



FCC RADIO TEST REPORT

FCC ID : TLZ-CM390SM
Equipment : IEEE 802.11a/b/g/n/ac WiFi with Bluetooth 5.0
Combo Stamp Module
Brand Name : AzureWave
Model Name : AW-CM390SM
Applicant : AzureWave Technologies, Inc.
8F., No.94, Baozhong Rd., Xindian Dist., New Taipei
City 23144, Taiwan
Standard : 47 CFR FCC Part 15.247

The product was received on Mar. 12, 2020, and testing was started from Mar. 19, 2020 and completed on Apr. 29, 2020. 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.)



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Appendix I. Test Photos

Photographs of EUT v01



TEL : 886-3-656-9065
FAX : 886-3-656-9085
Report Template No.: CB-A10_5 Ver1.1



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:

- 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.

1.1.2 Antenna Information

Ant.	Port	Brand	P/N	Antenna Type	Connector	Gain (dBi)		
						WLAN		Bluetooth
						2.4GHz	5GHz	
1	1	MAG.LAYERS	MSA-4008-25GC1-A1	PIFA	I-PEX	2.98	5.16	2.98

Note: The above information was declared by manufacturer.

For 2.4GHz function:

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

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

For 5GHz function:

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

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

For Bluetooth function:

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

**1.1.3 Mode Test Duty Cycle**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
BT-BR(1Mbps)	0.77	1.14	2.888m	1k
BT-EDR(2Mbps)	0.754	1.23	2.891m	1k
BT-EDR(3Mbps)	0.765	1.16	2.893m	1k

Note:

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

1.1.4 EUT Operational Condition

EUT Power Type	From host system
Test Software Version	Version 7.45.173(r707987 CY WLTEST)FWID 01-6c82dde4



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

The following reference test guidance is not within the scope of accreditation of TAF.

- ♦ FCC KDB 558074 D01 v05r02
- ♦ FCC KDB 414788 D01 v01r01

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	TH03-CB	Lucas Huangs	22-22.4°C / 45-47%	Mar. 25, 2020~ Mar. 31, 2020
Radiated<Below 1GHz>	03CH04-CB	Stim Sung	21.1-22.7°C / 45-47%	Mar. 25, 2020~ Apr. 29, 2020
Radiated<Above 1GHz>	03CH03-CB	Brian Sun	21.3-22.7°C / 47-49%	Mar. 19, 2020 Mar. 31, 2020
AC Conduction	CO01-CB	Max Lin	23~24°C / 59~60%	Apr. 16, 2020

Test site Designation No. TW0006 with FCC.

Test site registered number IC 4086D 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)	4.3 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	5.1 dB	Confidence levels of 95%
Conducted Emission	2.4 dB	Confidence levels of 95%
Output Power Measurement	1.5 dB	Confidence levels of 95%
Bandwidth Measurement	2%	Confidence levels of 95%



2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
BT-BR(1Mbps)	-
2402MHz	0A
2440MHz	0A
2480MHz	0A
BT-EDR(2Mbps)	-
2402MHz	0A
2440MHz	0A
2480MHz	0A
BT-EDR(3Mbps)	-
2402MHz	0A
2440MHz	0A
2480MHz	0A

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
1	EUT + 2.4GHz + Bluetooth with Ant.
2	EUT + 5GHz + Bluetooth with Ant.
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

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
1	EUT in Z axis + 2.4GHz + Bluetooth with Ant.
2	EUT in Z axis + 5GHz + Bluetooth with Ant.
For operating mode 2 is the worst case and it was record in this test report.	
Operating Mode > 1GHz	CTX
The EUT was performed at X axis, Y axis and Z axis position test, and the worst case was found at X axis So the measurement will follow this same test configuration.	
1	EUT in X axis + Ant.



The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Radiated Emission Co-location
Test Condition	Radiated measurement
Operating Mode	Normal Link
1	EUT in Z axis: Bluetooth+WLAN 2.4GHz
2	EUT in Z axis: Bluetooth+WLAN 5GHz
For operating mode 1 was the worst case and it was record in this test report.	
Refer to Appendix H for Radiated Emission Co-location.	

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	Bluetooth+WLAN 2.4GHz
2	Bluetooth+WLAN 5GHz
Refer to Sporton Test Report No.: FA030609 for Co-location RF Exposure Evaluation.	

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

N/A



2.5 Support Equipment

For AC Conduction:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Fixture	AzureWave	CK77 94V-0	N/A
B	Notebook	DELL	E6430	N/A
C	Earphone	e-Power	S90W	N/A
D	Mouse	HP	FM100	N/A
E	Smart phone	Samsung	Galaxy J2	A3LSMJ200F
F	AP	ASUS	RP-N53	MSQ-RPN53

For Radiated (below 1GHz):

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A
B	WLAN AP	ASUS	RT-AX88U	MSQ-RTAXHP00
C	Smart phone	Samsung	Galaxy J2	A3LSMJ200F
D	Fixture	AzureWave	CK77 94V-0	N/A
E	Earphone	e-Power	S90W	N/A
F	Mouse	HP	FM100	N/A

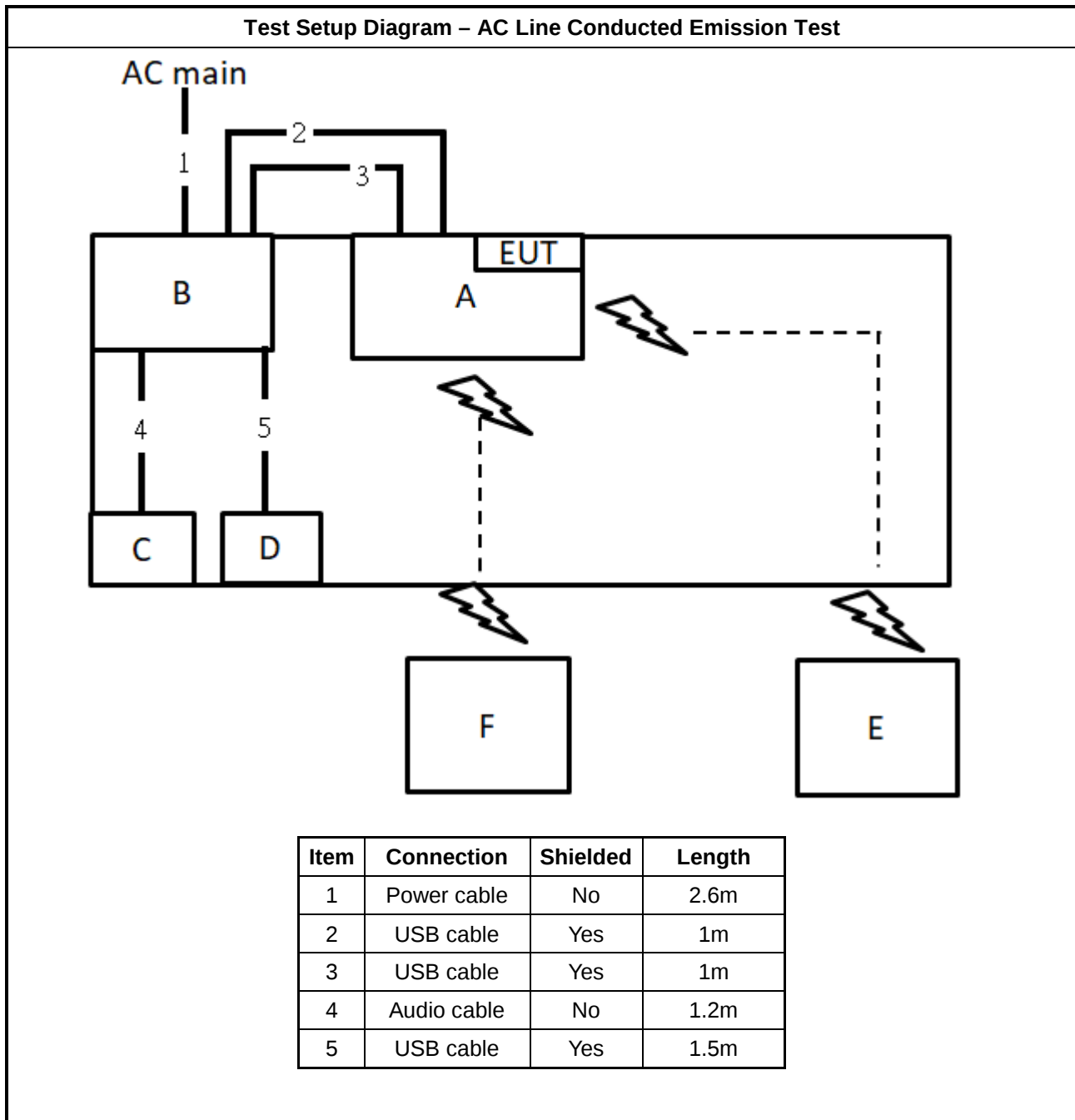
For Radiated (above 1GHz):

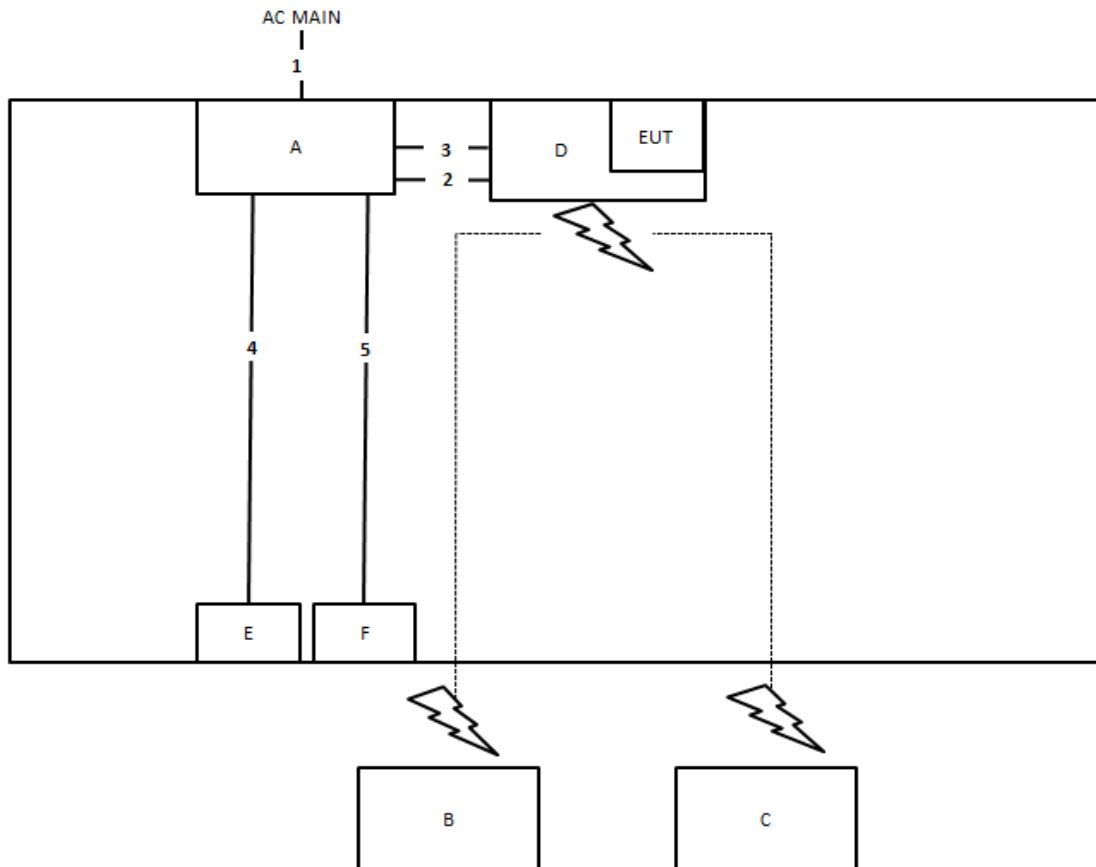
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A
B	Fixture	AzureWave	CK77 94V-0	N/A

For RF Conducted:

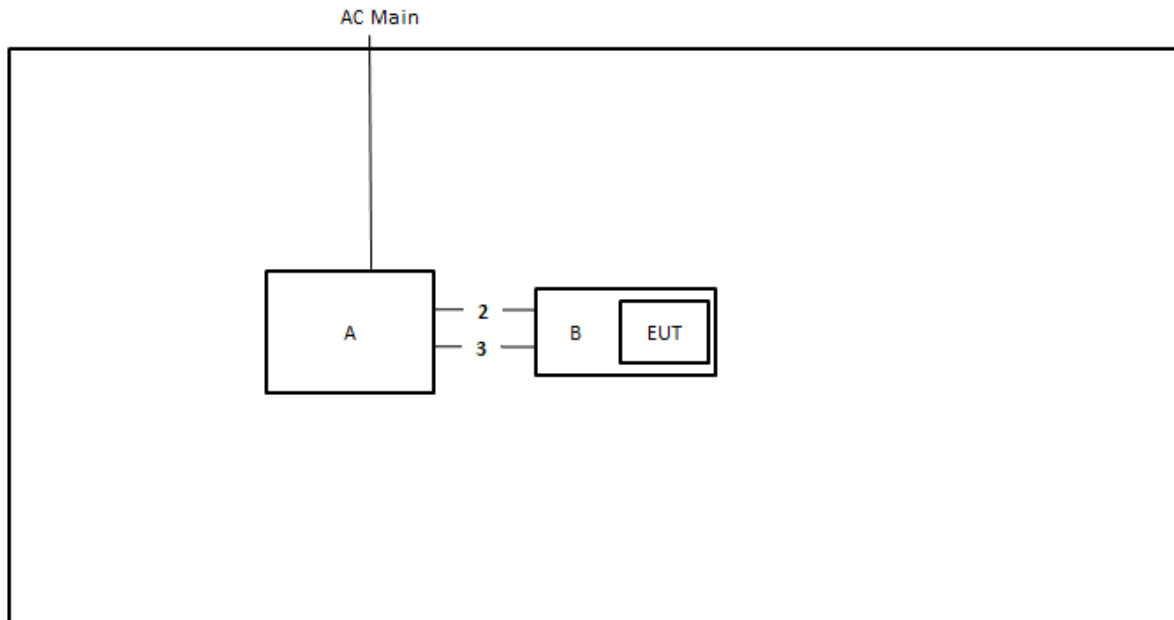
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A
B	Fixture	AzureWave	CK77 94V-0	N/A

2.6 Test Setup Diagram



Test Setup Diagram - Radiated Test < 1GHz


Item	Connection	Shielded	Length
1	Power cable	No	2.6m
2	USB cable	Yes	1m
3	USB cable	Yes	1m
4	Audio cable	No	1.2m
5	USB cable	Yes	1.5m

Test Setup Diagram - Radiated Test > 1GHz


Item	Connection	Shielded	Length
1	USB cable	No	1m
2	USB cable	No	1m



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.

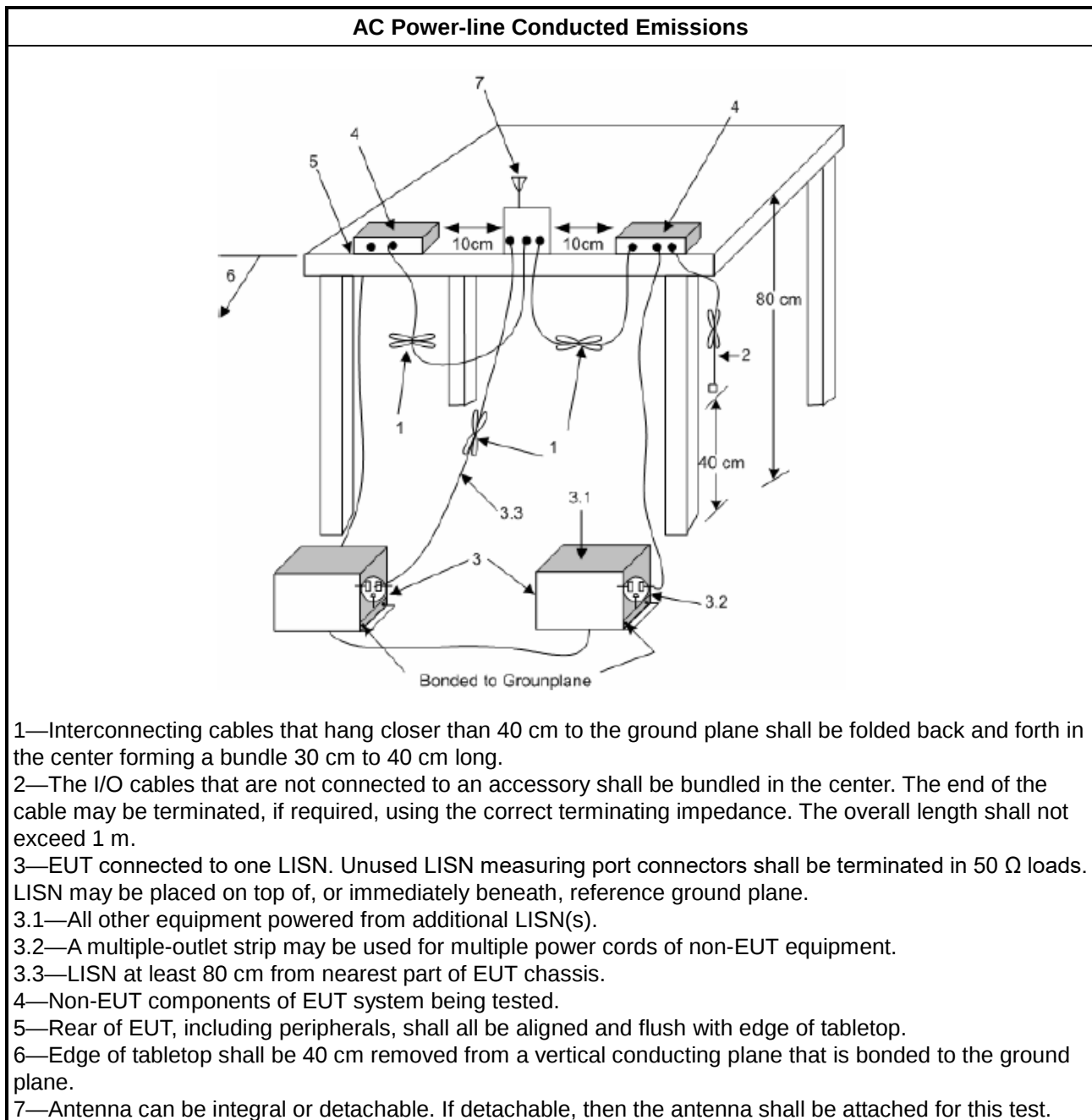
3.1.2 Measuring Instruments

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	

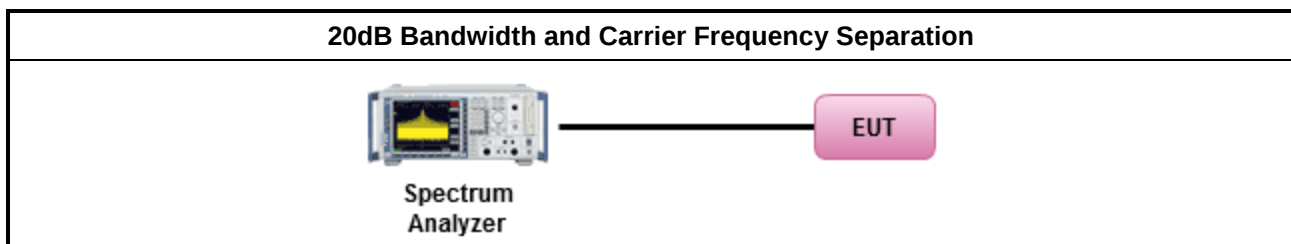
3.2.2 Measuring Instruments

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	

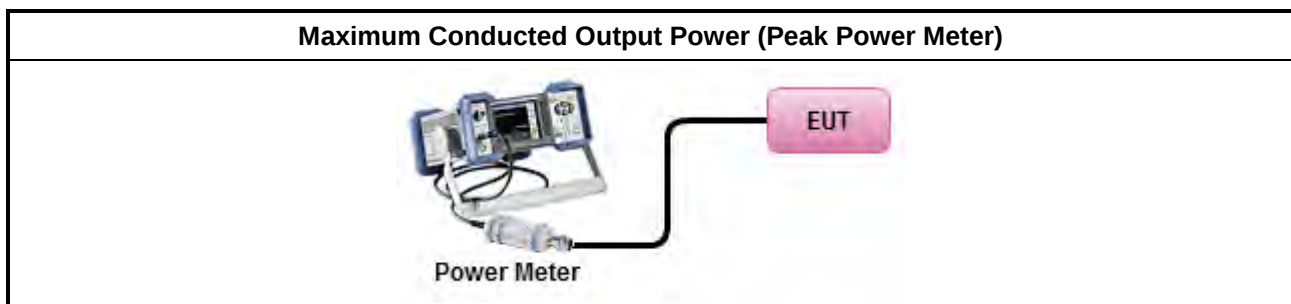
3.3.2 Measuring Instruments

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 $ChS \geq \text{MAX}$ (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	

3.4.2 Hopping Bandedge Limit

Refer clause 3.6.1 and clause 3.7.1

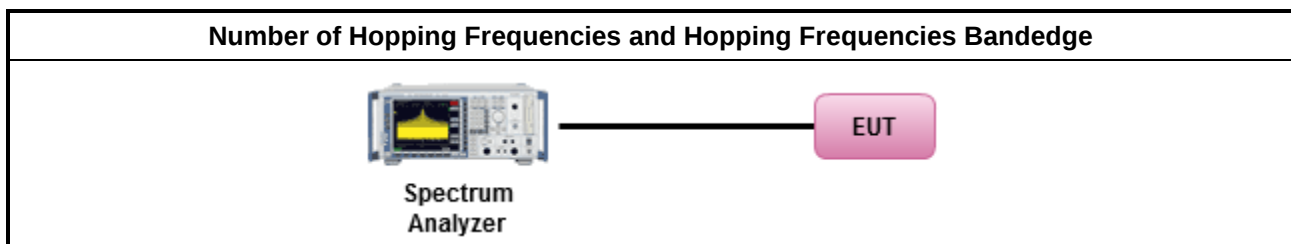
3.4.3 Measuring Instruments

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	

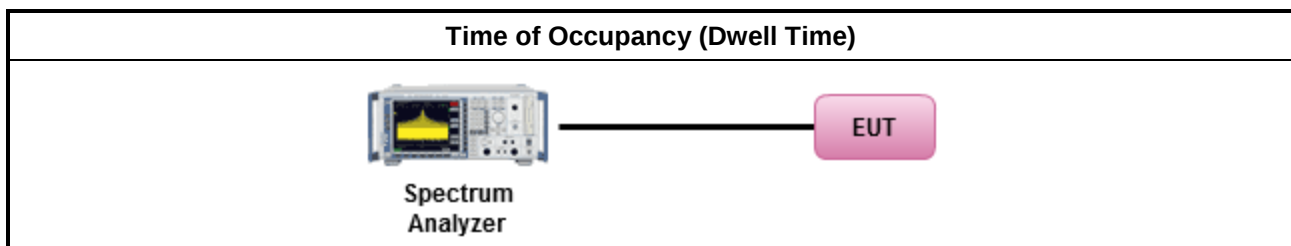
3.5.2 Measuring Instruments

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.	

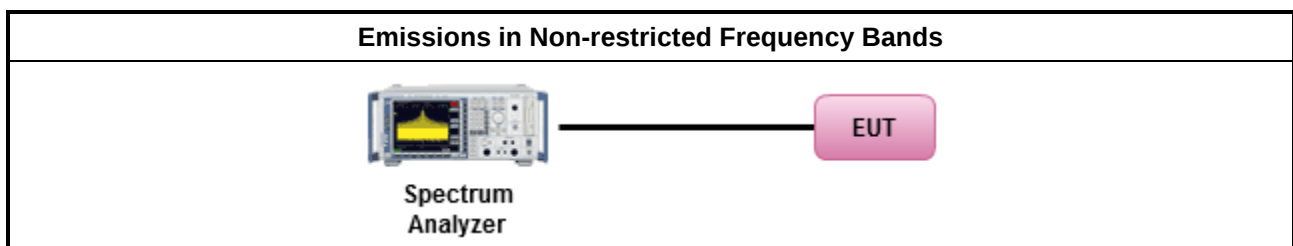
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

Test Method
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.

