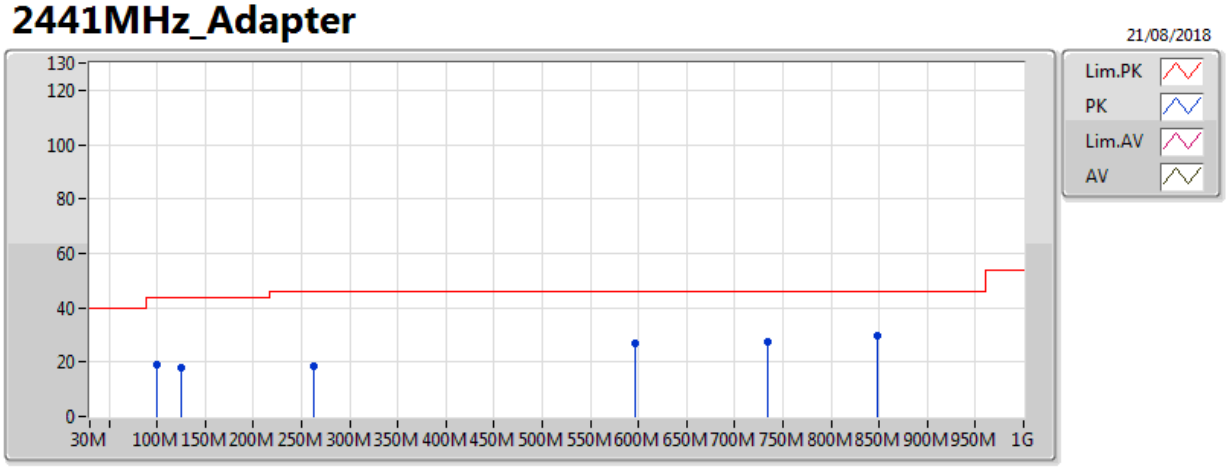
2441MHz_Adapter



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	99.84M	29.61	43.50	-13.89	-9.33	3	Vertical	360	1.00	-
PK	163.86M	19.64	43.50	-23.86	-9.87	3	Vertical	360	1.00	-
PK	258.92M	19.31	46.00	-26.69	-5.65	3	Vertical	360	1.00	-
PK	458.74M	25.22	46.00	-20.78	-2.16	3	Vertical	360	1.00	-
PK	600.36M	27.03	46.00	-18.97	-0.54	3	Vertical	360	1.00	-
PK	856.44M	30.31	46.00	-15.69	2.45	3	Vertical	360	1.00	-

BT-BR(1Mbps)

2441MHz_Adapter



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	99.84M	19.28	43.50	-24.22	-9.33	3	Horizontal	0	1.00	-
PK	125.06M	17.90	43.50	-25.60	-7.79	3	Horizontal	0	1.00	-
PK	262.8M	18.50	46.00	-27.50	-5.73	3	Horizontal	0	1.00	-
PK	596.48M	27.05	46.00	-18.95	-0.56	3	Horizontal	0	1.00	-
PK	734.22M	27.43	46.00	-18.57	1.31	3	Horizontal	0	1.00	-
PK	848.68M	29.76	46.00	-16.24	2.38	3	Horizontal	0	1.00	-

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	AV	2.4982G	47.38	54.00	-6.62	30.75	3	Vertical	137	1.59	-
BT-EDR(2Mbps)	Pass	AV	2.498G	47.13	54.00	-6.87	30.75	3	Vertical	137	1.22	-
BT-EDR(3Mbps)	Pass	AV	2.4986G	47.22	54.00	-6.78	30.75	3	Vertical	48	1.09	-

Result

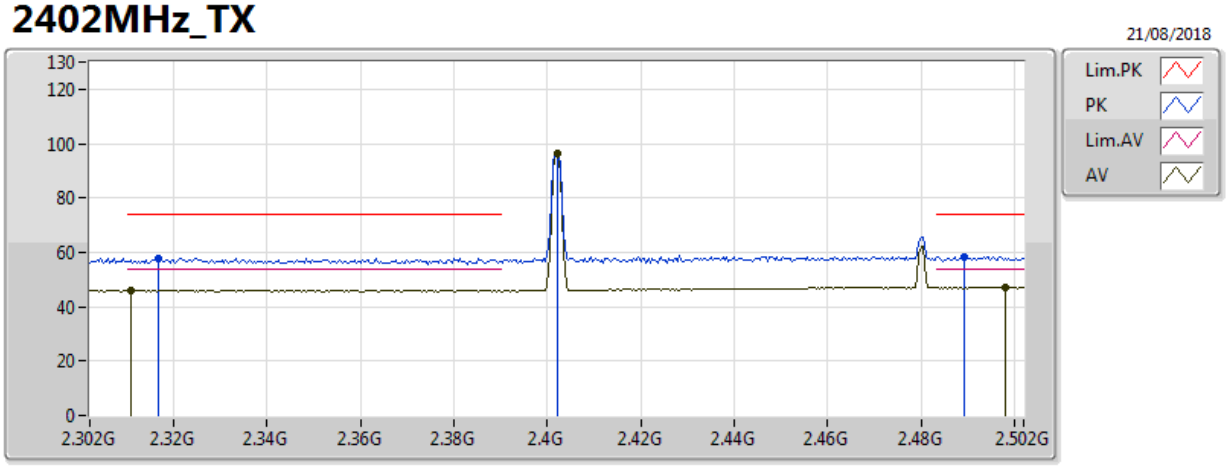
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3108G	45.94	54.00	-8.06	30.12	3	Vertical	136	1.25	-
2402MHz	Pass	AV	2.402G	96.23	Inf	-Inf	30.41	3	Vertical	136	1.25	-
2402MHz	Pass	AV	2.498G	47.32	54.00	-6.68	30.75	3	Vertical	136	1.25	-
2402MHz	Pass	PK	2.3168G	57.90	74.00	-16.10	30.14	3	Vertical	136	1.25	-
2402MHz	Pass	PK	2.402G	96.43	Inf	-Inf	30.41	3	Vertical	136	1.25	-
2402MHz	Pass	PK	2.4892G	58.37	74.00	-15.63	30.71	3	Vertical	136	1.25	-
2402MHz	Pass	AV	2.3112G	45.93	54.00	-8.07	30.12	3	Horizontal	49	1.10	-
2402MHz	Pass	AV	2.4016G	93.10	Inf	-Inf	30.41	3	Horizontal	49	1.10	-
2402MHz	Pass	AV	2.4988G	47.31	54.00	-6.69	30.75	3	Horizontal	49	1.10	-
2402MHz	Pass	PK	2.384G	57.73	74.00	-16.27	30.36	3	Horizontal	49	1.10	-
2402MHz	Pass	PK	2.402G	94.28	Inf	-Inf	30.41	3	Horizontal	49	1.10	-
2402MHz	Pass	PK	2.4852G	58.20	74.00	-15.80	30.70	3	Horizontal	49	1.10	-
2402MHz	Pass	AV	4.802443G	33.35	54.00	-20.65	5.78	3	Vertical	51	1.50	-
2402MHz	Pass	PK	4.802762G	44.97	74.00	-29.03	5.78	3	Vertical	51	1.50	-
2402MHz	Pass	AV	4.802802G	33.56	54.00	-20.44	5.78	3	Horizontal	92	1.50	-
2402MHz	Pass	PK	4.808551G	45.45	74.00	-28.55	5.79	3	Horizontal	92	1.50	-
2441MHz	Pass	AV	2.3898G	45.90	54.00	-8.10	30.38	3	Vertical	137	1.59	-
2441MHz	Pass	AV	2.441G	95.44	Inf	-Inf	30.55	3	Vertical	137	1.59	-
2441MHz	Pass	AV	2.4982G	47.38	54.00	-6.62	30.75	3	Vertical	137	1.59	-
2441MHz	Pass	PK	2.3806G	57.35	74.00	-16.65	30.34	3	Vertical	137	1.59	-
2441MHz	Pass	PK	2.441G	95.58	Inf	-Inf	30.55	3	Vertical	137	1.59	-
2441MHz	Pass	PK	2.4966G	59.25	74.00	-14.75	30.74	3	Vertical	137	1.59	-
2441MHz	Pass	AV	2.3898G	45.90	54.00	-8.10	30.38	3	Horizontal	48	1.10	-
2441MHz	Pass	AV	2.441G	92.52	Inf	-Inf	30.55	3	Horizontal	48	1.10	-
2441MHz	Pass	AV	2.4986G	47.16	54.00	-6.84	30.75	3	Horizontal	48	1.10	-
2441MHz	Pass	PK	2.3526G	57.96	74.00	-16.04	30.26	3	Horizontal	48	1.10	-
2441MHz	Pass	PK	2.441G	92.78	Inf	-Inf	30.55	3	Horizontal	48	1.10	-
2441MHz	Pass	PK	2.499G	58.84	74.00	-15.16	30.75	3	Horizontal	48	1.10	-
2441MHz	Pass	AV	4.891701G	33.14	54.00	-20.86	5.98	3	Vertical	47	1.50	-
2441MHz	Pass	PK	4.887349G	45.91	74.00	-28.09	5.96	3	Vertical	47	1.50	-
2441MHz	Pass	AV	4.891621G	33.14	54.00	-20.86	5.98	3	Horizontal	359	1.50	-
2441MHz	Pass	PK	4.88192G	45.03	74.00	-28.97	5.95	3	Horizontal	359	1.50	-
2480MHz	Pass	AV	2.3896G	45.90	54.00	-8.10	30.38	3	Vertical	138	1.56	-
2480MHz	Pass	AV	2.48G	94.45	Inf	-Inf	30.68	3	Vertical	138	1.56	-
2480MHz	Pass	AV	2.4984G	47.28	54.00	-6.72	30.75	3	Vertical	138	1.56	-
2480MHz	Pass	PK	2.3836G	57.37	74.00	-16.63	30.36	3	Vertical	138	1.56	-
2480MHz	Pass	PK	2.48G	94.65	Inf	-Inf	30.68	3	Vertical	138	1.56	-
2480MHz	Pass	PK	2.4884G	59.21	74.00	-14.79	30.71	3	Vertical	138	1.56	-
2480MHz	Pass	AV	2.3896G	45.90	54.00	-8.10	30.38	3	Horizontal	49	1.01	-
2480MHz	Pass	AV	2.48G	92.08	Inf	-Inf	30.68	3	Horizontal	49	1.01	-
2480MHz	Pass	AV	2.498G	47.09	54.00	-6.91	30.75	3	Horizontal	49	1.01	-
2480MHz	Pass	PK	2.38G	57.28	74.00	-16.72	30.34	3	Horizontal	49	1.01	-
2480MHz	Pass	PK	2.48G	92.34	Inf	-Inf	30.68	3	Horizontal	49	1.01	-
2480MHz	Pass	PK	2.49G	58.67	74.00	-15.33	30.72	3	Horizontal	49	1.01	-
2480MHz	Pass	AV	4.956208G	33.54	54.00	-20.46	6.11	3	Vertical	325	1.50	-
2480MHz	Pass	PK	4.953134G	45.54	74.00	-28.46	6.10	3	Vertical	325	1.50	-
2480MHz	Pass	AV	4.957246G	33.55	54.00	-20.45	6.11	3	Horizontal	258	1.50	-

