



RADIO TEST REPORT

FCC ID : Z8H89FT0073
Equipment : XE3-4TN Outdoor Wi-Fi 6e 4x4 Access Point with SDR
Brand Name : Cambium Networks
Model Name : XE3-4T
Applicant : Cambium Networks Inc.
3800 Golf Road Suite 360 Rolling Meadows IL United States 60008
Manufacturer : LITE-ON Technology Corp. Networking Plant
5F, No. 101, Neihuan N. Rd., Nanzih Dist., Kaohsiung City 811, Taiwan, R.O.C.
Standard : 47 CFR FCC Part 15.247

The product was received on Aug. 02, 2022, and testing was started from Aug. 02, 2022 and completed on Dec. 15, 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

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



Summary of Test Result

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

Declaration of Conformity:

1. 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:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Sam Chen

Report Producer: Viola Huang



1 General Description

1.1 Information

1.1.1 RF General Information

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

For Radio 4

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	BT-BR	1	1
2.4-2.4835GHz	BT-EDR	1	1

Note:

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


1.1.2 Antenna Information

Set	Port					Brand Name	Part Name	Antenna Type	Connector	Gain (dBi)
	WLAN 2.4GHz (Radio 1)	WLAN 5GHz (Radio 2)	WLAN 5GHz (Radio 3)	BT (Radio 4)	GPS (Radio 5)					
1	1	1	2	-	-	LYNwave	ALX22X-121050-00	Dipole	N-Type	Note 1
	2	2	4	-	-					
	-	-	1	-	-					
	-	-	3	-	-					
2	1	1	2	-	-	SmartAnt	SAA19-220130	Dipole	N-Type	
	2	2	4	-	-					
	-	-	1	-	-					
	-	-	3	-	-					
3	-	-	2	-	-	LYNwave	OLX22X-127130-A	Patch	N-Type	
	-	-	4	-	-					
	-	-	1	-	-					
	-	-	3	-	-					
4	1	-	-	-	-	EAHiSON	ANT-DIR15-2X2-2.4 G-01	Panel	N-Female	
	2	-	-	-	-					
5	-	1	2	-	-	KBT	ANT-DIR15-2X2-5.0 G-01	Panel	N-Female	
	-	2	4	-	-					
	-	-	1	-	-					
	-	-	3	-	-					
6	-	-	-	-	1	Cirocomm	03V0134913Z010T	Marine GPS	SMA	
7	-	-	-	1	-	INPAQ	RFPCA403422IMAB 702	PCB	I-PEX	



Note 1:

Set	Antenna Gain (dBi)				Cable loss (dB)				Net Gain (dBi)			
	WLAN 2.4GHz (Radio 1)	BT (Radio 4)	GPS (Radio 5)		WLAN 2.4GHz (Radio 1)	BT (Radio 4)	GPS (Radio 5)		WLAN 2.4GHz (Radio 1)	BT (Radio 4)	GPS (Radio 5)	
			1575.42 MHz	1602 MHz			1575.42 MHz	1602 MHz			1575.42 MHz	1602 MHz
1	4.4	-	-	-	-	-	-	-	4.4	-	-	-
2	3	-	-	-	-	-	-	-	3	-	-	-
4	18	-	-	-	0.77	-	-	-	17.23	-	-	-
6	-	-	3	4.5	-	-	-	-	-	-	3	4.5
7	-	3.73	-	-	-	-	-	-	-	3.73	-	-

Set	Antenna Gain (dBi)								Cable loss (dB)								Net Gain (dBi)							
	WLAN 5GHz (Radio 2)				WLAN 5GHz (Radio 3)				WLAN 5GHz (Radio 2)				WLAN 5GHz (Radio 3)				WLAN 5GHz (Radio 2)				WLAN 5GHz (Radio 3)			
	UNII 1	UNII 2A	UNII 2C	UNII 3	UNII 1	UNII 2A	UNII 2C	UNII 3	UNII 1	UNII 2A	UNII 2C	UNII 3	UNII 1	UNII 2A	UNII 2C	UNII 3	UNII 1	UNII 2A	UNII 2C	UNII 3	UNII 1	UNII 2A	UNII 2C	UNII 3
1	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	-	-	-	-	-	-	-	-	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
2	5	5	6	6	5	5	6	6	-	-	-	-	-	-	-	-	5	5	6	6	5	5	6	6
3	-	-	-	-	11	11	11	11	-	-	-	-	1.45	1.45	1.6	1.6	-	-	-	-	9.55	9.55	9.4	9.4
5	18	18	18	18	18	18	18	18	1.45	1.45	1.6	1.6	1.45	1.45	1.6	1.6	16.55	16.55	16.4	16.4	16.55	16.55	16.4	16.4

Note 2: The EUT has five sets of antenna for WLAN and one set of antenna for GPS and Bluetooth.

Note 3: The above information was declared by manufacturer.

Note 4: The antenna set 1 and set 2 are the same antenna type, only the highest gain antenna (antenna set 1 for 2.4GHz and 5GHz UNII 1, antenna set 2 for 5GHz UNII 3) were selected to test and record in this report.

Note 5: The EUT doesn't enable the DFS band.

Note 6: Polarization of antenna set 3: 2*Horizontal, 2*Vertical. so array gain only adds 10log (2).

Polarization of antenna set 4: 1*Horizontal, 1*Vertical. so the array gain is 0dBi.

Polarization of antenna set 5: Radio 2: 1*Horizontal, 1*Vertical. so the array gain is 0dBi.

Radio 3: 2*Horizontal, 2*Vertical. so array gain only adds 10log (2).

Note 7: Directional gain information.

Type	Maximum Output Power	Power Spectral Density
Non-BF	Directional gain = Max.gain + array gain. For power measurements on IEEE 802.11 devices Array Gain = 0 dB (i.e., no array gain) for N ANT ≤ 4	$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ant}} \left[\sum_{k=1}^{N_{ant}} g_{j,k} \right]^2}{N_{ant}} \right]$
BF	$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ant}} \left[\sum_{k=1}^{N_{ant}} g_{j,k} \right]^2}{N_{ant}} \right]$	$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ant}} \left[\sum_{k=1}^{N_{ant}} g_{j,k} \right]^2}{N_{ant}} \right]$

Ex.

Directional Gain (NSS1) formula :

$$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ant}} \left[\sum_{k=1}^{N_{ant}} g_{j,k} \right]^2}{N_{ant}} \right]$$

NSS1(g1,1) = $10^{G1/20}$; NSS1(g1,2)= $10^{G2/20}$; NSS1(g1,2)= $10^{G3/20}$; NSS1(g1,2)= $10^{G4/20}$

$g_{j,k} = (NSS1(g1,1) + NSS1(g1,2) + NSS1(g1,3) + NSS1(g1,4))^2$

$DG = 10 \log[(NSS1(g1,1) + NSS1(g1,2) + NSS1(g1,3) + NSS1(g1,4))^2 / N_{ANT}] \Rightarrow 10$

$\log[(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2 / N_{ANT}]$

Where ;

Antenna set 1

2.4G G1 = 4.4 dBi; G2 = 4.4 dBi ;DG = 4.4 dBi

5G Band1 G1 = 5.5 dBi; G2 = 5.5 dBi; G3 = 5.5 dBi; G4 = 5.5 dBi;DG = 5.5 dBi

5G Band2 G1 = 5.5 dBi; G2 = 5.5 dBi; G3 = 5.5 dBi; G4 = 5.5 dBi;DG = 5.5 dBi

2.4G DG = 7.41 dBi

For 2TX

Radio 2 5G Band1 DG = 8.51 dBi

Radio 2 5G Band2 DG = 8.51 dBi

For 4TX

Radio 3 5G Band1 DG = 11.52 dBi

Radio 3 5G Band2 DG = 11.52 dBi

Antenna set 2

5G Band3 G1 = 6 dBi; G2 = 6 dBi; G3 = 6 dBi; G4 = 6 dBi;DG = 6 dBi

5G Band4 G1 = 6 dBi; G2 = 6 dBi; G3 = 6 dBi; G4 = 6 dBi;DG = 6 dBi

For 2TX

Radio 2 5G Band3 DG = 9.01 dBi

Radio 2 5G Band4 DG = 9.01 dBi

For 4TX

Radio 3 5G Band3 DG = 12.02 dBi

Radio 3 5G Band4 DG = 12.02 dBi

**Antenna set 3(Cross-Polarized Antenna)**

5G Band1 G1 = 9.55 dBi; G2 = 9.55 dBi; G3 = 9.55 dBi; G4 = 9.55 dBi; DG = 9.55 dBi

5G Band2 G1 = 9.55 dBi; G2 = 9.55 dBi; G3 = 9.55 dBi; G4 = 9.55 dBi; DG = 9.55 dBi

5G Band3 G1 = 9.4 dBi; G2 = 9.4 dBi; G3 = 9.4 dBi; G4 = 9.4 dBi; DG = 9.4 dBi

5G Band4 G1 = 9.4 dBi; G2 = 9.4 dBi; G3 = 9.4 dBi; G4 = 9.4 dBi; DG = 9.4 dBi

Radio 3 5G Band1 DG = 12.56 dBi

Radio 3 5G Band2 DG = 12.56 dBi

Radio 3 5G Band3 DG = 12.41 dBi

Radio 3 5G Band4 DG = 12.41 dBi

Antenna set 4(Cross-Polarized Antenna)

2.4G G1 = 17.23 dBi; G2 = 17.23 dBi

DG = 17.23 dBi

Antenna set 5(Cross-Polarized Antenna)

5G Band1 G1 = 16.55 dBi; G2 = 16.55 dBi; G3 = 16.55 dBi; G4 = 16.55 dBi; DG = 16.55 dBi

5G Band2 G1 = 16.55 dBi; G2 = 16.55 dBi; G3 = 16.55 dBi; G4 = 16.55 dBi; DG = 16.55 dBi

5G Band3 G1 = 16.4 dBi; G2 = 16.4 dBi; G3 = 16.4 dBi; G4 = 16.4 dBi; DG = 16.4 dBi

5G Band4 G1 = 16.4 dBi; G2 = 16.4 dBi; G3 = 16.4 dBi; G4 = 16.4 dBi; DG = 16.4 dBi

For 2TX

Radio 2 5G Band1 DG = 16.55 dBi

Radio 2 5G Band2 DG = 16.55 dBi

Radio 2 5G Band3 DG = 16.40 dBi

Radio 2 5G Band4 DG = 16.40 dBi

For 4TX

Radio 3 5G Band1 DG = 19.56 dBi

Radio 3 5G Band2 DG = 19.56 dBi

Radio 3 5G Band3 DG = 19.41 dBi

Radio 3 5G Band4 DG = 19.41 dBi

For Radio 1**For 2.4GHz:****For IEEE 802.11b/g/n/VHT/ax mode (2TX/2RX):**

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

Port 1 and Port 2 could transmit/receive simultaneously.

For Radio 2**For 5GHz UNII 1, 3:****For IEEE 802.11a/n/ac/ax mode (2TX/2RX):**

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

Port 1 and Port 2 could transmit/receive simultaneously.

For Radio 3**For 5GHz UNII 1, 3:****For IEEE 802.11a/n/ac/ax mode (4TX/4RX):**

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

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

For Radio 4**Bluetooth (1TX/1RX):**

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

For Radio 5**GPS (1RX):**

Only Port 1 can be used as receiving antenna.

**1.1.3 Mode Test Duty Cycle**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
BT-BR(1Mbps)	0.787	1.04	2.898m	1k
BT-EDR(3Mbps)	0.747	1.27	2.905m	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	BlueTest3(version 10520)

1.1.5 Table for EUT support function

Function
AP
Mesh
Bridge

Note1: For above table list, only AP mode was tested and recorded in this test.

Note2: The above information was declared by manufacturer.

1.1.6 Table for Radio function

Radio (R)	WLAN 2.4GHz	5GHz	Bluetooth	GPS
R1	V	-	-	-
R2	-	V (20/40/80MHz)	-	-
R3	-	V (20/40/80MHz)	-	-
R4	-	-	V	-
R5	-	-	-	V

Note: The above information was declared by manufacturer.

1.1.7 Table for Multiple Listing

EUT	DDR		GPS	
	Brand	Model	Brand	Model
1	MICRON	MT41K256M16TW-107	ST	TESEO-LIV3F
2	ISSI	IS43TR16256B-107MBL	Quectel	LC76G

Note 1: From the above models, model: EUT 1 was selected as representative EUT for other test and its data was recorded in this report ; EUT 2 was selected as representative EUT for AC Power-line Conducted and Emissions in Restricted Frequency Bands below 1GHz and its data was recorded in this report.

Note 2: The above information was declared by manufacturer.



1.2 Applicable Standards

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

- ♦ 47 CFR FCC Part 15.247

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 (TAF: 3787)	ADD: 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 Test site Designation No. TW3787 with FCC. Conformity Assessment Body Identifier (CABID) TW3787 with ISCED.

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
RF Conducted	TH03-CB	Owen Hsu	23.5~24.1 / 61~65	Aug. 05, 2022~Oct. 14, 2022
Radiated below 1GHz	03CH05-CB	Simmon Cheng	23.1~24.3 / 57~60	Aug. 02, 2022~Dec. 15, 2022
Radiated above 1GHz	03CH06-CB	Simmon Cheng	23.4~24.3 / 56~59	Aug. 02, 2022~Nov. 07, 2022
AC Conduction	CO01-CB	Tim Chen	23~24 / 58~59	Nov. 08, 2022~Dec. 15, 2022

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)	3.4 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	2.0 %	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Channel Mode

For Radio 4

Mode	Power Setting
BT-BR(1Mbps)	-
2402MHz	63
2440MHz	63
2480MHz	63
BT-EDR(2Mbps)	-
2402MHz	63
2440MHz	63
2480MHz	63
BT-EDR(3Mbps)	-
2402MHz	63
2440MHz	63
2480MHz	63

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	CTX
	A. The EUT performed testing in the following test mode. 1.EUT 1_R1 + Antenna set 1 2.EUT 1_R2 + Antenna set 2 3.EUT 1_R3 + Antenna set 2 4.EUT 1_R1 + Antenna set 4 5.EUT 1_R2 + Antenna set 5 6.EUT 1_R3 + Antenna set 5 7.EUT 1_R3 + Antenna set 3 8.EUT 1_R4 + Antenna set 7 Mode 7 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_R3 + Antenna set 3 B. "EUT 2_R3 + Antenna set 3" has been evaluated to be the worst case from above test mode. Thus, the measurement will follow this same test mode.
1	EUT 2_R3 + Antenna set 3 + PoE



The Worst Case Mode for Following Conformance Tests	
Tests Item	20dB Bandwidth Carrier Frequency Separation Maximum Conducted Output Power Number of Hopping Frequencies Hopping Bandedge Time of Occupancy (Dwell Time) Emissions in Non-restricted Frequency Bands
Test Condition	Conducted measurement at transmit chains
1	EUT 1_R4 + Antenna set 7

The Worst Case Mode for Following Conformance Tests	
Tests Item	Emissions in Restricted Frequency Bands
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode < 1GHz	CTX
	A. The EUT was performed at the X axis, Y axis, and Z axis position for Emissions in Restricted Frequency Bands above 1GHz, and the worst case axis was found and listed below. So the measurement will follow this same test configuration. B. The EUT performed testing in the following test mode. 1.EUT 1 in Y axis_R1 + Antenna set 1 2.EUT 1 in X axis_R2 + Antenna set 2 3.EUT 1 in X axis_R3 + Antenna set 2 4.EUT 1 in X axis_R1 + Antenna set 4 5.EUT 1 in Y axis_R2 + Antenna set 5 6.EUT 1 in Y axis_R3 + Antenna set 5 7.EUT 1 in Y axis_R3 + Antenna set 3 8.EUT 1 in X axis_R4 + Antenna set 7 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 in X axis_R1 + Antenna set 4 C. "EUT 1 in X axis_R1 + Antenna set 4 + PoE" has been evaluated to be the worst case from above test mode. Thus, the measurement will follow this same test mode.
1	EUT 1 in X axis_R1 + Antenna set 4 + PoE
Operating Mode > 1GHz	CTX
	The EUT was performed at the X axis, Y axis, and Z axis position, and the worst case axis was found and listed below. So the measurement will follow this same test configuration.
1	EUT 1 in X axis_R4 + Antenna set 7



The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	R1 (2.4G + antenna set 1) + R2 (5G + antenna set 2) + R3 (5G + antenna set 2) + R4 (Bluetooth + antenna set 7)
2	R1 (2.4G + antenna set 4) + R2 (5G + antenna set 5) + R3 (5G + antenna set 5) + R4 (Bluetooth + antenna set 7)
3	R1 (2.4G + antenna set 4) + R2 (5G + antenna set 5) + R3 (5G + antenna set 3) + R4 (Bluetooth + antenna set 7)
Refer to Sporton Test Report No.: FA290202 for Co-location RF Exposure Evaluation.	

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

Their information as below:

Power	Brand	Model
PoE	Cambium	NET-P60-56IN

2.3 EUT Operation during Test

For CTX Mode:

The EUT was programmed to be in continuously transmitting mode.

For Normal Link:

During the test, the EUT operation to normal function.

2.4 Accessories

Accessories
Bracket 1*1 (Only for EUT 1~EUT 2 use)
Bracket 2*1 (Only for Antenna Set 3 use)
Bracket 3*1 (Only for Antenna Set 4 use)
Bracket 4*1 (Only for Antenna Set 5 use)
Antenna cable*6 (Only for Antenna Set 3~5 use)
Sealing collar*1



2.5 Support Equipment

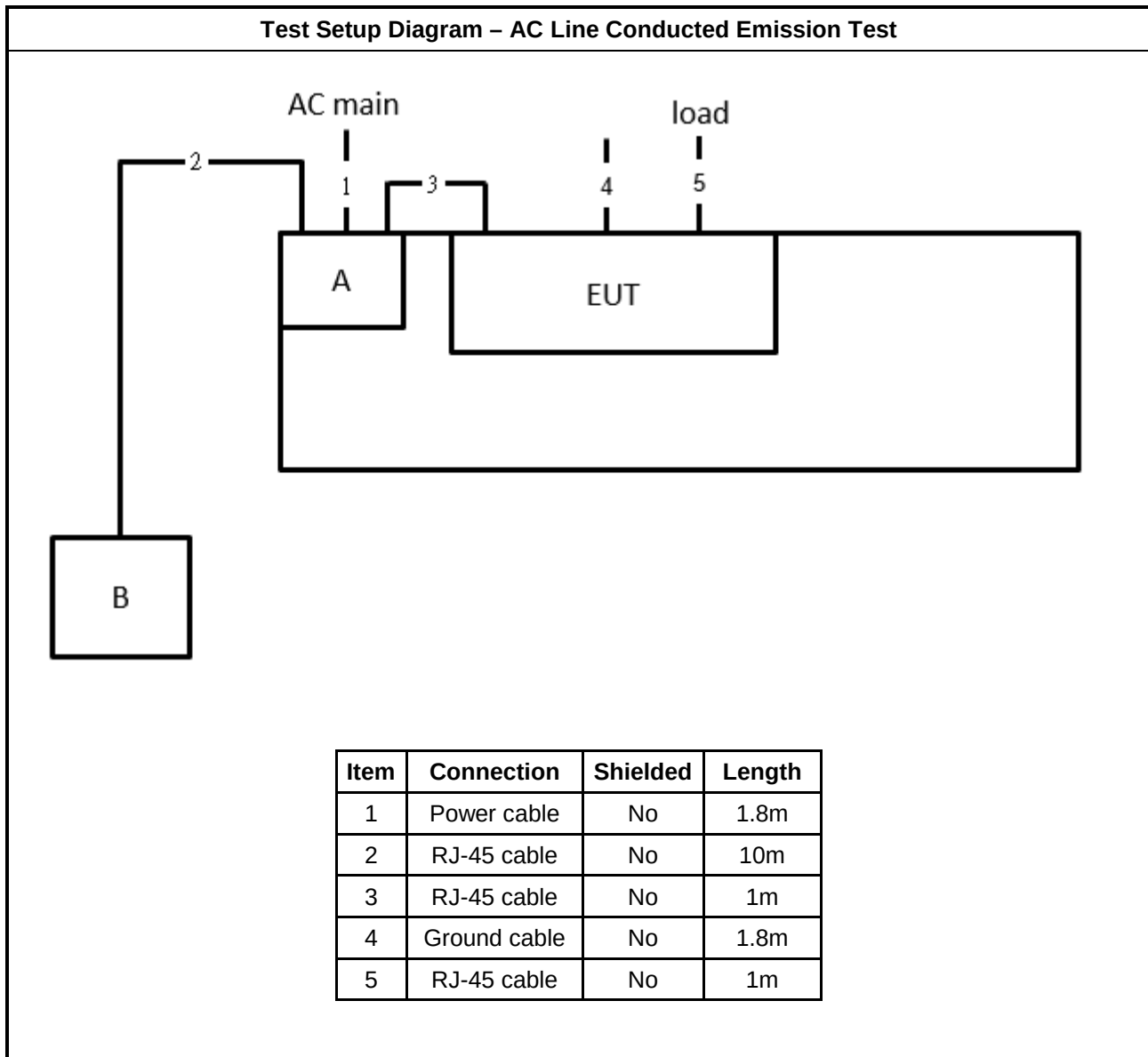
For AC Conduction:

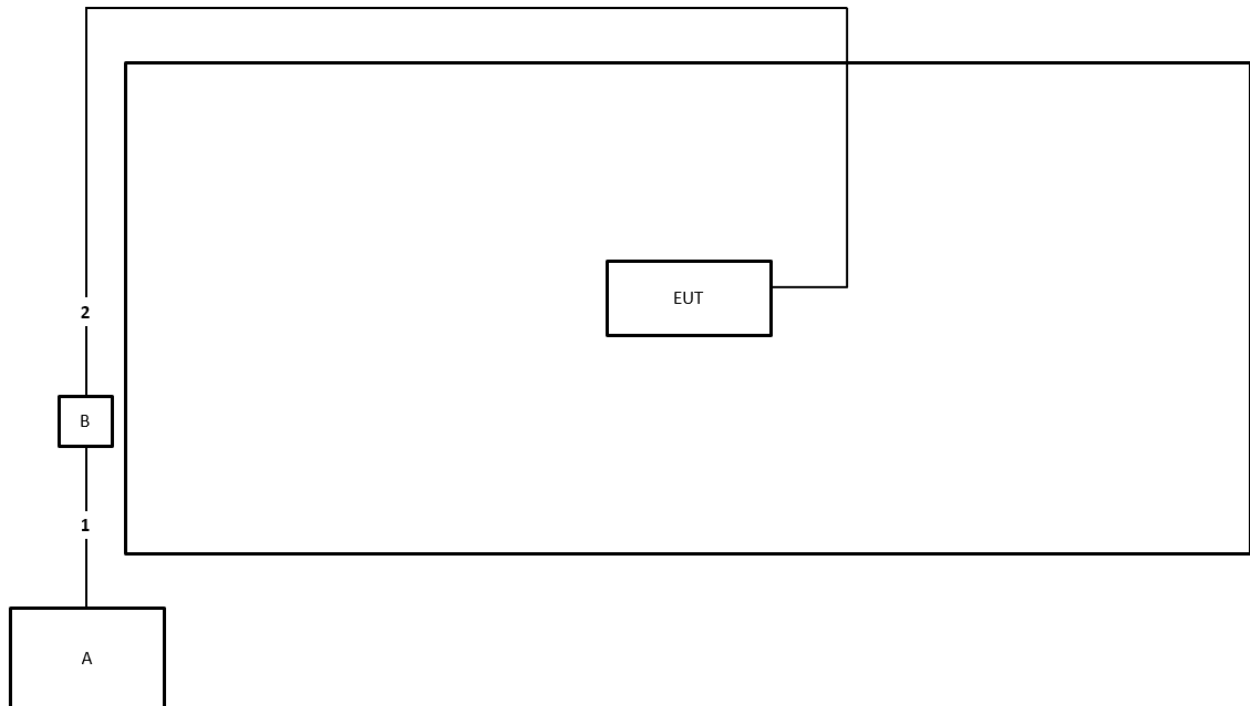
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	PoE 2	Cambium	NET-P60-56IN	N/A
B	NB	DELL	E6430	N/A

For Radiated and RF Conducted:

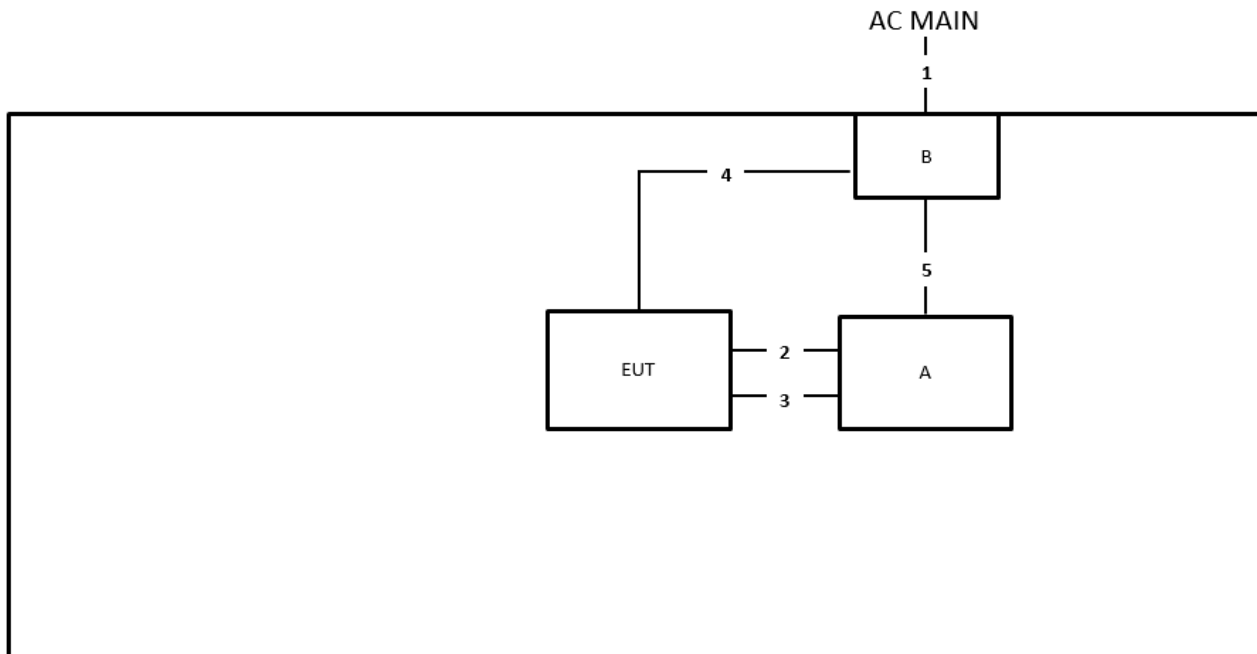
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	DELL	E4300	N/A
B	PoE 2	Cambium	NET-P60-56IN	N/A

2.6 Test Setup Diagram



Test Setup Diagram - Radiated Test < 1GHz


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

Test Setup Diagram - Radiated Test > 1GHz


Item	Connection	Shielded	Length
1	Power cable	No	1.5m
2	Pin cable	No	0.4m
3	USB cable	Yes	1m
4	RJ-45 cable	No	1.5m
5	RJ-45 cable	No	1.5m



3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

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

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

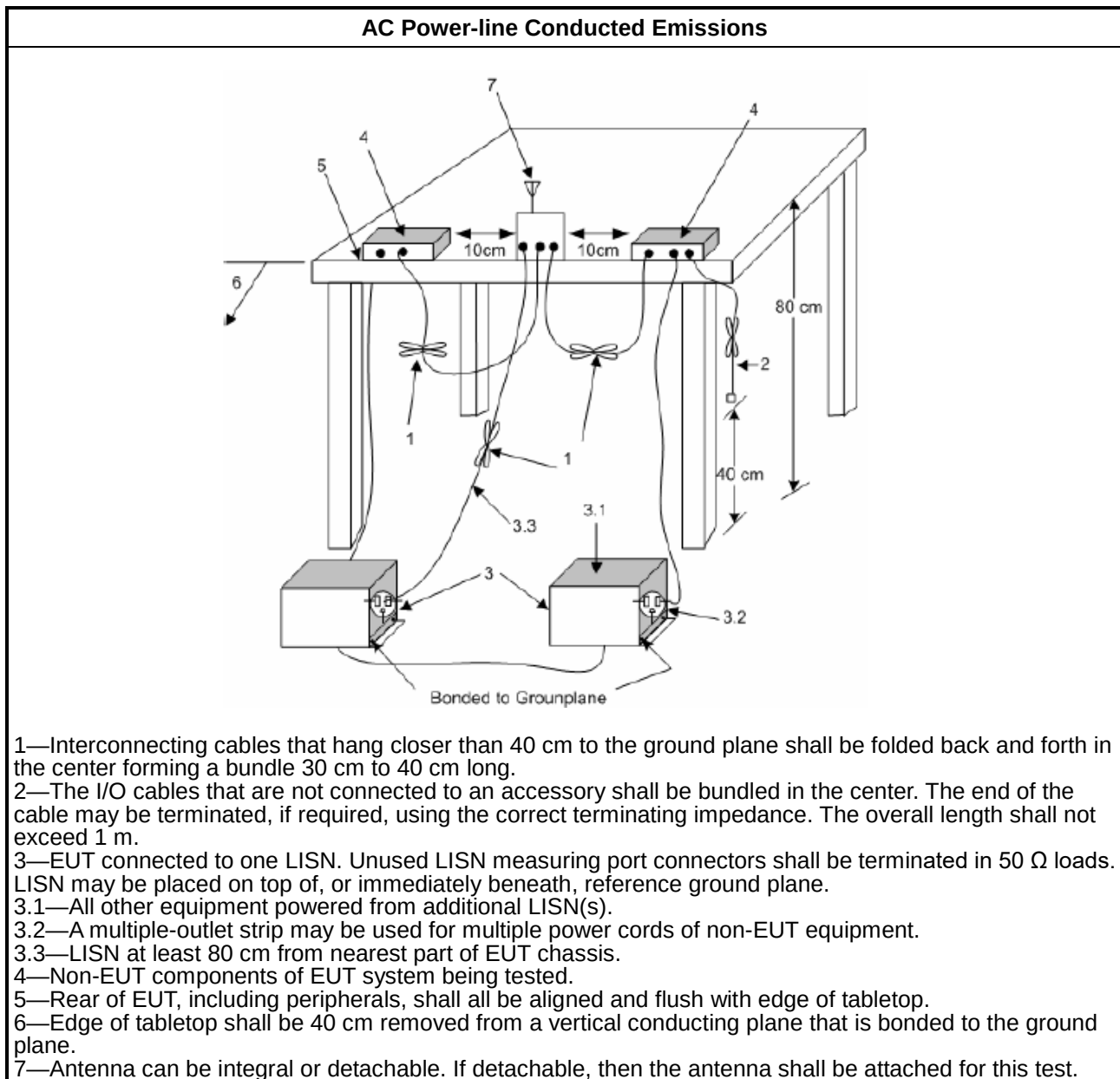
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

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

3.1.4 Test Setup



1.1.1. Measurement Results Calculation

The measured Level is calculated using:

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

3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 20dB Bandwidth and Carrier Frequency Separation

3.2.1 20dB Bandwidth and Carrier Frequency Separation Limit

20dB Bandwidth and Carrier Frequency Separation Limit for Frequency Hopping Systems	
▪ 902-928 MHz Band:	
	▪ $N \geq 50$ and $ChS \geq \text{MAX}$ (20 dB bandwidth, 25 kHz); 20 dB bandwidth $\leq$ 250 kHz.
	▪ $50 > N \geq 25$ and $ChS \geq \text{MAX}$ (20 dB bandwidth, 25 kHz); 20 dB bandwidth $>$ 250 kHz.
▪ 2400-2483.5 MHz Band:	
	▪ $N \geq 75$ and $ChS \geq \text{MAX}$ (20 dB bandwidth, 25 kHz).
	▪ $75 > N \geq 15$ and $ChS \geq \text{MAX}$ (20 dB bandwidth 2/3, 25 kHz).
▪ 5725-5850 MHz Band:	
	▪ $N \geq 75$ and $ChS \geq \text{MAX}$ (20 dB bandwidth, 25 kHz); 20 dB bandwidth $\leq$ 1 MHz.
N: Number of Hopping Frequencies; ChS: Hopping Channel Separation	

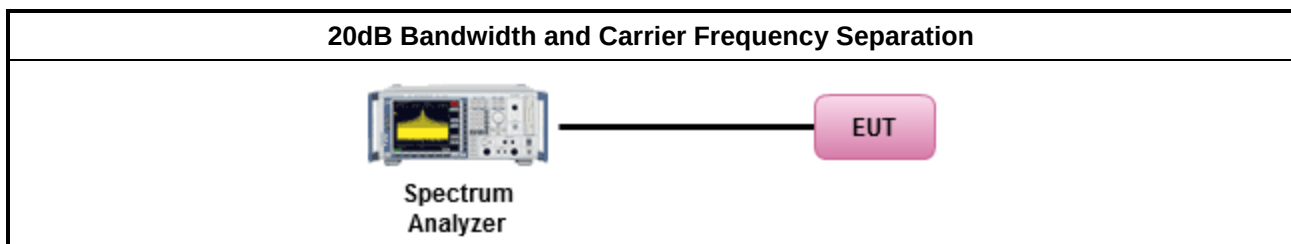
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method
▪ Refer as ANSI C63.10-2013, clause 6.9.1 for 20 dB bandwidth measurement.
▪ Refer as ANSI C63.10-2013, clause 7.8.2 for carrier frequency separation measurement.

