FCC RADIO TEST REPORT

FCC ID	:	NKR-RAAME1
Equipment	:	Madesafe Gateway, Madesafe/IOT Gateway
Brand Name	:	Catapult TECH
Model Name	:	815-00027, 815-00028, 815-00029
Applicant	:	Wistron NeWeb Corporation 20 Park Avenue II Hsinchu Science Park Hsinchu Taiwan 308
Manufacturer	:	Wistron NeWeb Corporation 20 Park Avenue II Hsinchu Science Park Hsinchu Taiwan 308
Standard	:	47 CFR FCC Part 15.247

The product was received on Jan. 28, 2019, and testing was started from Jun. 05, 2019 and completed on Jun. 19, 2019. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

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

Approved by: Cliff Chang

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

Table of Contents

History of this test report **4**

Summary of Test Result **5**

1 General Description **6**

1.1 Information 6
1.2 Applicable Standards 9
1.3 Testing Location Information 9
1.4 Measurement Uncertainty 9

2 Test Configuration of EUT **10**

2.1 Test Channel Mode 10
2.2 The Worst Case Measurement Configuration 11
2.3 EUT Operation during Test 12
2.4 Accessories 13
2.5 Support Equipment 13
2.6 Test Setup Diagram 14

3 Transmitter Test Result **16**

3.1 AC Power-line Conducted Emissions 16
3.2 20dB Bandwidth and Carrier Frequency Separation 18
3.3 Maximum Conducted Output Power 19
3.4 Number of Hopping Frequencies and Hopping Bandedge 20
3.5 Time of Occupancy (Dwell Time) 21
3.6 Emissions in Non-restricted Frequency Bands 22
3.7 Emissions in Restricted Frequency Bands 23

4 Test Equipment and Calibration Data **26**

Appendix A. Test Results of AC Power-line Conducted Emissions

Appendix B. Test Results of 20dB Bandwidth AND Carrier Frequency Separation

Appendix C. Test Results of Maximum Conducted Output Power

Appendix D. Test Results of Number of Hopping Frequencies and Hopping Bandedge

Appendix E. Test Results of Time of Occupancy (Dwell Time)

Appendix F. Test Results of Emissions in Non-restricted Frequency Bands

Appendix G. Test Results of Emissions in Restricted Frequency Bands

Appendix H. Test Photos

Photographs of EUT v01

History of this test report

Report No.	Version	Description	Issued Date
FR912811AC	01	Initial issue of report	Jul. 03, 2019

Summary of Test Result

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

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Sam Chen
Report Producer: Sandy Chuang

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:
- 2.4G is the 2.4GHz Band (2.4-2.4835GHz).
- 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.
- Nss-Min is the minimum number of spatial streams.
- Nant is the number of outputs. e.g., 2(2, 3) means have 2 outputs for port 2 and port 3. 2 means have 2 outputs for port 1 and port 2.
- EUT contains a certified RF module (FCC ID: W7Z-WD907102) for EUT 2.

1.1.2 Antenna Information

Ant.	Port			Brand		P/N		
	WLAN 2.4GHz	WLAN 5GHz	Bluetooth	WLAN 2.4GHz、5GHz / Bluetooth (Internal)	Bluetooth (External)	WLAN 2.4GHz、5GHz	Bluetooth (Internal)	Bluetooth (External)
1	1	1	-	WNC	-	3ADHUBW69S1-111	-	-
2	2	2	-	WNC	-	3ADHUBW69S1-111	-	-
3	-	-	1	WNC	-	-	95XKAJ15.G04	-
4	-	-	1	-	RFlink	-	-	08.22100.007

Ant.	Antenna Type			Antenna Connector	Gain (dBi)					
	WLAN 2.4GHz、5GHz	Bluetooth (Internal)	Bluetooth (External)		WLAN 2.4GHz	WLAN 5GHz	Bluetooth (Internal)	Bluetooth (External)		
								Antenna Gain	Cable loss (dB)	True Gain
1	PIFA	-	-	N/A	1.20	4.01	-	-	-	-
2	PIFA	-	-	N/A	0.66	4.02	-	-	-	-
3	-	PCB	-	N/A	-	-	1.25	-	-	-
4	-	-	Dipole	SMA	-	-	-	2.70	3.31	-0.61

Note 1: The above information was declared by manufacturer.

<For 2.4GHz Band>

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

Port 1 and Port 2 can be used as transmitting/receiving antenna.

Port 1 and Port 2 could transmit/receive simultaneously.

<For 5GHz Band>

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

Port 1 and Port 2 can be used as transmitting/receiving antenna.

Port 1 and Port 2 could transmit/receive simultaneously.

<For Bluetooth> (1TX/1RX)

Only Port 1 can be used as transmitting/receiving antenna.

1.1.3 Mode Test Duty Cycle

Mode 1: EUT 1 <Internal>

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
BT-BR(1Mbps)	0.854	0.69	2.898m	1k
BT-EDR(2Mbps)	0.833	0.79	2.908m	1k
BT-EDR(3Mbps)	0.842	0.75	2.908m	1k

Mode 2: EUT 3 <External>

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
BT-BR(1Mbps)	0.854	0.69	2.898m	1k
BT-EDR(2Mbps)	0.833	0.79	2.908m	1k
BT-EDR(3Mbps)	0.842	0.75	2.908m	1k

1.1.4 EUT Operational Condition

EUT Power Type	From Power Adapter or PoE
Test Software Version	DutApiMimoBt.exe

1.1.5 Table for Multiple Listing

The difference for each equipment name/model name is shown as below:

EUT	1	2	3
Equipment Name	Madesafe Gateway	Madesafe/IOT Gateway	Madesafe Gateway
Model Name	815-00027	815-00028	815-00029
Contain certified Module (Zigbee function only)	-	V (FCC ID: W7Z-WD907102)	-
Bluetooth Antenna	Internal	Internal	External
WIFI / Bluetooth Function	V	V	V

Note: From the above models, EUT 1 and EUT 3 were selected as representative model for the test and its data was recorded in this report.

1.2 Applicable Standards

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

- 47 CFR FCC Part 15
- FCC KDB 558074 D01 v05r02

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
☒	JHUBEI	ADD :	No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C.
		TEL :	886-3-656-9065 FAX : 886-3-656-9085

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH02-CB	Eddie Weng	25~27°C / 52~56%	Jun. 11, 2019~ Jun. 12, 2019
Radiated (Below 1GHz)	03CH04-CB	KJ Chang	21~23°C / 45~52%	Jun. 05, 2019~ Jun. 17, 2019
Radiated (Above 1GHz)	03CH06-CB	KJ Chang	22~24°C / 50~60%	Jun. 05, 2019~ Jun. 17, 2019
AC Conduction	CO02-CB	Peter Wu	24.3~24.5°C / 59~63%	Jun. 05, 2019~ Jun. 19, 2019

Test site Designation No. TW0006 with FCC.
Test site registered number IC 4086B with Industry Canada.

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)	2.0 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.9 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.9 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.7 dB	Confidence levels of 95%
Conducted Emission	2.4 dB	Confidence levels of 95%
Output Power Measurement	1.5 dB	Confidence levels of 95%
Power Density Measurement	2.4 dB	Confidence levels of 95%
Bandwidth Measurement	10.0×10^{-5}	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Channel Mode

Mode 1: EUT 1 <Internal>

Mode	PowerSetting
BT-BR(1Mbps)	-
2402MHz	4
2440MHz	4
2480MHz	4
BT-EDR(2Mbps)	-
2402MHz	4
2440MHz	4
2480MHz	4
BT-EDR(3Mbps)	-
2402MHz	4
2440MHz	4
2480MHz	4

Mode 2: EUT 3 <External>

Mode	PowerSetting
BT-BR(1Mbps)	-
2402MHz	4
2440MHz	4
2480MHz	4
BT-EDR(2Mbps)	-
2402MHz	4
2440MHz	4
2480MHz	4
BT-EDR(3Mbps)	-
2402MHz	4
2440MHz	4
2480MHz	4

2.2 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
The EUT was perform with PoE and Adapter. After evaluating, the worst case was found as PoE, thus the measurement will follow this same test configuration.	
1	EUT 1 + Bluetooth BR/EDR + PoE
2	EUT 3 + Bluetooth BR/EDR + PoE
For operating mode 1 is the worst case and it was record in this test report.	

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
1	EUT 1
2	EUT 3

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
The EUT was perform with PoE and Adapter. After evaluating, the worst case was found as Adapter, thus the measurement will follow this same test configuration. The EUT was performed at Y-axis and Z-axis position. Internal (EUT 1) in Y axis and External (EUT 3) in Z axis here been evaluated to be the worst case at Emissions in Emissions in Restricted Frequency Bands <Above 1GHz>; thus, the measurement will follow this same test configuration.	
1	EUT 1 in Y axis + Bluetooth BR/EDR + Adapter
2	EUT 3 in Z axis + Bluetooth BR/EDR + Adapter
For operating mode 1 is the worst case and it was record in this test report.	
Operating Mode > 1GHz	CTX
The EUT was performed at Y-axis and Z-axis position. Internal (EUT 1) in Y axis and External (EUT 3) in Z axis, thus the measurement will follow this same test configuration.	
1	EUT 1 in Y axis + Bluetooth BR/EDR
2	EUT 3 in Z axis + Bluetooth BR/EDR

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	WLAN 2.4GHz + WLAN 5GHz + Bluetooth
2	WLAN 2.4GHz + WLAN 5GHz + Bluetooth + Zigbee (FCC ID: W7Z-WD907102)
Refer to Sporton Test Report No.: FA912811 for Co-location RF Exposure Evaluation.	

Note: The PoE below is for measurement only, would not be marketed.

The PoE information as below:

Support Unit	Brand Name	Model Name
PoE	Microsemi	PD-9001GR/AT/AC

2.3 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

2.4 Accessories

Accessories				
No.	**Equipment Name**	**Brand Holder**	**Model Name**	**Rating**
1	Adapter	JIANGSU CHENYANG ELECTRON Co.,LTD	CYSF12G-050200U	INPUT: 100-240V~50/60Hz, 0.35A Max OUTPUT: 5V, 2.0A
Other				
Bluetooth Antenna*1 (For EUT 3 use)				

2.5 Support Equipment

For AC Conduction:

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	LAN NB	DELL	E6430	N/A
B	Flash disk3.0	Transcend	B06	N/A
C	PoE	Microsemi	PD-9001GR/AT/AC	N/A

For Radiated:

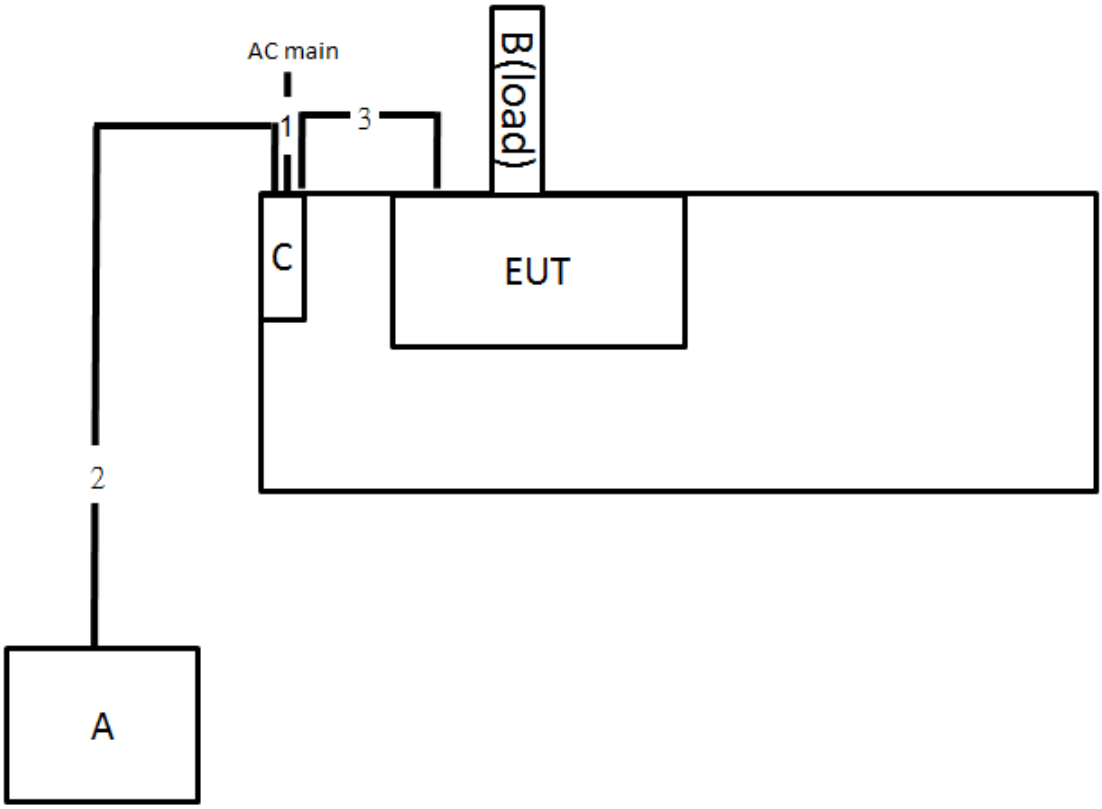
Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	Notebook	DELL	E4300	N/A

For RF Conducted:

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	Notebook	DELL	E4300	N/A

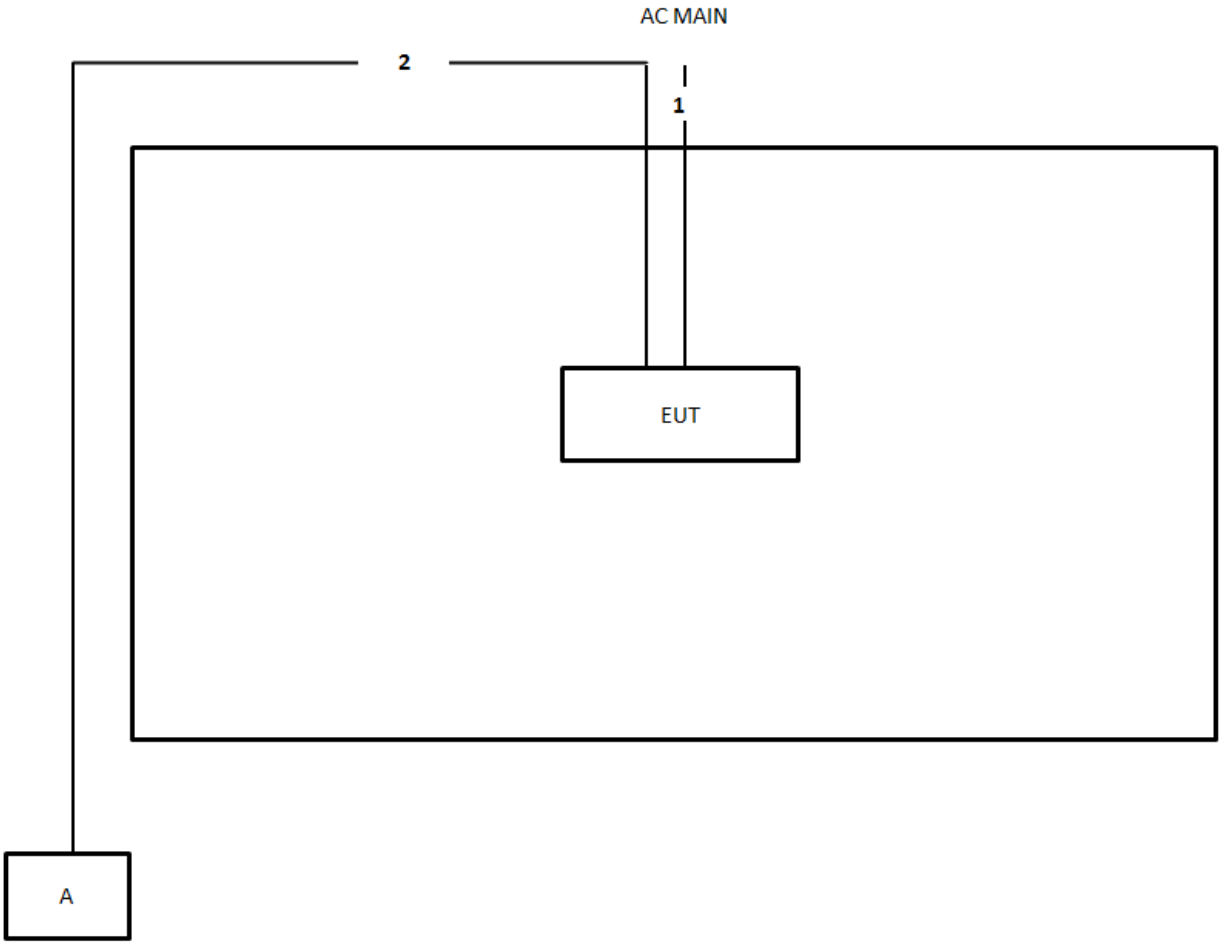
2.6 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



Item	Connection	Shielded	Length
1	Power cable	No	1.5m
2	RJ-45 cable	No	10m
3	RJ-45 cable	No	1.5m

Test Setup Diagram - Radiated Test



Item	Connection	Shielded	Length
1	Power cable	No	1.6m
2	RJ-45 cable	No	10m

3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

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

3.1.2 Measuring Instruments

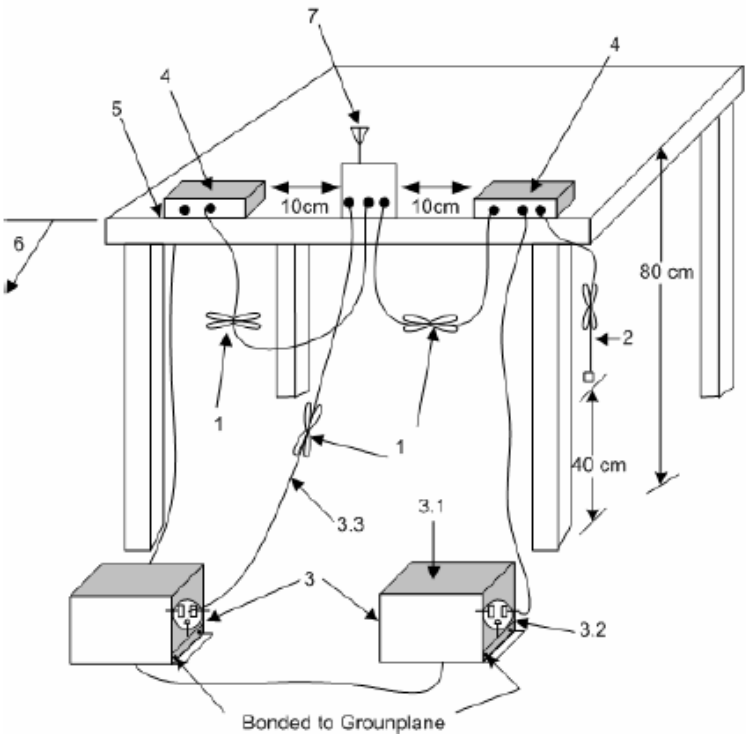
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

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

3.1.4 Test Setup

AC Power-line Conducted Emissions



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

3.1.5 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

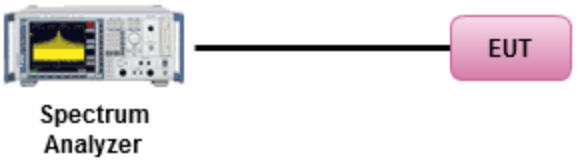
3.2.2 Measuring Instruments

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 6.9.1 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

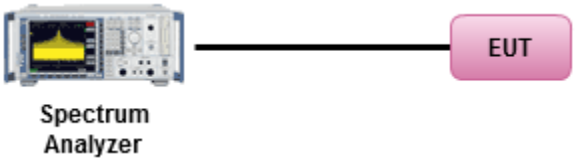
3.4.3 Measuring Instruments

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

20dB Bandwidth and Carrier Frequency Separation 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

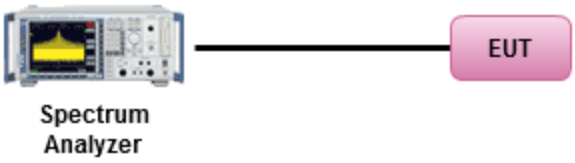
3.5.2 Measuring Instruments

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

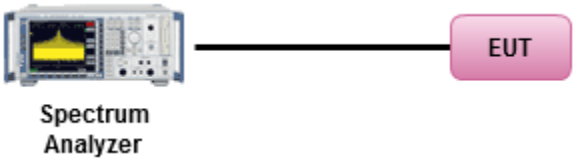
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

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

3.6.4 Test Setup

Emissions in Non-restricted Frequency Bands


3.6.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix F

3.7 Emissions in Restricted Frequency Bands

3.7.1 Emissions in Restricted Frequency Bands Limit

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

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

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

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

3.7.2 Measuring Instruments

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

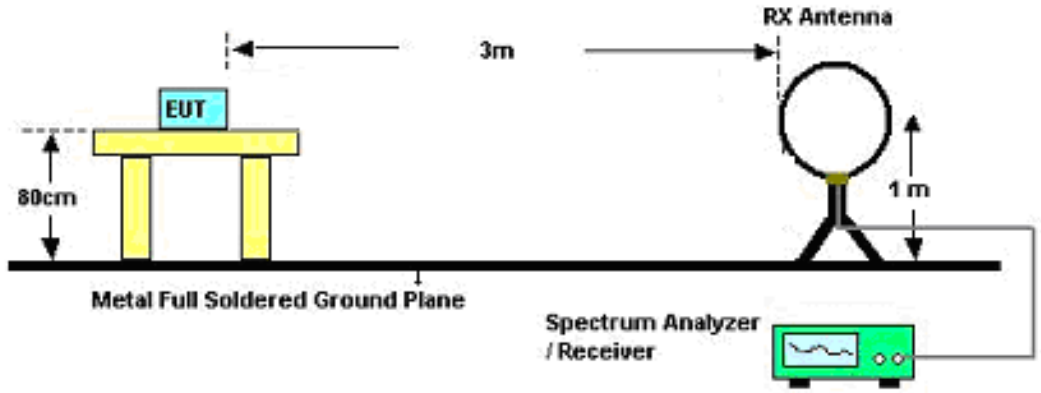
3.7.3 Test Procedures

Test Method	
▪ The average emission levels shall be measured in [hopping duty factor].	
▪ Refer as ANSI C63.10; clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.	
▪ For the transmitter unwanted emissions shall be measured using following options below:	
	▪ Refer as ANSI C63.10, clause 4.1.4.2.1 QP value.
	▪ Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak.
	▪ Refer as ANSI C63.10, clause 4.1.4.2.4 average value of hopping pulsed emissions.

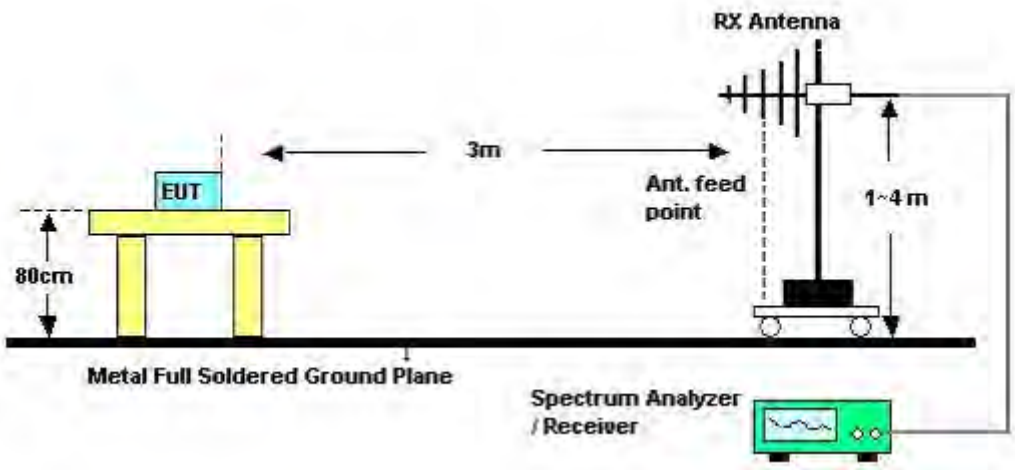
3.7.4 Test Setup

Emissions in Restricted Frequency Bands

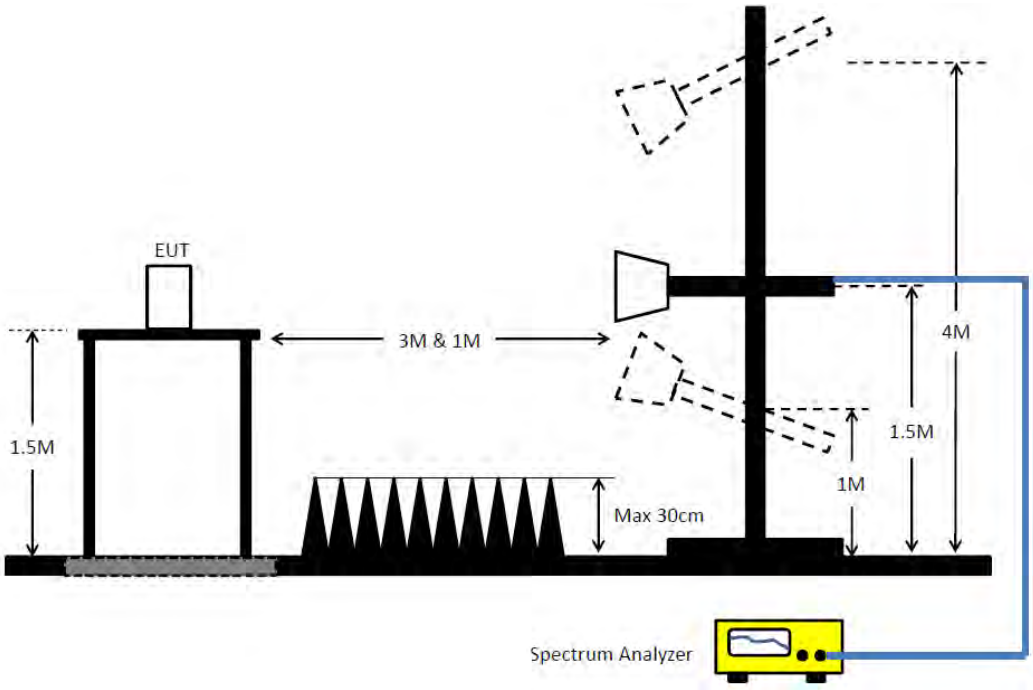
9kHz ~30MHz



30MHz~1GHz



Above 1GHz



3.7.5 Measurement Results Calculation

The measured Level is calculated using:
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

3.7.6 Emissions in Restricted Frequency Bands (Below 30MHz)

All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.
The radiated emissions were investigated from 9 kHz or the lowest frequency generated within the device, up to the 10 harmonic or 40 GHz, whichever is appropriate.

3.7.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix G

4 Test Equipment and Calibration Data

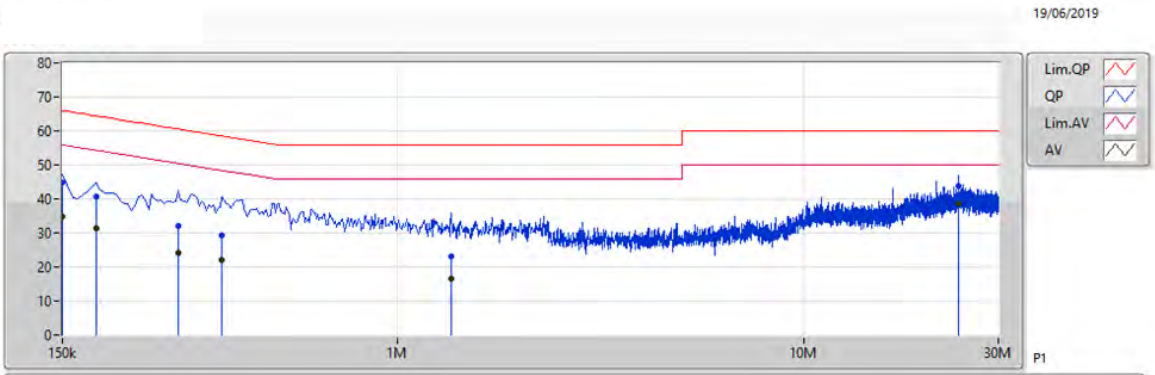
Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
LISN	Schwarzbeck	NSLK 8127	8127650	9kHz ~ 30MHz	Nov. 21, 2018	Nov. 20, 2019	Conduction (CO02-CB)
LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Nov. 05, 2018	Nov. 04, 2019	Conduction (CO02-CB)
EMI Receiver	Agilent	N9038A	MY52260140	9kHz ~ 8.4GHz	Jan. 16, 2019	Jan. 15, 2020	Conduction (CO02-CB)
COND Cable	Woken	Cable	2	0.15MHz ~ 30MHz	Nov. 06, 2018	Nov. 05, 2019	Conduction (CO02-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	N.C.R.	Conduction (CO02-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 29, 2019	Mar. 28, 2020	Radiation (03CH04-CB)
Horn Antenna	ETS・Lindgren	3115	00143147	750MHz~18GHz	Oct. 26, 2018	Oct. 25, 2019	Radiation (03CH04-CB)
BILOG ANTENNA	Schaffner	CBL6112B & N-6-06-06	22021&AT-N0607	30MHz ~ 1GHz	Oct. 12, 2018	Oct. 11, 2019	Radiation (03CH04-CB)
Pre-Amplifier	Agilent	83017A	MY53270063	0.5GHz ~ 26.5GHz	Mar. 19, 2019	Mar. 18, 2020	Radiation (03CH04-CB)
Pre-Amplifier	Agilent	310N	187291	0.1MHz ~ 1GHz	Mar. 19, 2019	Mar. 18, 2020	Radiation (03CH04-CB)
Spectrum Analyzer	R&S	FSP40	100142	9kHz~40GHz	Dec. 26, 2018	Dec. 25, 2019	Radiation (03CH04-CB
EMI Test Receiver	R&S	ESCS	100359	9kHz ~ 2.75GHz	Jul. 03, 2018	Jul. 02, 2019	Radiation (03CH04-CB)
RF Cable	Woken	Low Cable-03+22	N/A	30MHz – 1GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH04-CB)
Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-1292	1GHz~18GHz	Jul. 20, 2018	Jul. 19, 2019	Radiation (03CH06-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jun. 28, 2018	Jun. 27, 2019	Radiation (03CH06-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 08, 2019	Jan. 07, 2020	Radiation (03CH06-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 04, 2018	Jul. 03, 2019	Radiation (03CH06-CB)
Spectrum analyzer	R&S	FSP40	100080	9kHz~40GHz	Oct. 03, 2018	Oct. 02, 2019	Radiation (03CH06-CB)
RF Cable	HUBER+SUHNER	RG402	High Cable-05	1GHz~18GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH06-CB)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable	HUBER+SUHNER	RG402	High Cable-05+24	1GHz~18GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH06-CB)
RF Cable-high	Woken	High Cable-40G#1	N/A	18GHz ~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH06-CB)
RF Cable-high	Woken	High Cable-40G#2	N/A	18GHz ~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH06-CB)
Spectrum analyzer	R&S	FSV40	101027	9kHz~40GHz	Jun. 22, 2018	Jun. 21, 2019	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-01	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-02	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-3	1 GHz – 26.5 GHz	Oct. 24, 2018	Oct. 23, 2019	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-04	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-05	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH02-CB)
Power Sensor	Anritsu	MA2411B	1126203	300MHz~40GHz	Sep. 03, 2018	Sep. 02, 2019	Conducted (TH02-CB)
Power Meter	Anritsu	ML2495A	1210004	300MHz~40GHz	Sep. 03, 2018	Sep. 02, 2019	Conducted (TH02-CB)

Note: Calibration Interval of instruments listed above is one year.

NCR means Non-Calibration required.

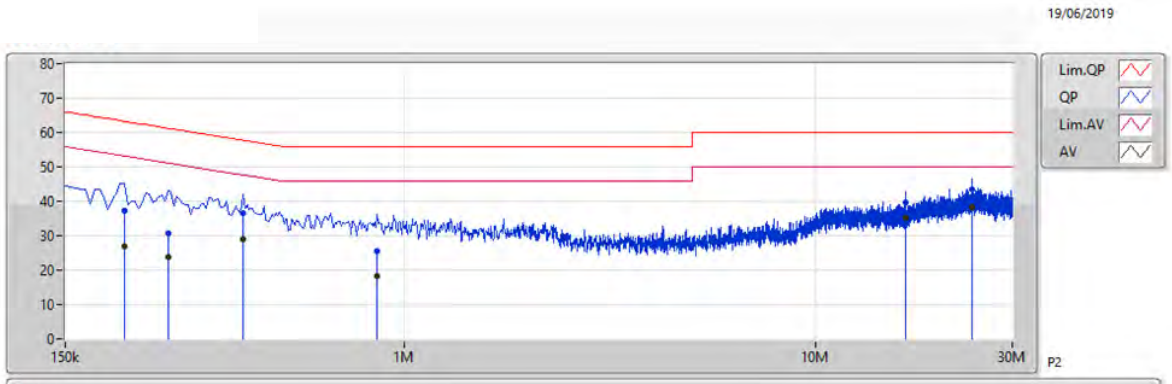
AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Line
Operating Function	CTX		



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	AF	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	150k	44.81	66.00	-21.19	9.90	Line	-	34.91	0.05	0.06	9.79
AV	150k	34.75	56.00	-21.25	9.90	Line	-	24.85	0.05	0.06	9.79
QP	181.5k	40.70	64.41	-23.71	9.91	Line	-	30.79	0.06	0.06	9.79
AV	181.5k	31.42	54.41	-22.99	9.91	Line	-	21.51	0.06	0.06	9.79
QP	289.5k	31.96	60.53	-28.57	9.92	Line	-	22.04	0.06	0.06	9.80
AV	289.5k	24.27	50.53	-26.26	9.92	Line	-	14.35	0.06	0.06	9.80
QP	370.5k	29.18	58.49	-29.31	9.93	Line	-	19.25	0.06	0.06	9.81
AV	370.5k	22.04	48.49	-26.45	9.93	Line	-	12.11	0.06	0.06	9.81
QP	1.352M	23.16	56.00	-32.84	10.00	Line	-	13.16	0.08	0.10	9.82
AV	1.352M	16.44	46.00	-29.56	10.00	Line	-	6.44	0.08	0.10	9.82
QP	24.009M	43.64	60.00	-16.36	10.67	Line	-	32.97	0.32	0.34	10.01
AV	24.009M	38.46	50.00	-11.54	10.67	Line	"Worst"	27.79	0.32	0.34	10.01

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**	Neutral
Operating Function	CTX		



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	AF	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	208.5k	37.12	63.27	-26.15	9.89	Neutral	-	27.23	0.04	0.06	9.79
AV	208.5k	27.00	53.27	-26.27	9.89	Neutral	-	17.11	0.04	0.06	9.79
QP	267k	30.77	61.20	-30.43	9.90	Neutral	-	20.87	0.04	0.06	9.80
AV	267k	23.74	51.20	-27.46	9.90	Neutral	-	13.84	0.04	0.06	9.80
QP	406.5k	36.65	57.72	-21.07	9.91	Neutral	-	26.74	0.04	0.06	9.81
AV	406.5k	28.99	47.72	-18.73	9.91	Neutral	-	19.08	0.04	0.06	9.81
QP	856.5k	25.42	56.00	-30.58	9.96	Neutral	-	15.46	0.06	0.08	9.82
AV	856.5k	18.39	46.00	-27.61	9.96	Neutral	-	8.43	0.06	0.08	9.82
QP	16.467M	39.59	60.00	-20.41	10.40	Neutral	-	29.19	0.23	0.23	9.94
AV	16.467M	35.20	50.00	-14.80	10.40	Neutral	-	24.80	0.23	0.23	9.94
QP	24.009M	43.41	60.00	-16.59	10.66	Neutral	-	32.75	0.31	0.34	10.01
AV	24.009M	38.28	50.00	-11.72	10.66	Neutral	"Worst"	27.62	0.31	0.34	10.01

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.)

