



FCC RADIO TEST REPORT

FCC ID : NKR-LVSK-R1
Equipment : Router
Brand Name : verizon
Model Name : LVR1
Applicant : Wistron NeWeb Corporation
20 Park Ave. II, Hsinchu Science Park, Hsinchu
308, Taiwan
Manufacturer : Wistron NeWeb Corporation
20 Park Ave. II, Hsinchu Science Park, Hsinchu
308, Taiwan
Standard : 47 CFR FCC Part 15.247

The product was received on May 29, 2019, and testing was started from Jun. 01, 2019 and completed on Jun. 14, 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: Sam Chen

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



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Photographs of EUT v01



TEL : 886-3-656-9065
FAX : 886-3-656-9085
Report Template No.: CB Ver1.0



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: Viola Huang



1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	Bluetooth Version	Ch. Frequency (MHz)	Channel Number
2400-2483.5	BR / EDR	2402-2480	0-78 [79]

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	BT-BR(1Mbps)	1	1TX
2.4-2.4835GHz	BT-EDR(2Mbps)	1	1TX
2.4-2.4835GHz	BT-EDR(3Mbps)	1	1TX

Note:

- ♦ Bluetooth BR uses a GFSK (1Mbps).
- ♦ Bluetooth EDR uses a combination of $\pi/4$ -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.

1.1.2 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	1	WNC	95XKAC15.GCFVZ	Dipole Antenna	I-PEX MHF	Note1
2	2	WNC	95XKAC15.GCEVZ	Dipole Antenna	I-PEX MHF	
3	3	WNC	95XKAC15.GCGVZ	Dipole Antenna	I-PEX MHF	
4	4	WNC	95XKAC15.GCHVZ	Dipole Antenna	I-PEX MHF	
5	1	WNC	95XKAC15.GCKVZ	Dipole Antenna	I-PEX MHF	
6	2	WNC	95XKAC15.GCJVZ	Dipole Antenna	I-PEX MHF	
7	3	WNC	95XKAC15.GCIVZ	Dipole Antenna	I-PEX MHF	
8	4	WNC	95XKAC15.GCLVZ	Dipole Antenna	I-PEX MHF	
9	1	WNC	95XKAC15.GCNVZ	Patch Antenna	I-PEX MHF	
10		WNC	95XKAC15.GCMVZ	Patch Antenna	I-PEX MHF	

Note1:

Directional Gain (dBi)				
Ant.	Port	2.4GHz	5G Bnad 1	5G Bnad 4
1	1	5.45	-	6.94
2	2	5.45	-	6.94
3	3	5.45	-	6.94
4	4	5.45	-	6.94
5	1	-	5.88	-
6	2	-	5.88	-
7	3	-	5.88	-
8	4	-	5.88	-

Antenna Gain (dBi)		
Ant.	Port	Bluetooth
9	1	2.72
10		2.72

Note2:The above information was declared by manufacturer.

For wifi function (4TX/4RX):

Port 1, Port 2, Port 3 and Port 4 can be used as transmitting/receiving antenna.

Port 1, Port 2, Port 3 and Port 4 can could transmit/receive simultaneously.

For bluetooth function (1TX/1RX):

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

**1.1.3 Mode Test Duty Cycle**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
BT-BR(1Mbps)	0.788	1.03	2.9m	1k
BT-EDR(3Mbps)	0.782	1.07	2.908m	1k

Note:

- ♦ DC is Duty Cycle.
- ♦ DCF is Duty Cycle Factor.

1.1.4 EUT Operational Condition

EUT Power Type	From Power Adapter
Test Software Version	QSPR : v5.0-00163

Note: The above information was declared by manufacturer.



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		
<input type="checkbox"/>	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
<input checked="" type="checkbox"/>	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	TH01-CB	Eddie Weng	22~24°C / 50~60%	Jun. 04, 2019 ~ Jun. 14, 2019
Radiated	03CH04-CB for below 1GHz	Welson Chen	22~24°C / 55~60%	Jun. 10, 2019
Radiated	03CH04-CB for above 1GHz	Eason Chen	22~24°C / 50~60%	Jun. 01, 2019 ~ Jun. 13, 2019
AC Conduction	CO01-CB	Wei Li	24.3~24.6°C / 59~61%	Jun. 11, 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)	3.8 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.7 dB	Confidence levels of 95%
Conducted Emission	1.7 dB	Confidence levels of 95%
Output Power Measurement	1.33 dB	Confidence levels of 95%
Bandwidth Measurement	9.74×10^{-8}	Confidence levels of 95%



2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	PowerSetting
BT-BR(1Mbps)	-
2402MHz	8
2440MHz	8
2480MHz	8
BT-EDR(2Mbps)	-
2402MHz	8
2440MHz	8
2480MHz	8
BT-EDR(3Mbps)	-
2402MHz	8
2440MHz	8
2480MHz	8

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	Normal Link

The Worst Case Mode for Following Conformance Tests	
Tests Item	20dB Bandwidth Carrier Frequency Separation Maximum Conducted Output Power Number of Hopping Frequencies Hopping Bandedge Time of Occupancy (Dwell Time) Emissions in Non-restricted Frequency Bands
Test Condition	Conducted measurement at transmit chains

The Worst Case Mode for Following Conformance Tests	
Tests Item	Emissions in Restricted Frequency Bands
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode < 1GHz	Normal Link
Operating Mode > 1GHz	CTX

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 Band 1 + WLAN 5GHz Band 4 + Bluetooth
Refer to Sporton Test Report No.: FA952921 for Co-location RF Exposure Evaluation.	

Note: The EUT only use in Z axis.

2.3 EUT Operation during Test

For CTX Mode:

The EUT was programmed to be in continuously transmitting mode.

For Normal Link:

During the test, the EUT operation to normal function.



2.4 Accessories

Accessories			
Equipment Name	Brand Name	Model Name	Rating
Adapter	LUCENT TRANS	1A95-US1223	INPUT: 100-240V, 1A, 50-60Hz OUTPUT: 19V, 2.37A

2.5 Support Equipment

For AC Conduction:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	1Gbps NB	DELL	E6430	N/A
B	WAN PC	DELL	T3400	N/A
C	2.5Gbps PC	DELL	T3400	N/A
D	Device	verizon	LVR1	NKR-LVSK-R1
E	Smart phone	Samsung	Galaxy J2	N/A

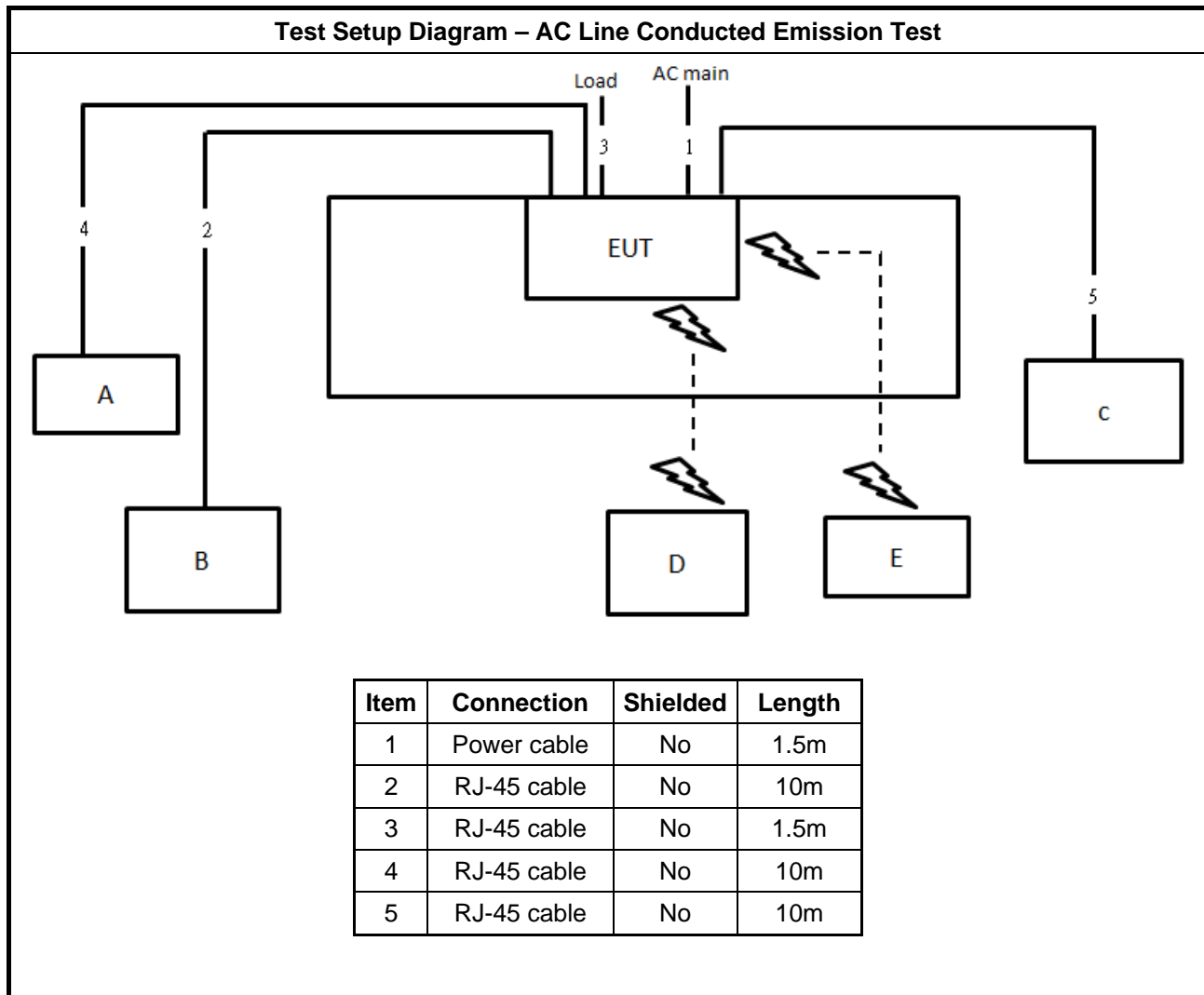
For Radiated (below 1GHz):

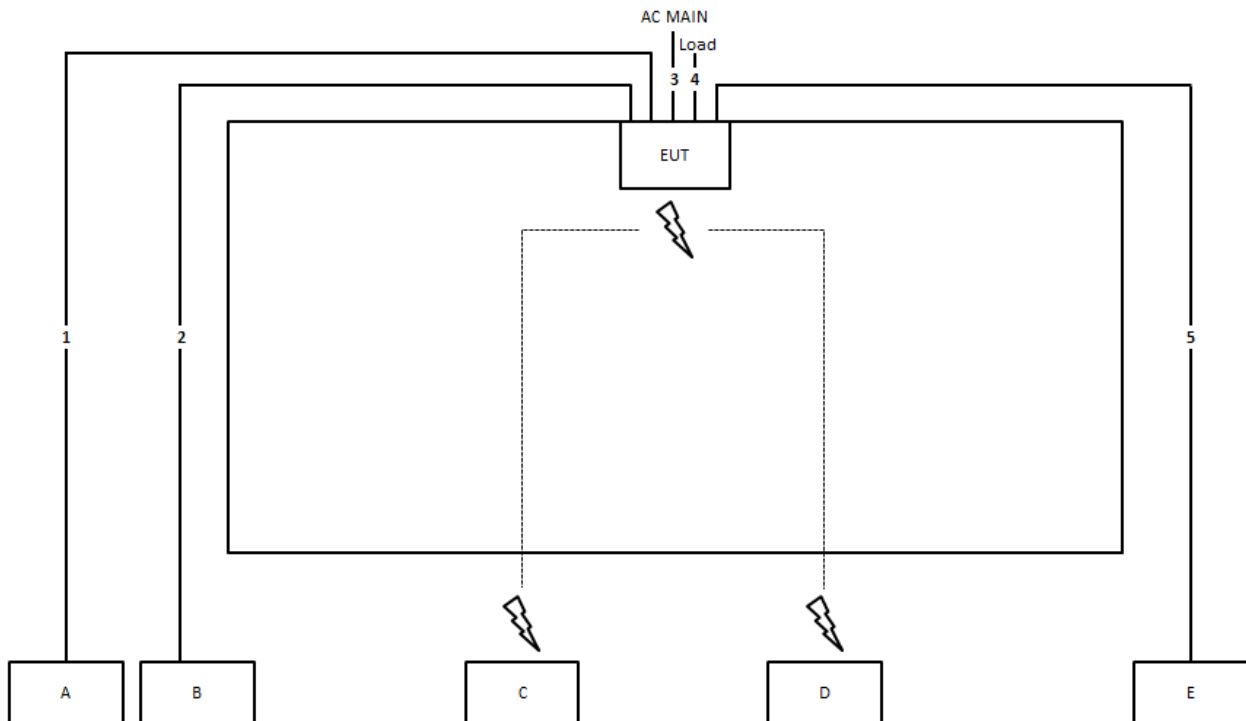
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	PC	DELL	OPTIPLEX 3010	N/A
B	PC	DELL	OPTIPLEX 3010	N/A
C	Device	verizon	LVR1	NKR-LVSK-R1
D	Phone	Samsung	SM-J200Y	N/A
E	NB	DELL	E4300	N/A

For Radiated (above 1GHz) and RF Conducted:

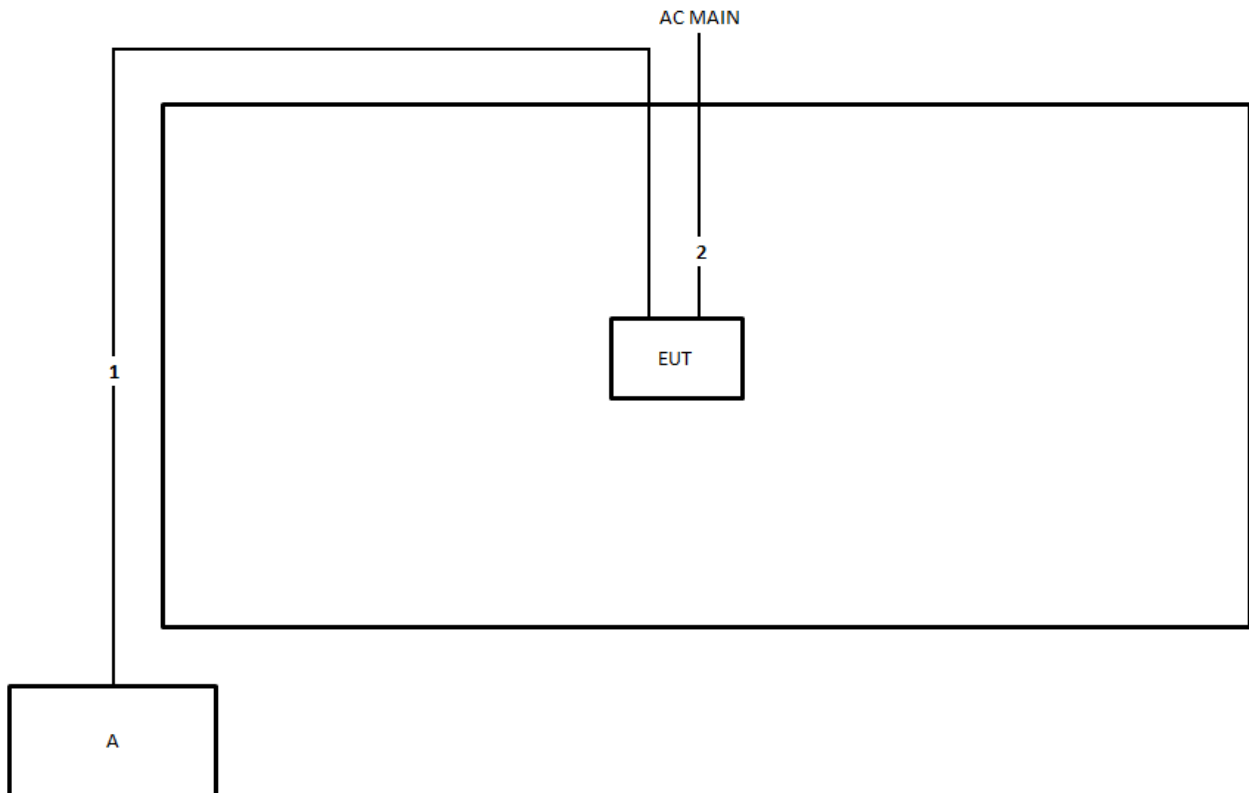
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	DELL	E4300	N/A

2.6 Test Setup Diagram



Test Setup Diagram - Radiated Test < 1GHz


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

Test Setup Diagram - Radiated Test > 1GHz


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



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.

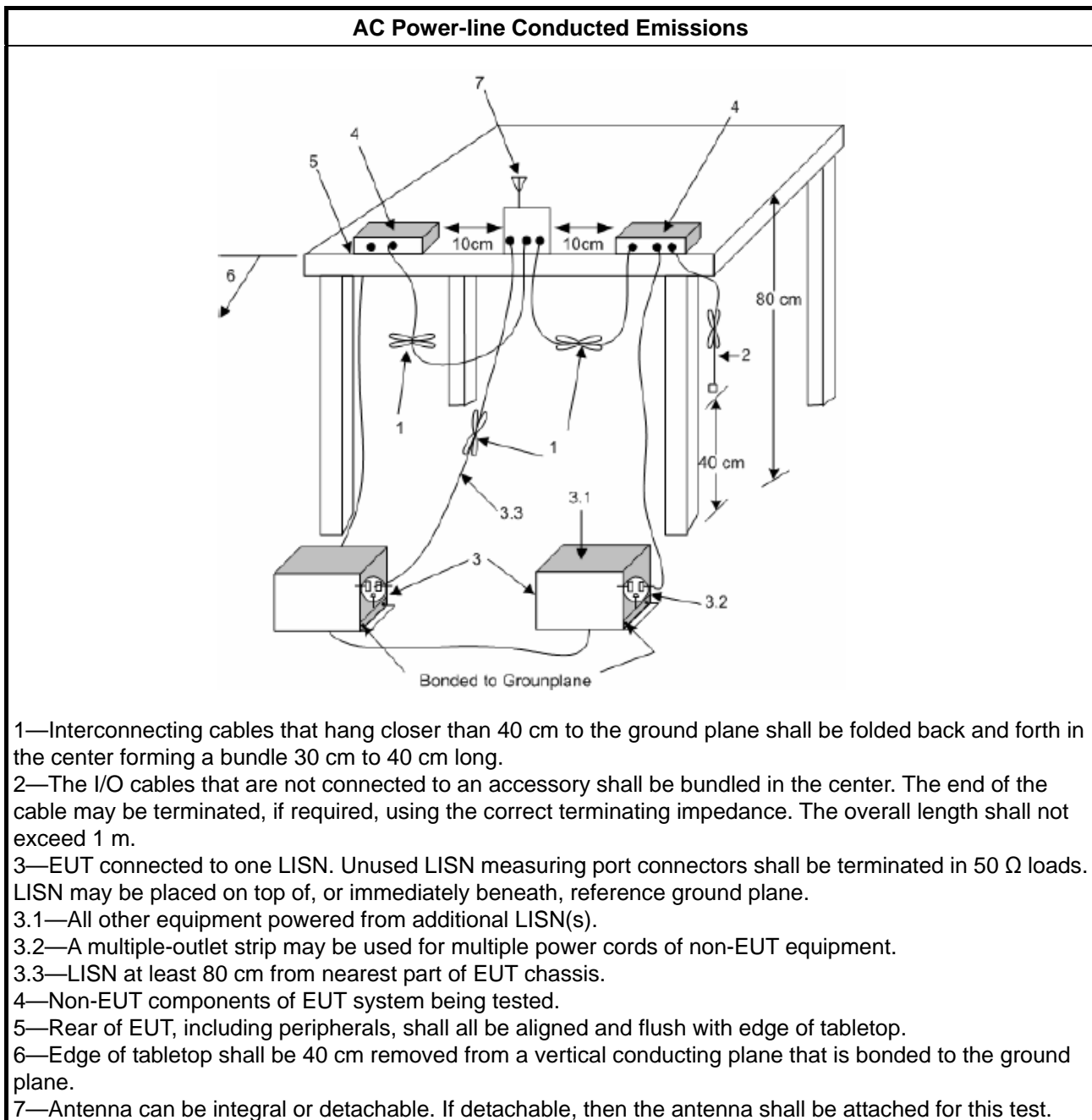
3.1.2 Measuring Instruments

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



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:	
	▪ $N \geq 50$ and $ChS \geq \text{MAX}$ (20 dB bandwidth, 25 kHz); 20 dB bandwidth \leq 250 kHz.
	▪ $50 > N \geq 25$ and $ChS \geq \text{MAX}$ (20 dB bandwidth, 25 kHz); 20 dB bandwidth $>$ 250 kHz.
▪ 2400-2483.5 MHz Band:	
	▪ $N \geq 75$ and $ChS \geq \text{MAX}$ (20 dB bandwidth, 25 kHz).
	▪ $75 > N \geq 15$ and $ChS \geq \text{MAX}$ (20 dB bandwidth 2/3, 25 kHz).
▪ 5725-5850 MHz Band:	
	▪ $N \geq 75$ and $ChS \geq \text{MAX}$ (20 dB bandwidth, 25 kHz); 20 dB bandwidth \leq 1 MHz.
N: Number of Hopping Frequencies; ChS: Hopping Channel Separation	

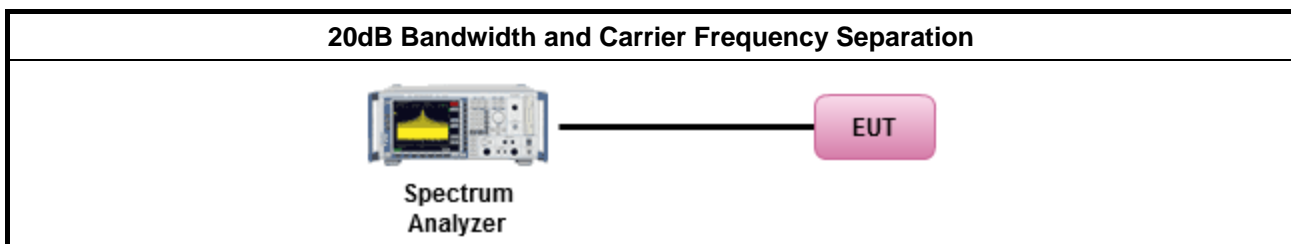
3.2.2 Measuring Instruments

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



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	

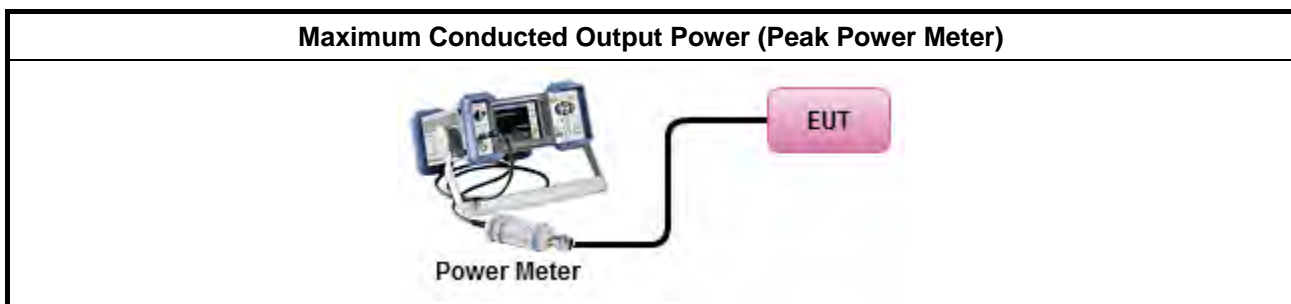
3.3.2 Measuring Instruments

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



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:	
	▪ $N \geq 50$ and $ChS \geq MAX$ (20 dB bandwidth, 25 kHz); 20 dB bandwidth \leq 250 kHz.
	▪ $50 > N \geq 25$ and $ChS \geq MAX$ (20 dB bandwidth, 25 kHz); 20 dB bandwidth $>$ 250 kHz.
▪ 2400-2483.5 MHz Band:	
	▪ $N \geq 75$ and $ChS \geq MAX$ (20 dB bandwidth, 25 kHz).
	▪ $75 > N \geq 15$ and $ChS \geq MAX$ (20 dB bandwidth 2/3, 25 kHz).
▪ 5725-5850 MHz Band:	
	▪ $N \geq 75$ and $ChS \geq MAX$ (20 dB bandwidth, 25 kHz); 20 dB bandwidth \leq 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