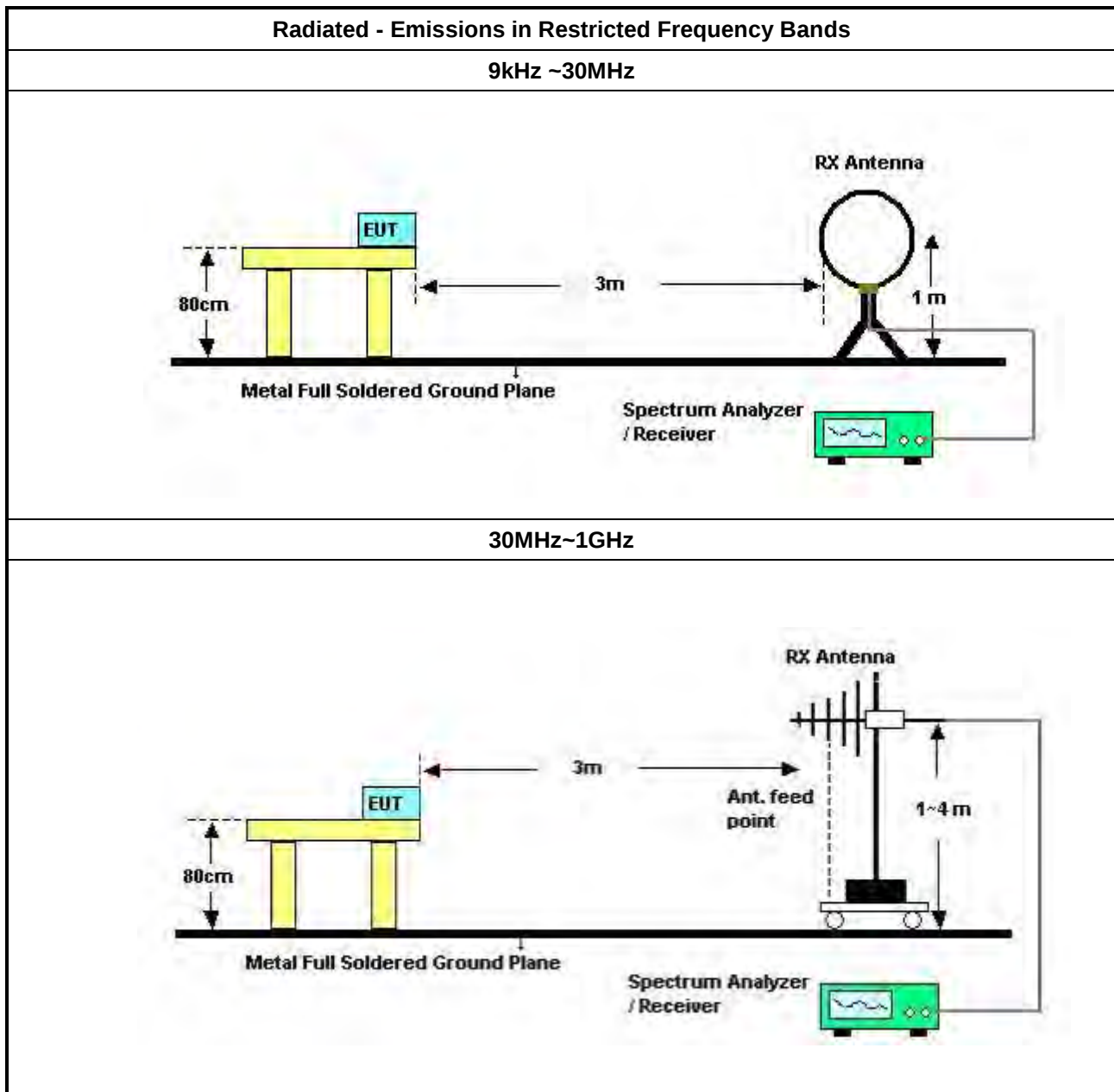
3.7.2 Measuring Instruments

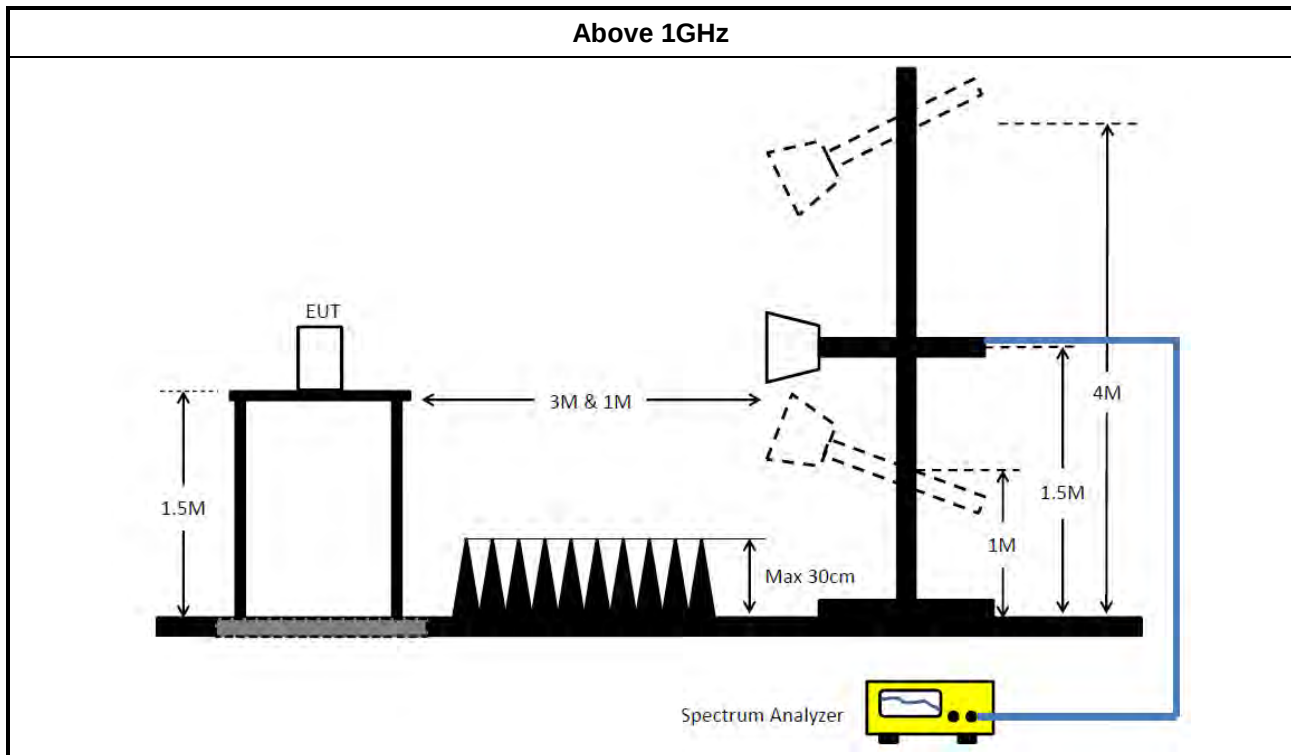
Refer a test equipment and calibration data table in this test report.

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 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)

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to KDB414788 Radiated Test Site, and the result came out very similar.

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

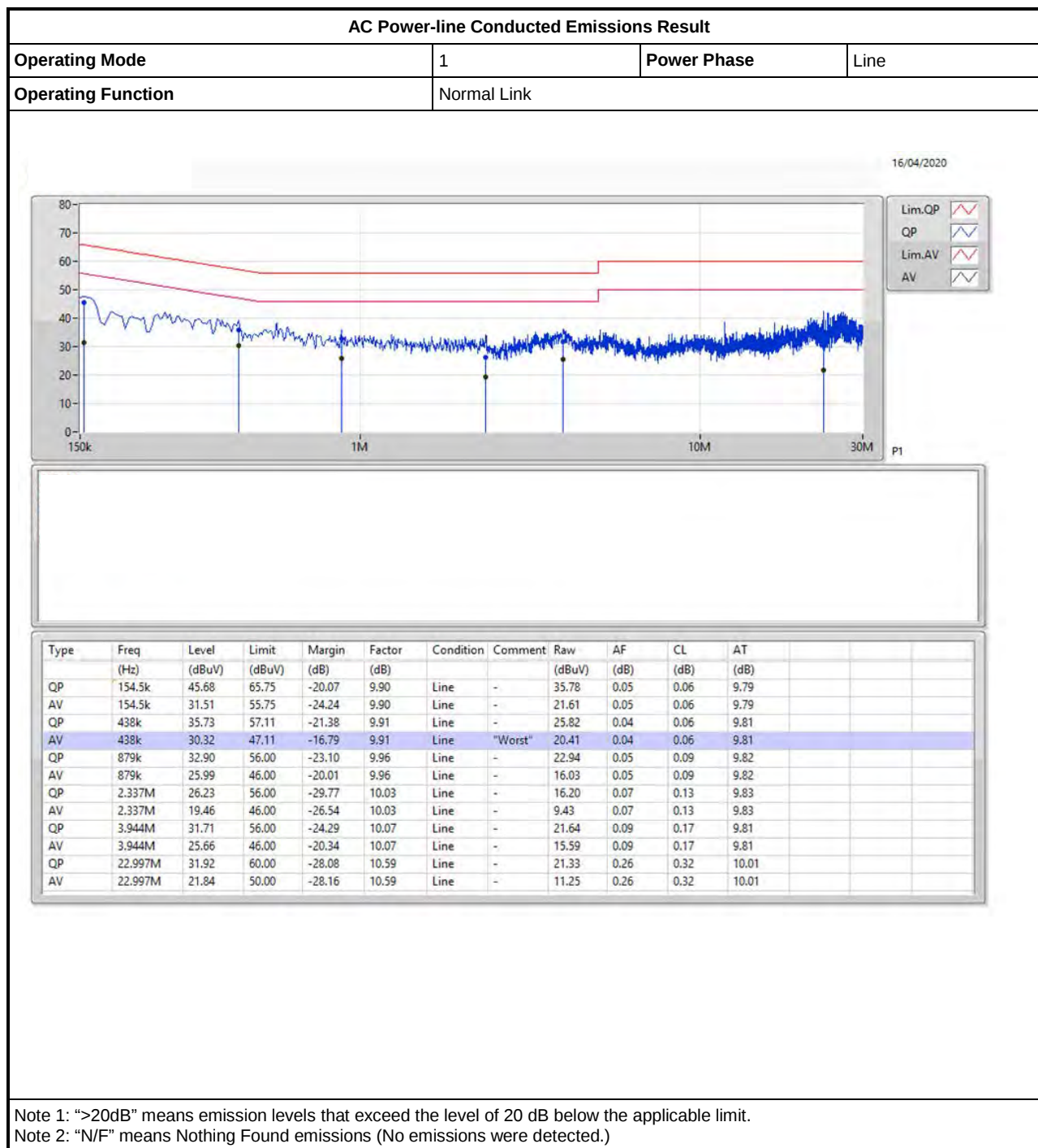
Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.45GHz	Feb. 26, 2020	Feb. 25, 2021	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Dec. 25, 2019	Dec. 24, 2020	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Feb. 25, 2020	Feb. 24, 2021	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)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 29, 2019	Mar. 28, 2020	Radiation (03CH04-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Apr. 13, 2020	Apr. 12, 2021	Radiation (03CH04-CB)
BILOG ANTENNA with 6 dB attenuator	Schaffner & EMCI	CBL6112B & N-6-06	22021&AT-N06 07	30MHz ~ 1GHz	Oct. 12, 2019	Oct. 11, 2020	Radiation (03CH04-CB)
Pre-Amplifier	Agilent	310N	187291	0.1MHz ~ 1GHz	Mar. 19, 2020	Mar. 18, 2021	Radiation (03CH04-CB)
Spectrum Analyzer	R&S	FSP40	100142	9kHz~40GHz	Dec. 18, 2019	Dec. 17, 2020	Radiation (03CH04-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	May 15, 2019	May 14, 2020	Radiation (03CH04-CB)
RF Cable-low	Woken	RG402	Low Cable-03+22	30MHz ~ 1GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH04-CB)
Horn Antenna	ETS • Lindgren	3115	6821	750MHz~18GHz	Jan. 20, 2020	Jan. 19, 2021	Radiation (03CH03-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jun. 27, 2019	Jun. 26, 2020	Radiation (03CH03-CB)
Pre-Amplifier	Agilent	8449B	3008A02097	1GHz ~ 26.5GHz	Dec. 19, 2019	Dec. 18, 2020	Radiation (03CH03-CB)
Pre-Amplifier	MITEQ	TTA1840-35-H G	1864479	18GHz ~ 40GHz	Jul. 03, 2019	Jul. 02, 2020	Radiation (03CH03-CB)
Spectrum Analyzer	R&S	FSP40	100019	9kHz ~ 40GHz	Jun. 19, 2019	Jun. 18, 2020	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-20+27	1GHz ~ 18GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH03-CB)

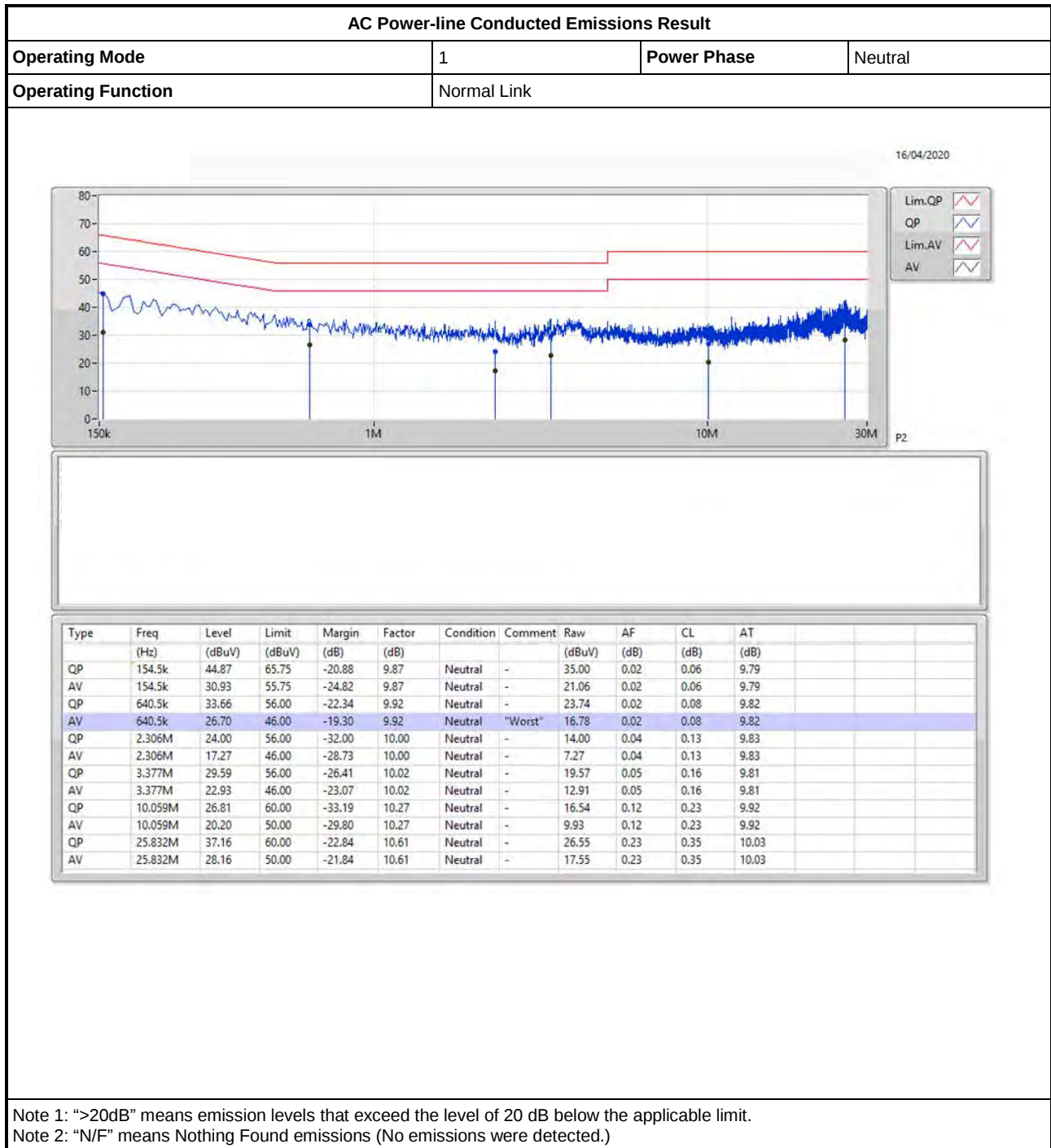


Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-27	1GHz ~ 18GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH03-CB)
Spectrum analyzer	R&S	FSV40	101028	9kHz~40GHz	Nov. 01, 2019	Oct. 31, 2020	Conducted (TH03-CB)
Power Sensor	Anritsu	MA2411B	1726195	300MHz~40GHz	Aug. 13, 2019	Aug. 12, 2020	Conducted (TH03-CB)
Power Meter	Anritsu	ML2495A	1035008	300MHz~40GHz	Aug. 13, 2019	Aug. 12, 2020	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-11	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-12	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-13	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-14	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-15	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 06, 2020	Conducted (TH03-CB)

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

NCR 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)	922.5k	899.55k	900KF1D	917.5k	897.051k
BT-EDR(2Mbps)	1.328M	1.217M	1M22G1D	1.325M	1.216M
BT-EDR(3Mbps)	1.335M	1.222M	1M22G1D	1.314M	1.221M

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;

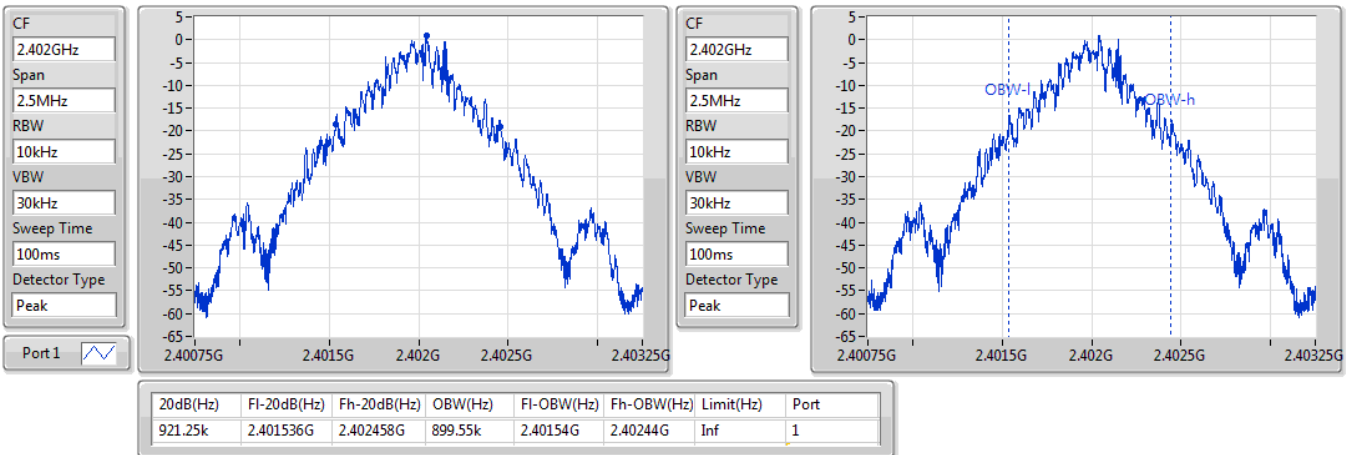
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	Inf	921.25k	899.55k
2440MHz	Pass	Inf	922.5k	897.051k
2480MHz	Pass	Inf	917.5k	897.051k
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.328M	1.217M
2440MHz	Pass	Inf	1.325M	1.217M
2480MHz	Pass	Inf	1.326M	1.216M
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.315M	1.222M
2440MHz	Pass	Inf	1.314M	1.222M
2480MHz	Pass	Inf	1.335M	1.221M

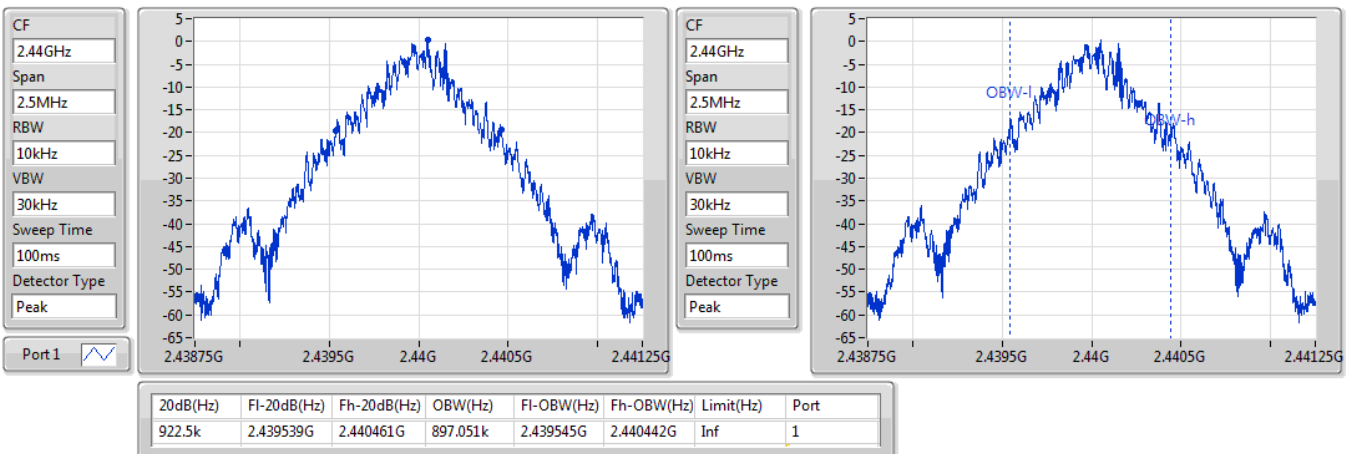
Port X-N dB = Port X 20dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

