

FCC Test Report

Equipment : 802.11ac Tri Band PoE Access Point
Brand Name : LITE-ON, MOJO
Model No. : WP8333V1, C-110
FCC ID : PPQ-WP8333V1
Standard : 47 CFR FCC Part 15.247
Operating Band : 2400 MHz – 2483.5 MHz
Applicant : LITE-ON Technology Corp.
Bldg. C, 90, Chien 1 Rd., Chung-Ho, New Taipei City,
23585 Taiwan
Manufacturer : Lite-On Network Communication (Dongguan) Limited
30#Keji Rd., Yin Hu Industrial Area, Qingxi
Town, DongGuan City, Guangdong, China

The product sample received on Apr. 17, 2017 and completely tested on Jun. 15, 2017. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given inanes and shown compliance with the applicable technical standards.

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


Cliff Chang
SPORTON INTERNATIONAL INC.



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Summary of Test Result

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



SPORTON INTERNATIONAL INC.
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FCC ID: PPQ-WP8333V1

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 channel separation
- ♦ 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.	Brand Holder	Model Name	Antenna Type	Connector	Radio
1	Master Wave Technology CO., LTD	98P7NPIPF000	PCB Antenna	I-PEX	R1
2	Master Wave Technology CO., LTD	98P7NPIPF001	PCB Antenna	I-PEX	R1
3	Master Wave Technology CO., LTD	98P7PUIPF000	PCB Antenna	I-PEX	R2
4	Master Wave Technology CO., LTD	98P7QUIPF000	PCB Antenna	I-PEX	R2
5	Master Wave Technology CO., LTD	98P7RPIPF000	PCB Antenna	I-PEX	R3
6	Master Wave Technology CO., LTD	98P7RPIPF001	PCB Antenna	I-PEX	R3
7	Master Wave Technology CO., LTD	98P7SMIPF000	PCB Antenna	I-PEX	R4

Ant.	Gain (dBi)										
	Radio 1			Radio 2		Radio 3					Radio 4
	2.4G	5G B1	5G B4	5G B1	5G B4	2.4G	5G B1	5G B2	5G B3	5G B4	BT
1	6.3	4.3	5.3	-	-	-	-	-	-	-	-
2	6.5	4.9	6.1	-	-	-	-	-	-	-	-
3	-	-	-	5.6	5.9	-	-	-	-	-	-
4	-	-	-	5.6	4.6	-	-	-	-	-	-
5	-	-	-	-	-	6.5	4.7	4.7	5.6	6.0	-
6	-	-	-	-	-	6.5	4.8	5.4	5.8	5.5	-
7	-	-	-	-	-	-	-	-	-	-	2.1

Note1: The EUT has seven antennas.

Note2: The EUT contain Radio 3 (2.4G)/(5G) RF module (Model Name: WM862FEMD)

FCC ID: PPQ-WM862FEMD)

For 2.4GHz function:

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

Radio 1

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

Radio 3

Ant. 5 (port 1) and Ant. 6 (port 2) could transmit/receive simultaneously.

For 5GHz function:

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

Radio 1 (For B1 and B4)

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

Radio 2 (For B1 and B4)

Ant. 3 (port 1) and Ant. 4 (port 2) could transmit/receive simultaneously.

Radio 3 (For B1~B4)

Ant. 5 (port 1) and Ant. 6 (port 2) could transmit/receive simultaneously.

For bluetooth function:

For bluetooth mode (1TX/1RX)

Radio 4

Only Ant. 7 (port 1) can be used as transmitting/receiving antenna.

1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)
BT-BR(1Mbps)	0.44	3.565
BT-EDR(2Mbps)	0.436	3.605
BT-EDR(3Mbps)	0.47	3.279

1.1.4 EUT Operational Condition

EUT Power Type	From Power Adapter or PoE
-----------------------	---------------------------

1.1.5 Table for Multiple Listing

The brand/model names in the following table are all refer to the identical product.

Brand Name	Model Name	Description
LITE-ON	WP8333V1	All the models are identical, the difference model name for difference brand served as marketing strategy.
MOJO	C-110	

From the above models, model: WP8333V1 was selected as representative model for the test and its data was recorded in this report.

1.1.6 Table for Explanation of Flash

EUT No.	Brand name	Model name	Flash
1	winbond	25Q256JVFQ	32M+32M
2	MXIC	MX25L51245GMI-08G	64M

1.2 Testing Applied Standards

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

- ♦ 47 CFR FCC Part 15
- ♦ FCC Public Notice DA 00-705

1.3 Testing Location Information

Testing Location		
☐	HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-318-0055
☒	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	Ron Huang & Peter Wu	23.1°C / 75%	May 15, 2017 ~ Jun. 02, 2017
Radiated below 1GHz	03CH01-CB	Joy Tseng & Welson Chen	22°C / 54%	Jun. 15, 2017
Radiated above 1GHz	03CH01-CB	Joy Tseng & Welson Chen	22°C / 54%	May 11, 2017 ~ Jun. 15, 2017
AC Conduction	CO01-CB	Kane Liu	21°C / 60%	Jun. 03, 2017

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)	3.2 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 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 x10 ⁻⁸	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
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
1	EUT 1 - R1 (2.4G) + R2 (5G) + R3 (2.4G) + R4 (BT) + Adapter
2	EUT 1 - R1 (2.4G) + R2 (5G) + R3 (5G) + R4 (BT) + Adapter
Mode 2 has been evaluated to be the worst case between Mode 1~2, thus measurement for Mode 3 will follow this same test mode.	
3	EUT 1 - R1 (5G) + R2 (5G) + R3 (5G) + R4 (BT) + Adapter
For operating mode 3 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 1 in Y axis - R1 (2.4G) + R2 (5G) + R3 (2.4G) + R4 (BT) + Adapter
2	EUT 1 in Z axis - R1 (2.4G) + R2 (5G) + R3 (2.4G) + R4 (BT) + Adapter
Mode 1 has been evaluated to be the worst case among Mode 1~2, thus measurement for Mode 3 will follow this same test mode.	
3	EUT 1 in Y axis - R1 (2.4G) + R2 (5G) + R3 (5G) + R4 (BT) + Adapter
Mode 1 has been evaluated to be the worst case among Mode 1~3, thus measurement for Mode 4 will follow this same test mode.	
4	EUT 1 in Y axis - R1 (5G) + R2 (5G) + R3 (2.4G) + R4 (BT) + Adapter
Mode 1 has been evaluated to be the worst case among Mode 1~4, thus measurement for Mode 5 will follow this same test mode.	
5	EUT 1 in Y axis - R1 (2.4G) + R2 (5G) + R3 (2.4G) + R4 (BT) + PoE
Mode 5 has been evaluated to be the worst case among Mode 1~5, thus measurement for Mode 6 will follow this same test mode.	
6	EUT 2 in Y axis - R1 (2.4G) + R2 (5G) + R3 (2.4G) + R4 (BT) + PoE
For operating mode 5 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 for Radiated emission above 1GHz test, and the worst case was found at X axis. So the measurement will follow this same test configuration.
1	EUT 2 in X axis - R4 (BT)

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 2 - R1 (2.4G) + R2 (5G) + R3 (2.4G) + R4 (BT)
2	EUT 2 - R1 (2.4G) + R2 (5G) + R3 (5G) + R4 (BT)
3	EUT 2 - R1 (5G) + R2 (5G) + R3 (2.4G) + R4 (BT)
4	EUT 2 - R1 (5G) + R2 (5G) + R3 (5G) + R4 (BT)
For operating mode 4 is 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	EUT 2 - R1 (2.4G) + R2 (5G) + R3 (2.4G) + R4 (BT)
2	EUT 2 - R1 (2.4G) + R2 (5G) + R3 (5G) + R4 (BT)
3	EUT 2 - R1 (5G) + R2 (5G) + R3 (2.4G) + R4 (BT)
4	EUT 2 - R1 (5G) + R2 (5G) + R3 (5G) + R4 (BT)
Refer to Sporton Test Report No.: FA741722 for Co-location RF Exposure Evaluation.	

Note: The PoE and Adapter were for measurement only, would not be marketed.

The PoE and Adapter information as below:

Support Unit	Brand	Model Number
PoE	Ruckus	740-64214-001
Adapter	APD	WB-18D12FU

2.3 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

2.4 Accessories

N/A

2.5 Support Equipment

For Test Site No: CO01-CB

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	NB*5	DELL	E6430	DoC
2	Device	LITE-ON	WP8333V1	PPQ-WP8333V1
3	Flash disk3.0	Transcend	JetFlash-700	DoC
4	Adapter	APD	WB-18D12FU	DoC

For Test Site No: 03CH01-CB (below 1GHz)

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	NB*5	DELL	E4300	DoC
2	Device	LITE-ON	WP8333V1	PPQ-WP8333V1
3	Flash disk3.0	Silicon Power	B06	DoC
4	PoE	Ruckus	740-64214-001	DoC

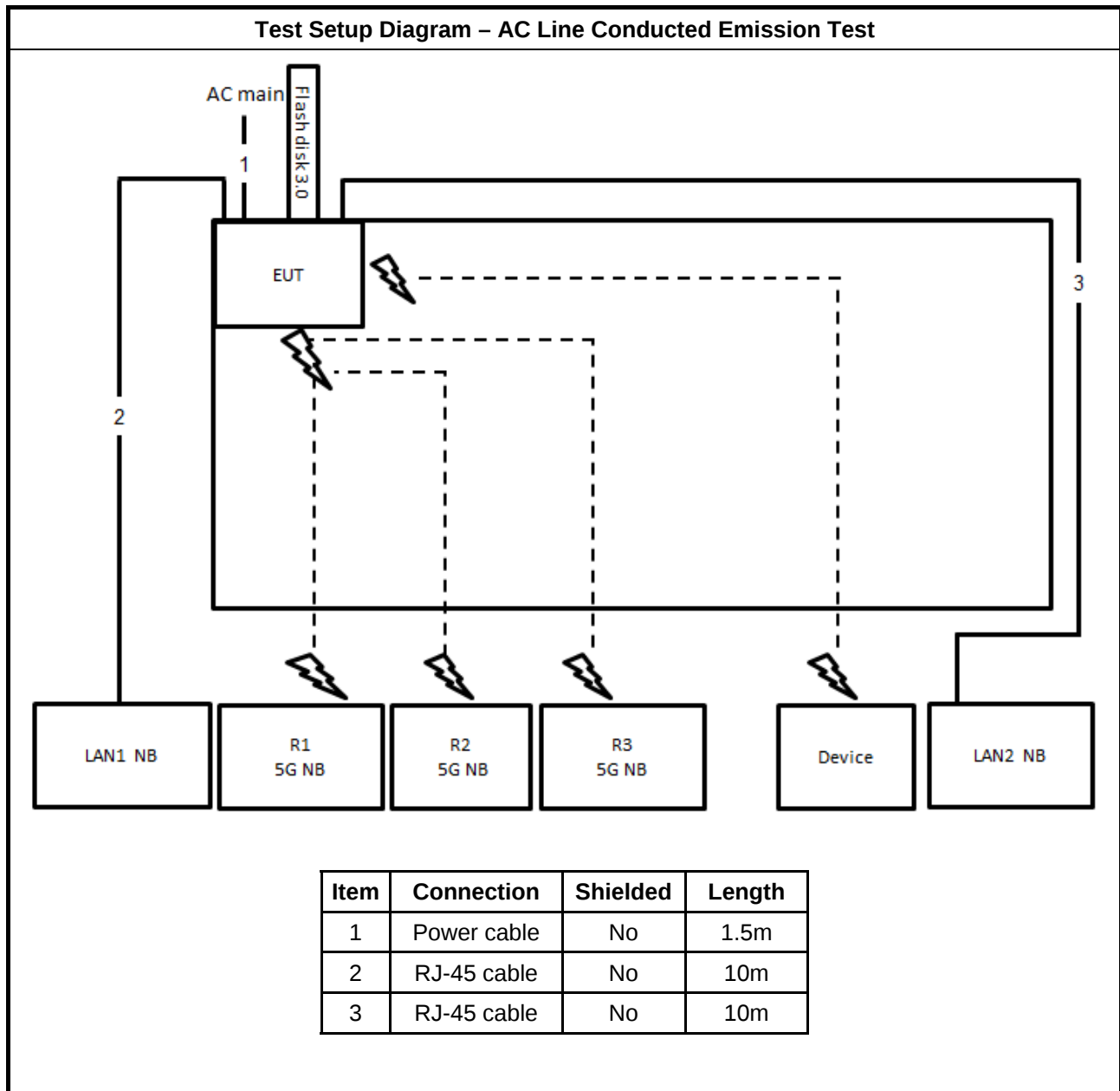
For Test Site No: 03CH01-CB (above 1GHz)

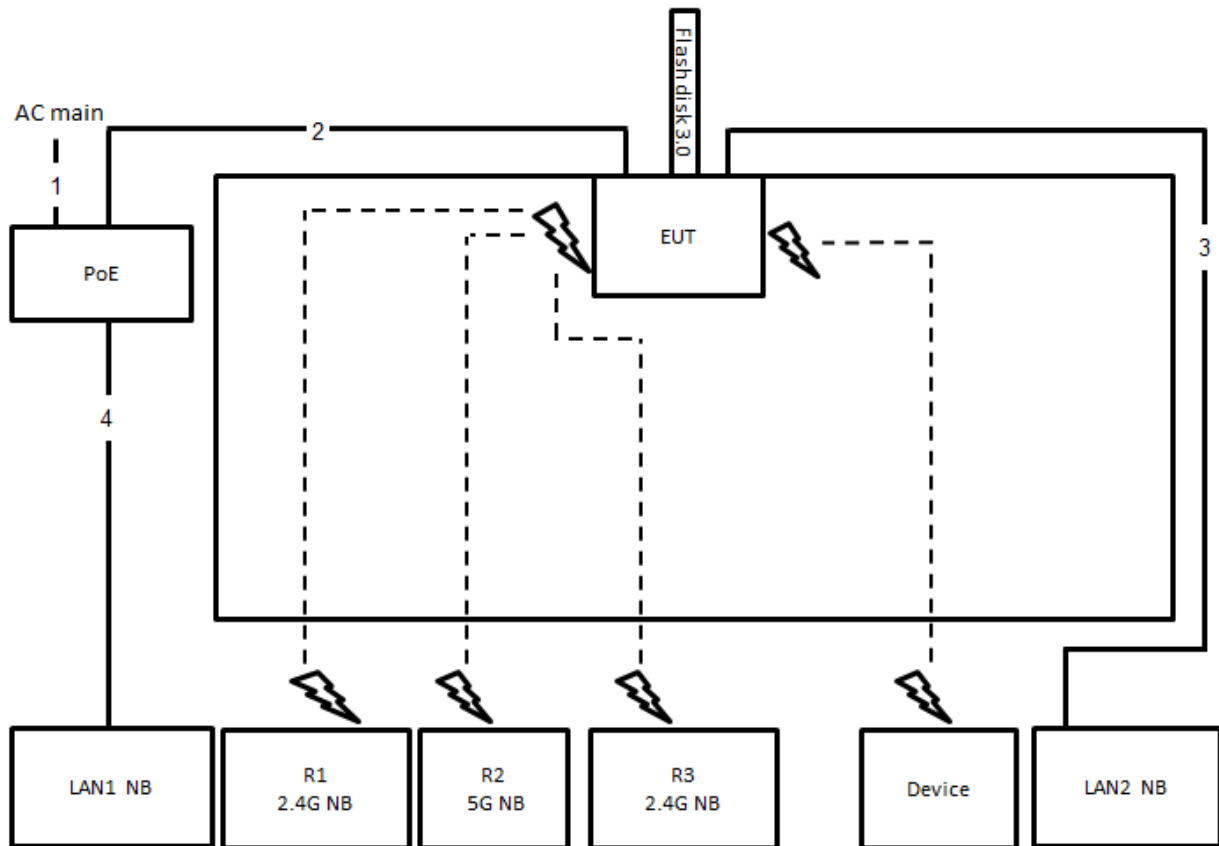
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	NB	DELL	E4300	DoC
2	Adapter	APD	WB-18D12FU	DoC

For Test Site No: TH01-CB

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	NB	DELL	E4300	DoC
2	Adapter	APD	WB-18D12FU	DoC

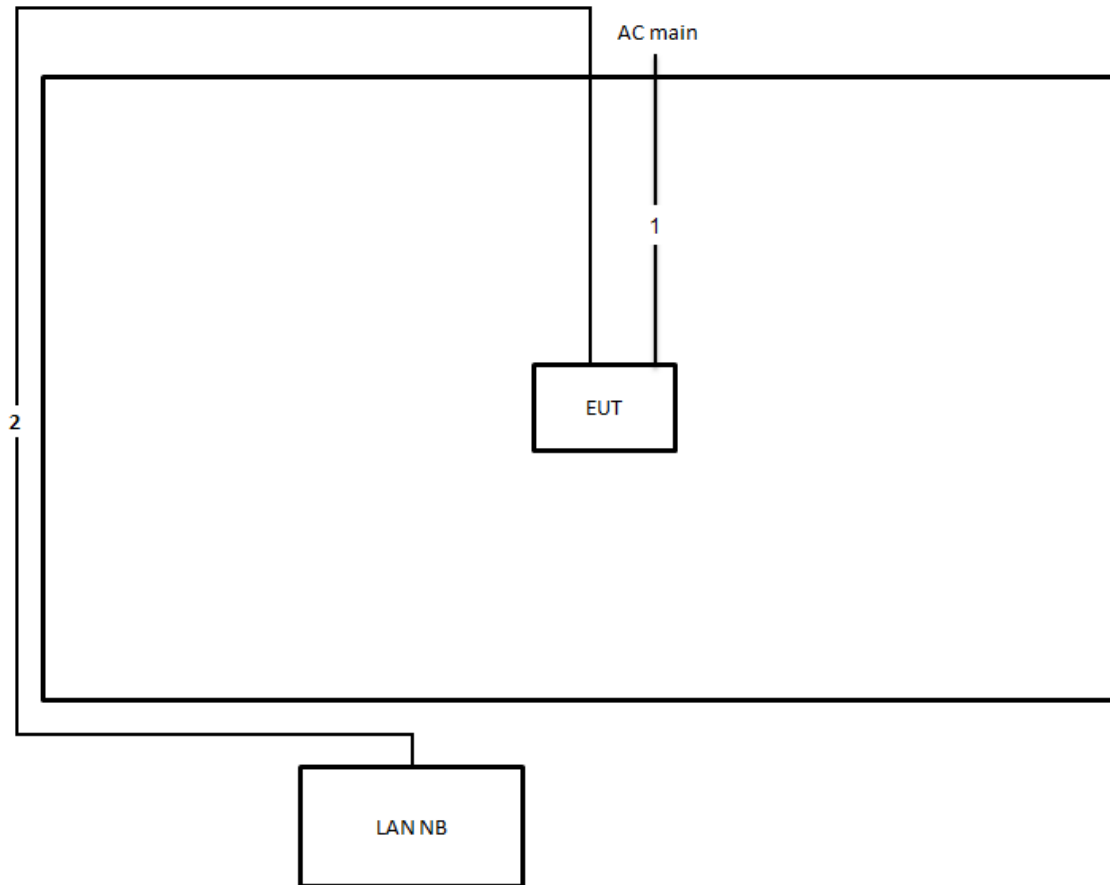
2.6 Test Setup Diagram



Test Setup Diagram - Radiated Test < 1GHz


Item	Connection	Shielded	Length
1	Power cable	No	0.7m
2	RJ-45 cable	No	10m
3	RJ-45 cable	No	10m
4	RJ-45 cable	No	1.5m

Test Setup Diagram - Radiated Test > 1GHz



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

3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

Note 1: * Decreases with the logarithm of the frequency.