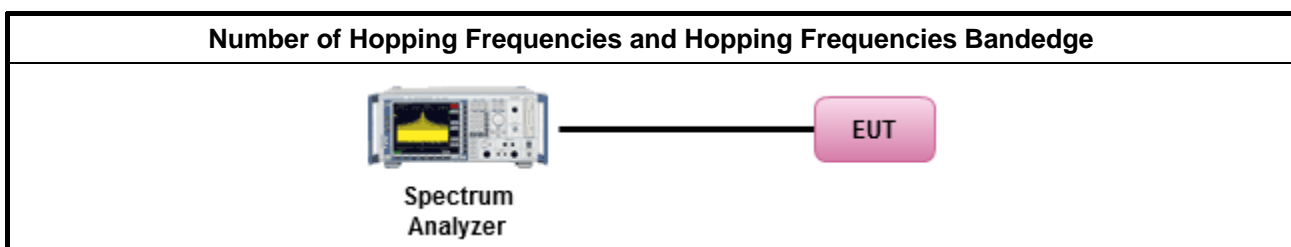
3.4.3 Measuring Instruments

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



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:	
	▪ $N \geq 50$; 0.4s in 20s period
	▪ $50 > N \geq 25$; 0.4s in 10s period
▪ 2400-2483.5 MHz Band:	
	▪ $N \geq 75$; 0.4s in $N \times 0.4$ period
	▪ $75 > N \geq 15$; 0.4s in $N \times 0.4$ period
▪ 5725-5850 MHz Band:	
	▪ $N \geq 75$; 0.4s in 30s period
N: Number of Hopping Frequencies	

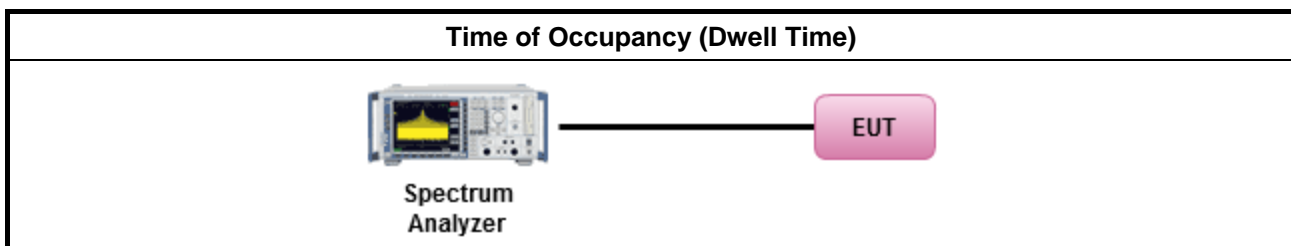
3.5.2 Measuring Instruments

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



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.	

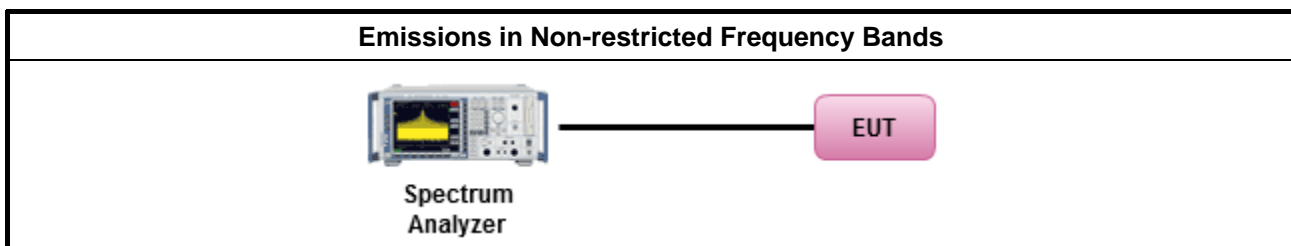
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

Test Method
<ul style="list-style-type: none"> Refer as ANSI C63.10-2013, clause 7.8.8 for unwanted emissions into non-restricted bands.

3.6.4 Test Setup



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 below 30 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.

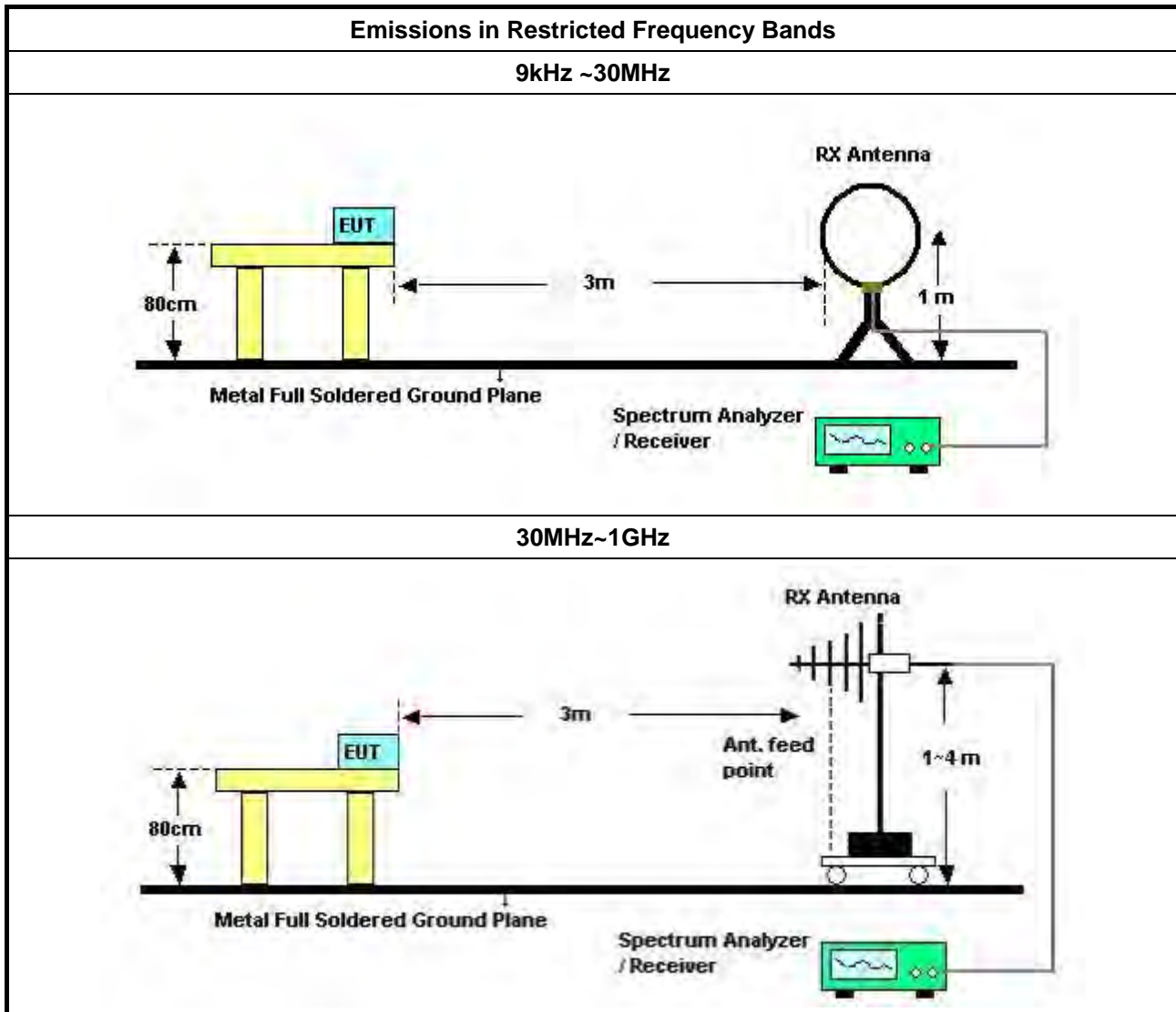
3.7.2 Measuring Instruments

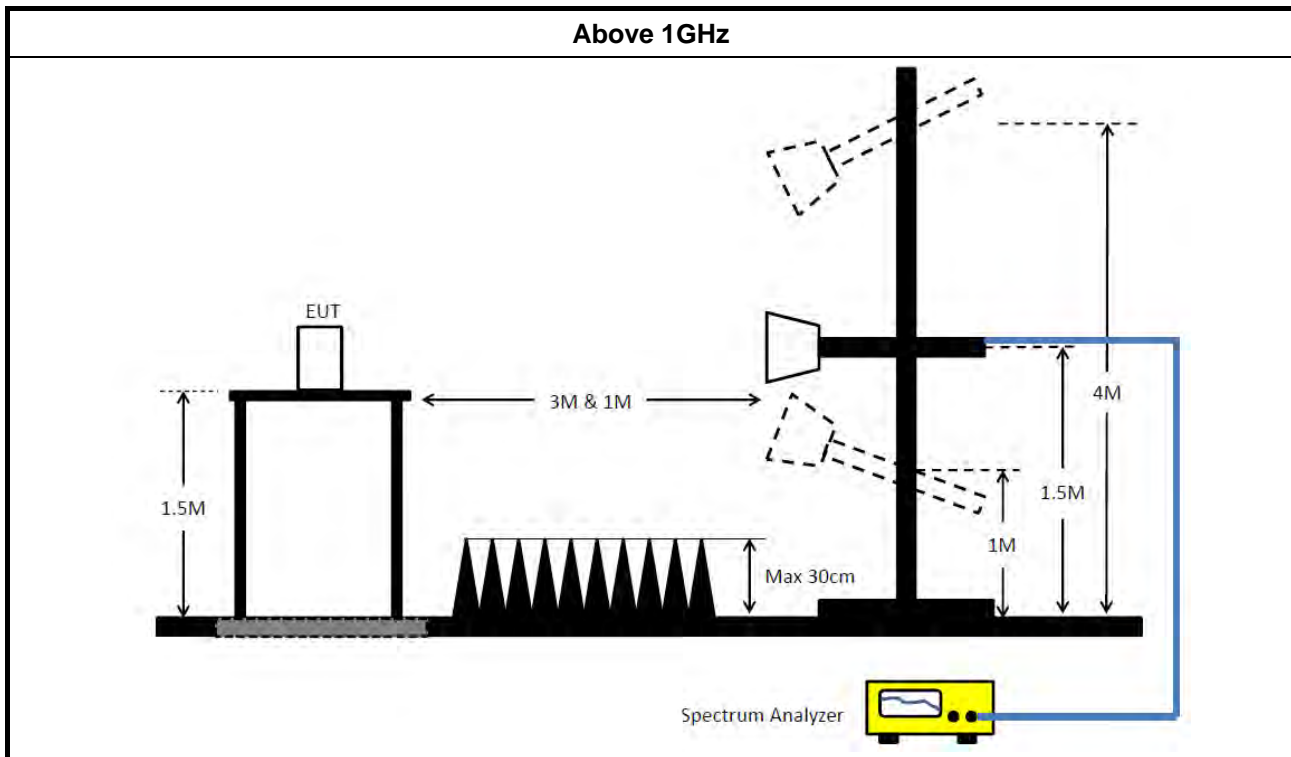
Refer a test equipment and calibration data table in this test report.

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





3.7.5 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.

3.7.6 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix G



4 Test Equipment and Calibration Data

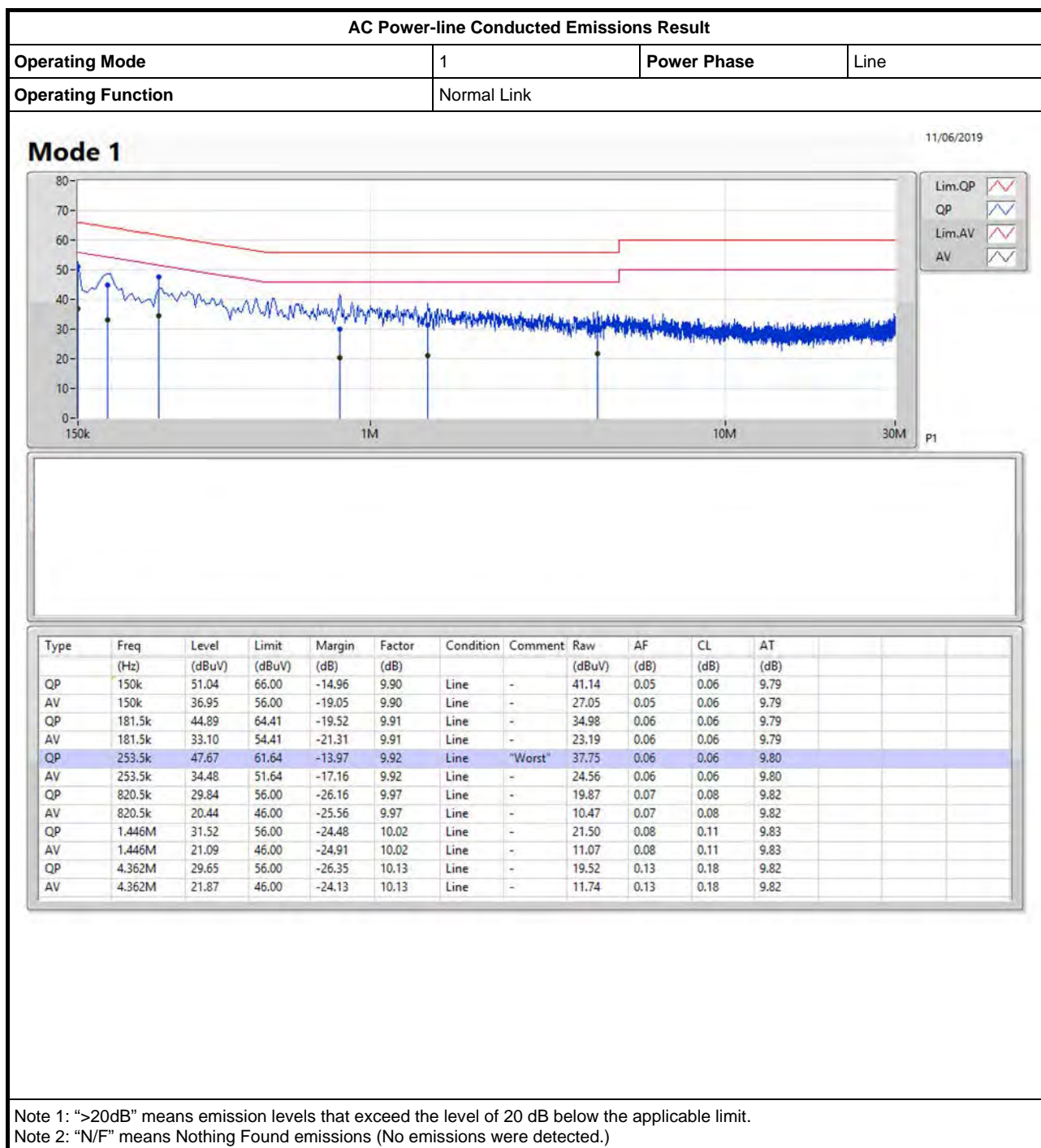
Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.45GHz	Jan. 28, 2019	Jan. 29, 2020	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-1 6-2	04083	150kHz~100MHz	Dec. 24, 2018	Dec. 23, 2019	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Jan. 11, 2019	Jan. 10, 2020	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	9kHz ~ 30MHz	May 21, 2019	May 20, 2020	Conduction (CO01-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
BILOG ANTENNA with 6 dB attenuator	Schaffner & Woken	CBL6112B & N-6-06	22021&AT-N06 07	30MHz ~ 1GHz	Oct. 12, 2018	Oct. 11, 2019	Radiation (03CH04-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)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jun. 28, 2018	Jun. 27, 2019	Radiation (03CH04-CB)
Pre-Amplifier	Agilent	310N	187291	0.1MHz ~ 1GHz	Mar. 19, 2019	Mar. 18, 2020	Radiation (03CH04-CB)
Pre-Amplifier	Agilent	83017A	MY53270063	0.5GHz~26.5GHz	Mar. 19, 2019	Mar. 18, 2020	Radiation (03CH04-CB)
Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 04, 2018	Jul. 03, 2019	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-low	Woken	RG402	Low Cable-03+22	30MHz – 1GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21	1GHz - 18GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21+22	1GHz - 18GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH04-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Feb. 25, 2019	Feb. 24, 2020	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)

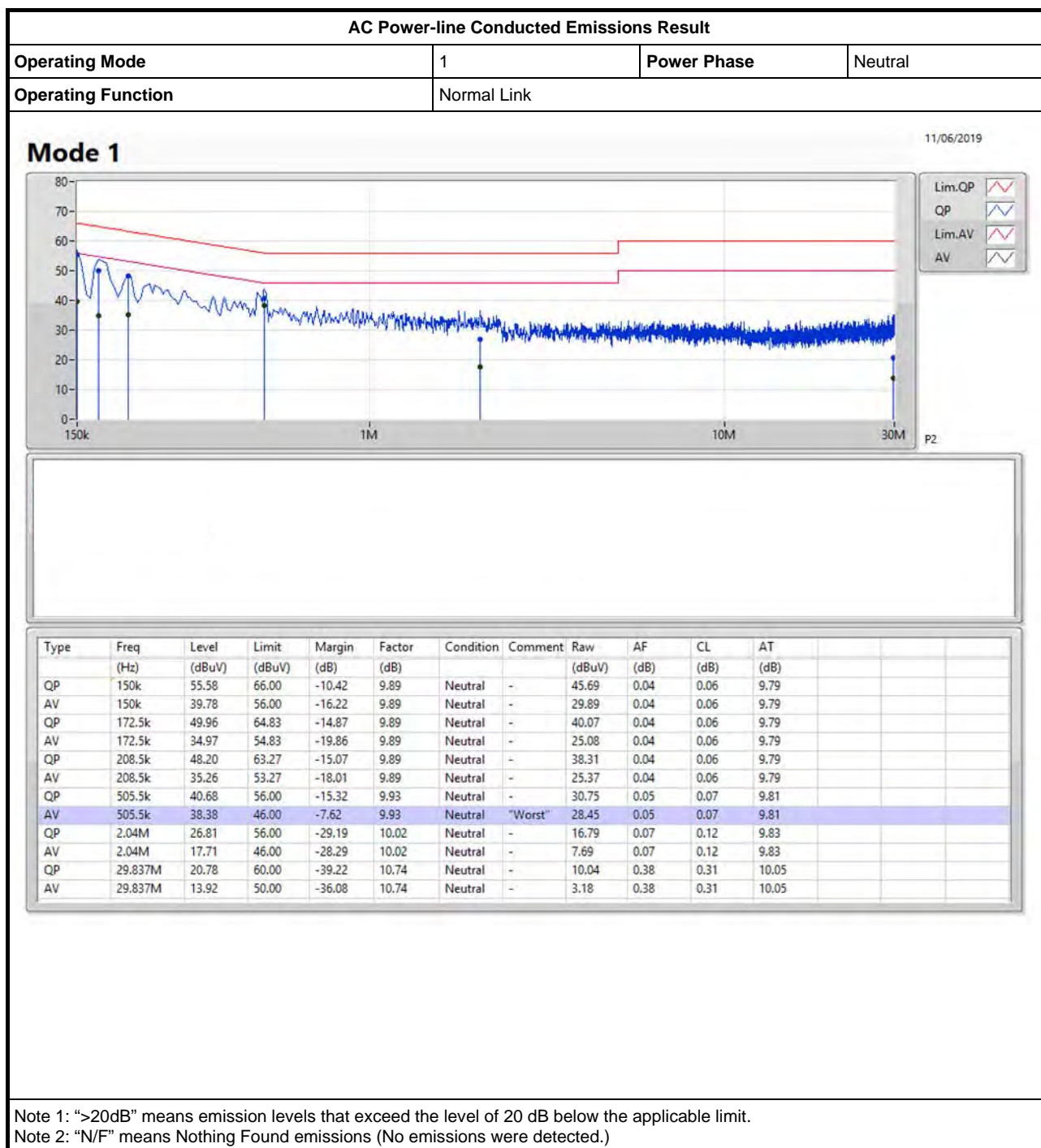


Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-09	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-28	1 GHz –26.5 GHz	Nov. 19, 2018	Nov. 18, 2019	Conducted (TH01-CB)
Power Sensor	Agilent	E9327A	US40442088	50MHz~18GHz	Jan. 15, 2019	Jan. 14, 2020	Conducted (TH01-CB)
Power Meter	Agilent	E4416A	GB41291199	50MHz~18GHz	Jan. 15, 2019	Jan. 14, 2020	Conducted (TH01-CB)

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

N.C.R. means Non-Calibration required.