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	4.966766G	45.79	74.00	-28.21	6.12	3	Horizontal	258	1.50	-
BT-EDR(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3108G	45.94	54.00	-8.06	30.12	3	Vertical	137	1.22	-
2402MHz	Pass	AV	2.402G	90.44	Inf	-Inf	30.41	3	Vertical	137	1.22	-
2402MHz	Pass	AV	2.498G	47.13	54.00	-6.87	30.75	3	Vertical	137	1.22	-
2402MHz	Pass	PK	2.3884G	58.95	74.00	-15.05	30.37	3	Vertical	137	1.22	-
2402MHz	Pass	PK	2.402G	95.39	Inf	-Inf	30.41	3	Vertical	137	1.22	-
2402MHz	Pass	PK	2.4976G	59.83	74.00	-14.17	30.74	3	Vertical	137	1.22	-
2402MHz	Pass	AV	2.31G	45.93	54.00	-8.07	30.11	3	Horizontal	47	1.10	-
2402MHz	Pass	AV	2.402G	89.26	Inf	-Inf	30.41	3	Horizontal	47	1.10	-
2402MHz	Pass	AV	2.498G	47.06	54.00	-6.94	30.75	3	Horizontal	47	1.10	-
2402MHz	Pass	PK	2.36G	58.11	74.00	-15.89	30.27	3	Horizontal	47	1.10	-
2402MHz	Pass	PK	2.402G	93.79	Inf	-Inf	30.41	3	Horizontal	47	1.10	-
2402MHz	Pass	PK	2.492G	59.75	74.00	-14.25	30.72	3	Horizontal	47	1.10	-
2441MHz	Pass	AV	2.3898G	45.90	54.00	-8.10	30.38	3	Vertical	136	1.61	-
2441MHz	Pass	AV	2.441G	90.74	Inf	-Inf	30.55	3	Vertical	136	1.61	-
2441MHz	Pass	AV	2.4986G	47.01	54.00	-6.99	30.75	3	Vertical	136	1.61	-
2441MHz	Pass	PK	2.389G	57.57	74.00	-16.43	30.37	3	Vertical	136	1.61	-
2441MHz	Pass	PK	2.441G	95.01	Inf	-Inf	30.55	3	Vertical	136	1.61	-
2441MHz	Pass	PK	2.491G	58.00	74.00	-16.00	30.72	3	Vertical	136	1.61	-
2441MHz	Pass	AV	2.3898G	45.90	54.00	-8.10	30.38	3	Horizontal	49	1.09	-
2441MHz	Pass	AV	2.441G	87.98	Inf	-Inf	30.55	3	Horizontal	49	1.09	-
2441MHz	Pass	AV	2.4982G	46.88	54.00	-7.12	30.75	3	Horizontal	49	1.09	-
2441MHz	Pass	PK	2.349G	58.17	74.00	-15.83	30.24	3	Horizontal	49	1.09	-
2441MHz	Pass	PK	2.441G	92.28	Inf	-Inf	30.55	3	Horizontal	49	1.09	-
2441MHz	Pass	PK	2.4878G	59.01	74.00	-14.99	30.71	3	Horizontal	49	1.09	-
2480MHz	Pass	AV	2.389998G	45.90	54.00	-8.10	30.38	3	Vertical	137	1.56	-
2480MHz	Pass	AV	2.48G	89.52	Inf	-Inf	30.68	3	Vertical	137	1.56	-
2480MHz	Pass	AV	2.4988G	46.88	54.00	-7.12	30.75	3	Vertical	137	1.56	-
2480MHz	Pass	PK	2.3864G	57.33	74.00	-16.67	30.37	3	Vertical	137	1.56	-
2480MHz	Pass	PK	2.48G	93.90	Inf	-Inf	30.68	3	Vertical	137	1.56	-
2480MHz	Pass	PK	2.4952G	57.94	74.00	-16.06	30.74	3	Vertical	137	1.56	-
2480MHz	Pass	AV	2.3896G	45.90	54.00	-8.10	30.38	3	Horizontal	50	1.00	-
2480MHz	Pass	AV	2.48G	87.41	Inf	-Inf	30.68	3	Horizontal	50	1.00	-
2480MHz	Pass	AV	2.498G	46.68	54.00	-7.32	30.75	3	Horizontal	50	1.00	-
2480MHz	Pass	PK	2.3884G	56.82	74.00	-17.18	30.37	3	Horizontal	50	1.00	-
2480MHz	Pass	PK	2.48G	91.75	Inf	-Inf	30.68	3	Horizontal	50	1.00	-
2480MHz	Pass	PK	2.4964G	58.17	74.00	-15.83	30.74	3	Horizontal	50	1.00	-
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3204G	46.19	54.00	-7.81	30.15	3	Vertical	136	1.25	-
2402MHz	Pass	AV	2.402G	90.99	Inf	-Inf	30.41	3	Vertical	136	1.25	-
2402MHz	Pass	AV	2.498G	47.01	54.00	-6.99	30.75	3	Vertical	136	1.25	-
2402MHz	Pass	PK	2.3116G	57.70	74.00	-16.30	30.12	3	Vertical	136	1.25	-
2402MHz	Pass	PK	2.4024G	95.59	Inf	-Inf	30.42	3	Vertical	136	1.25	-
2402MHz	Pass	PK	2.496G	57.78	74.00	-16.22	30.74	3	Vertical	136	1.25	-
2402MHz	Pass	AV	2.3108G	45.94	54.00	-8.06	30.12	3	Horizontal	35	1.10	-
2402MHz	Pass	AV	2.402G	85.88	Inf	-Inf	30.41	3	Horizontal	35	1.10	-
2402MHz	Pass	AV	2.498G	46.88	54.00	-7.12	30.75	3	Horizontal	35	1.10	-
2402MHz	Pass	PK	2.3284G	57.87	74.00	-16.13	30.18	3	Horizontal	35	1.10	-

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	2.402G	90.76	Inf	-Inf	30.41	3	Horizontal	35	1.10	-
2402MHz	Pass	PK	2.49G	58.00	74.00	-16.00	30.72	3	Horizontal	35	1.10	-
2441MHz	Pass	AV	2.3726G	46.06	54.00	-7.94	30.32	3	Vertical	48	1.09	-
2441MHz	Pass	AV	2.441G	87.95	Inf	-Inf	30.55	3	Vertical	48	1.09	-
2441MHz	Pass	AV	2.4986G	47.22	54.00	-6.78	30.75	3	Vertical	48	1.09	-
2441MHz	Pass	PK	2.3706G	57.32	74.00	-16.68	30.31	3	Vertical	48	1.09	-
2441MHz	Pass	PK	2.4414G	92.27	Inf	-Inf	30.55	3	Vertical	48	1.09	-
2441MHz	Pass	PK	2.4922G	58.23	74.00	-15.77	30.72	3	Vertical	48	1.09	-
2441MHz	Pass	AV	2.3534G	46.06	54.00	-7.94	30.26	3	Horizontal	49	1.08	-
2441MHz	Pass	AV	2.441G	87.82	Inf	-Inf	30.55	3	Horizontal	49	1.08	-
2441MHz	Pass	AV	2.4982G	47.10	54.00	-6.90	30.75	3	Horizontal	49	1.08	-
2441MHz	Pass	PK	2.3562G	57.22	74.00	-16.78	30.26	3	Horizontal	49	1.08	-
2441MHz	Pass	PK	2.441G	92.15	Inf	-Inf	30.55	3	Horizontal	49	1.08	-
2441MHz	Pass	PK	2.4998G	57.88	74.00	-16.12	30.75	3	Horizontal	49	1.08	-
2480MHz	Pass	AV	2.3896G	45.90	54.00	-8.10	30.38	3	Vertical	135	1.43	-
2480MHz	Pass	AV	2.48G	89.67	Inf	-Inf	30.68	3	Vertical	135	1.43	-
2480MHz	Pass	AV	2.4988G	47.17	54.00	-6.83	30.75	3	Vertical	135	1.43	-
2480MHz	Pass	PK	2.389998G	57.15	74.00	-16.85	30.38	3	Vertical	135	1.43	-
2480MHz	Pass	PK	2.4804G	93.97	Inf	-Inf	30.68	3	Vertical	135	1.43	-
2480MHz	Pass	PK	2.4924G	58.08	74.00	-15.92	30.72	3	Vertical	135	1.43	-
2480MHz	Pass	AV	2.3888G	45.88	54.00	-8.12	30.37	3	Horizontal	49	1.01	-
2480MHz	Pass	AV	2.48G	87.35	Inf	-Inf	30.68	3	Horizontal	49	1.01	-
2480MHz	Pass	AV	2.498G	47.09	54.00	-6.91	30.75	3	Horizontal	49	1.01	-
2480MHz	Pass	PK	2.386G	57.61	74.00	-16.39	30.37	3	Horizontal	49	1.01	-
2480MHz	Pass	PK	2.48G	91.66	Inf	-Inf	30.68	3	Horizontal	49	1.01	-
2480MHz	Pass	PK	2.4916G	58.74	74.00	-15.26	30.72	3	Horizontal	49	1.01	-