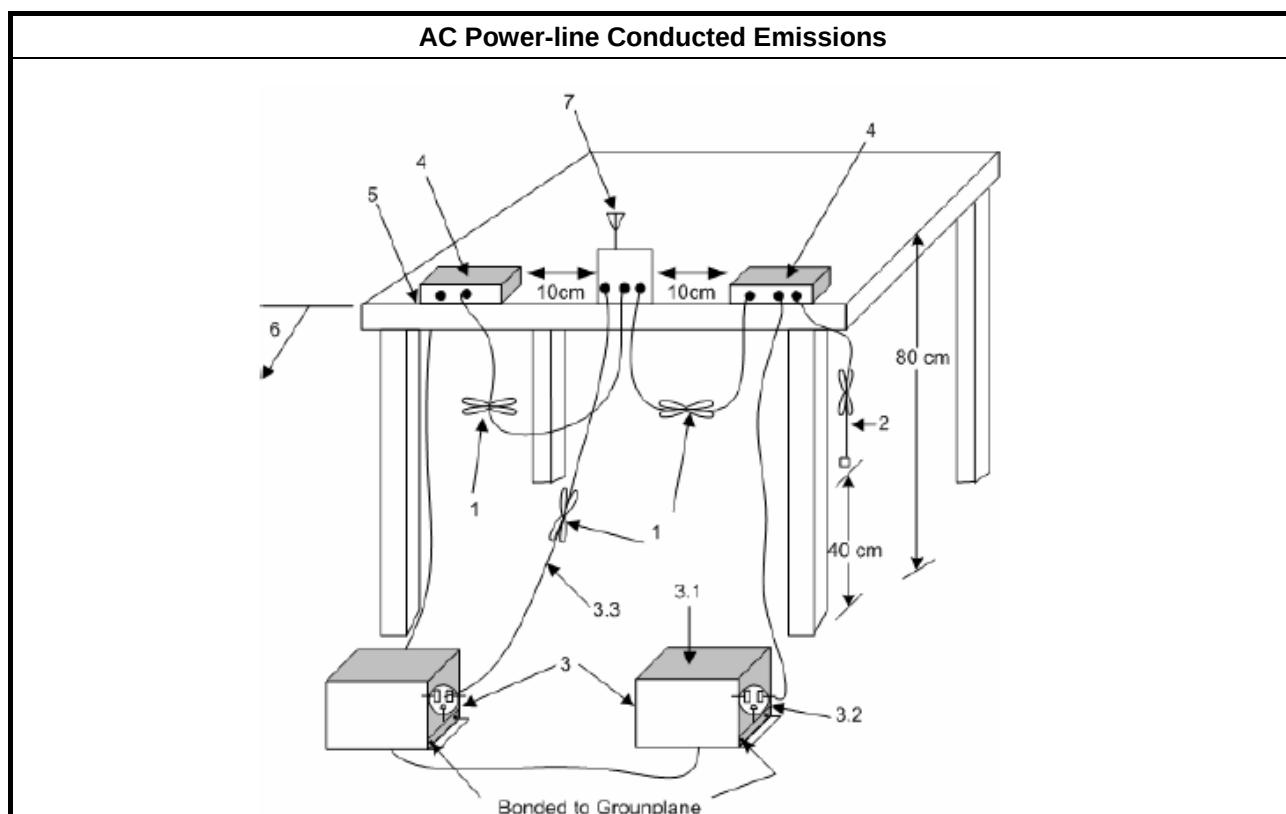
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

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

3.1.4 Test Setup





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	

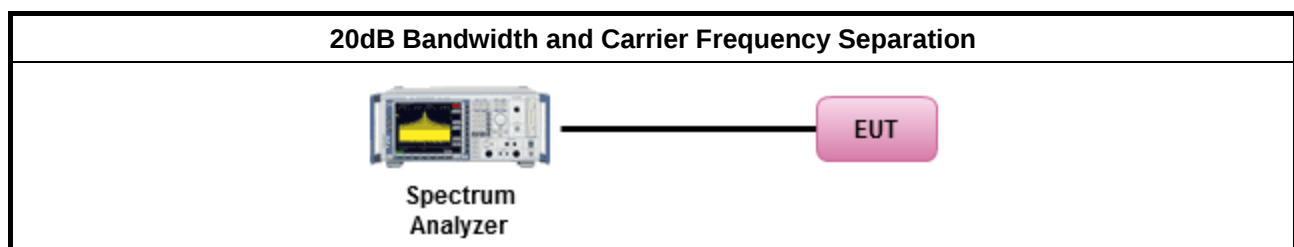
3.2.2 Measuring Instruments

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:	
	▪ $N \geq 50$; Power 30dBm; EIRP 36dBm
	▪ $50 > N \geq 25$; Power 24dBm; EIRP 30dBm
▪ 2400-2483.5 MHz Band:	
	▪ $N \geq 75$; Power 30dBm; EIRP 36dBm
	▪ $75 > N \geq 15$; Power 21dBm; EIRP 27dBm
▪ 5725-5850 MHz Band:	
	▪ $N \geq 75$; Power 30dBm; EIRP 36dBm
N: Number of Hopping Frequencies	

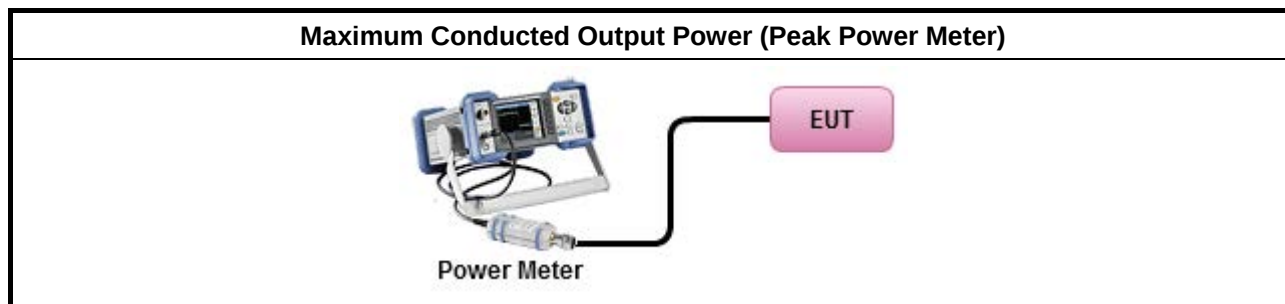
3.3.2 Measuring Instruments

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

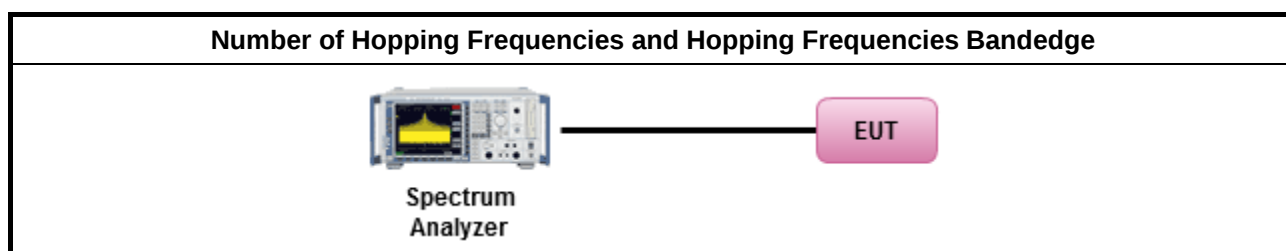
3.4.3 Measuring Instruments

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	

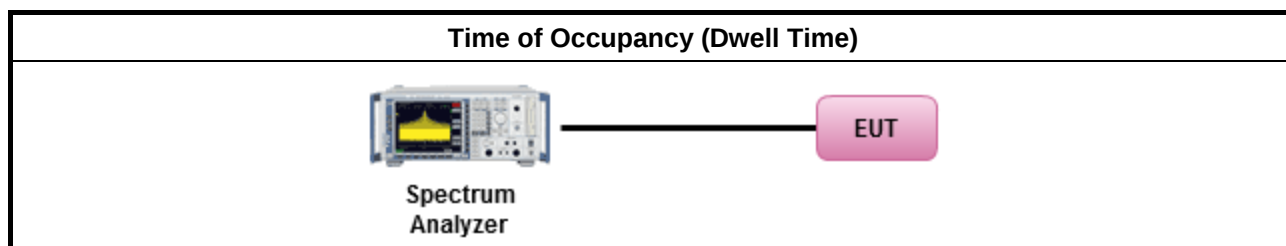
3.5.2 Measuring Instruments

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

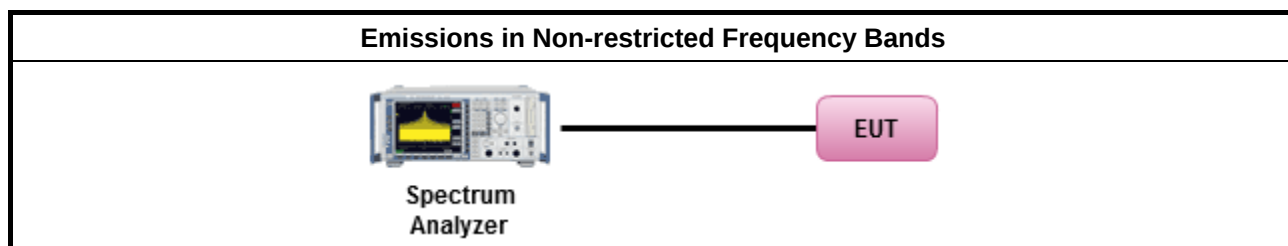
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

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

3.6.4 Test Setup



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.

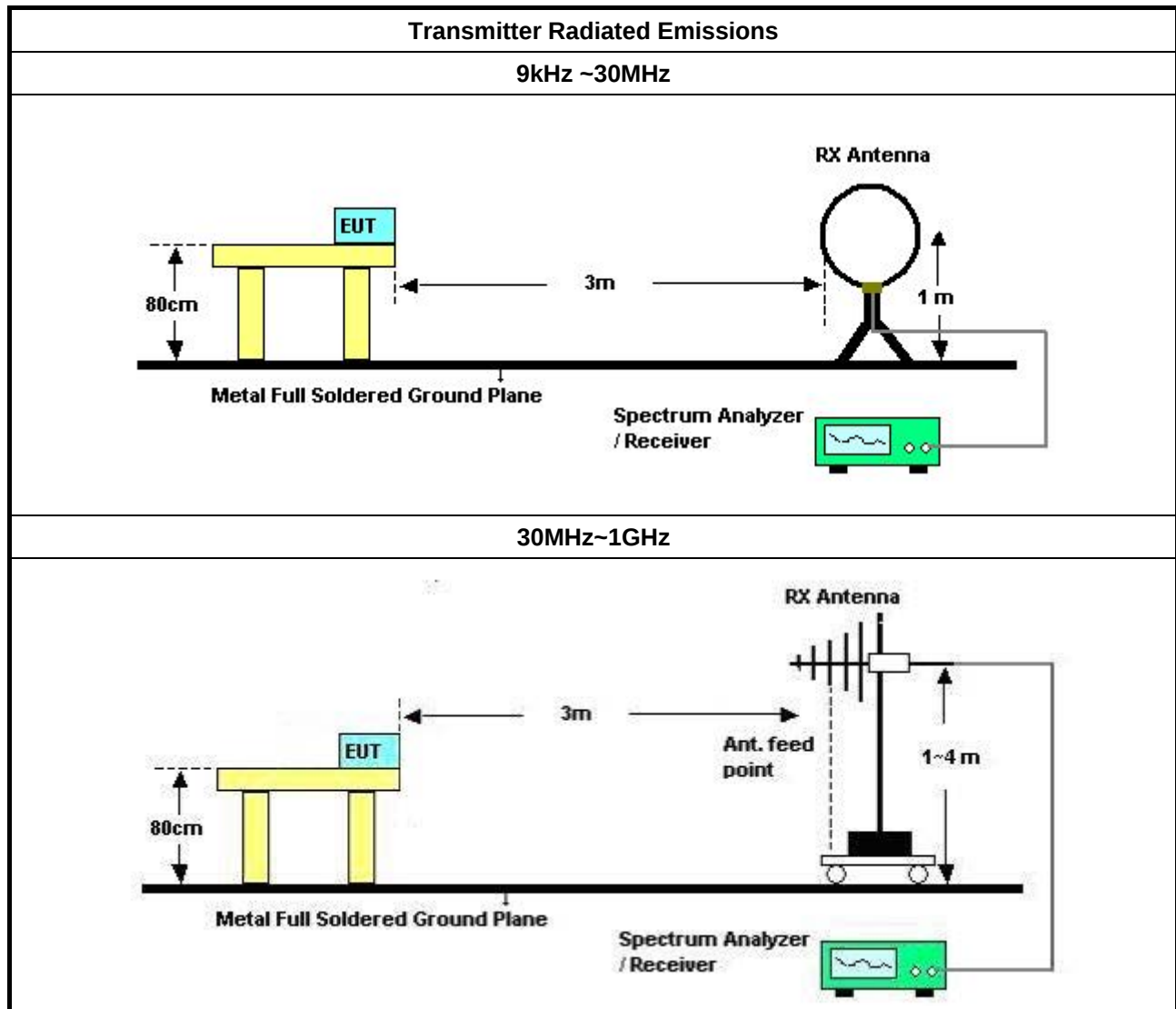
3.7.2 Measuring Instruments

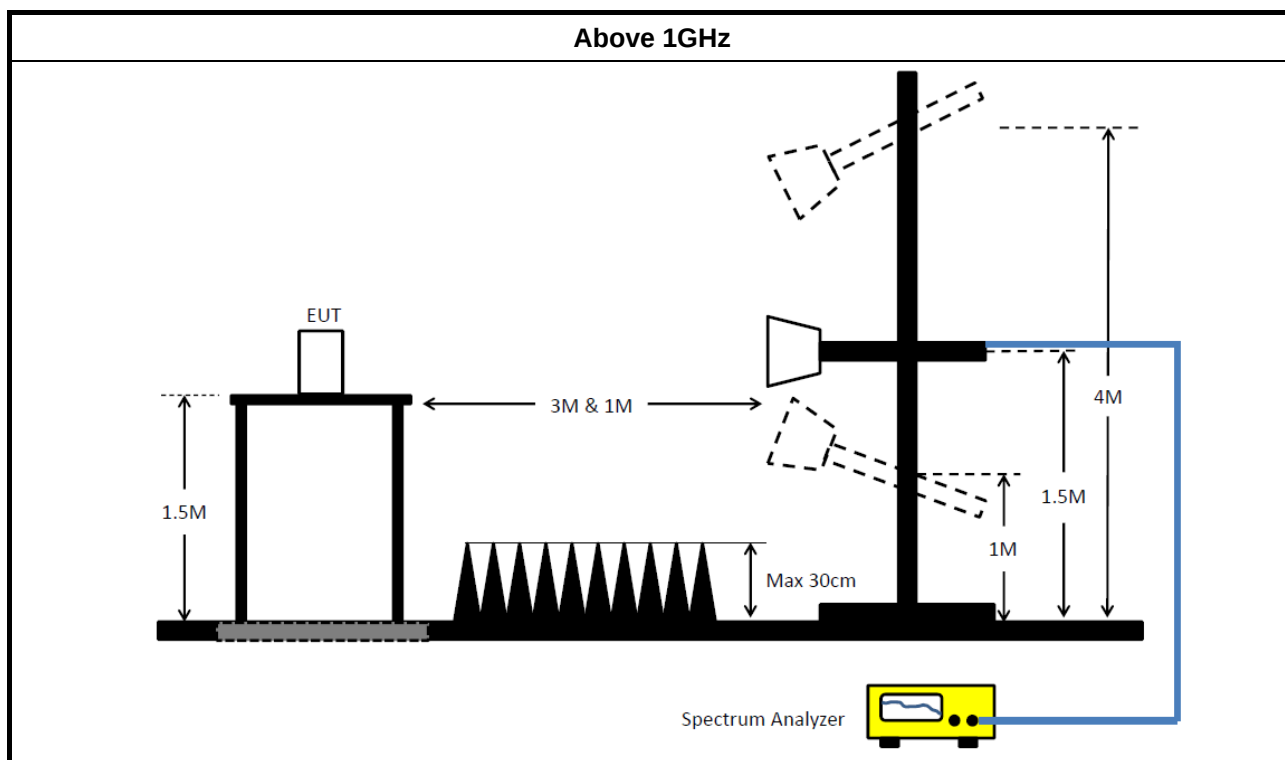
Refer a test equipment and calibration data table in this test report.

3.7.3 Test Procedures

Test Method	
▪ The average emission levels shall be measured in [hopping duty factor].	
▪ Refer as ANSI C63.10; clause 6.9.2.2 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.	
▪ For the transmitter unwanted emissions shall be measured using following options below:	
	▪ Refer as ANSI C63.10, clause 4.1.4.2.1 QP value.
	▪ Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak.
	▪ Refer as ANSI C63.10, clause 4.1.4.2.4 average value of hopping pulsed emissions.

3.7.4 Test Setup





3.7.5 Transmitter Radiated Unwanted Emissions (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.

3.7.6 Transmitter Radiated Unwanted Emissions

Refer as Appendix G

4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.45GHz	Jan. 23, 2017	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Dec. 14, 2016	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Dec. 21, 2016	Conduction (CO01-CB)
COND Cable	Woken	Cable	01	150kHz ~ 30MHz	May 23, 2017	Conduction (CO01-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	Conduction (CO01-CB)
BILOG ANTENNA with 6dB Attenuator	TESEQ & EMCI	CBL6112D & N-6-06	37880 & AT-N0609	20MHz ~ 2GHz	Aug. 30, 2016	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 16, 2016*	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Nov. 10, 2016	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 25, 2016	Radiation (03CH01-CB)
Pre-Amplifier	EMCI	EMC330N	980332	20MHz ~ 3GHz	May 02, 2017	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 16, 2017	Radiation (03CH01-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jun. 28, 2016	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Nov. 22, 2016	Radiation (03CH01-CB)
EMI Test	R&S	ESCS	100355	9kHz ~ 2.75GHz	May 06, 2017	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-16+17	N/A	30 MHz ~ 1 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16+17	N/A	1 GHz ~ 18 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#1	N/A	18GHz ~ 40 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#2	N/A	18GHz ~ 40 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
Test Software	Audix	E3	6.2009-I0-7	N/A	N/A	Radiation (03CH01-CB)

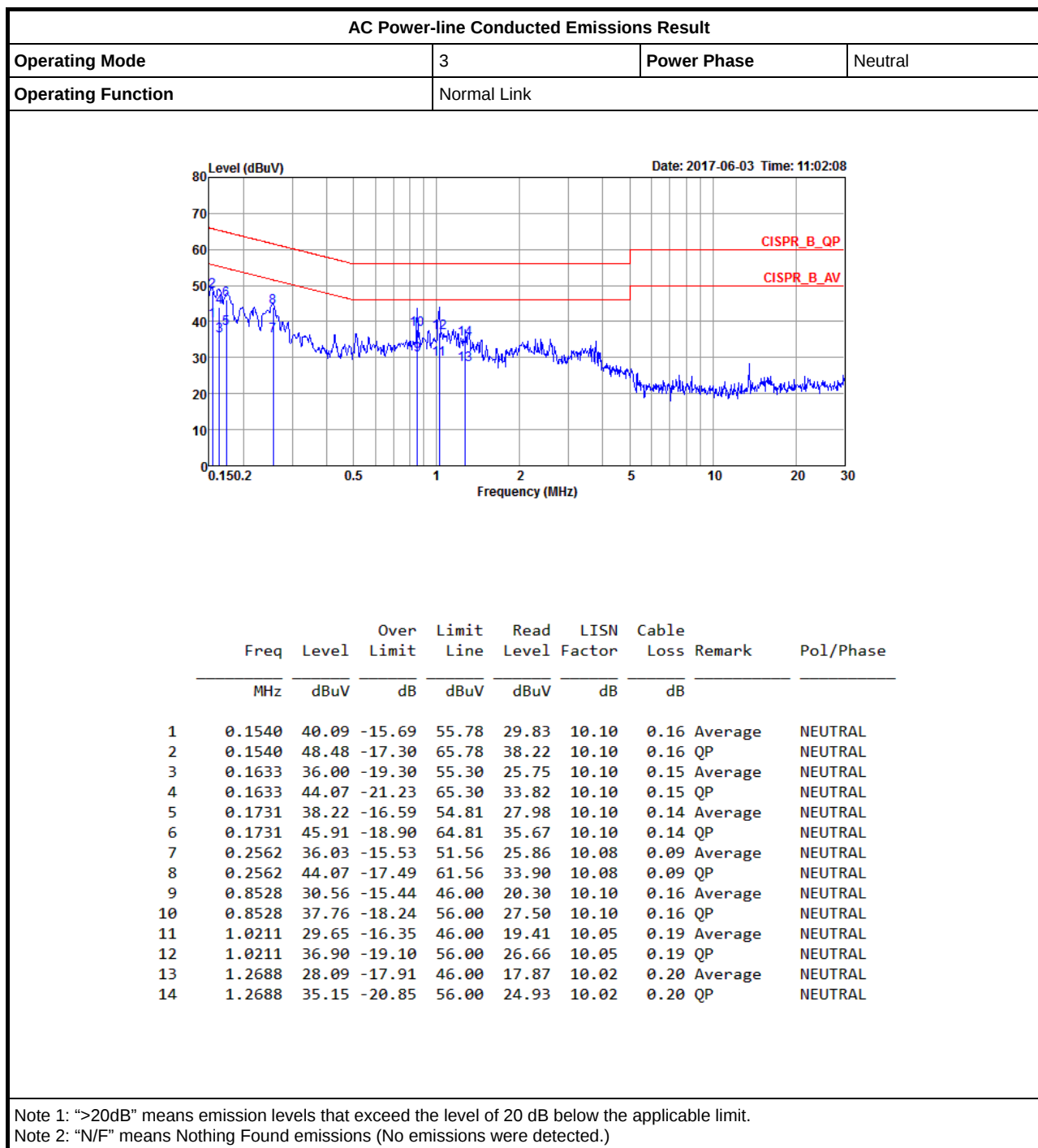


Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 26, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-6	1 GHz – 26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-7	1 GHz –26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-8	1 GHz –26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-9	1 GHz –26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 22, 2016	Conducted (TH01-CB)

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

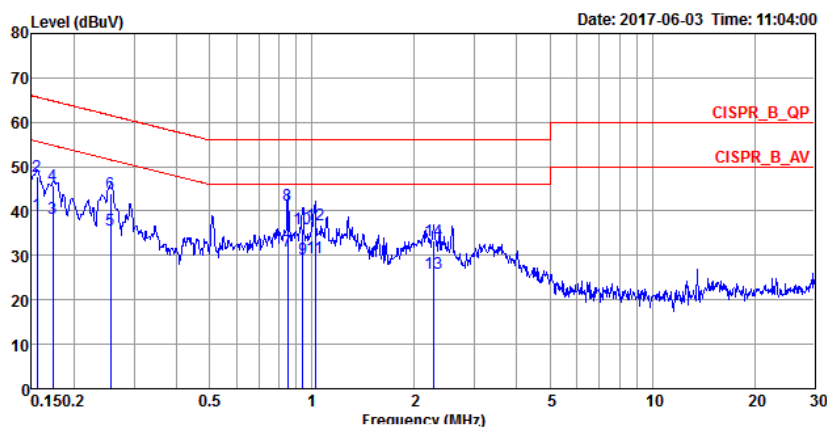
*Calibration Interval of instruments listed above is two year.