3.2.4 Test Setup



3.2.5 Test Result of 20dB Bandwidth

Refer as Appendix B

3.2.6 Test Result of Carrier Frequency Separation

Refer as Appendix B

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
▪ 902-928 MHz Band:	
▪ N ≥ 50; Power 30dBm; EIRP 36dBm	
▪ 50 > N ≥ 25; Power 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	

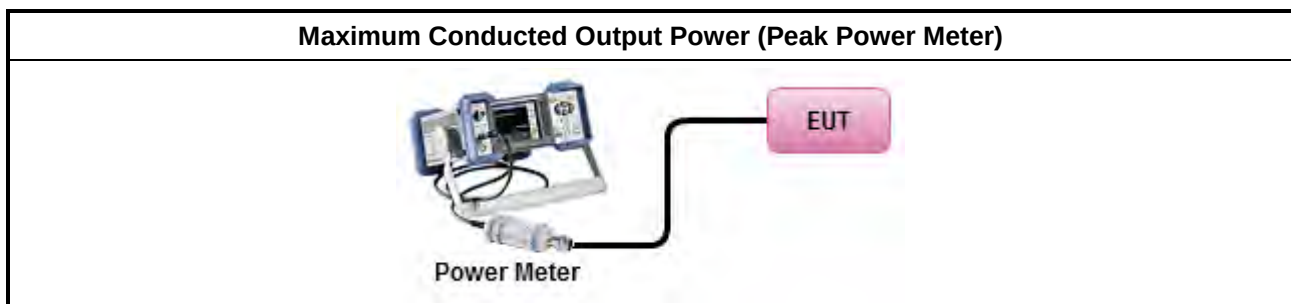
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method
▪ Refer as ANSI C63.10-2013, clause 7.8.5 for output power measurement.

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

3.4 Number of Hopping Frequencies and Hopping Bandedge

3.4.1 Number of Hopping Frequencies Limit

Number of Hopping Frequencies Limit	
▪ 902-928 MHz Band:	
	▪ $N \geq 50$ and $ChS \geq \text{MAX}$ (20 dB bandwidth, 25 kHz); 20 dB bandwidth $\leq$ 250 kHz.
	▪ $50 > N \geq 25$ and $ChS \geq \text{MAX}$ (20 dB bandwidth, 25 kHz); 20 dB bandwidth $>$ 250 kHz.
▪ 2400-2483.5 MHz Band:	
	▪ $N \geq 75$ and $ChS \geq \text{MAX}$ (20 dB bandwidth, 25 kHz).
	▪ $75 > N \geq 15$ and $ChS \geq \text{MAX}$ (20 dB bandwidth 2/3, 25 kHz).
▪ 5725-5850 MHz Band:	
	▪ $N \geq 75$ and $ChS \geq \text{MAX}$ (20 dB bandwidth, 25 kHz); 20 dB bandwidth $\leq$ 1 MHz.
N: Number of Hopping Frequencies; ChS : Hopping Channel Separation	

3.4.2 Hopping Bandedge Limit

Refer clause 3.6.1 and clause 3.7.1

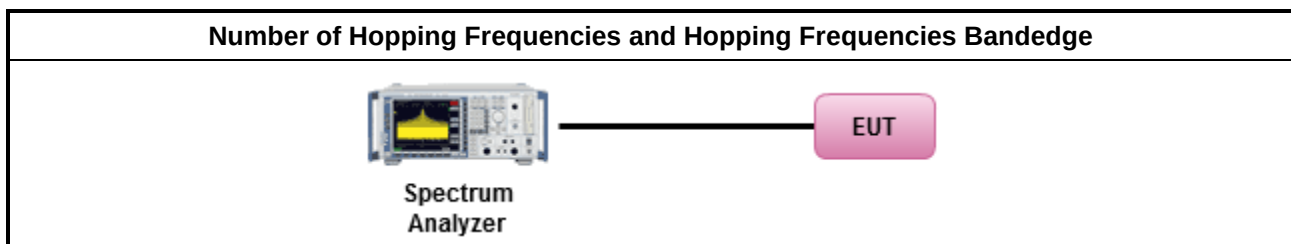
3.4.3 Measuring Instruments

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

3.4.4 Test Procedures

Test Method
▪ Refer as ANSI C63.10-2013, clause 7.8.3 for number of hopping frequencies measurement.
▪ Refer as ANSI C63.10-2013, clause 7.8.6 for hopping frequencies Bandedge measurement.

3.4.5 Test Setup



3.4.6 Test Result of Number of Hopping Frequencies

Refer as Appendix D

3.4.7 Test Result of Number of Hopping Frequencies Bandedge

Refer as Appendix D

3.5 Time of Occupancy (Dwell Time)

3.5.1 Time of Occupancy (Dwell Time) Limit

20dB Bandwidth and Carrier Frequency Separation Limit for Frequency Hopping Systems	
▪ 902-928 MHz Band:	
	▪ $N \geq 50$; 0.4s in 20s period
	▪ $50 > N \geq 25$; 0.4s in 10s period
▪ 2400-2483.5 MHz Band:	
	▪ $N \geq 75$; 0.4s in $N \times 0.4$ period
	▪ $75 > N \geq 15$; 0.4s in $N \times 0.4$ period
▪ 5725-5850 MHz Band:	
	▪ $N \geq 75$; 0.4s in 30s period
N: Number of Hopping Frequencies	

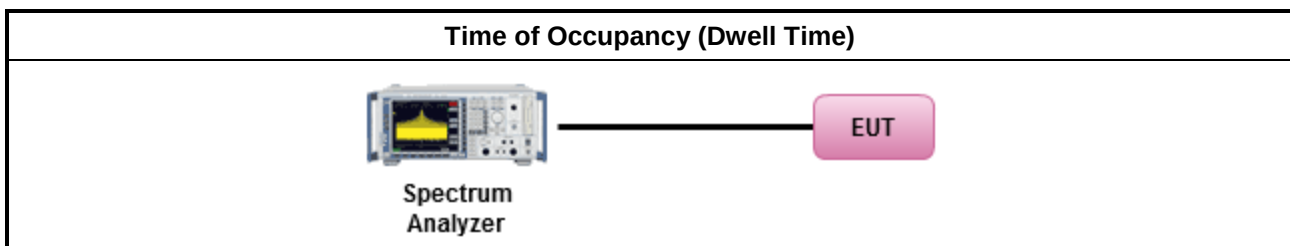
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

Test Method	
▪ Refer as ANSI C63.10-2013, clause 7.8.4 for dwell time measurement.	
▪ Bluetooth ACL packets can be 1, 3, or 5 time slots. Following as dwell time. Operate DH5 at maximum dwell time and maximum duty cycle.	
	▪ The DH5 packet can cover up to 5 time slots. Operate DH5 at maximum dwell time and maximum duty cycle. A maximum length packet has duration of 5 time slots. The hopping rate is 1600 hops/second so the maximum dwell time is $5/1600$ seconds, or 3.125ms. DH5 Packet permit maximum $1600 / 79 / 6 = 3.37$ hops per second in each channel.

3.5.4 Test Setup



3.5.5 Test Result of Time of Occupancy (Dwell Time)

Refer as Appendix E

3.6 Emissions in Non-restricted Frequency Bands

3.6.1 Emissions in Non-restricted Frequency Bands Limit

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

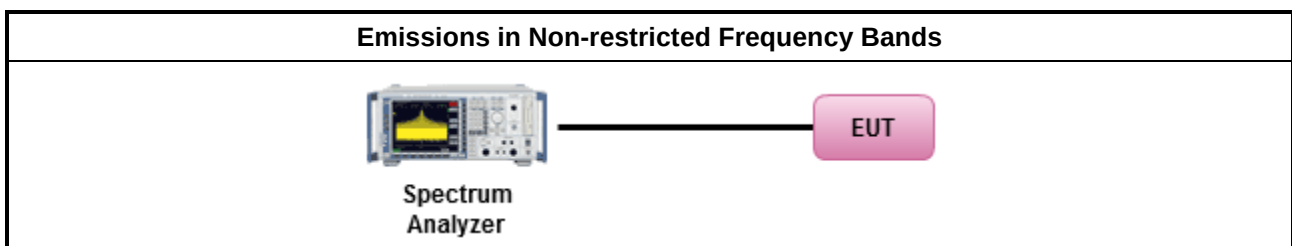
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

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

3.6.4 Test Setup



3.6.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix F



3.7 Emissions in Restricted Frequency Bands

3.7.1 Emissions in Restricted Frequency Bands Limit

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

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

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

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

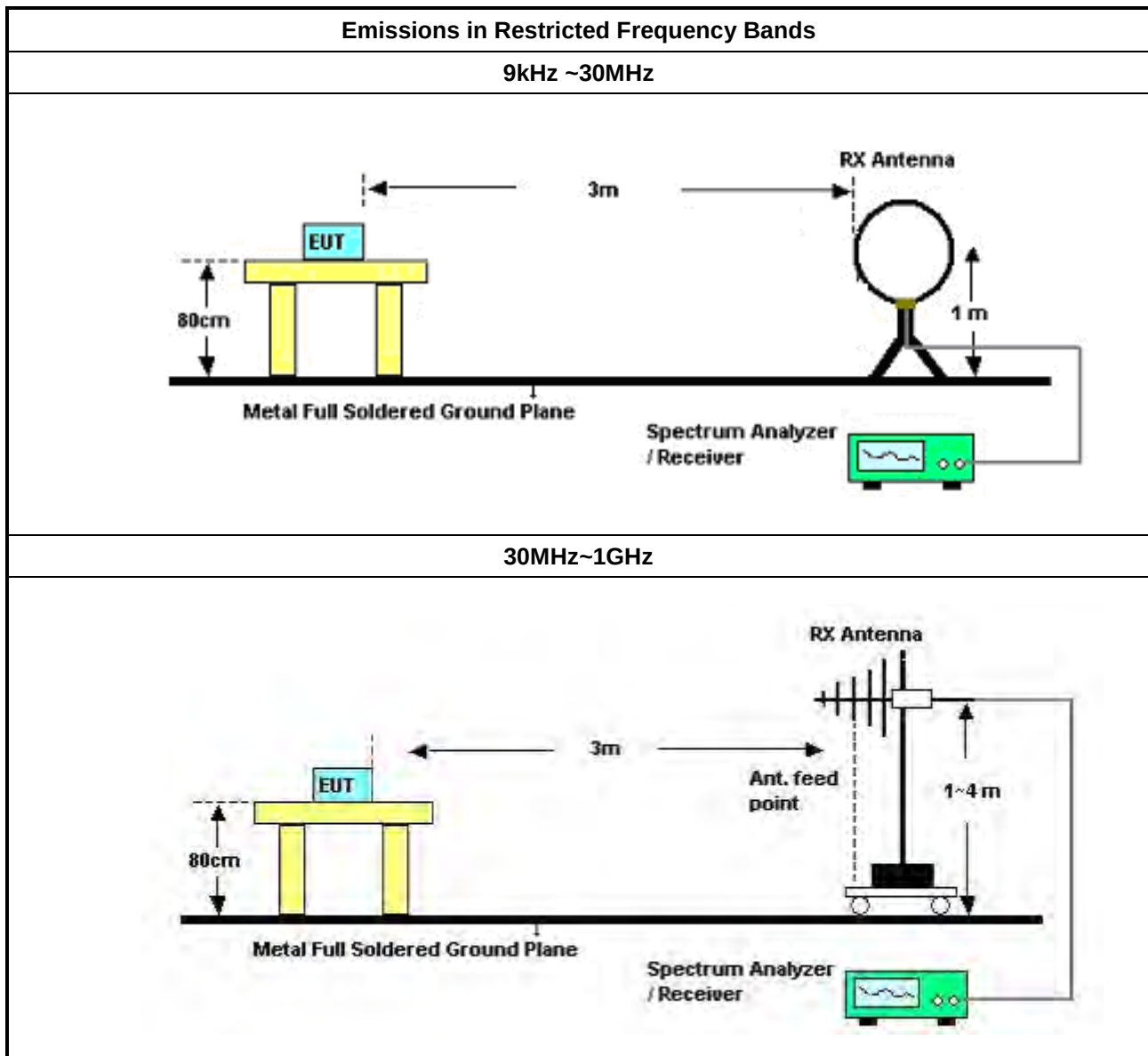
3.7.2 Measuring Instruments

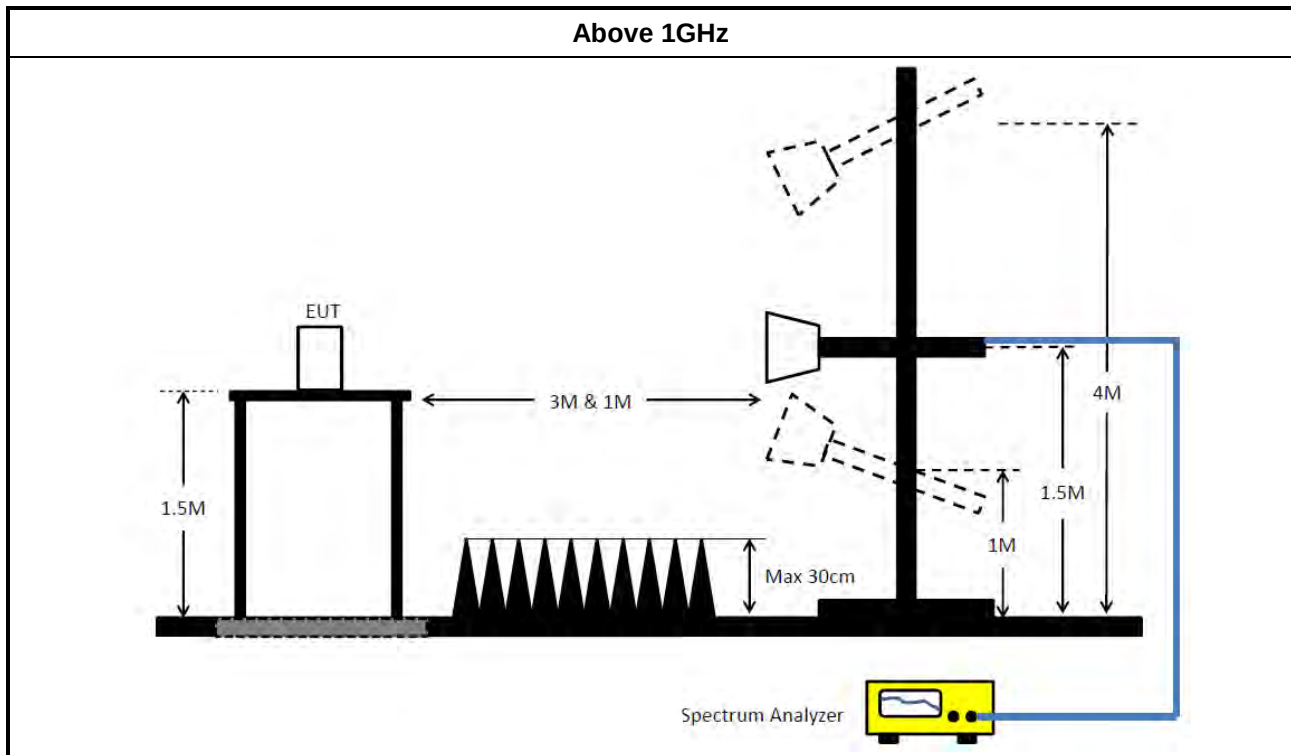
Refer a test equipment and calibration data table in this test report.

3.7.3 Test Procedures

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

3.7.4 Test Setup





3.7.5 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Antenna factor (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



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	Oct. 18, 2022	Oct. 17, 2023	Conduction (CO01-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	May 14, 2022	May 13, 2023	Radiation (03CH05-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH05-CB	30 MHz ~ 1 GHz	Aug. 09, 2021	Aug. 08, 2022	Radiation (03CH05-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH05-CB	30 MHz ~ 1 GHz	Aug. 03, 2022	Aug. 02, 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)
Pre-Amplifier	EMCI	EMC330N	980331	20MHz ~ 3GHz	Apr. 26, 2022	Apr. 25, 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-low	Woken	RG402	Low Cable-04+23	30MHz~1GHz	Oct. 03, 2022	Oct. 02, 2023	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-28	1GHz~18GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH05-CB)
RF Cable-high	Woken	RG402	High Cable-04+28	1GHz~18GHz	Oct. 13, 2021	Oct. 12, 2022	Radiation (03CH05-CB)
RF Cable-high	Woken	RG402	High Cable-04+28	1GHz~18GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH05-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH05-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH06-CB	1GHz ~18GHz 3m	Oct. 01, 2021	Sep. 30, 2022	Radiation (03CH06-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH06-CB	1GHz ~18GHz 3m	Sep. 30, 2022	Sep. 29, 2023	Radiation (03CH06-CB)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1370	1GHz~18GHz	Jun. 23, 2022	Jun. 22, 2023	Radiation (03CH06-CB)
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Jul. 05, 2022	Jul. 04, 2023	Radiation (03CH06-CB)
Pre-Amplifier	Agilent	83017A	MY53270064	0.5GHz ~ 26.5GHz	Aug. 02, 2022	Aug. 01, 2023	Radiation (03CH06-CB)
Pre-Amplifier	MITEQ	TTA1840-35-H G	1864479	18GHz ~ 40GHz	Jul. 20, 2022	Jul. 19, 2023	Radiation (03CH06-CB)
Spectrum analyzer	R&S	FSP40	100080	9kHz~40GHz	Dec. 24, 2021	Dec. 23, 2022	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-67	1GHz~18GHz	Feb. 24, 2022	Feb. 23, 2023	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-05+67	1GHz~18GHz	Feb. 24, 2022	Feb. 23, 2023	Radiation (03CH06-CB)
High Cable	Woken	WCA0929M	40G#5+7	1GHz ~ 40 GHz	Dec. 14, 2021	Dec. 13, 2022	Radiation (03CH06-CB)
High Cable	Woken	WCA0929M	40G#5	1GHz ~ 40 GHz	Dec. 08, 2021	Dec. 07, 2022	Radiation (03CH06-CB)
High Cable	Woken	WCA0929M	40G#7	1GHz ~ 40 GHz	Dec. 14, 2021	Dec. 13, 2022	Radiation (03CH06-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH06-CB)
Spectrum analyzer	R&S	FSV40	101028	9kHz~40GHz	Jan. 07, 2022	Jan. 06, 2023	Conducted (TH03-CB)
Power Sensor	Anritsu	MA2411B	1531344	300MHz~40GHz	Jul. 31, 2022	Jul. 30, 2023	Conducted (TH03-CB)
Power Meter	Anritsu	ML2495A	1728002	300MHz~40GHz	Jul. 31, 2022	Jul. 30, 2023	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-11	1 GHz ~18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-11	1 GHz ~18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-12	1 GHz ~18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-12	1 GHz ~18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-13	1 GHz ~18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-13	1 GHz ~18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-14	1 GHz ~18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-14	1 GHz ~18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-15	1 GHz ~18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH03-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-15	1 GHz –18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH03-CB)
Switch	SPTCB	SP-SWI	SWI-03	1 GHz –26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	SWI-03-P1	1 GHz –26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	SWI-03-P2	1 GHz –26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	SWI-03-P3	1 GHz –26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	SWI-03-P4	1 GHz –26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	SWI-03-P5	1 GHz –26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH03-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conducted (TH03-CB)

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

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



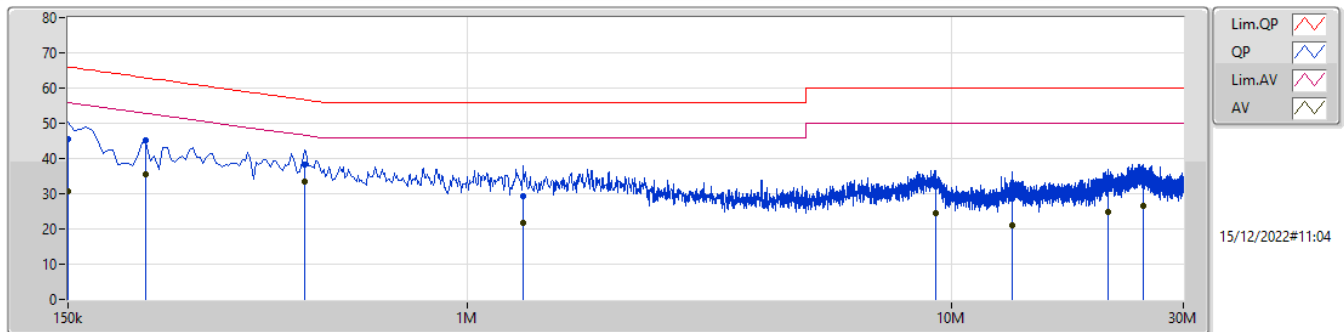
Conducted Emissions at Powerline

Appendix A

Summary

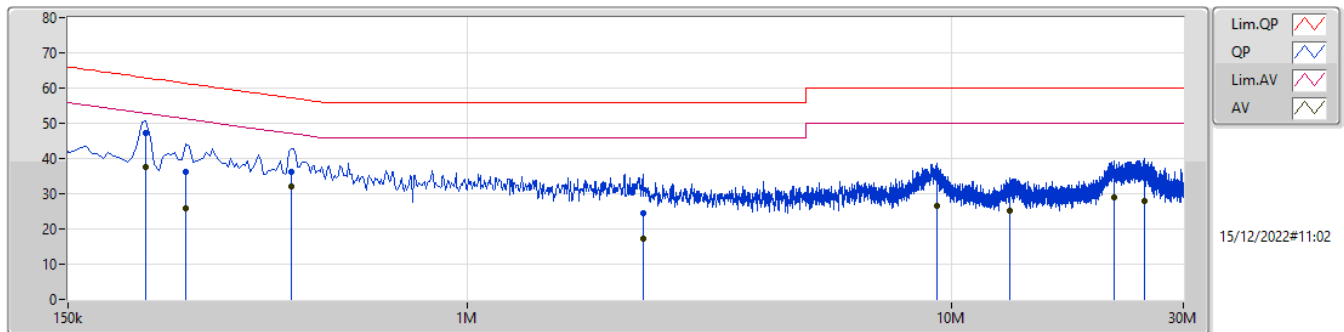
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	460.5k	33.54	46.69	-13.15	Line

Test Mode 1



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	150k	45.61	66.00	-20.39	9.99	Line	-	35.62	0.06	0.04	9.89						
AV	150k	30.71	56.00	-25.29	9.99	Line	-	20.72	0.06	0.04	9.89						
QP	217.5k	45.34	62.92	-17.58	9.99	Line	-	35.35	0.06	0.04	9.89						
AV	217.5k	35.64	52.92	-17.28	9.99	Line	-	25.65	0.06	0.04	9.89						
QP	460.5k	38.34	56.69	-18.35	10.01	Line	-	28.33	0.06	0.06	9.89						
AV	460.5k	33.54	46.69	-13.15	10.01	Line	"Worst"	23.53	0.06	0.06	9.89						
QP	1.307M	29.15	56.00	-26.85	10.03	Line	-	19.12	0.08	0.06	9.89						
AV	1.307M	21.89	46.00	-24.11	10.03	Line	-	11.86	0.08	0.06	9.89						
QP	9.258M	32.22	60.00	-27.78	10.28	Line	-	21.94	0.21	0.16	9.91						
AV	9.258M	24.45	50.00	-25.55	10.28	Line	-	14.17	0.21	0.16	9.91						
QP	13.308M	28.59	60.00	-31.41	10.35	Line	-	18.24	0.25	0.17	9.93						
AV	13.308M	21.06	50.00	-28.94	10.35	Line	-	10.71	0.25	0.17	9.93						
QP	20.976M	31.35	60.00	-28.65	10.50	Line	-	20.85	0.31	0.23	9.96						
AV	20.976M	24.79	50.00	-25.21	10.50	Line	-	14.29	0.31	0.23	9.96						
QP	24.833M	33.27	60.00	-26.73	10.60	Line	-	22.67	0.35	0.28	9.97						
AV	24.833M	26.42	50.00	-23.58	10.60	Line	-	15.82	0.35	0.28	9.97						

Test Mode 1



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	217.5k	47.41	62.92	-15.51	10.00	Neutral	-	37.41	0.07	0.04	9.89						
AV	217.5k	37.73	52.92	-15.19	10.00	Neutral	"Worst"	27.73	0.07	0.04	9.89						
QP	262.5k	36.24	61.35	-25.11	10.01	Neutral	-	26.23	0.07	0.05	9.89						
AV	262.5k	26.03	51.35	-25.32	10.01	Neutral	-	16.02	0.07	0.05	9.89						
QP	433.5k	36.12	57.19	-21.07	10.02	Neutral	-	26.10	0.07	0.06	9.89						
AV	433.5k	31.95	47.19	-15.24	10.02	Neutral	-	21.93	0.07	0.06	9.89						
QP	2.301M	24.37	56.00	-31.63	10.09	Neutral	-	14.28	0.11	0.09	9.89						
AV	2.301M	17.13	46.00	-28.87	10.09	Neutral	-	7.04	0.11	0.09	9.89						
QP	9.303M	34.64	60.00	-25.36	10.30	Neutral	-	24.34	0.23	0.16	9.91						
AV	9.303M	26.69	50.00	-23.31	10.30	Neutral	-	16.39	0.23	0.16	9.91						
QP	13.164M	31.91	60.00	-28.09	10.36	Neutral	-	21.55	0.26	0.17	9.93						
AV	13.164M	25.15	50.00	-24.85	10.36	Neutral	-	14.79	0.26	0.17	9.93						
QP	21.62M	35.24	60.00	-24.76	10.50	Neutral	-	24.74	0.30	0.24	9.96						
AV	21.62M	28.94	50.00	-21.06	10.50	Neutral	-	18.44	0.30	0.24	9.96						
QP	24.887M	34.58	60.00	-25.42	10.56	Neutral	-	24.02	0.31	0.28	9.97						
AV	24.887M	28.04	50.00	-21.96	10.56	Neutral	-	17.48	0.31	0.28	9.97						

**Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
BT-BR(1Mbps)	936.25k	884.558k	885KF1D	933.75k	868.316k
BT-EDR(2Mbps)	1.334M	1.229M	1M23G1D	1.315M	1.206M
BT-EDR(3Mbps)	1.299M	1.227M	1M23G1D	1.276M	1.211M