BT-BR(1Mbps)

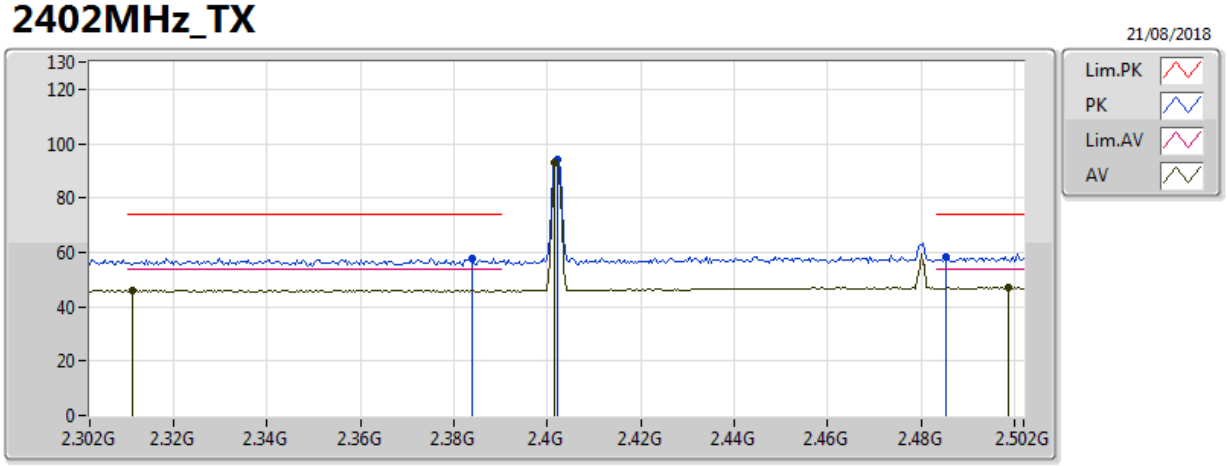
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3108G	45.94	54.00	-8.06	30.12	3	Vertical	136	1.25	-
AV	2.402G	96.23	Inf	-Inf	30.41	3	Vertical	136	1.25	-
AV	2.498G	47.32	54.00	-6.68	30.75	3	Vertical	136	1.25	-
PK	2.3168G	57.90	74.00	-16.10	30.14	3	Vertical	136	1.25	-
PK	2.402G	96.43	Inf	-Inf	30.41	3	Vertical	136	1.25	-
PK	2.4892G	58.37	74.00	-15.63	30.71	3	Vertical	136	1.25	-

BT-BR(1Mbps)

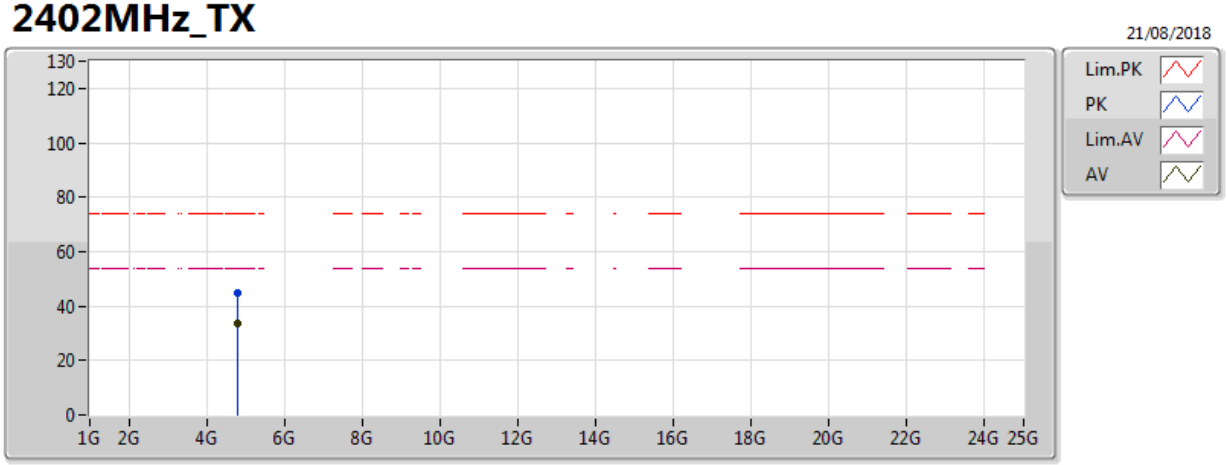
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3112G	45.93	54.00	-8.07	30.12	3	Horizontal	49	1.10	-
AV	2.4016G	93.10	Inf	-Inf	30.41	3	Horizontal	49	1.10	-
AV	2.4988G	47.31	54.00	-6.69	30.75	3	Horizontal	49	1.10	-
PK	2.384G	57.73	74.00	-16.27	30.36	3	Horizontal	49	1.10	-
PK	2.402G	94.28	Inf	-Inf	30.41	3	Horizontal	49	1.10	-
PK	2.4852G	58.20	74.00	-15.80	30.70	3	Horizontal	49	1.10	-

BT-BR(1Mbps)

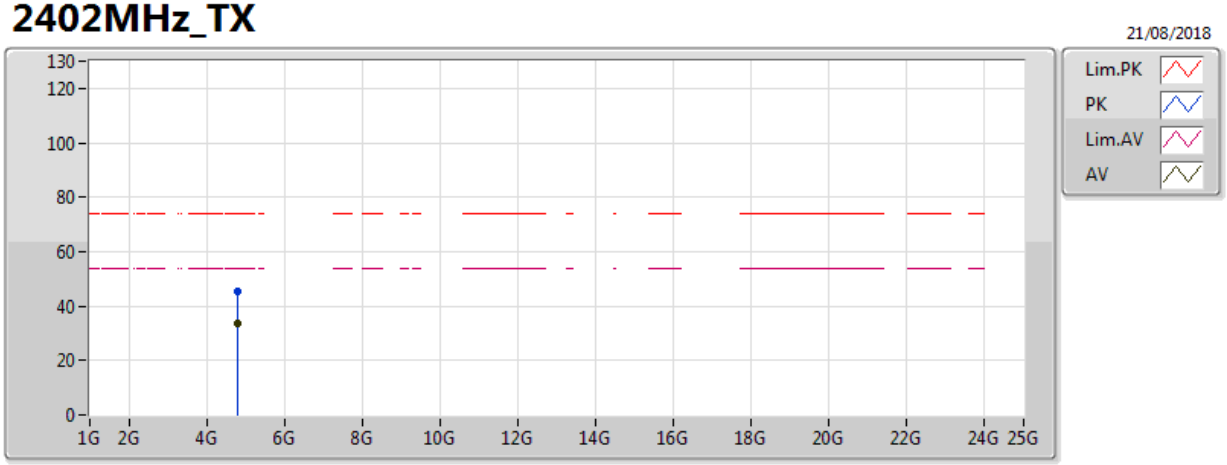
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.802443G	33.35	54.00	-20.65	5.78	3	Vertical	51	1.50	-
PK	4.802762G	44.97	74.00	-29.03	5.78	3	Vertical	51	1.50	-

BT-BR(1Mbps)

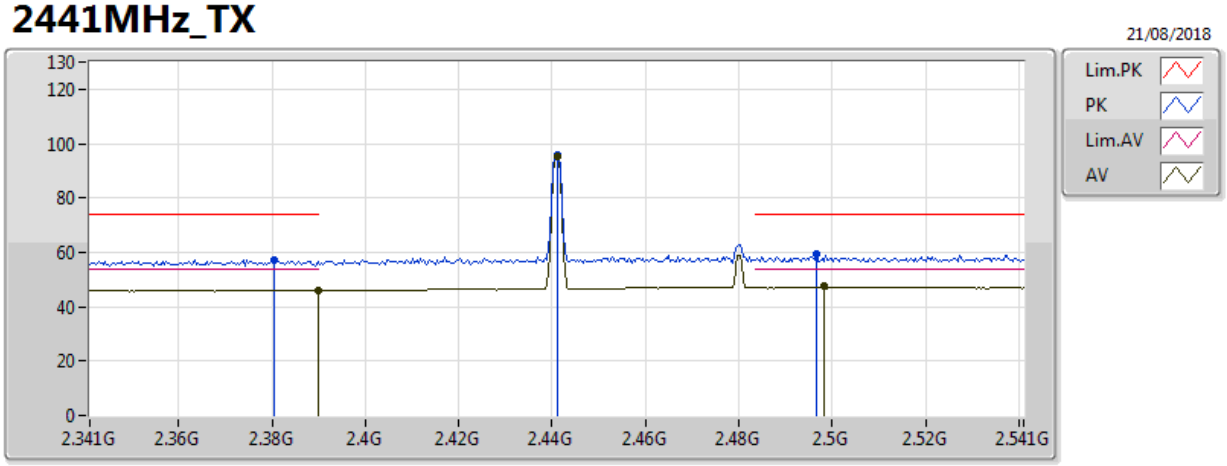
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.802802G	33.56	54.00	-20.44	5.78	3	Horizontal	92	1.50	-
PK	4.808551G	45.45	74.00	-28.55	5.79	3	Horizontal	92	1.50	-

BT-BR(1Mbps)