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



AC Power-line Conducted Emissions Result

Operating Mode	3	Power Phase	Line
Operating Function	Normal Link		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1557	39.40	-16.29	55.69	29.24	10.00	0.16	Average	LINE
2	0.1557	47.93	-17.76	65.69	37.77	10.00	0.16	QP	LINE
3	0.1731	38.26	-16.55	54.81	28.12	10.00	0.14	Average	LINE
4	0.1731	45.66	-19.15	64.81	35.52	10.00	0.14	QP	LINE
5	0.2562	35.76	-15.80	51.56	25.75	9.92	0.09	Average	LINE
6	0.2562	44.04	-17.52	61.56	34.03	9.92	0.09	QP	LINE
7	0.8483	31.00	-15.00	46.00	20.88	9.96	0.16	Average	LINE
8	0.8483	41.37	-14.63	56.00	31.25	9.96	0.16	QP	LINE
9	0.9381	29.36	-16.64	46.00	19.22	9.96	0.18	Average	LINE
10	0.9381	36.16	-19.84	56.00	26.02	9.96	0.18	QP	LINE
11	1.0211	29.41	-16.59	46.00	19.26	9.96	0.19	Average	LINE
12	1.0211	36.87	-19.13	56.00	26.72	9.96	0.19	QP	LINE
13	2.2726	26.07	-19.93	46.00	15.92	9.96	0.19	Average	LINE
14	2.2726	33.42	-22.58	56.00	23.27	9.96	0.19	QP	LINE

Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
BT-BR(1Mbps)	-	-	-	-	-
2.4-2.4835GHz	921.25k	867.066k	867kF1D	920k	865.817k
BT-EDR(2Mbps)	-	-	-	-	-
2.4-2.4835GHz	1.315M	1.199M	1M20G1D	1.315M	1.189M
BT-EDR(3Mbps)	-	-	-	-	-
2.4-2.4835GHz	1.275M	1.209M	1M21G1D	1.271M	1.183M

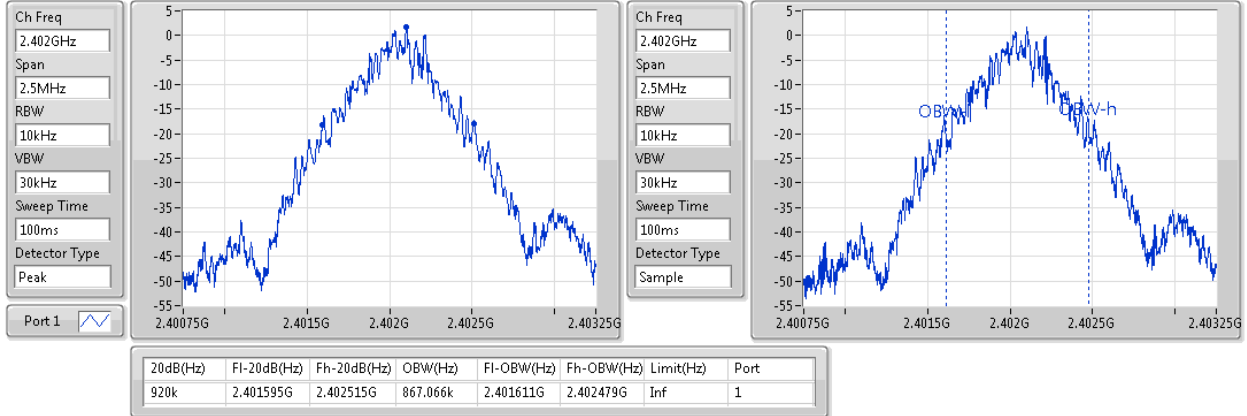
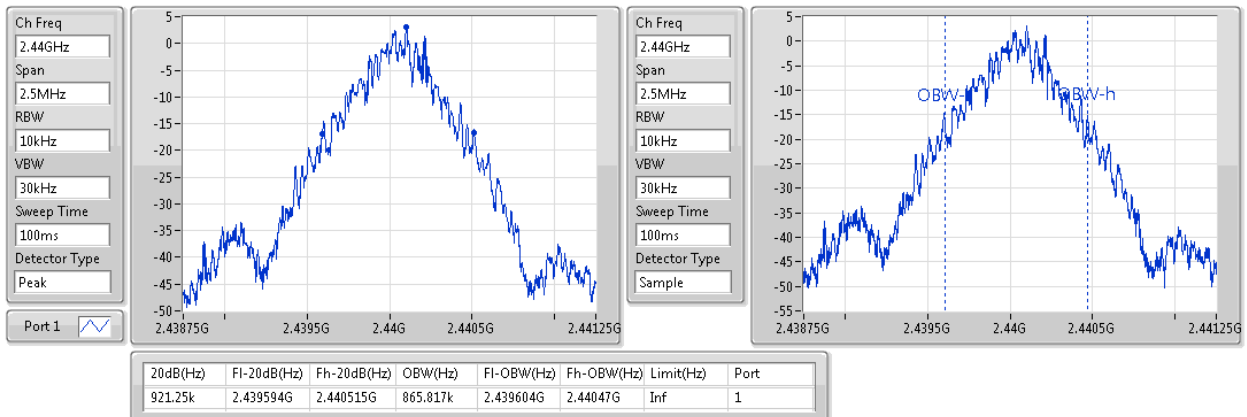
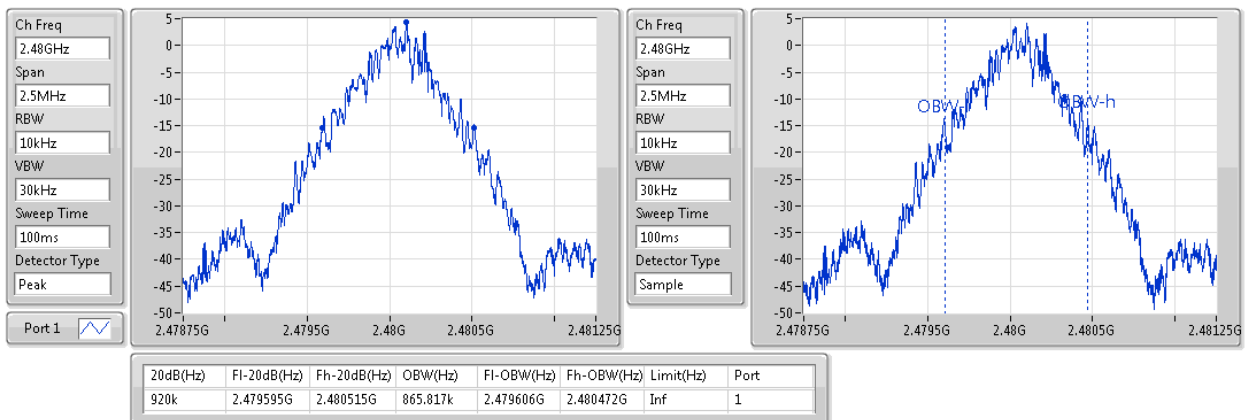
Max-N dB = Maximum 20dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;

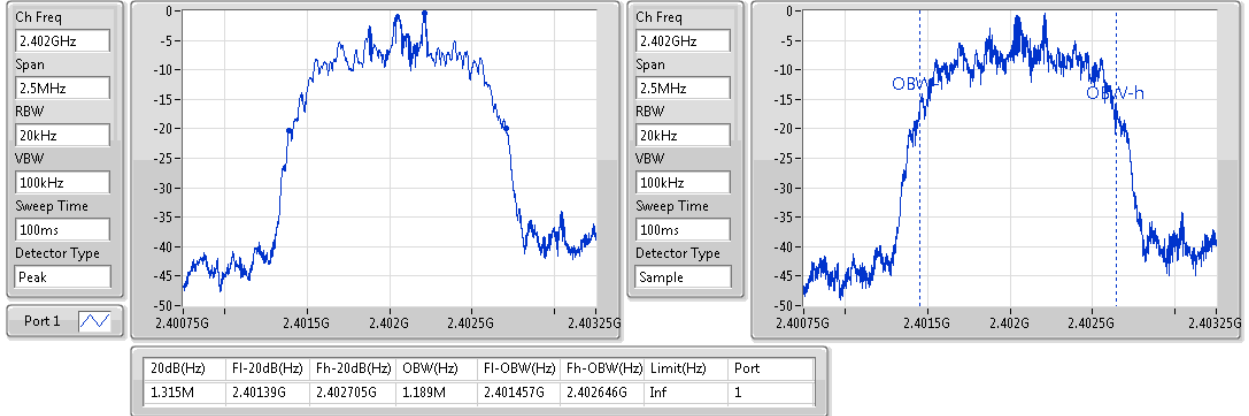
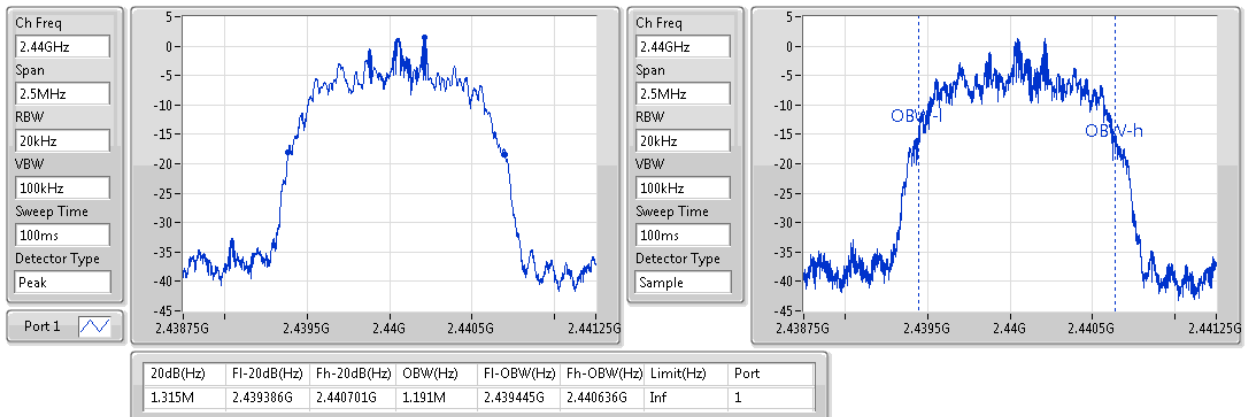
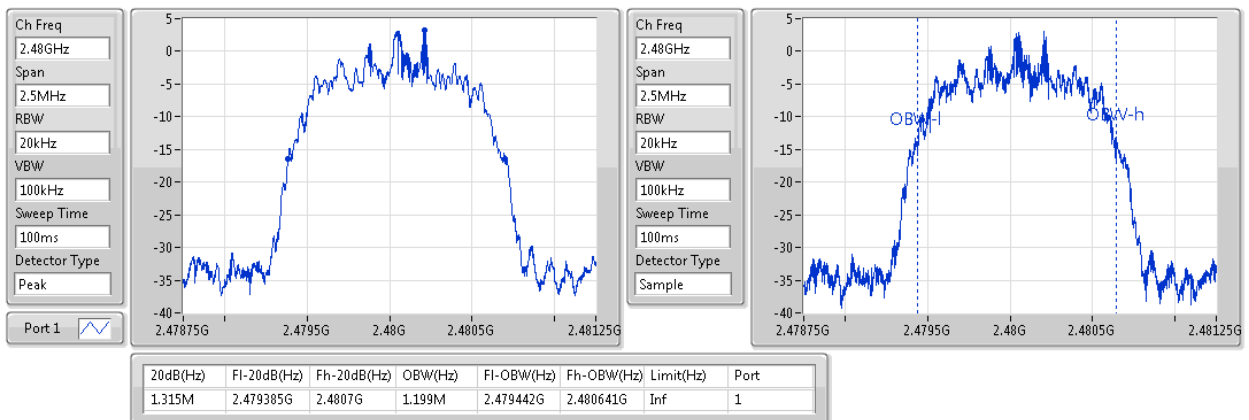
Min-N dB = Minimum 20dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

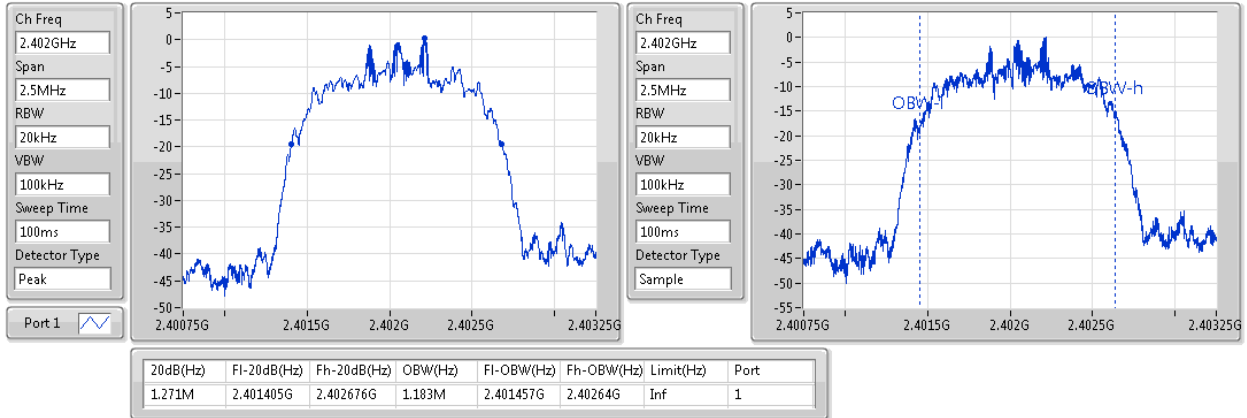
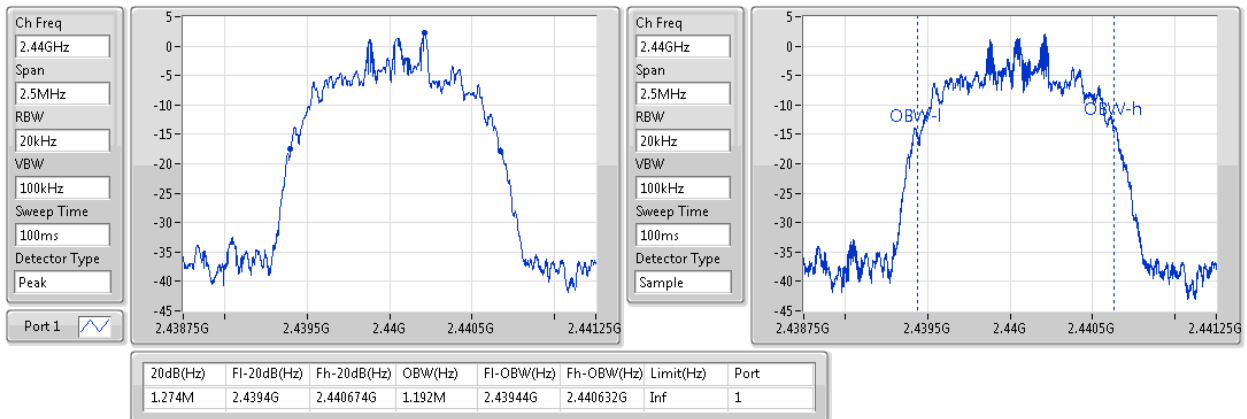
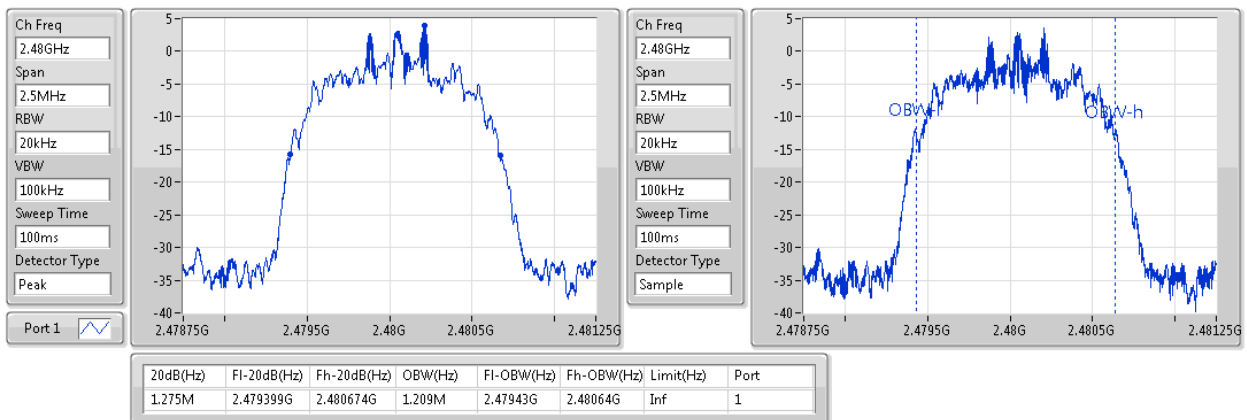
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	Inf	920k	867.066k
2440MHz	Pass	Inf	921.25k	865.817k
2480MHz	Pass	Inf	920k	865.817k
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.315M	1.189M
2440MHz	Pass	Inf	1.315M	1.191M
2480MHz	Pass	Inf	1.315M	1.199M
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.271M	1.183M
2440MHz	Pass	Inf	1.274M	1.192M
2480MHz	Pass	Inf	1.275M	1.209M

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

BT-BR(1Mbps)
EBW
2402MHz

BT-BR(1Mbps)
EBW
2440MHz

BT-BR(1Mbps)
EBW
2480MHz


BT-EDR(2Mbps)
EBW
2402MHz

BT-EDR(2Mbps)
EBW
2440MHz

BT-EDR(2Mbps)
EBW
2480MHz


BT-EDR(3Mbps)
EBW
2402MHz

BT-EDR(3Mbps)
EBW
2440MHz

BT-EDR(3Mbps)
EBW
2480MHz


Summary

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

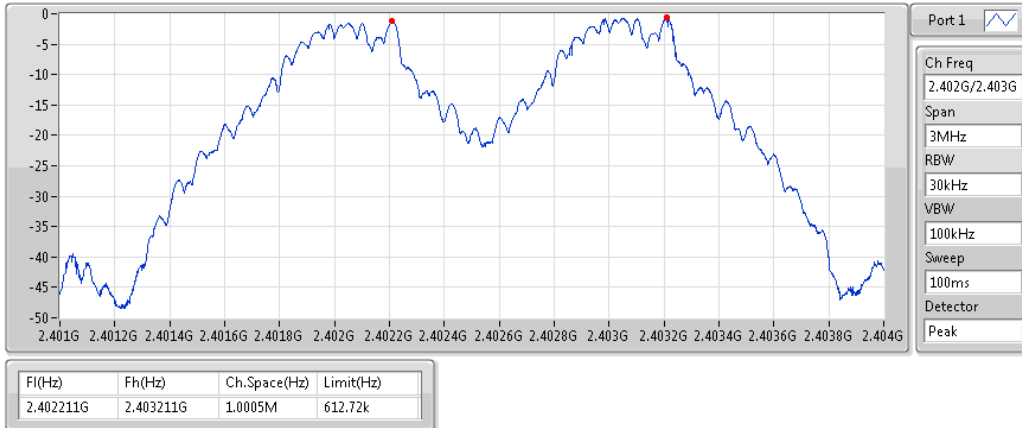
Result

Mode	Result	Fl (Hz)	Fh (Hz)	Ch.Space (Hz)	Limit (Hz)
BT-BR(1Mbps)	-	-	-	-	-
2402MHz	Pass	2.402211G	2.403211G	1.0005M	612.72k
2440MHz	Pass	2.440211G	2.44121G	999k	613.5525k
2480MHz	Pass	2.479211G	2.480213G	1.002M	612.72k
BT-EDR(2Mbps)	-	-	-	-	-
2402MHz	Pass	2.40205G	2.403049G	999k	875.79k
2440MHz	Pass	2.44005G	2.441049G	999k	875.79k
2480MHz	Pass	2.479049G	2.480049G	1.0005M	875.79k
BT-EDR(3Mbps)	-	-	-	-	-
2402MHz	Pass	2.402211G	2.40321G	999k	846.486k
2440MHz	Pass	2.440208G	2.44121G	1.002M	848.484k
2480MHz	Pass	2.479209G	2.480211G	1.002M	849.15k

BT-BR(1Mbps)

Channel Separation

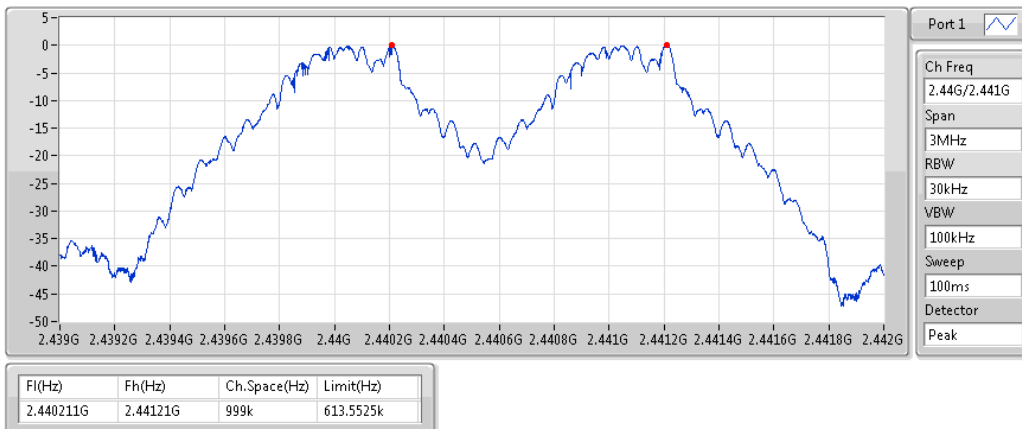
2.402G/2.403GHz



BT-BR(1Mbps)

Channel Separation

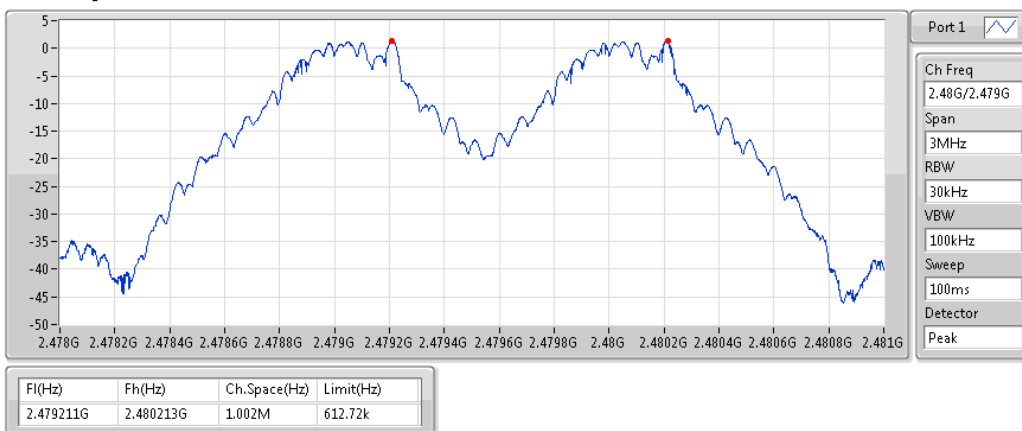
2.44G/2.441GHz



BT-BR(1Mbps)

