

Report No.: FR282322AB



RADIO TEST REPORT

FCC ID : UDX-60072010

Equipment : SMART Camera

Brand Name : CISCO

Model Name : MV93X-HW, MV93-HW

Applicant : Cisco Systems, Inc.

170 West Tasman Drive, San Jose, CA 95134 USA

Manufacturer : Cisco Systems, Inc.

170 West Tasman Drive, San Jose, CA 95134 USA

Standard: 47 CFR FCC Part 15.247

The product was received on Aug. 25, 2022, and testing was started from Sep. 08, 2022 and completed on Oct. 11, 2022. We, Sporton International Inc. Hsinchu 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 test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. Hsinchu Laboratory, the test report shall not be reproduced except in full.

Approved by: Sam Chen

Sporton International Inc. Hsinchu Laboratory

No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)

TEL: 886-3-656-9065 FAX: 886-3-656-9085

Report Template No.: CB-A10_5 Ver1.3

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Report Version : 01

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Appendix I. Test Photos

Photographs of EUT v01

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History of this test report

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Report No.	Version	Description	Issued Date
FR282322AB	01	Initial issue of report	Nov. 01, 2022

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Summary of Test Result

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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. It's means measurement values may risk exceeding the limit of regulation standards, if measurement uncertainty is include in test results.
- 2. The measurement uncertainty please refer to report "Measurement Uncertainty".

Comments and Explanations:

- 1. The test configuration, test mode and test software were written in this test report are declared by the manufacturer.
- 2. 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: Vicky Huang

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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]

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

Note:

- Bluetooth BR uses a GFSK (1Mbps).
- Bluetooth EDR uses a combination of π/4-DQPSK (2Mbps) and 8DPSK (3Mbps).
- Bluetooth BR/EDR uses as a system using FHSS modulation.
- BWch is the nominal channel bandwidth.

1.1.2 Antenna Information

Ant.	Port		Brand	Model Name	Antonno Tyno	Connector	Cain (dPi)	
Ant.	2.4GHz	5GHz	Bluetooth		Woder Name	Antenna Type	Connector	Gaiii (GBI)
1	1	1	-	Sercomm	617211LR	PIFA Antenna	I-PEX	Note
2	2	2	1	Sercomm	617211LQ	PIFA Antenna	I-PEX	Note

	Antenna Gain (dBi)					
Ant.	WLAN 2.4GHz	WLAN 5GHz UNII 1	WLAN 5GHz UNII 2A	WLAN 5GHz UNII 2C	WLAN 5GHz UNII 3	Bluetooth
1	6.49	6.34	6.34	6.23	5.13	-
2	2.86	5.26	5.26	5.58	5.05	2.86

Note: The above information was declared by manufacturer.

For 2.4GHz function:

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

The EUT supports the antenna with TX/RX diversity function.

Both Port 1 and Port 2 can be used as transmitting/receiving antennas, but only one of them is used as transmitting/receiving antenna.

The Port 1 generated the worst case, so it was selected to test and record in the report.

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For 5GHz function:

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

The EUT supports the antenna with TX/RX diversity function.

Both Port 1 and Port 2 can be used as transmitting/receiving antennas, but only one of them is used as transmitting/receiving antenna

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The Port 1 generated the worst case, so it was selected to test and record in the report.

For Bluetooth function

For Bluetooth mode (1TX/1RX):

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) ≥ 1/T
BT-BR(1Mbps)	0.785	1.05	2.89m	1k
BT-EDR(2Mbps)	0.742	1.3	2.891m	1k
BT-EDR(3Mbps)	0.785	1.05	2.89m	1k

Note:

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

1.1.4 EUT Operational Condition

EUT Power Type	From PoE
Test Software Version	QRCT V4.0.72.1

1.1.5 Table for Multiple Listing

The EUT has two model names which are identical to each other in all aspects except for the following table

EUT	Model Name	Memory
1	MV93X-HW	1TB
2	MV93-HW	256GB

Note 1: From the above, EUT 1 has selected to execute all test items and EUT 2 has selected to execute the Emissions in Restricted Frequency Bands Below 1GHz tests.

Note 2: The above information was declared by manufacturer.

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1.2 Applicable Standards

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

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47 CFR FCC Part 15.247

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 Information

Test Lab.: Sporton International Inc. Hsinchu Laboratory

Hsinchu ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)

(TAF: 3787) TEL: 886-3-656-9065 FAX: 886-3-656-9085

Test site Designation No. TW3787 with FCC.

Conformity Assessment Body Identifier (CABID) TW3787 with ISED.

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
RF Conducted	TH02-CB	Jay Lo	23.9~24.2 / 58-65	Sep. 15, 2022
Radiated (below 1GHz)	03CH05-CB	Simmon Cheng	24.4-25.5 / 55-58	Sep. 15, 2022~ Sep. 29, 2022
Radiated (above 1GHz)	03CH05-CB	Simmon Cheng	24.4-25.5 / 55-58	Sep. 08, 2022~ Sep. 15, 2022
Radiated (co-location)	03CH05-CB	Simmon Cheng	24.4-25.5 / 55-58	Oct. 11, 2022
AC Conduction	CO01-CB	Elvin Yeh	23~24 / 56~57	Sep. 21, 2022

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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

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level (based on a coverage factor (k=2)

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.4 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	3.4 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	5.6 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	5.2 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.7 dB	Confidence levels of 95%
Conducted Emission	3.2 dB	Confidence levels of 95%
Output Power Measurement	0.8 dB	Confidence levels of 95%
Power Density Measurement	3.2 dB	Confidence levels of 95%
Bandwidth Measurement	2%	Confidence levels of 95%

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2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
BT-BR(1Mbps)	-
2402MHz	9
2440MHz	9
2480MHz	9
BT-EDR(2Mbps)	-
2402MHz	9
2440MHz	9
2480MHz	9
BT-EDR(3Mbps)	-
2402MHz	9
2440MHz	9
2480MHz	9

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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 Test Voltage: 120Vac / 60Hz		
Operating Mode	Normal Link		
1	EUT 1+LAN mode-Day mode+Bluetooth+PoE 1		
2	EUT 1+LAN mode-Night mode+Bluetooth+PoE 1		
	Mode 1 has been evaluated to be the worst case among Mode 1~2, thus measurement for Mode 3 ~ 6 wil follow this same test mode.		
3	EUT 1+WLAN 2.4GHz mode-Day mode+Bluetooth+PoE 1		
4	EUT 1+WLAN 2.4GHz mode-Day mode+Bluetooth+PoE 2		
5	EUT 1+WLAN 5GHz mode-Day mode+Bluetooth+PoE 1		
6 EUT 1+WLAN 5GHz mode-Day mode+Bluetooth+PoE 2			
For operating mode 1 is the worst case and it was record in this test report.			

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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		

Th	The Worst Case Mode for Following Conformance Tests			
Tests Item	Emissions in Restricted Frequency Bands			
Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used regardless of spatial multiplexing MIMO configuration), the radiated test be performed with highest antenna gain of each antenna type.				
Operating Mode < 1GHz Normal Link				
1	EUT 1 at Z-axis +LAN mode-Day mode+Bluetooth+PoE 1			
2	EUT 1 at Y-axis +LAN mode-Day mode+Bluetooth+PoE 1			
3	EUT 1 at X-axis +LAN mode-Day mode+Bluetooth+PoE 1			
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 at Z-axis +LAN mode-Night mode +Bluetooth+PoE 1			

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Mode 4 has been evaluated to be the worst case among Mode $1\sim4$, thus measurement for Mode $5\sim8$ will follow this same test mode.			
5	EUT 1 at Z-axis +WLAN 2.4GHz mode-Night mode +Bluetooth+PoE 1		
6	EUT 1 at Z-axis +WLAN 2.4GHz mode-Night mode +Bluetooth+PoE 2		
7	EUT 1 at Z-axis +WLAN 5GHz mode-Night mode +Bluetooth+PoE 1		
8	EUT 1 at Z-axis +WLAN 5GHz mode-Night mode +Bluetooth+PoE 2		
Mode 4 has been evaluated to be the worst case among Mode 1~8, thus measurement for Mode 9 will follow this same test mode.			
9	EUT 2 at Z-axis +LAN mode-Night mode +Bluetooth+PoE 1		
For operating mode 4 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. The worst case was found at Y axis, so it was selected to perform test and its test result was written in the report.			
1	EUT 1 in Y axis		

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The Worst Case Mode for Following Conformance Tests			
Tests Item	Tests Item Simultaneous Transmission Analysis - Radiated Emission Co-location		
Test Condition	Radiated measurement		
Operating Mode	Operating Mode Normal Link		
The EUT was performed at X axis, Y axis and Z axis position, and the worst case was found at Z axis. So the measurement will follow this same test configuration.			
1	1 EUT 1 in Z axis-WLAN 2.4GHz+Bluetooth		
2	2 EUT 1 in Z axis-WLAN 5GHz+Bluetooth		
For operating mode 2 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	Tests Item Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation		
Operating Mode			
1	EUT 1-WLAN 2.4GHz+Bluetooth		
2 EUT 1-WLAN 5GHz+Bluetooth			
Refer to Sporton Test Report No.: FA282322 for Co-location RF Exposure Evaluation.			

Refer to Sporton Test Report No.: FAZ82322 for Co-location RF Exposure Evalua

Note: The PoE are for measurement only, would not be marketed. PoEs information as below:

Support Unit	Brand Name	Model Name
PoE 1	PHIHONG	POEA33U-1ATE
PoE 2	Cisco	MA-PWR-MV-LV

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2.3 EUT Operation during Test

For CTX Mode:

The EUT was programmed to be in continuously transmitting mode.

For Normal Link Mode:

During the test, the EUT operation to normal function.

2.4 Accessories

Wall-mounted rack*4

2.5 Support Equipment

For AC Conduction:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
Α	1G LAN1 NB	DELL	E6430	N/A
В	PoE 1	PHIHONG	POEA33U-1ATE	N/A
С	iPhone 4	Apple	A1332	N/A
D	AP Router	ASUS	RP-N53	MSQ-RPN53

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For Radiated (below 1GHz):

	Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID	
Α	NB	Lenovo	L440	N/A	
В	WLAN AP	Netgear	R7500	PY314300288	
С	Phone	SAMPO	HT-B 907WL	N/A	
D	PoE 1	PHIHONG	POEA33U-1ATE	N/A	

For Radiated (above 1GHz):

Support Equipment					
No.	No. Equipment Brand Name Model Name FCC ID				
Α	NB	DELL	E4300	N/A	
В	PoE 1	PHIHONG	POEA33U-1ATE	N/A	

For RF Conducted:

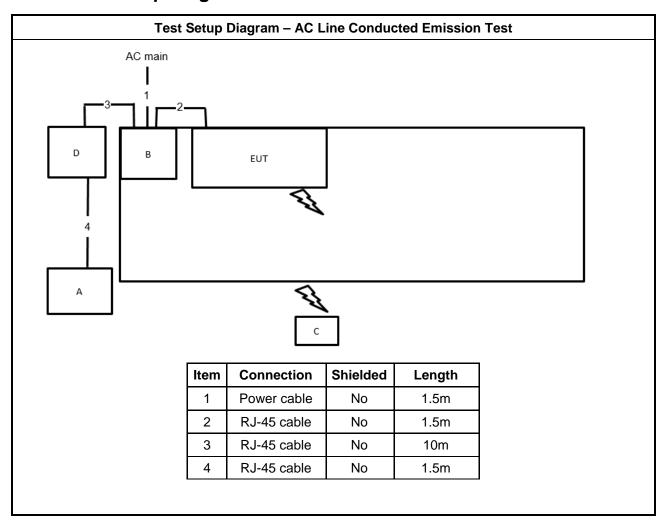
	Support Equipment				
No.	No. Equipment Brand Name Model Name FCC ID				
Α	NB	DELL	E4300	N/A	

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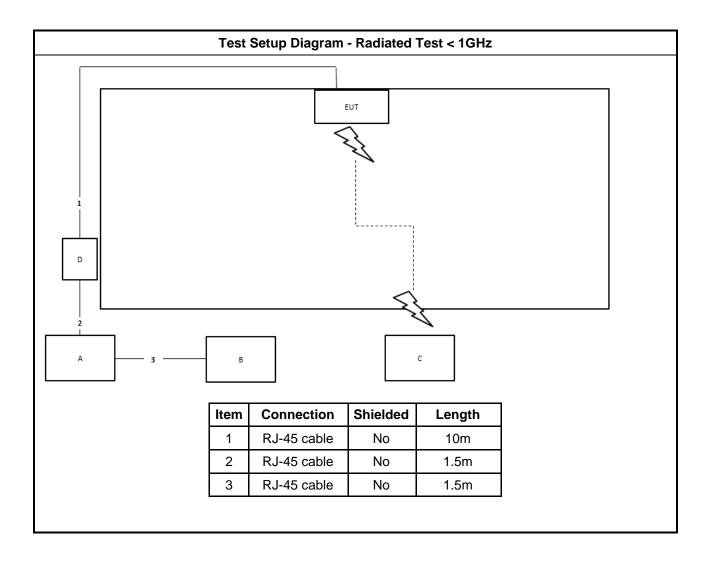


2.6 Test Setup Diagram



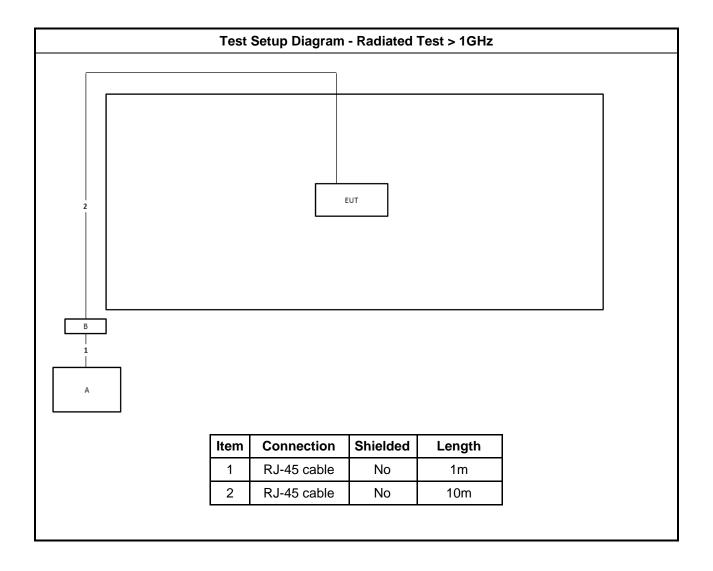
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3 Transmitter Test Result

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.							

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3.1.2 Measuring Instruments

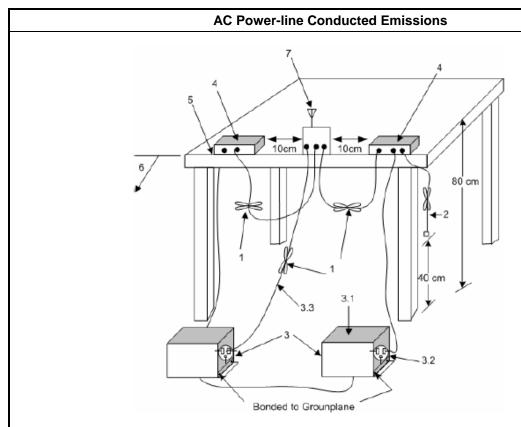
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

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

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3.1.4 **Test Setup**



-Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 cm to 40 cm long.

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- 2—The I/O cables that are not connected to an accessory shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- 3—EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω loads. LISN may be placed on top of, or immediately beneath, reference ground plane.
- 3.1—All other equipment powered from additional LISN(s).
- 3.2—A multiple-outlet strip may be used for multiple power cords of non-EUT equipment.
 3.3—LISN at least 80 cm from nearest part of EUT chassis.
 4—Non-EUT components of EUT system being tested.

- –Rear of EUT, including peripheráls, shall all be aligned and flush with edge of tabletop.
- 6—Edge of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground
- 7—Antenna can be integral or detachable. If detachable, then the antenna shall be attached for this test.

