FCC Test Report

Equipment	:	802.11 a/b/g/n/ac 2T2R+BT V4.2LE combo module
Brand Name	:	LITE-ON
Model No.	:	WCBN3510A
FCC ID	:	PPQ-WCBN3510A
Standard	:	47 CFR FCC Part 15.247
Operating Band	:	2400 MHz – 2483.5 MHz
Function	:	☒Point-to-multipoint; ☐Point-to-point
Applicant	:	LITE-ON Technology Corp. Bldg. C, 90, Chien 1 Road, Chung Ho, New Taipei City 23585, Taiwan, R.O.C
Manufacturer	:	LITE-ON TECHNOLOGY (Changzhou) CO., LTD A9 Building,No.88 Yanghu Road, Wujin Hi-Tech Industrial Development Zone ,Changzhou City, Jiangsu Province 213100 China

The product sample received on Nov. 27, 2017 and completely tested on Dec. 14, 2017. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONALINC., the test report shall not be reproduced except in full.

Phoenix Chen / Assistant Manager

Testing Laboratory
1190

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PHOTOGRAPHS OF EUT V01

Summary of Test Result

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

Revision History

Report No.	Version	Description	Issued Date
FR7N1336AD	Rev. 01	Initial issue of report	Jan. 15, 2018

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.	Project	Brand	Product Name	P/N	Antenna Type	Connector
1	-	Walsin	WIFI- Antenna	RFMTA401020IMLB701	PIFA	Mini i-Pex
2	-	Walsin	WIFI-2 Antenna	RFMTA401020IMLB701	PIFA	Mini i-Pex
3	-	Walsin	BT Antenna	RFMTA401020IMLB701	PIFA	Mini i-Pex
4	Sparrow 10 inch	Shenzhen South Star Technology Co., LTD	WIFI- Antenna	N12-4140-R0A	PIFA	-
5		Shenzhen South Star Technology Co., LTD	WIFI-2 Antenna	N12-4141-R0A	PIFA	-
6		Shenzhen South Star Technology Co., LTD	BT Antenna	N14-0594-R0A	PIFA	-
7	Sparrow 8 inch	Shenzhen South Star Technology Co., LTD	WIFI- Antenna	N12-4142-R0A	PIFA	-
8		Shenzhen South Star Technology Co., LTD	WIFI-2 Antenna	N12-4143-R0A	PIFA	-
9		Shenzhen South Star Technology Co., LTD	BT Antenna	N14-0595-R0A	PIFA	-

Ant.	Port	Gain (dBi)		
		2.4G	5G	BT
1	1	3.52	4.18	-
2	2	3.52	4.18	-
3	1	-	-	3.52
4	-	2.97	4.04	-
5	-	3.41	4.05	-
6	-	-	-	3.31
7	-	3.35	3.97	-
8	-	3.33	3.86	-
9	-	-	-	2.86

Note 1: EUT can match with above antennas for using. The higher gain (Ant. 1/2/3) was used to perform the worst configuration and result of that was recorded as the final test result.

For 2.4 GHz function:

For IEEE 802.11b/g/n/ac mode (2TX/2RX)

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

For 5 GHz function:

For IEEE 802.11a/n/ac mode (2TX/2RX)

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

For Bluetooth function:

For Bluetooth mode (1TX/1RX)

Only Ant. 3 (port 1) can be used as transmitting/receiving antenna.

1.1.3 EUT Information

Identify EUT	
RF Chip	**Qualcomm QCA9379-3**
Operational Condition	
EUT Power Type	From System

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)	0.462	3.354	2.888m	1k
BT-EDR(2Mbps)	0.463	3.344	2.892m	1k
BT-EDR(3Mbps)	0.462	3.354	2.894m	1k

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	TH07-HY	Ryan	24.5°C / 65%	07/Dec/2017
Radiated	03CH03-HY	Jeff	24.1°C / 63%	14/Dec/2017
AC Conduction	CO04-HY	Thor	23.9°C / 58.5%	01/Dec/2017

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%

2 Test Configuration of EUT

2.1 Test Condition

RF Conducted	Abbreviation	Remark
RF Conducted-FS	Abbreviation	Remark
TnomVnom	Tnom	20°C
-	Vnom	120V

2.2 Test Channel Mode

Test Software Version	QCARCT 3.0.197.0

Mode	Power Setting
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	AC Power 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	AC Power Mode		
Operating Mode > 1GHz	CTX		
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
Operating Mode	CTX
1	Bluetooth+WLAN 2.4GHz
2	Bluetooth+WLAN 5GHz
Refer to Sporton Test Report No.: FA7N1336 for Co-location RF Exposure Evaluation.	

2.4 Support Equipment

Support Equipment – RF Conducted				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	Notebook	DELL	E5410	DoC
2	Adapter for NB	DELL	HA65NM130	DoC
3	Notebook	DELL	E5410	DoC
4	Adapter for NB	DELL	HA65NM130	DoC
5	Fixture	-	-	N/A
6	AC adapter for Fixture	Asian	WB-18D12FU	N/A
7	CBT	RS	100959	N/A

Note: Support equipment No.5 & 6 were provided by customer.

Support Equipment – Radiated Emission				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	Fixture	-	-	N/A
2	AC adapter for Fixture	Asian	WB-18D12FU	N/A
3	CBT	RS	100959	N/A

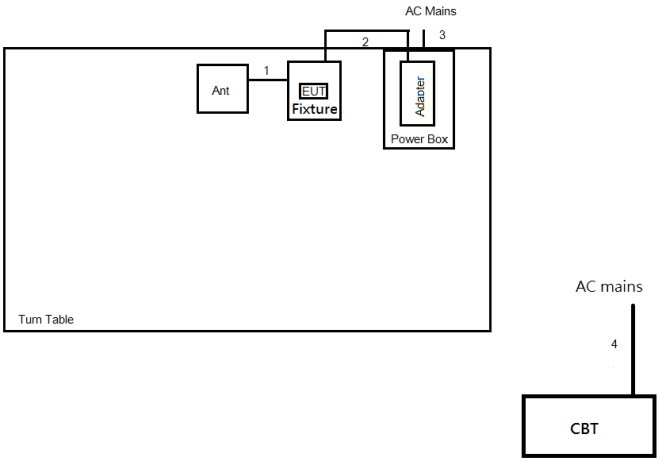
Note: Support equipment No.1 & 2 were provided by customer.

Support Equipment – AC Conduction				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	Fixture	-	-	N/A
2	AC adapter for Fixture	Asian	WB-18D12FU	N/A
3	CBT	RS	100959	N/A

Note: Support equipment No.1 & 2 were provided by customer.

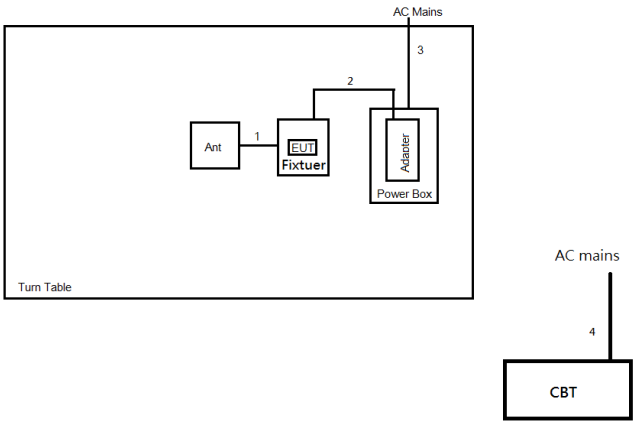
2.5 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



Item	Connection	Shielded	Length(m)	Remark
1	RF cable	No	0.2	-
2	DC Power cable	No	1.5	-
3	AC Power cable	No	1.5	-
4	AC Power cable	No	1.5	-

Test Setup Diagram - Radiated Test



Item	Connection	Shielded	Length(m)	Remark
1	RF cable	No	0.2	-
2	RF cable	No	0.2	-
3	DC Power cable	No	1.5	-
4	AC Power cable	No	1.5	-
5	AC Power cable	No	1.5	-

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

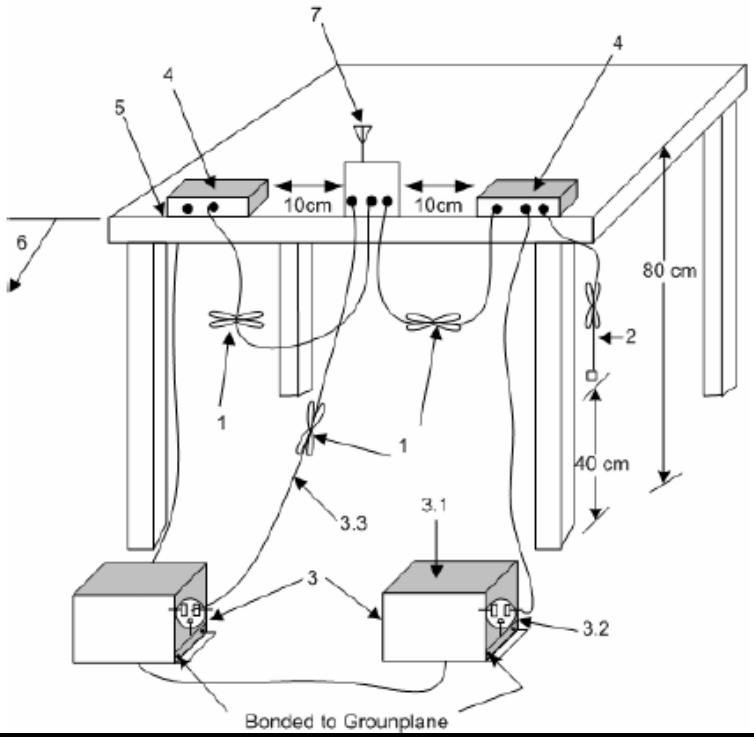
Refer a test equipment and calibration data table in this test report.

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	
▪ 902-928 MHz Band:	
	▪ N ≥50 and ChS ≥ MAX (20 dB bandwidth, 25 kHz); 20 dB bandwidth≤ 250 kHz.
	▪ 50 >N≥25 and ChS ≥ MAX (20 dB bandwidth, 25 kHz); 20 dB bandwidth>250 kHz.
▪ 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).
▪ 5725-5850 MHz Band:	
	▪ N ≥ 75 and ChS ≥ MAX (20 dB bandwidth, 25 kHz); 20 dB bandwidth≤ 1 MHz.
N:Number of Hopping Frequencies; **ChS**: Hopping Channel Separation	

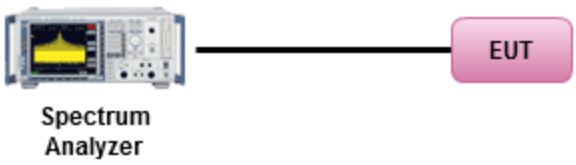
3.2.2 Measuring Instruments

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	
▪ 902-928 MHz Band:	
	▪ N ≥50; Power 30dBm; EIRP 36dBm
	▪ 50 >N≥ 25; Power 24dBm; EIRP 30dBm
▪ 2400-2483.5 MHz Band:	
	▪ N ≥ 75; Power 30dBm; EIRP 36dBm
	▪ 75 >N ≥ 15; Power 21dBm; EIRP 27dBm
▪ 5725-5850 MHz Band:	
	▪ N ≥ 75; Power 30dBm; EIRP 36dBm
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	
▪ 902-928 MHz Band:	
	▪ N ≥50 and ChS ≥ MAX (20 dB bandwidth, 25 kHz); 20 dB bandwidth≤ 250 kHz.
	▪ 50 >N≥ 25 and ChS ≥ MAX (20 dB bandwidth, 25 kHz); 20 dB bandwidth>250 kHz.
▪ 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).
▪ 5725-5850 MHz Band:	
	▪ N ≥ 75 and ChS ≥ MAX (20 dB bandwidth, 25 kHz); 20 dB bandwidth≤ 1 MHz.
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

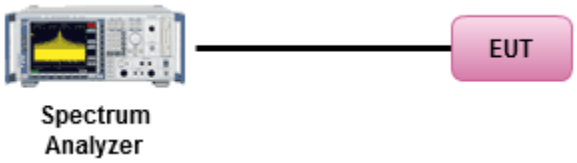
3.4.3 Measuring Instruments

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	
▪ 902-928 MHz Band:	
	▪ N ≥50; 0.4s in 20s period
	▪ 50 >N≥ 25; 0.4s in 10s period
▪ 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
▪ 5725-5850 MHz Band:	
	▪ N ≥ 75; 0.4s in 30s period
N:Number of Hopping Frequencies	

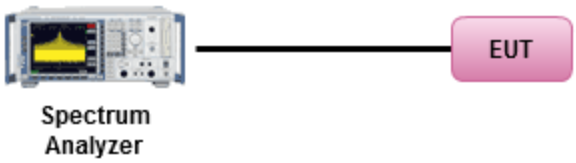
3.5.2 Measuring Instruments

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

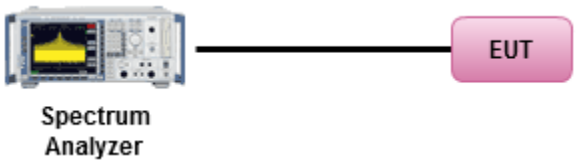
Refer a test equipment and calibration data table in this test report.

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.

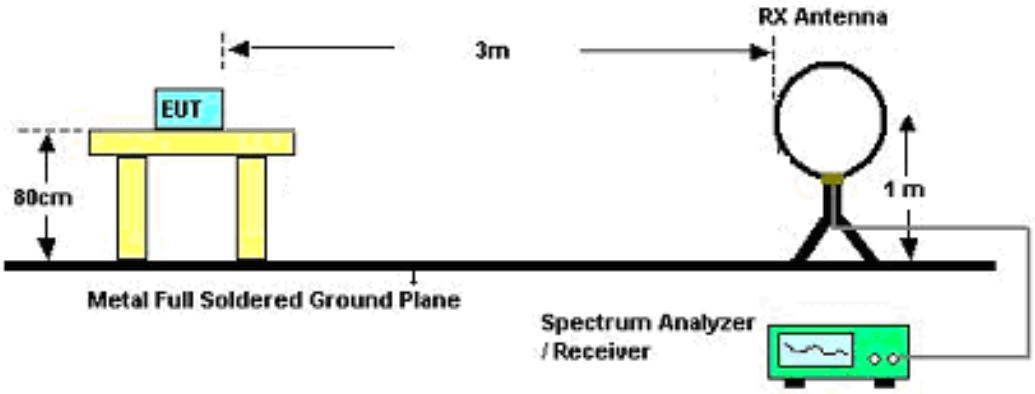
3.7.3 Test Procedures

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.

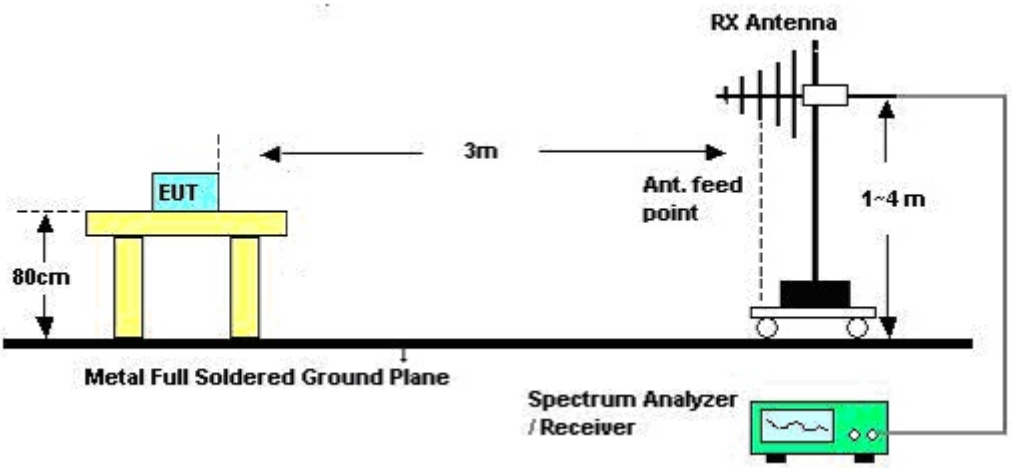
3.7.4 Test Setup

Emissions in Restricted Frequency Bands

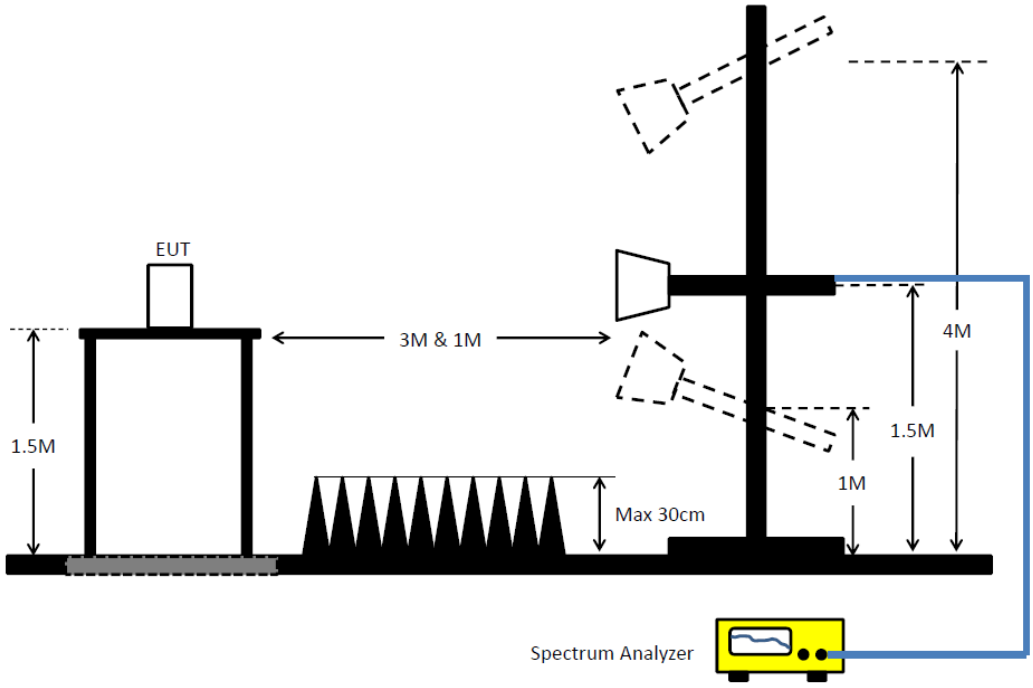
9kHz ~30MHz



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	ESR3	102052	9KHz ~ 3.6GHz	29/Apr/2017	28/Apr/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
LISN	R&S	ENV216	101295	9kHz ~ 30MHz	17/Nov/2017	16/Nov/2018