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

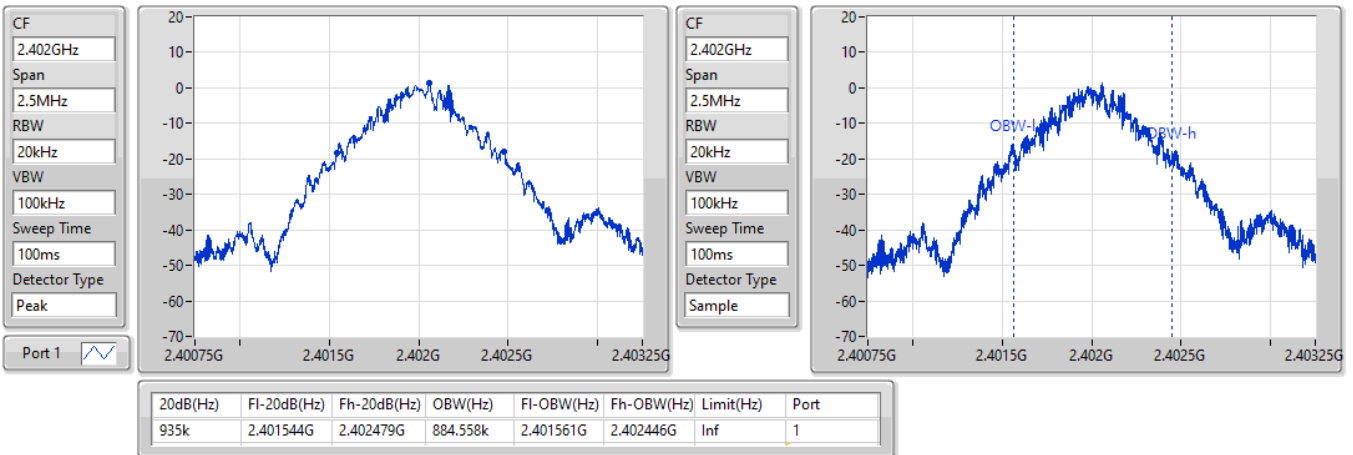
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	Inf	935k	884.558k
2440MHz	Pass	Inf	936.25k	868.316k
2480MHz	Pass	Inf	933.75k	874.563k
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.315M	1.206M
2440MHz	Pass	Inf	1.319M	1.218M
2480MHz	Pass	Inf	1.334M	1.229M
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.276M	1.211M
2440MHz	Pass	Inf	1.299M	1.213M
2480MHz	Pass	Inf	1.298M	1.227M

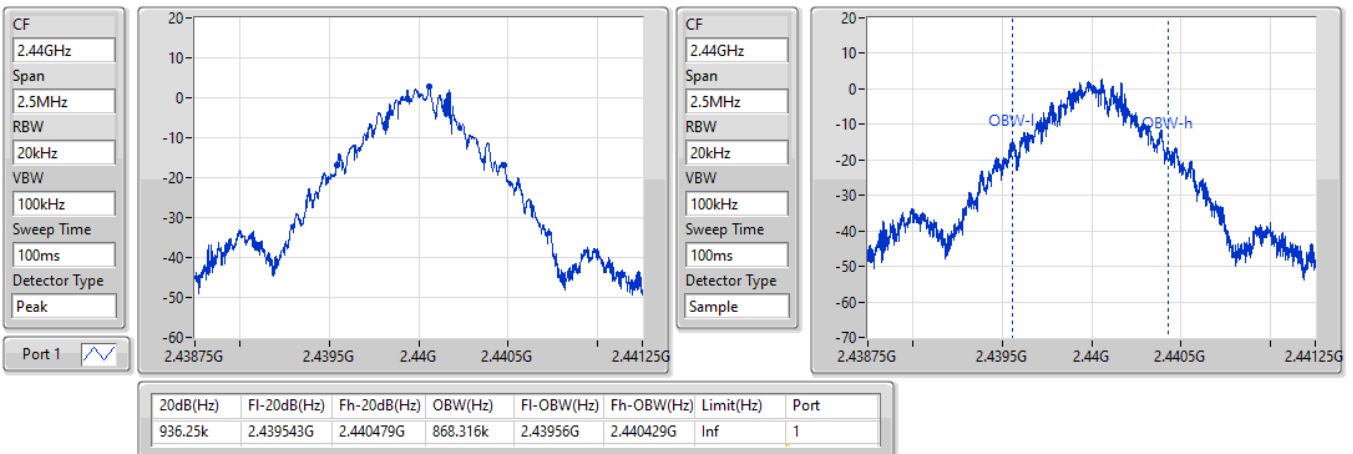
Port X-N dB = Port X 20dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth

BT-BR(1Mbps)
2402MHz
EBW-FS

01/09/2022

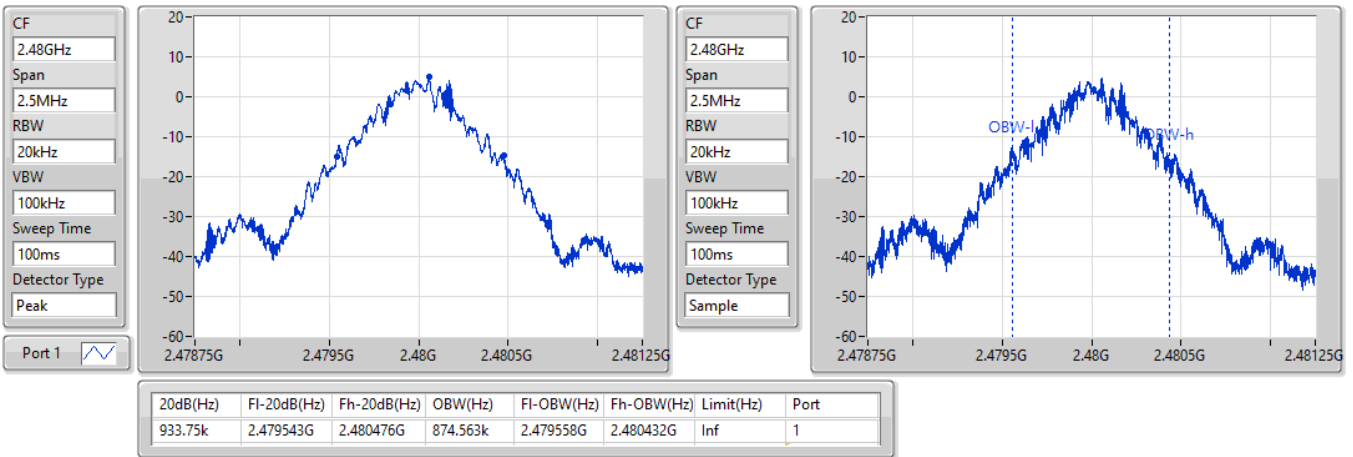

BT-BR(1Mbps)
2440MHz
EBW-FS

01/09/2022

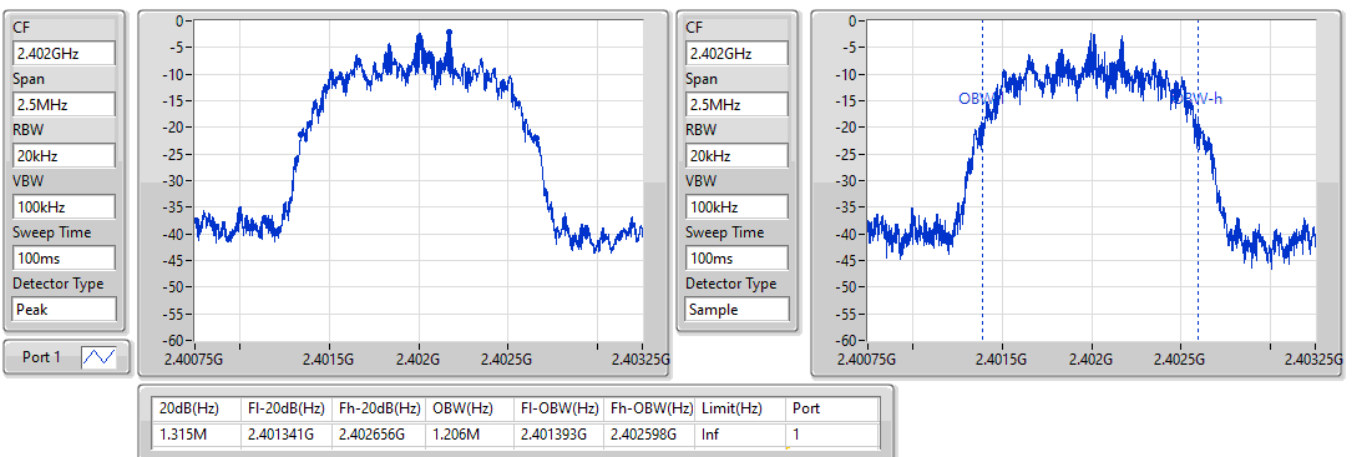


BT-BR(1Mbps)
EBW-FS
2480MHz

01/09/2022

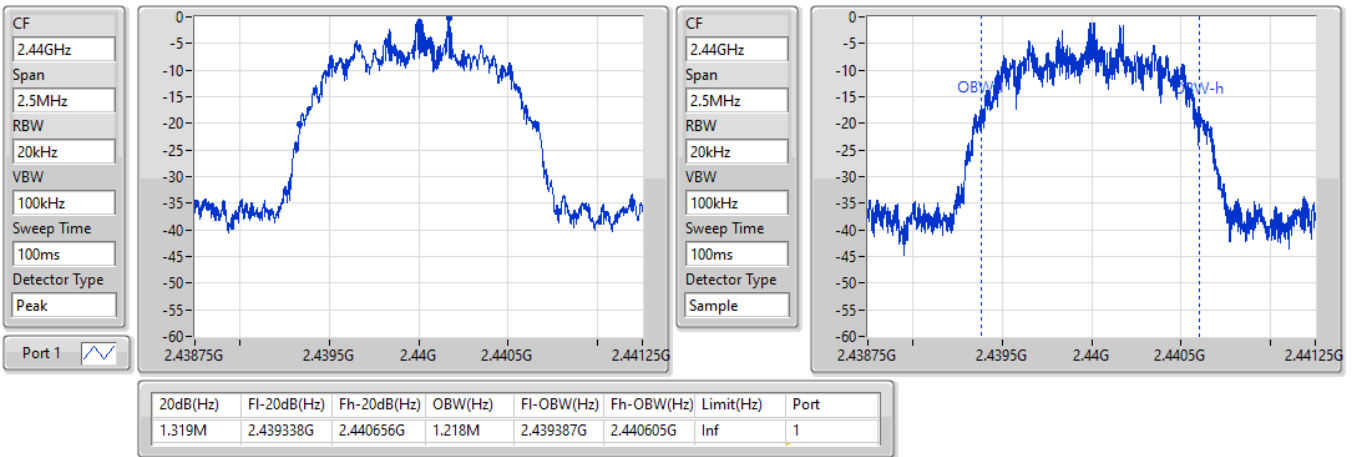

BT-EDR(2Mbps)
EBW-FS
2402MHz

01/09/2022

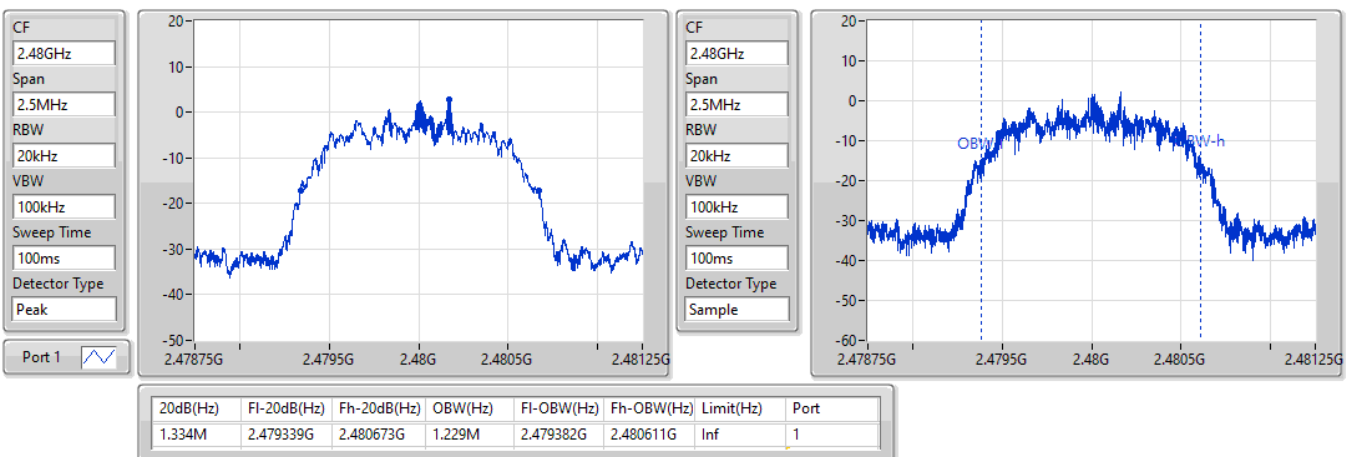


BT-EDR(2Mbps)
EBW-FS
2440MHz

01/09/2022

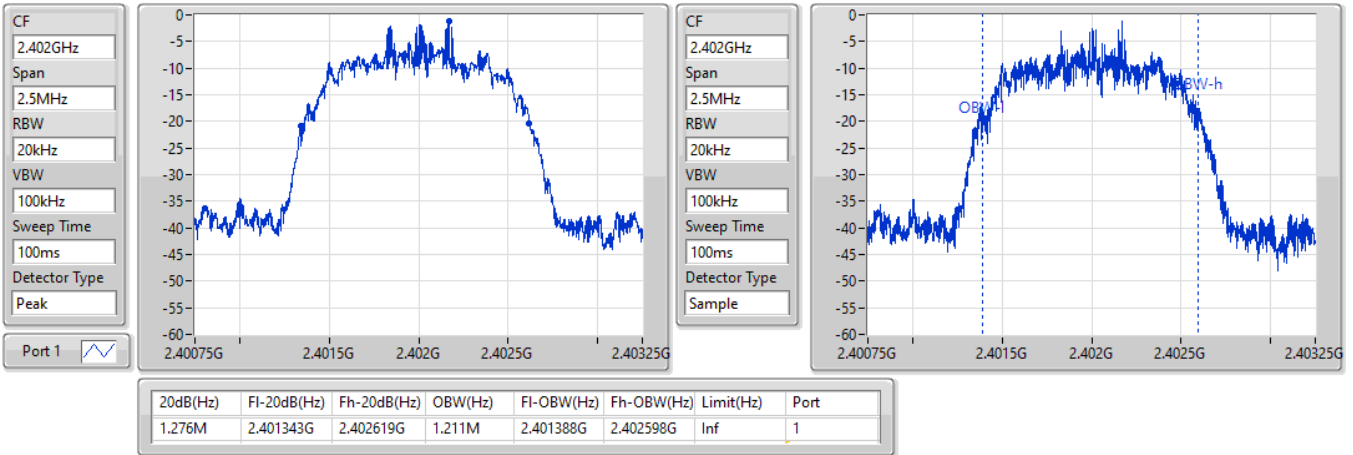

BT-EDR(2Mbps)
EBW-FS
2480MHz

01/09/2022

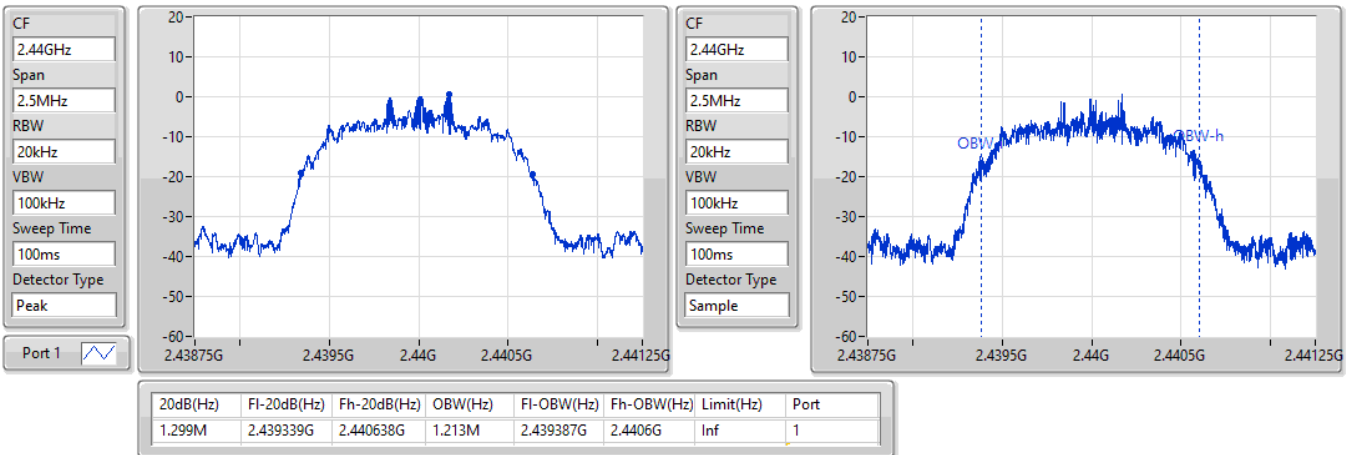


BT-EDR(3Mbps)
EBW-FS
2402MHz

01/09/2022

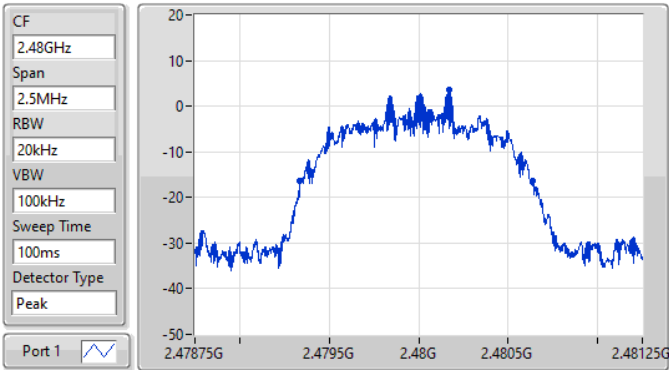

BT-EDR(3Mbps)
EBW-FS
2440MHz

01/09/2022



BT-EDR(3Mbps)

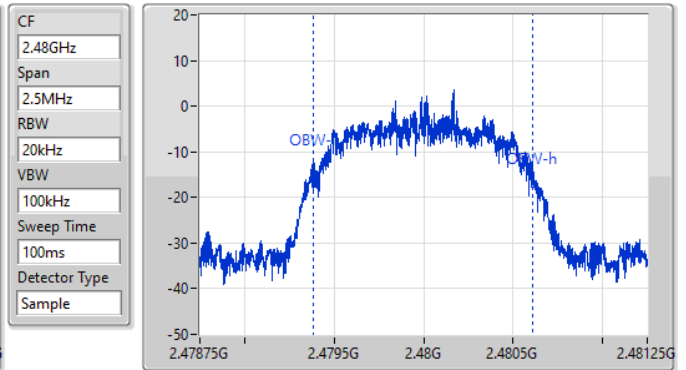
2480MHz



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.298M	2.479336G	2.480634G	1.227M	2.47938G	2.480607G	Inf	1

EBW-FS

01/09/2022



Summary

Mode	Max-Space (Hz)	Min-Space (Hz)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	1.0005M	840k
BT-EDR(2Mbps)	1.0005M	999k
BT-EDR(3Mbps)	1.002M	999k

Result

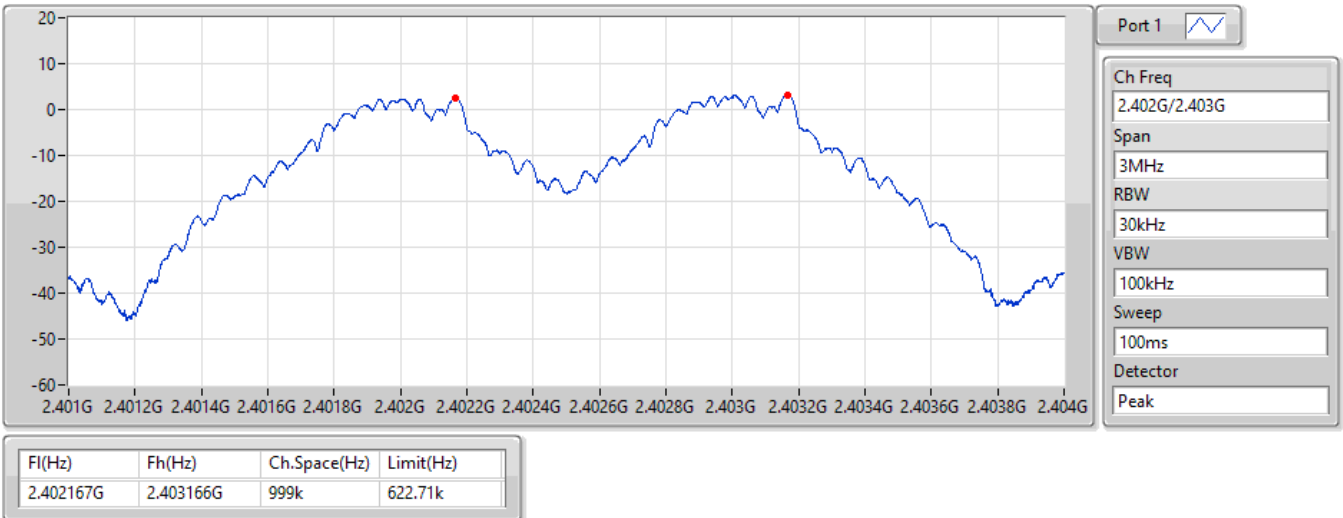
Mode	Result	Fl (Hz)	Fh (Hz)	Ch.Space (Hz)	Limit (Hz)
BT-BR(1Mbps)	-	-	-	-	-
2402MHz	Pass	2.402167G	2.403166G	999k	622.71k
2440MHz	Pass	2.440166G	2.441166G	1.0005M	623.5425k
2480MHz	Pass	2.479166G	2.480006G	840k	621.8775k
BT-EDR(2Mbps)	-	-	-	-	-
2402MHz	Pass	2.402005G	2.403006G	1.0005M	875.79k
2440MHz	Pass	2.440005G	2.441006G	1.0005M	878.454k
2480MHz	Pass	2.479008G	2.480007G	999k	888.444k
BT-EDR(3Mbps)	-	-	-	-	-
2402MHz	Pass	2.402167G	2.403169G	1.002M	849.816k
2440MHz	Pass	2.440167G	2.441169G	1.002M	865.134k
2480MHz	Pass	2.479169G	2.480168G	999k	864.468k

BT-BR(1Mbps)

2.402G/2.403GHz

Channel Separation-FS

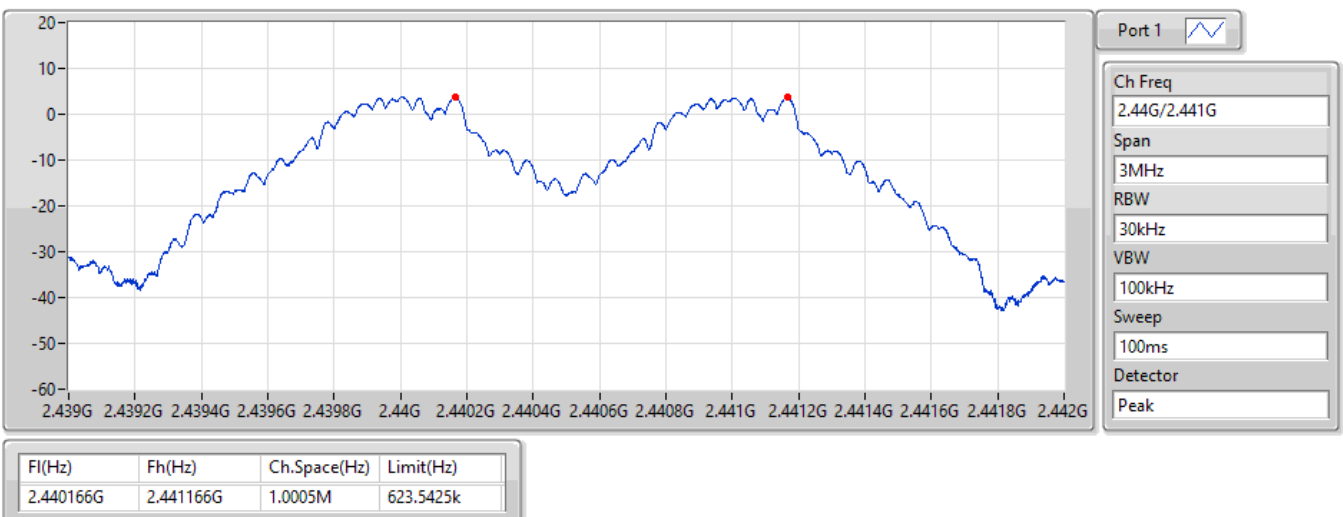
01/09/2022



BT-BR(1Mbps)

2.44G/2.441GHz

Channel Separation-FS

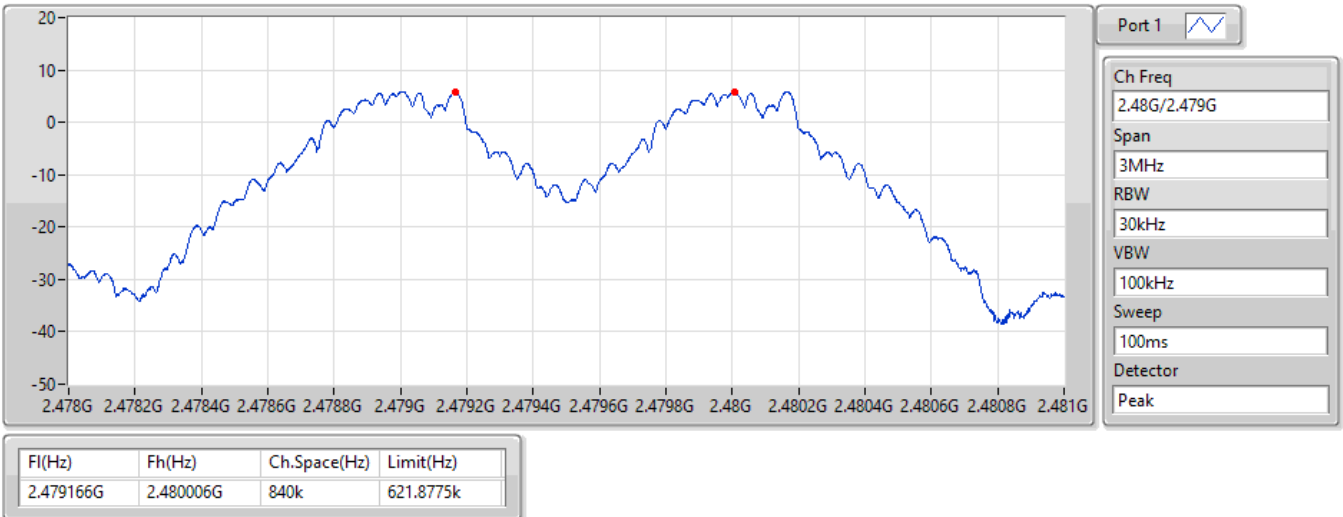


BT-BR(1Mbps)

2.48G/2.479GHz

Channel Separation-FS

01/09/2022

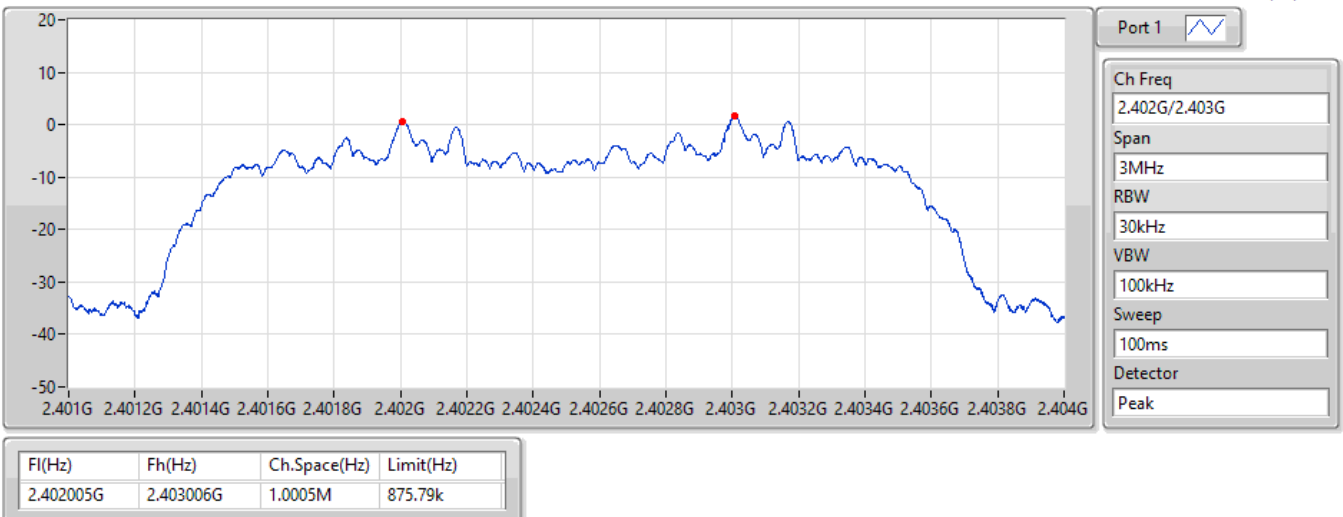


BT-EDR(2Mbps)

2.402G/2.403GHz

Channel Separation-FS

01/09/2022

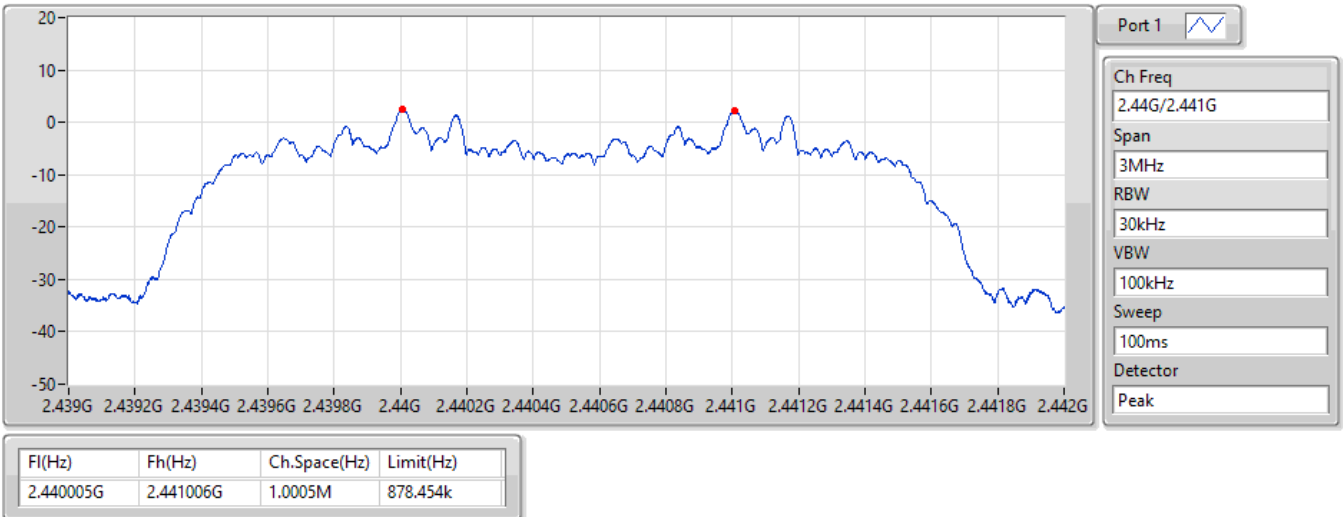


BT-EDR(2Mbps)