1.1.1. Measurement Results Calculation

The measured Level is calculated using:

- Corrected Reading: LISN Factor (LISN) + Attenuator (AT/AUX) + Cable Loss (CL) + Read Level (Raw) = Level
- Margin = -Limit + Level

Test Result of AC Power-line Conducted Emissions 3.1.5

Refer as Appendix A

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3.2 20dB Bandwidth and Carrier Frequency Separation

3.2.1 20dB Bandwidth and Carrier Frequency Separation Limit

	20dB Bandwidth and Carrier Frequency Separation Limit for Frequency Hopping Systems						
•	902-928 MHz Band:						
	N ≥50 and ChS ≥ MAX (20 dB bandwidth, 25 kHz); 20 dB bandwidth≤ 250 kHz.						
	■ 50 >N≥25 and ChS ≥ MAX (20 dB bandwidth, 25 kHz); 20 dB bandwidth>250 kHz.						
•	2400-2483.5 MHz Band:						
	N ≥75 and ChS ≥ MAX (20 dB bandwidth, 25 kHz).						
	■ 75>N ≥ 15 and ChS ≥ MAX (20 dB bandwidth 2/3,25 kHz).						
•	■ 5725-5850 MHz Band:						
	N ≥ 75 and ChS ≥ MAX (20 dB bandwidth, 25 kHz); 20 dB bandwidth≤ 1 MHz.						
N:N	N:Number of Hopping Frequencies; ChS: Hopping Channel Separation						

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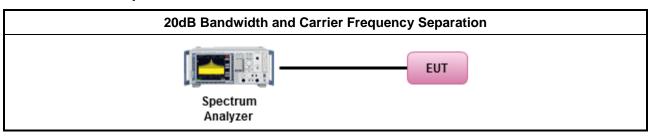
3.2.2 Measuring Instruments

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

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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 23.98dBm; EIRP 29.98dBm					
■ 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						

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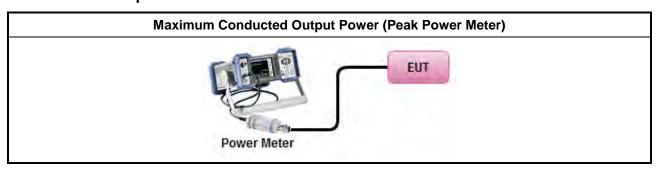
3.3.2 Measuring Instruments

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

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3.4 Number of Hopping Frequencies and Hopping Bandedge

3.4.1 Number of Hopping Frequencies Limit

Number of Hopping Frequencies Limit						
■ 902-928 MHz Band:						
	N ≥50 and ChS ≥ MAX (20 dB bandwidth, 25 kHz); 20 dB bandwidth≤ 250 kHz.					
	■ 50 >N≥ 25 and ChS ≥ MAX (20 dB bandwidth, 25 kHz); 20 dB bandwidth>250 kHz.					
■ 2400-2483.5 MHz Band:						
	■ N ≥ 75 and ChS ≥ MAX (20 dB bandwidth, 25 kHz).					
	■ 75 >N ≥ 15 and ChS ≥ MAX (20 dB bandwidth 2/3,25 kHz).					
■ 5725-5850 MHz Band:						
	N ≥ 75 and ChS ≥ MAX (20 dB bandwidth, 25 kHz); 20 dB bandwidth≤ 1 MHz.					
N:Number of Hopping Frequencies; ChS: Hopping Channel Separation						

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3.4.2 Hopping Bandedge Limit

Refer clause 3.6.1 and clause 3.7.1

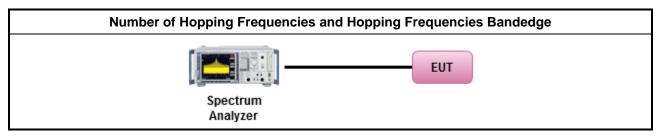
3.4.3 Measuring Instruments

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

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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 Ba	■ 902-928 MHz Band:					
■ N≥50; 0.4s	N ≥50; 0.4s in 20s period					
■ 50 >N≥ 25;	0.4s in 10s period					
■ 2400-2483.5 MH	■ 2400-2483.5 MHz Band:					
■ N ≥ 75; 0.4s	in N x 0.4 period					
■ 75 >N ≥ 15;	0.4s in N x 0.4 period					
■ 5725-5850 MHz I	■ 5725-5850 MHz Band:					
■ N ≥ 75; 0.4s	in 30s period					
N:Number of Hopping Frequencies						

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3.5.2 Measuring Instruments

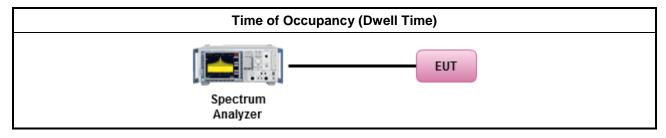
Refer a test equipment and calibration data table in this test report.

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

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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			

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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.

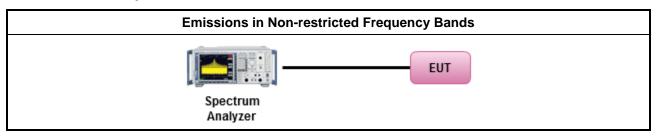
3.6.2 Measuring Instruments

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

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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 30~88 100		29	30				
		40	3				
88~216 150		43.5	3				
216~960 200		46	3				
Above 960	500	54	3				

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- Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).
- Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB / decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.
- Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

3.7.2 Measuring Instruments

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

3.7.3 Test Procedures

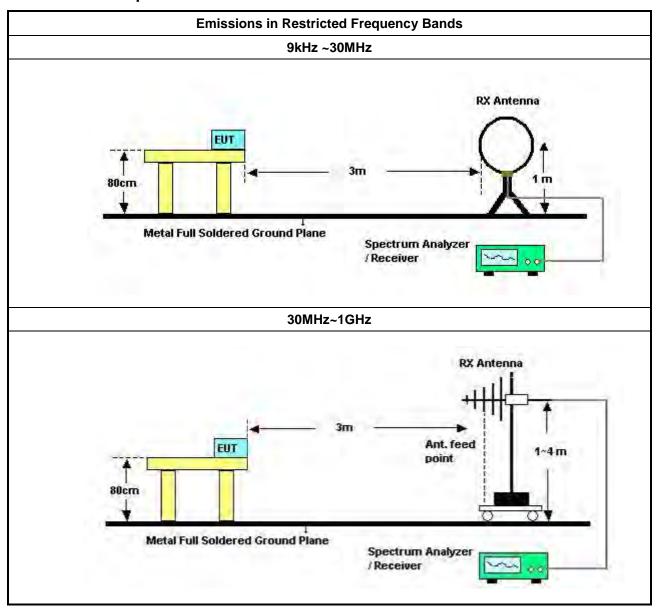
Test Method

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

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3.7.4 Test Setup



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Above 1GHz

Spectrum Analyzer

Above 1GHz

AMAX 30cm

Spectrum Analyzer

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3.7.5 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Antenna factor (AF) + Cable loss (CL) + Read level (Raw) - Preamp factor (PA)(if applicable) = 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 10th harmonic or 40 GHz, whichever is appropriate.

3.7.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix G

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4 Test Equipment and Calibration Data

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.4GHz	Feb. 22, 2022	Feb. 21, 2023	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN- 50-16-2	04083	150kHz ~ 100MHz	Feb. 09, 2022	Feb. 08, 2023	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Apr. 12, 2022	Apr. 11, 2023	Conduction (CO01-CB)
Pulse Limiter	Rohde&Schwarz	ESH3-Z2	100430	9kHz ~ 30MHz	Feb. 10, 2022	Feb. 09, 2023	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	9kHz ~ 30MHz	May 18, 2022	May 17, 2023	Conduction (CO01-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH05-CB	30 MHz ~1 GHz	Aug. 03, 2022	Aug. 02, 2023	Radiation (03CH05-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH05-CB	1GHz ~18GHz 3m	Nov. 07, 2021	Nov. 06, 2022	Radiation (03CH05-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	May 14, 2022	May 13, 2023	Radiation (03CH05-CB)
Bilog Antenna with 6dB Attenuator	TESEQ & EMCI	CBL 6112D & N-6-06	35236 & AT-N0610	30MHz ~ 2GHz	Mar. 25, 2022	Mar. 24, 2023	Radiation (03CH05-CB)
Horn Antenna	SCHWARZBECK	BBHA9120 D	BBHA 9120 D-1291	1GHz~18GHz	Jun. 23, 2022	Jun. 22, 2023	Radiation (03CH05-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA917025 2	15GHz ~ 40GHz	Aug. 22, 2022	Aug. 21, 2023	Radiation (03CH05-CB)
Pre-Amplifier	EMCI	EMC330N	980331	20MHz ~ 3GHz	Apr. 26, 2022	Apr. 25, 2023	Radiation (03CH05-CB)
Pre-Amplifier	EMCI	EMC12630 SE	980287	1GHz – 26.5GHz	Jul. 01, 2022	Jun. 30, 2023	Radiation (03CH05-CB)
Pre-Amplifier	MITEQ	TTA1840-35 -HG	1864479	18GHz ~ 40GHz	Jul. 20, 2022	Jul. 19, 2023	Radiation (03CH05-CB)
Spectrum Analyzer	R&S	FSP40	100304	9kHz ~ 40GHz	Mar. 14, 2022	Mar. 13, 2023	Radiation (03CH05-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	Jun. 17, 2022	Jun. 16, 2023	Radiation (03CH05-CB)
RF Cable-low	Woken	RG402	Low Cable-04+23	30MHz~1GHz	Oct. 13, 2021	Oct. 12, 2022	Radiation (03CH05-CB)
RF Cable-high	Woken	RG402	High Cable-28	1GHz~18GHz	Oct. 13, 2021	Oct. 12, 2022	Radiation (03CH05-CB)
RF Cable-high	Woken	RG402	High Cable-04+28	1GHz~18GHz	Oct. 13, 2021	Oct. 12, 2022	Radiation (03CH05-CB)
High Cable	Woken	WCA0929M	40G#5+7	1GHz ~ 40 GHz	Dec. 14, 2021	Dec. 13, 2022	Radiation (03CH05-CB)
High Cable	Woken	WCA0929M	40G#5	1GHz ~ 40 GHz	Dec. 08, 2021	Dec. 07, 2022	Radiation (03CH05-CB)

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Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
High Cable	Woken	WCA0929M	40G#7	1GHz ~ 40 GHz	Dec. 14, 2021	Dec. 13, 2022	Radiation (03CH05-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH05-CB)
Spectrum analyzer	R&S	FSV40	101027	9kHz~40GHz	Aug. 15, 2022	Aug. 14, 2023	Conducted (TH02-CB)
Power Sensor	Anritsu	MA2411B	1126203	300MHz~ 40GHz	Oct. 25, 2021	Oct. 24, 2022	Conducted (TH02-CB)
Power Meter	Anritsu	ML2495A	1210004	300MHz~ 40GHz	Oct. 25, 2021	Oct. 24, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-01	1 GHz – 18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-02	1 GHz – 18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-03	1 GHz – 18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-04	1 GHz – 18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-05	1 GHz – 18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH02-CB)
Switch	SPTCB	SP-SWI	SWI-02	1 GHz – 26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	SWI-02-P1	1 GHz – 26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	SWI-02-P2	1 GHz – 26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	SWI-02-P3	1 GHz – 26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	SWI-02-P4	1 GHz – 26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	SWI-02-P5	1 GHz – 26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH02-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conducted (TH02-CB)

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Note: Calibration Interval of instruments listed above is one year. NCR means Non-Calibration required.

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Conducted Emissions at Powerline

Appendix A

Summary

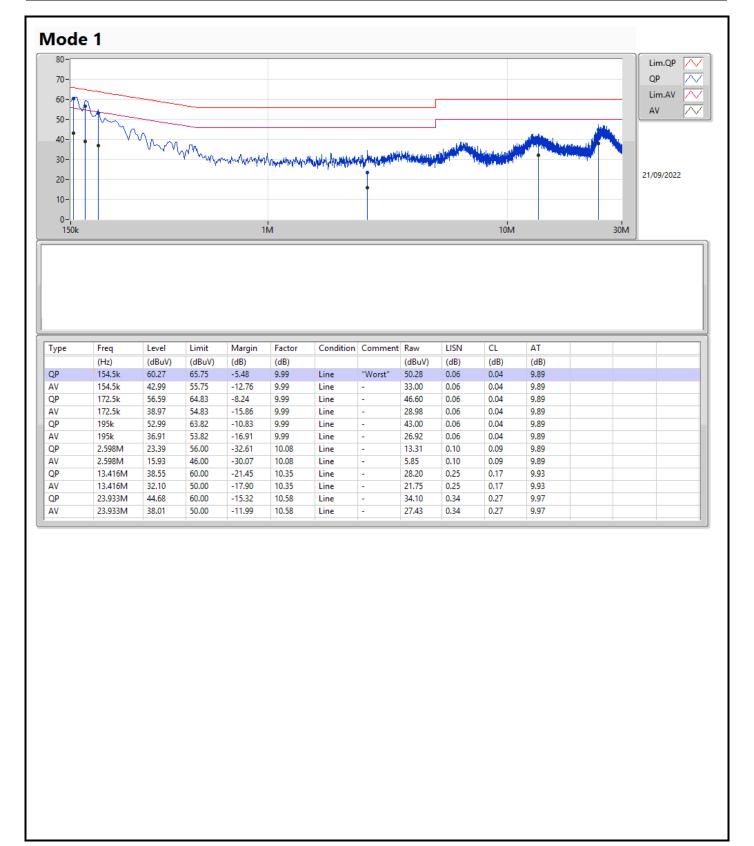
Mode	Result	Туре	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	154.5k	60.27	65.75	-5.48	Line

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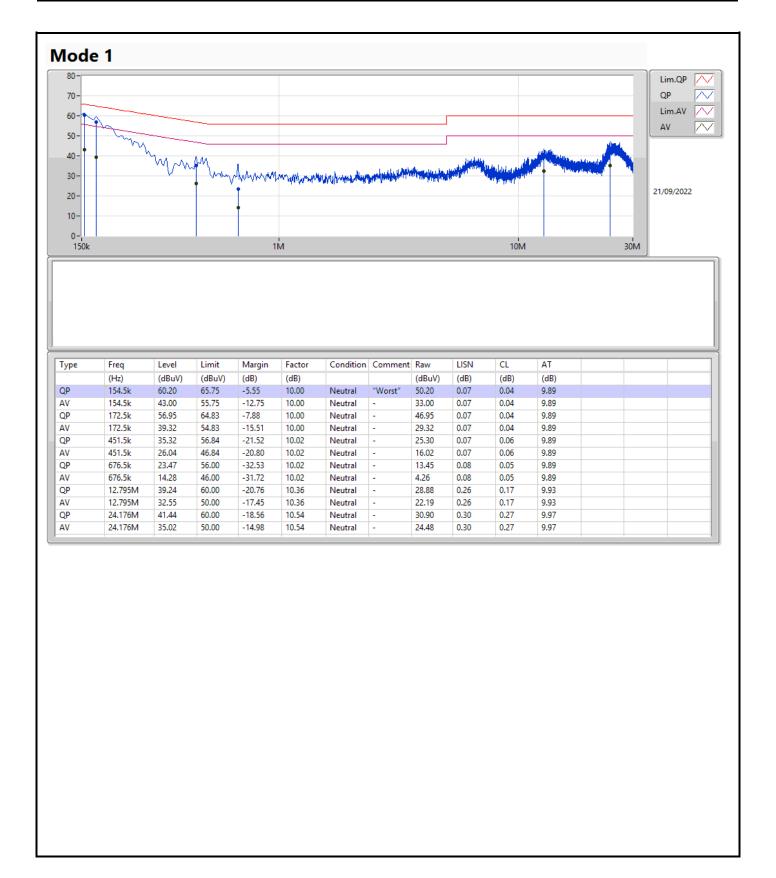




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Summary

Mode	Max-N dB	Max-OBW	ITU-Code	Min-N dB	Min-OBW
	(Hz)	(Hz)		(Hz)	(Hz)
2.4-2.4835GHz	=	-	=	-	=
BT-BR(1Mbps)	881.25k	852.076k	852KF1D	880k	848.331k
BT-EDR(2Mbps)	1.255M	1.2M	1M20G1D	1.254M	1.184M
BT-EDR(3Mbps)	1.258M	1.205M	1M21G1D	1.256M	1.193M