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	869.565k	870KF1D	918.75k	868.316k
BT-EDR(2Mbps)	1.33M	1.212M	1M21G1D	1.318M	1.192M
BT-EDR(3Mbps)	1.298M	1.217M	1M22G1D	1.27M	1.206M

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;

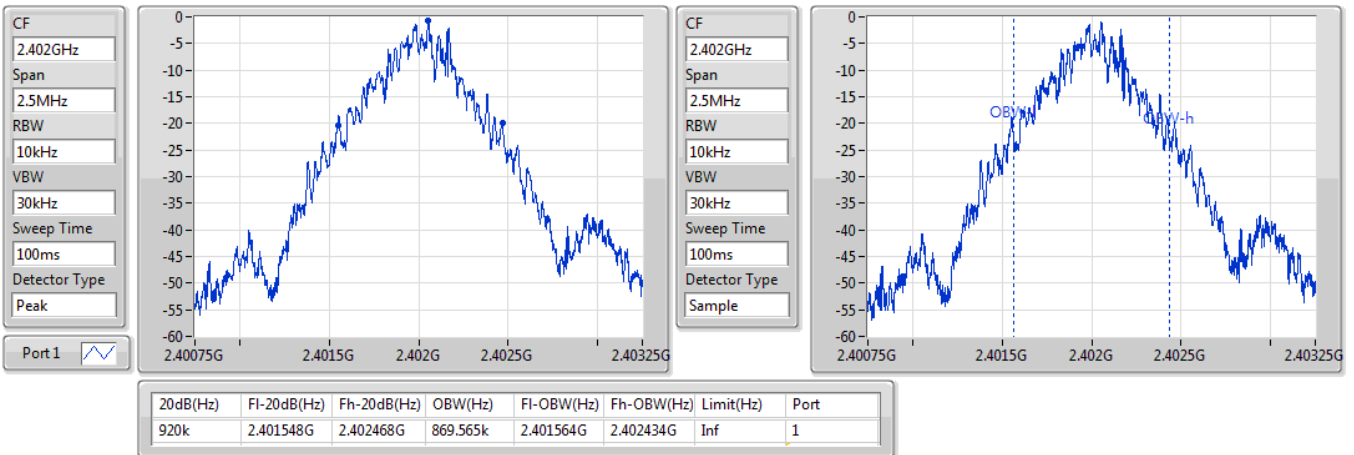
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	Inf	920k	869.565k
2440MHz	Pass	Inf	920k	869.565k
2480MHz	Pass	Inf	918.75k	868.316k
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.318M	1.192M
2440MHz	Pass	Inf	1.33M	1.208M
2480MHz	Pass	Inf	1.33M	1.212M
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.27M	1.206M
2440MHz	Pass	Inf	1.298M	1.214M
2480MHz	Pass	Inf	1.295M	1.217M

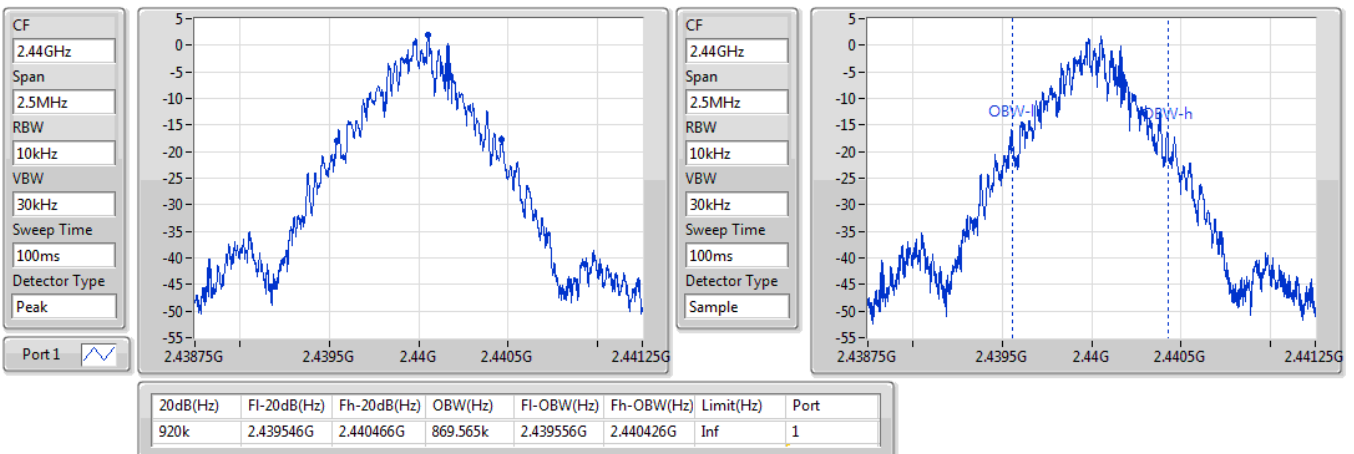
Port X-N dB = Port X 20dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

BT-BR(1Mbps)
2402MHz
EBW

05/06/2019

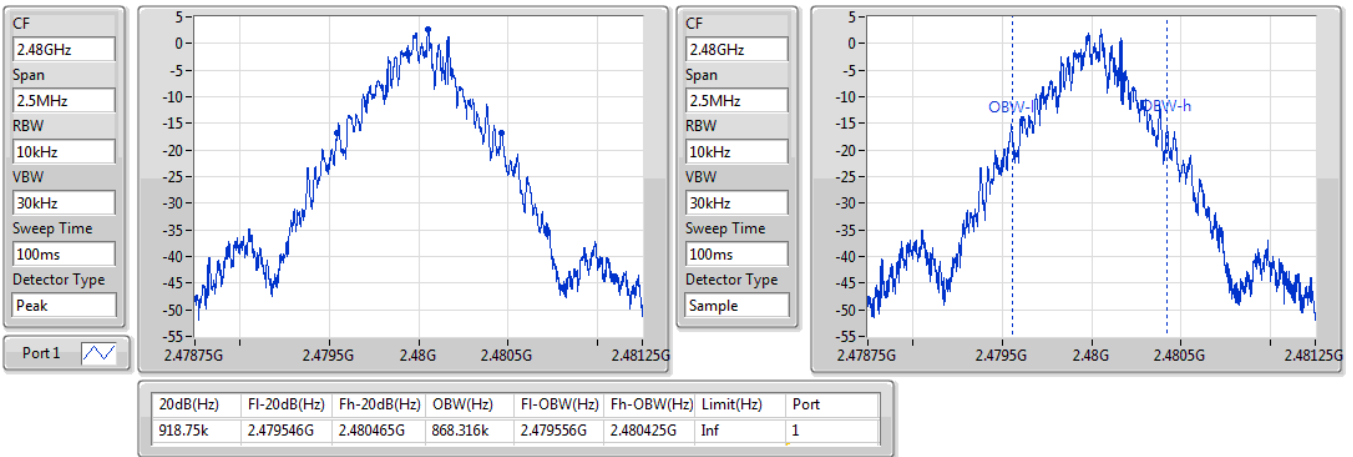

BT-BR(1Mbps)
2440MHz
EBW

05/06/2019

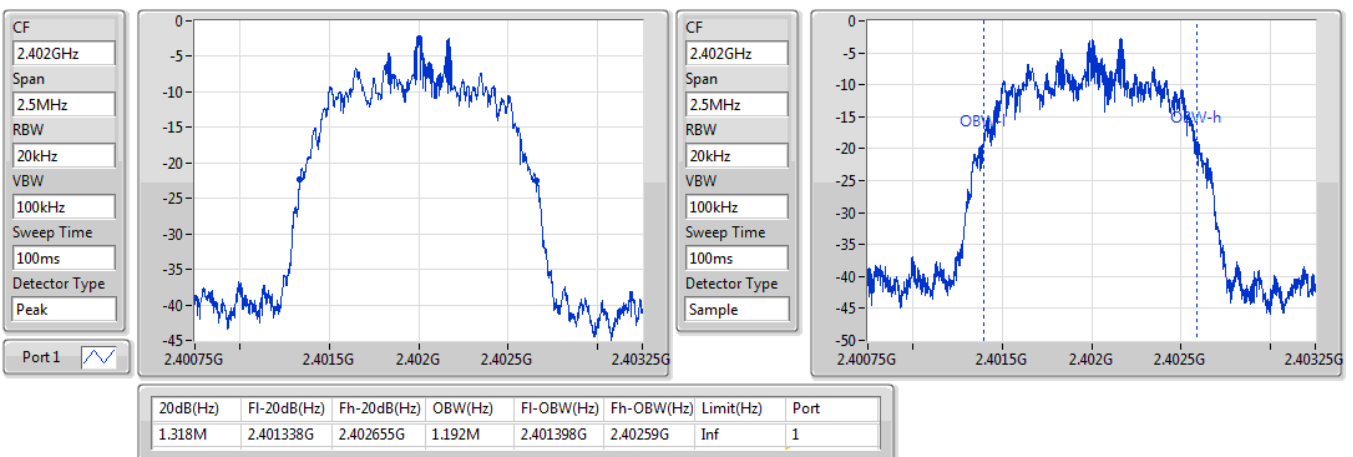


BT-BR(1Mbps)
EBW
2480MHz

05/06/2019

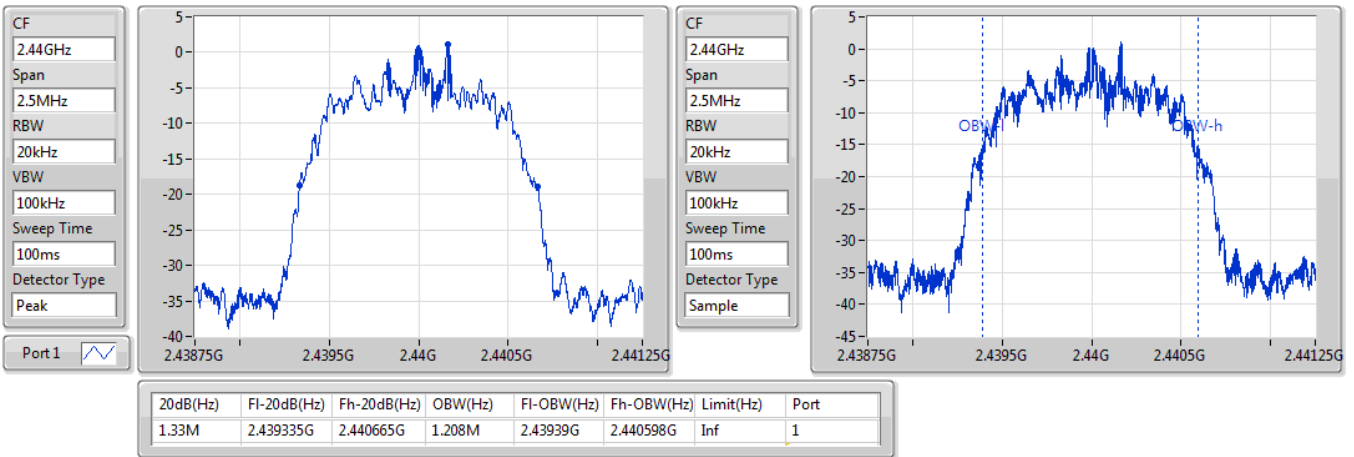

BT-EDR(2Mbps)
EBW
2402MHz

05/06/2019

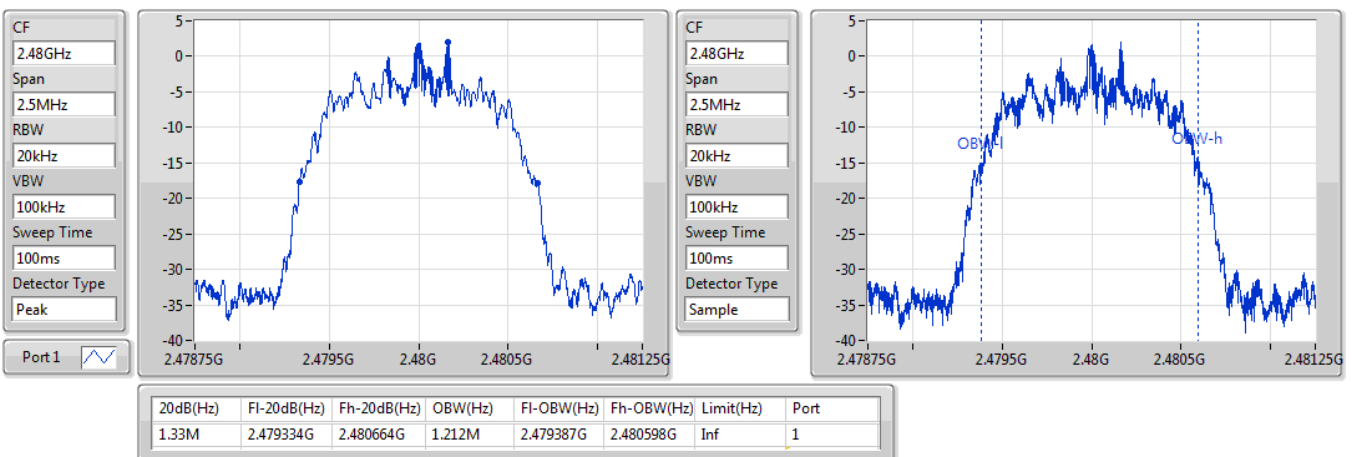


BT-EDR(2Mbps)
EBW
2440MHz

05/06/2019

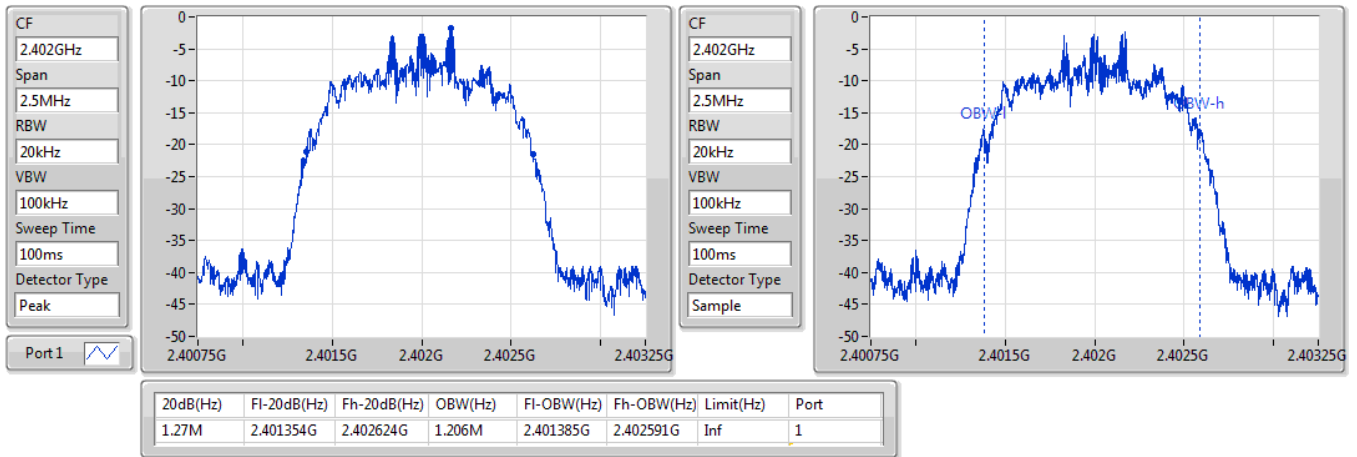

BT-EDR(2Mbps)
EBW
2480MHz

05/06/2019

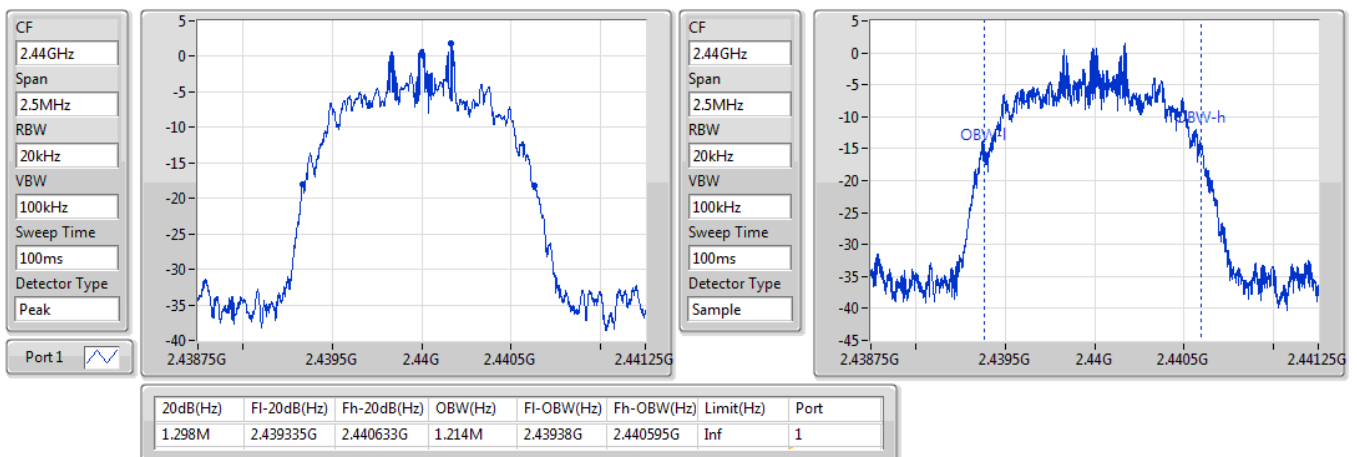


BT-EDR(3Mbps)
EBW
2402MHz

05/06/2019


BT-EDR(3Mbps)
EBW
2440MHz

05/06/2019

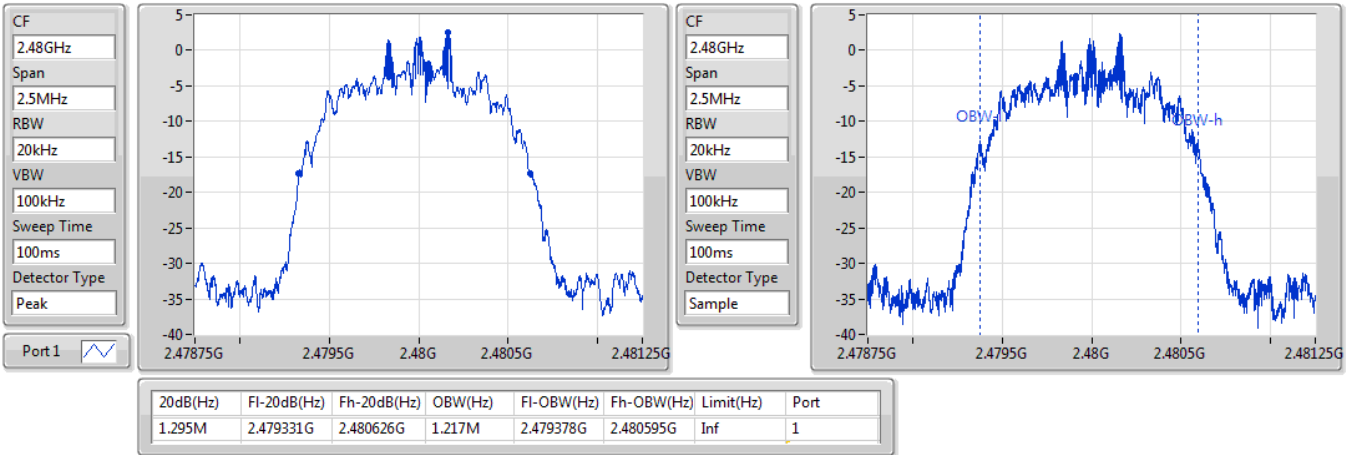


BT-EDR(3Mbps)

2480MHz

EBW

05/06/2019



Summary

Mode	Max-Space (Hz)	Min-Space (Hz)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	1.002M	999k
BT-EDR(2Mbps)	1.002M	997.5k
BT-EDR(3Mbps)	999k	997.5k

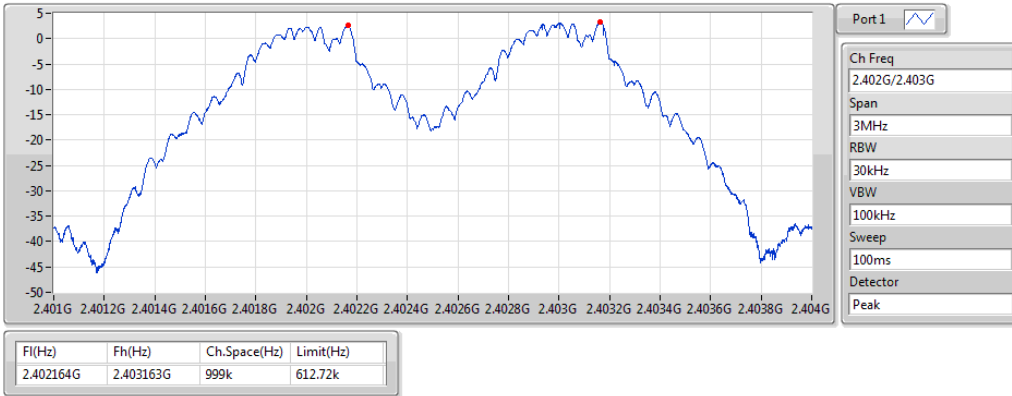
Result

Mode	Result	Fl (Hz)	Fh (Hz)	Ch.Space (Hz)	Limit (Hz)
BT-BR(1Mbps)	-	-	-	-	-
2402MHz	Pass	2.402164G	2.403163G	999k	612.72k
2440MHz	Pass	2.44016G	2.441162G	1.002M	612.72k
2480MHz	Pass	2.479161G	2.480162G	1.0005M	611.8875k
BT-EDR(2Mbps)	-	-	-	-	-
2402MHz	Pass	2.402001G	2.403003G	1.002M	877.788k
2440MHz	Pass	2.440001G	2.441001G	1.0005M	885.78k
2480MHz	Pass	2.479002G	2.48G	997.5k	885.78k
BT-EDR(3Mbps)	-	-	-	-	-
2402MHz	Pass	2.402163G	2.403162G	999k	845.82k
2440MHz	Pass	2.440163G	2.44116G	997.5k	864.468k
2480MHz	Pass	2.479163G	2.480162G	999k	862.47k

BT-BR(1Mbps)

2.402G/2.403GHz

Channel Separation



BT-BR(1Mbps)

2.44G/2.441GHz

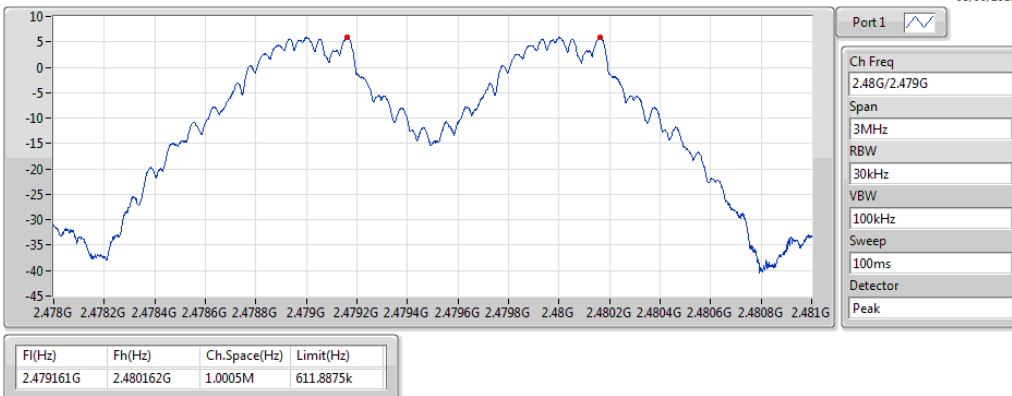
Channel Separation



BT-BR(1Mbps)

