



RADIO TEST REPORT

FCC ID : RAXWN8711
Equipment : Wireless LAN Network Module
Brand Name : Arcadyan
Model Name : WN8711BTAAC-YA
Applicant : Arcadyan Technology Corporation
No.8, Sec.2, Guangfu Rd.,Hsinchu, 30071 Taiwan
Manufacturer : Arcadyan Technology Corporation
No.8, Sec.2, Guangfu Rd.,Hsinchu, 30071 Taiwan
Standard : 47 CFR FCC Part 15.247

The product was received on Apr. 19, 2022, and testing was started from Apr. 22, 2022 and completed on Jun. 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

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



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Appendix I. Test Photos

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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]

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

Ant.	Brand	Model Name	Type	Connector	Gain (dBi)		Cable Length (mm)
					2.4GHz	5GHz	
1	ACON	AEMEE-10000	Dipole	Reversed-SMA	3.24	4.54	Note 1

Note 1:

Dipole Cable	Brand	Model Name	Cable Length (mm)	Cable Loss (dB)		True Gain (dBi)	
				2.4GHz / BT	5GHz	2.4GHz / BT	5GHz
1	ACON	AEC8P-1000001 (Black)	30	0.08	0.12	3.16	4.42
2	ACON	AEC8P-1000003 (Black)	50	0.13	0.19	3.11	4.35
3	ACON	AEC8P-1000005 (Black)	70	0.19	0.27	3.05	4.27
4	ACON	AEC8P-1000007 (Black)	90	0.24	0.35	3.00	4.19
5	ACON	AEC8P-1000009 (Black)	120	0.32	0.46	2.92	4.08
6	ACON	AEC8P-1000011 (Black)	160	0.43	0.62	2.81	3.92
7	ACON	AEC8P-1000013 (Black)	200	0.54	0.77	2.70	3.77
8	ACON	AEC8P-1000015 (Black)	240	0.64	0.93	2.60	3.61
9	ACON	AEC8P-1000017 (Black)	280	0.75	1.08	2.49	3.46
10	ACON	AEC8P-1000019 (Black)	320	0.86	1.24	2.38	3.30
11	ACON	AEC8P-1000021 (Black)	360	0.96	1.39	2.28	3.15
12	ACON	AEC8P-1000023 (Black)	400	1.07	1.54	2.17	3.00
13	ACON	AEC8P-1000025 (Black)	450	1.21	1.74	2.03	2.80
14	ACON	AEC8P-1000027 (Black)	500	1.34	1.93	1.90	2.61

Note 2: Dipole Antenna collocate with 14 set cables selling, only the highest gain antenna “cable 1” was tested and recorded in the report.

Note 3: The above information was declared by manufacturer.

Note 4: The EUT has one antenna.

For WLAN 2.4GHz Function

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

Port 1 can be used as transmitting/receiving antenna.

Port 1 could transmit/receive simultaneously.

For WLAN 5GHz Function

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

Port 1 can be used as transmitting/receiving antenna.

Port 1 could transmit/receive simultaneously.

For Bluetooth function (1TX/1RX):

Port 1 can be used as transmitting/receiving antenna.

Port 1 could transmit/receive simultaneously.



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)	0.391	4.08	1.568m	1k
BT-EDR(3Mbps)	0.269	5.7	1.075m	1k

Note:

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

1.1.4 EUT Operational Condition

EUT Power Type	From host system
Test Software Version	DOS [ver 6.1.7601]
Operating frequency of CPU	1GHz
Rating	3.7V, 4.21W

1.1.5 Table for Multiple Listing

Function	Supports type
AP	Master
Slave	Slave without radar detection

Note 1: AP Mode and Slave Mode were tested and their data were 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 ISED.

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
RF Conducted	TH03-CB	Owen Hsu	18.7~19.1 / 65~68	Apr. 27, 2022~May 30, 2022
Radiated Below 1GHz	03CH05-CB	Kevin Huang	24.5~25.6 / 56~59	Apr. 22, 2022~Apr. 23, 2022
Radiated above 1GHz (For others test)	03CH02-CB	Chris Lee	23.8~24.9 / 55~58	Apr. 23, 2022~May 24, 2022
Radiated above 1GHz (For co-location test)	03CH01-CB	Chris Lee	23.2~24.3 / 56~59	Jun. 07, 2022~Jun. 15, 2022
AC Conduction	CO01-CB	Joe Chu	20~22 / 60~62	Apr. 26, 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))

For others test

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.4 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	4.2 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	5.5 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	4.7 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.2 dB	Confidence levels of 95%
Conducted Emission	2.5 dB	Confidence levels of 95%
Output Power Measurement	1.3 dB	Confidence levels of 95%
Power Density Measurement	2.5 dB	Confidence levels of 95%
Bandwidth Measurement	0.9%	Confidence levels of 95%



For co-location test

Test Items	Uncertainty	Remark
Radiated Emission (1GHz ~ 18GHz)	5.2 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.7 dB	Confidence levels of 95%



2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
BT-BR(1Mbps)	-
2402MHz	00
2440MHz	00
2480MHz	00
BT-EDR(2Mbps)	-
2402MHz	00
2440MHz	00
2480MHz	00
BT-EDR(3Mbps)	-
2402MHz	00
2440MHz	00
2480MHz	00



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	AP Mode_EUT (2.4GHz+Bluetooth Master) with Dipole antenna + cable 1
2	AP Mode_EUT (5GHz+Bluetooth Master) with Dipole antenna + cable 1
Mode 2 has been evaluated to be the worst case between Mode 1~2, thus measurement for Mode 3 will follow this same test mode.	
3	Slave Mode_EUT (5GHz+Bluetooth Master) with Dipole antenna + cable 1
Mode 2 has been evaluated to be the worst case between Mode 1~3, thus measurement for Mode 4 will follow this same test mode.	
4	Slave Mode_EUT (5GHz+Bluetooth Slave) with Dipole antenna + cable 1
For operating mode 4 is the worst case and it was record in this test report.	

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



The Worst Case Mode for Following Conformance Tests	
Tests Item	Emissions in Restricted Frequency Bands
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode < 1GHz	Normal Link
1	AP Mode_EUT in X axis (2.4GHz+Bluetooth Master) with Dipole antenna + cable 1
2	AP Mode_EUT in Y axis (2.4GHz+Bluetooth Master) with Dipole antenna + cable 1
3	AP Mode_EUT in Z axis (2.4GHz+Bluetooth Master) with Dipole antenna + cable 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	AP Mode_EUT in X axis (5GHz+Bluetooth Master) with Dipole antenna + cable 1
Mode 4 has been evaluated to be the worst case among Mode 1~4 thus measurement for Mode 5~6 will follow this same test mode.	
5	Slave Mode_EUT in X axis (5GHz+Bluetooth Master) with Dipole antenna + cable 1
6	Slave Mode_EUT in X axis (5GHz+Bluetooth Slave) with Dipole antenna + cable 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, and the worst case was found at Y axis. So the measurement will follow this same test configuration.
1	EUT in Y axis

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Radiated Emission Co-location
Test Condition	Radiated measurement
Operating Mode	Normal Link The EUT was performed at X axis, Y axis and Z axis position for Emissions in Restricted Frequency Bands above 1GHz, and the worst case was found at Y axis. So the measurement will follow this same test configuration.
1	EUT in Y axis_WLAN 2.4GHz + Bluetooth
2	EUT in Y axis_WLAN 5GHz + Bluetooth
For operating mode 1 is the worst case and it was record in this test report.	
Refer to Appendix G for Radiated Emission Co-location.	



The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	WLAN 2.4GHz + Bluetooth
2	WLAN 5GHz + Bluetooth
Refer to Sporton Test Report No.: FA770523-13 for Co-location RF Exposure Evaluation.	

2.3 EUT Operation during Test

For CTX Mode:

The EUT was programmed to be in continuously transmitting mode.

For Normal Link Mode:

During the test, the EUT operation to normal function.

2.4 Accessories

N/A

2.5 Support Equipment

For AC Conduction:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Fixture 2	Arcadyan	WN9711BTAAC-YA Test Jig	N/A
B	LAN NB	DELL	E6430	N/A
C	AP Router	ASUS	DSL-AC68U	MSQ-RPN53
D	Smart Phone	Samsung	Galaxy J2	N/A
E	Earphone	e-Power	S90W	N/A

For Radiated (below 1GHz):

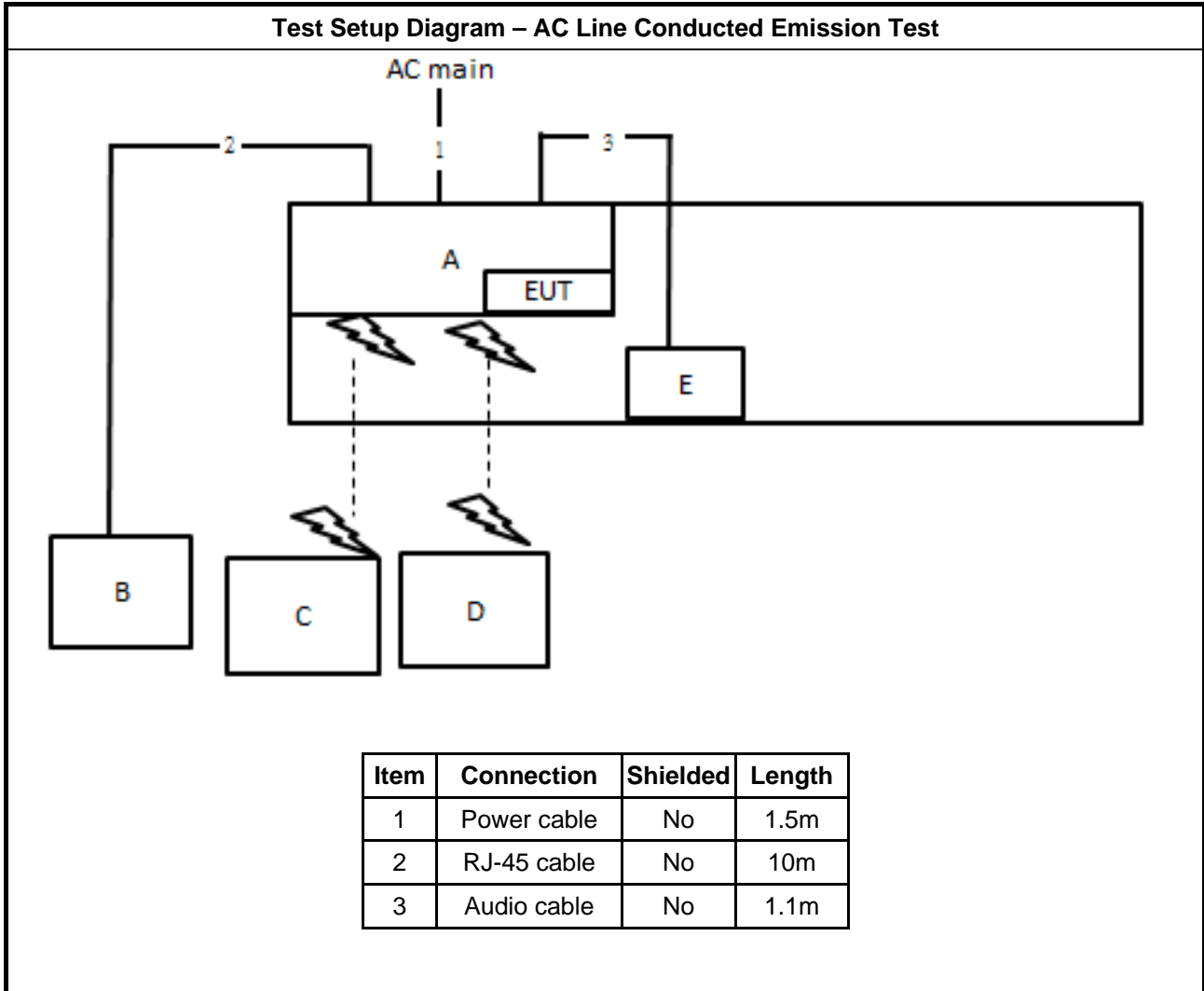
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Fixture 2	Arcadyan	WN9711BTAAC-YA Test Jig	N/A
B	Bluetooth Speaker	MI	XMYX02YM	2AJ7PXMYX02YM
C	Notebook	DELL	E4300	N/A
D	Phone	SAMSUNG	SM-J200Y	A3LSMJ200Y
E	WLAN AP	ASUS	RT-AX88U	MSQ-RTAXHP00



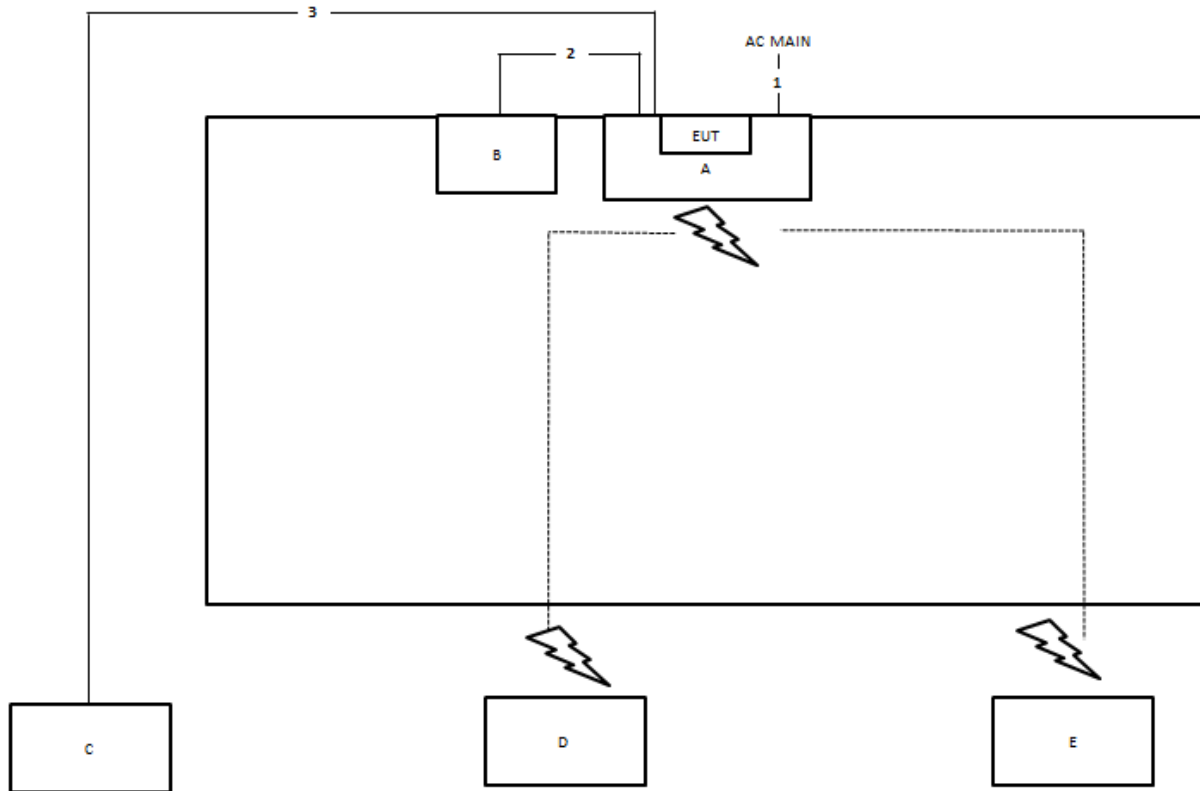
For Radiated (above 1GHz) and RF Conducted:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A
B	Fixture 1	Arcadyan	WN9711BTAAAC-YA Test Jig	N/A

2.6 Test Setup Diagram

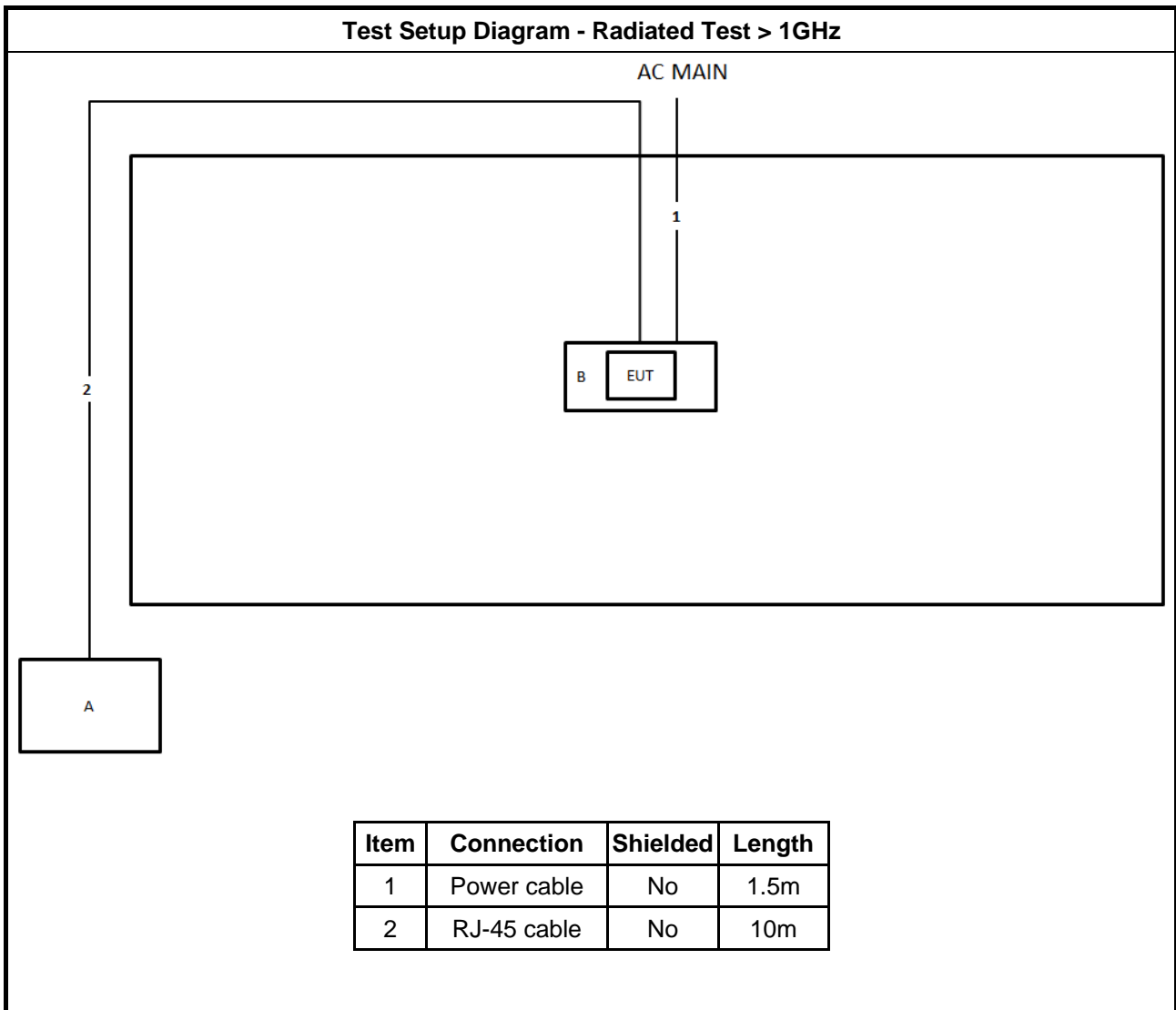


Test Setup Diagram - Radiated Test < 1GHz



Item	Connection	Shielded	Length
1	Power cable	No	1.5m
2	Audio cable	No	0.5m
3	RJ-45 cable	No	10m

Test Setup Diagram - Radiated Test > 1GHz



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



3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

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

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

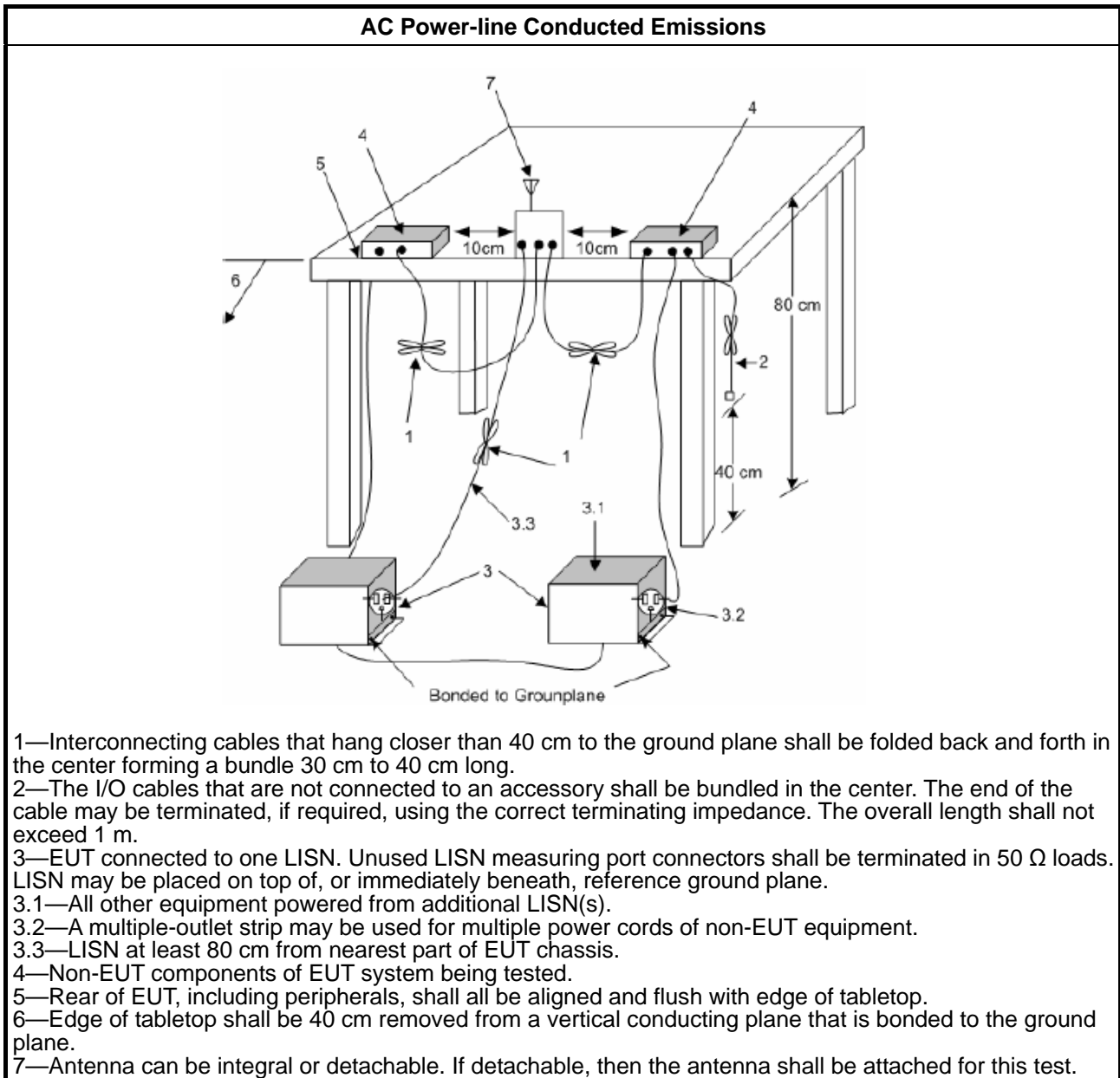
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

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

3.1.4 Test Setup



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

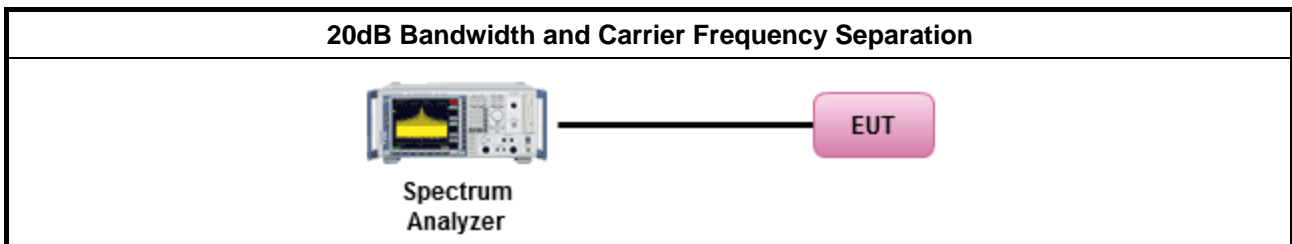
3.2.2 Measuring Instruments

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	
<ul style="list-style-type: none"> ▪ 902-928 MHz Band: 	
	<ul style="list-style-type: none"> ▪ $N \geq 50$; Power 30dBm; EIRP 36dBm
	<ul style="list-style-type: none"> ▪ $50 > N \geq 25$; Power 23.98dBm; EIRP 29.98dBm
<ul style="list-style-type: none"> ▪ 2400-2483.5 MHz Band: 	
	<ul style="list-style-type: none"> ▪ $N \geq 75$; Power 30dBm; EIRP 36dBm
	<ul style="list-style-type: none"> ▪ $75 > N \geq 15$; Power 21dBm; EIRP 27dBm
<ul style="list-style-type: none"> ▪ 5725-5850 MHz Band: 	
	<ul style="list-style-type: none"> ▪ $N \geq 75$; Power 30dBm; EIRP 36dBm
N: Number of Hopping Frequencies	

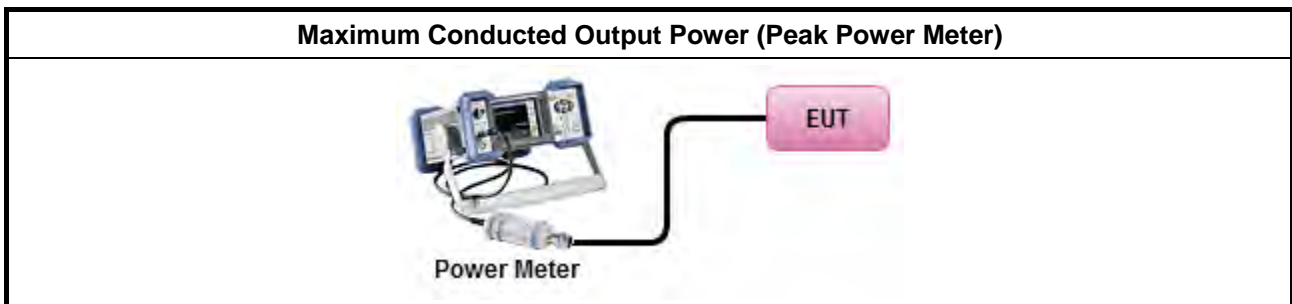
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method
<ul style="list-style-type: none"> ▪ Refer as ANSI C63.10-2013, clause 7.8.5 for output power measurement.