Channel Separation

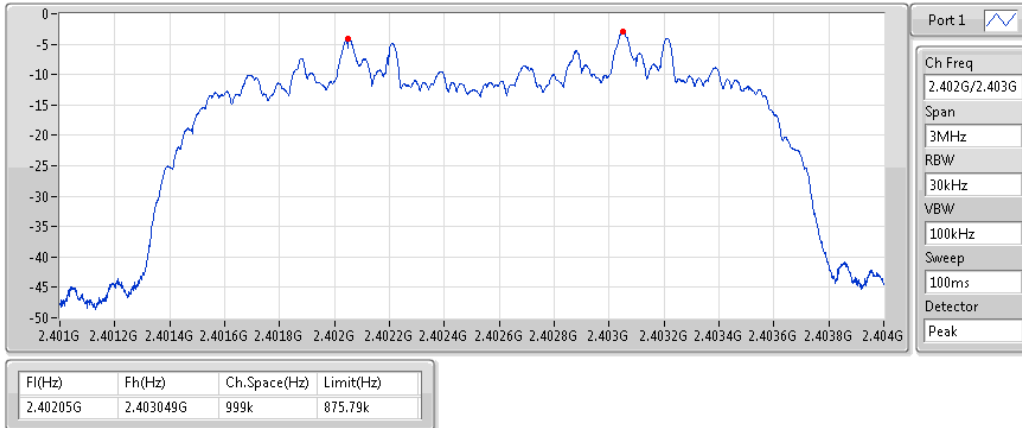
2.48G/2.479GHz



BT-EDR(2Mbps)

Channel Separation

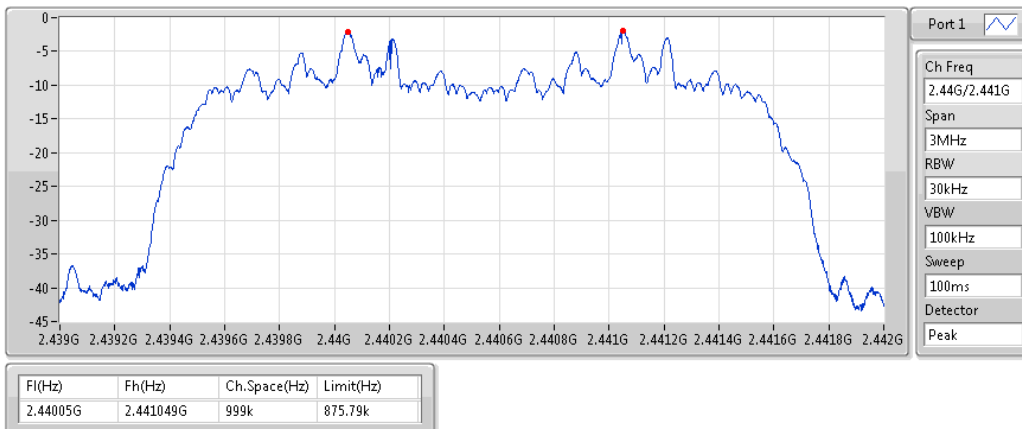
2.402G/2.403GHz



BT-EDR(2Mbps)

Channel Separation

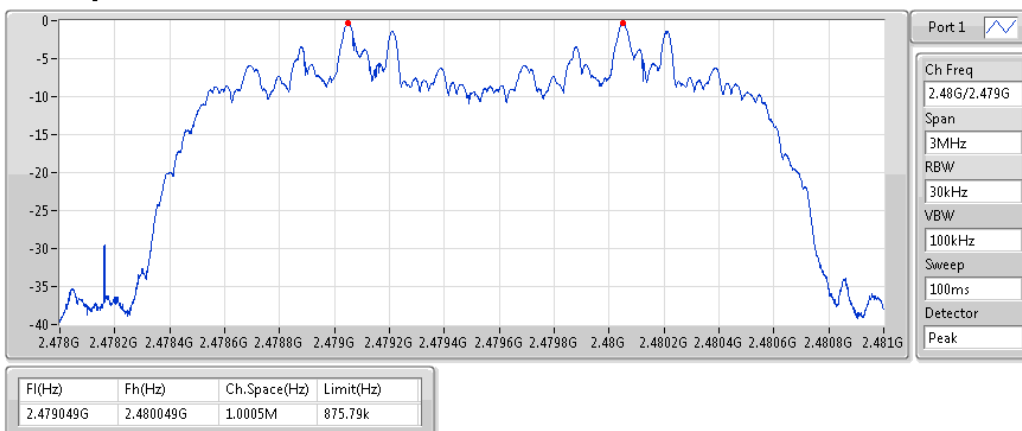
2.44G/2.441GHz



BT-EDR(2Mbps)

Channel Separation

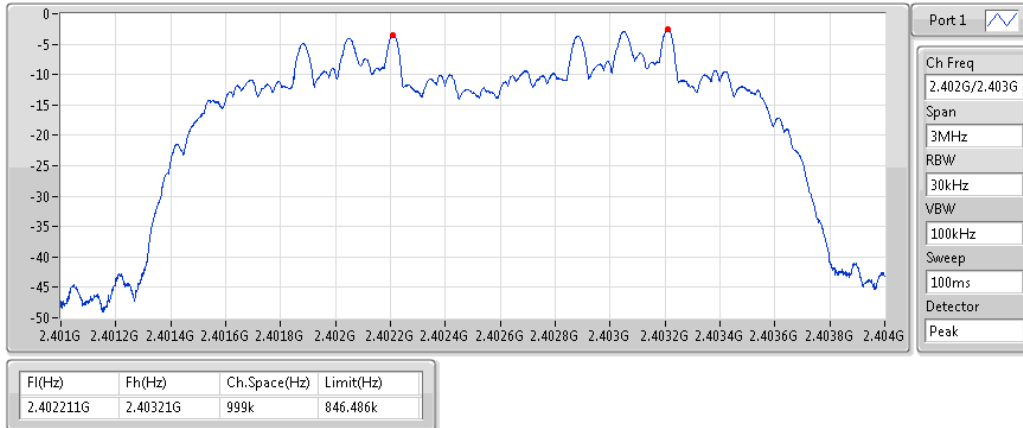
2.48G/2.479GHz



BT-EDR(3Mbps)

Channel Separation

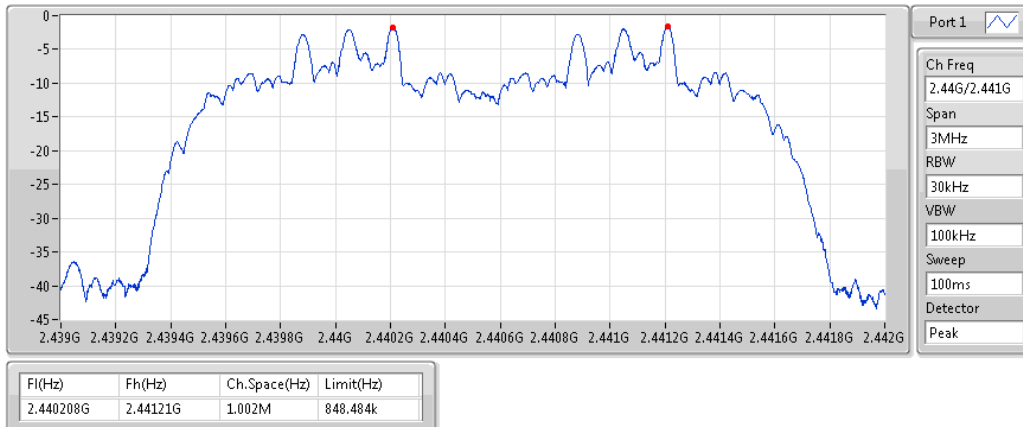
2.402G/2.403GHz



BT-EDR(3Mbps)

Channel Separation

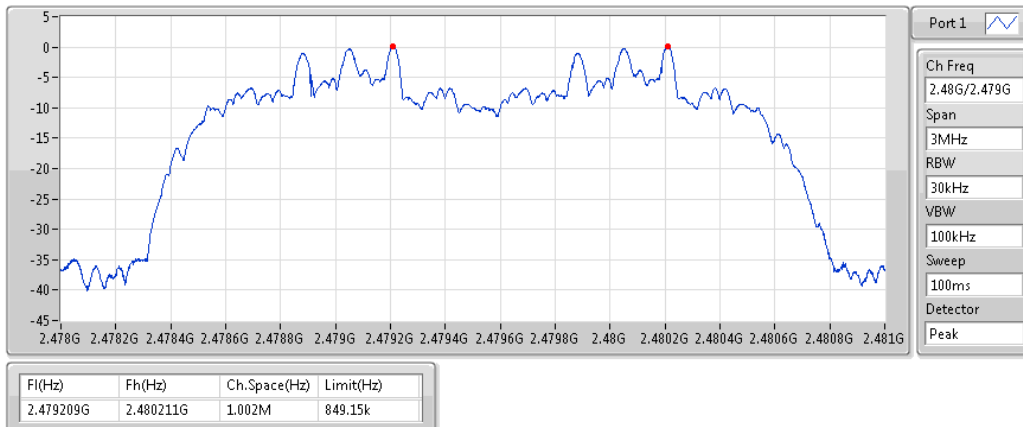
2.44G/2.441GHz



BT-EDR(3Mbps)

Channel Separation

2.48G/2.479GHz



Summary

Mode	Power (dBm)	Power (W)
BT-BR(1Mbps)	-	-
2.4-2.4835GHz	9.96	0.00991
BT-EDR(2Mbps)	-	-
2.4-2.4835GHz	7.12	0.00515
BT-EDR(3Mbps)	-	-
2.4-2.4835GHz	7.12	0.00515

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	2.10	7.41	21.00
2440MHz	Pass	2.10	8.72	21.00
2480MHz	Pass	2.10	9.96	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	2.10	3.42	21.00
2440MHz	Pass	2.10	5.32	21.00
2480MHz	Pass	2.10	7.12	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	2.10	3.41	21.00
2440MHz	Pass	2.10	5.33	21.00
2480MHz	Pass	2.10	7.12	21.00

Summary

Mode	Power (dBm)	Power (W)
BT-BR(1Mbps)	-	-
2.4-2.4835GHz	10.11	0.01026
BT-EDR(2Mbps)	-	-
2.4-2.4835GHz	9.17	0.00826
BT-EDR(3Mbps)	-	-
2.4-2.4835GHz	9.39	0.00869

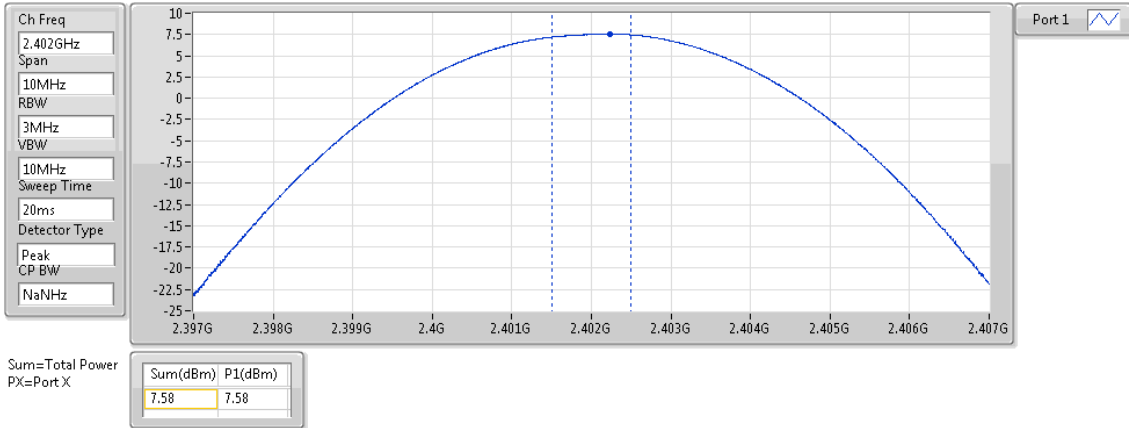
Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	2.10	7.58	21.00
2440MHz	Pass	2.10	8.92	21.00
2480MHz	Pass	2.10	10.11	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	2.10	5.85	21.00
2440MHz	Pass	2.10	7.64	21.00
2480MHz	Pass	2.10	9.17	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	2.10	6.29	21.00
2440MHz	Pass	2.10	7.99	21.00
2480MHz	Pass	2.10	9.39	21.00

BT-BR(1Mbps)

PK Power

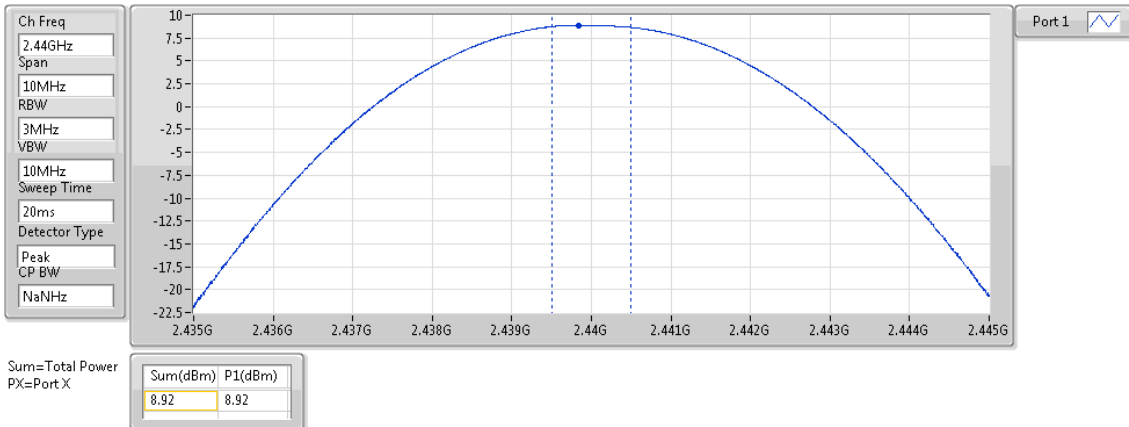
2402MHz



BT-BR(1Mbps)

PK Power

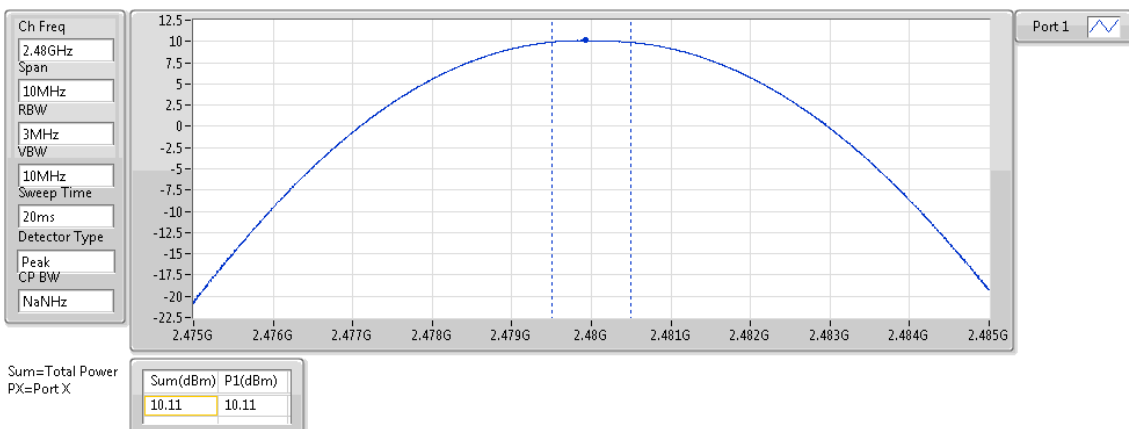
2440MHz



BT-BR(1Mbps)

PK Power

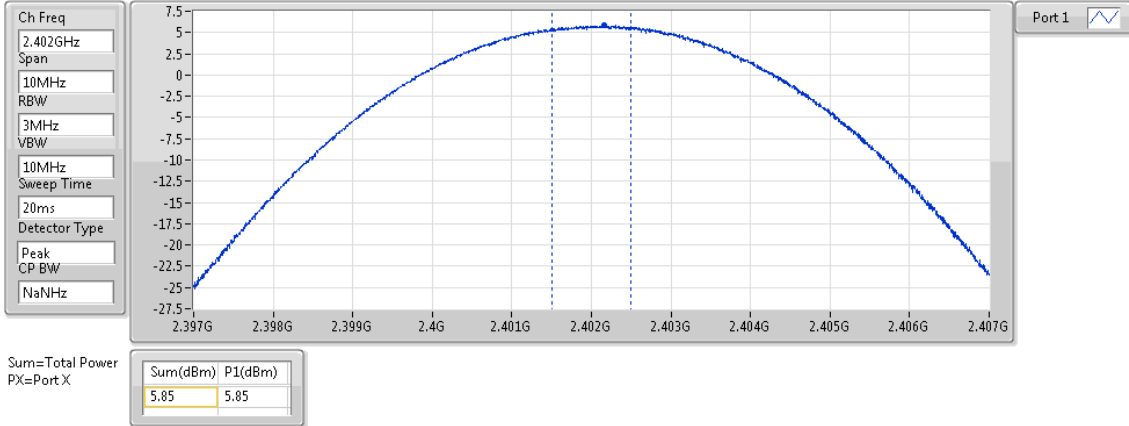
2480MHz



BT-EDR(2Mbps)

PK Power

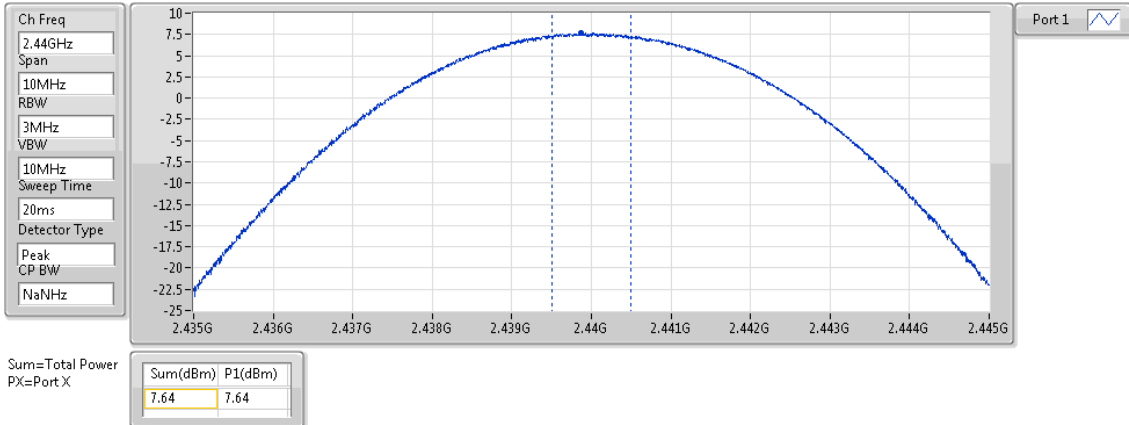
2402MHz



BT-EDR(2Mbps)

PK Power

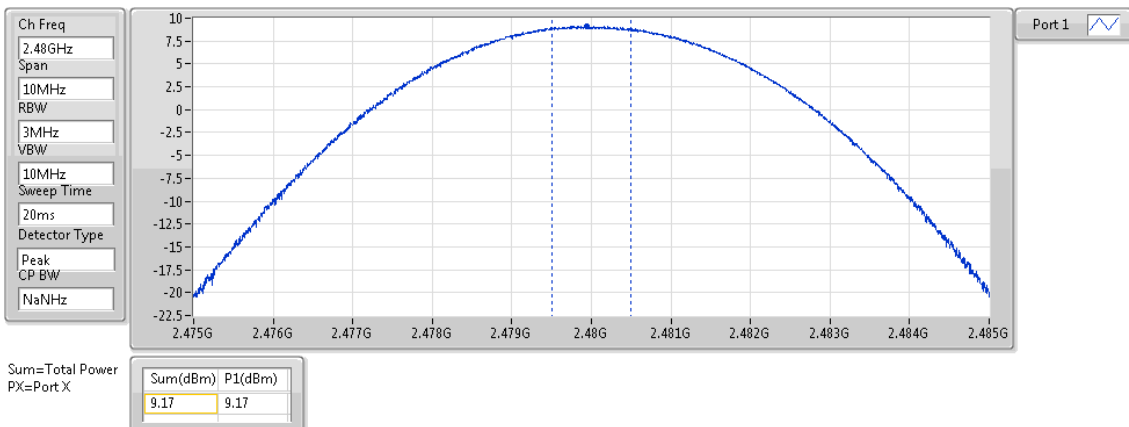
2440MHz



BT-EDR(2Mbps)

PK Power

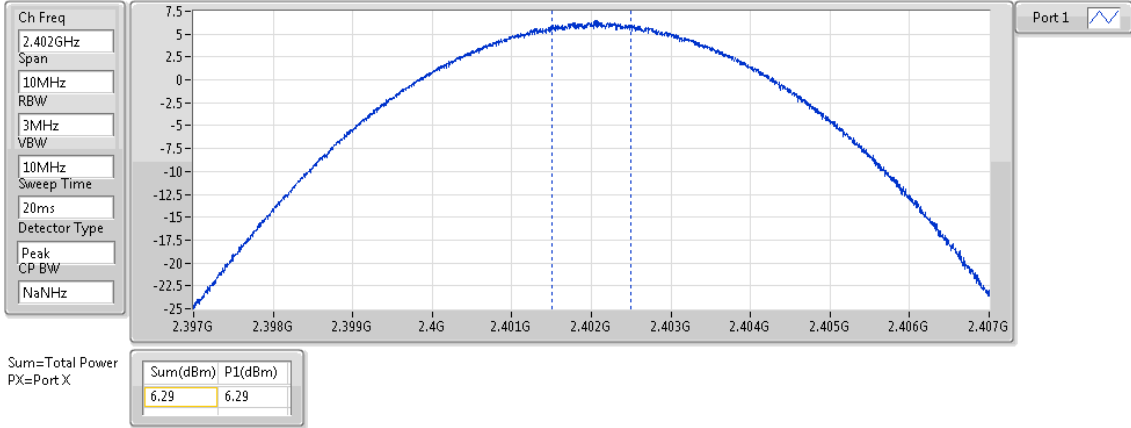
2480MHz



BT-EDR(3Mbps)