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

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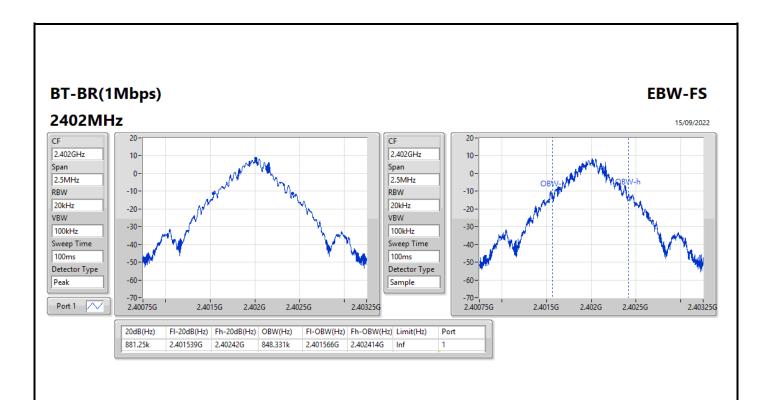
Result

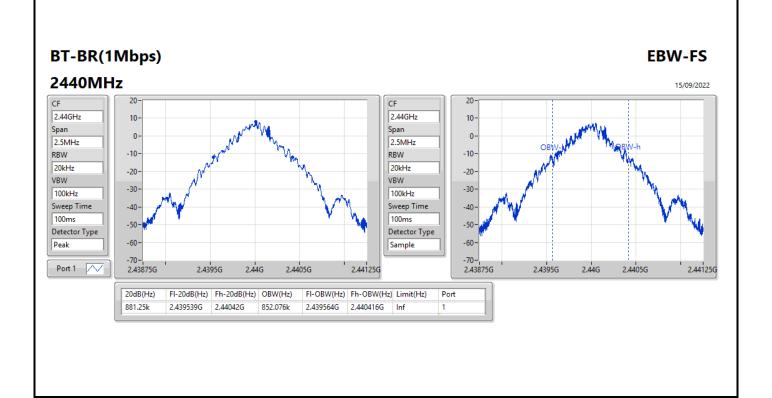
Mode	Result	Limit	Port 1-N dB	Port 1-OBW
		(Hz)	(Hz)	(Hz)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	Inf	881.25k	848.331k
2440MHz	Pass	Inf	881.25k	852.076k
2480MHz	Pass	Inf	880k	850.525k
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.255M	1.192M
2440MHz	Pass	Inf	1.255M	1.184M
2480MHz	Pass	Inf	1.254M	1.2M
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.256M	1.201M
2440MHz	Pass	Inf	1.256M	1.193M
2480MHz	Pass	Inf	1.258M	1.205M

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

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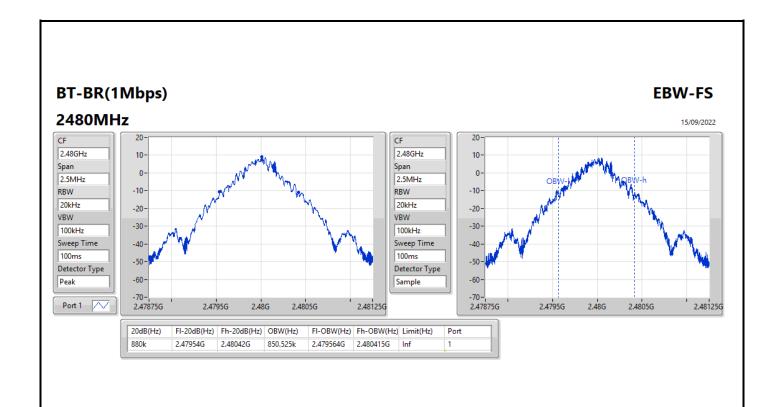
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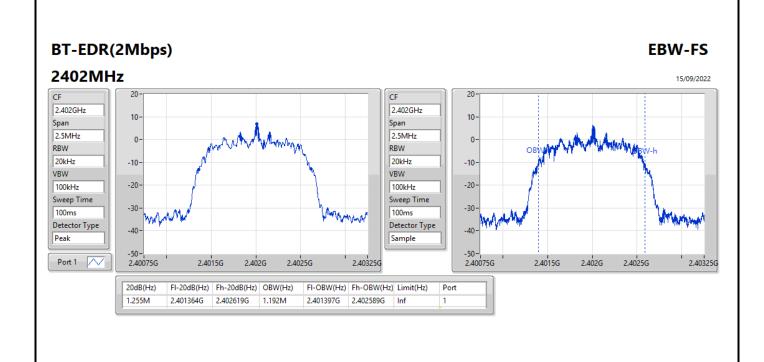




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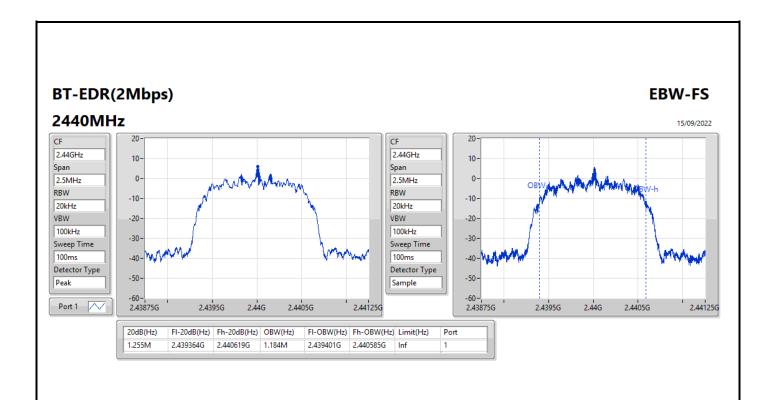
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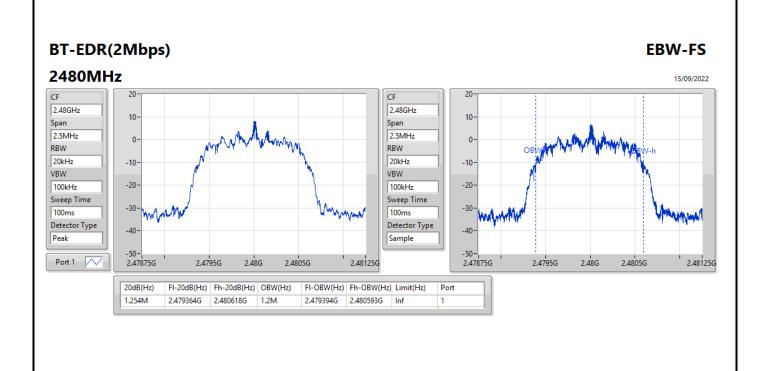




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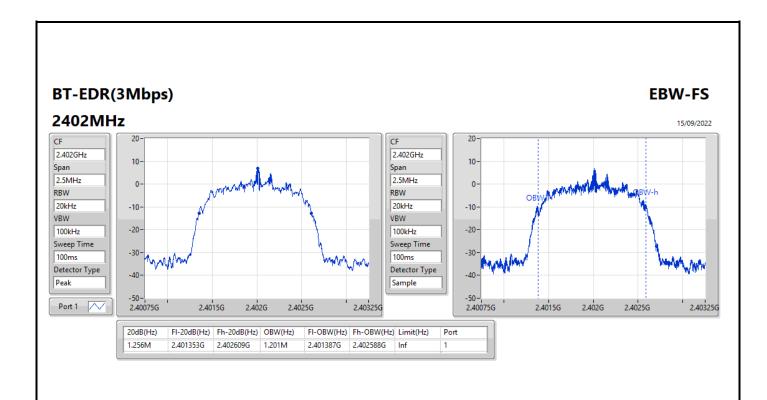


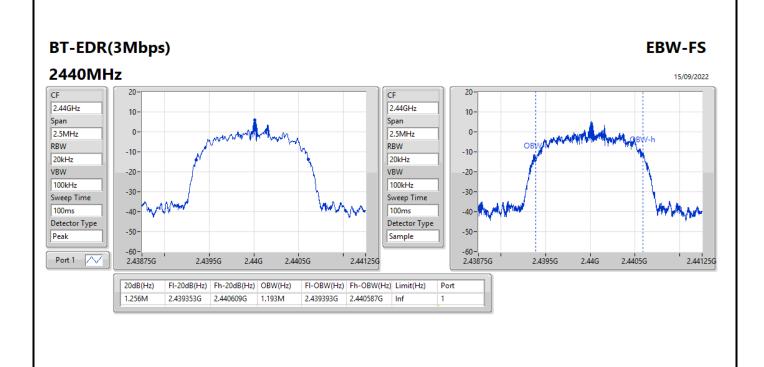


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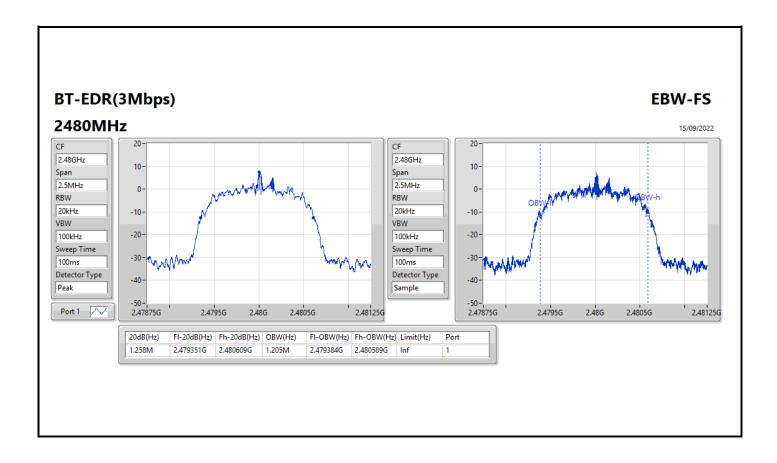
EBW-FHSS Appendix B.1





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Channel Separation-FHSS

Appendix B.2

Summary

Mode	Max-Space (Hz)	Min-Space (Hz)		
2.4-2.4835GHz	-	-		
BT-BR(1Mbps)	1.0035M	997.5k		
BT-EDR(2Mbps)	1.002M	999k		
BT-EDR(3Mbps)	1.0005M	999k		

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Channel Separation-FHSS

Appendix B.2

Result

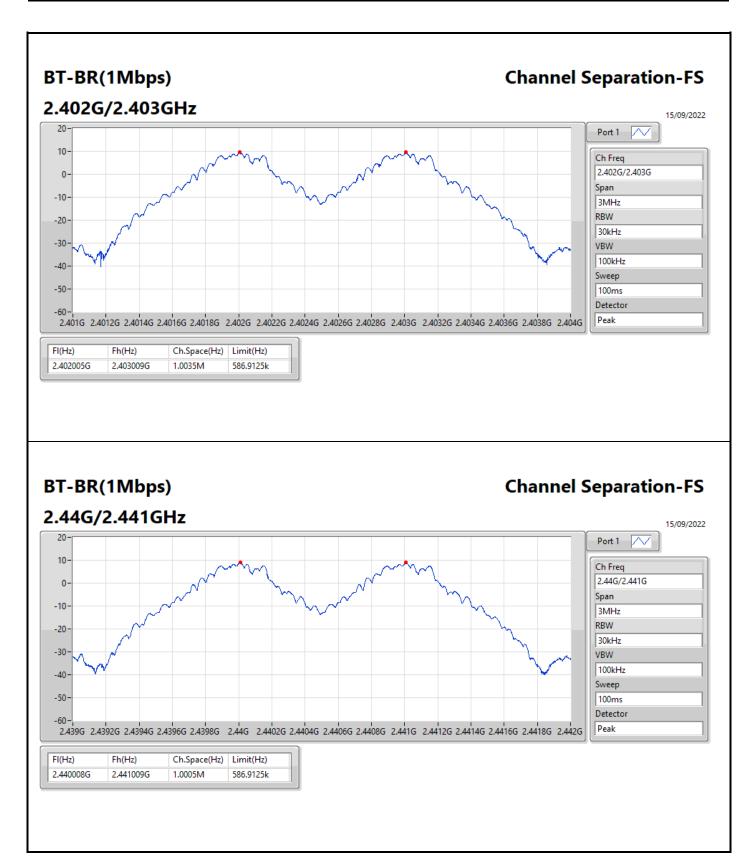
Mode	Result	FI	Fh	Ch.Space	Limit
		(Hz)	(Hz)	(Hz)	(Hz)
BT-BR(1Mbps)	-	-	-	-	-
2402MHz	Pass	2.402005G	2.403009G	1.0035M	586.9125k
2440MHz	Pass	2.440008G	2.441009G	1.0005M	586.9125k
2480MHz	Pass	2.479008G	2.480006G	997.5k	586.08k
BT-EDR(2Mbps)	-	-	-	-	-
2402MHz	Pass	2.402008G	2.403007G	999k	835.83k
2440MHz	Pass	2.440007G	2.441007G	1.0005M	835.83k
2480MHz	Pass	2.479007G	2.480009G	1.002M	835.164k
BT-EDR(3Mbps)	-	-	-	-	-
2402MHz	Pass	2.402007G	2.403007G	1.0005M	836.496k
2440MHz	Pass	2.440008G	2.441009G	1.0005M	836.496k
2480MHz	Pass	2.479007G	2.480006G	999k	837.828k

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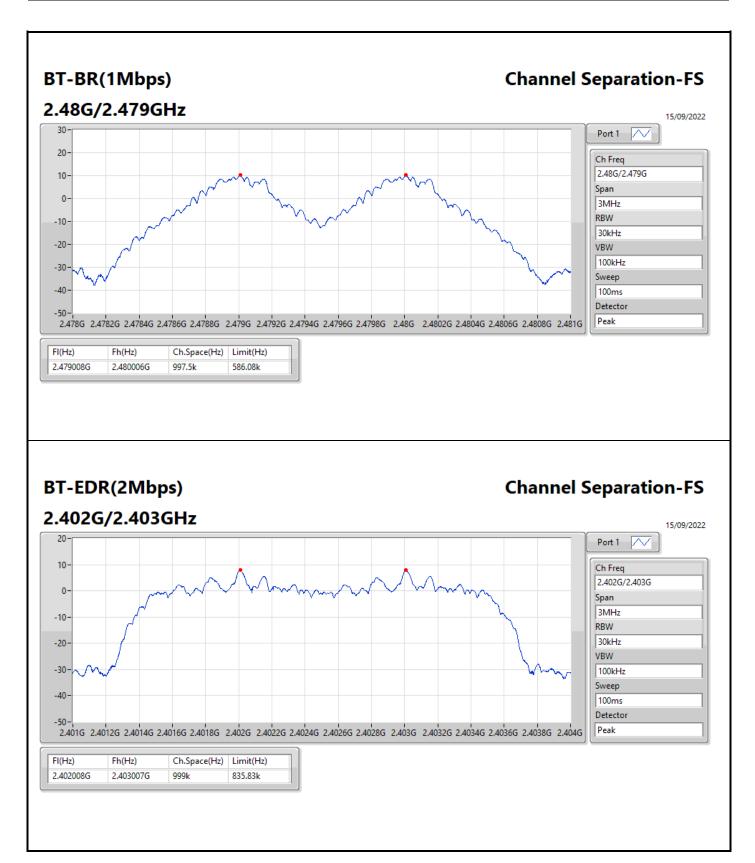




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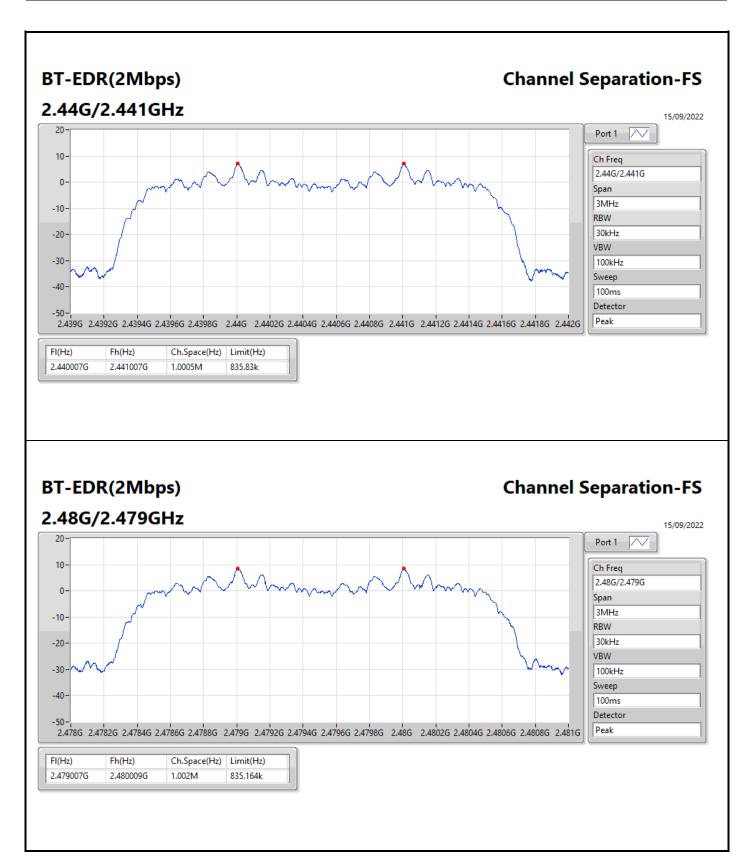