2.44G/2.441GHz

Channel Separation-FS

01/09/2022

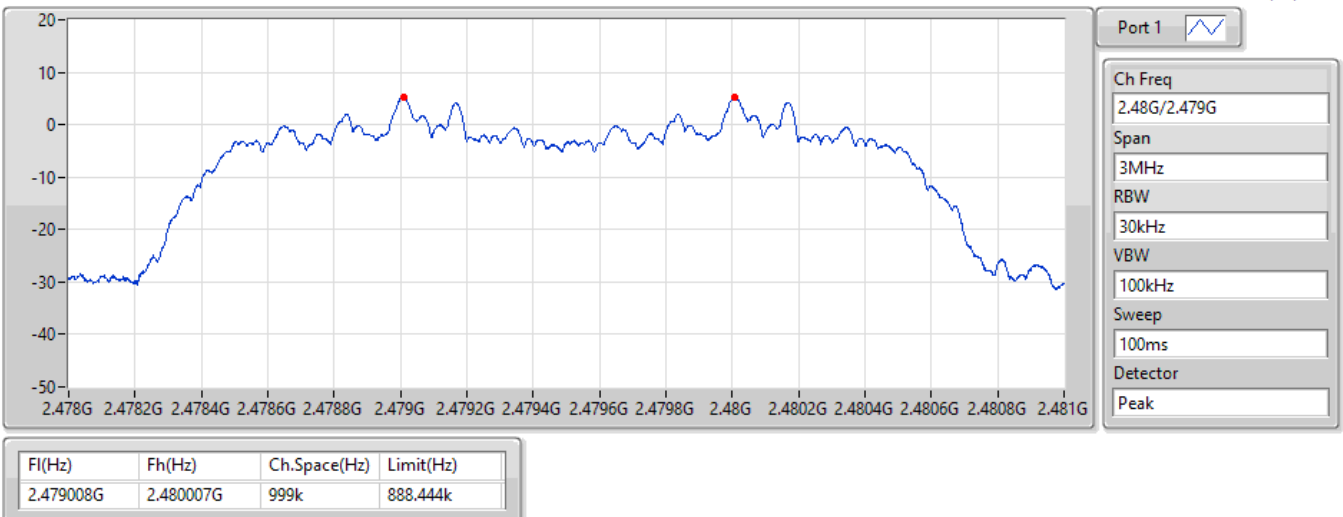


BT-EDR(2Mbps)

2.48G/2.479GHz

Channel Separation-FS

01/09/2022

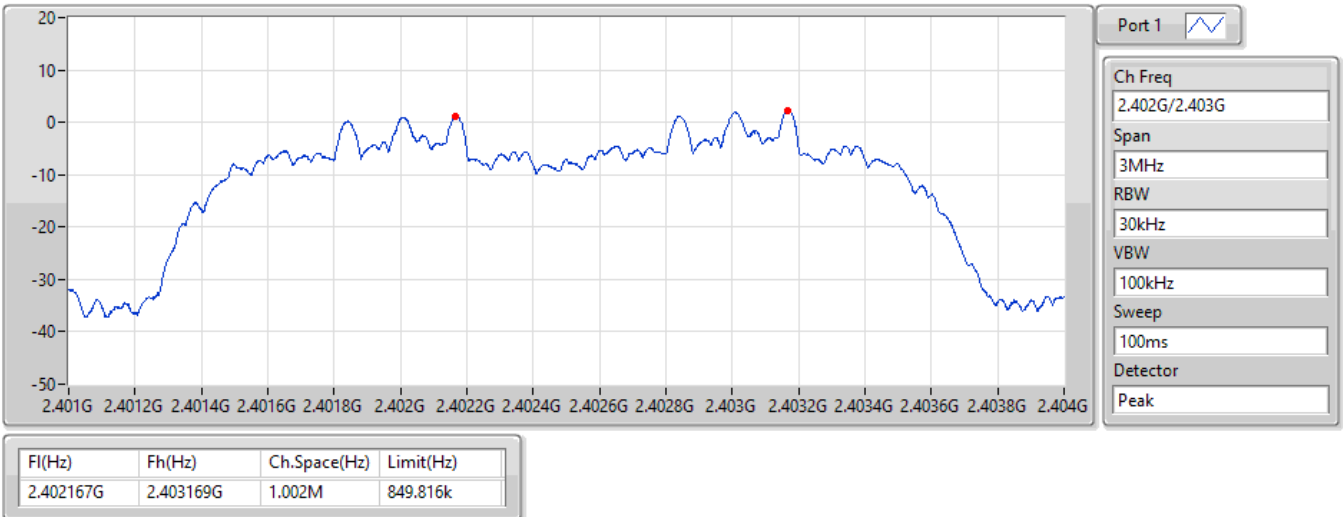


BT-EDR(3Mbps)

2.402G/2.403GHz

Channel Separation-FS

01/09/2022

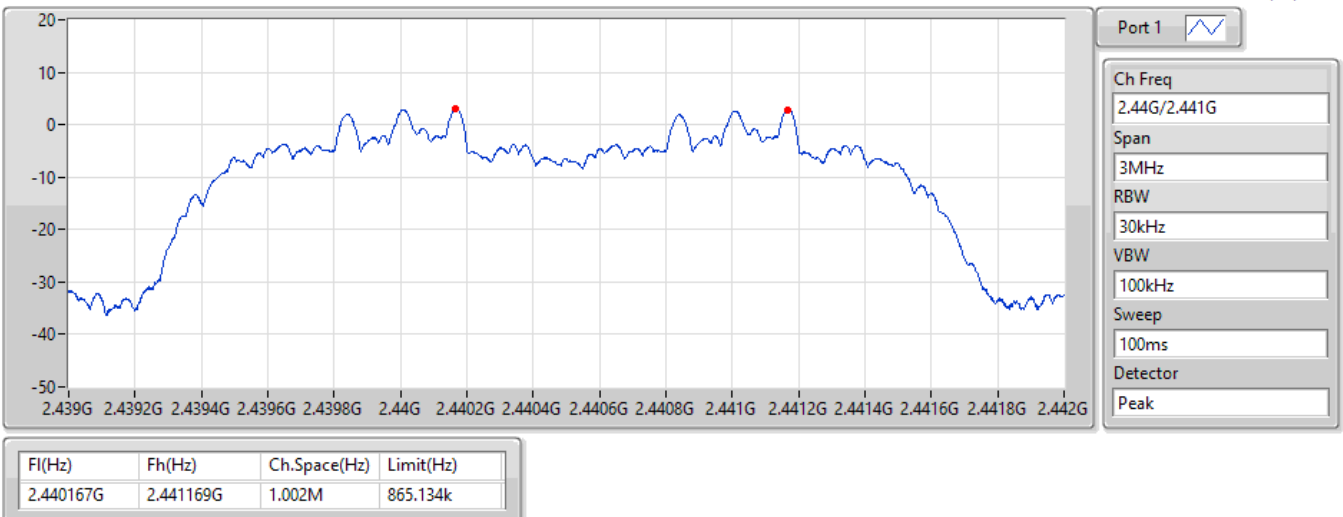


BT-EDR(3Mbps)

2.44G/2.441GHz

Channel Separation-FS

01/09/2022

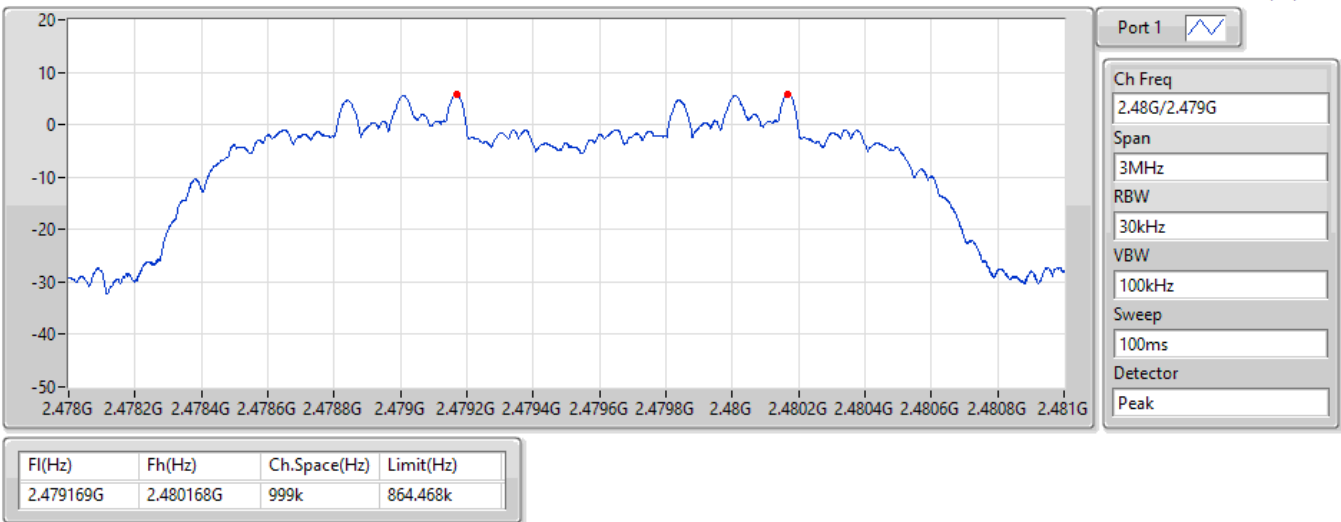


BT-EDR(3Mbps)

2.48G/2.479GHz

Channel Separation-FS

01/09/2022





Average Power-FHSS

Appendix C.1

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	9.09	0.00811
BT-EDR(2Mbps)	6.91	0.00491
BT-EDR(3Mbps)	6.97	0.00498



Average Power-FHSS

Appendix C.1

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	3.73	5.79	21.00
2440MHz	Pass	3.73	7.01	21.00
2480MHz	Pass	3.73	9.09	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	3.73	2.45	21.00
2440MHz	Pass	3.73	4.12	21.00
2480MHz	Pass	3.73	6.91	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	3.73	2.48	21.00
2440MHz	Pass	3.73	4.23	21.00
2480MHz	Pass	3.73	6.97	21.00

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



Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	9.50	0.00891
BT-EDR(2Mbps)	8.18	0.00658
BT-EDR(3Mbps)	8.62	0.00728

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	3.73	6.31	21.00
2440MHz	Pass	3.73	7.61	21.00
2480MHz	Pass	3.73	9.50	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	3.73	4.01	21.00
2440MHz	Pass	3.73	5.61	21.00
2480MHz	Pass	3.73	8.18	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	3.73	4.76	21.00
2440MHz	Pass	3.73	6.28	21.00
2480MHz	Pass	3.73	8.62	21.00

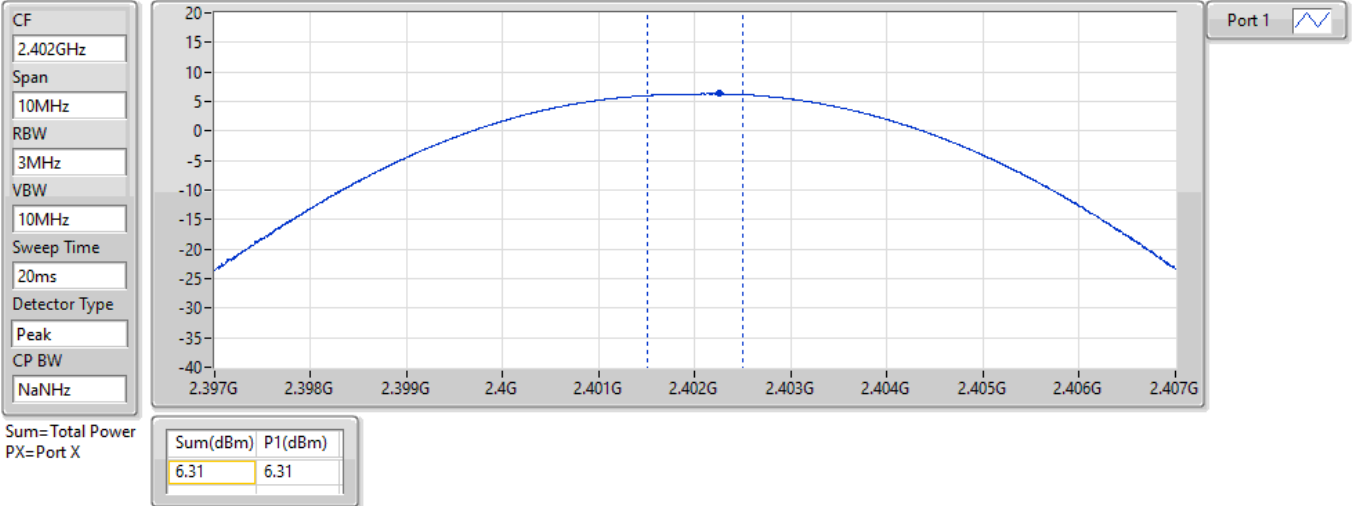
DG = Directional Gain; Port X = Port X output power

BT-BR(1Mbps)

PK Power-FS

2402MHz

01/09/2022

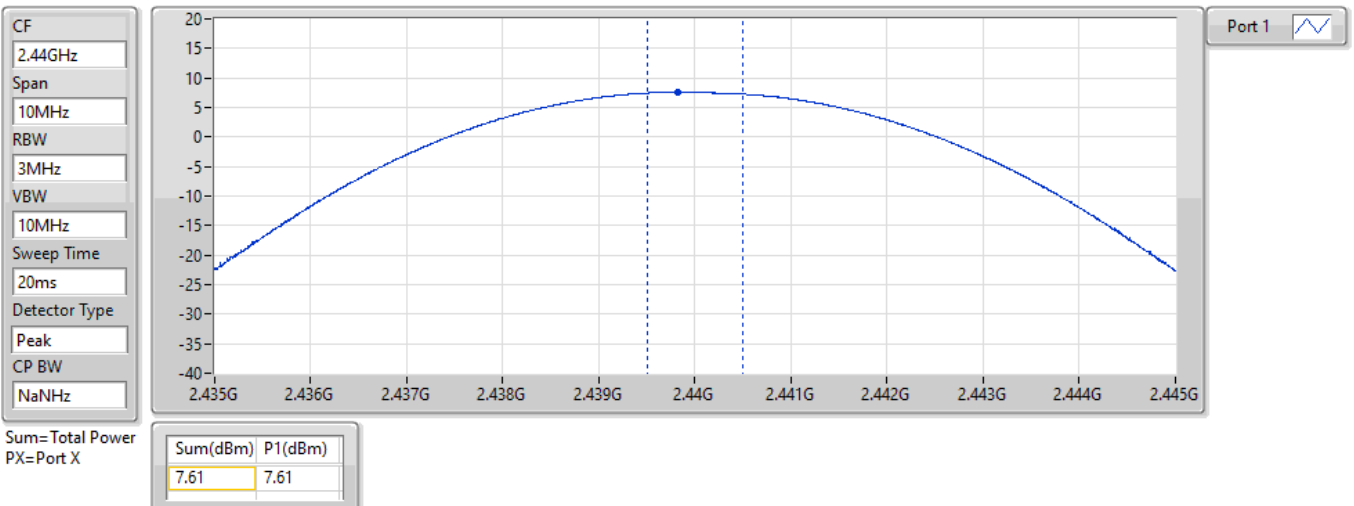


BT-BR(1Mbps)

PK Power-FS

2440MHz

01/09/2022

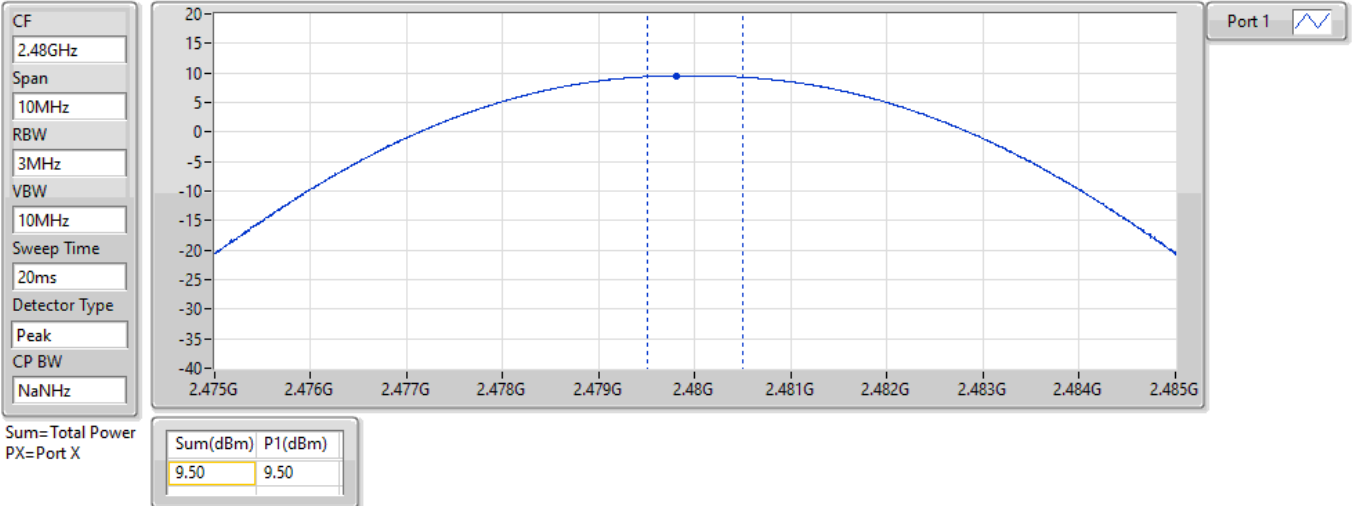


BT-BR(1Mbps)

PK Power-FS

2480MHz

01/09/2022

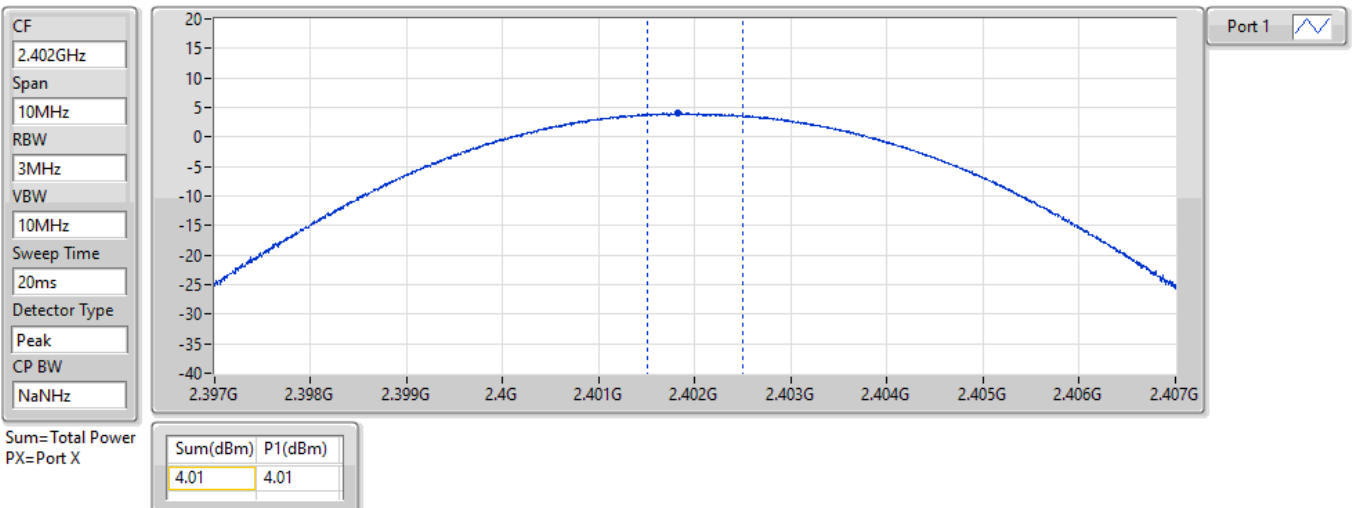


BT-EDR(2Mbps)

PK Power-FS

2402MHz

01/09/2022

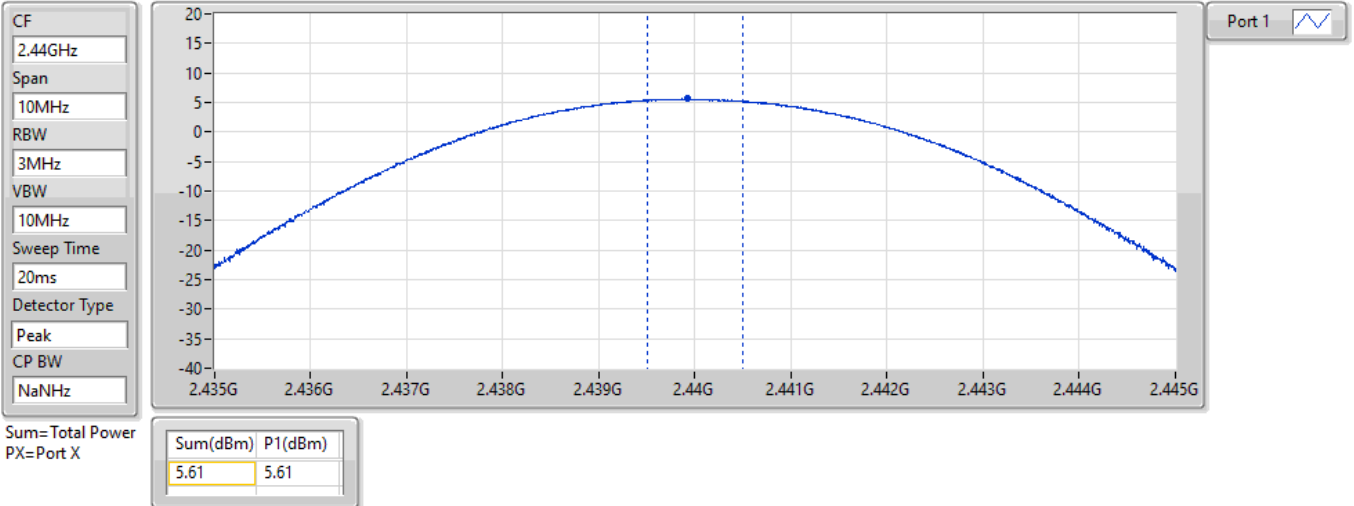


BT-EDR(2Mbps)

PK Power-FS

2440MHz

01/09/2022

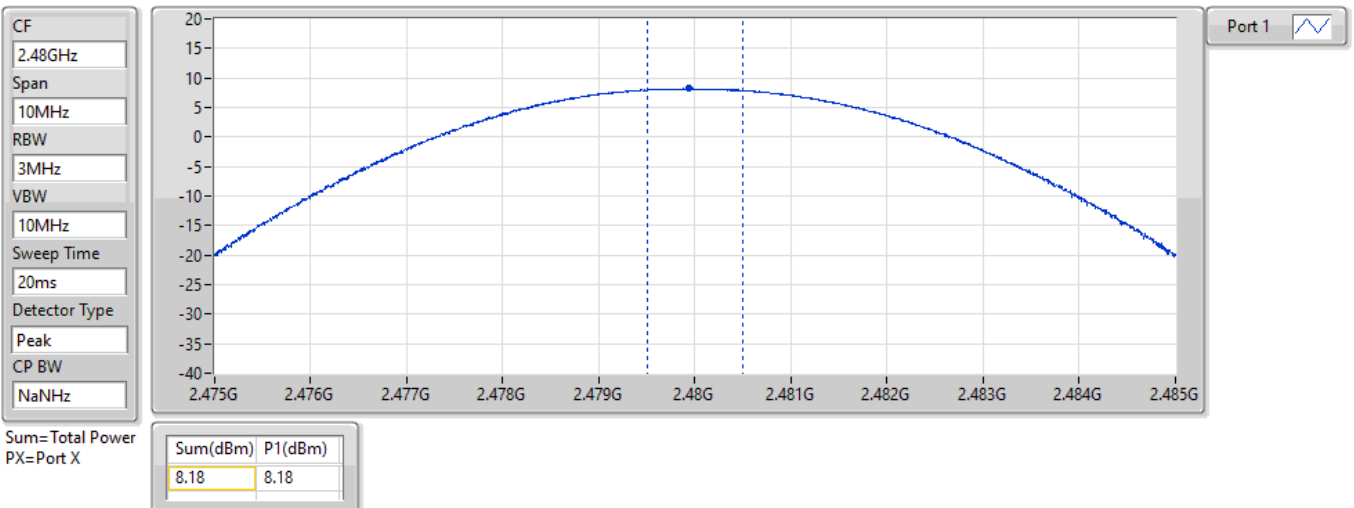


BT-EDR(2Mbps)

PK Power-FS

2480MHz

01/09/2022

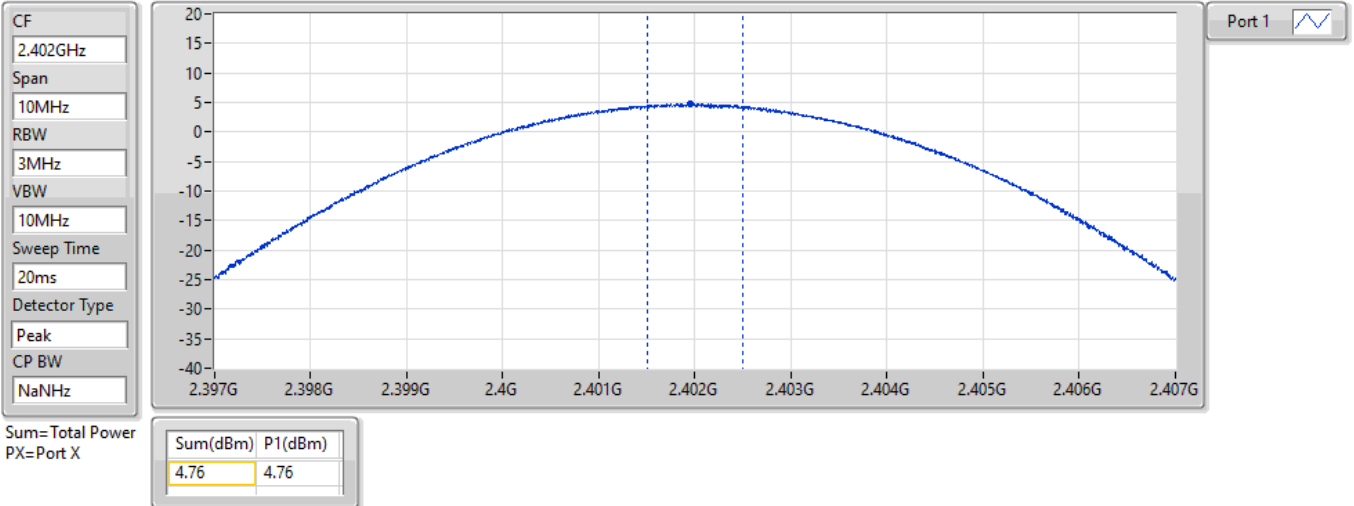


BT-EDR(3Mbps)

PK Power-FS

2402MHz

01/09/2022

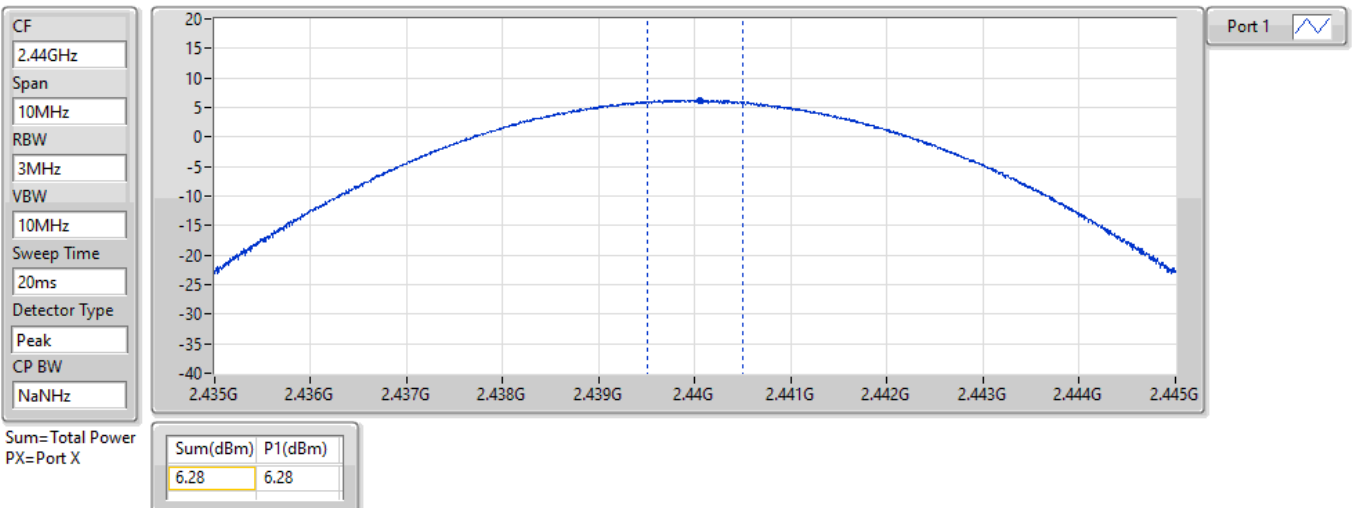


BT-EDR(3Mbps)