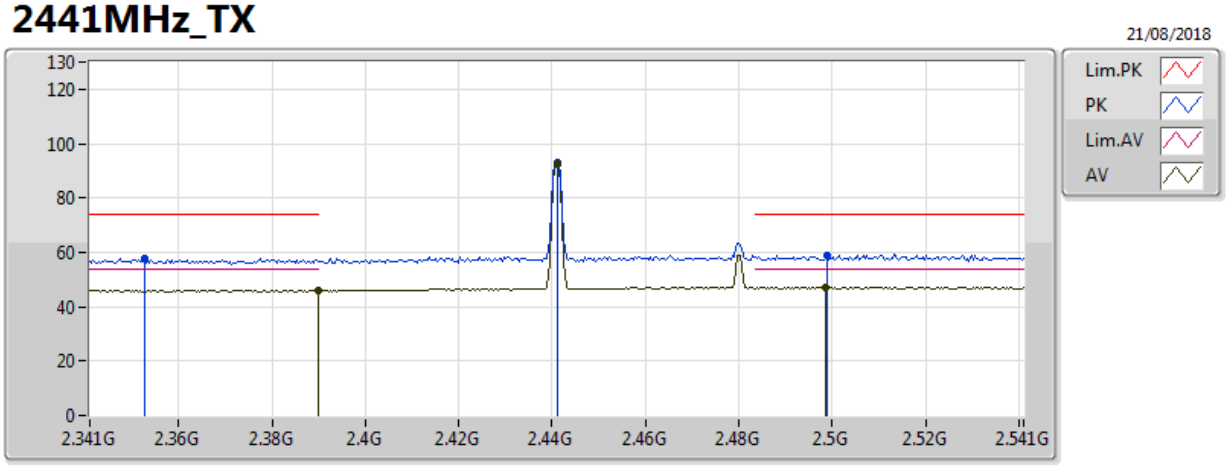
2441MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3898G	45.90	54.00	-8.10	30.38	3	Vertical	137	1.59	-
AV	2.441G	95.44	Inf	-Inf	30.55	3	Vertical	137	1.59	-
AV	2.4982G	47.38	54.00	-6.62	30.75	3	Vertical	137	1.59	-
PK	2.3806G	57.35	74.00	-16.65	30.34	3	Vertical	137	1.59	-
PK	2.441G	95.58	Inf	-Inf	30.55	3	Vertical	137	1.59	-
PK	2.4966G	59.25	74.00	-14.75	30.74	3	Vertical	137	1.59	-

BT-BR(1Mbps)

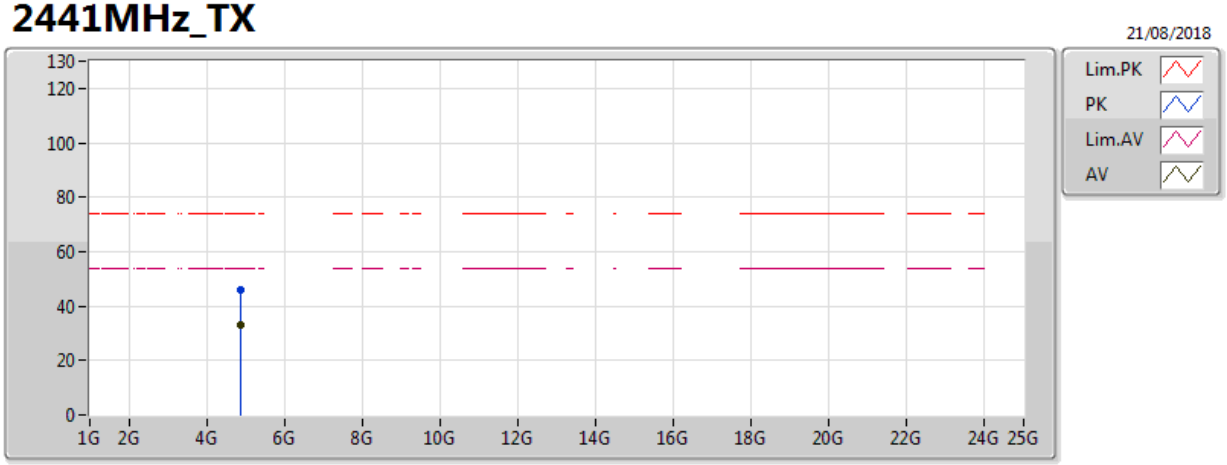
2441MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3898G	45.90	54.00	-8.10	30.38	3	Horizontal	48	1.10	-
AV	2.441G	92.52	Inf	-Inf	30.55	3	Horizontal	48	1.10	-
AV	2.4986G	47.16	54.00	-6.84	30.75	3	Horizontal	48	1.10	-
PK	2.3526G	57.96	74.00	-16.04	30.26	3	Horizontal	48	1.10	-
PK	2.441G	92.78	Inf	-Inf	30.55	3	Horizontal	48	1.10	-
PK	2.499G	58.84	74.00	-15.16	30.75	3	Horizontal	48	1.10	-

BT-BR(1Mbps)

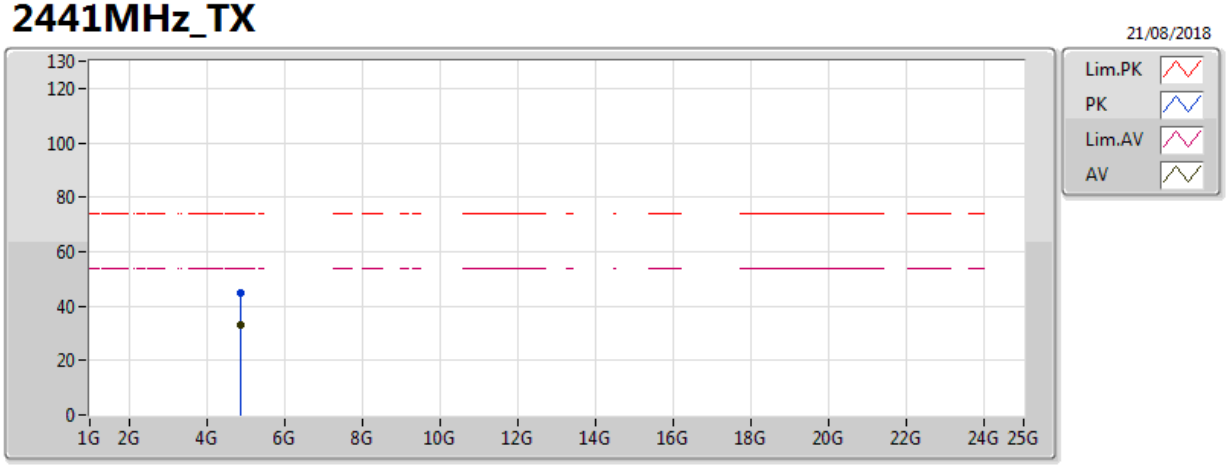
2441MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.891701G	33.14	54.00	-20.86	5.98	3	Vertical	47	1.50	-
PK	4.887349G	45.91	74.00	-28.09	5.96	3	Vertical	47	1.50	-

BT-BR(1Mbps)

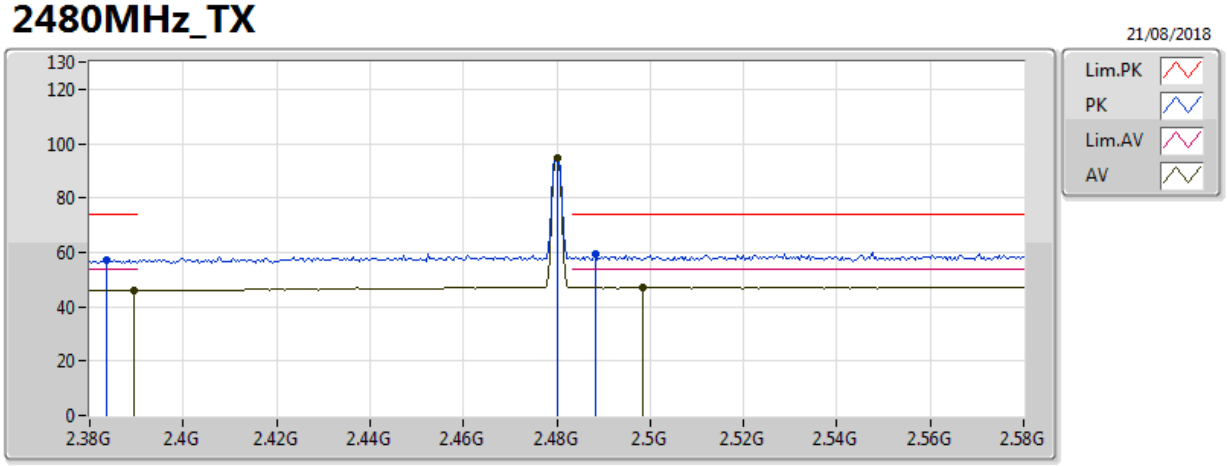
2441MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.891621G	33.14	54.00	-20.86	5.98	3	Horizontal	359	1.50	-
PK	4.88192G	45.03	74.00	-28.97	5.95	3	Horizontal	359	1.50	-

BT-BR(1Mbps)

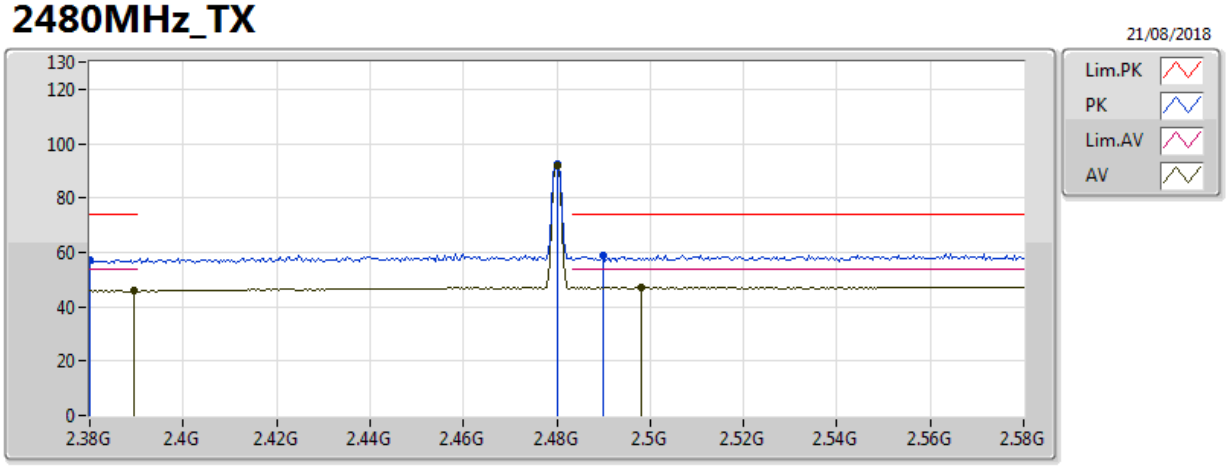
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3896G	45.90	54.00	-8.10	30.38	3	Vertical	138	1.56	-
AV	2.48G	94.45	Inf	-Inf	30.68	3	Vertical	138	1.56	-
AV	2.4984G	47.28	54.00	-6.72	30.75	3	Vertical	138	1.56	-
PK	2.3836G	57.37	74.00	-16.63	30.36	3	Vertical	138	1.56	-
PK	2.48G	94.65	Inf	-Inf	30.68	3	Vertical	138	1.56	-
PK	2.4884G	59.21	74.00	-14.79	30.71	3	Vertical	138	1.56	-