Mode 1: EUT 1 <Internal>

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)	920k	873.313k	873KF1D	918.75k	869.565k
BT-EDR(2Mbps)	1.321M	1.183M	1M18G1D	1.32M	1.179M
BT-EDR(3Mbps)	1.264M	1.188M	1M19G1D	1.263M	1.184M

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

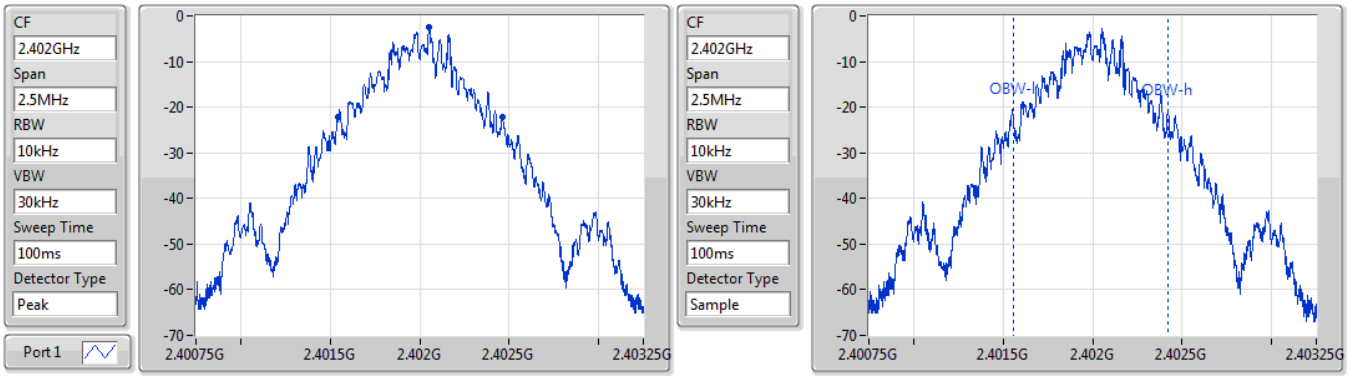
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	Inf	918.75k	869.565k
2440MHz	Pass	Inf	920k	872.064k
2480MHz	Pass	Inf	920k	873.313k
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.321M	1.183M
2440MHz	Pass	Inf	1.32M	1.179M
2480MHz	Pass	Inf	1.32M	1.181M
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.263M	1.186M
2440MHz	Pass	Inf	1.264M	1.184M
2480MHz	Pass	Inf	1.263M	1.188M

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

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

2402MHz

12/06/2019

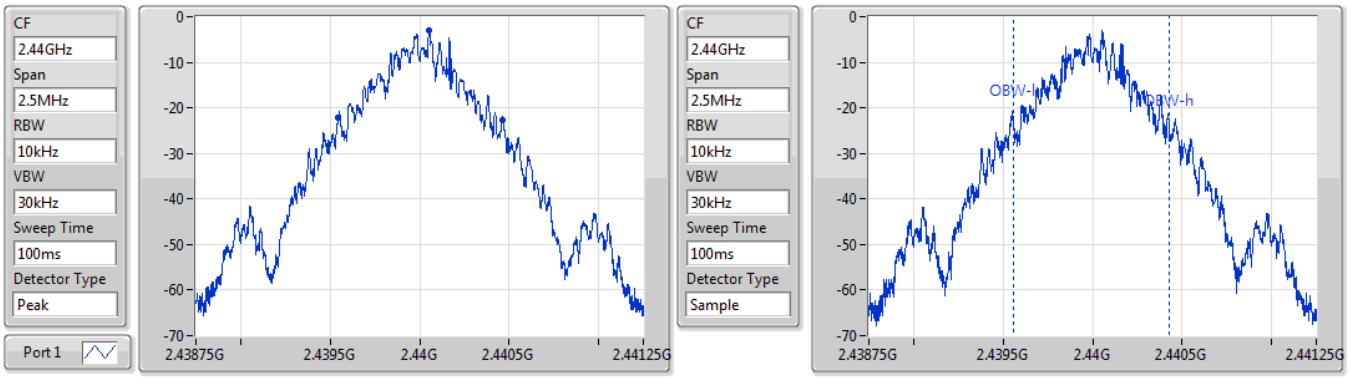


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
918.75k	2.401546G	2.402465G	869.565k	2.401555G	2.402425G	Inf	1

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

2440MHz

12/06/2019

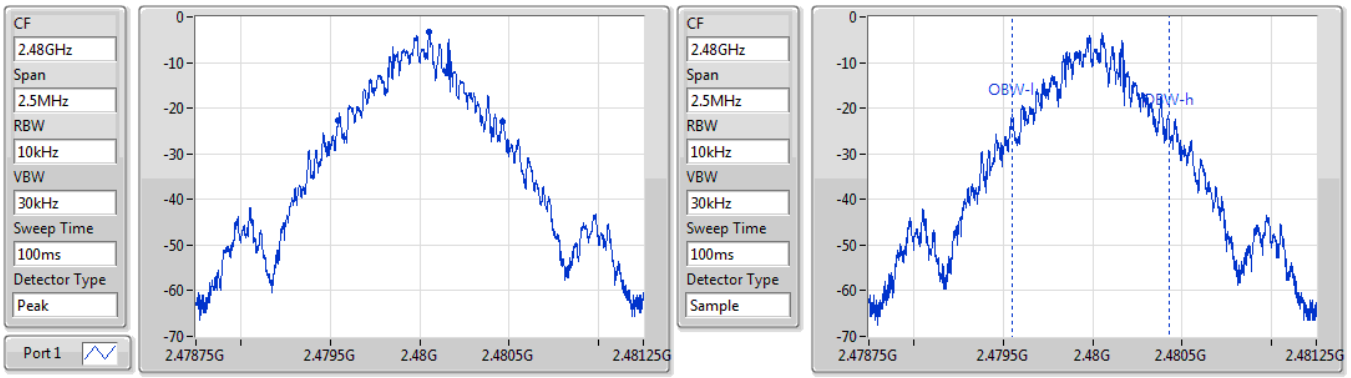


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
920k	2.439546G	2.440466G	872.064k	2.439555G	2.440427G	Inf	1

BT-BR(1Mbps) EBW

2480MHz

12/06/2019

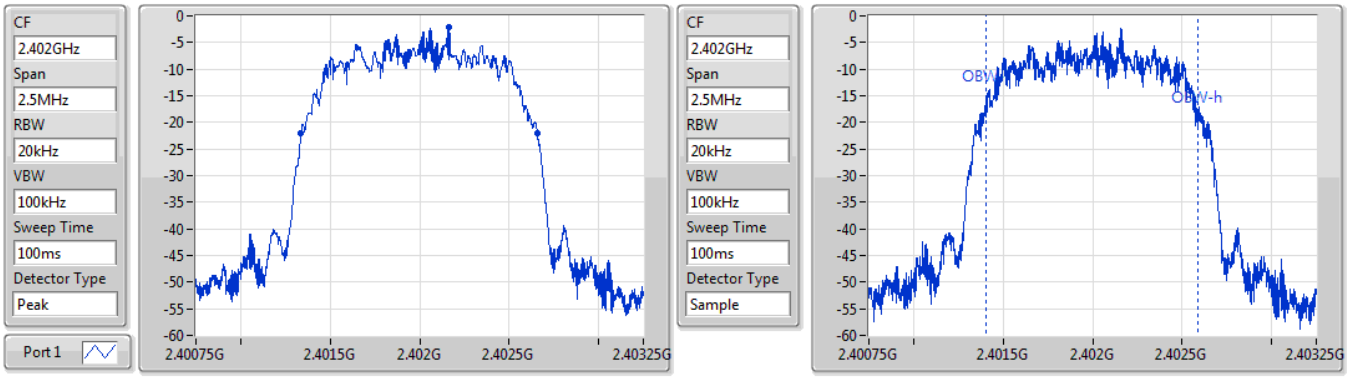


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
920k	2.479546G	2.480466G	873.313k	2.479554G	2.480427G	Inf	1

BT-EDR(2Mbps) EBW

2402MHz

12/06/2019

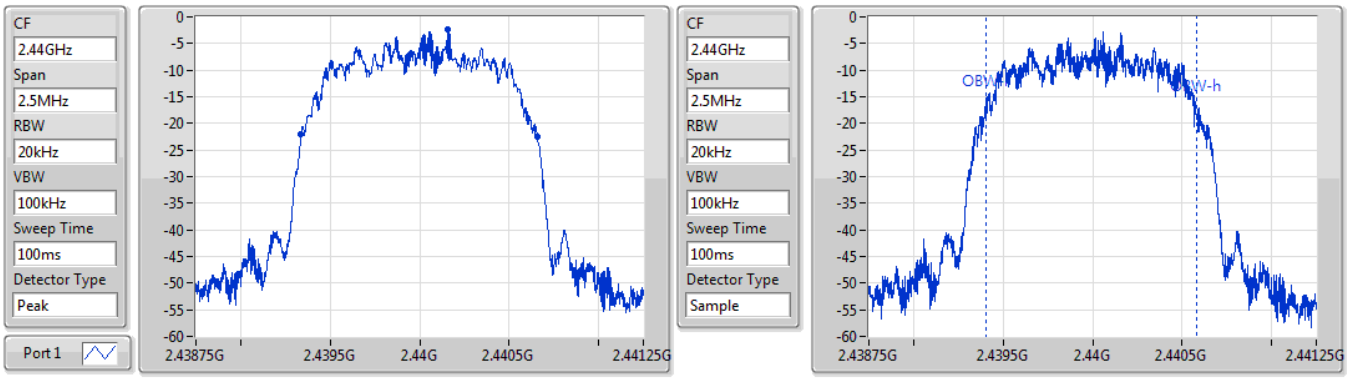


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.321M	2.401336G	2.402658G	1.183M	2.401404G	2.402587G	Inf	1

BT-EDR(2Mbps) EBW

2440MHz

12/06/2019

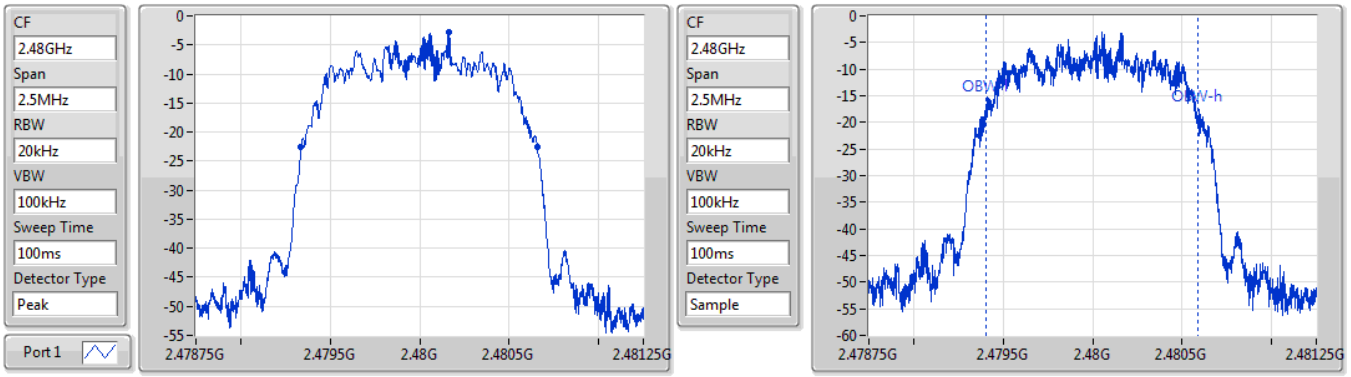


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.32M	2.439338G	2.440658G	1.179M	2.439405G	2.440585G	Inf	1

BT-EDR(2Mbps) EBW

2480MHz

12/06/2019

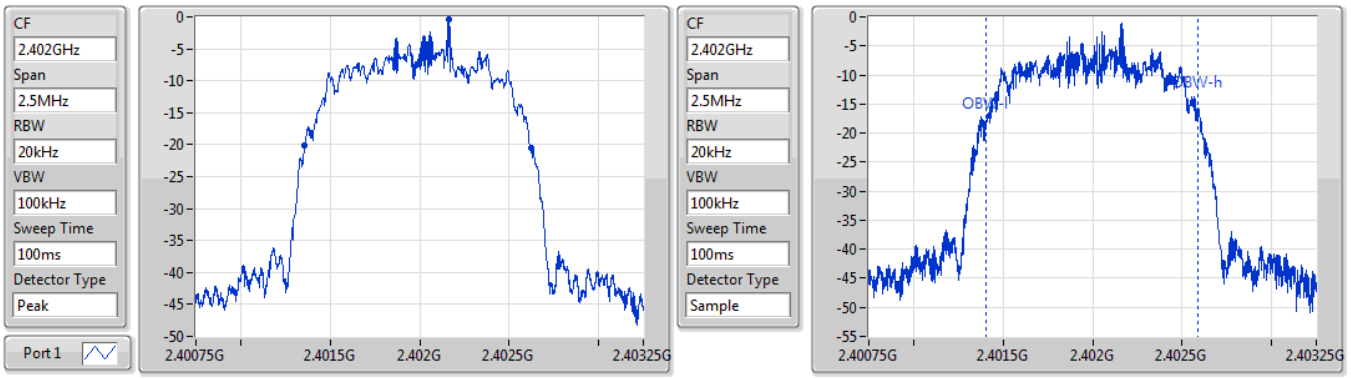


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.32M	2.479338G	2.480658G	1.181M	2.479405G	2.480586G	Inf	1

BT-EDR(3Mbps) EBW

2402MHz

12/06/2019

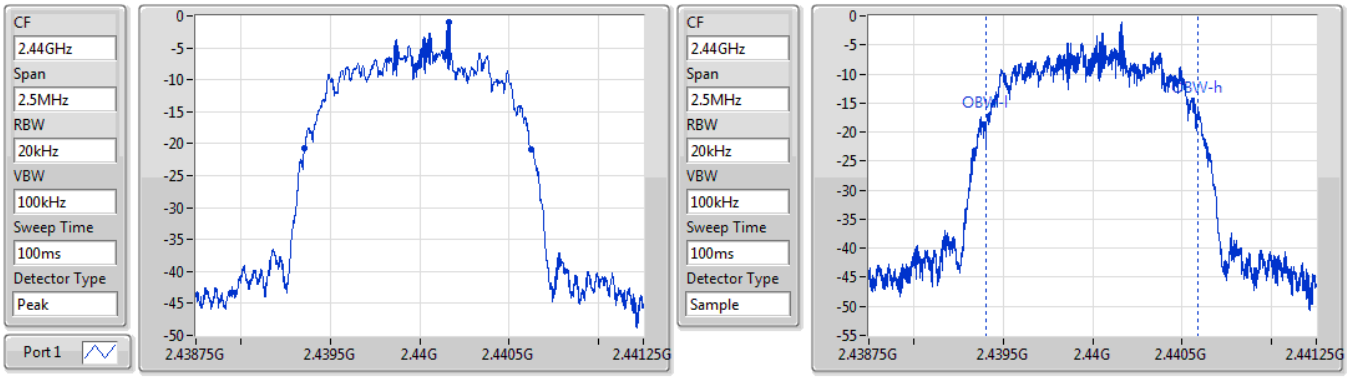


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.263M	2.401358G	2.40262G	1.186M	2.401403G	2.402588G	Inf	1

BT-EDR(3Mbps) EBW

2440MHz

12/06/2019

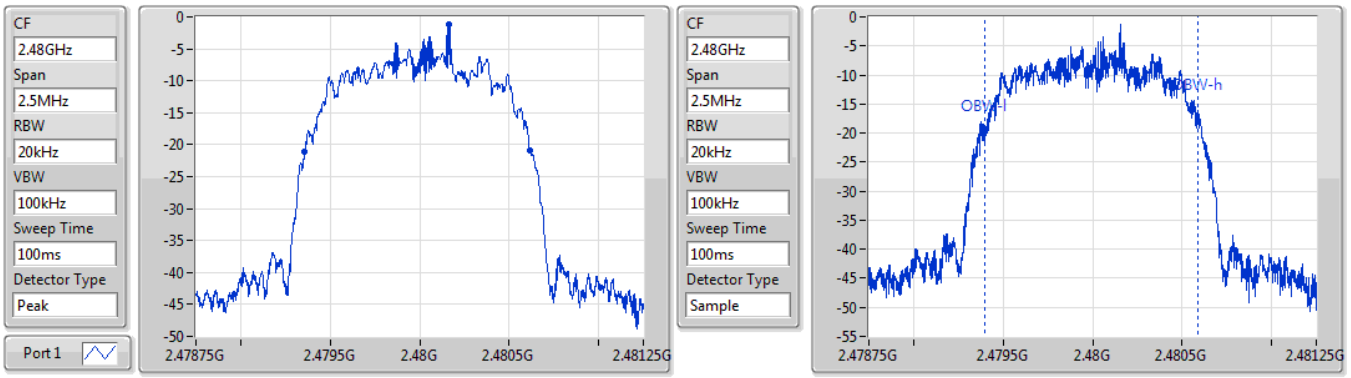


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.264M	2.439356G	2.44062G	1.184M	2.439403G	2.440587G	Inf	1

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

2480MHz

12/06/2019



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.263M	2.479356G	2.480619G	1.188M	2.4794G	2.480588G	Inf	1

Mode 2: EUT 3 <External>

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)	920k	880.81k	881KF1D	918.75k	870.815k
BT-EDR(2Mbps)	1.31M	1.182M	1M18G1D	1.308M	1.181M
BT-EDR(3Mbps)	1.268M	1.191M	1M19G1D	1.263M	1.188M

Max-N dB = Maximum 20dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;
Min-N dB = Minimum 20dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

Result

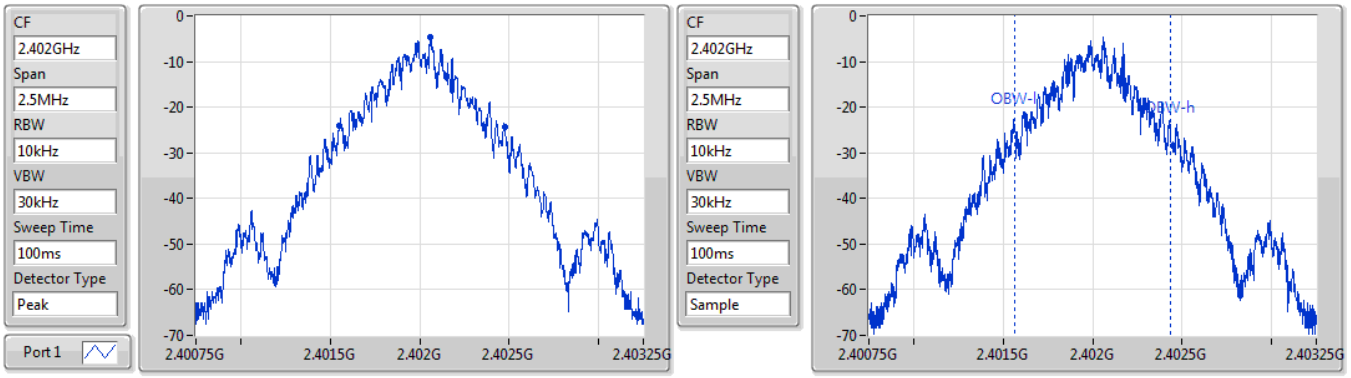
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	Inf	920k	872.064k
2440MHz	Pass	Inf	920k	880.81k
2480MHz	Pass	Inf	918.75k	870.815k
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.309M	1.181M
2440MHz	Pass	Inf	1.31M	1.182M
2480MHz	Pass	Inf	1.308M	1.182M
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.263M	1.189M
2440MHz	Pass	Inf	1.268M	1.188M
2480MHz	Pass	Inf	1.263M	1.191M

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

BT-BR(1Mbps) EBW

2402MHz

12/06/2019

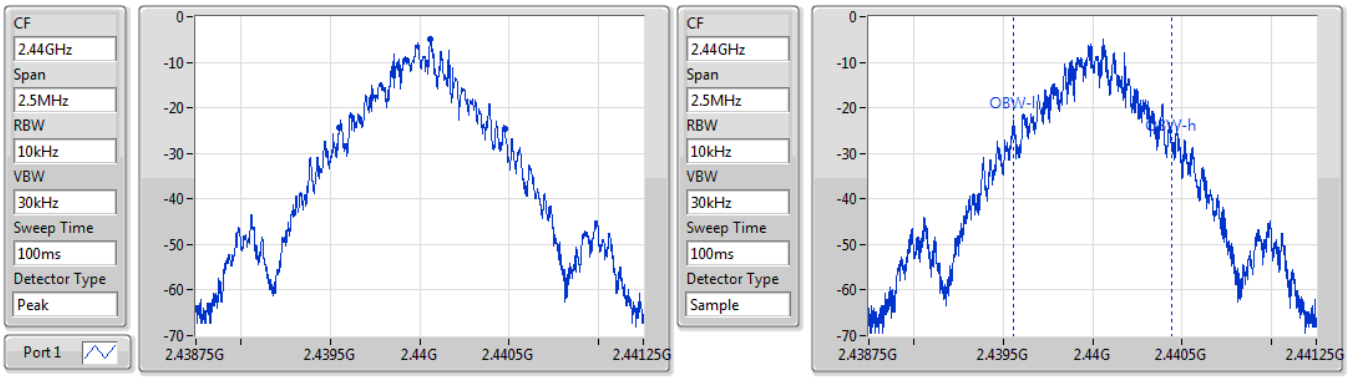


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
920k	2.401554G	2.402474G	872.064k	2.401563G	2.402435G	Inf	1

BT-BR(1Mbps) EBW

2440MHz

12/06/2019

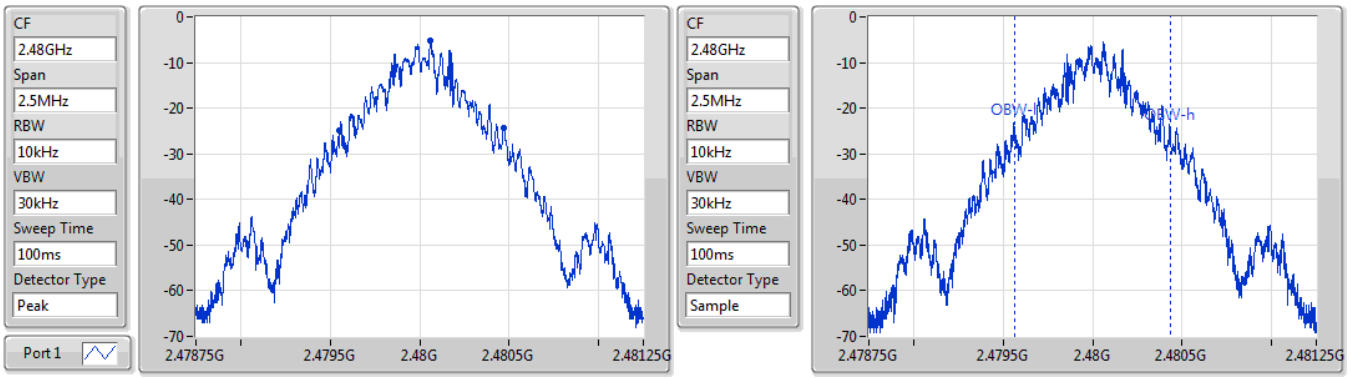


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
920k	2.439554G	2.440474G	880.81k	2.43956G	2.440441G	Inf	1

BT-BR(1Mbps) EBW

2480MHz

12/06/2019

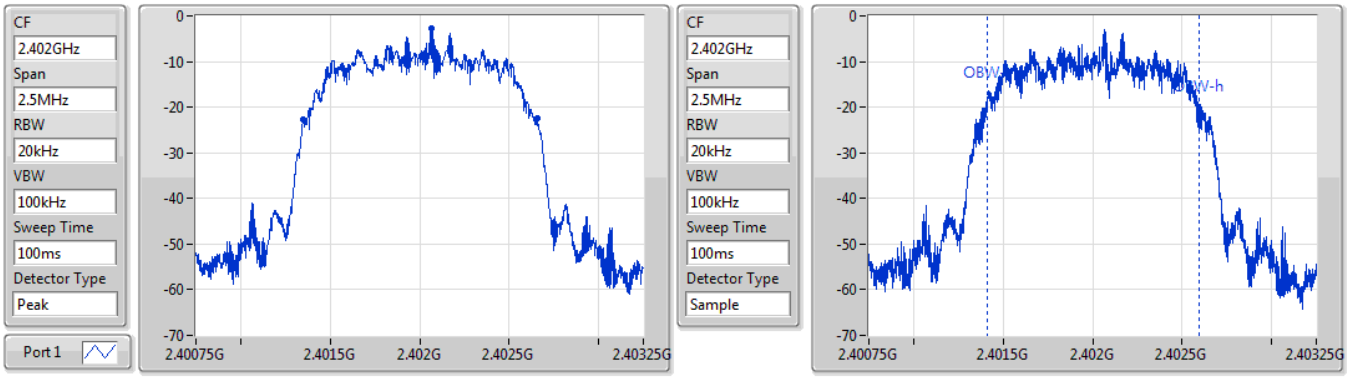


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
918.75k	2.479554G	2.480473G	870.815k	2.479566G	2.480437G	Inf	1

BT-EDR(2Mbps) EBW

2402MHz

12/06/2019

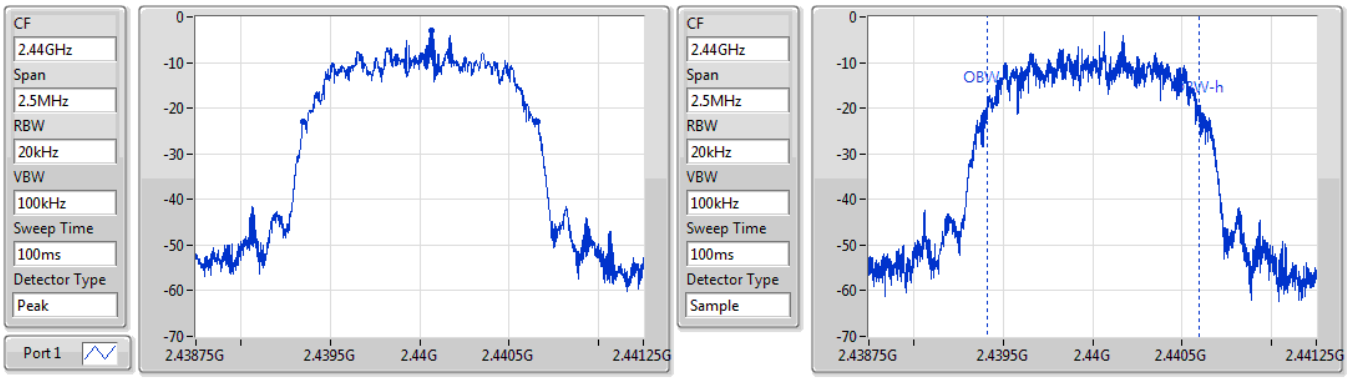


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.309M	2.40135G	2.402659G	1.181M	2.401412G	2.402592G	Inf	1

BT-EDR(2Mbps) EBW

2440MHz

12/06/2019

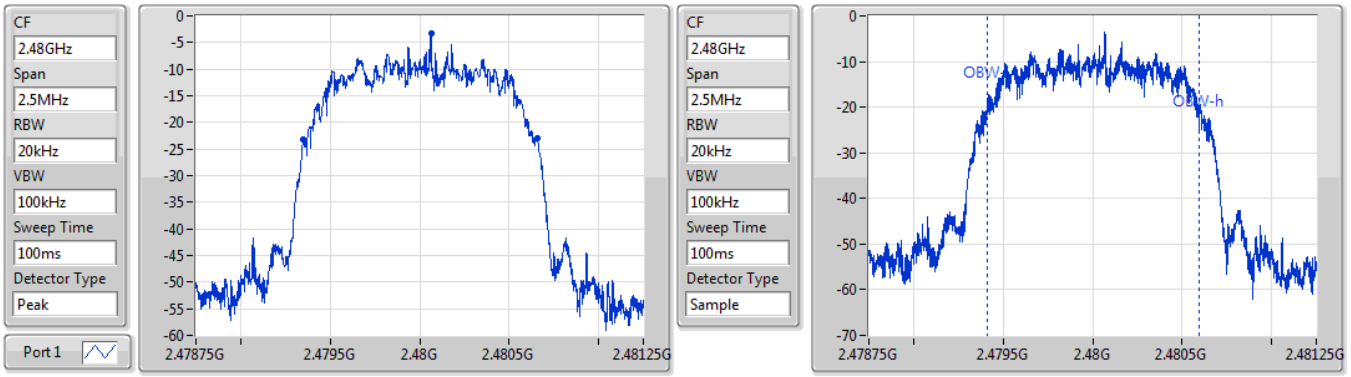


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.31M	2.43935G	2.44066G	1.182M	2.439414G	2.440596G	Inf	1

BT-EDR(2Mbps) EBW

2480MHz

12/06/2019

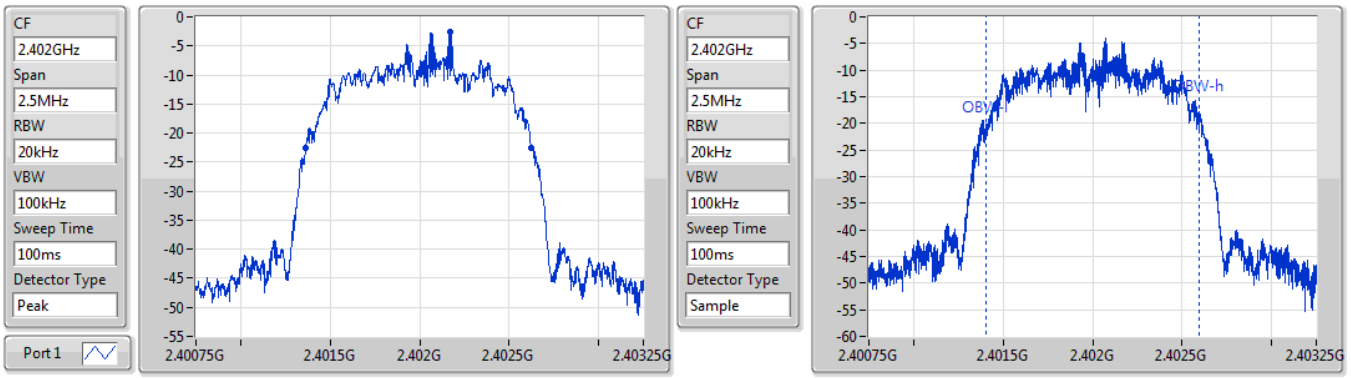


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.308M	2.47935G	2.480658G	1.182M	2.479414G	2.480596G	Inf	1

BT-EDR(3Mbps) EBW

2402MHz

12/06/2019

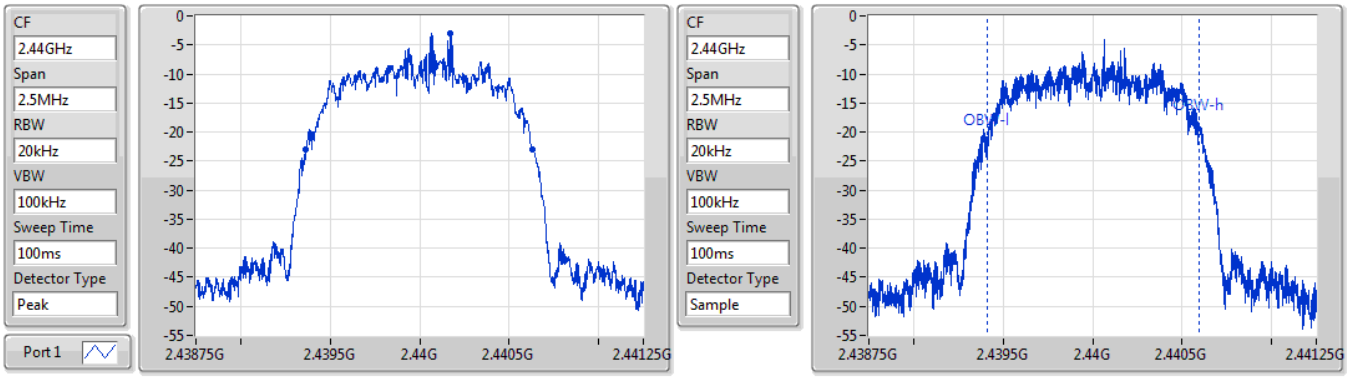


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.263M	2.401364G	2.402626G	1.189M	2.401408G	2.402597G	Inf	1

BT-EDR(3Mbps) EBW

2440MHz

12/06/2019

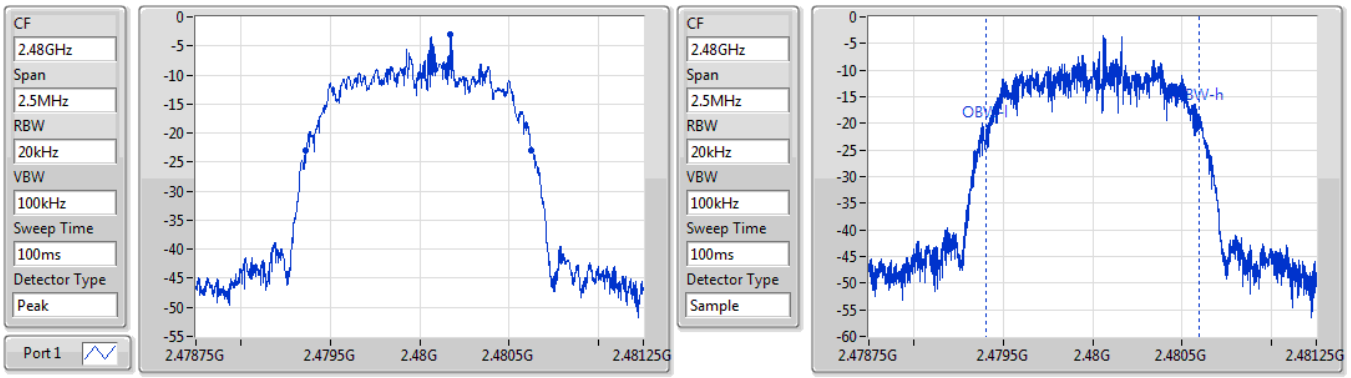


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.268M	2.439363G	2.44063G	1.188M	2.439409G	2.440597G	Inf	1

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

2480MHz

12/06/2019



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.263M	2.479364G	2.480626G	1.191M	2.479408G	2.480598G	Inf	1

Mode 1: EUT 1 <Internal>

Summary

Mode	Max-Space (Hz)	Min-Space (Hz)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	1.002M	999k
BT-EDR(2Mbps)	1.038M	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	2.402161G	2.403163G	1.002M	611.8875k
2440MHz	Pass	2.440161G	2.441163G	1.002M	468.6975k
2480MHz	Pass	2.479163G	2.480162G	999k	612.72k
BT-EDR(2Mbps)	-	-	-	-	-
2402MHz	Pass	2.402059G	2.403058G	999k	879.786k
2440MHz	Pass	2.440023G	2.441061G	1.038M	879.12k
2480MHz	Pass	2.479059G	2.480063G	1.0035M	879.12k
BT-EDR(3Mbps)	-	-	-	-	-
2402MHz	Pass	2.402161G	2.403162G	1.0005M	841.158k
2440MHz	Pass	2.440161G	2.441163G	1.002M	841.824k
2480MHz	Pass	2.479163G	2.480163G	1.0005M	841.158k

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

2.402G/2.403GHz

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.402161G	2.403163G	1.002M	611.8875k

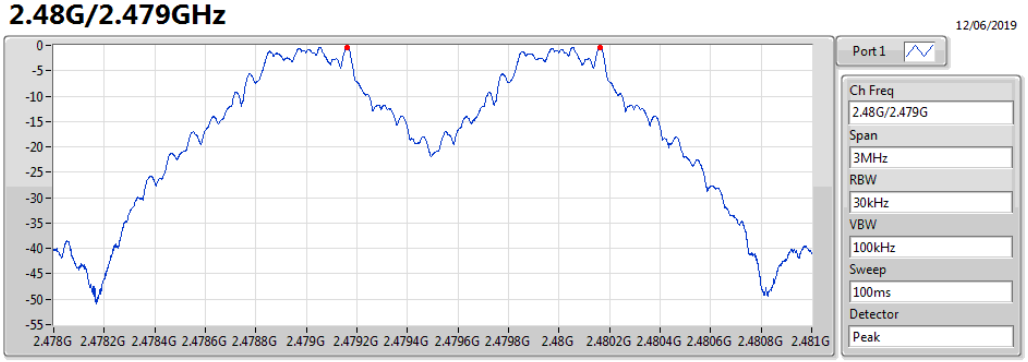
BT-BR(1Mbps) **Channel Separation**

2.44G/2.441GHz

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.440161G	2.441163G	1.002M	468.6975k

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

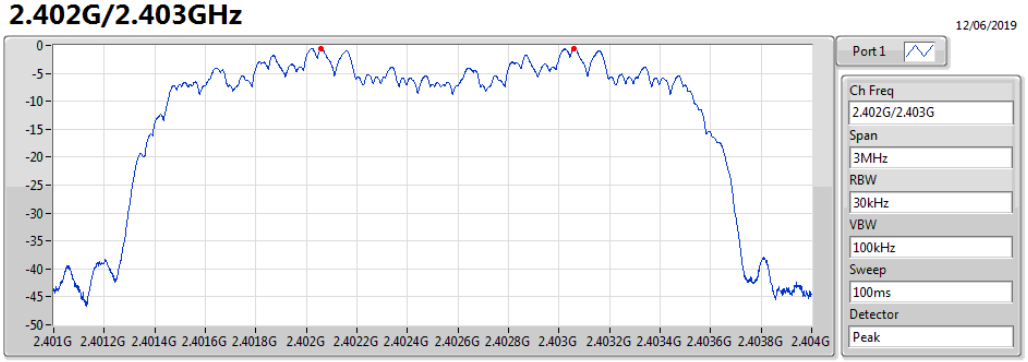
2.48G/2.479GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.479163G	2.480162G	999k	612.72k

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

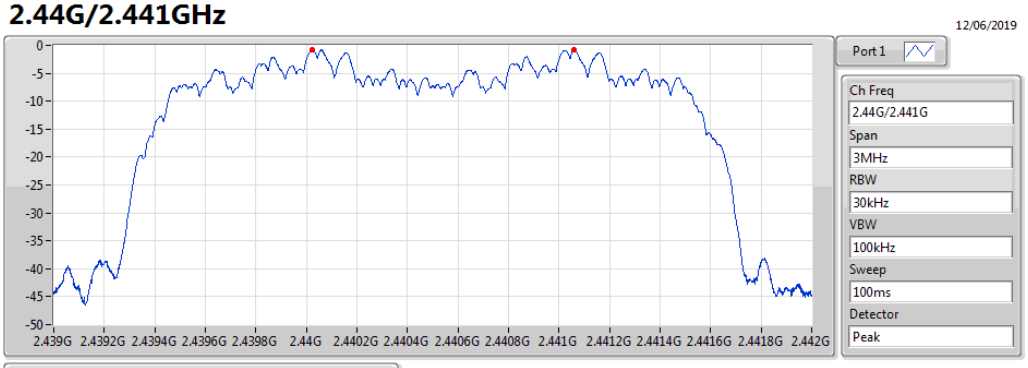
2.402G/2.403GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.402059G	2.403058G	999k	879.786k

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

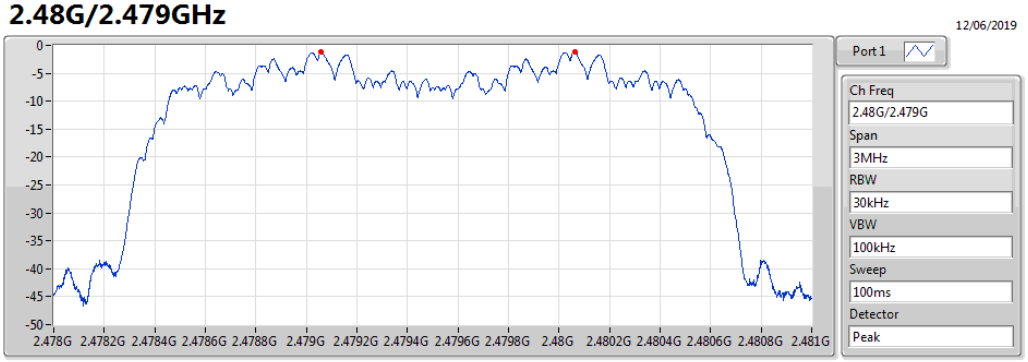
2.44G/2.441GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.440023G	2.441061G	1.038M	879.12k

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

2.48G/2.479GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.479059G	2.480063G	1.0035M	879.12k

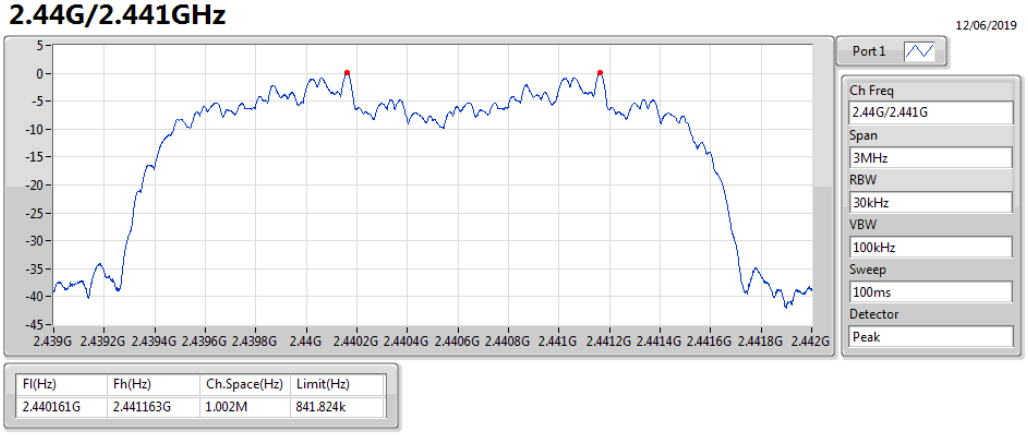
BT-EDR(3Mbps) **Channel Separation**

2.402G/2.403GHz

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.402161G	2.403162G	1.0005M	841.158k

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

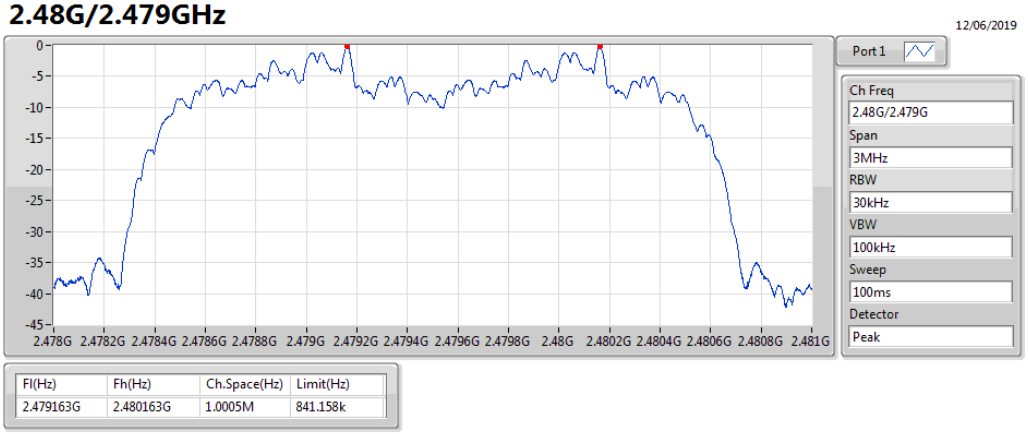
2.44G/2.441GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.440161G	2.441163G	1.002M	841.824k

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

2.48G/2.479GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.479163G	2.480163G	1.0005M	841.158k

Mode 2: EUT 3 <External>

Summary

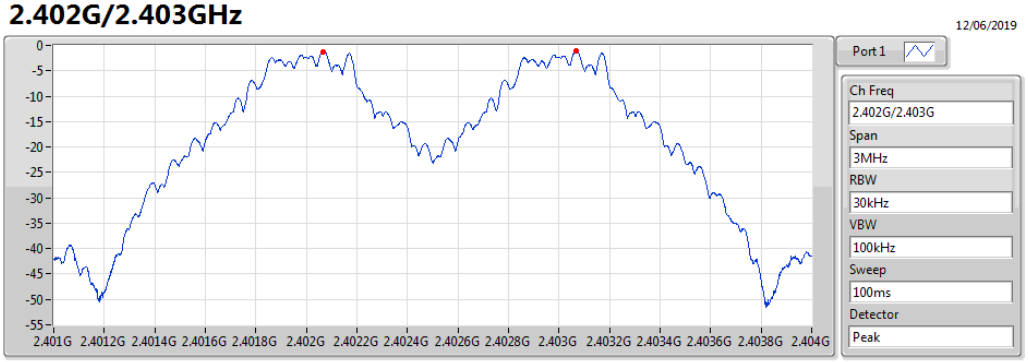
Mode	Max-Space (Hz)	Min-Space (Hz)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	1.002M	999k
BT-EDR(2Mbps)	1.002M	999k
BT-EDR(3Mbps)	1.0005M	999k

Result

Mode	Result	Fl (Hz)	Fh (Hz)	Ch.Space (Hz)	Limit (Hz)
BT-BR(1Mbps)	-	-	-	-	-
2402MHz	Pass	2.402067G	2.403069G	1.002M	612.72k
2440MHz	Pass	2.440068G	2.441067G	999k	612.72k
2480MHz	Pass	2.47907G	2.48007G	1.0005M	611.8875k
BT-EDR(2Mbps)	-	-	-	-	-
2402MHz	Pass	2.402068G	2.40307G	1.002M	871.794k
2440MHz	Pass	2.440067G	2.441067G	1.0005M	872.46k
2480MHz	Pass	2.479068G	2.480067G	999k	871.128k
BT-EDR(3Mbps)	-	-	-	-	-
2402MHz	Pass	2.402068G	2.403069G	1.0005M	841.158k
2440MHz	Pass	2.440068G	2.441069G	1.0005M	844.488k
2480MHz	Pass	2.479068G	2.480067G	999k	841.158k

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

2.402G/2.403GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.402067G	2.403069G	1.002M	612.72k