NCR : Non-Calibration Require

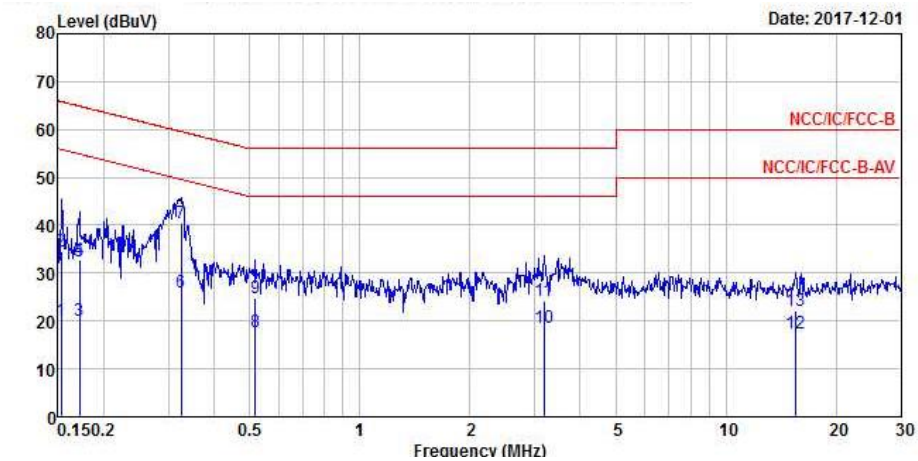
Instrument for Radiated Test

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	19/Apr/2017	18/Apr/2018
Amplifier	Keysight	83017A	MY53270196	1GHz ~ 26.5GHz	31/Aug/2017	30/Aug/2018
Spectrum	R&S	FSV40	101500	9kHz ~ 40GHz	28/Jun/2017	27/Jun/2018
Receiver	R&S	ESR3	102052	9KHz ~ 3.6GHz	29/Apr/2017	28/Apr/2018
Bluetooth Tester	R&S	CBT	100959	Bluetooth Station	02/Mar/2017	01/Mar/2018
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz ~ 1GHz	26/Jan/2017	25/Jan/2018
RF Cable-high	SUHNER	SUCOFLEX106	CB222	1GHz ~ 40GHz	26/Jan/2017	25/Jan/2018
Bilog Antenna	SCHAFFNER	CBL 6112B	22237	30MHz ~ 1GHz	08/Jul/2017	07/Jul/2018
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	18GHz ~ 40GHz	06/Feb/ 2017	05/Feb/2018
Horn Antenna	SCHWARZBECK	BBHA9120D	1531	1GHz ~ 18GHz	25/Apr/ 2017	24/Apr/2018
Loop Antenna	TESEQ	HLA 6120	31244	9 kHz~30 MHz	02/Mar/2017	01/Mar/2018

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	30/Dec/2016	29/Dec/2017
Power Sensor	Anritsu	MA2411B	1339407	300MHz ~ 40GHz	10/May/2017	09/May/2018
Power Meter	Anritsu	ML2495A	1517010	300MHz ~ 40GHz	06/Nov/2017	05/Nov/2018
RF Cable-0.2m	HUBER+SUHNER	SUCOFLEX_104	MY10710/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018
RF Cable-0.2m	HUBER+SUHNER	SUCOFLEX_104	MY10709/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018
RF Cable-0.5m	HUBER+SUHNER	SUCOFLEX_104	MY10713/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	27/Jul/2017	26/Jul/2018
Bluetooth Tester	ROHDE&SCHWARZ	CBT	101021	2.4GHz	28/Apr/2017	27/Apr/2018

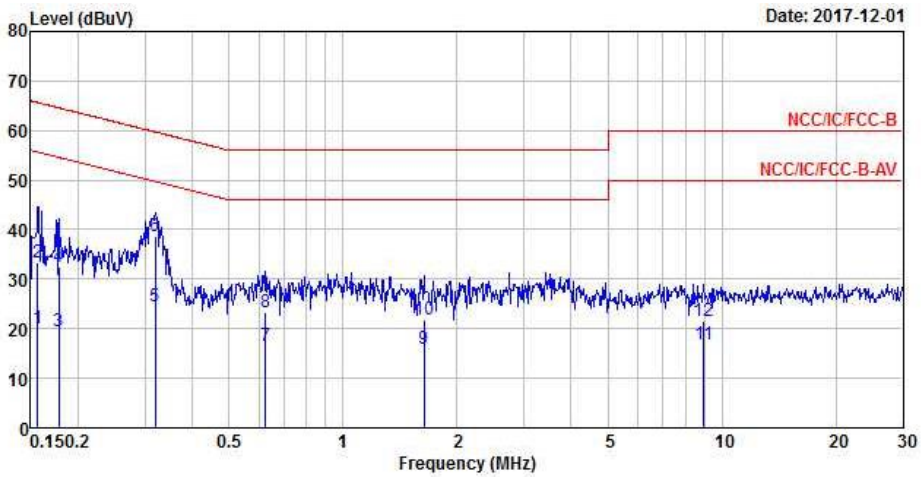
AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Neutral
Operating Function	Adapter mode		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1532	20.09	-35.73	55.82	10.42	9.63	0.04	Average
2	0.1532	34.49	-31.33	65.82	24.82	9.63	0.04	QP
3	0.1712	20.10	-34.80	54.90	10.45	9.63	0.02	Average
4	0.1712	32.67	-32.23	64.90	23.02	9.63	0.02	QP
5	0.1712	32.35	-32.55	64.90	22.70	9.63	0.02	QP
6	0.3251	25.97	-23.60	49.57	16.29	9.61	0.07	Average
7 MAX	0.3251	40.50	-19.07	59.57	30.82	9.61	0.07	QP
8	0.5182	17.70	-28.30	46.00	8.02	9.61	0.07	Average
9	0.5182	24.85	-31.15	56.00	15.17	9.61	0.07	QP
10	3.1900	18.74	-27.26	46.00	9.04	9.64	0.06	Average
11	3.1900	24.13	-31.87	56.00	14.43	9.64	0.06	QP
12	15.5523	17.29	-32.71	50.00	7.56	9.70	0.03	Average
13	15.5523	22.23	-37.77	60.00	12.50	9.70	0.03	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		



		Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
		MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1		0.1565	19.96	-35.69	55.65	10.30	9.62	0.04	Average
2		0.1565	33.25	-32.40	65.65	23.59	9.62	0.04	QP
3		0.1777	19.47	-35.12	54.59	9.83	9.62	0.02	Average
4		0.1777	32.36	-32.23	64.59	22.72	9.62	0.02	QP
5		0.3200	24.40	-25.31	49.71	14.72	9.61	0.07	Average
6	MAX	0.3200	38.76	-20.95	59.71	29.08	9.61	0.07	QP
7		0.6238	16.49	-29.51	46.00	6.83	9.61	0.05	Average
8		0.6238	23.32	-32.68	56.00	13.66	9.61	0.05	QP
9		1.6363	15.95	-30.05	46.00	6.33	9.62	0.00	Average
10		1.6363	21.74	-34.26	56.00	12.12	9.62	0.00	QP
11		8.9637	16.94	-33.06	50.00	7.09	9.66	0.19	Average
12		8.9637	21.68	-38.32	60.00	11.83	9.66	0.19	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)	921.25k	905.797k	906KF1D	918.75k	897.051k
BT-EDR(2Mbps)	1.311M	1.189M	1M19G1D	1.276M	1.188M
BT-EDR(3Mbps)	1.285M	1.201M	1M20G1D	1.281M	1.196M

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

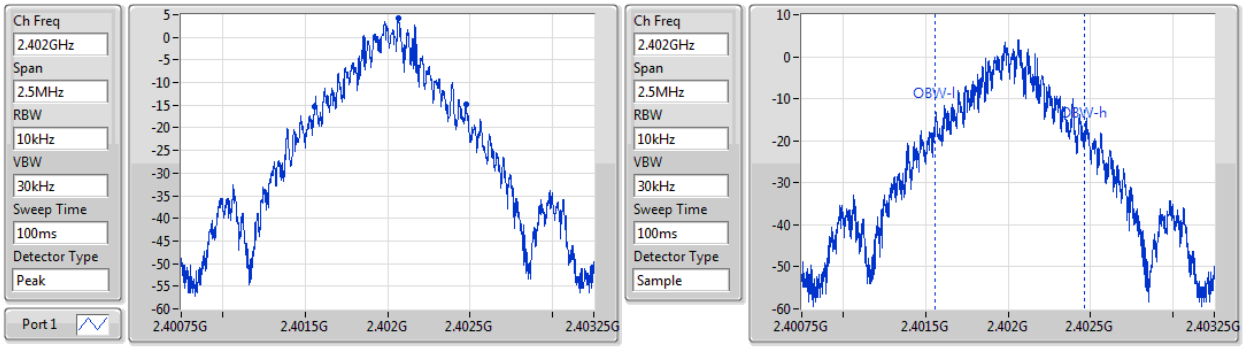
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	Inf	920k	905.797k
2441MHz	Pass	Inf	921.25k	900.8k
2480MHz	Pass	Inf	918.75k	897.051k
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.281M	1.188M
2441MHz	Pass	Inf	1.311M	1.189M
2480MHz	Pass	Inf	1.276M	1.188M
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.281M	1.196M
2441MHz	Pass	Inf	1.285M	1.198M
2480MHz	Pass	Inf	1.285M	1.201M

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

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

2402MHz

07/12/2017

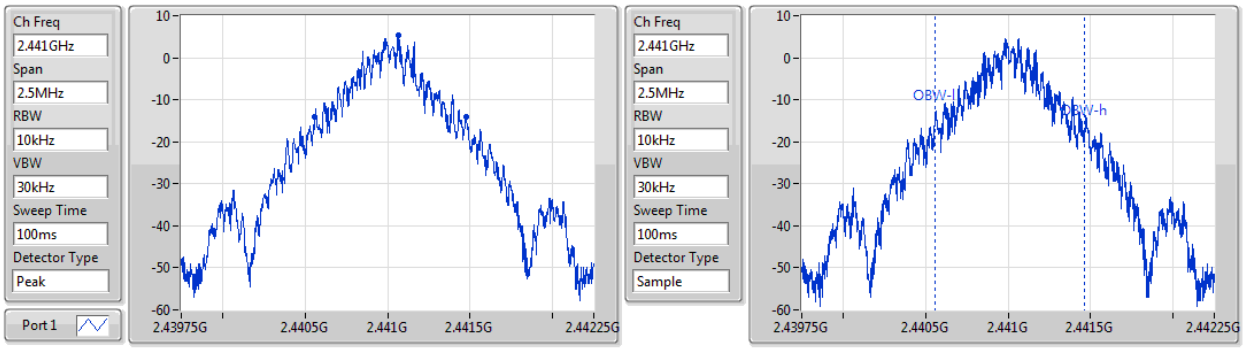


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
920k	2.401558G	2.402478G	905.797k	2.401559G	2.402465G	Inf	1

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

2441MHz

07/12/2017

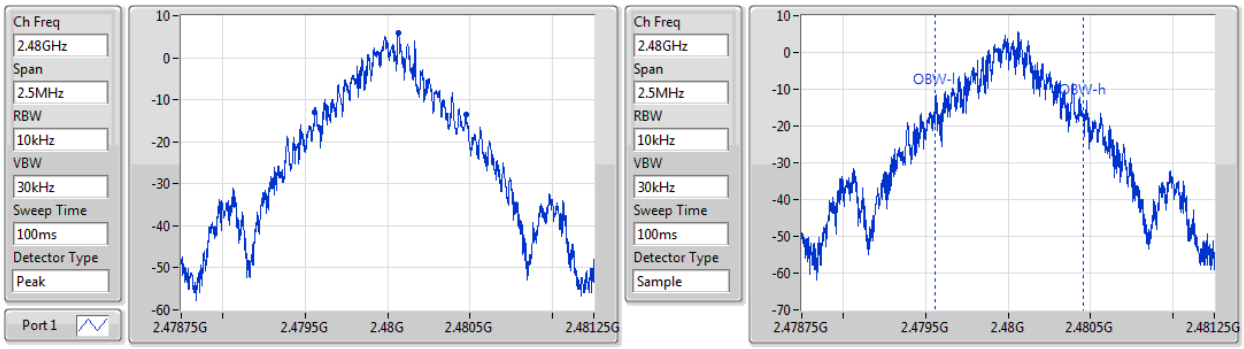


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
921.25k	2.440558G	2.441479G	900.8k	2.440559G	2.44146G	Inf	1

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

2480MHz

07/12/2017

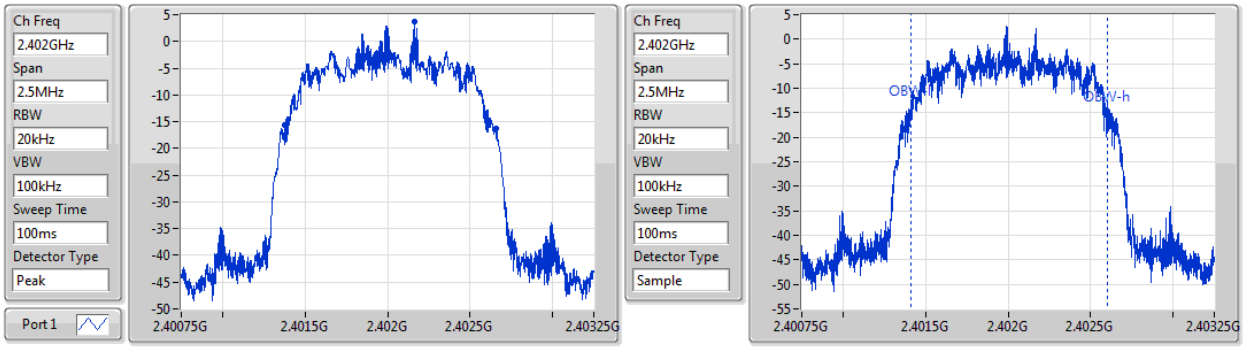


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
918.75k	2.479559G	2.480478G	897.051k	2.479558G	2.480455G	Inf	1

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

2402MHz

07/12/2017

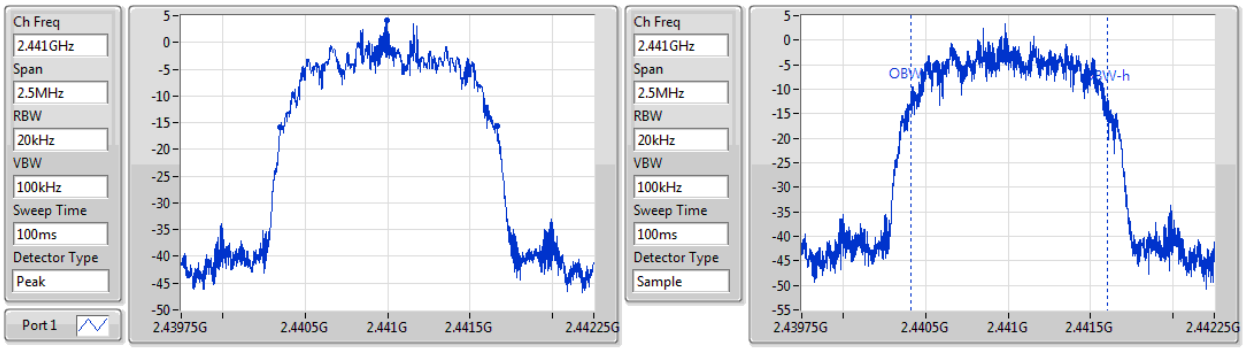


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.281M	2.401378G	2.402659G	1.188M	2.401414G	2.402602G	Inf	1

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

2441MHz

07/12/2017

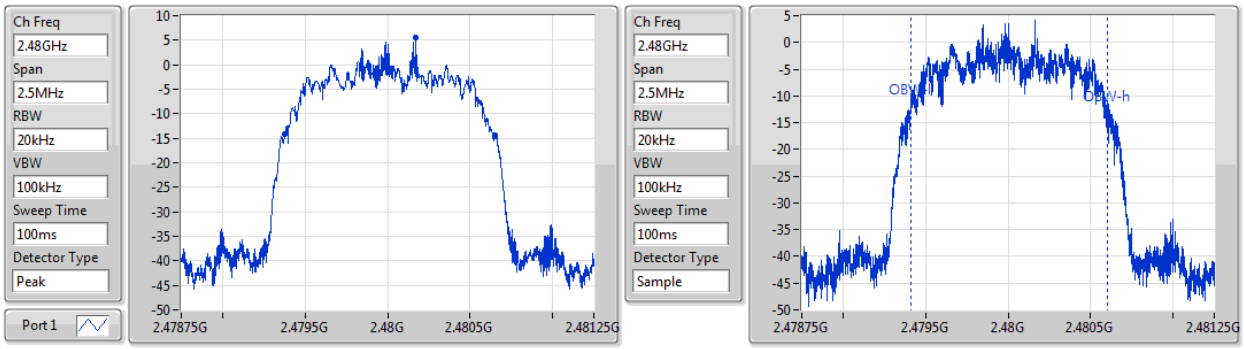


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.311M	2.440351G	2.441663G	1.189M	2.44041G	2.4416G	Inf	1

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

2480MHz

07/12/2017

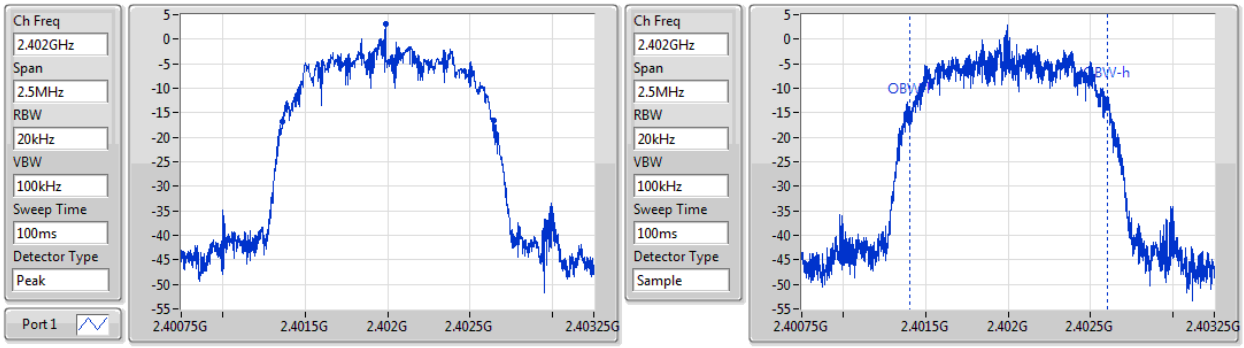


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.276M	2.479378G	2.480654G	1.188M	2.479413G	2.480601G	Inf	1

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

2402MHz

07/12/2017

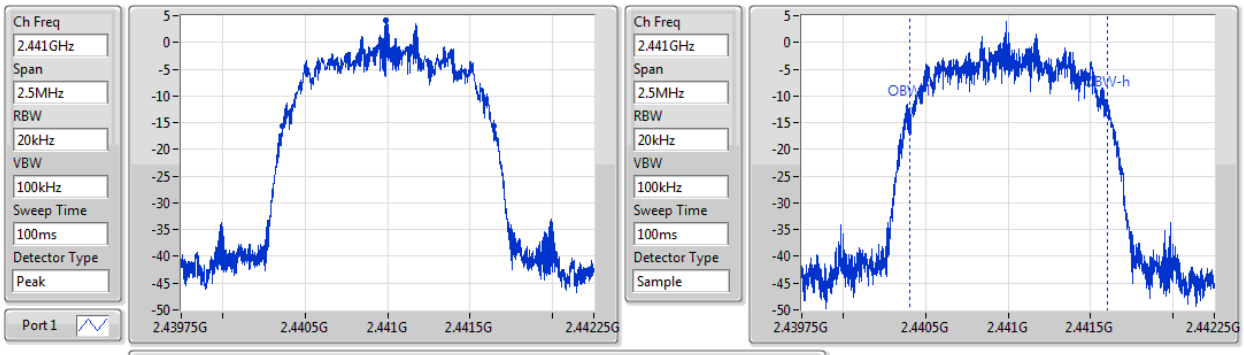


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.281M	2.401363G	2.402644G	1.196M	2.401408G	2.402603G	Inf	1

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

2441MHz

07/12/2017

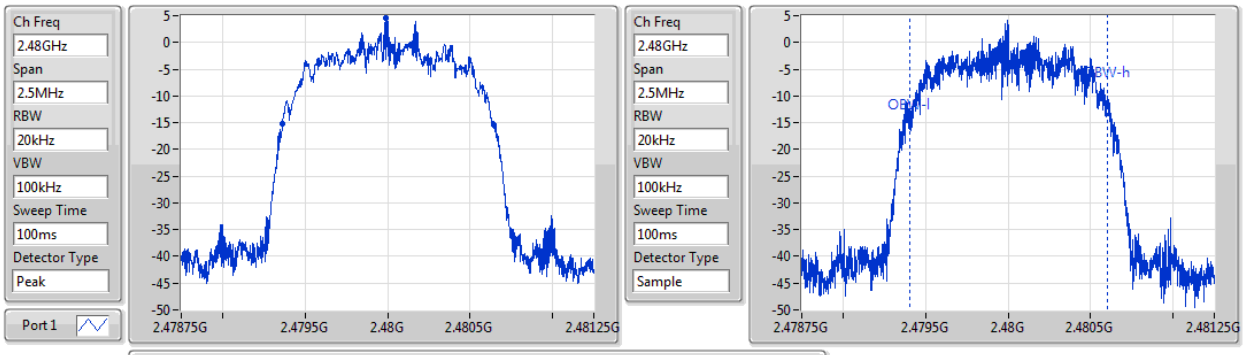


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.285M	2.440363G	2.441648G	1.198M	2.440405G	2.441603G	Inf	1