PK Power-FS

2440MHz

01/09/2022

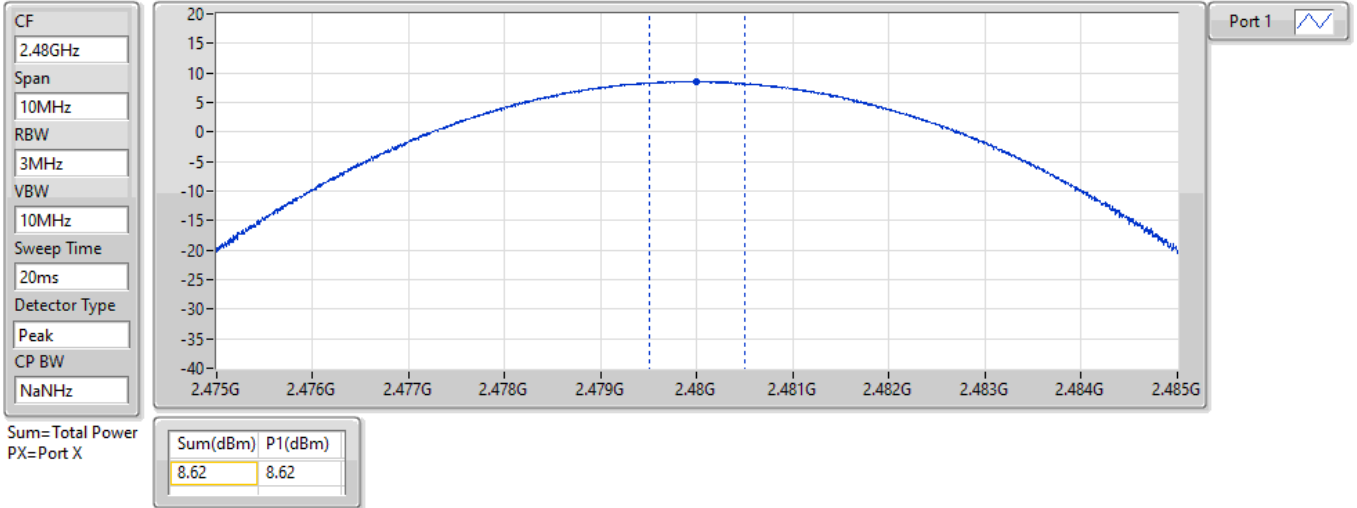


BT-EDR(3Mbps)

PK Power-FS

2480MHz

01/09/2022





Summary

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

Result

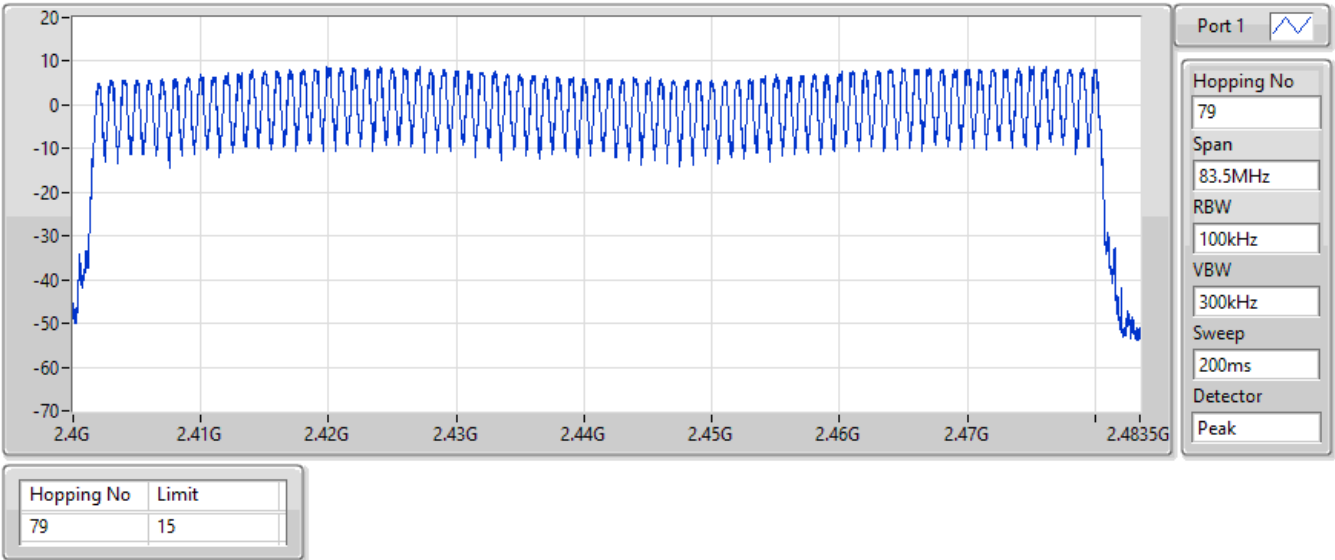
Mode	Result	Hopping No	Limit
BT-BR(1Mbps)	-	-	-
2440MHz	Pass	79	15
BT-EDR(2Mbps)	-	-	-
2440MHz	Pass	79	15
BT-EDR(3Mbps)	-	-	-
2440MHz	Pass	79	15

BT-BR(1Mbps)

2440MHz

Hopping-FS

01/09/2022

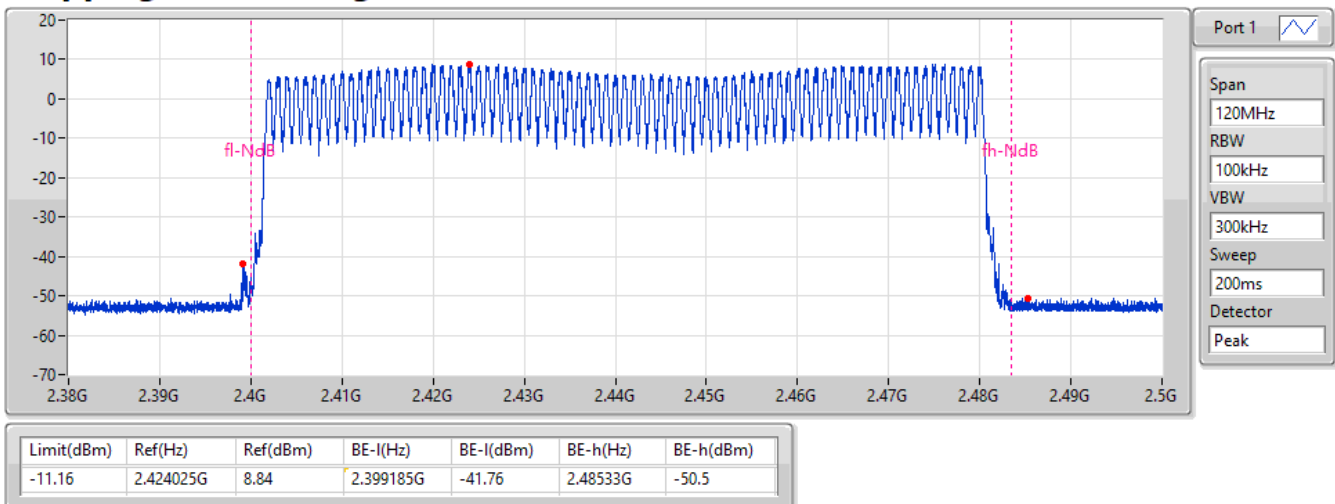


BT-BR(1Mbps)

2440MHz

Hopping Ch Bandedge (Non-restricted Band)

01/09/2022

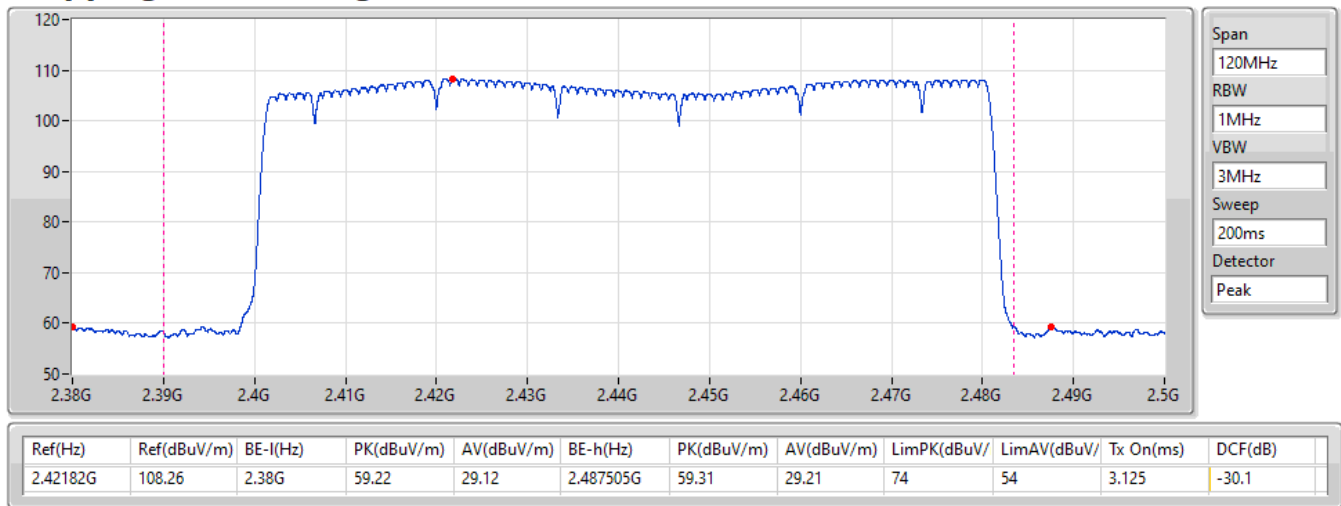


BT-BR(1Mbps)

2440MHz

Hopping Ch Bandedge (Restricted Band)

01/09/2022

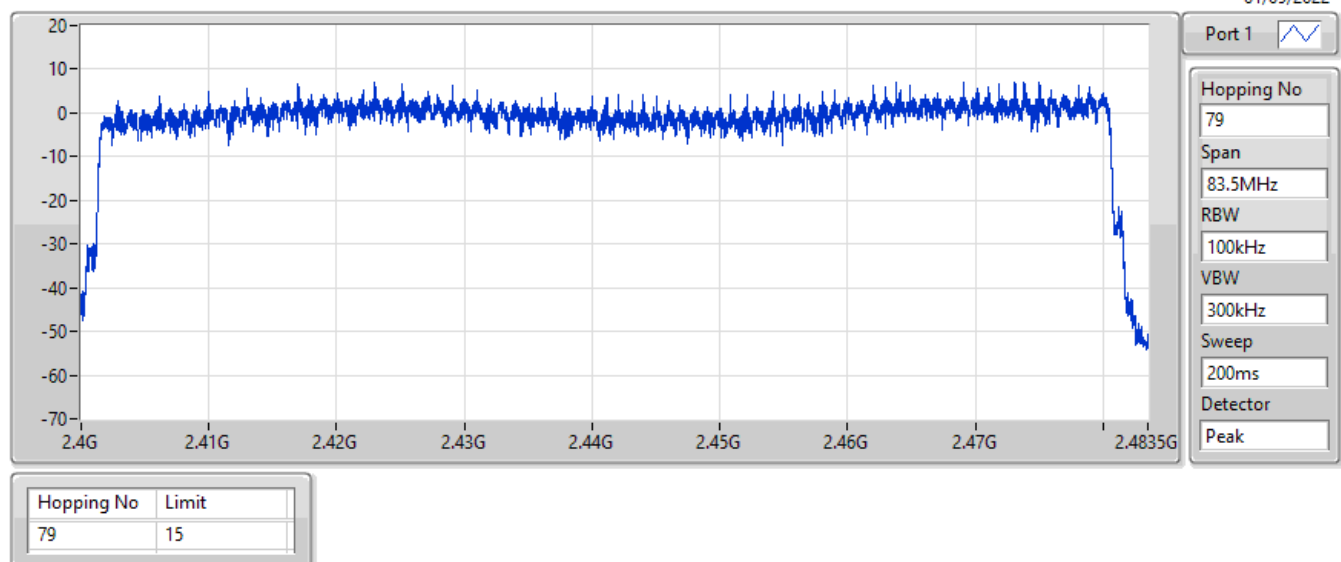


BT-EDR(2Mbps)

2440MHz

Hopping-FS

01/09/2022

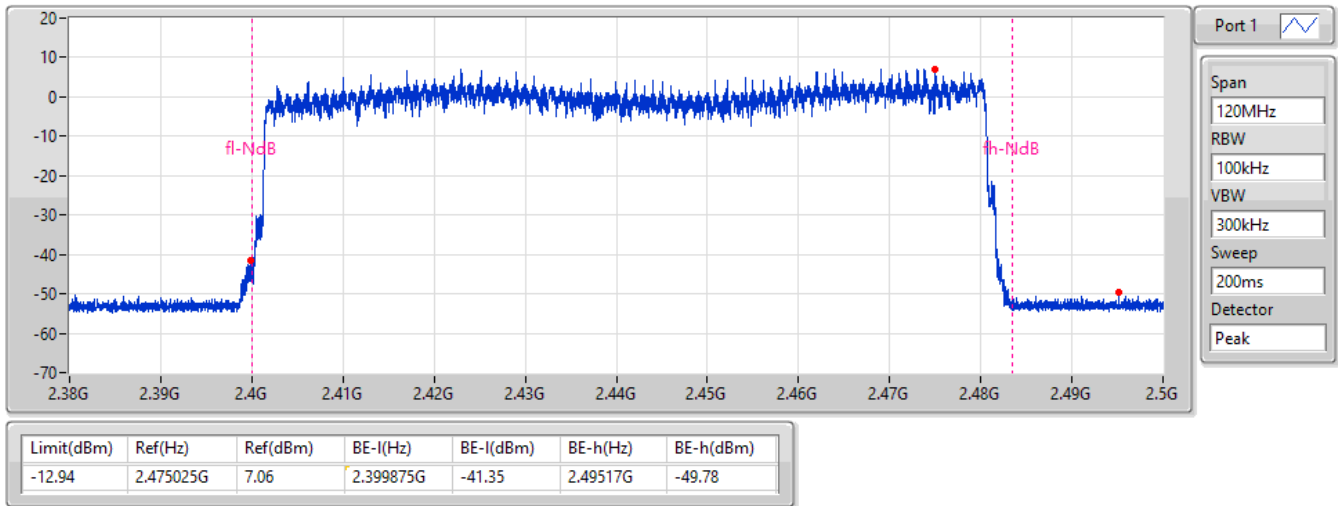


BT-EDR(2Mbps)

2440MHz

Hopping Ch Bandedge (Non-restricted Band)

01/09/2022

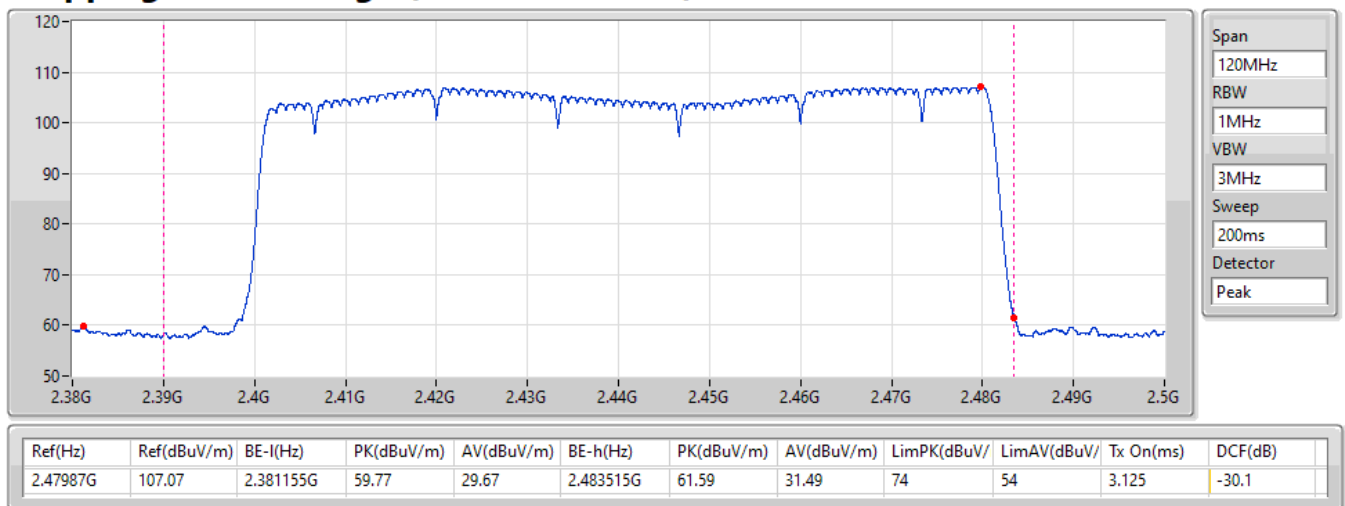


BT-EDR(2Mbps)

2440MHz

Hopping Ch Bandedge (Restricted Band)

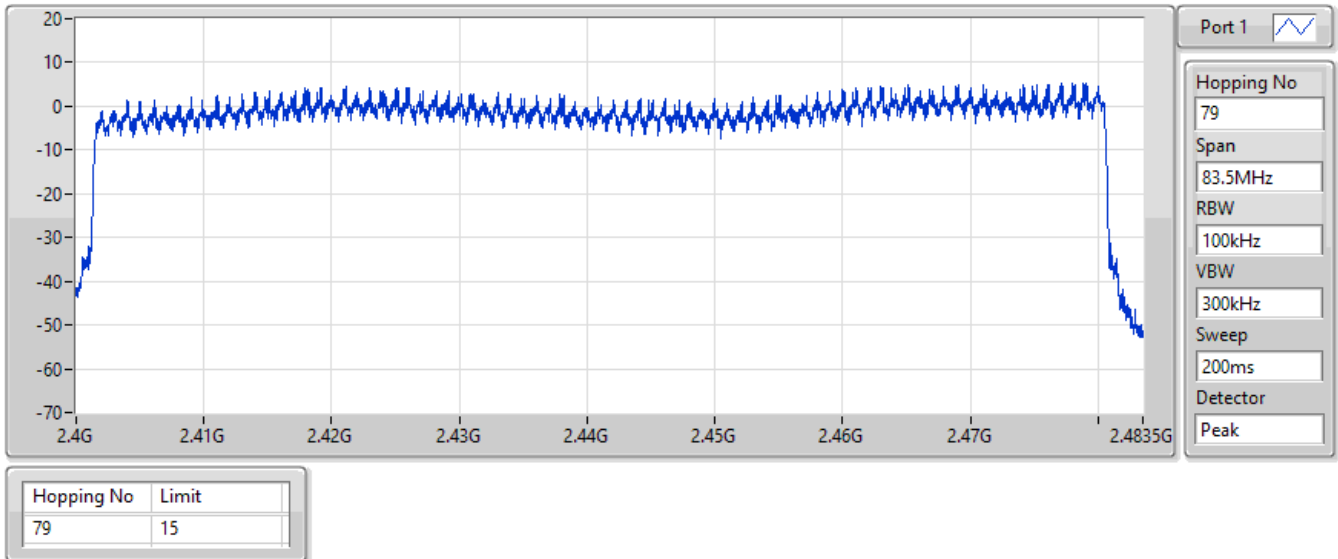
01/09/2022



BT-EDR(3Mbps) 2440MHz

Hopping-FS

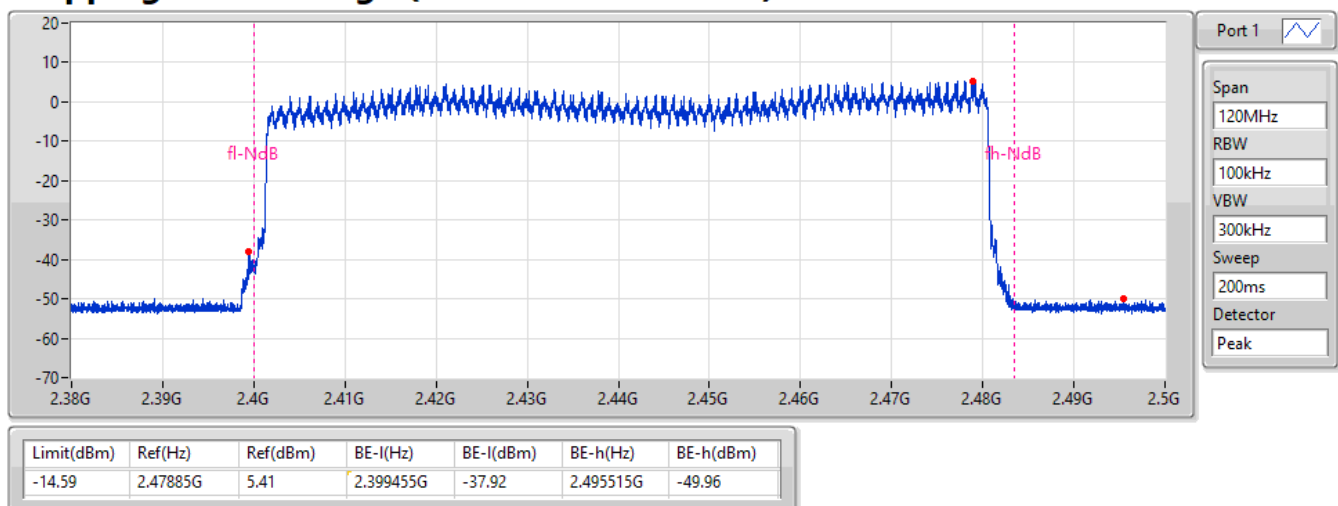
01/09/2022



BT-EDR(3Mbps) 2440MHz

Hopping Ch Bandedge (Non-restricted Band)

01/09/2022

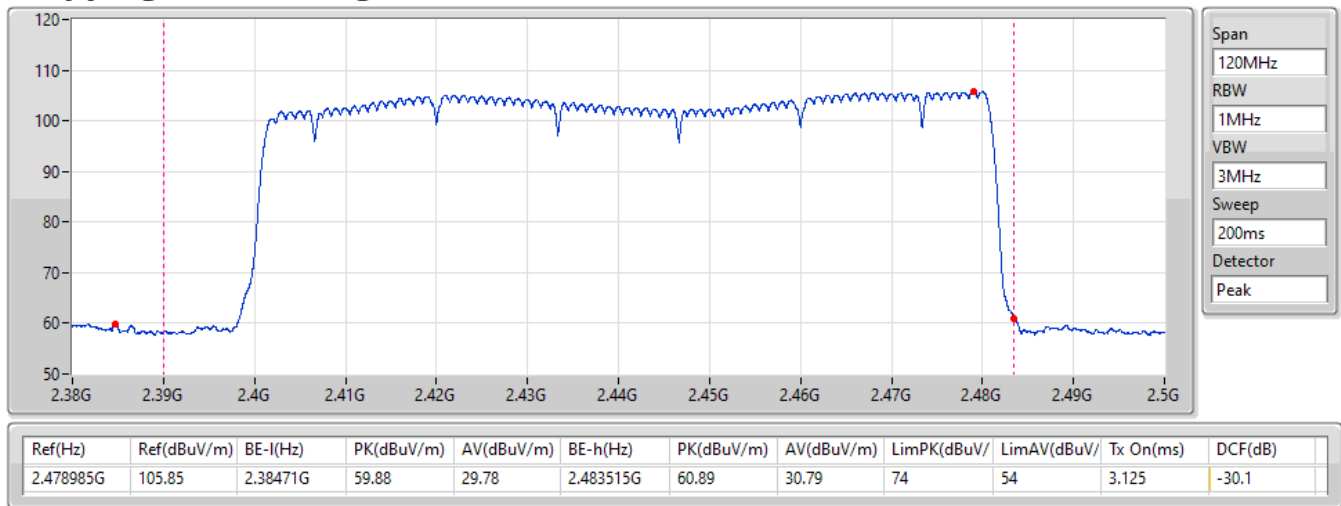


BT-EDR(3Mbps)

2440MHz

Hopping Ch Bandedge (Restricted Band)

01/09/2022





Summary

Mode	Max-Dwell (s)
2.4-2.4835GHz	-
BT-BR(1Mbps)	309.4065m_DH5
BT-EDR(2Mbps)	310.4192m_DH5
BT-EDR(3Mbps)	310.71235m_DH5

Result

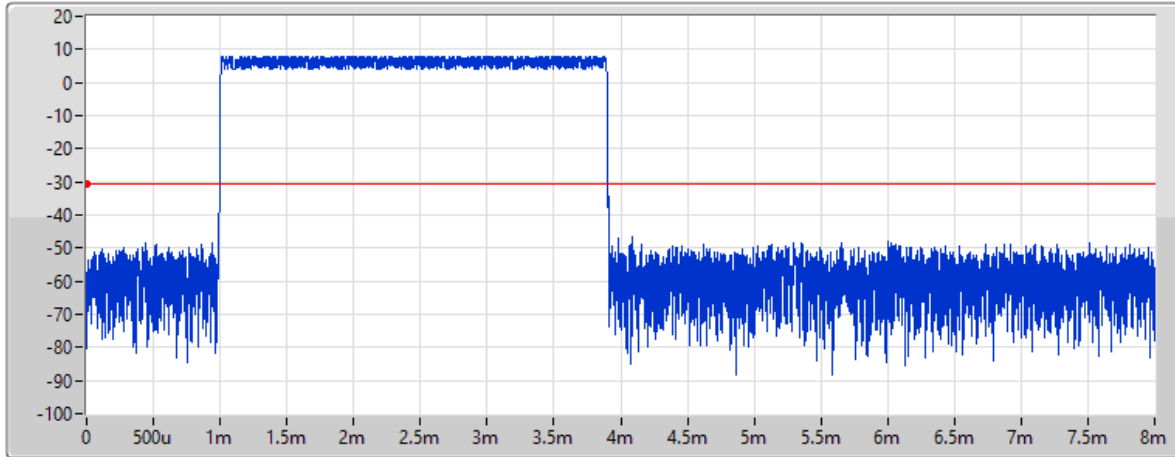
Mode	Result	Period (s)	Dwell (s)	Limit (s)	Tx On (s)
BT-BR(1Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	309.4065m_DH5	400m	2.9025m
2440MHz	Pass	8	154.689925m_DH5-AFH	400m	2.90225m
BT-EDR(2Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	310.4192m_DH5	400m	2.912m
2440MHz	Pass	8	155.249575m_DH5-AFH	400m	2.91275m
BT-EDR(3Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	310.71235m_DH5	400m	2.91475m
2440MHz	Pass	8	155.34285m_DH5-AFH	400m	2.9145m

BT-BR(1Mbps)

2440MHz

Dwell-FS

01/09/2022



Port 1 

Ch Freq
2.44GHz

RBW
300kHz

VBW
1MHz

Sweep Time
8ms

TX Time
2.9025ms

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	309.4065m_DH5	400m	2.9025m

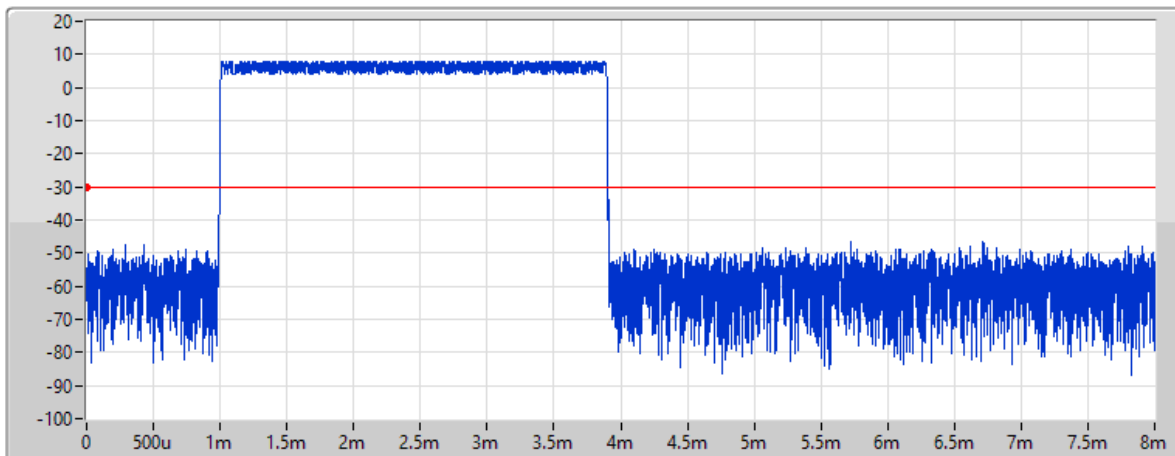
DH5

BT-BR(1Mbps)

2440MHz

Dwell-FS

01/09/2022



Port 1 

Ch Freq
2.44GHz

RBW
300kHz

VBW
1MHz

Sweep Time
8ms

TX Time
2.90225ms

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
8	154.689925m_DH5-AFI	400m	2.90225m

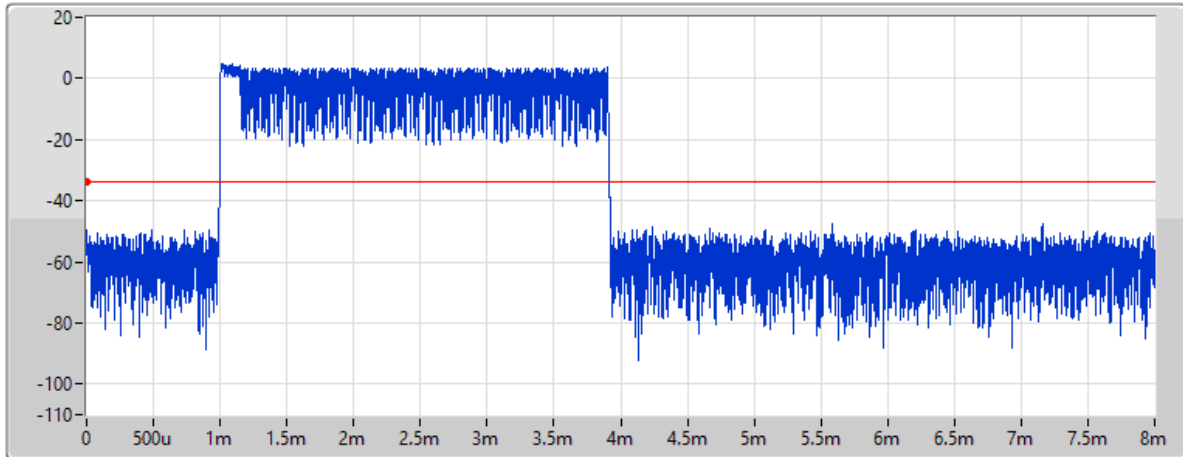
DH5-AFH

BT-EDR(2Mbps)