BT-BR(1Mbps)
2402MHz
EBW

26/03/2020

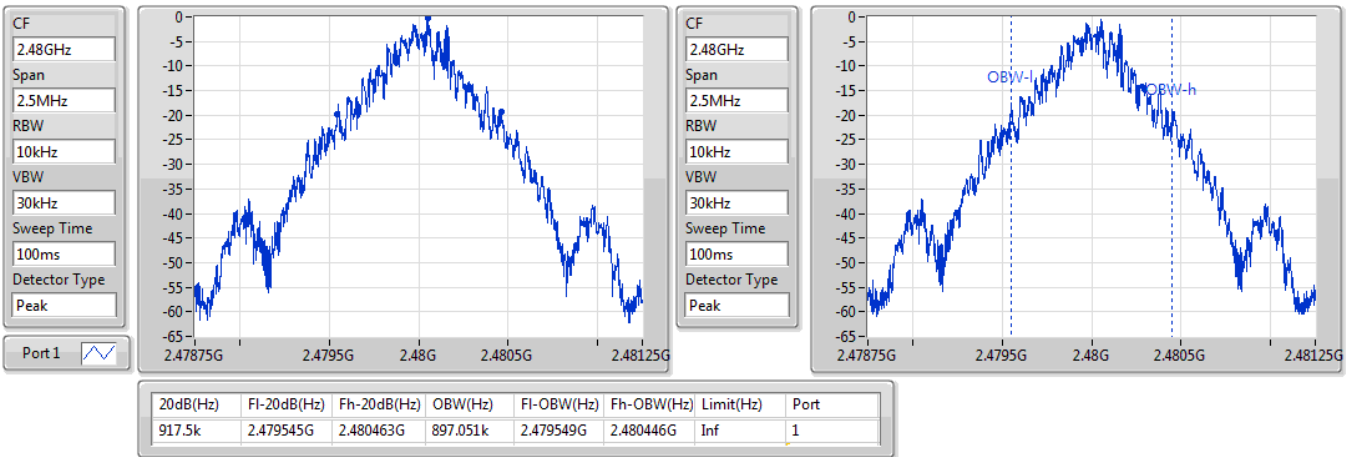

BT-BR(1Mbps)
2440MHz
EBW

26/03/2020

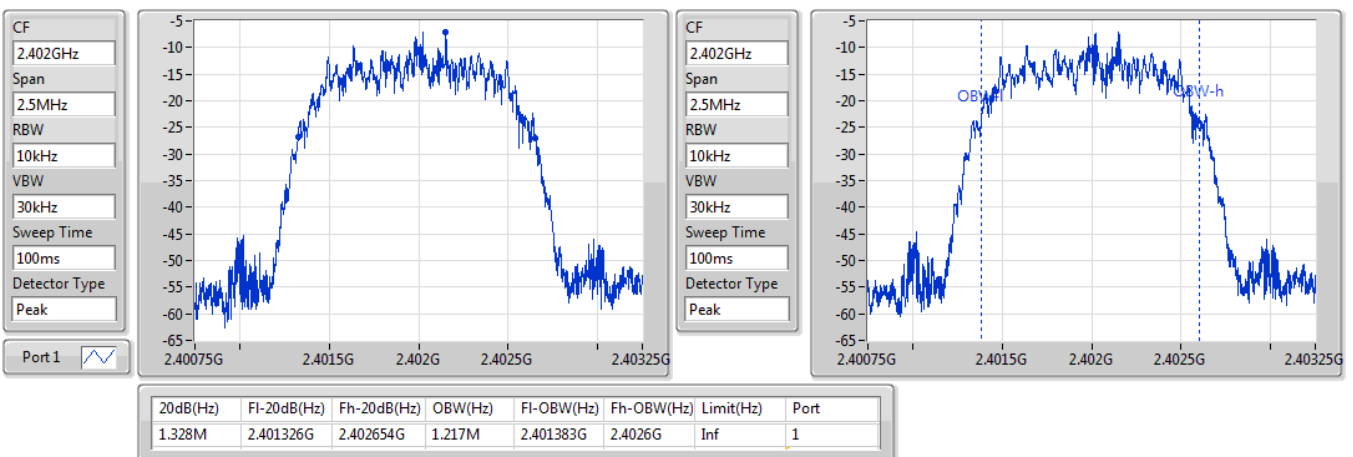


BT-BR(1Mbps)
EBW
2480MHz

26/03/2020

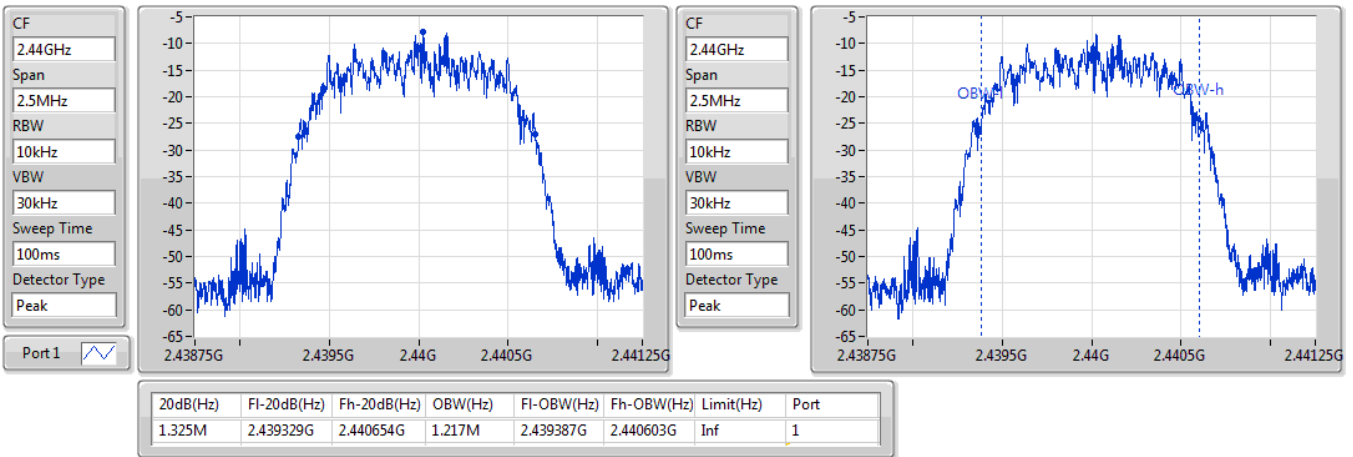

BT-EDR(2Mbps)
EBW
2402MHz

26/03/2020

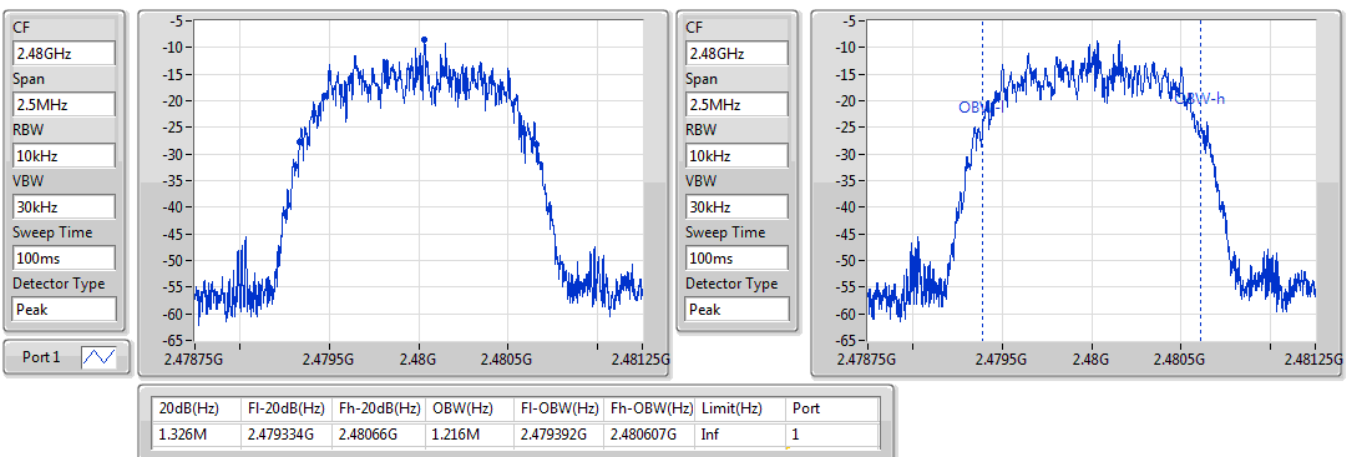


BT-EDR(2Mbps)
EBW
2440MHz

26/03/2020

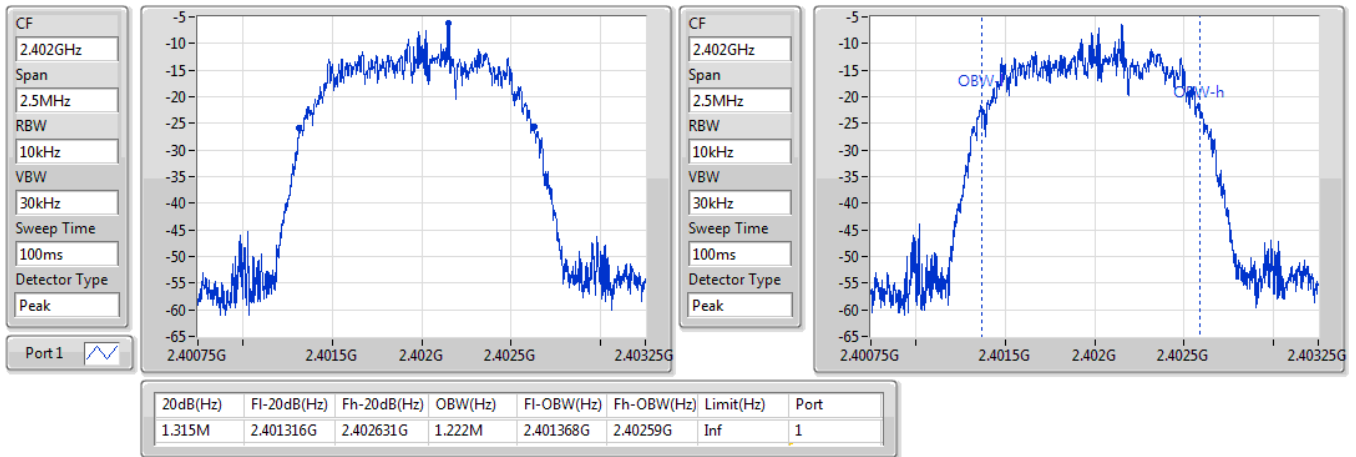

BT-EDR(2Mbps)
EBW
2480MHz

26/03/2020

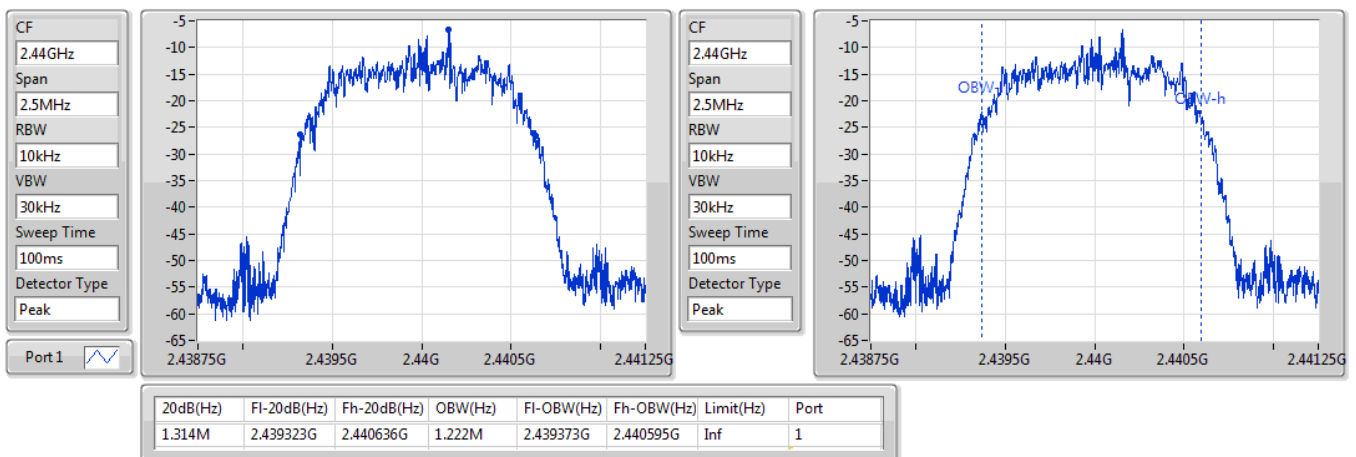


BT-EDR(3Mbps)
EBW
2402MHz

26/03/2020


BT-EDR(3Mbps)
EBW
2440MHz

26/03/2020

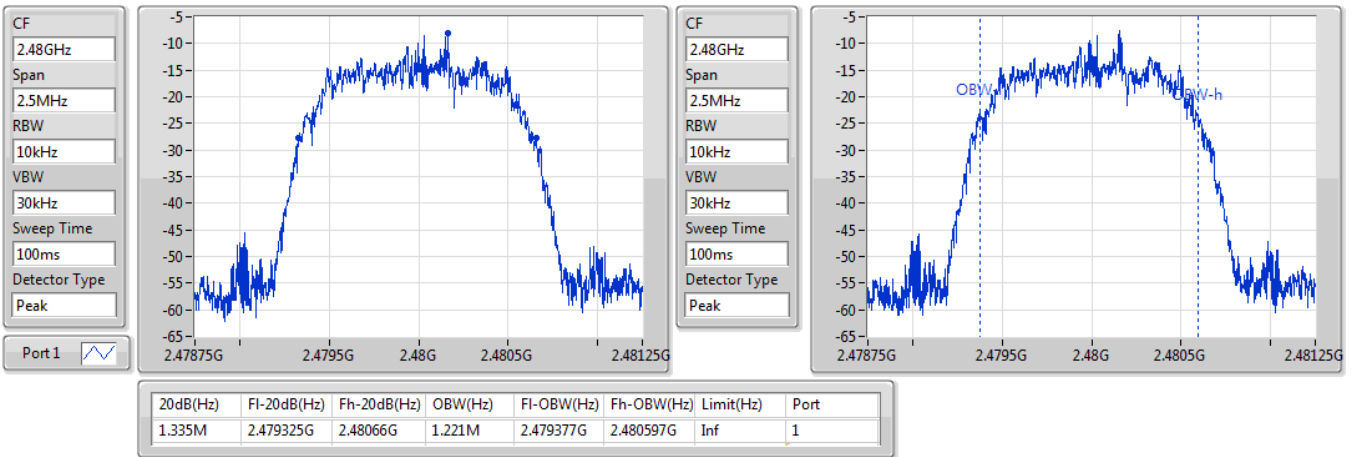


BT-EDR(3Mbps)

2480MHz

EBW

26/03/2020





Summary

Mode	Max-Space (Hz)	Min-Space (Hz)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	1.0005M	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	2.402148G	2.403147G	999k	613.5525k
2440MHz	Pass	2.440151G	2.441151G	1.0005M	614.385k
2480MHz	Pass	2.479155G	2.480154G	999k	611.055k
BT-EDR(2Mbps)	-	-	-	-	-
2402MHz	Pass	2.402148G	2.40315G	1.002M	884.448k
2440MHz	Pass	2.440154G	2.441153G	999k	882.45k
2480MHz	Pass	2.479157G	2.480159G	1.002M	883.116k
BT-EDR(3Mbps)	-	-	-	-	-
2402MHz	Pass	2.402146G	2.403145G	999k	875.79k
2440MHz	Pass	2.440151G	2.44115G	999k	875.124k
2480MHz	Pass	2.479155G	2.480156G	1.0005M	889.11k

BT-BR(1Mbps)

2.402G/2.403GHz

Channel Separation



BT-BR(1Mbps)

2.44G/2.441GHz

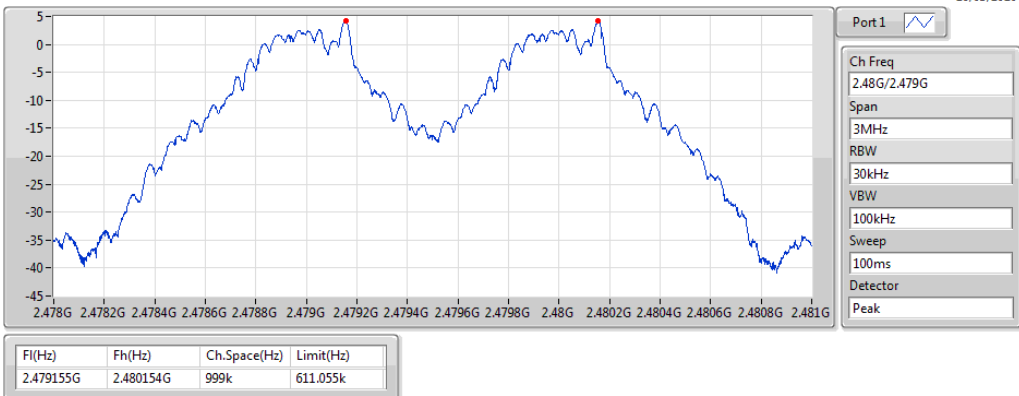
Channel Separation



BT-BR(1Mbps)

2.48G/2.479GHz

Channel Separation

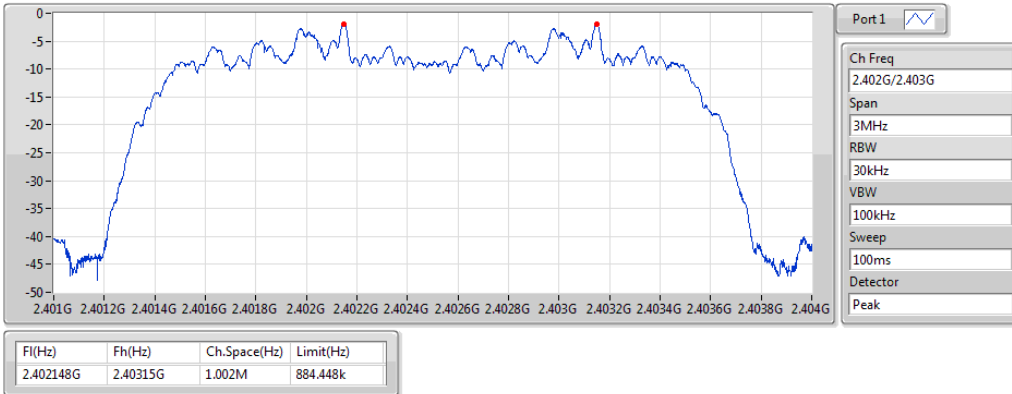


BT-EDR(2Mbps)

2.402G/2.403GHz

Channel Separation

26/03/2020

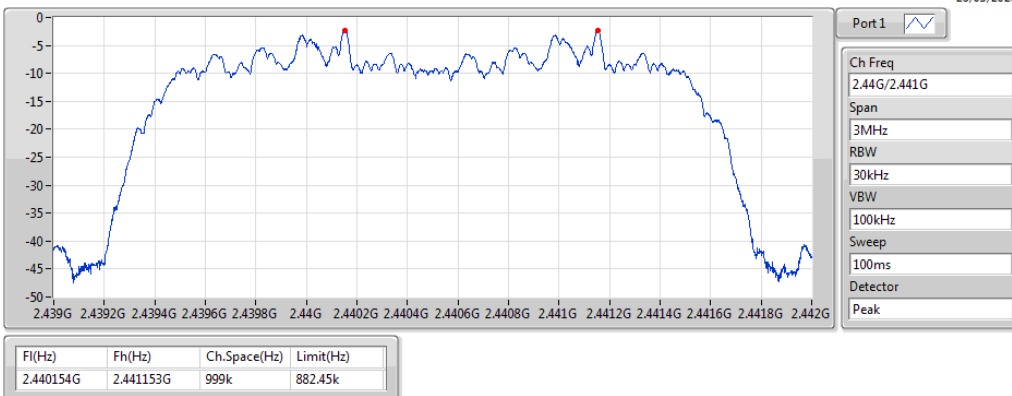


BT-EDR(2Mbps)

2.44G/2.441GHz

Channel Separation

26/03/2020

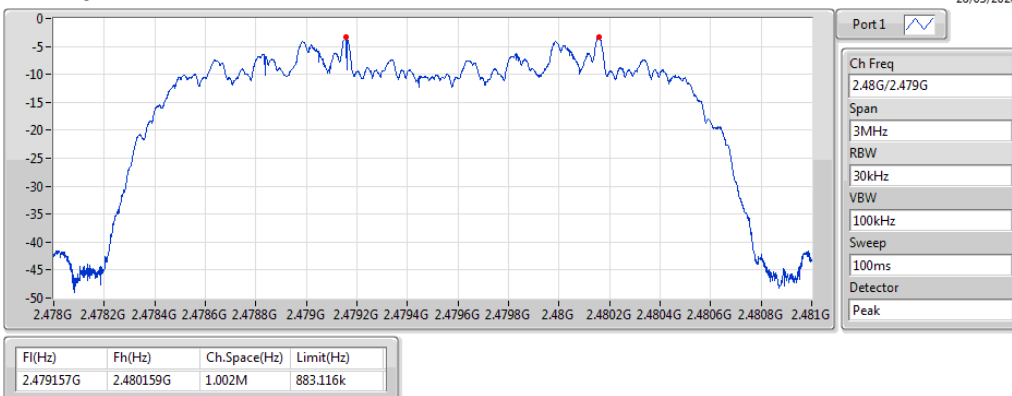


BT-EDR(2Mbps)

2.48G/2.479GHz

Channel Separation

26/03/2020

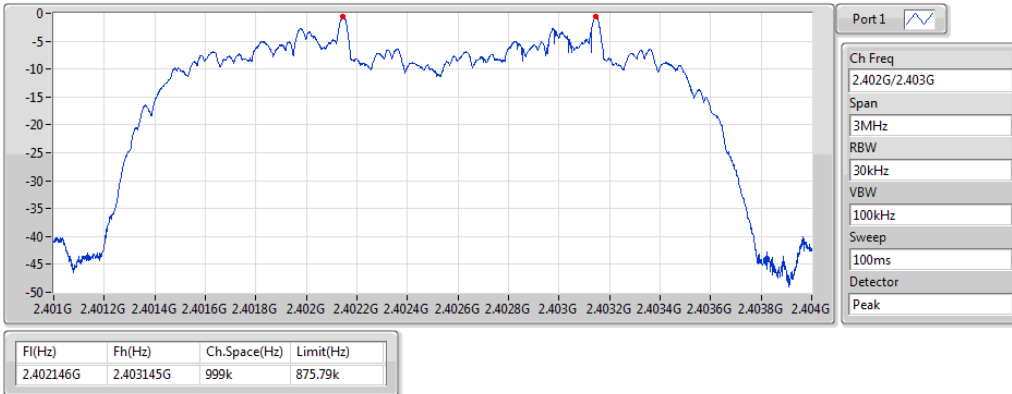


BT-EDR(3Mbps)

2.402G/2.403GHz

Channel Separation

26/03/2020



BT-EDR(3Mbps)

2.44G/2.441GHz

Channel Separation

26/03/2020



BT-EDR(3Mbps)

2.48G/2.479GHz

Channel Separation

26/03/2020





Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	8.57	0.00719
BT-EDR(2Mbps)	3.23	0.00210
BT-EDR(3Mbps)	3.28	0.00213

**Result**

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	2.98	8.57	21.00
2440MHz	Pass	2.98	8.35	21.00
2480MHz	Pass	2.98	8.02	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	2.98	3.23	21.00
2440MHz	Pass	2.98	3.01	21.00
2480MHz	Pass	2.98	2.40	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	2.98	3.28	21.00
2440MHz	Pass	2.98	3.00	21.00
2480MHz	Pass	2.98	2.43	21.00

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



Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	8.61	0.00726
BT-EDR(2Mbps)	5.52	0.00356
BT-EDR(3Mbps)	5.88	0.00387

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	2.98	8.61	21.00
2440MHz	Pass	2.98	8.32	21.00
2480MHz	Pass	2.98	7.97	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	2.98	5.52	21.00
2440MHz	Pass	2.98	5.21	21.00
2480MHz	Pass	2.98	4.56	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	2.98	5.88	21.00
2440MHz	Pass	2.98	5.63	21.00
2480MHz	Pass	2.98	5.00	21.00

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

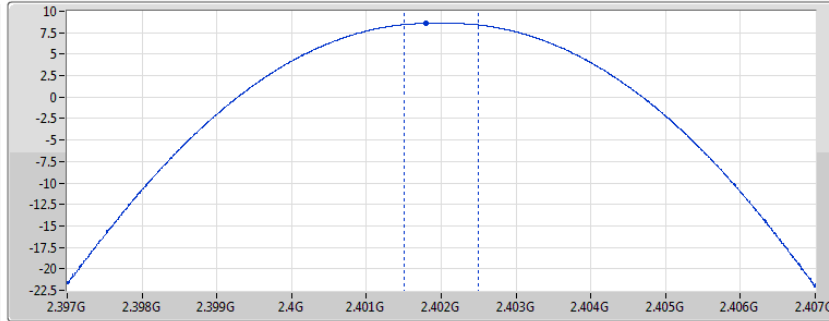
BT-BR(1Mbps)