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

2480MHz

07/12/2017



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.285M	2.479363G	2.480648G	1.201M	2.479404G	2.480605G	Inf	1

Channel Separation-FS Result

Summary

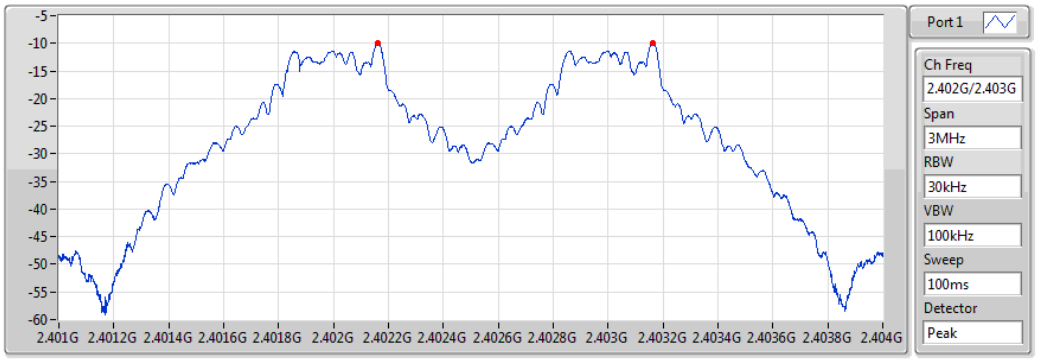
Mode	Max-Space (Hz)	Min-Space (Hz)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	1.002M	999k
BT-EDR(2Mbps)	1.0005M	999k
BT-EDR(3Mbps)	1.002M	1.0005M

Result

Mode	Result	Fl (Hz)	Fh (Hz)	Ch.Space (Hz)	Limit (Hz)
BT-BR(1Mbps)	-	-	-	-	-
2402MHz	Pass	2.402163G	2.403162G	999k	612.72k
2441MHz	Pass	2.441163G	2.442162G	999k	613.5525k
2480MHz	Pass	2.479161G	2.480163G	1.002M	611.8875k
BT-EDR(2Mbps)	-	-	-	-	-
2402MHz	Pass	2.402164G	2.403165G	1.0005M	853.146k
2441MHz	Pass	2.441164G	2.442165G	1.0005M	873.126k
2480MHz	Pass	2.479164G	2.480163G	999k	849.816k
BT-EDR(3Mbps)	-	-	-	-	-
2402MHz	Pass	2.401996G	2.402998G	1.002M	853.146k
2441MHz	Pass	2.440998G	2.441998G	1.0005M	855.81k
2480MHz	Pass	2.478996G	2.479998G	1.002M	855.81k

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

2.402G/2.403GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.402163G	2.403162G	999k	612.72k

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

2.441G/2.442GHz

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.441163G	2.442162G	999k	613.5525k

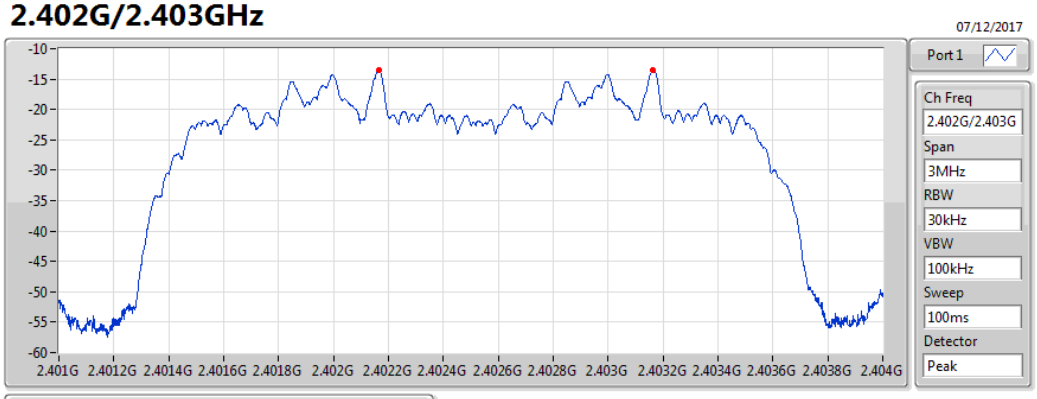
BT-BR(1Mbps) **Channel Separation**

2.48G/2.479GHz

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.479161G	2.480163G	1.002M	611.8875k

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

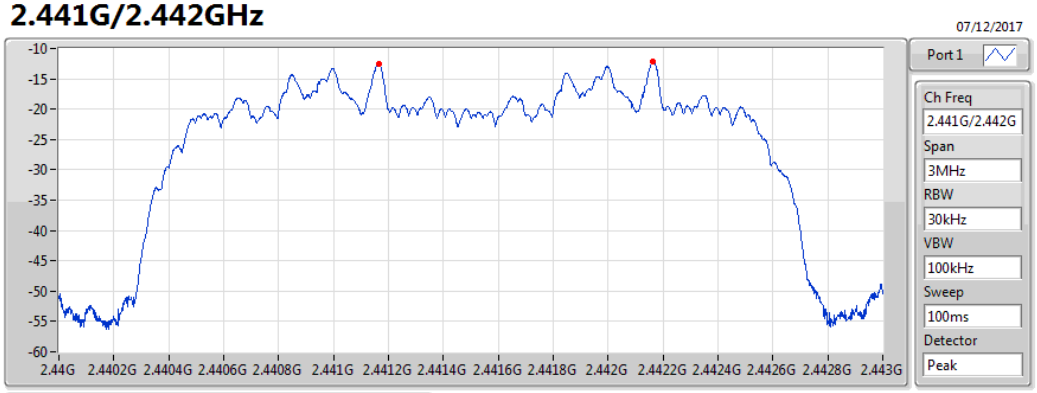
2.402G/2.403GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.402164G	2.403165G	1.0005M	853.146k

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

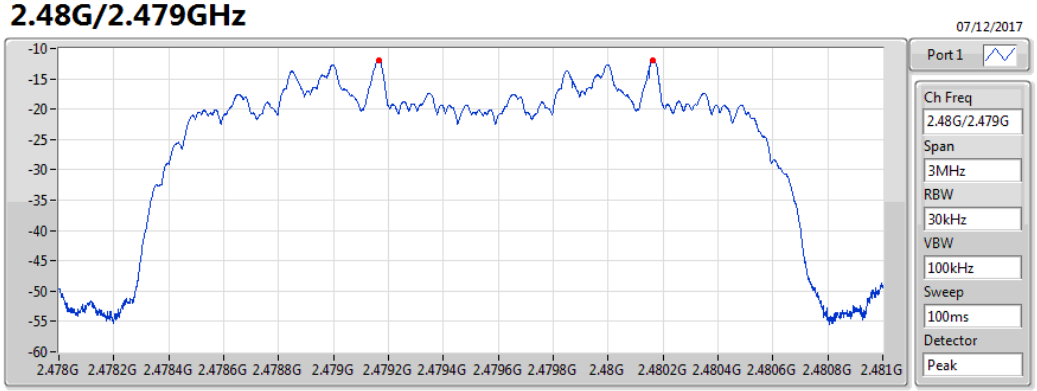
2.441G/2.442GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.441164G	2.442165G	1.0005M	873.126k

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

2.48G/2.479GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.479164G	2.480163G	999k	849.816k

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

2.402G/2.403GHz

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.401996G	2.402998G	1.002M	853.146k

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

2.441G/2.442GHz

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.440998G	2.441998G	1.0005M	855.81k

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

2.48G/2.479GHz

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.478996G	2.479998G	1.002M	855.81k

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	11.94	0.01563
BT-EDR(2Mbps)	8.68	0.00738
BT-EDR(3Mbps)	8.74	0.00748

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	3.52	10.47	21.00
2441MHz	Pass	3.52	11.44	21.00
2480MHz	Pass	3.52	11.94	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	3.52	7.08	21.00
2441MHz	Pass	3.52	8.09	21.00
2480MHz	Pass	3.52	8.68	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	3.52	7.04	21.00
2441MHz	Pass	3.52	8.14	21.00
2480MHz	Pass	3.52	8.74	21.00

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	12.38	0.01730
BT-EDR(2Mbps)	11.41	0.01384
BT-EDR(3Mbps)	11.76	0.01500

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	3.52	10.89	21.00
2441MHz	Pass	3.52	11.84	21.00
2480MHz	Pass	3.52	12.38	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	3.52	9.90	21.00
2441MHz	Pass	3.52	10.91	21.00
2480MHz	Pass	3.52	11.41	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	3.52	10.21	21.00
2441MHz	Pass	3.52	11.19	21.00
2480MHz	Pass	3.52	11.76	21.00

Summary

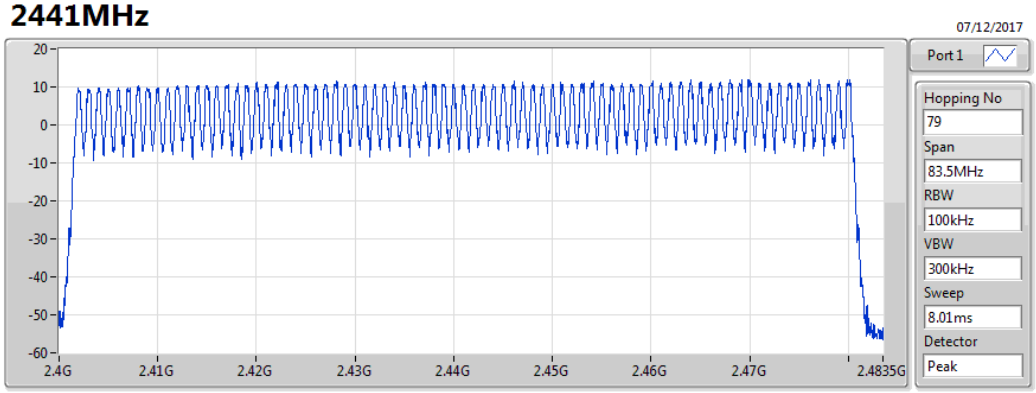
Mode	Max-Hop No
2.4-2.4835GHz	-
BT-BR(1Mbps)	79
BT-EDR(2Mbps)	79
BT-EDR(3Mbps)	79

Result

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

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

2441MHz

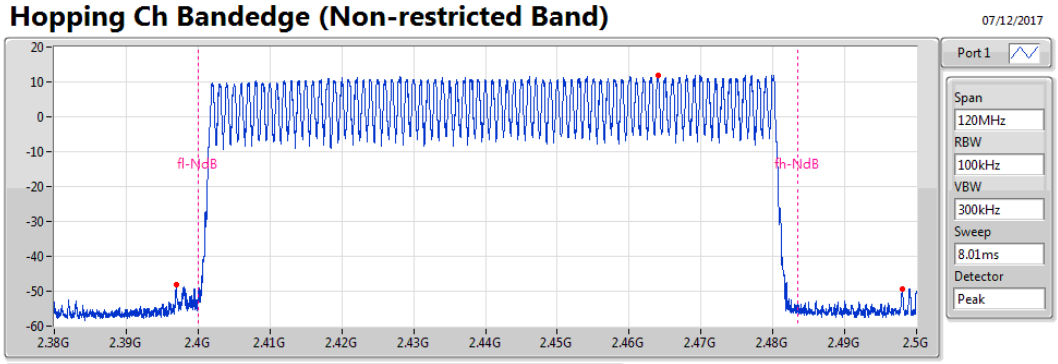


Hopping No	Limit
79	15

BT-BR(1Mbps)

2441MHz

Hopping Ch Bandedge (Non-restricted Band)

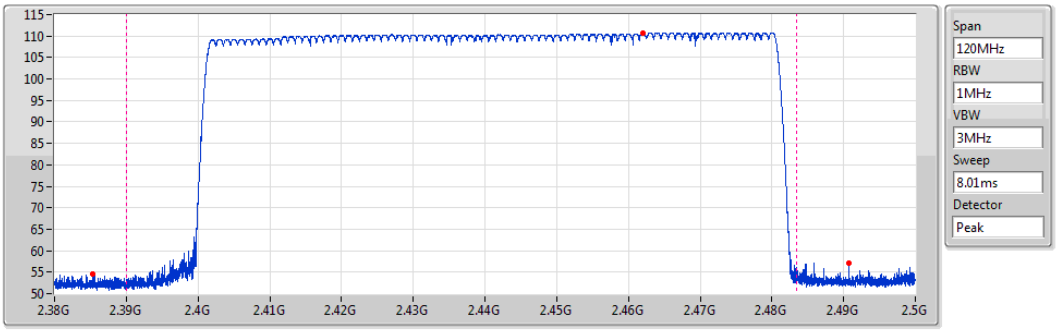


Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-8.17	2.464015G	11.83	2.39701G	-48.11	2.498005G	-49.28

BT-BR(1Mbps)

2441MHz

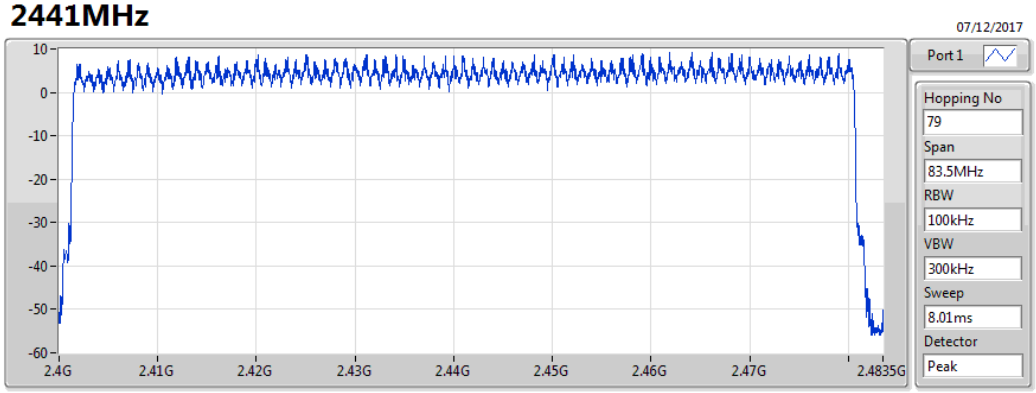
Hopping Ch Bandedge (Restricted Band)



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)
2.46205G	110.79	2.385385G	54.51	23.74	2.49073G	57.13	26.36	74	54	2.895	-30.77

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

2441MHz

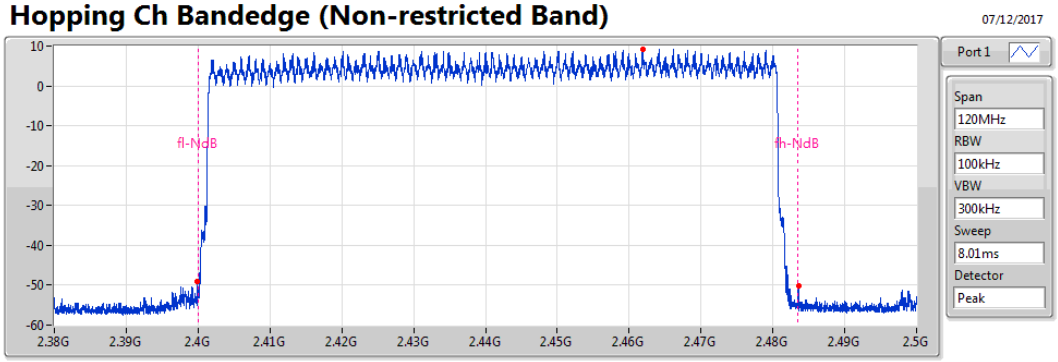


Hopping No	Limit
79	15

BT-EDR(2Mbps)

2441MHz

Hopping Ch Bandedge (Non-restricted Band)

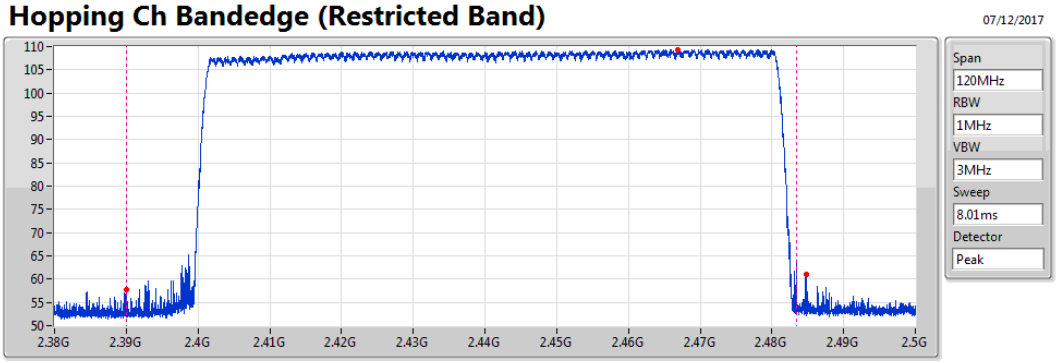


Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-10.89	2.46187G	9.11	2.39989G	-48.95	2.483545G	-50.17

BT-EDR(2Mbps)

2441MHz

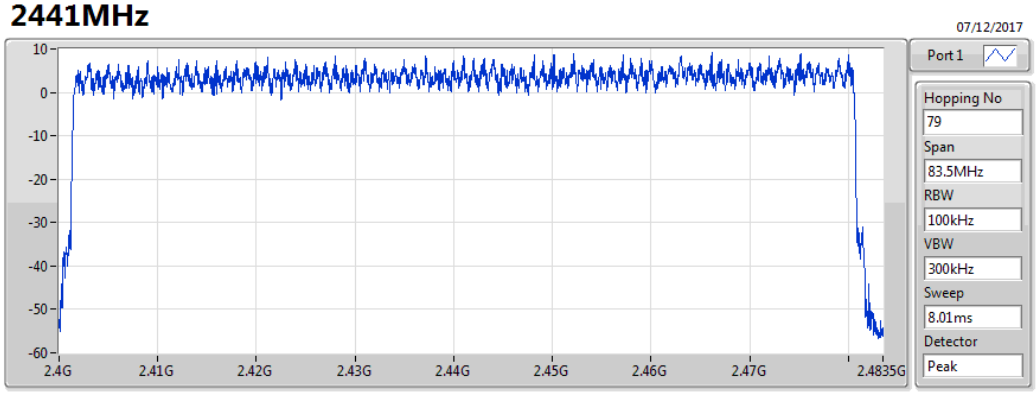
Hopping Ch Bandedge (Restricted Band)



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)
2.466925G	109.37	2.38996G	57.64	26.88	2.484775G	60.9	30.14	74	54	2.898	-30.76

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

2441MHz

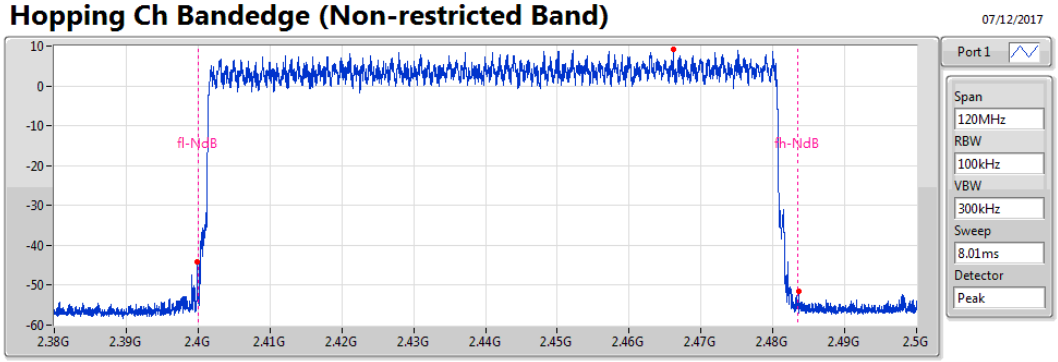


Hopping No	Limit
79	15

BT-EDR(3Mbps)