PK Power

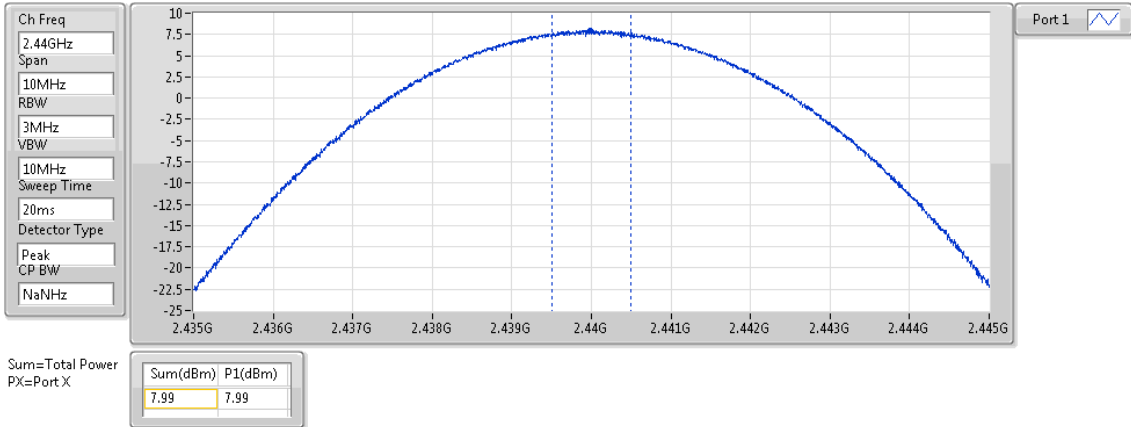
2402MHz



BT-EDR(3Mbps)

PK Power

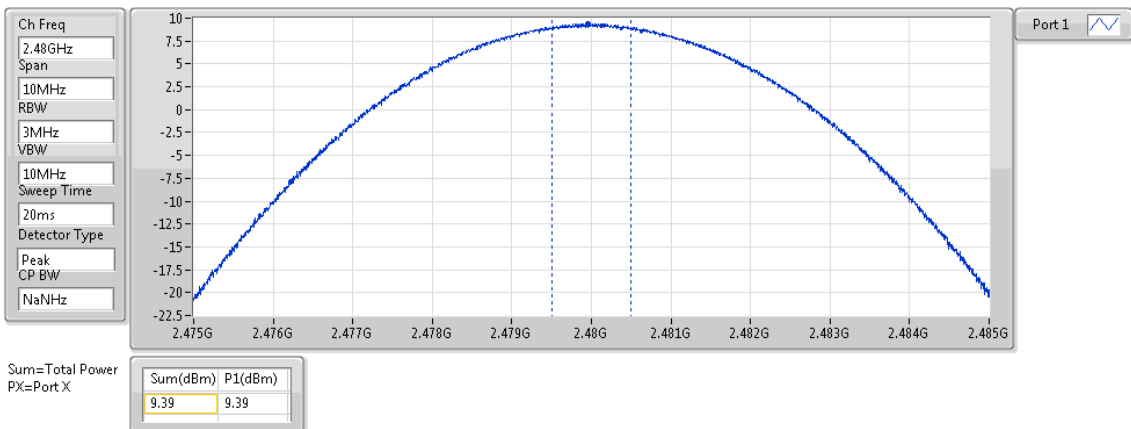
2440MHz



BT-EDR(3Mbps)

PK Power

2480MHz



Summary

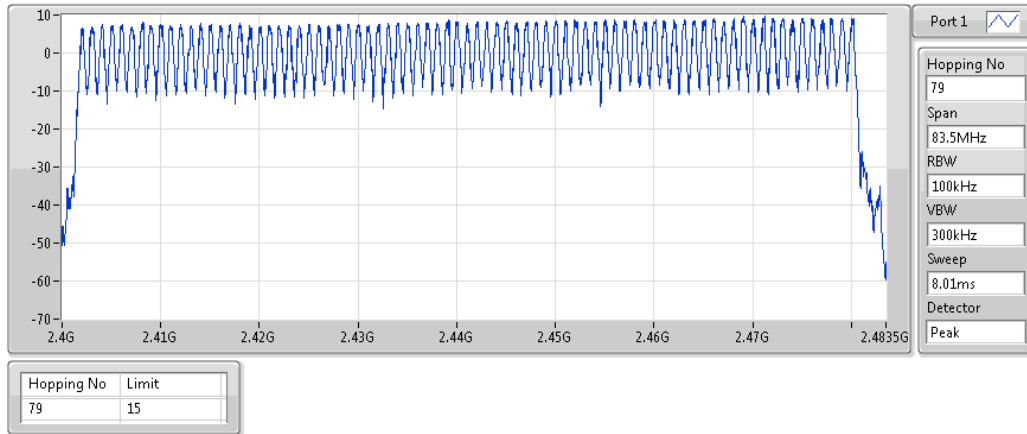
Mode	Max-Hop No
BT-BR(1Mbps)	-
2.4-2.4835GHz	79
BT-EDR(2Mbps)	-
2.4-2.4835GHz	79
BT-EDR(3Mbps)	-
2.4-2.4835GHz	79

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

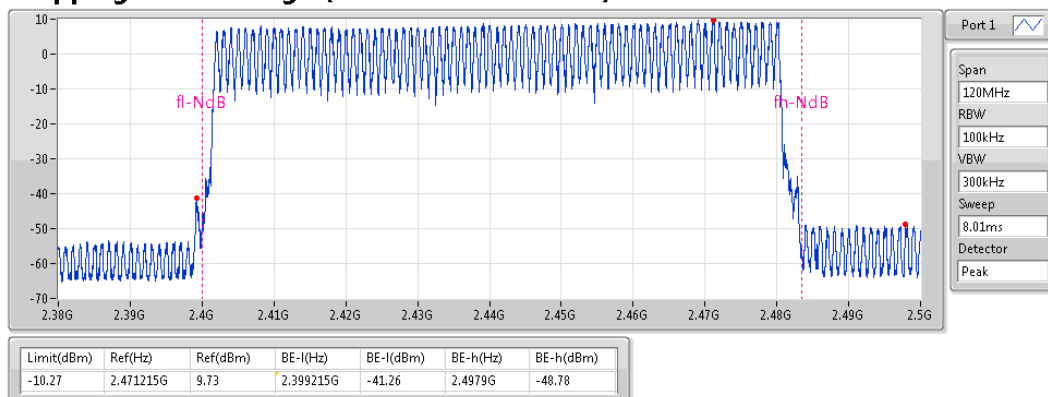
BT-BR(1Mbps) 2440MHz

Hopping Ch



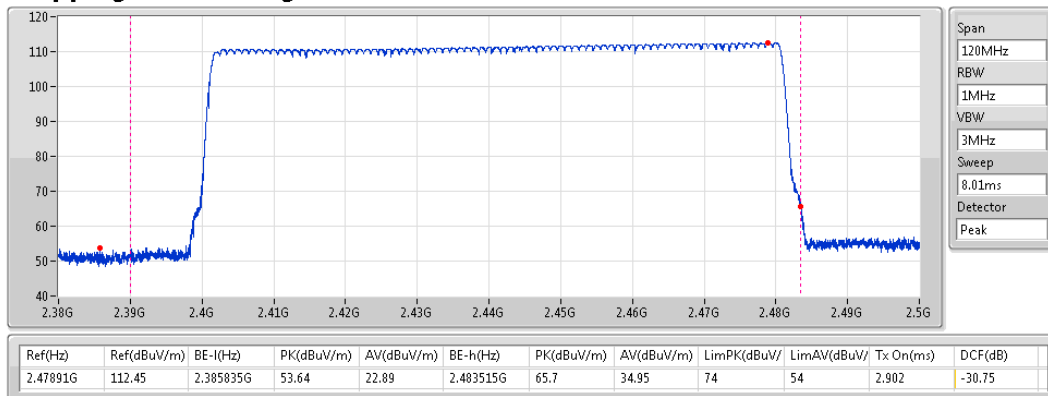
BT-BR(1Mbps) 2440MHz

Hopping Ch Bandedge (Non-restricted Band)



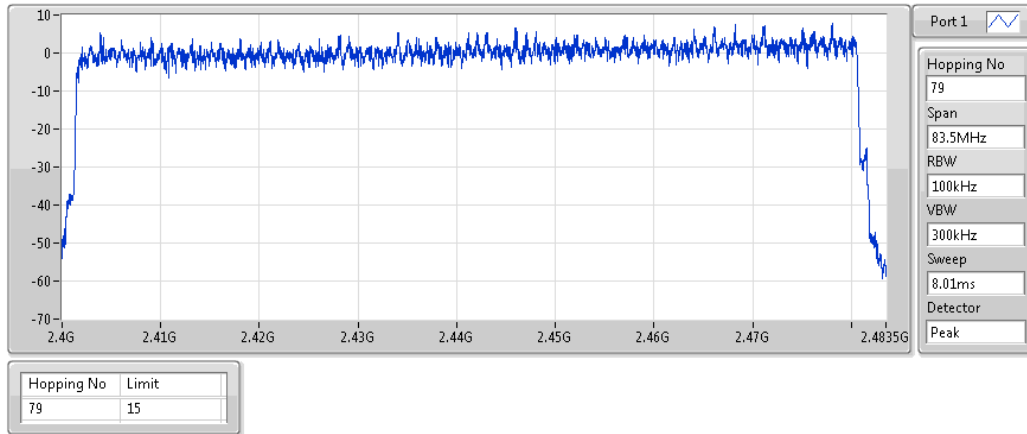
BT-BR(1Mbps) 2440MHz

Hopping Ch Bandedge (Restricted Band)



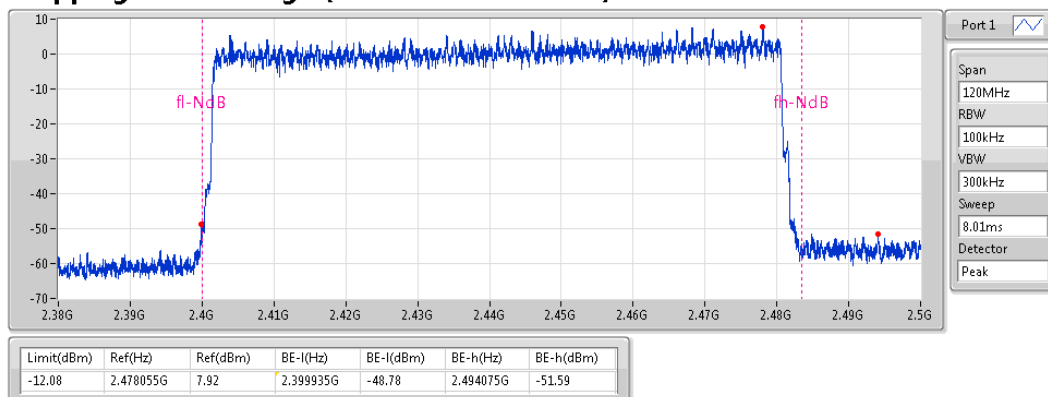
BT-EDR(2Mbps) 2440MHz

Hopping Ch



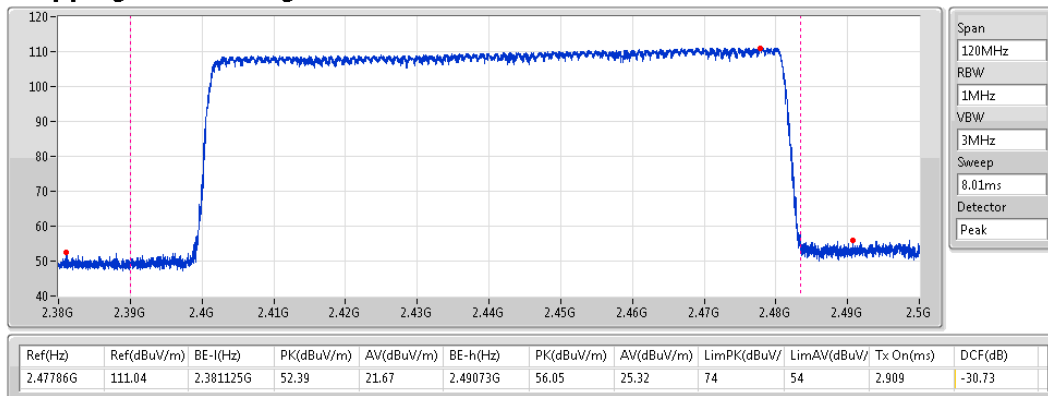
BT-EDR(2Mbps) 2440MHz

Hopping Ch Bandedge (Non-restricted Band)



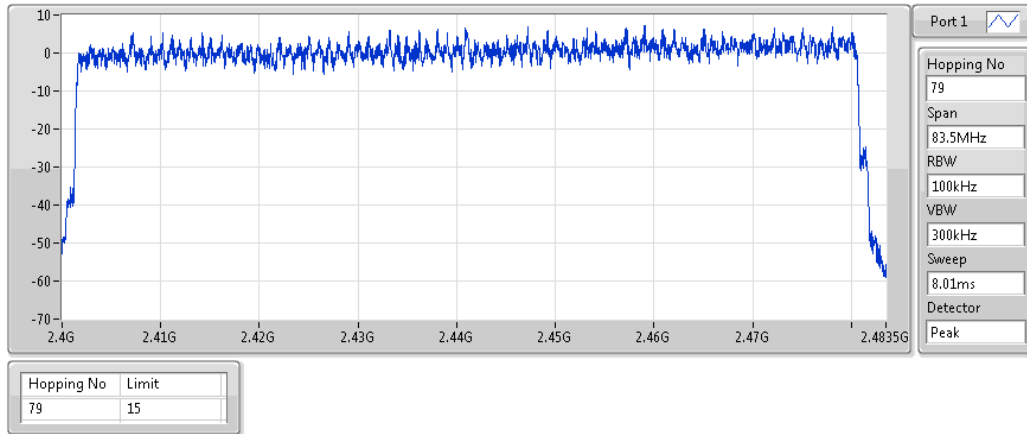
BT-EDR(2Mbps) 2440MHz

Hopping Ch Bandedge (Restricted Band)



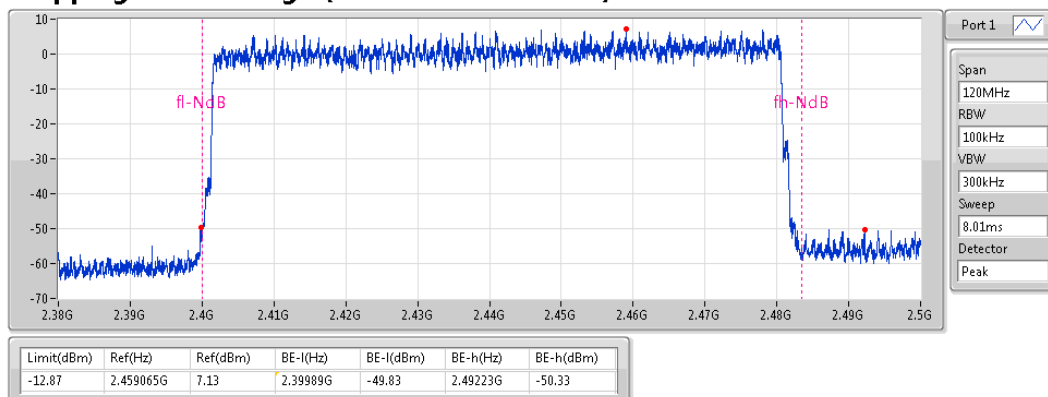
BT-EDR(3Mbps) 2440MHz

Hopping Ch



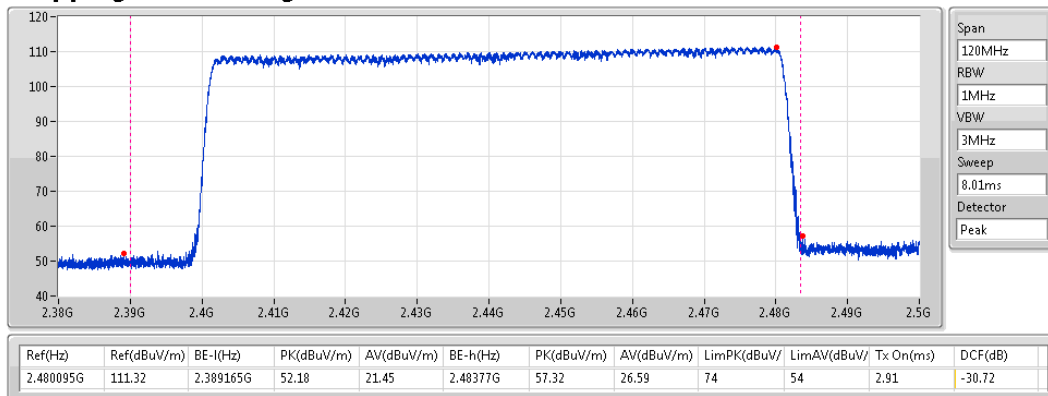
BT-EDR(3Mbps) 2440MHz

Hopping Ch Bandedge (Non-restricted Band)



BT-EDR(3Mbps) 2440MHz

Hopping Ch Bandedge (Restricted Band)



Summary

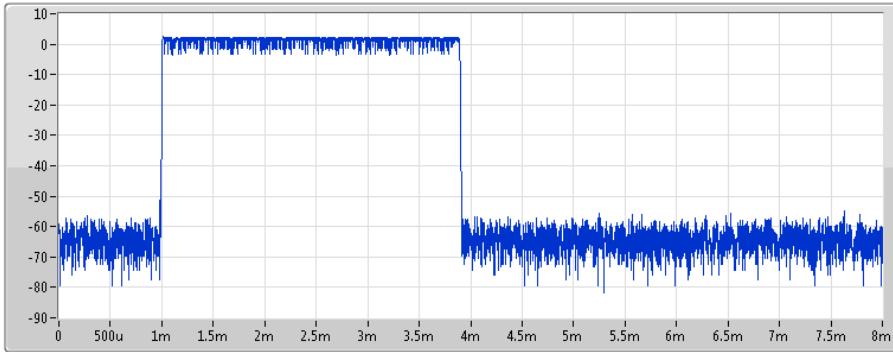
Mode	Max-Dwell (s)
BT-BR(1Mbps)	-
2.4-2.4835GHz	309.3532m
BT-EDR(2Mbps)	-
2.4-2.4835GHz	310.0994m
BT-EDR(3Mbps)	-
2.4-2.4835GHz	310.206m

Result

Mode	Result	Period (s)	Dwell (s)	Limit (s)	Tx On (s)
BT-BR(1Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	309.3532m	400m	2.902m
BT-EDR(2Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	310.0994m	400m	2.909m
BT-EDR(3Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	310.206m	400m	2.91m

BT-BR(1Mbps)

2440MHz



Dwell

Port 1 

Ch Freq
2.44GHz

RBW
300kHz

VBW
1MHz

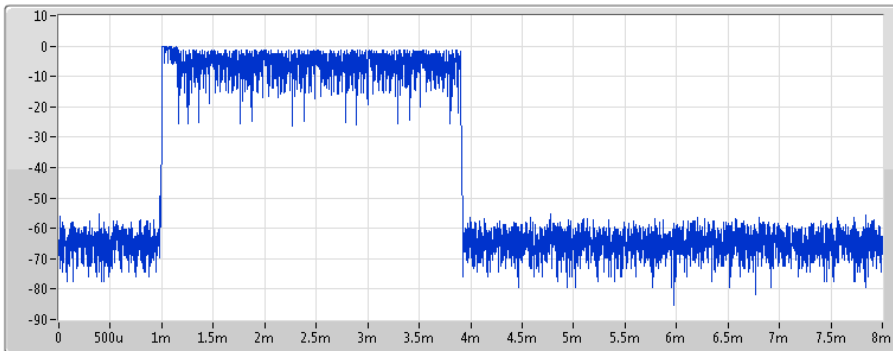
Sweep Time
8ms

TX Time
2.902ms

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	309.3532m	400m	2.902m

BT-EDR(2Mbps)

2440MHz



Dwell

Port 1 

Ch Freq
2.44GHz

RBW
300kHz

VBW
1MHz

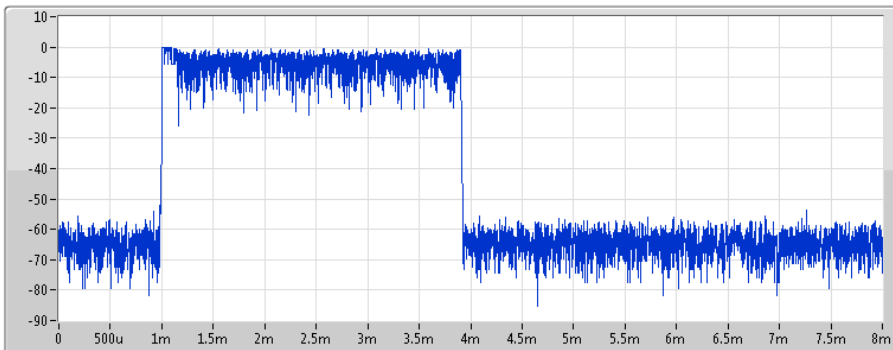
Sweep Time
8ms

TX Time
2.909ms

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	310.0994m	400m	2.909m

BT-EDR(3Mbps)

2440MHz



Dwell

Port 1 

Ch Freq
2.44GHz

RBW
300kHz

VBW
1MHz

Sweep Time
8ms

TX Time
2.91ms

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	310.206m	400m	2.91m

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
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2.4-2.4835GHz	Pass	2.40167G	-5.23	-25.23	890.768M	-61.65	2.399188G	-41.23	2.4853G	-60.60	7.205102G	-48.87	1