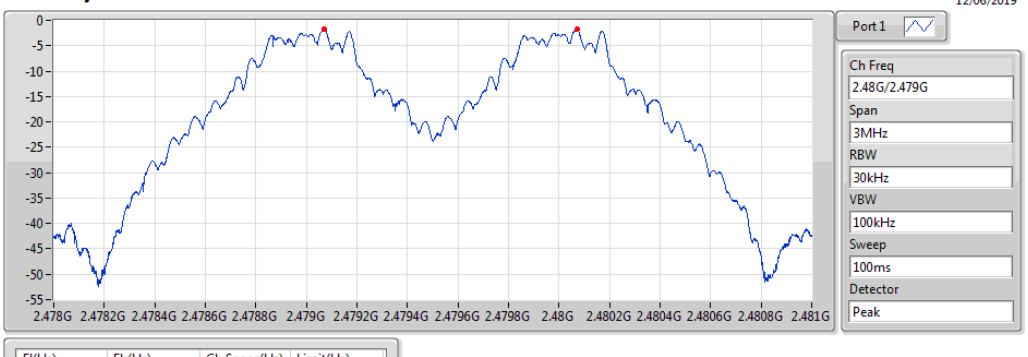
BT-BR(1Mbps) **Channel Separation**

2.44G/2.441GHz

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.440068G	2.441067G	999k	612.72k

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

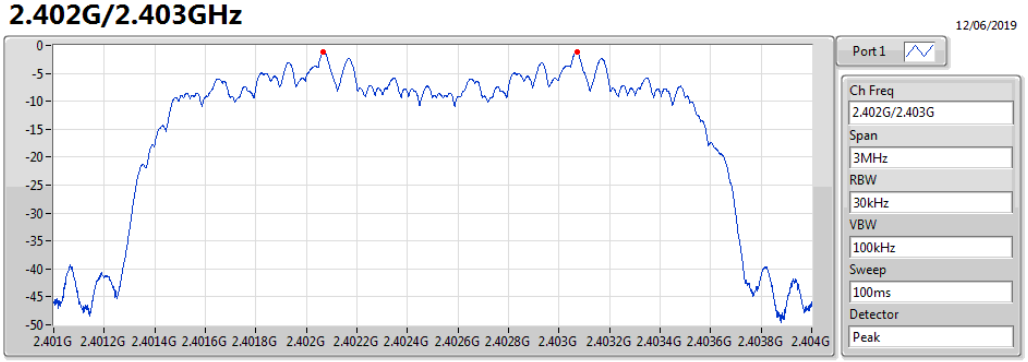
2.48G/2.479GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.47907G	2.48007G	1.0005M	611.8875k

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

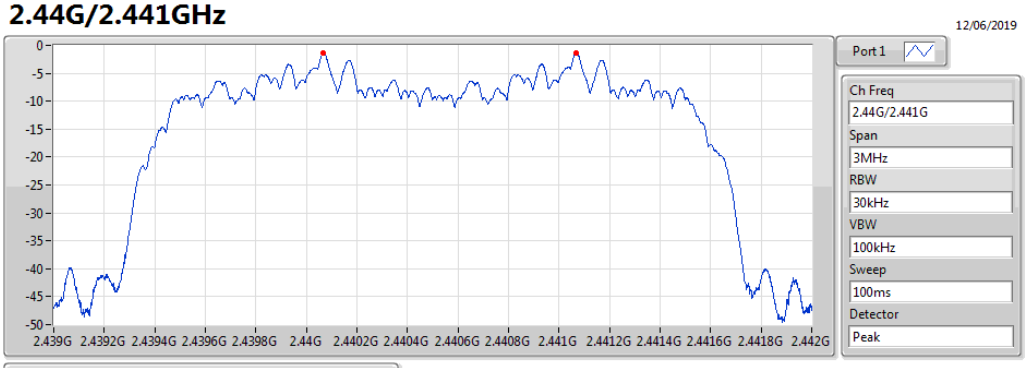
2.402G/2.403GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.402068G	2.40307G	1.002M	871.794k

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

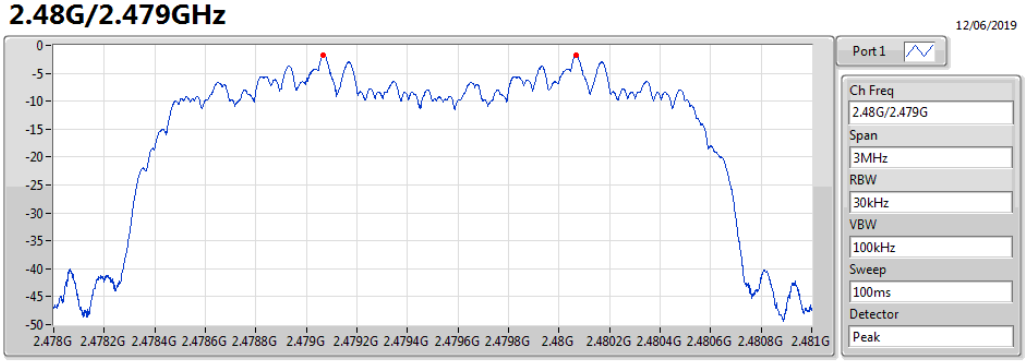
2.44G/2.441GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.440067G	2.441067G	1.0005M	872.46k

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

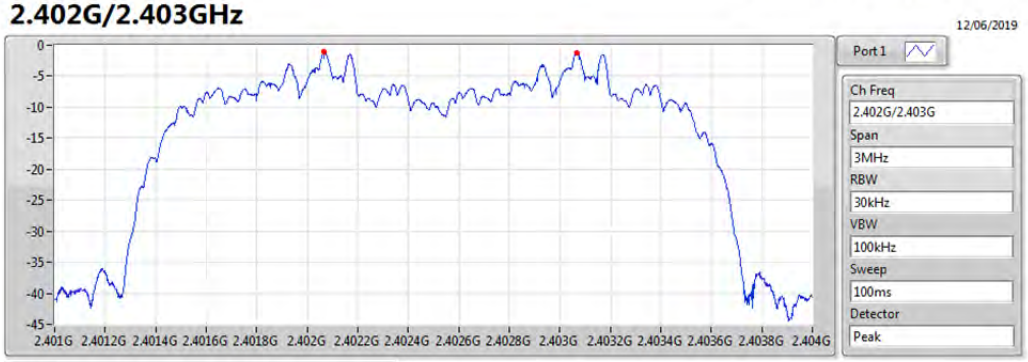
2.48G/2.479GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.479068G	2.480067G	999k	871.128k

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

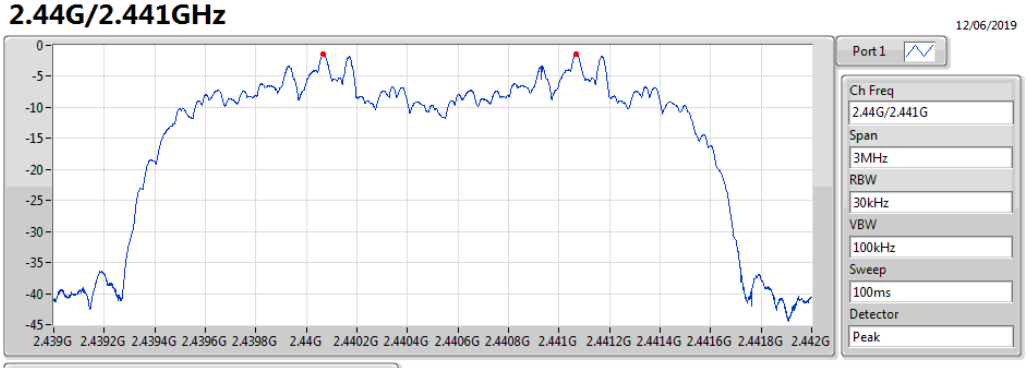
2.402G/2.403GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.402068G	2.403069G	1.0005M	841.158k

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

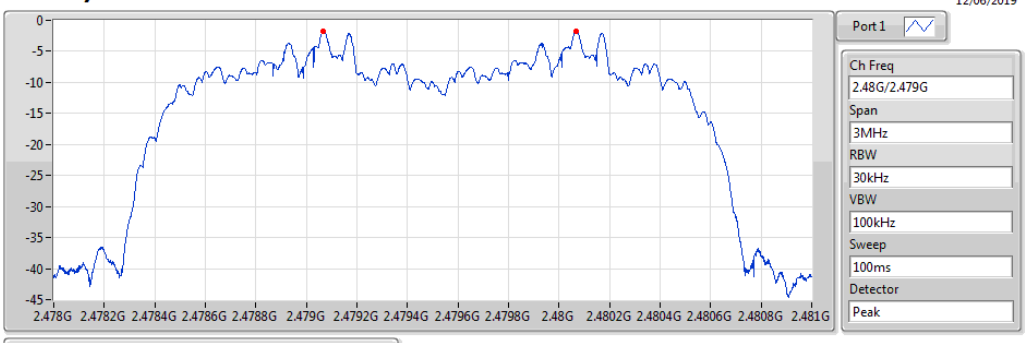
2.44G/2.441GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.440068G	2.441069G	1.0005M	844.488k

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

2.48G/2.479GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.479068G	2.480067G	999k	841.158k

Mode 1: EUT 1 <Internal>

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	3.47	0.00222
BT-EDR(2Mbps)	3.45	0.00221
BT-EDR(3Mbps)	3.46	0.00222

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	1.25	3.47	21.00
2440MHz	Pass	1.25	3.24	21.00
2480MHz	Pass	1.25	2.93	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	1.25	3.45	21.00
2440MHz	Pass	1.25	3.24	21.00
2480MHz	Pass	1.25	2.86	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	1.25	3.46	21.00
2440MHz	Pass	1.25	3.28	21.00
2480MHz	Pass	1.25	2.88	21.00

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

Mode 2: EUT 3 <External>

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	3.52	0.00225
BT-EDR(2Mbps)	3.52	0.00225
BT-EDR(3Mbps)	3.53	0.00225

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	-0.61	3.52	21.00
2440MHz	Pass	-0.61	3.33	21.00
2480MHz	Pass	-0.61	3.02	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	-0.61	3.52	21.00
2440MHz	Pass	-0.61	3.32	21.00
2480MHz	Pass	-0.61	2.90	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	-0.61	3.53	21.00
2440MHz	Pass	-0.61	3.23	21.00
2480MHz	Pass	-0.61	2.97	21.00

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

Mode 1: EUT 1 <Internal>

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	4.00	0.00251
BT-EDR(2Mbps)	5.74	0.00375
BT-EDR(3Mbps)	6.06	0.00404

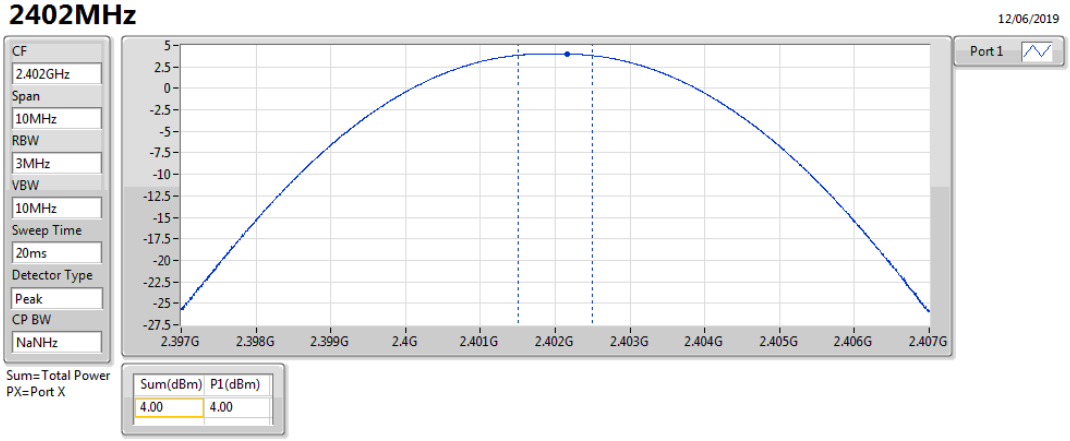
Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	1.25	4.00	21.00
2440MHz	Pass	1.25	3.67	21.00
2480MHz	Pass	1.25	3.35	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	1.25	5.74	21.00
2440MHz	Pass	1.25	5.39	21.00
2480MHz	Pass	1.25	5.10	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	1.25	6.06	21.00
2440MHz	Pass	1.25	5.72	21.00
2480MHz	Pass	1.25	5.42	21.00

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

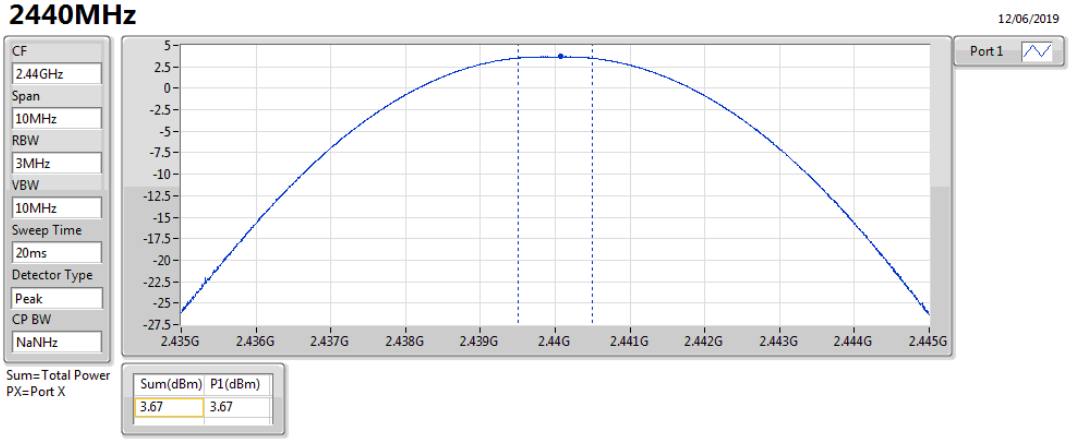
BT-BR(1Mbps) **PK Power**

2402MHz



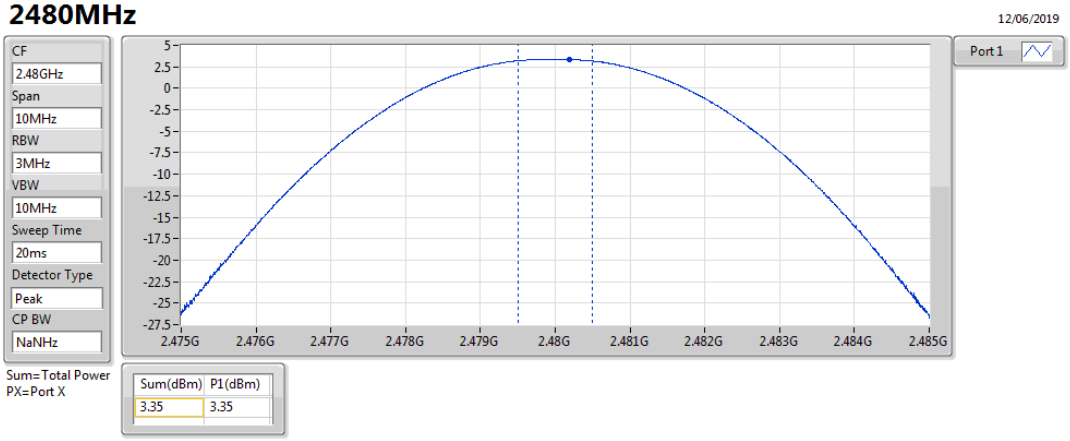
BT-BR(1Mbps) **PK Power**

2440MHz



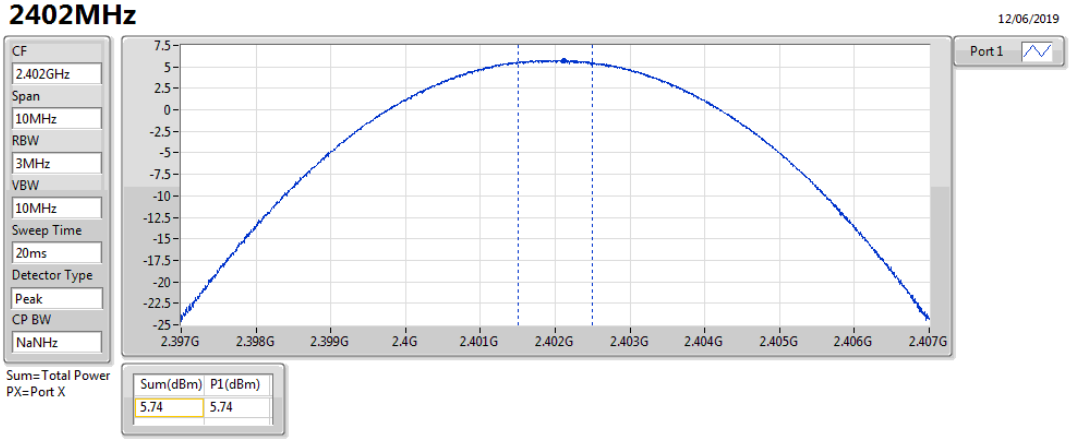
BT-BR(1Mbps) **PK Power**

2480MHz



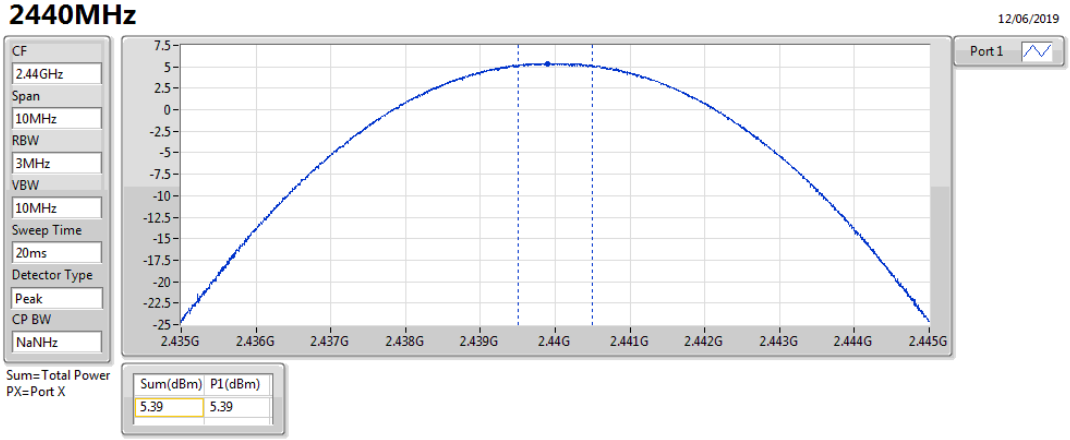
BT-EDR(2Mbps) **PK Power**

2402MHz



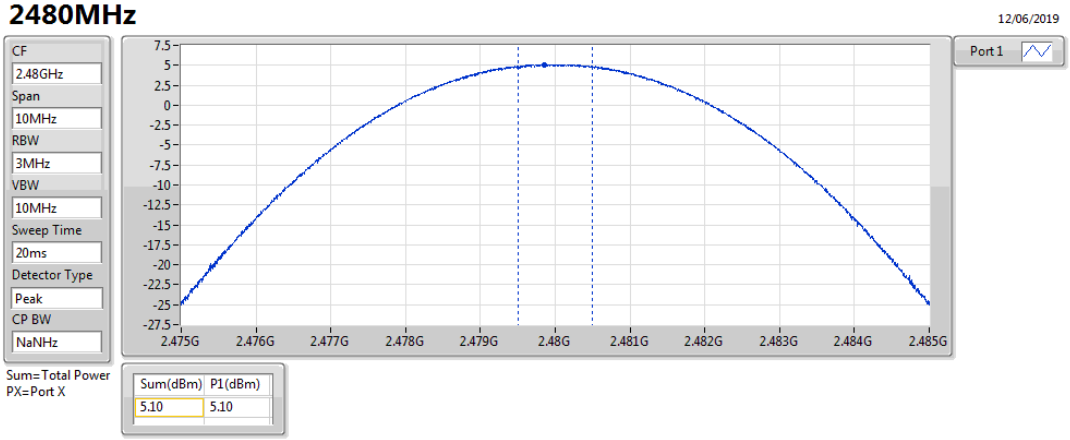
BT-EDR(2Mbps) **PK Power**

2440MHz



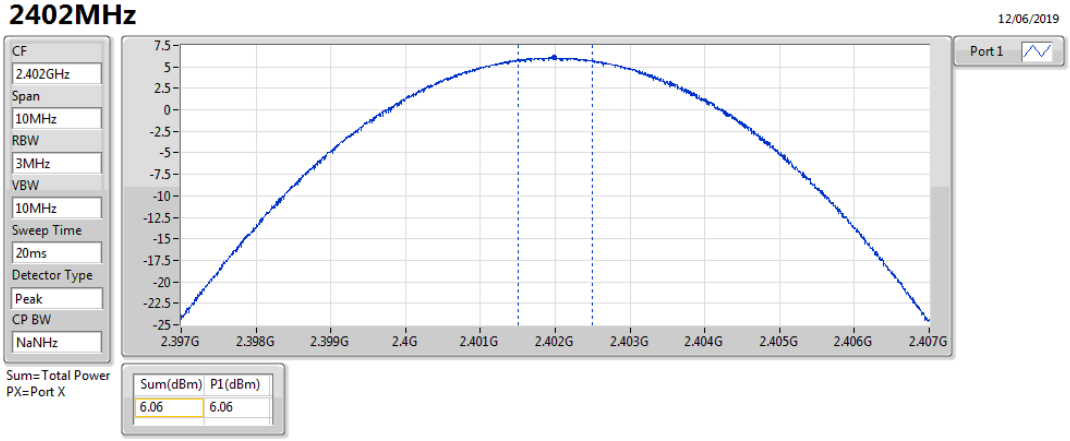
BT-EDR(2Mbps) **PK Power**

2480MHz



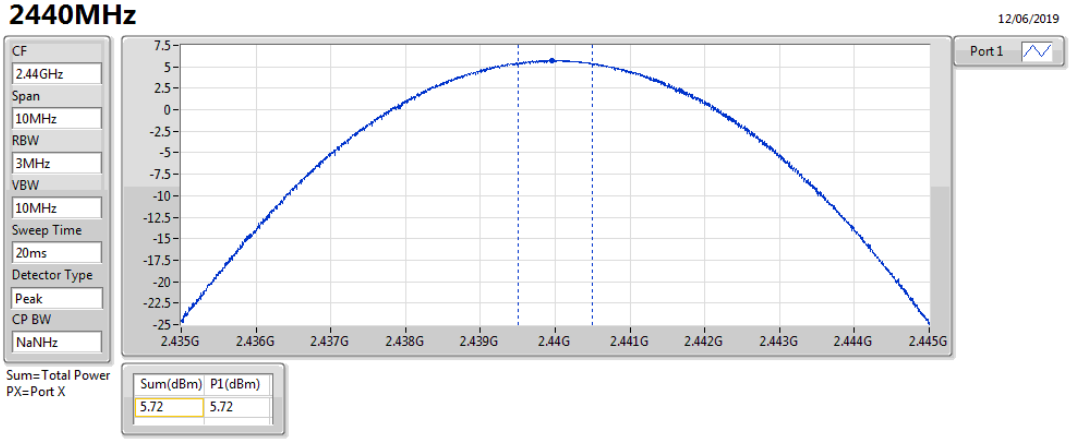
BT-EDR(3Mbps) **PK Power**

2402MHz



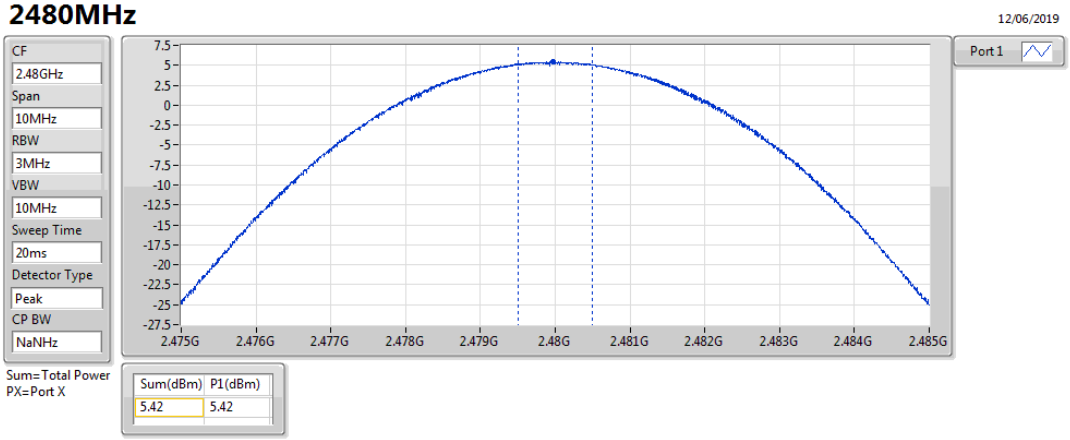
BT-EDR(3Mbps) **PK Power**

2440MHz



BT-EDR(3Mbps) **PK Power**

2480MHz



Mode 2: EUT 3 <External>

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	4.11	0.00258
BT-EDR(2Mbps)	5.83	0.00383
BT-EDR(3Mbps)	6.15	0.00412

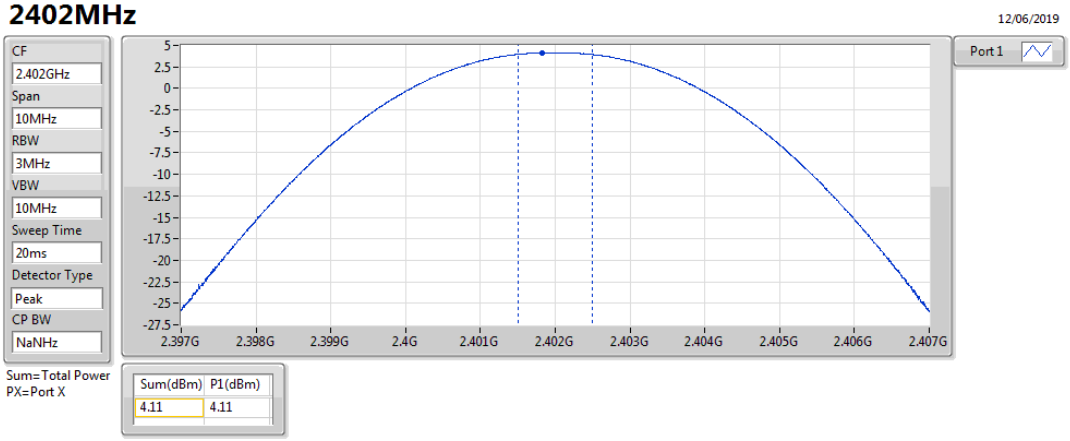
Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	-0.61	4.11	21.00
2440MHz	Pass	-0.61	3.78	21.00
2480MHz	Pass	-0.61	3.48	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	-0.61	5.83	21.00
2440MHz	Pass	-0.61	5.51	21.00
2480MHz	Pass	-0.61	5.19	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	-0.61	6.15	21.00
2440MHz	Pass	-0.61	5.84	21.00
2480MHz	Pass	-0.61	5.51	21.00

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

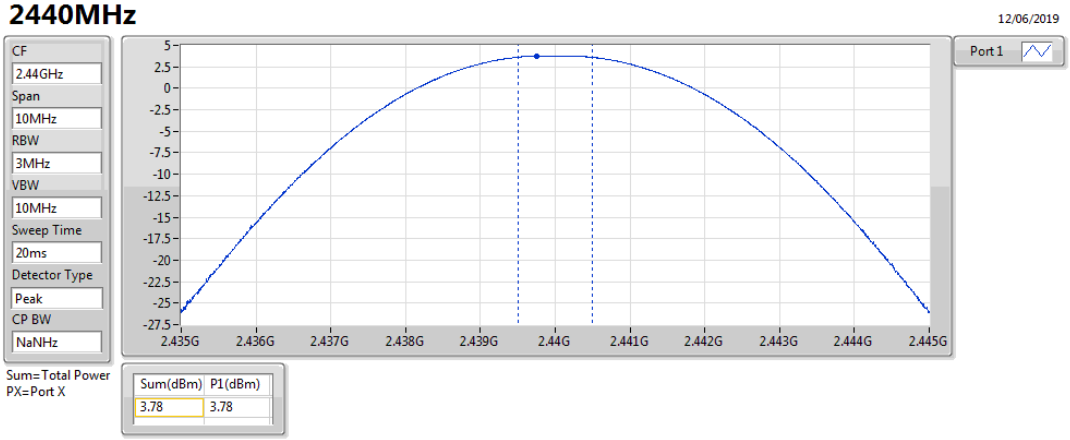
BT-BR(1Mbps) **PK Power**

2402MHz



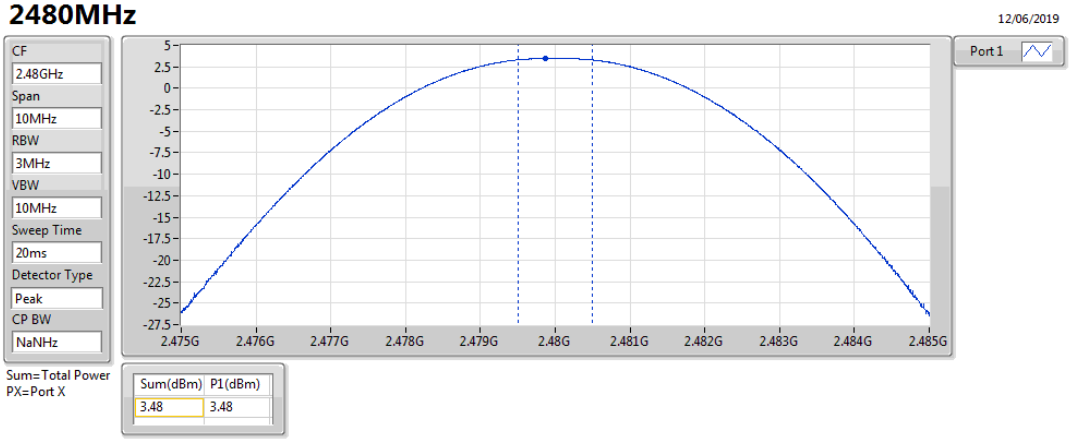
BT-BR(1Mbps) **PK Power**

2440MHz



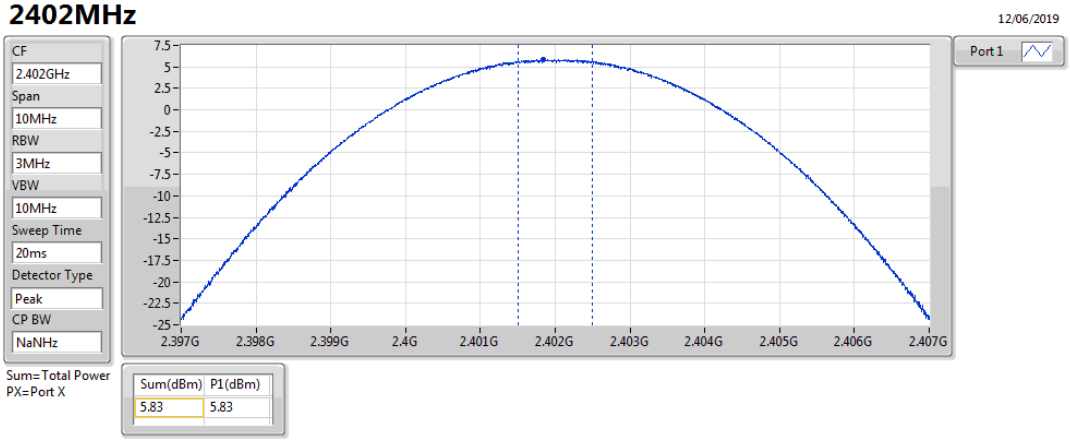
BT-BR(1Mbps) **PK Power**

2480MHz



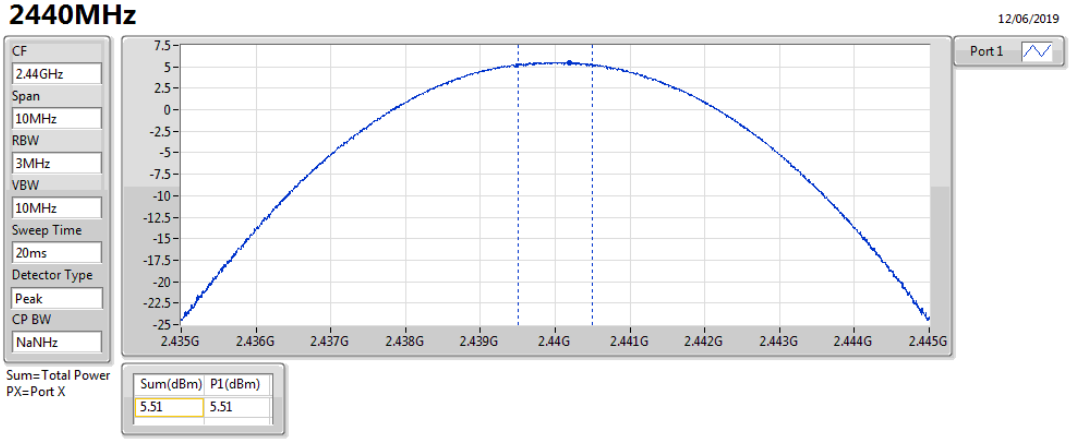
BT-EDR(2Mbps) **PK Power**

2402MHz



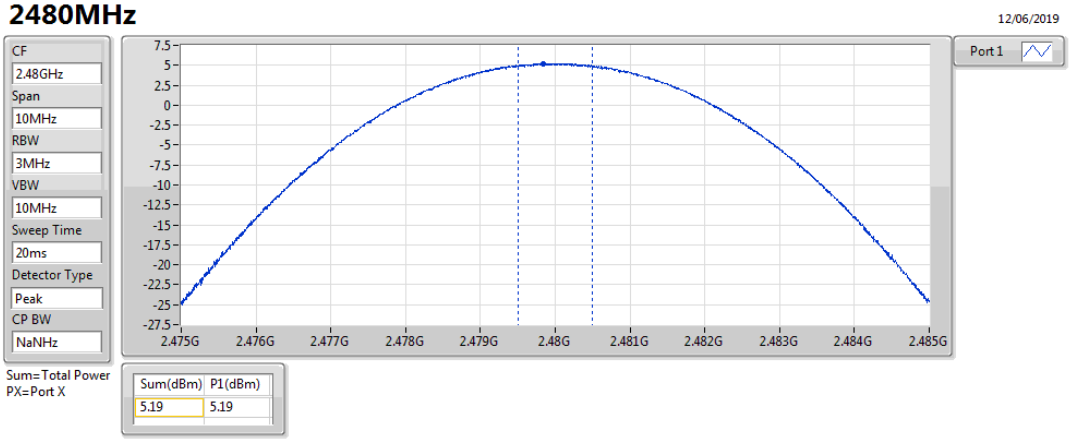
BT-EDR(2Mbps) **PK Power**

2440MHz



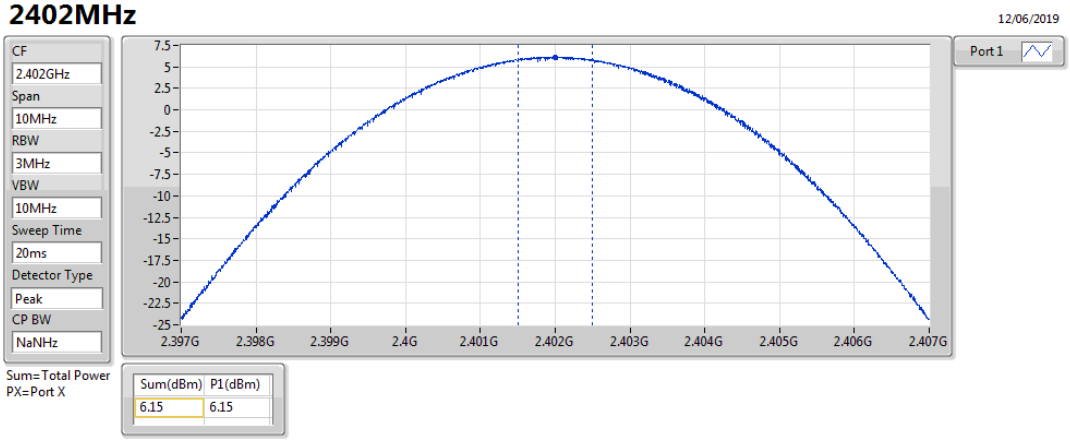
BT-EDR(2Mbps) **PK Power**

2480MHz



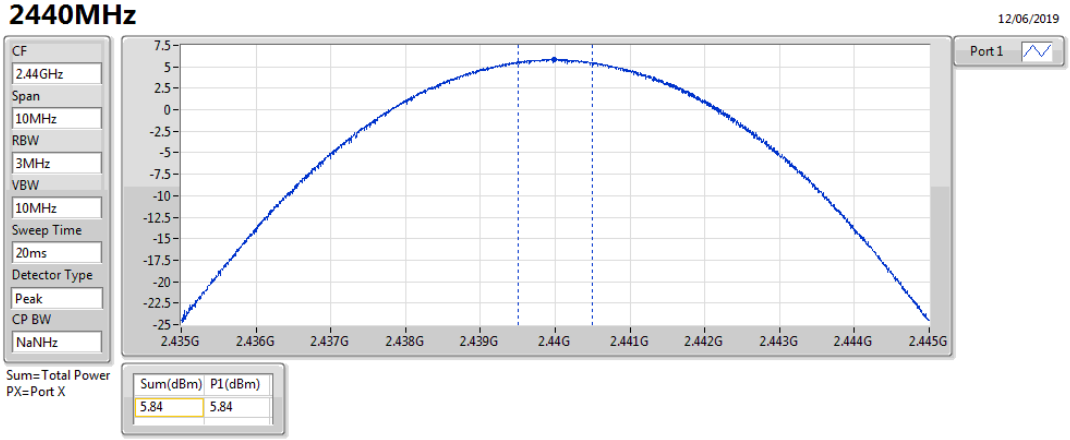
BT-EDR(3Mbps) **PK Power**

2402MHz



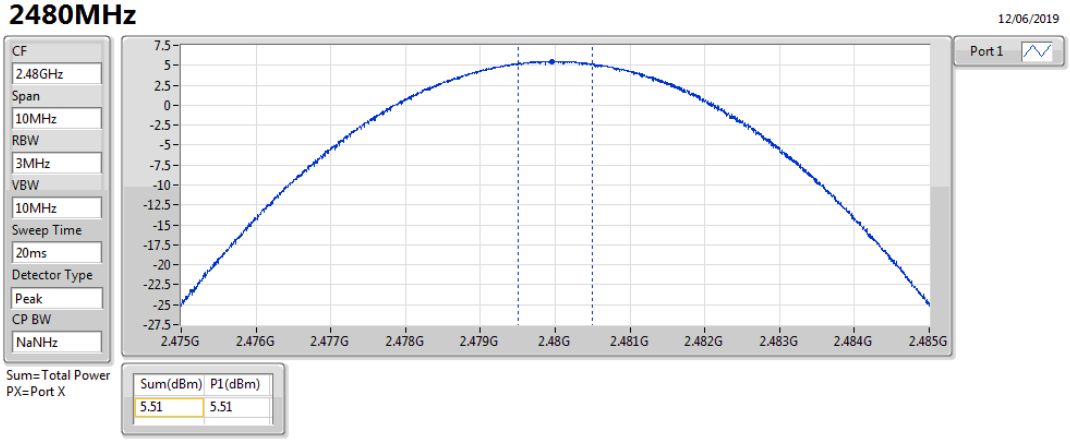
BT-EDR(3Mbps) **PK Power**

2440MHz



BT-EDR(3Mbps) **PK Power**

2480MHz



Mode 1: EUT 1 <Internal>

Summary

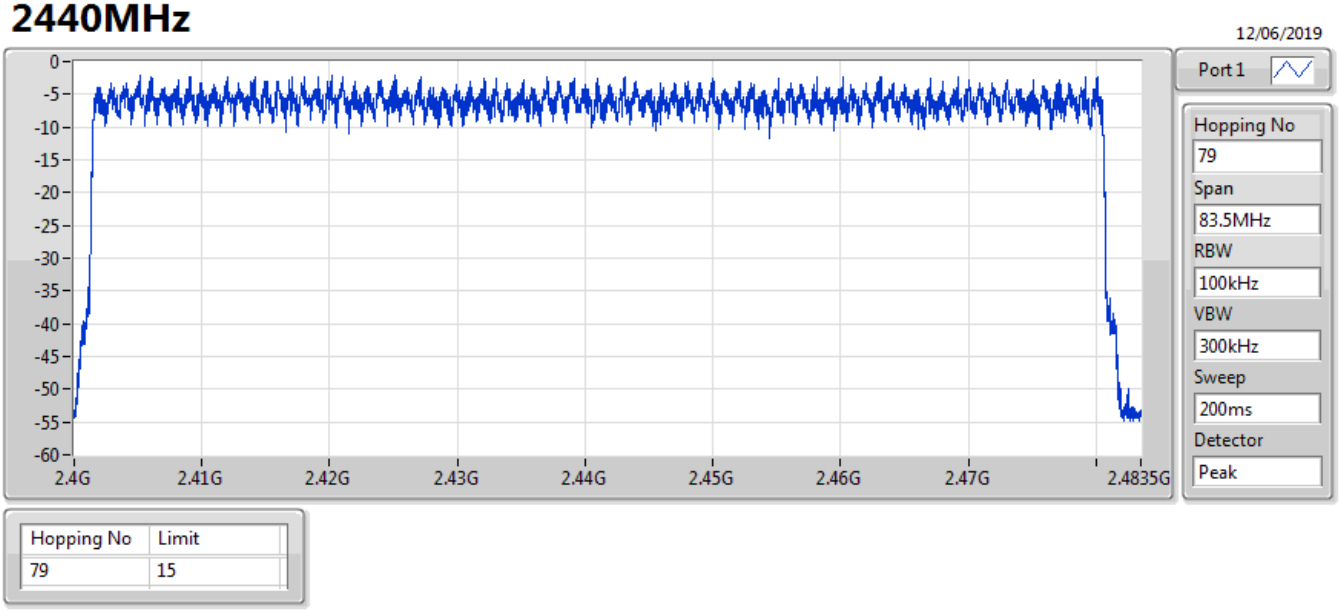
Mode	Max-Hop No
2.4-2.4835GHz	-
BT-BR(1Mbps)	79
BT-EDR(2Mbps)	79
BT-EDR(3Mbps)	79