2441MHz

Hopping Ch Bandedge (Non-restricted Band)

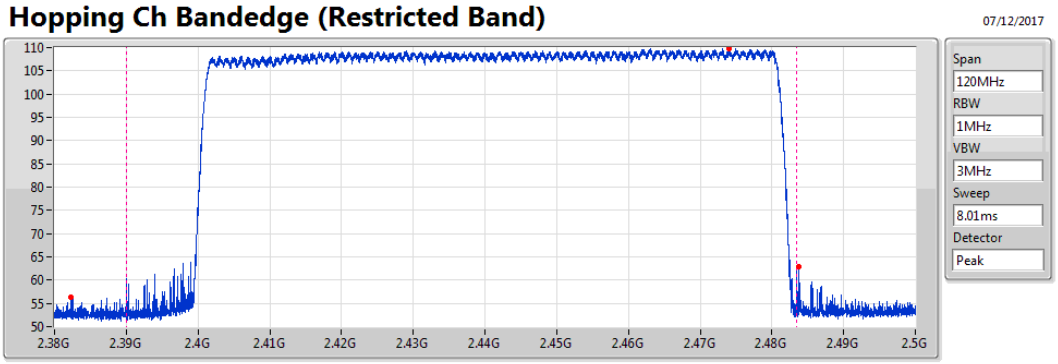


Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-10.94	2.46616G	9.06	2.399875G	-44.26	2.48362G	-51.53

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)
2.47405G	109.66	2.38234G	56.34	25.4	2.48377G	62.91	31.97	74	54	2.838	-30.94

Summary

Mode	Max-Dwell (s)
2.4-2.4835GHz	-
BT-BR(1Mbps)	308.607m
BT-EDR(2Mbps)	308.9268m
BT-EDR(3Mbps)	302.5308m

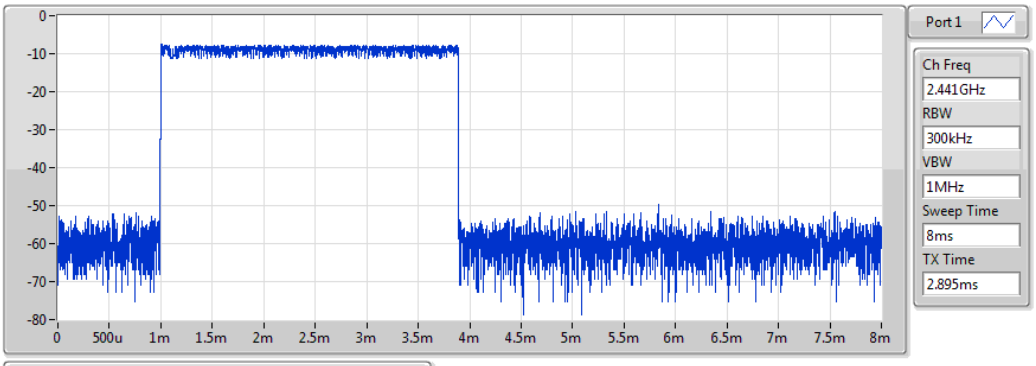
Result

Mode	Result	Period (s)	Dwell (s)	Limit (s)	Tx On (s)
BT-BR(1Mbps)	-	-	-	-	-
2441MHz	Pass	31.6	308.607m	400m	2.895m
BT-EDR(2Mbps)	-	-	-	-	-
2441MHz	Pass	31.6	308.9268m	400m	2.898m
BT-EDR(3Mbps)	-	-	-	-	-
2441MHz	Pass	31.6	302.5308m	400m	2.838m

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

2441MHz

07/12/2017

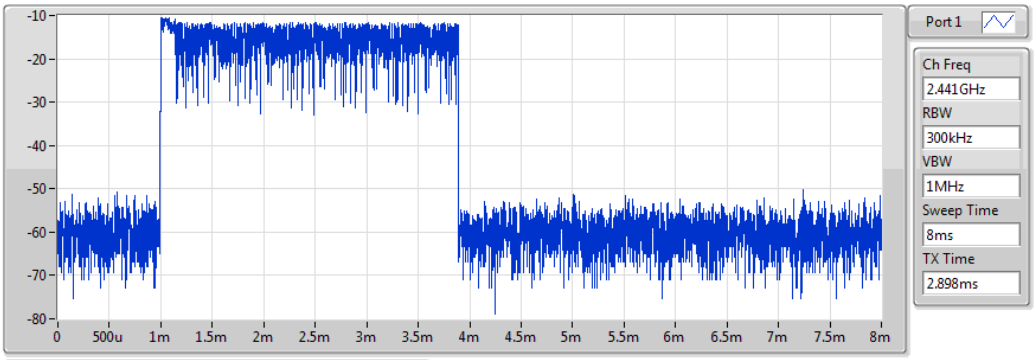


Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	308.607m	400m	2.895m

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

2441MHz

07/12/2017

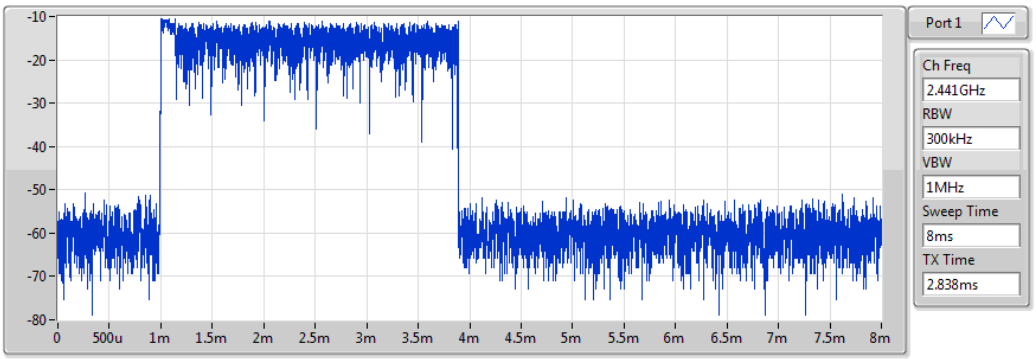


Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	308.9268m	400m	2.898m

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

2441MHz

07/12/2017



Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	302.5308m	400m	2.838m

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	2.402004G	9.52	-10.48	2.398G	-51.64	2.39986G	-44.76	2.484188G	-55.63	16.224974G	-49.39	1
BT-EDR(2Mbps)	Pass	2.40167G	5.14	-14.86	2.398G	-54.21	2.399972G	-45.16	2.484268G	-54.76	16.922923G	-49.41	1
BT-EDR(3Mbps)	Pass	2.402004G	4.46	-15.54	868.272M	-56.08	2.399916G	-44.28	2.483932G	-55.94	23.564701G	-49.02	1

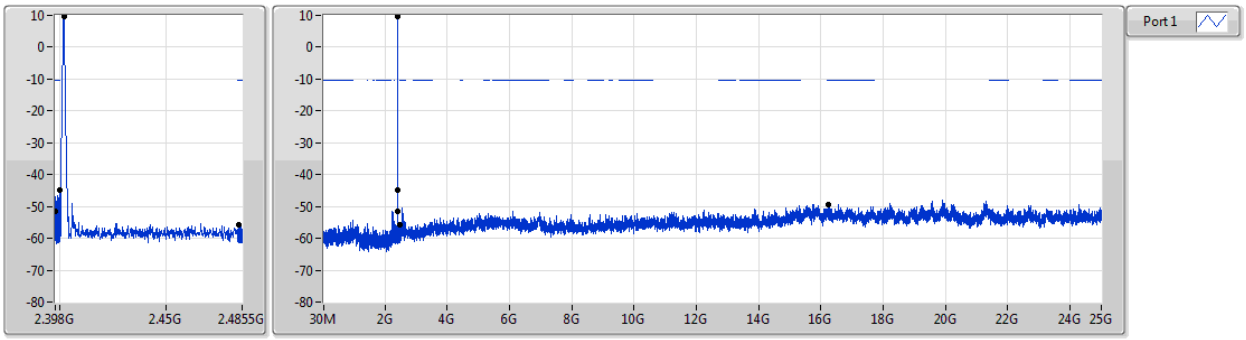
Result

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	2.402004G	9.52	-10.48	2.398G	-51.64	2.39986G	-44.76	2.484188G	-55.63	16.224974G	-49.39	1
2441MHz	Pass	2.440915G	10.20	-9.80	832.752M	-55.59	2.398664G	-56.33	2.483956G	-55.06	15.192121G	-49.62	1
2480MHz	Pass	2.479993G	10.88	-9.12	677.648M	-55.03	2.399508G	-56.34	2.483568G	-49.18	15.178049G	-49.50	1
BT-EDR(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40167G	5.14	-14.86	2.398G	-54.21	2.399972G	-45.16	2.484268G	-54.76	16.922923G	-49.41	1
2441MHz	Pass	2.441082G	5.17	-14.83	774.736M	-54.61	2.398128G	-55.74	2.484692G	-55.91	16.571134G	-48.55	1
2480MHz	Pass	2.479993G	5.51	-14.49	861.168M	-55.11	2.399072G	-56.53	2.483528G	-49.40	16.28126G	-47.61	1
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.402004G	4.46	-15.54	868.272M	-56.08	2.399916G	-44.28	2.483932G	-55.94	23.564701G	-49.02	1
2441MHz	Pass	2.440581G	1.23	-18.77	816.176M	-56.18	2.398644G	-56.82	2.485352G	-55.16	16.303774G	-49.22	1
2480MHz	Pass	2.479993G	5.71	-14.29	174.448M	-55.78	2.398212G	-56.05	2.484368G	-49.67	16.224974G	-49.28	1

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

2402MHz

07/12/2017

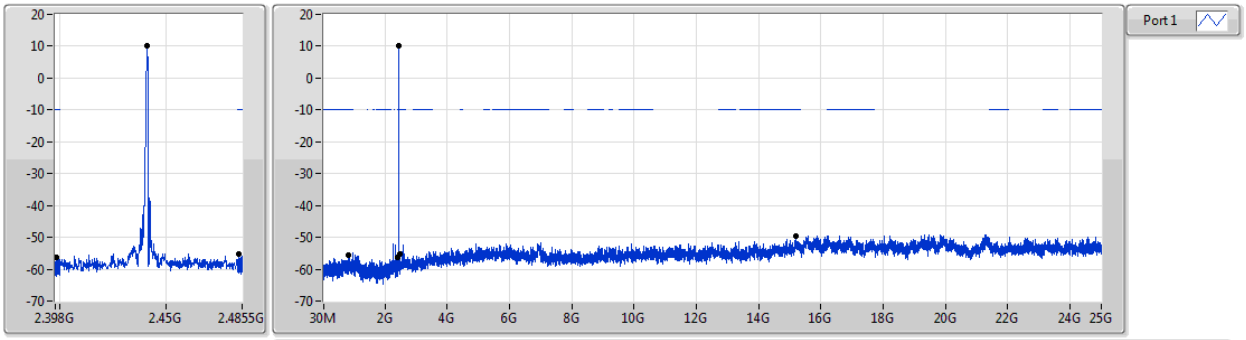


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.402004G	9.52	-10.48	2.398G	-51.64	2.39986G	-44.76	2.484188G	-55.63	16.224974G	-49.39	1

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

2441MHz

07/12/2017

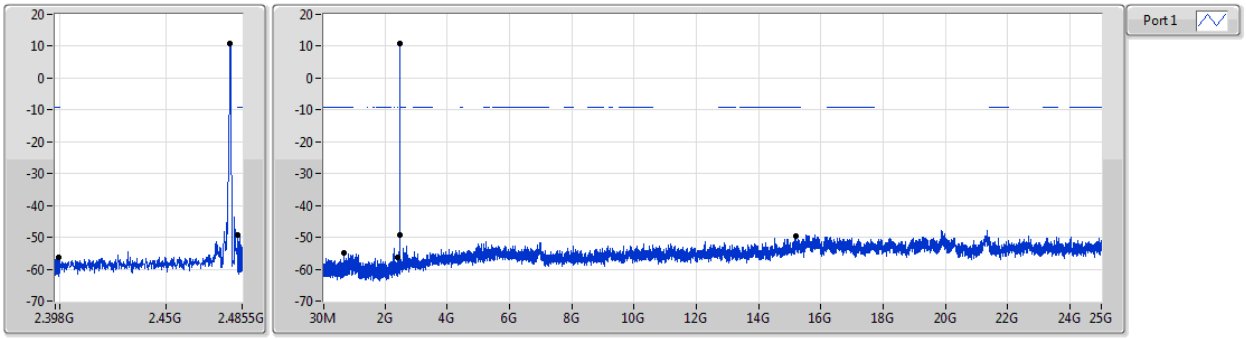


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.440915G	10.20	-9.80	832.752M	-55.59	2.398664G	-56.33	2.483956G	-55.06	15.192121G	-49.62	1

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

2480MHz

07/12/2017

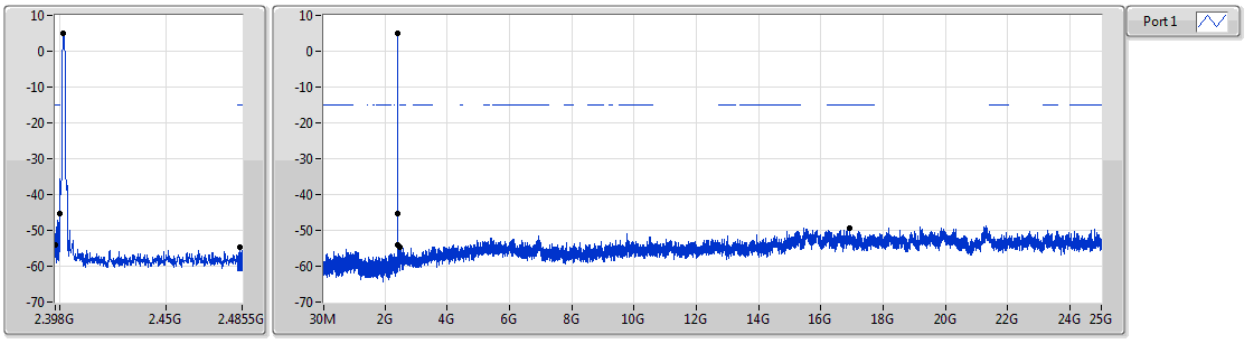


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.479993G	10.88	-9.12	677.648M	-55.03	2.399508G	-56.34	2.483568G	-49.18	15.178049G	-49.50	1

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

2402MHz

07/12/2017

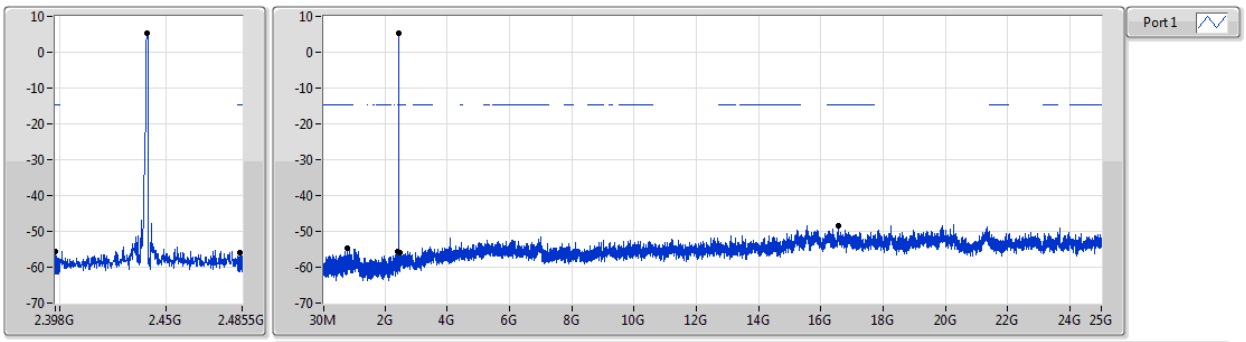


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40167G	5.14	-14.86	2.398G	-54.21	2.399972G	-45.16	2.484268G	-54.76	16.922923G	-49.41	1

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

2441MHz

07/12/2017

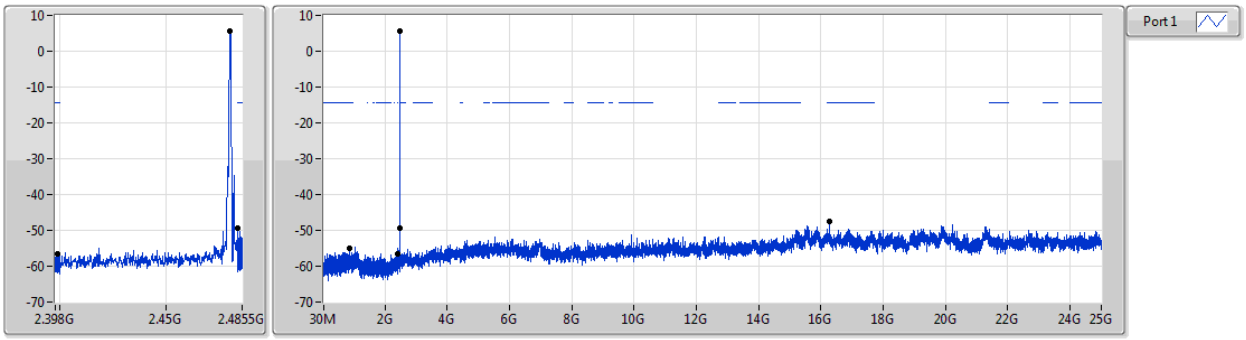


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.441082G	5.17	-14.83	774.736M	-54.61	2.398128G	-55.74	2.484692G	-55.91	16.571134G	-48.55	1

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

2480MHz

07/12/2017

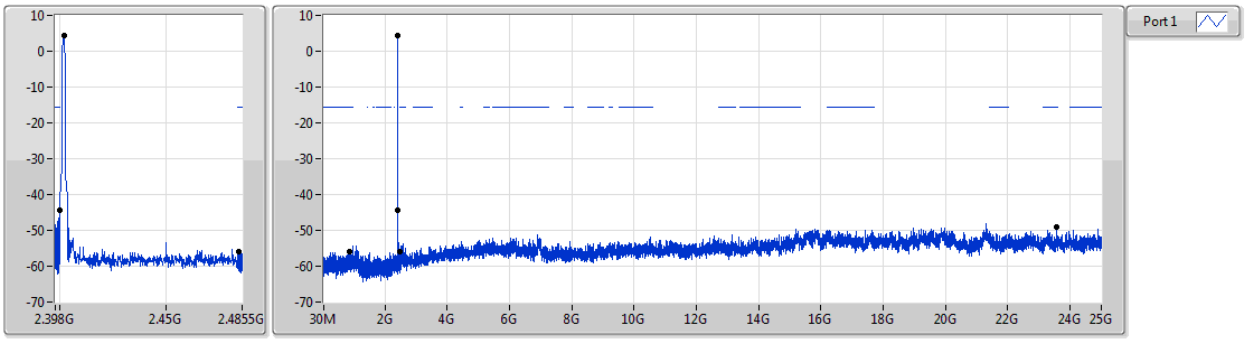


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.479993G	5.51	-14.49	861.168M	-55.11	2.399072G	-56.53	2.483528G	-49.40	16.28126G	-47.61	1