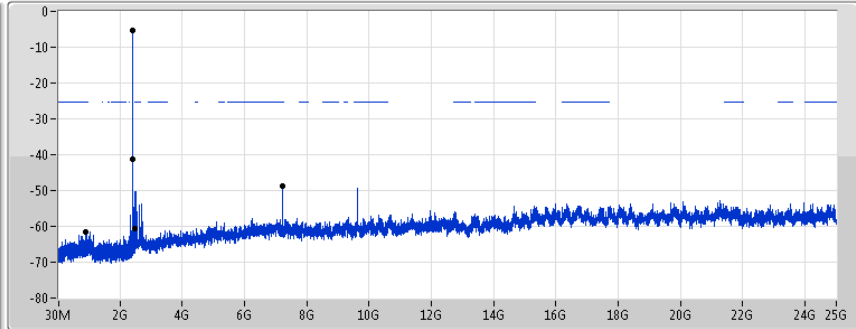
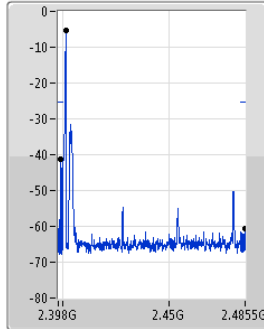
Result

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	2.40167G	-5.23	-25.23	890.768M	-61.65	2.399188G	-41.23	2.4853G	-60.60	7.205102G	-48.87	1
2480MHz	Pass	2.479993G	9.01	-10.99	2.123312G	-63.08	2.39822G	-61.78	2.483556G	-52.78	2.584001G	-48.82	1
BT-EDR(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.402338G	0.39	-19.61	1.968208G	-62.15	2.399996G	-46.49	2.484024G	-61.50	9.608525G	-50.81	1
2480MHz	Pass	2.479993G	4.63	-15.37	900.24M	-62.80	2.398248G	-62.39	2.483728G	-55.90	9.918099G	-51.04	1
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.401837G	0.60	-19.40	880.112M	-62.55	2.399984G	-47.30	2.485232G	-61.72	2.555858G	-52.94	1
2480MHz	Pass	2.479993G	4.35	-15.65	580.56M	-63.21	2.399684G	-62.23	2.483528G	-55.13	2.555858G	-52.54	1

BT-BR(1Mbps)

CSE NdB

2402MHz

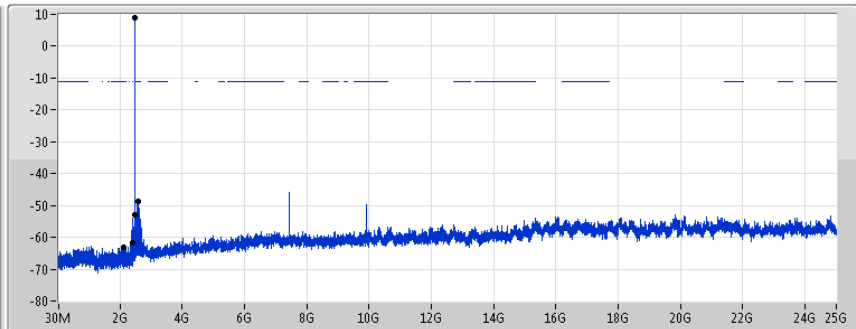
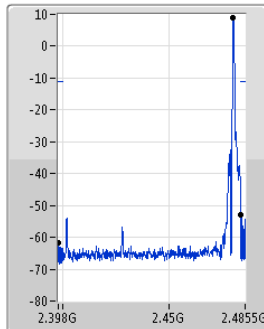


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40167G	-5.23	-25.23	890.768M	-61.65	2.399188G	-41.23	2.4853G	-60.60	7.205102G	-48.87	1

BT-BR(1Mbps)

CSE NdB

2480MHz

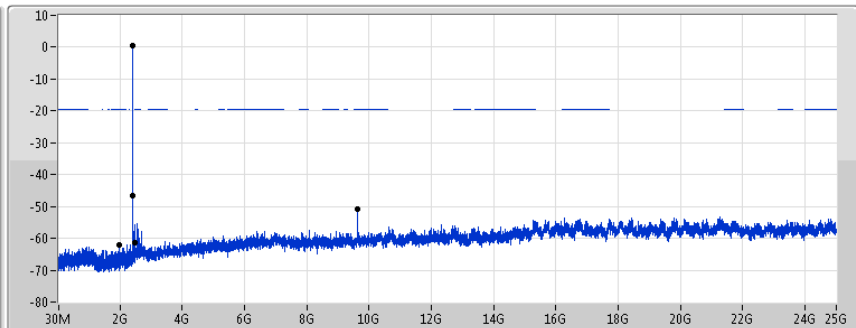
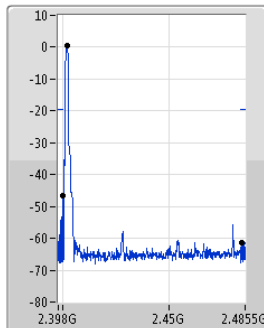


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.479993G	9.01	-10.99	2.123312G	-63.08	2.39822G	-61.78	2.483556G	-52.78	2.584001G	-48.82	1

BT-EDR(2Mbps)

CSE NdB

2402MHz

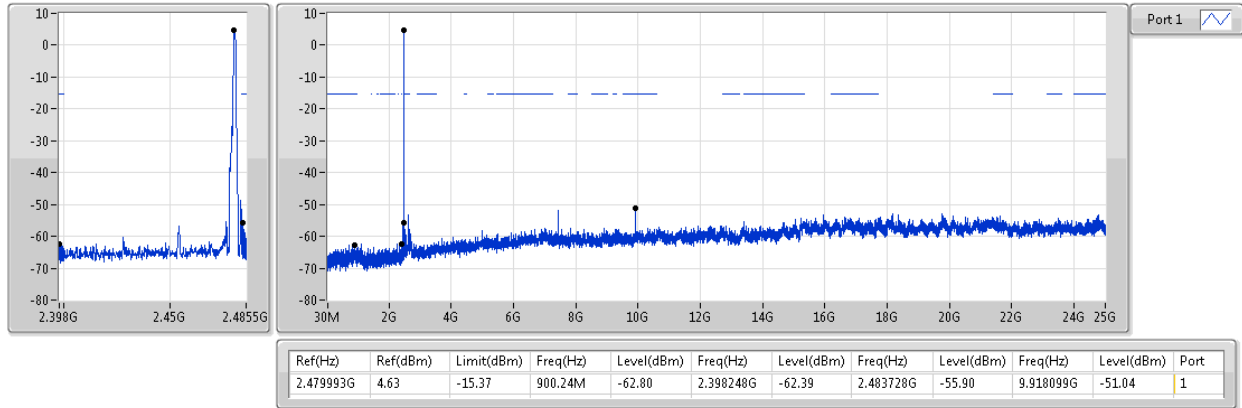


Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.402338G	0.39	-19.61	1.968208G	-62.15	2.399996G	-46.49	2.484024G	-61.50	9.608525G	-50.81	1

BT-EDR(2Mbps)

CSE NdB

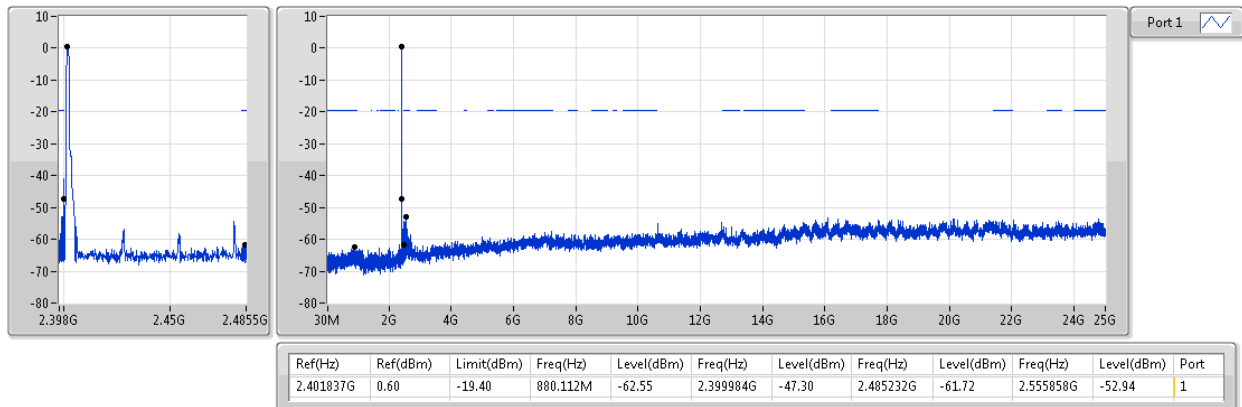
2480MHz



BT-EDR(3Mbps)

CSE NdB

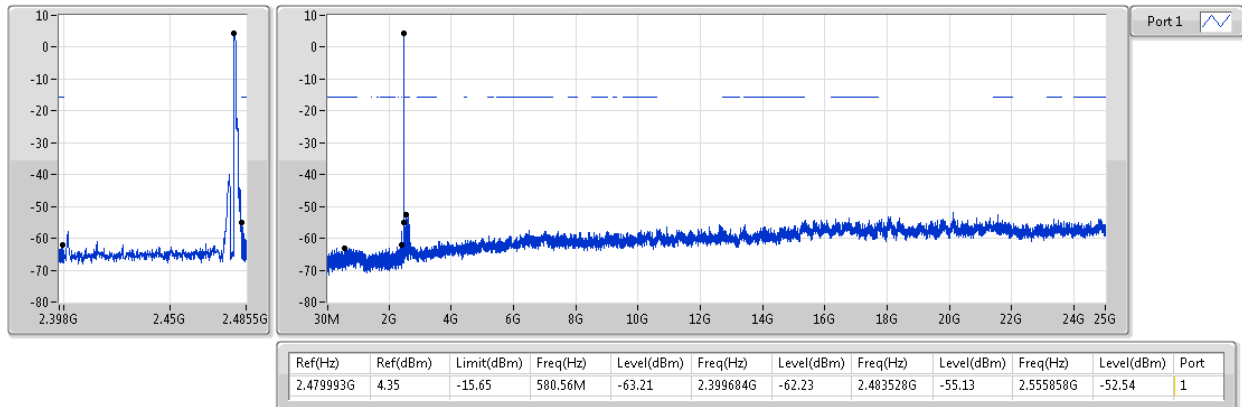
2402MHz

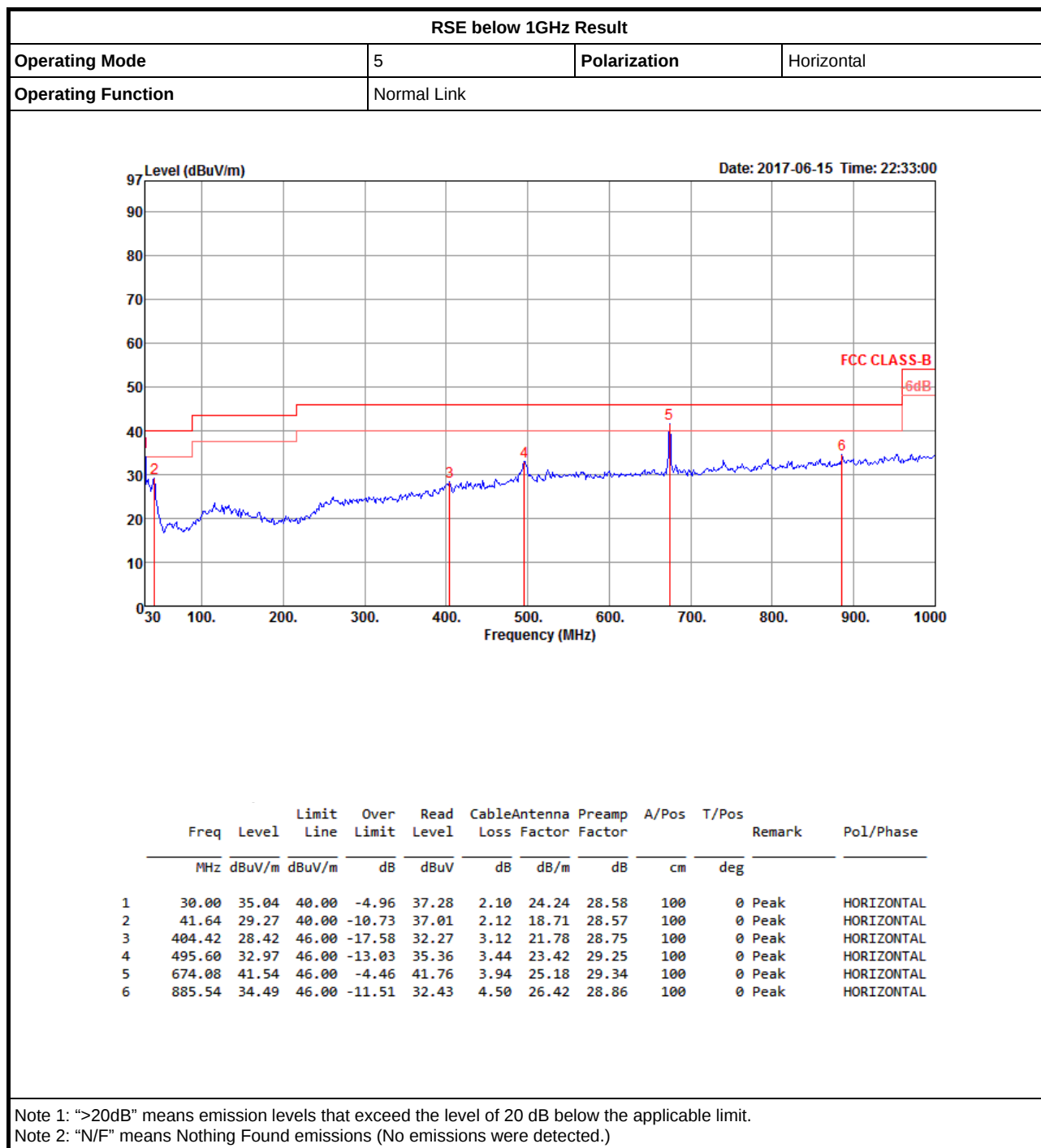


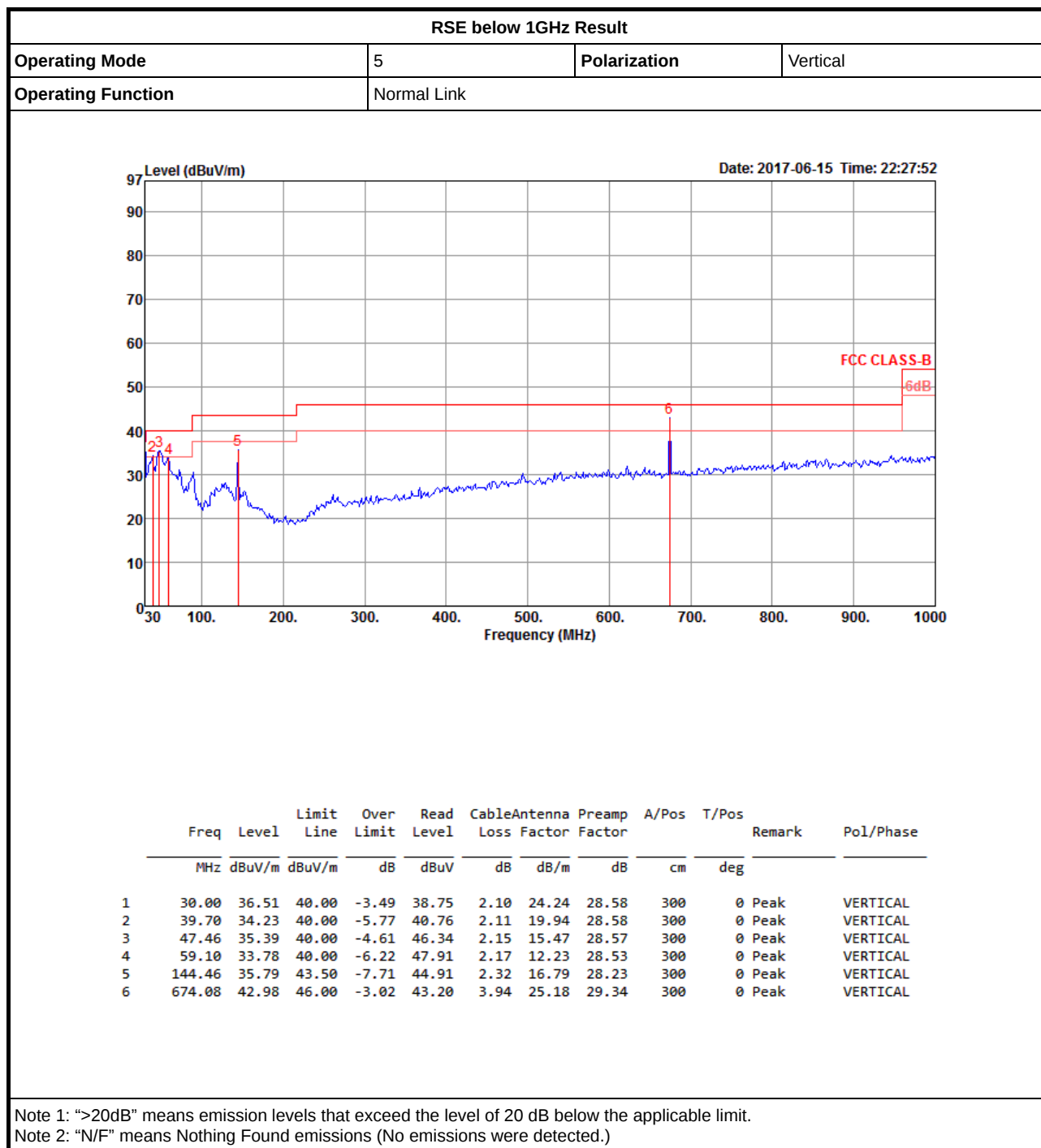
BT-EDR(3Mbps)

CSE NdB

2480MHz









RSE TX above 1GHz Result

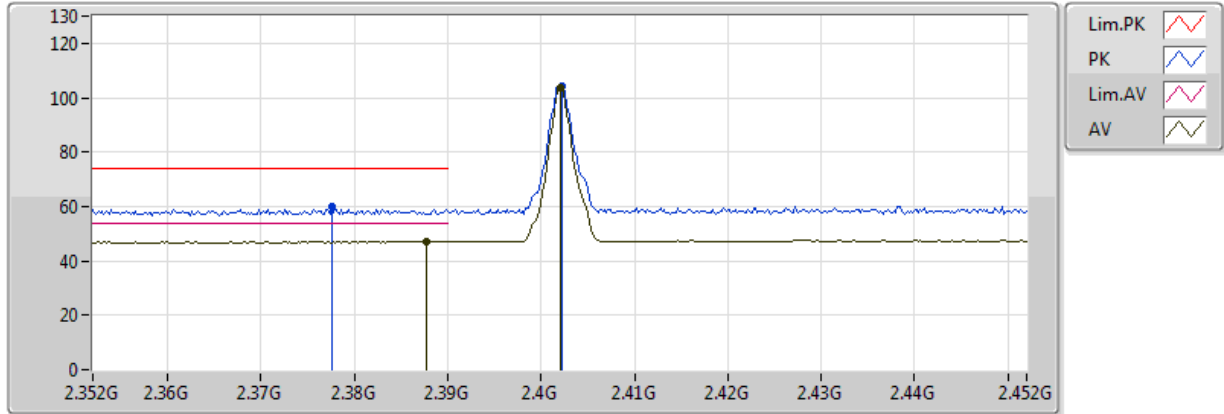
Appendix G.2

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Pol. (H/V)	Azimuth (°)	Height (m)	Comments
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2.4-2.4835GHz	Pass	AV	4.960102G	52.13	54.00	-1.87	8.41	3	H	357	1.73	-

BT-BR(1Mbps)

2402MHz_TX

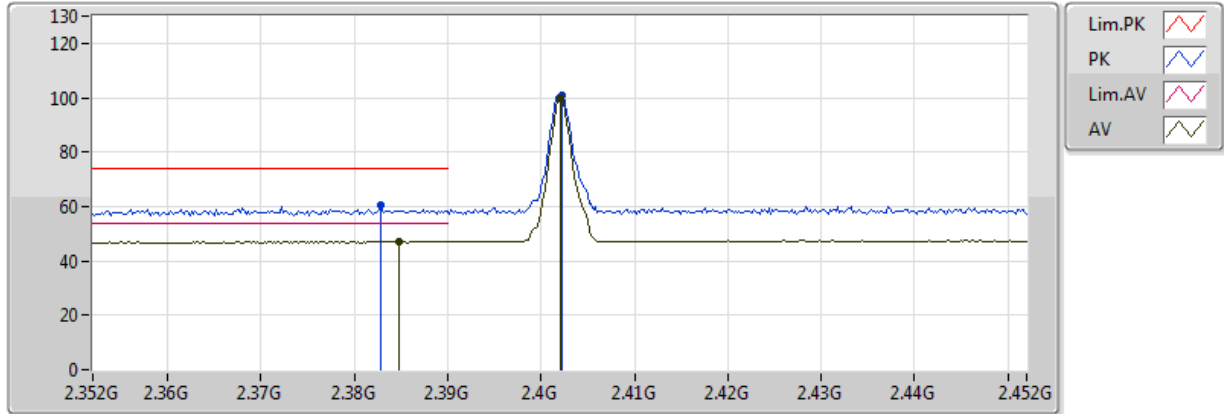


20170511
EUT X_1TX
Setting 8
02-W-3
FSU

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.3878G	47.21	54.00	-6.79	31.87	3	V	32	2.55	-
AV	2.402G	103.57	Inf	-Inf	31.91	3	V	32	2.55	-
PK	2.3776G	59.72	74.00	-14.28	31.84	3	V	32	2.55	-
PK	2.4022G	104.46	Inf	-Inf	31.91	3	V	32	2.55	-

BT-BR(1Mbps)