Result

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

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

2440MHz

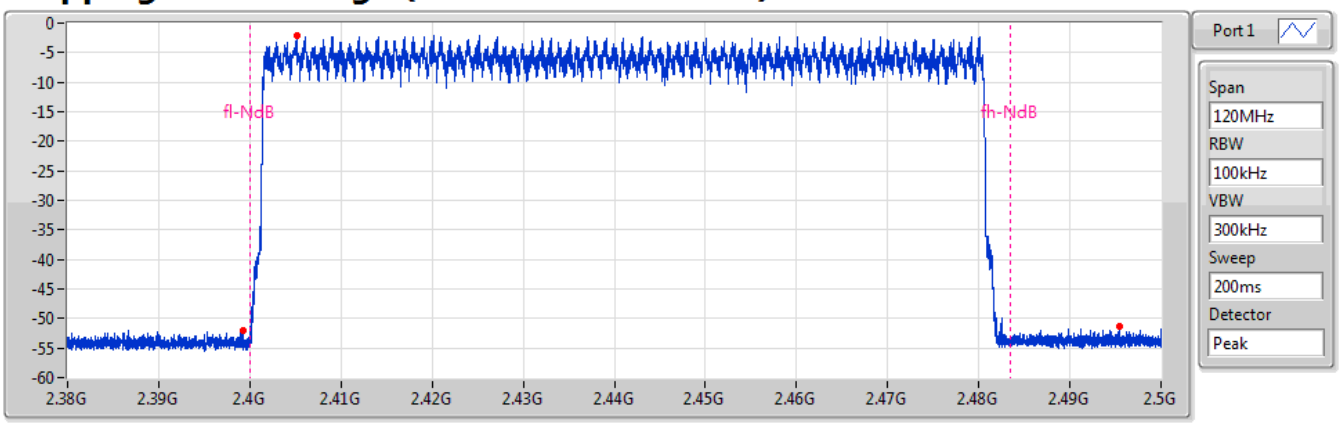


Hopping No	Limit
79	15

BT-BR(1Mbps)

2440MHz

Hopping Ch Bandedge (Non-restricted Band)

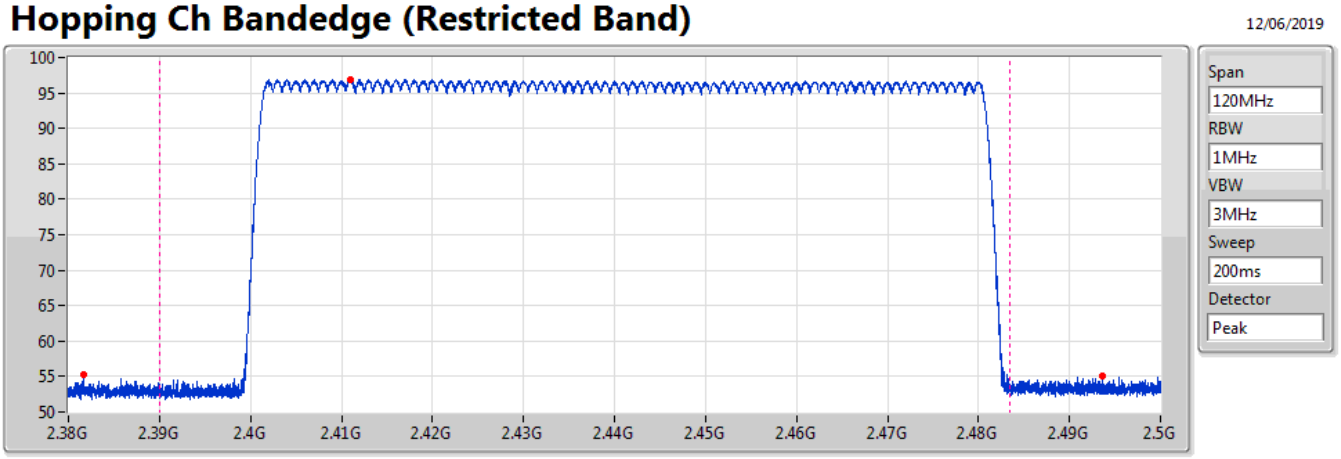


Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-22.03	2.405155G	-2.03	2.39932G	-51.99	2.49544G	-51.4

BT-BR(1Mbps)

2440MHz

Hopping Ch Bandedge (Restricted Band)

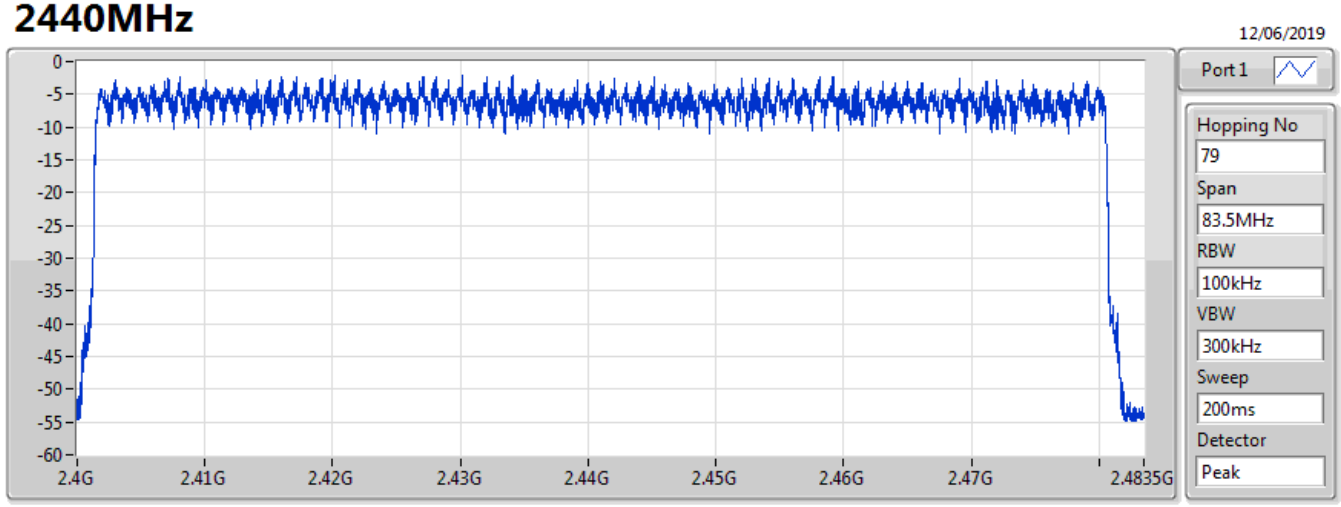


Ref(Hz)	Ref(dBuV/m)	BE-l(Hz)	PK(dBuV/m)	AV(dBuV/m)	BE-h(Hz)	PK(dBuV/m)	AV(dBuV/m)	LimPK(dBuV/	LimAV(dBuV/	Tx On(ms)	DCF(dB)
2.41096G	96.81	2.38162G	55.29	25.19	2.493655G	55.03	24.93	74	54	3.125	-30.1

BT-EDR(2Mbps)

2440MHz

Hopping Ch

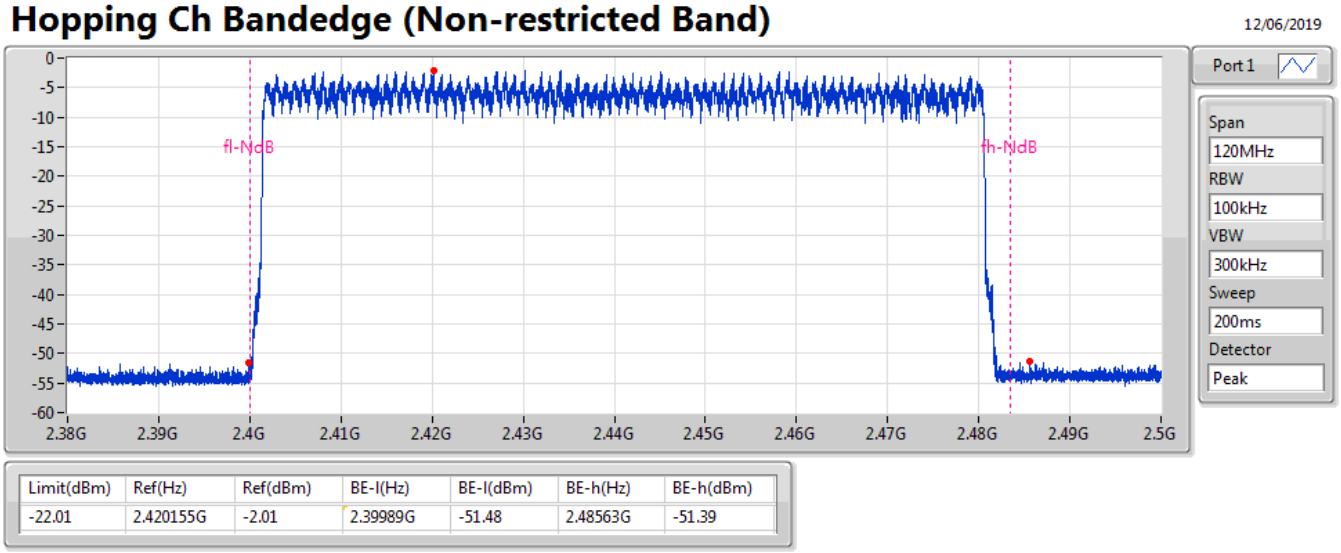


Hopping No	Limit
79	15

BT-EDR(2Mbps)

2440MHz

Hopping Ch Bandedge (Non-restricted Band)

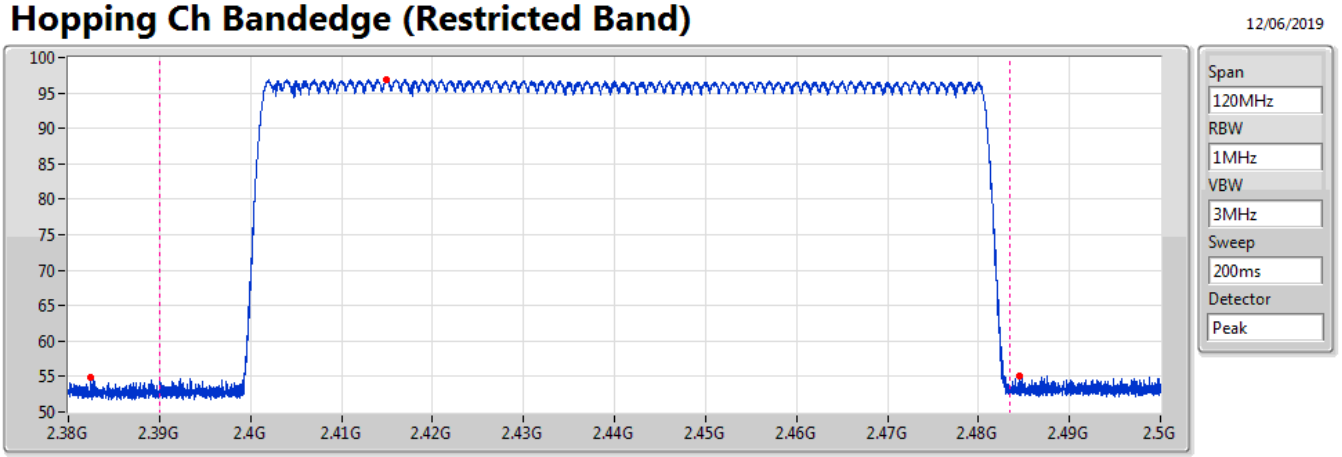


Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-22.01	2.420155G	-2.01	2.39989G	-51.48	2.48563G	-51.39

BT-EDR(2Mbps)

2440MHz

Hopping Ch Bandedge (Restricted Band)

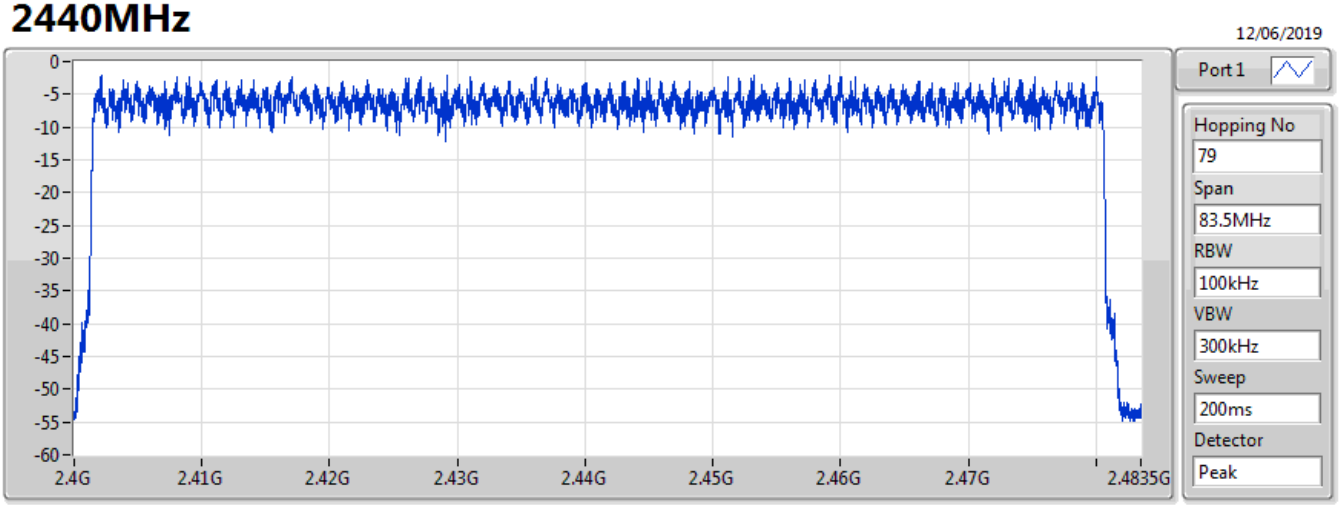


Ref(Hz)	Ref(dBuV/m)	BE-l(Hz)	PK(dBuV/m)	AV(dBuV/m)	BE-h(Hz)	PK(dBuV/m)	AV(dBuV/m)	LimPK(dBuV/	LimAV(dBuV/	Tx On(ms)	DCF(dB)
2.414965G	96.82	2.38237G	54.82	24.72	2.48449G	54.99	24.89	74	54	3.125	-30.1

BT-EDR(3Mbps)

2440MHz

Hopping Ch

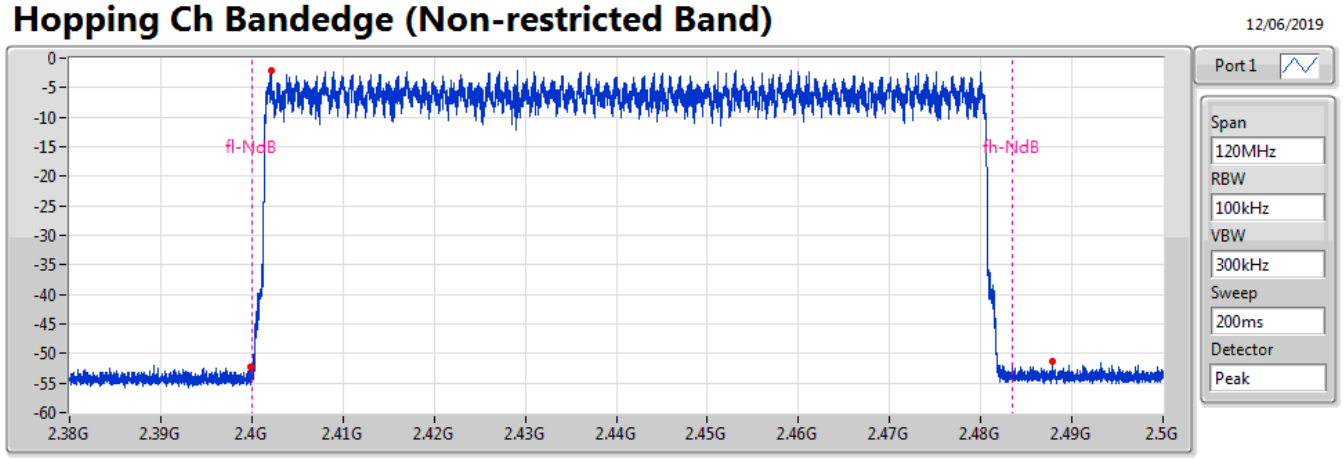


Hopping No	Limit
79	15

BT-EDR(3Mbps)

2440MHz

Hopping Ch Bandedge (Non-restricted Band)

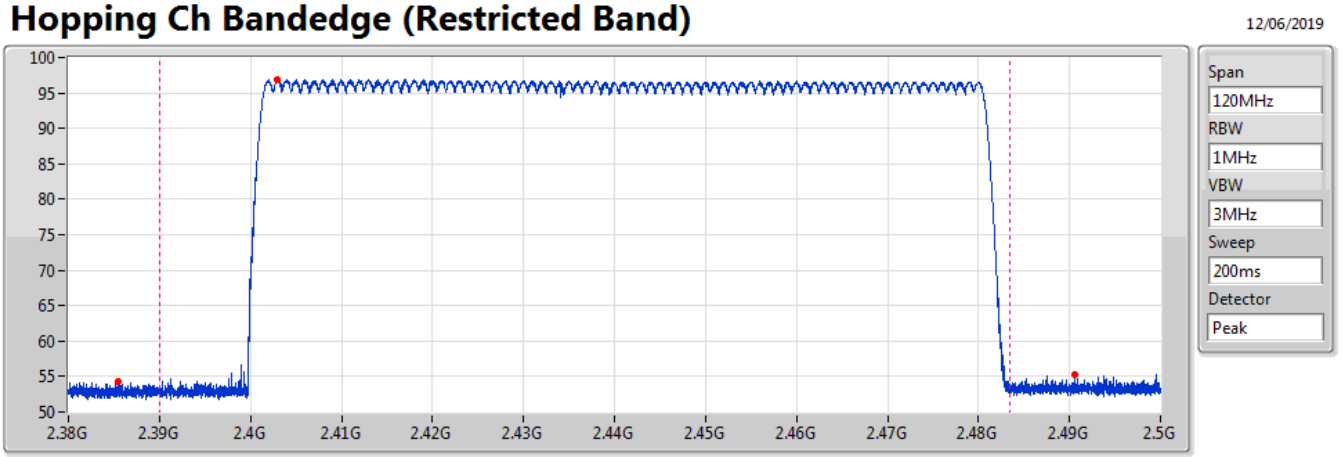


Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-22.03	2.402155G	-2.03	2.399875G	-52.34	2.48791G	-51.39

BT-EDR(3Mbps)

2440MHz

Hopping Ch Bandedge (Restricted Band)



Ref(Hz)	Ref(dBuV/m)	BE-l(Hz)	PK(dBuV/m)	AV(dBuV/m)	BE-h(Hz)	PK(dBuV/m)	AV(dBuV/m)	LimPK(dBuV/	LimAV(dBuV/	Tx On(ms)	DCF(dB)
2.40298G	96.81	2.385505G	54.27	24.17	2.490625G	55.2	25.1	74	54	3.125	-30.1

Mode 2: EUT 3 <External>

Summary

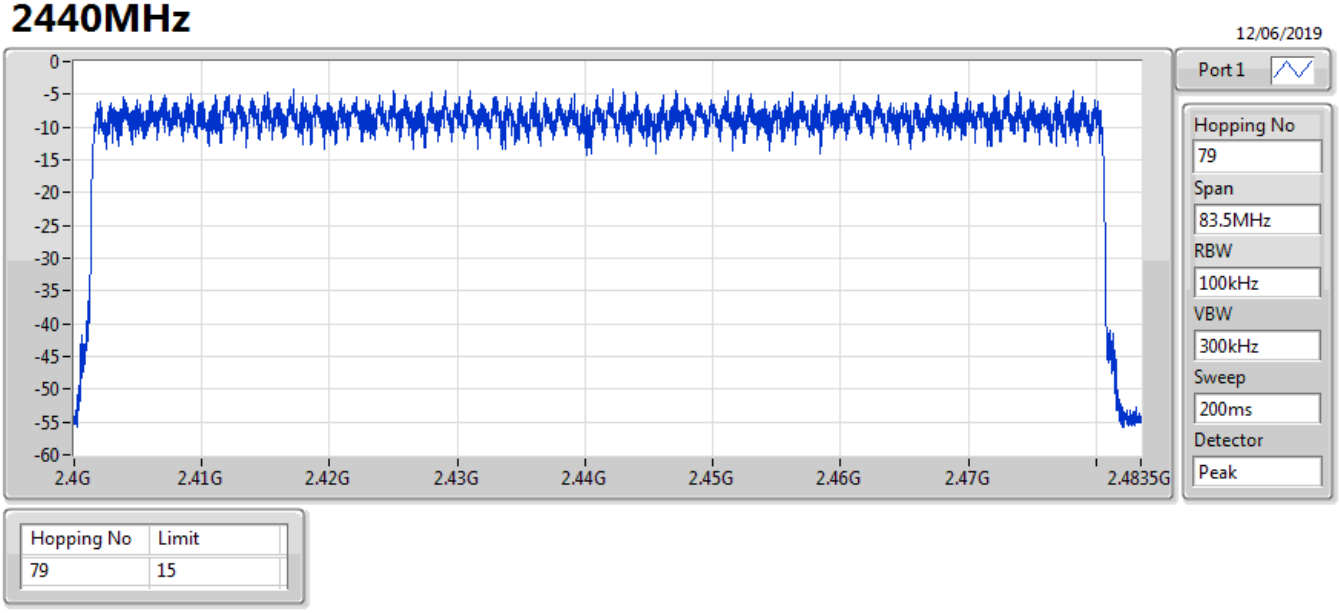
Mode	Max-Hop No
2.4-2.4835GHz	-
BT-BR(1Mbps)	79
BT-EDR(2Mbps)	79
BT-EDR(3Mbps)	79

Result

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

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

2440MHz

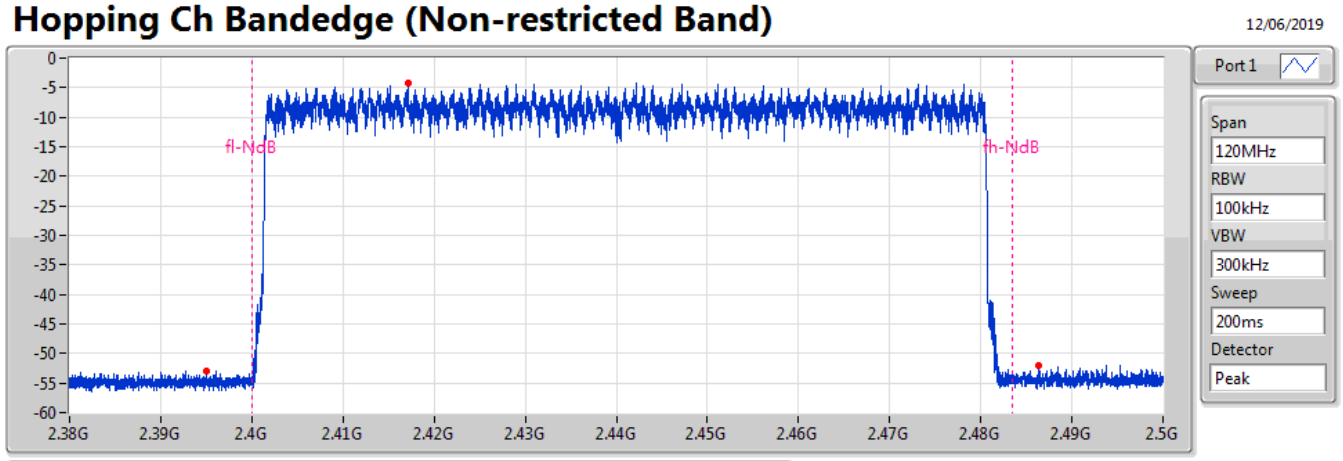


Hopping No	Limit
79	15

BT-BR(1Mbps)

2440MHz

Hopping Ch Bandedge (Non-restricted Band)

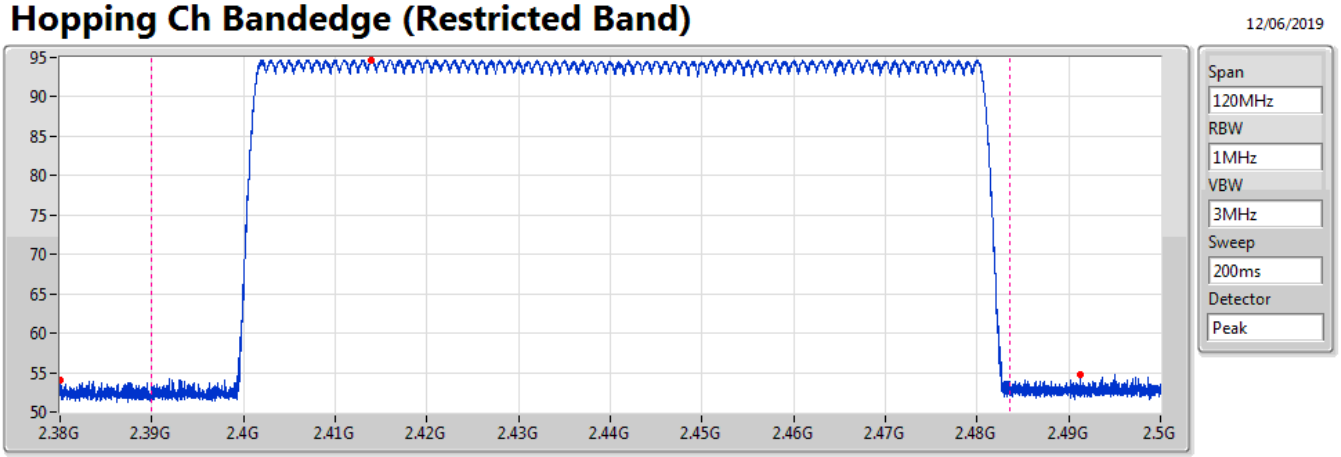


Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-24.22	2.417155G	-4.22	2.394985G	-52.88	2.48632G	-51.92

BT-BR(1Mbps)

2440MHz

Hopping Ch Bandedge (Restricted Band)

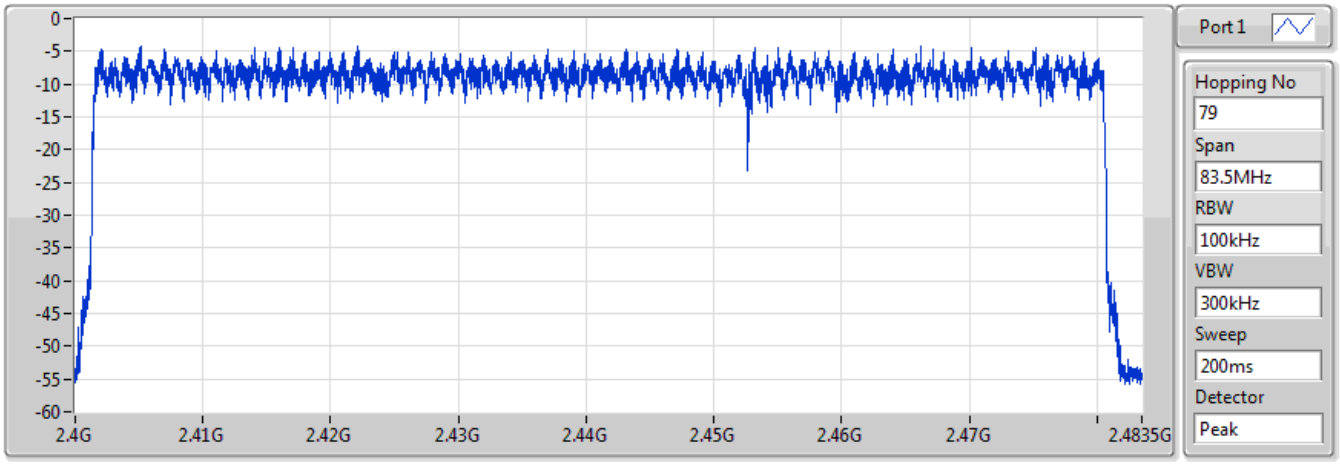


Ref(Hz)	Ref(dBuV/m)	BE-l(Hz)	PK(dBuV/m)	AV(dBuV/m)	BE-h(Hz)	PK(dBuV/m)	AV(dBuV/m)	LimPK(dBuV/	LimAV(dBuV/	Tx On(ms)	DCF(dB)
2.41399G	94.71	2.380015G	54.09	23.99	2.491225G	54.77	24.67	74	54	3.125	-30.1

BT-EDR(2Mbps)

2440MHz

Hopping Ch

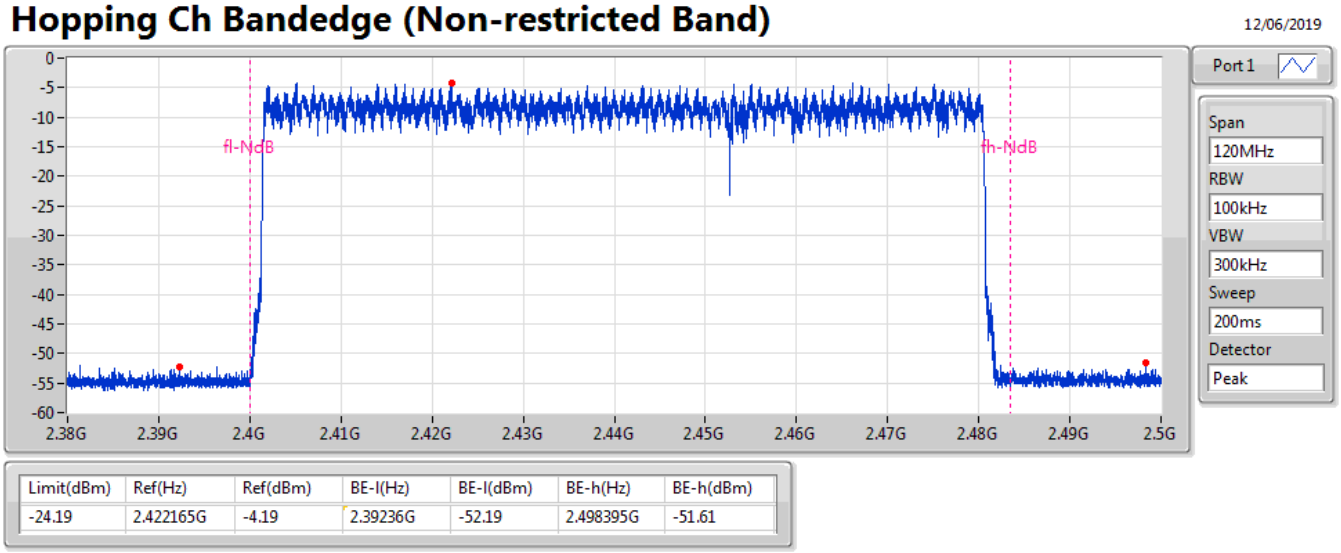


Hopping No	Limit
79	15

BT-EDR(2Mbps)

2440MHz

Hopping Ch Bandedge (Non-restricted Band)

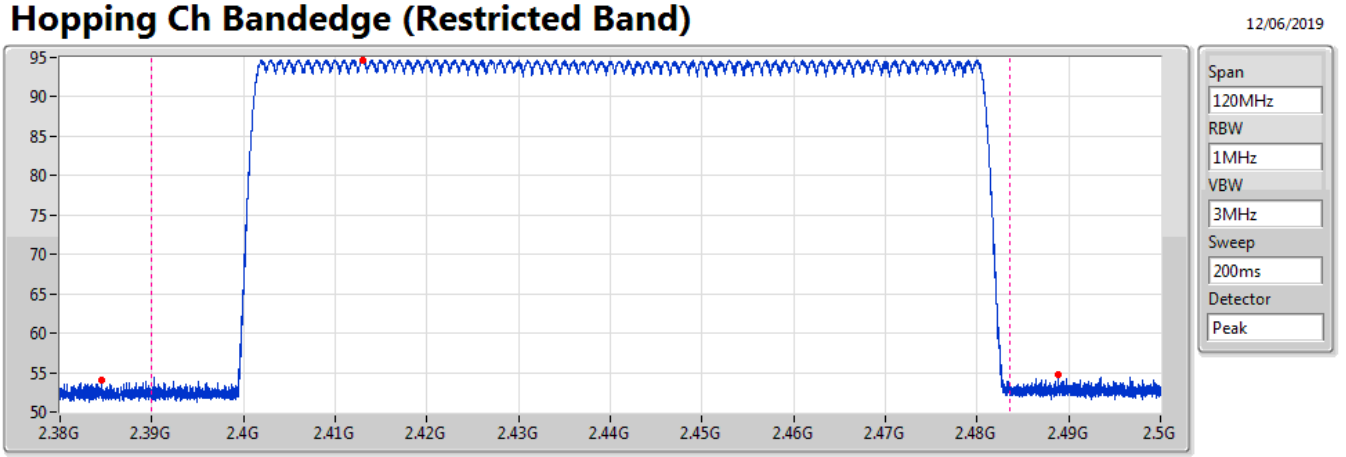


Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-24.19	2.422165G	-4.19	2.39236G	-52.19	2.498395G	-51.61

BT-EDR(2Mbps)

2440MHz

Hopping Ch Bandedge (Restricted Band)

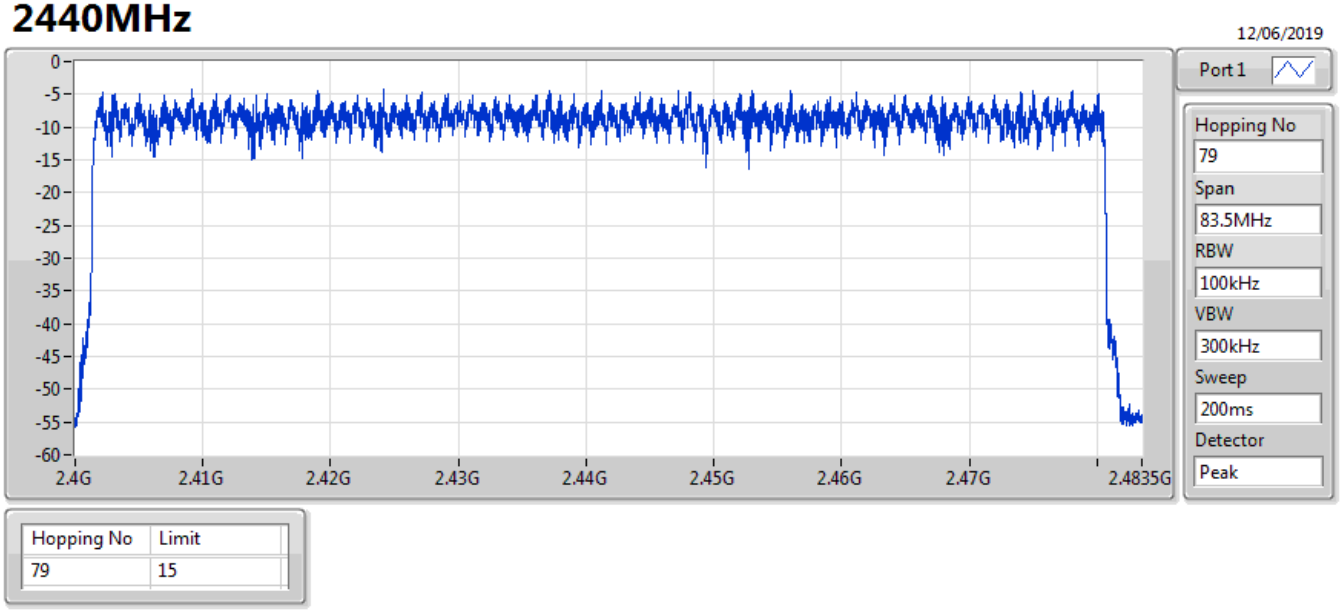


Ref(Hz)	Ref(dBuV/m)	BE-l(Hz)	PK(dBuV/m)	AV(dBuV/m)	BE-h(Hz)	PK(dBuV/m)	AV(dBuV/m)	LimPK(dBuV/	LimAV(dBuV/	Tx On(ms)	DCF(dB)
2.413015G	94.72	2.384515G	54.06	23.96	2.48887G	54.83	24.73	74	54	3.125	-30.1

BT-EDR(3Mbps)

2440MHz

Hopping Ch

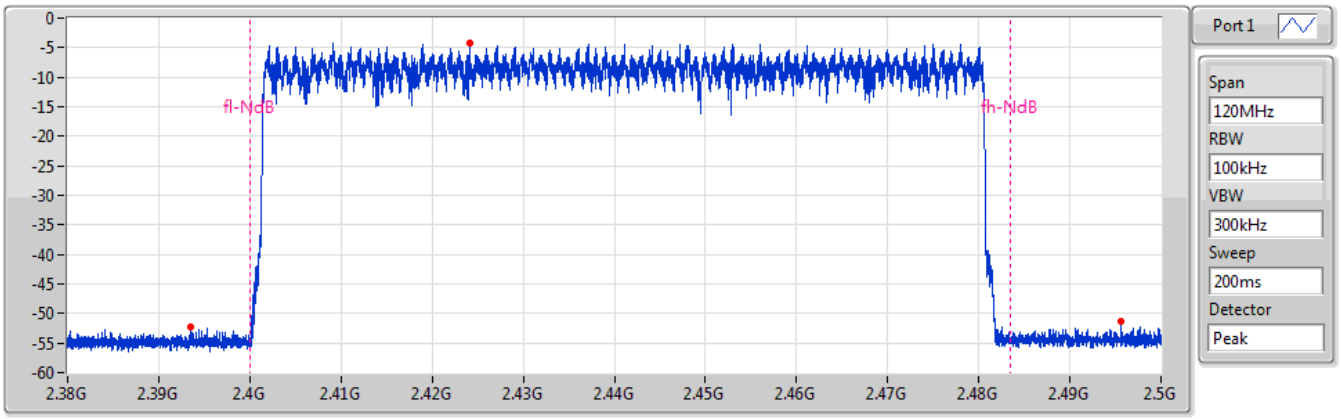


Hopping No	Limit
79	15

BT-EDR(3Mbps)

2440MHz

Hopping Ch Bandedge (Non-restricted Band)

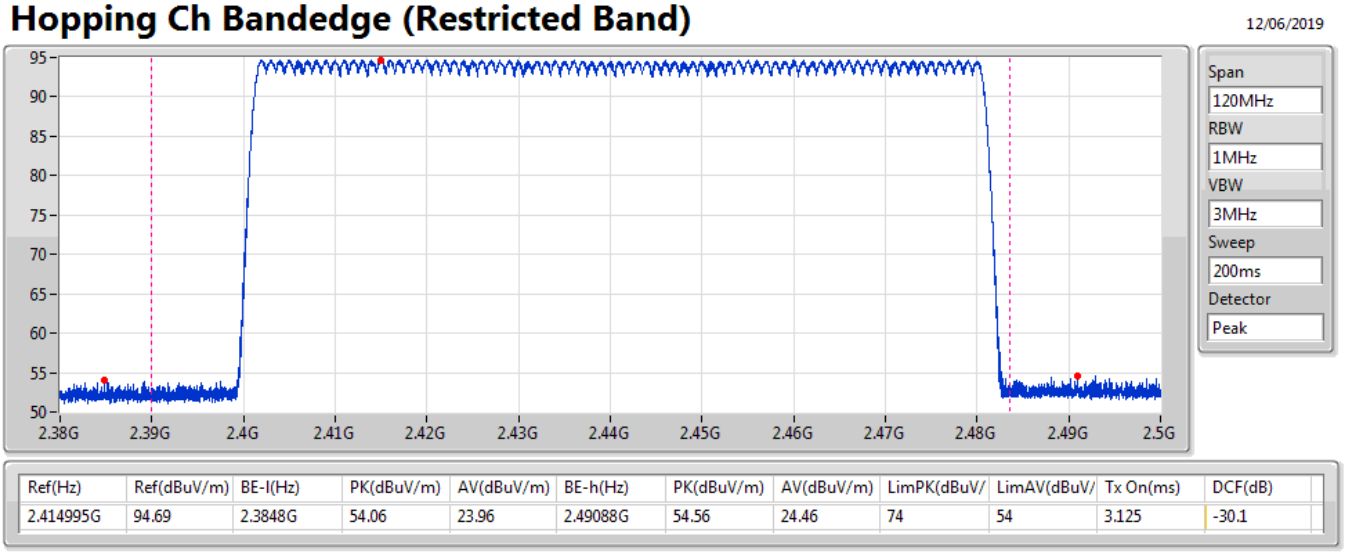


Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-24.22	2.424175G	-4.22	2.39344G	-52.19	2.49559G	-51.44

BT-EDR(3Mbps)

2440MHz

Hopping Ch Bandedge (Restricted Band)