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

2402MHz

07/12/2017

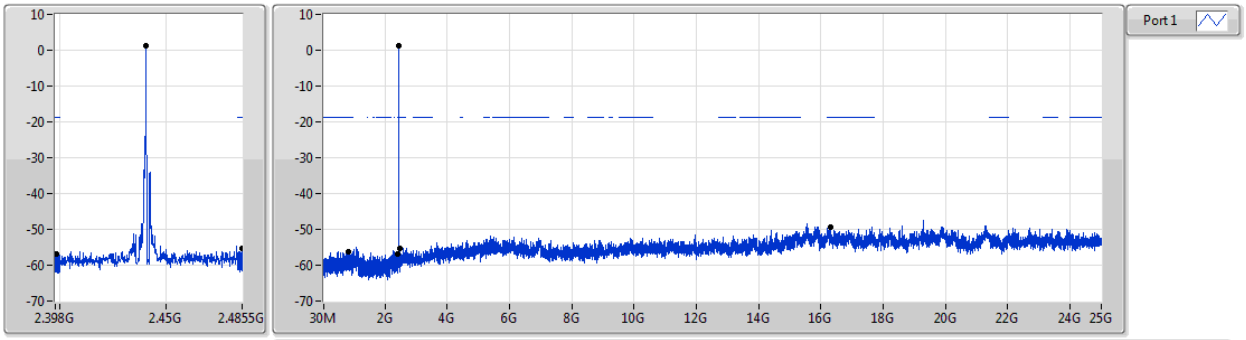


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.402004G	4.46	-15.54	868.272M	-56.08	2.399916G	-44.28	2.483932G	-55.94	23.564701G	-49.02	1

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

2441MHz

07/12/2017

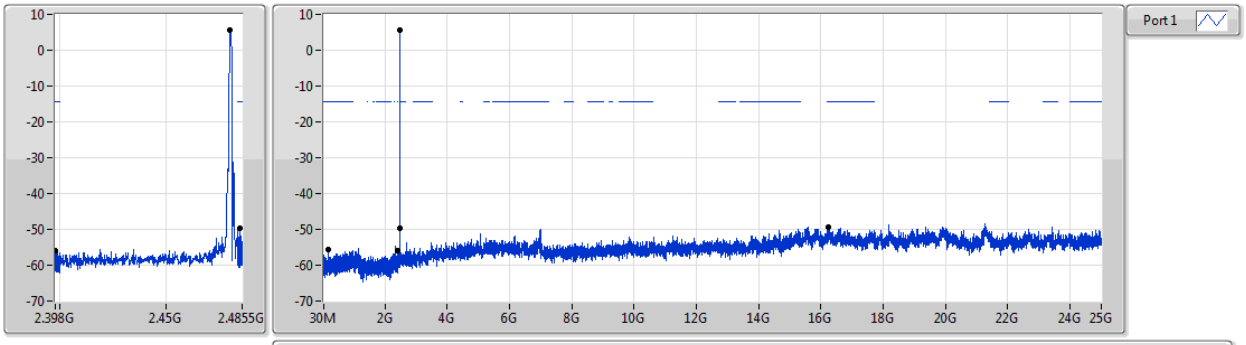


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.440581G	1.23	-18.77	816.176M	-56.18	2.398644G	-56.82	2.485352G	-55.16	16.303774G	-49.22	1

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

2480MHz

07/12/2017



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	5.71	-14.29	174.448M	-55.78	2.398212G	-56.05	2.484368G	-49.67	16.224974G	-49.28	1

Summary

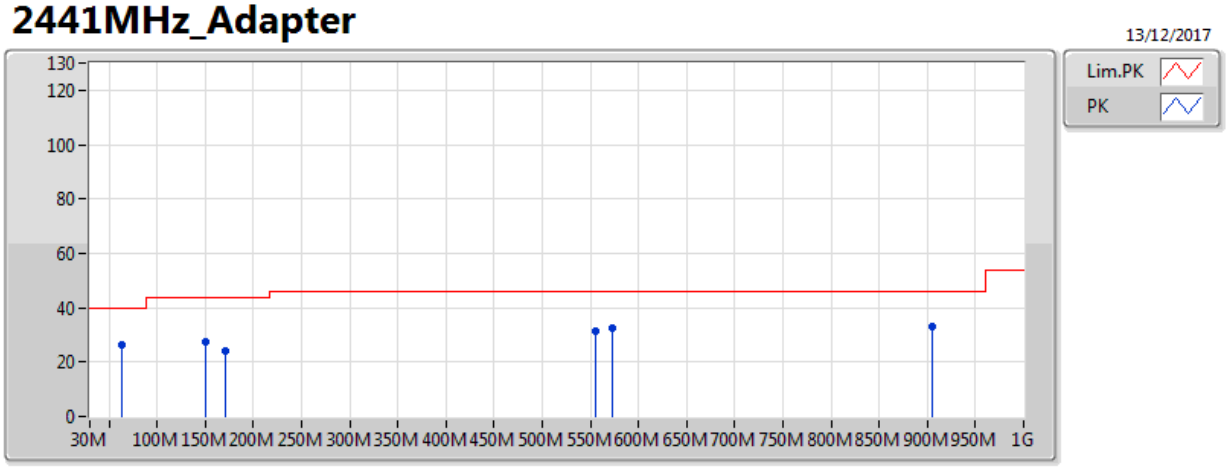
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	PK	903M	41.61	46.00	-4.39	2.86	3	Horizontal	0	1.00	-

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	61.04M	23.12	40.00	-16.88	-14.33	3	Horizontal	0	1.00	-
2441MHz	Pass	PK	171.62M	23.56	43.50	-19.94	-9.85	3	Horizontal	0	1.00	-
2441MHz	Pass	PK	229.82M	27.31	46.00	-18.69	-9.04	3	Horizontal	0	1.00	-
2441MHz	Pass	PK	342.34M	28.99	46.00	-17.01	-4.94	3	Horizontal	0	1.00	-
2441MHz	Pass	PK	629.46M	31.23	46.00	-14.77	-0.02	3	Horizontal	0	1.00	-
2441MHz	Pass	PK	903M	41.61	46.00	-4.39	2.86	3	Horizontal	0	1.00	-
2441MHz	Pass	PK	62.98M	26.30	40.00	-13.70	-14.33	3	Vertical	360	1.00	-
2441MHz	Pass	PK	150.28M	27.18	43.50	-16.32	-9.67	3	Vertical	360	1.00	-
2441MHz	Pass	PK	171.62M	23.97	43.50	-19.53	-9.85	3	Vertical	360	1.00	-
2441MHz	Pass	PK	555.74M	31.11	46.00	-14.89	-0.45	3	Vertical	360	1.00	-
2441MHz	Pass	PK	573.2M	32.28	46.00	-13.72	-0.68	3	Vertical	360	1.00	-
2441MHz	Pass	PK	904.94M	33.17	46.00	-12.83	2.88	3	Vertical	360	1.00	-

BT-BR(1Mbps)

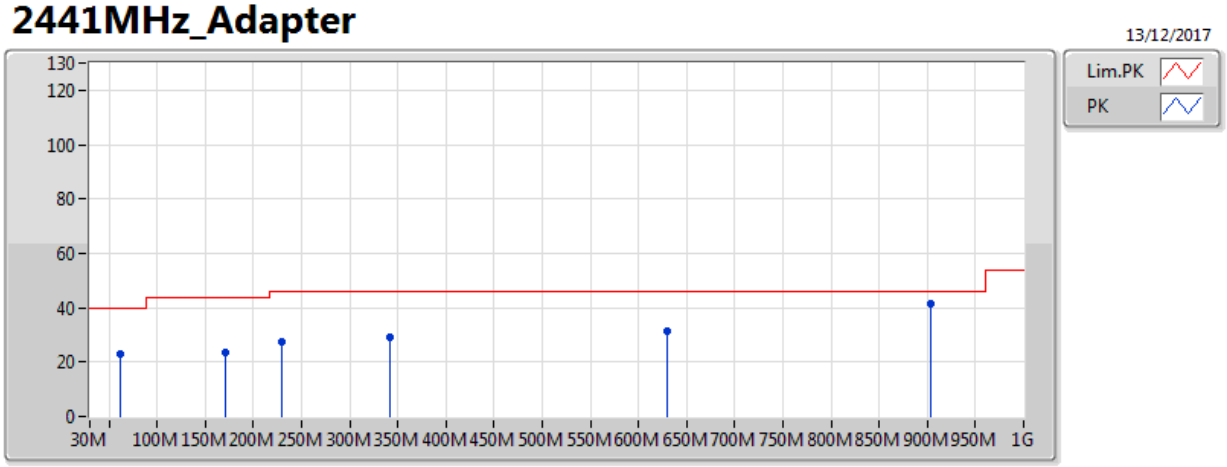
2441MHz_Adapter



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
PK	62.98M	26.30	40.00	-13.70	-14.33	3	Vertical	360	1.00	-	40.63	11.48	1.68	27.49
PK	150.28M	27.18	43.50	-16.32	-9.67	3	Vertical	360	1.00	-	36.85	15.37	2.10	27.14
PK	171.62M	23.97	43.50	-19.53	-9.85	3	Vertical	360	1.00	-	33.82	14.68	2.52	27.04
PK	555.74M	31.11	46.00	-14.89	-0.45	3	Vertical	360	1.00	-	31.56	23.80	3.67	27.92
PK	573.2M	32.28	46.00	-13.72	-0.68	3	Vertical	360	1.00	-	32.96	23.58	3.69	27.95
PK	904.94M	33.17	46.00	-12.83	2.88	3	Vertical	360	1.00	-	30.29	25.56	4.80	27.49

BT-BR(1Mbps)

2441MHz_Adapter



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
PK	61.04M	23.12	40.00	-16.88	-14.33	3	Horizontal	0	1.00	-	37.45	11.48	1.68	27.49
PK	171.62M	23.56	43.50	-19.94	-9.85	3	Horizontal	0	1.00	-	33.41	14.68	2.52	27.04
PK	229.82M	27.31	46.00	-18.69	-9.04	3	Horizontal	0	1.00	-	36.35	15.29	2.51	26.84
PK	342.34M	28.99	46.00	-17.01	-4.94	3	Horizontal	0	1.00	-	33.93	19.11	2.89	26.94
PK	629.46M	31.23	46.00	-14.77	-0.02	3	Horizontal	0	1.00	-	31.25	23.97	3.99	27.98
PK	903M	41.61	46.00	-4.39	2.86	3	Horizontal	0	1.00	-	38.75	25.55	4.79	27.49

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	2.483502G	46.51	54.00	-7.49	30.79	3	Vertical	305	1.06	-
BT-EDR(2Mbps)	Pass	AV	2.4836G	45.58	54.00	-8.42	30.79	3	Vertical	304	1.16	-
BT-EDR(3Mbps)	Pass	AV	2.483502G	45.35	54.00	-8.65	30.79	3	Horizontal	310	3.18	-

Result

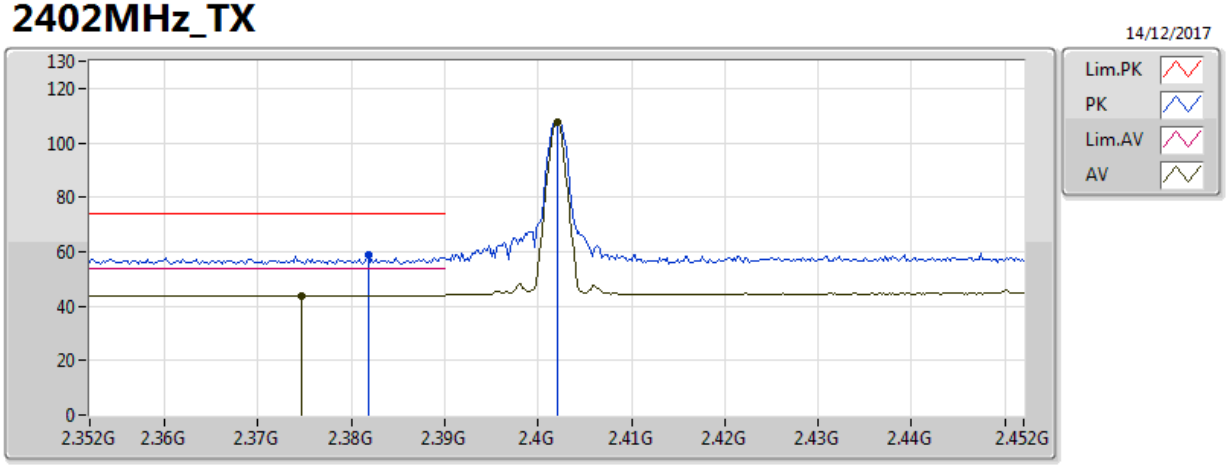
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3548G	44.00	54.00	-10.00	30.33	3	Horizontal	312	1.37	-
2402MHz	Pass	AV	2.402G	106.24	Inf	-Inf	30.50	3	Horizontal	312	1.37	-
2402MHz	Pass	PK	2.3892G	58.49	74.00	-15.51	30.45	3	Horizontal	312	1.37	-
2402MHz	Pass	PK	2.4022G	106.88	Inf	-Inf	30.50	3	Horizontal	312	1.37	-
2402MHz	Pass	AV	2.3746G	43.95	54.00	-10.05	30.40	3	Vertical	307	1.11	-
2402MHz	Pass	AV	2.402G	107.31	Inf	-Inf	30.50	3	Vertical	307	1.11	-
2402MHz	Pass	PK	2.3818G	58.65	74.00	-15.35	30.43	3	Vertical	307	1.11	-
2402MHz	Pass	PK	2.402G	107.86	Inf	-Inf	30.50	3	Vertical	307	1.11	-
2402MHz	Pass	AV	4.804G	33.75	54.00	-20.25	5.85	3	Horizontal	284	1.01	-
2402MHz	Pass	PK	4.804G	47.02	74.00	-26.98	5.85	3	Horizontal	284	1.01	-
2402MHz	Pass	AV	4.804G	33.90	54.00	-20.10	5.85	3	Vertical	349	1.13	-
2402MHz	Pass	PK	4.804G	46.74	74.00	-27.26	5.85	3	Vertical	349	1.13	-
2441MHz	Pass	AV	2.377G	44.06	54.00	-9.94	30.41	3	Horizontal	312	1.31	-
2441MHz	Pass	AV	2.441G	107.71	Inf	-Inf	30.64	3	Horizontal	312	1.31	-
2441MHz	Pass	AV	2.489G	45.02	54.00	-8.98	30.81	3	Horizontal	312	1.31	-
2441MHz	Pass	PK	2.3886G	57.31	74.00	-16.69	30.45	3	Horizontal	312	1.31	-
2441MHz	Pass	PK	2.441G	108.46	Inf	-Inf	30.64	3	Horizontal	312	1.31	-
2441MHz	Pass	PK	2.499998G	58.06	74.00	-15.94	30.85	3	Horizontal	312	1.31	-
2441MHz	Pass	AV	2.345G	44.17	54.00	-9.83	30.30	3	Vertical	305	1.05	-
2441MHz	Pass	AV	2.441G	108.36	Inf	-Inf	30.64	3	Vertical	305	1.05	-
2441MHz	Pass	AV	2.489G	45.24	54.00	-8.76	30.81	3	Vertical	305	1.05	-
2441MHz	Pass	PK	2.3798G	58.30	74.00	-15.70	30.42	3	Vertical	305	1.05	-
2441MHz	Pass	PK	2.441G	109.19	Inf	-Inf	30.64	3	Vertical	305	1.05	-
2441MHz	Pass	PK	2.4934G	58.97	74.00	-15.03	30.83	3	Vertical	305	1.05	-
2441MHz	Pass	AV	4.882G	32.19	54.00	-21.81	6.03	3	Horizontal	283	1.04	-
2441MHz	Pass	PK	4.882G	44.72	74.00	-29.28	6.03	3	Horizontal	283	1.04	-
2441MHz	Pass	AV	4.882G	32.53	54.00	-21.47	6.03	3	Vertical	8	2.77	-
2441MHz	Pass	PK	4.882G	46.20	74.00	-27.80	6.03	3	Vertical	8	2.77	-
2480MHz	Pass	AV	2.48G	107.27	Inf	-Inf	30.78	3	Horizontal	309	3.19	-
2480MHz	Pass	AV	2.483502G	46.37	54.00	-7.63	30.79	3	Horizontal	309	3.19	-
2480MHz	Pass	PK	2.48G	108.13	Inf	-Inf	30.78	3	Horizontal	309	3.19	-
2480MHz	Pass	PK	2.4838G	62.70	74.00	-11.30	30.79	3	Horizontal	309	3.19	-
2480MHz	Pass	AV	2.48G	107.48	Inf	-Inf	30.78	3	Vertical	305	1.06	-
2480MHz	Pass	AV	2.483502G	46.51	54.00	-7.49	30.79	3	Vertical	305	1.06	-
2480MHz	Pass	PK	2.48G	108.19	Inf	-Inf	30.78	3	Vertical	305	1.06	-
2480MHz	Pass	PK	2.4836G	63.22	74.00	-10.78	30.79	3	Vertical	305	1.06	-
2480MHz	Pass	AV	4.96G	32.32	54.00	-21.68	6.21	3	Horizontal	299	1.50	-
2480MHz	Pass	PK	4.96G	46.34	74.00	-27.66	6.21	3	Horizontal	299	1.50	-
2480MHz	Pass	AV	4.96G	32.31	54.00	-21.69	6.21	3	Vertical	343	3.14	-
2480MHz	Pass	PK	4.96G	45.96	74.00	-28.04	6.21	3	Vertical	343	3.14	-
BT-EDR(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3888G	44.08	54.00	-9.92	30.45	3	Horizontal	312	1.39	-
2402MHz	Pass	AV	2.4024G	103.07	Inf	-Inf	30.50	3	Horizontal	312	1.39	-
2402MHz	Pass	PK	2.3796G	57.79	74.00	-16.21	30.42	3	Horizontal	312	1.39	-
2402MHz	Pass	PK	2.4022G	104.95	Inf	-Inf	30.50	3	Horizontal	312	1.39	-
2402MHz	Pass	AV	2.3882G	44.05	54.00	-9.95	30.45	3	Vertical	306	1.00	-
2402MHz	Pass	AV	2.4024G	104.04	Inf	-Inf	30.50	3	Vertical	306	1.00	-