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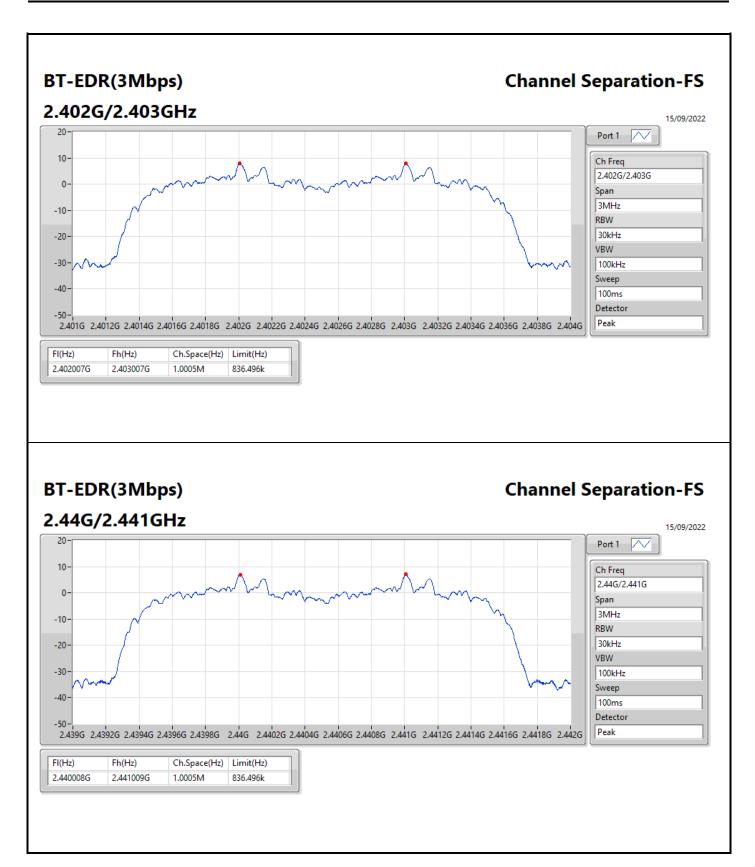




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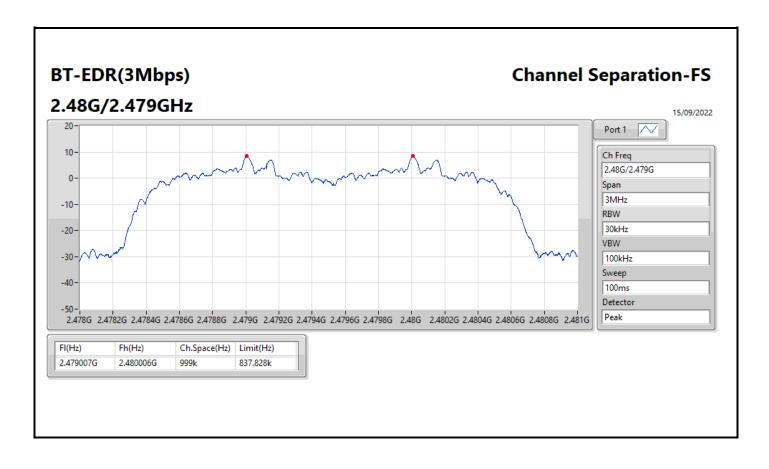




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Average Power-FHSS

Appendix C.1

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	12.15	0.01641
BT-EDR(2Mbps)	9.95	0.00989
BT-EDR(3Mbps)	9.87	0.00971

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Appendix C.1

Mode	Result	Gain	Power	Power Limit
		(dBi)	(dBm)	(dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	2.86	11.71	21.00
2440MHz	Pass	2.86	10.96	21.00
2480MHz	Pass	2.86	12.15	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	2.86	9.52	21.00
2440MHz	Pass	2.86	8.31	21.00
2480MHz	Pass	2.86	9.95	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	2.86	9.50	21.00
2440MHz	Pass	2.86	8.31	21.00
2480MHz	Pass	2.86	9.87	21.00

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

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Peak Power-FHSS Appendix C.2

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	12.17	0.01648
BT-EDR(2Mbps)	11.78	0.01507
BT-EDR(3Mbps)	11.95	0.01567

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Peak Power-FHSS Appendix C.2

Result

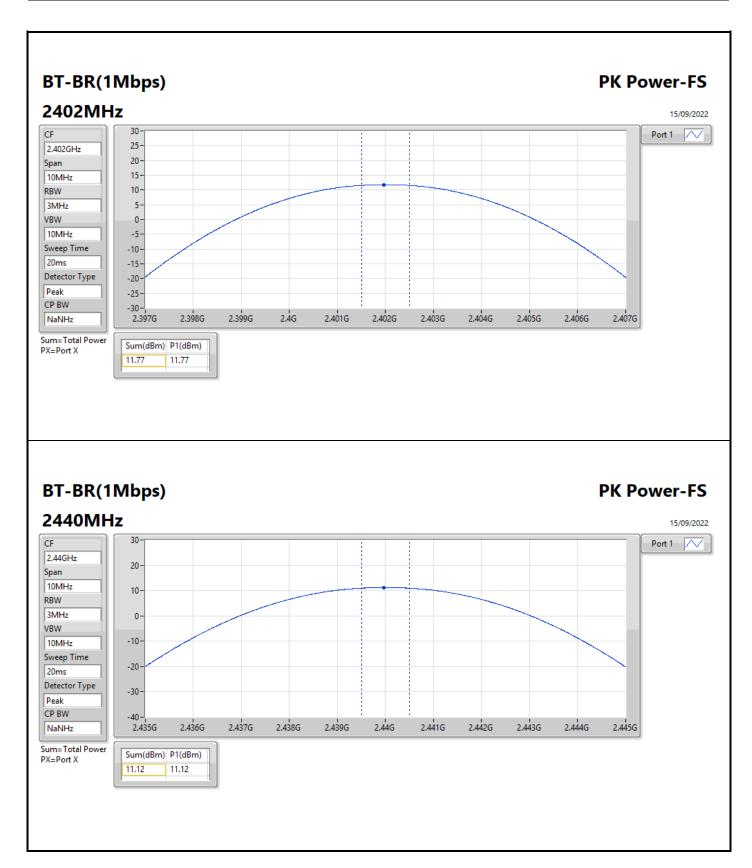
Mode	Result	Gain	Power	Power Limit
		(dBi)	(dBm)	(dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	2.86	11.77	21.00
2440MHz	Pass	2.86	11.12	21.00
2480MHz	Pass	2.86	12.17	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	2.86	11.35	21.00
2440MHz	Pass	2.86	10.56	21.00
2480MHz	Pass	2.86	11.78	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	2.86	11.54	21.00
2440MHz	Pass	2.86	10.88	21.00
2480MHz	Pass	2.86	11.95	21.00

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

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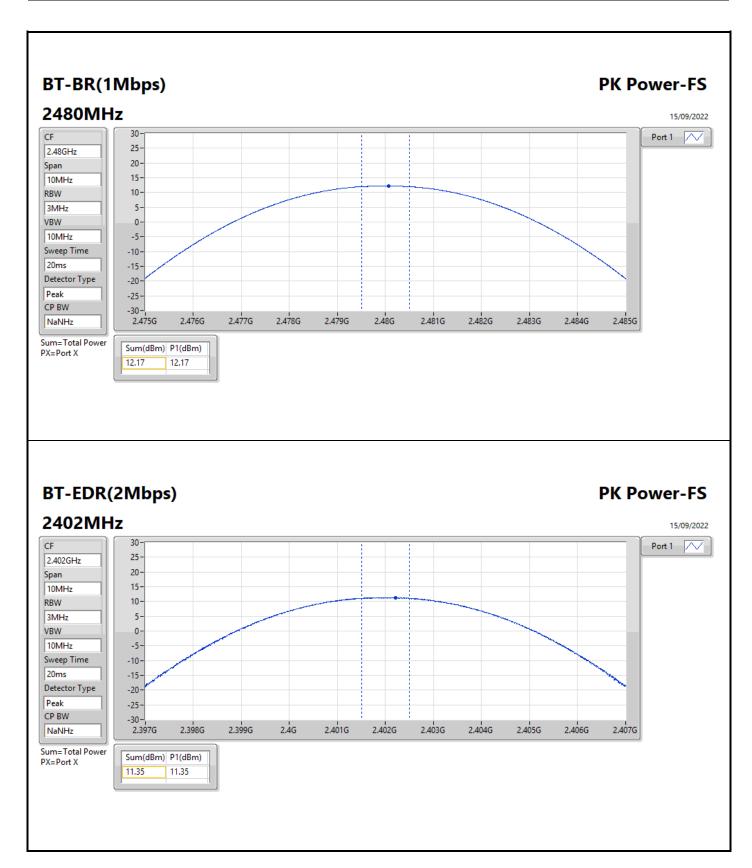




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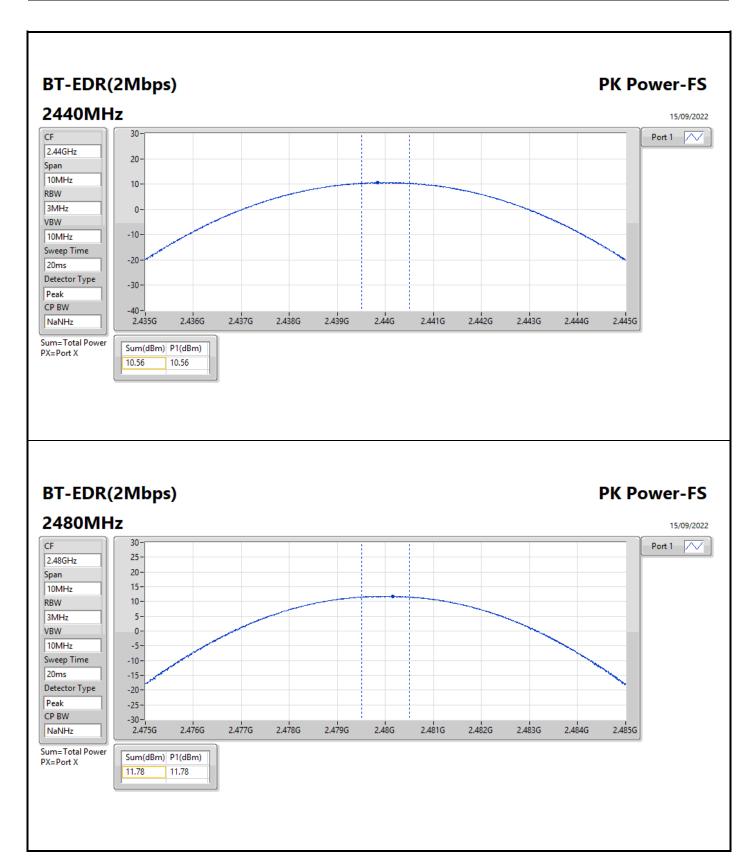




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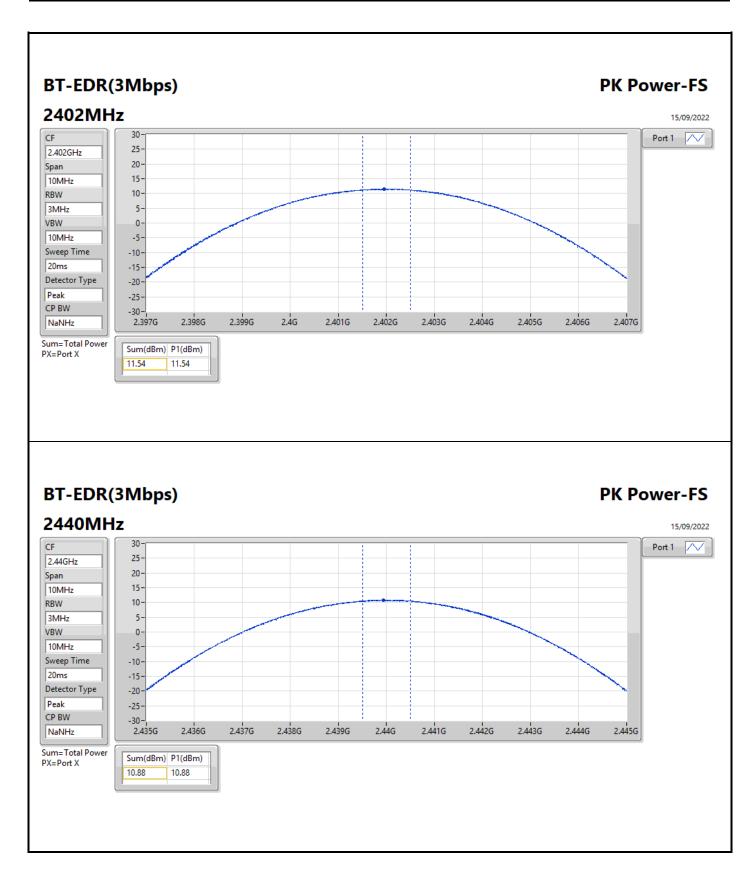




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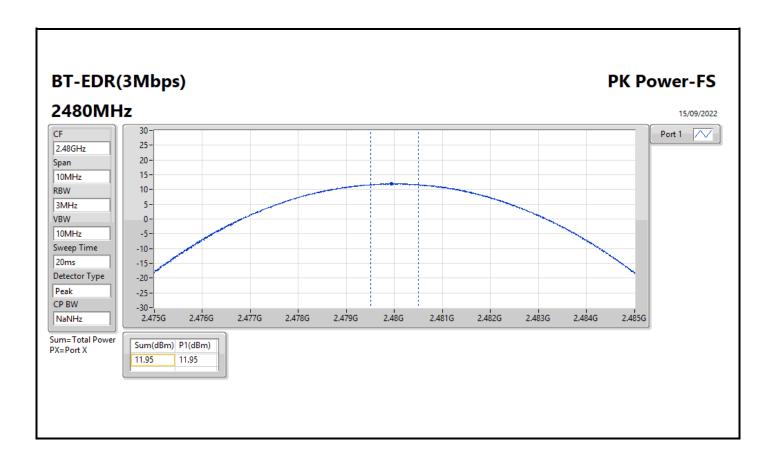
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Hopping Channel and Bandedge-FHSS

Appendix D

Summary

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

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Hopping Channel and Bandedge-FHSS

Appendix D

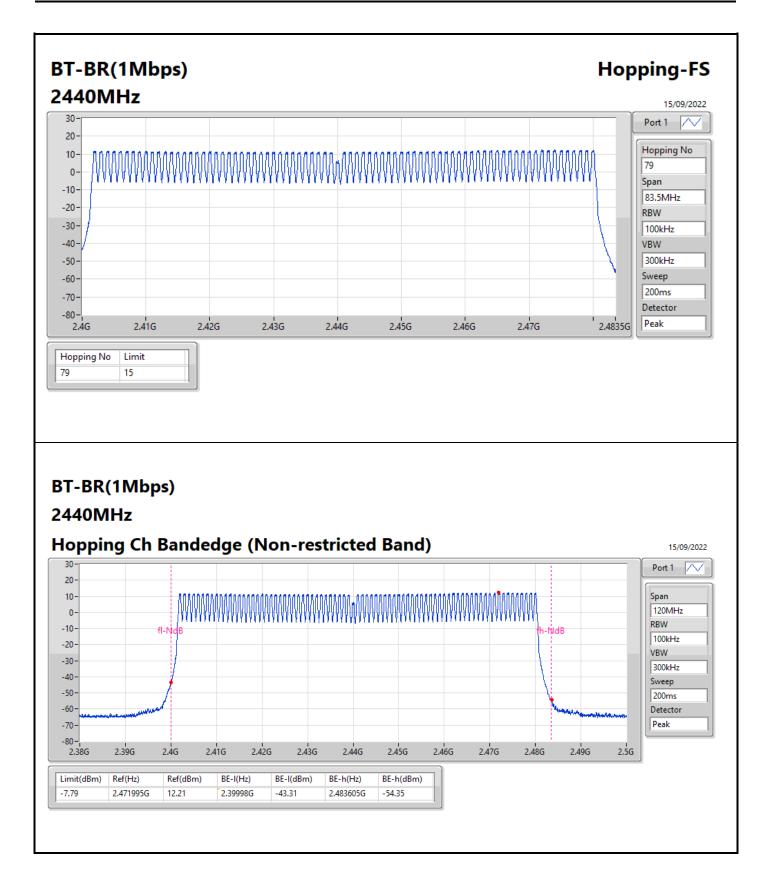
Result

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

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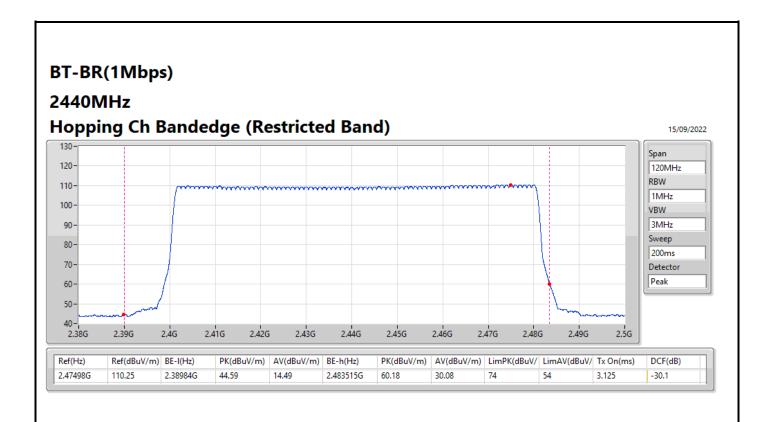