2.48G/2.479GHz

Channel Separation

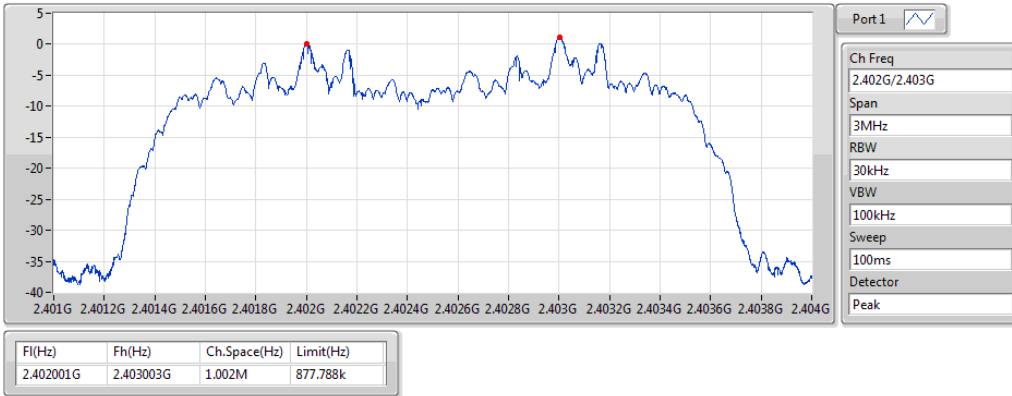


BT-EDR(2Mbps)

2.402G/2.403GHz

Channel Separation

05/06/2019

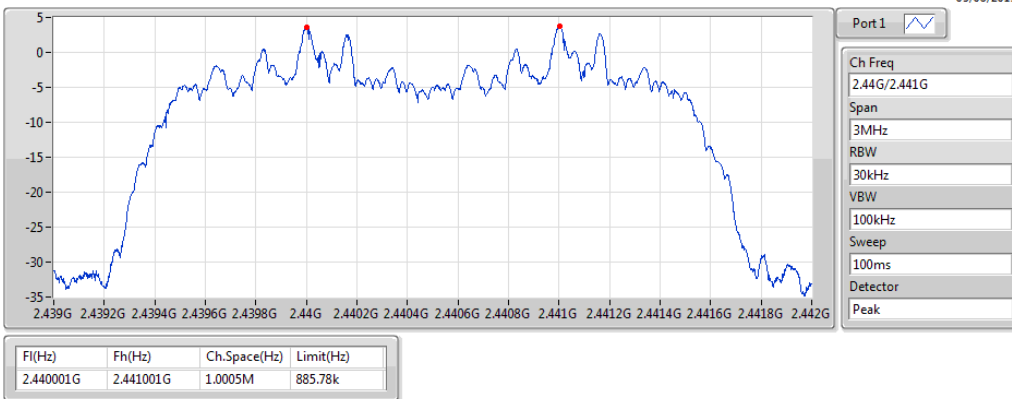


BT-EDR(2Mbps)

2.44G/2.441GHz

Channel Separation

05/06/2019

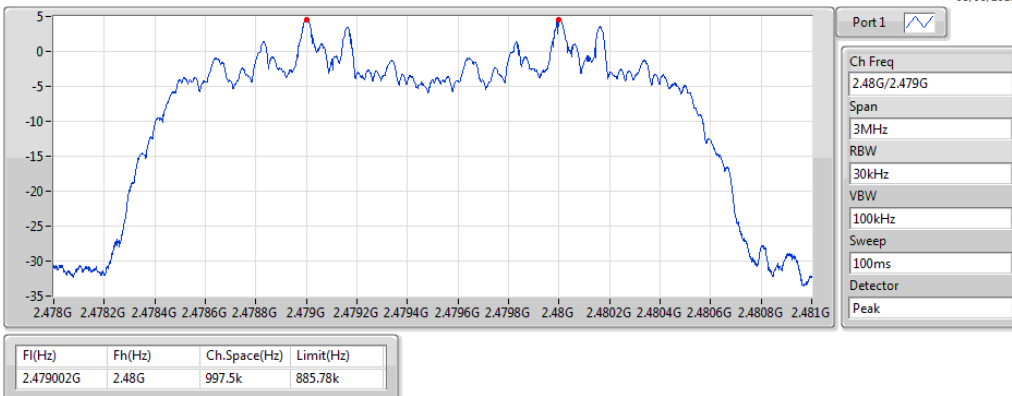


BT-EDR(2Mbps)

2.48G/2.479GHz

Channel Separation

05/06/2019

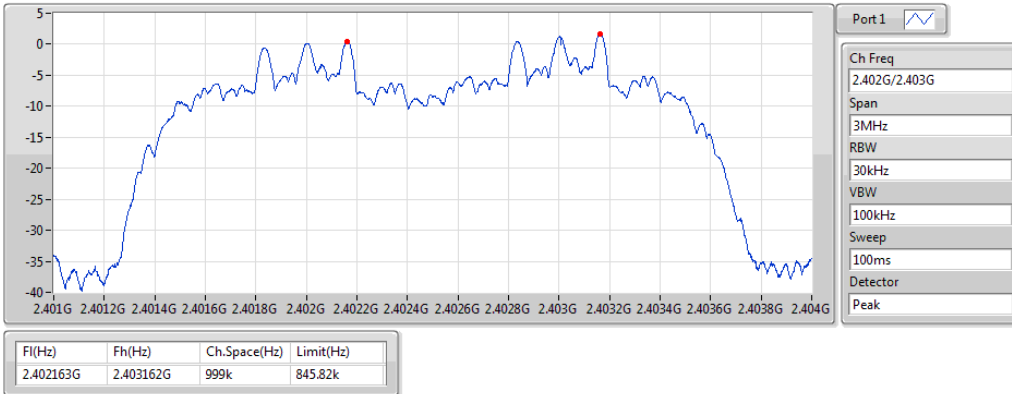


BT-EDR(3Mbps)

2.402G/2.403GHz

Channel Separation

05/06/2019

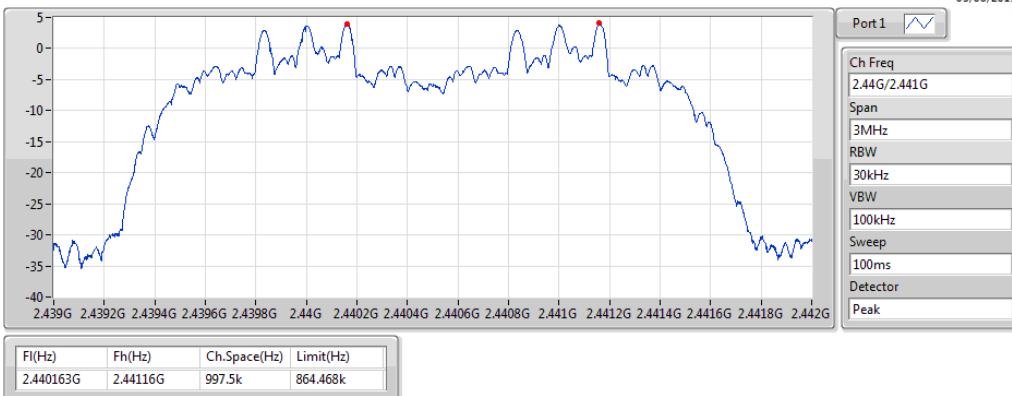


BT-EDR(3Mbps)

2.44G/2.441GHz

Channel Separation

05/06/2019

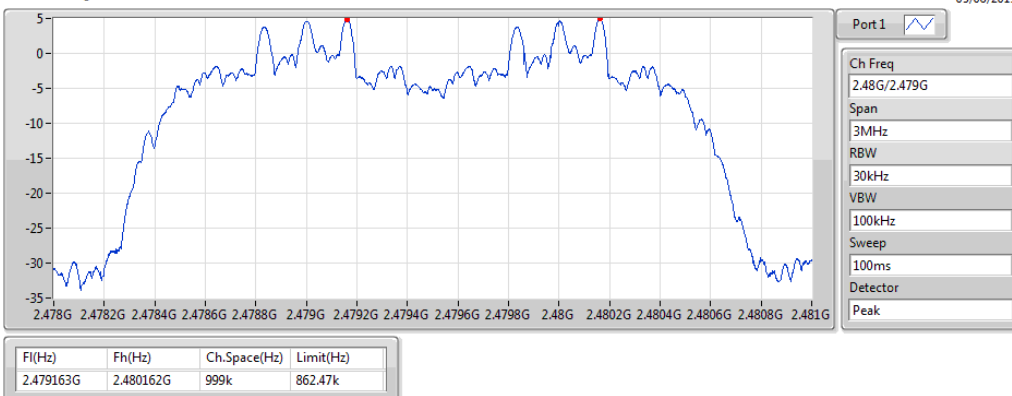


BT-EDR(3Mbps)

2.48G/2.479GHz

Channel Separation

05/06/2019





Average Power-FHSS

Appendix C.1

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	8.67	0.00736
BT-EDR(2Mbps)	6.22	0.00419
BT-EDR(3Mbps)	6.12	0.00409

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	2.72	5.23	21.00
2440MHz	Pass	2.72	7.86	21.00
2480MHz	Pass	2.72	8.67	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	2.72	1.72	21.00
2440MHz	Pass	2.72	5.16	21.00
2480MHz	Pass	2.72	6.22	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	2.72	1.75	21.00
2440MHz	Pass	2.72	5.21	21.00
2480MHz	Pass	2.72	6.12	21.00

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

**Summary**

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	8.82	0.00762
BT-EDR(2Mbps)	7.89	0.00615
BT-EDR(3Mbps)	7.91	0.00618

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	2.72	5.52	21.00
2440MHz	Pass	2.72	8.01	21.00
2480MHz	Pass	2.72	8.82	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	2.72	3.34	21.00
2440MHz	Pass	2.72	7.03	21.00
2480MHz	Pass	2.72	7.89	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	2.72	3.54	21.00
2440MHz	Pass	2.72	6.87	21.00
2480MHz	Pass	2.72	7.91	21.00

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

Summary

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

Result

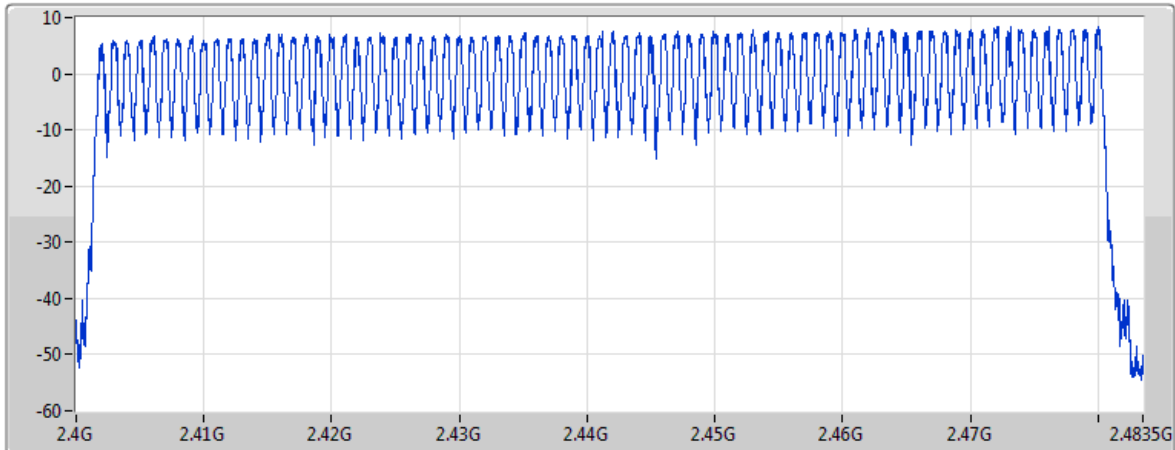
Mode	Result	Hopping No	Limit
BT-BR(1Mbps)	-	-	-
2440MHz	Pass	79	15
BT-EDR(2Mbps)	-	-	-
2440MHz	Pass	79	15
BT-EDR(3Mbps)	-	-	-
2440MHz	Pass	79	15

BT-BR(1Mbps)

2440MHz

Hopping Ch

13/06/2019



Port 1

Hopping No

79

Span

83.5MHz

RBW

100kHz

VBW

300kHz

Sweep

200ms

Detector

Peak

Hopping No

79

Limit

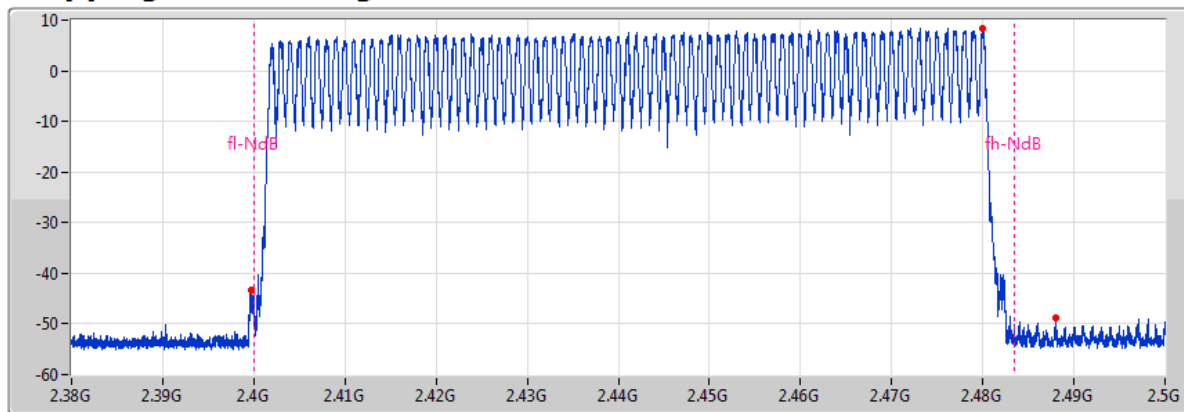
15

BT-BR(1Mbps)

2440MHz

Hopping Ch Bandedge (Non-restricted Band)

13/06/2019



Port 1

Span

120MHz

RBW

100kHz

VBW

300kHz

Sweep

200ms

Detector

Peak

Limit(dBm)

-11.54

Ref(Hz)

2.47999G

Ref(dBm)

8.46

BE-l(Hz)

2.399695G

BE-l(dBm)

-43.31

BE-h(Hz)

2.488015G

BE-h(dBm)

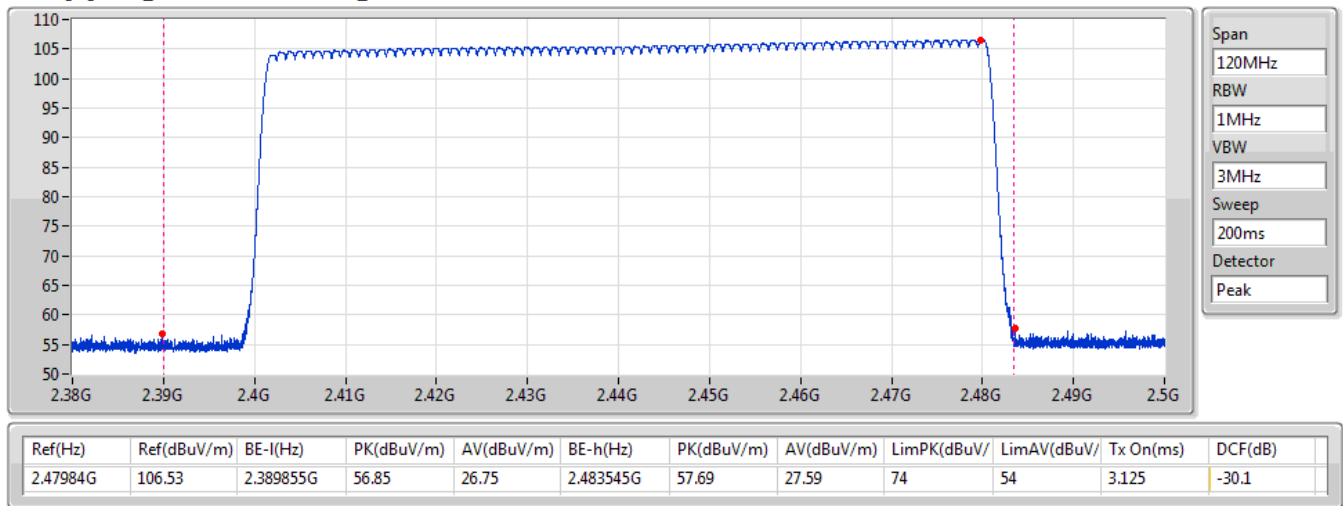
-48.9

BT-BR(1Mbps)

2440MHz

Hopping Ch Bandedge (Restricted Band)

13/06/2019

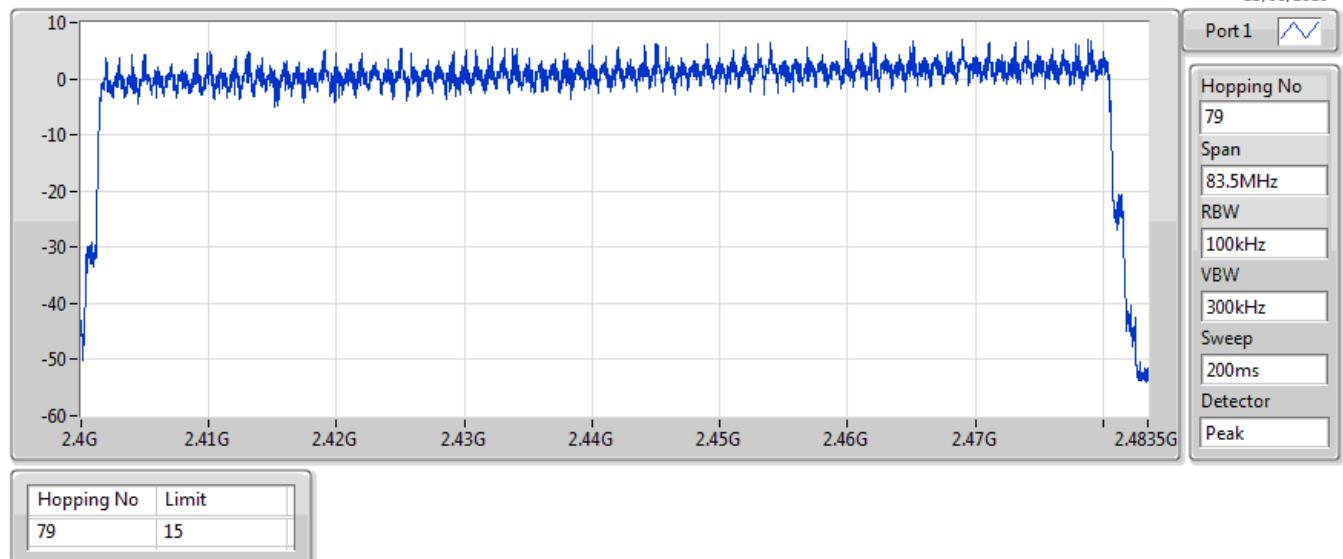


BT-EDR(2Mbps)

2440MHz

Hopping Ch

13/06/2019

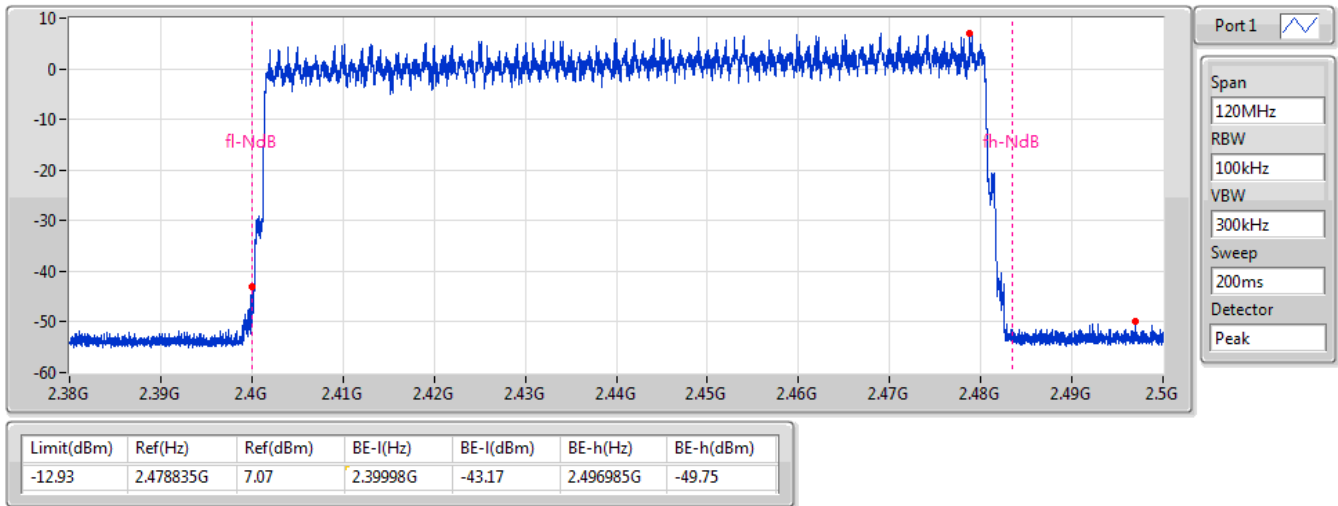


BT-EDR(2Mbps)

2440MHz

Hopping Ch Bandedge (Non-restricted Band)

13/06/2019

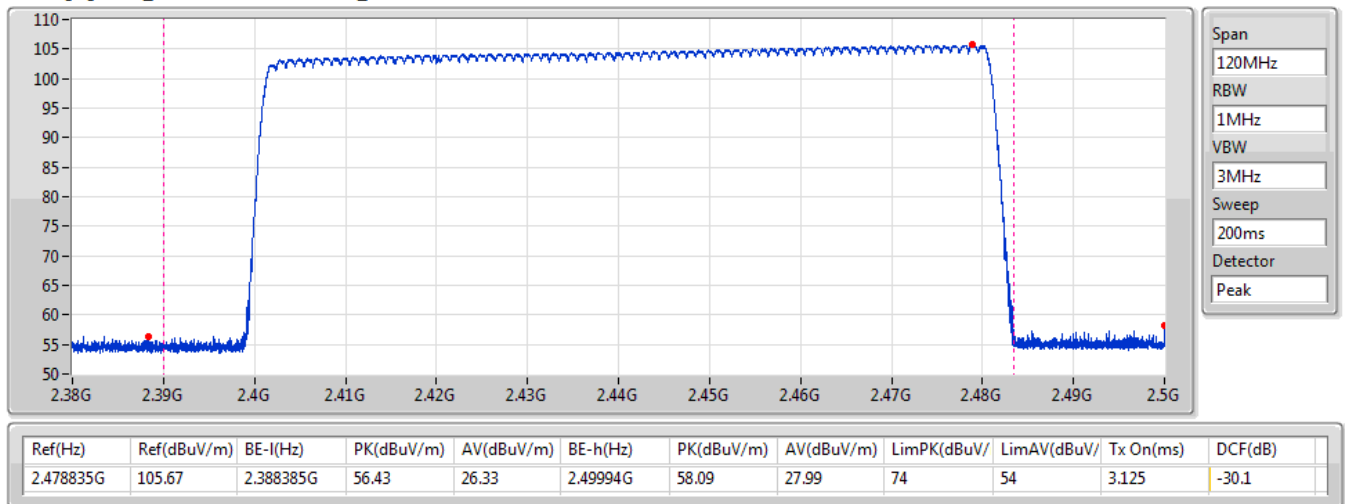


BT-EDR(2Mbps)