PK Power

2402MHz

31/03/2020

CF
2.402GHz
Span
10MHz
RBW
3MHz
VBW
10MHz
Sweep Time
20ms
Detector Type
Peak
CP BW
NaNHz



Port1

Sum=Total Power
PX=Port X

Sum(dBm)	P1(dBm)
8.61	8.61

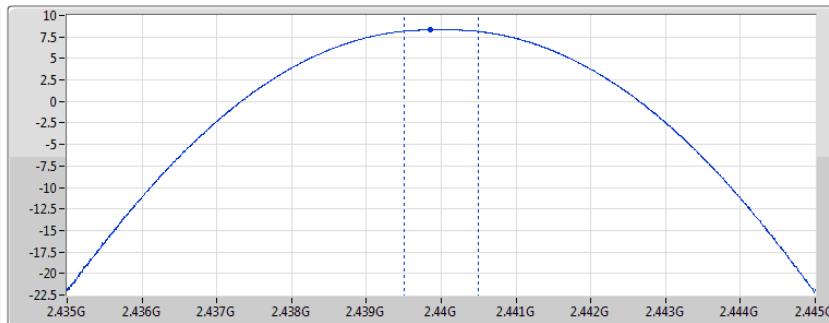
BT-BR(1Mbps)

PK Power

2440MHz

31/03/2020

CF
2.44GHz
Span
10MHz
RBW
3MHz
VBW
10MHz
Sweep Time
20ms
Detector Type
Peak
CP BW
NaNHz



Port1

Sum=Total Power
PX=Port X

Sum(dBm)	P1(dBm)
8.32	8.32

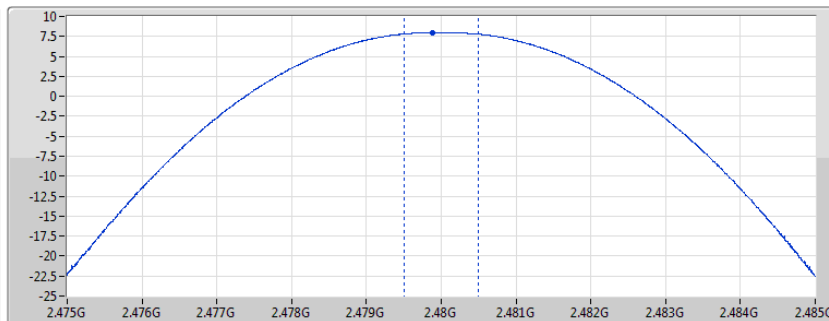
BT-BR(1Mbps)

PK Power

2480MHz

31/03/2020

CF
2.48GHz
Span
10MHz
RBW
3MHz
VBW
10MHz
Sweep Time
20ms
Detector Type
Peak
CP BW
NaNHz



Port1

Sum=Total Power
PX=Port X

Sum(dBm)	P1(dBm)
7.97	7.97

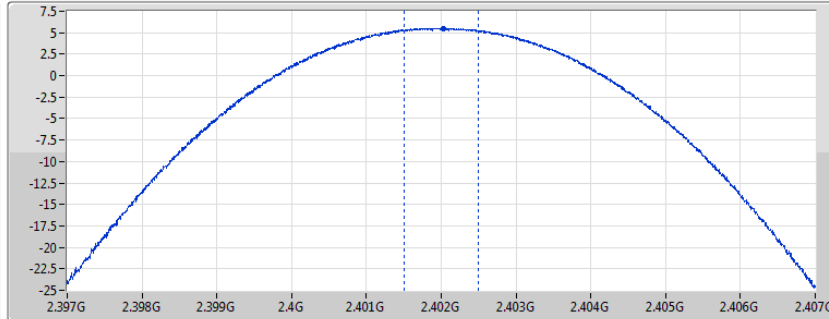
BT-EDR(2Mbps)

PK Power

2402MHz

31/03/2020

CF
2.402GHz
Span
10MHz
RBW
3MHz
VBW
10MHz
Sweep Time
20ms
Detector Type
Peak
CP BW
NaNHz



Port1

Sum=Total Power
PX=Port X

Sum(dBm)	P1(dBm)
5.52	5.52

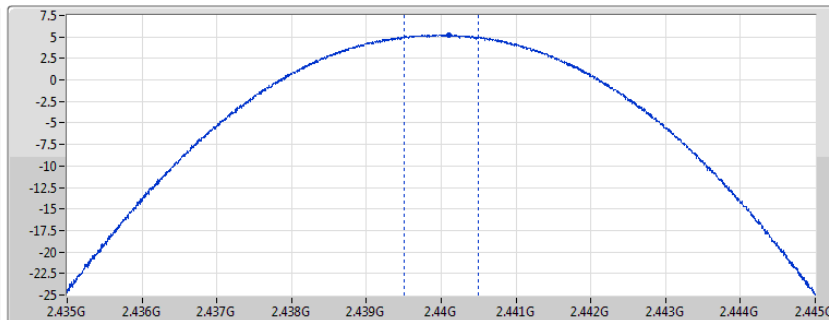
BT-EDR(2Mbps)

PK Power

2440MHz

31/03/2020

CF
2.44GHz
Span
10MHz
RBW
3MHz
VBW
10MHz
Sweep Time
20ms
Detector Type
Peak
CP BW
NaNHz



Port1

Sum=Total Power
PX=Port X

Sum(dBm)	P1(dBm)
5.21	5.21

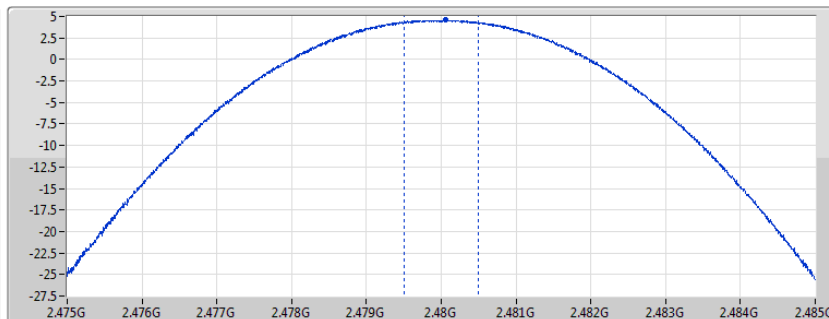
BT-EDR(2Mbps)

PK Power

2480MHz

31/03/2020

CF
2.48GHz
Span
10MHz
RBW
3MHz
VBW
10MHz
Sweep Time
20ms
Detector Type
Peak
CP BW
NaNHz



Port1

Sum=Total Power
PX=Port X

Sum(dBm)	P1(dBm)
4.56	4.56

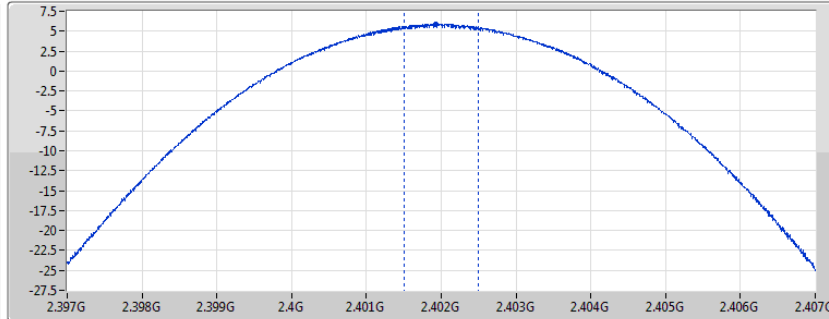
BT-EDR(3Mbps)

PK Power

2402MHz

31/03/2020

CF
2.402GHz
Span
10MHz
RBW
3MHz
VBW
10MHz
Sweep Time
20ms
Detector Type
Peak
CP BW
NaNHz



Port1

Sum=Total Power
PX=Port X

Sum(dBm)	P1(dBm)
5.88	5.88

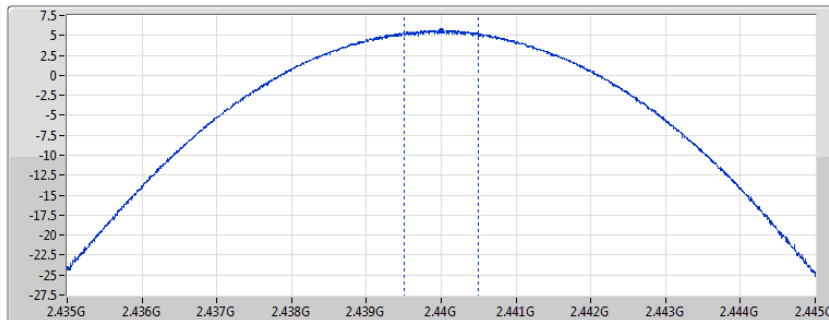
BT-EDR(3Mbps)

PK Power

2440MHz

31/03/2020

CF
2.44GHz
Span
10MHz
RBW
3MHz
VBW
10MHz
Sweep Time
20ms
Detector Type
Peak
CP BW
NaNHz



Port1

Sum=Total Power
PX=Port X

Sum(dBm)	P1(dBm)
5.63	5.63

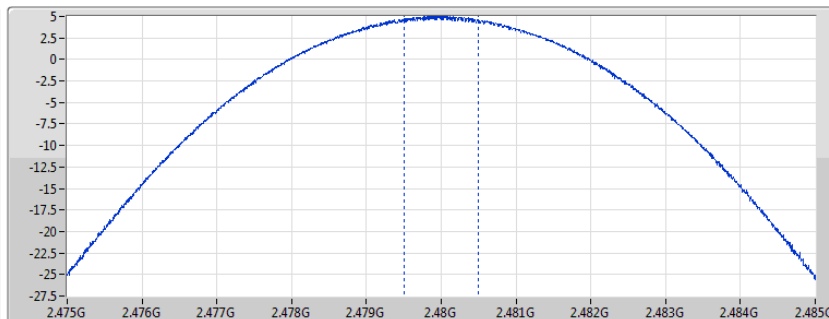
BT-EDR(3Mbps)

PK Power

2480MHz

31/03/2020

CF
2.48GHz
Span
10MHz
RBW
3MHz
VBW
10MHz
Sweep Time
20ms
Detector Type
Peak
CP BW
NaNHz



Port1

Sum=Total Power
PX=Port X

Sum(dBm)	P1(dBm)
5.00	5.00



Summary

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

Result

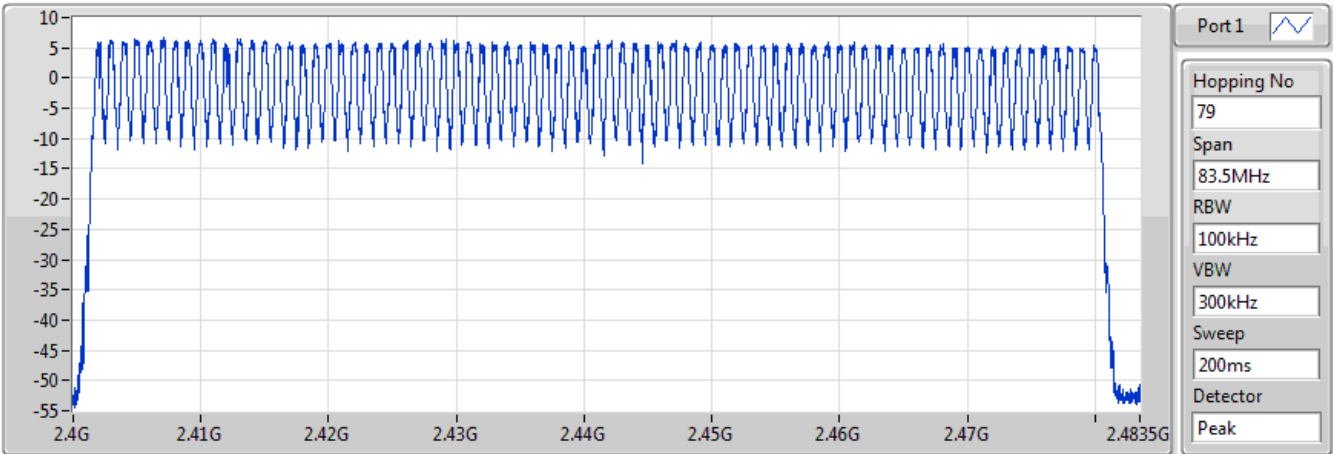
Mode	Result	Hopping No	Limit
BT-BR(1Mbps)	-	-	-
2440MHz	Pass	79	15
BT-EDR(2Mbps)	-	-	-
2440MHz	Pass	79	15
BT-EDR(3Mbps)	-	-	-
2440MHz	Pass	79	15

BT-BR(1Mbps)

2440MHz

Hopping Ch

26/03/2020



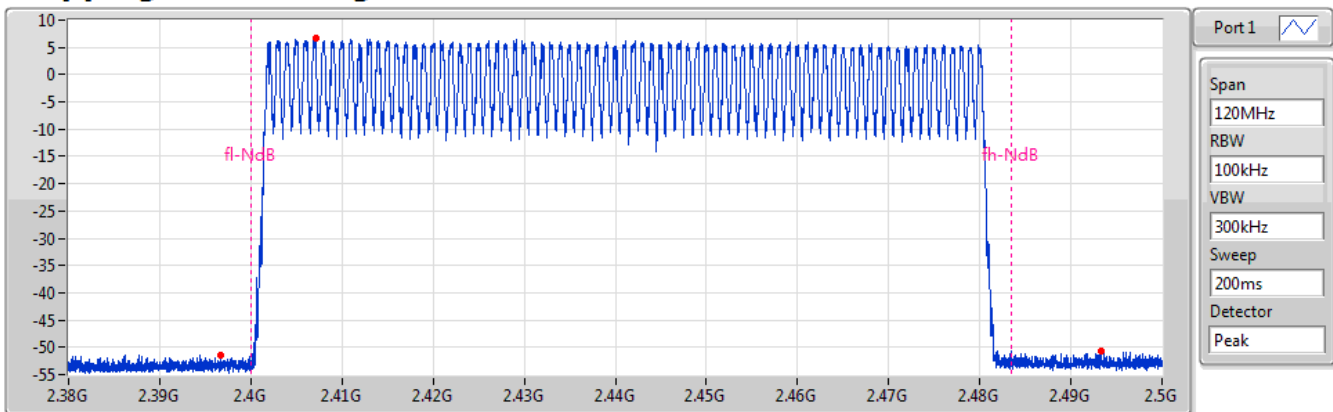
Hopping No	Limit
79	15

BT-BR(1Mbps)

2440MHz

Hopping Ch Bandedge (Non-restricted Band)

26/03/2020



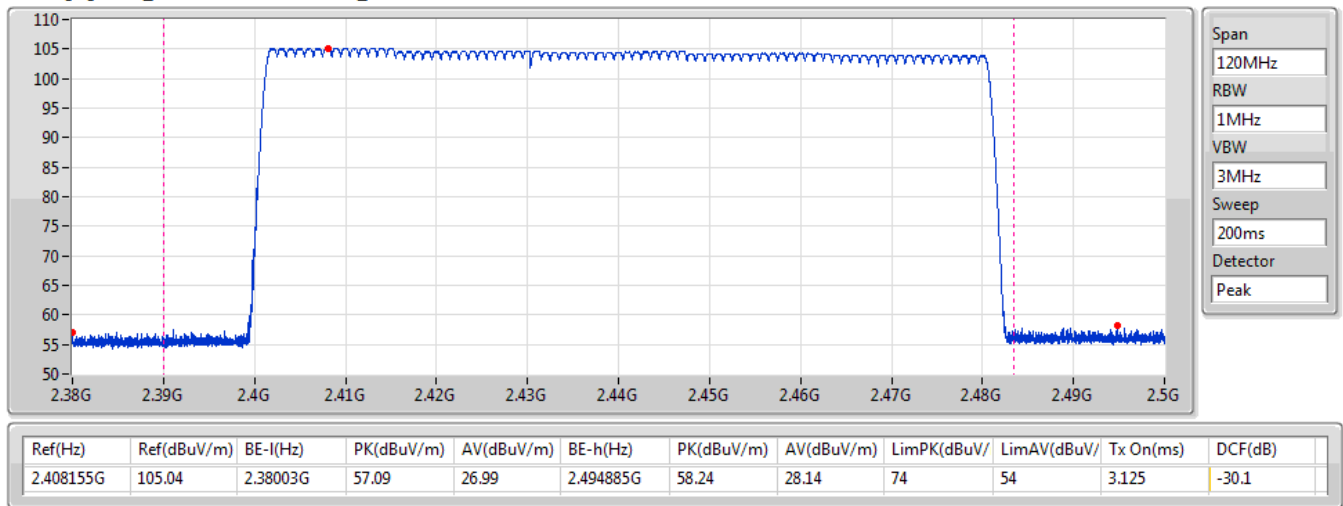
Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-13.42	2.40712G	6.58	2.39674G	-51.48	2.493325G	-50.78

BT-BR(1Mbps)

2440MHz

Hopping Ch Bandedge (Restricted Band)

26/03/2020

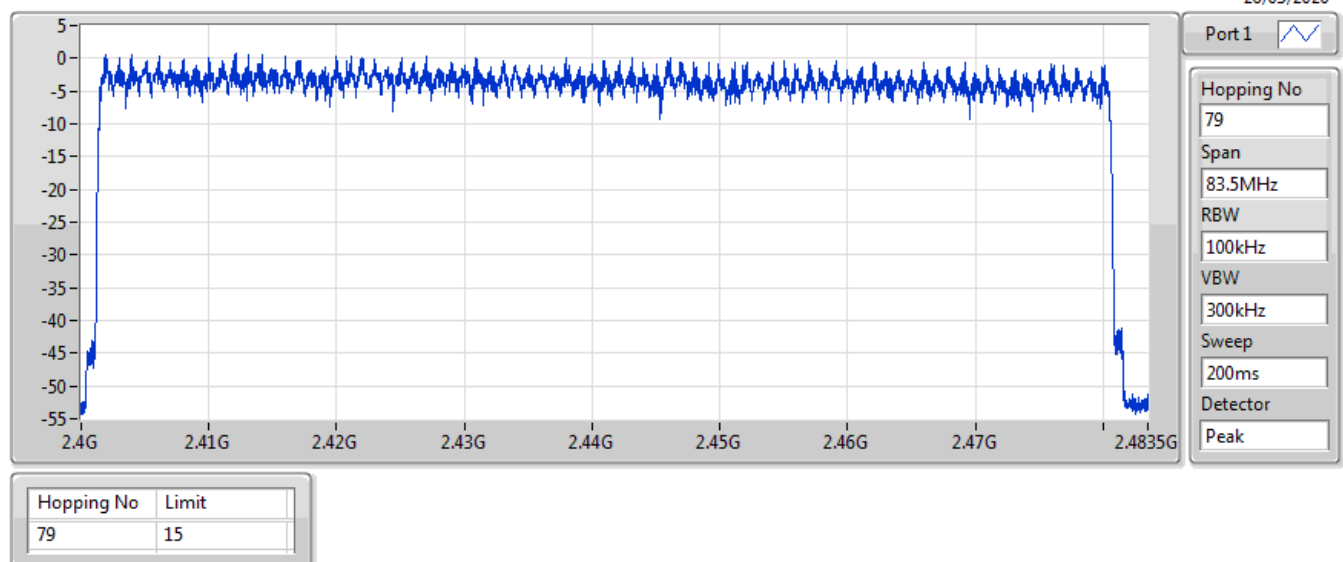


BT-EDR(2Mbps)

2440MHz

Hopping Ch

26/03/2020

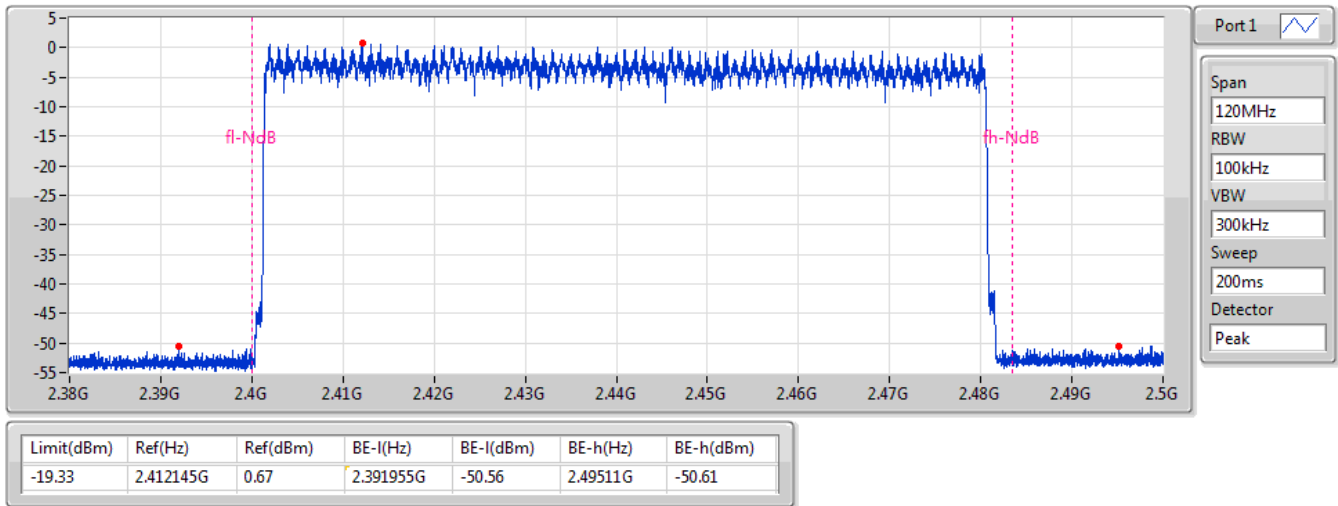


BT-EDR(2Mbps)

2440MHz

Hopping Ch Bandedge (Non-restricted Band)

26/03/2020

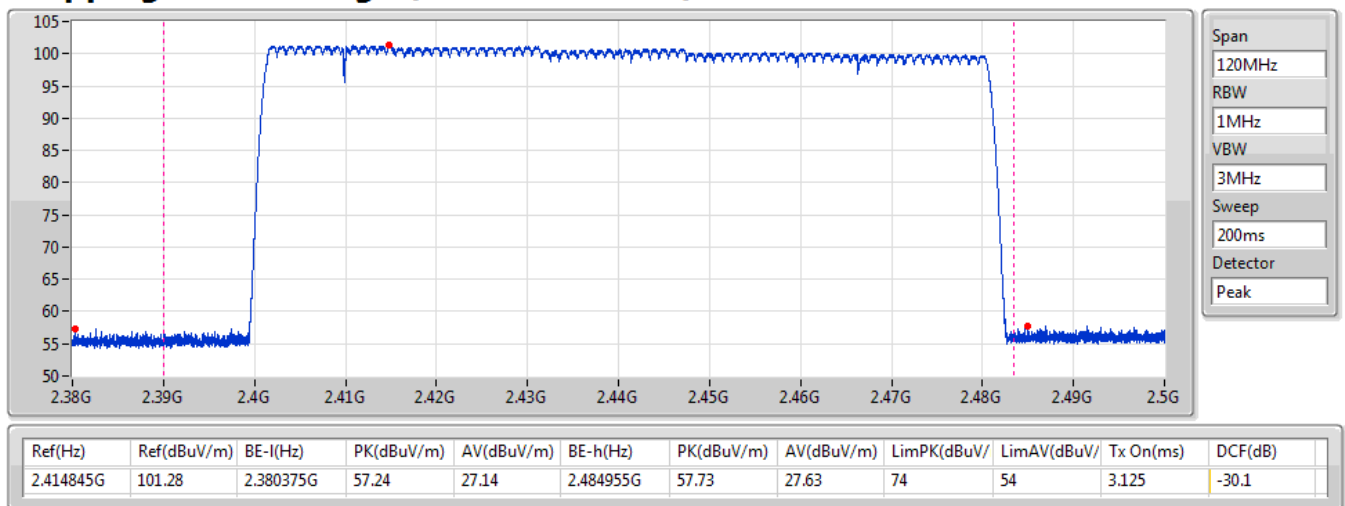


BT-EDR(2Mbps)