2402MHz_TX

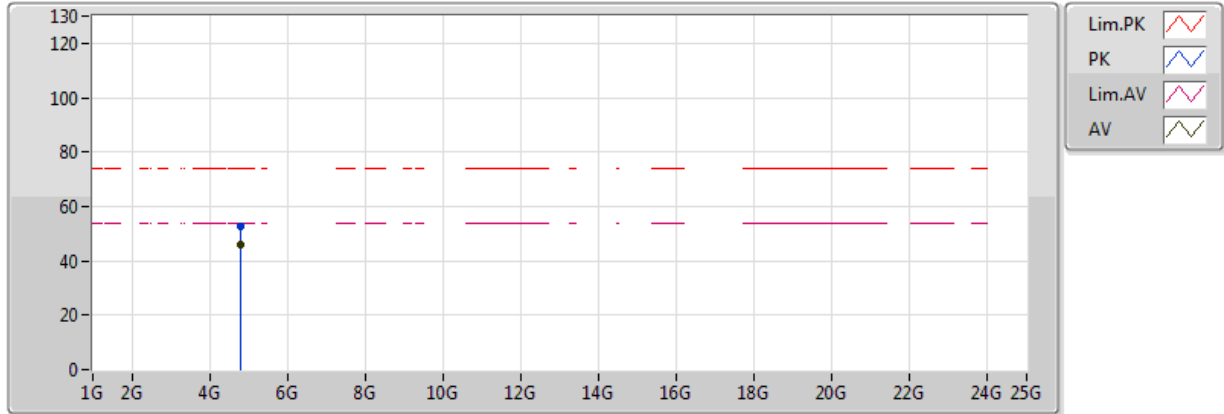


20170511
EUT X_1TX
Setting 8
02-W-3
FSU

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.3848G	47.05	54.00	-6.95	31.86	3	H	22	2.09	-
AV	2.402G	99.94	Inf	-Inf	31.91	3	H	22	2.09	-
PK	2.3828G	60.69	74.00	-13.31	31.86	3	H	22	2.09	-
PK	2.4022G	100.87	Inf	-Inf	31.91	3	H	22	2.09	-

BT-BR(1Mbps)

2402MHz_TX

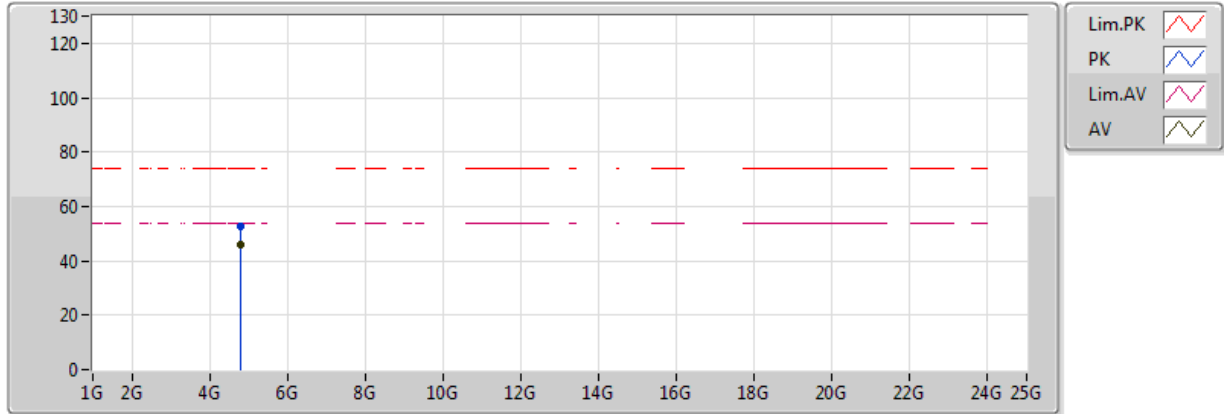


20170511
EUT X_1TX
Setting 8
02-W-3
FSU

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.804132G	46.19	54.00	-7.81	7.96	3	V	302	2.93	-
PK	4.803682G	52.70	74.00	-21.30	7.96	3	V	302	2.93	-

BT-BR(1Mbps)

2402MHz_TX

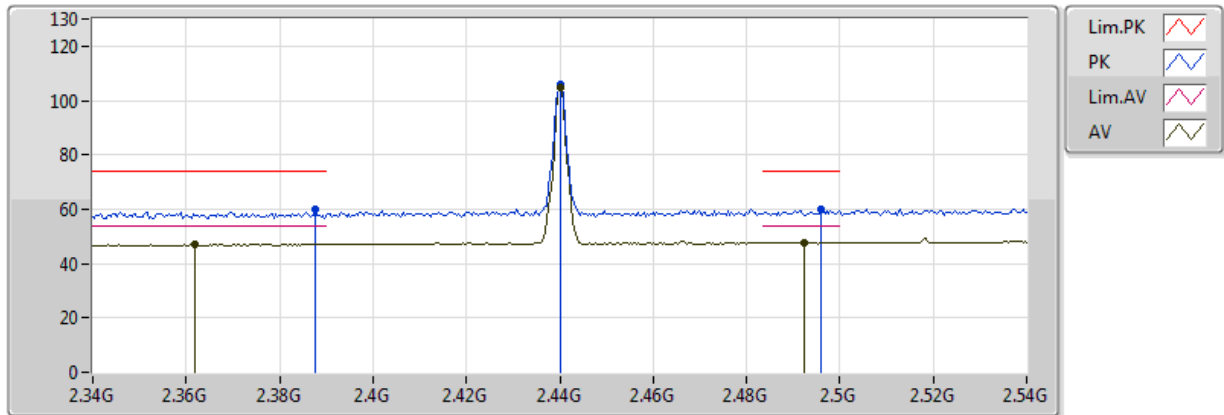


20170511
EUT_X_1TX
Setting 8
02-W-3
FSU

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.804084G	45.73	54.00	-8.27	7.96	3	H	38	1.69	-
PK	4.804182G	52.84	74.00	-21.16	7.96	3	H	38	1.69	-

BT-BR(1Mbps)

2440MHz_TX

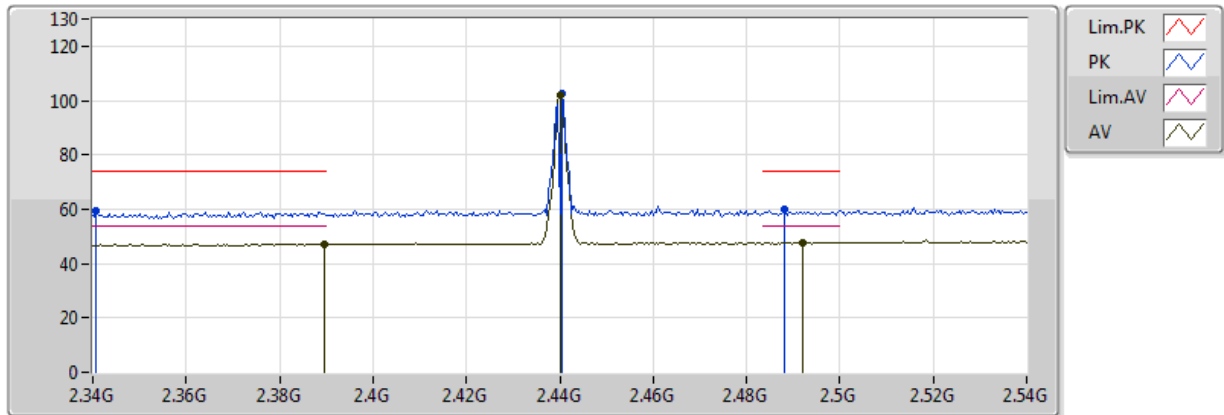


20170511
EUT X_1TX
Setting 8
02-W-3
FSU

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.362G	47.18	54.00	-6.82	31.80	3	V	21	2.67	-
AV	2.44G	104.81	Inf	-Inf	32.01	3	V	21	2.67	-
AV	2.4924G	47.84	54.00	-6.16	32.15	3	V	21	2.67	-
PK	2.3876G	59.86	74.00	-14.14	31.87	3	V	21	2.67	-
PK	2.44G	105.70	Inf	-Inf	32.01	3	V	21	2.67	-
PK	2.496G	59.72	74.00	-14.28	32.16	3	V	21	2.67	-

BT-BR(1Mbps)

2440MHz_TX

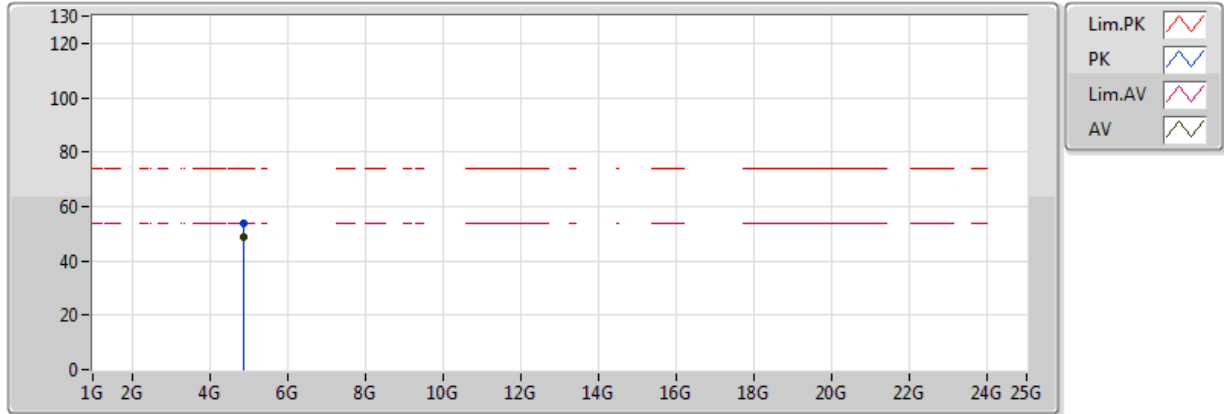


20170511
EUT X_1TX
Setting 8
02-W-3
FSU

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.3896G	47.15	54.00	-6.85	31.87	3	H	20	1.09	-
AV	2.44G	102.07	Inf	-Inf	32.01	3	H	20	1.09	-
AV	2.492G	47.68	54.00	-6.32	32.15	3	H	20	1.09	-
PK	2.3408G	59.62	74.00	-14.38	31.75	3	H	20	1.09	-
PK	2.4404G	102.68	Inf	-Inf	32.01	3	H	20	1.09	-
PK	2.488G	59.77	74.00	-14.23	32.14	3	H	20	1.09	-

BT-BR(1Mbps)

2440MHz_TX

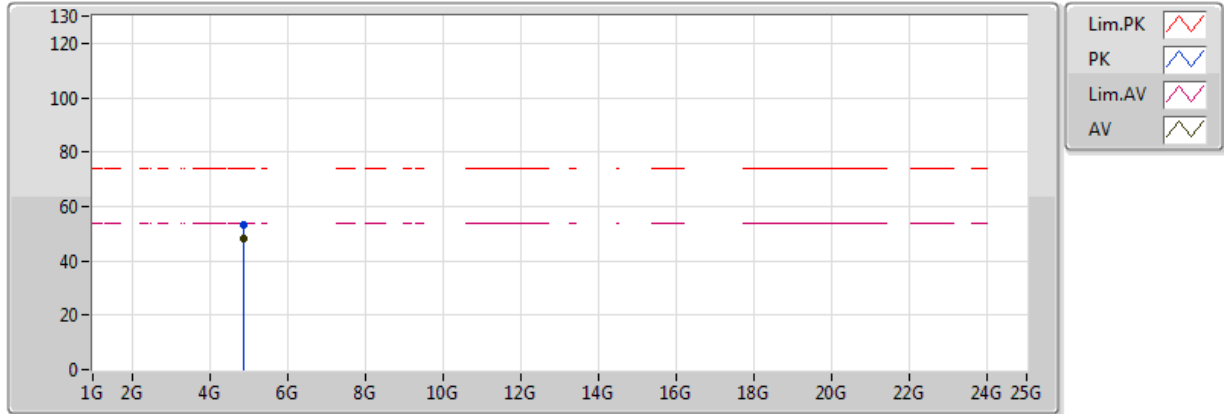


20170511
EUT X_1TX
Setting 8
02-W-3
FSU

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.880084G	48.82	54.00	-5.18	8.17	3	V	308	2.87	-
PK	4.879716G	53.93	74.00	-20.07	8.17	3	V	308	2.87	-

BT-BR(1Mbps)

2440MHz_TX

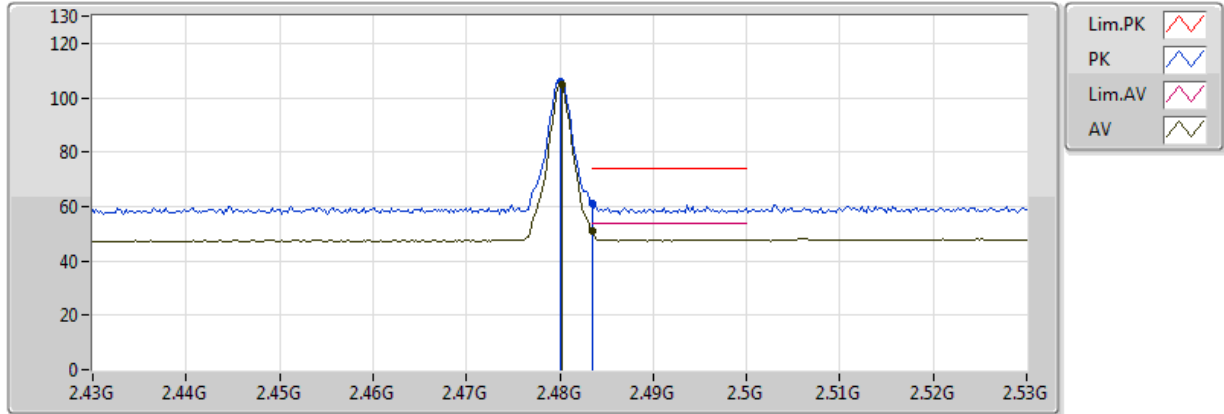


20170511
EUT X_1TX
Setting 8
02-W-3
FSU

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.880094G	48.22	54.00	-5.78	8.17	3	H	352	1.73	-
PK	4.88038G	53.46	74.00	-20.54	8.17	3	H	352	1.73	-

BT-BR(1Mbps)

2480MHz_TX

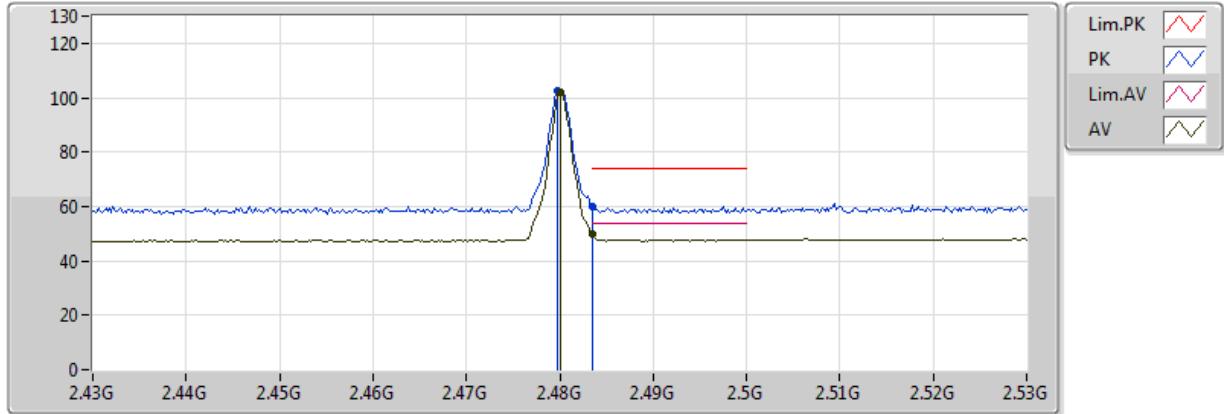


20170511
EUT X_1TX
Setting 8
02-W-3
FSU

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.4802G	104.76	Inf	-Inf	32.12	3	V	320	2.30	-
AV	2.483502G	51.25	54.00	-2.75	32.13	3	V	320	2.30	-
PK	2.48G	105.63	Inf	-Inf	32.12	3	V	320	2.30	-
PK	2.483502G	61.21	74.00	-12.79	32.13	3	V	320	2.30	-

BT-BR(1Mbps)

2480MHz_TX

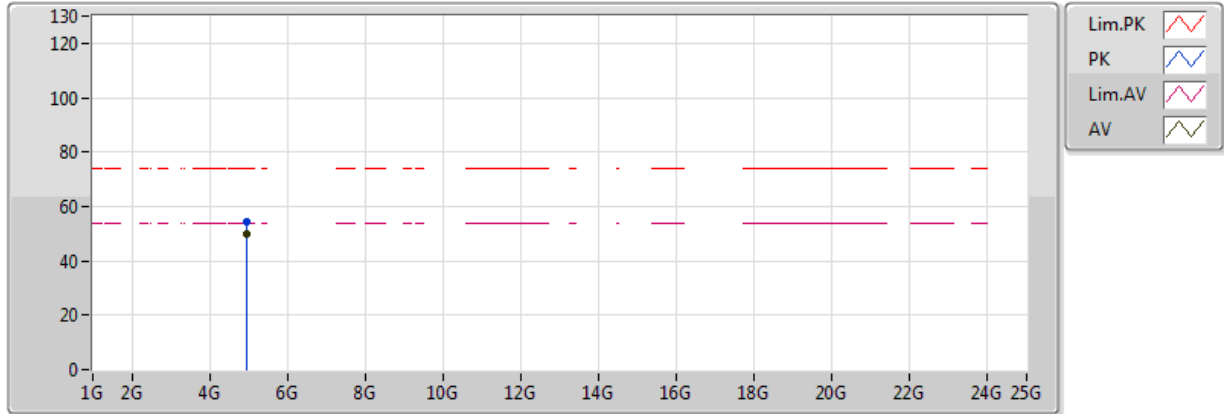


20170511
EUT X_1TX
Setting 8
02-W-3
FSU

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.48G	101.86	Inf	-Inf	32.12	3	H	25	1.10	-
AV	2.483502G	50.15	54.00	-3.85	32.13	3	H	25	1.10	-
PK	2.4798G	102.75	Inf	-Inf	32.12	3	H	25	1.10	-
PK	2.483502G	60.20	74.00	-13.80	32.13	3	H	25	1.10	-

BT-BR(1Mbps)

2480MHz_TX

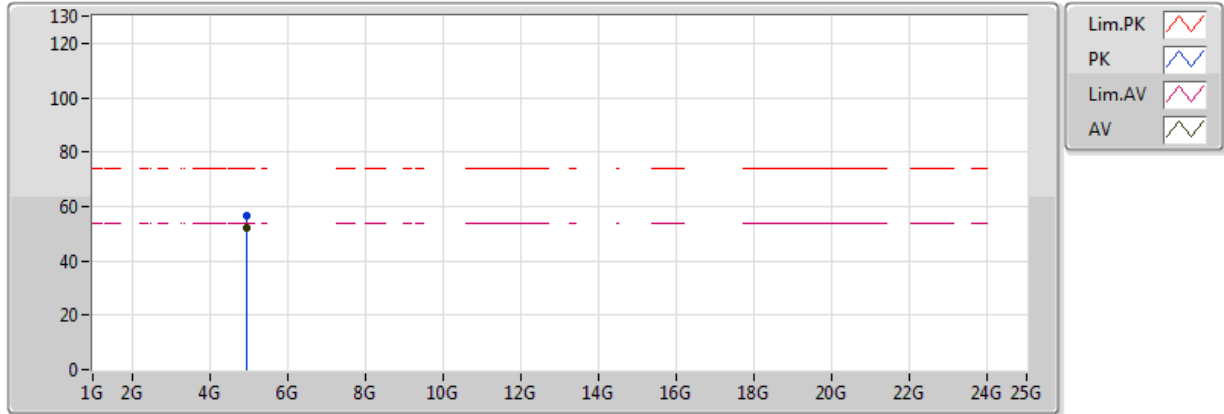


20170511
EUT X_1TX
Setting 8
02-W-3
FSU

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.960124G	49.64	54.00	-4.36	8.41	3	V	310	2.53	-
PK	4.959692G	54.61	74.00	-19.39	8.41	3	V	310	2.53	-

BT-BR(1Mbps)

2480MHz_TX

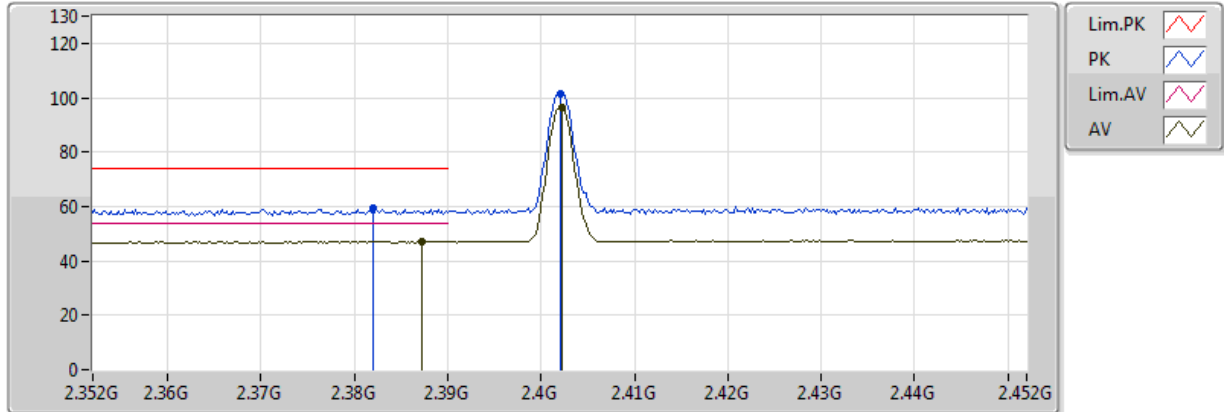


20170511
EUT X_1TX
Setting 8
02-W-3
FSU

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.960102G	52.13	54.00	-1.87	8.41	3	H	357	1.73	-
PK	4.959722G	56.37	74.00	-17.63	8.41	3	H	357	1.73	-

BT-EDR(3Mbps)