2440MHz

Dwell-FS

01/09/2022



Port 1 

Ch Freq
2.44GHz

RBW
300kHz

VBW
1MHz

Sweep Time
8ms

TX Time
2.912ms

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	310.4192m_DH5	400m	2.912m

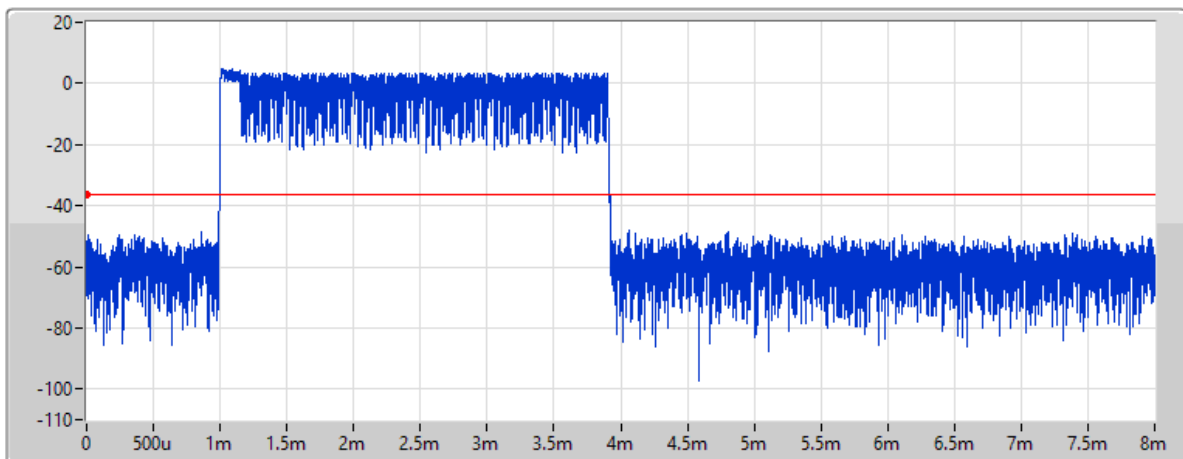
DH5

BT-EDR(2Mbps)

2440MHz

Dwell-FS

01/09/2022



Port 1 

Ch Freq
2.44GHz

RBW
300kHz

VBW
1MHz

Sweep Time
8ms

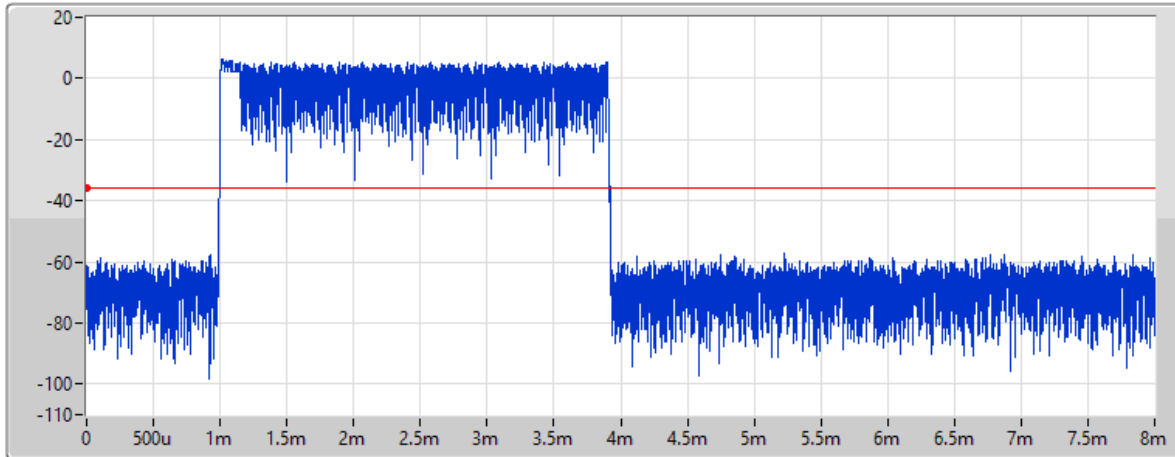
TX Time
2.91275ms

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
8	155.249575m_DH5-AFI	400m	2.91275m

DH5-AFH

BT-EDR(3Mbps)

2440MHz



Port 1 

Ch Freq
2.44GHz

RBW
300kHz

VBW
1MHz

Sweep Time
8ms

TX Time
2.91475ms

01/09/2022

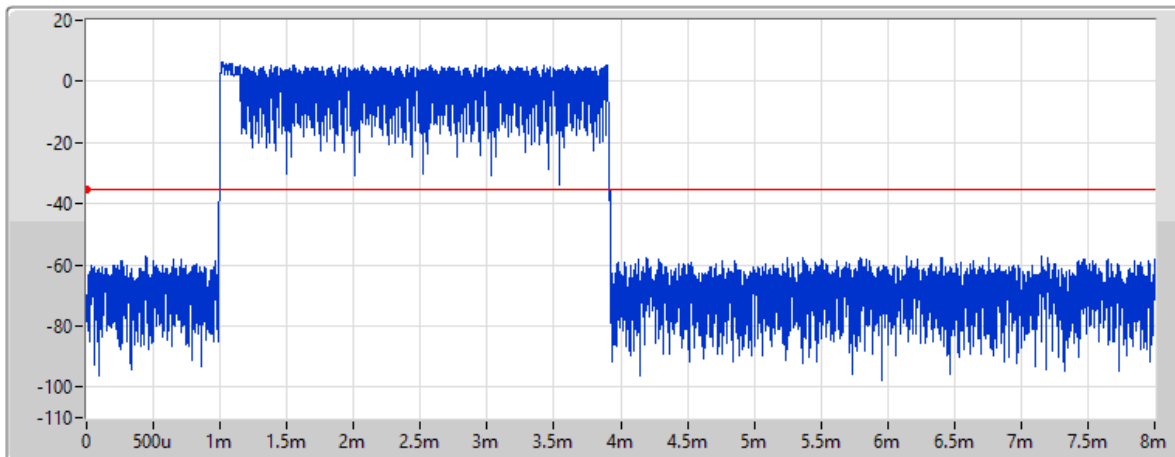
Dwell-FS

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	310.71235m_DH5	400m	2.91475m

DH5

BT-EDR(3Mbps)

2440MHz



Port 1 

Ch Freq
2.44GHz

RBW
300kHz

VBW
1MHz

Sweep Time
8ms

TX Time
2.9145ms

01/09/2022

Dwell-FS

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
8	155.34285m_DH5-AFH	400m	2.9145m

DH5-AFH

Summary

Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	2.40196G	4.45	-15.55	1.90266G	-51.77	2.39999G	-40.72	2.4G	-46.53	2.48933G	-51.77	6.91844G	-47.13	1
BT-EDR(2Mbps)	Pass	2.402G	2.76	-17.24	2.30274G	-52.21	2.39949G	-38.93	2.4G	-42.77	2.48577G	-51.17	5.82455G	-47.42	1
BT-EDR(3Mbps)	Pass	2.402G	2.83	-17.17	953.84M	-52.18	2.39954G	-37.04	2.4G	-41.82	2.49347G	-51.12	6.70753G	-46.57	1

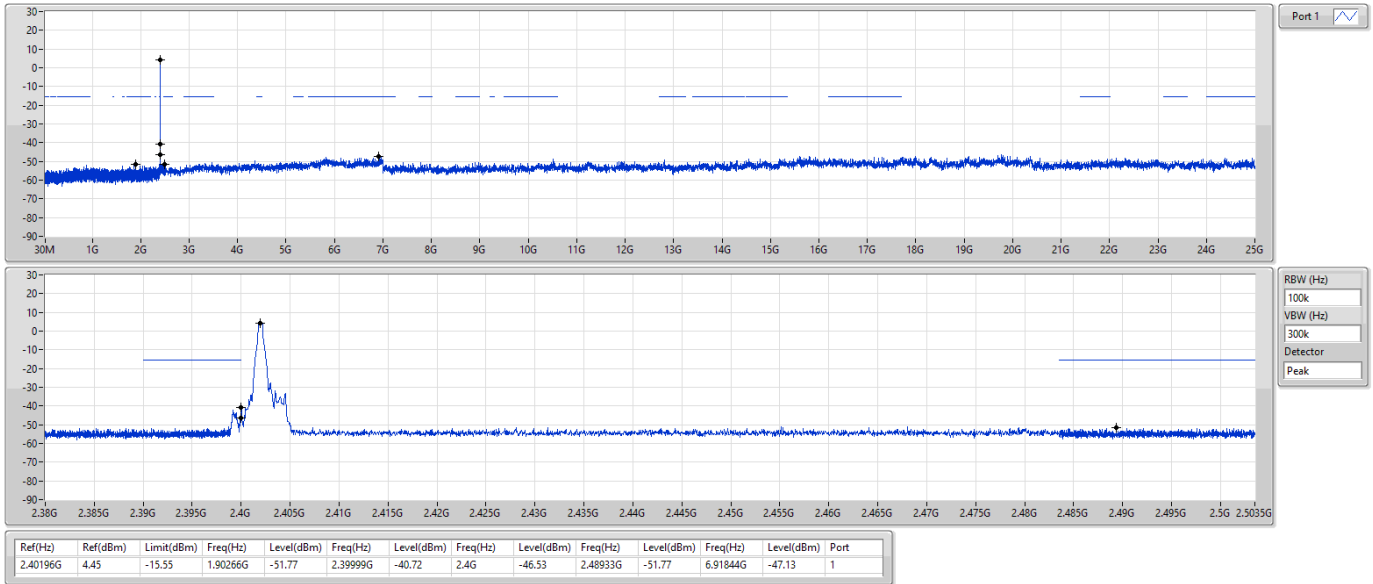
Result

Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40196G	4.45	-15.55	1.90266G	-51.77	2.39999G	-40.72	2.4G	-46.53	2.48933G	-51.77	6.91844G	-47.13	1
2440MHz	Pass	2.44004G	6.13	-13.87	2.06686G	-52.44	2.39134G	-50.60	2.4G	-53.89	2.49482G	-51.17	5.99046G	-46.89	1
2480MHz	Pass	2.47987G	8.20	-11.80	947.97M	-52.43	2.39262G	-52.25	2.4835G	-51.55	2.48548G	-49.56	5.82173G	-46.85	1
BT-EDR(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.402G	2.76	-17.24	2.30274G	-52.21	2.39949G	-38.93	2.4G	-42.77	2.48577G	-51.17	5.82455G	-47.42	1
2440MHz	Pass	2.44G	4.64	-15.36	1.80396G	-52.69	2.39713G	-52.23	2.4G	-52.82	2.49674G	-51.31	17.67177G	-47.05	1
2480MHz	Pass	2.47983G	6.44	-13.56	1.93761G	-52.39	2.39469G	-51.27	2.4835G	-50.41	2.48352G	-49.80	5.94828G	-47.35	1
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.402G	2.83	-17.17	953.84M	-52.18	2.39954G	-37.04	2.4G	-41.82	2.49347G	-51.12	6.70753G	-46.57	1
2440MHz	Pass	2.44G	4.34	-15.66	1.82041G	-52.12	2.3987G	-51.83	2.4835G	-53.19	2.48553G	-50.86	5.89766G	-47.23	1
2480MHz	Pass	2.48016G	7.10	-12.90	903.61M	-51.75	2.39782G	-51.90	2.4835G	-50.24	2.48353G	-49.25	17.61834G	-47.21	1

BT-BR(1Mbps)

CSENdB-FS

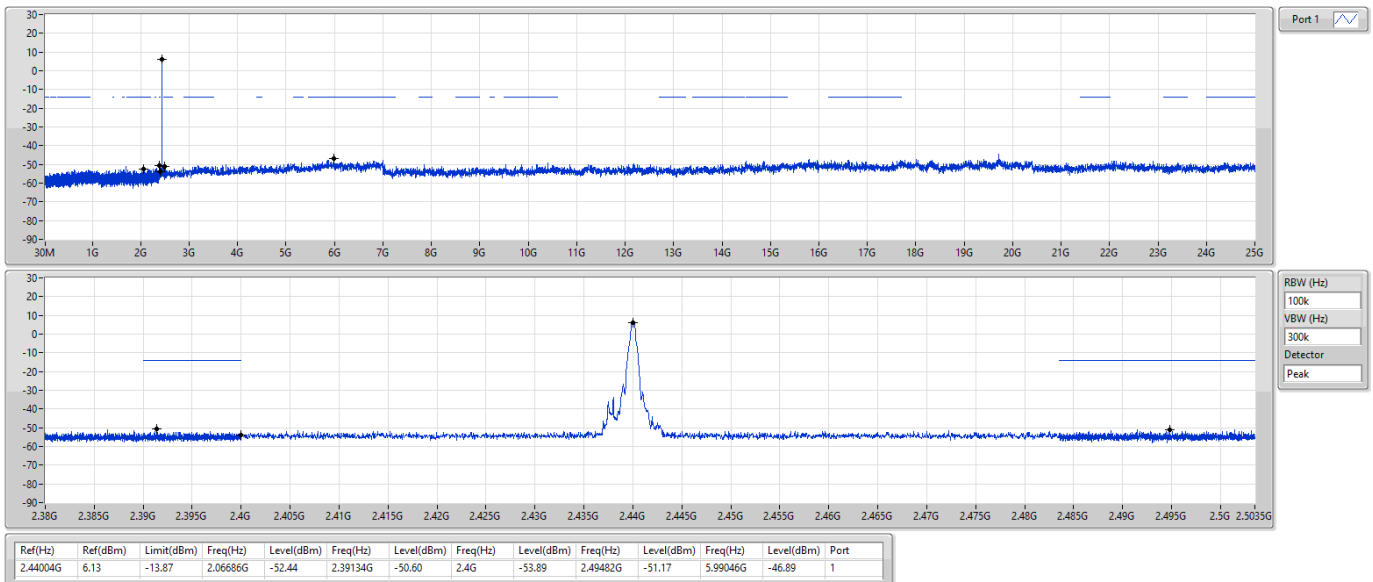
2402MHz



BT-BR(1Mbps)

CSENdB-FS

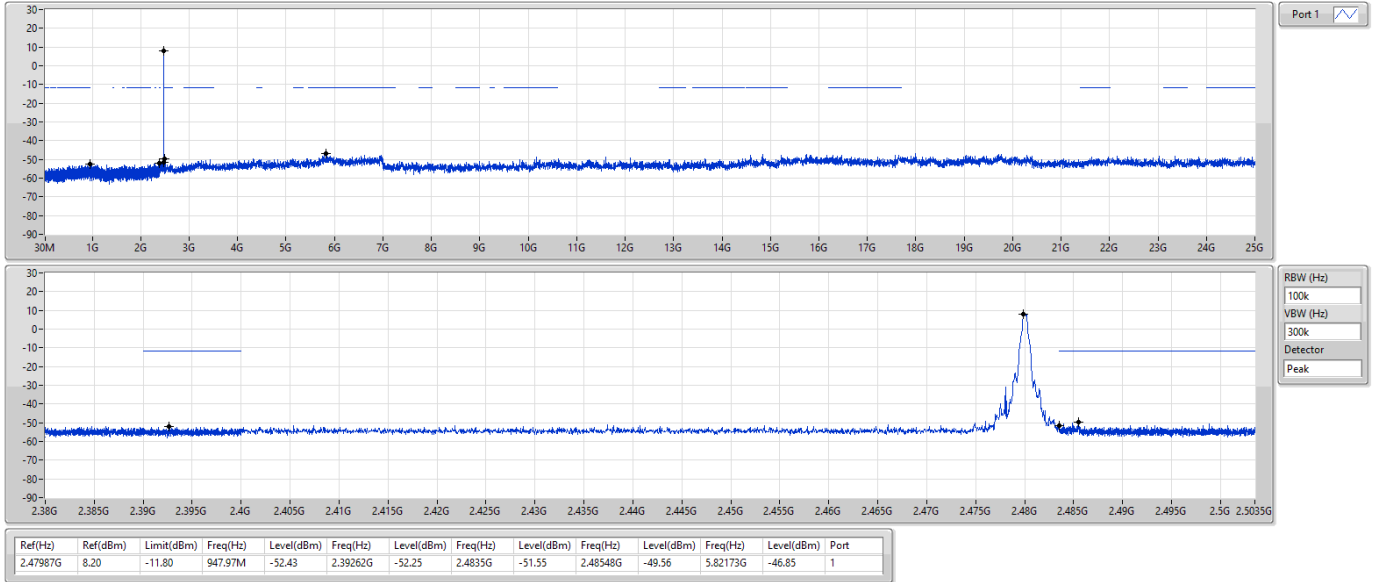
2440MHz



BT-BR(1Mbps)

CSEndB-FS

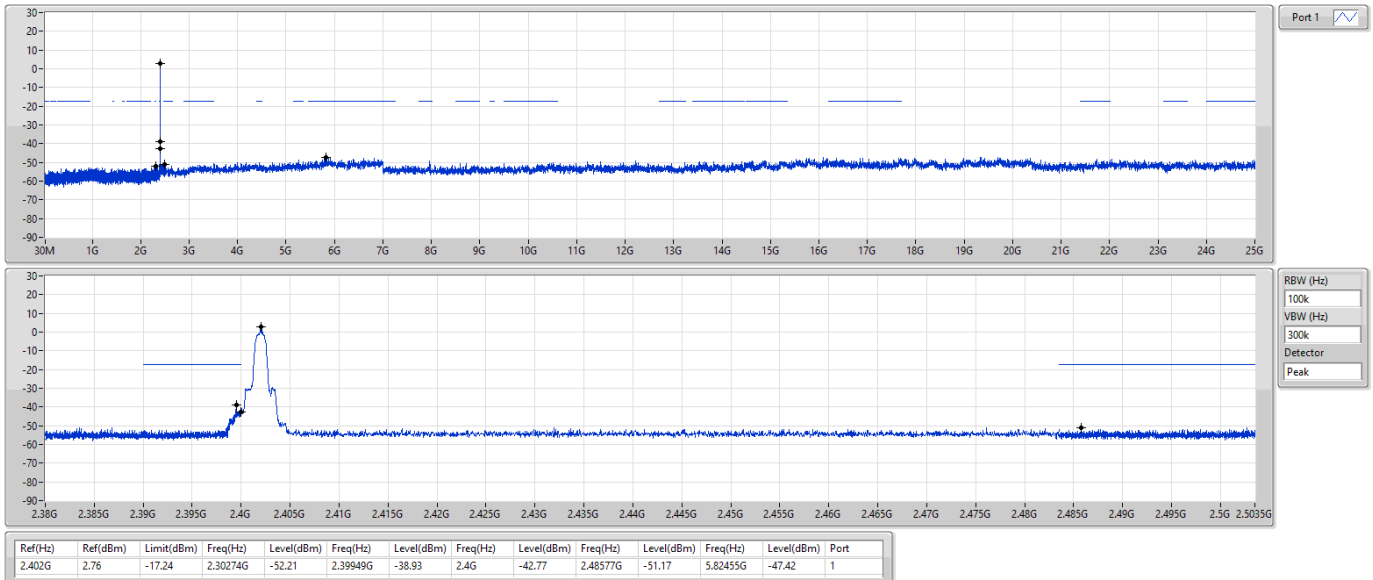
2480MHz



BT-EDR(2Mbps)

CSEndB-FS

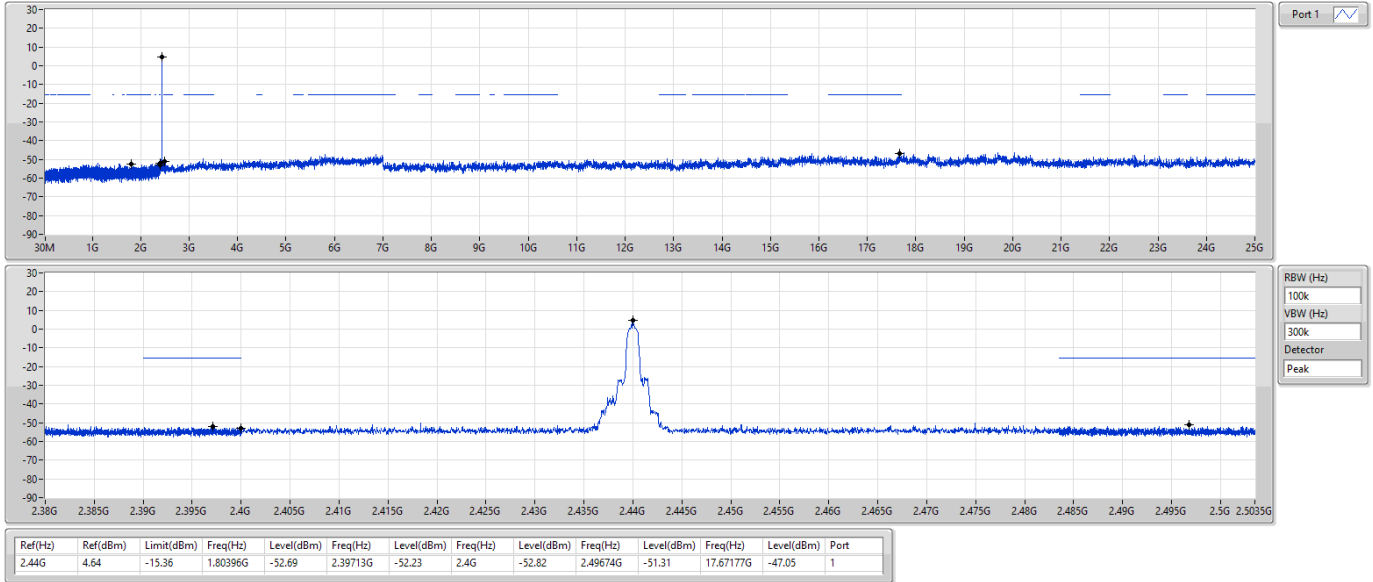
2402MHz



BT-EDR(2Mbps)

CSENdB-FS

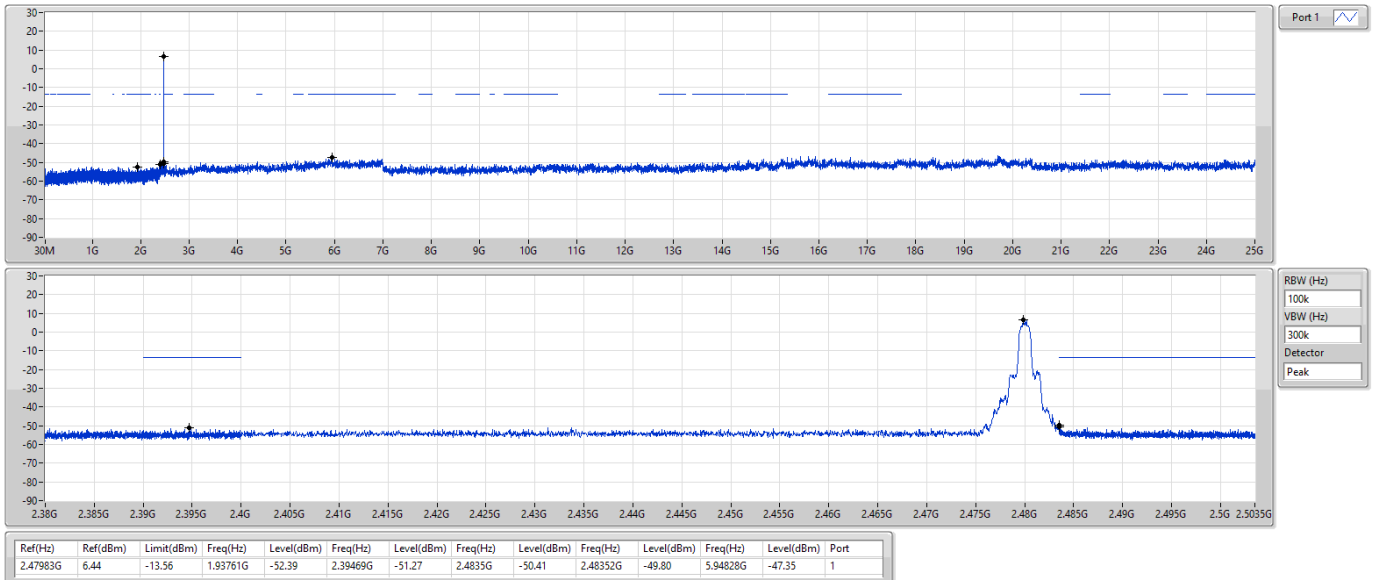
2440MHz



BT-EDR(2Mbps)

CSENdB-FS

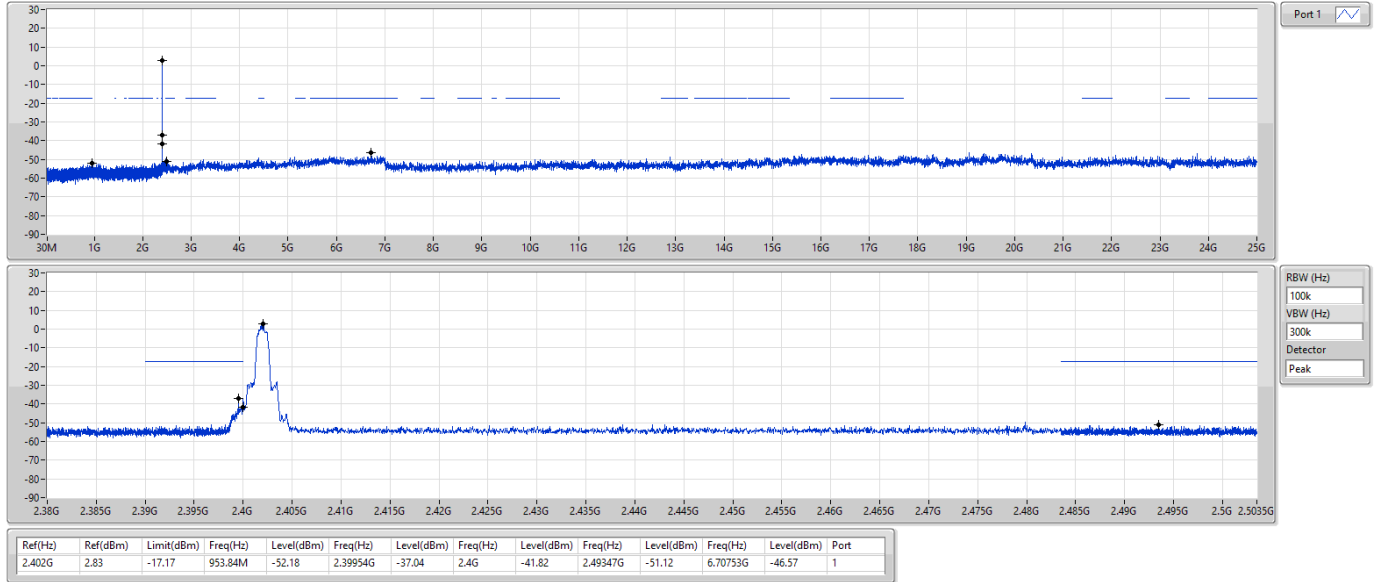
2480MHz



BT-EDR(3Mbps)

CSEndB-FS

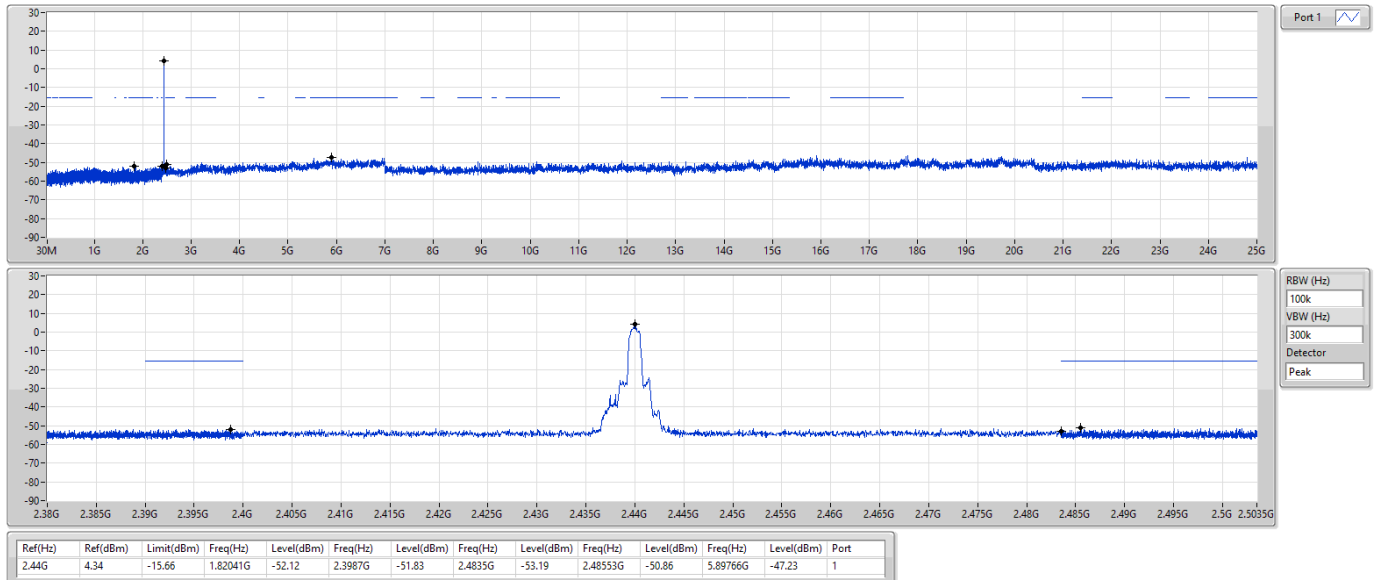
2402MHz



BT-EDR(3Mbps)

CSEndB-FS

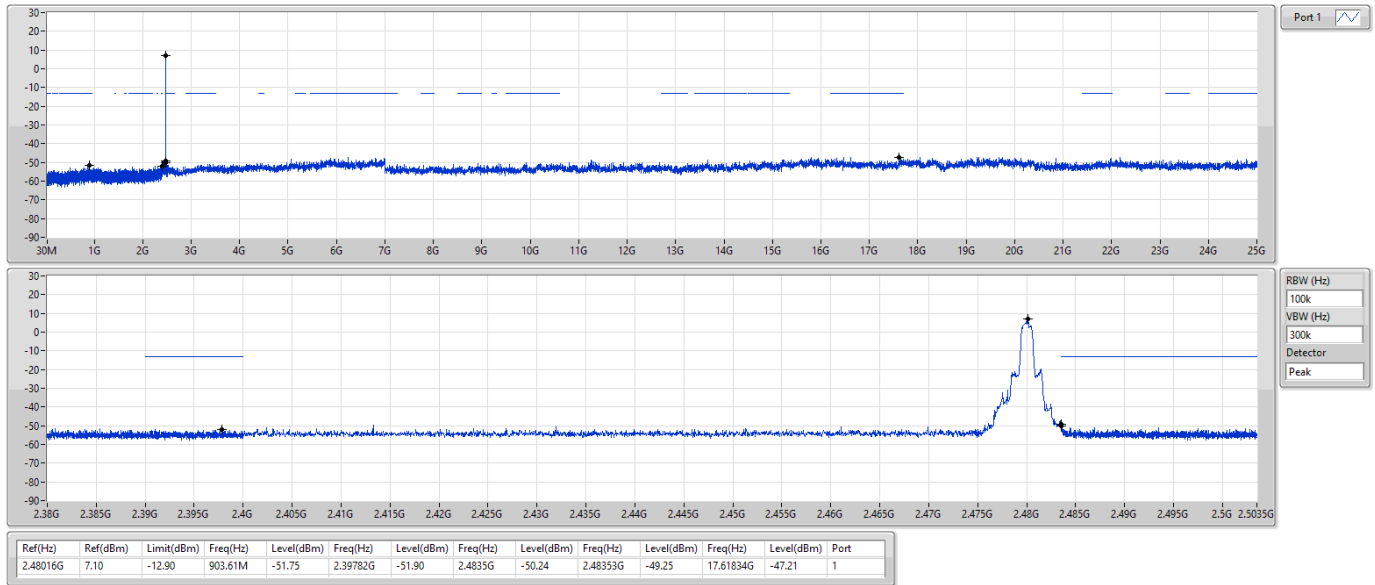
2440MHz



BT-EDR(3Mbps)