BT-BR(1Mbps)

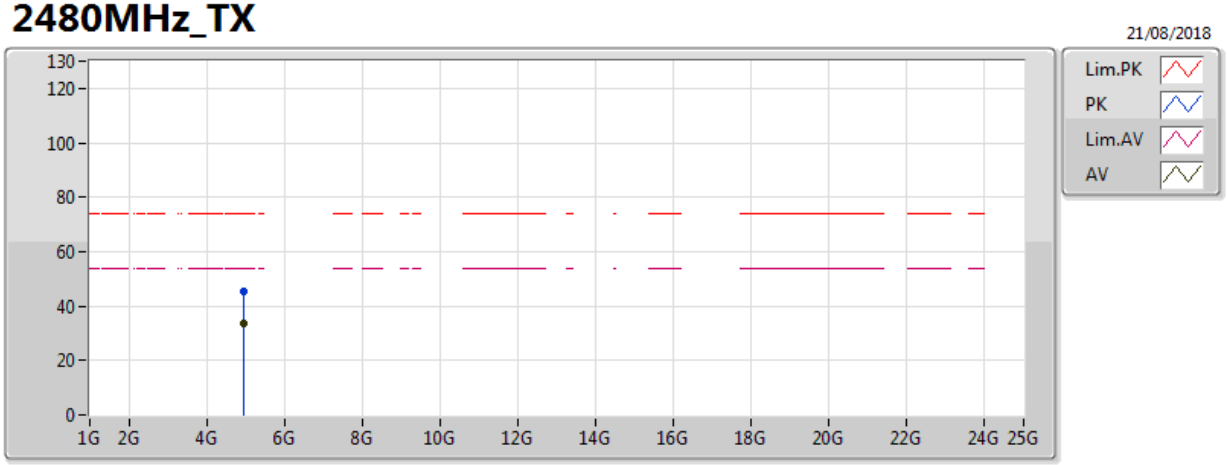
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3896G	45.90	54.00	-8.10	30.38	3	Horizontal	49	1.01	-
AV	2.48G	92.08	Inf	-Inf	30.68	3	Horizontal	49	1.01	-
AV	2.498G	47.09	54.00	-6.91	30.75	3	Horizontal	49	1.01	-
PK	2.38G	57.28	74.00	-16.72	30.34	3	Horizontal	49	1.01	-
PK	2.48G	92.34	Inf	-Inf	30.68	3	Horizontal	49	1.01	-
PK	2.49G	58.67	74.00	-15.33	30.72	3	Horizontal	49	1.01	-

BT-BR(1Mbps)

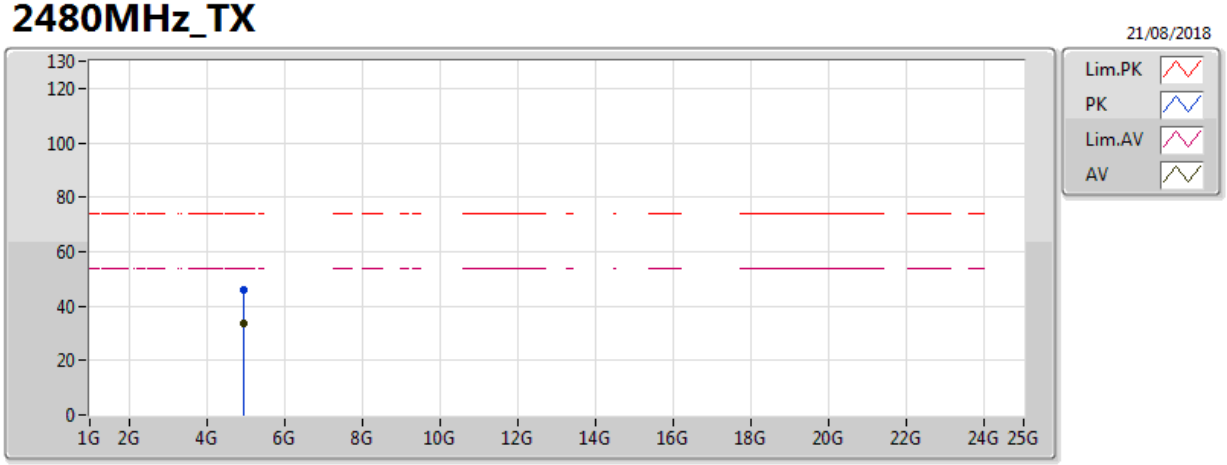
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.956208G	33.54	54.00	-20.46	6.11	3	Vertical	325	1.50	-
PK	4.953134G	45.54	74.00	-28.46	6.10	3	Vertical	325	1.50	-

BT-BR(1Mbps)

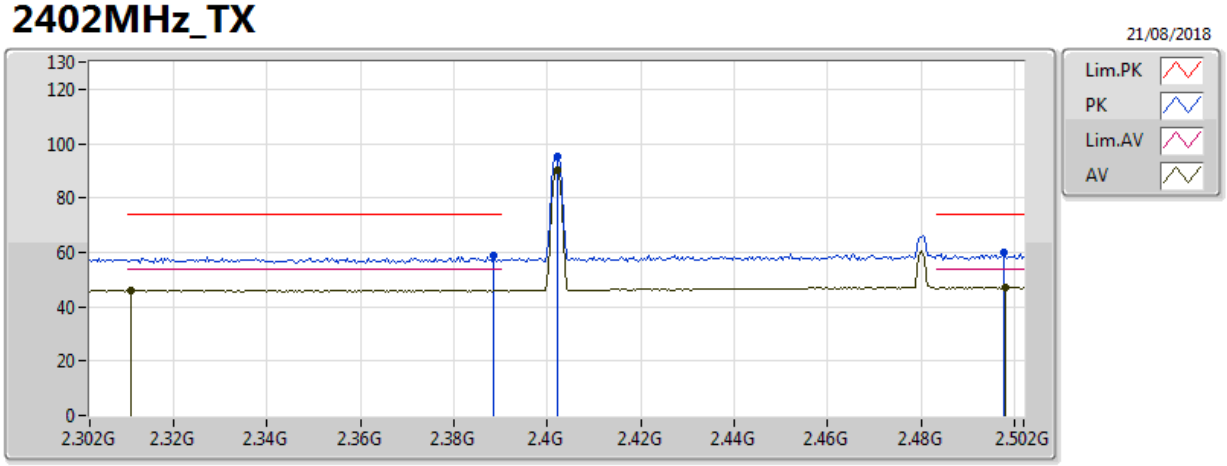
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.957246G	33.55	54.00	-20.45	6.11	3	Horizontal	258	1.50	-
PK	4.966766G	45.79	74.00	-28.21	6.12	3	Horizontal	258	1.50	-

BT-EDR(2Mbps)

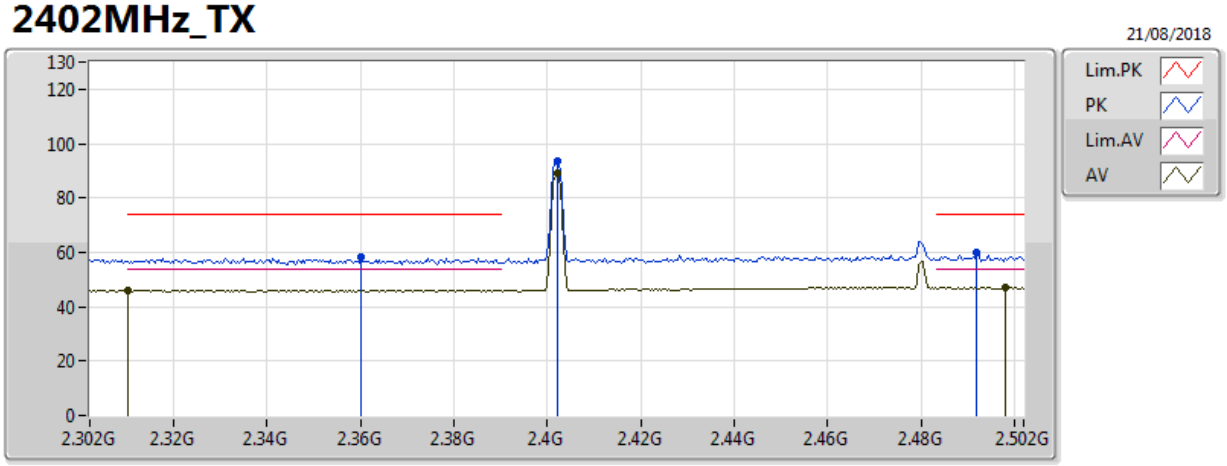
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3108G	45.94	54.00	-8.06	30.12	3	Vertical	137	1.22	-
AV	2.402G	90.44	Inf	-Inf	30.41	3	Vertical	137	1.22	-
AV	2.498G	47.13	54.00	-6.87	30.75	3	Vertical	137	1.22	-
PK	2.3884G	58.95	74.00	-15.05	30.37	3	Vertical	137	1.22	-
PK	2.402G	95.39	Inf	-Inf	30.41	3	Vertical	137	1.22	-
PK	2.4976G	59.83	74.00	-14.17	30.74	3	Vertical	137	1.22	-