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

3.4 Number of Hopping Frequencies and Hopping Bandedge

3.4.1 Number of Hopping Frequencies Limit

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

3.4.2 Hopping Bandedge Limit

Refer clause 3.6.1 and clause 3.7.1

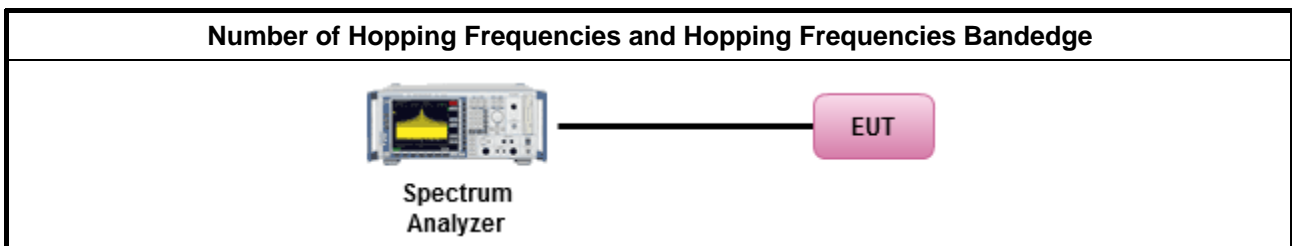
3.4.3 Measuring Instruments

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

3.4.4 Test Procedures

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

3.4.5 Test Setup



3.4.6 Test Result of Number of Hopping Frequencies

Refer as Appendix D

3.4.7 Test Result of Number of Hopping Frequencies Bandedge

Refer as Appendix D

3.5 Time of Occupancy (Dwell Time)

3.5.1 Time of Occupancy (Dwell Time) Limit

20dB Bandwidth and Carrier Frequency Separation Limit for Frequency Hopping Systems	
<ul style="list-style-type: none"> 902-928 MHz Band: 	
	<ul style="list-style-type: none"> N ≥ 50; 0.4s in 20s period
	<ul style="list-style-type: none"> 50 > N ≥ 25; 0.4s in 10s period
<ul style="list-style-type: none"> 2400-2483.5 MHz Band: 	
	<ul style="list-style-type: none"> N ≥ 75; 0.4s in N x 0.4 period
	<ul style="list-style-type: none"> 75 > N ≥ 15; 0.4s in N x 0.4 period
<ul style="list-style-type: none"> 5725-5850 MHz Band: 	
	<ul style="list-style-type: none"> N ≥ 75; 0.4s in 30s period
N: Number of Hopping Frequencies	

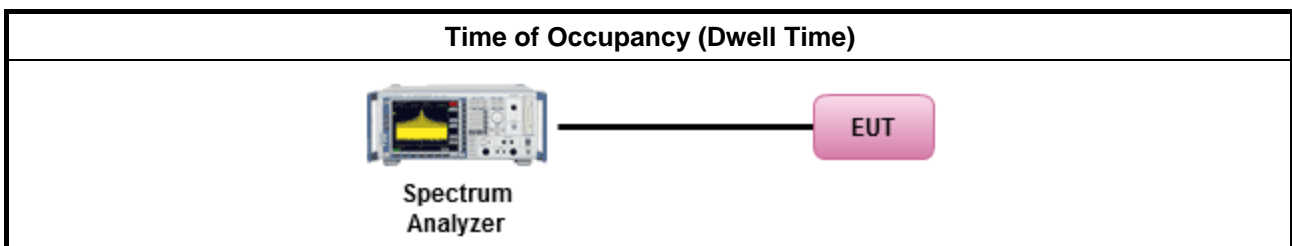
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> Refer as ANSI C63.10-2013, clause 7.8.4 for dwell time measurement. 	
<ul style="list-style-type: none"> 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. 	
	<ul style="list-style-type: none"> The DH5 packet can cover up to 5 time slots. Operate DH5 at maximum dwell time and maximum duty cycle. A maximum length packet has duration of 5 time slots. The hopping rate is 1600 hops/second so the maximum dwell time is 5/1600 seconds, or 3.125ms. DH5 Packet permit maximum 1600 / 79 / 6 = 3.37 hops per second in each channel.

3.5.4 Test Setup



3.5.5 Test Result of Time of Occupancy (Dwell Time)

Refer as Appendix E

3.6 Emissions in Non-restricted Frequency Bands

3.6.1 Emissions in Non-restricted Frequency Bands Limit

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

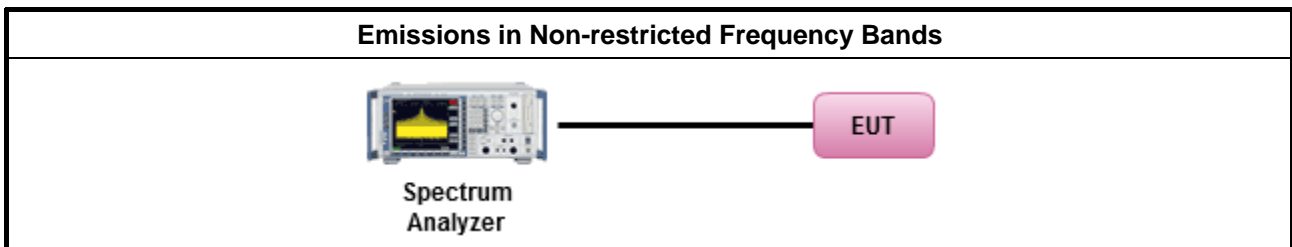
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

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

3.6.4 Test Setup



3.6.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix F



3.7 Emissions in Restricted Frequency Bands

3.7.1 Emissions in Restricted Frequency Bands Limit

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

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

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

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

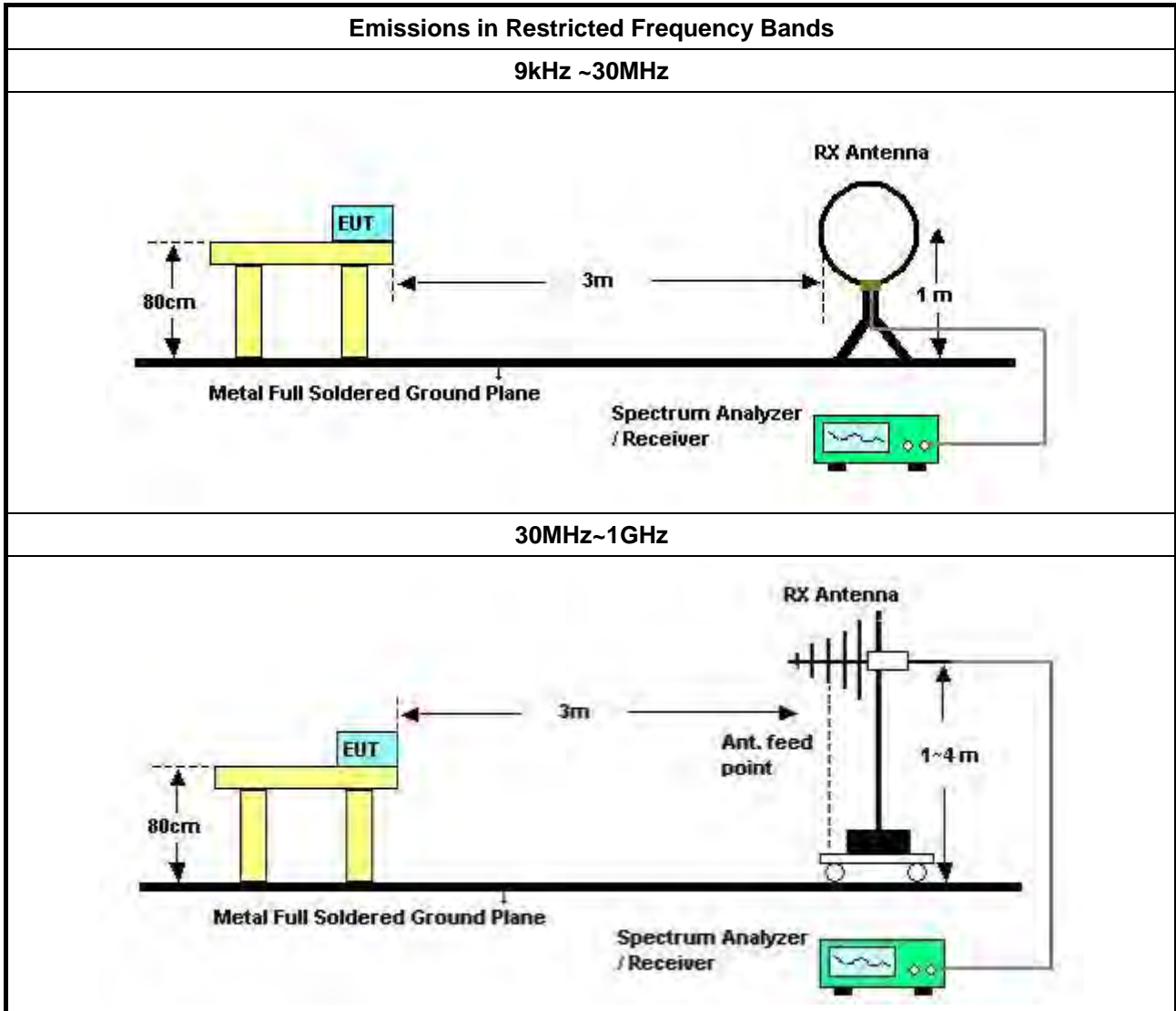
3.7.2 Measuring Instruments

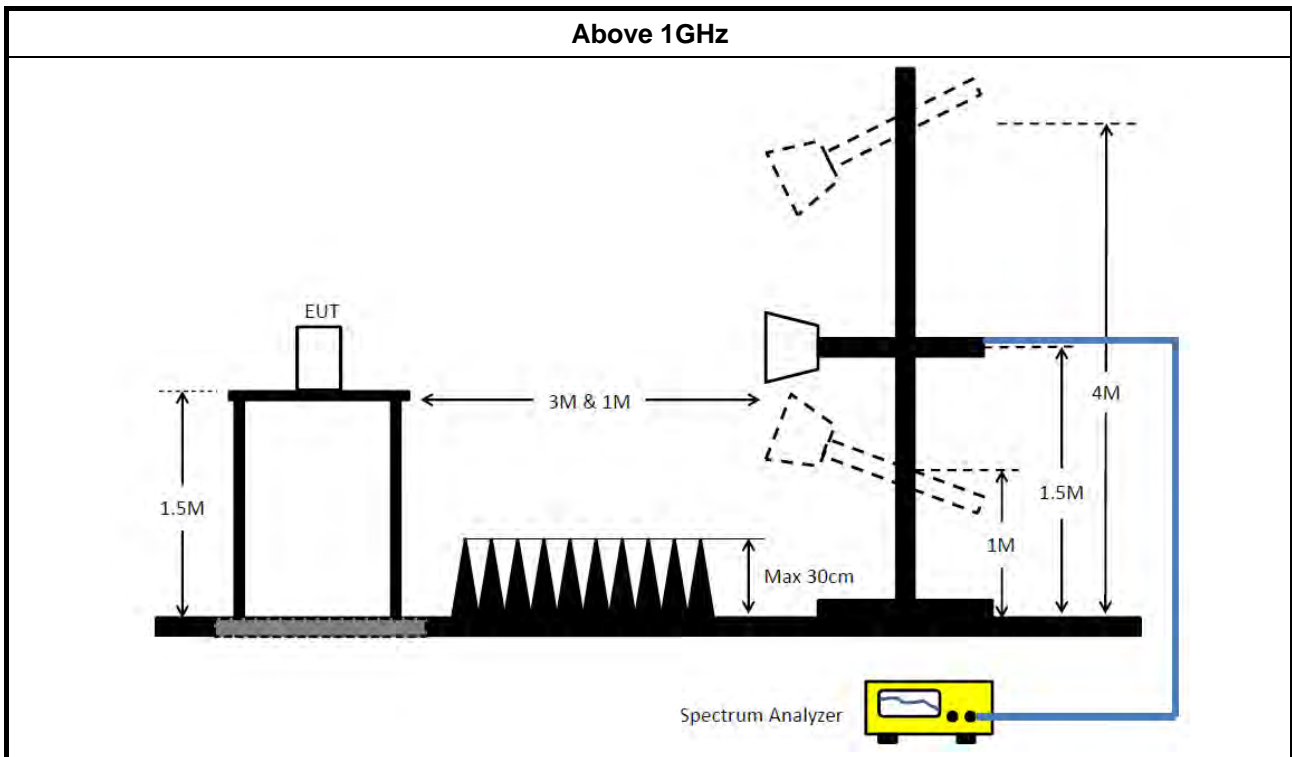
Refer a test equipment and calibration data table in this test report.

3.7.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> The average emission levels shall be measured in [hopping duty factor]. 	
<ul style="list-style-type: none"> 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. 	
<ul style="list-style-type: none"> For the transmitter unwanted emissions shall be measured using following options below: <ul style="list-style-type: none"> 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	May 19, 2021	May 18, 2022	Conduction (CO01-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
Loop Antenna	Teseq	HLA 6120	31244	9kHz - 30 MHz	Mar. 18, 2022	Mar. 17, 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 VSWR	TDK	SAC-3M	03CH05-CB	1GHz ~18GHz 3m	Nov. 07, 2021	Nov. 06, 2022	Radiation (03CH05-CB)
Bilog Antenna with 6dB Attenuator	TESEQ & EMC I	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. 27, 2021	Apr. 26, 2022	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. 21, 2021	Jun. 20, 2022	Radiation (03CH05-CB)
RF Cable-low	Woken	RG402	Low Cable-04+23	30MHz~1GHz	Oct. 13, 2021	Oct. 12, 2022	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	03CH01-CB	1GHz ~18GHz 3m	May 06, 2022	May 05, 2023	Radiation (03CH01-CB)
Horn Antenna	ETS-LINDGREN	3115	00075790	750MHz ~ 18GHz	Nov. 06, 2021	Nov. 05, 2022	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Aug. 05, 2021	Aug. 04, 2022	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02121	1GHz ~ 26.5GHz	May 19, 2022	May 18, 2023	Radiation (03CH01-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 13, 2021	Jul. 12, 2022	Radiation (03CH01-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	May 06, 2022	May 05, 2023	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-16	1 GHz ~ 18 GHz	Oct. 04, 2021	Oct. 03, 2022	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-16+17	1 GHz ~ 18 GHz	Oct. 04, 2021	Oct. 03, 2022	Radiation (03CH01-CB)
High Cable	Woken	WCA0929M	40G#5+7	1GHz ~ 40 GHz	Dec. 14, 2021	Dec. 13, 2022	Radiation (03CH01-CB)
High Cable	Woken	WCA0929M	40G#5	1GHz ~ 40 GHz	Dec. 08, 2021	Dec. 07, 2022	Radiation (03CH01-CB)
High Cable	Woken	WCA0929M	40G#7	1GHz ~ 40 GHz	Dec. 14, 2021	Dec. 13, 2022	Radiation (03CH01-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH01-CB)
3m Semi Anechoic Chamber VSWR	RIKEN	SAC-3M	03CH02-CB	1GHz ~18GHz	Mar. 26, 2022	Mar. 25, 2023	Radiation (03CH02-CB)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1370	1GHz~18GHz	Sep. 14, 2021	Sep. 13, 2022	Radiation (03CH02-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Aug. 05, 2021	Aug. 04, 2022	Radiation (03CH02-CB)
Pre-Amplifier	Agilent	83017A	MY39501305	1GHz ~ 26.5GHz	Jul. 12, 2021	Jul. 11, 2022	Radiation (03CH02-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 13, 2021	Jul. 12, 2022	Radiation (03CH02-CB)
Spectrum analyzer	R&S	FSU	100015	9kHz~26GHz	Oct. 25, 2021	Oct. 24, 2022	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-18	1GHz ~ 18GHz	Oct. 04, 2021	Oct. 03, 2022	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-18+19	1GHz ~ 18GHz	Oct. 04, 2021	Oct. 03, 2022	Radiation (03CH02-CB)
High Cable	Woken	WCA0929M	40G#5+7	1GHz ~ 40 GHz	Dec. 14, 2021	Dec. 13, 2022	Radiation (03CH02-CB)
High Cable	Woken	WCA0929M	40G#5	1GHz ~ 40 GHz	Dec. 08, 2021	Dec. 07, 2022	Radiation (03CH02-CB)
High Cable	Woken	WCA0929M	40G#7	1GHz ~ 40 GHz	Dec. 14, 2021	Dec. 13, 2022	Radiation (03CH02-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH02-CB)
Spectrum analyzer	R&S	FSV40	101028	9kHz~40GHz	Jan. 07, 2022	Jan. 06, 2023	Conducted (TH03-CB)
Power Sensor	Anritsu	MA2411B	1726195	300MHz~40GHz	Aug. 22, 2021	Aug. 21, 2022	Conducted (TH03-CB)
Power Meter	Anritsu	ML2495A	1035008	300MHz~40GHz	Aug. 22, 2021	Aug. 21, 2022	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-12	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-13	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. 04, 2021	Oct. 03, 2022	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-15	1 GHz –18 GHz	Oct. 04, 2021	Oct. 03, 2022	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)

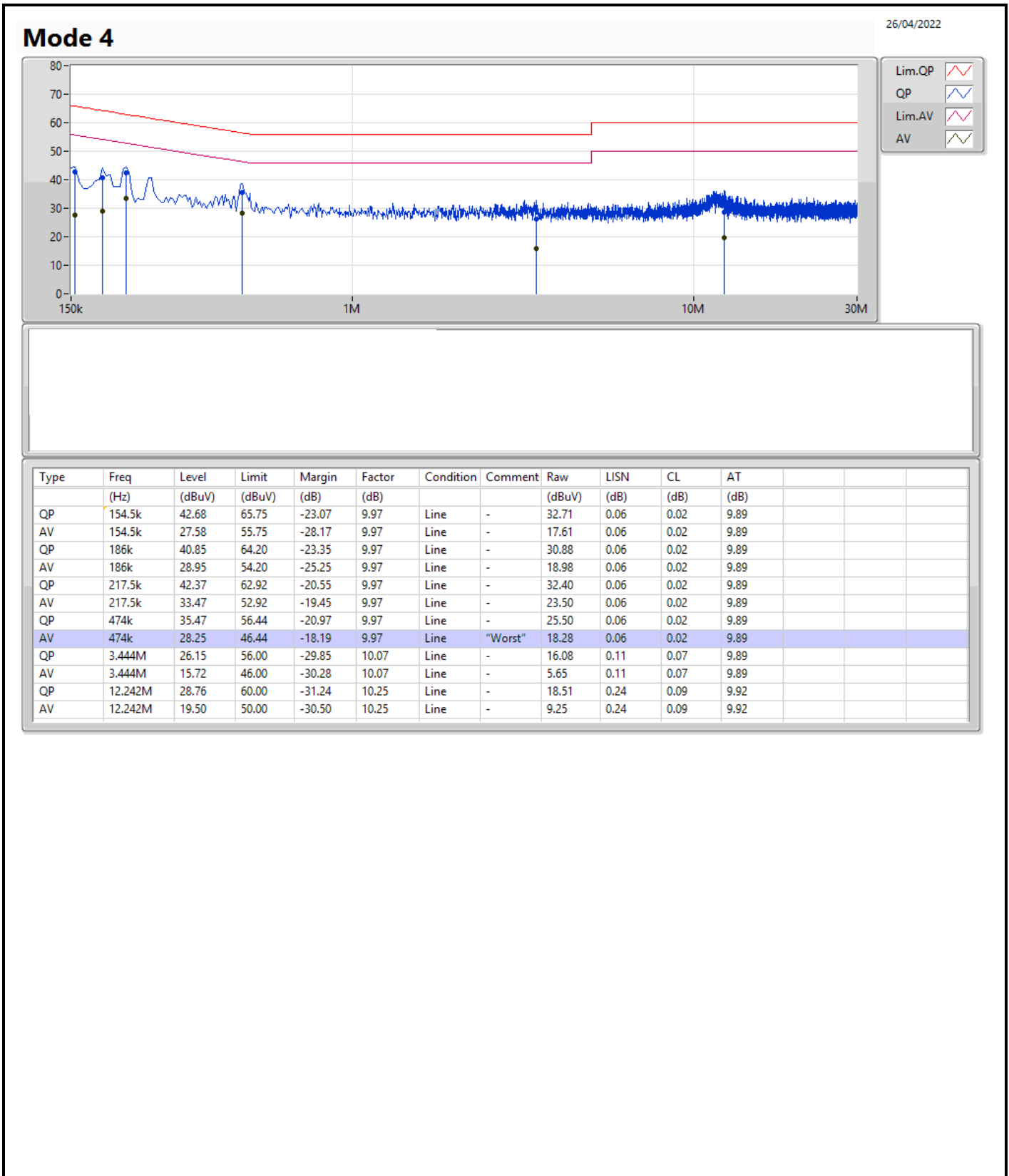
Note: Calibration Interval of instruments listed above is one year.

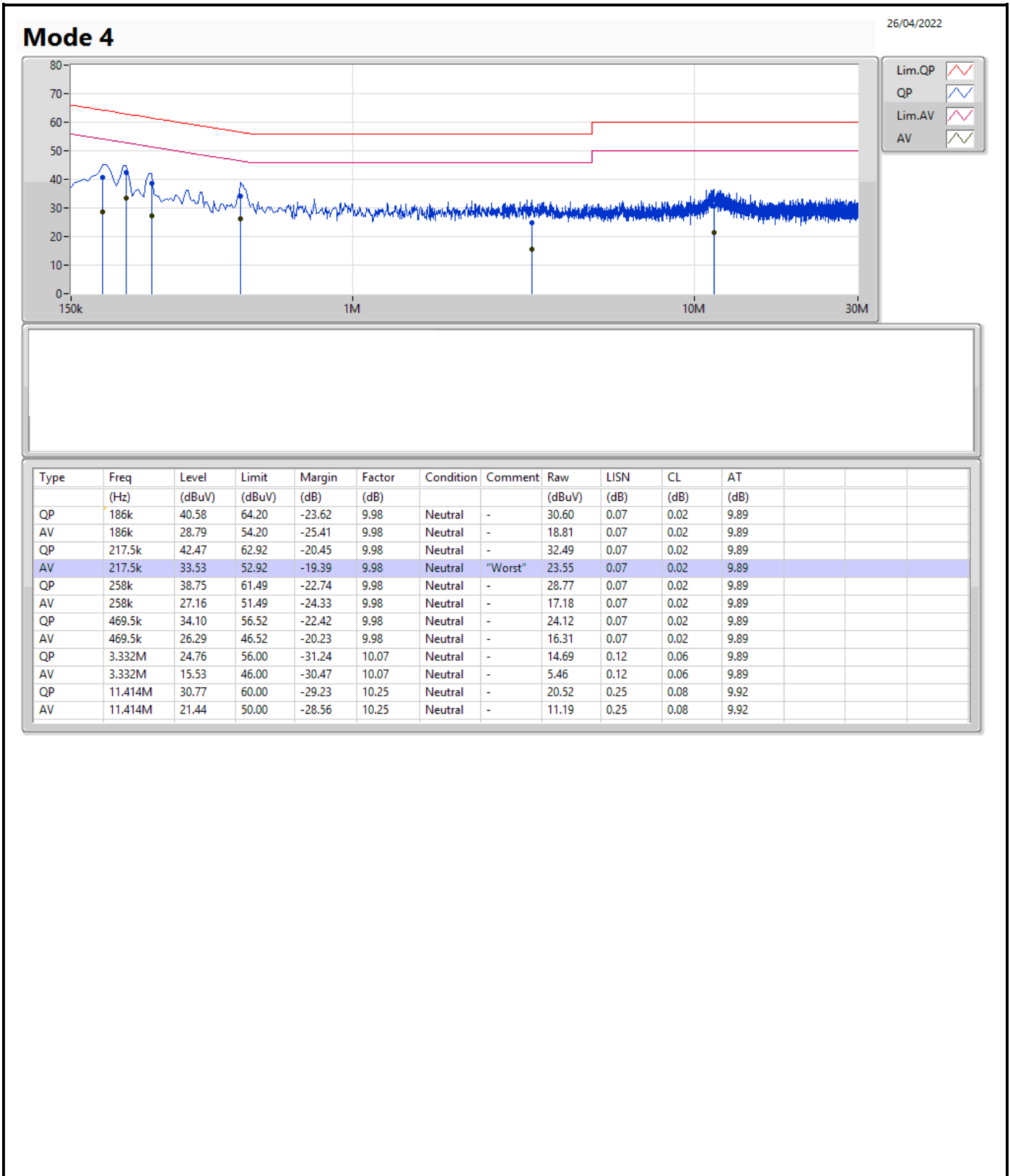
N.C.R. means Non-Calibration required.



Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin	Condition
						(dB)	
Mode 4	Pass	AV	474k	28.25	46.44	-18.19	Line







Summary

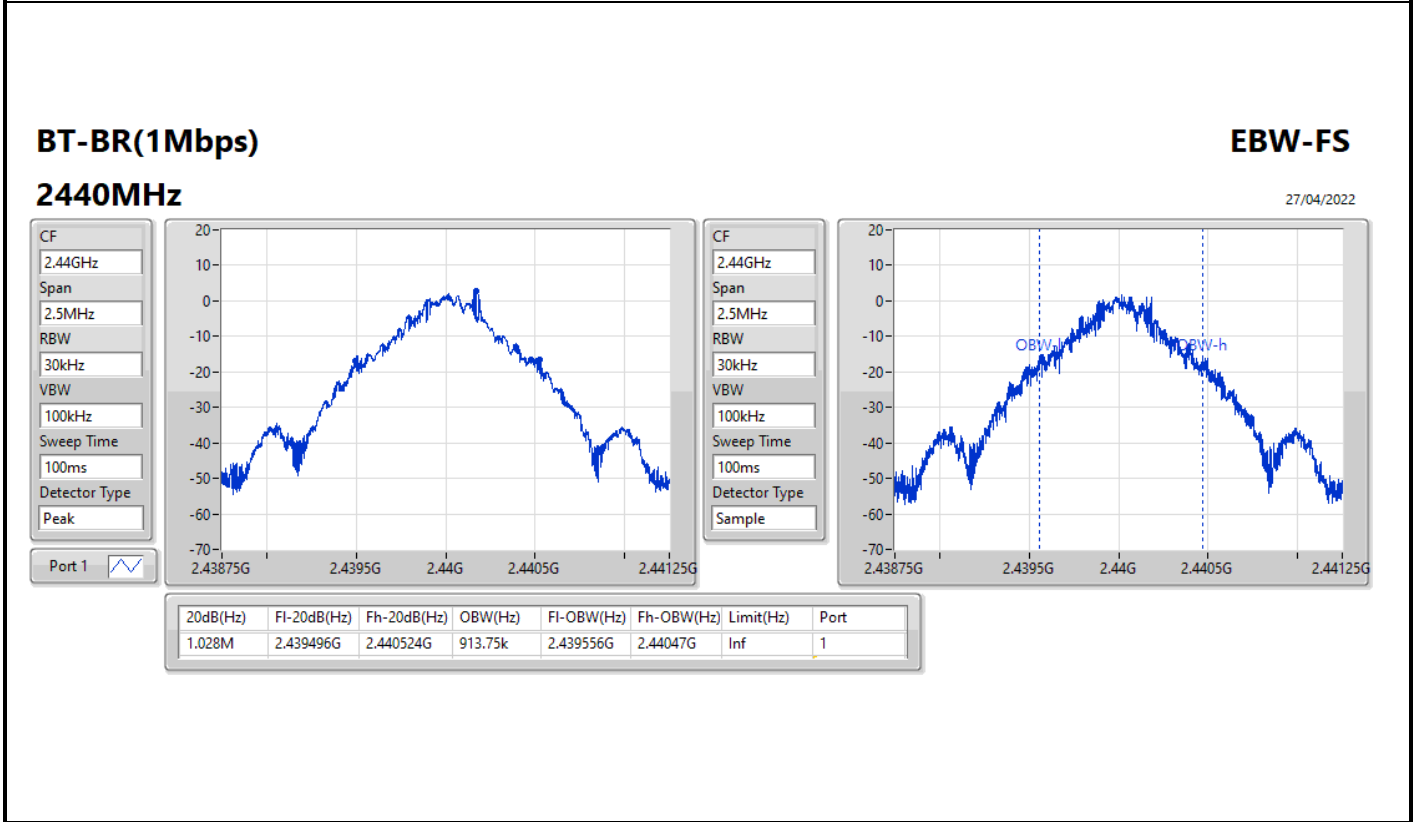
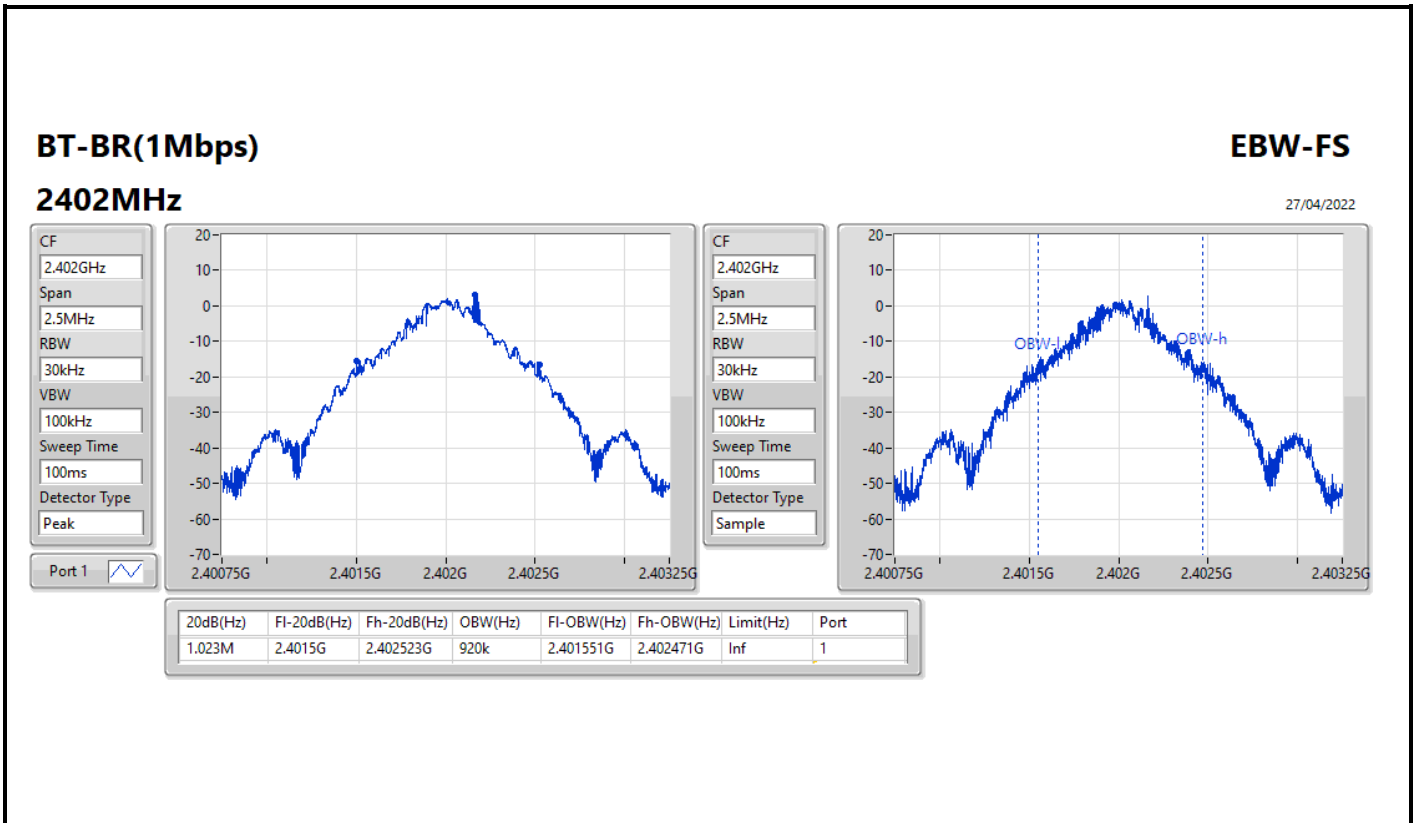
Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
BT-BR(1Mbps)	1.029M	920k	920KF1D	1.023M	913.75k
BT-EDR(2Mbps)	1.346M	1.228M	1M23G1D	1.345M	1.219M
BT-EDR(3Mbps)	1.299M	1.221M	1M22G1D	1.293M	1.206M

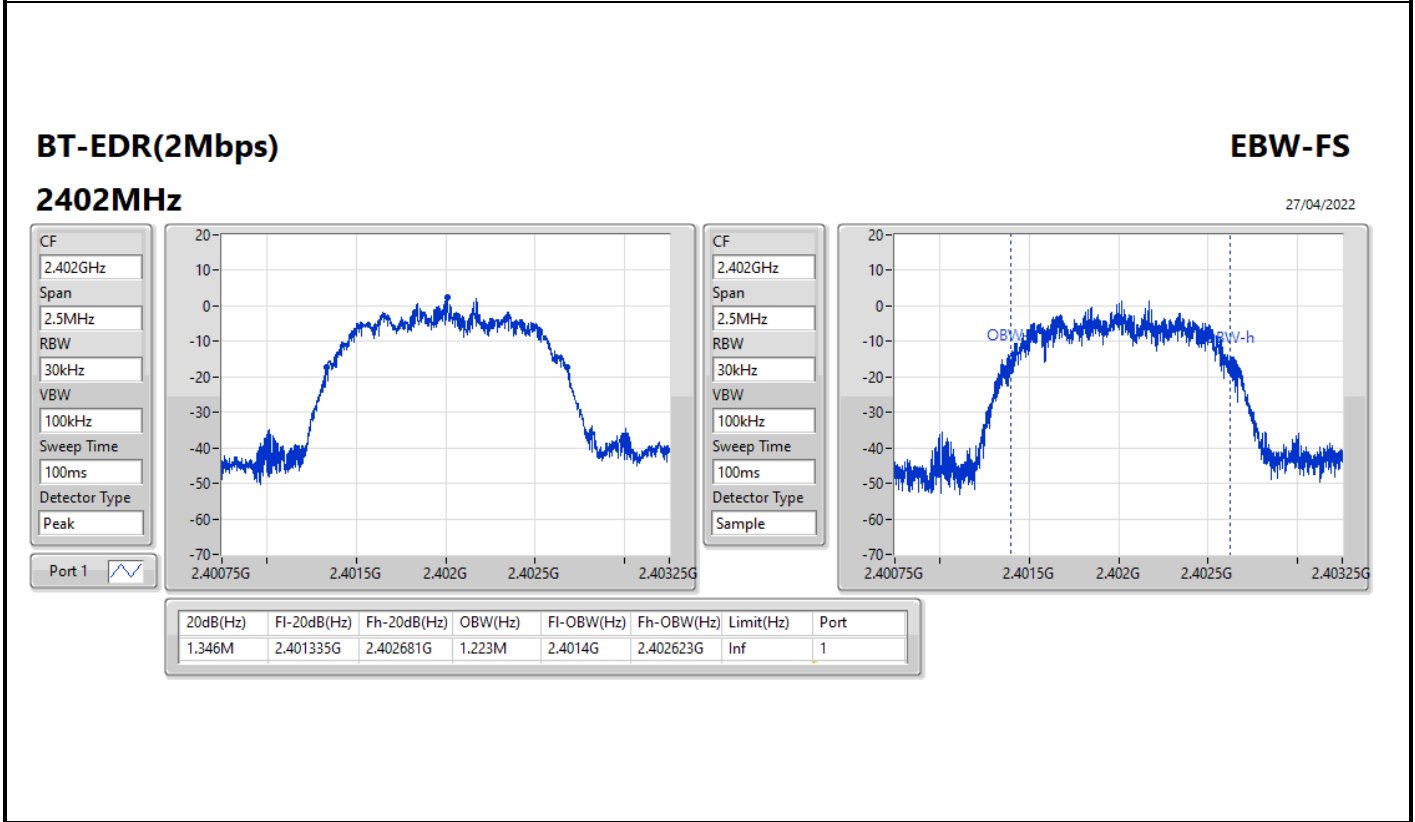
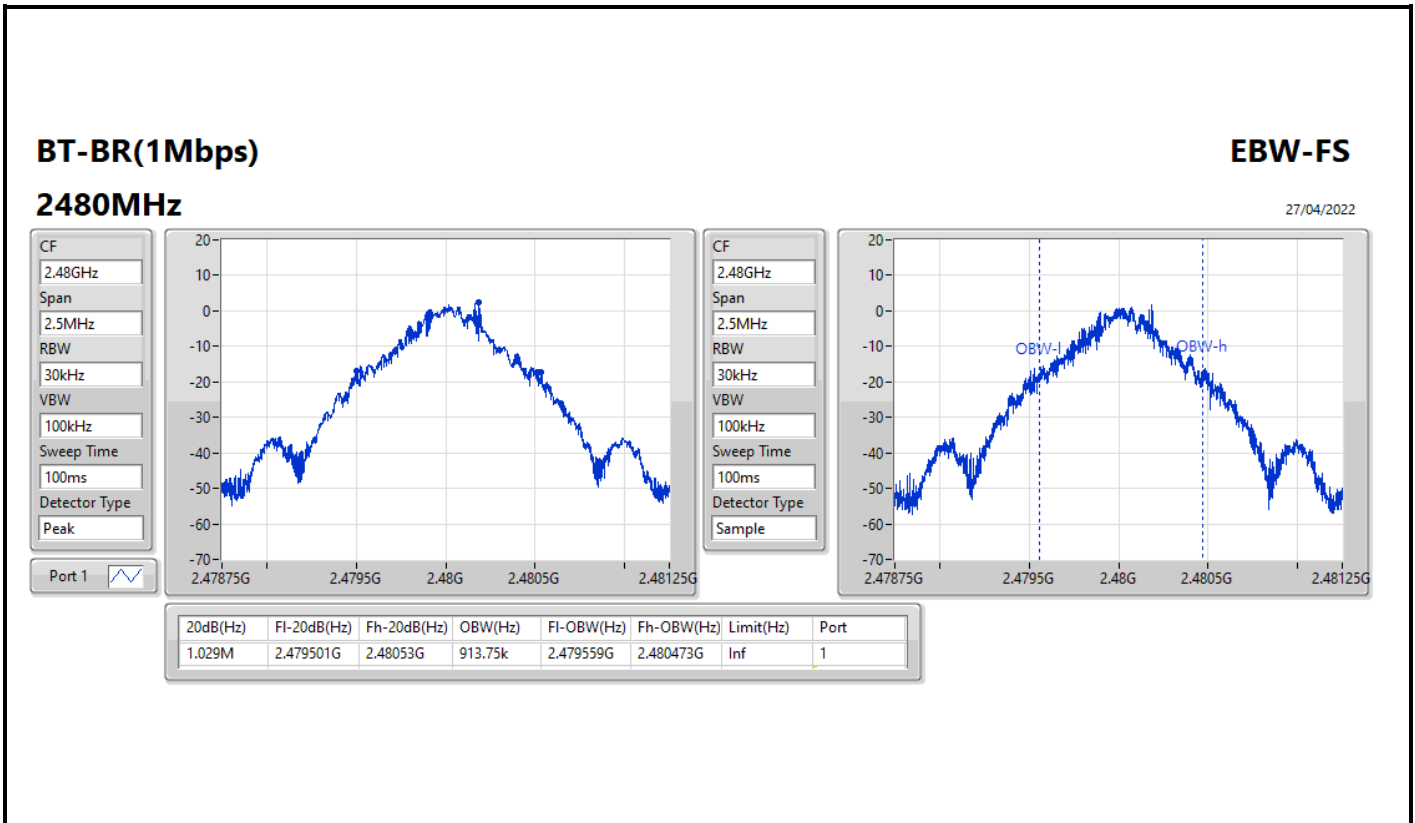
Max-N dB = Maximum 20dB down bandwidth; Max-OBW = Maximum 99% occupied bandwidth;
Min-N dB = Minimum 20dB down bandwidth; Min-OBW = Minimum 99% occupied bandwidth

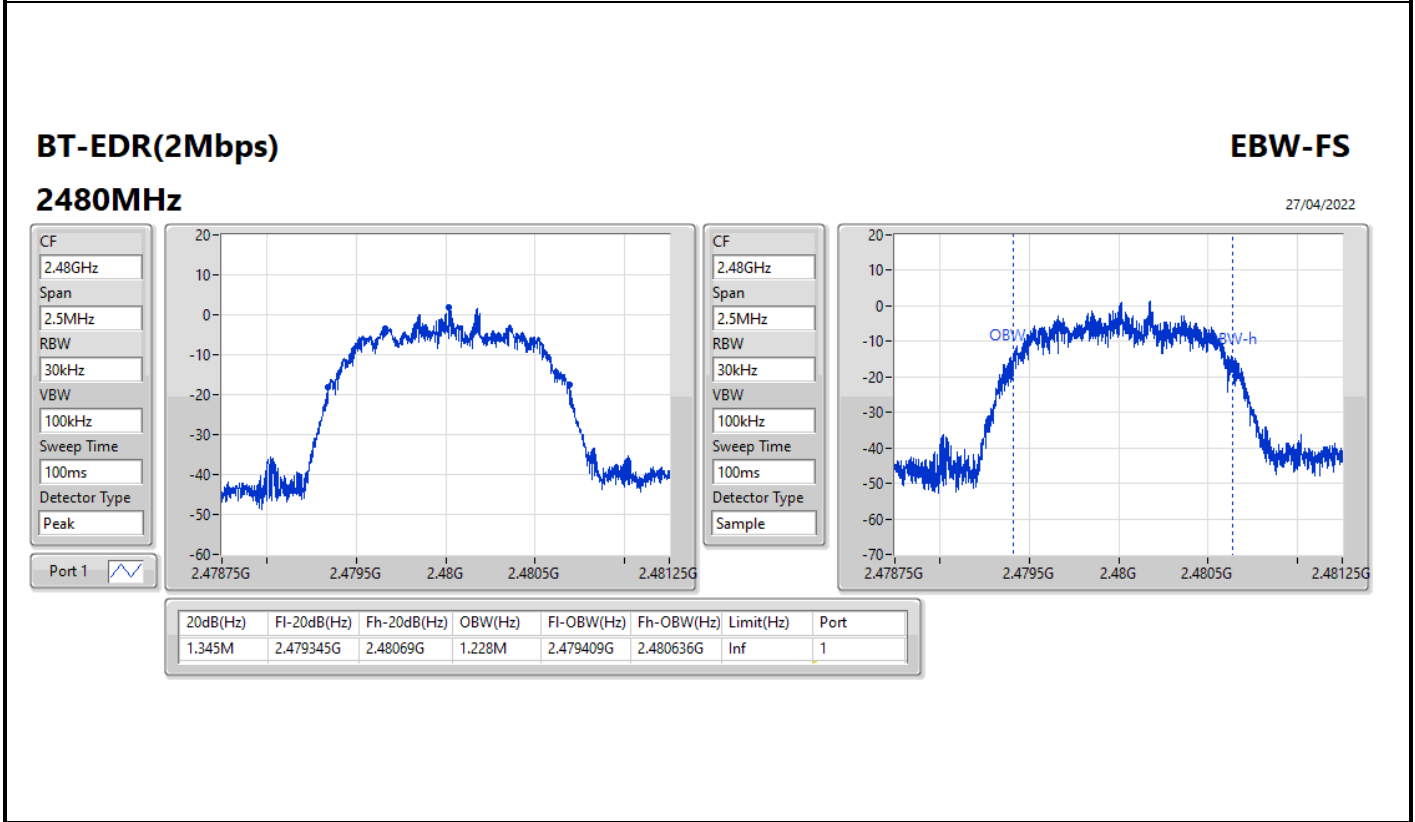
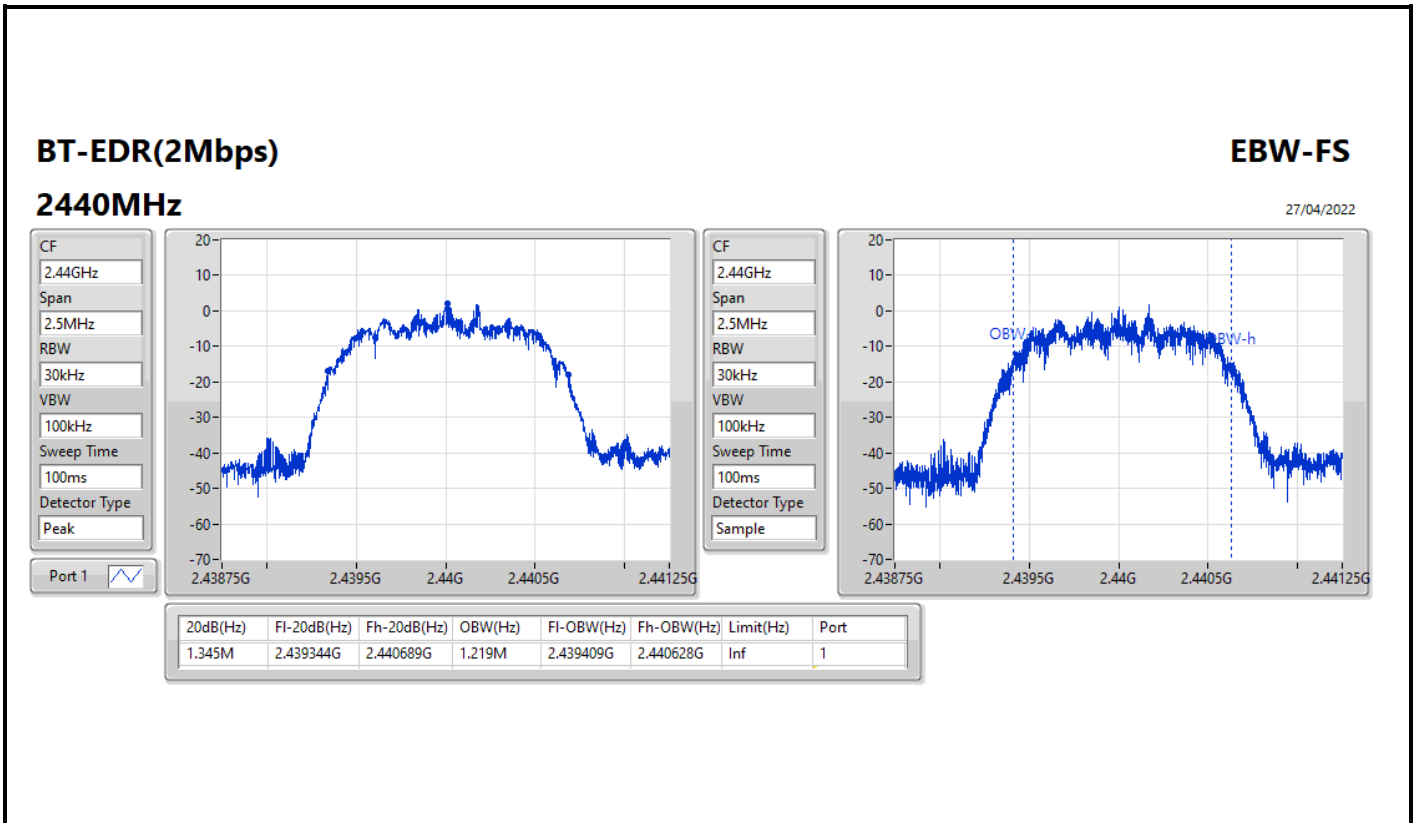
Result