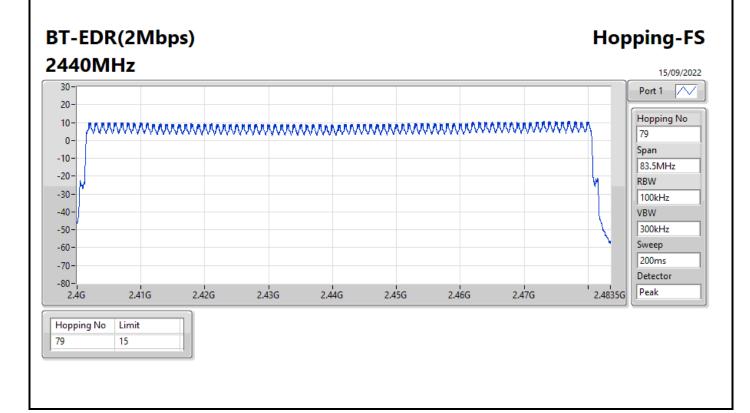


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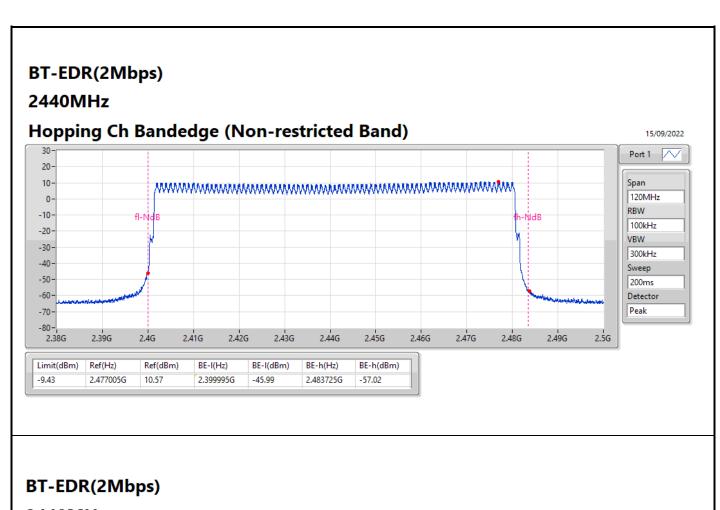




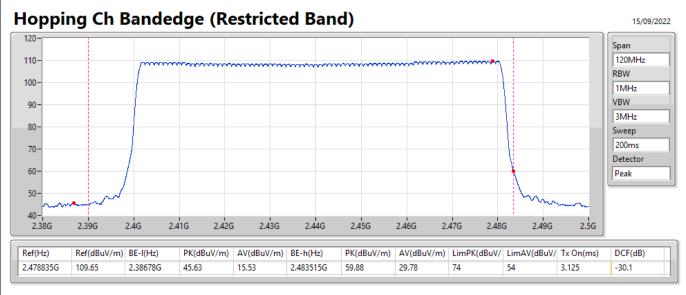
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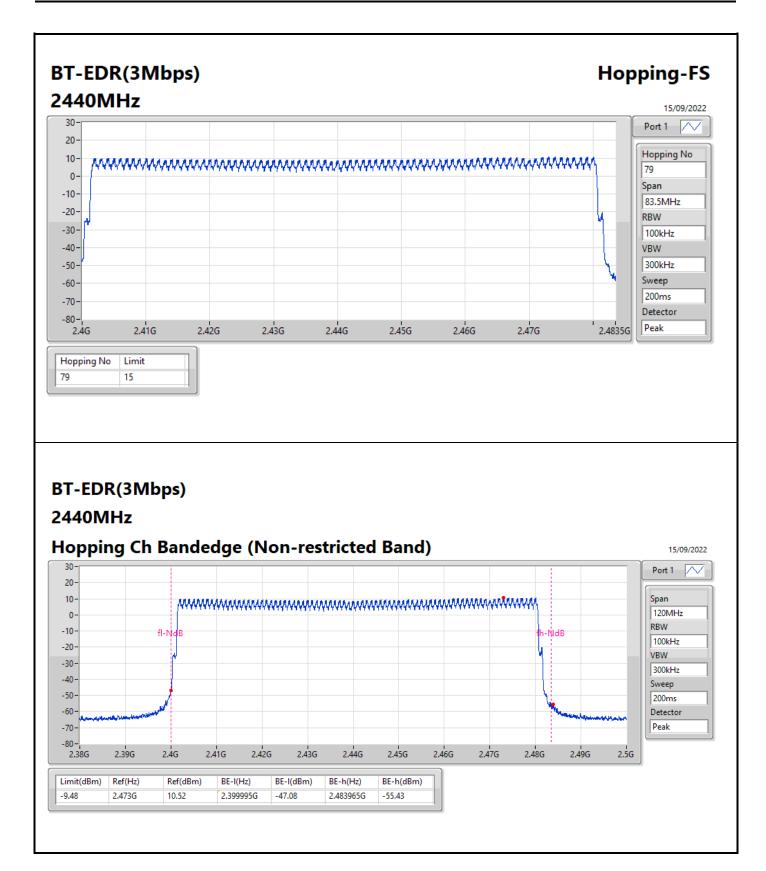
2440MHz



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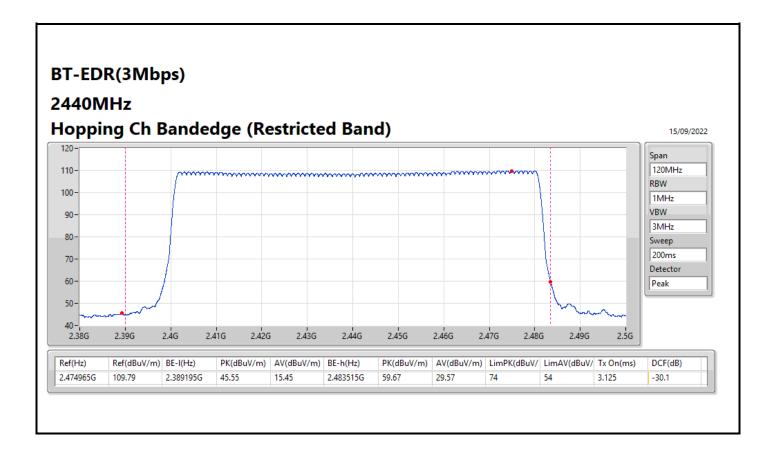




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Dwell Time-FHSS Appendix E

Summary

Mode	Max-Dwell
	(s)
2.4-2.4835GHz	-
BT-BR(1Mbps)	308.1273m_DH5
BT-EDR(2Mbps)	308.9268m_DH5
BT-EDR(3Mbps)	309.16665m_DH5

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Dwell Time-FHSS Appendix E

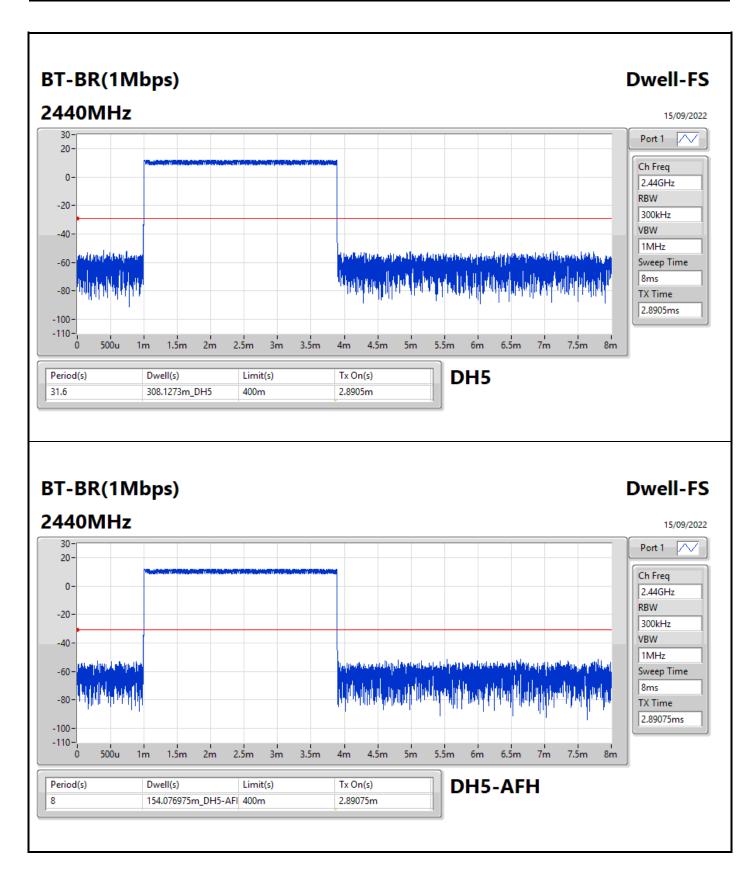
Result

Mode	Result	Period	Dwell	Limit	Tx On
		(s)	(s)	(s)	(s)
BT-BR(1Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	308.1273m_DH5	400m	2.8905m
2440MHz	Pass	8	154.076975m_DH5-AFH	400m	2.89075m
BT-EDR(2Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	308.9268m_DH5	400m	2.898m
2440MHz	Pass	8	154.43675m_DH5-AFH	400m	2.8975m
BT-EDR(3Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	309.16665m_DH5	400m	2.90025m
2440MHz	Pass	8	154.57m_DH5-AFH	400m	2.9m

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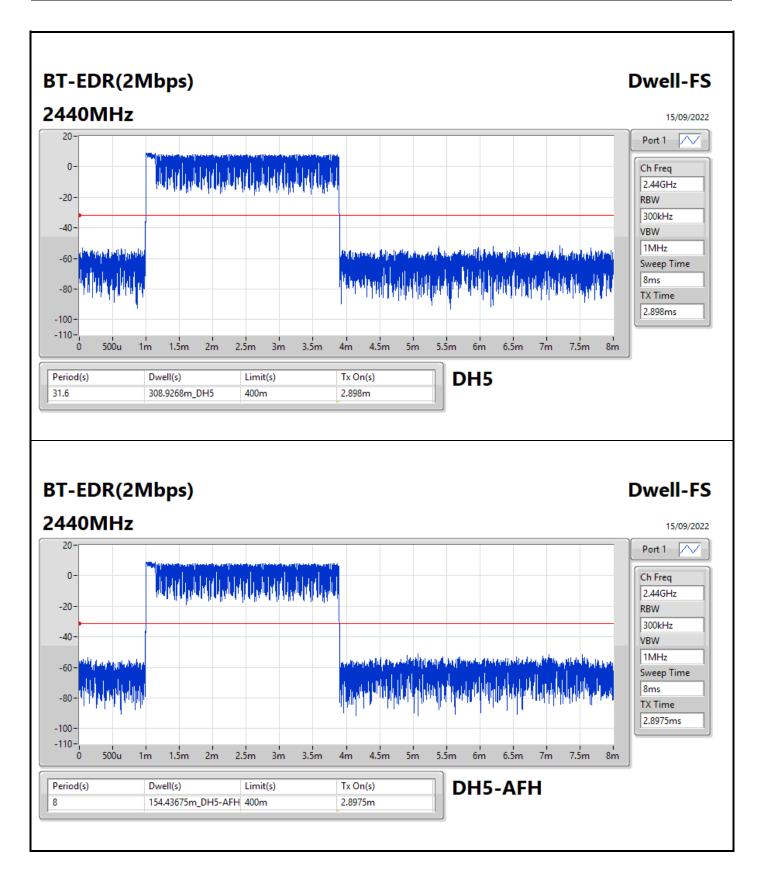




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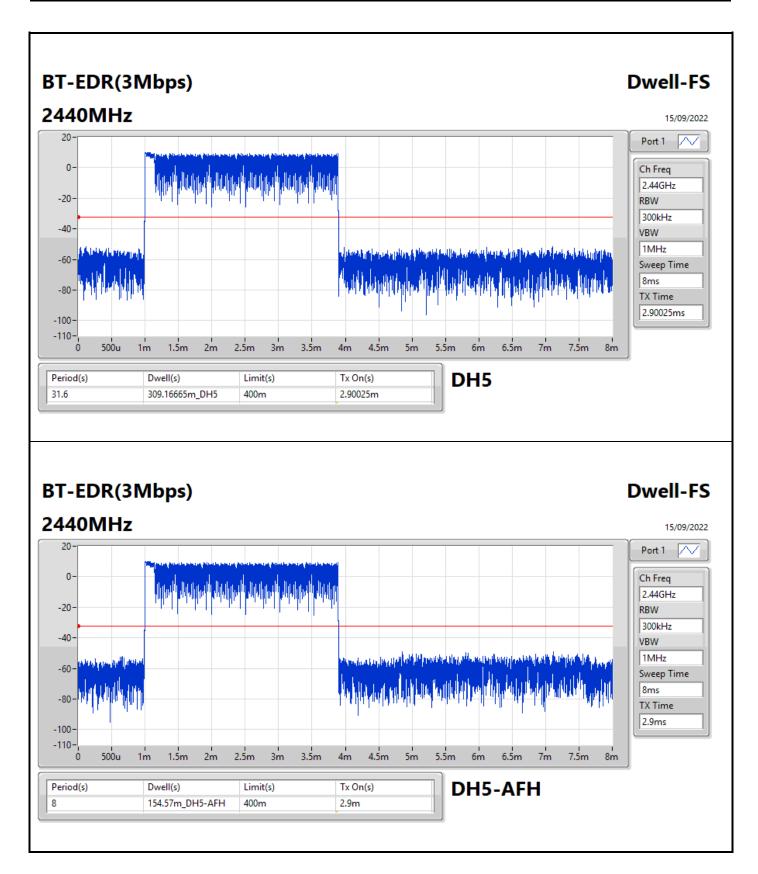




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CSE (Non-restricted Band)-FHSS

Appendix F

Summary

Mode	Result	Ref	Ref	Limit	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Port
		(Hz)	(dBm)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	2.40196G	11.55	-8.45	2.11709G	-54.83	2.39999G	-42.81	2.4G	-42.43	2.4861G	-51.48	6.44968G	-49.86	1
BT-EDR(2Mbps)	Pass	2.40213G	9.81	-10.19	1.86711G	-54.05	2.39992G	-45.03	2.4G	-47.77	2.4961G	-51.88	21.78862G	-48.71	1
BT-EDR(3Mbps)	Pass	2.40196G	9.74	-10.26	2.10916G	-54.27	2.39988G	-45.11	2.4G	-45.47	2.49469G	-51.58	21.96016G	-48.19	1

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CSE (Non-restricted Band)-FHSS