2440MHz

Hopping Ch Bandedge (Restricted Band)

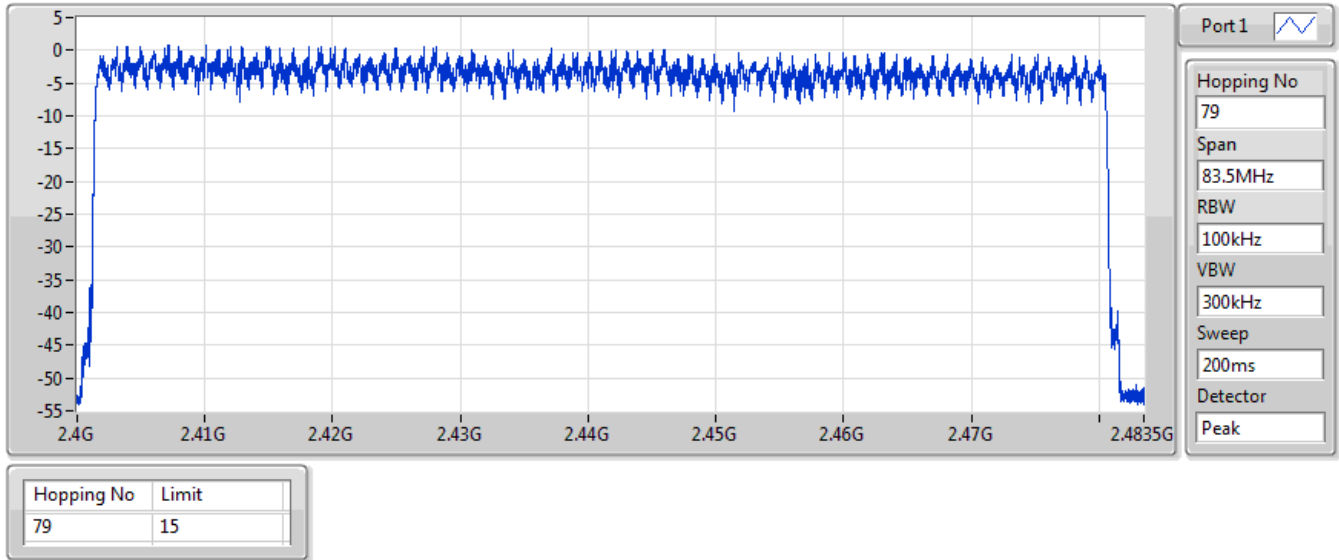
26/03/2020



BT-EDR(3Mbps) 2440MHz

Hopping Ch

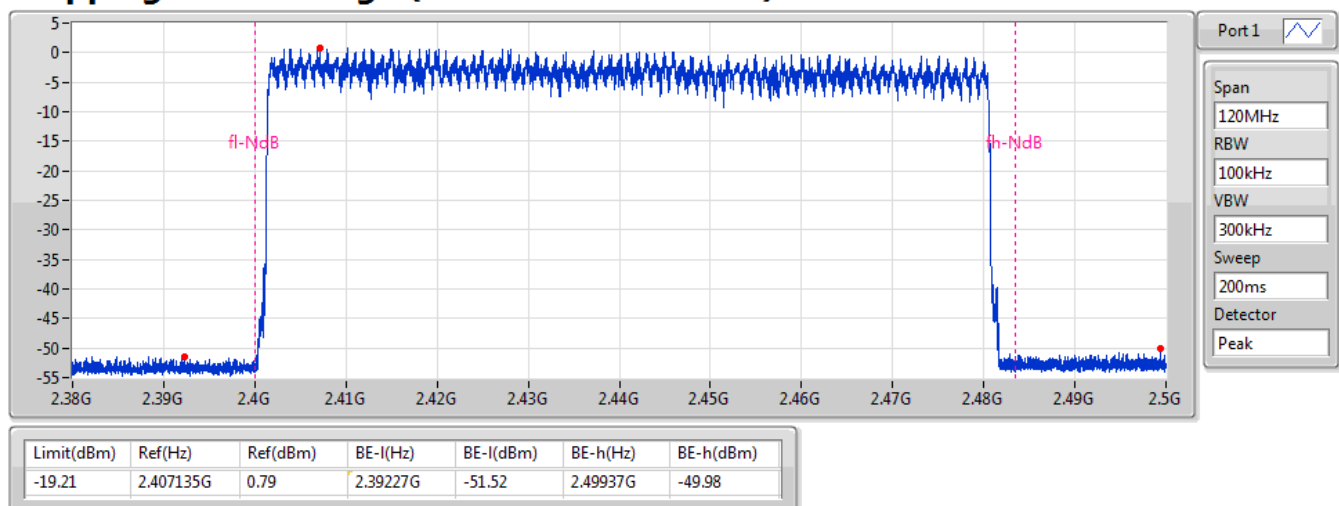
26/03/2020



BT-EDR(3Mbps) 2440MHz

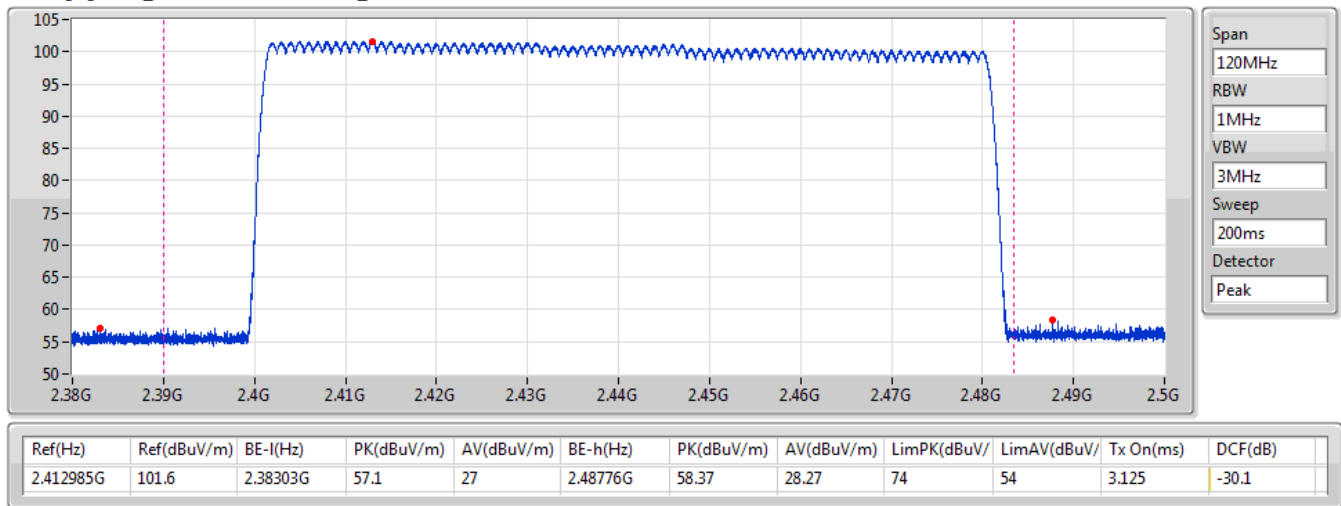
Hopping Ch Bandedge (Non-restricted Band)

26/03/2020



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

26/03/2020





Summary

Mode	Max-Dwell (s)
2.4-2.4835GHz	-
BT-BR(1Mbps)	311.7517m
BT-EDR(2Mbps)	311.9116m
BT-EDR(3Mbps)	312.2314m

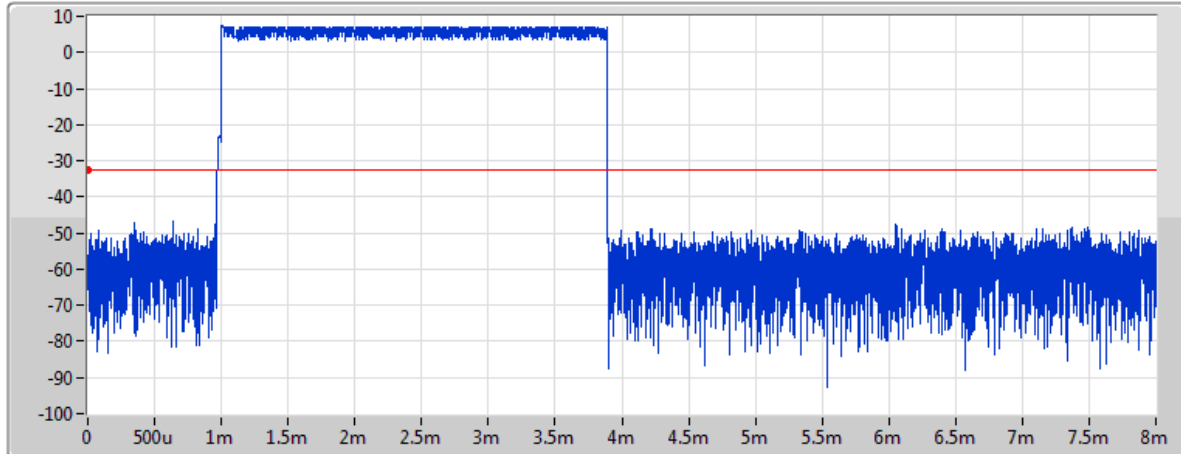
Result

Mode	Result	Period (s)	Dwell (s)	Limit (s)	Tx On (s)
BT-BR(1Mbps)	-	-	-	-	-
2440MHz	Pass	31.2	311.7517m	400m	2.9245m
BT-EDR(2Mbps)	-	-	-	-	-
2440MHz	Pass	31.2	311.9116m	400m	2.926m
BT-EDR(3Mbps)	-	-	-	-	-
2440MHz	Pass	31.2	312.2314m	400m	2.929m

BT-BR(1Mbps)

2440MHz

26/03/2020



Port1 

Ch Freq
2.44GHz

RBW
300kHz

VBW
1MHz

Sweep Time
8ms

TX Time
2.9245ms

non AFH Mode

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.2	311.7517m	400m	2.9245m

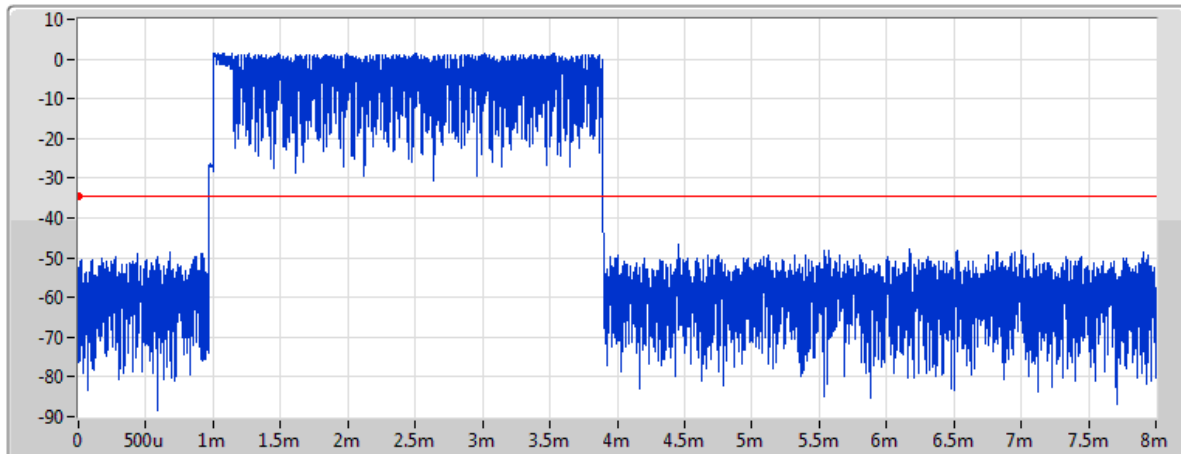
AFH Mode

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
8	155.87585m	400m	2.9245m

BT-EDR(2Mbps)

2440MHz

26/03/2020



Port1 

Ch Freq
2.44GHz

RBW
300kHz

VBW
1MHz

Sweep Time
8ms

TX Time
2.926ms

non AFH Mode

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.2	311.9116m	400m	2.926m

AFH Mode

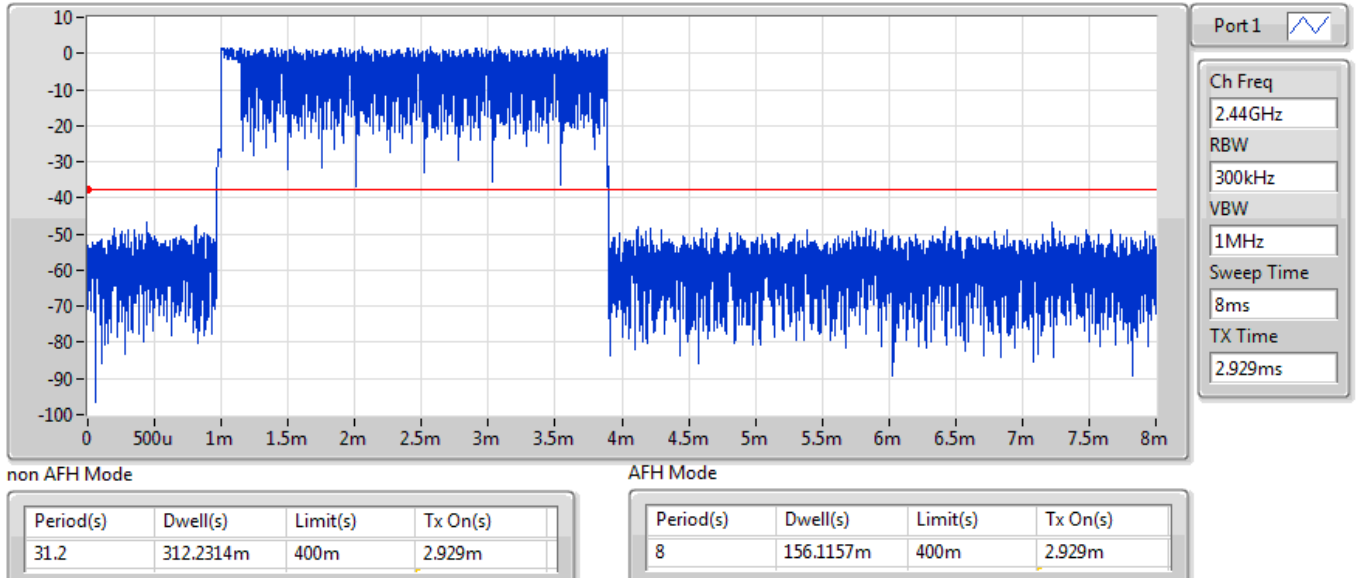
Period(s)	Dwell(s)	Limit(s)	Tx On(s)
8	155.9558m	400m	2.926m

BT-EDR(3Mbps)

2440MHz

26/03/2020

Dwell



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)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	2.40213G	6.74	-13.26	794.04M	-52.42	2.39796G	-51.03	2.4G	-51.51	2.49919G	-50.76	24.71036G	-41.44	1
BT-EDR(2Mbps)	Pass	2.402G	-0.56	-20.56	671.55M	-52.77	2.39036G	-51.58	2.4G	-53.17	2.49076G	-49.99	16.96875G	-40.83	1
BT-EDR(3Mbps)	Pass	2.40213G	0.65	-19.35	732.65M	-52.35	2.39504G	-52.10	2.4835G	-54.63	2.49408G	-51.05	17.06436G	-42.22	1

Result

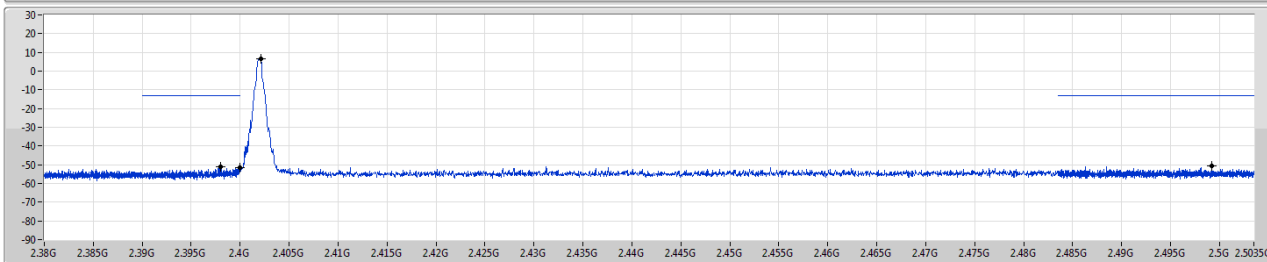
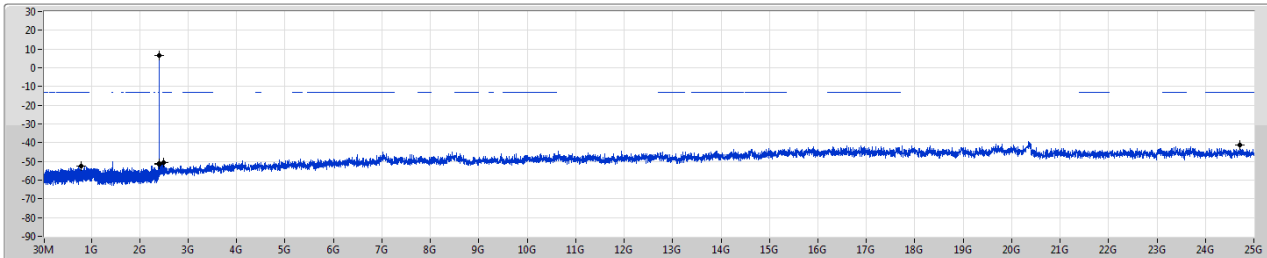
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40213G	6.74	-13.26	794.04M	-52.42	2.39796G	-51.03	2.4G	-51.51	2.49919G	-50.76	24.71036G	-41.44	1
2440MHz	Pass	2.40213G	6.74	-13.26	812.55M	-52.65	2.39341G	-52.21	2.4835G	-54.39	2.4881G	-51.41	17.64364G	-40.22	1
2480MHz	Pass	2.40213G	6.74	-13.26	890.69M	-52.93	2.39782G	-51.83	2.4G	-54.43	2.49536G	-51.20	16.4682G	-41.98	1
BT-EDR(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.402G	-0.56	-20.56	1.65767G	-52.21	2.39518G	-51.08	2.4G	-54.40	2.48453G	-51.05	23.36057G	-42.15	1
2440MHz	Pass	2.402G	-0.56	-20.56	941.21M	-53.08	2.39807G	-52.59	2.4835G	-54.23	2.48763G	-51.17	24.28011G	-41.81	1
2480MHz	Pass	2.402G	-0.56	-20.56	671.55M	-52.77	2.39036G	-51.58	2.4G	-53.17	2.49076G	-49.99	16.96875G	-40.83	1
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40213G	0.65	-19.35	868.95M	-52.15	2.39951G	-51.68	2.4G	-55.49	2.4973G	-51.62	17.64083G	-41.58	1
2440MHz	Pass	2.40213G	0.65	-19.35	873.06M	-53.01	2.39201G	-51.86	2.4835G	-54.53	2.48777G	-51.20	17.6577G	-40.89	1
2480MHz	Pass	2.40213G	0.65	-19.35	732.65M	-52.35	2.39504G	-52.10	2.4835G	-54.63	2.49408G	-51.05	17.06436G	-42.22	1

BT-BR(1Mbps)

2402MHz

CSE NdB

26/03/2020



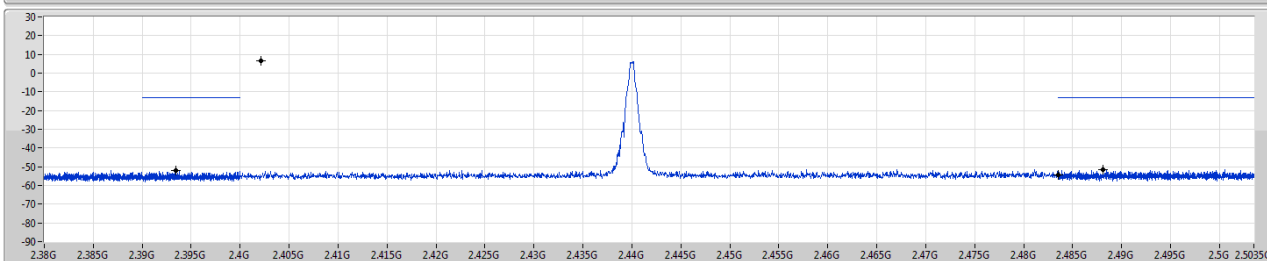
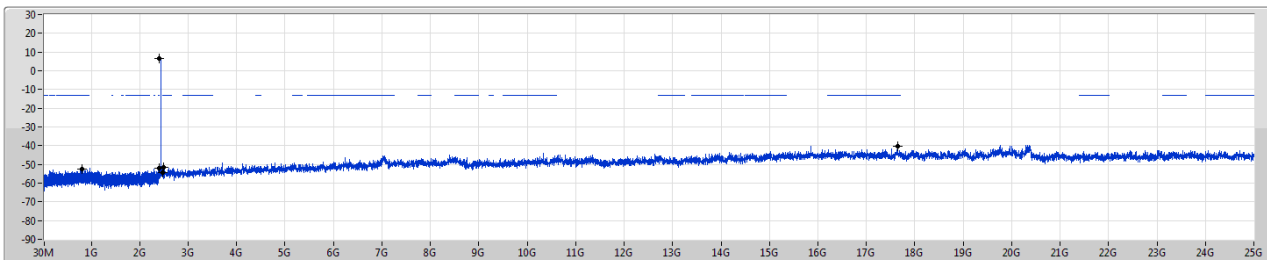
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40213G	6.74	-13.26	794.04M	-52.42	2.39796G	-51.03	2.4G	-51.51	2.49919G	-50.76	2.471036G	-41.44	1

BT-BR(1Mbps)

2440MHz

CSE NdB

26/03/2020



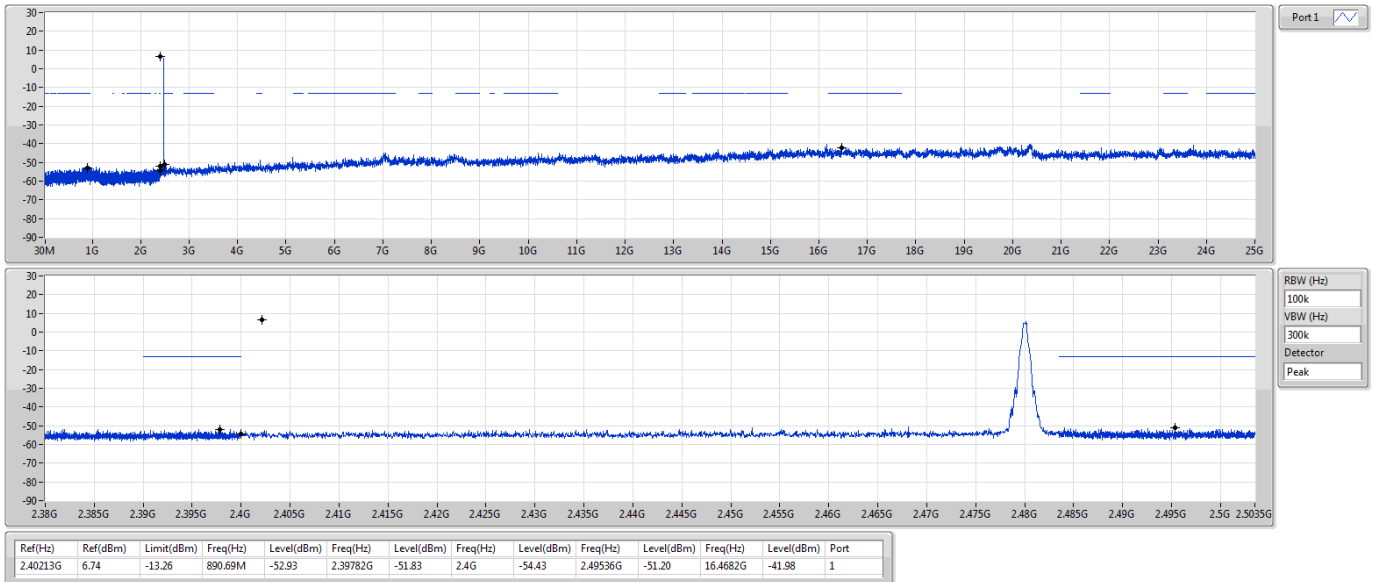
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40213G	6.74	-13.26	812.55M	-52.65	2.39341G	-52.21	2.4835G	-54.39	2.4881G	-51.41	17.64364G	-40.22	1