CSEndB-FS

2480MHz





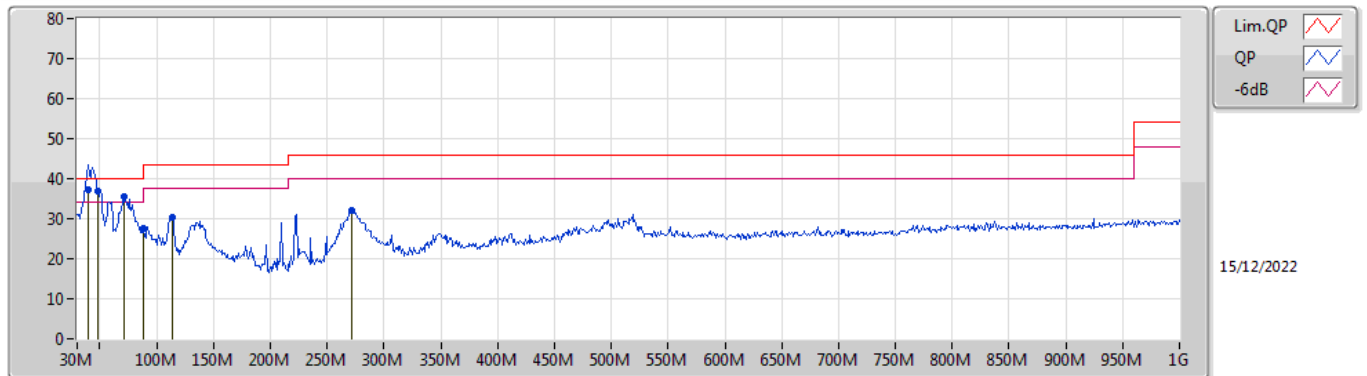
Radiated Emissions below 1GHz

Appendix G.1

Summary

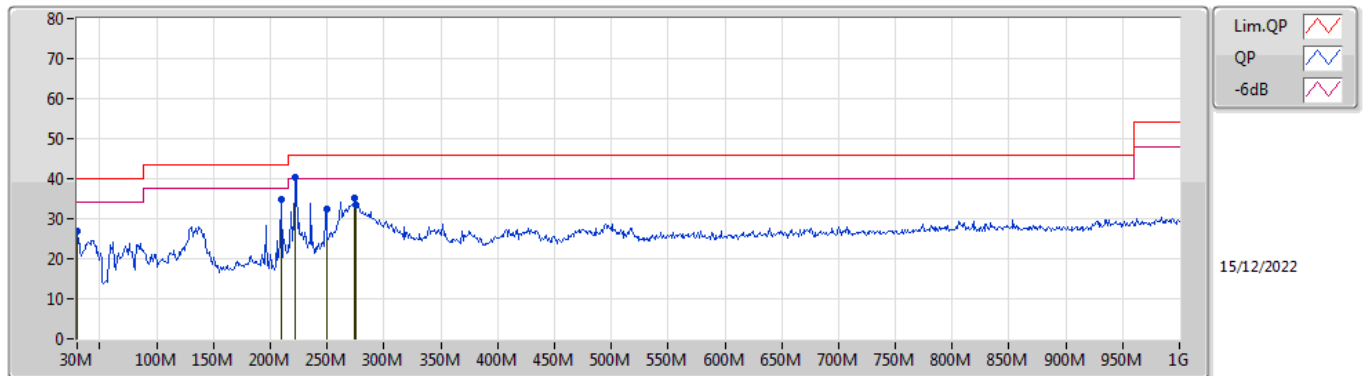
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	QP	39.7M	37.38	40.00	-2.62	Vertical

Test Mode 1



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB/m)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV/m)	AF (dB/m)	CL (dB)	PA (dB)
QP	39.7M	37.38	40.00	-2.62	-12.42	3	Vertical	126	1.00	"Worst"	49.80	18.78	0.55	31.75
PK	48.43M	36.86	40.00	-3.14	-16.61	3	Vertical	294	1.00	-	53.47	14.59	0.65	31.85
PK	70.74M	35.66	40.00	-4.34	-18.95	3	Vertical	283	2.00	-	54.61	12.16	0.86	31.97
PK	88M	27.51	43.50	-15.99	-16.80	3	Vertical	0	1.25	-	44.31	14.15	1.00	31.95
PK	113.42M	30.22	43.50	-13.28	-12.98	3	Vertical	192	1.00	-	43.20	17.79	1.20	31.97
PK	271.53M	32.13	46.00	-13.87	-11.38	3	Vertical	360	1.25	-	43.51	18.57	2.10	32.05

Test Mode 1



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB/m)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV/m)	AF (dB/m)	CL (dB)	PA (dB)
PK	30M	26.78	40.00	-13.22	-7.12	3	Horizontal	226	3.00	-	33.90	23.99	0.44	31.55
PK	209.45M	34.85	43.50	-8.65	-15.31	3	Horizontal	172	1.25	-	50.16	14.93	1.78	32.02
PK	222.06M	40.22	46.00	-5.78	-15.03	3	Horizontal	172	1.25	"Worst"	55.25	15.13	1.85	32.01
PK	249.22M	32.26	46.00	-13.74	-11.89	3	Horizontal	180	1.00	-	44.15	18.11	2.00	32.00
PK	274.44M	35.06	46.00	-10.94	-11.37	3	Horizontal	172	1.00	-	46.43	18.56	2.12	32.05
PK	275.41M	33.53	46.00	-12.47	-11.37	3	Horizontal	180	1.00	-	44.90	18.57	2.12	32.06

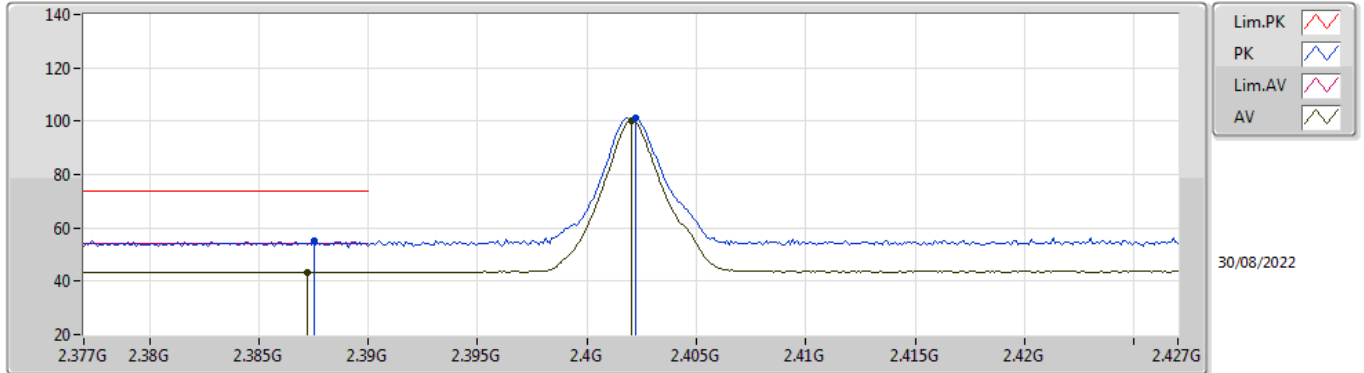


Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	AV	2.4835G	48.98	54.00	-5.02	3	Horizontal	16	2.68	-

BT-BR(1Mbps)

2402MHz_TX

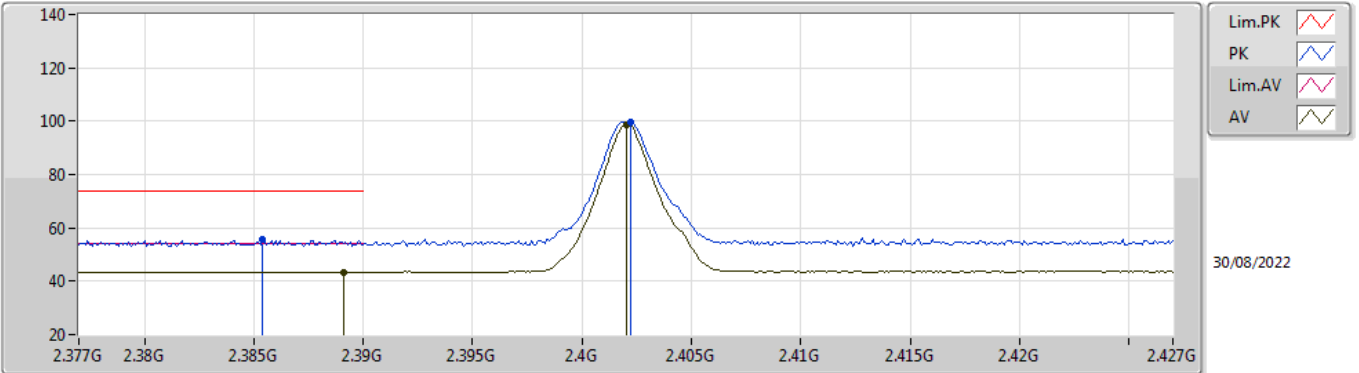


EUT X_1TX
Setting 63
06-E-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.3875G	55.33	74.00	-18.67	23.79	3	Vertical	131	3.00	-	27.65	3.89	-	
AV	2.3872G	43.44	54.00	-10.56	11.90	3	Vertical	131	3.00	-	27.65	3.89	-	
PK	2.4022G	101.14	Inf	-Inf	69.64	3	Vertical	131	3.00	-	27.60	3.90	-	
AV	2.402G	100.15	Inf	-Inf	68.65	3	Vertical	131	3.00	-	27.60	3.90	-	

BT-BR(1Mbps)

2402MHz_TX

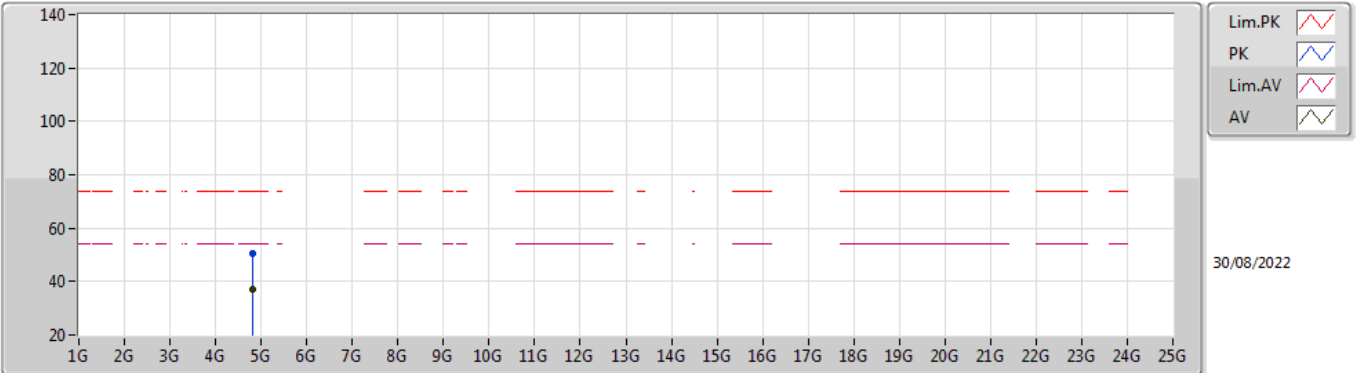


EUT_X_1TX
Setting 63
06-E-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.3854G	55.56	74.00	-18.44	24.01	3	Horizontal	229	1.44	-	27.66	3.89	-	
AV	2.3891G	43.49	54.00	-10.51	11.96	3	Horizontal	229	1.44	-	27.64	3.89	-	
PK	2.4022G	99.76	Inf	-Inf	68.26	3	Horizontal	229	1.44	-	27.60	3.90	-	
AV	2.402G	98.82	Inf	-Inf	67.32	3	Horizontal	229	1.44	-	27.60	3.90	-	

BT-BR(1Mbps)

2402MHz_TX

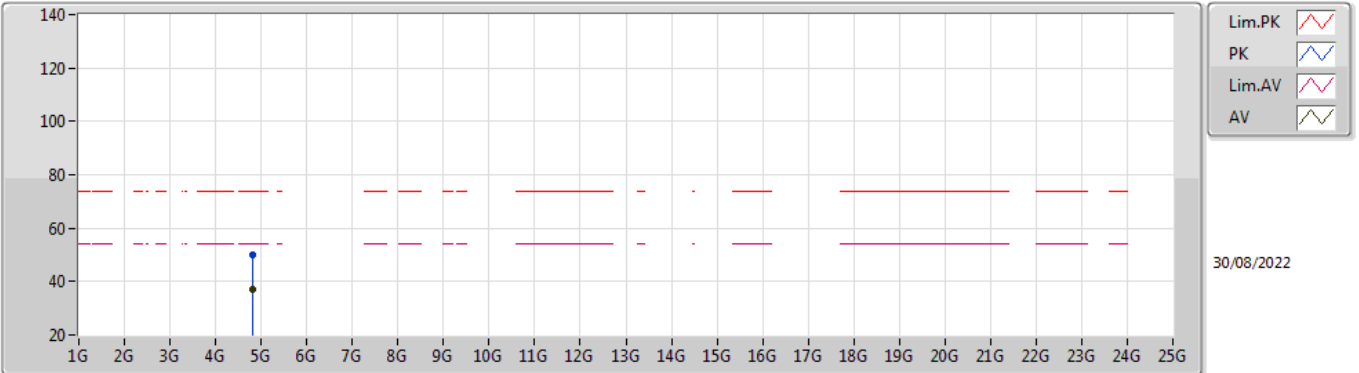


EUT X_1TX
Setting 63
06-E-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	4.80458G	50.42	74.00	-23.58	46.24	3	Vertical	314	1.83	-	31.31	5.40	32.53	
AV	4.7993G	36.88	54.00	-17.12	32.71	3	Vertical	314	1.83	-	31.30	5.40	32.53	

BT-BR(1Mbps)

2402MHz_TX

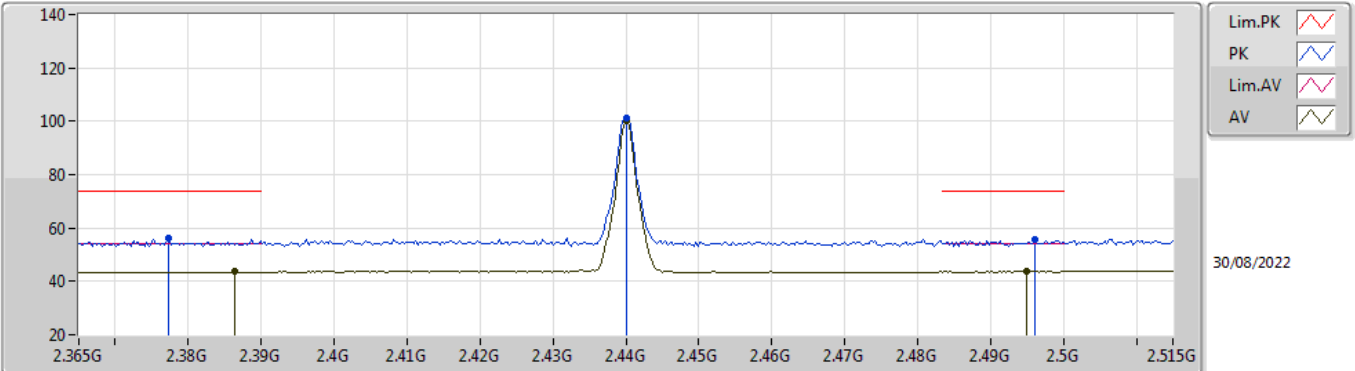


EUT X_1TX
Setting 63
06-E-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.80424G	50.25	74.00	-23.75	46.07	3	Horizontal	153	2.19	-	31.31	5.40	32.53
AV	4.80002G	37.01	54.00	-16.99	32.84	3	Horizontal	153	2.19	-	31.30	5.40	32.53

BT-BR(1Mbps)

2440MHz_TX

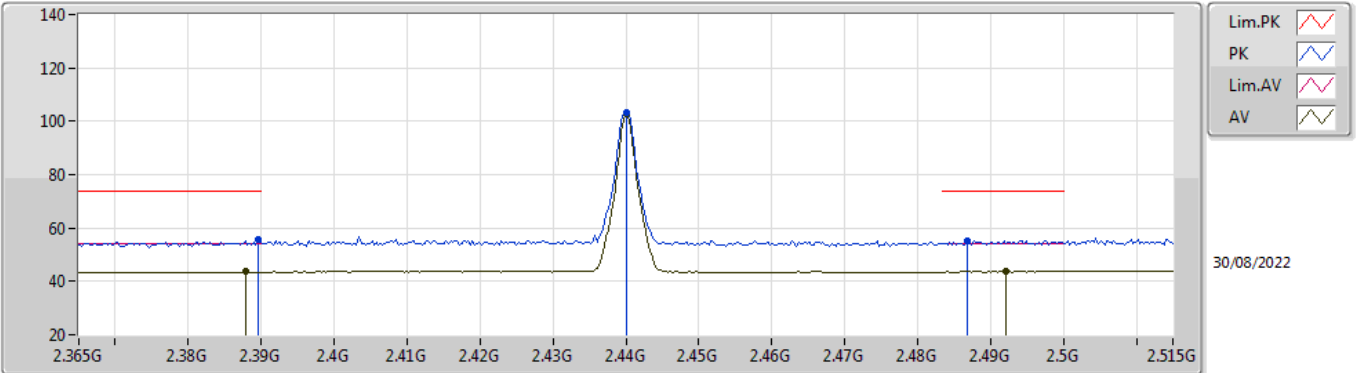


EUT X_1TX
Setting 63
06-E-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.3773G	56.22	74.00	-17.78	24.65	3	Vertical	128	2.94	-	27.69	3.88	-
AV	2.3863G	43.62	54.00	-10.38	12.08	3	Vertical	128	2.94	-	27.65	3.89	-
PK	2.44G	101.25	Inf	-Inf	69.75	3	Vertical	128	2.94	-	27.60	3.90	-
AV	2.44G	100.21	Inf	-Inf	68.71	3	Vertical	128	2.94	-	27.60	3.90	-
PK	2.4961G	55.84	74.00	-18.16	24.34	3	Vertical	128	2.94	-	27.60	3.90	-
AV	2.4949G	43.75	54.00	-10.25	12.25	3	Vertical	128	2.94	-	27.60	3.90	-

BT-BR(1Mbps)

2440MHz_TX

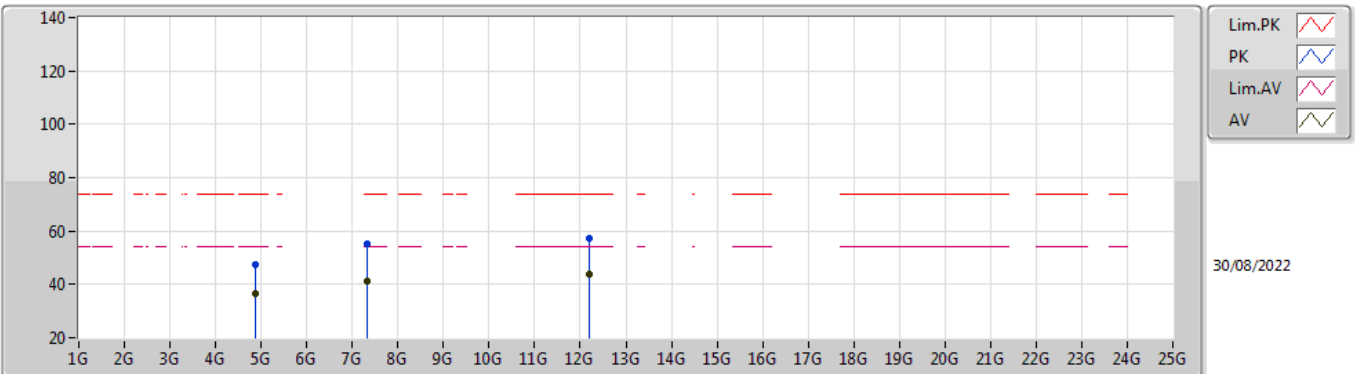


EUT X_1TX
Setting 63
06-E-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.3896G	55.82	74.00	-18.18	24.29	3	Horizontal	68	2.57	-	27.64	3.89	-
AV	2.3878G	43.64	54.00	-10.36	12.10	3	Horizontal	68	2.57	-	27.65	3.89	-
PK	2.44G	103.53	Inf	-Inf	72.03	3	Horizontal	68	2.57	-	27.60	3.90	-
AV	2.44G	102.56	Inf	-Inf	71.06	3	Horizontal	68	2.57	-	27.60	3.90	-
PK	2.4868G	55.25	74.00	-18.75	23.75	3	Horizontal	68	2.57	-	27.60	3.90	-
AV	2.4922G	43.86	54.00	-10.14	12.36	3	Horizontal	68	2.57	-	27.60	3.90	-

BT-BR(1Mbps)

2440MHz_TX

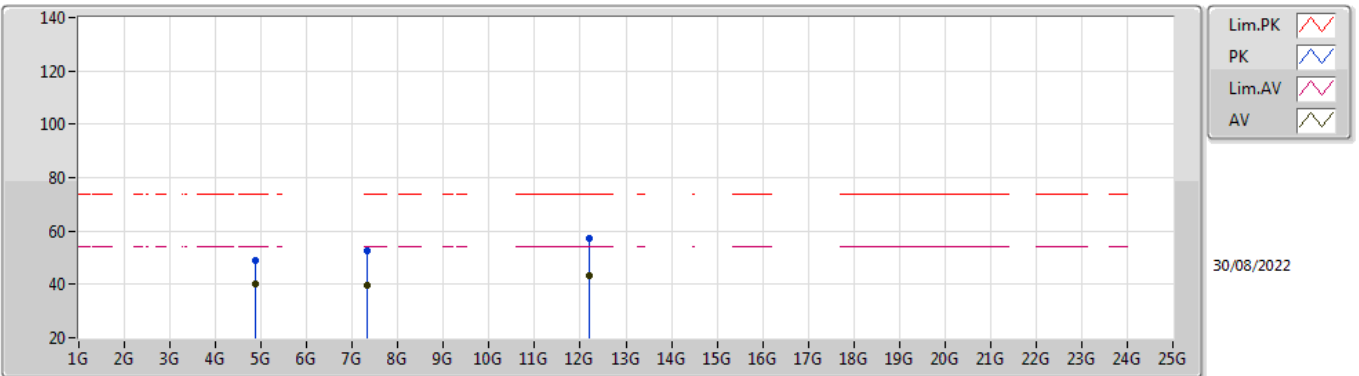


EUT X_1TX
Setting 63
06-E-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	4.87978G	47.65	74.00	-26.35	43.35	3	Vertical	240	1.80	-	31.40	5.40	32.50	
AV	4.88004G	36.79	54.00	-17.21	32.49	3	Vertical	240	1.80	-	31.40	5.40	32.50	
PK	7.31968G	55.08	74.00	-18.92	45.11	3	Vertical	322	1.80	-	36.70	6.72	33.45	
AV	7.31988G	41.07	54.00	-12.93	31.10	3	Vertical	322	1.80	-	36.70	6.72	33.45	
PK	12.20478G	57.32	74.00	-16.68	43.37	3	Vertical	240	2.37	-	39.09	9.55	34.69	
AV	12.20358G	43.70	54.00	-10.30	29.75	3	Vertical	240	2.37	-	39.09	9.55	34.69	

BT-BR(1Mbps)

2440MHz_TX

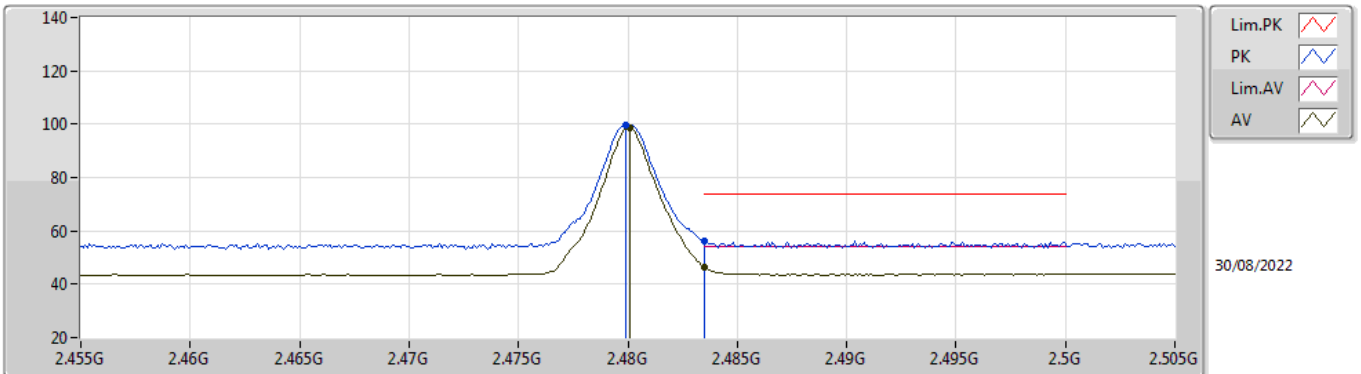


EUT X_1TX
Setting 63
06-E-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	4.87988G	49.05	74.00	-24.95	44.75	3	Horizontal	330	1.99	-	31.40	5.40	32.50	
AV	4.88G	40.04	54.00	-13.96	35.74	3	Horizontal	330	1.99	-	31.40	5.40	32.50	
PK	7.31844G	52.59	74.00	-21.41	42.62	3	Horizontal	271	2.91	-	36.70	6.72	33.45	
AV	7.32022G	39.73	54.00	-14.27	29.76	3	Horizontal	271	2.91	-	36.70	6.72	33.45	
PK	12.19854G	57.02	74.00	-16.98	43.06	3	Horizontal	5	1.57	-	39.10	9.55	34.69	
AV	12.1959G	43.49	54.00	-10.51	29.53	3	Horizontal	5	1.57	-	39.10	9.55	34.69	

BT-BR(1Mbps)

2480MHz_TX

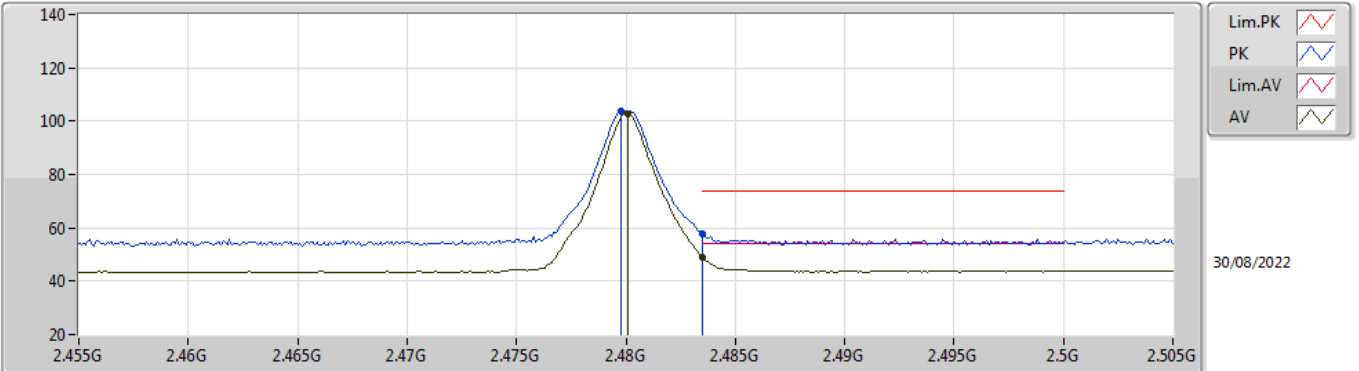


EUT_X_1TX
Setting 63
06-E-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.4799G	99.51	Inf	-Inf	68.01	3	Vertical	131	2.90	-	27.60	3.90	-	
AV	2.4801G	98.59	Inf	-Inf	67.09	3	Vertical	131	2.90	-	27.60	3.90	-	
PK	2.4835G	56.27	74.00	-17.73	24.77	3	Vertical	131	2.90	-	27.60	3.90	-	
AV	2.4835G	46.39	54.00	-7.61	14.89	3	Vertical	131	2.90	-	27.60	3.90	-	

BT-BR(1Mbps)

2480MHz_TX

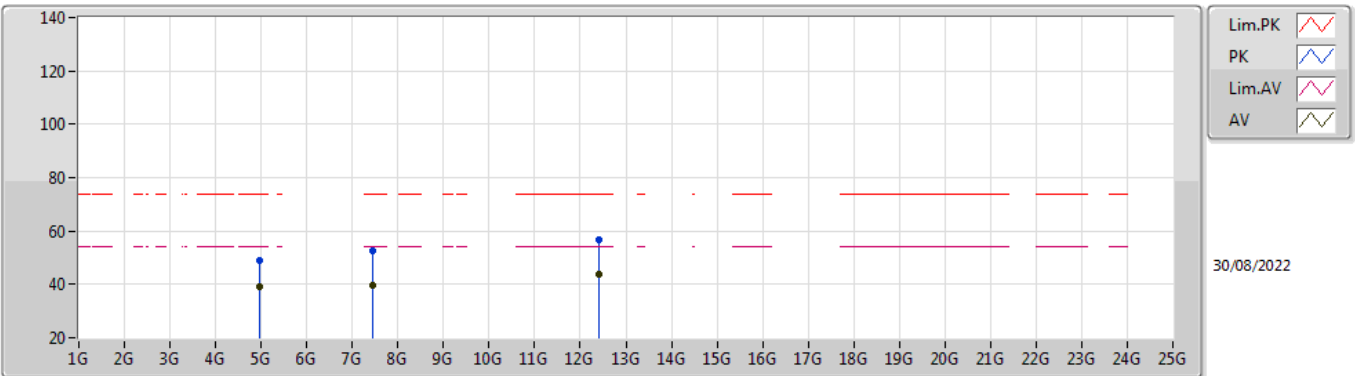


EUT_X_1TX
Setting 63
06-E-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.4798G	103.68	Inf	-Inf	72.18	3	Horizontal	16	2.68	-	27.60	3.90	-	
AV	2.4801G	102.81	Inf	-Inf	71.31	3	Horizontal	16	2.68	-	27.60	3.90	-	
PK	2.4835G	57.74	74.00	-16.26	26.24	3	Horizontal	16	2.68	-	27.60	3.90	-	
AV	2.4835G	48.98	54.00	-5.02	17.48	3	Horizontal	16	2.68	-	27.60	3.90	-	