Ref(Hz)	Ref(dBuV/m)	BE-l(Hz)	PK(dBuV/m)	AV(dBuV/m)	BE-h(Hz)	PK(dBuV/m)	AV(dBuV/m)	LimPK(dBuV/	LimAV(dBuV/	Tx On(ms)	DCF(dB)
2.414995G	94.69	2.3848G	54.06	23.96	2.49088G	54.56	24.46	74	54	3.125	-30.1

Mode 1: EUT 1 <Internal>

Summary

Mode	Max-Dwell (s)
2.4-2.4835GHz	-
BT-BR(1Mbps)	308.1806m
BT-EDR(2Mbps)	308.2872m
BT-EDR(3Mbps)	308.2872m

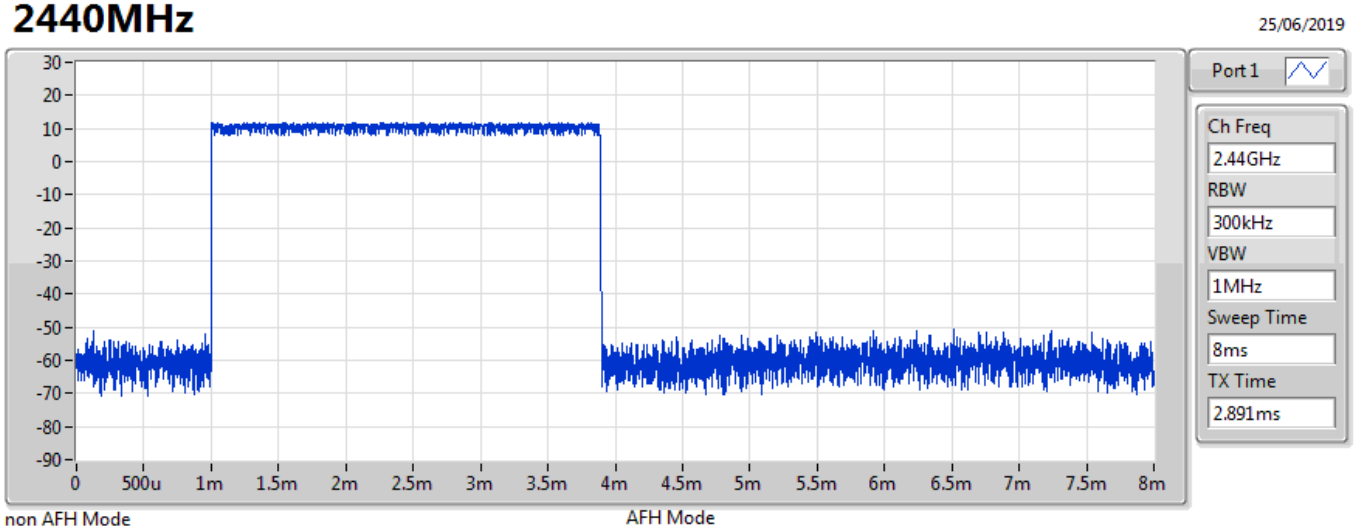
Result

Mode	Result	Period (s)	Dwell (s)	Limit (s)	Tx On (s)
BT-BR(1Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	308.1806m	400m	2.891m
BT-EDR(2Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	308.2872m	400m	2.892m
BT-EDR(3Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	308.2872m	400m	2.892m

BT-BR(1Mbps)

Dwell

2440MHz



non AFH Mode

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

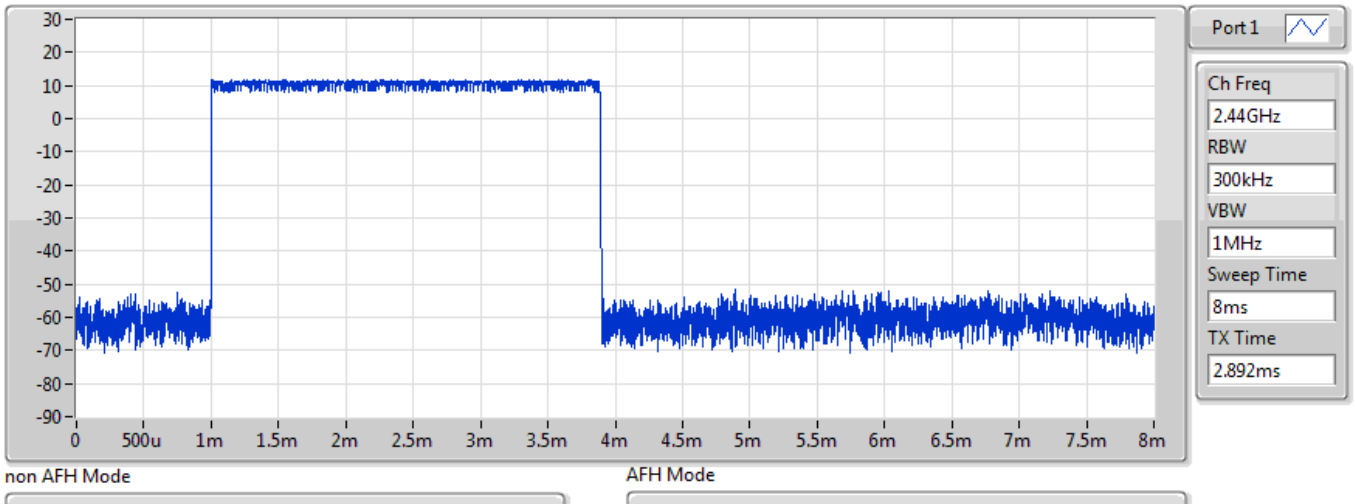
AFH Mode

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
0	154.0903m	400m	2.891m

BT-EDR(2Mbps)

Dwell

2440MHz



non AFH Mode

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	308.2872m	400m	2.892m

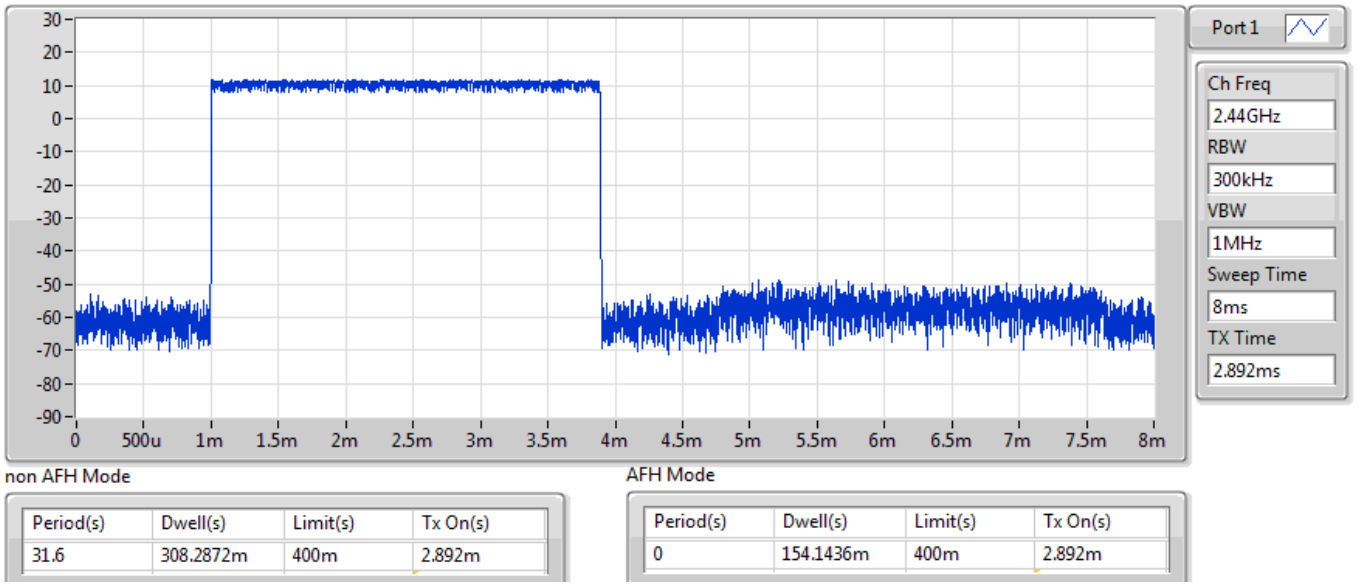
AFH Mode

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
0	154.1436m	400m	2.892m

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

2440MHz

25/06/2019



non AFH Mode

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	308.2872m	400m	2.892m

AFH Mode

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
0	154.1436m	400m	2.892m

Mode 2: EUT 3 <External>

Summary

Mode	Max-Dwell (s)
2.4-2.4835GHz	-
BT-BR(1Mbps)	308.2872m
BT-EDR(2Mbps)	308.1806m
BT-EDR(3Mbps)	308.1806m

Result

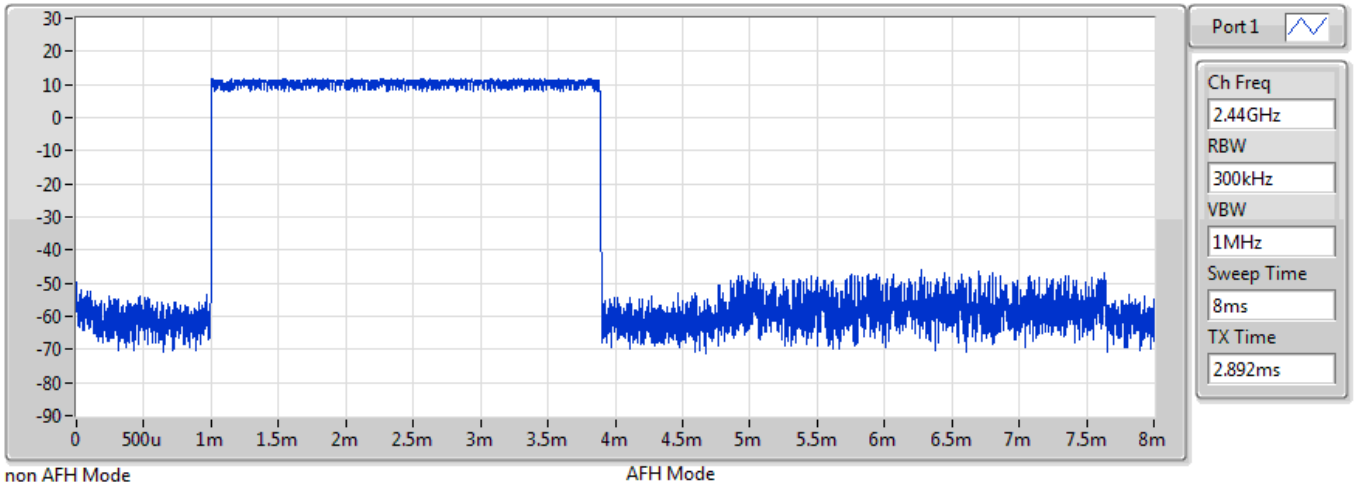
Mode	Result	Period (s)	Dwell (s)	Limit (s)	Tx On (s)
BT-BR(1Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	308.2872m	400m	2.892m
BT-EDR(2Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	308.1806m	400m	2.891m
BT-EDR(3Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	308.1806m	400m	2.891m

BT-BR(1Mbps)

Dwell

2440MHz

25/06/2019



non AFH Mode

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	308.2872m	400m	2.892m

AFH Mode

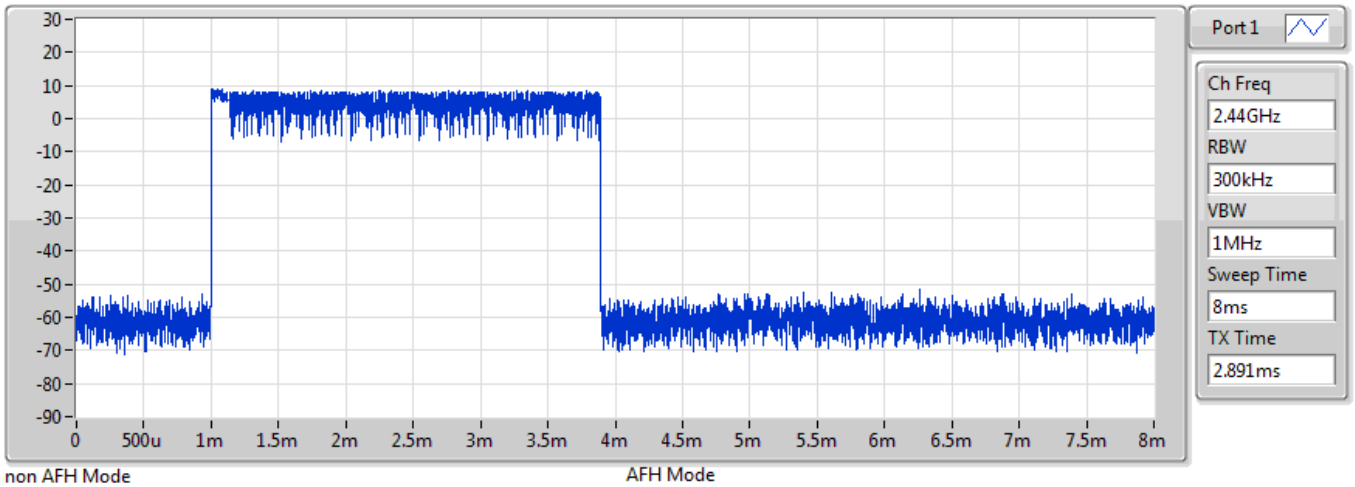
Period(s)	Dwell(s)	Limit(s)	Tx On(s)
0	154.1436m	400m	2.892m

BT-EDR(2Mbps)

Dwell

2440MHz

25/06/2019



non AFH Mode

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

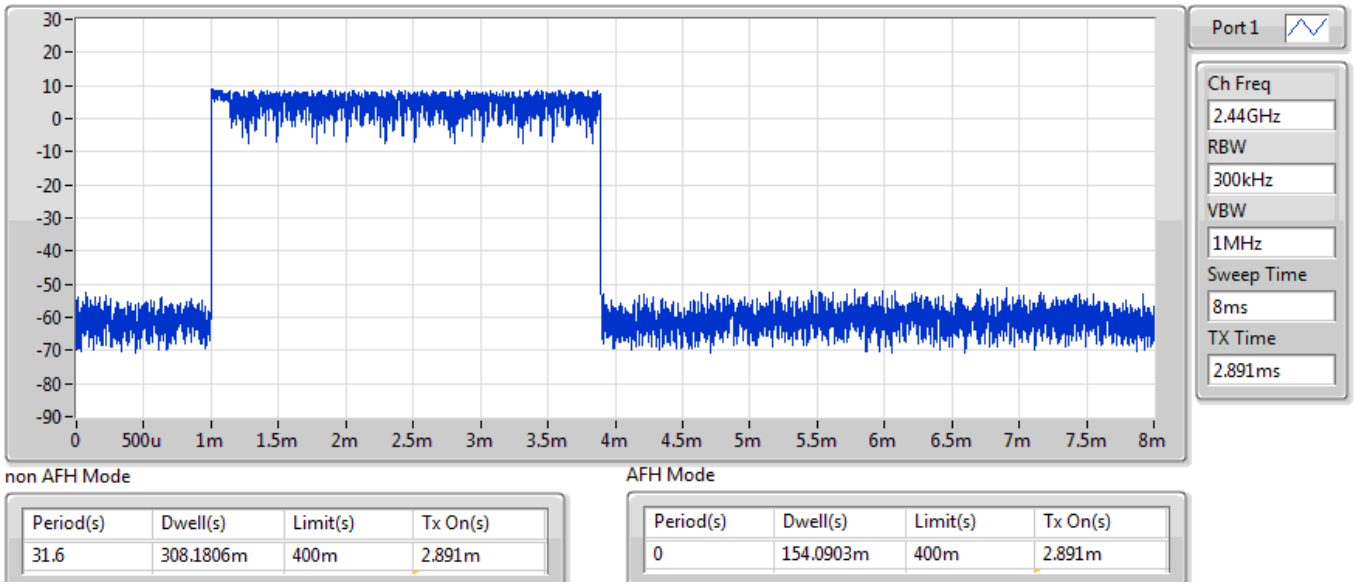
AFH Mode

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
0	154.0903m	400m	2.891m

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

2440MHz

25/06/2019



non AFH Mode

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

AFH Mode

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
0	154.0903m	400m	2.891m

Mode 1: EUT 1 <Internal>

Summary

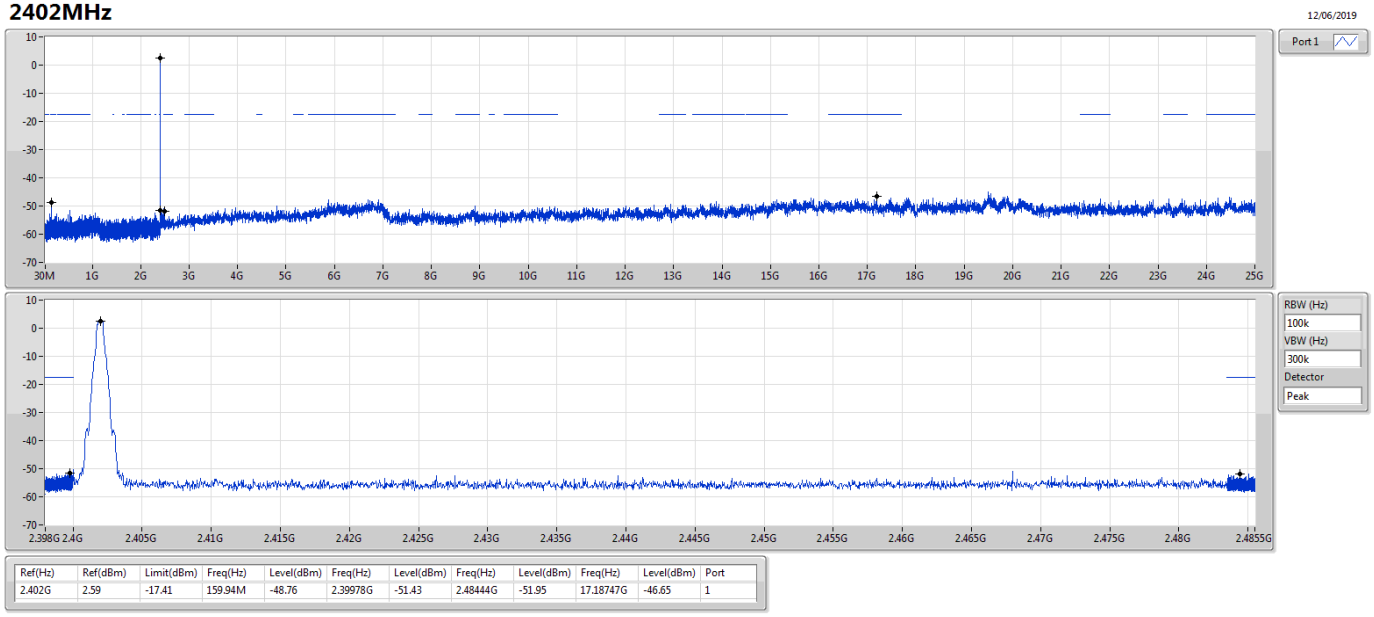
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	2.48003G	1.95	-18.05	159.94M	-49.75	2.3988G	-52.63	2.48473G	-51.60	24.16415G	-45.85	1
BT-EDR(2Mbps)	Pass	2.43987G	1.89	-18.11	159.94M	-49.77	2.39806G	-51.85	2.48458G	-51.97	16.27G	-46.00	1
BT-EDR(3Mbps)	Pass	2.40196G	2.16	-17.84	96.01M	-50.92	2.39968G	-46.77	2.4854G	-52.26	6.60565G	-46.24	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	2.402G	2.59	-17.41	159.94M	-48.76	2.39978G	-51.43	2.48444G	-51.95	17.18747G	-46.65	1
2440MHz	Pass	2.44016G	2.52	-17.48	96.01M	-50.99	2.39951G	-52.47	2.48542G	-51.16	16.74281G	-46.83	1
2480MHz	Pass	2.48003G	1.95	-18.05	159.94M	-49.75	2.3988G	-52.63	2.48473G	-51.60	24.16415G	-45.85	1
BT-EDR(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40213G	3.19	-16.81	95.71M	-49.48	2.39979G	-50.06	2.48393G	-50.47	16.84694G	-46.38	1
2440MHz	Pass	2.43987G	1.89	-18.11	159.94M	-49.77	2.39806G	-51.85	2.48458G	-51.97	16.27G	-46.00	1
2480MHz	Pass	2.48008G	1.82	-18.18	96.01M	-49.47	2.39892G	-52.40	2.48447G	-52.14	6.88708G	-47.05	1
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40196G	2.16	-17.84	96.01M	-50.92	2.39968G	-46.77	2.4854G	-52.26	6.60565G	-46.24	1
2440MHz	Pass	2.44016G	2.56	-17.44	543.86M	-52.43	2.39977G	-52.28	2.48409G	-51.61	24.47091G	-46.41	1
2480MHz	Pass	2.4802G	2.38	-17.62	543.86M	-50.62	2.39968G	-52.42	2.48395G	-51.65	15.23996G	-47.31	1

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

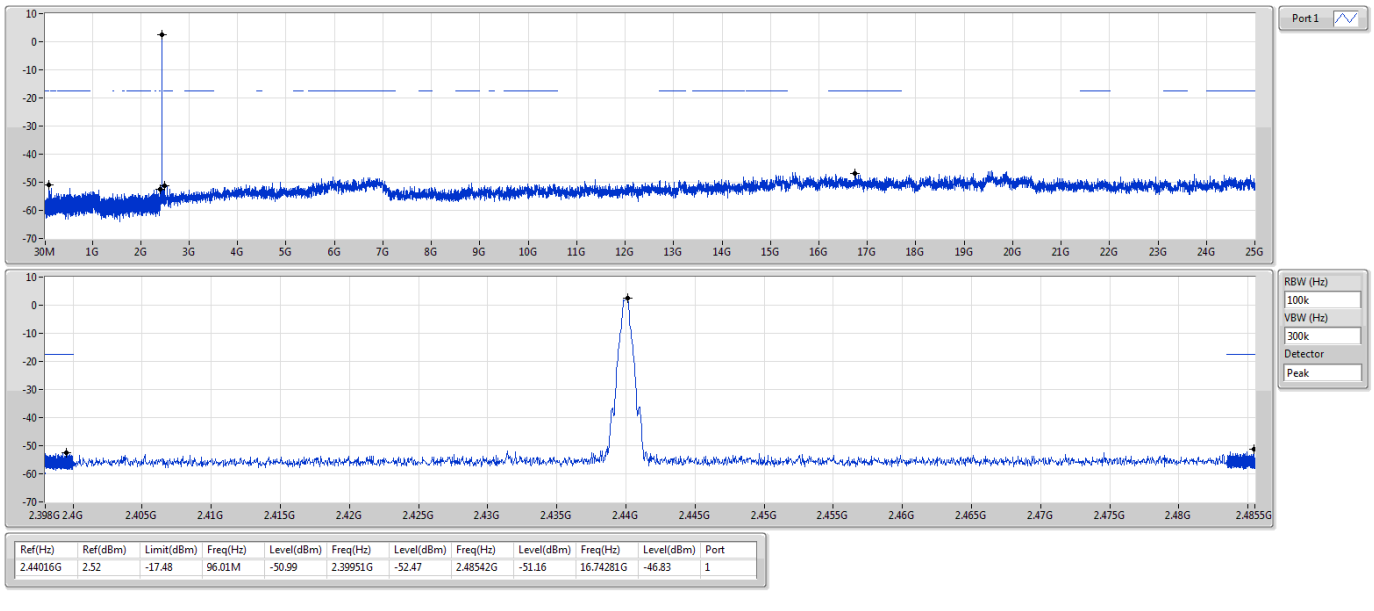
2402MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.402G	2.59	-17.41	159.94M	-48.76	2.39978G	-51.43	2.48444G	-51.95	17.18747G	-46.65	1

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

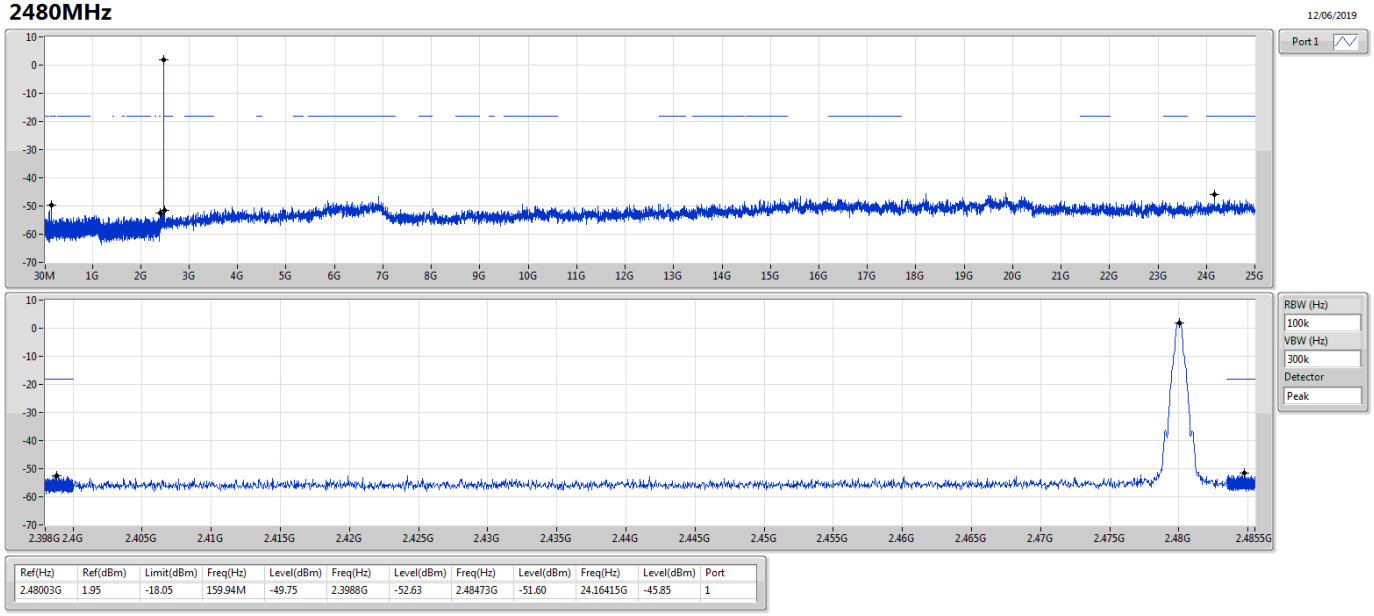
2440MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44016G	2.52	-17.48	96.01M	-50.99	2.39951G	-52.47	2.48542G	-51.16	16.74281G	-46.83	1

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

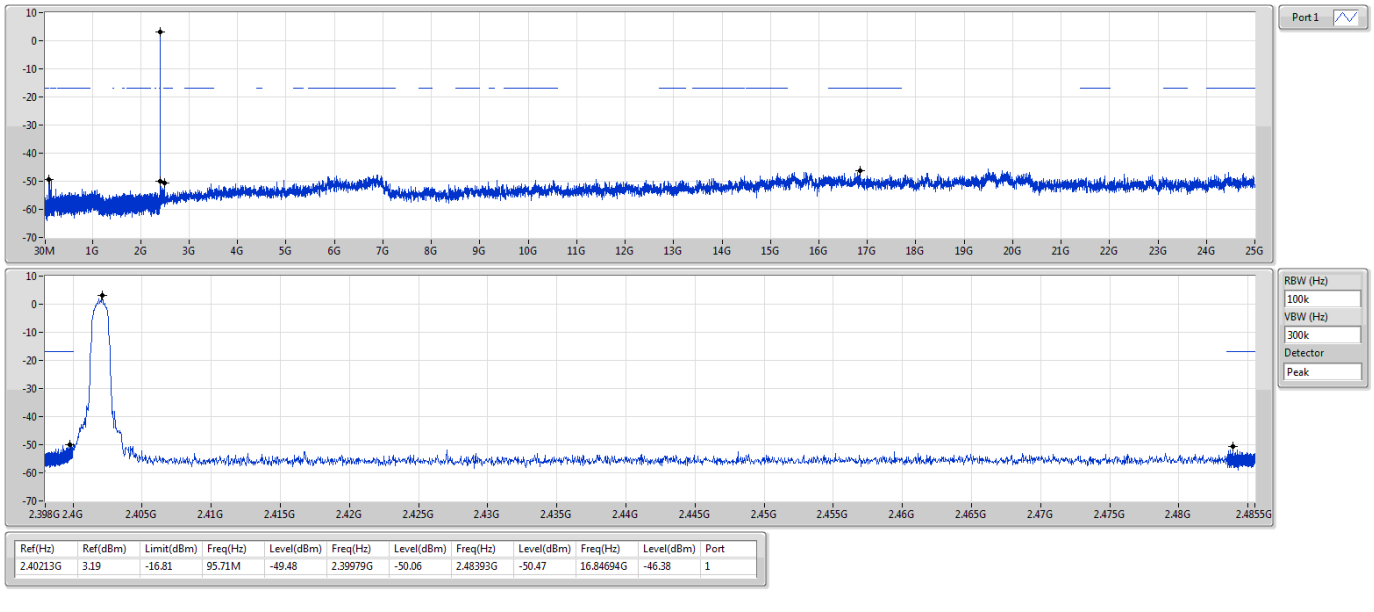
2480MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.48003G	1.95	-18.05	159.94M	-49.75	2.3988G	-52.63	2.48473G	-51.60	24.16415G	-45.85	1

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

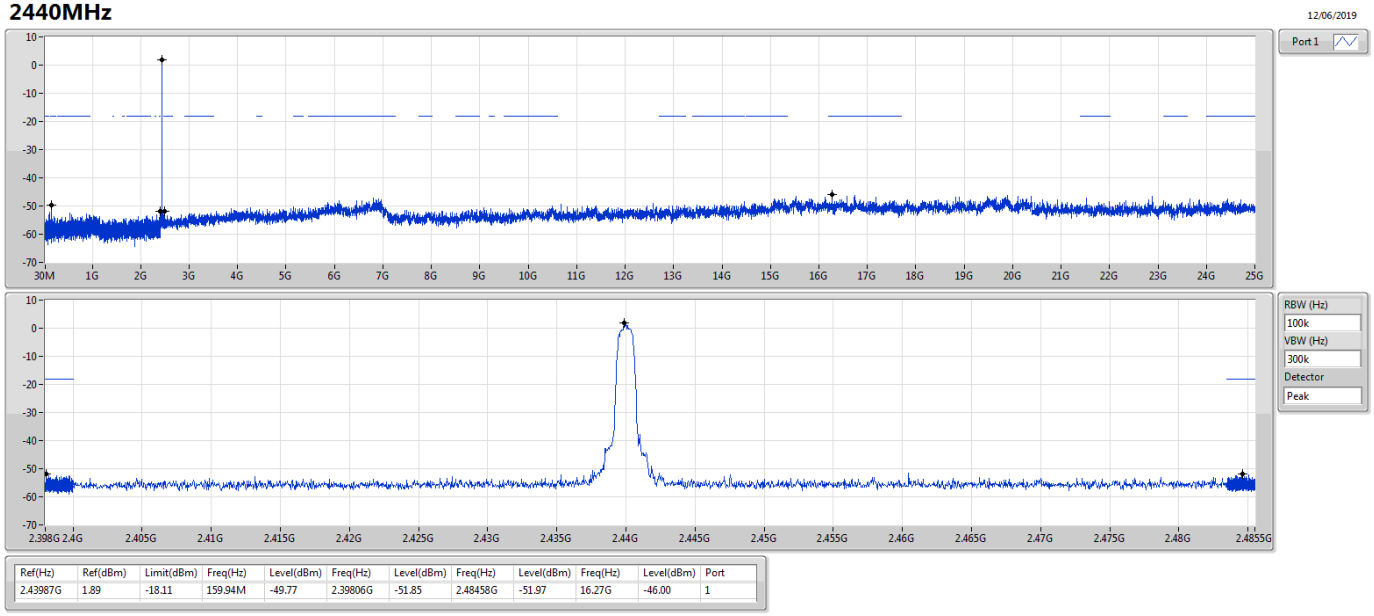
2402MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40213G	3.19	-16.81	95.71M	-49.48	2.39979G	-50.06	2.48393G	-50.47	16.84694G	-46.38	1

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

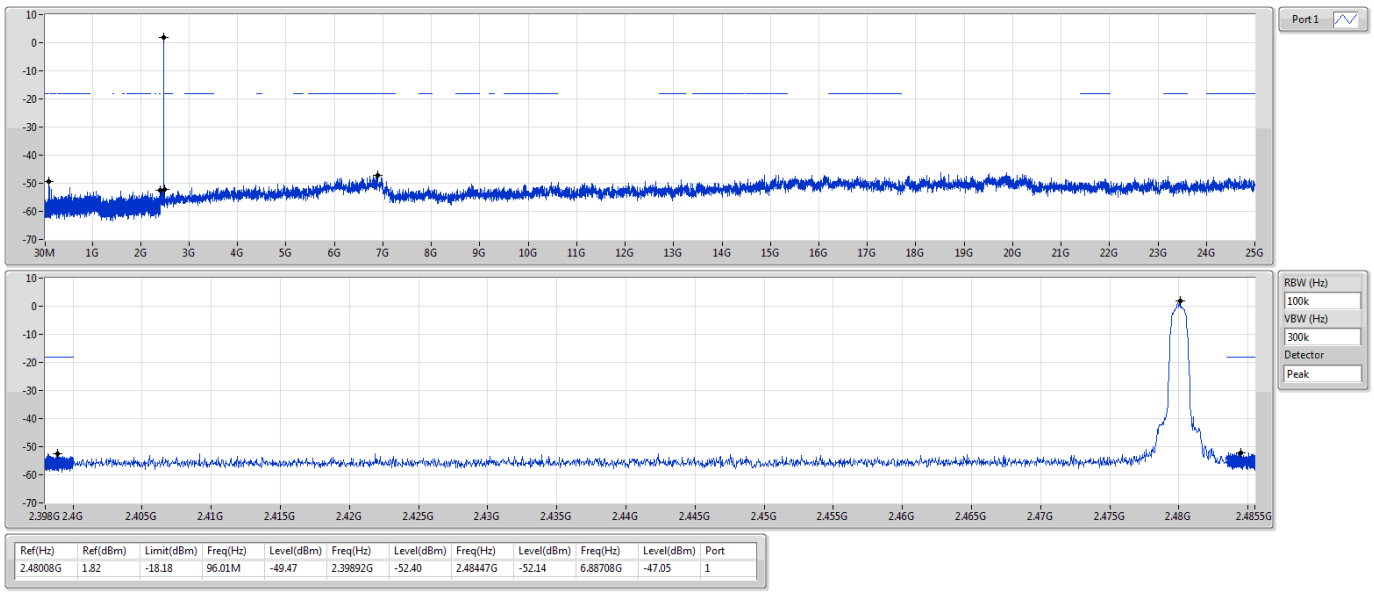
2440MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43987G	1.89	-18.11	159.94M	-49.77	2.39806G	-51.85	2.48458G	-51.97	16.27G	-46.00	1

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

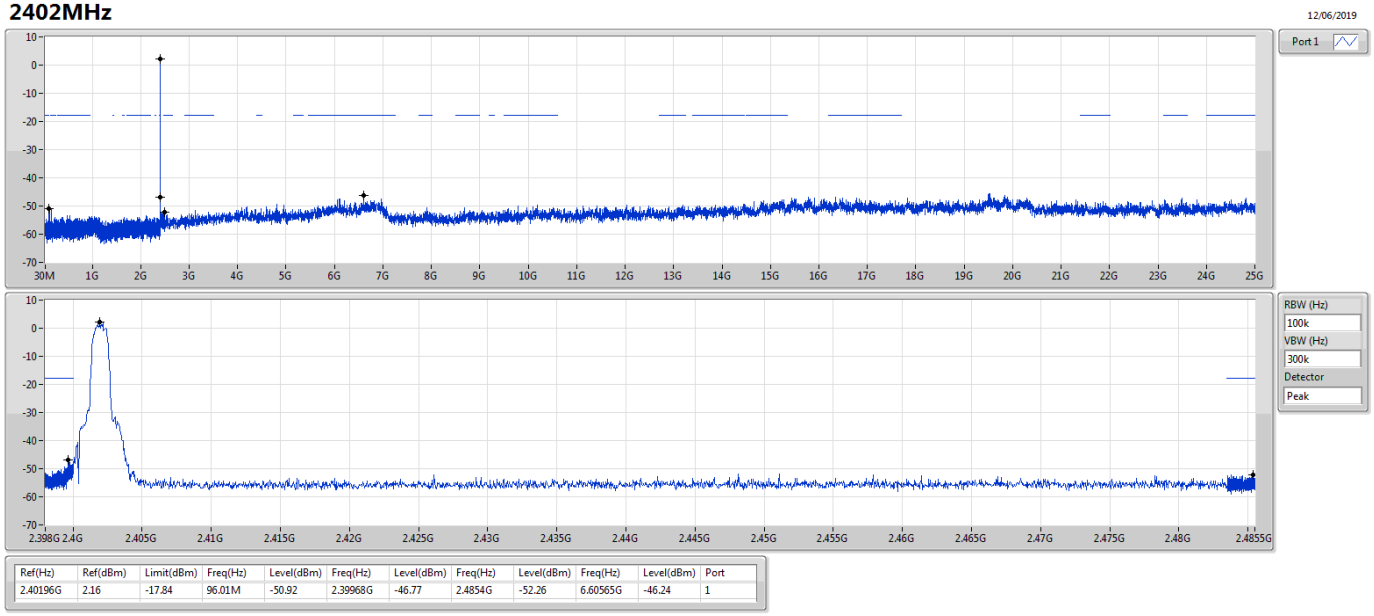
2480MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.48008G	1.82	-18.18	96.01M	-49.47	2.39892G	-52.40	2.48447G	-52.14	6.88708G	-47.05	1

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

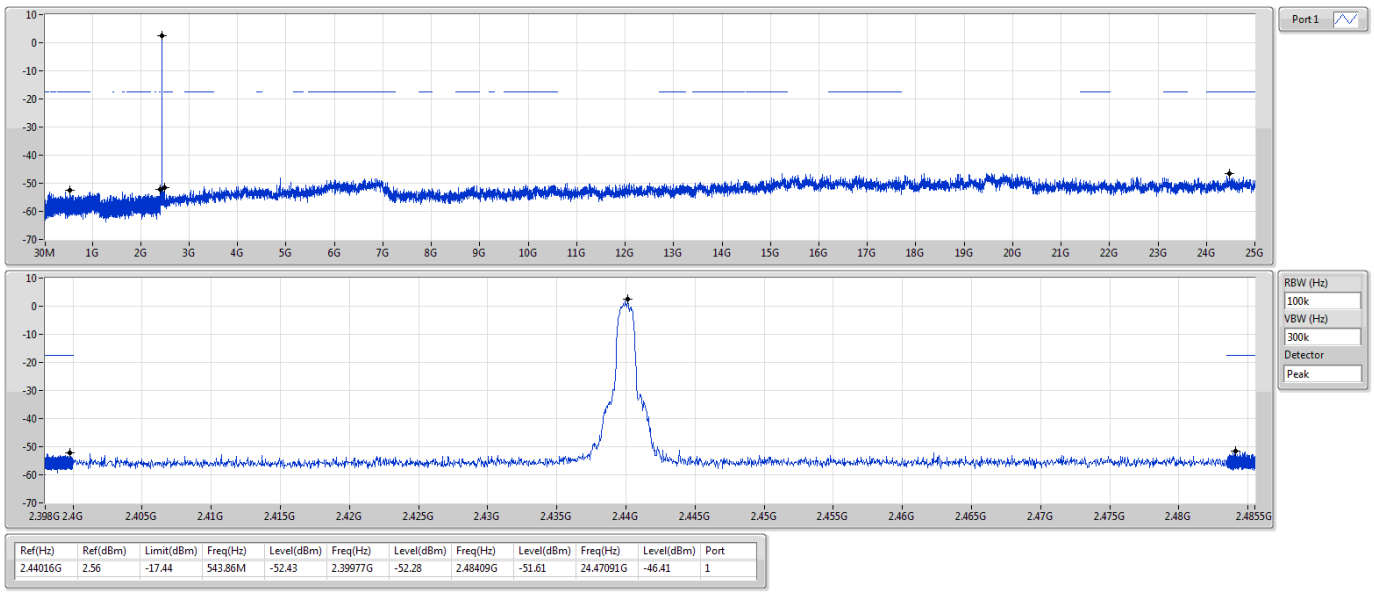
2402MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40196G	2.16	-17.84	96.01M	-50.92	2.39968G	-46.77	2.4854G	-52.26	6.60565G	-46.24	1