2440MHz

Hopping Ch Bandedge (Restricted Band)

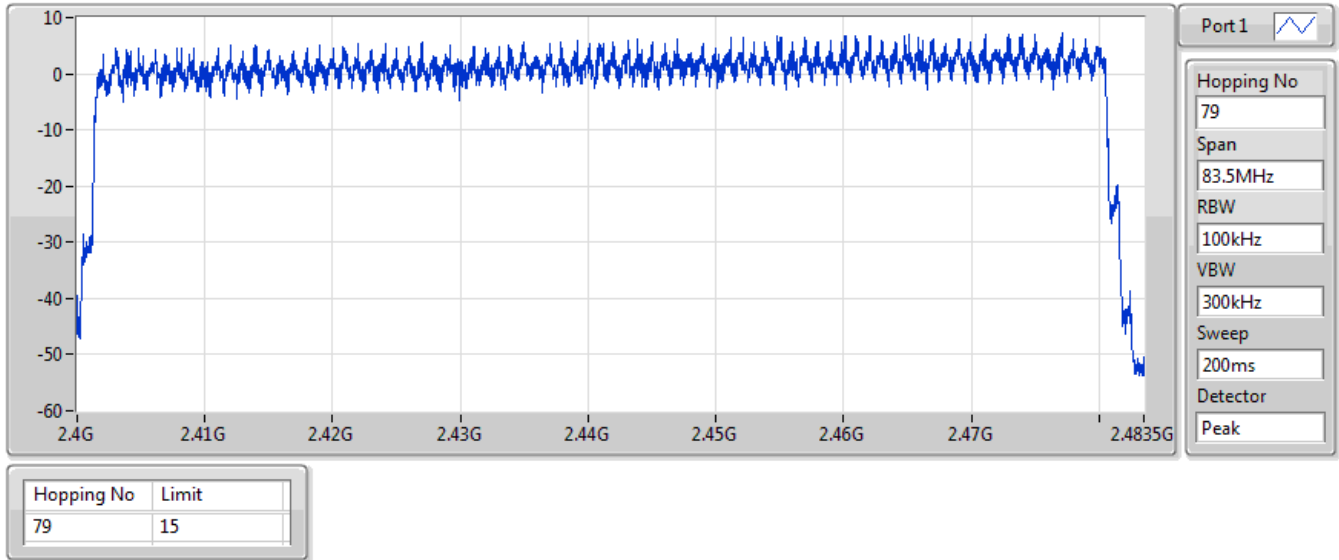
13/06/2019



BT-EDR(3Mbps) 2440MHz

Hopping Ch

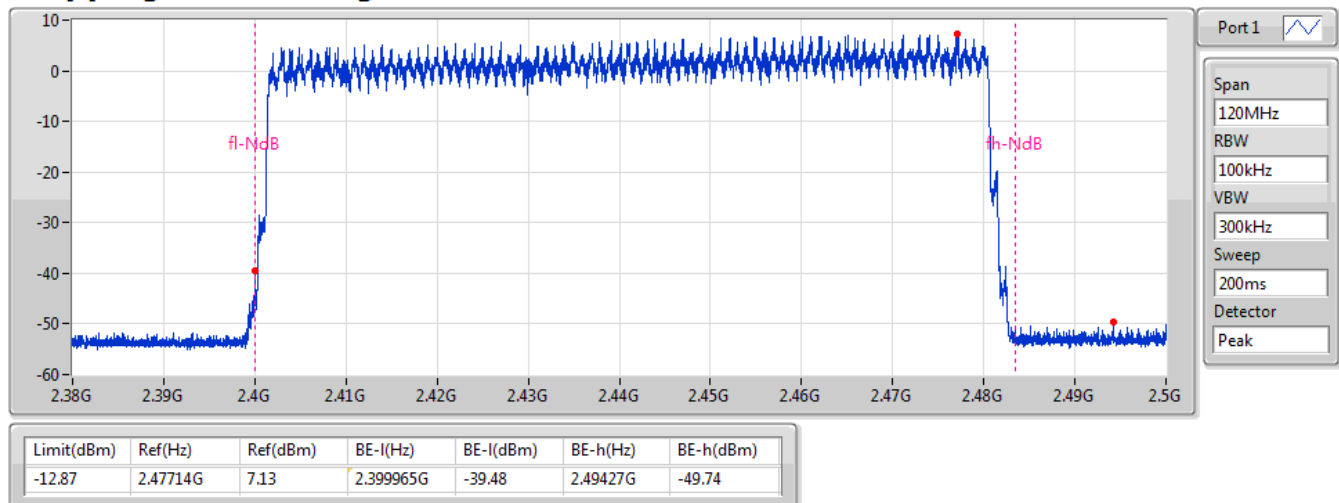
13/06/2019



BT-EDR(3Mbps) 2440MHz

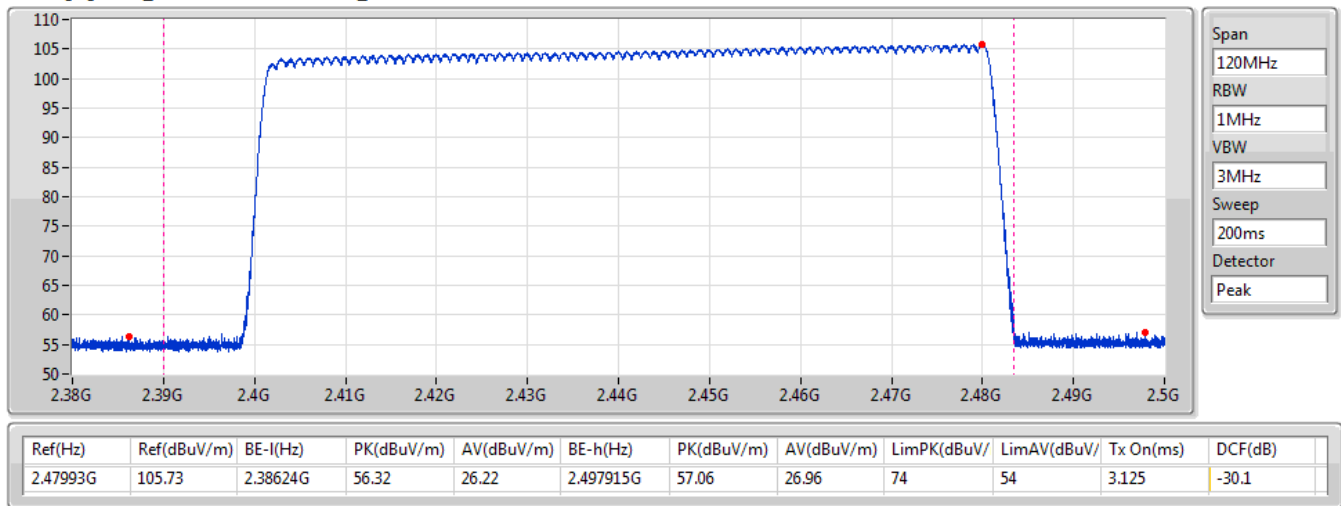
Hopping Ch Bandedge (Non-restricted Band)

13/06/2019



BT-EDR(3Mbps)**2440MHz****Hopping Ch Bandedge (Restricted Band)**

13/06/2019



Summary

Mode	Max-Dwell (s)
2.4-2.4835GHz	-
BT-BR(1Mbps)	309.2466m
BT-EDR(2Mbps)	38.909m
BT-EDR(3Mbps)	54.366m

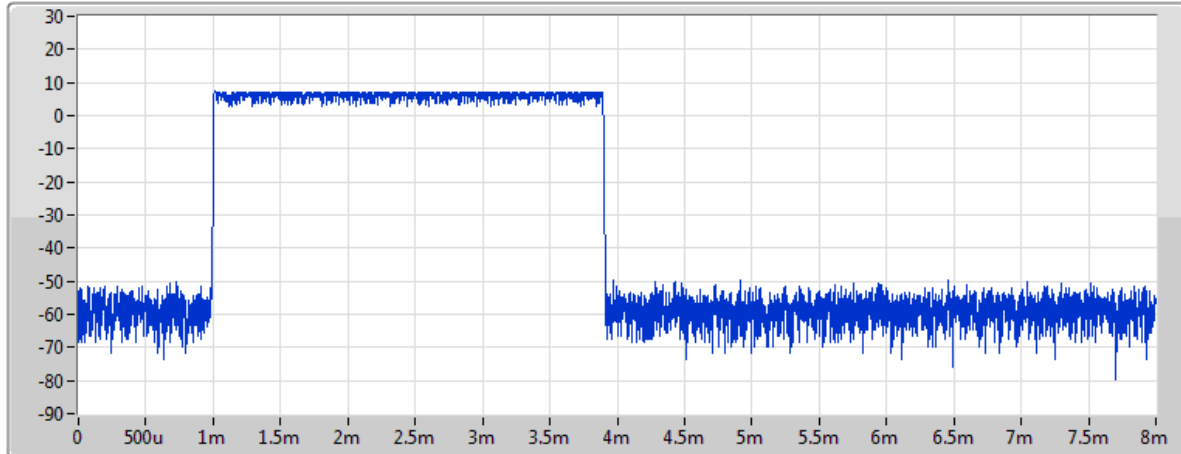
Result


Mode	Result	Period (s)	Dwell (s)	Limit (s)	Tx On (s)
BT-BR(1Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	309.2466m	400m	2.901m
BT-EDR(2Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	38.909m	400m	365u
BT-EDR(3Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	54.366m	400m	510u

BT-BR(1Mbps)

2440MHz

13/06/2019



Port1 

Ch Freq
2.44GHz

RBW
300kHz

VBW
1MHz

Sweep Time
8ms

TX Time
2.901ms

non AFH Mode

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	309.2466m	400m	2.901m

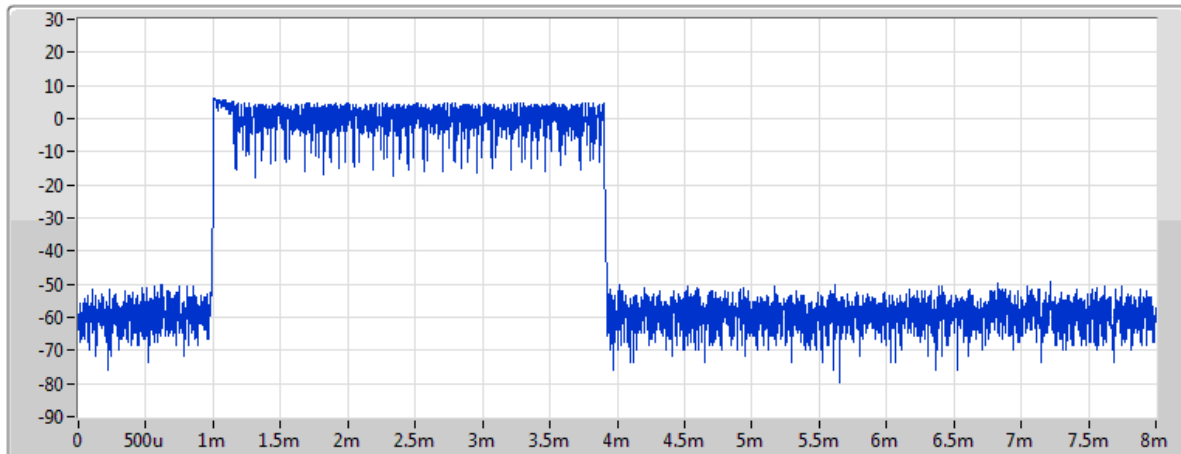
AFH Mode


Period(s)	Dwell(s)	Limit(s)	Tx On(s)
0	154.6233m	400m	2.901m

BT-EDR(2Mbps)

2440MHz

13/06/2019



Port1 

Ch Freq
2.44GHz

RBW
300kHz

VBW
1MHz

Sweep Time
8ms

TX Time
365us

non AFH Mode

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	38.909m	400m	365u

AFH Mode

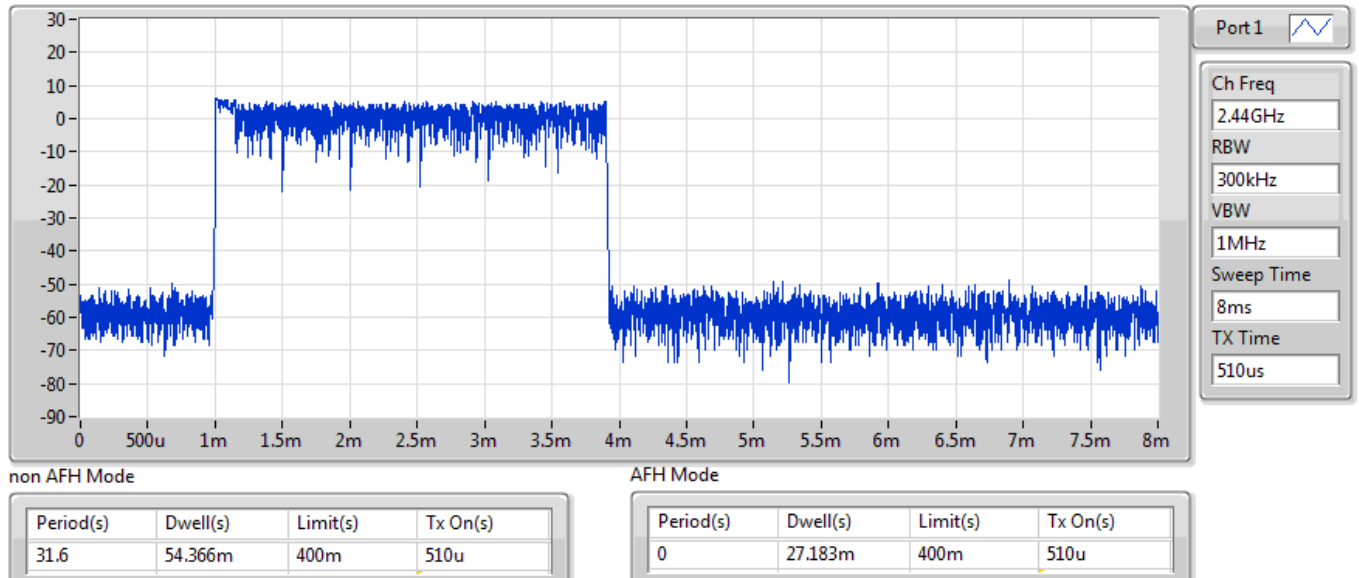
Period(s)	Dwell(s)	Limit(s)	Tx On(s)
0	19.4545m	400m	365u

BT-EDR(3Mbps)

2440MHz

Dwell

13/06/2019



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	2.40184G	4.61	-15.39	709.32M	-52.57	2.4G	-41.43	2.48365G	-51.86	17.47734G	-44.07	1
BT-EDR(2Mbps)	Pass	2.40196G	2.10	-17.90	812.62M	-52.29	2.39999G	-38.02	2.48517G	-51.08	24.54127G	-44.92	1
BT-EDR(3Mbps)	Pass	2.40184G	2.48	-17.52	895.8M	-52.73	2.4G	-38.20	2.48404G	-51.14	24.63695G	-44.53	1

Result

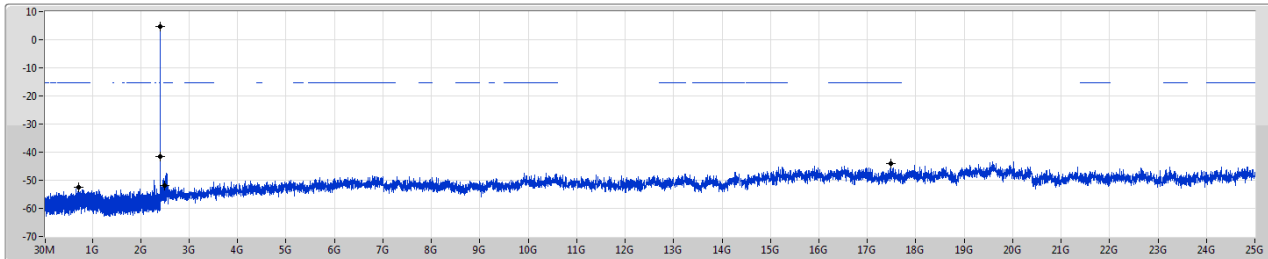
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40184G	4.61	-15.39	709.32M	-52.57	2.4G	-41.43	2.48365G	-51.86	17.47734G	-44.07	1
2440MHz	Pass	2.44004G	6.91	-13.09	2.18488G	-53.07	2.39877G	-52.50	2.48353G	-50.77	15.23996G	-44.18	1
2480MHz	Pass	2.48016G	8.38	-11.62	621.7M	-52.51	2.39846G	-51.69	2.48353G	-49.61	24.7439G	-44.29	1
BT-EDR(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40196G	2.10	-17.90	812.62M	-52.29	2.39999G	-38.02	2.48517G	-51.08	24.54127G	-44.92	1
2440MHz	Pass	2.43983G	5.22	-14.78	766.74M	-51.69	2.39844G	-52.19	2.48475G	-51.57	24.65103G	-44.45	1
2480MHz	Pass	2.4802G	6.47	-13.53	857.02M	-52.95	2.39885G	-52.50	2.4845G	-50.44	17.45764G	-44.67	1
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40184G	2.48	-17.52	895.8M	-52.73	2.4G	-38.20	2.48404G	-51.14	24.63695G	-44.53	1
2440MHz	Pass	2.43983G	5.97	-14.03	957.37M	-51.73	2.39822G	-51.66	2.48363G	-50.84	24.87898G	-44.73	1
2480MHz	Pass	2.48003G	5.97	-14.03	917.11M	-53.06	2.39847G	-51.76	2.48351G	-50.33	24.33582G	-44.07	1

BT-BR(1Mbps)

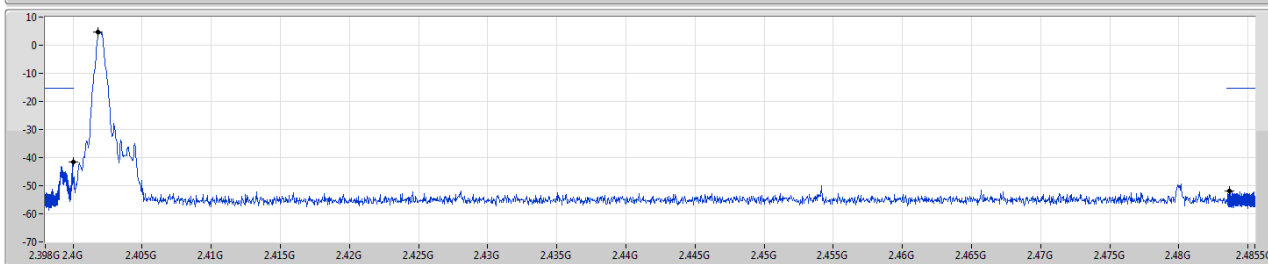
CSE NdB

2402MHz

05/06/2019



Port1



RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

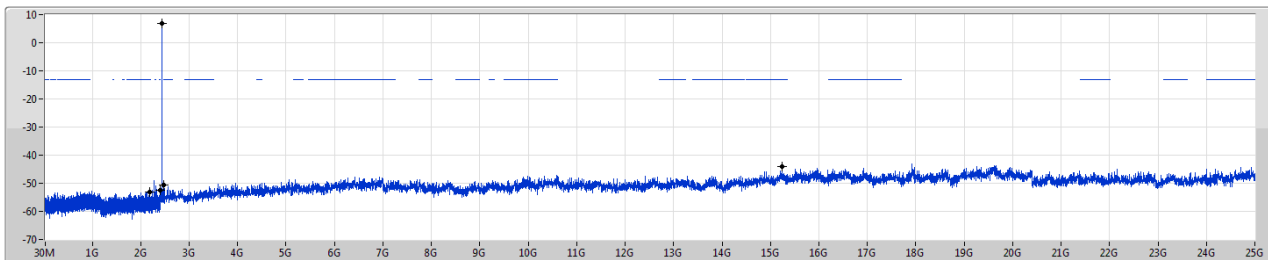
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40184G	4.61	-15.39	709.32M	-52.57	2.4G	-41.43	2.48365G	-51.86	17.47734G	-44.07	1

BT-BR(1Mbps)

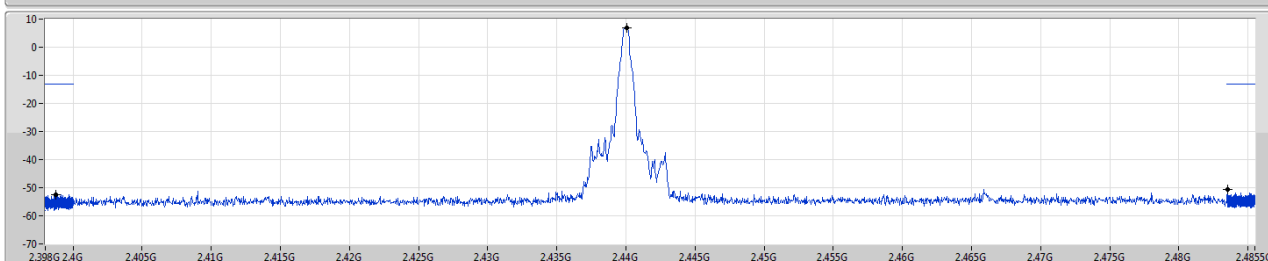
CSE NdB

2440MHz

05/06/2019



Port1



RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44004G	6.91	-13.09	2.18488G	-53.07	2.39877G	-52.50	2.48353G	-50.77	15.23996G	-44.18	1

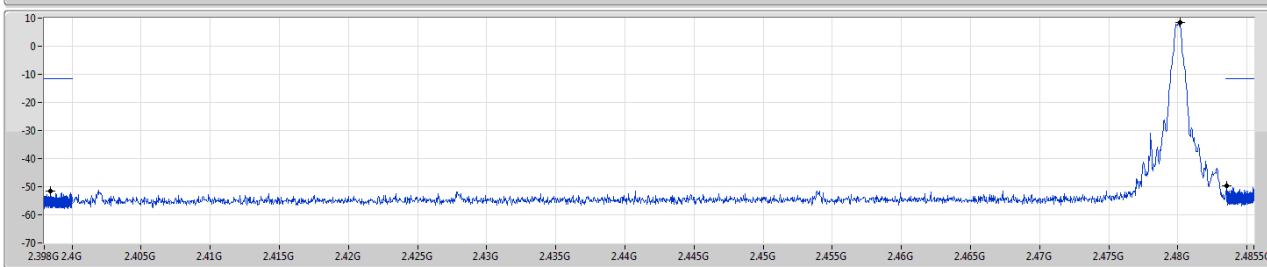
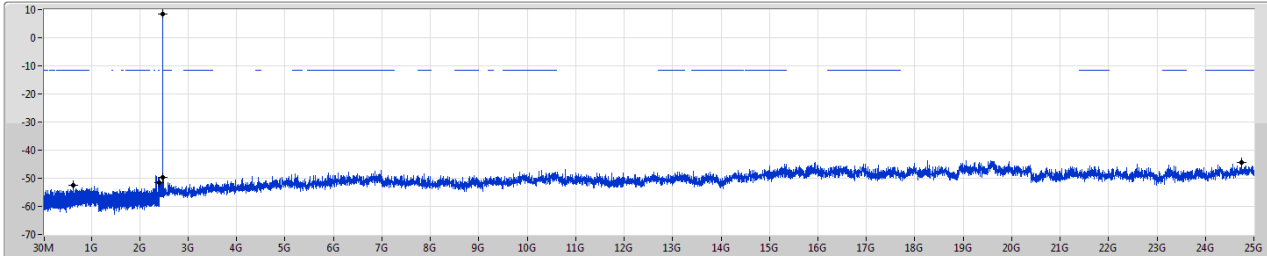
BT-BR(1Mbps)