Appendix F

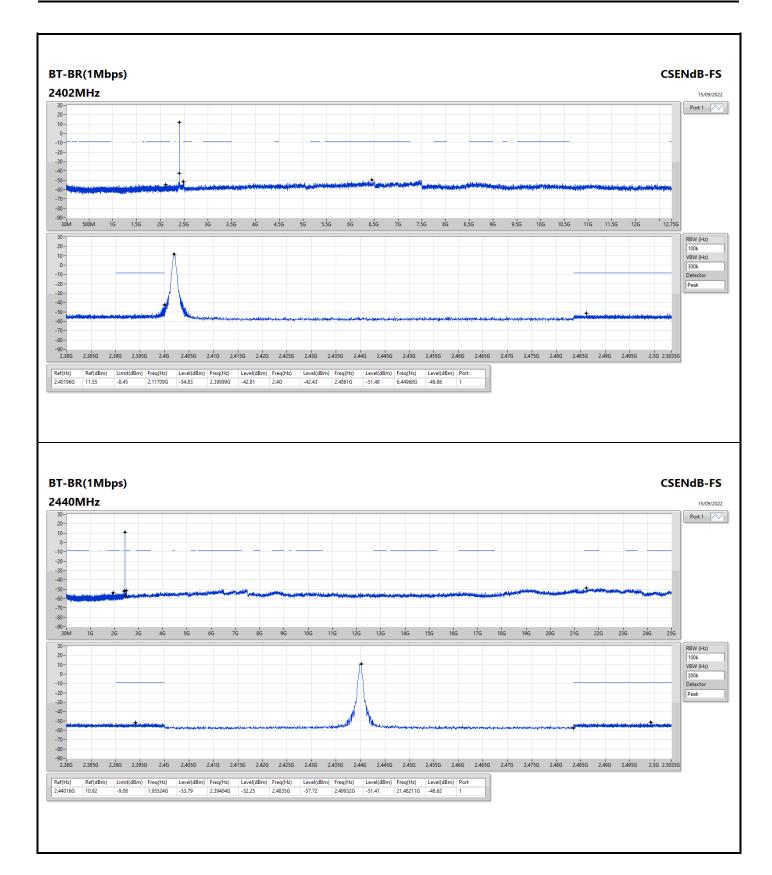
Result

Mode	Result	Ref	Ref	Limit	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Port
		(Hz)	(dBm)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40196G	11.55	-8.45	2.11709G	-54.83	2.39999G	-42.81	2.4G	-42.43	2.4861G	-51.48	6.44968G	-49.86	1
2440MHz	Pass	2.44016G	10.92	-9.08	1.95524G	-53.79	2.39404G	-52.25	2.4835G	-57.72	2.49932G	-51.41	21.48211G	-48.62	1
2480MHz	Pass	2.47999G	12.01	-7.99	1.87681G	-53.65	2.39805G	-51.77	2.4835G	-54.32	2.48475G	-49.97	21.95172G	-48.42	1
BT-EDR(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-		-	
2402MHz	Pass	2.40213G	9.81	-10.19	1.86711G	-54.05	2.39992G	-45.03	2.4G	-47.77	2.4961G	-51.88	21.78862G	-48.71	1
2440MHz	Pass	2.43983G	8.77	-11.23	2.17819G	-53.78	2.39507G	-51.89	2.4G	-55.75	2.50333G	-51.63	21.65646G	-48.63	1
2480MHz	Pass	2.48003G	10.40	-9.60	66.72M	-53.41	2.39926G	-52.01	2.4835G	-53.95	2.49329G	-51.33	21.99391G	-48.27	1
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2402MHz	Pass	2.40196G	9.74	-10.26	2.10916G	-54.27	2.39988G	-45.11	2.4G	-45.47	2.49469G	-51.58	21.96016G	-48.19	1
2440MHz	Pass	2.44012G	8.46	-11.54	1.85595G	-54.45	2.3991G	-52.09	2.4G	-56.96	2.48652G	-51.57	21.81675G	-49.00	1
2480MHz	Pass	2.48016G	10.36	-9.64	1.72406G	-54.88	2.39958G	-52.12	2.4835G	-54.79	2.4835G	-51.66	21.65083G	-48.39	1

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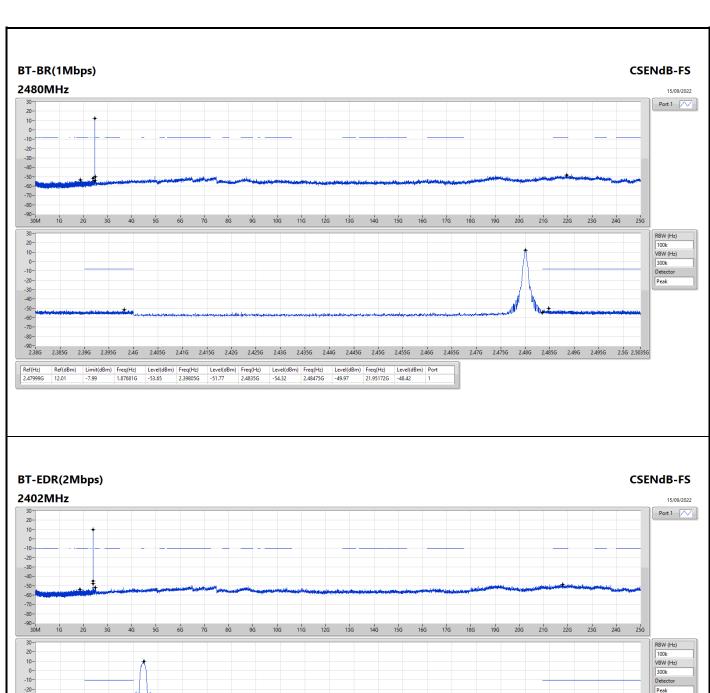
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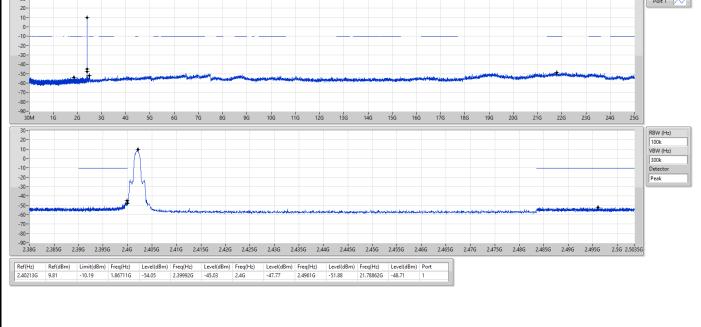




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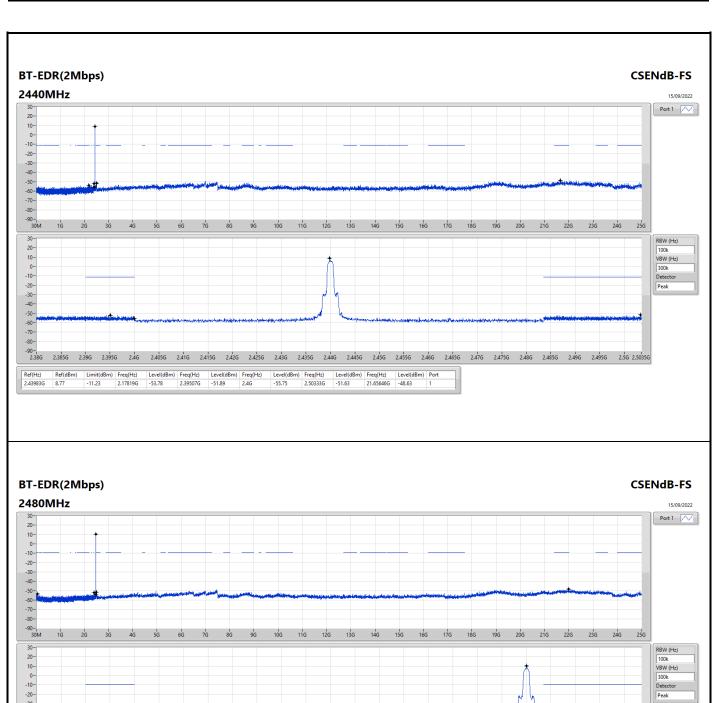






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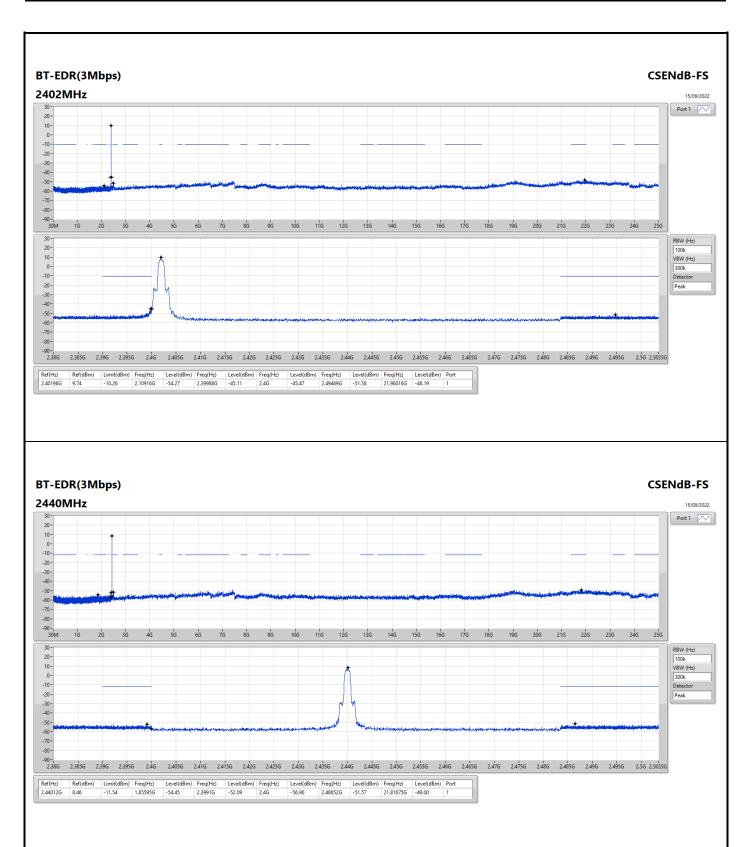
-90-2.38G 2.385G 2.39G 2.395G 2.4G 2.405G 2.41G 2.415G 2.42G 2.425G 2.435G 2.435G 2.44G 2.445G 2.455G 2.455G 2.455G 2.475G 2.475G 2.475G 2.48G 2.485G 2.495G 2.50.25035G

 Ref(Hz)
 Ref(dBm)
 Limit(dBm)
 Freq(Hz)
 Level(dBm)
 Freq(Hz)
 Level(dBm)

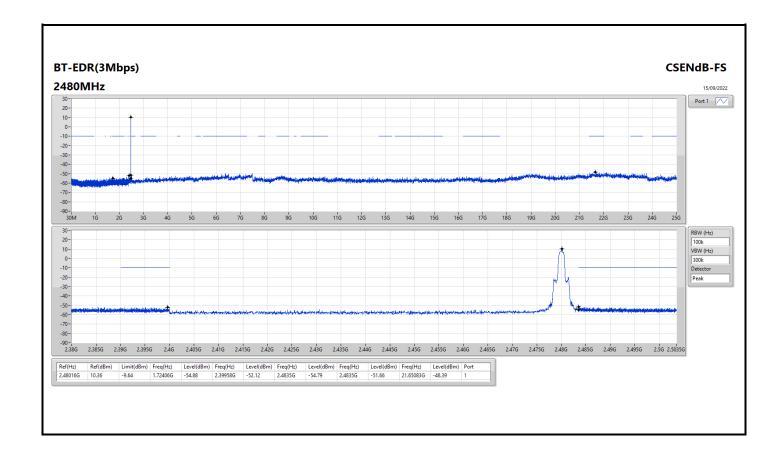
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Radiated Emissions below 1GHz

Appendix G.1

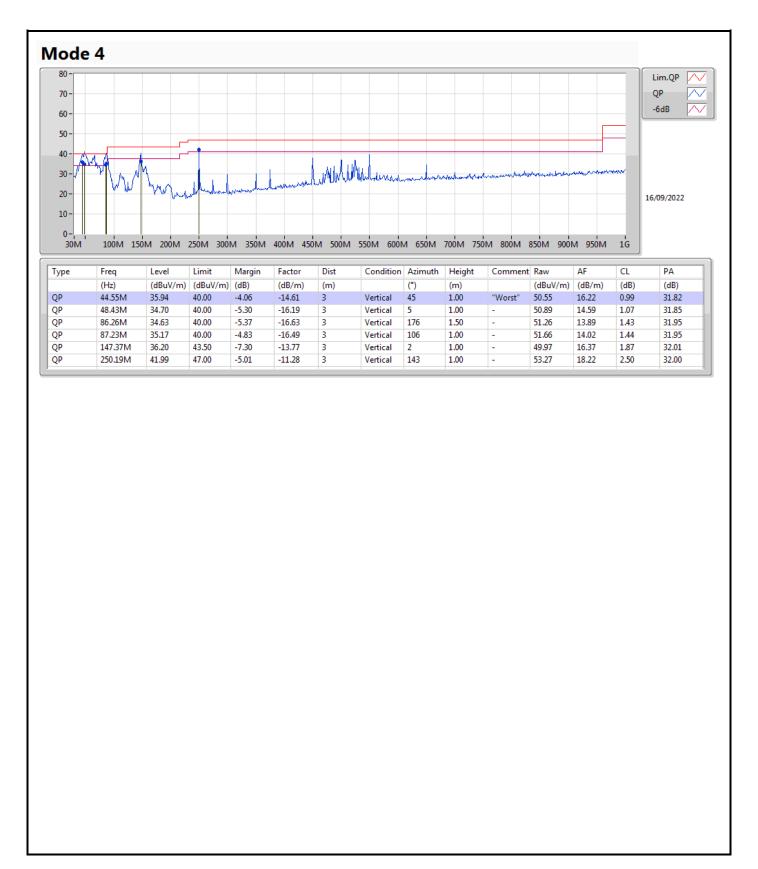
Summary

Mode	Result	Туре	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 4	Pass	QP	250.19M	41.99	46.00	-4.01	Vertical

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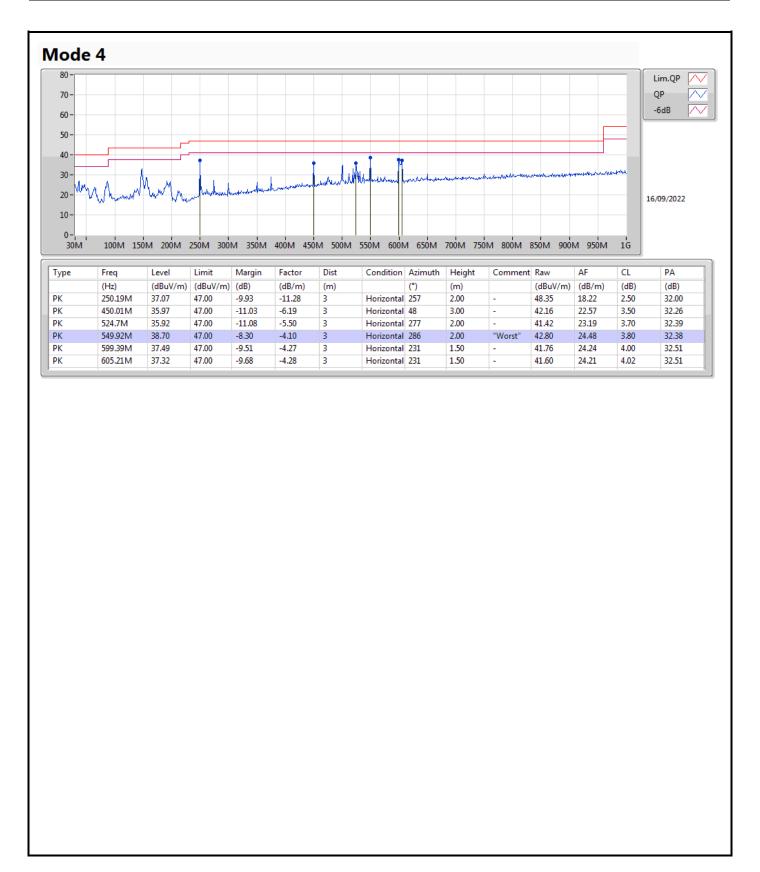