BT-EDR(2Mbps)

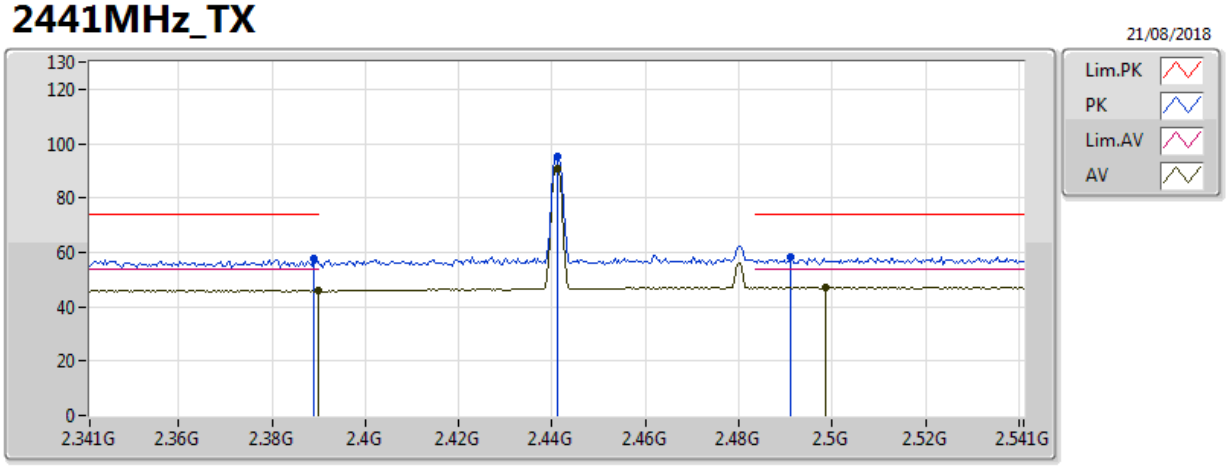
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.31G	45.93	54.00	-8.07	30.11	3	Horizontal	47	1.10	-
AV	2.402G	89.26	Inf	-Inf	30.41	3	Horizontal	47	1.10	-
AV	2.498G	47.06	54.00	-6.94	30.75	3	Horizontal	47	1.10	-
PK	2.36G	58.11	74.00	-15.89	30.27	3	Horizontal	47	1.10	-
PK	2.402G	93.79	Inf	-Inf	30.41	3	Horizontal	47	1.10	-
PK	2.492G	59.75	74.00	-14.25	30.72	3	Horizontal	47	1.10	-

BT-EDR(2Mbps)

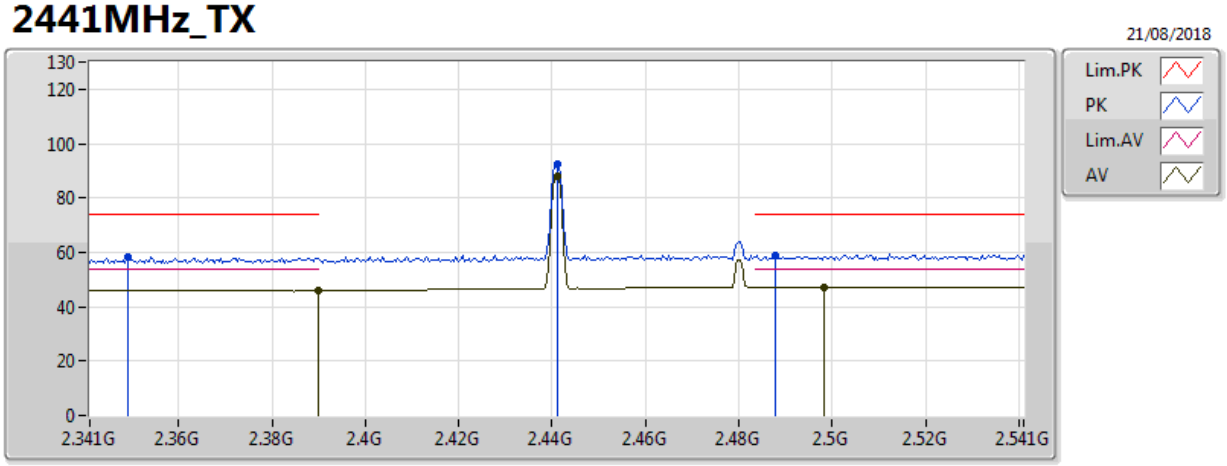
2441MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3898G	45.90	54.00	-8.10	30.38	3	Vertical	136	1.61	-
AV	2.441G	90.74	Inf	-Inf	30.55	3	Vertical	136	1.61	-
AV	2.4986G	47.01	54.00	-6.99	30.75	3	Vertical	136	1.61	-
PK	2.389G	57.57	74.00	-16.43	30.37	3	Vertical	136	1.61	-
PK	2.441G	95.01	Inf	-Inf	30.55	3	Vertical	136	1.61	-
PK	2.491G	58.00	74.00	-16.00	30.72	3	Vertical	136	1.61	-

BT-EDR(2Mbps)

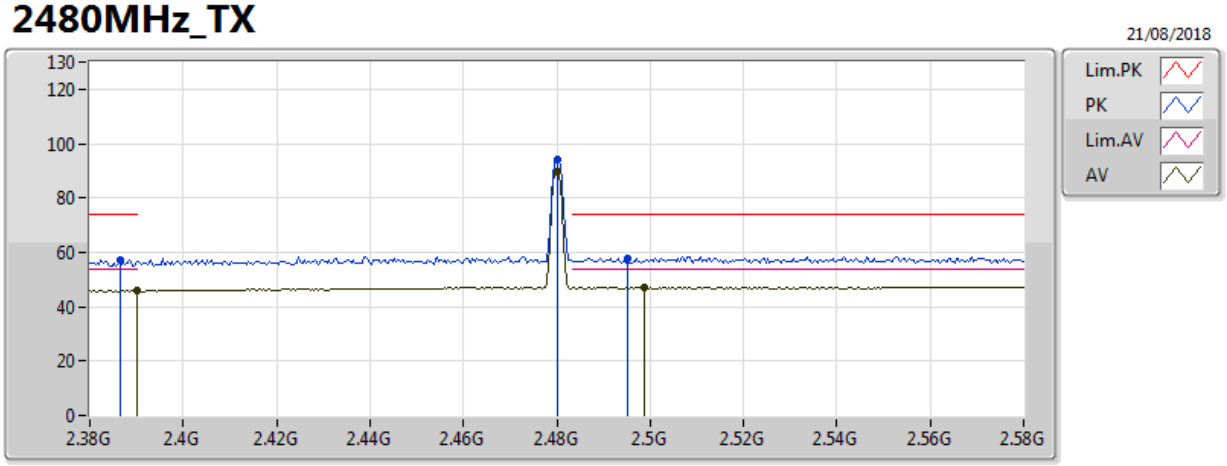
2441MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3898G	45.90	54.00	-8.10	30.38	3	Horizontal	49	1.09	-
AV	2.441G	87.98	Inf	-Inf	30.55	3	Horizontal	49	1.09	-
AV	2.4982G	46.88	54.00	-7.12	30.75	3	Horizontal	49	1.09	-
PK	2.349G	58.17	74.00	-15.83	30.24	3	Horizontal	49	1.09	-
PK	2.441G	92.28	Inf	-Inf	30.55	3	Horizontal	49	1.09	-
PK	2.4878G	59.01	74.00	-14.99	30.71	3	Horizontal	49	1.09	-

BT-EDR(2Mbps)

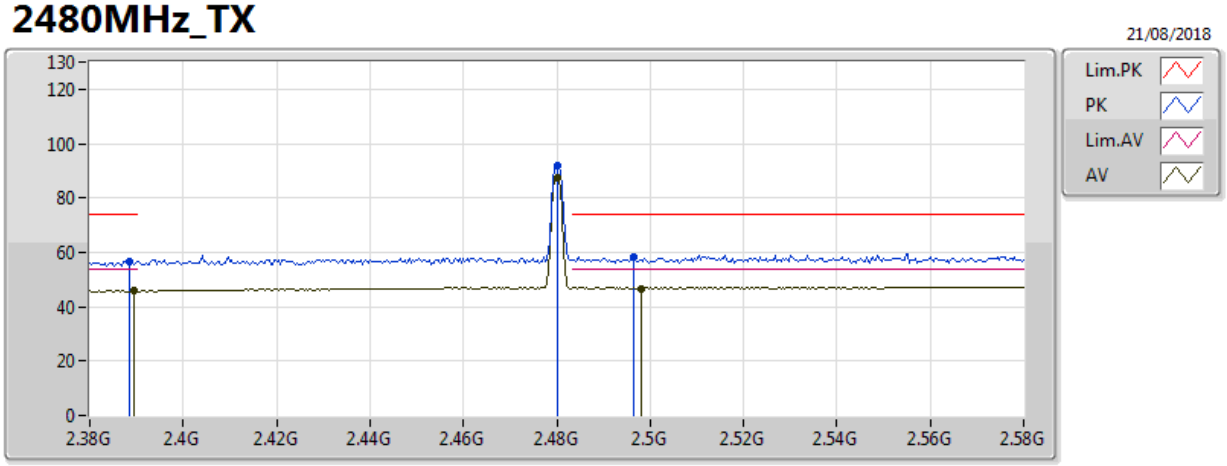
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.389998G	45.90	54.00	-8.10	30.38	3	Vertical	137	1.56	-
AV	2.48G	89.52	Inf	-Inf	30.68	3	Vertical	137	1.56	-
AV	2.4988G	46.88	54.00	-7.12	30.75	3	Vertical	137	1.56	-
PK	2.3864G	57.33	74.00	-16.67	30.37	3	Vertical	137	1.56	-
PK	2.48G	93.90	Inf	-Inf	30.68	3	Vertical	137	1.56	-
PK	2.4952G	57.94	74.00	-16.06	30.74	3	Vertical	137	1.56	-

BT-EDR(2Mbps)