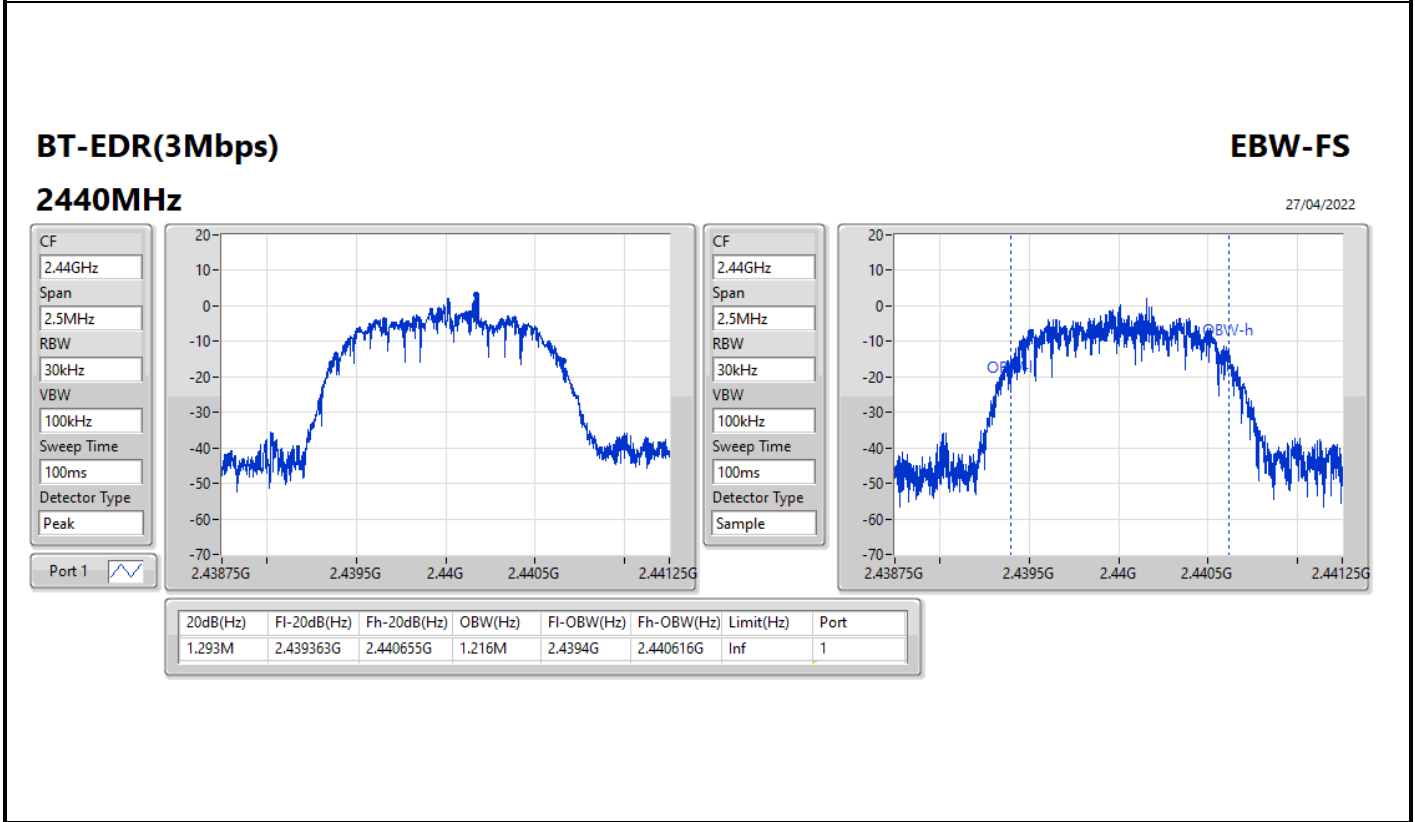
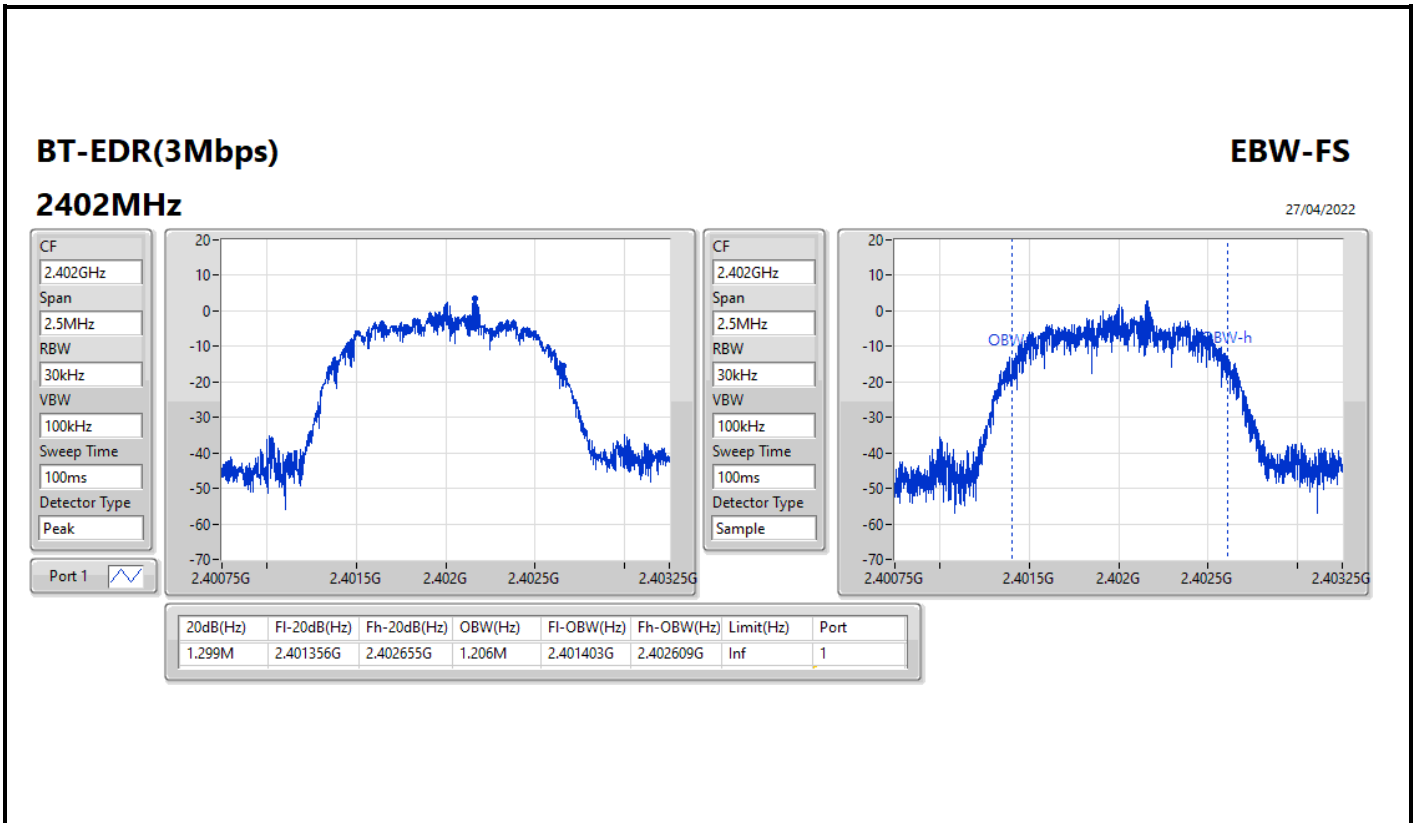
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.023M	920k
2440MHz	Pass	Inf	1.028M	913.75k
2480MHz	Pass	Inf	1.029M	913.75k
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.346M	1.223M
2440MHz	Pass	Inf	1.345M	1.219M
2480MHz	Pass	Inf	1.345M	1.228M
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.299M	1.206M
2440MHz	Pass	Inf	1.293M	1.216M
2480MHz	Pass	Inf	1.299M	1.221M

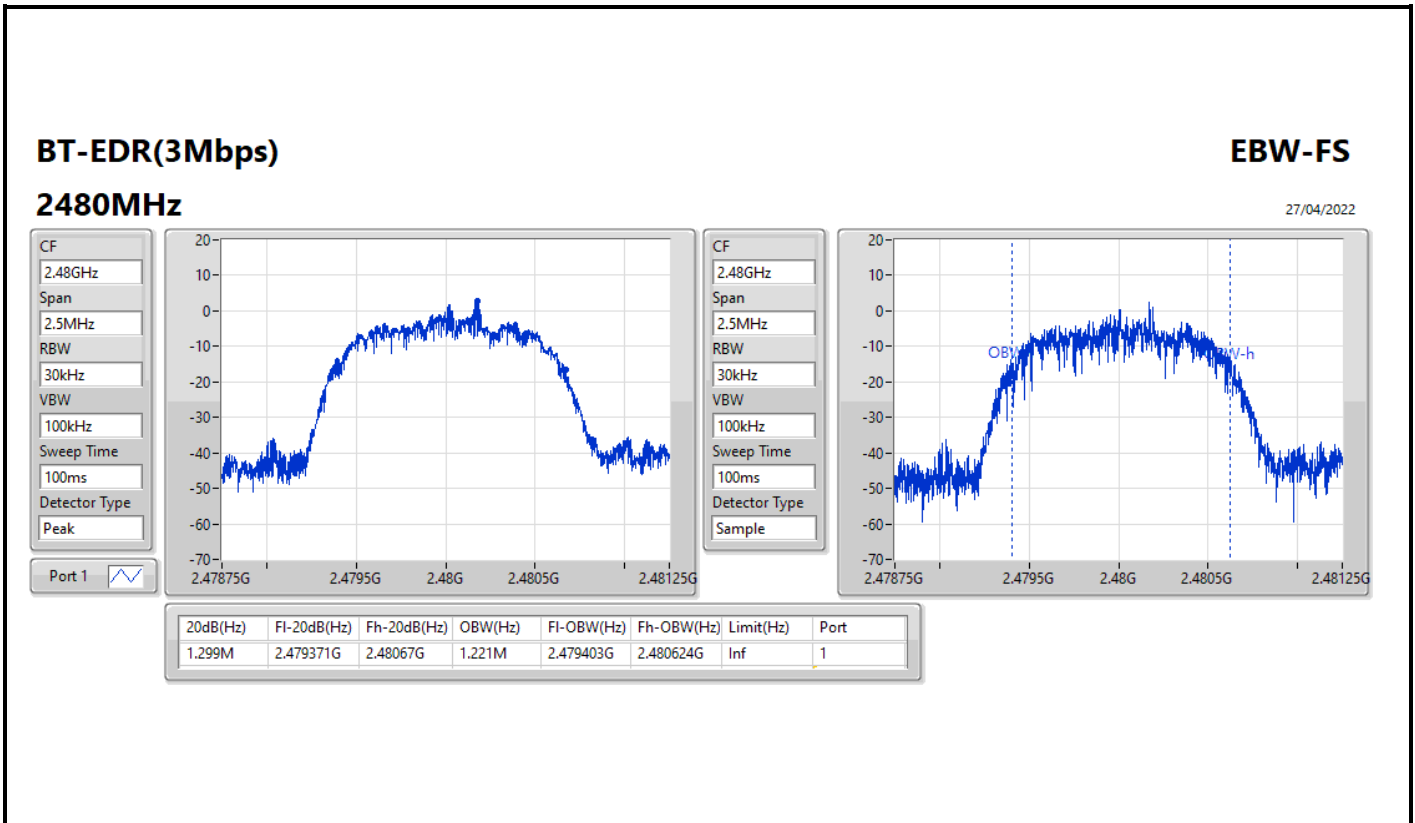
Port X-N dB = Port X 20dB down bandwidth;
 Port X-OBW = Port X 99% occupied bandwidth













Summary

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



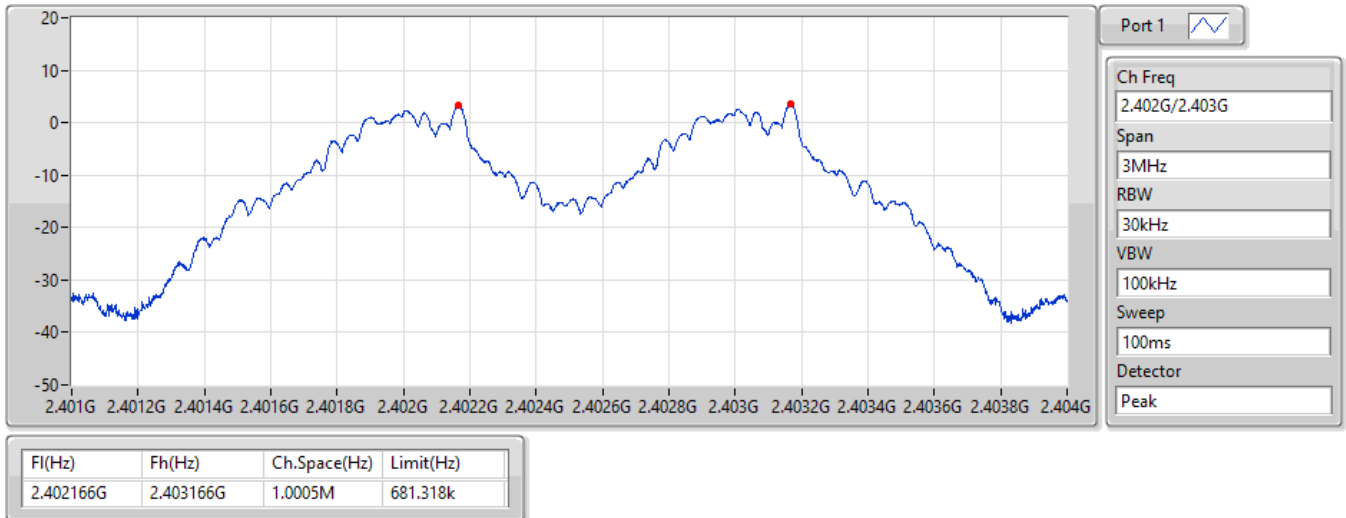
Result

Mode	Result	Fl (Hz)	Fh (Hz)	Ch.Space (Hz)	Limit (Hz)
BT-BR(1Mbps)	-	-	-	-	-
2402MHz	Pass	2.402166G	2.403166G	1.0005M	681.318k
2440MHz	Pass	2.44017G	2.441171G	1.0005M	684.648k
2480MHz	Pass	2.479175G	2.480177G	1.002M	685.314k
BT-EDR(2Mbps)	-	-	-	-	-
2402MHz	Pass	2.402008G	2.403007G	999k	896.436k
2440MHz	Pass	2.440013G	2.441015G	1.002M	895.77k
2480MHz	Pass	2.479017G	2.480019G	1.002M	895.77k
BT-EDR(3Mbps)	-	-	-	-	-
2402MHz	Pass	2.402166G	2.403166G	1.0005M	865.134k
2440MHz	Pass	2.440172G	2.441171G	999k	861.138k
2480MHz	Pass	2.479175G	2.480177G	1.002M	865.134k

BT-BR(1Mbps)

Channel Separation-FS

2.402G/2.403GHz

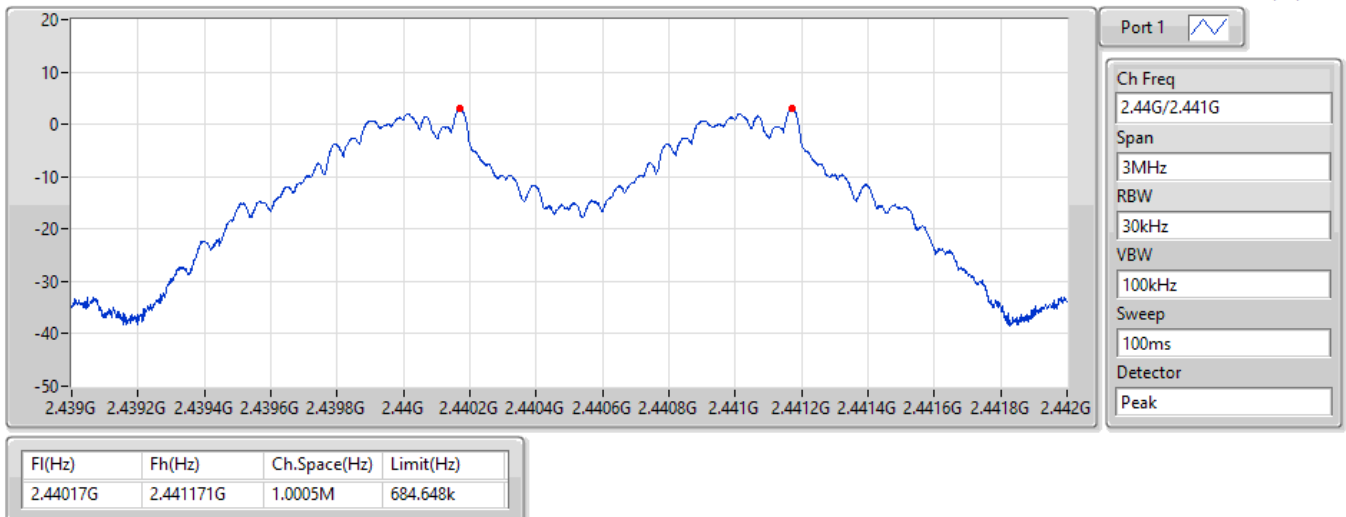


BT-BR(1Mbps)

Channel Separation-FS

2.44G/2.441GHz

27/04/2022




BT-BR(1Mbps)

2.48G/2.479GHz

Channel Separation-FS

27/04/2022



Port 1 

Ch Freq
2.48G/2.479G

Span
3MHz

RBW
30kHz

VBW
100kHz

Sweep
100ms

Detector
Peak

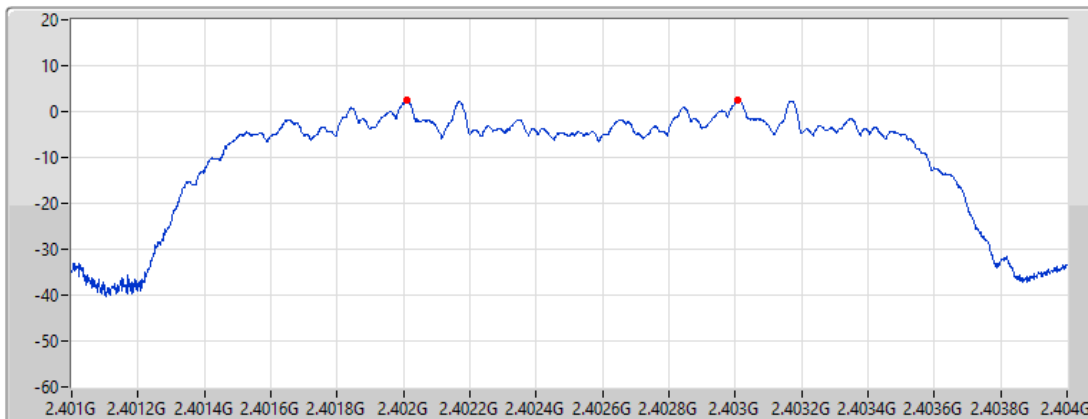
Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.479175G	2.480177G	1.002M	685.314k


BT-EDR(2Mbps)

2.402G/2.403GHz

Channel Separation-FS

27/04/2022



Port 1 

Ch Freq
2.402G/2.403G

Span
3MHz

RBW
30kHz

VBW
100kHz

Sweep
100ms

Detector
Peak

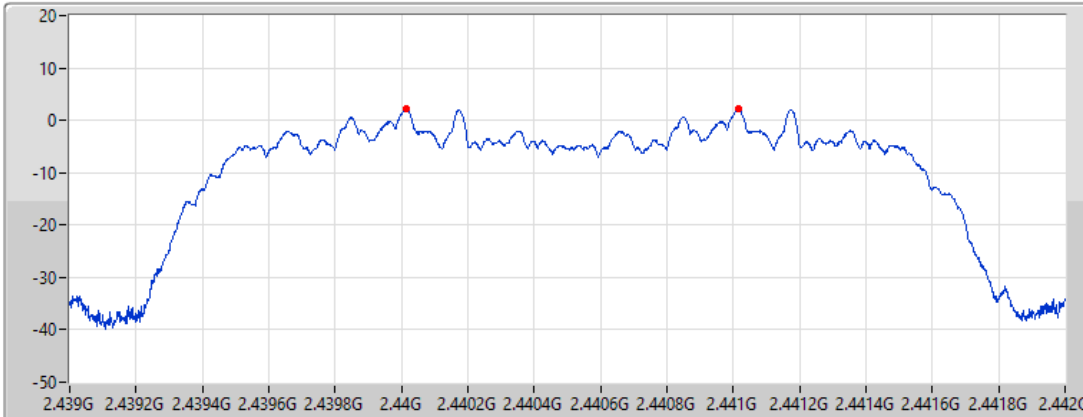
Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.402008G	2.403007G	999k	896.436k


BT-EDR(2Mbps)

Channel Separation-FS

2.44G/2.441GHz

27/04/2022



Port 1 

Ch Freq
2.44G/2.441G

Span
3MHz

RBW
30kHz

VBW
100kHz

Sweep
100ms

Detector
Peak

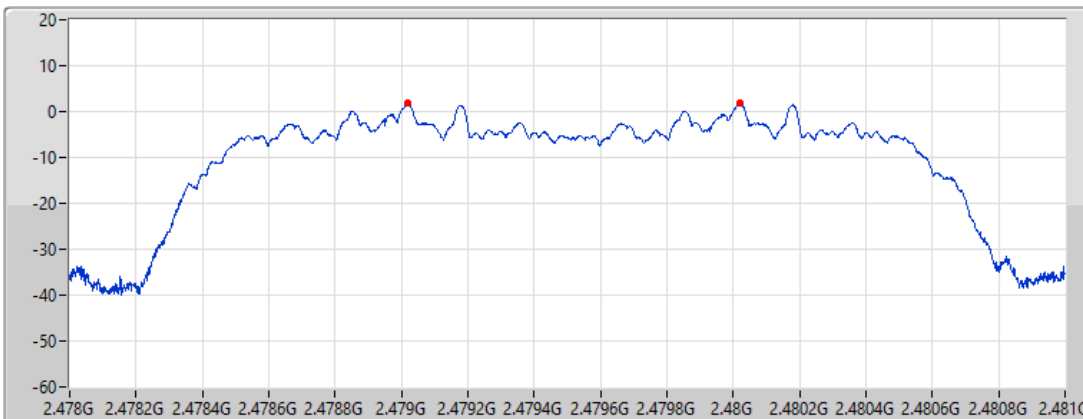
Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.440013G	2.441015G	1.002M	895.77k


BT-EDR(2Mbps)

Channel Separation-FS

2.48G/2.479GHz

27/04/2022



Port 1 

Ch Freq
2.48G/2.479G

Span
3MHz

RBW
30kHz

VBW
100kHz

Sweep
100ms

Detector
Peak

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.479017G	2.480019G	1.002M	895.77k

BT-EDR(3Mbps)

Channel Separation-FS

2.402G/2.403GHz

27/04/2022



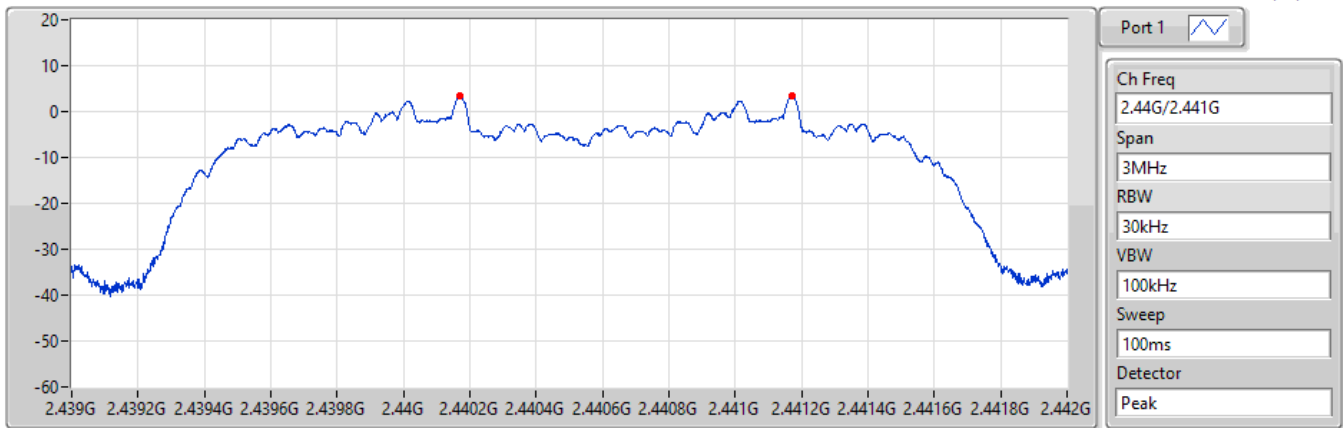
Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.402166G	2.403166G	1.0005M	865.134k

BT-EDR(3Mbps)

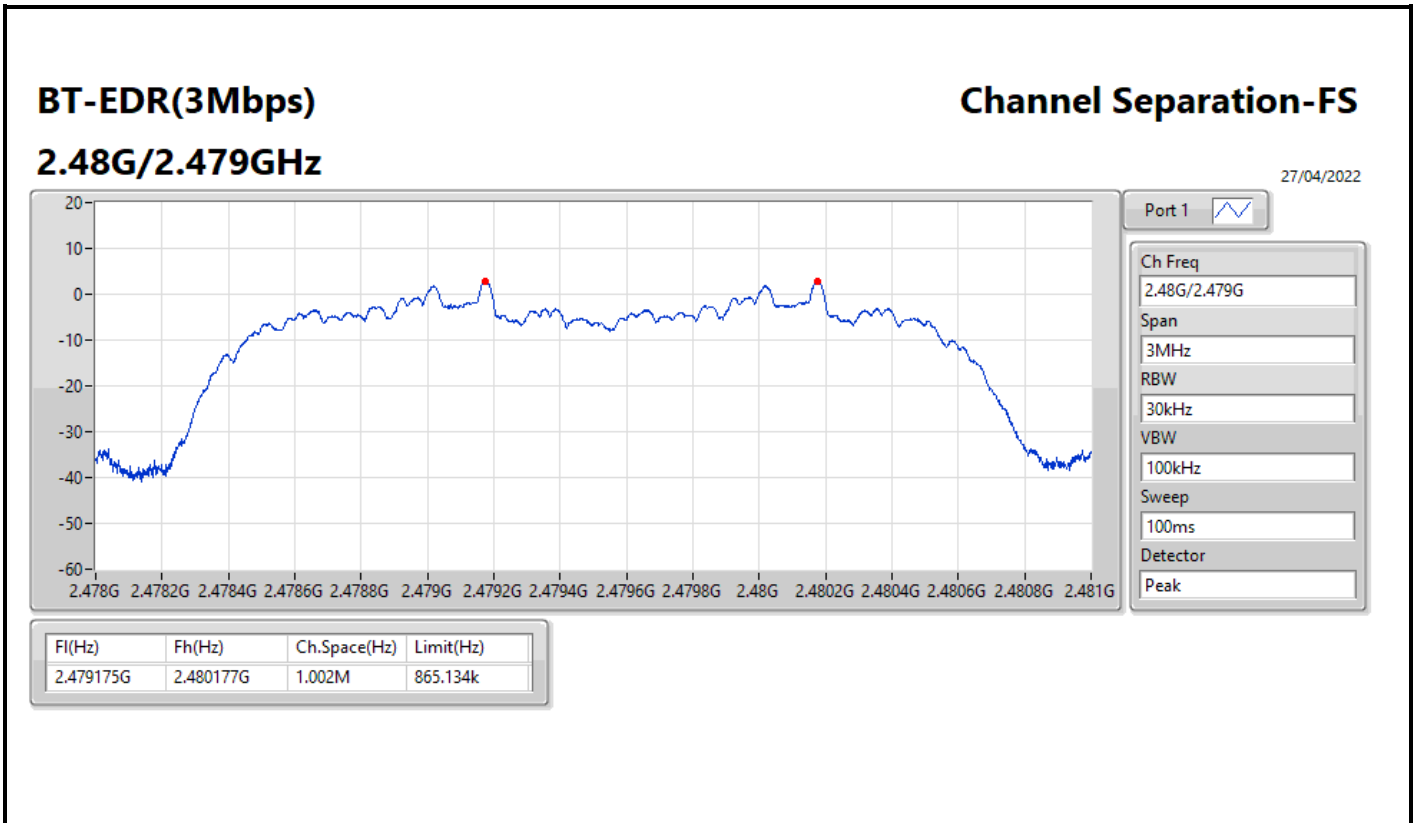
Channel Separation-FS

2.44G/2.441GHz

27/04/2022



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.440172G	2.441171G	999k	861.138k





Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	4.20	0.00263
BT-EDR(2Mbps)	4.39	0.00275
BT-EDR(3Mbps)	4.71	0.00296



Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	3.16	4.20	21.00
2440MHz	Pass	3.16	4.03	21.00
2480MHz	Pass	3.16	3.71	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	3.16	4.39	21.00
2440MHz	Pass	3.16	4.34	21.00
2480MHz	Pass	3.16	3.89	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	3.16	4.71	21.00
2440MHz	Pass	3.16	4.27	21.00
2480MHz	Pass	3.16	3.98	21.00

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



Summary

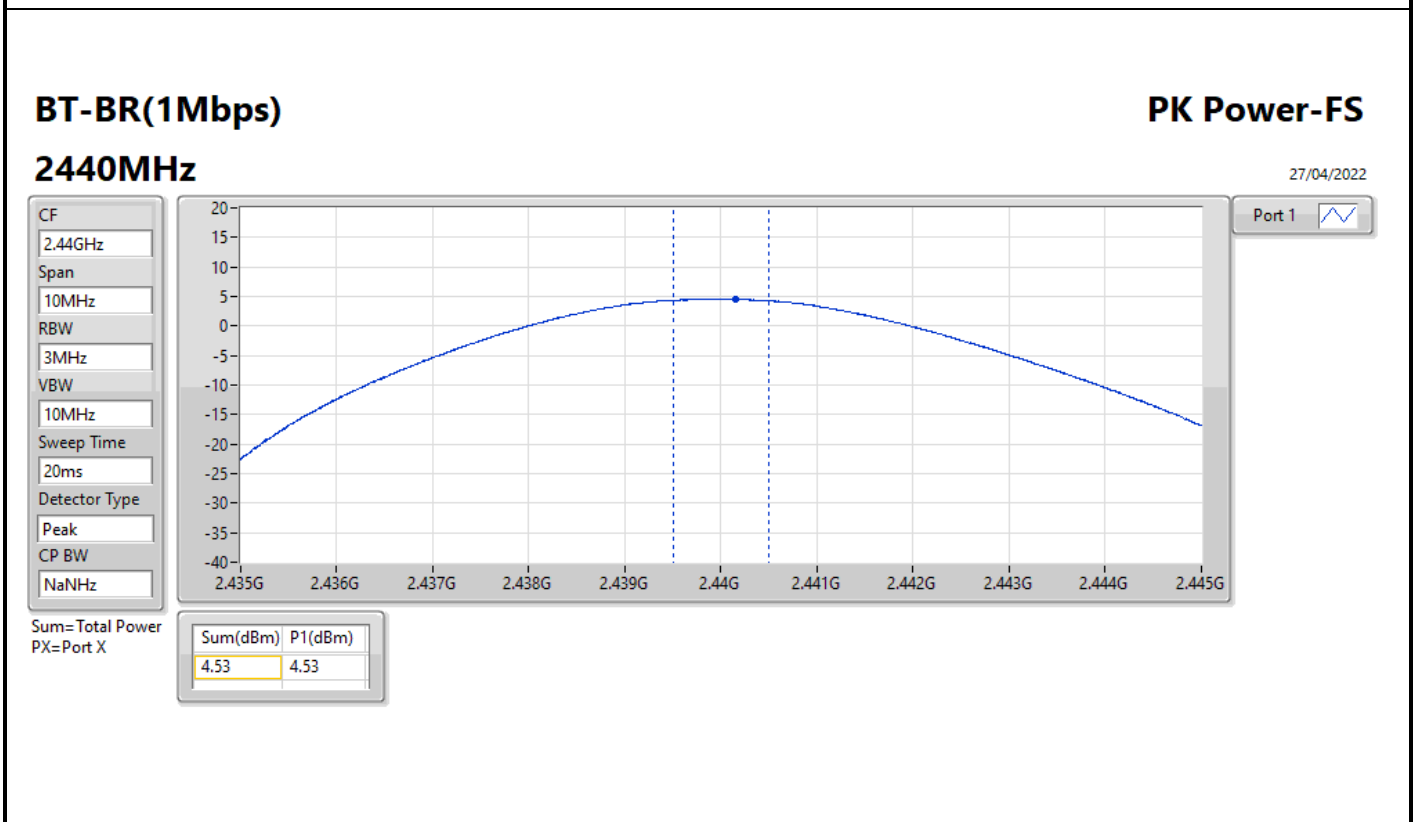
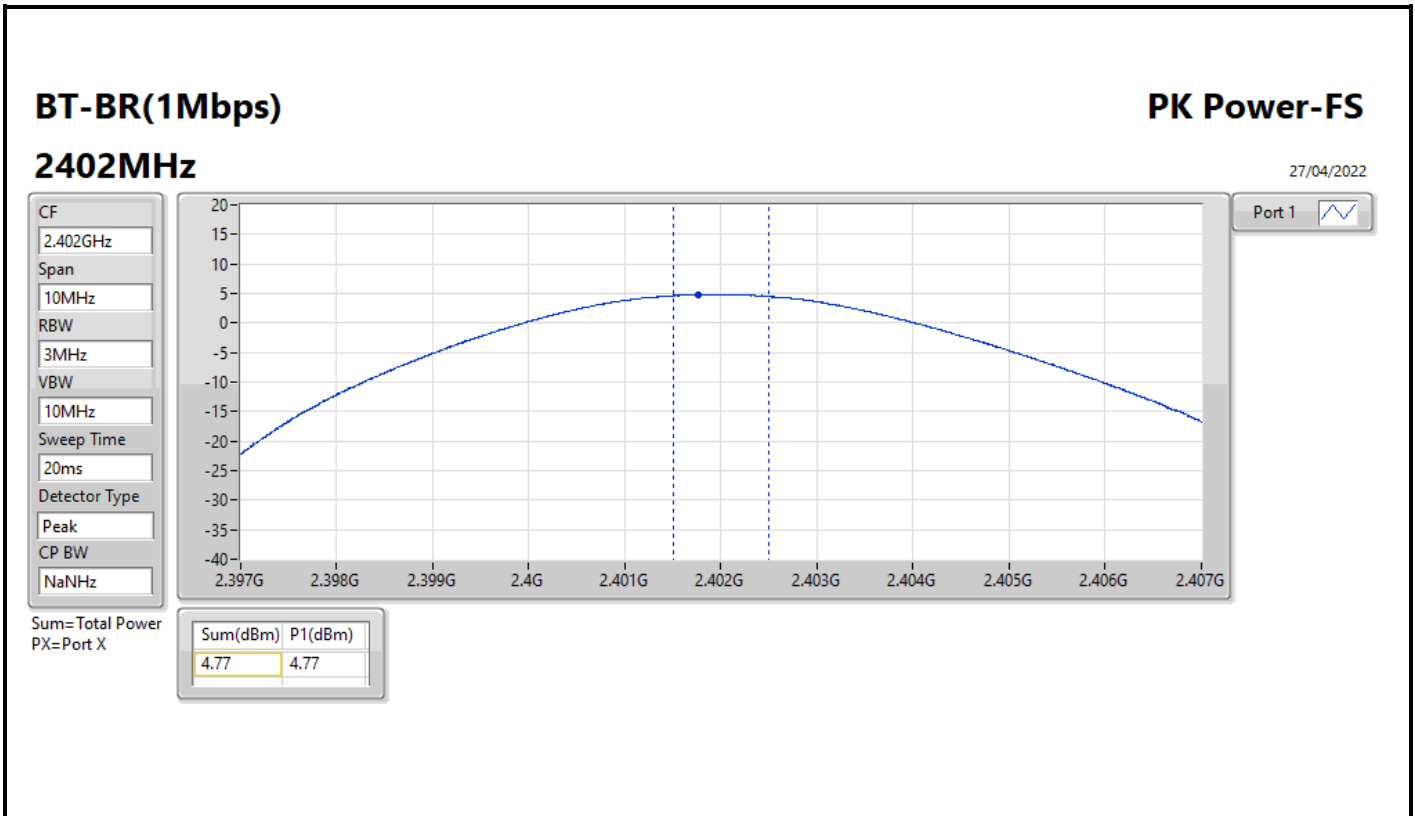
Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	4.77	0.00300
BT-EDR(2Mbps)	7.27	0.00533
BT-EDR(3Mbps)	7.76	0.00597

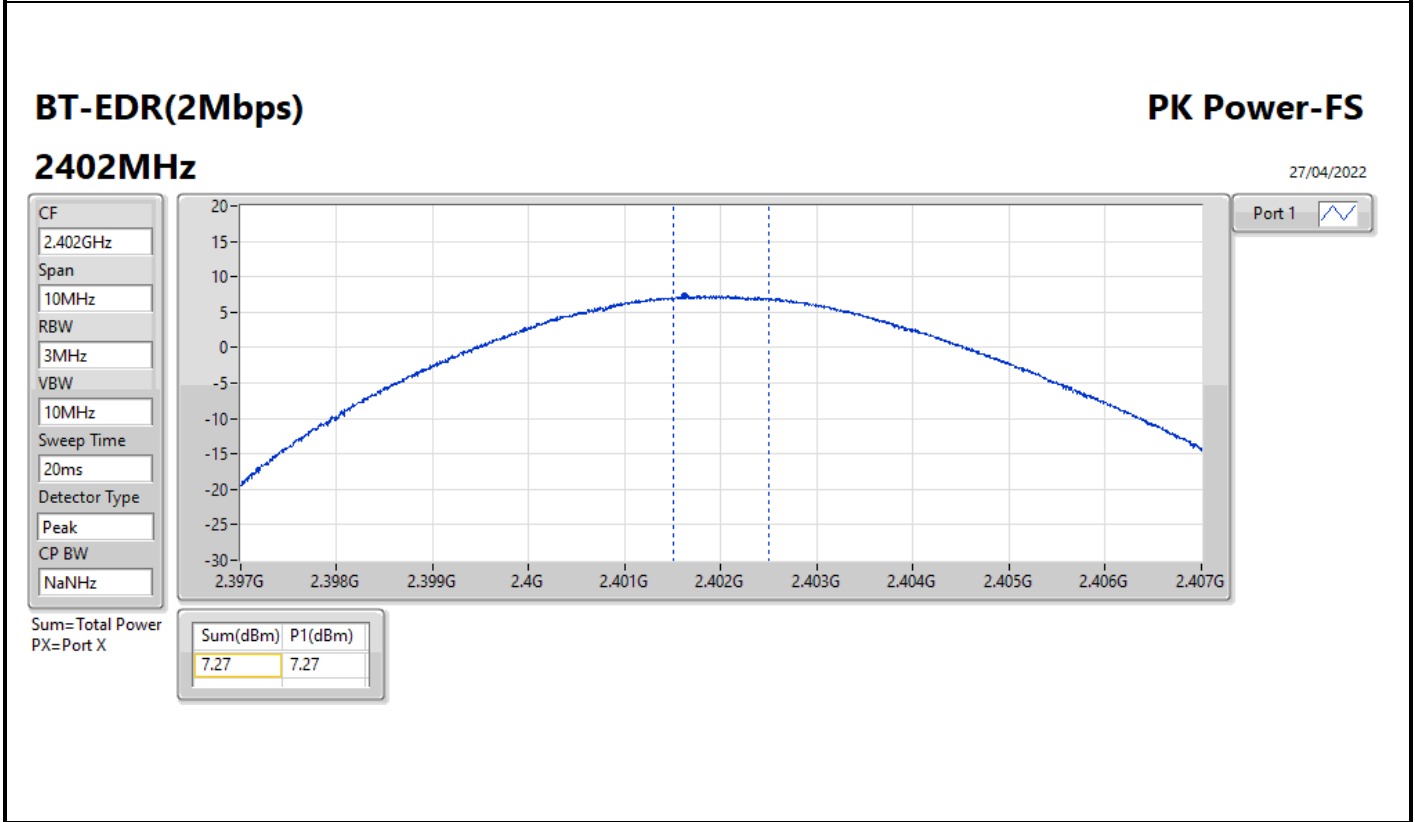
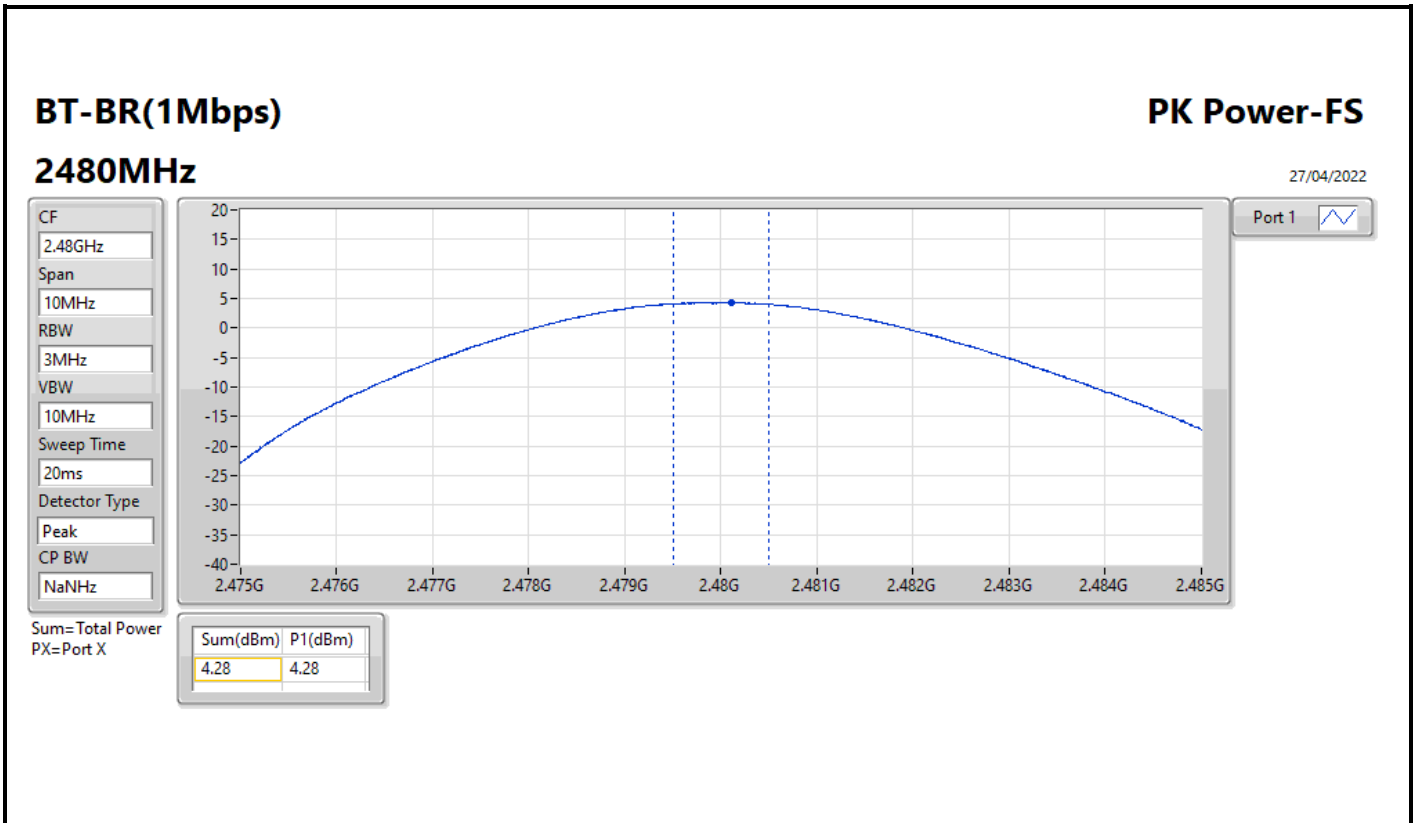


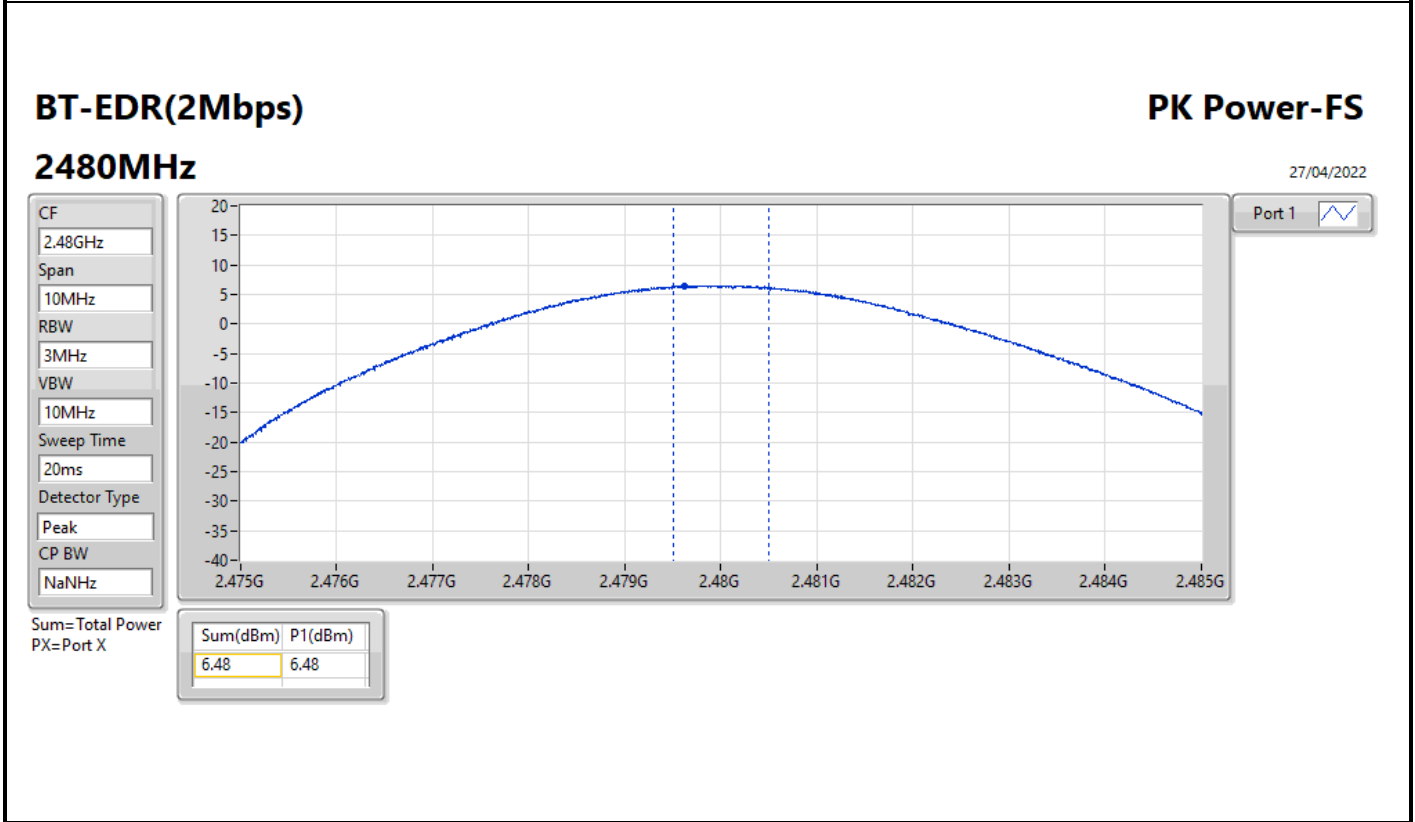
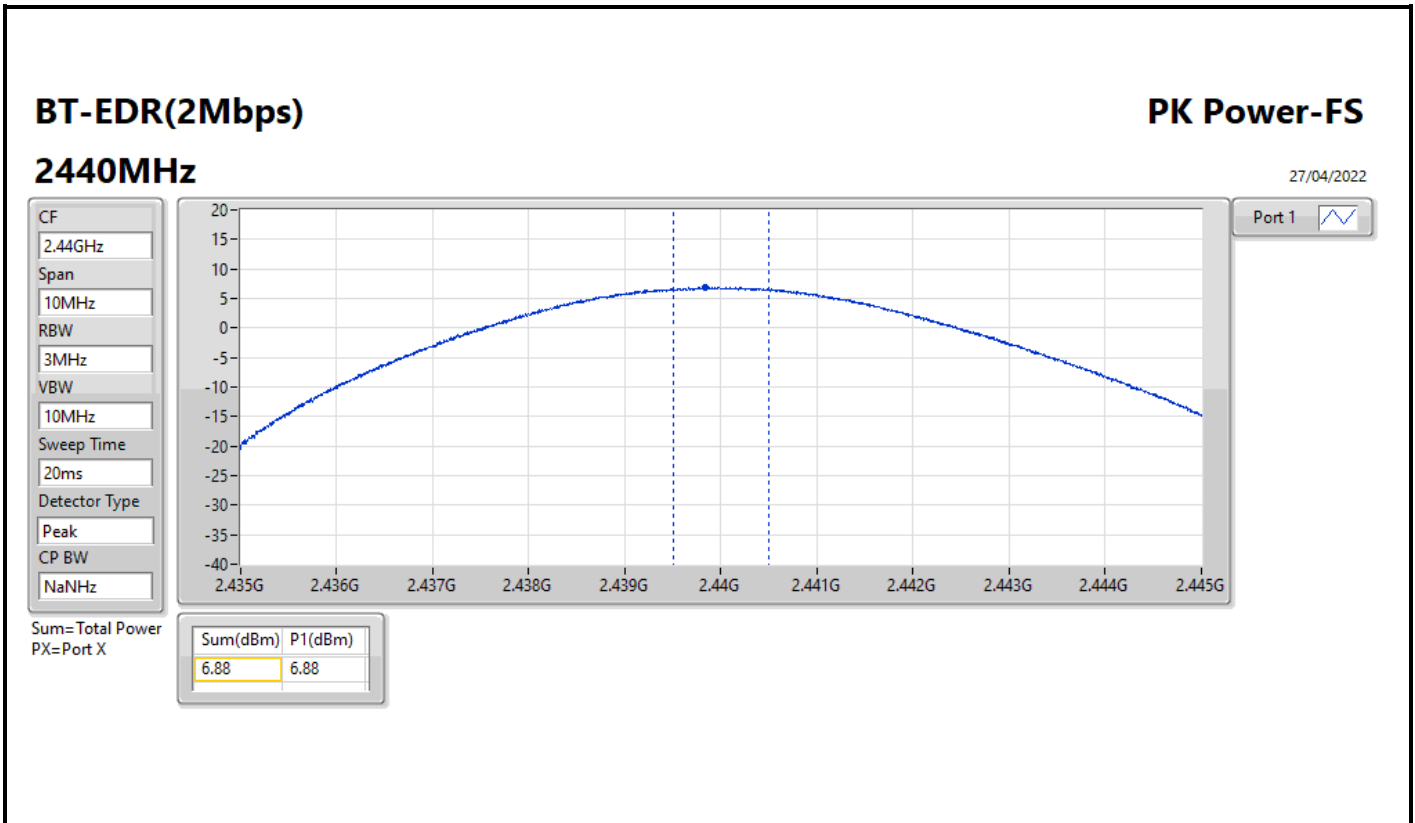
Result