2480MHz

CSE NdB

05/06/2019

Port1



RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

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	8.38	-11.62	621.7M	-52.51	2.39846G	-51.69	2.48353G	-49.61	2.47439G	-44.29	1

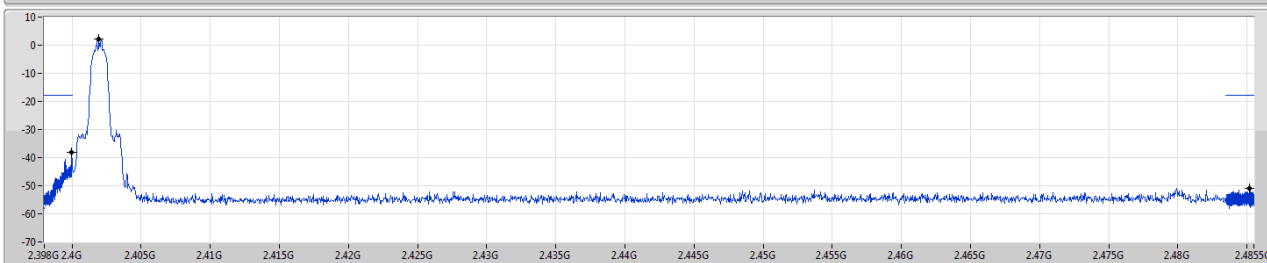
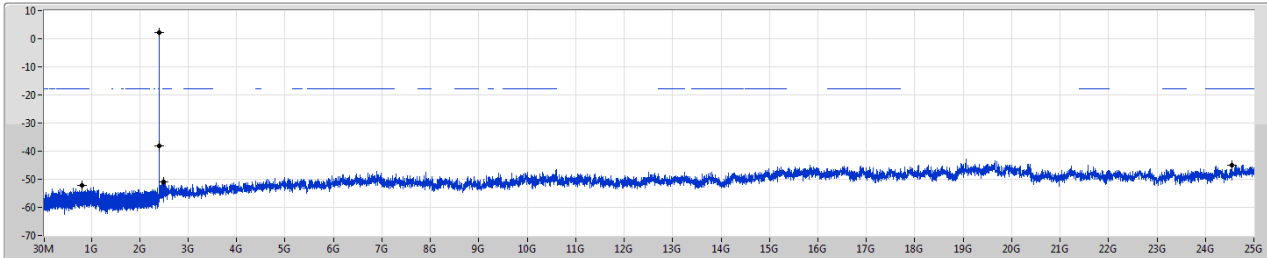
BT-EDR(2Mbps)

2402MHz

CSE NdB

05/06/2019

Port1



RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

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	2.10	-17.90	812.62M	-52.29	2.39999G	-38.02	2.48517G	-51.08	2.454127G	-44.92	1

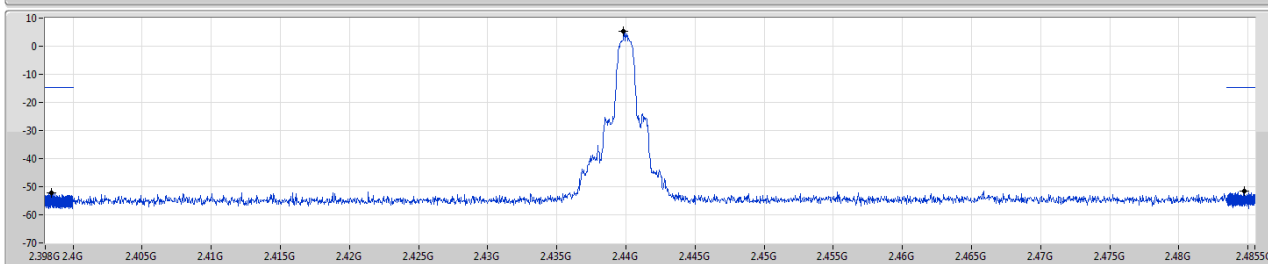
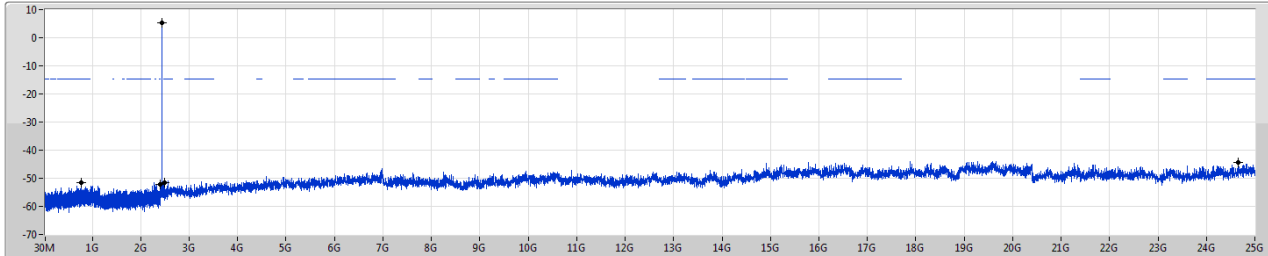
BT-EDR(2Mbps)

2440MHz

CSE NdB

05/06/2019

Port1



RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43983G	5.22	-14.78	766.74M	-51.69	2.39844G	-52.19	2.48475G	-51.57	2.45103G	-44.45	1

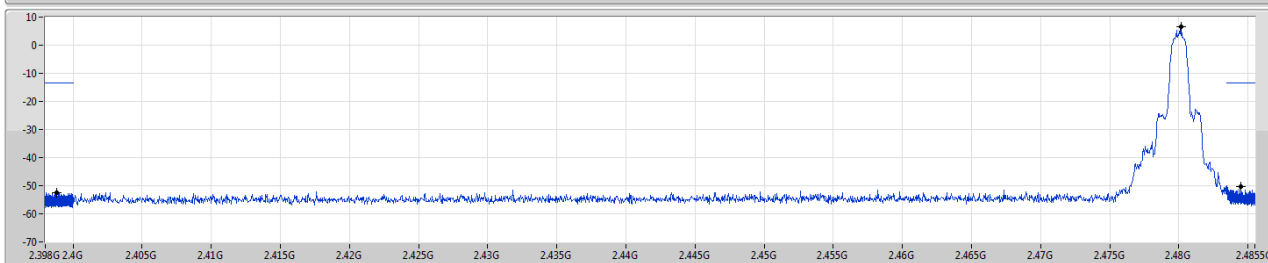
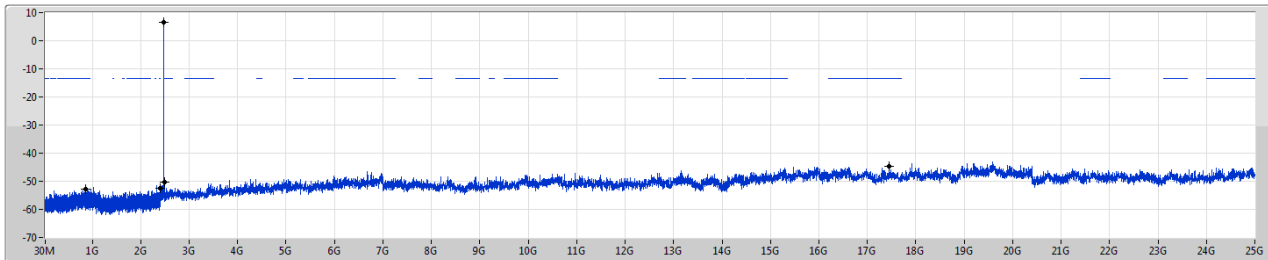
BT-EDR(2Mbps)

2480MHz

CSE NdB

05/06/2019

Port1



RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

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	6.47	-13.53	857.02M	-52.95	2.39885G	-52.50	2.4845G	-50.44	17.45764G	-44.67	1

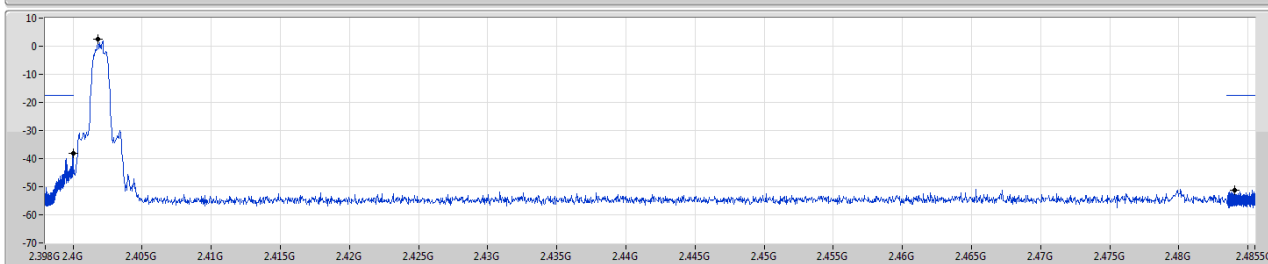
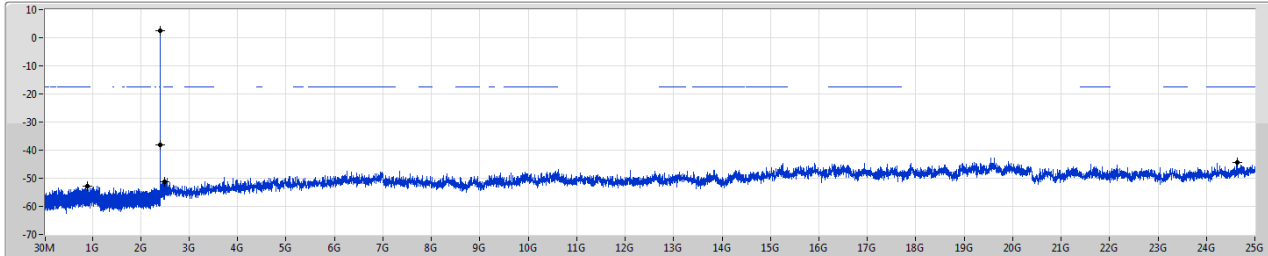
BT-EDR(3Mbps)

2402MHz

CSE NdB

05/06/2019

Port1



RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

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	2.48	-17.52	895.8M	-52.73	2.4G	-38.20	2.48404G	-51.14	2.43695G	-44.53	1

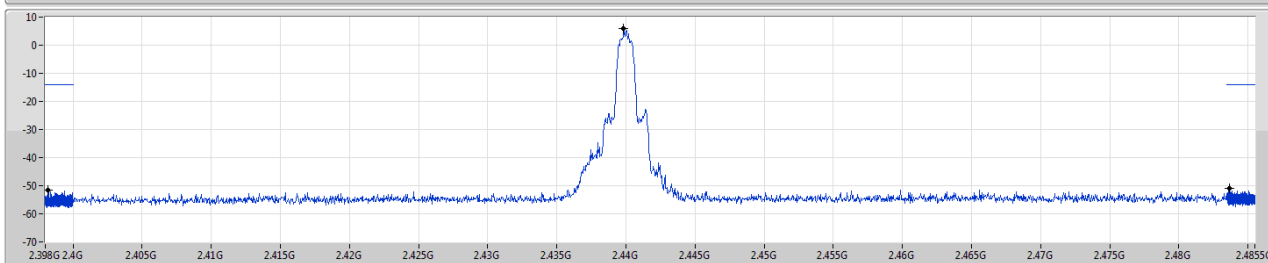
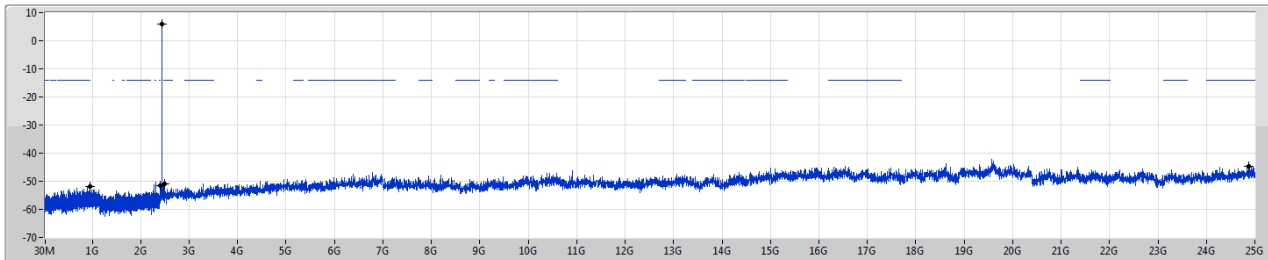
BT-EDR(3Mbps)

2440MHz

CSE NdB

05/06/2019

Port1



RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.43983G	5.97	-14.03	957.37M	-51.73	2.39822G	-51.66	2.48363G	-50.84	2.47898G	-44.73	1

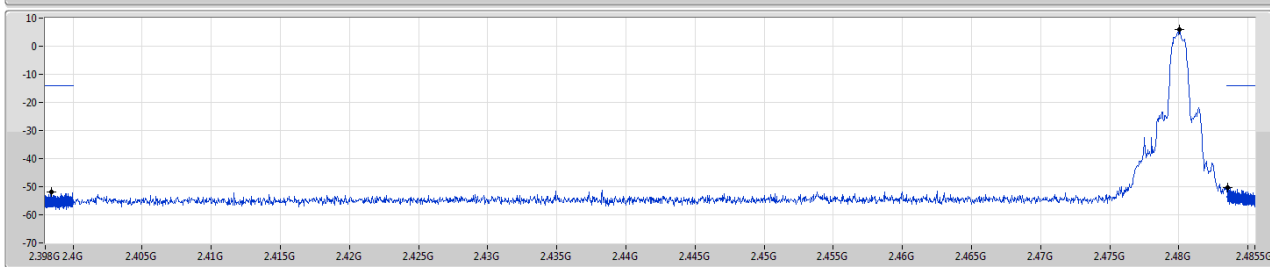
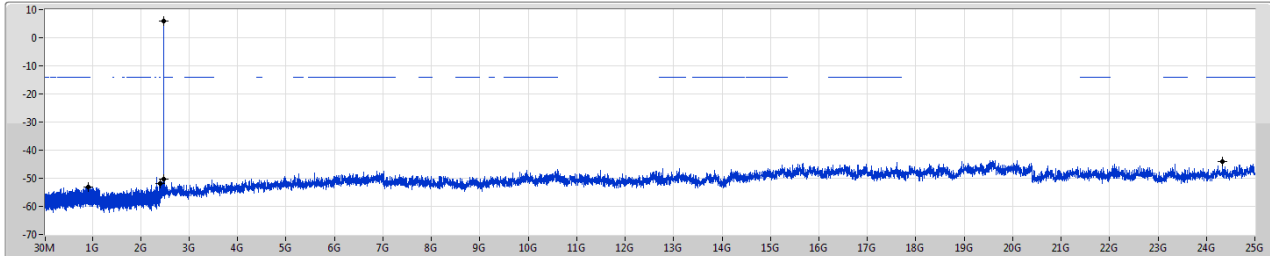
BT-EDR(3Mbps)

2480MHz

CSE NdB

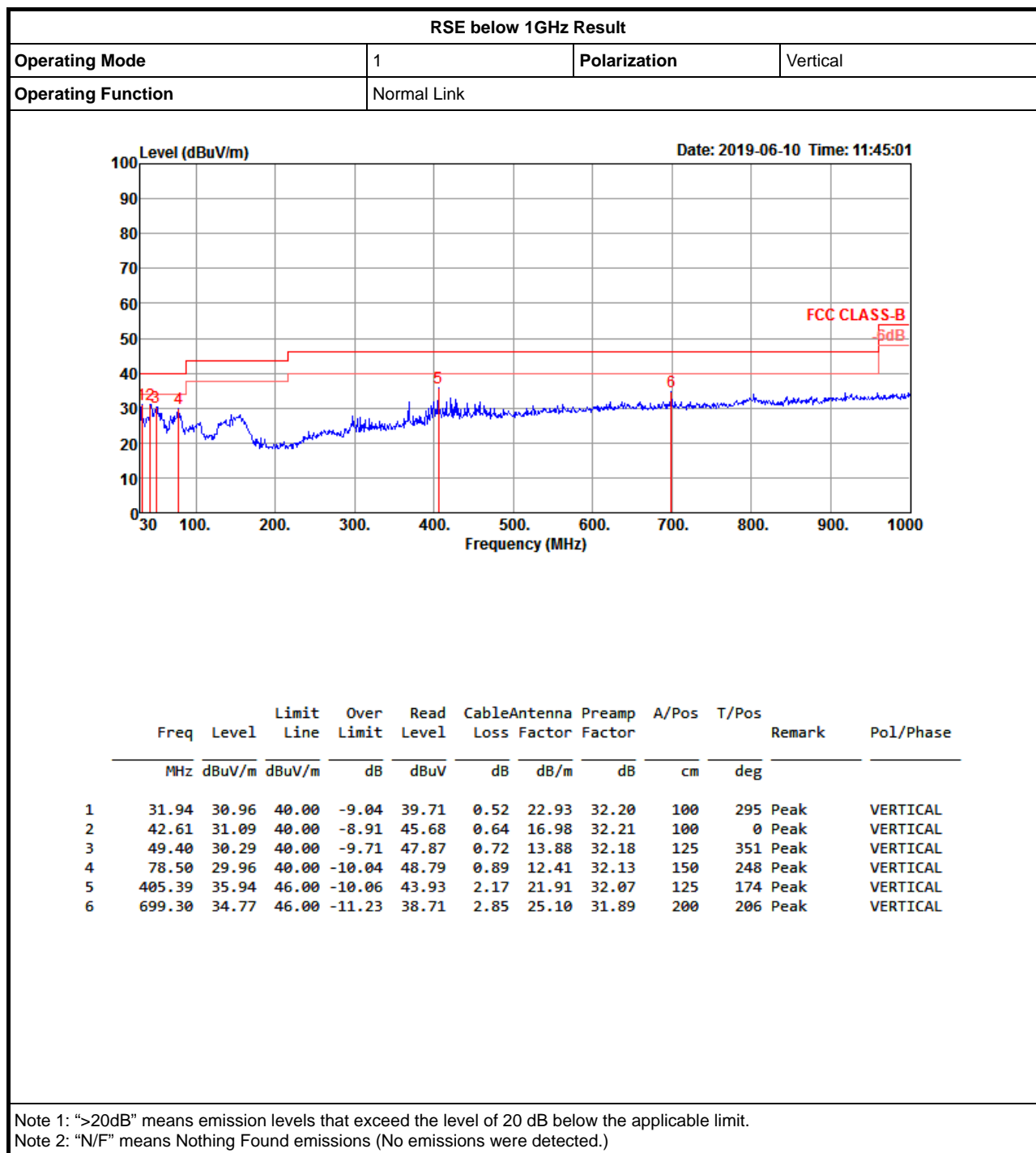
05/06/2019

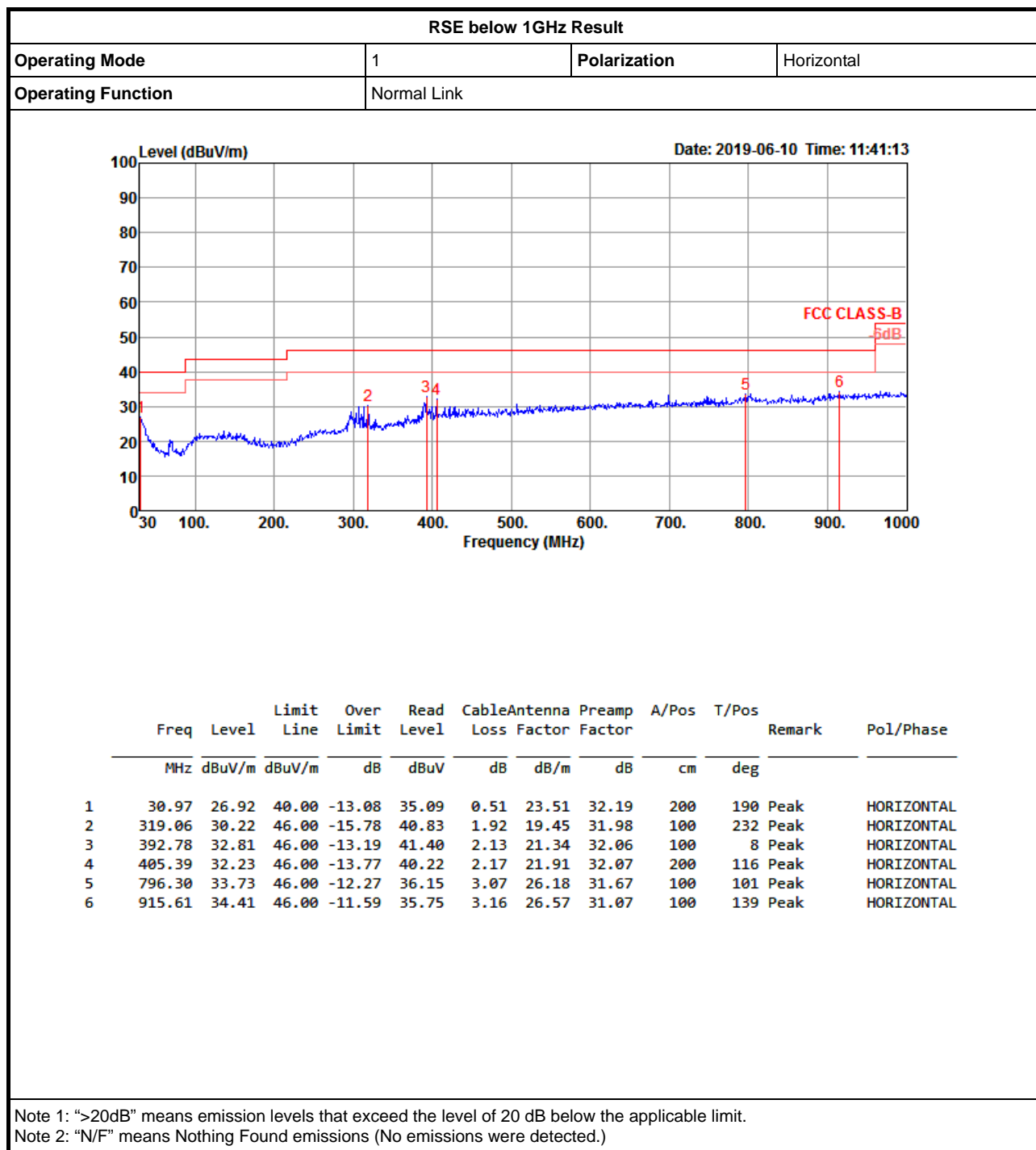
Port1



RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

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	5.97	-14.03	917.11M	-53.06	2.39847G	-51.76	2.48351G	-50.33	2.43582G	-44.07	1