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

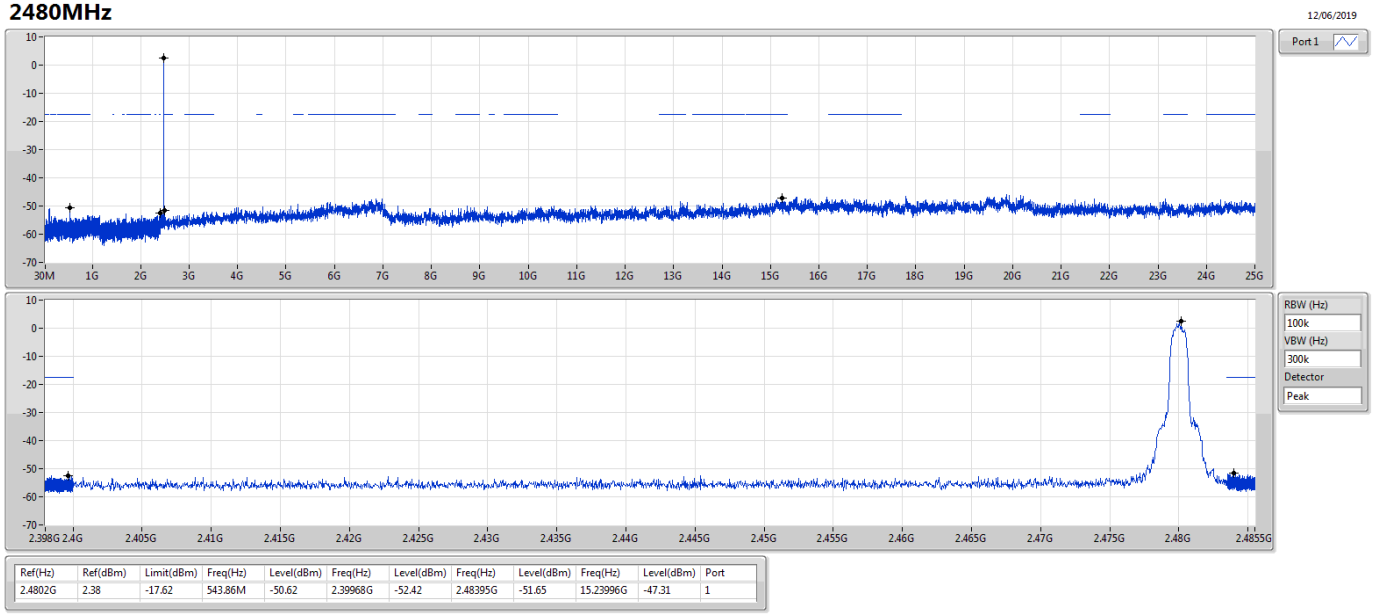
2440MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44016G	2.56	-17.44	543.86M	-52.43	2.39977G	-52.28	2.48409G	-51.61	24.47091G	-46.41	1

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

2480MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.4802G	2.38	-17.62	543.86M	-50.62	2.39968G	-52.42	2.48395G	-51.65	15.23996G	-47.31	1

Mode 2: EUT 3 <External>

Summary

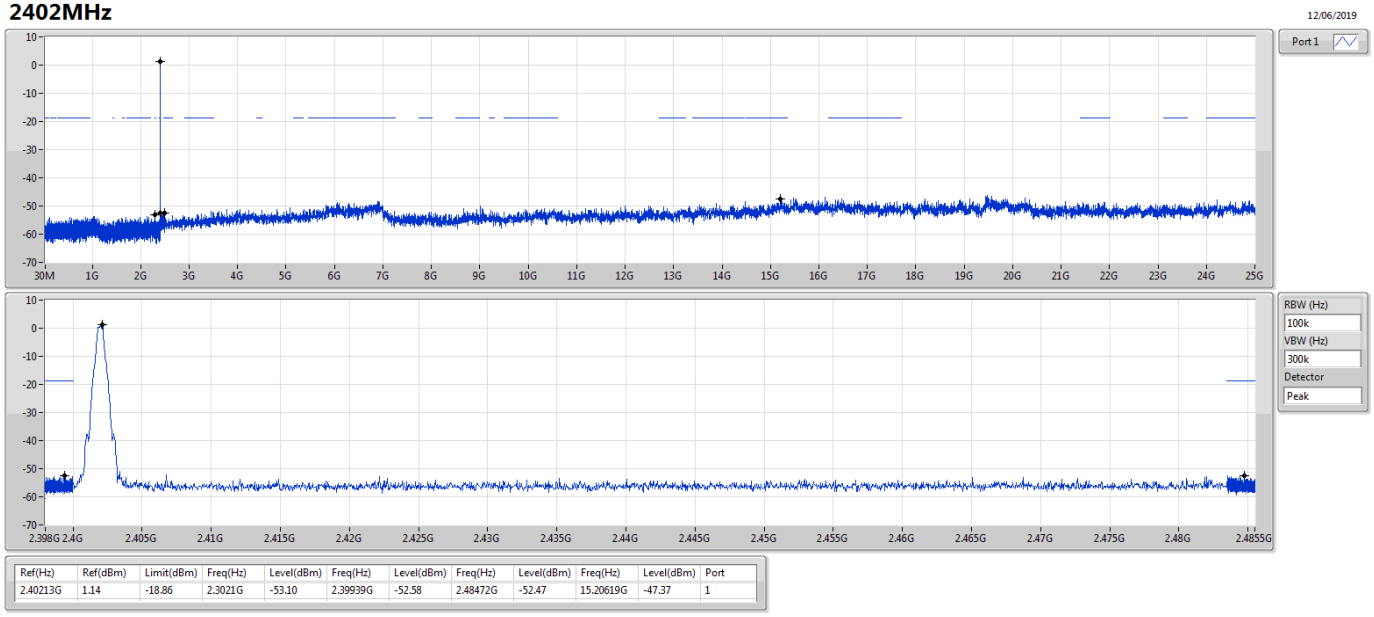
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	2.48016G	0.42	-19.58	543.86M	-53.44	2.39913G	-52.66	2.48521G	-52.34	15.16398G	-46.55	1
BT-EDR(2Mbps)	Pass	2.40213G	1.18	-18.82	813.81M	-52.88	2.39971G	-50.92	2.48362G	-52.30	16.43886G	-45.26	1
BT-EDR(3Mbps)	Pass	2.47991G	-0.63	-20.63	544.15M	-53.00	2.39827G	-52.50	2.4841G	-51.92	16.34317G	-46.72	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	2.40213G	1.14	-18.86	2.3021G	-53.10	2.39939G	-52.58	2.48472G	-52.47	15.20619G	-47.37	1
2440MHz	Pass	2.44016G	0.78	-19.22	543.86M	-51.79	2.39801G	-52.79	2.48514G	-52.03	16.41916G	-46.93	1
2480MHz	Pass	2.48016G	0.42	-19.58	543.86M	-53.44	2.39913G	-52.66	2.48521G	-52.34	15.16398G	-46.55	1
BT-EDR(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40213G	1.18	-18.82	813.81M	-52.88	2.39971G	-50.92	2.48362G	-52.30	16.43886G	-45.26	1
2440MHz	Pass	2.44021G	0.42	-19.58	543.86M	-52.24	2.39837G	-52.80	2.485G	-52.33	24.27109G	-47.46	1
2480MHz	Pass	2.48012G	-0.30	-20.30	95.71M	-53.46	2.39805G	-52.84	2.48356G	-52.24	17.10867G	-47.21	1
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40184G	0.06	-19.94	543.86M	-52.21	2.39976G	-47.82	2.48386G	-52.25	6.8111G	-47.42	1
2440MHz	Pass	2.44G	0.37	-19.63	96.01M	-52.74	2.39833G	-53.03	2.4844G	-52.47	16.74562G	-47.17	1
2480MHz	Pass	2.47991G	-0.63	-20.63	544.15M	-53.00	2.39827G	-52.50	2.4841G	-51.92	16.34317G	-46.72	1

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

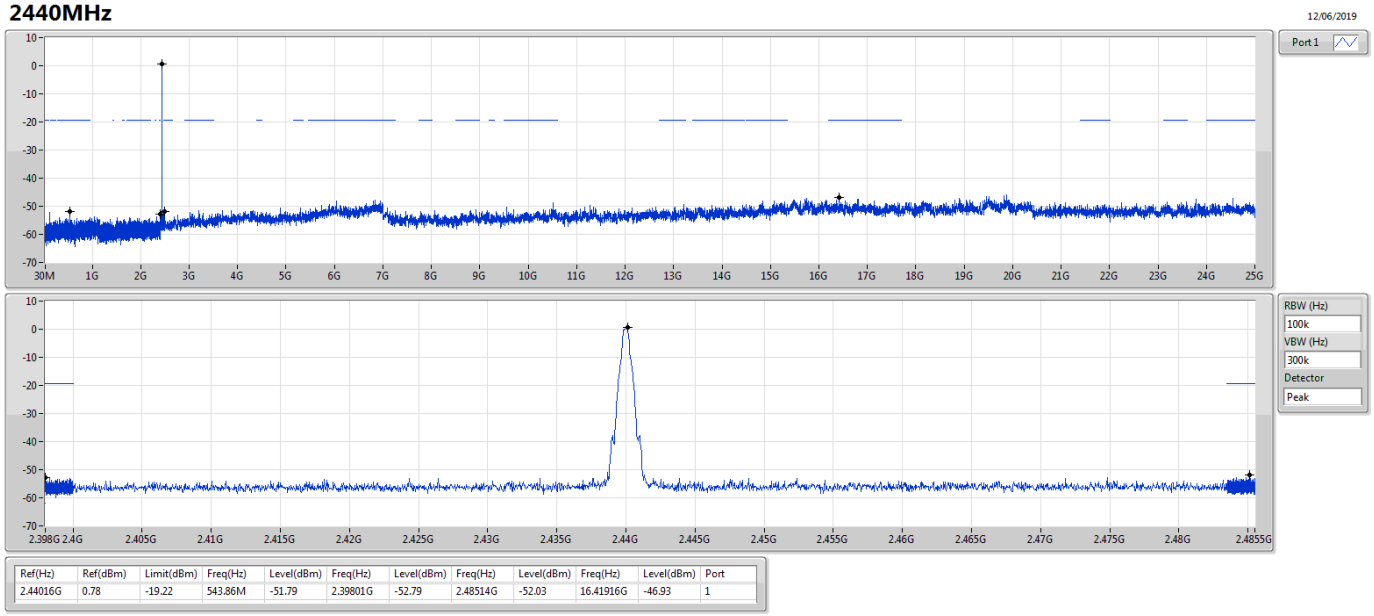
2402MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40213G	1.14	-18.86	2.3021G	-53.10	2.39939G	-52.58	2.48472G	-52.47	15.20619G	-47.37	1

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

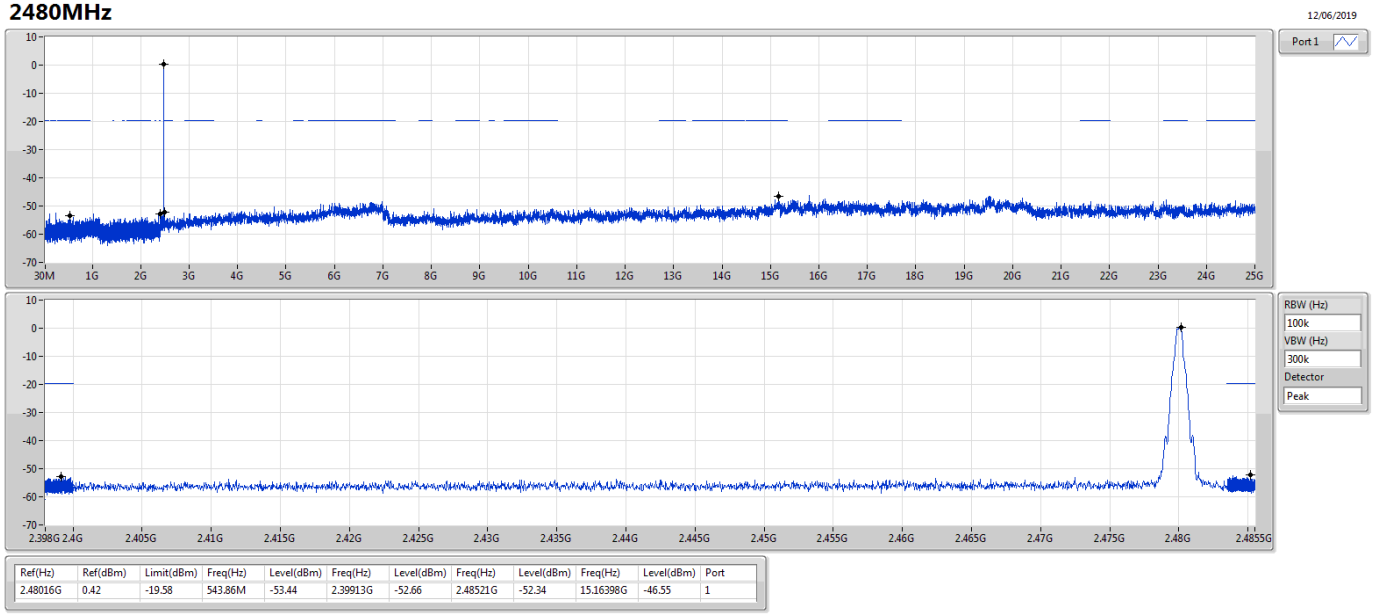
2440MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44016G	0.78	-19.22	543.86M	-51.79	2.39801G	-52.79	2.48514G	-52.03	16.41916G	-46.93	1

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

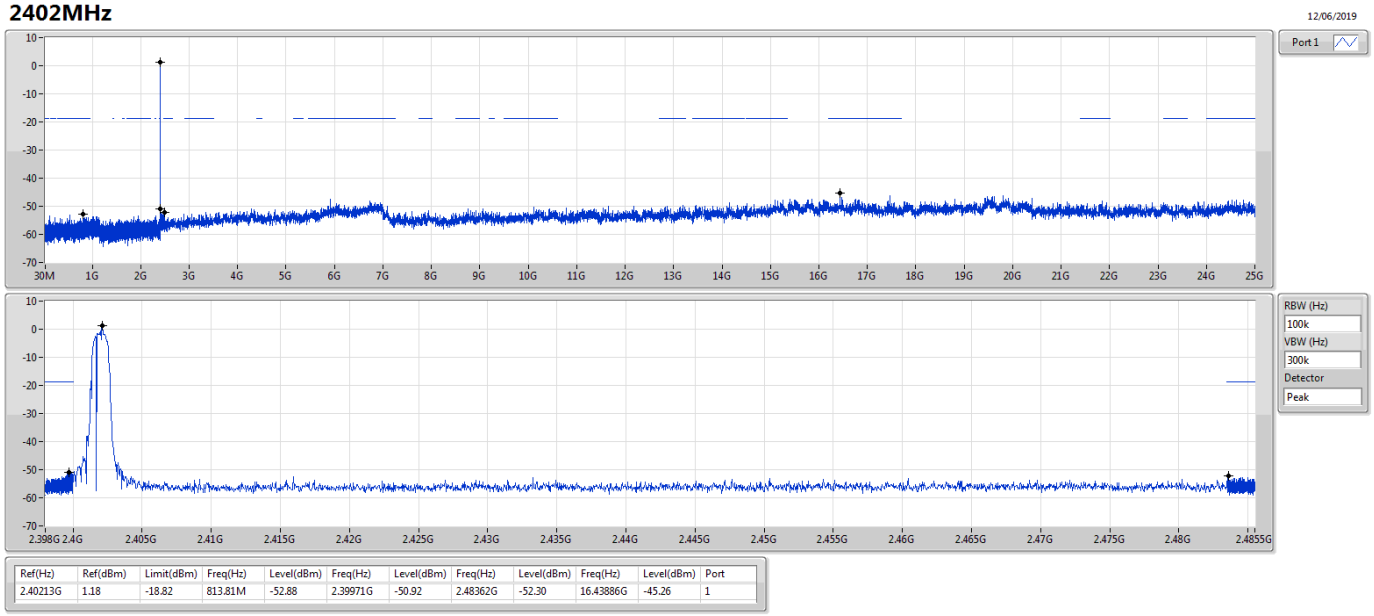
2480MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.48016G	0.42	-19.58	543.86M	-53.44	2.39913G	-52.66	2.48521G	-52.34	15.16398G	-46.55	1

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

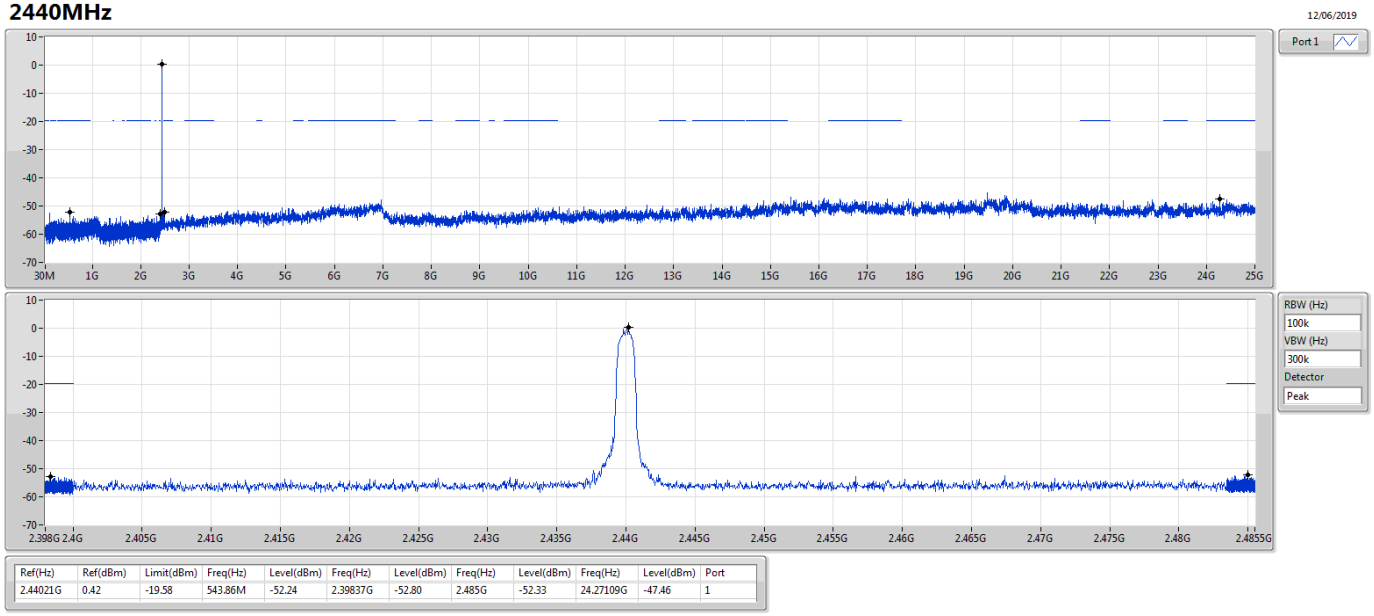
2402MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40213G	1.18	-18.82	813.81M	-52.88	2.39971G	-50.92	2.48362G	-52.30	16.43886G	-45.26	1

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

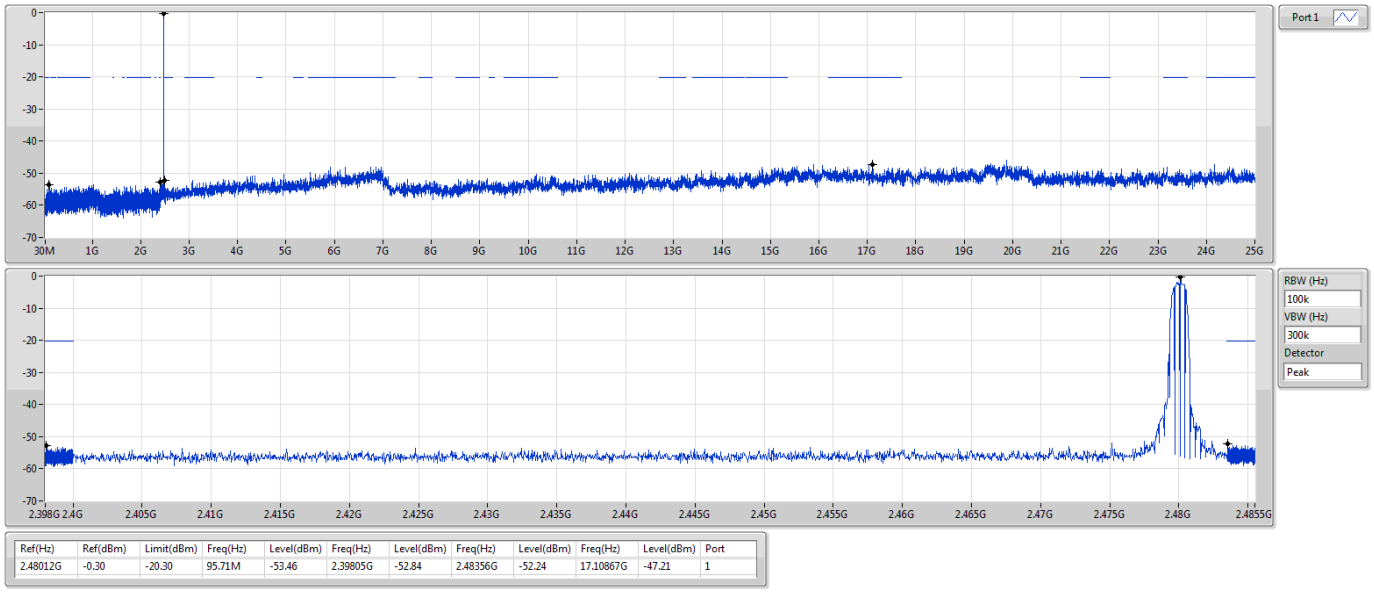
2440MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44021G	0.42	-19.58	543.86M	-52.24	2.39837G	-52.80	2.485G	-52.33	24.27109G	-47.46	1

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

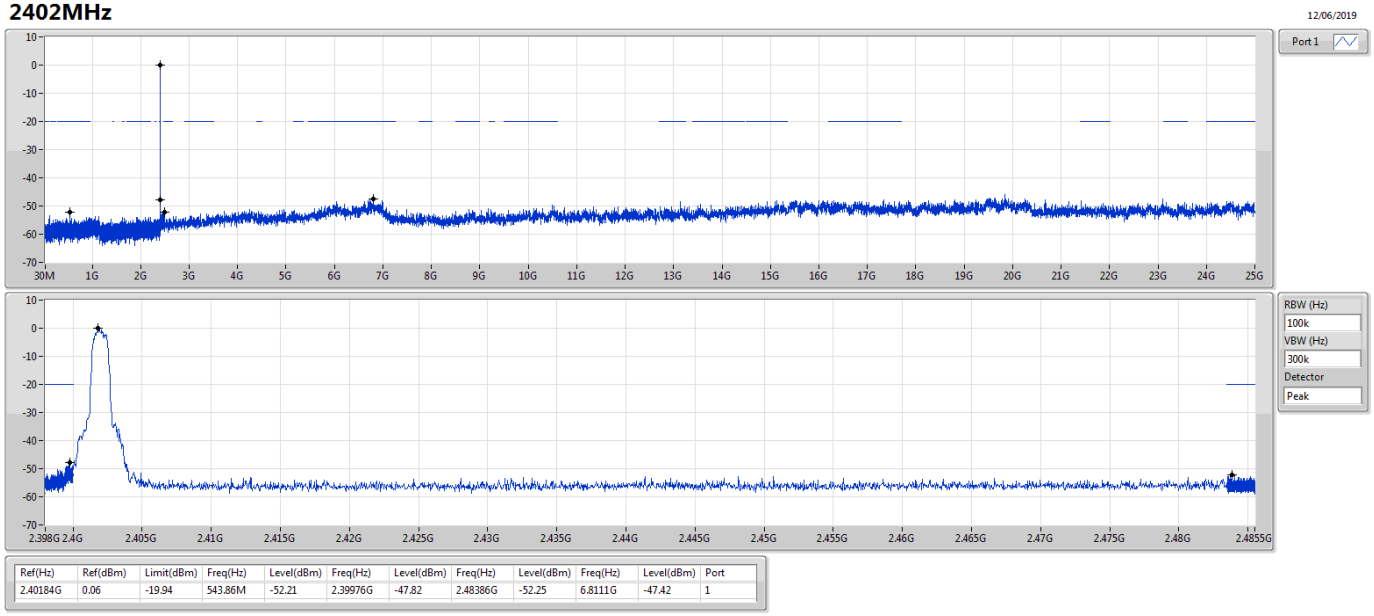
2480MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.48012G	-0.30	-20.30	95.71M	-53.46	2.39805G	-52.84	2.48356G	-52.24	17.10867G	-47.21	1

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

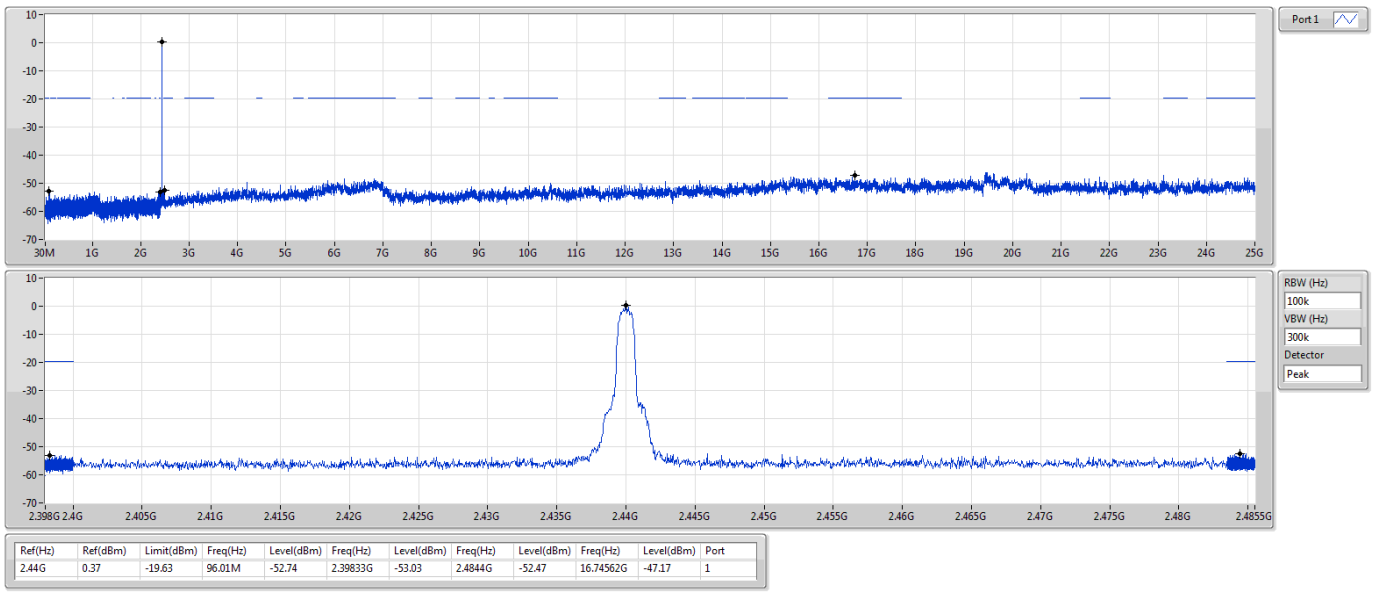
2402MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40184G	0.06	-19.94	543.86M	-52.21	2.39976G	-47.82	2.48386G	-52.25	6.8111G	-47.42	1

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

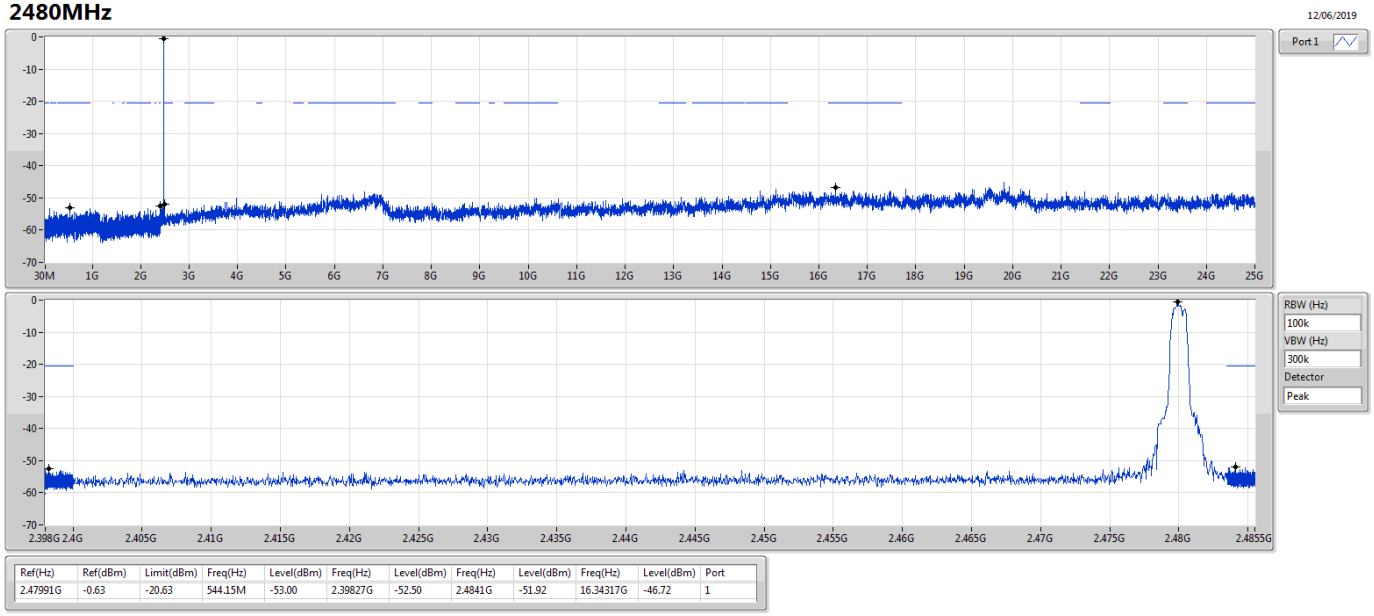
2440MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44G	0.37	-19.63	96.01M	-52.74	2.39833G	-53.03	2.4844G	-52.47	16.74562G	-47.17	1

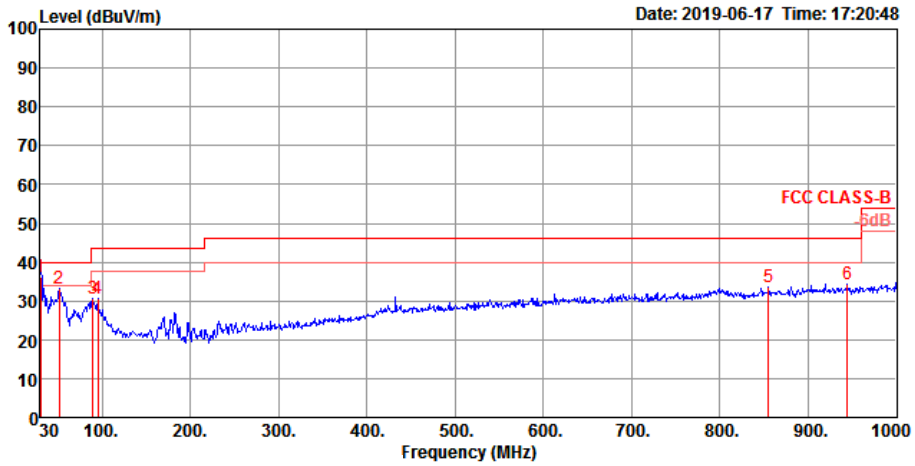
BT-EDR(3Mbps) **CSE NdB**

2480MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.47991G	-0.63	-20.63	544.15M	-53.00	2.39827G	-52.50	2.4841G	-51.92	16.34317G	-46.72	1

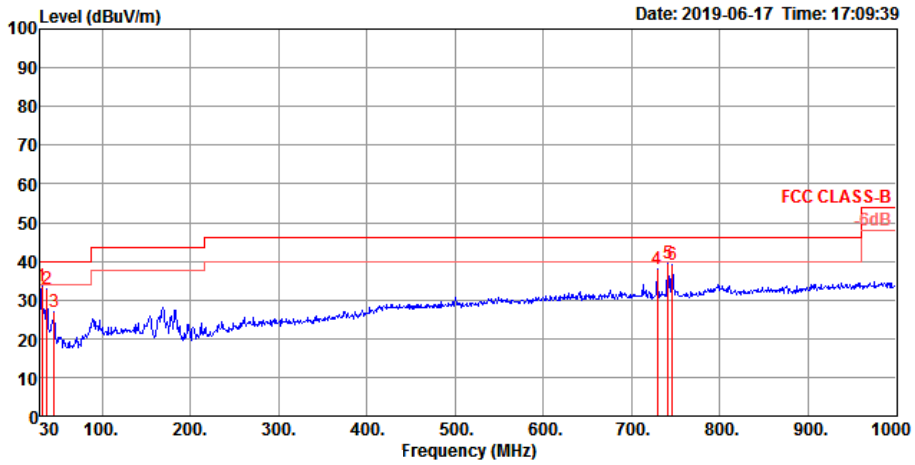
RSE below 1GHz Result			
Operating Mode	1	**Polarization**	Vertical
Operating Function	CTX		



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	30.00	36.10	40.00	-3.90	43.70	0.49	24.10	32.19	125	293	QP	VERTICAL
2	51.34	33.04	40.00	-6.96	51.17	0.74	13.31	32.18	100	329	Peak	VERTICAL
3	89.17	30.51	43.50	-12.99	46.97	1.00	14.61	32.07	150	244	Peak	VERTICAL
4	94.99	30.65	43.50	-12.85	45.74	1.04	15.95	32.08	125	61	Peak	VERTICAL
5	855.47	33.59	46.00	-12.41	35.95	3.09	26.15	31.60	100	39	Peak	VERTICAL
6	944.71	34.35	46.00	-11.65	35.14	3.30	26.68	30.77	125	156	Peak	VERTICAL

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.)

RSE below 1GHz Result			
Operating Mode	1	**Polarization**	Horizontal
Operating Function	CTX		



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	31.94	33.52	40.00	-6.48	42.27	0.52	22.93	32.20	100	86	Peak	HORIZONTAL
2	37.76	32.89	40.00	-7.11	45.01	0.59	19.51	32.22	200	0	Peak	HORIZONTAL
3	45.52	26.92	40.00	-13.08	42.84	0.68	15.61	32.21	200	0	Peak	HORIZONTAL
4	729.37	37.88	46.00	-8.12	41.48	2.89	25.53	32.02	125	228	Peak	HORIZONTAL
5	741.01	39.35	46.00	-6.65	42.90	2.90	25.62	32.07	125	283	Peak	HORIZONTAL
6	745.86	38.97	46.00	-7.03	42.52	2.90	25.63	32.08	125	283	Peak	HORIZONTAL

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.)

Mode 1: EUT 1 <Internal>

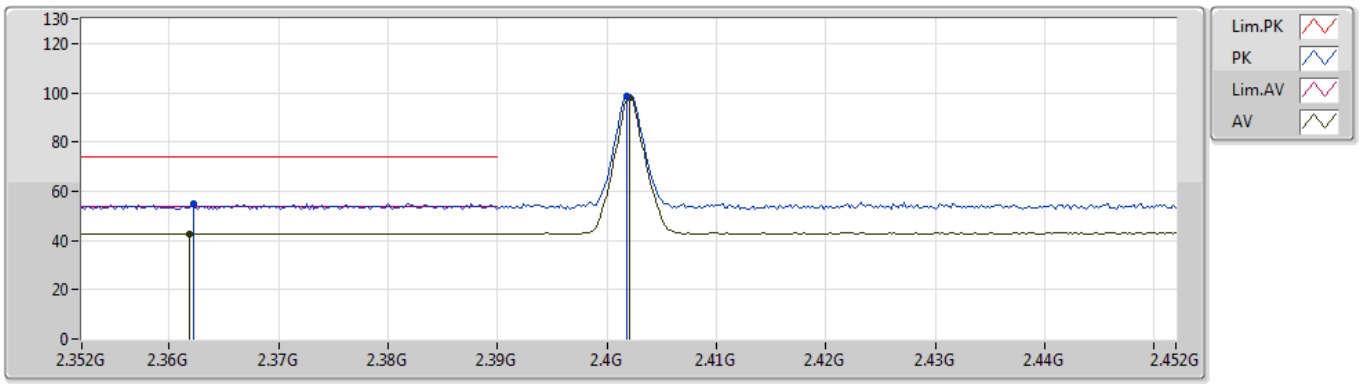
Summary

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-EDR(3Mbps)	Pass	AV	2.4835G	46.53	54.00	-7.47	30.96	3	Vertical	176	1.55	-

BT-BR(1Mbps)

11/06/2019

2402MHz_TX



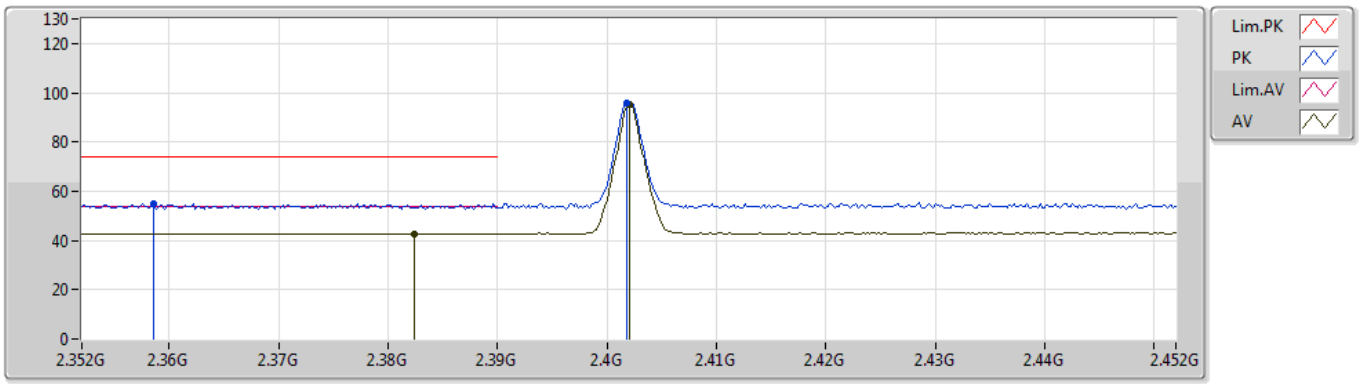
EUT Y_1TX
Setting 4
01-B-4
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.3622G	54.85	74.00	-19.15	30.70	3	Vertical	184	1.57	-
AV	2.3618G	42.85	54.00	-11.15	30.70	3	Vertical	184	1.57	-
PK	2.4018G	98.83	Inf	-Inf	30.84	3	Vertical	184	1.57	-
AV	2.402G	97.96	Inf	-Inf	30.84	3	Vertical	184	1.57	-

BT-BR(1Mbps)

11/06/2019

2402MHz_TX



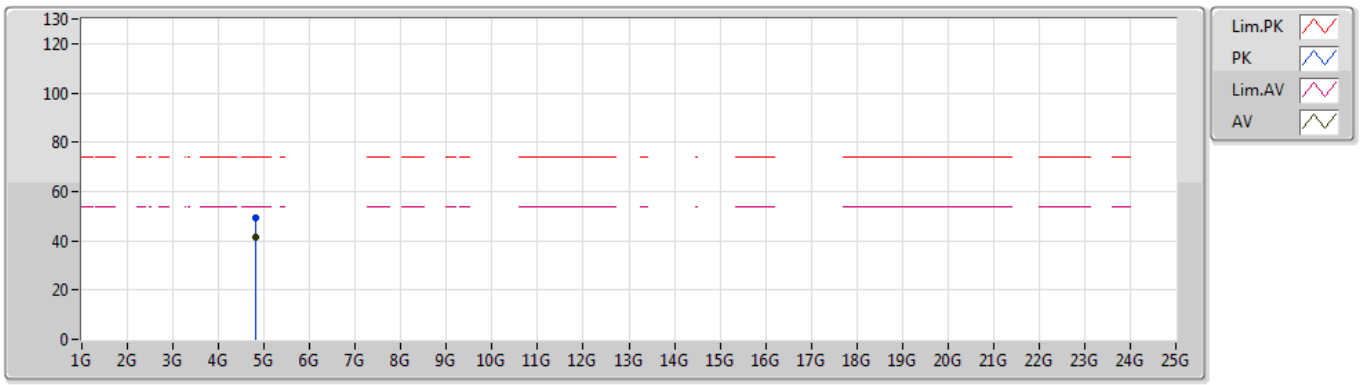
EUT Y_1TX
Setting 4
01-B-4
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.3586G	55.18	74.00	-18.82	30.69	3	Horizontal	117	2.03	-
AV	2.3824G	42.83	54.00	-11.17	30.78	3	Horizontal	117	2.03	-
PK	2.4018G	96.08	Inf	-Inf	30.84	3	Horizontal	117	2.03	-
AV	2.402G	95.24	Inf	-Inf	30.84	3	Horizontal	117	2.03	-

BT-BR(1Mbps)