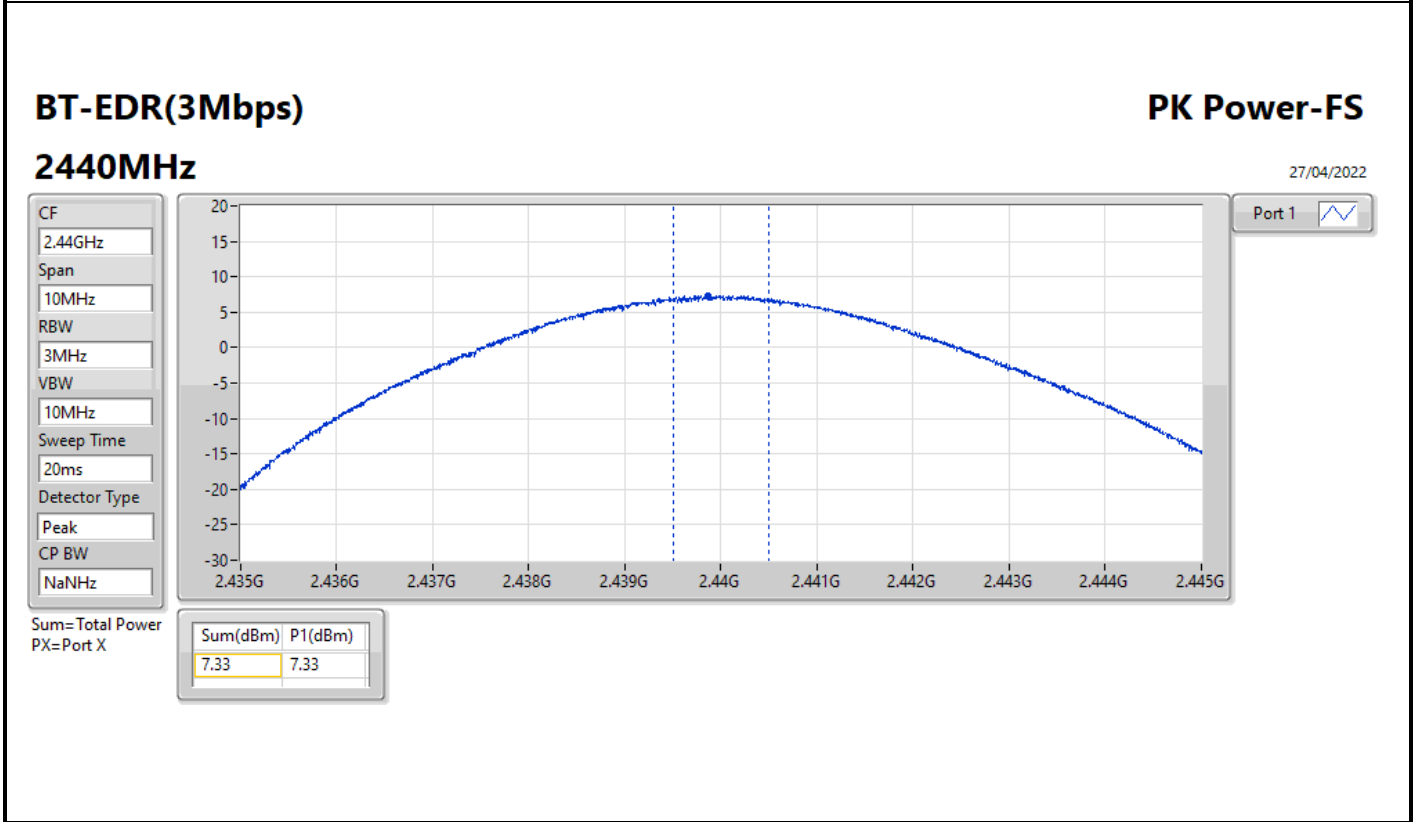
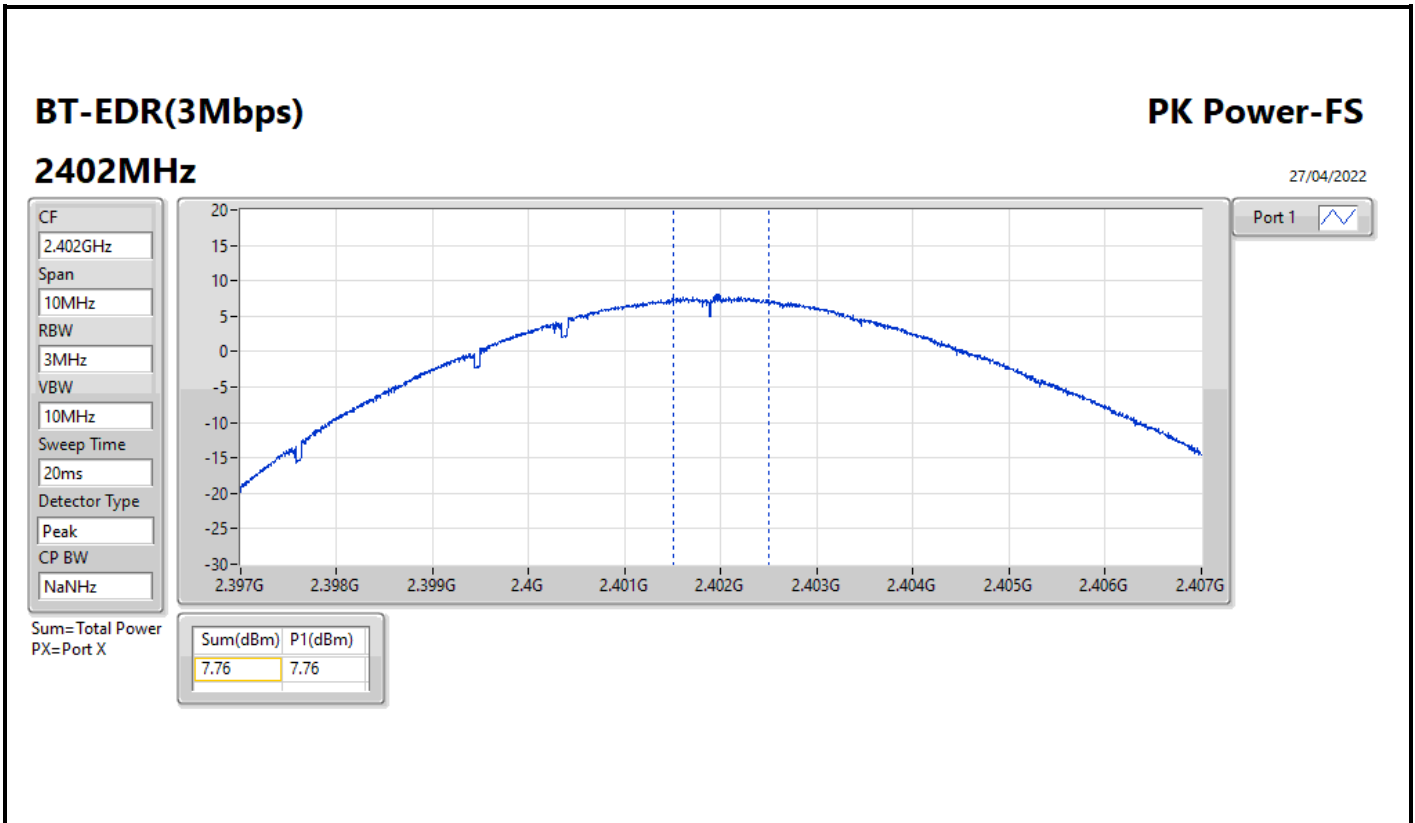
Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	3.16	4.77	21.00
2440MHz	Pass	3.16	4.53	21.00
2480MHz	Pass	3.16	4.28	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	3.16	7.27	21.00
2440MHz	Pass	3.16	6.88	21.00
2480MHz	Pass	3.16	6.48	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	3.16	7.76	21.00
2440MHz	Pass	3.16	7.33	21.00
2480MHz	Pass	3.16	6.94	21.00

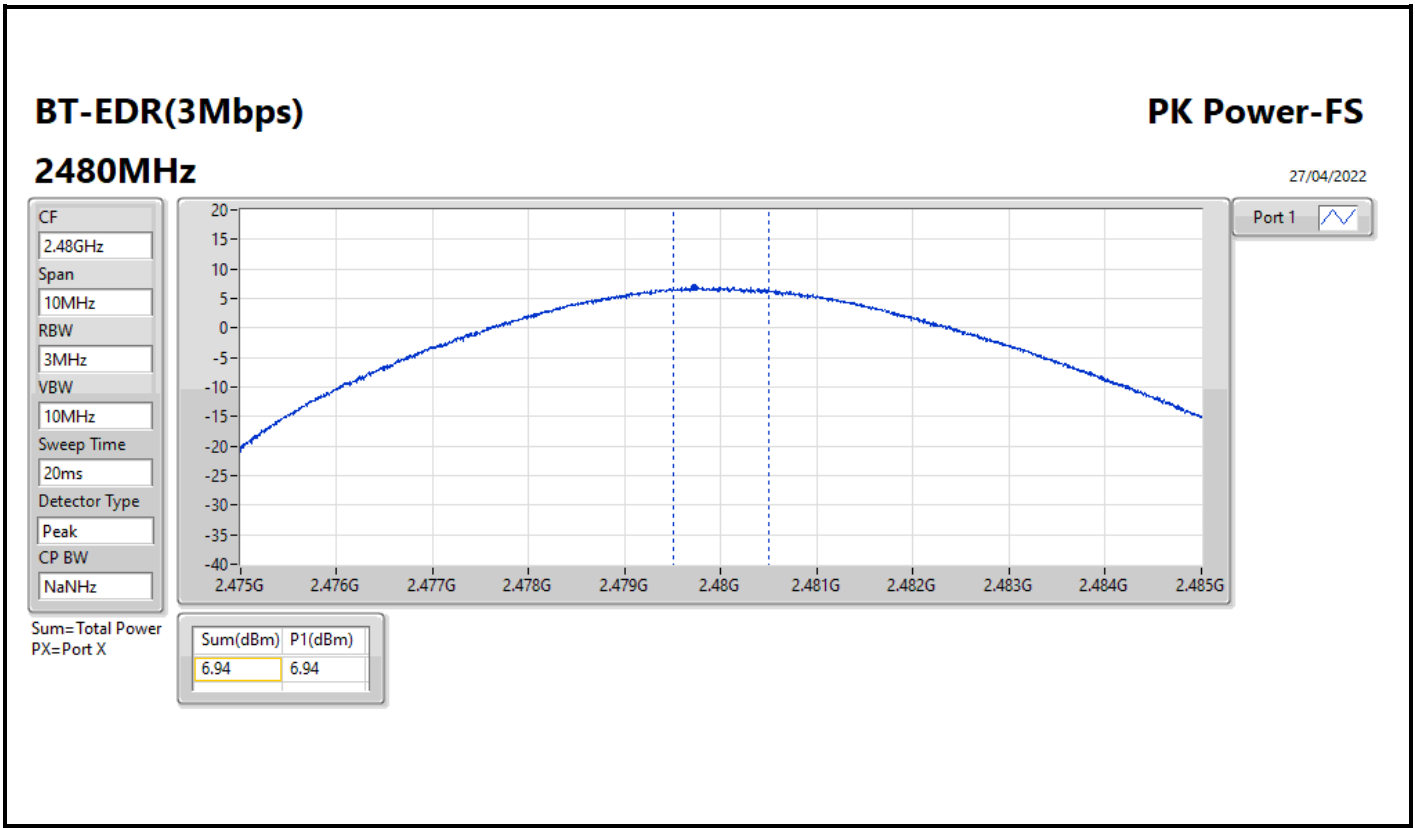
DG = Directional Gain; Port X = Port X output power













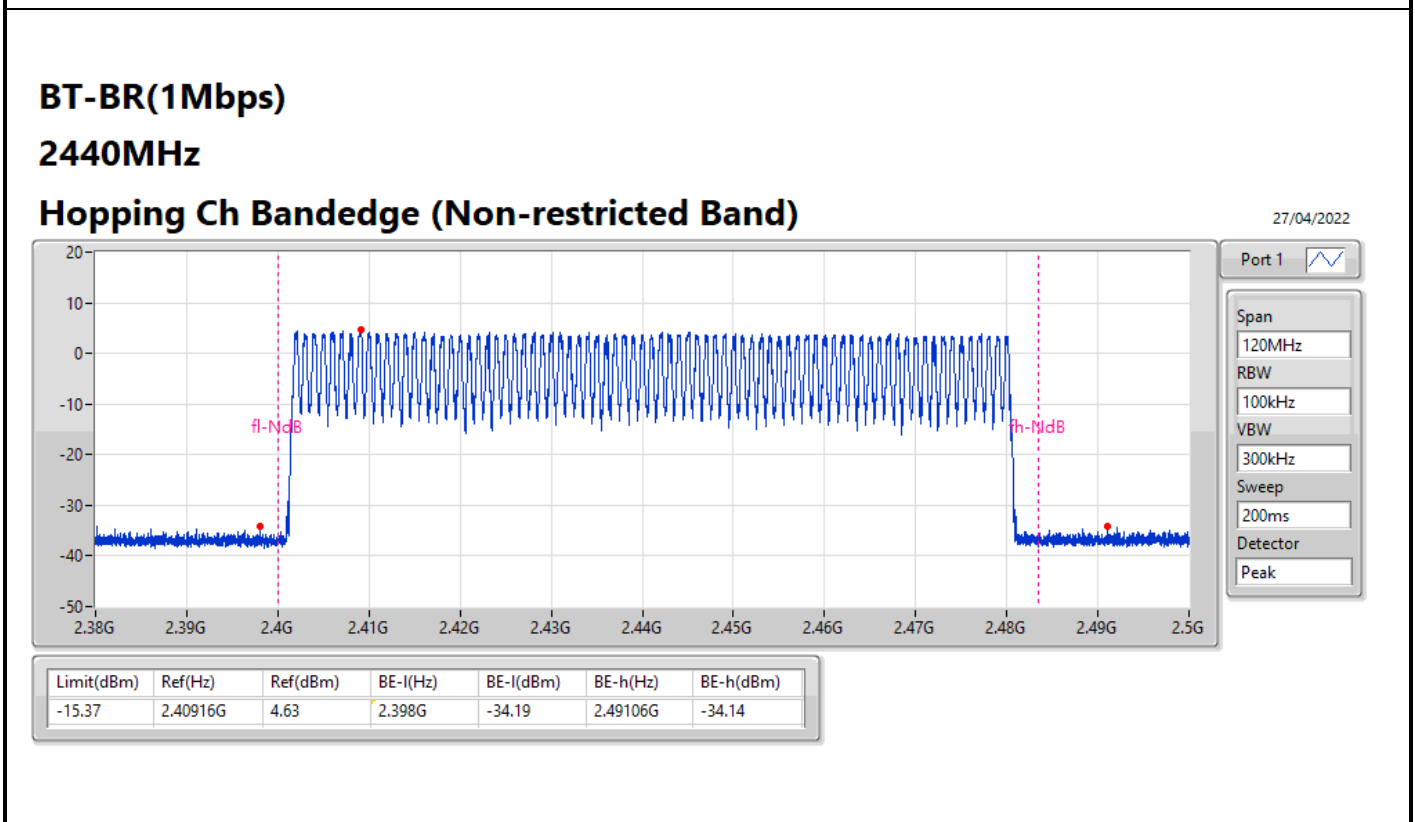
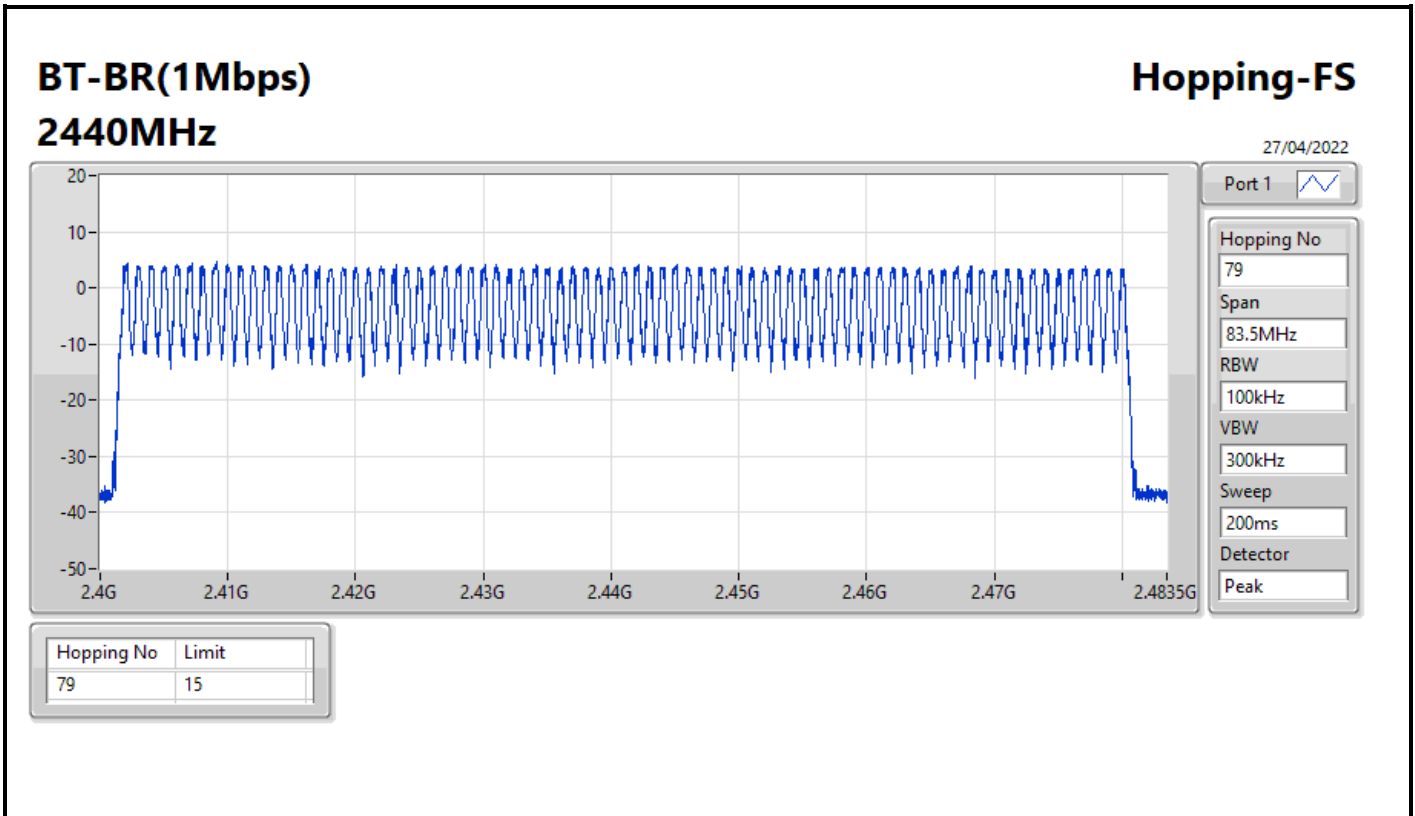
Summary

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



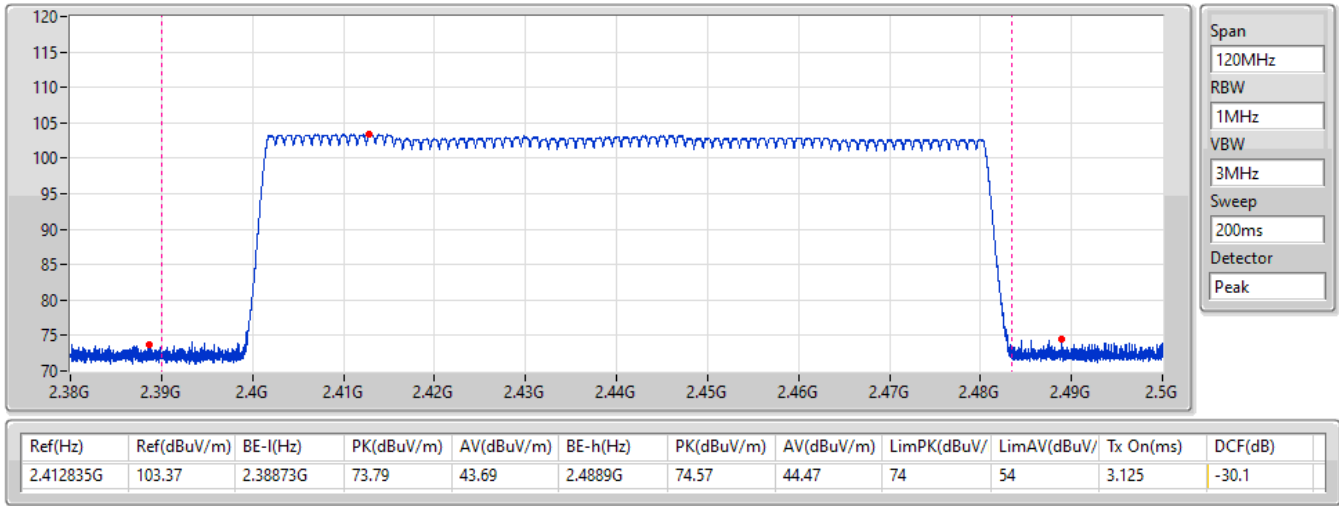
Result

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



BT-BR(1Mbps)
2440MHz
Hopping Ch Bandedge (Restricted Band)

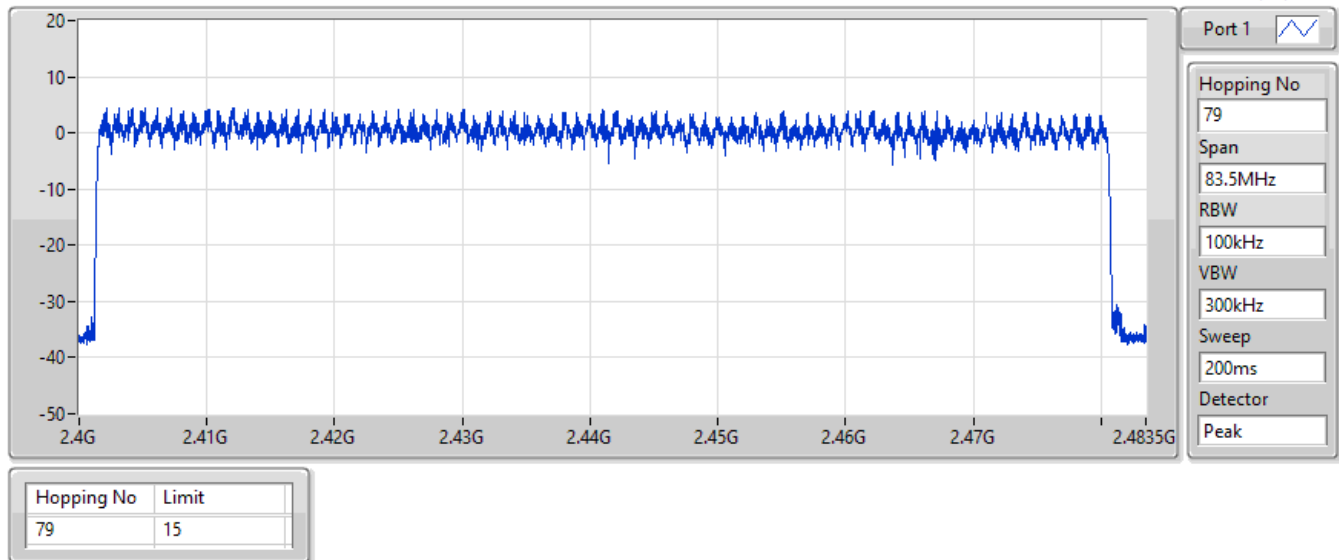
27/04/2022



BT-EDR(2Mbps)
2440MHz

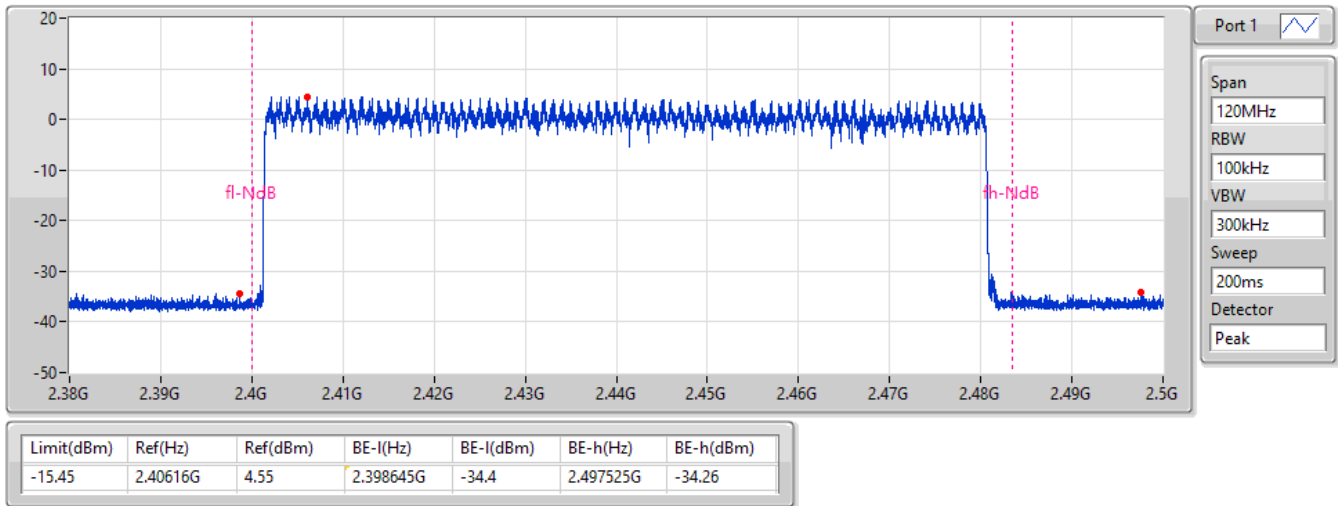
Hopping-FS

27/04/2022



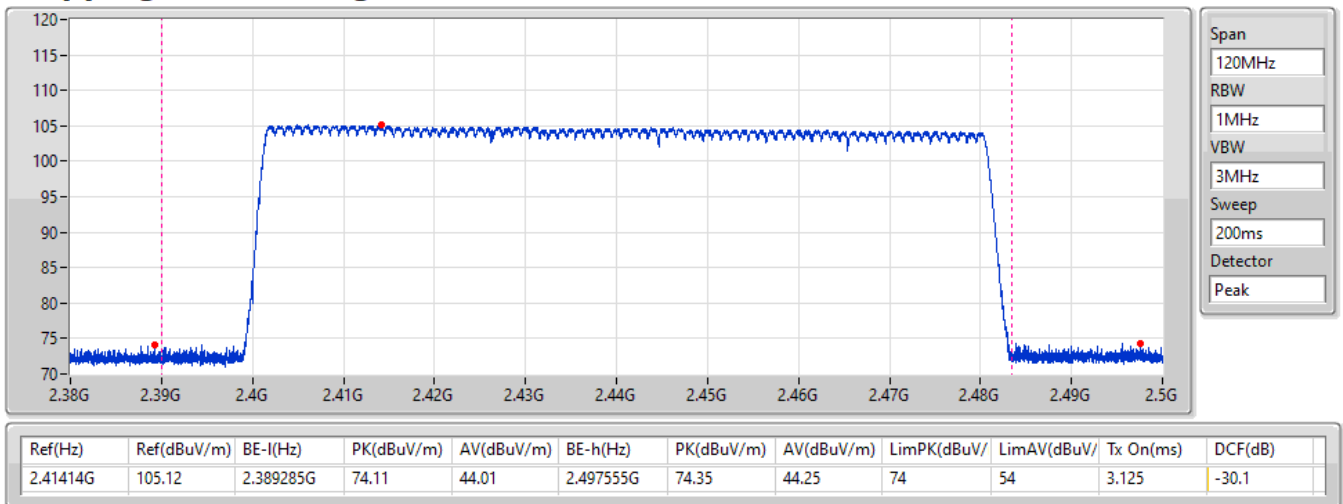
BT-EDR(2Mbps)
2440MHz
Hopping Ch Bandedge (Non-restricted Band)

27/04/2022



BT-EDR(2Mbps)
2440MHz
Hopping Ch Bandedge (Restricted Band)