BT-BR(1Mbps)

2480MHz_TX

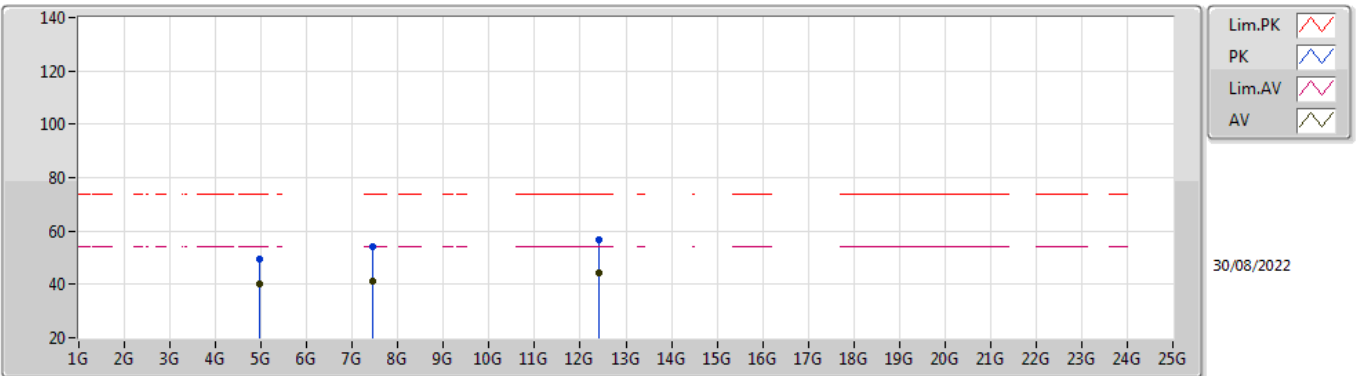


EUT X_1TX
Setting 63
06-E-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.95966G	48.87	74.00	-25.13	44.37	3	Vertical	177	2.03	-	31.56	5.40	32.46
AV	4.96002G	39.29	54.00	-14.71	34.79	3	Vertical	177	2.03	-	31.56	5.40	32.46
PK	7.43634G	52.62	74.00	-21.38	42.70	3	Vertical	7	2.64	-	36.70	6.82	33.60
AV	7.4407G	39.59	54.00	-14.41	29.67	3	Vertical	7	2.64	-	36.70	6.82	33.60
PK	12.40076G	56.96	74.00	-17.04	43.36	3	Vertical	213	2.66	-	38.70	9.60	34.70
AV	12.4005G	43.94	54.00	-10.06	30.34	3	Vertical	213	2.66	-	38.70	9.60	34.70

BT-BR(1Mbps)

2480MHz_TX

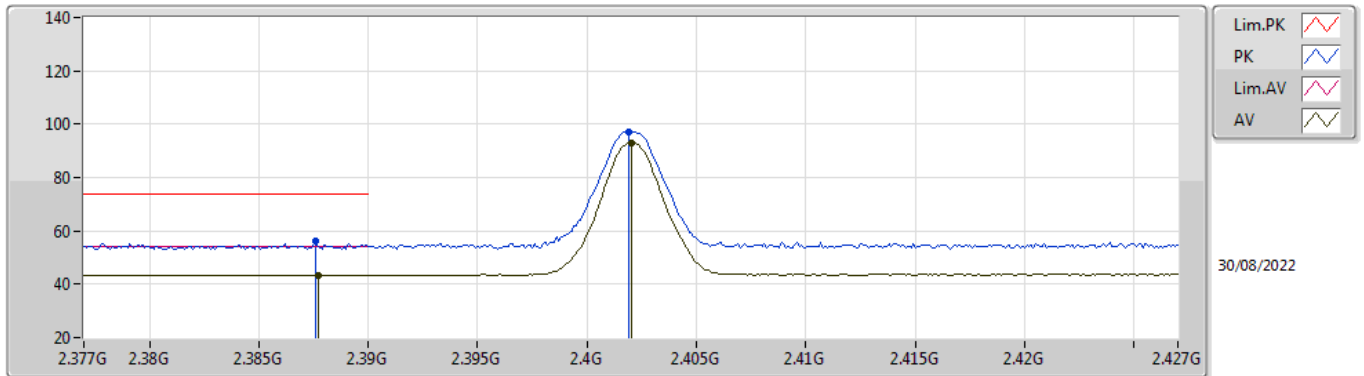


EUT X_1TX
Setting 63
06-E-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.96G	49.55	74.00	-24.45	45.05	3	Horizontal	349	2.41	-	31.56	5.40	32.46
AV	4.96002G	40.32	54.00	-13.68	35.82	3	Horizontal	349	2.41	-	31.56	5.40	32.46
PK	7.44044G	54.05	74.00	-19.95	44.13	3	Horizontal	329	1.90	-	36.70	6.82	33.60
AV	7.4401G	41.14	54.00	-12.86	31.22	3	Horizontal	329	1.90	-	36.70	6.82	33.60
PK	12.39762G	56.97	74.00	-17.03	43.37	3	Horizontal	129	1.76	-	38.70	9.60	34.70
AV	12.40068G	44.18	54.00	-9.82	30.58	3	Horizontal	129	1.76	-	38.70	9.60	34.70

BT-EDR(3Mbps)

2402MHz_TX

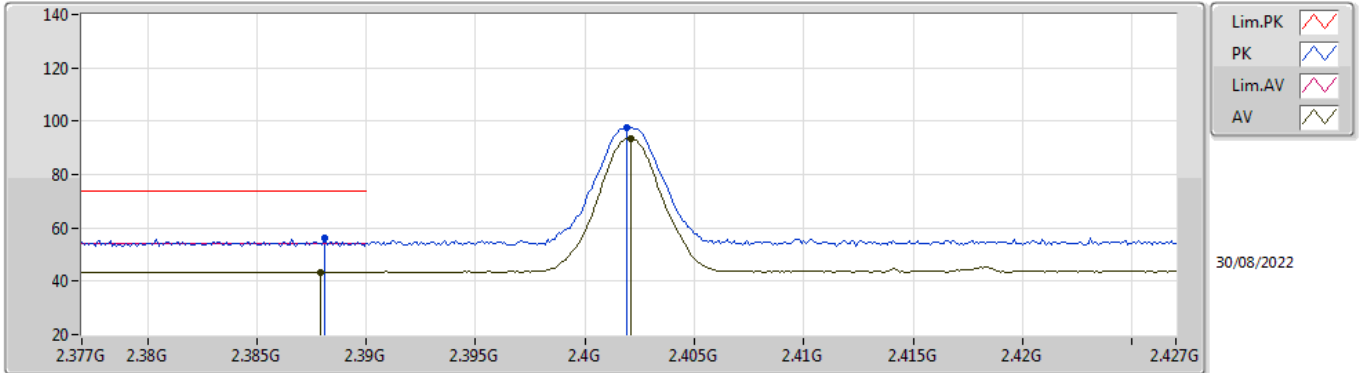


EUT_X_1TX
Setting 63
06-E-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.3876G	56.02	74.00	-17.98	24.48	3	Vertical	133	2.74	-	27.65	3.89	-	
AV	2.3877G	43.46	54.00	-10.54	11.92	3	Vertical	133	2.74	-	27.65	3.89	-	
PK	2.4019G	97.10	Inf	-Inf	65.60	3	Vertical	133	2.74	-	27.60	3.90	-	
AV	2.402G	93.07	Inf	-Inf	61.57	3	Vertical	133	2.74	-	27.60	3.90	-	

BT-EDR(3Mbps)

2402MHz_TX

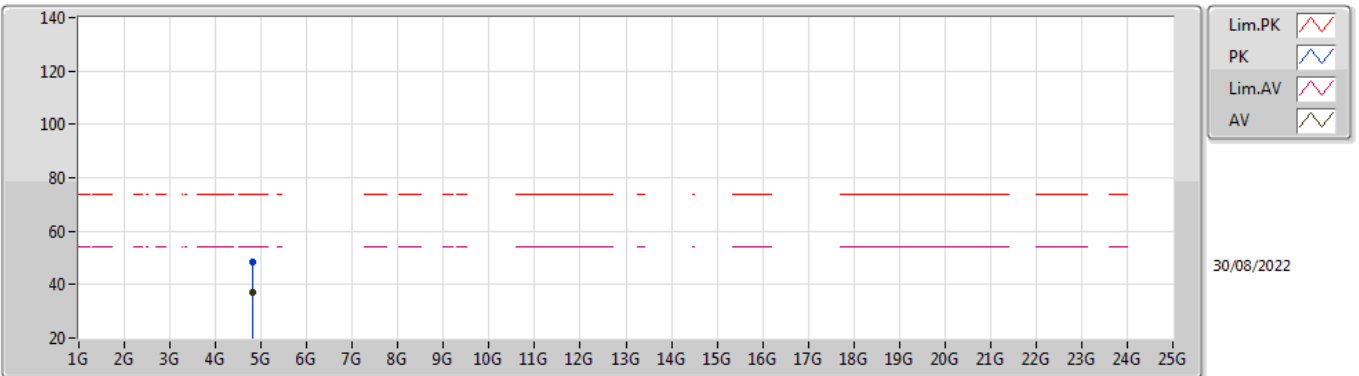


EUT_X_1TX
Setting 63
06-E-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.3881G	56.39	74.00	-17.61	24.85	3	Horizontal	229	1.42	-	27.65	3.89	-	
AV	2.3879G	43.53	54.00	-10.47	11.99	3	Horizontal	229	1.42	-	27.65	3.89	-	
PK	2.4019G	97.50	Inf	-Inf	66.00	3	Horizontal	229	1.42	-	27.60	3.90	-	
AV	2.4021G	93.43	Inf	-Inf	61.93	3	Horizontal	229	1.42	-	27.60	3.90	-	

BT-EDR(3Mbps)

2402MHz_TX

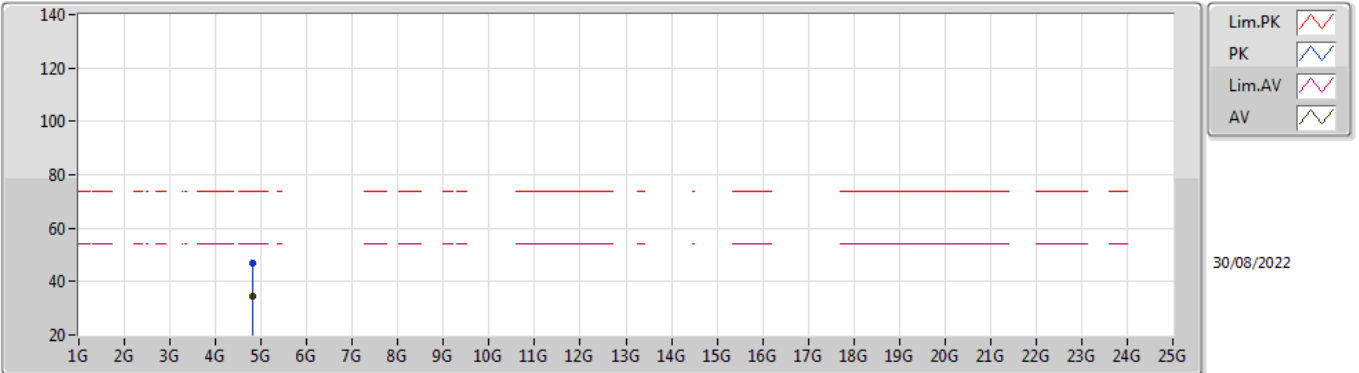


EUT X_1TX
Setting 63
06-E-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	4.80402G	48.47	74.00	-25.53	44.29	3	Vertical	187	2.16	-	31.31	5.40	32.53	
AV	4.80402G	36.93	54.00	-17.07	32.75	3	Vertical	187	2.16	-	31.31	5.40	32.53	

BT-EDR(3Mbps)

2402MHz_TX

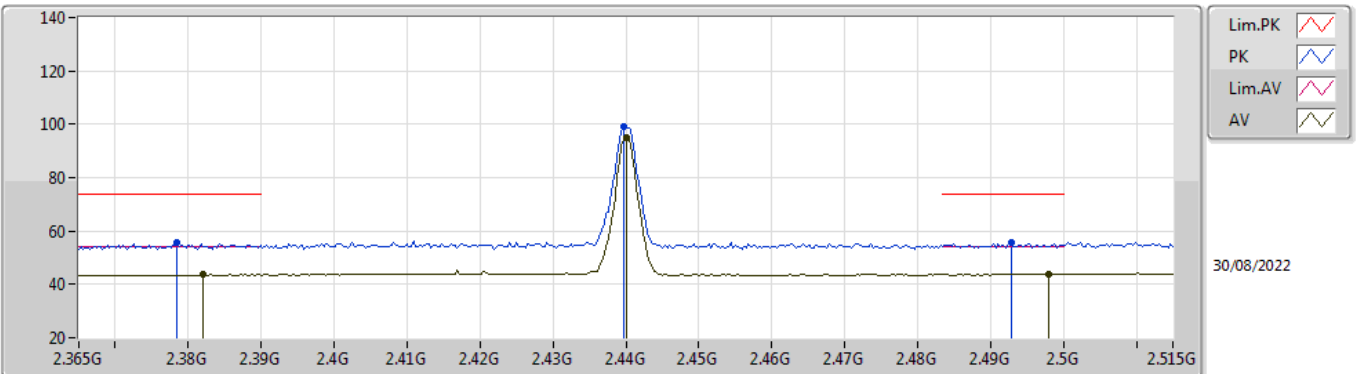


EUT X_1TX
Setting 63
06-E-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.8039G	46.68	74.00	-27.32	42.50	3	Horizontal	137	2.68	-	31.31	5.40	32.53
AV	4.8037G	34.43	54.00	-19.57	30.25	3	Horizontal	137	2.68	-	31.31	5.40	32.53

BT-EDR(3Mbps)

2440MHz_TX

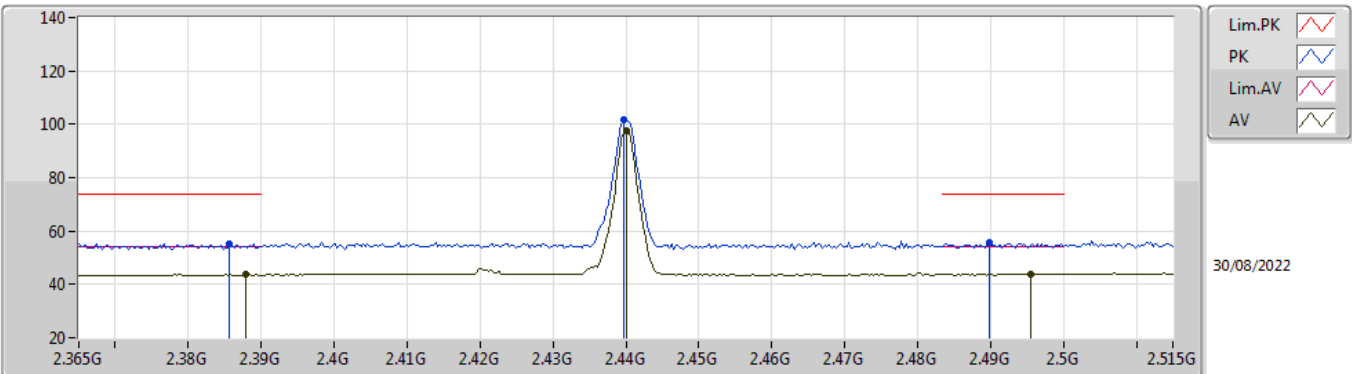


EUT X_1TX
Setting 63
06-E-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.3785G	55.73	74.00	-18.27	24.16	3	Vertical	130	2.93	-	27.69	3.88	-	
AV	2.3821G	43.62	54.00	-10.38	12.07	3	Vertical	130	2.93	-	27.67	3.88	-	
PK	2.4397G	99.15	Inf	-Inf	67.65	3	Vertical	130	2.93	-	27.60	3.90	-	
AV	2.44G	95.07	Inf	-Inf	63.57	3	Vertical	130	2.93	-	27.60	3.90	-	
PK	2.4928G	55.52	74.00	-18.48	24.02	3	Vertical	130	2.93	-	27.60	3.90	-	
AV	2.4979G	43.86	54.00	-10.14	12.36	3	Vertical	130	2.93	-	27.60	3.90	-	

BT-EDR(3Mbps)

2440MHz_TX

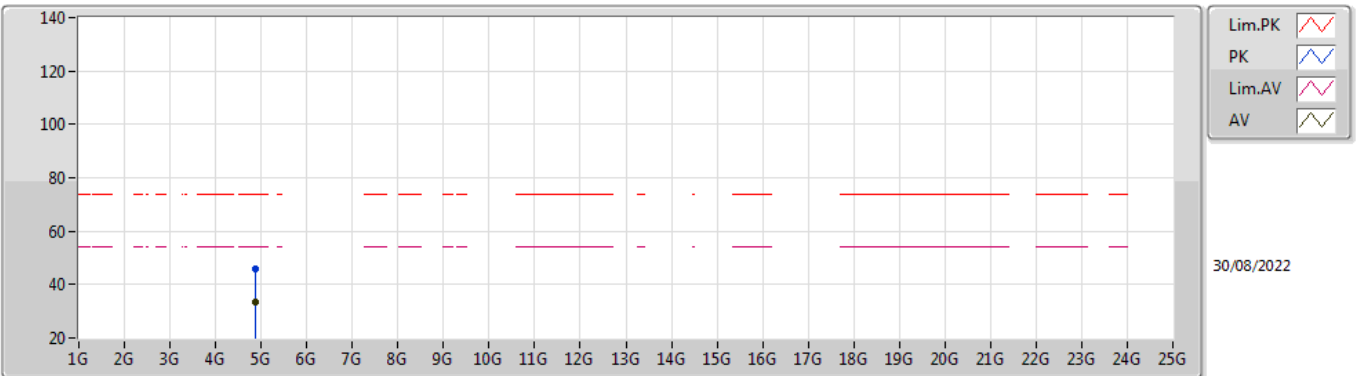


EUT_X1TX
Setting 63
06-E-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.3857G	55.26	74.00	-18.74	23.71	3	Horizontal	65	2.57	-	27.66	3.89	-
AV	2.3878G	43.60	54.00	-10.40	12.06	3	Horizontal	65	2.57	-	27.65	3.89	-
PK	2.4397G	101.55	Inf	-Inf	70.05	3	Horizontal	65	2.57	-	27.60	3.90	-
AV	2.44G	97.61	Inf	-Inf	66.11	3	Horizontal	65	2.57	-	27.60	3.90	-
PK	2.4898G	55.47	74.00	-18.53	23.97	3	Horizontal	65	2.57	-	27.60	3.90	-
AV	2.4955G	43.84	54.00	-10.16	12.34	3	Horizontal	65	2.57	-	27.60	3.90	-

BT-EDR(3Mbps)

2440MHz_TX

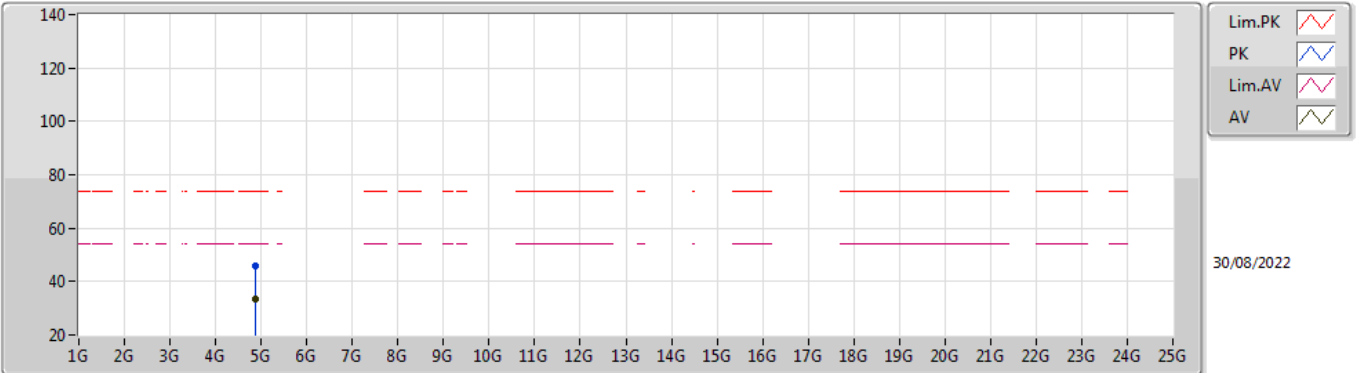


EUT X_1TX
Setting 63
06-E-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	4.8853G	45.75	74.00	-28.25	41.44	3	Vertical	191	2.24	-	31.40	5.40	32.49	
AV	4.8728G	33.53	54.00	-20.47	29.23	3	Vertical	191	2.24	-	31.40	5.40	32.50	

BT-EDR(3Mbps)

2440MHz_TX

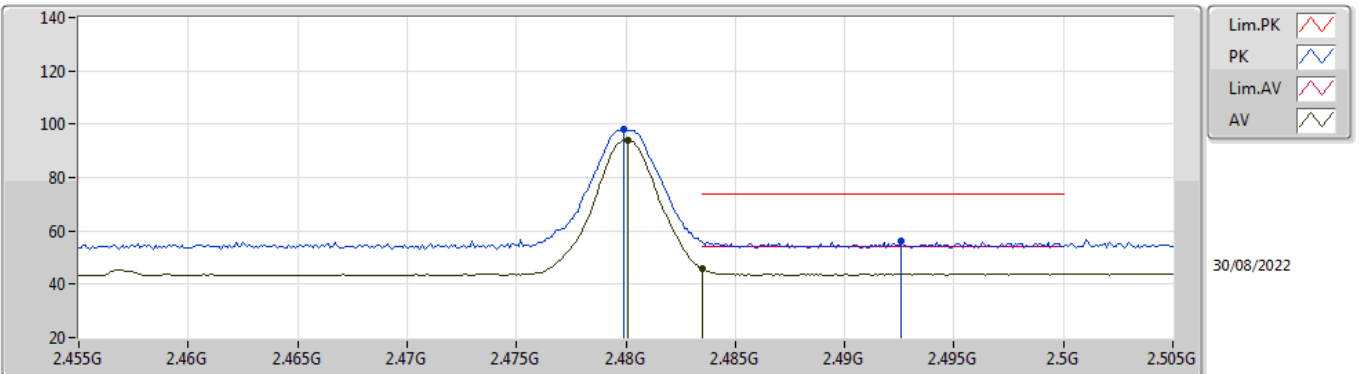


EUT X_1TX
Setting 63
06-E-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	4.8798G	45.93	74.00	-28.07	41.63	3	Horizontal	228	1.88	-	31.40	5.40	32.50	
AV	4.8854G	33.44	54.00	-20.56	29.13	3	Horizontal	228	1.88	-	31.40	5.40	32.49	

BT-EDR(3Mbps)

2480MHz_TX

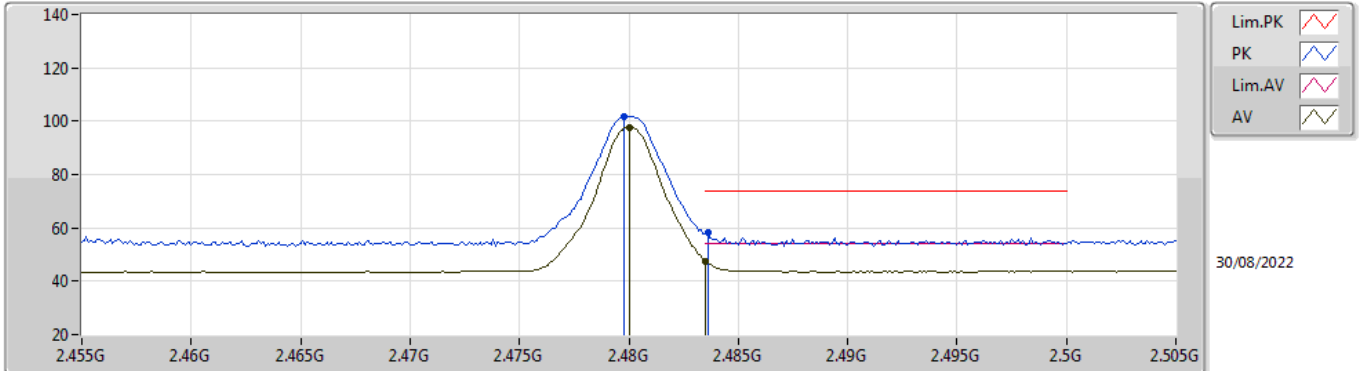


EUT X_1TX
Setting 63
06-E-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.4799G	98.00	Inf	-Inf	66.50	3	Vertical	131	2.89	-	27.60	3.90	-	
AV	2.4801G	93.99	Inf	-Inf	62.49	3	Vertical	131	2.89	-	27.60	3.90	-	
PK	2.4926G	56.34	74.00	-17.66	24.84	3	Vertical	131	2.89	-	27.60	3.90	-	
AV	2.4835G	45.64	54.00	-8.36	14.14	3	Vertical	131	2.89	-	27.60	3.90	-	

BT-EDR(3Mbps)

2480MHz_TX

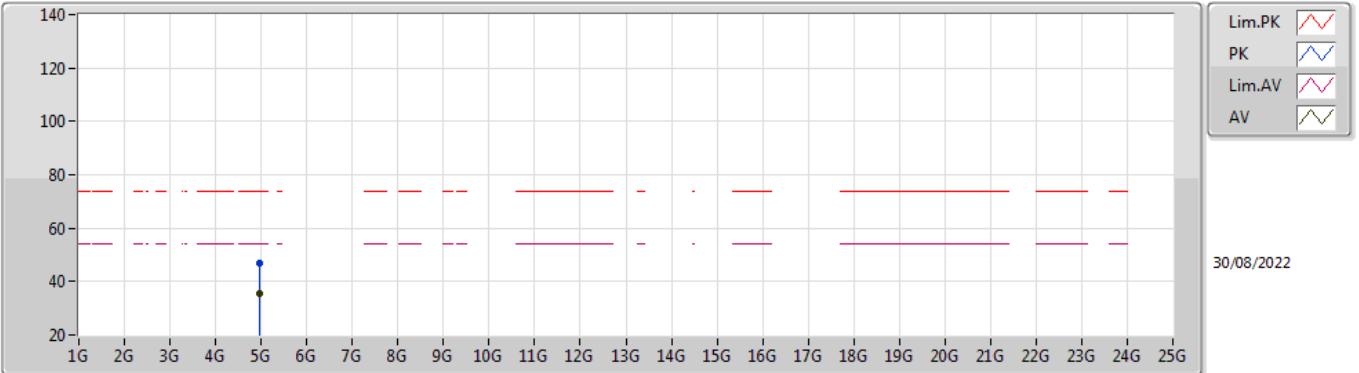


EUT X_1TX
Setting 63
06-E-S-5

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA	
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)	
PK	2.4798G	101.76	Inf	-Inf	70.26	3	Horizontal	17	2.67	-	27.60	3.90	-	
AV	2.48G	97.76	Inf	-Inf	66.26	3	Horizontal	17	2.67	-	27.60	3.90	-	
PK	2.4836G	58.20	74.00	-15.80	26.70	3	Horizontal	17	2.67	-	27.60	3.90	-	
AV	2.4835G	47.54	54.00	-6.46	16.04	3	Horizontal	17	2.67	-	27.60	3.90	-	

BT-EDR(3Mbps)

2480MHz_TX

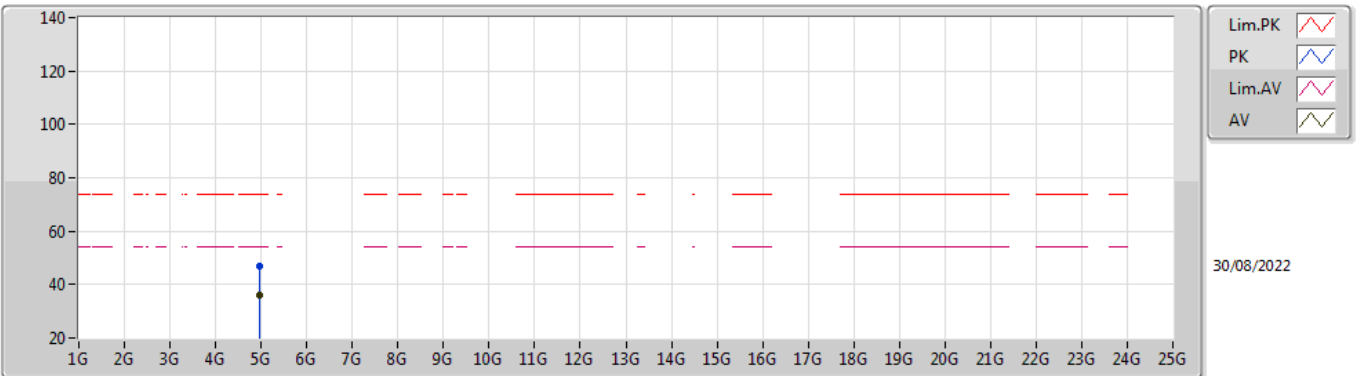


EUT_X_1TX
Setting 63
06-E-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.9594G	47.09	74.00	-26.91	42.59	3	Vertical	181	2.54	-	31.56	5.40	32.46
AV	4.9601G	35.43	54.00	-18.57	30.93	3	Vertical	181	2.54	-	31.56	5.40	32.46

BT-EDR(3Mbps)

2480MHz_TX



EUT X_1TX
Setting 63
06-E-S-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.95916G	47.10	74.00	-26.90	42.61	3	Horizontal	279	1.38	-	31.55	5.40	32.46
AV	4.96004G	35.79	54.00	-18.21	31.29	3	Horizontal	279	1.38	-	31.56	5.40	32.46