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	2.3808G	58.41	74.00	-15.59	30.42	3	Vertical	306	1.00	-
2402MHz	Pass	PK	2.4022G	105.94	Inf	-Inf	30.50	3	Vertical	306	1.00	-
2441MHz	Pass	AV	2.345G	44.04	54.00	-9.96	30.30	3	Horizontal	312	2.98	-
2441MHz	Pass	AV	2.4414G	104.31	Inf	-Inf	30.64	3	Horizontal	312	2.98	-
2441MHz	Pass	AV	2.4886G	45.05	54.00	-8.95	30.81	3	Horizontal	312	2.98	-
2441MHz	Pass	PK	2.3814G	58.20	74.00	-15.80	30.42	3	Horizontal	312	2.98	-
2441MHz	Pass	PK	2.4414G	106.13	Inf	-Inf	30.64	3	Horizontal	312	2.98	-
2441MHz	Pass	PK	2.4978G	58.59	74.00	-15.41	30.84	3	Horizontal	312	2.98	-
2441MHz	Pass	AV	2.3774G	44.08	54.00	-9.92	30.41	3	Vertical	305	1.20	-
2441MHz	Pass	AV	2.4414G	104.86	Inf	-Inf	30.64	3	Vertical	305	1.20	-
2441MHz	Pass	AV	2.4894G	45.18	54.00	-8.82	30.81	3	Vertical	305	1.20	-
2441MHz	Pass	PK	2.379G	58.45	74.00	-15.55	30.42	3	Vertical	305	1.20	-
2441MHz	Pass	PK	2.441G	106.69	Inf	-Inf	30.64	3	Vertical	305	1.20	-
2441MHz	Pass	PK	2.4946G	58.89	74.00	-15.11	30.83	3	Vertical	305	1.20	-
2480MHz	Pass	AV	2.4804G	104.21	Inf	-Inf	30.78	3	Horizontal	308	3.19	-
2480MHz	Pass	AV	2.4836G	45.49	54.00	-8.51	30.79	3	Horizontal	308	3.19	-
2480MHz	Pass	PK	2.4802G	106.15	Inf	-Inf	30.78	3	Horizontal	308	3.19	-
2480MHz	Pass	PK	2.484G	60.99	74.00	-13.01	30.79	3	Horizontal	308	3.19	-
2480MHz	Pass	AV	2.4804G	104.26	Inf	-Inf	30.78	3	Vertical	304	1.16	-
2480MHz	Pass	AV	2.4836G	45.58	54.00	-8.42	30.79	3	Vertical	304	1.16	-
2480MHz	Pass	PK	2.4802G	106.24	Inf	-Inf	30.78	3	Vertical	304	1.16	-
2480MHz	Pass	PK	2.4836G	60.79	74.00	-13.21	30.79	3	Vertical	304	1.16	-
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3852G	44.03	54.00	-9.97	30.44	3	Horizontal	312	1.38	-
2402MHz	Pass	AV	2.402G	99.99	Inf	-Inf	30.50	3	Horizontal	312	1.38	-
2402MHz	Pass	PK	2.3834G	58.26	74.00	-15.74	30.43	3	Horizontal	312	1.38	-
2402MHz	Pass	PK	2.4018G	104.78	Inf	-Inf	30.50	3	Horizontal	312	1.38	-
2402MHz	Pass	AV	2.3872G	44.09	54.00	-9.91	30.45	3	Vertical	304	1.41	-
2402MHz	Pass	AV	2.4016G	100.49	Inf	-Inf	30.50	3	Vertical	304	1.41	-
2402MHz	Pass	PK	2.3896G	59.53	74.00	-14.47	30.45	3	Vertical	304	1.41	-
2402MHz	Pass	PK	2.4018G	105.08	Inf	-Inf	30.50	3	Vertical	304	1.41	-
2441MHz	Pass	AV	2.3454G	44.01	54.00	-9.99	30.30	3	Horizontal	311	1.31	-
2441MHz	Pass	AV	2.4406G	101.90	Inf	-Inf	30.64	3	Horizontal	311	1.31	-
2441MHz	Pass	AV	2.4978G	45.03	54.00	-8.97	30.84	3	Horizontal	311	1.31	-
2441MHz	Pass	PK	2.381G	57.74	74.00	-16.26	30.42	3	Horizontal	311	1.31	-
2441MHz	Pass	PK	2.441G	106.22	Inf	-Inf	30.64	3	Horizontal	311	1.31	-
2441MHz	Pass	PK	2.4986G	58.36	74.00	-15.64	30.84	3	Horizontal	311	1.31	-
2441MHz	Pass	AV	2.3454G	44.03	54.00	-9.97	30.30	3	Vertical	310	1.49	-
2441MHz	Pass	AV	2.4406G	101.68	Inf	-Inf	30.64	3	Vertical	310	1.49	-
2441MHz	Pass	AV	2.4886G	45.04	54.00	-8.96	30.81	3	Vertical	310	1.49	-
2441MHz	Pass	PK	2.347G	58.03	74.00	-15.97	30.30	3	Vertical	310	1.49	-
2441MHz	Pass	PK	2.441G	106.17	Inf	-Inf	30.64	3	Vertical	310	1.49	-
2441MHz	Pass	PK	2.4866G	58.22	74.00	-15.78	30.80	3	Vertical	310	1.49	-
2480MHz	Pass	AV	2.4796G	101.45	Inf	-Inf	30.78	3	Horizontal	310	3.18	-
2480MHz	Pass	AV	2.483502G	45.35	54.00	-8.65	30.79	3	Horizontal	310	3.18	-
2480MHz	Pass	PK	2.4798G	105.83	Inf	-Inf	30.78	3	Horizontal	310	3.18	-
2480MHz	Pass	PK	2.484G	59.95	74.00	-14.05	30.79	3	Horizontal	310	3.18	-
2480MHz	Pass	AV	2.4796G	101.24	Inf	-Inf	30.78	3	Vertical	307	1.16	-
2480MHz	Pass	AV	2.4852G	45.23	54.00	-8.77	30.80	3	Vertical	307	1.16	-

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	2.48G	105.62	Inf	-Inf	30.78	3	Vertical	307	1.16	-
2480MHz	Pass	PK	2.4836G	59.34	74.00	-14.66	30.79	3	Vertical	307	1.16	-

BT-BR(1Mbps)

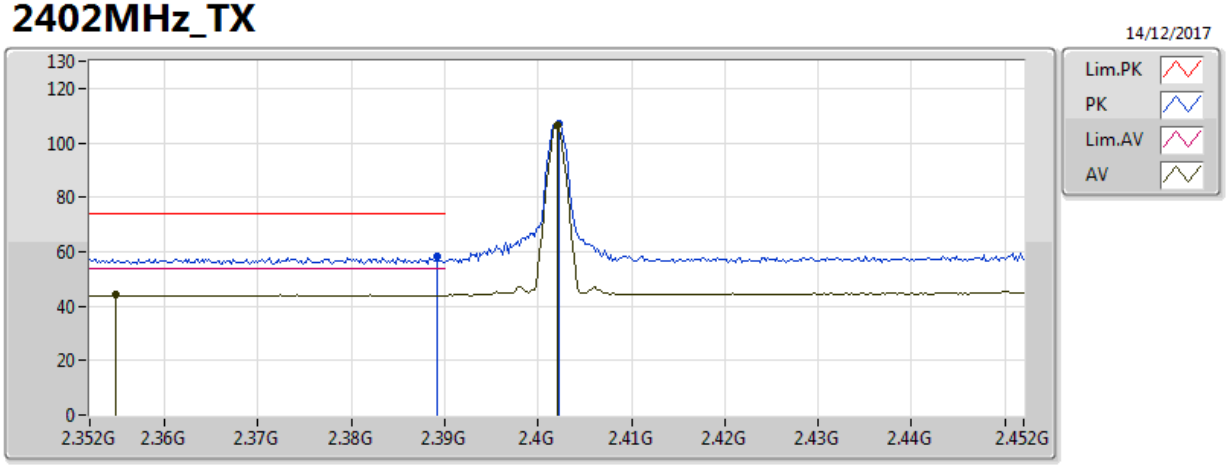
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3746G	43.95	54.00	-10.05	30.40	3	Vertical	307	1.11	-	13.55	27.17	3.23	-
AV	2.402G	107.31	Inf	-Inf	30.50	3	Vertical	307	1.11	-	76.82	27.25	3.25	-
PK	2.3818G	58.65	74.00	-15.35	30.43	3	Vertical	307	1.11	-	28.22	27.19	3.23	-
PK	2.402G	107.86	Inf	-Inf	30.50	3	Vertical	307	1.11	-	77.37	27.25	3.25	-

BT-BR(1Mbps)

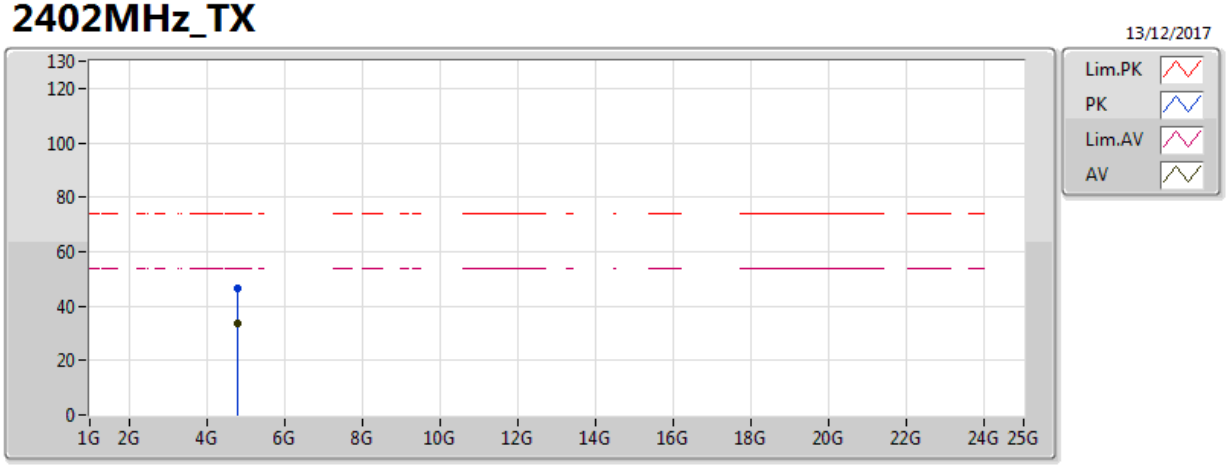
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3548G	44.00	54.00	-10.00	30.33	3	Horizontal	312	1.37	-	13.67	27.12	3.21	-
AV	2.402G	106.24	Inf	-Inf	30.50	3	Horizontal	312	1.37	-	75.74	27.25	3.25	-
PK	2.3892G	58.49	74.00	-15.51	30.45	3	Horizontal	312	1.37	-	28.04	27.21	3.24	-
PK	2.4022G	106.88	Inf	-Inf	30.50	3	Horizontal	312	1.37	-	76.39	27.25	3.25	-

BT-BR(1Mbps)

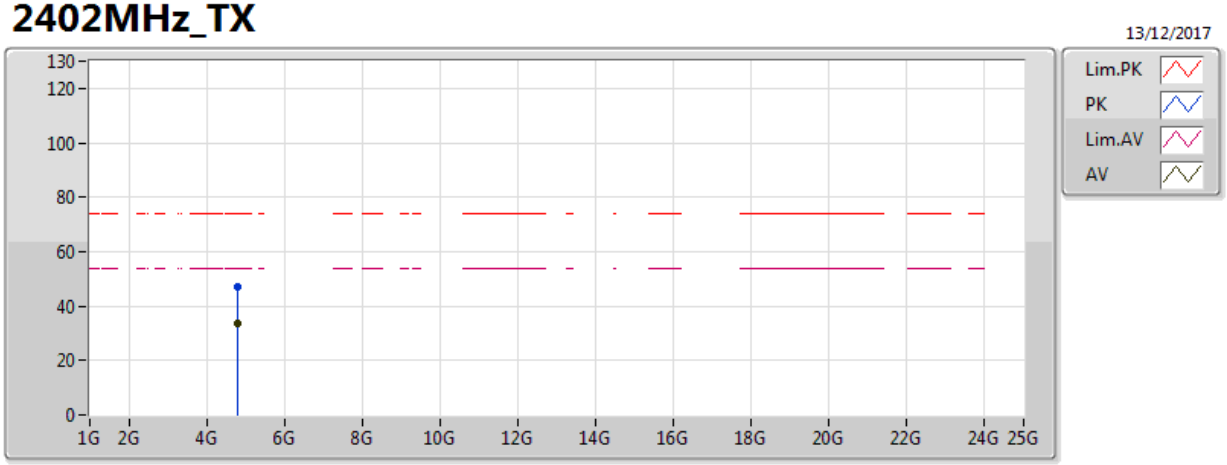
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
PK	4.804G	46.74	74.00	-27.26	5.85	3	Vertical	349	1.13	-	40.89	31.19	4.51	29.85
AV	4.804G	33.90	54.00	-20.10	5.85	3	Vertical	349	1.13	-	28.05	31.19	4.51	29.85

BT-BR(1Mbps)

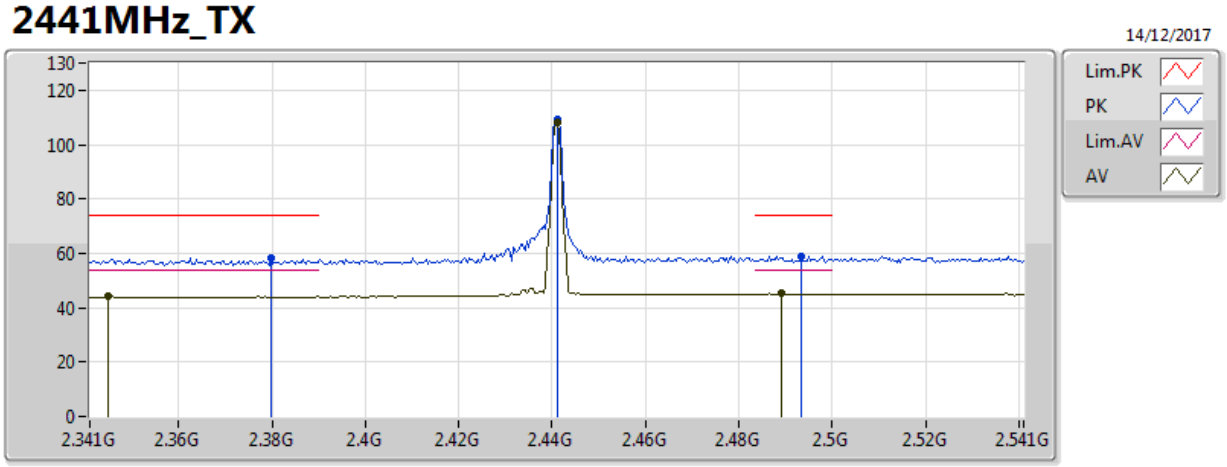
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.804G	33.75	54.00	-20.25	5.85	3	Horizontal	284	1.01	-	27.90	31.19	4.51	29.85
PK	4.804G	47.02	74.00	-26.98	5.85	3	Horizontal	284	1.01	-	41.17	31.19	4.51	29.85

BT-BR(1Mbps)

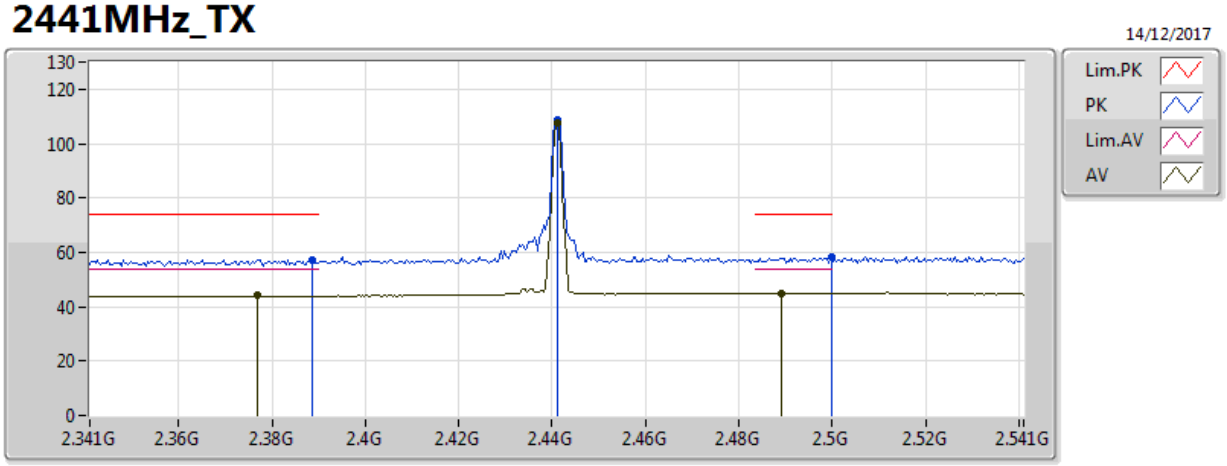
2441MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.345G	44.17	54.00	-9.83	30.30	3	Vertical	305	1.05	-	13.88	27.10	3.20	-
AV	2.441G	108.36	Inf	-Inf	30.64	3	Vertical	305	1.05	-	77.72	27.35	3.29	-
AV	2.489G	45.24	54.00	-8.76	30.81	3	Vertical	305	1.05	-	14.43	27.47	3.34	-
PK	2.3798G	58.30	74.00	-15.70	30.42	3	Vertical	305	1.05	-	27.88	27.19	3.23	-
PK	2.441G	109.19	Inf	-Inf	30.64	3	Vertical	305	1.05	-	78.55	27.35	3.29	-
PK	2.4934G	58.97	74.00	-15.03	30.83	3	Vertical	305	1.05	-	28.14	27.48	3.34	-

BT-BR(1Mbps)

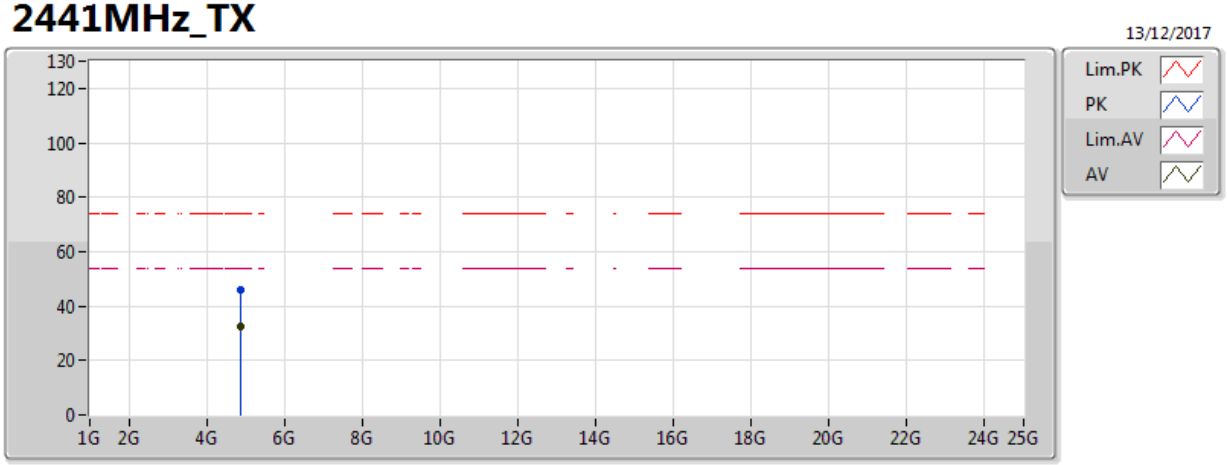
2441MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.377G	44.06	54.00	-9.94	30.41	3	Horizontal	312	1.31	-	13.65	27.18	3.23	-
AV	2.441G	107.71	Inf	-Inf	30.64	3	Horizontal	312	1.31	-	77.07	27.35	3.29	-
AV	2.489G	45.02	54.00	-8.98	30.81	3	Horizontal	312	1.31	-	14.21	27.47	3.34	-
PK	2.3886G	57.31	74.00	-16.69	30.45	3	Horizontal	312	1.31	-	26.86	27.21	3.24	-
PK	2.441G	108.46	Inf	-Inf	30.64	3	Horizontal	312	1.31	-	77.83	27.35	3.29	-
PK	2.499998G	58.06	74.00	-15.94	30.85	3	Horizontal	312	1.31	-	27.21	27.50	3.35	-

BT-BR(1Mbps)

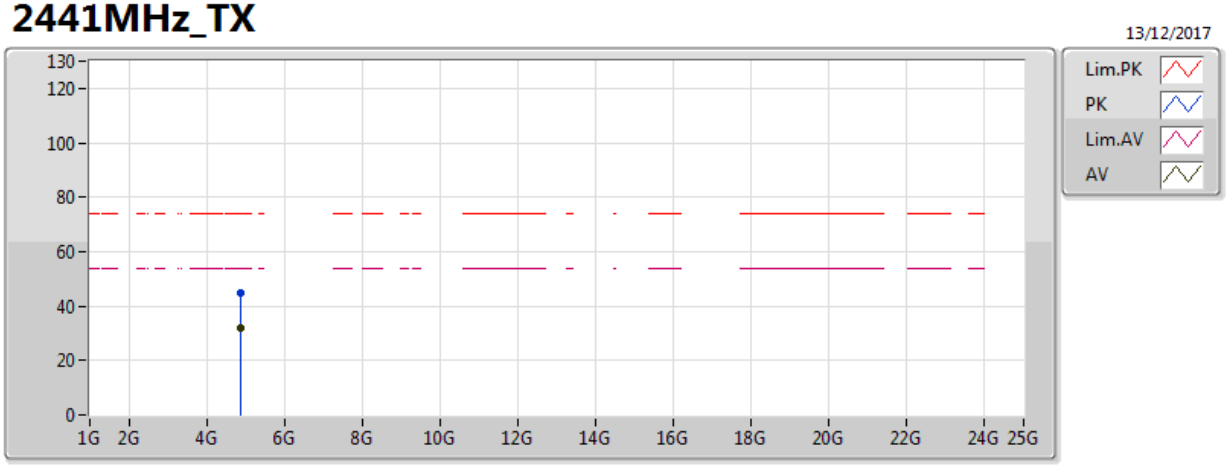
2441MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.882G	32.53	54.00	-21.47	6.03	3	Vertical	8	2.77	-	26.50	31.31	4.55	29.83
PK	4.882G	46.20	74.00	-27.80	6.03	3	Vertical	8	2.77	-	40.17	31.31	4.55	29.83