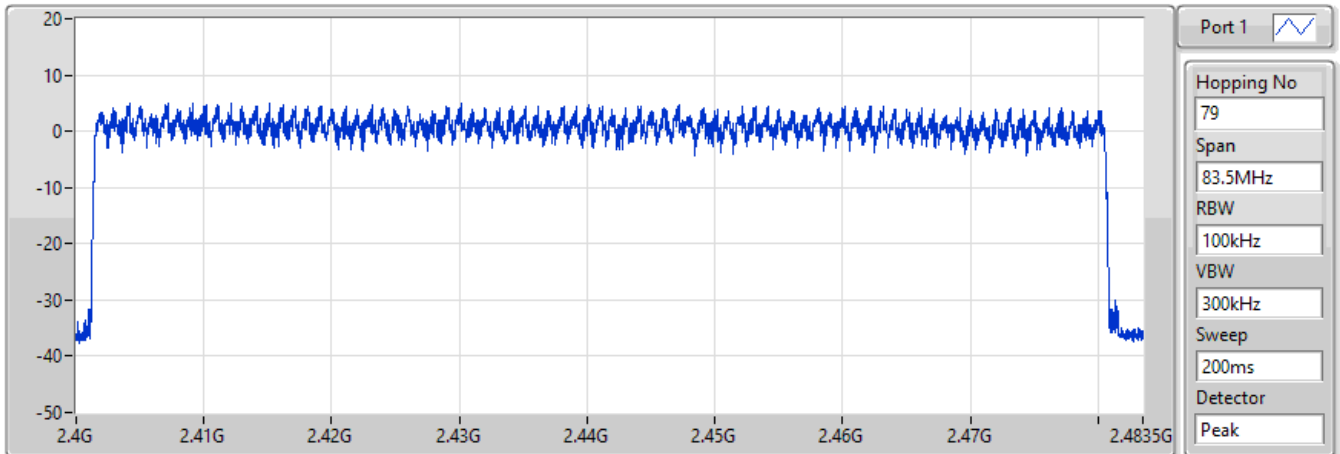
27/04/2022



BT-EDR(3Mbps)
2440MHz

Hopping-FS

27/04/2022

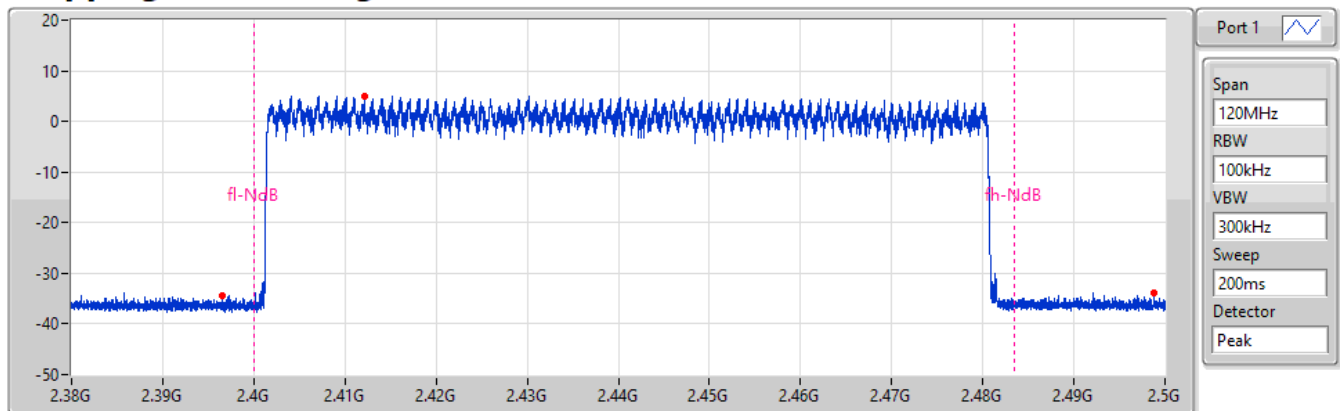


Hopping No	Limit
79	15

BT-EDR(3Mbps)
2440MHz

Hopping Ch Bandedge (Non-restricted Band)

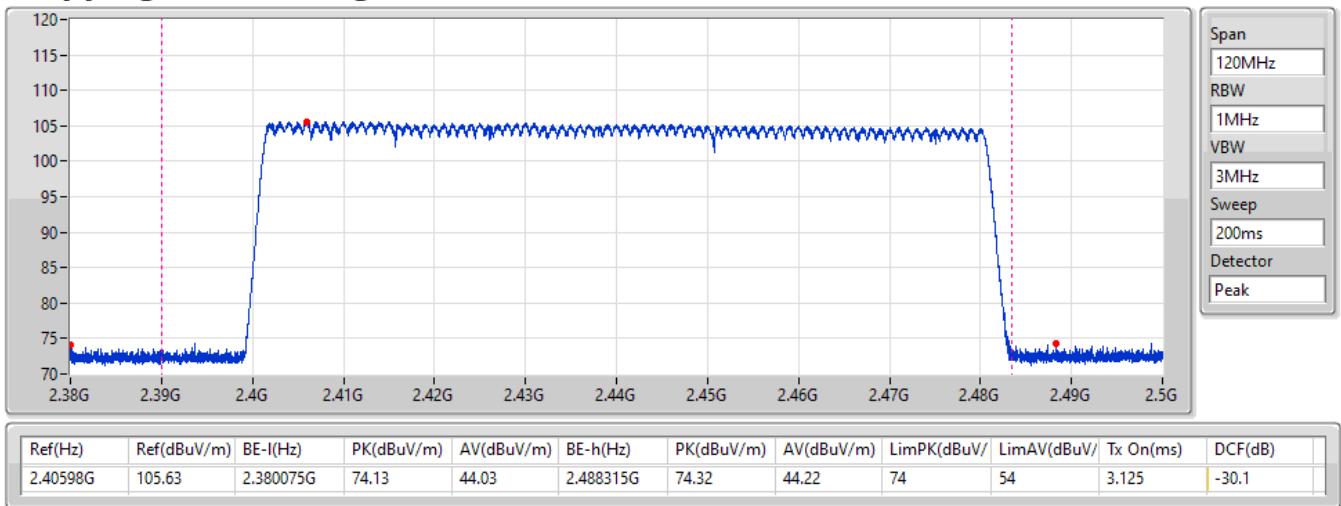
27/04/2022



Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-15.04	2.41216G	4.96	2.396575G	-34.49	2.498815G	-33.98

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

27/04/2022





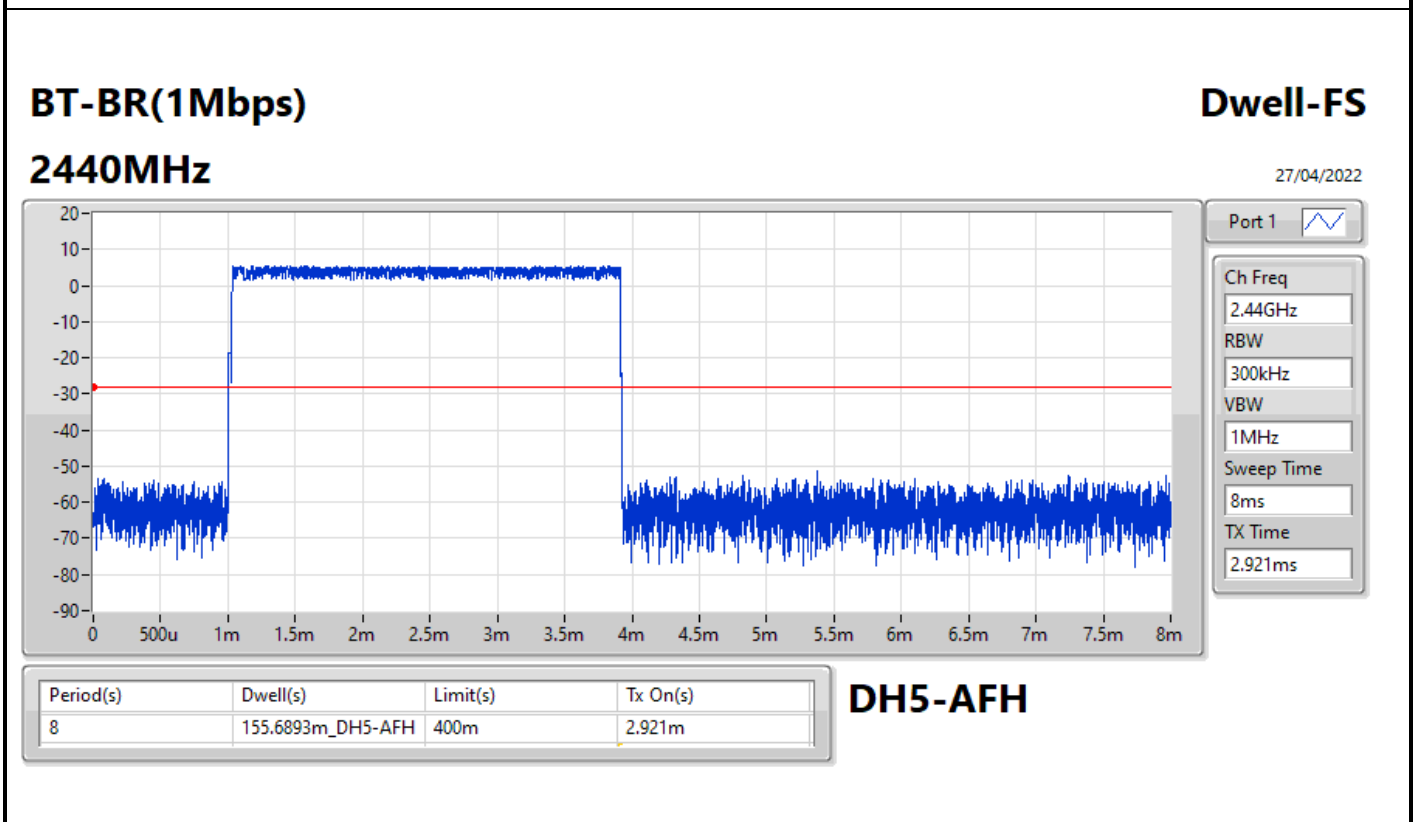
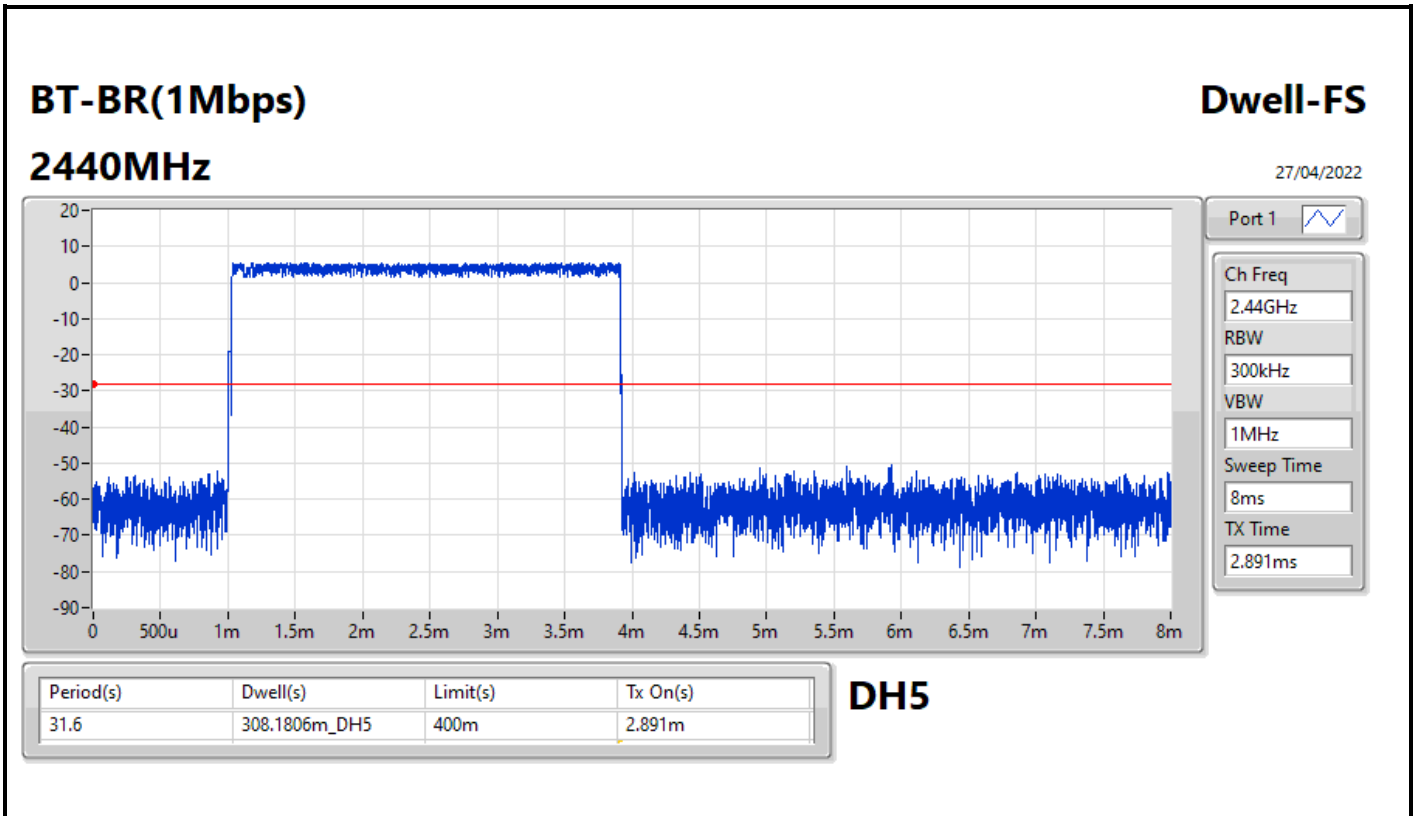
Summary

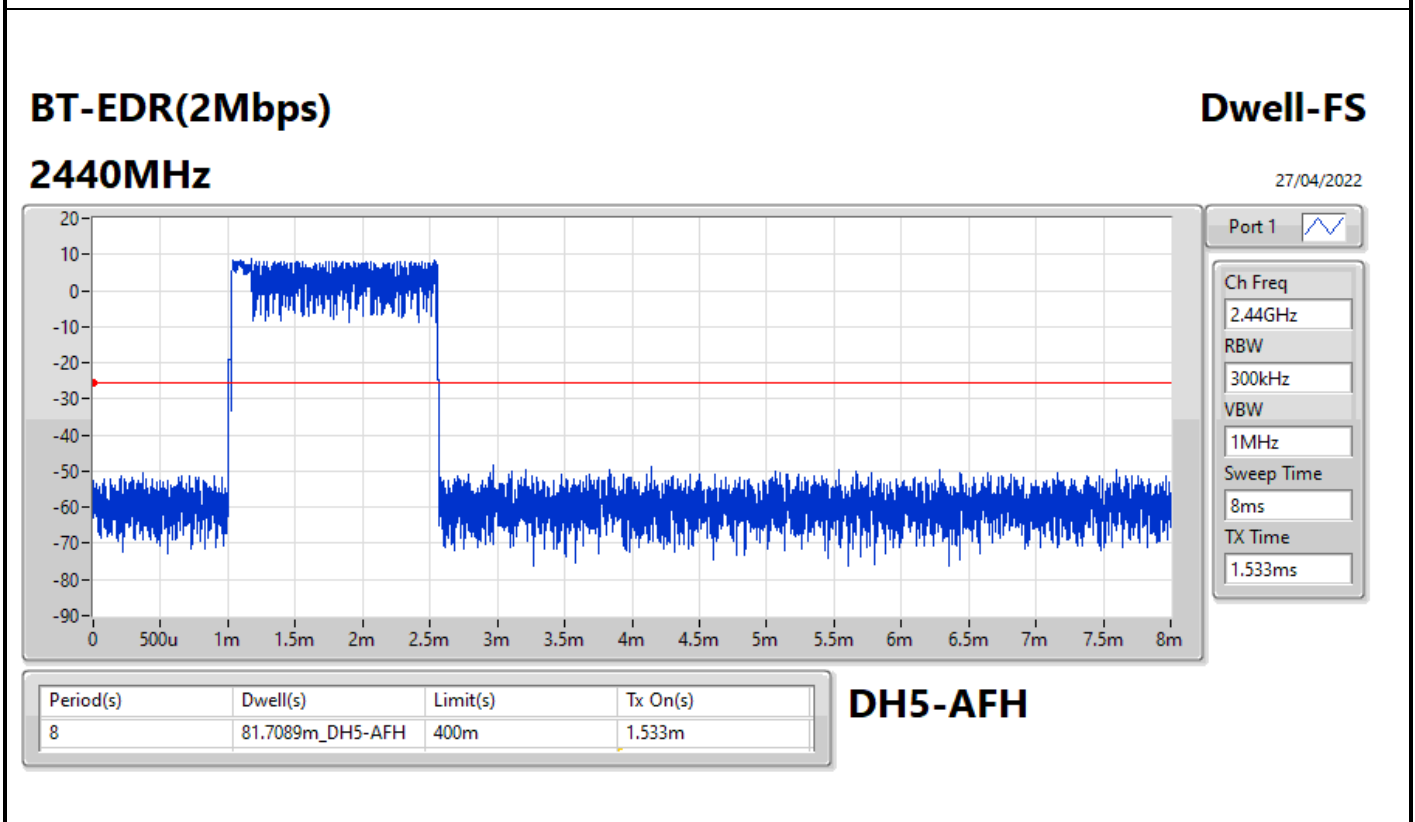
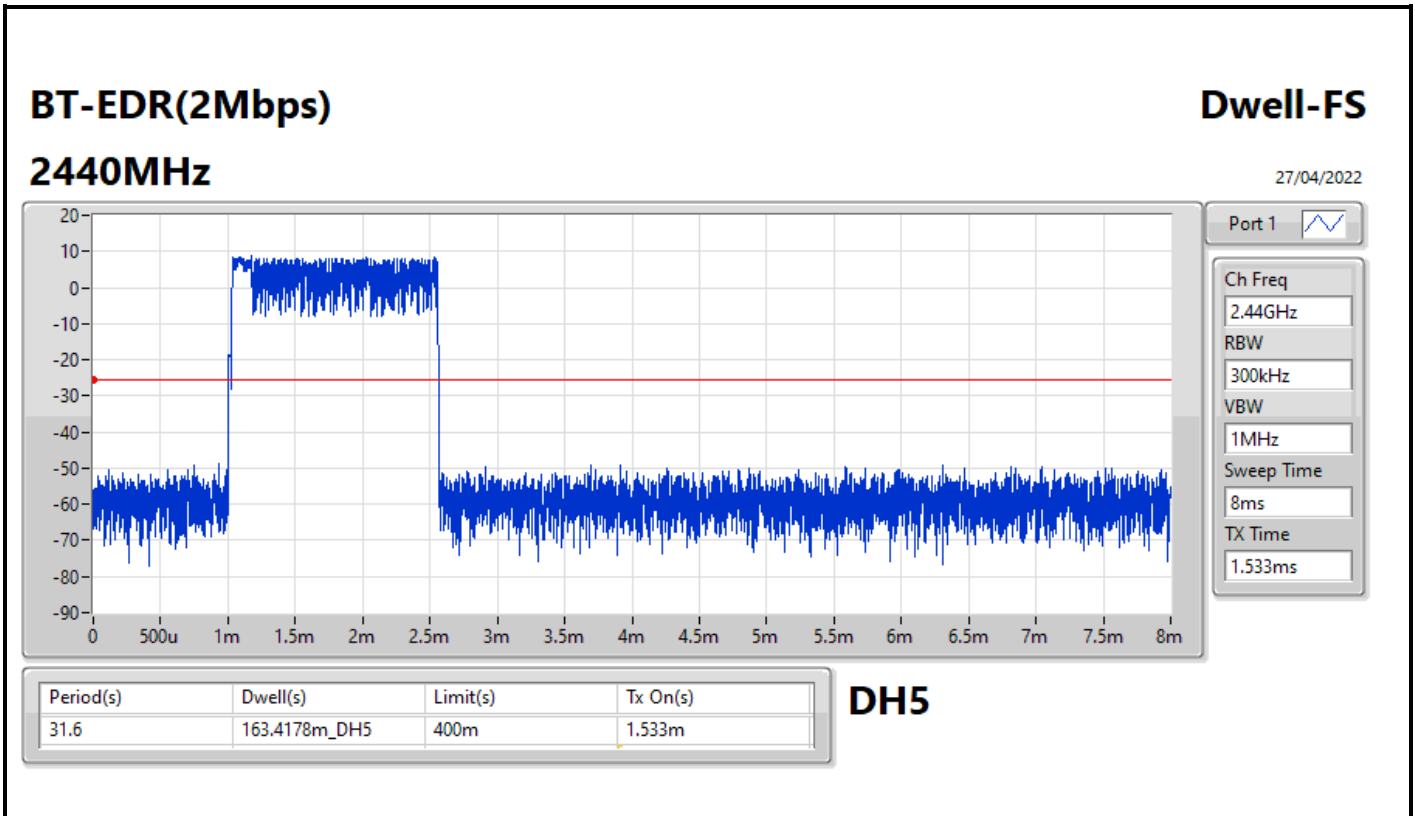
Mode	Max-Dwell (s)
2.4-2.4835GHz	-
BT-BR(1Mbps)	308.1806m_DH5
BT-EDR(2Mbps)	163.4178m_DH5
BT-EDR(3Mbps)	114.8082m_DH5

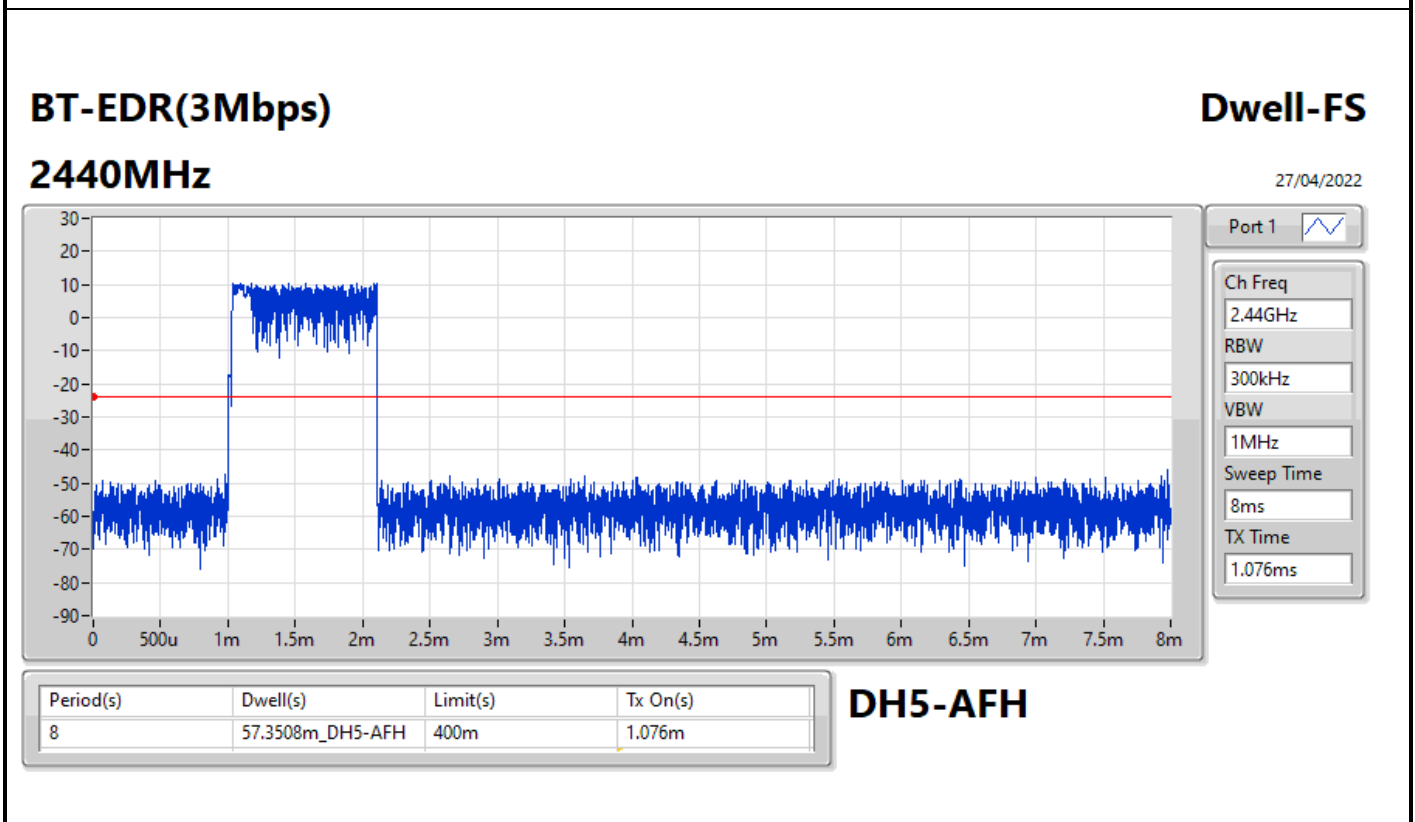
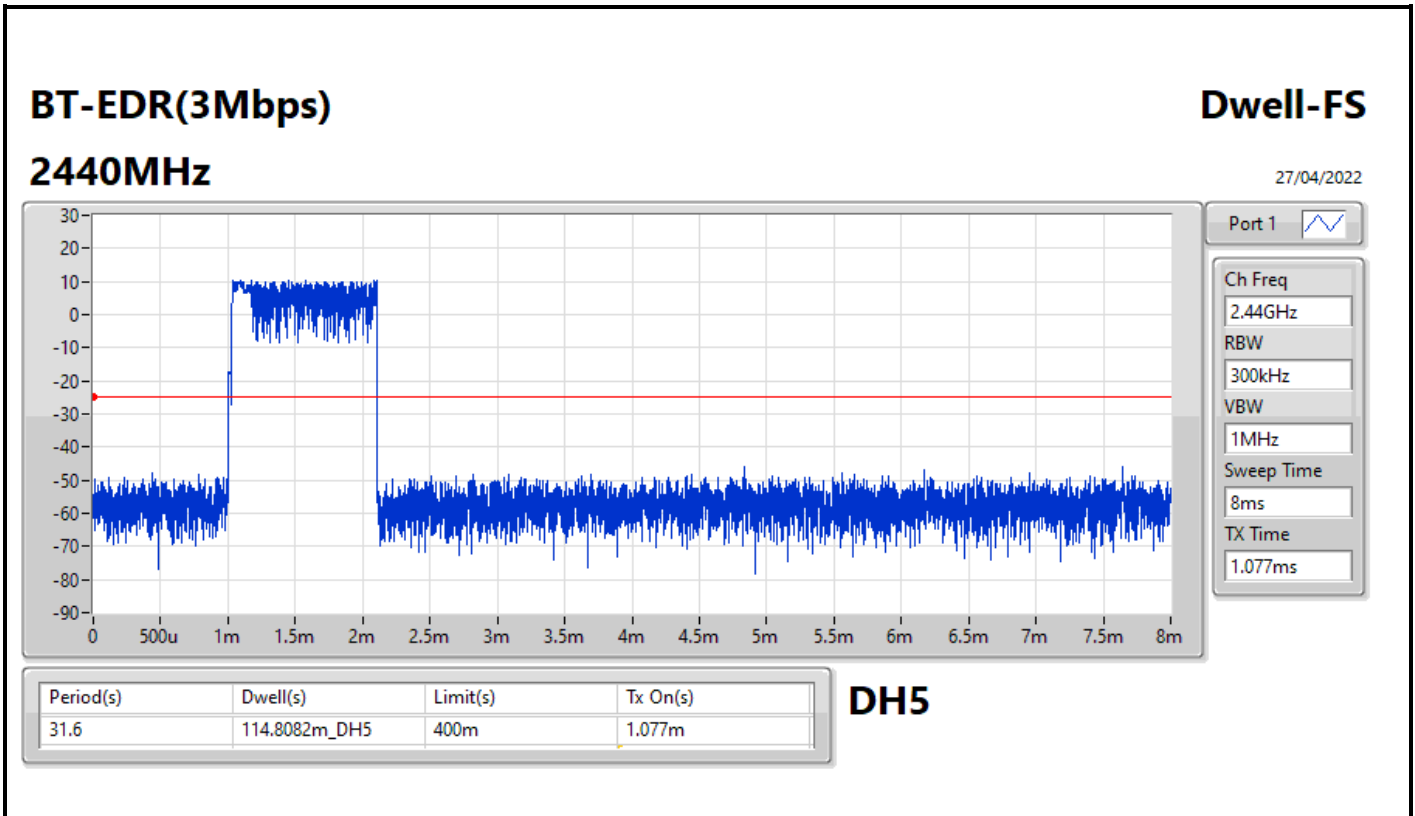