2402MHz_TX

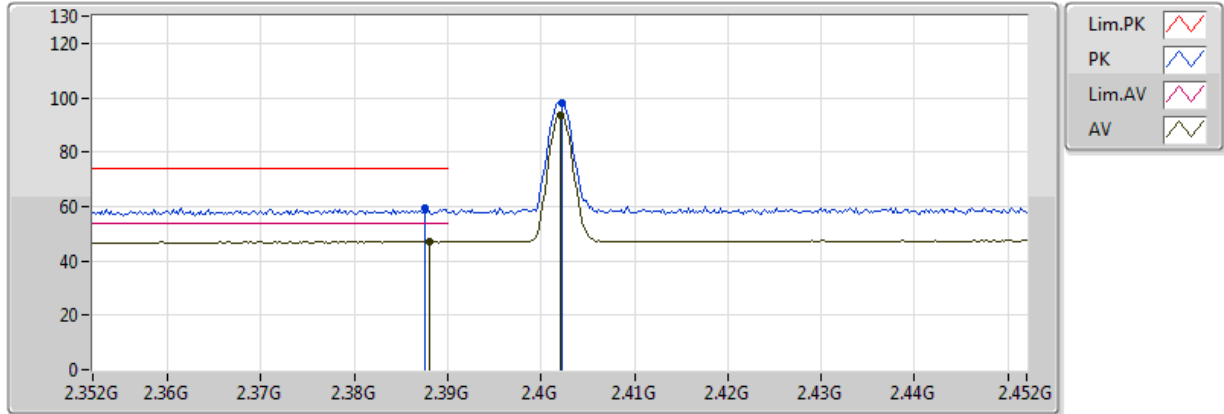


20170511
EUT X_1TX
Setting 8
02-W-3
FSU

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.3872G	47.05	54.00	-6.95	31.87	3	V	19	2.16	-
AV	2.4022G	96.55	Inf	-Inf	31.91	3	V	19	2.16	-
PK	2.382G	59.17	74.00	-14.83	31.85	3	V	19	2.16	-
PK	2.402G	101.51	Inf	-Inf	31.91	3	V	19	2.16	-

BT-EDR(3Mbps)

2402MHz_TX

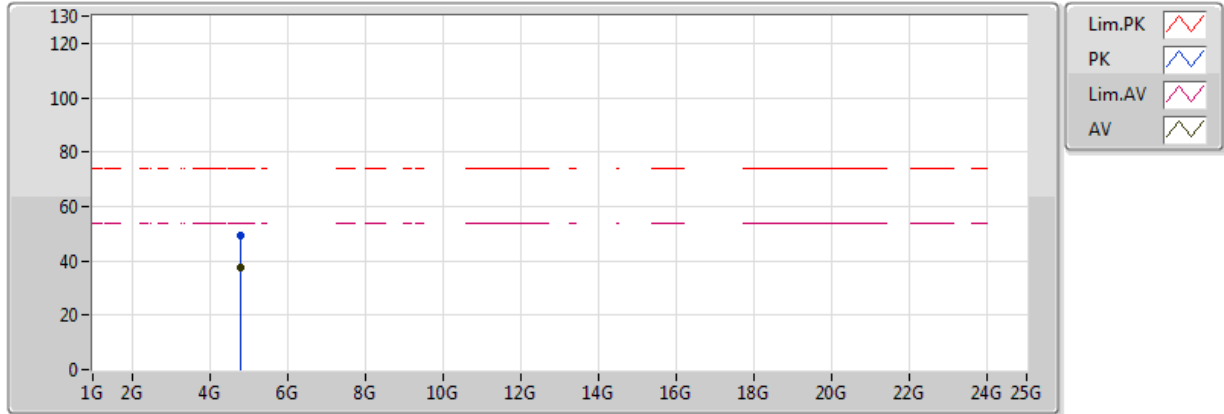


20170511
EUT X_1TX
Setting 8
02-W-3
FSU

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.388G	47.15	54.00	-6.85	31.87	3	H	27	2.09	-
AV	2.402G	93.84	Inf	-Inf	31.91	3	H	27	2.09	-
PK	2.3876G	59.44	74.00	-14.56	31.87	3	H	27	2.09	-
PK	2.4022G	97.89	Inf	-Inf	31.91	3	H	27	2.09	-

BT-EDR(3Mbps)

2402MHz_TX

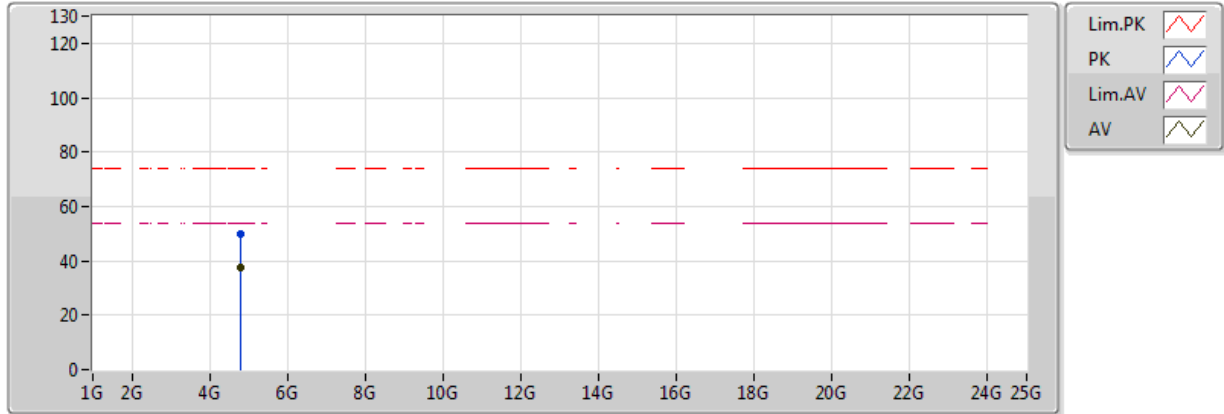


20170511
EUT X_1TX
Setting 8
02-W-3
FSU

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.804152G	37.82	54.00	-16.18	7.96	3	V	313	2.96	-
PK	4.80389G	49.58	74.00	-24.42	7.96	3	V	313	2.96	-

BT-EDR(3Mbps)

2402MHz_TX

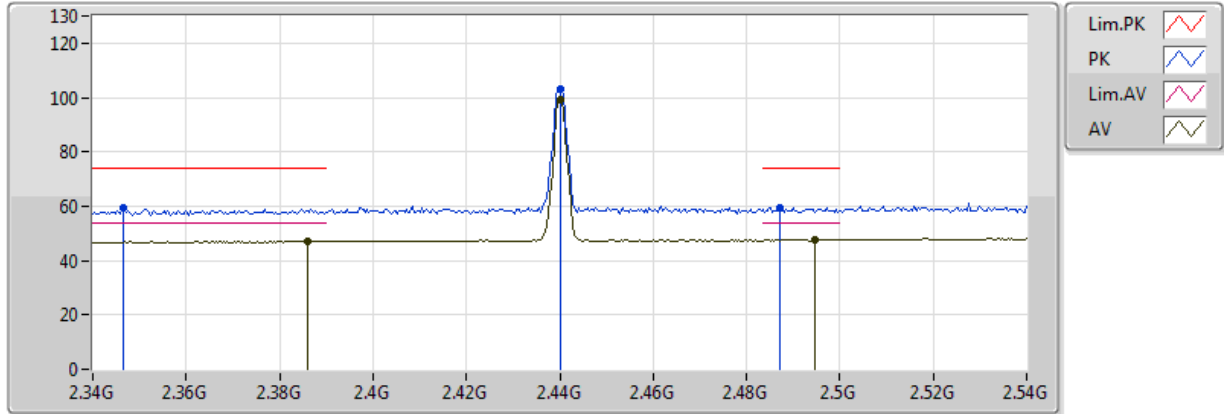


20170511
EUT X_1TX
Setting 8
02-W-3
FSU

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.804228G	37.37	54.00	-16.63	7.96	3	H	71	1.88	-
PK	4.804066G	49.76	74.00	-24.24	7.96	3	H	71	1.88	-

BT-EDR(3Mbps)

2440MHz_TX

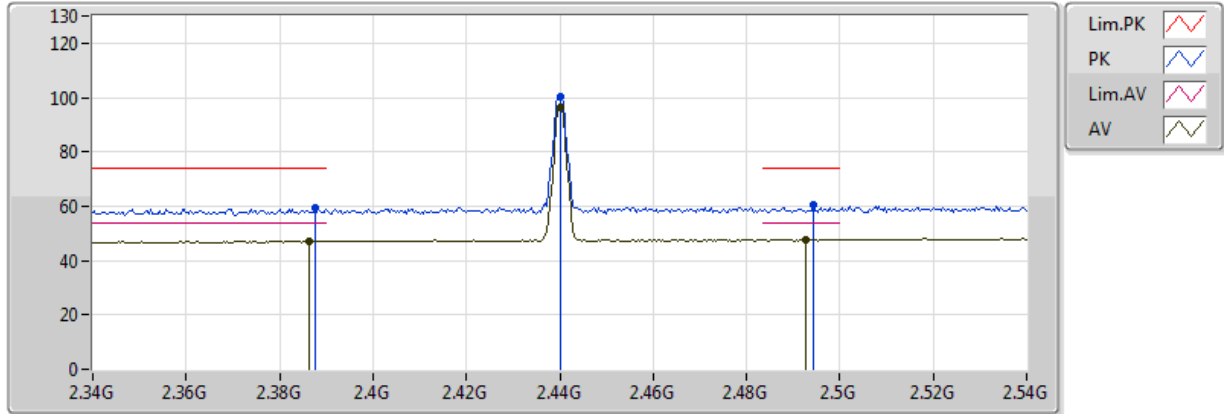


20170511
EUT X_1TX
Setting 8
02-W-3
FSU

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.386G	47.13	54.00	-6.87	31.86	3	V	17	2.65	-
AV	2.44G	99.06	Inf	-Inf	32.01	3	V	17	2.65	-
AV	2.4948G	47.65	54.00	-6.35	32.16	3	V	17	2.65	-
PK	2.3464G	59.47	74.00	-14.53	31.76	3	V	17	2.65	-
PK	2.44G	103.19	Inf	-Inf	32.01	3	V	17	2.65	-
PK	2.4872G	59.47	74.00	-14.53	32.14	3	V	17	2.65	-

BT-EDR(3Mbps)

2440MHz_TX

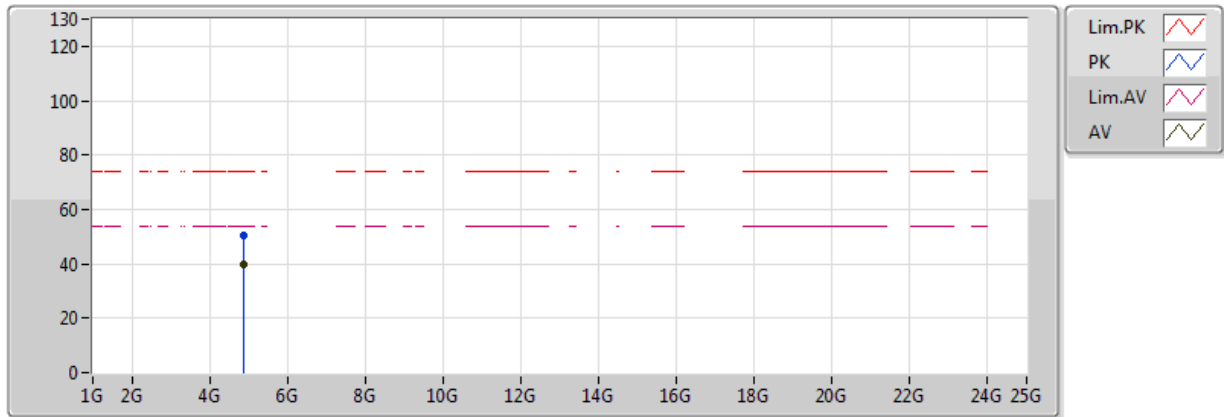


20170511
EUT X_1TX
Setting 8
02-W-3
FSU

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.3864G	47.11	54.00	-6.89	31.86	3	H	24	1.07	-
AV	2.44G	96.24	Inf	-Inf	32.01	3	H	24	1.07	-
AV	2.4928G	47.72	54.00	-6.28	32.15	3	H	24	1.07	-
PK	2.3876G	59.65	74.00	-14.35	31.87	3	H	24	1.07	-
PK	2.44G	100.39	Inf	-Inf	32.01	3	H	24	1.07	-
PK	2.4944G	60.29	74.00	-13.71	32.15	3	H	24	1.07	-

BT-EDR(3Mbps)

2440MHz_TX

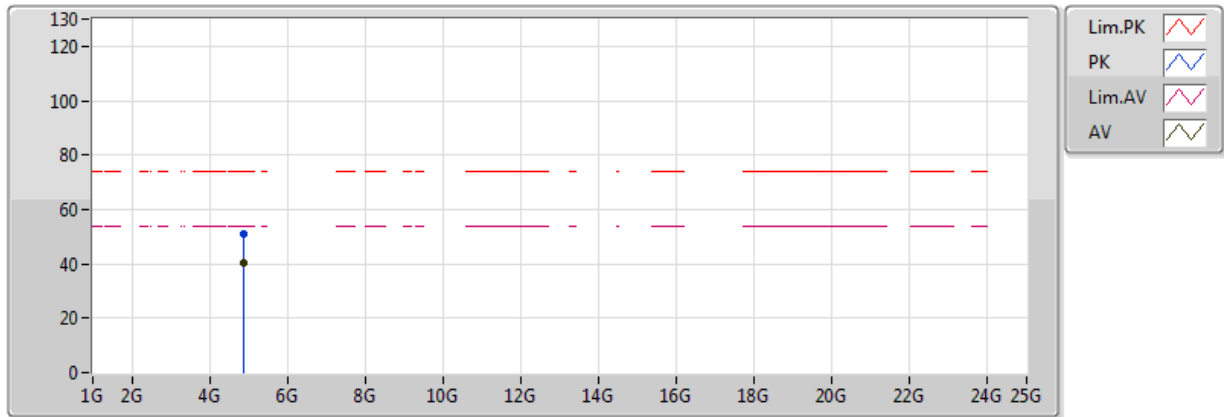


20170511
EUT X_1TX
Setting 8
02-W-3
FSU

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.880084G	39.98	54.00	-14.02	8.17	3	V	318	2.89	-
PK	4.879894G	50.23	74.00	-23.77	8.17	3	V	318	2.89	-

BT-EDR(3Mbps)

2440MHz_TX

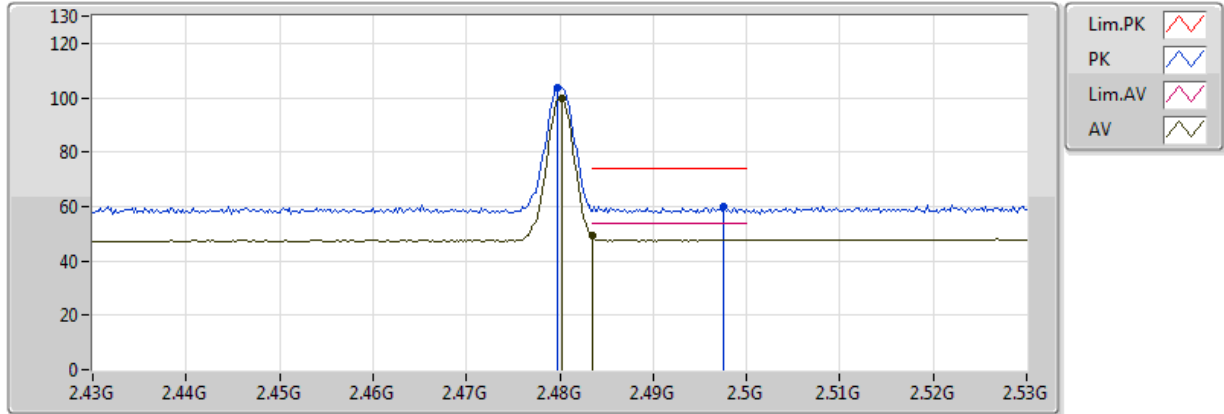


20170511
EUT X_1TX
Setting 8
02-W-3
FSU

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.880064G	40.58	54.00	-13.42	8.17	3	H	355	1.81	-
PK	4.880138G	50.91	74.00	-23.09	8.17	3	H	355	1.81	-

BT-EDR(3Mbps)

2480MHz_TX

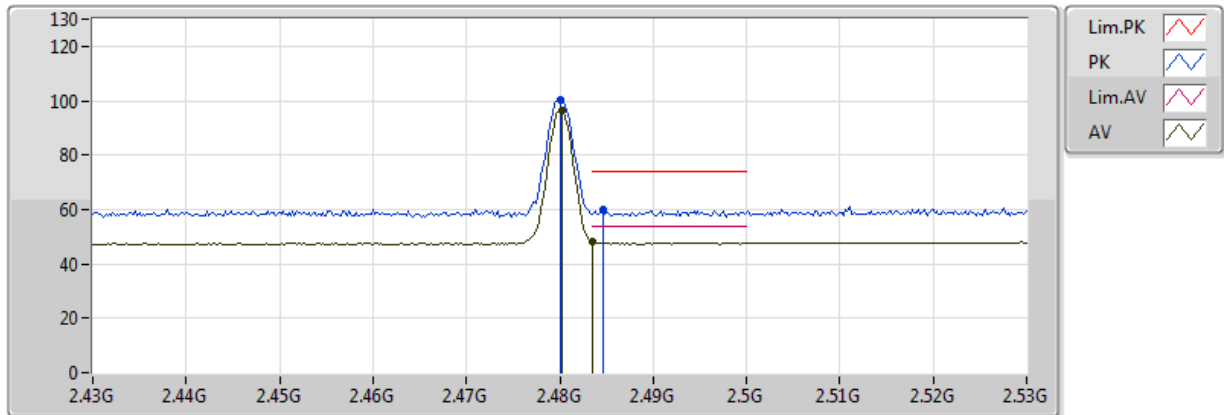


20170511
EUT X_1TX
Setting 8
02-W-3
FSU

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.4802G	99.72	Inf	-Inf	32.12	3	V	328	2.30	-
AV	2.483502G	49.05	54.00	-4.95	32.13	3	V	328	2.30	-
PK	2.4798G	103.87	Inf	-Inf	32.12	3	V	328	2.30	-
PK	2.4976G	60.11	74.00	-13.89	32.16	3	V	328	2.30	-

BT-EDR(3Mbps)

2480MHz_TX

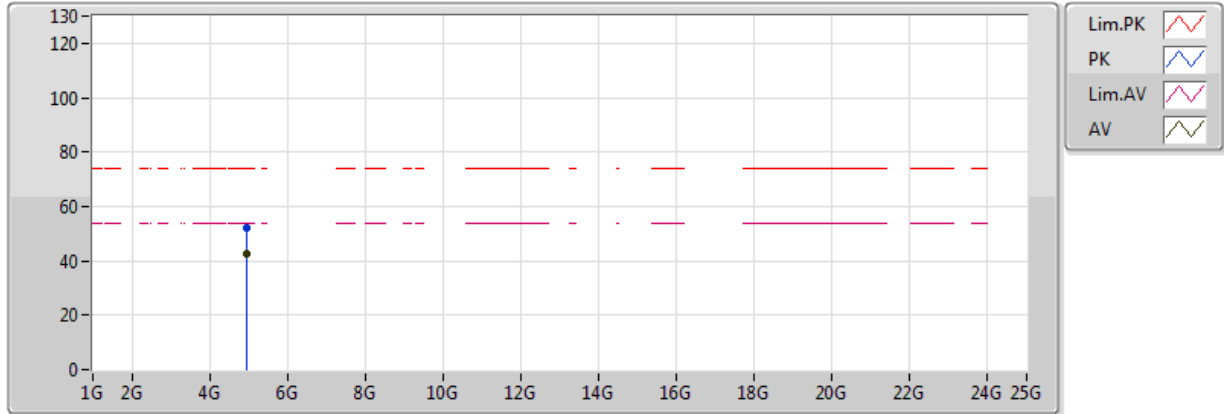


20170511
EUT X_1TX
Setting 8
02-W-3
FSU

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.4802G	96.29	Inf	-Inf	32.12	3	H	20	1.21	-
AV	2.483502G	48.09	54.00	-5.91	32.13	3	H	20	1.21	-
PK	2.48G	100.46	Inf	-Inf	32.12	3	H	20	1.21	-
PK	2.4846G	59.91	74.00	-14.09	32.13	3	H	20	1.21	-

BT-EDR(3Mbps)

2480MHz_TX

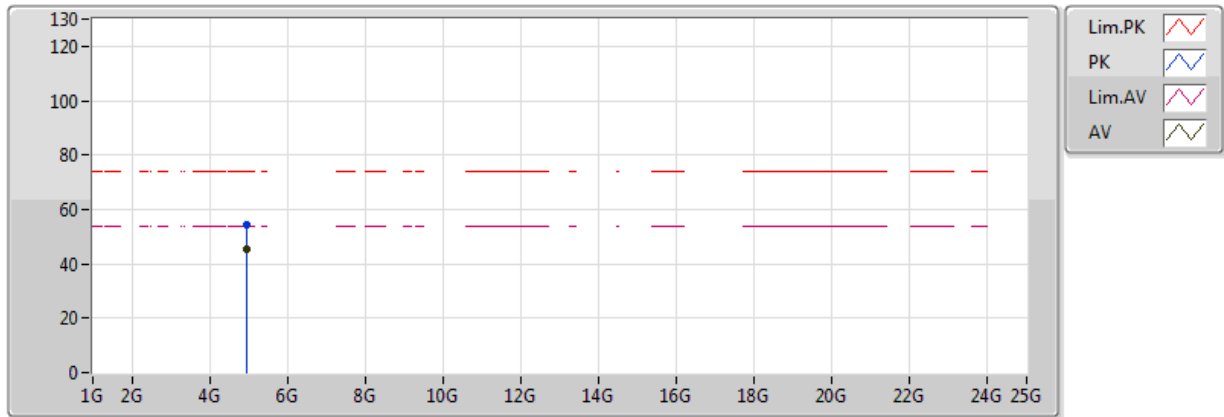


20170511
EUT X_1TX
Setting 8
02-W-3
FSU

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.960076G	42.56	54.00	-11.44	8.41	3	V	307	2.64	-
PK	4.959576G	52.29	74.00	-21.71	8.40	3	V	307	2.64	-

BT-EDR(3Mbps)

2480MHz_TX



20170511
EUT X_1TX
Setting 8
02-W-3
FSU

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.960116G	45.24	54.00	-8.76	8.41	3	H	355	1.75	-
PK	4.959736G	54.33	74.00	-19.67	8.41	3	H	355	1.75	-