BT-BR(1Mbps)

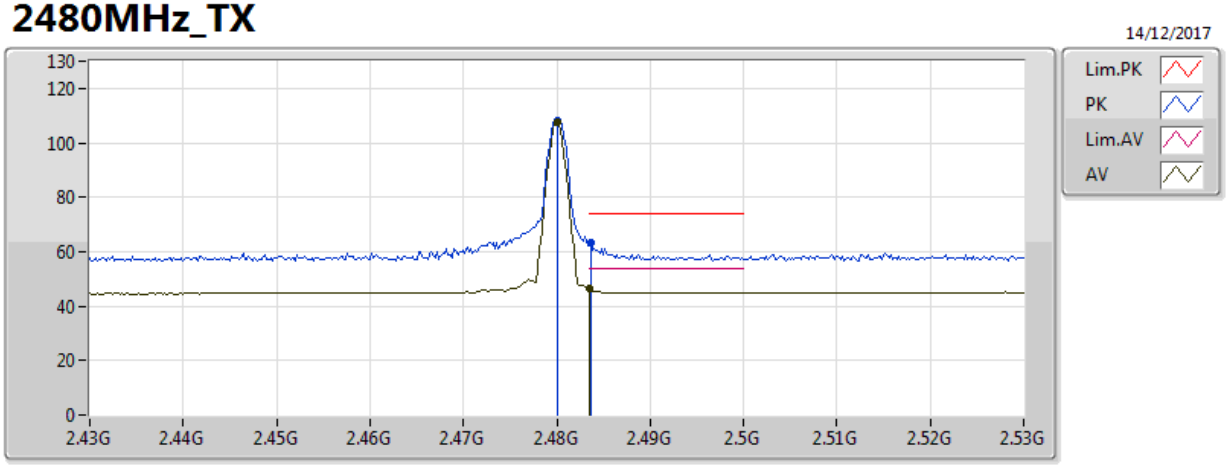
2441MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.882G	32.19	54.00	-21.81	6.03	3	Horizontal	283	1.04	-	26.16	31.31	4.55	29.83
PK	4.882G	44.72	74.00	-29.28	6.03	3	Horizontal	283	1.04	-	38.69	31.31	4.55	29.83

BT-BR(1Mbps)

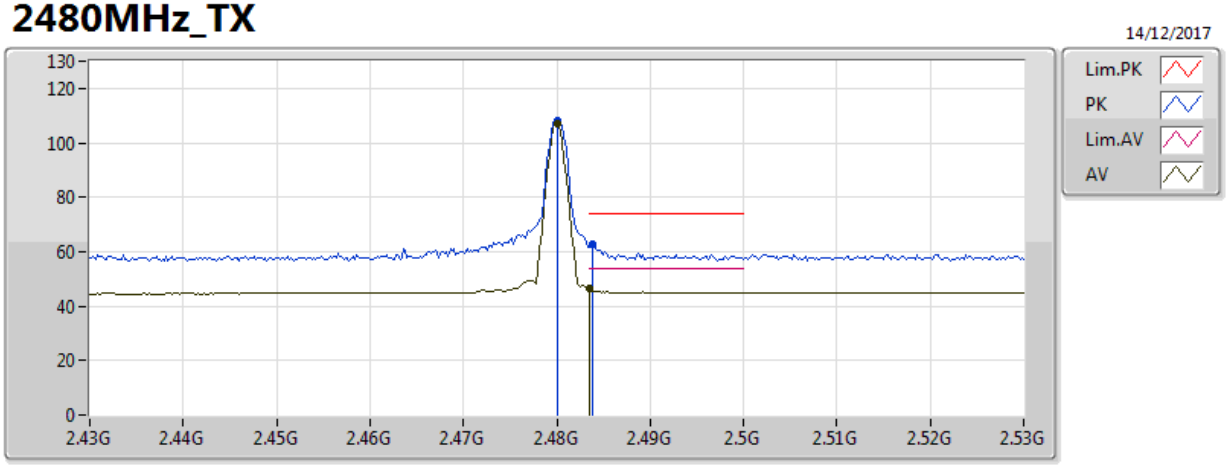
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.48G	107.48	Inf	-Inf	30.78	3	Vertical	305	1.06	-	76.70	27.45	3.33	-
AV	2.483502G	46.51	54.00	-7.49	30.79	3	Vertical	305	1.06	-	15.72	27.46	3.33	-
PK	2.48G	108.19	Inf	-Inf	30.78	3	Vertical	305	1.06	-	77.41	27.45	3.33	-
PK	2.4836G	63.22	74.00	-10.78	30.79	3	Vertical	305	1.06	-	32.43	27.46	3.33	-

BT-BR(1Mbps)

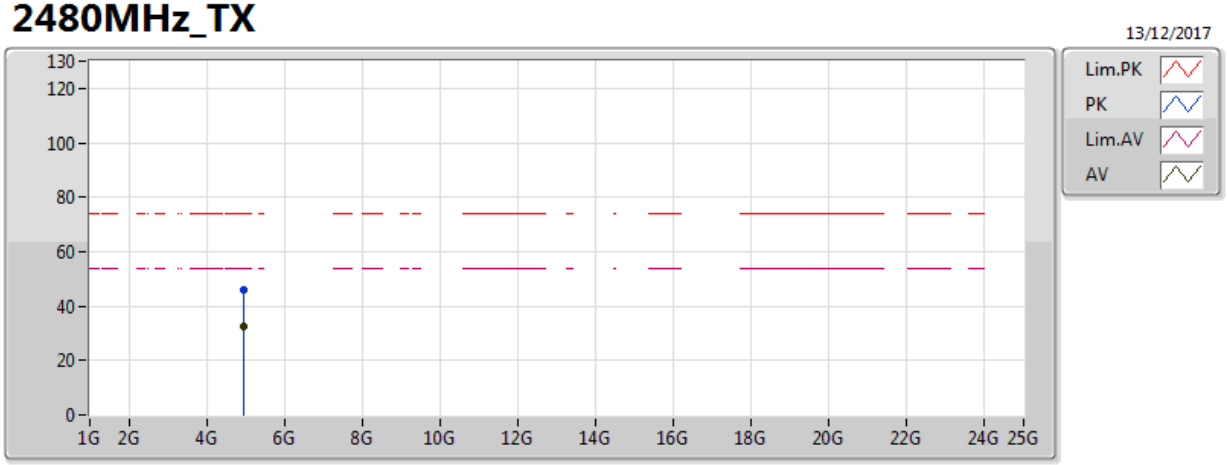
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.48G	107.27	Inf	-Inf	30.78	3	Horizontal	309	3.19	-	76.49	27.45	3.33	-
AV	2.483502G	46.37	54.00	-7.63	30.79	3	Horizontal	309	3.19	-	15.58	27.46	3.33	-
PK	2.48G	108.13	Inf	-Inf	30.78	3	Horizontal	309	3.19	-	77.35	27.45	3.33	-
PK	2.4838G	62.70	74.00	-11.30	30.79	3	Horizontal	309	3.19	-	31.90	27.46	3.33	-

BT-BR(1Mbps)

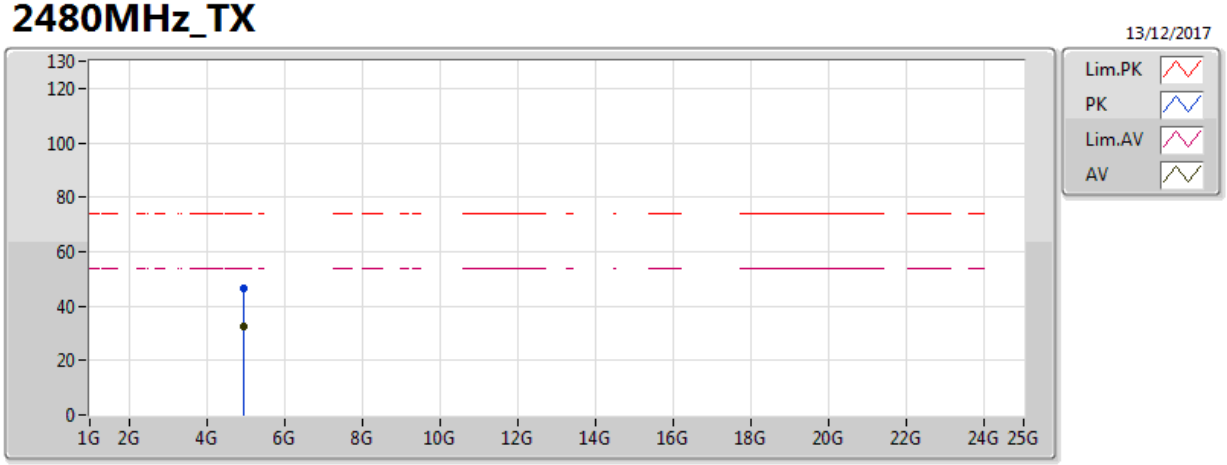
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.96G	32.31	54.00	-21.69	6.21	3	Vertical	343	3.14	-	26.10	31.44	4.59	29.82
PK	4.96G	45.96	74.00	-28.04	6.21	3	Vertical	343	3.14	-	39.75	31.44	4.59	29.82

BT-BR(1Mbps)

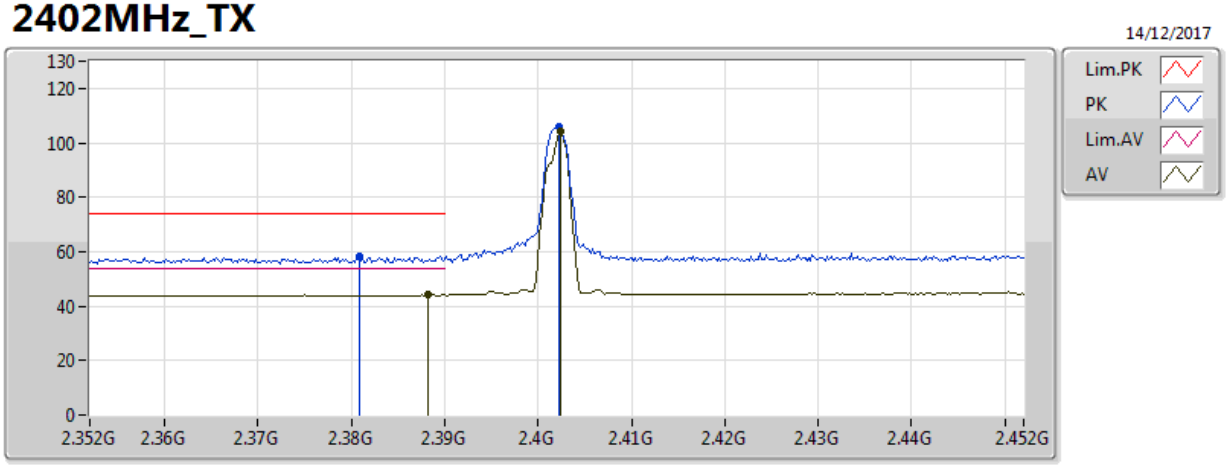
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.96G	32.32	54.00	-21.68	6.21	3	Horizontal	299	1.50	-	26.11	31.44	4.59	29.82
PK	4.96G	46.34	74.00	-27.66	6.21	3	Horizontal	299	1.50	-	40.13	31.44	4.59	29.82

BT-EDR(2Mbps)

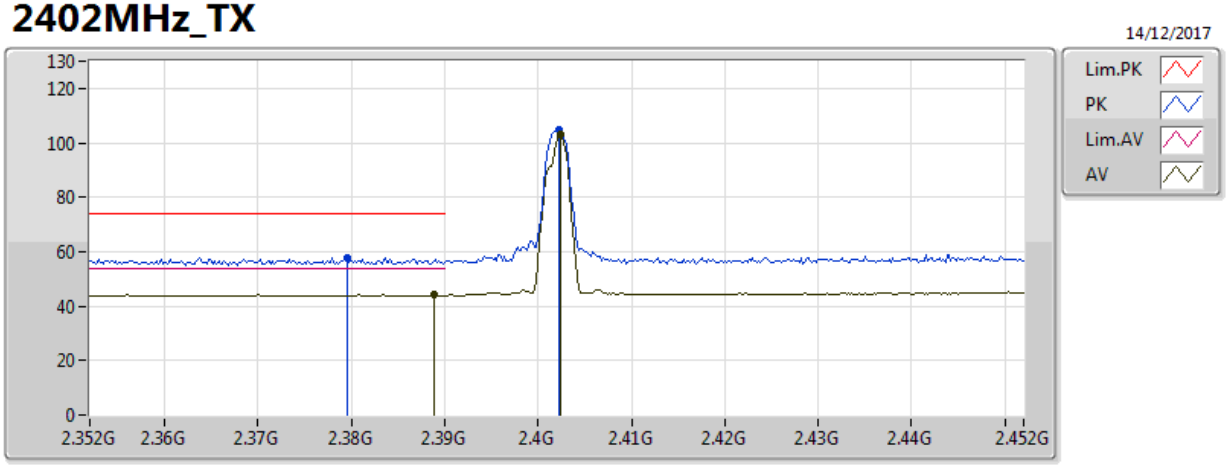
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3882G	44.05	54.00	-9.95	30.45	3	Vertical	306	1.00	-	13.60	27.21	3.24	-
AV	2.4024G	104.04	Inf	-Inf	30.50	3	Vertical	306	1.00	-	73.54	27.25	3.25	-
PK	2.3808G	58.41	74.00	-15.59	30.42	3	Vertical	306	1.00	-	27.99	27.19	3.23	-
PK	2.4022G	105.94	Inf	-Inf	30.50	3	Vertical	306	1.00	-	75.44	27.25	3.25	-

BT-EDR(2Mbps)

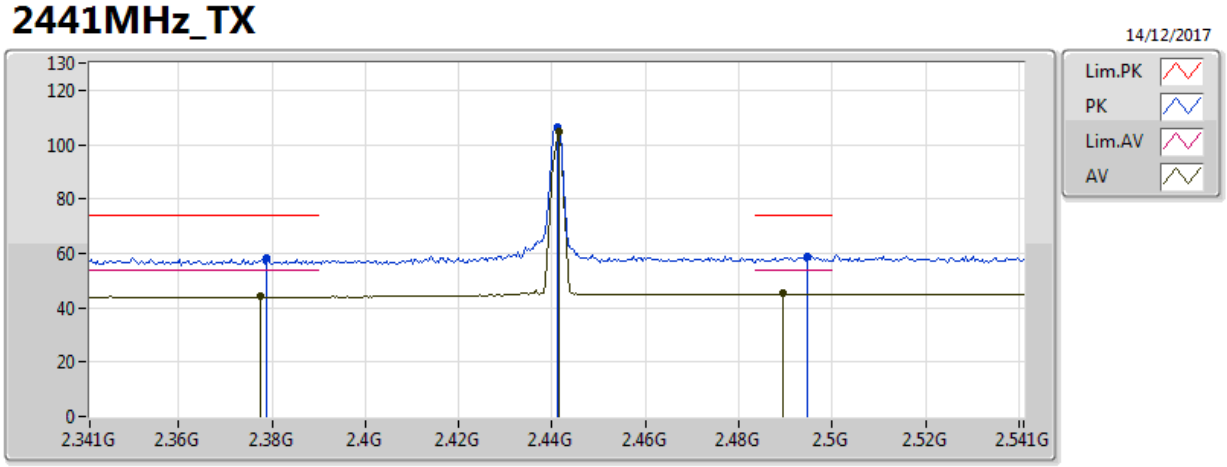
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3888G	44.08	54.00	-9.92	30.45	3	Horizontal	312	1.39	-	13.63	27.21	3.24	-
AV	2.4024G	103.07	Inf	-Inf	30.50	3	Horizontal	312	1.39	-	72.58	27.25	3.25	-
PK	2.3796G	57.79	74.00	-16.21	30.42	3	Horizontal	312	1.39	-	27.37	27.19	3.23	-
PK	2.4022G	104.95	Inf	-Inf	30.50	3	Horizontal	312	1.39	-	74.45	27.25	3.25	-

BT-EDR(2Mbps)

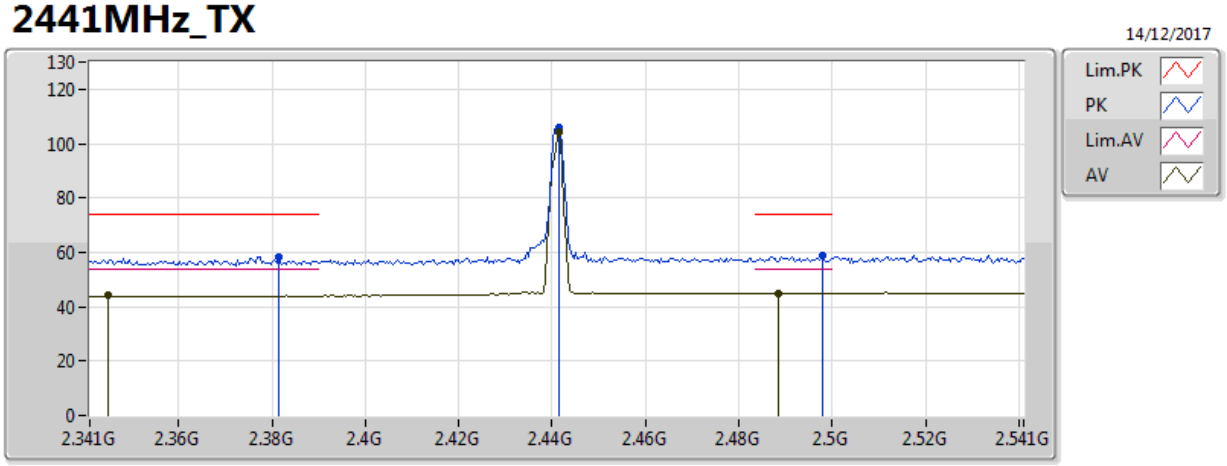
2441MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3774G	44.08	54.00	-9.92	30.41	3	Vertical	305	1.20	-	13.67	27.18	3.23	-
AV	2.4414G	104.86	Inf	-Inf	30.64	3	Vertical	305	1.20	-	74.22	27.35	3.29	-
AV	2.4894G	45.18	54.00	-8.82	30.81	3	Vertical	305	1.20	-	14.37	27.47	3.34	-
PK	2.379G	58.45	74.00	-15.55	30.42	3	Vertical	305	1.20	-	28.03	27.19	3.23	-
PK	2.441G	106.69	Inf	-Inf	30.64	3	Vertical	305	1.20	-	76.05	27.35	3.29	-
PK	2.4946G	58.89	74.00	-15.11	30.83	3	Vertical	305	1.20	-	28.06	27.49	3.34	-

BT-EDR(2Mbps)