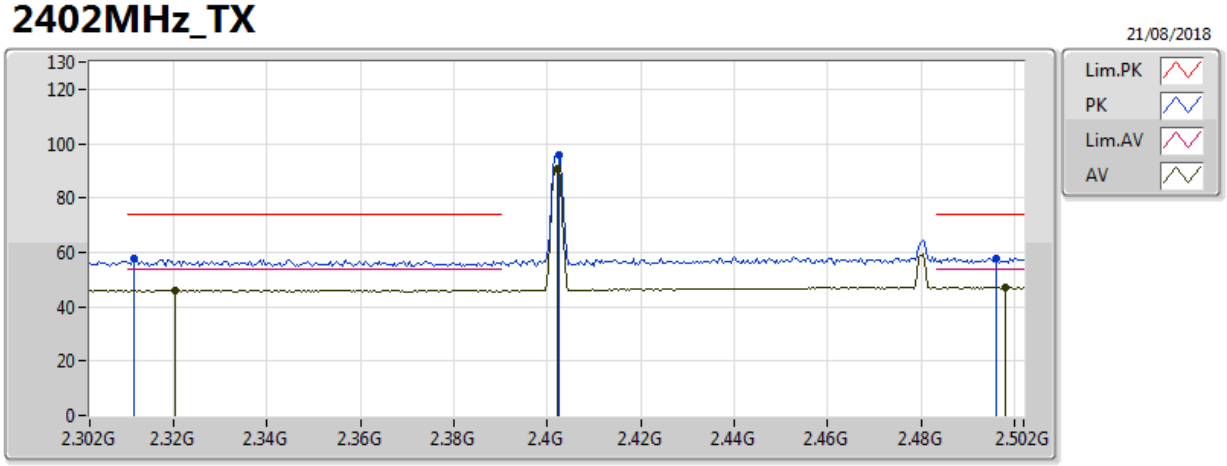
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3896G	45.90	54.00	-8.10	30.38	3	Horizontal	50	1.00	-
AV	2.48G	87.41	Inf	-Inf	30.68	3	Horizontal	50	1.00	-
AV	2.498G	46.68	54.00	-7.32	30.75	3	Horizontal	50	1.00	-
PK	2.3884G	56.82	74.00	-17.18	30.37	3	Horizontal	50	1.00	-
PK	2.48G	91.75	Inf	-Inf	30.68	3	Horizontal	50	1.00	-
PK	2.4964G	58.17	74.00	-15.83	30.74	3	Horizontal	50	1.00	-

BT-EDR(3Mbps)

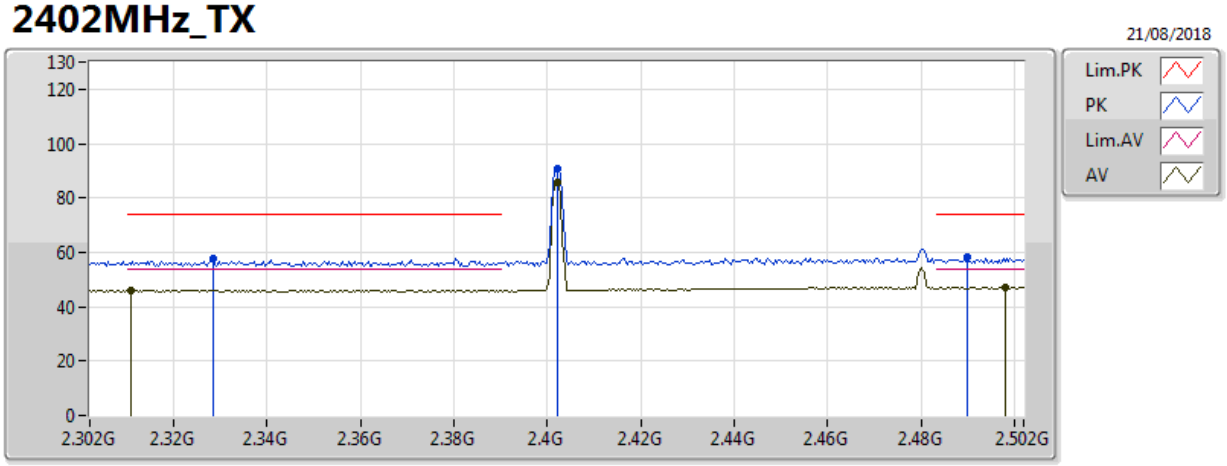
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3204G	46.19	54.00	-7.81	30.15	3	Vertical	136	1.25	-
AV	2.402G	90.99	Inf	-Inf	30.41	3	Vertical	136	1.25	-
AV	2.498G	47.01	54.00	-6.99	30.75	3	Vertical	136	1.25	-
PK	2.3116G	57.70	74.00	-16.30	30.12	3	Vertical	136	1.25	-
PK	2.4024G	95.59	Inf	-Inf	30.42	3	Vertical	136	1.25	-
PK	2.496G	57.78	74.00	-16.22	30.74	3	Vertical	136	1.25	-

BT-EDR(3Mbps)

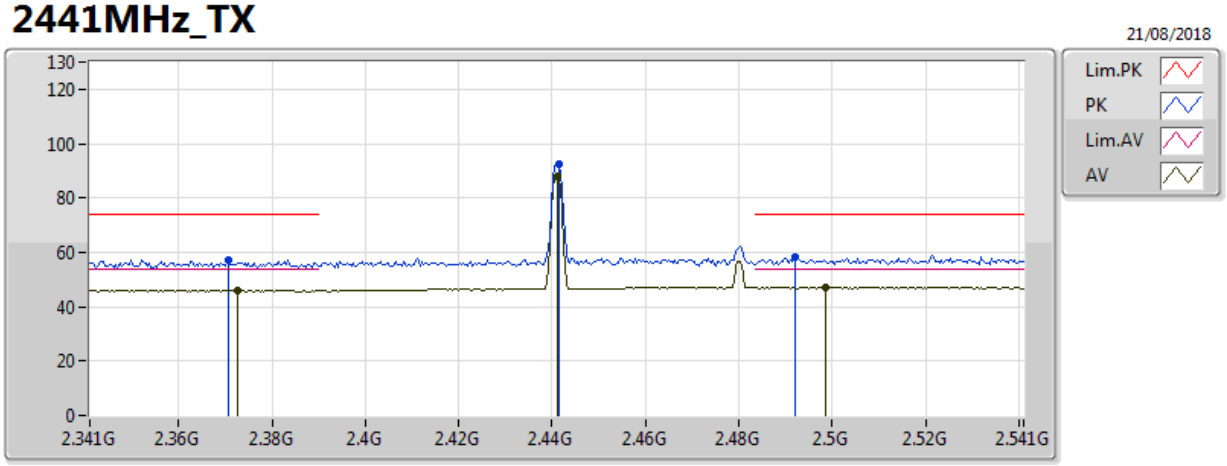
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3108G	45.94	54.00	-8.06	30.12	3	Horizontal	35	1.10	-
AV	2.402G	85.88	Inf	-Inf	30.41	3	Horizontal	35	1.10	-
AV	2.498G	46.88	54.00	-7.12	30.75	3	Horizontal	35	1.10	-
PK	2.3284G	57.87	74.00	-16.13	30.18	3	Horizontal	35	1.10	-
PK	2.402G	90.76	Inf	-Inf	30.41	3	Horizontal	35	1.10	-
PK	2.49G	58.00	74.00	-16.00	30.72	3	Horizontal	35	1.10	-

BT-EDR(3Mbps)

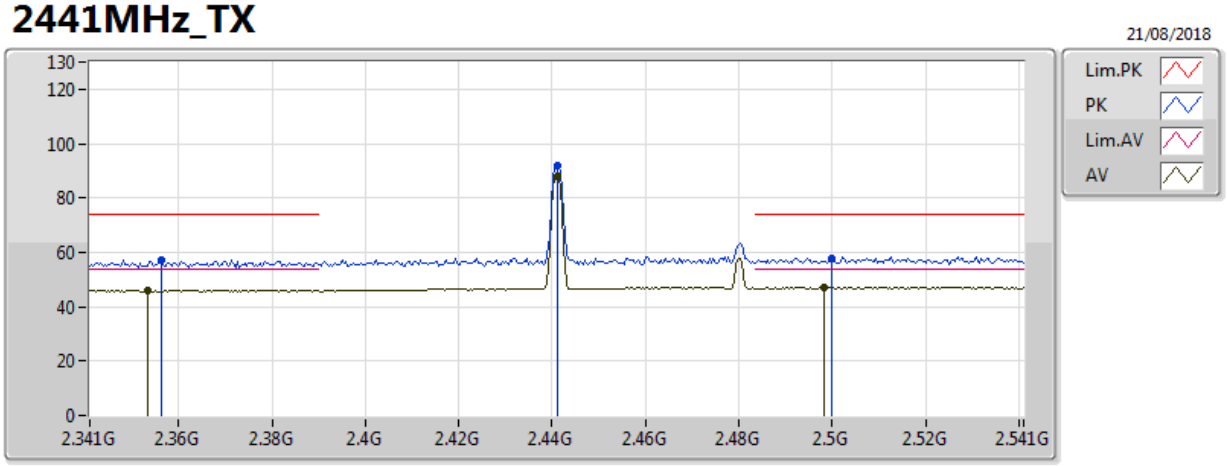
2441MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3726G	46.06	54.00	-7.94	30.32	3	Vertical	48	1.09	-
AV	2.441G	87.95	Inf	-Inf	30.55	3	Vertical	48	1.09	-
AV	2.4986G	47.22	54.00	-6.78	30.75	3	Vertical	48	1.09	-
PK	2.3706G	57.32	74.00	-16.68	30.31	3	Vertical	48	1.09	-
PK	2.4414G	92.27	Inf	-Inf	30.55	3	Vertical	48	1.09	-
PK	2.4922G	58.23	74.00	-15.77	30.72	3	Vertical	48	1.09	-

BT-EDR(3Mbps)