RSE TX above 1GHz Result

Appendix G.2

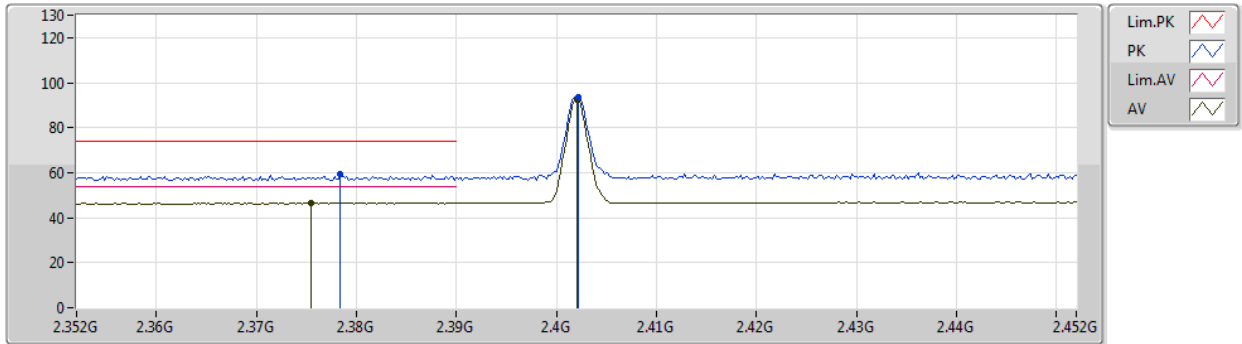
Summary

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	50.49	54.00	-3.51	32.41	3	Horizontal	70	1.72	-

BT-BR(1Mbps)

2402MHz_TX

03/06/2019



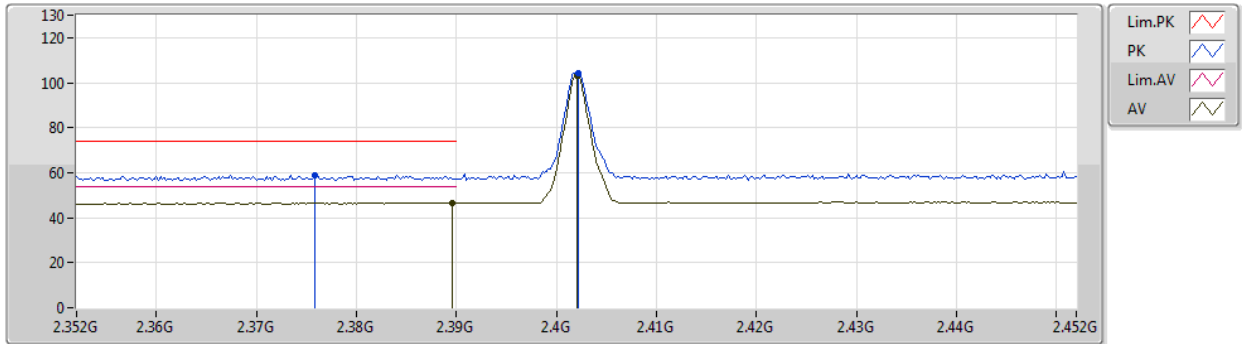
EUT Z_1TX
Setting 8
02-J-5
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.3784G	59.56	74.00	-14.44	31.17	3	Vertical	325	1.15	-				
AV	2.3754G	46.50	54.00	-7.50	31.17	3	Vertical	325	1.15	-				
PK	2.4022G	93.62	Inf	-Inf	31.23	3	Vertical	325	1.15	-				
AV	2.402G	92.64	Inf	-Inf	31.23	3	Vertical	325	1.15	-				

BT-BR(1Mbps)

2402MHz_TX

03/06/2019



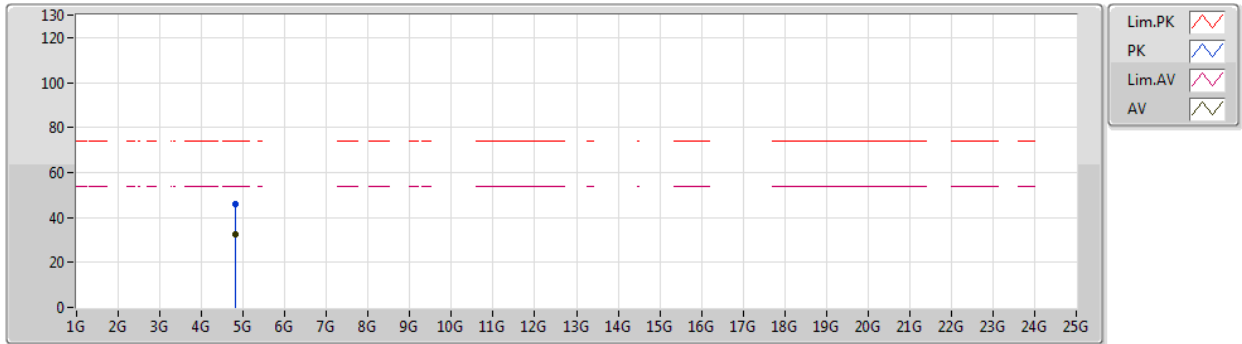
EUT Z_1TX
Setting 8
02-J-5
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.3758G	58.88	74.00	-15.12	31.17	3	Horizontal	86	2.62	-				
AV	2.3896G	46.57	54.00	-7.43	31.20	3	Horizontal	86	2.62	-				
PK	2.4022G	104.28	Inf	-Inf	31.23	3	Horizontal	86	2.62	-				
AV	2.402G	103.36	Inf	-Inf	31.23	3	Horizontal	86	2.62	-				

BT-BR(1Mbps)

2402MHz_TX

03/06/2019



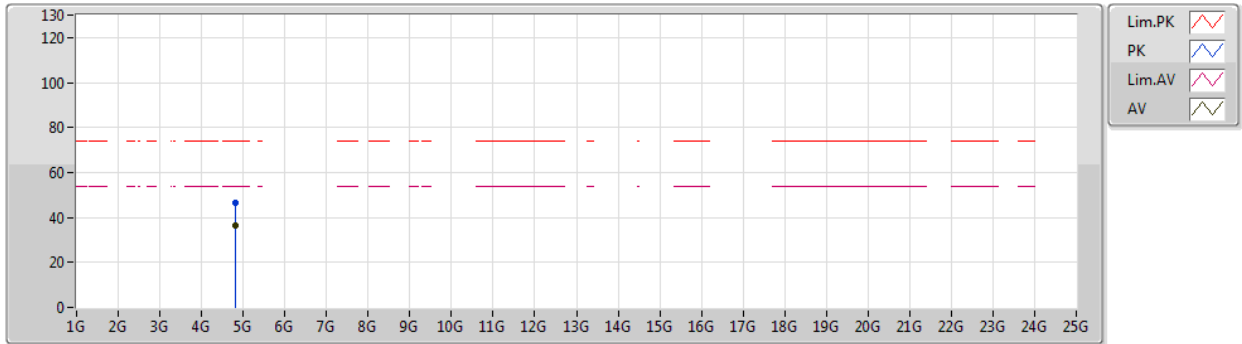
EUT_Z_1TX
Setting 8
02-J-5
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.80442G	45.88	74.00	-28.12	7.12	3	Vertical	314	1.50	-				
AV	4.80406G	32.65	54.00	-21.35	7.12	3	Vertical	314	1.50	-				

BT-BR(1Mbps)

2402MHz_TX

03/06/2019



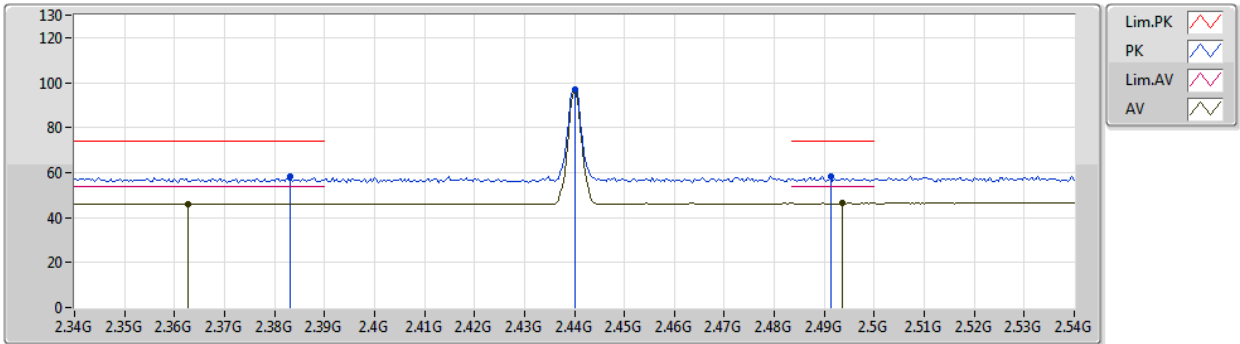
EUT_Z_1TX
Setting 8
02-J-5
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.80404G	46.59	74.00	-27.41	7.12	3	Horizontal	301	1.20	-				
AV	4.80406G	36.54	54.00	-17.46	7.12	3	Horizontal	301	1.20	-				

BT-BR(1Mbps)

2440MHz_TX

06/06/2019



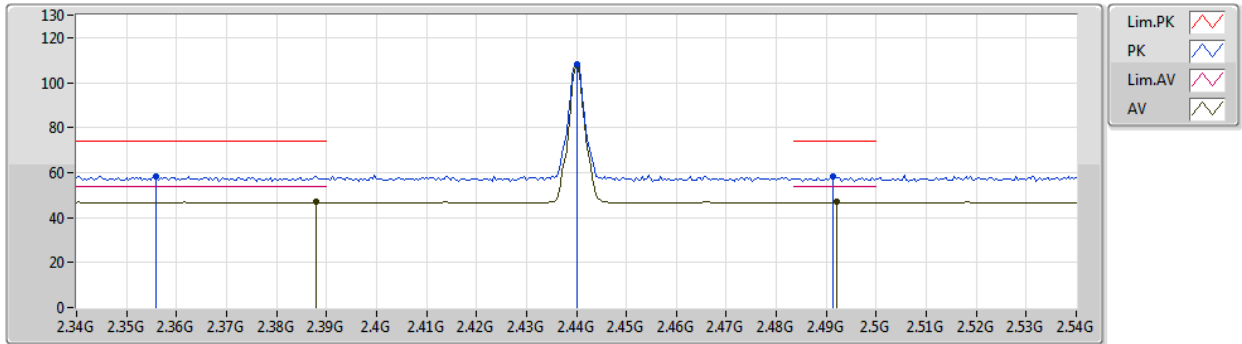
EUT_Z_1TX
Setting 8
02-R-5
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.3832G	58.26	74.00	-15.74	33.08	3	Vertical	316	1.05	-				
AV	2.3628G	46.21	54.00	-7.79	33.06	3	Vertical	316	1.05	-				
PK	2.44G	97.01	Inf	-Inf	33.22	3	Vertical	316	1.05	-				
AV	2.44G	96.13	Inf	-Inf	33.22	3	Vertical	316	1.05	-				
PK	2.4912G	58.28	74.00	-15.72	33.38	3	Vertical	316	1.05	-				
AV	2.4936G	46.40	54.00	-7.60	33.39	3	Vertical	316	1.05	-				

BT-BR(1Mbps)

2440MHz_TX

06/06/2019



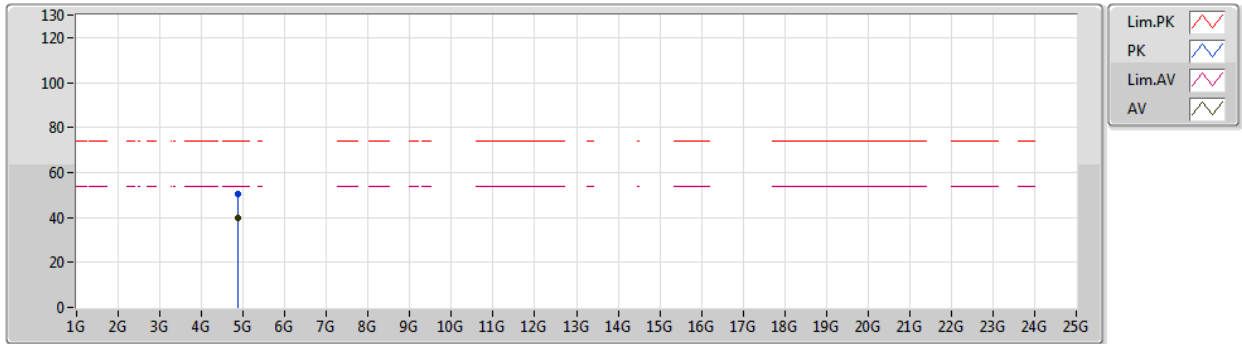
EUT_Z_1TX
Setting 8
02-R-5
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.356G	58.47	74.00	-15.53	33.62	3	Horizontal	70	2.20	-				
AV	2.388G	46.84	54.00	-7.16	33.64	3	Horizontal	70	2.20	-				
PK	2.44G	108.34	Inf	-Inf	33.63	3	Horizontal	70	2.20	-				
AV	2.44G	107.43	Inf	-Inf	33.63	3	Horizontal	70	2.20	-				
PK	2.4912G	58.01	74.00	-15.99	33.61	3	Horizontal	70	2.20	-				
AV	2.492G	46.87	54.00	-7.13	33.61	3	Horizontal	70	2.20	-				

BT-BR(1Mbps)

2440MHz_TX

06/06/2019



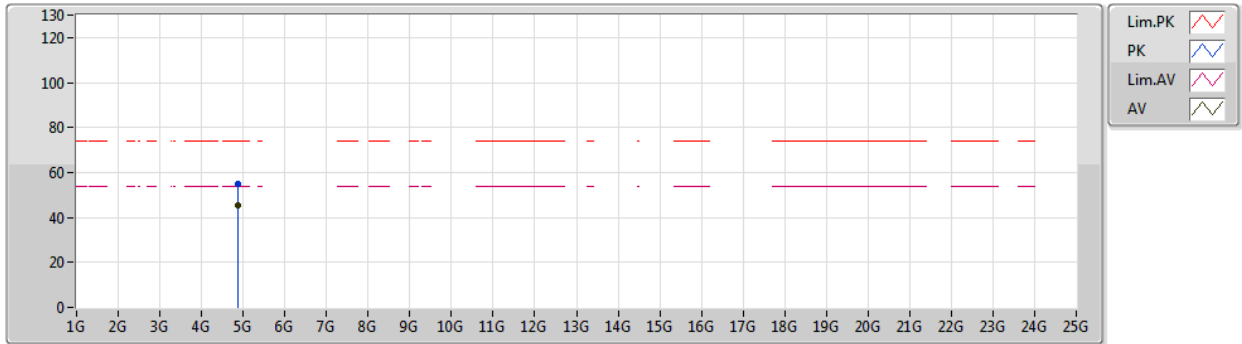
EUT_Z_1TX
Setting 8
02-R-5
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.88032G	50.54	74.00	-23.46	6.90	3	Vertical	313	1.38	-				
AV	4.88001G	39.67	54.00	-14.33	6.90	3	Vertical	313	1.38	-				

BT-BR(1Mbps)

2440MHz_TX

06/06/2019



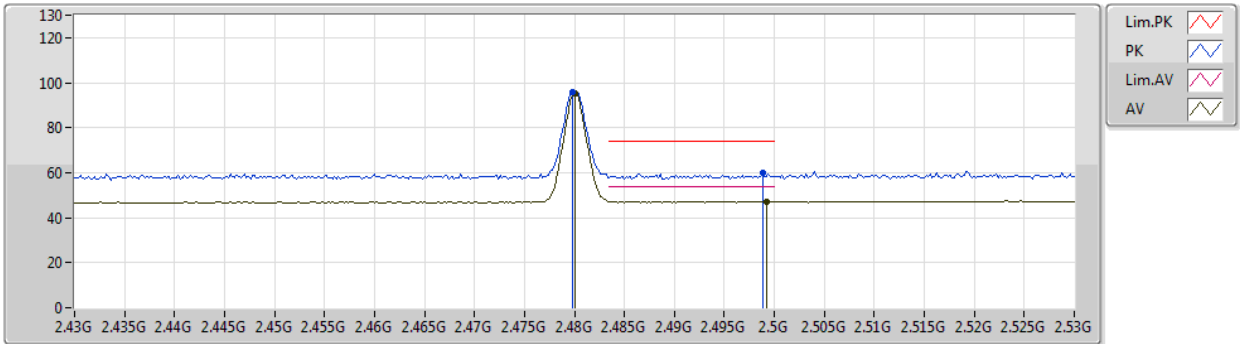
EUT_Z_1TX
Setting 8
02-R-5
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.87981G	54.79	74.00	-19.21	6.90	3	Horizontal	294	1.14	-				
AV	4.88G	45.30	54.00	-8.70	6.90	3	Horizontal	294	1.14	-				

BT-BR(1Mbps)

2480MHz_TX

03/06/2019



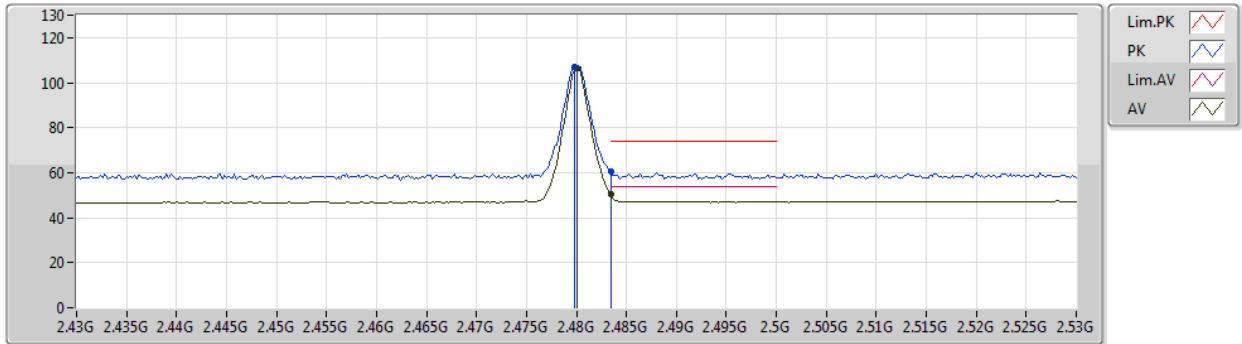
EUT_Z_1TX
Setting 8
02-J-5
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.4798G	95.87	Inf	-Inf	31.39	3	Vertical	331	1.43	-				
AV	2.48G	94.99	Inf	-Inf	31.39	3	Vertical	331	1.43	-				
PK	2.4988G	60.15	74.00	-13.85	31.43	3	Vertical	331	1.43	-				
AV	2.4992G	47.13	54.00	-6.87	31.43	3	Vertical	331	1.43	-				

BT-BR(1Mbps)

2480MHz_TX

03/06/2019



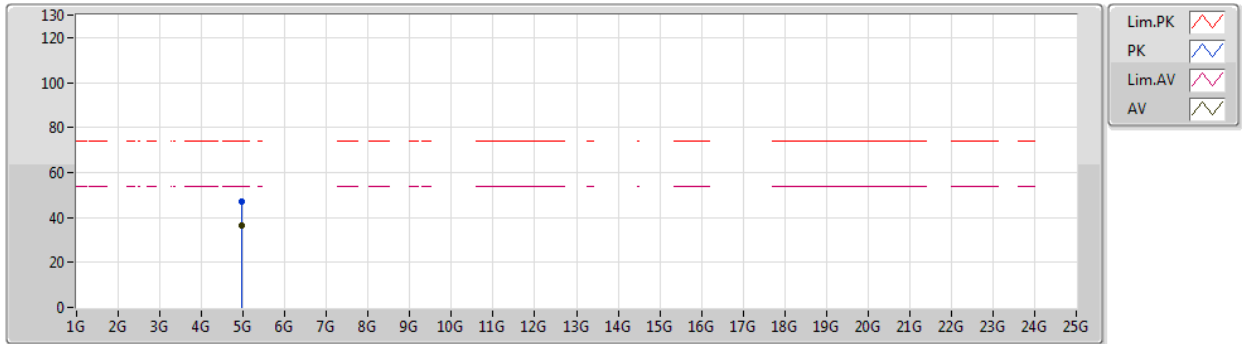
EUT_Z_1TX
Setting 8
02-J-5
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.4798G	107.21	Inf	-Inf	31.39	3	Horizontal	66	1.46	-				
AV	2.48G	106.38	Inf	-Inf	31.39	3	Horizontal	66	1.46	-				
PK	2.4835G	60.58	74.00	-13.42	31.39	3	Horizontal	66	1.46	-				
AV	2.4835G	50.24	54.00	-3.76	31.39	3	Horizontal	66	1.46	-				

BT-BR(1Mbps)

2480MHz_TX

03/06/2019



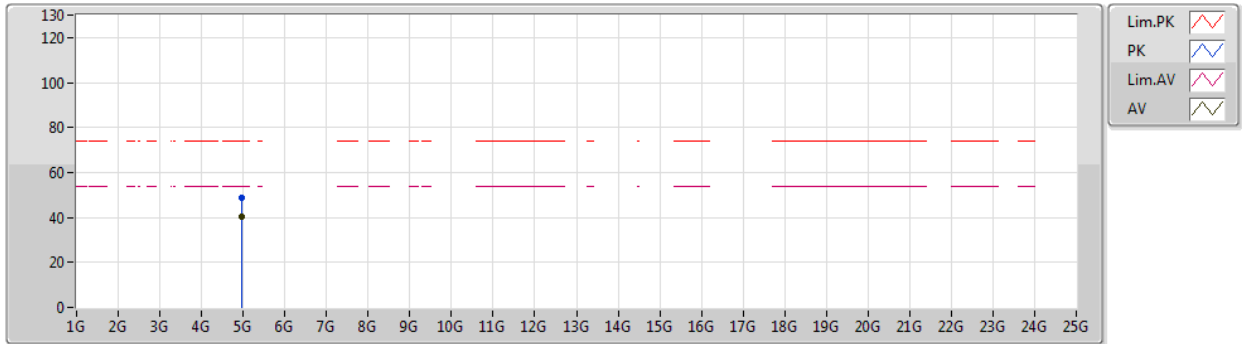
EUT_Z_1TX
Setting 8
02-J-5
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.95966G	47.16	74.00	-26.84	7.48	3	Vertical	313	2.93	-				
AV	4.96004G	36.42	54.00	-17.58	7.48	3	Vertical	313	2.93	-				

BT-BR(1Mbps)