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RSE TX above 1GHz

Appendix G.2

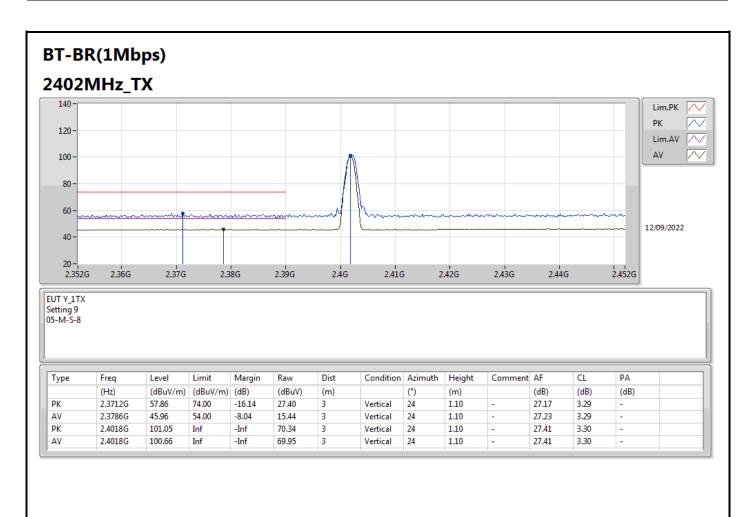
Summary

Mode	Result	Туре	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-EDR(3Mbps)	Pass	AV	4.95988G	49.29	54.00	-4.71	3	Horizontal	56	1.80	-

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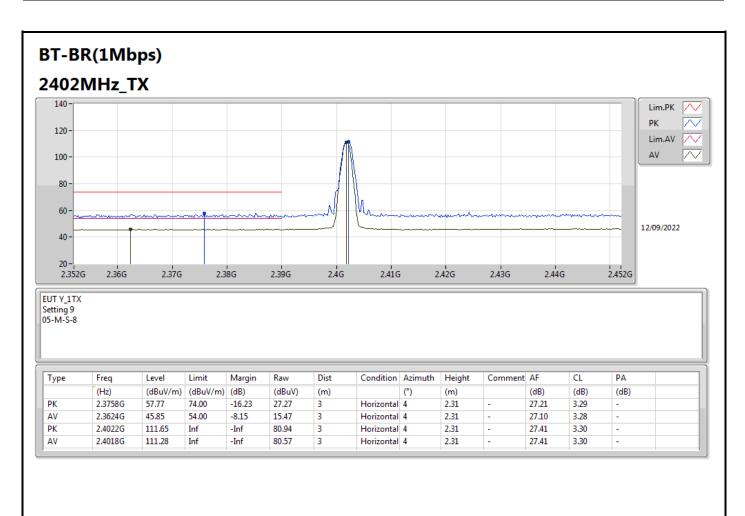




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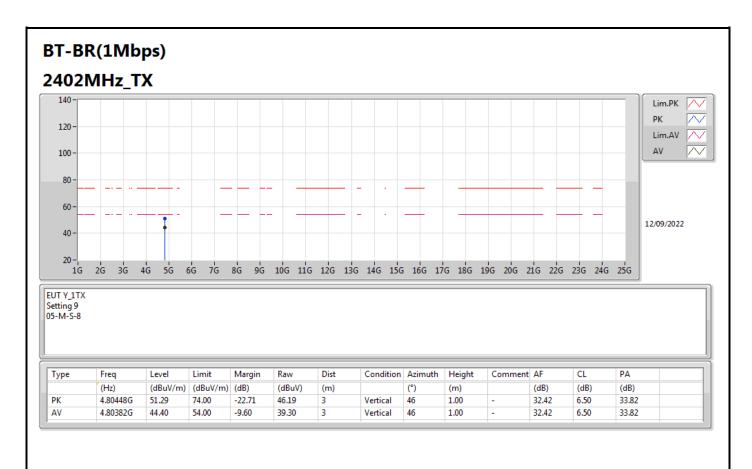




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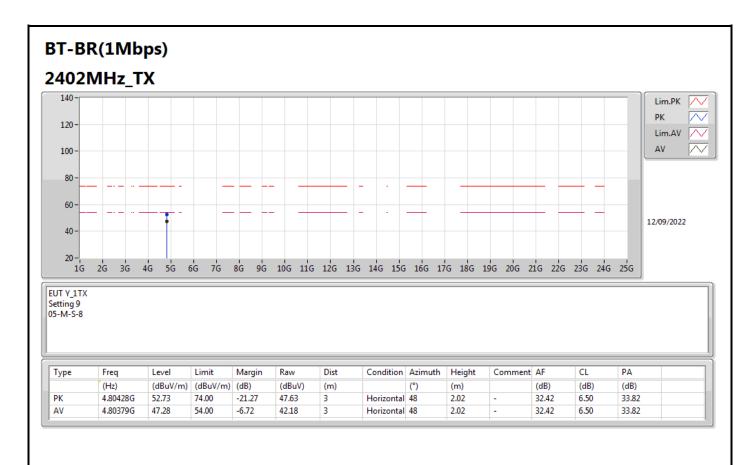




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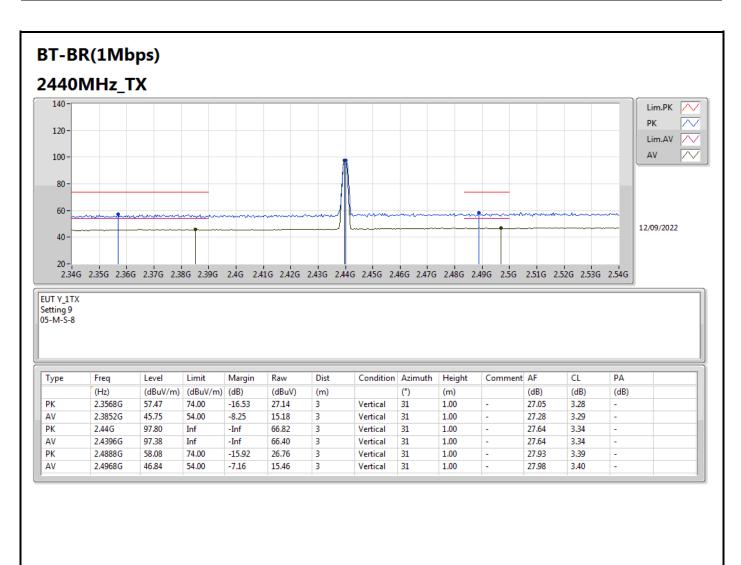




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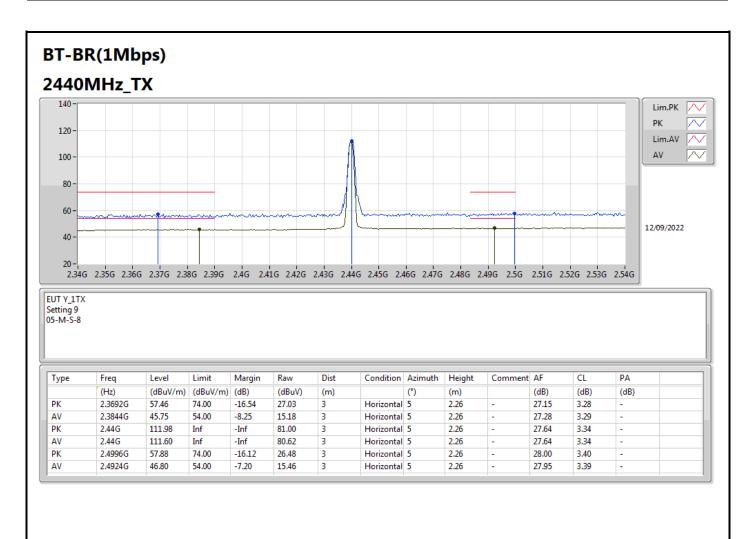




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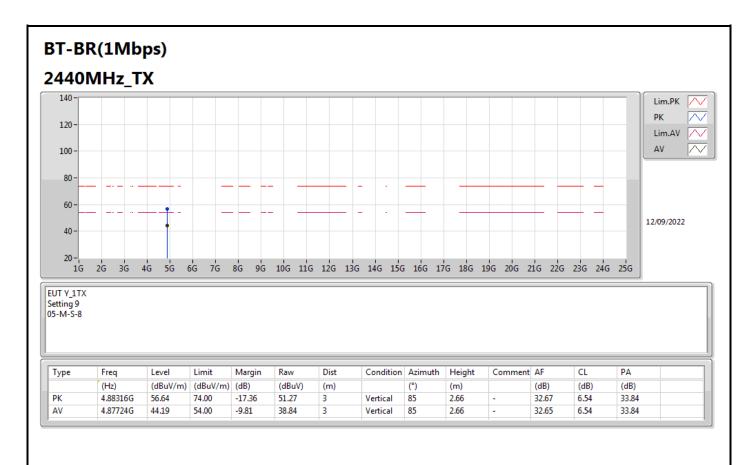




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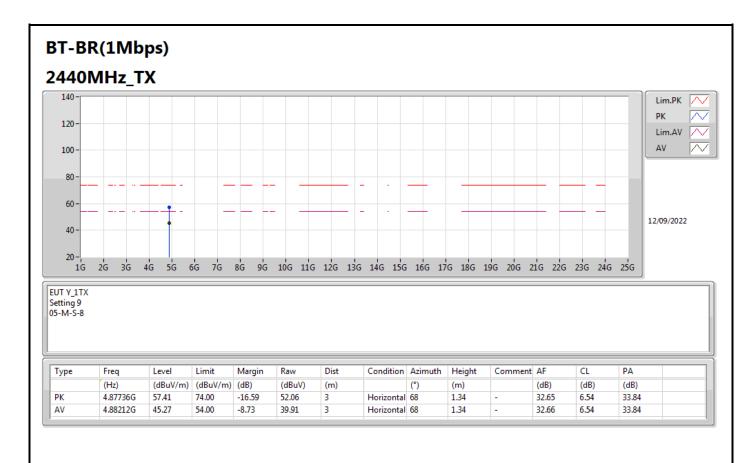




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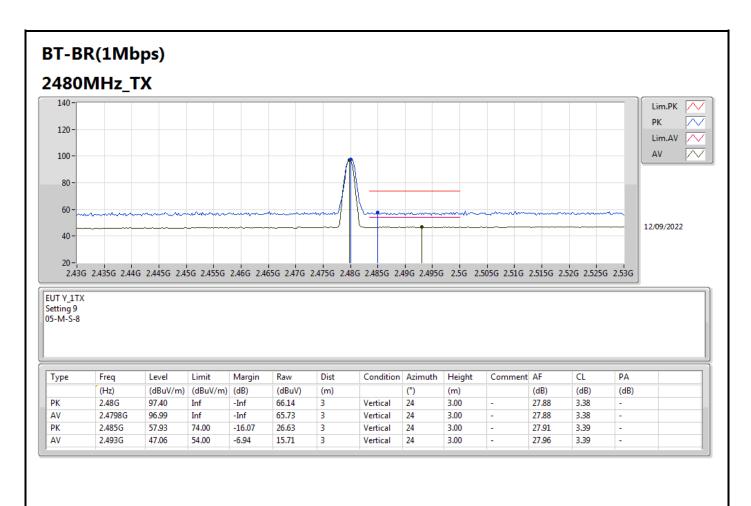




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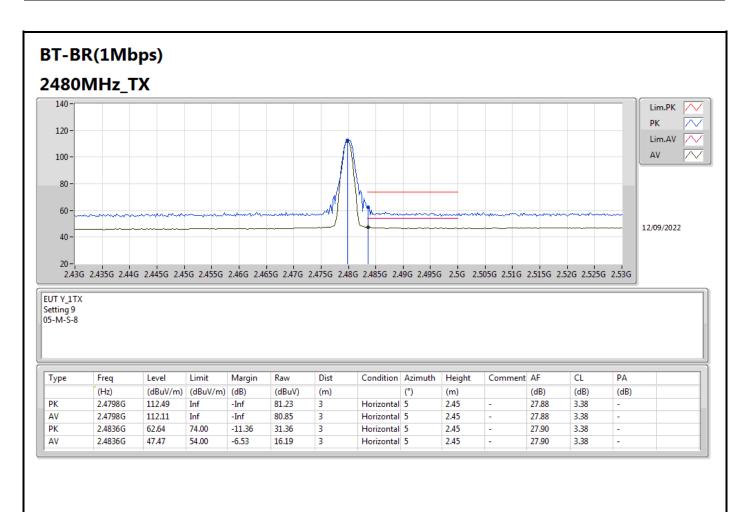
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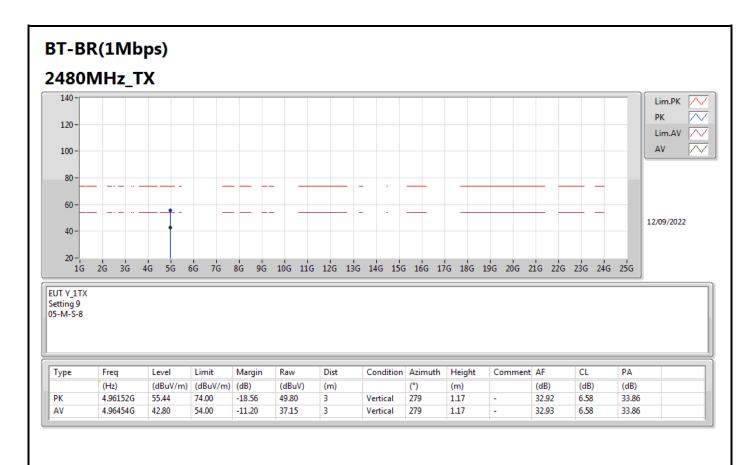




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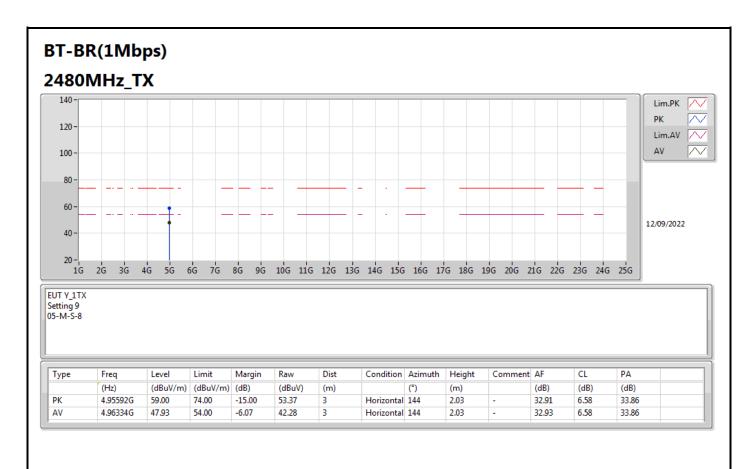




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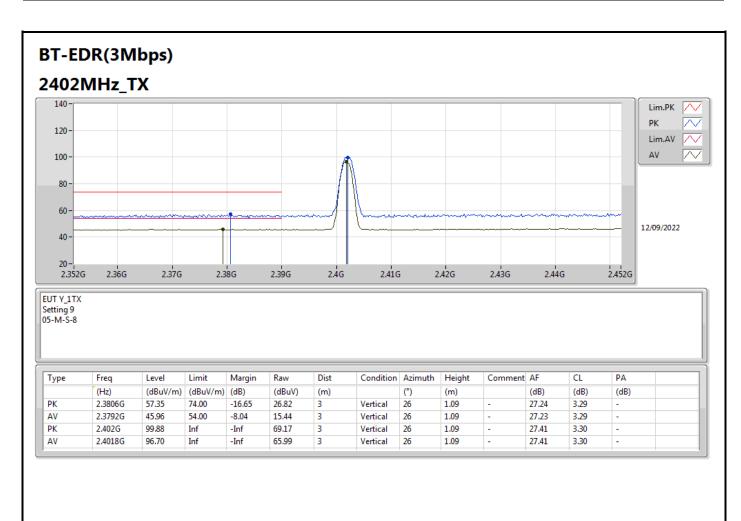
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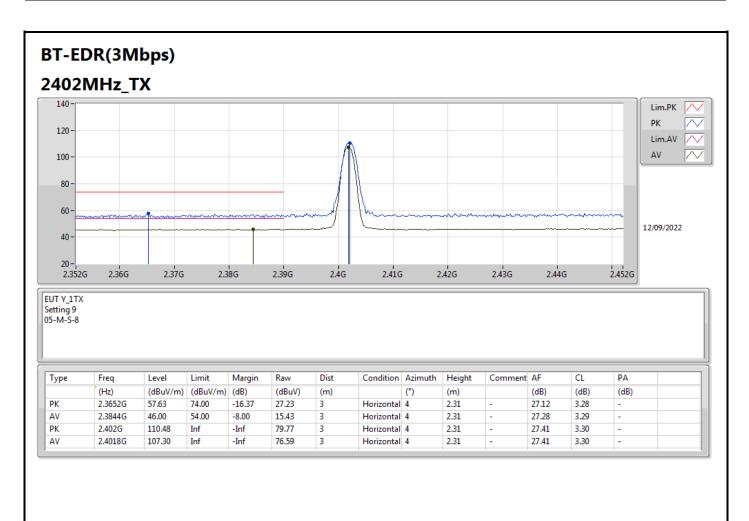
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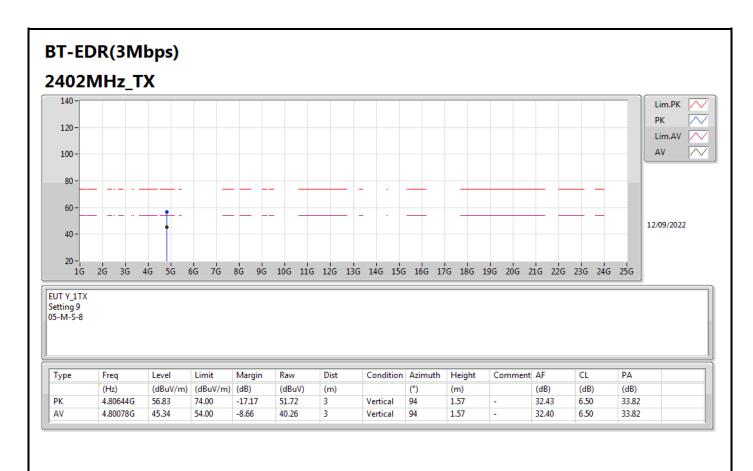