11/06/2019

2402MHz_TX



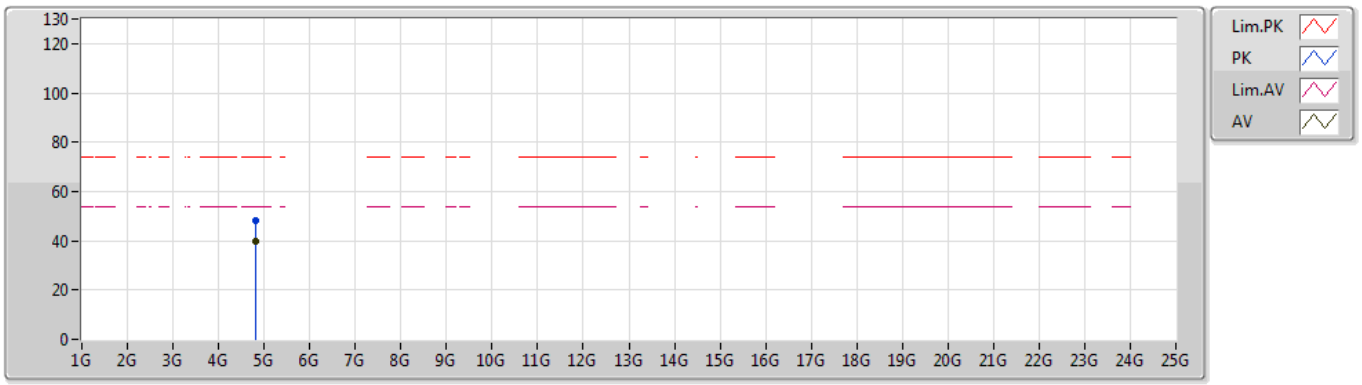
EUT Y_1TX
Setting 4
01-B-4
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.80416G	49.17	74.00	-24.83	3.49	3	Vertical	136	1.07	-
AV	4.80396G	41.50	54.00	-12.50	3.49	3	Vertical	136	1.07	-

BT-BR(1Mbps)

11/06/2019

2402MHz_TX



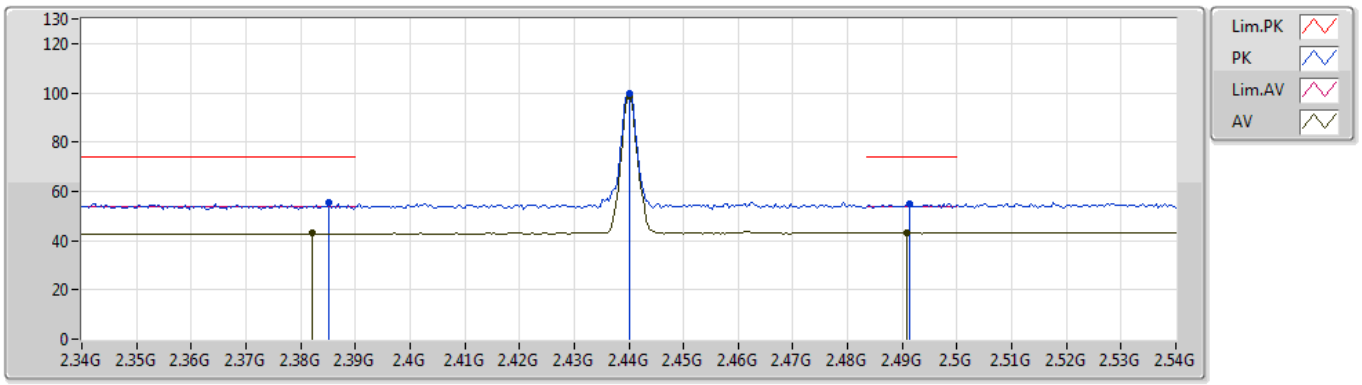
EUT Y_1TX
Setting 4
01-B-4
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.8042G	48.45	74.00	-25.55	3.50	3	Horizontal	229	1.46	-
AV	4.80398G	39.74	54.00	-14.26	3.49	3	Horizontal	229	1.46	-

BT-BR(1Mbps)

11/06/2019

2440MHz_TX



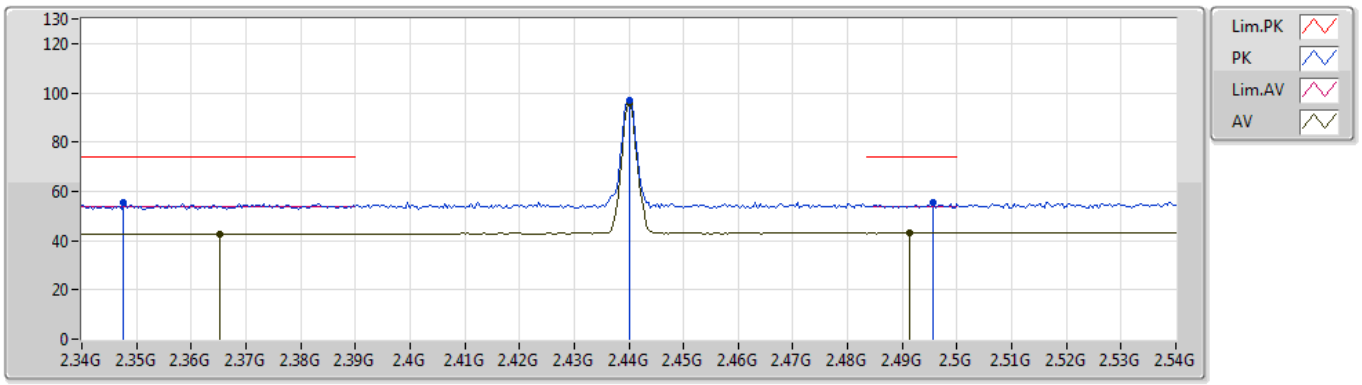
EUT Y_1TX
Setting 4
01-B-4
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.3852G	55.73	74.00	-18.27	30.79	3	Vertical	182	1.99	-
AV	2.382G	42.88	54.00	-11.12	30.78	3	Vertical	182	1.99	-
PK	2.44G	99.63	Inf	-Inf	30.90	3	Vertical	182	1.99	-
AV	2.44G	98.73	Inf	-Inf	30.90	3	Vertical	182	1.99	-
PK	2.4912G	55.14	74.00	-18.86	30.98	3	Vertical	182	1.99	-
AV	2.4908G	43.16	54.00	-10.84	30.98	3	Vertical	182	1.99	-

BT-BR(1Mbps)

11/06/2019

2440MHz_TX



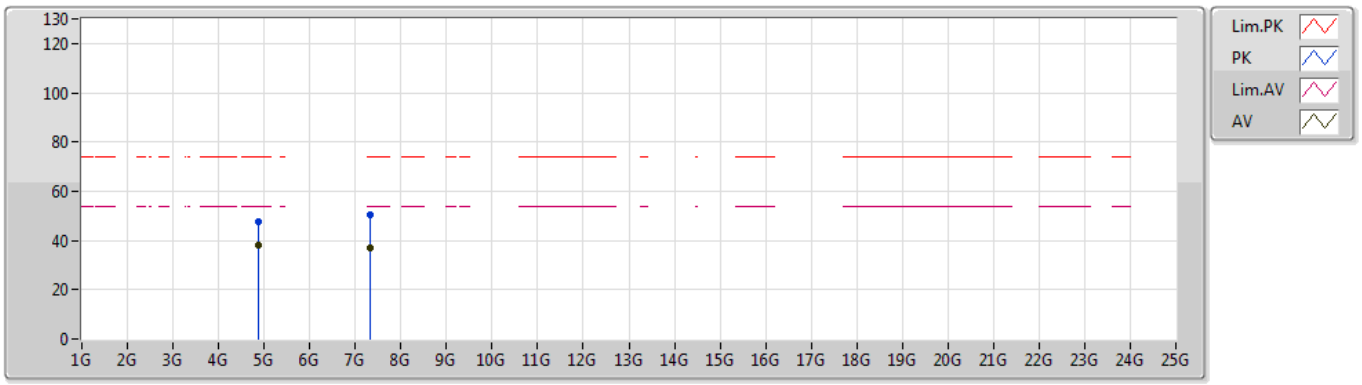
EUT Y_1TX
Setting 4
01-B-4
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.3476G	55.24	74.00	-18.76	30.64	3	Horizontal	116	2.39	-
AV	2.3652G	42.79	54.00	-11.21	30.71	3	Horizontal	116	2.39	-
PK	2.44G	96.80	Inf	-Inf	30.90	3	Horizontal	116	2.39	-
AV	2.44G	95.94	Inf	-Inf	30.90	3	Horizontal	116	2.39	-
PK	2.4956G	55.41	74.00	-18.59	30.99	3	Horizontal	116	2.39	-
AV	2.4912G	43.17	54.00	-10.83	30.98	3	Horizontal	116	2.39	-

BT-BR(1Mbps)

11/06/2019

2440MHz_TX



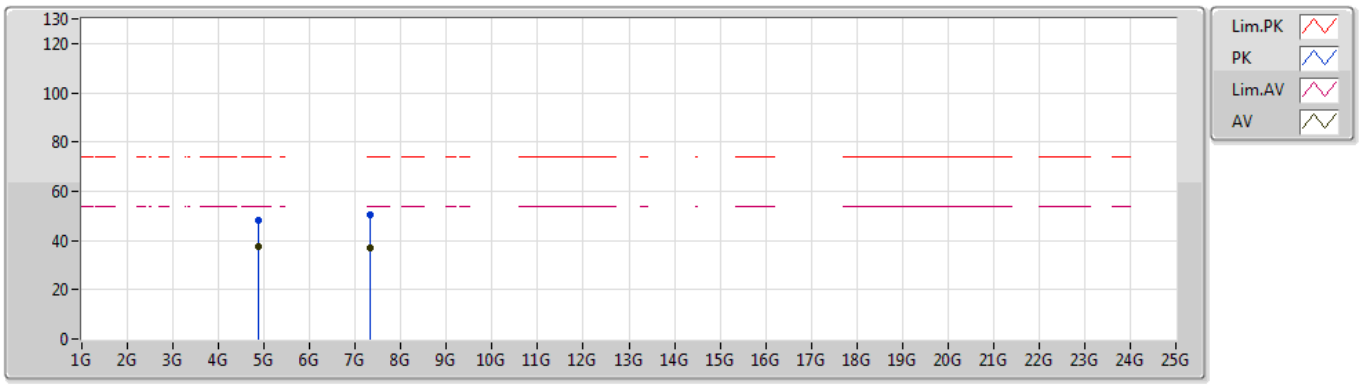
EUT Y_1TX
Setting 4
01-B-4
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.8803G	47.74	74.00	-26.26	3.84	3	Vertical	138	1.06	-
AV	4.88G	38.03	54.00	-15.97	3.84	3	Vertical	138	1.06	-
PK	7.31996G	50.54	74.00	-23.46	9.25	3	Vertical	181	1.56	-
AV	7.31578G	37.09	54.00	-16.91	9.26	3	Vertical	181	1.56	-

BT-BR(1Mbps)

11/06/2019

2440MHz_TX



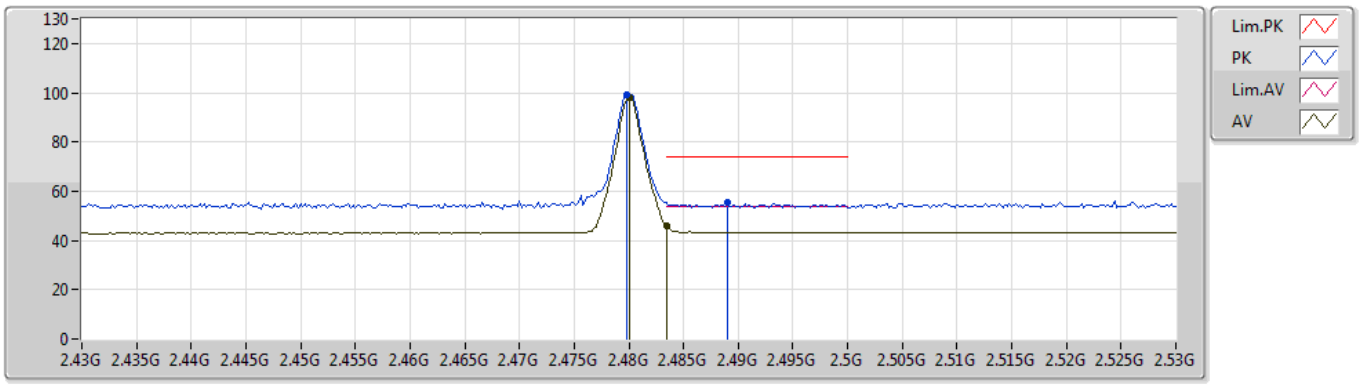
EUT Y_1TX
Setting 4
01-B-4
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.8797G	47.96	74.00	-26.04	3.84	3	Horizontal	227	1.62	-
AV	4.87994G	37.46	54.00	-16.54	3.84	3	Horizontal	227	1.62	-
PK	7.32204G	50.61	74.00	-23.39	9.25	3	Horizontal	191	1.43	-
AV	7.3217G	37.10	54.00	-16.90	9.25	3	Horizontal	191	1.43	-

BT-BR(1Mbps)

10/06/2019

2480MHz_TX



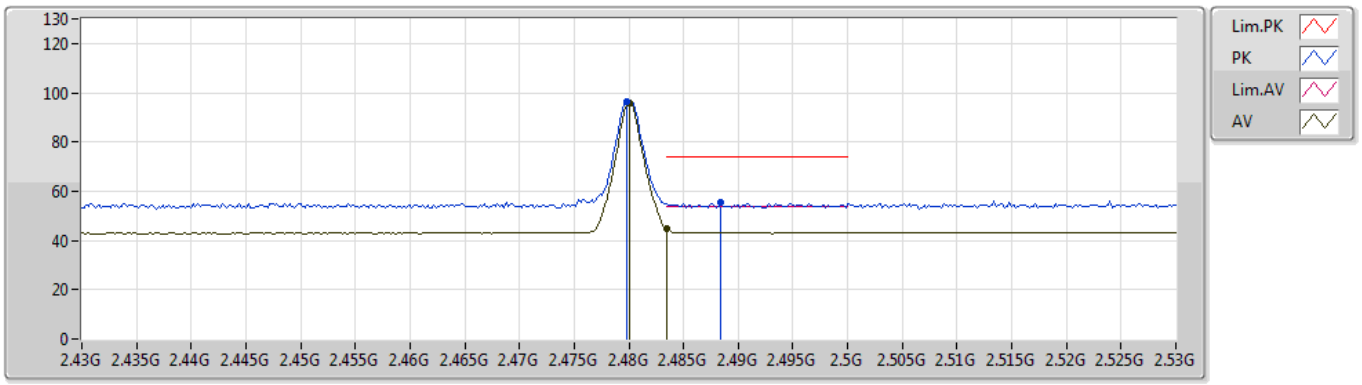
EUT Y_1TX
Setting 4
01-B-4
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.4798G	99.08	Inf	-Inf	30.96	3	Vertical	185	1.54	-
AV	2.48G	98.20	Inf	-Inf	30.96	3	Vertical	185	1.54	-
PK	2.489G	55.48	74.00	-18.52	30.97	3	Vertical	185	1.54	-
AV	2.4835G	45.88	54.00	-8.12	30.96	3	Vertical	185	1.54	-

BT-BR(1Mbps)

10/06/2019

2480MHz_TX



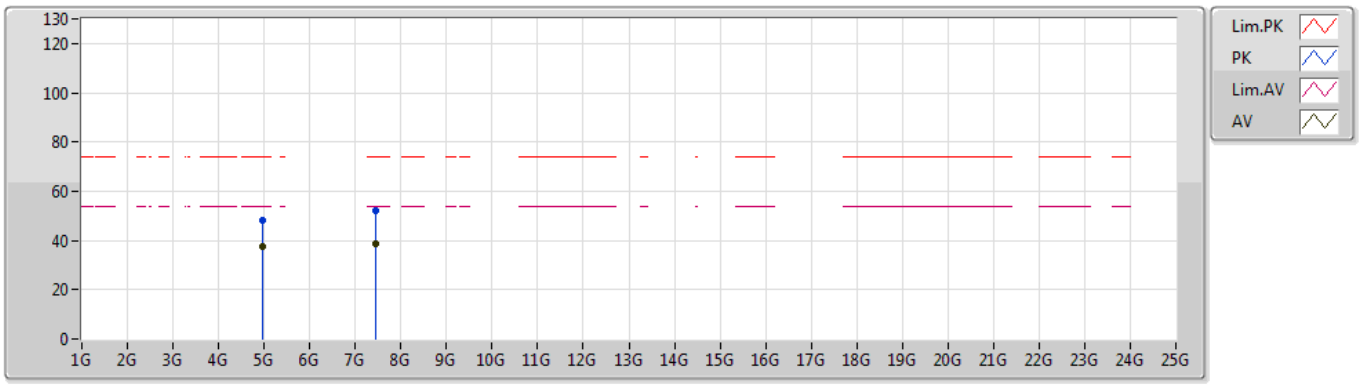
EUT Y_1TX
Setting 4
01-B-4
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.4798G	96.65	Inf	-Inf	30.96	3	Horizontal	117	1.86	-
AV	2.48G	95.76	Inf	-Inf	30.96	3	Horizontal	117	1.86	-
PK	2.4884G	55.34	74.00	-18.66	30.97	3	Horizontal	117	1.86	-
AV	2.4835G	44.73	54.00	-9.27	30.96	3	Horizontal	117	1.86	-

BT-BR(1Mbps)

10/06/2019

2480MHz_TX



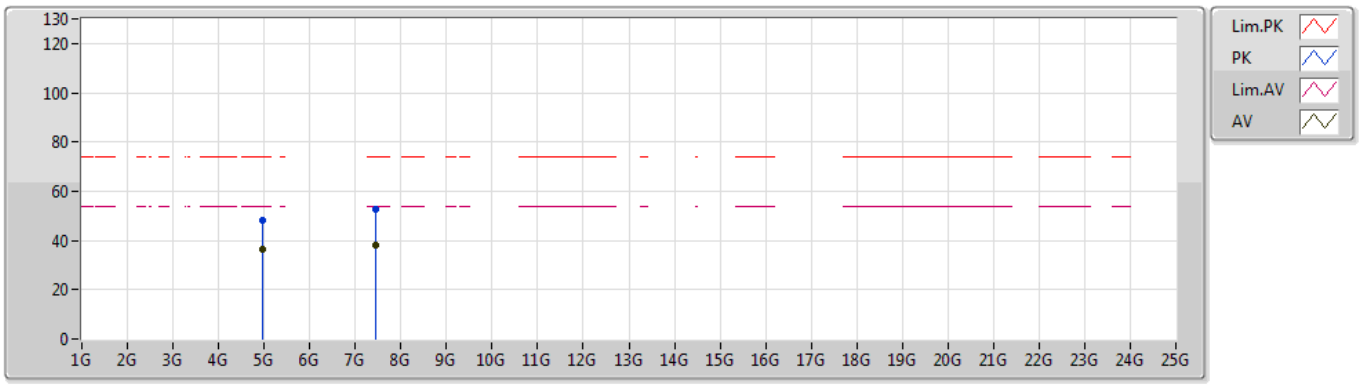
EUT Y_1TX
Setting 4
01-B-4
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.95956G	48.32	74.00	-25.68	4.20	3	Vertical	198	1.01	-
AV	4.96G	37.63	54.00	-16.37	4.20	3	Vertical	198	1.01	-
PK	7.43896G	52.25	74.00	-21.75	9.46	3	Vertical	323	2.20	-
AV	7.4365G	38.44	54.00	-15.56	9.45	3	Vertical	323	2.20	-

BT-BR(1Mbps)

10/06/2019

2480MHz_TX



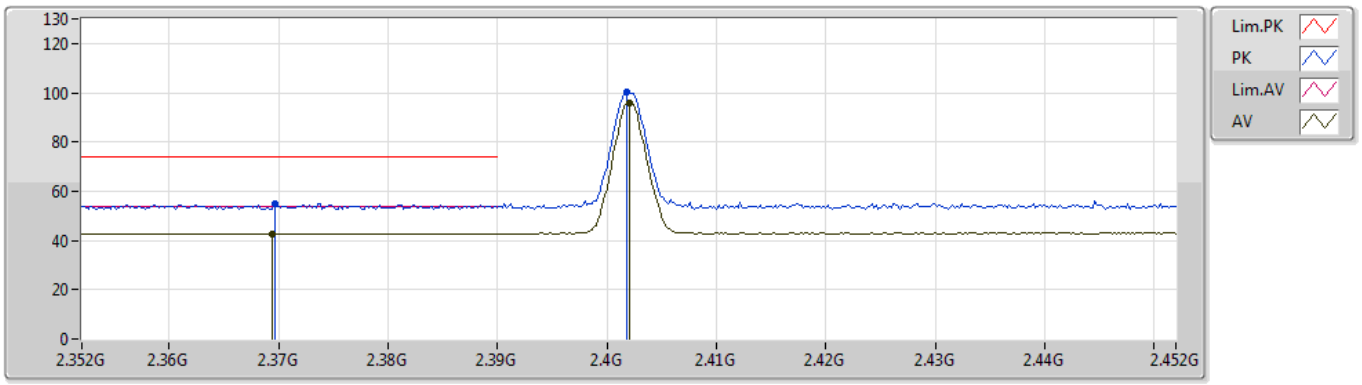
EUT Y_1TX
Setting 4
01-B-4
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.96026G	48.10	74.00	-25.90	4.20	3	Horizontal	228	1.55	-
AV	4.95998G	36.43	54.00	-17.57	4.20	3	Horizontal	228	1.55	-
PK	7.43914G	52.54	74.00	-21.46	9.46	3	Horizontal	202	1.75	-
AV	7.44084G	38.38	54.00	-15.62	9.47	3	Horizontal	202	1.75	-

BT-EDR(3Mbps)

11/06/2019

2402MHz_TX



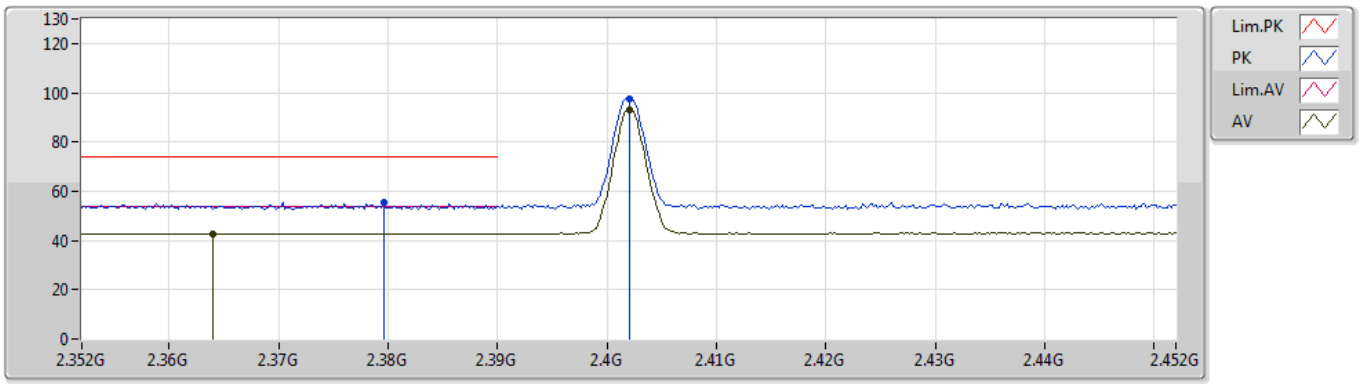
EUT Y_1TX
Setting 4
01-B-4
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.3696G	54.97	74.00	-19.03	30.73	3	Vertical	185	1.58	-
AV	2.3694G	42.85	54.00	-11.15	30.73	3	Vertical	185	1.58	-
PK	2.4018G	100.06	Inf	-Inf	30.84	3	Vertical	185	1.58	-
AV	2.402G	95.78	Inf	-Inf	30.84	3	Vertical	185	1.58	-

BT-EDR(3Mbps)

11/06/2019

2402MHz_TX



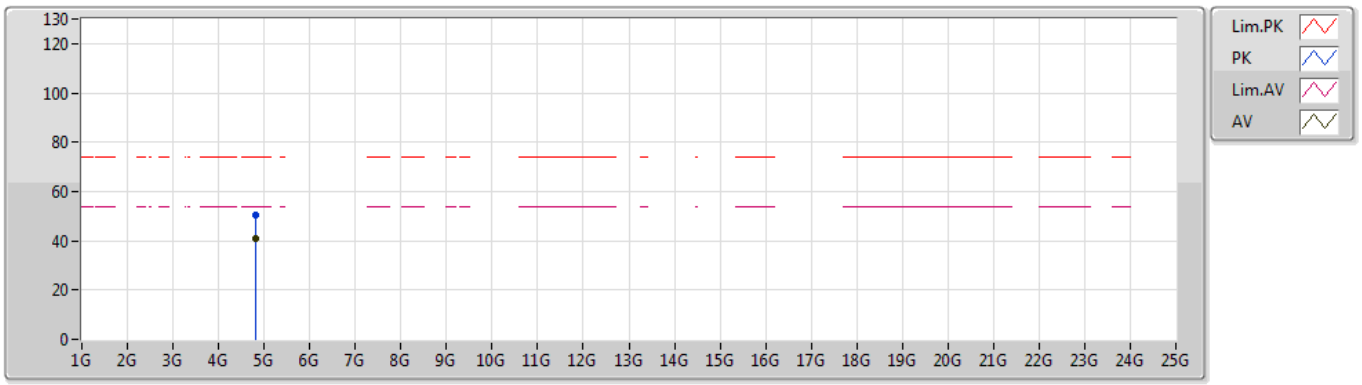
EUT Y_1TX
Setting 4
01-B-4
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.3796G	55.40	74.00	-18.60	30.76	3	Horizontal	116	2.04	-
AV	2.364G	42.80	54.00	-11.20	30.70	3	Horizontal	116	2.04	-
PK	2.402G	97.40	Inf	-Inf	30.84	3	Horizontal	116	2.04	-
AV	2.402G	93.13	Inf	-Inf	30.84	3	Horizontal	116	2.04	-

BT-EDR(3Mbps)

11/06/2019

2402MHz_TX



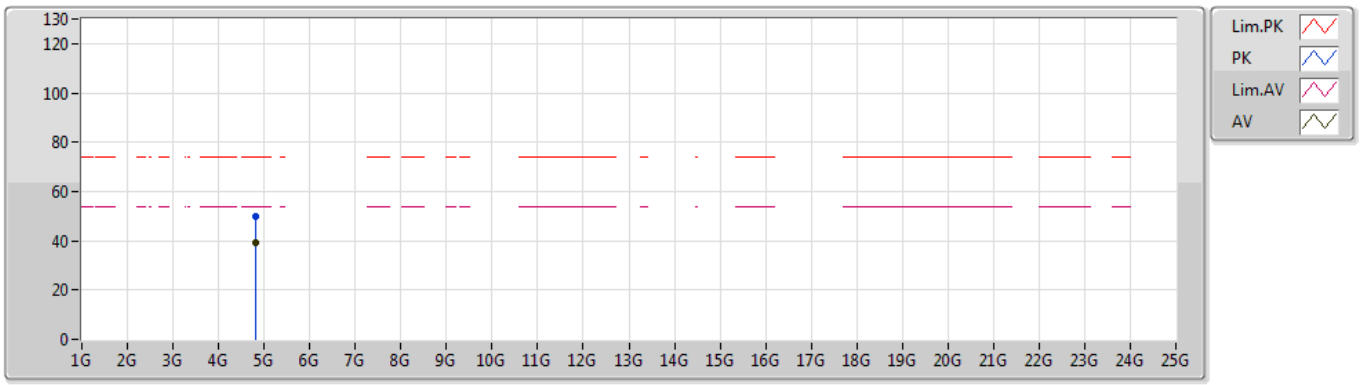
EUT Y_1TX
Setting 4
01-B-4
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.80396G	50.22	74.00	-23.78	3.49	3	Vertical	137	1.01	-
AV	4.804G	40.78	54.00	-13.22	3.49	3	Vertical	137	1.01	-

BT-EDR(3Mbps)

11/06/2019

2402MHz_TX



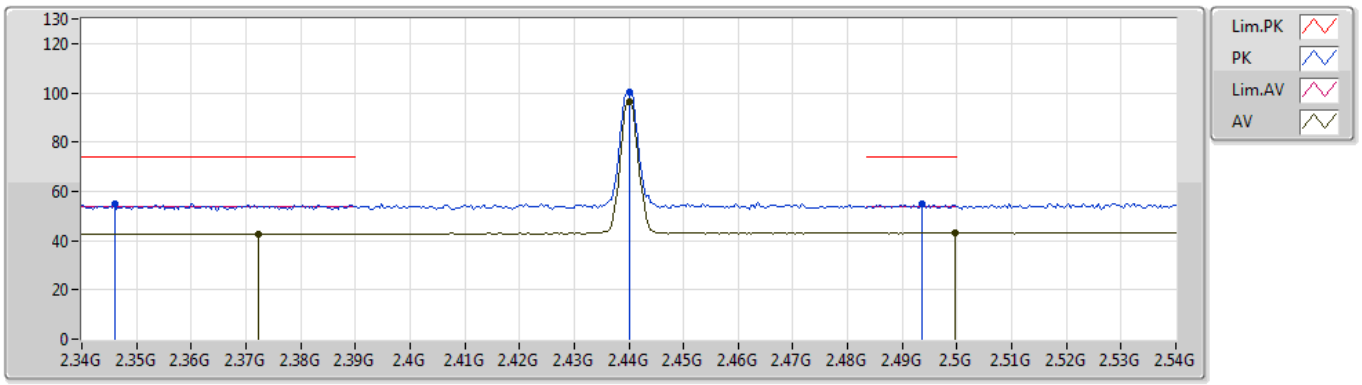
EUT Y_1TX
Setting 4
01-B-4
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.80398G	49.99	74.00	-24.01	3.49	3	Horizontal	227	1.68	-
AV	4.80408G	39.35	54.00	-14.65	3.49	3	Horizontal	227	1.68	-

BT-EDR(3Mbps)

11/06/2019

2440MHz_TX



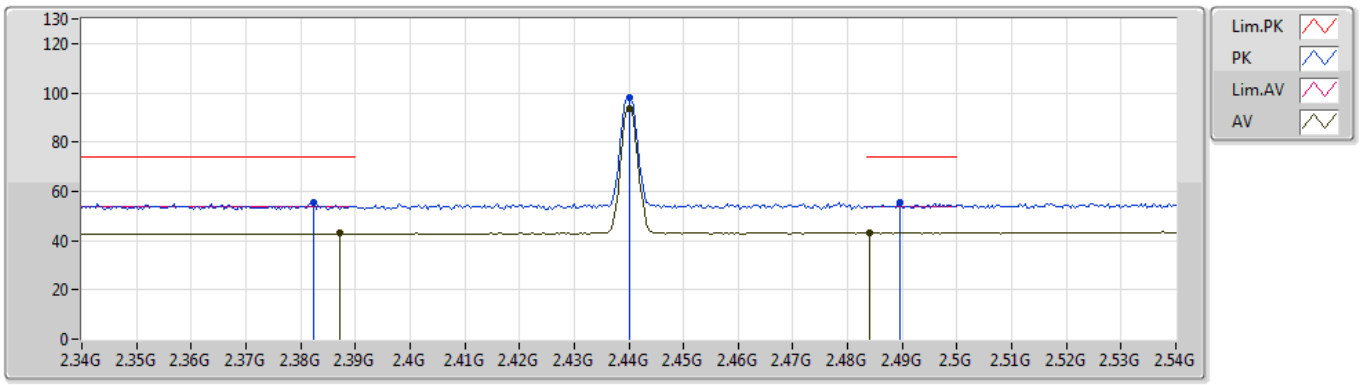
EUT Y_1TX
Setting 4
01-B-4
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.346G	54.92	74.00	-19.08	30.64	3	Vertical	186	1.41	-
AV	2.3724G	42.86	54.00	-11.14	30.74	3	Vertical	186	1.41	-
PK	2.44G	100.55	Inf	-Inf	30.90	3	Vertical	186	1.41	-
AV	2.44G	96.28	Inf	-Inf	30.90	3	Vertical	186	1.41	-
PK	2.4936G	54.66	74.00	-19.34	30.98	3	Vertical	186	1.41	-
AV	2.4996G	43.07	54.00	-10.93	30.99	3	Vertical	186	1.41	-

BT-EDR(3Mbps)

11/06/2019

2440MHz_TX



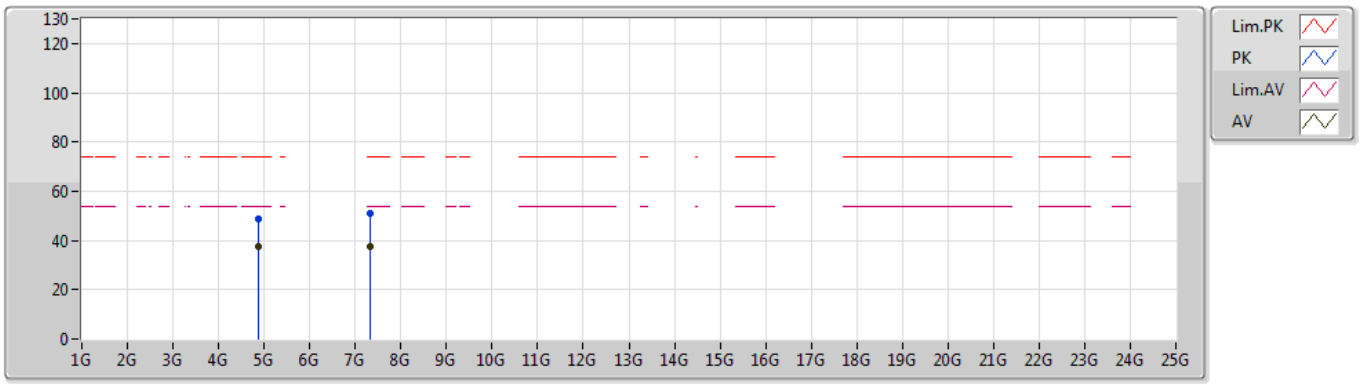
EUT Y_1TX
Setting 4
01-B-4
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.3824G	55.25	74.00	-18.75	30.78	3	Horizontal	116	2.40	-
AV	2.3872G	42.87	54.00	-11.13	30.79	3	Horizontal	116	2.40	-
PK	2.44G	97.85	Inf	-Inf	30.90	3	Horizontal	116	2.40	-
AV	2.44G	93.58	Inf	-Inf	30.90	3	Horizontal	116	2.40	-
PK	2.4896G	55.35	74.00	-18.65	30.97	3	Horizontal	116	2.40	-
AV	2.484G	43.07	54.00	-10.93	30.96	3	Horizontal	116	2.40	-

BT-EDR(3Mbps)

11/06/2019

2440MHz_TX



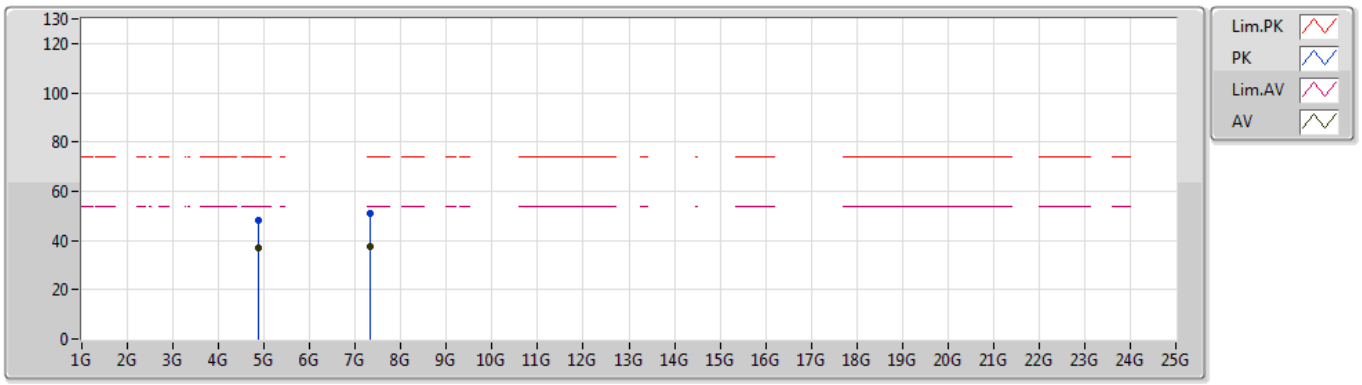
EUT Y_1TX
Setting 4
01-B-4
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.8797G	48.82	74.00	-25.18	3.84	3	Vertical	132	1.06	-
AV	4.88006G	37.63	54.00	-16.37	3.84	3	Vertical	132	1.06	-
PK	7.3212G	50.86	74.00	-23.14	9.25	3	Vertical	272	1.79	-
AV	7.3242G	37.32	54.00	-16.68	9.25	3	Vertical	272	1.79	-

BT-EDR(3Mbps)

11/06/2019

2440MHz_TX



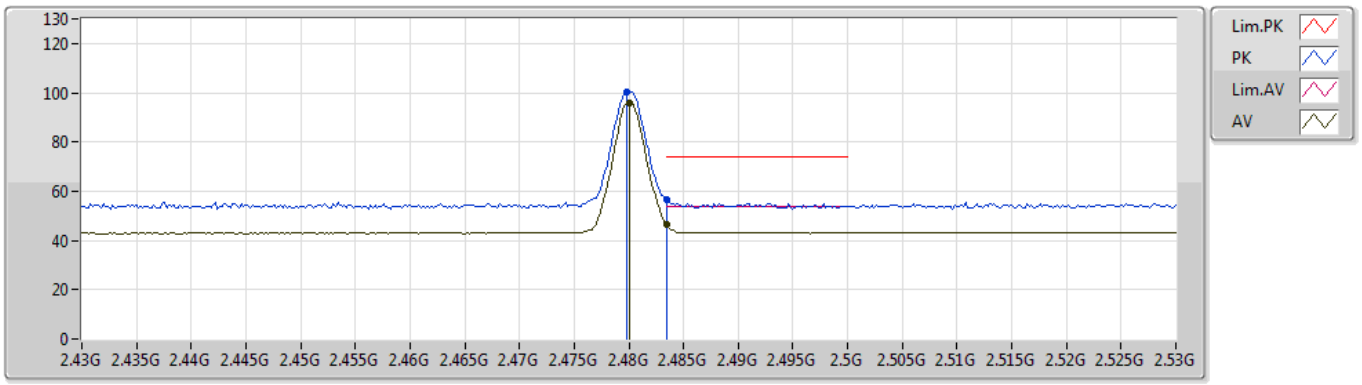
EUT Y_1TX
Setting 4
01-B-4
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.8803G	48.31	74.00	-25.69	3.84	3	Horizontal	228	1.49	-
AV	4.88G	36.93	54.00	-17.07	3.84	3	Horizontal	228	1.49	-
PK	7.3187G	51.02	74.00	-22.98	9.25	3	Horizontal	138	1.32	-
AV	7.31648G	37.33	54.00	-16.67	9.26	3	Horizontal	138	1.32	-

BT-EDR(3Mbps)

11/06/2019

2480MHz_TX



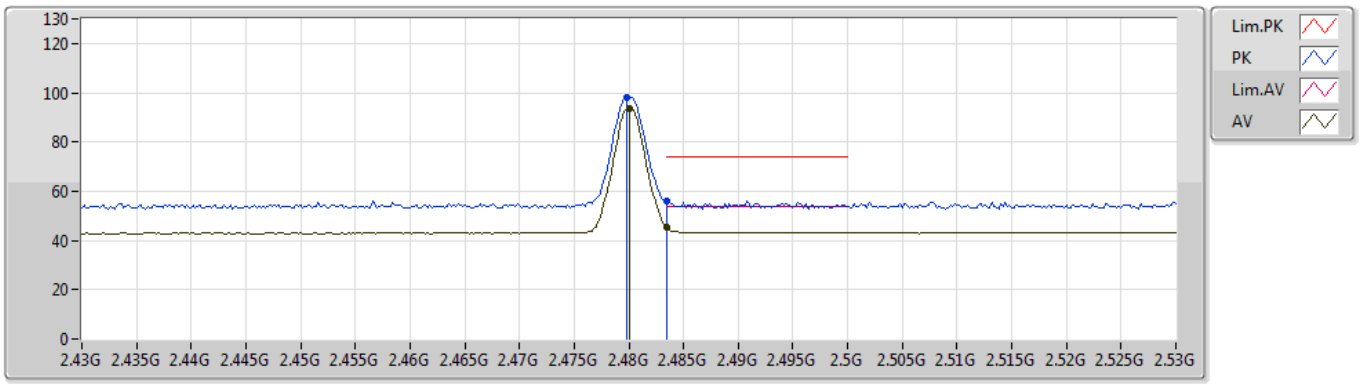
EUT Y_1TX
Setting 4
01-B-4
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.4798G	100.25	Inf	-Inf	30.96	3	Vertical	176	1.55	-
AV	2.48G	95.94	Inf	-Inf	30.96	3	Vertical	176	1.55	-
PK	2.4835G	56.41	74.00	-17.59	30.96	3	Vertical	176	1.55	-
AV	2.4835G	46.53	54.00	-7.47	30.96	3	Vertical	176	1.55	-

BT-EDR(3Mbps)