2480MHz_TX

03/06/2019



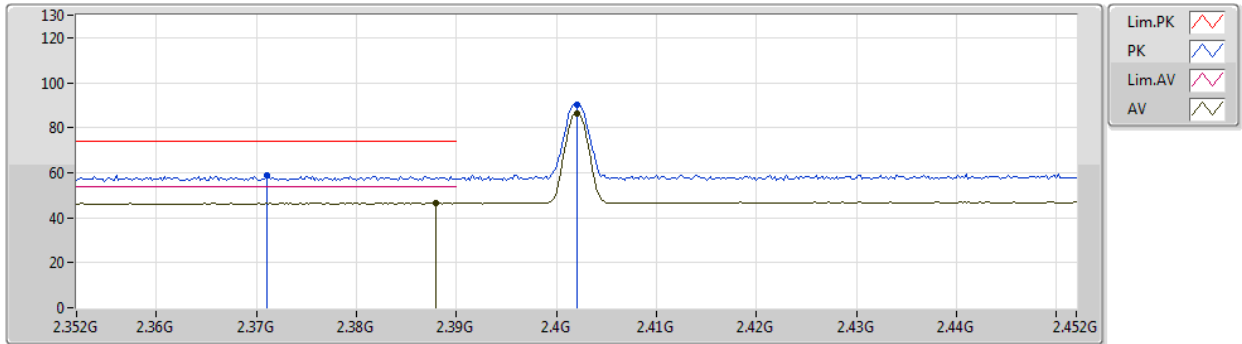
EUT_Z_1TX
Setting 8
02-J-5
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.9603G	48.77	74.00	-25.23	7.48	3	Horizontal	72	1.99	-				
AV	4.95998G	40.14	54.00	-13.86	7.48	3	Horizontal	72	1.99	-				

BT-EDR(3Mbps)

03/06/2019

2402MHz_TX



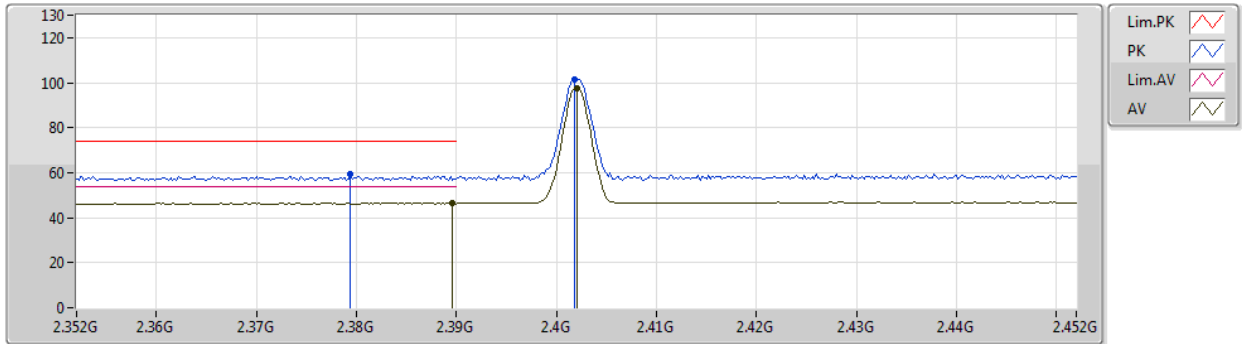
EUT_Z_1TX
Setting 8
02-J-5
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.371G	58.80	74.00	-15.20	31.16	3	Vertical	311	1.14	-				
AV	2.388G	46.42	54.00	-7.58	31.20	3	Vertical	311	1.14	-				
PK	2.402G	90.18	Inf	-Inf	31.23	3	Vertical	311	1.14	-				
AV	2.402G	86.06	Inf	-Inf	31.23	3	Vertical	311	1.14	-				

BT-EDR(3Mbps)

03/06/2019

2402MHz_TX



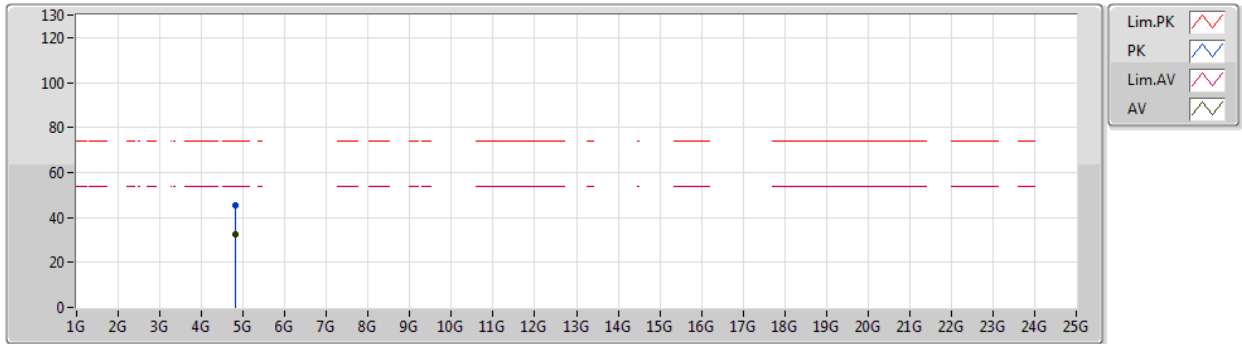
EUT_Z_1TX
Setting 8
02-J-5
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.3794G	59.67	74.00	-14.33	31.18	3	Horizontal	103	1.93	-				
AV	2.3896G	46.46	54.00	-7.54	31.20	3	Horizontal	103	1.93	-				
PK	2.4018G	101.49	Inf	-Inf	31.23	3	Horizontal	103	1.93	-				
AV	2.402G	97.47	Inf	-Inf	31.23	3	Horizontal	103	1.93	-				

BT-EDR(3Mbps)

2402MHz_TX

03/06/2019



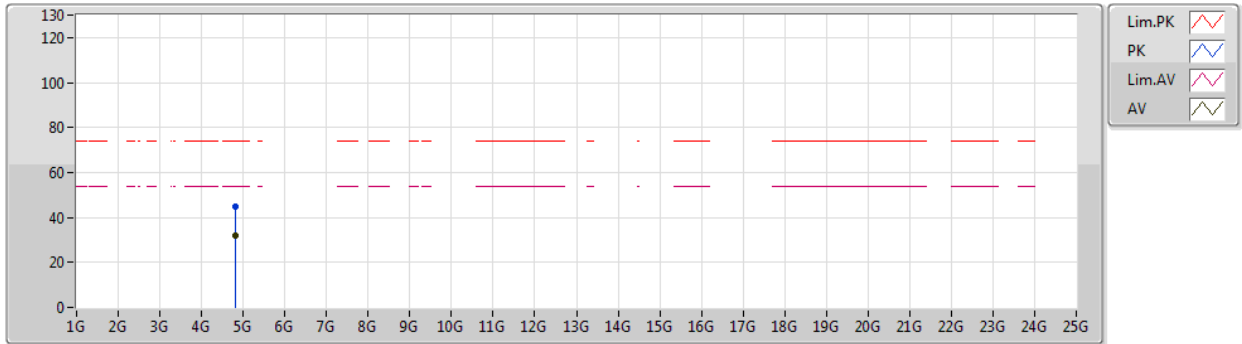
EUT_Z_1TX
Setting 8
02-J-5
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.8049G	45.11	74.00	-28.89	7.12	3	Vertical	296	1.13	-				
AV	4.80396G	32.60	54.00	-21.40	7.12	3	Vertical	296	1.13	-				

BT-EDR(3Mbps)

2402MHz_TX

03/06/2019



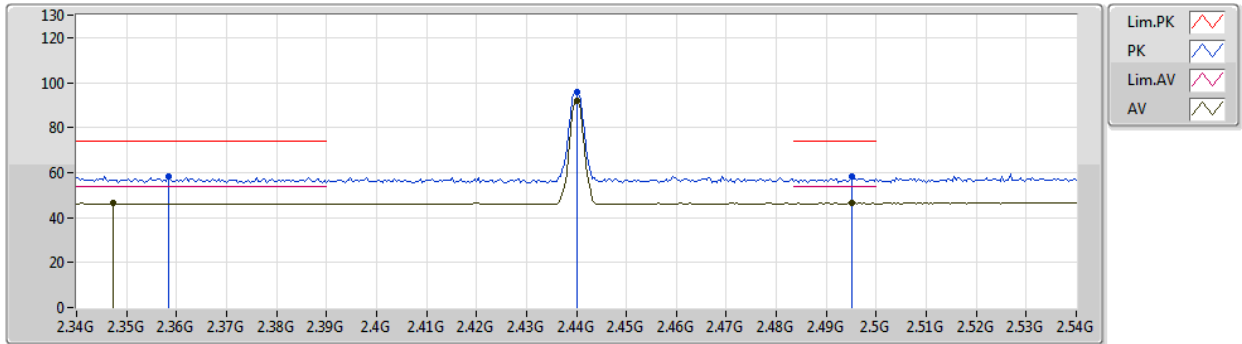
EUT_Z_1TX
Setting 8
02-J-5
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.80398G	44.92	74.00	-29.08	7.12	3	Horizontal	329	1.13	-				
AV	4.80376G	32.17	54.00	-21.83	7.12	3	Horizontal	329	1.13	-				

BT-EDR(3Mbps)

2440MHz_TX

06/06/2019



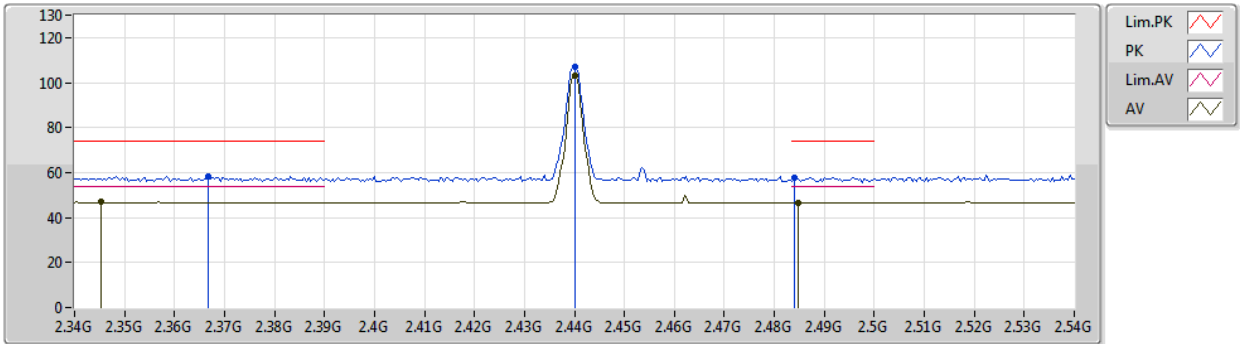
EUT_Z_1TX
Setting 8
02-R-5
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	2.3584G	58.24	74.00	-15.76	33.05	3	Vertical	316	1.08	-
AV	2.3472G	46.27	54.00	-7.73	33.03	3	Vertical	316	1.08	-
PK	2.44G	95.82	Inf	-Inf	33.22	3	Vertical	316	1.08	-
AV	2.44G	91.79	Inf	-Inf	33.22	3	Vertical	316	1.08	-
PK	2.4952G	58.12	74.00	-15.88	33.39	3	Vertical	316	1.08	-
AV	2.4952G	46.35	54.00	-7.65	33.39	3	Vertical	316	1.08	-

BT-EDR(3Mbps)

2440MHz_TX

06/06/2019



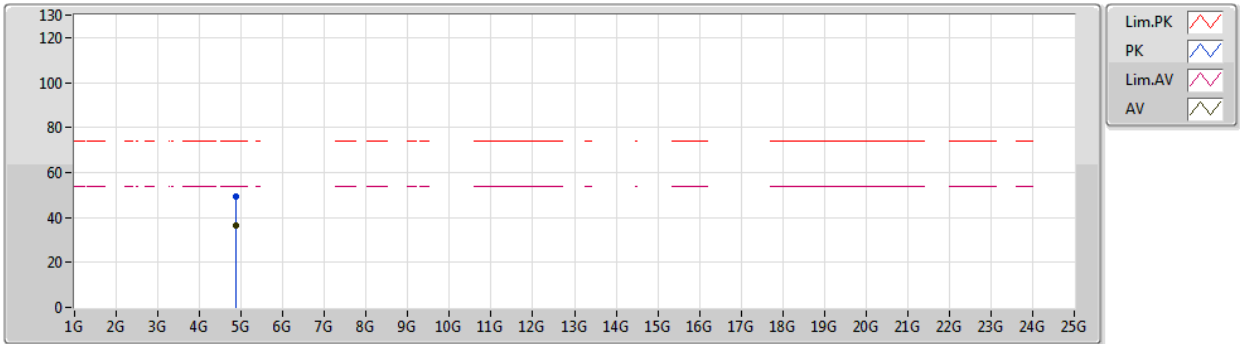
EUT_Z_1TX
Setting 8
02-R-5
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	2.3668G	58.41	74.00	-15.59	33.62	3	Horizontal	72	2.17	-
AV	2.3454G	46.85	54.00	-7.15	33.61	3	Horizontal	72	2.17	-
PK	2.44G	106.79	Inf	-Inf	33.63	3	Horizontal	72	2.17	-
AV	2.44G	102.92	Inf	-Inf	33.63	3	Horizontal	72	2.17	-
PK	2.484G	57.93	74.00	-16.07	33.61	3	Horizontal	72	2.17	-
AV	2.4848G	46.78	54.00	-7.22	33.61	3	Horizontal	72	2.17	-

BT-EDR(3Mbps)

2440MHz_TX

06/06/2019



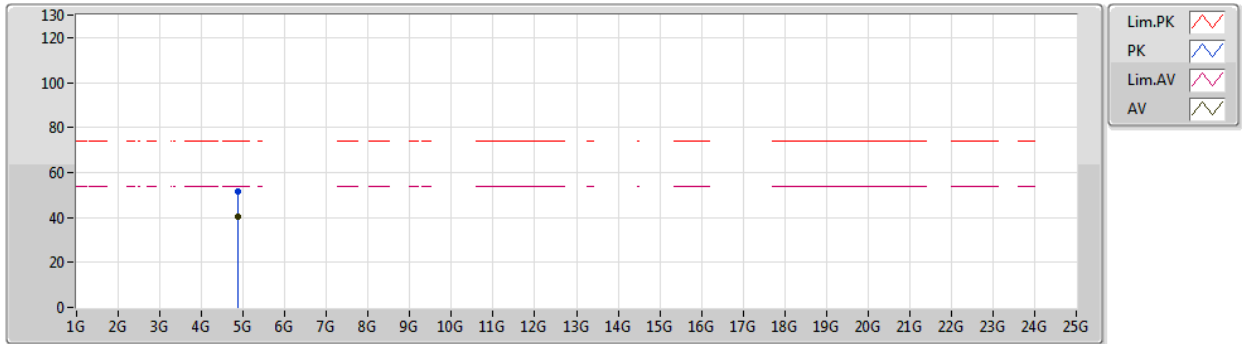
EUT_Z_1TX
Setting 8
02-R-5
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.87992G	49.47	74.00	-24.53	6.90	3	Vertical	310	2.90	-				
AV	4.88002G	36.37	54.00	-17.63	6.90	3	Vertical	310	2.90	-				

BT-EDR(3Mbps)

2440MHz_TX

06/06/2019



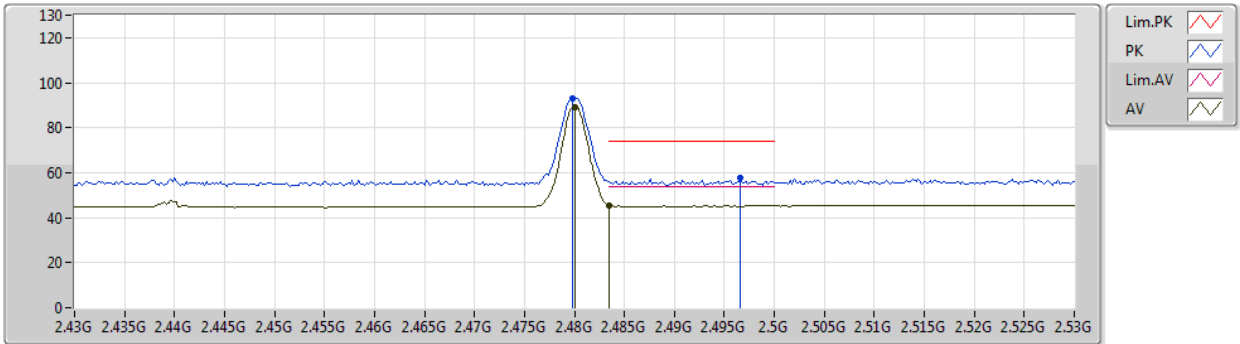
EUT_Z_1TX
Setting 8
02-R-5
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.8801G	51.29	74.00	-22.71	6.90	3	Horizontal	295	1.01	-				
AV	4.87995G	40.11	54.00	-13.89	6.90	3	Horizontal	295	1.01	-				

BT-EDR(3Mbps)

2480MHz_TX

06/06/2019



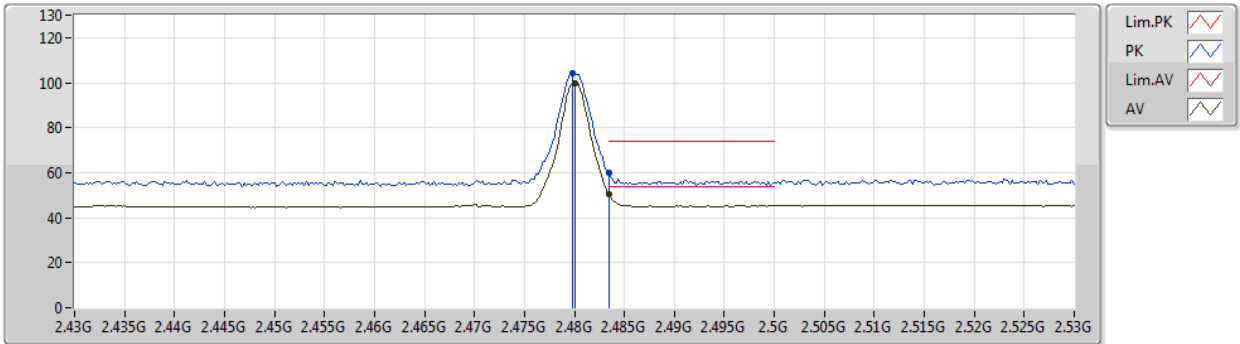
EUT_Z_1TX
Setting 8
06-R-5
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.4798G	93.03	Inf	-Inf	32.40	3	Vertical	319	1.82	-				
AV	2.48G	89.16	Inf	-Inf	32.40	3	Vertical	319	1.82	-				
PK	2.4966G	57.44	74.00	-16.56	32.45	3	Vertical	319	1.82	-				
AV	2.4835G	45.66	54.00	-8.34	32.41	3	Vertical	319	1.82	-				

BT-EDR(3Mbps)

2480MHz_TX

06/06/2019



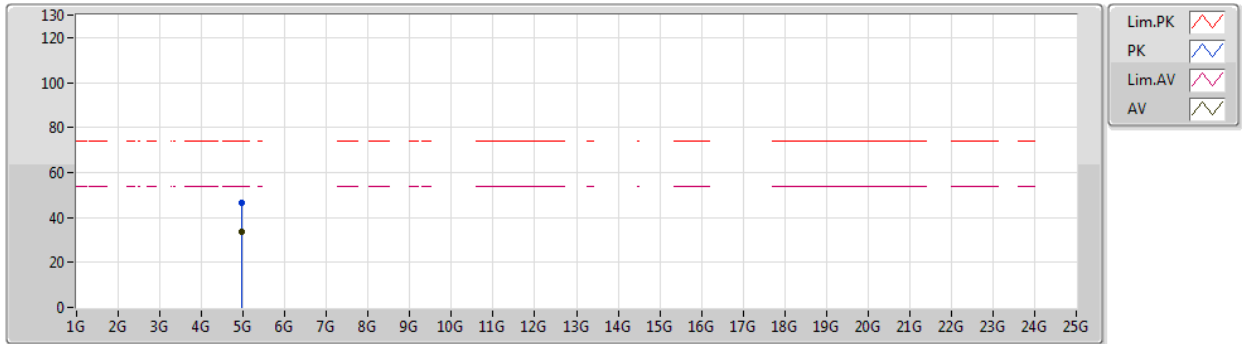
EUT_Z_1TX
Setting 8
06-R-5
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	2.4798G	104.07	Inf	-Inf	32.40	3	Horizontal	70	1.72	-				
AV	2.48G	99.95	Inf	-Inf	32.40	3	Horizontal	70	1.72	-				
PK	2.4835G	59.95	74.00	-14.05	32.41	3	Horizontal	70	1.72	-				
AV	2.4835G	50.49	54.00	-3.51	32.41	3	Horizontal	70	1.72	-				

BT-EDR(3Mbps)

2480MHz_TX

03/06/2019



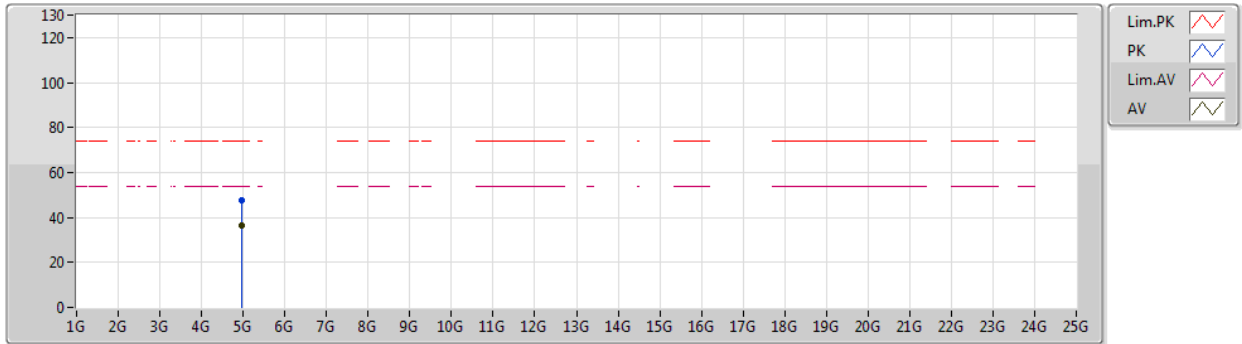
EUT_Z_1TX
Setting 8
02-J-5
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment
PK	4.9602G	46.55	74.00	-27.45	7.48	3	Vertical	321	2.91	-
AV	4.96012G	33.76	54.00	-20.24	7.48	3	Vertical	321	2.91	-

BT-EDR(3Mbps)

2480MHz_TX

03/06/2019



EUT_Z_1TX
Setting 8
02-J-5
FSU(100015)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	4.95996G	47.69	74.00	-26.31	7.48	3	Horizontal	70	2.85	-				
AV	4.95996G	36.31	54.00	-17.69	7.48	3	Horizontal	70	2.85	-				