BT-BR(1Mbps)

2480MHz

CSE NdB

26/03/2020

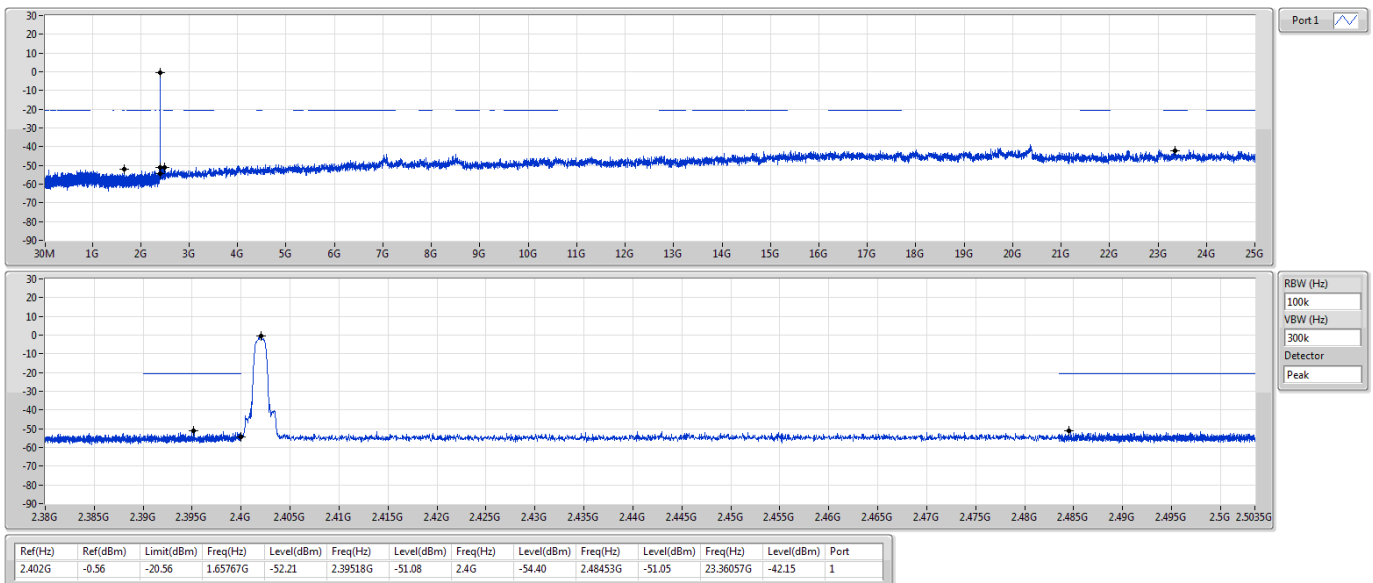


BT-EDR(2Mbps)

2402MHz

CSE NdB

26/03/2020

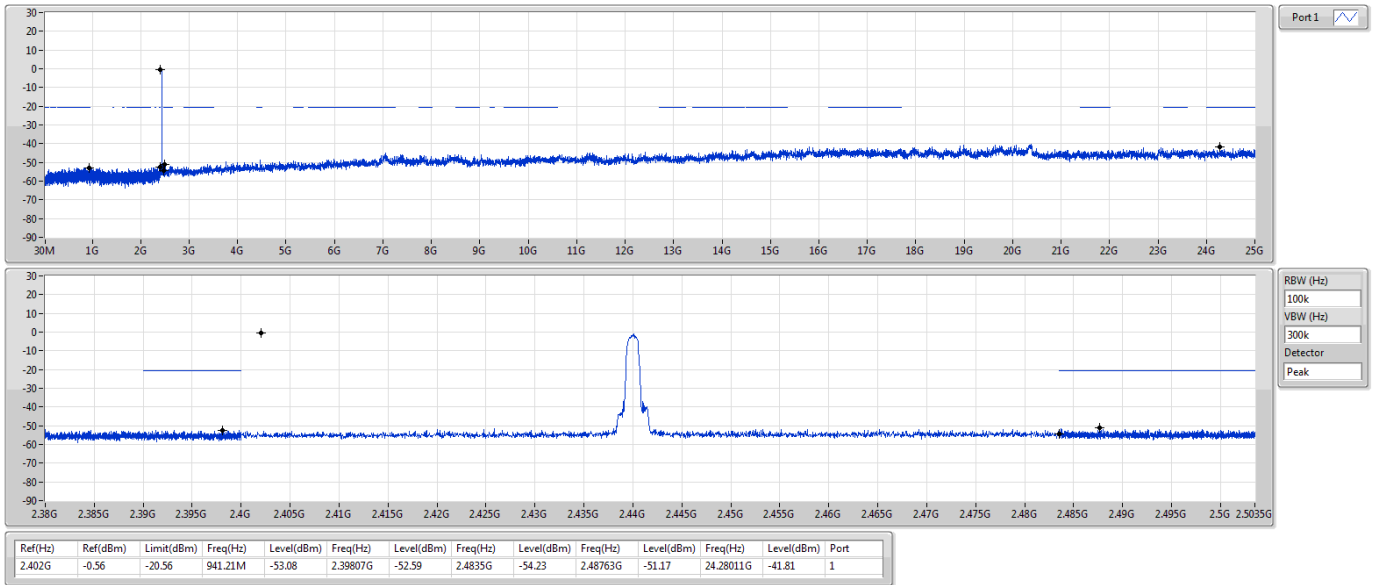


BT-EDR(2Mbps)

2440MHz

CSE NdB

26/03/2020

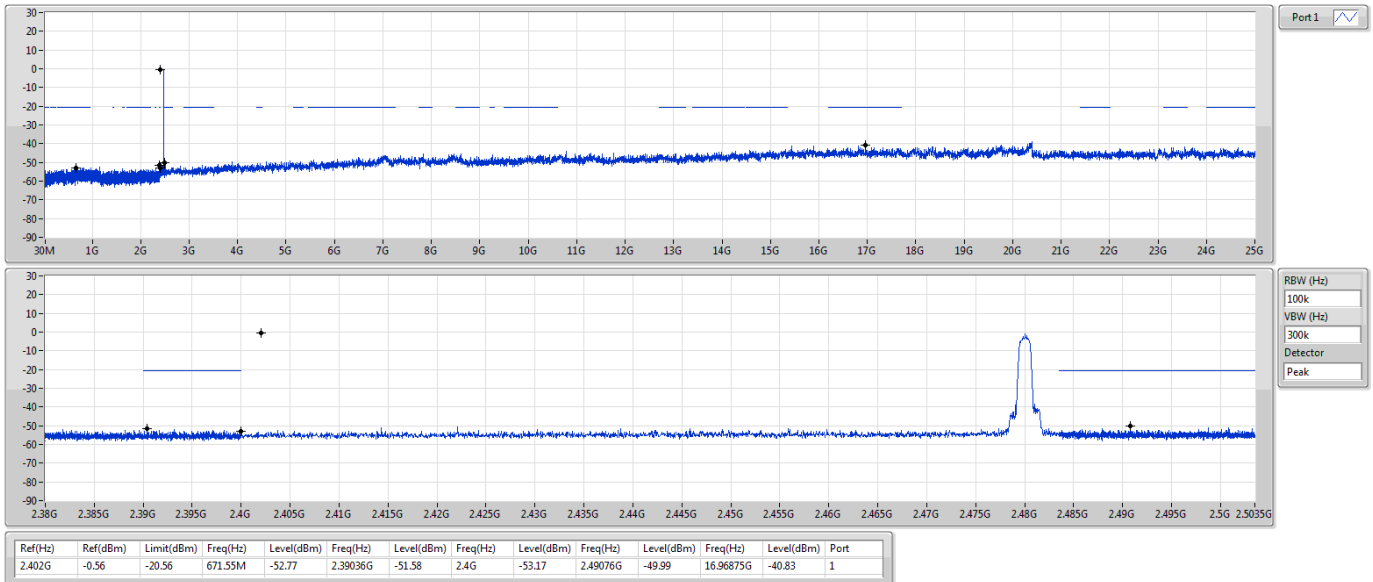


BT-EDR(2Mbps)

2480MHz

CSE NdB

26/03/2020

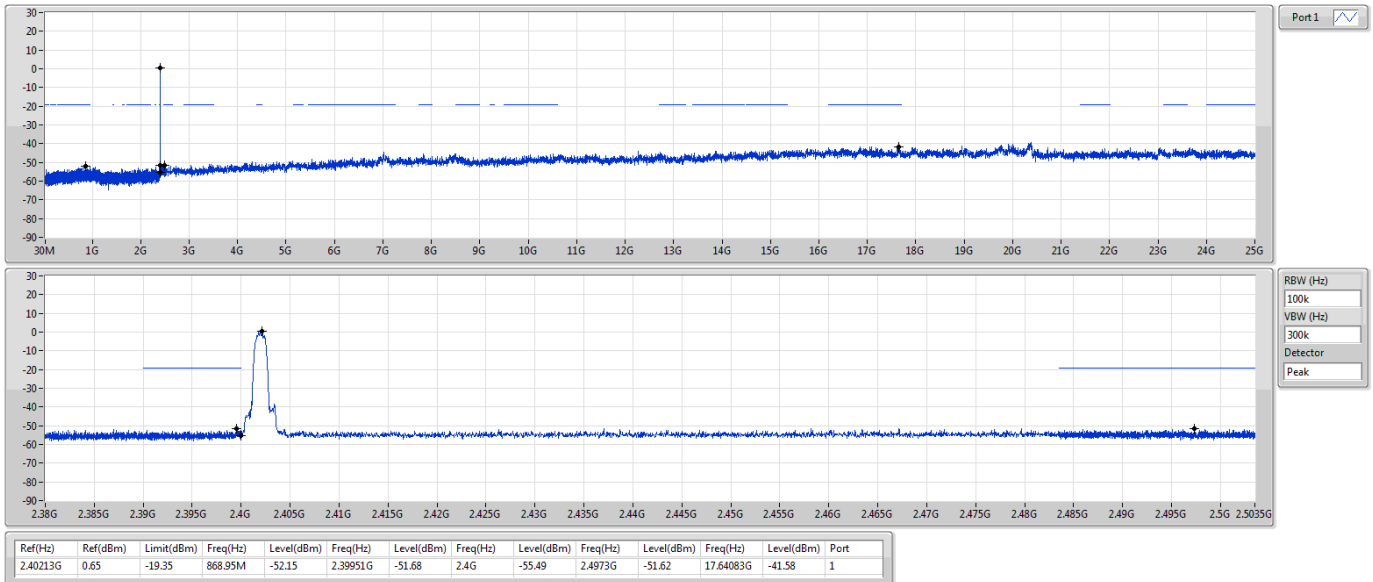


BT-EDR(3Mbps)

2402MHz

CSE NdB

26/03/2020

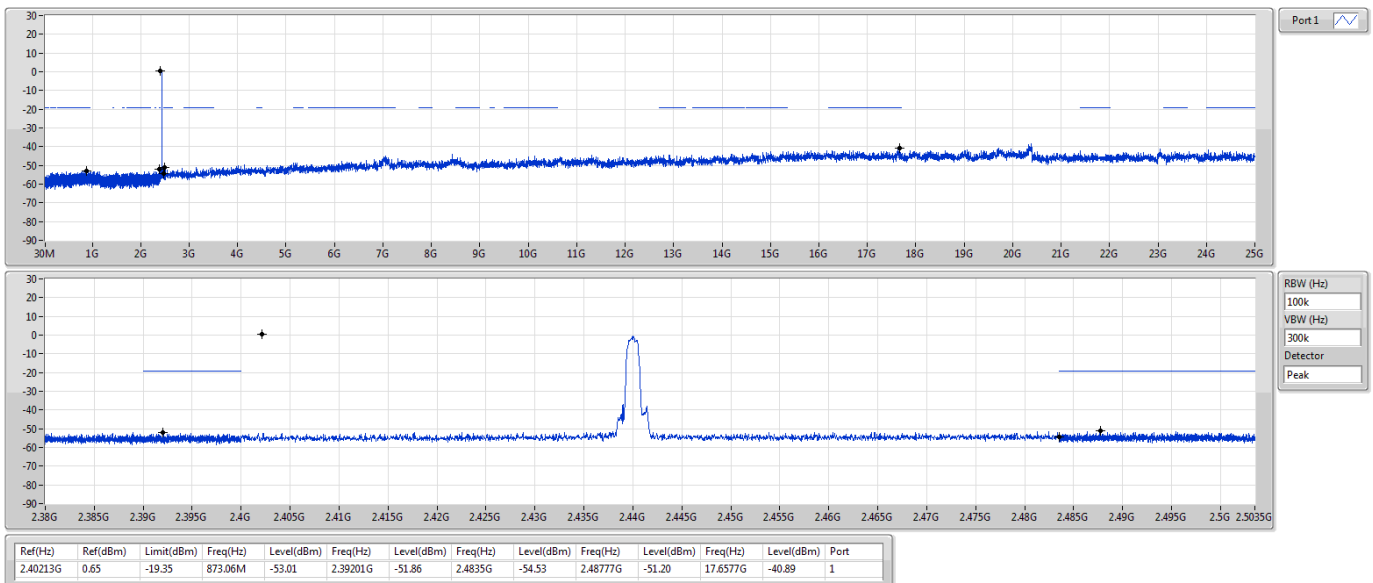


BT-EDR(3Mbps)

2440MHz

CSE NdB

26/03/2020

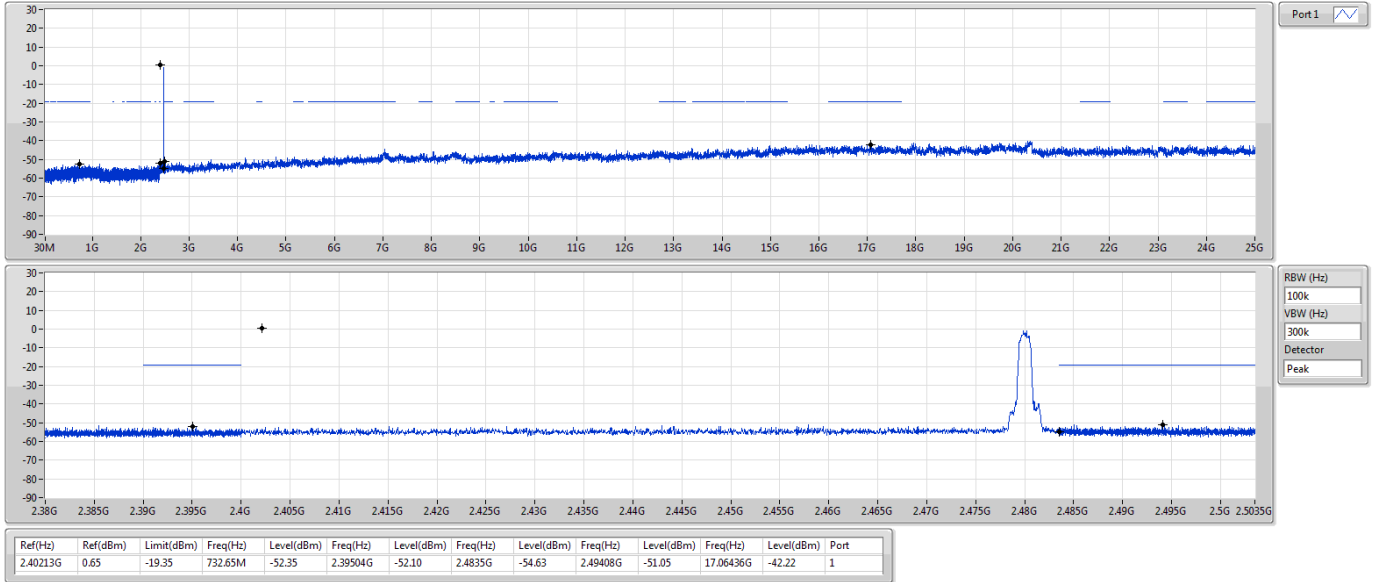


BT-EDR(3Mbps)

2480MHz

CSE NdB

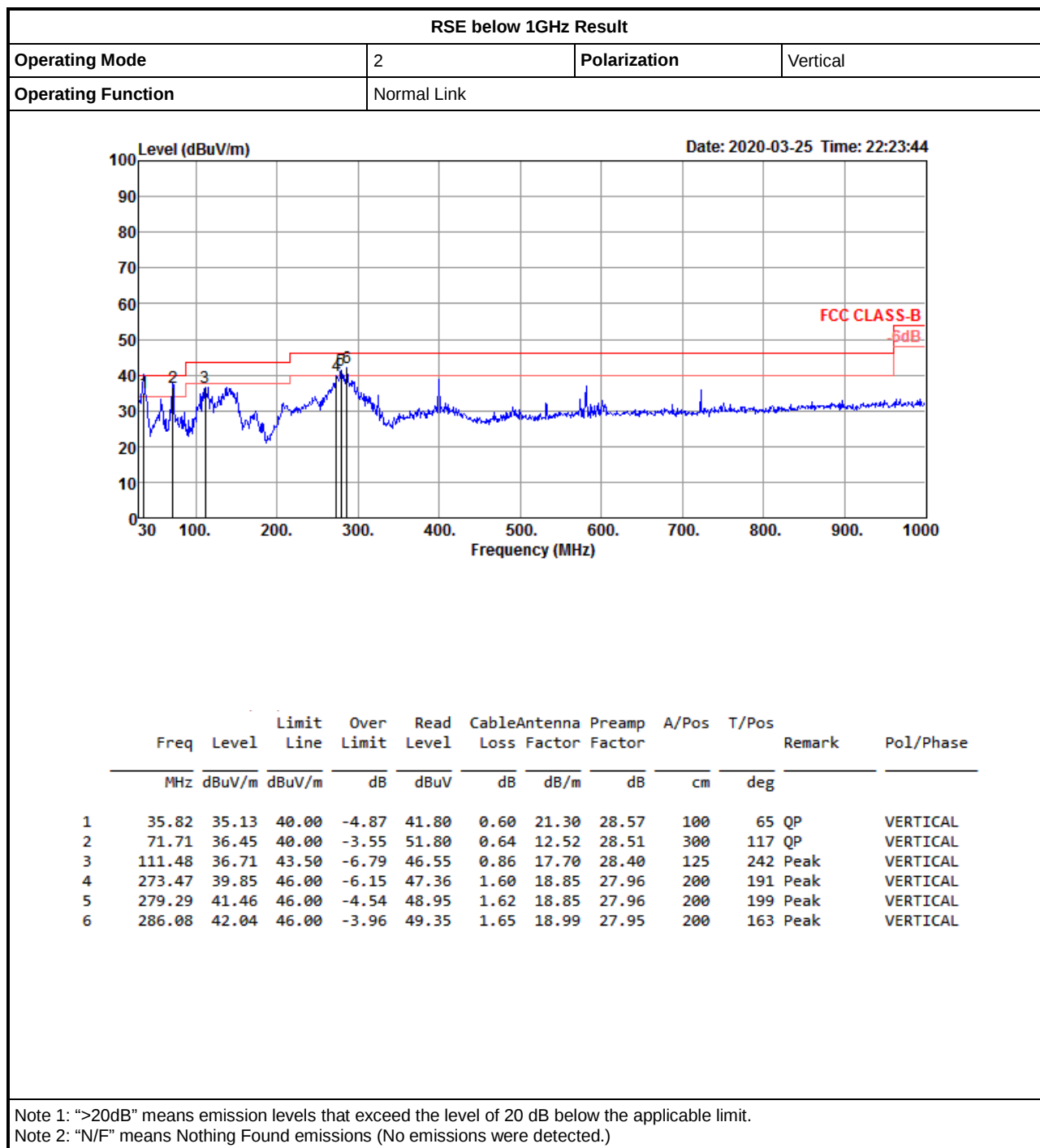
26/03/2020





RSE below 1GHz Result

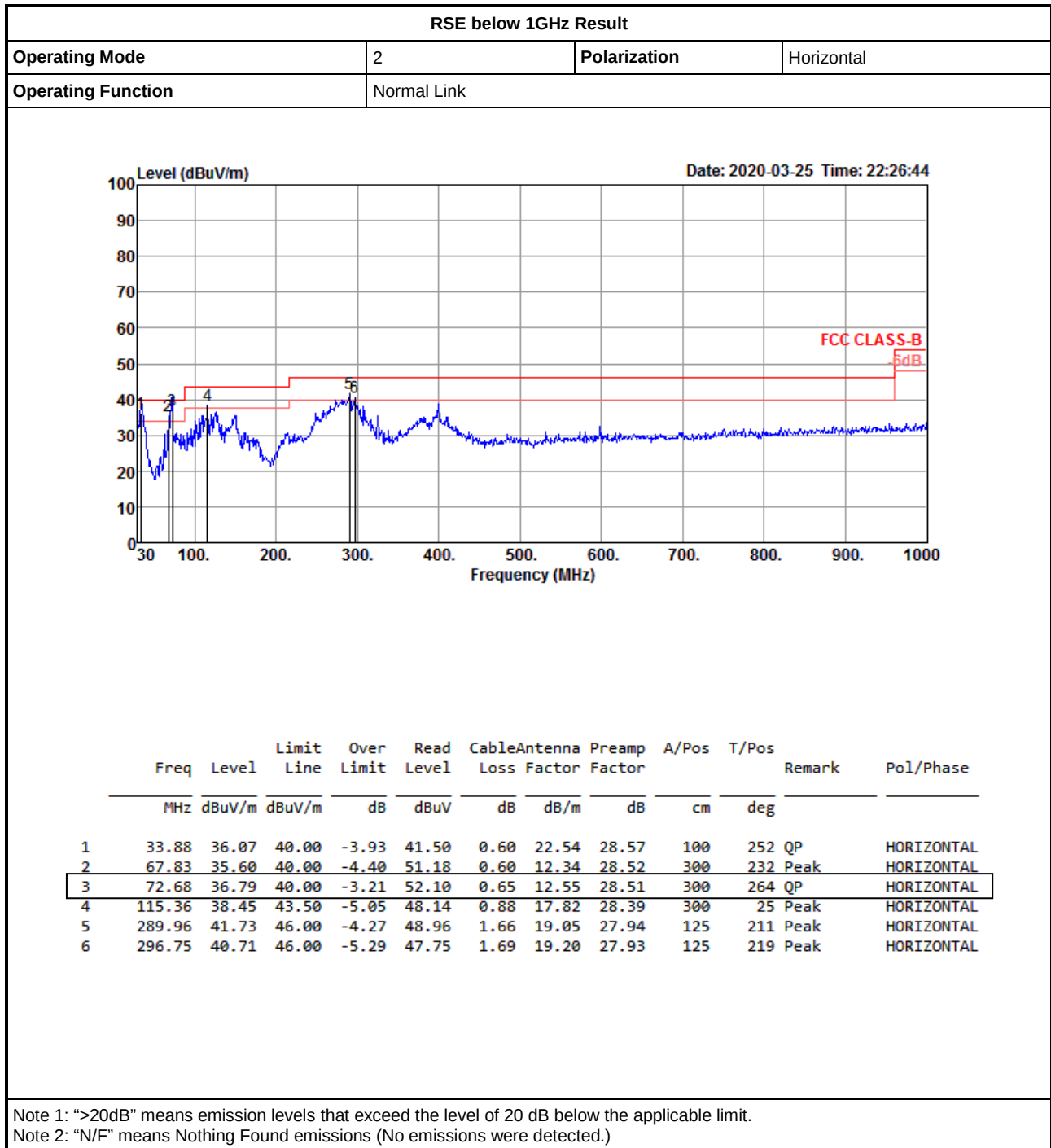
Appendix G.1





RSE below 1GHz Result

Appendix G.1





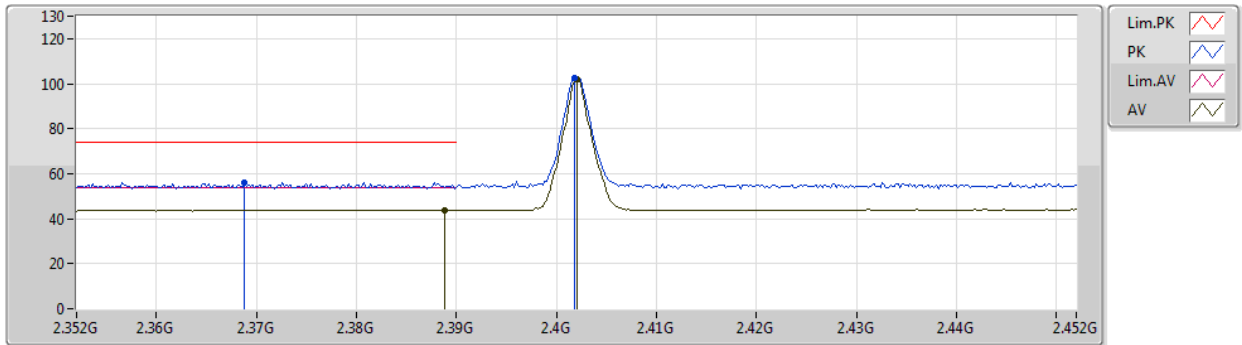
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	AV	2.4835G	46.77	54.00	-7.23	3	Vertical	302	2.10	-