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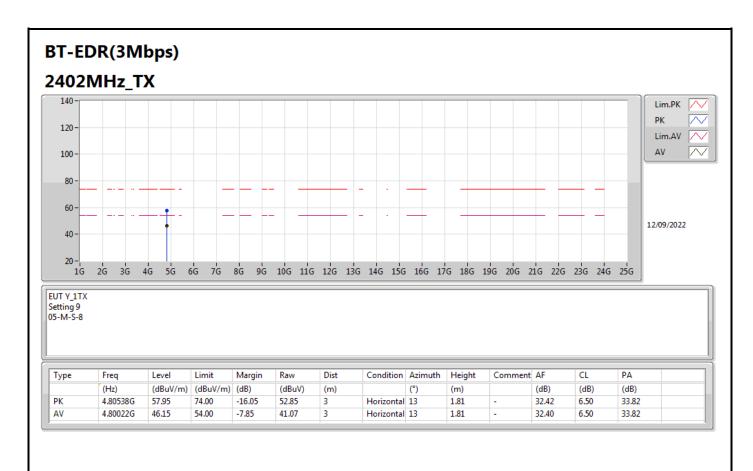




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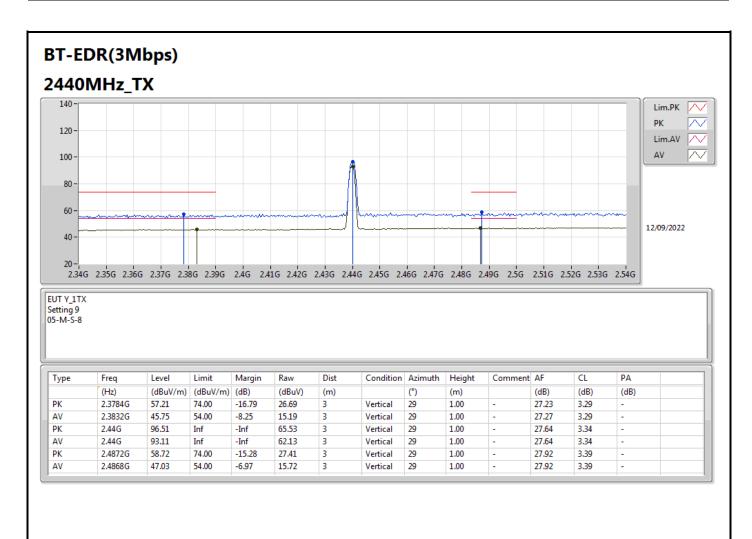




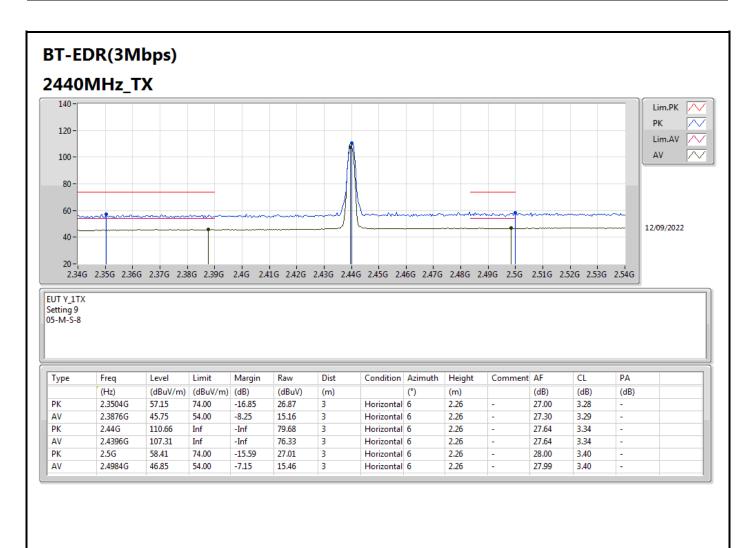
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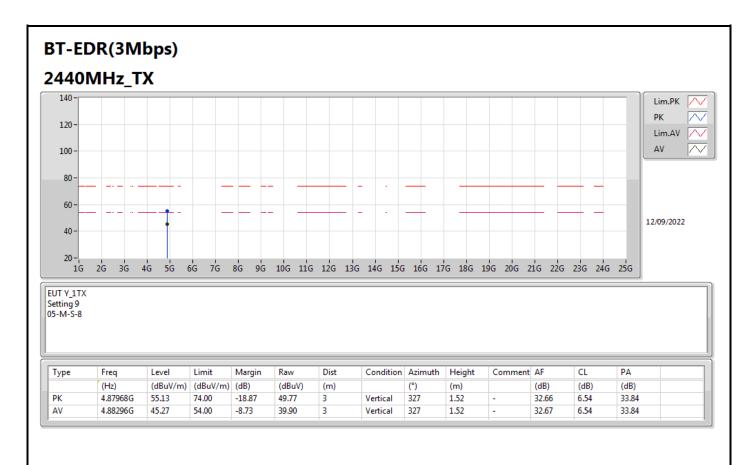




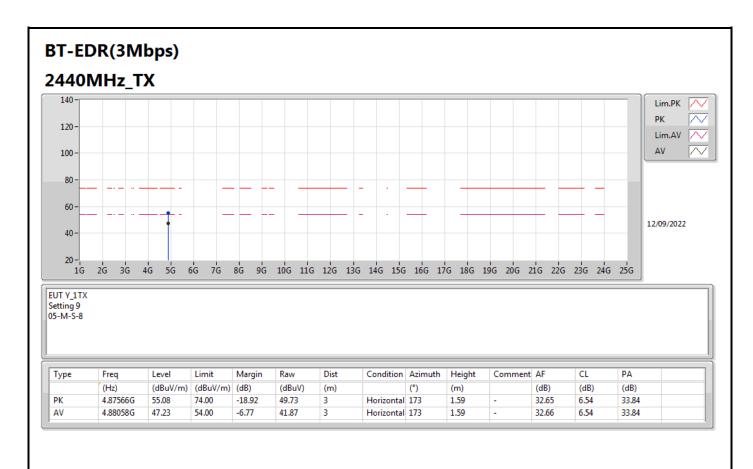


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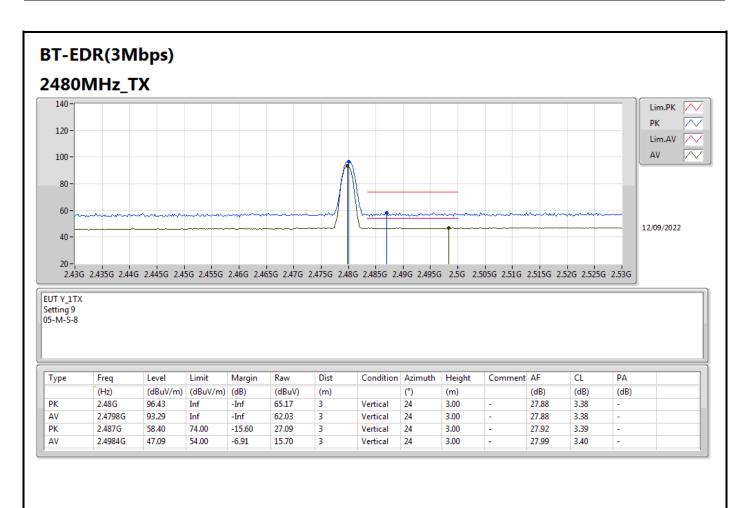




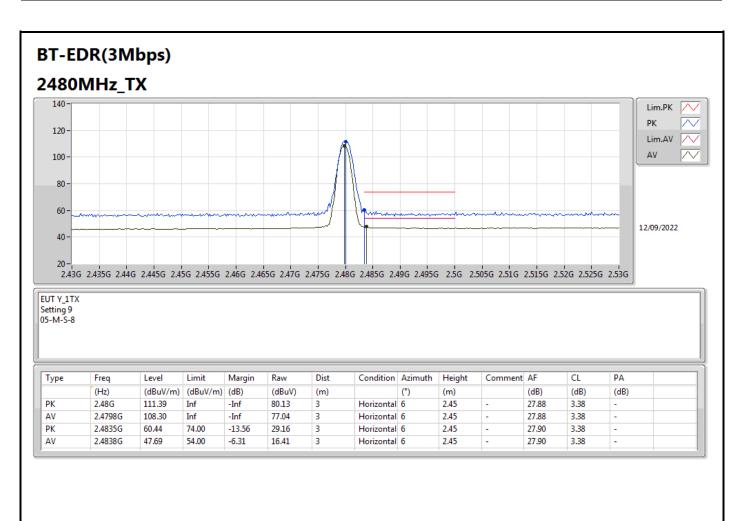
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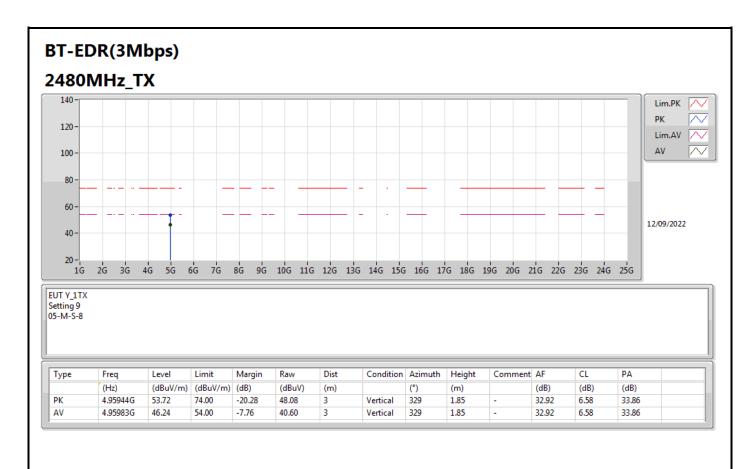








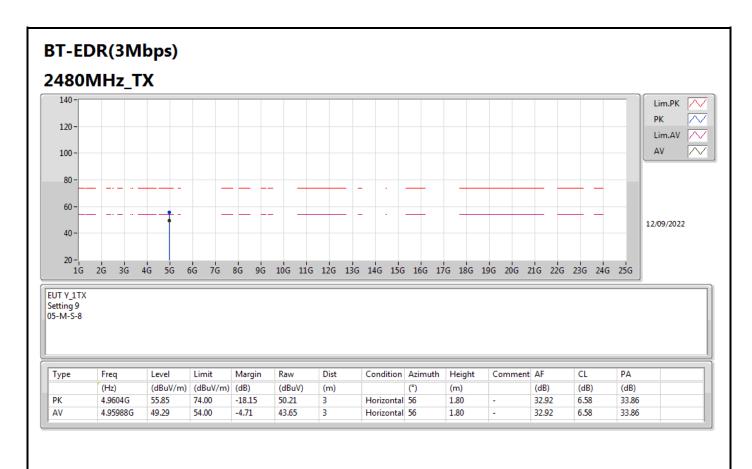




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Radiated Emission Co-location Report

Appendix H

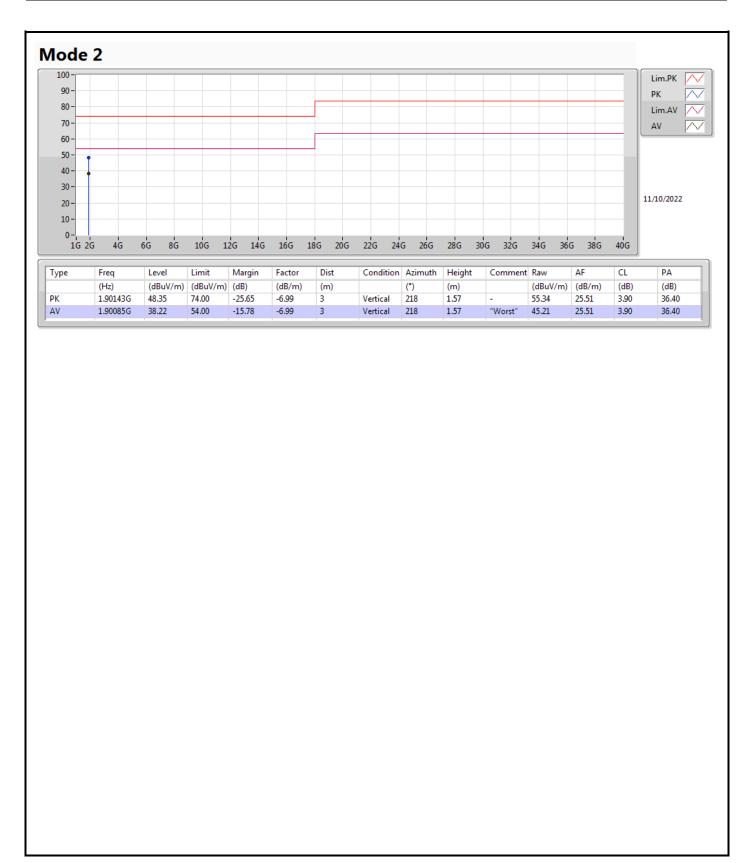
Summary

Mode	Result	Туре	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 2	Pass	AV	1.90085G	38.22	54.00	-15.78	Vertical

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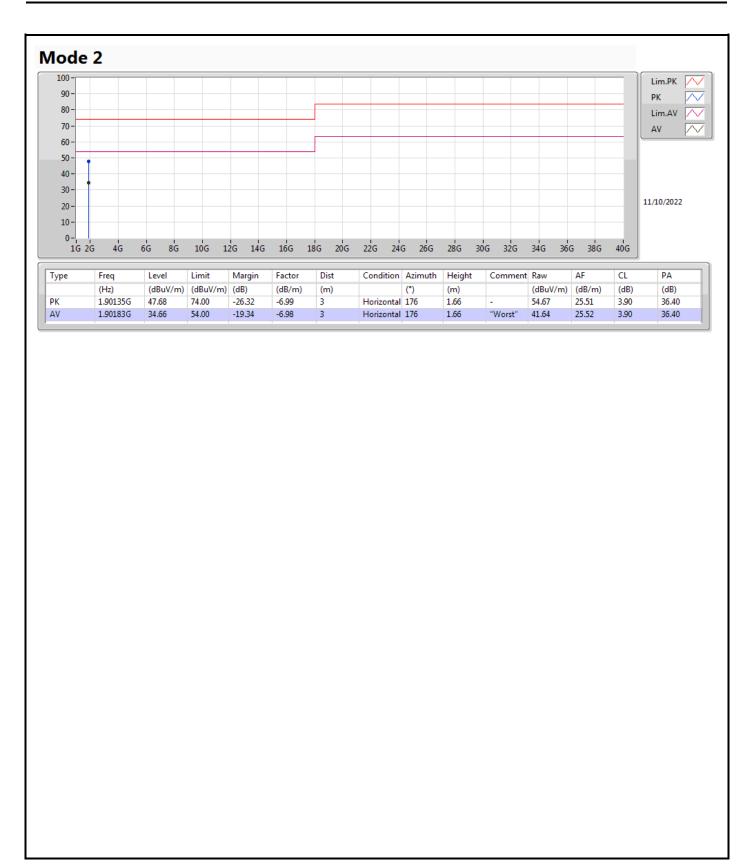
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