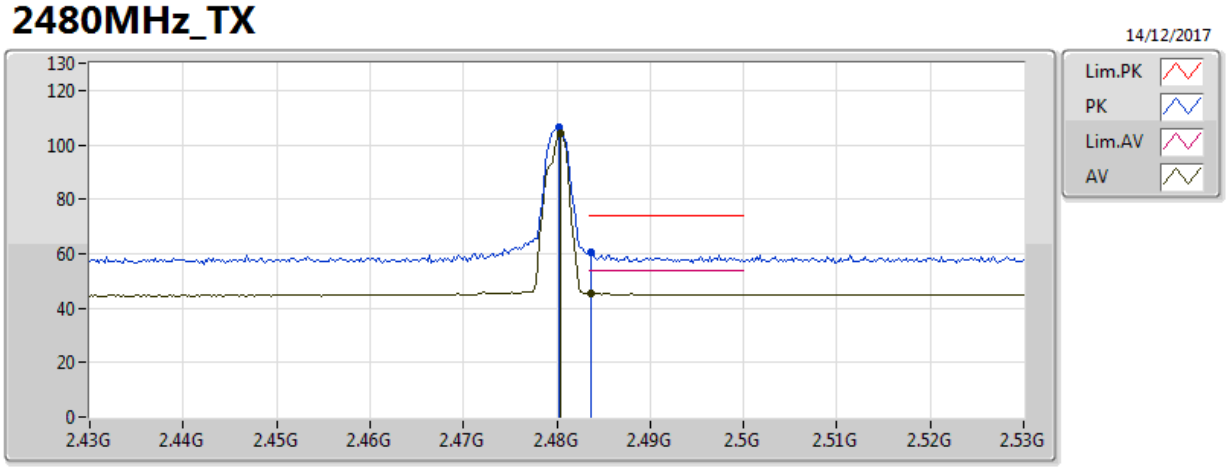
2441MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.345G	44.04	54.00	-9.96	30.30	3	Horizontal	312	2.98	-	13.74	27.10	3.20	-
AV	2.4414G	104.31	Inf	-Inf	30.64	3	Horizontal	312	2.98	-	73.67	27.35	3.29	-
AV	2.4886G	45.05	54.00	-8.95	30.81	3	Horizontal	312	2.98	-	14.24	27.47	3.34	-
PK	2.3814G	58.20	74.00	-15.80	30.42	3	Horizontal	312	2.98	-	27.78	27.19	3.23	-
PK	2.4414G	106.13	Inf	-Inf	30.64	3	Horizontal	312	2.98	-	75.49	27.35	3.29	-
PK	2.4978G	58.59	74.00	-15.41	30.84	3	Horizontal	312	2.98	-	27.75	27.49	3.35	-

BT-EDR(2Mbps)

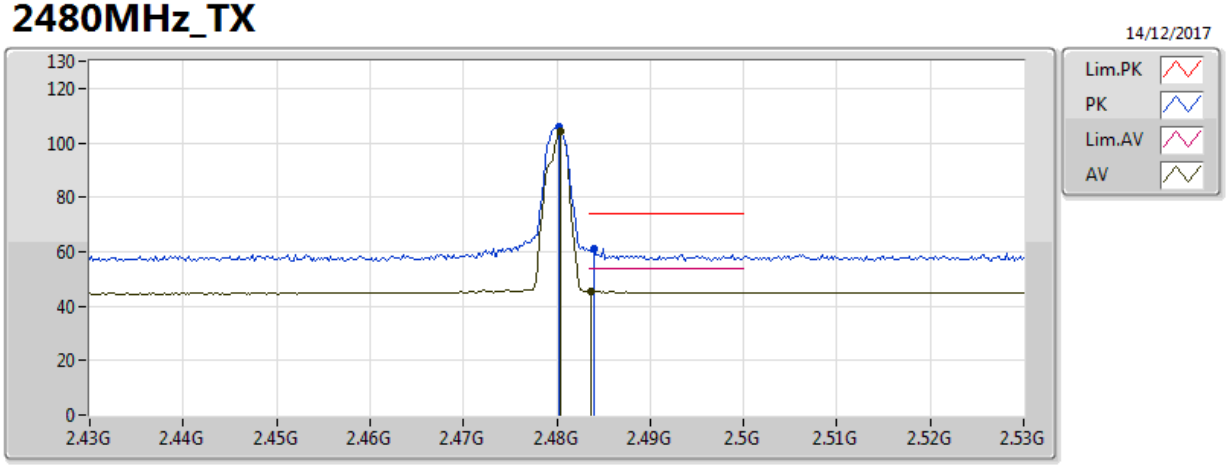
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.4804G	104.26	Inf	-Inf	30.78	3	Vertical	304	1.16	-	73.48	27.45	3.33	-
AV	2.4836G	45.58	54.00	-8.42	30.79	3	Vertical	304	1.16	-	14.79	27.46	3.33	-
PK	2.4802G	106.24	Inf	-Inf	30.78	3	Vertical	304	1.16	-	75.46	27.45	3.33	-
PK	2.4836G	60.79	74.00	-13.21	30.79	3	Vertical	304	1.16	-	30.00	27.46	3.33	-

BT-EDR(2Mbps)

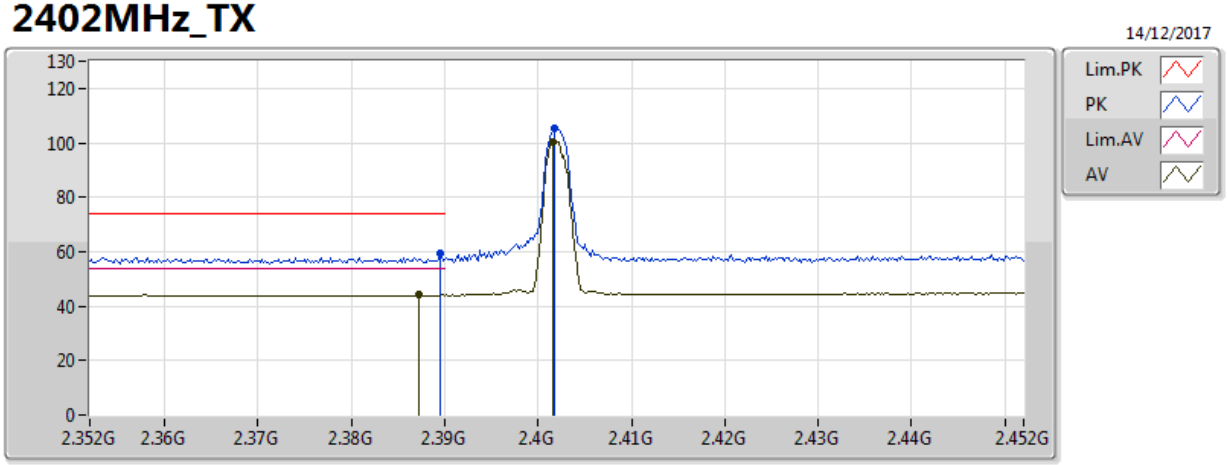
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.4804G	104.21	Inf	-Inf	30.78	3	Horizontal	308	3.19	-	73.43	27.45	3.33	-
AV	2.4836G	45.49	54.00	-8.51	30.79	3	Horizontal	308	3.19	-	14.70	27.46	3.33	-
PK	2.4802G	106.15	Inf	-Inf	30.78	3	Horizontal	308	3.19	-	75.37	27.45	3.33	-
PK	2.484G	60.99	74.00	-13.01	30.79	3	Horizontal	308	3.19	-	30.20	27.46	3.33	-

BT-EDR(3Mbps)

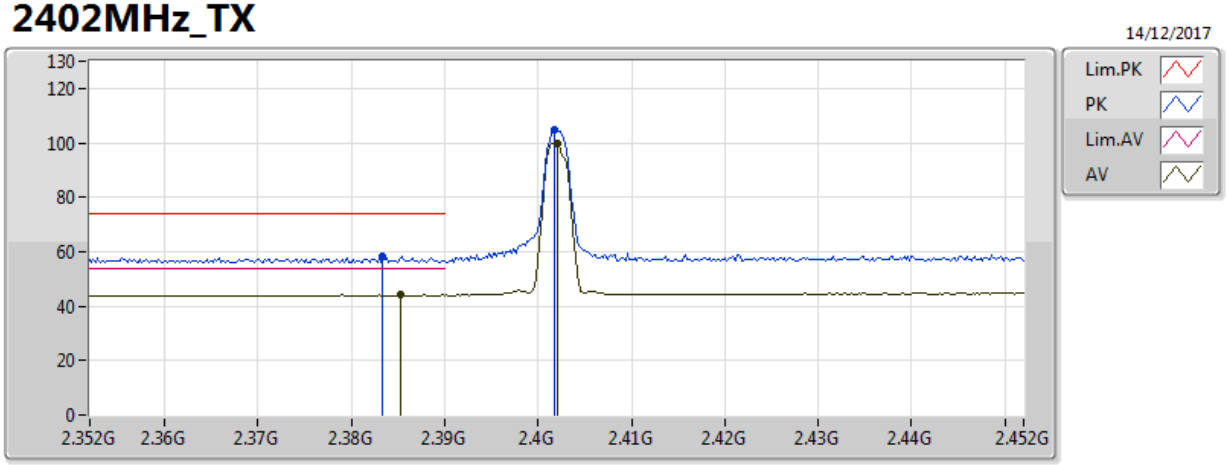
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3872G	44.09	54.00	-9.91	30.45	3	Vertical	304	1.41	-	13.65	27.21	3.24	-
AV	2.4016G	100.49	Inf	-Inf	30.50	3	Vertical	304	1.41	-	69.99	27.24	3.25	-
PK	2.3896G	59.53	74.00	-14.47	30.45	3	Vertical	304	1.41	-	29.07	27.21	3.24	-
PK	2.4018G	105.08	Inf	-Inf	30.50	3	Vertical	304	1.41	-	74.58	27.24	3.25	-

BT-EDR(3Mbps)

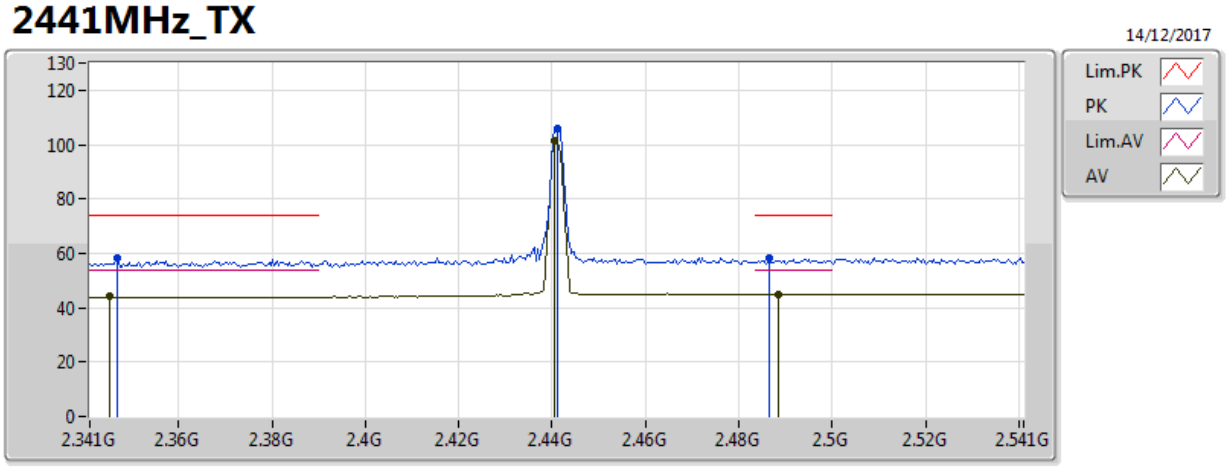
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3852G	44.03	54.00	-9.97	30.44	3	Horizontal	312	1.38	-	13.60	27.20	3.24	-
AV	2.402G	99.99	Inf	-Inf	30.50	3	Horizontal	312	1.38	-	69.50	27.25	3.25	-
PK	2.3834G	58.26	74.00	-15.74	30.43	3	Horizontal	312	1.38	-	27.82	27.20	3.24	-
PK	2.4018G	104.78	Inf	-Inf	30.50	3	Horizontal	312	1.38	-	74.28	27.24	3.25	-

BT-EDR(3Mbps)

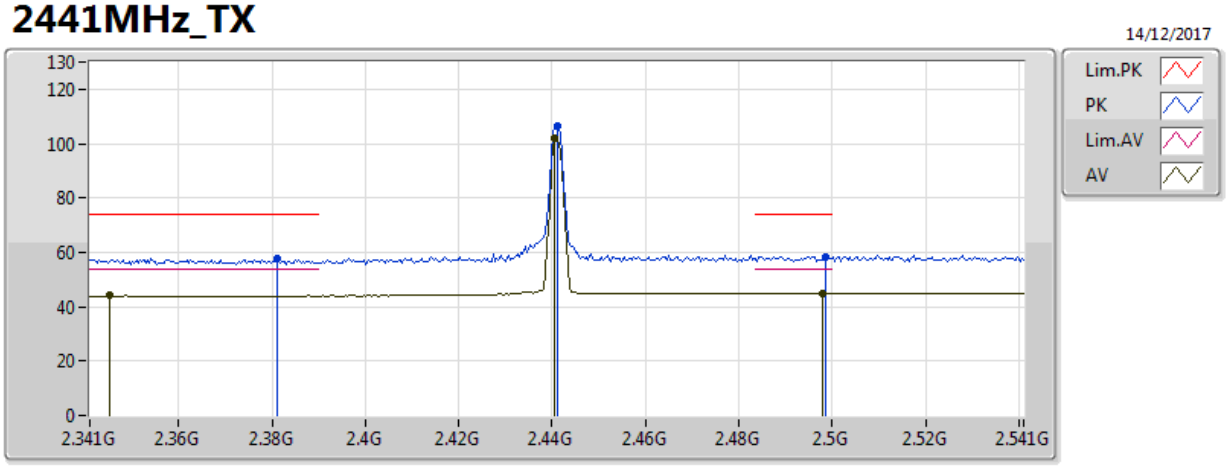
2441MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3454G	44.03	54.00	-9.97	30.30	3	Vertical	310	1.49	-	13.73	27.10	3.20	-
AV	2.4406G	101.68	Inf	-Inf	30.64	3	Vertical	310	1.49	-	71.05	27.35	3.29	-
AV	2.4886G	45.04	54.00	-8.96	30.81	3	Vertical	310	1.49	-	14.23	27.47	3.34	-
PK	2.347G	58.03	74.00	-15.97	30.30	3	Vertical	310	1.49	-	27.73	27.10	3.20	-
PK	2.441G	106.17	Inf	-Inf	30.64	3	Vertical	310	1.49	-	75.53	27.35	3.29	-
PK	2.4866G	58.22	74.00	-15.78	30.80	3	Vertical	310	1.49	-	27.42	27.47	3.34	-

BT-EDR(3Mbps)

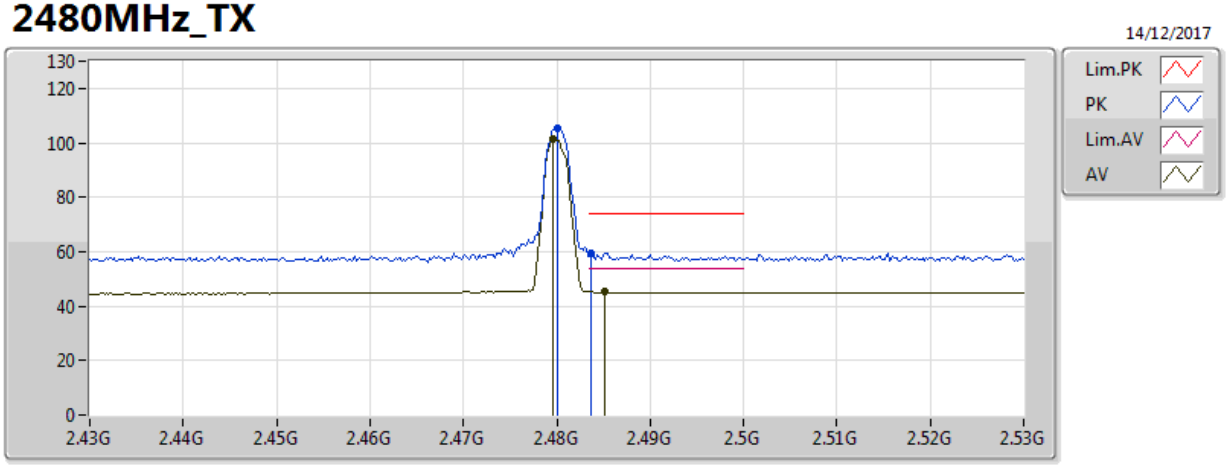
2441MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3454G	44.01	54.00	-9.99	30.30	3	Horizontal	311	1.31	-	13.71	27.10	3.20	-
AV	2.4406G	101.90	Inf	-Inf	30.64	3	Horizontal	311	1.31	-	71.27	27.35	3.29	-
AV	2.4978G	45.03	54.00	-8.97	30.84	3	Horizontal	311	1.31	-	14.19	27.49	3.35	-
PK	2.381G	57.74	74.00	-16.26	30.42	3	Horizontal	311	1.31	-	27.32	27.19	3.23	-
PK	2.441G	106.22	Inf	-Inf	30.64	3	Horizontal	311	1.31	-	75.58	27.35	3.29	-
PK	2.4986G	58.36	74.00	-15.64	30.84	3	Horizontal	311	1.31	-	27.51	27.50	3.35	-

BT-EDR(3Mbps)

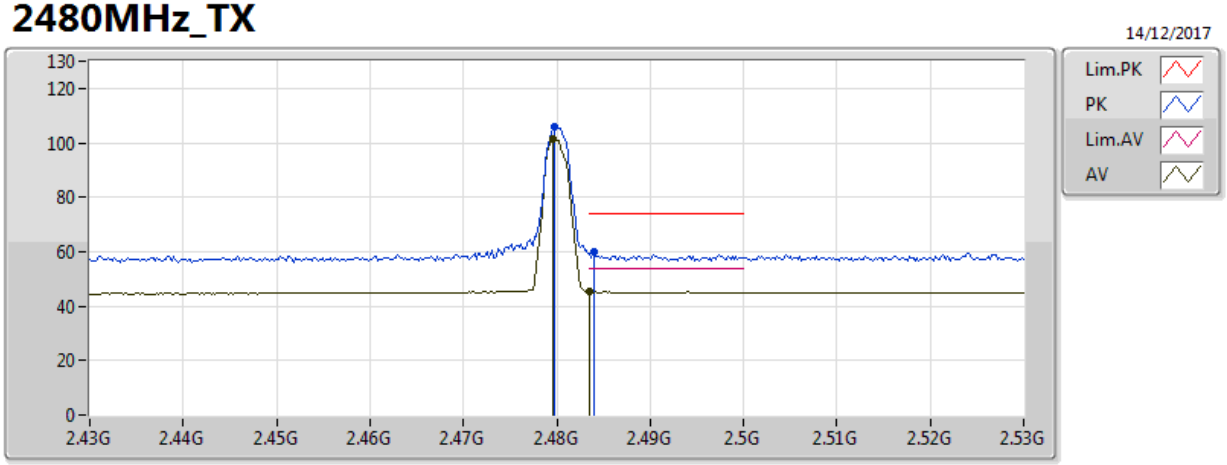
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.4796G	101.24	Inf	-Inf	30.78	3	Vertical	307	1.16	-	70.46	27.45	3.33	-
AV	2.4852G	45.23	54.00	-8.77	30.80	3	Vertical	307	1.16	-	14.43	27.46	3.34	-
PK	2.48G	105.62	Inf	-Inf	30.78	3	Vertical	307	1.16	-	74.84	27.45	3.33	-
PK	2.4836G	59.34	74.00	-14.66	30.79	3	Vertical	307	1.16	-	28.54	27.46	3.33	-

BT-EDR(3Mbps)

2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.4796G	101.45	Inf	-Inf	30.78	3	Horizontal	310	3.18	-	70.68	27.45	3.33	-
AV	2.483502G	45.35	54.00	-8.65	30.79	3	Horizontal	310	3.18	-	14.56	27.46	3.33	-
PK	2.4798G	105.83	Inf	-Inf	30.78	3	Horizontal	310	3.18	-	75.05	27.45	3.33	-
PK	2.484G	59.95	74.00	-14.05	30.79	3	Horizontal	310	3.18	-	29.16	27.46	3.33	-