BT-BR(1Mbps)

2402MHz_TX

25/03/2020



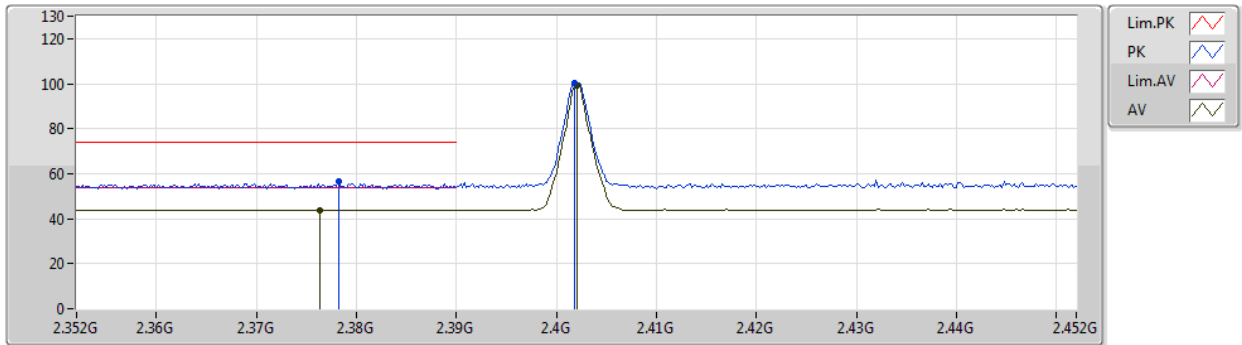
EUT X_1TX
Setting 0A
03-A-C-4

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.3688G	56.25	74.00	-17.75	24.29	3	Vertical	285	1.85	-	28.24	3.72	-
AV	2.3888G	43.92	54.00	-10.08	11.91	3	Vertical	285	1.85	-	28.28	3.73	-
PK	2.4018G	102.74	Inf	-Inf	70.69	3	Vertical	285	1.85	-	28.31	3.74	-
AV	2.402G	101.83	Inf	-Inf	69.78	3	Vertical	285	1.85	-	28.31	3.74	-

BT-BR(1Mbps)

25/03/2020

2402MHz_TX



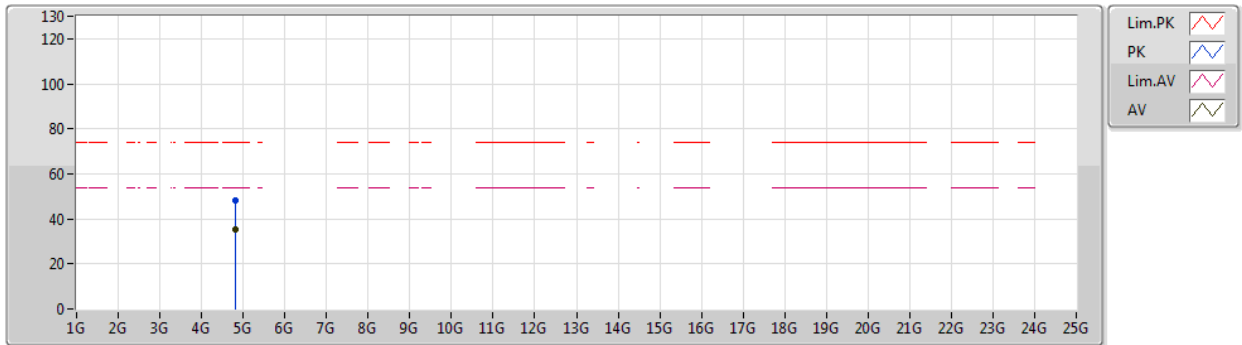
EUT X_1TX
Setting 0A
03-A-C-4

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.3782G	56.36	74.00	-17.64	24.37	3	Horizontal	326	1.84	-	28.26	3.73	-
AV	2.3764G	43.90	54.00	-10.10	11.92	3	Horizontal	326	1.84	-	28.25	3.73	-
PK	2.4018G	100.30	Inf	-Inf	68.25	3	Horizontal	326	1.84	-	28.31	3.74	-
AV	2.402G	99.45	Inf	-Inf	67.40	3	Horizontal	326	1.84	-	28.31	3.74	-

BT-BR(1Mbps)

25/03/2020

2402MHz_TX



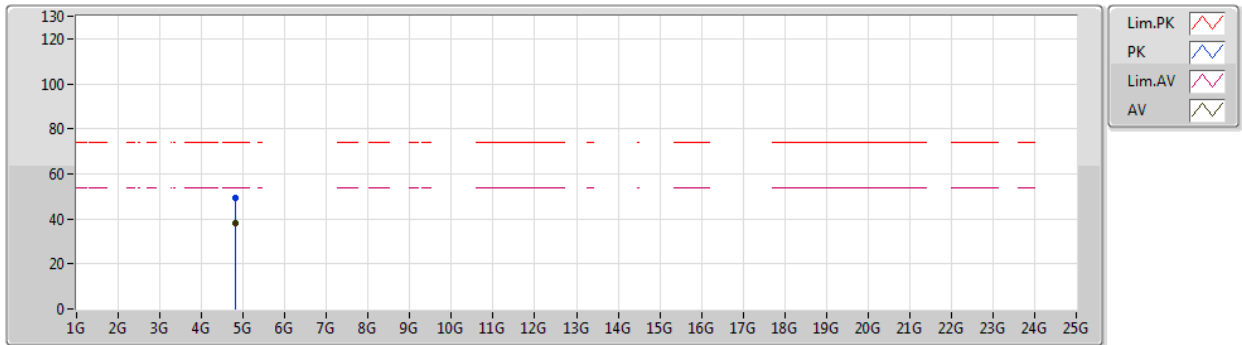
EUT X_1TX
Setting 0A
03-A-C-4

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.80362G	48.00	74.00	-26.00	42.77	3	Vertical	188	1.76	-	33.51	6.56	34.84
AV	4.80408G	35.24	54.00	-18.76	30.01	3	Vertical	188	1.76	-	33.51	6.56	34.84

BT-BR(1Mbps)

25/03/2020

2402MHz_TX



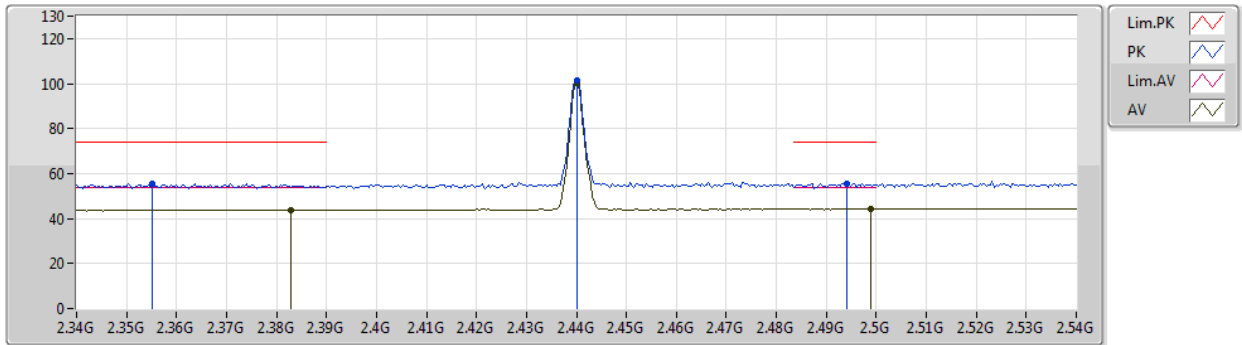
EUT X_1TX
Setting 0A
03-A-C-4

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	4.8044G	49.22	74.00	-24.78	43.99	3	Horizontal	28	1.79	-	33.51	6.56	34.84	
AV	4.8039G	38.00	54.00	-16.00	32.77	3	Horizontal	28	1.79	-	33.51	6.56	34.84	

BT-BR(1Mbps)

2440MHz_TX

25/03/2020



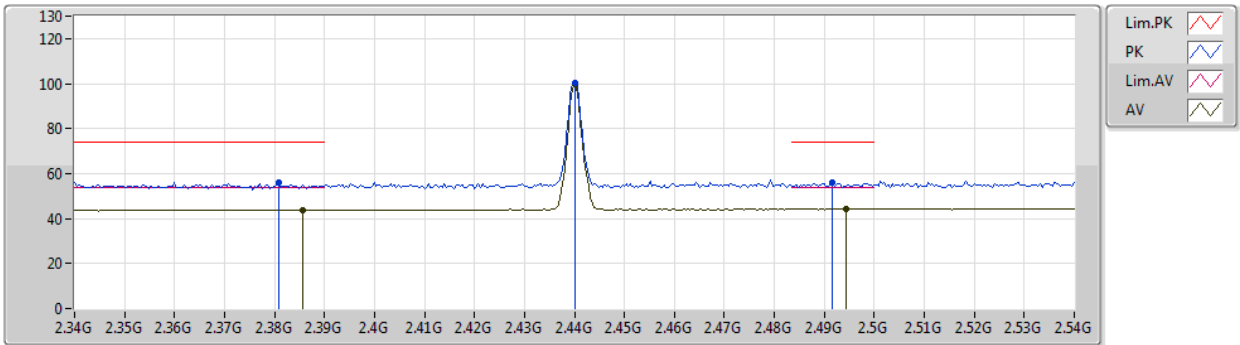
EUT X_1TX
Setting 0A
03-A-C-4

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.3552G	55.41	74.00	-18.59	23.49	3	Vertical	281	2.11	-	28.21	3.71	-
AV	2.3828G	43.85	54.00	-10.15	11.85	3	Vertical	281	2.11	-	28.27	3.73	-
PK	2.44G	101.41	Inf	-Inf	69.23	3	Vertical	281	2.11	-	28.42	3.76	-
AV	2.44G	100.53	Inf	-Inf	68.35	3	Vertical	281	2.11	-	28.42	3.76	-
PK	2.494G	55.68	74.00	-18.32	23.30	3	Vertical	281	2.11	-	28.58	3.80	-
AV	2.4988G	44.25	54.00	-9.75	11.85	3	Vertical	281	2.11	-	28.60	3.80	-

BT-BR(1Mbps)

2440MHz_TX

25/03/2020



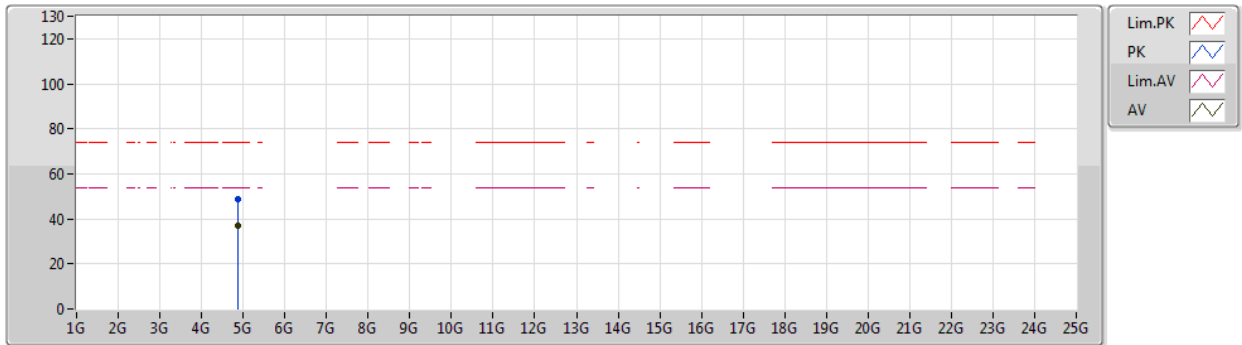
EUT X_1TX
Setting 0A
03-A-C-4

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.3808G	56.24	74.00	-17.76	24.25	3	Horizontal	195	2.94	-	28.26	3.73	-
AV	2.3856G	43.94	54.00	-10.06	11.94	3	Horizontal	195	2.94	-	28.27	3.73	-
PK	2.44G	100.35	Inf	-Inf	68.17	3	Horizontal	195	2.94	-	28.42	3.76	-
AV	2.44G	99.52	Inf	-Inf	67.34	3	Horizontal	195	2.94	-	28.42	3.76	-
PK	2.4916G	55.95	74.00	-18.05	23.59	3	Horizontal	195	2.94	-	28.57	3.79	-
AV	2.4944G	44.27	54.00	-9.73	11.89	3	Horizontal	195	2.94	-	28.58	3.80	-

BT-BR(1Mbps)

25/03/2020

2440MHz_TX



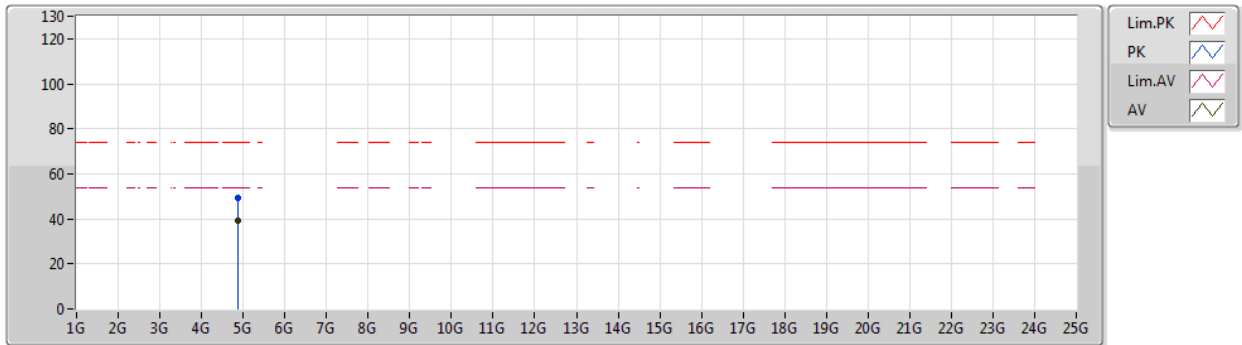
EUT X_1TX
Setting 0A
03-A-C-4

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.87966G	48.82	74.00	-25.18	43.36	3	Vertical	7	2.04	-	33.66	6.58	34.78
AV	4.88006G	36.91	54.00	-17.09	31.45	3	Vertical	7	2.04	-	33.66	6.58	34.78

BT-BR(1Mbps)

25/03/2020

2440MHz_TX



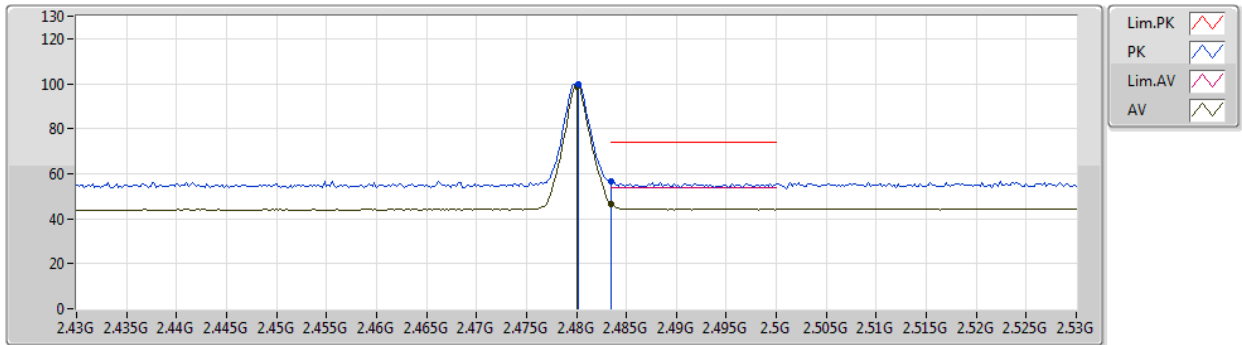
EUT X_1TX
Setting 0A
03-A-C-4

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.8798G	49.25	74.00	-24.75	43.79	3	Horizontal	36	1.79	-	33.66	6.58	34.78
AV	4.88012G	39.04	54.00	-14.96	33.58	3	Horizontal	36	1.79	-	33.66	6.58	34.78

BT-BR(1Mbps)

2480MHz_TX

25/03/2020



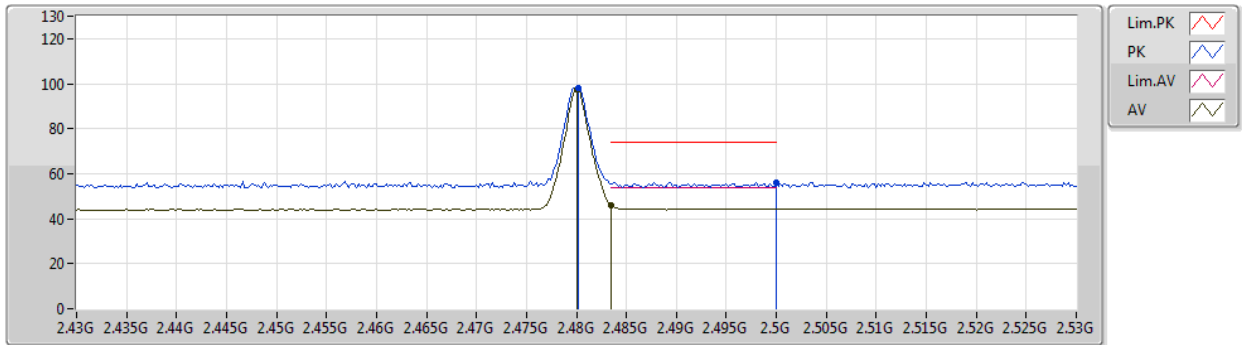
EUT X_1TX
Setting 0A
03-A-C-4

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.4802G	99.71	Inf	-Inf	67.38	3	Vertical	302	2.10	-	28.54	3.79	-
AV	2.48G	98.88	Inf	-Inf	66.55	3	Vertical	302	2.10	-	28.54	3.79	-
PK	2.4835G	56.65	74.00	-17.35	24.31	3	Vertical	302	2.10	-	28.55	3.79	-
AV	2.4835G	46.77	54.00	-7.23	14.43	3	Vertical	302	2.10	-	28.55	3.79	-

BT-BR(1Mbps)

25/03/2020

2480MHz_TX



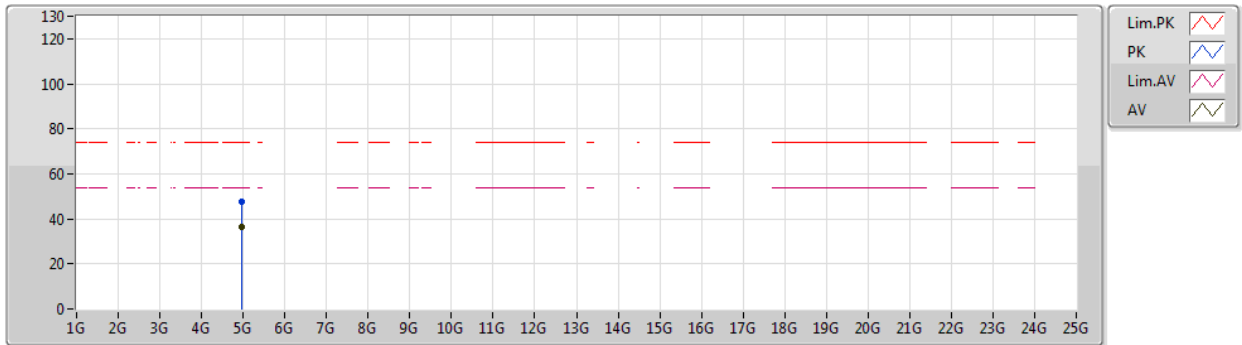
EUT X_1TX
Setting 0A
03-A-C-4

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.4802G	98.21	Inf	-Inf	65.88	3	Horizontal	211	2.36	-	28.54	3.79	-
AV	2.48G	97.31	Inf	-Inf	64.98	3	Horizontal	211	2.36	-	28.54	3.79	-
PK	2.5G	56.03	74.00	-17.97	23.63	3	Horizontal	211	2.36	-	28.60	3.80	-
AV	2.4835G	46.08	54.00	-7.92	13.74	3	Horizontal	211	2.36	-	28.55	3.79	-

BT-BR(1Mbps)

25/03/2020

2480MHz_TX



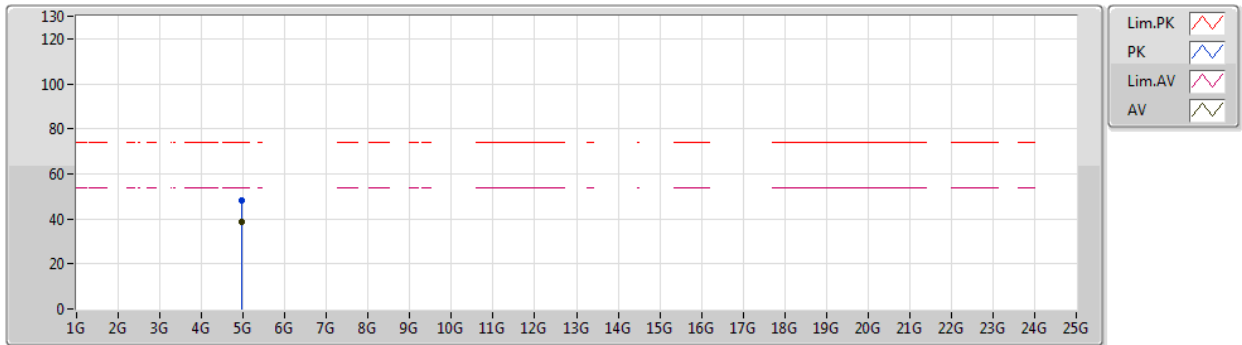
EUT X_1TX
Setting 0A
03-A-C-4

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.96032G	47.86	74.00	-26.14	42.14	3	Vertical	1	1.04	-	33.82	6.61	34.71
AV	4.95992G	36.62	54.00	-17.38	30.90	3	Vertical	1	1.04	-	33.82	6.61	34.71

BT-BR(1Mbps)