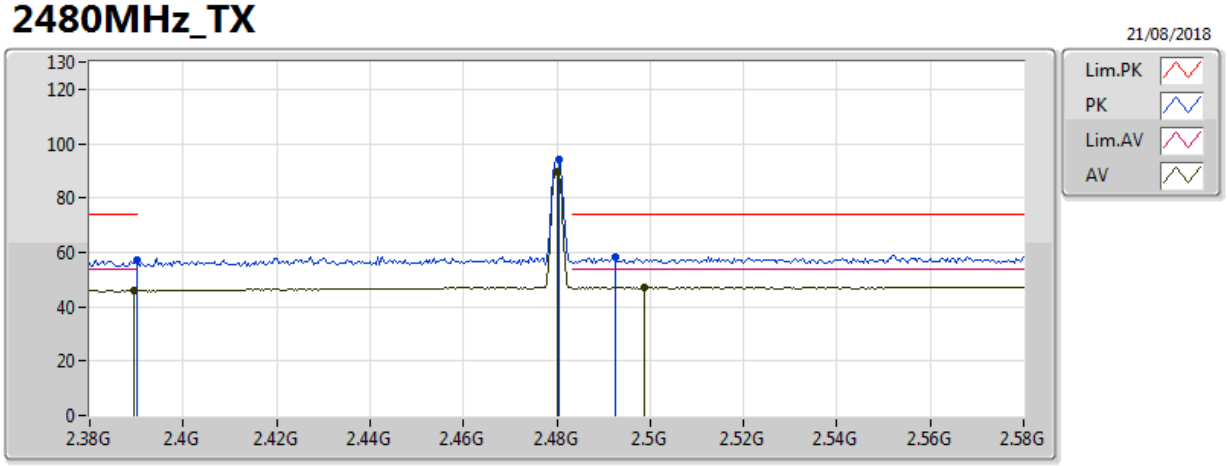
2441MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3534G	46.06	54.00	-7.94	30.26	3	Horizontal	49	1.08	-
AV	2.441G	87.82	Inf	-Inf	30.55	3	Horizontal	49	1.08	-
AV	2.4982G	47.10	54.00	-6.90	30.75	3	Horizontal	49	1.08	-
PK	2.3562G	57.22	74.00	-16.78	30.26	3	Horizontal	49	1.08	-
PK	2.441G	92.15	Inf	-Inf	30.55	3	Horizontal	49	1.08	-
PK	2.4998G	57.88	74.00	-16.12	30.75	3	Horizontal	49	1.08	-

BT-EDR(3Mbps)

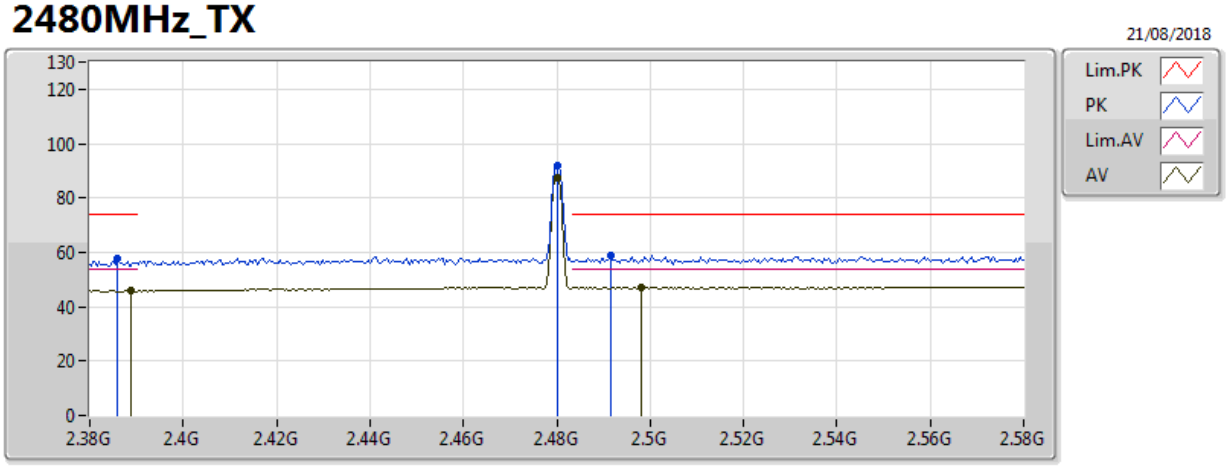
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3896G	45.90	54.00	-8.10	30.38	3	Vertical	135	1.43	-
AV	2.48G	89.67	Inf	-Inf	30.68	3	Vertical	135	1.43	-
AV	2.4988G	47.17	54.00	-6.83	30.75	3	Vertical	135	1.43	-
PK	2.389998G	57.15	74.00	-16.85	30.38	3	Vertical	135	1.43	-
PK	2.4804G	93.97	Inf	-Inf	30.68	3	Vertical	135	1.43	-
PK	2.4924G	58.08	74.00	-15.92	30.72	3	Vertical	135	1.43	-

BT-EDR(3Mbps)

2480MHz_TX



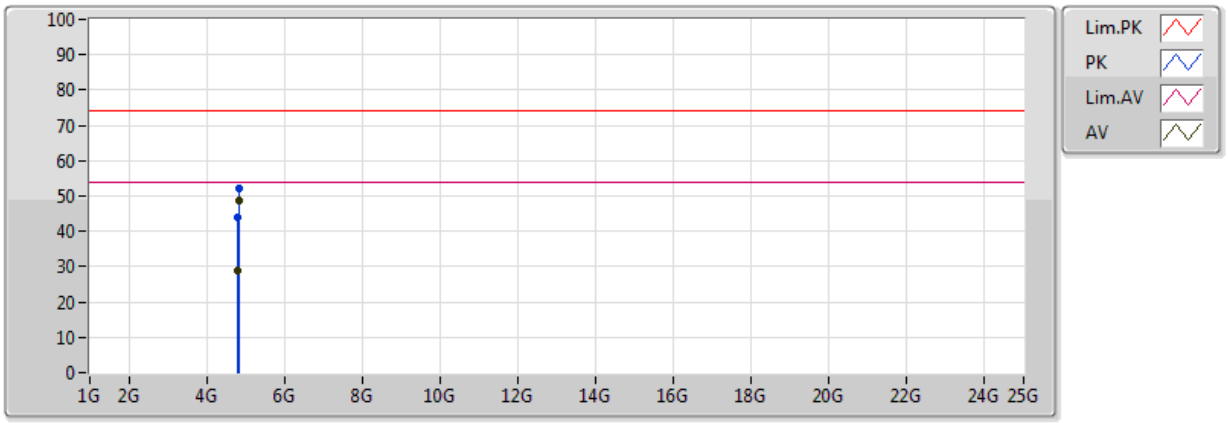
Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	2.3888G	45.88	54.00	-8.12	30.37	3	Horizontal	49	1.01	-
AV	2.48G	87.35	Inf	-Inf	30.68	3	Horizontal	49	1.01	-
AV	2.498G	47.09	54.00	-6.91	30.75	3	Horizontal	49	1.01	-
PK	2.386G	57.61	74.00	-16.39	30.37	3	Horizontal	49	1.01	-
PK	2.48G	91.66	Inf	-Inf	30.68	3	Horizontal	49	1.01	-
PK	2.4916G	58.74	74.00	-15.26	30.72	3	Horizontal	49	1.01	-

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
1	Pass	AV	4.824G	48.68	54.00	-5.32	2.13	3	Vertical	201	1.66	-

Radiation-above 1GHz_1

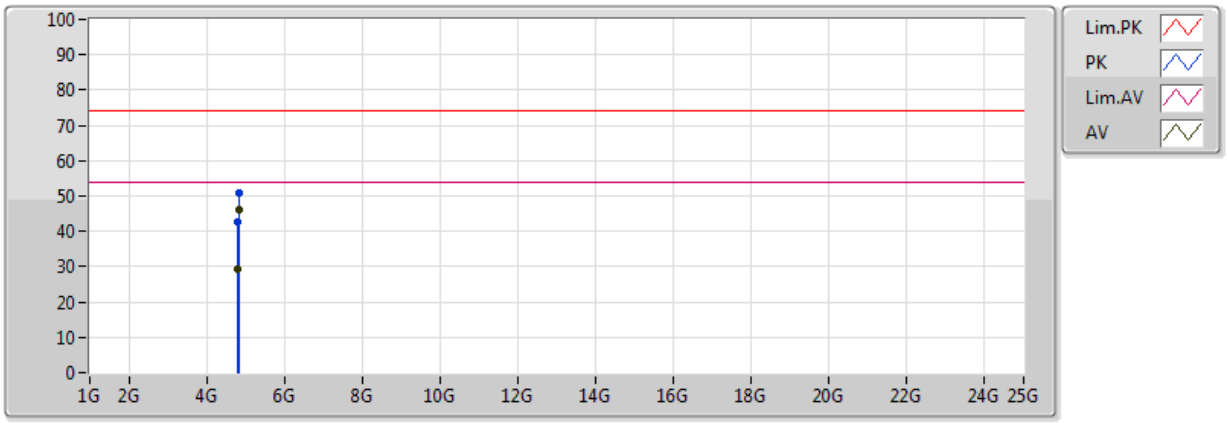
31/08/2018



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.80483G	28.82	54.00	-25.18	2.08	3	Vertical	152	1.56	-
AV	4.824G	48.68	54.00	-5.32	2.13	3	Vertical	201	1.66	-
PK	4.80483G	44.13	74.00	-29.87	2.08	3	Vertical	152	1.56	-
PK	4.82404G	51.97	74.00	-22.03	2.13	3	Vertical	201	1.66	-

Radiation-above 1GHz_1

31/08/2018



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
AV	4.80654G	29.21	54.00	-24.79	2.09	3	Horizontal	54	1.39	-
AV	4.824G	45.92	54.00	-8.08	2.13	3	Horizontal	169	1.74	-
PK	4.80654G	42.60	74.00	-31.40	2.09	3	Horizontal	54	1.39	-
PK	4.82406G	50.81	74.00	-23.19	2.13	3	Horizontal	169	1.74	-