11/06/2019

2480MHz_TX



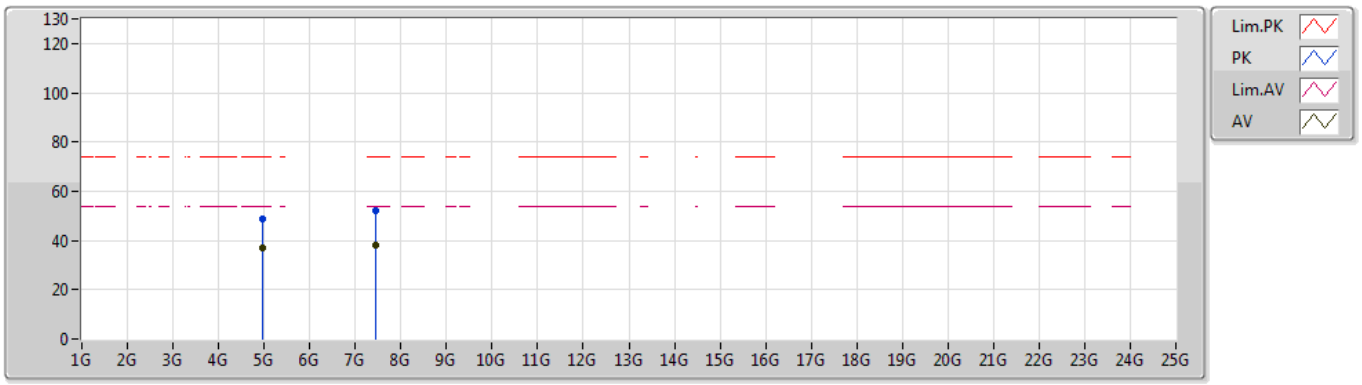
EUT Y_1TX
Setting 4
01-B-4
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.4798G	98.03	Inf	-Inf	30.96	3	Horizontal	119	2.14	-
AV	2.48G	93.81	Inf	-Inf	30.96	3	Horizontal	119	2.14	-
PK	2.4835G	56.04	74.00	-17.96	30.96	3	Horizontal	119	2.14	-
AV	2.4835G	45.31	54.00	-8.69	30.96	3	Horizontal	119	2.14	-

BT-EDR(3Mbps)

11/06/2019

2480MHz_TX



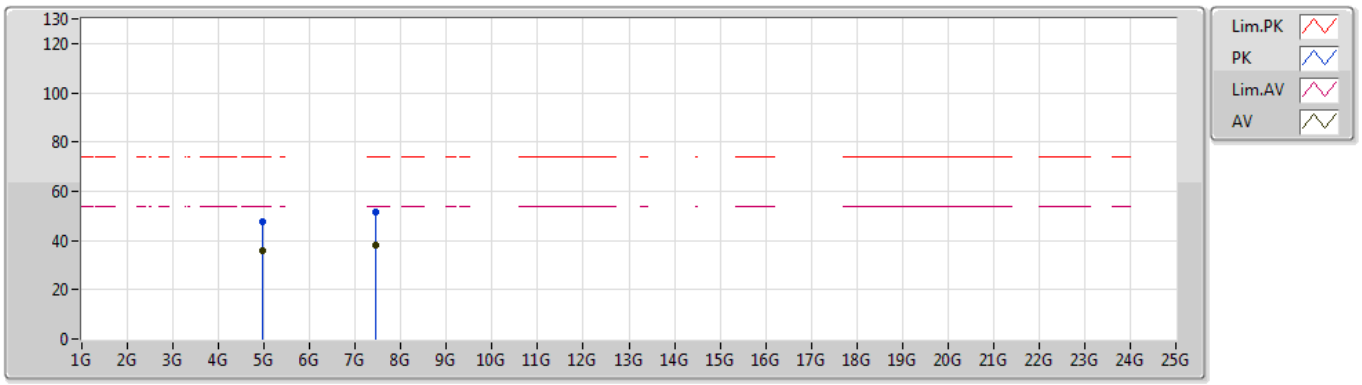
EUT Y_1TX
Setting 4
01-B-4
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.96034G	48.61	74.00	-25.39	4.20	3	Vertical	201	1.00	-
AV	4.95996G	37.21	54.00	-16.79	4.20	3	Vertical	201	1.00	-
PK	7.44446G	51.91	74.00	-22.09	9.49	3	Vertical	81	1.50	-
AV	7.43558G	38.22	54.00	-15.78	9.44	3	Vertical	81	1.50	-

BT-EDR(3Mbps)

11/06/2019

2480MHz_TX



EUT Y_1TX
Setting 4
01-B-4
FSP

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.95944G	47.88	74.00	-26.12	4.20	3	Horizontal	228	1.52	-
AV	4.96002G	36.02	54.00	-17.98	4.20	3	Horizontal	228	1.52	-
PK	7.43614G	51.71	74.00	-22.29	9.44	3	Horizontal	88	1.40	-
AV	7.43626G	38.12	54.00	-15.88	9.45	3	Horizontal	88	1.40	-

Mode 2: EUT 3 <External>

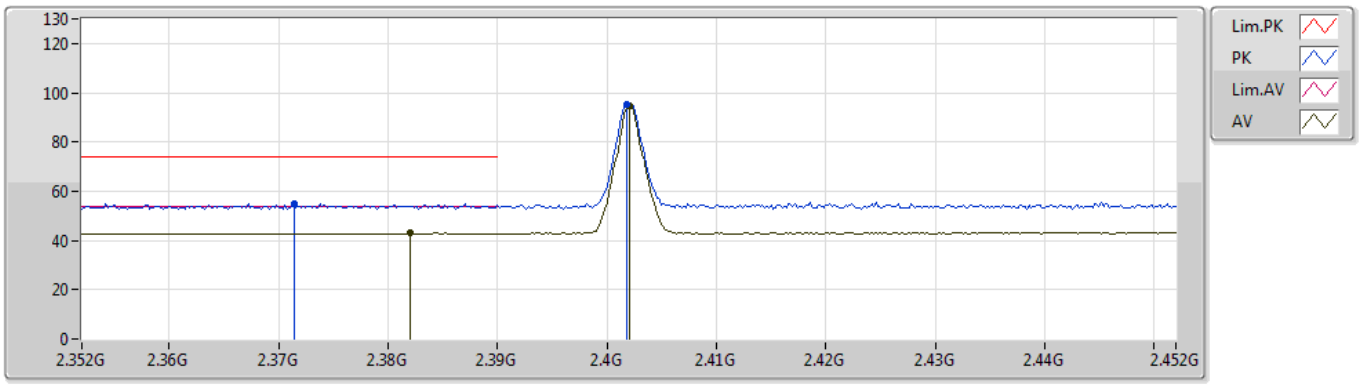
Summary

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-EDR(3Mbps)	Pass	AV	2.4835G	44.29	54.00	-9.71	30.96	3	Vertical	100	1.49	-

BT-BR(1Mbps)

11/06/2019

2402MHz_TX



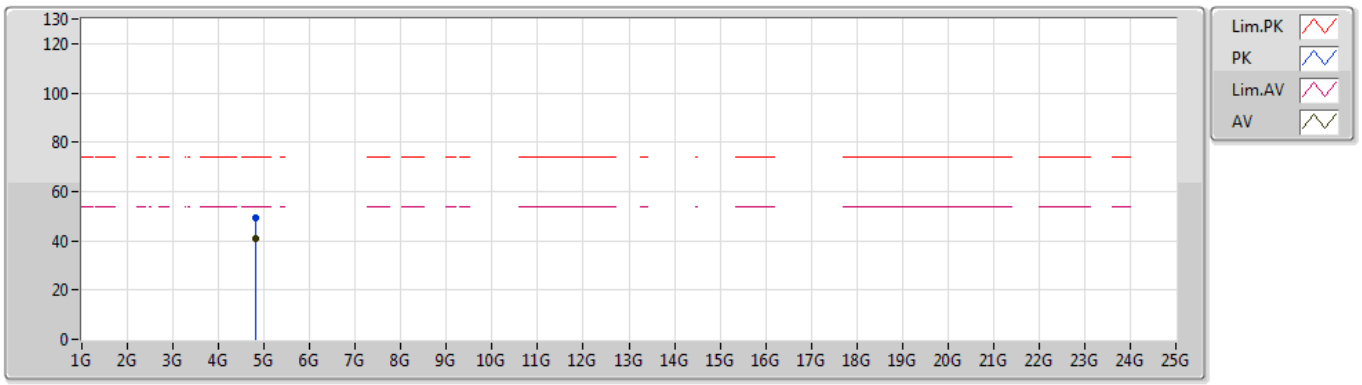
EUT Z_1TX
Setting 4
01-J-5
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.3714G	54.80	74.00	-19.20	30.73	3	Vertical	96	1.26	-
AV	2.382G	42.91	54.00	-11.09	30.78	3	Vertical	96	1.26	-
PK	2.4018G	95.48	Inf	-Inf	30.84	3	Vertical	96	1.26	-
AV	2.402G	94.61	Inf	-Inf	30.84	3	Vertical	96	1.26	-

BT-BR(1Mbps)

11/06/2019

2402MHz_TX



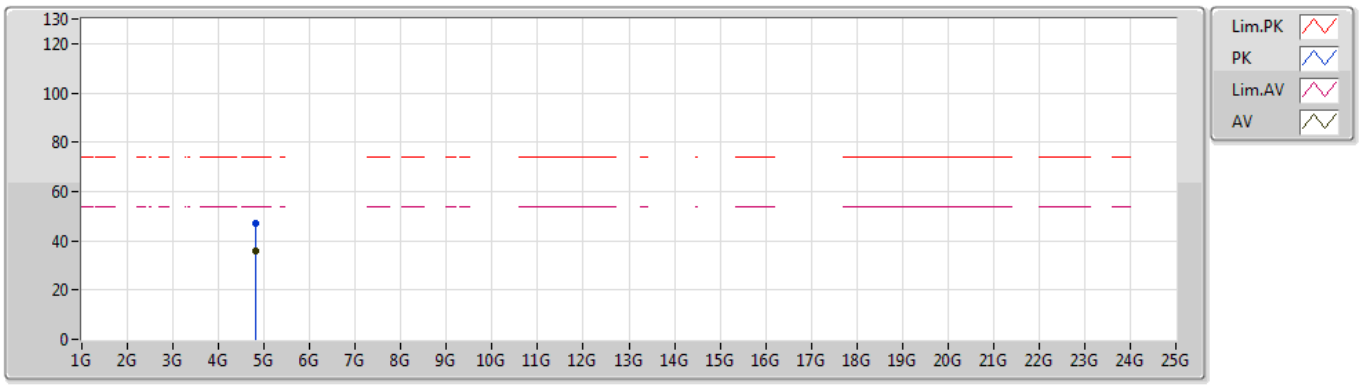
EUT Z_1TX
Setting 4
01-J-5
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.80388G	49.24	74.00	-24.76	3.49	3	Vertical	121	1.05	-
AV	4.80404G	41.12	54.00	-12.88	3.49	3	Vertical	121	1.05	-

BT-BR(1Mbps)

11/06/2019

2402MHz_TX



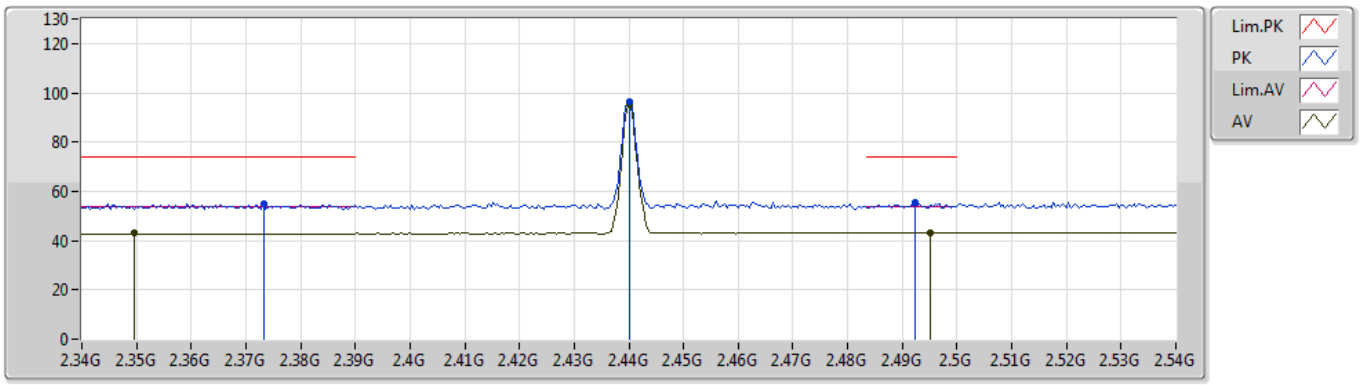
EUT Z_1TX
Setting 4
01-J-5
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.8037G	46.91	74.00	-27.09	3.49	3	Horizontal	43	1.28	-
AV	4.804G	35.87	54.00	-18.13	3.49	3	Horizontal	43	1.28	-

BT-BR(1Mbps)

11/06/2019

2440MHz_TX



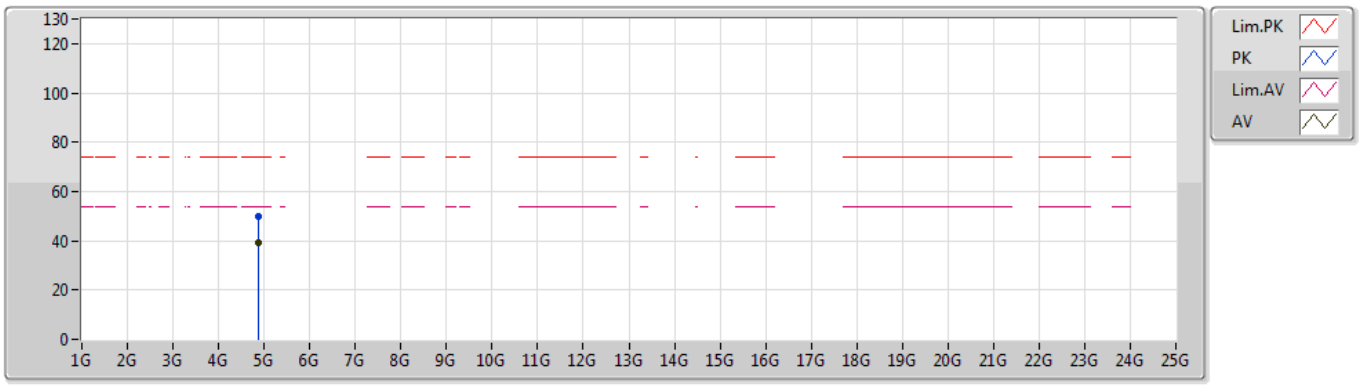
EUT Z_1TX
Setting 4
01-J-5
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.3732G	55.11	74.00	-18.89	30.74	3	Vertical	11	1.14	-
AV	2.3496G	42.91	54.00	-11.09	30.65	3	Vertical	11	1.14	-
PK	2.44G	96.19	Inf	-Inf	30.90	3	Vertical	11	1.14	-
AV	2.44G	95.35	Inf	-Inf	30.90	3	Vertical	11	1.14	-
PK	2.4924G	55.72	74.00	-18.28	30.98	3	Vertical	11	1.14	-
AV	2.4952G	43.13	54.00	-10.87	30.99	3	Vertical	11	1.14	-

BT-BR(1Mbps)

11/06/2019

2440MHz_TX



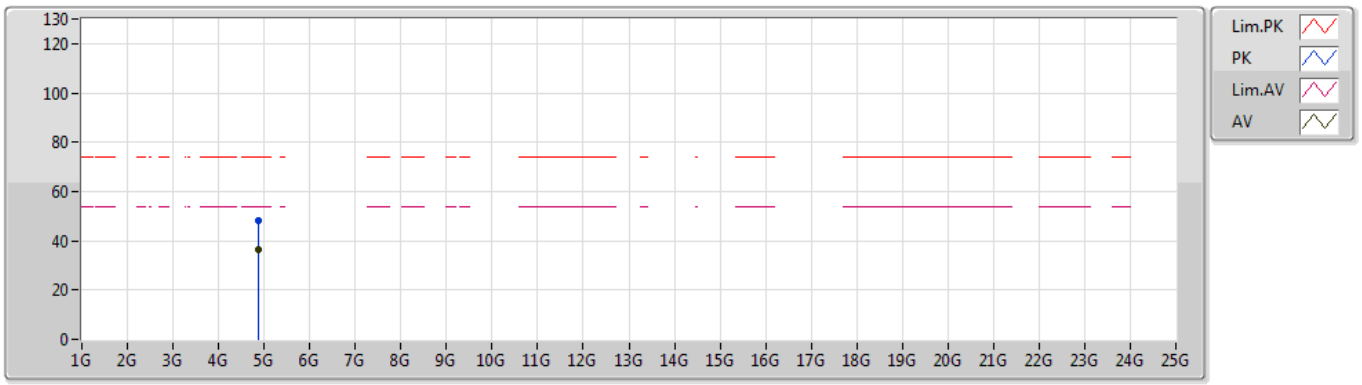
EUT Z_1TX
Setting 4
01-J-5
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.88024G	49.77	74.00	-24.23	3.84	3	Vertical	80	1.01	-
AV	4.88002G	39.42	54.00	-14.58	3.84	3	Vertical	80	1.01	-

BT-BR(1Mbps)

11/06/2019

2440MHz_TX



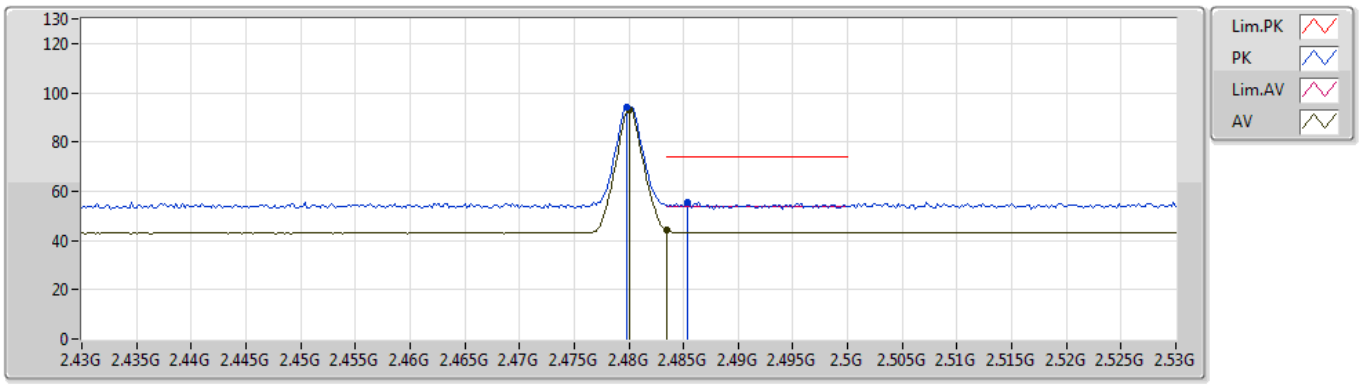
EUT Z_1TX
Setting 4
01-J-5
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.88032G	48.02	74.00	-25.98	3.84	3	Horizontal	320	1.11	-
AV	4.88016G	36.16	54.00	-17.84	3.84	3	Horizontal	320	1.11	-

BT-BR(1Mbps)

11/06/2019

2480MHz_TX



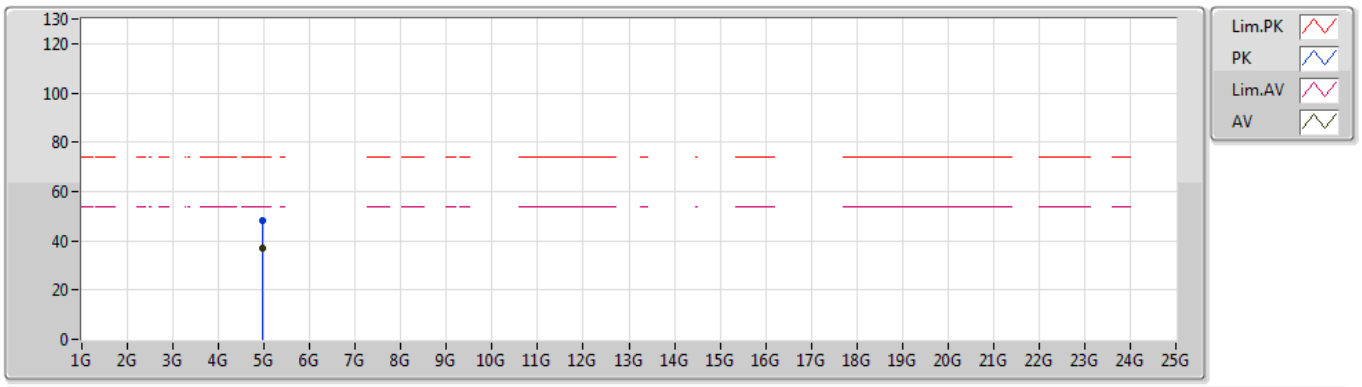
EUT Z_1TX
Setting 4
01-J-5
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.4798G	94.07	Inf	-Inf	30.96	3	Vertical	100	1.49	-
AV	2.48G	93.20	Inf	-Inf	30.96	3	Vertical	100	1.49	-
PK	2.4854G	55.37	74.00	-18.63	30.97	3	Vertical	100	1.49	-
AV	2.4835G	44.06	54.00	-9.94	30.96	3	Vertical	100	1.49	-

BT-BR(1Mbps)

11/06/2019

2480MHz_TX



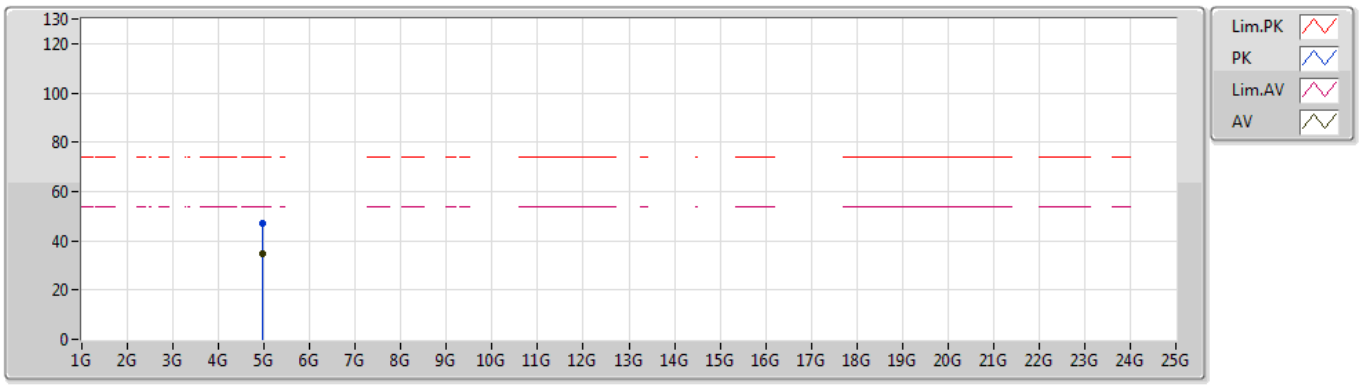
EUT Z_1TX
Setting 4
01-J-5
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.95974G	48.46	74.00	-25.54	4.20	3	Vertical	273	1.02	-
AV	4.96004G	37.01	54.00	-16.99	4.20	3	Vertical	273	1.02	-

BT-BR(1Mbps)

11/06/2019

2480MHz_TX



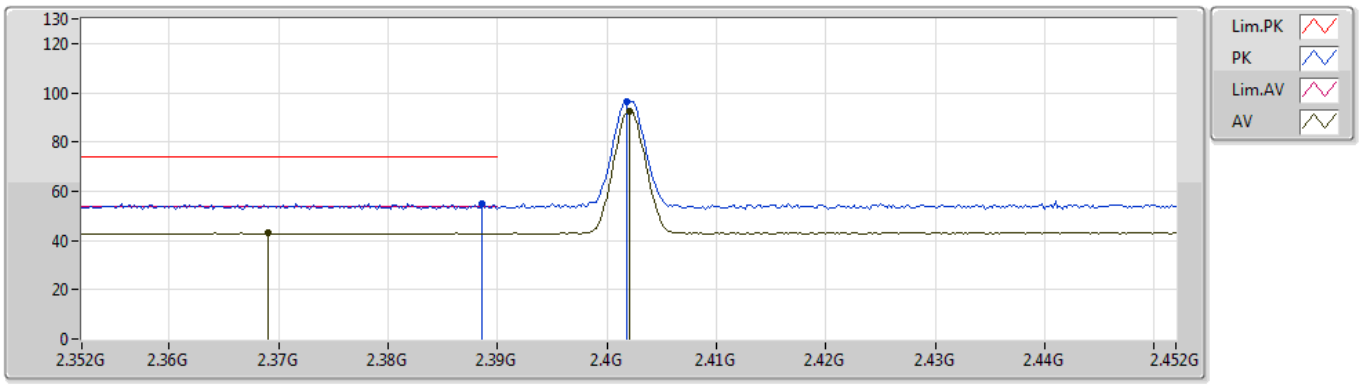
EUT Z_1TX
Setting 4
01-J-5
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.95776G	47.26	74.00	-26.74	4.19	3	Horizontal	52	1.06	-
AV	4.96006G	34.51	54.00	-19.49	4.20	3	Horizontal	52	1.06	-

BT-EDR(3Mbps)

11/06/2019

2402MHz_TX



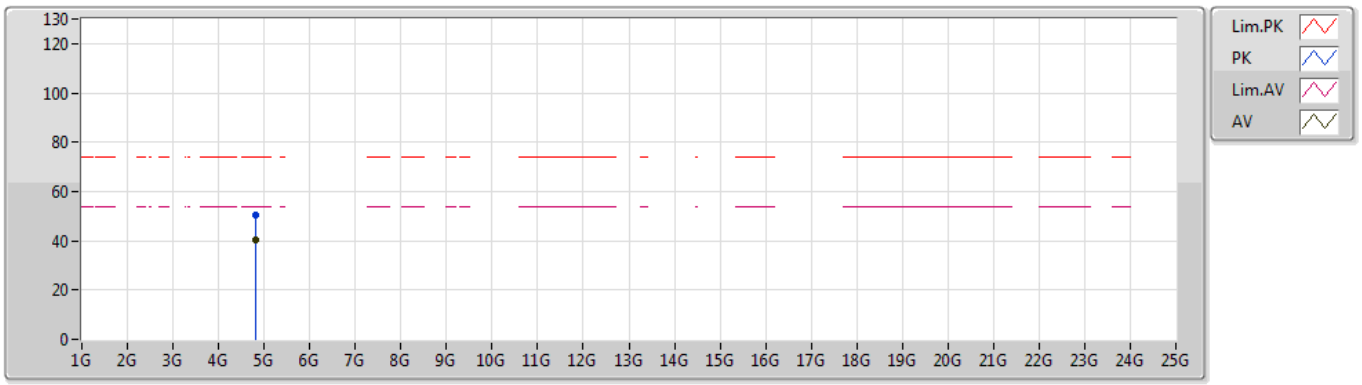
EUT Z_1TX
Setting 4
01-J-5
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.3886G	55.14	74.00	-18.86	30.80	3	Vertical	95	1.26	-
AV	2.369G	43.01	54.00	-10.99	30.73	3	Vertical	95	1.26	-
PK	2.4018G	96.49	Inf	-Inf	30.84	3	Vertical	95	1.26	-
AV	2.402G	92.24	Inf	-Inf	30.84	3	Vertical	95	1.26	-

BT-EDR(3Mbps)

11/06/2019

2402MHz_TX



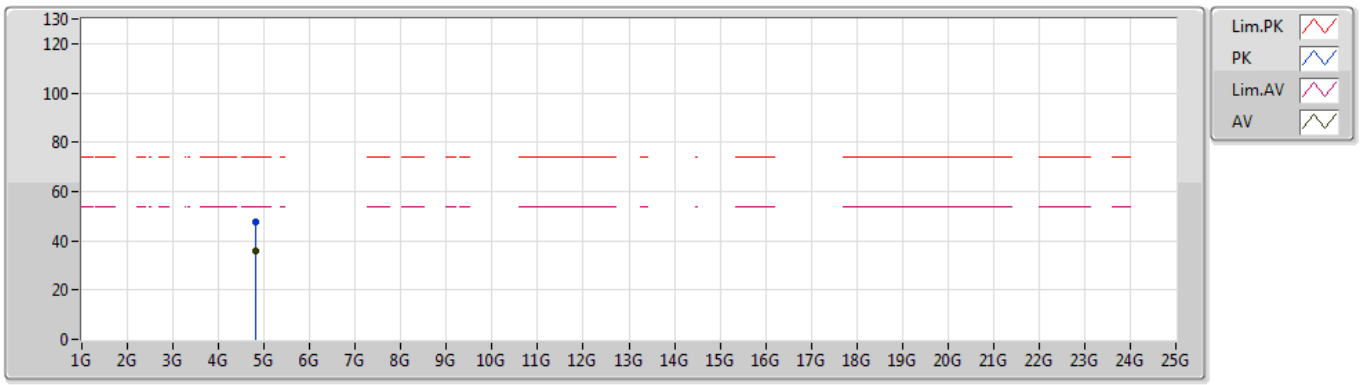
EUT Z_1TX
Setting 4
01-J-5
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.80378G	50.21	74.00	-23.79	3.49	3	Vertical	121	1.04	-
AV	4.80402G	40.55	54.00	-13.45	3.49	3	Vertical	121	1.04	-

BT-EDR(3Mbps)

11/06/2019

2402MHz_TX



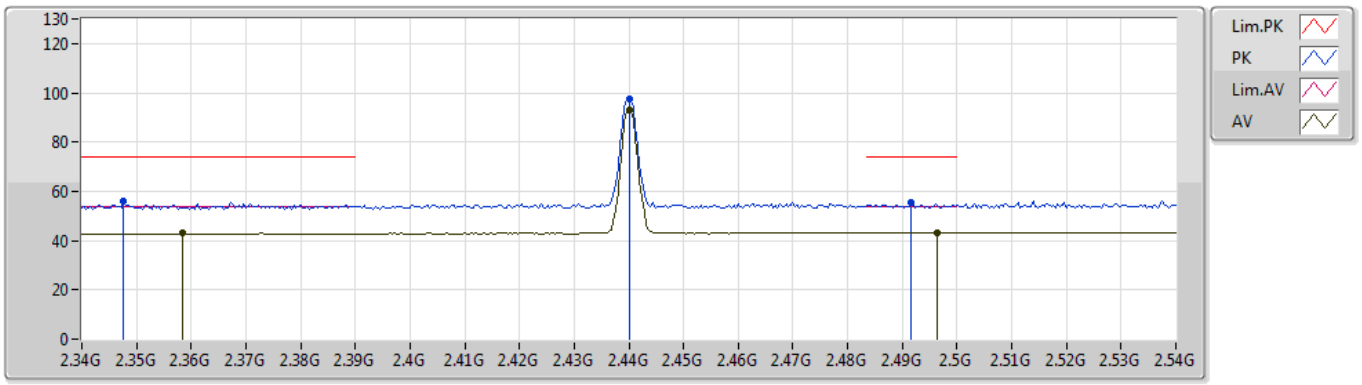
EUT Z_1TX
Setting 4
01-J-5
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.80418G	47.86	74.00	-26.14	3.50	3	Horizontal	44	1.14	-
AV	4.80406G	35.72	54.00	-18.28	3.49	3	Horizontal	44	1.14	-

BT-EDR(3Mbps)

11/06/2019

2440MHz_TX



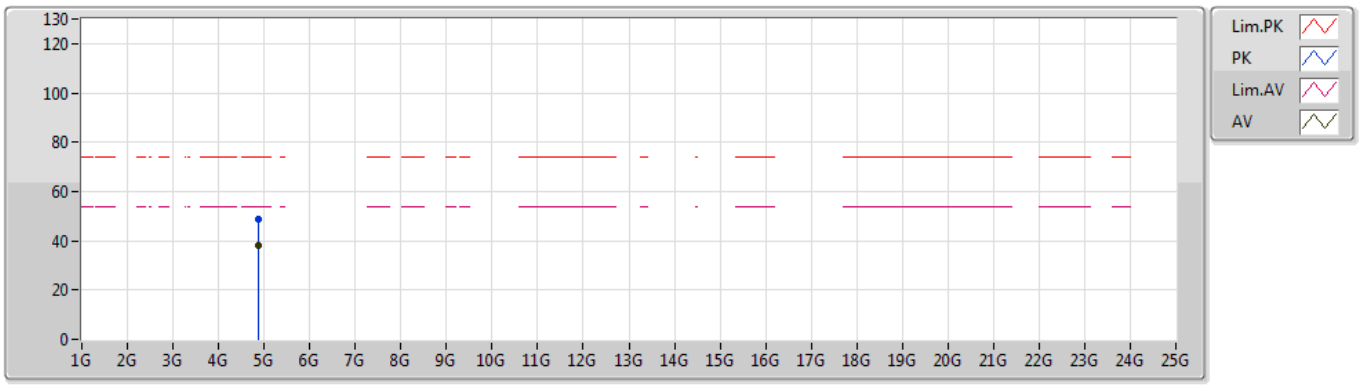
EUT Z_1TX
Setting 4
01-J-5
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.3476G	55.79	74.00	-18.21	30.64	3	Vertical	96	1.15	-
AV	2.3584G	42.88	54.00	-11.12	30.69	3	Vertical	96	1.15	-
PK	2.44G	97.27	Inf	-Inf	30.90	3	Vertical	96	1.15	-
AV	2.44G	92.99	Inf	-Inf	30.90	3	Vertical	96	1.15	-
PK	2.4916G	55.45	74.00	-18.55	30.98	3	Vertical	96	1.15	-
AV	2.4964G	43.21	54.00	-10.79	30.99	3	Vertical	96	1.15	-

BT-EDR(3Mbps)

11/06/2019

2440MHz_TX



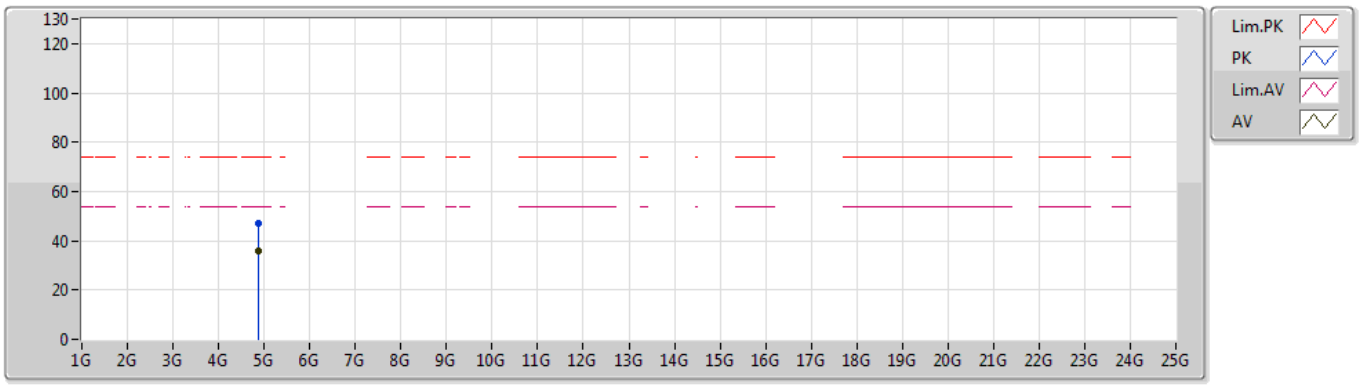
EUT Z_1TX
Setting 4
01-J-5
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.8794G	48.87	74.00	-25.13	3.84	3	Vertical	78	1.17	-
AV	4.87992G	38.07	54.00	-15.93	3.84	3	Vertical	78	1.17	-

BT-EDR(3Mbps)

11/06/2019

2440MHz_TX



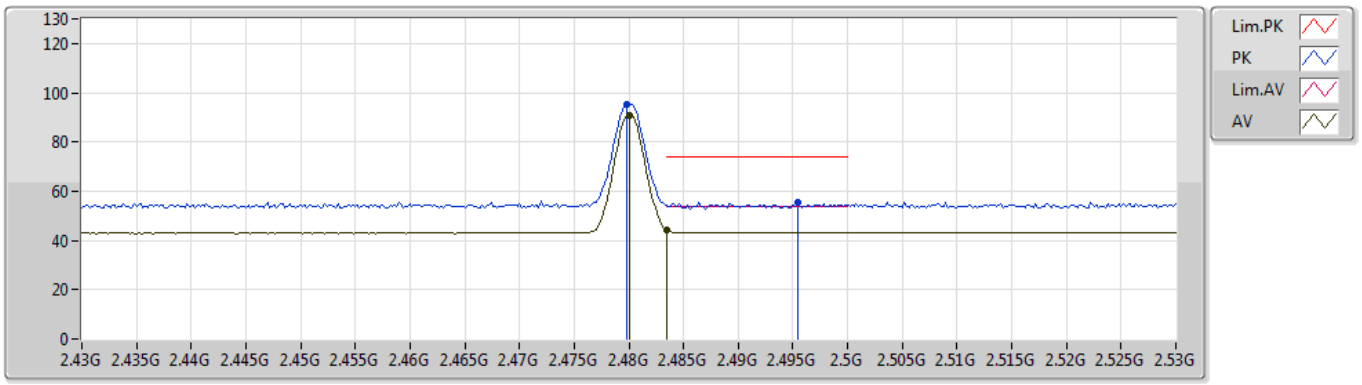
EUT Z_1TX
Setting 4
01-J-5
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.88012G	47.27	74.00	-26.73	3.84	3	Horizontal	318	1.00	-
AV	4.88008G	35.91	54.00	-18.09	3.84	3	Horizontal	318	1.00	-

BT-EDR(3Mbps)

11/06/2019

2480MHz_TX



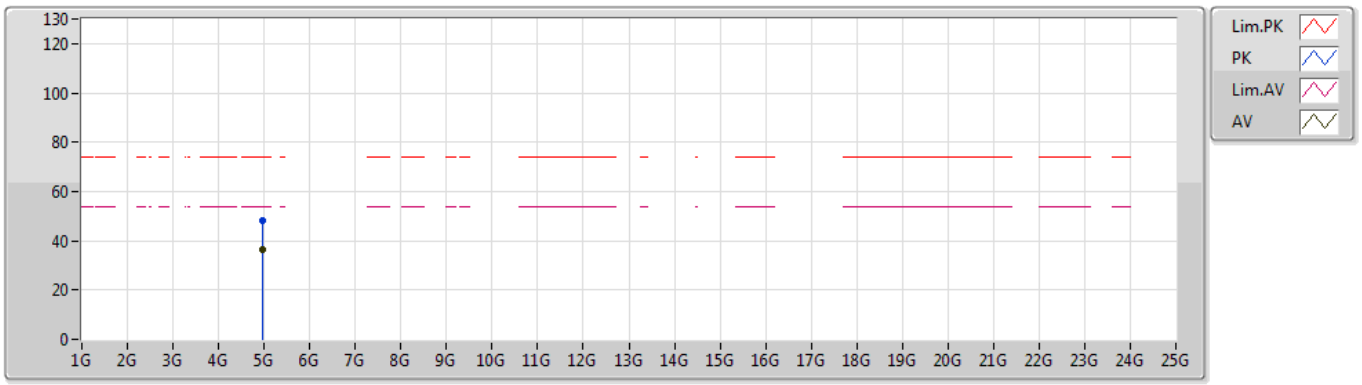
EUT Z_1TX
Setting 4
01-J-5
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	2.4798G	95.21	Inf	-Inf	30.96	3	Vertical	100	1.49	-
AV	2.48G	90.83	Inf	-Inf	30.96	3	Vertical	100	1.49	-
PK	2.4954G	55.52	74.00	-18.48	30.99	3	Vertical	100	1.49	-
AV	2.4835G	44.29	54.00	-9.71	30.96	3	Vertical	100	1.49	-

BT-EDR(3Mbps)

11/06/2019

2480MHz_TX



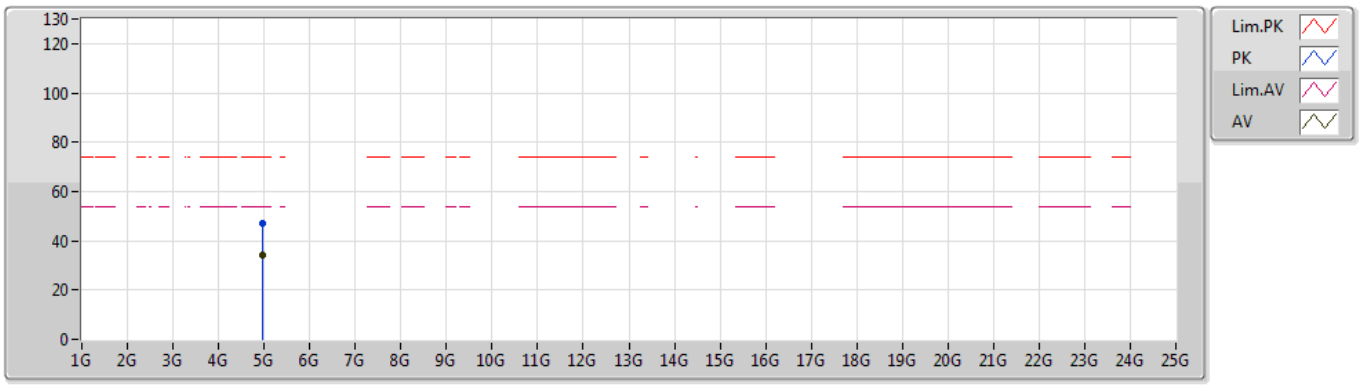
EUT Z_1TX
Setting 4
01-J-5
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.96026G	48.43	74.00	-25.57	4.20	3	Vertical	265	2.52	-
AV	4.9601G	36.25	54.00	-17.75	4.20	3	Vertical	265	2.52	-

BT-EDR(3Mbps)

11/06/2019

2480MHz_TX



EUT Z_1TX
Setting 4
01-J-5
FSP(100056)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
PK	4.96346G	47.29	74.00	-26.71	4.22	3	Horizontal	52	1.23	-
AV	4.95996G	34.30	54.00	-19.70	4.20	3	Horizontal	52	1.23	-