25/03/2020

2480MHz_TX



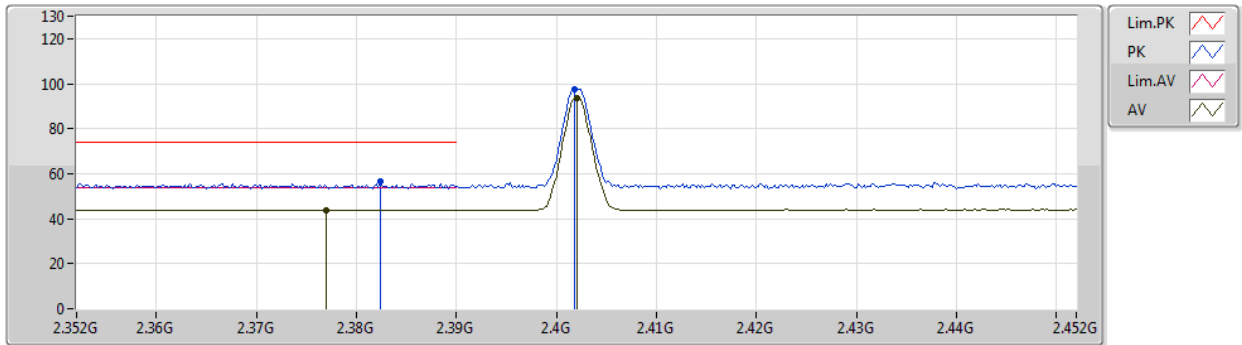
EUT X_1TX
Setting 0A
03-A-C-4

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.96G	48.35	74.00	-25.65	42.63	3	Horizontal	40	2.10	-	33.82	6.61	34.71
AV	4.96G	38.70	54.00	-15.30	32.98	3	Horizontal	40	2.10	-	33.82	6.61	34.71

BT-EDR(3Mbps)

25/03/2020

2402MHz_TX



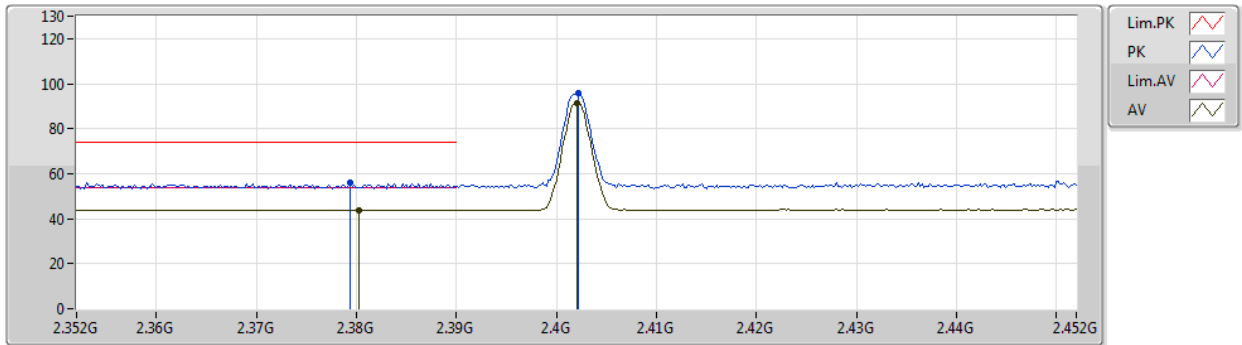
EUT X_1TX
Setting 0A
03-A-C-4

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.3824G	56.68	74.00	-17.32	24.69	3	Vertical	288	1.86	-	28.26	3.73	-
AV	2.377G	43.91	54.00	-10.09	11.93	3	Vertical	288	1.86	-	28.25	3.73	-
PK	2.4018G	97.59	Inf	-Inf	65.54	3	Vertical	288	1.86	-	28.31	3.74	-
AV	2.402G	93.60	Inf	-Inf	61.55	3	Vertical	288	1.86	-	28.31	3.74	-

BT-EDR(3Mbps)

2402MHz_TX

25/03/2020



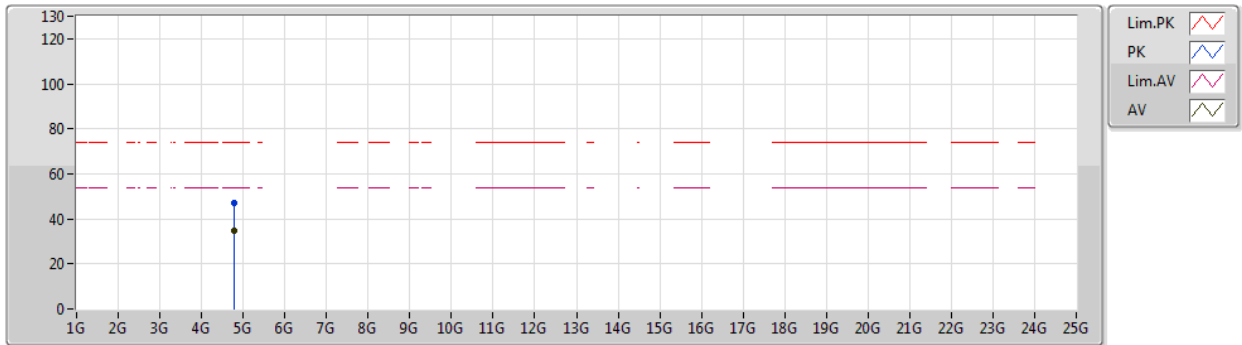
EUT X_1TX
Setting 0A
03-A-C-4

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.3794G	55.98	74.00	-18.02	23.99	3	Horizontal	64	1.80	-	28.26	3.73	-
AV	2.3802G	43.88	54.00	-10.12	11.89	3	Horizontal	64	1.80	-	28.26	3.73	-
PK	2.4022G	95.56	Inf	-Inf	63.51	3	Horizontal	64	1.80	-	28.31	3.74	-
AV	2.402G	91.46	Inf	-Inf	59.41	3	Horizontal	64	1.80	-	28.31	3.74	-

BT-EDR(3Mbps)

25/03/2020

2402MHz_TX



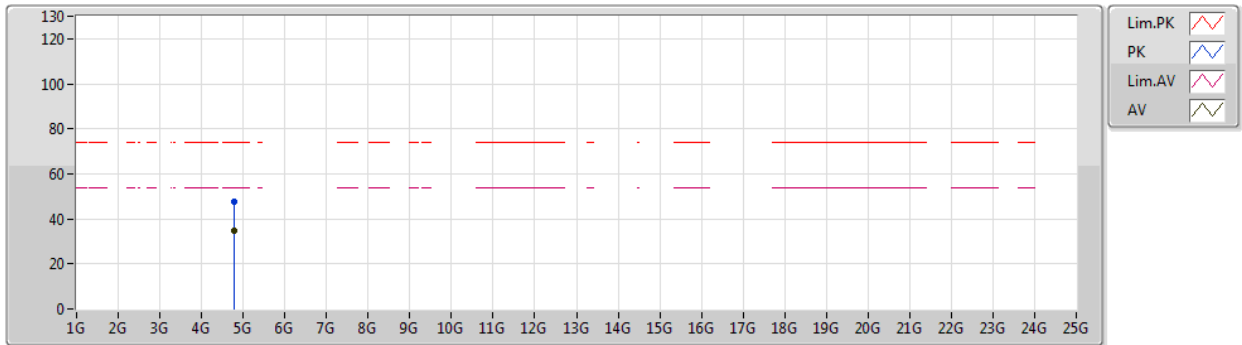
EUT X_1TX
Setting 0A
03-A-C-4

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.79536G	47.10	74.00	-26.90	41.88	3	Vertical	41	1.45	-	33.50	6.56	34.84
AV	4.79792G	34.49	54.00	-19.51	29.27	3	Vertical	41	1.45	-	33.50	6.56	34.84

BT-EDR(3Mbps)

25/03/2020

2402MHz_TX



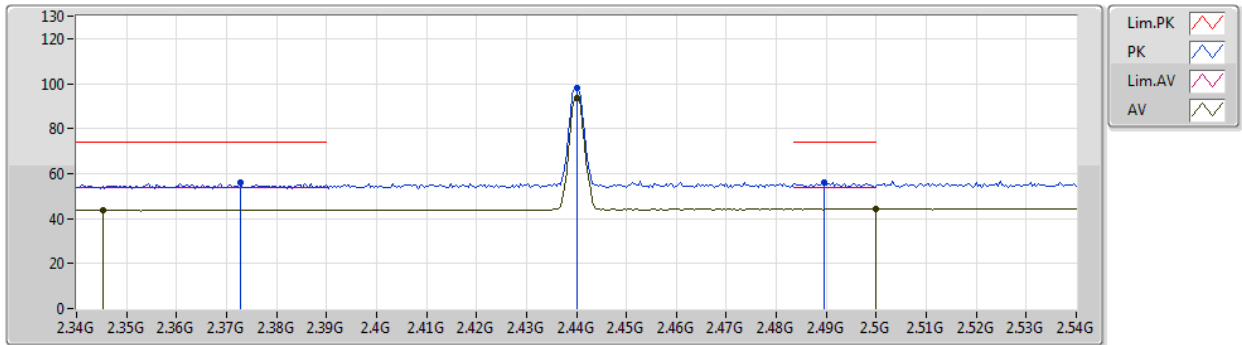
EUT X_1TX
Setting 0A
03-A-C-4

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	4.79704G	47.53	74.00	-26.47	42.31	3	Horizontal	344	1.30	-	33.50	6.56	34.84	
AV	4.79736G	34.61	54.00	-19.39	29.39	3	Horizontal	344	1.30	-	33.50	6.56	34.84	

BT-EDR(3Mbps)

25/03/2020

2440MHz_TX



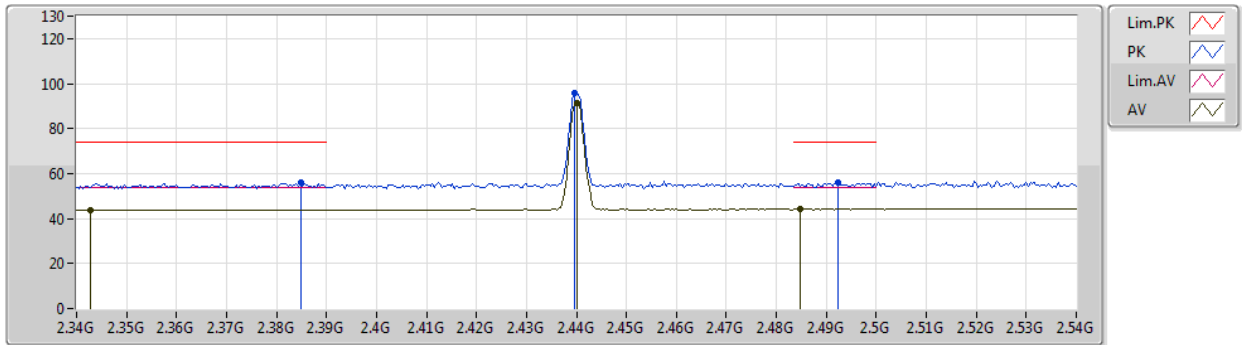
EUT X_1TX
Setting 0A
03-A-C-4

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.3728G	55.76	74.00	-18.24	23.79	3	Vertical	283	1.98	-	28.25	3.72	-
AV	2.3452G	43.85	54.00	-10.15	11.95	3	Vertical	283	1.98	-	28.19	3.71	-
PK	2.44G	97.81	Inf	-Inf	65.63	3	Vertical	283	1.98	-	28.42	3.76	-
AV	2.44G	93.76	Inf	-Inf	61.58	3	Vertical	283	1.98	-	28.42	3.76	-
PK	2.4896G	55.82	74.00	-18.18	23.46	3	Vertical	283	1.98	-	28.57	3.79	-
AV	2.5G	44.29	54.00	-9.71	11.89	3	Vertical	283	1.98	-	28.60	3.80	-

BT-EDR(3Mbps)

25/03/2020

2440MHz_TX



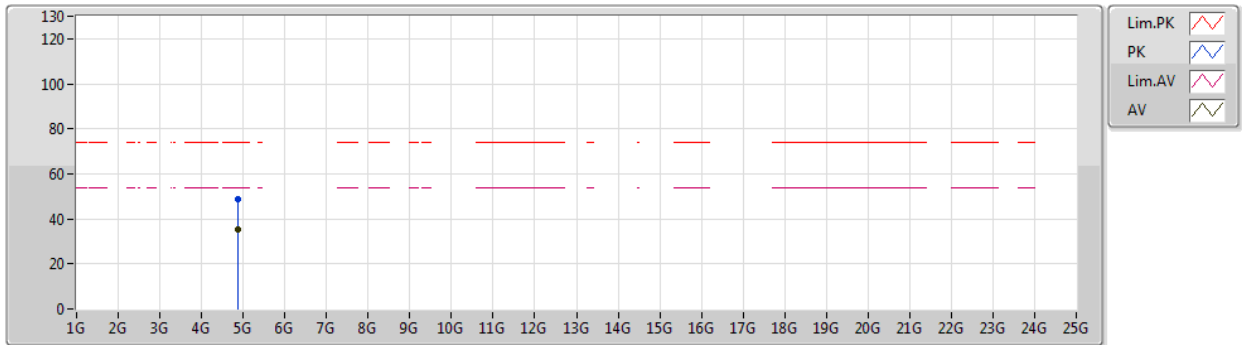
EUT X_1TX
Setting 0A
03-A-C-4

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.3848G	55.91	74.00	-18.09	23.91	3	Horizontal	67	1.54	-	28.27	3.73	-
AV	2.3428G	43.89	54.00	-10.11	11.99	3	Horizontal	67	1.54	-	28.19	3.71	-
PK	2.4396G	95.60	Inf	-Inf	63.42	3	Horizontal	67	1.54	-	28.42	3.76	-
AV	2.44G	91.56	Inf	-Inf	59.38	3	Horizontal	67	1.54	-	28.42	3.76	-
PK	2.4924G	56.24	74.00	-17.76	23.86	3	Horizontal	67	1.54	-	28.58	3.80	-
AV	2.4848G	44.24	54.00	-9.76	11.90	3	Horizontal	67	1.54	-	28.55	3.79	-

BT-EDR(3Mbps)

25/03/2020

2440MHz_TX



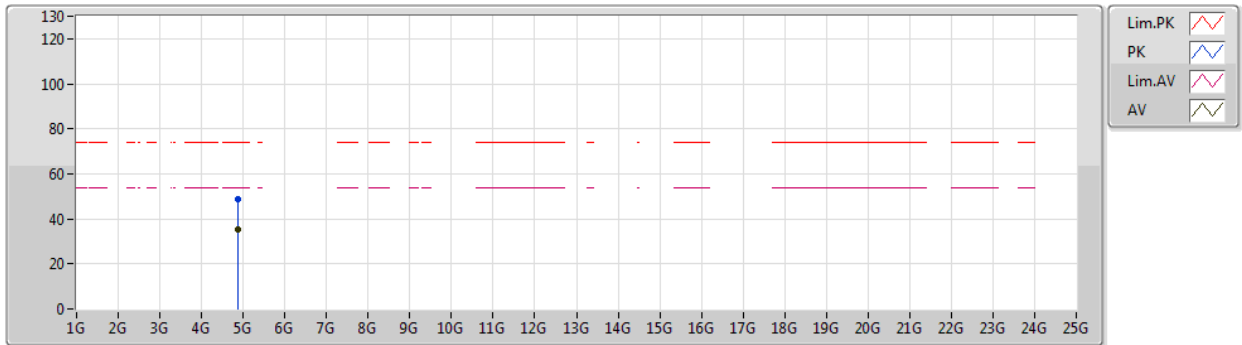
EUT X_1TX
Setting 0A
03-A-C-4

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	4.8718G	48.93	74.00	-25.07	43.49	3	Vertical	282	2.78	-	33.64	6.58	34.78	
AV	4.88876G	35.03	54.00	-18.97	29.53	3	Vertical	282	2.78	-	33.68	6.59	34.77	

BT-EDR(3Mbps)

25/03/2020

2440MHz_TX



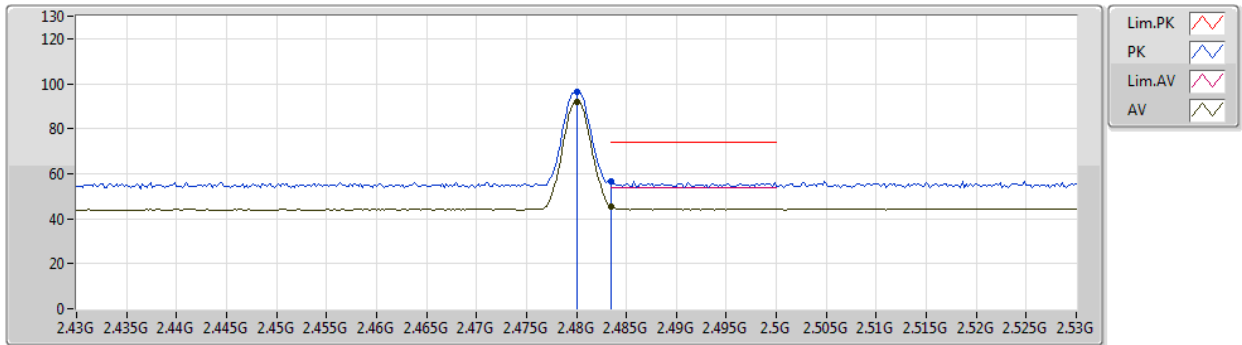
EUT X_1TX
Setting 0A
03-A-C-4

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.87604G	48.61	74.00	-25.39	43.16	3	Horizontal	238	1.72	-	33.65	6.58	34.78
AV	4.87832G	35.18	54.00	-18.82	29.72	3	Horizontal	238	1.72	-	33.66	6.58	34.78

BT-EDR(3Mbps)

25/03/2020

2480MHz_TX



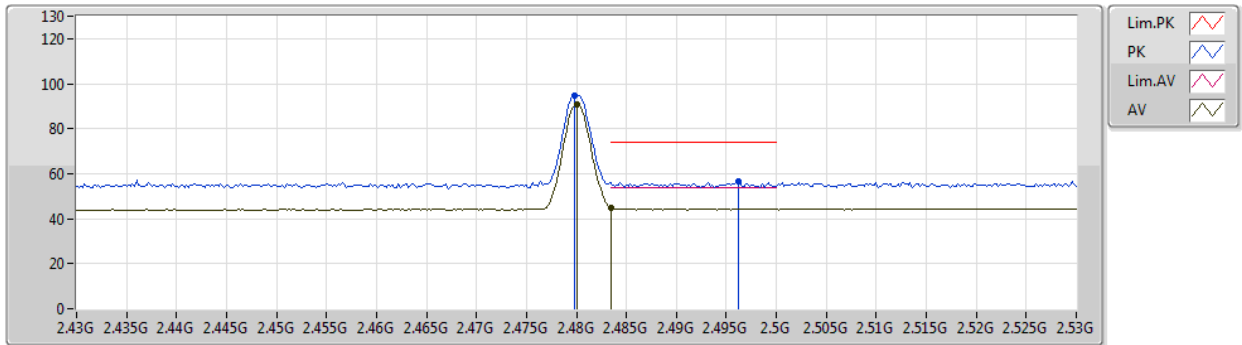
EUT X_1TX
Setting 0A
03-A-C-4

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.48G	96.10	Inf	-Inf	63.77	3	Vertical	303	2.11	-	28.54	3.79	-
AV	2.48G	92.04	Inf	-Inf	59.71	3	Vertical	303	2.11	-	28.54	3.79	-
PK	2.4835G	56.67	74.00	-17.33	24.33	3	Vertical	303	2.11	-	28.55	3.79	-
AV	2.4835G	45.33	54.00	-8.67	12.99	3	Vertical	303	2.11	-	28.55	3.79	-

BT-EDR(3Mbps)

25/03/2020

2480MHz_TX



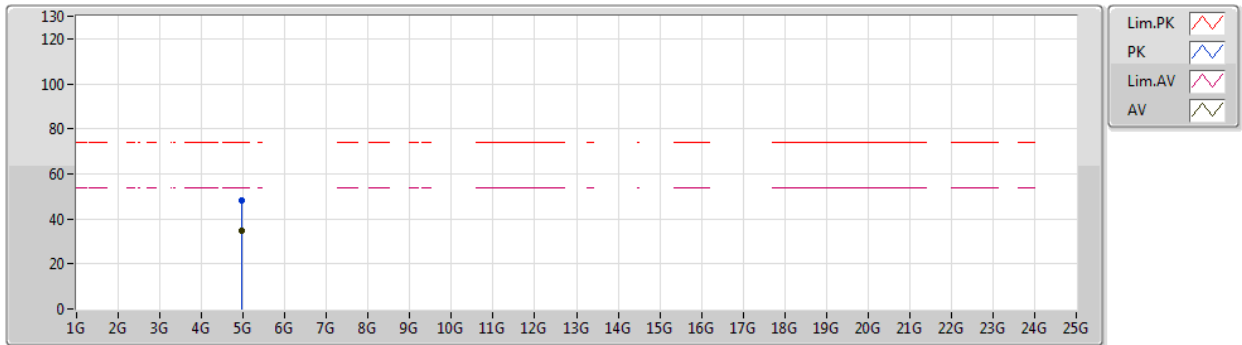
EUT X_1TX
Setting 0A
03-A-C-4

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.4798G	94.67	Inf	-Inf	62.34	3	Horizontal	211	2.35	-	28.54	3.79	-
AV	2.48G	90.61	Inf	-Inf	58.28	3	Horizontal	211	2.35	-	28.54	3.79	-
PK	2.4962G	56.57	74.00	-17.43	24.18	3	Horizontal	211	2.35	-	28.59	3.80	-
AV	2.4835G	44.94	54.00	-9.06	12.60	3	Horizontal	211	2.35	-	28.55	3.79	-

BT-EDR(3Mbps)

25/03/2020

2480MHz_TX



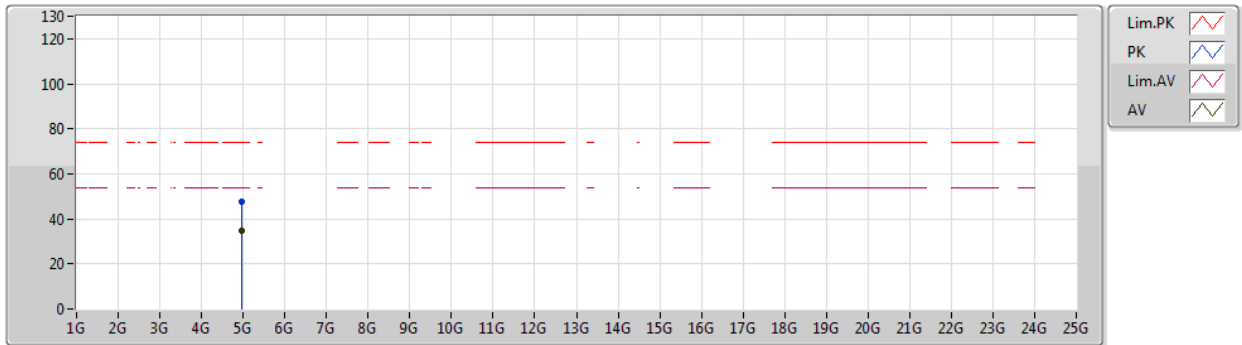
EUT X_1TX
Setting 0A
03-A-C-4

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	4.96588G	48.15	74.00	-25.85	42.41	3	Vertical	222	1.16	-	33.83	6.61	34.70	
AV	4.96532G	34.69	54.00	-19.31	28.95	3	Vertical	222	1.16	-	33.83	6.61	34.70	

BT-EDR(3Mbps)

25/03/2020

2480MHz_TX



EUT X_1TX
Setting 0A
03-A-C-4

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.95848G	47.90	74.00	-26.10	42.18	3	Horizontal	347	1.77	-	33.82	6.61	34.71
AV	4.95944G	34.61	54.00	-19.39	28.89	3	Horizontal	347	1.77	-	33.82	6.61	34.71



RSE Co-location Result

Appendix H