Result

Mode	Result	Period (s)	Dwell (s)	Limit (s)	Tx On (s)
BT-BR(1Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	308.1806m_DH5	400m	2.891m
2440MHz	Pass	8	155.6893m_DH5-AFH	400m	2.921m
BT-EDR(2Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	163.4178m_DH5	400m	1.533m
2440MHz	Pass	8	81.7089m_DH5-AFH	400m	1.533m
BT-EDR(3Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	114.8082m_DH5	400m	1.077m
2440MHz	Pass	8	57.3508m_DH5-AFH	400m	1.076m









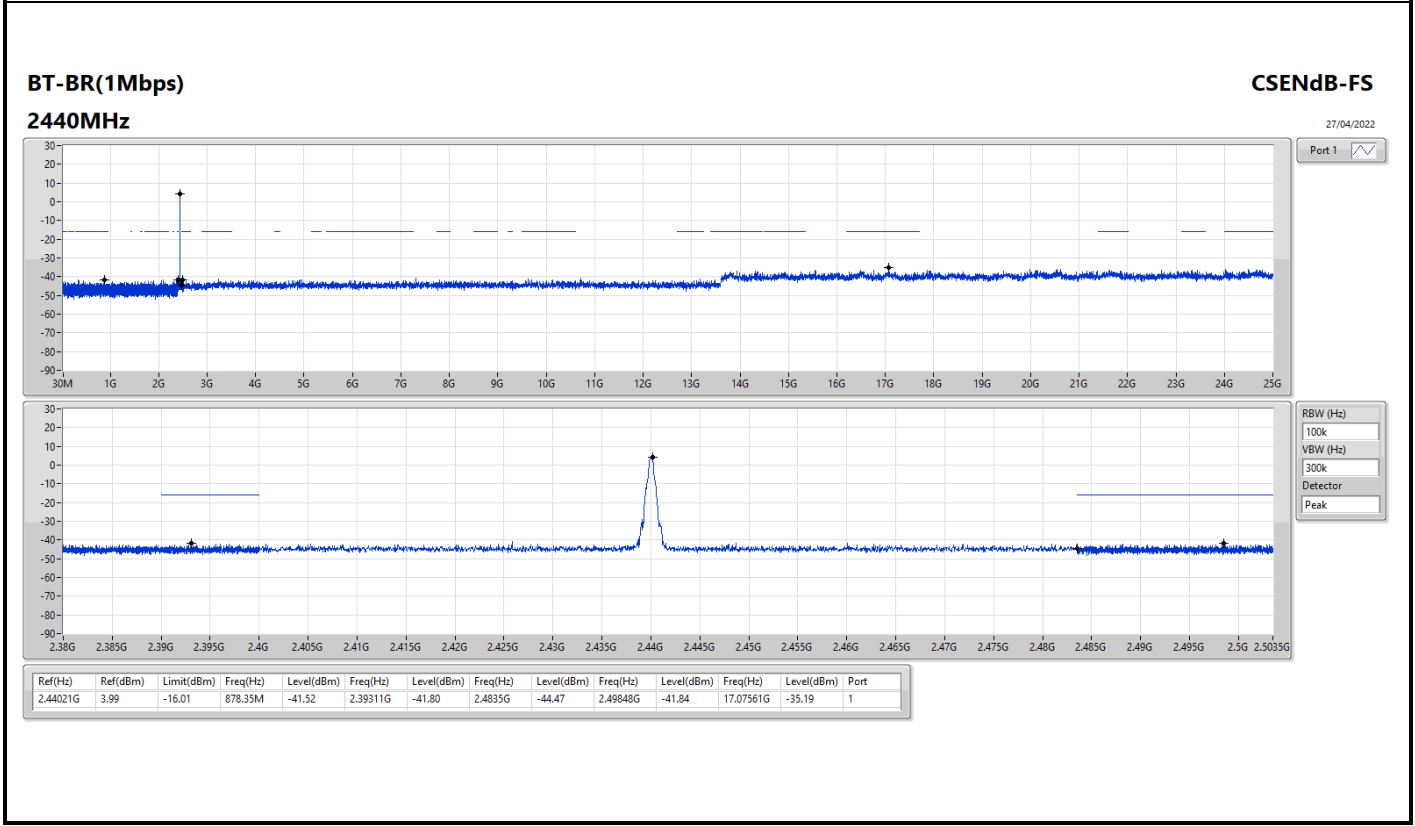
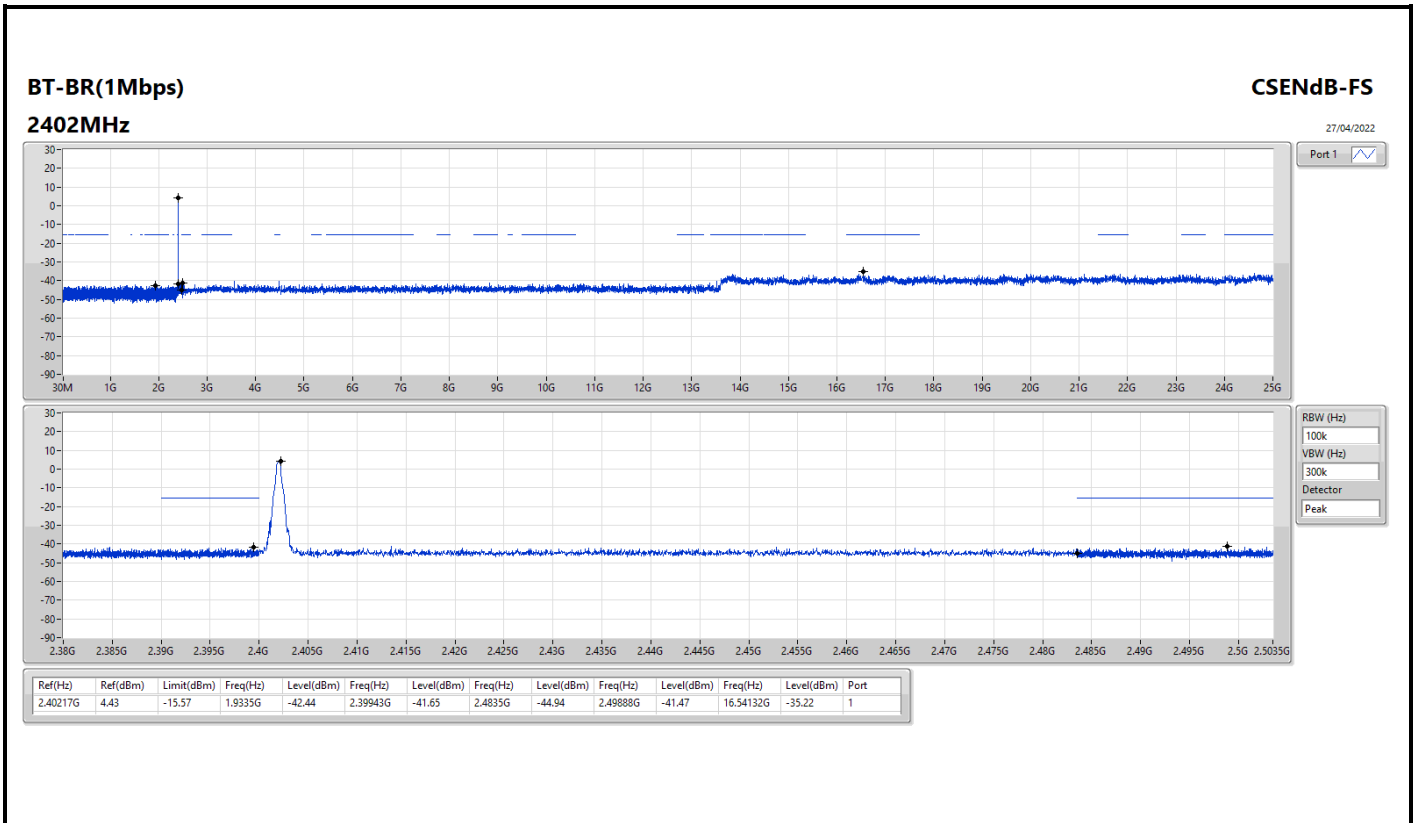
Summary

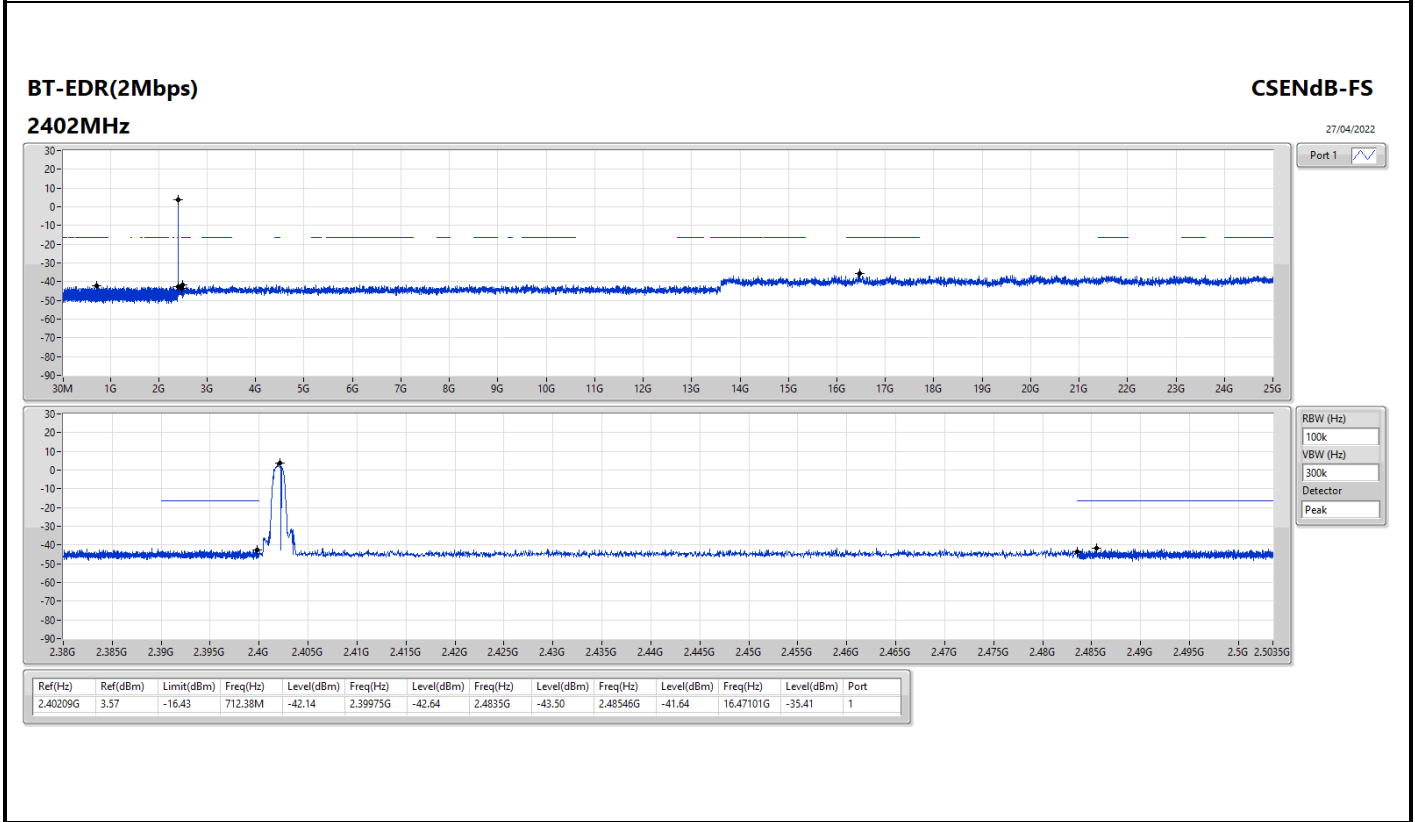
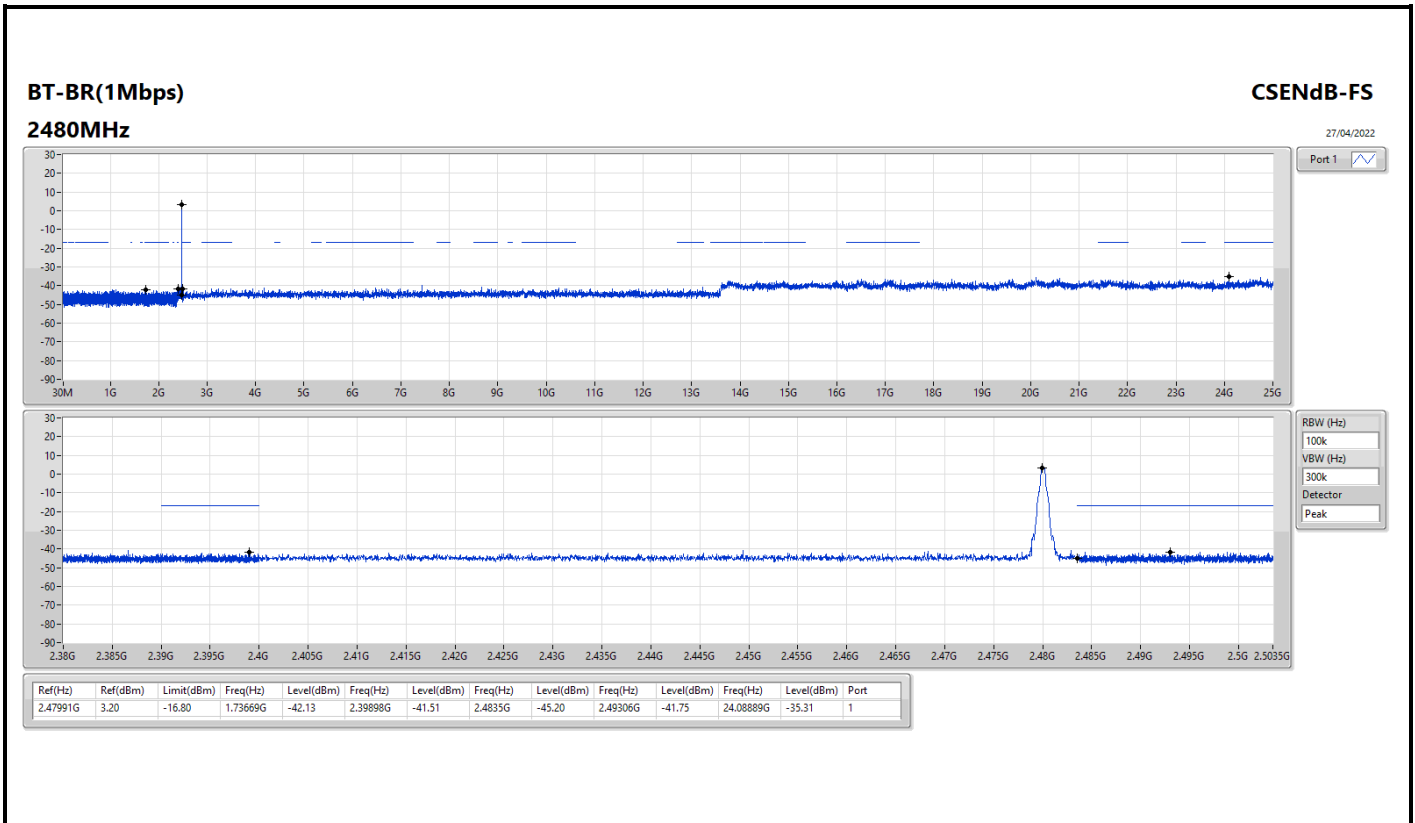
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	2.47991G	3.20	-16.80	1.73669G	-42.13	2.39898G	-41.51	2.4835G	-45.20	2.49306G	-41.75	24.08889G	-35.31	1
BT-EDR(2Mbps)	Pass	2.48003G	3.64	-16.36	393.37M	-41.91	2.39597G	-42.10	2.4G	-45.50	2.48668G	-41.48	24.71317G	-36.22	1
BT-EDR(3Mbps)	Pass	2.47999G	2.32	-17.68	93.74M	-41.87	2.39634G	-42.24	2.4835G	-42.90	2.48564G	-41.65	21.74363G	-36.01	1

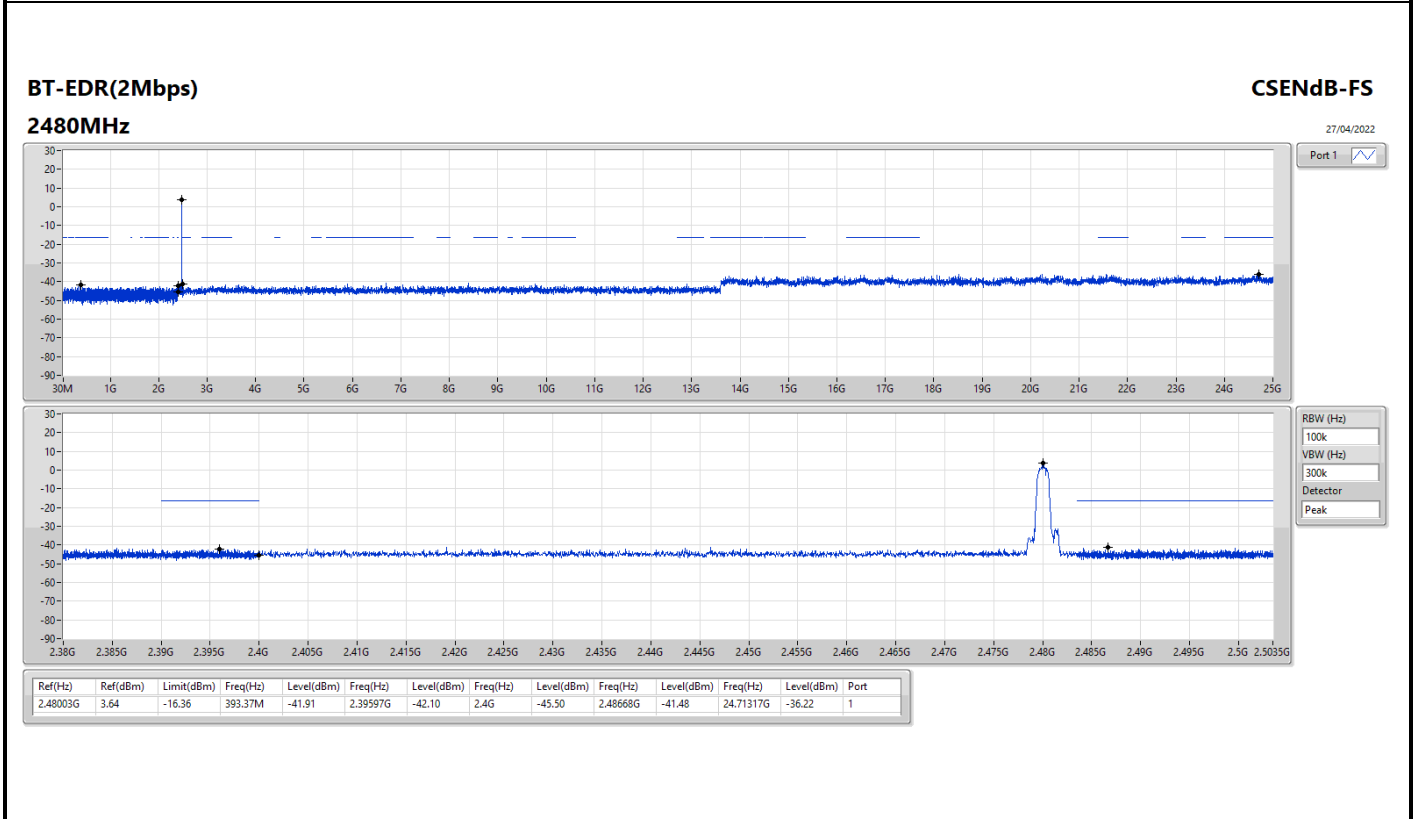
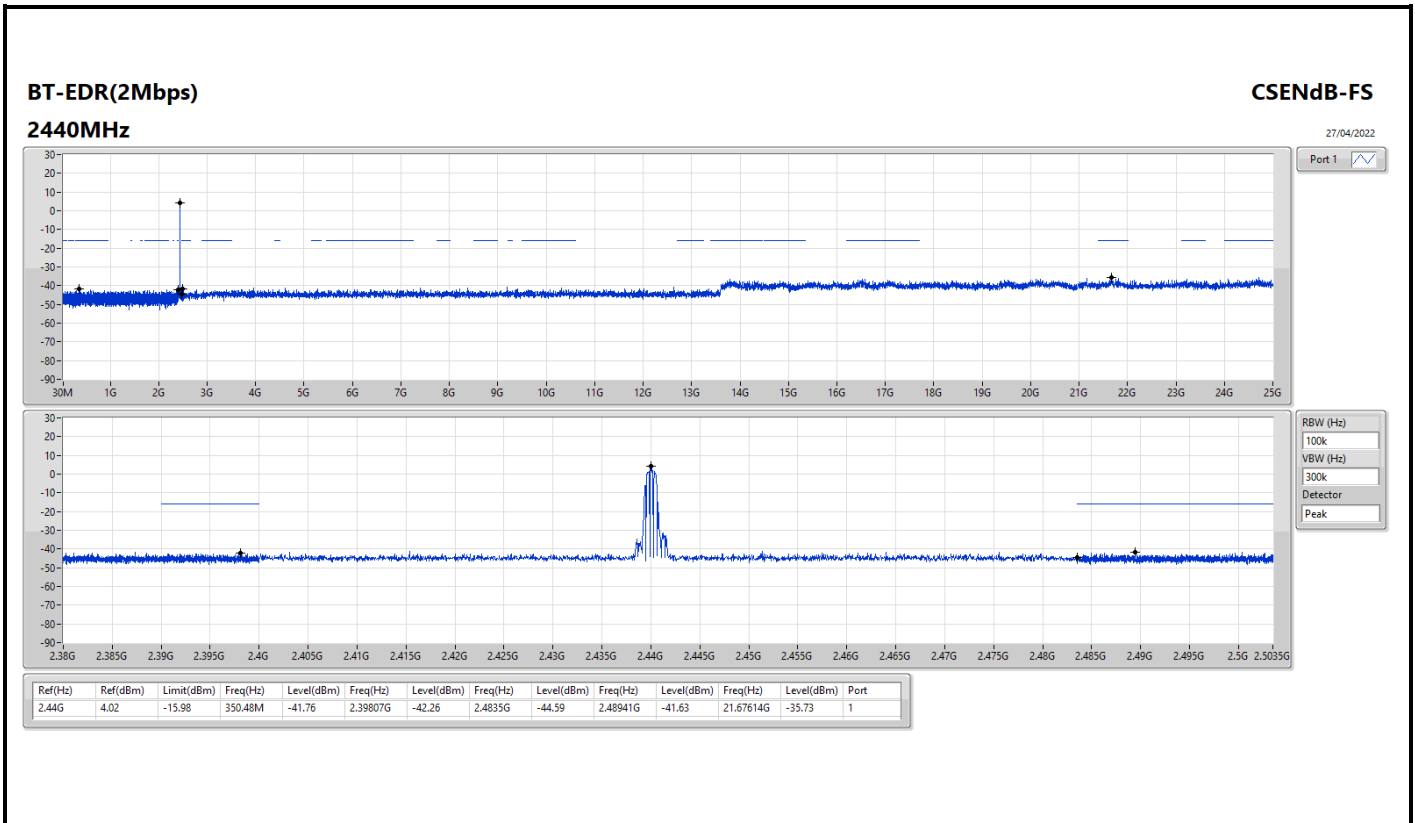


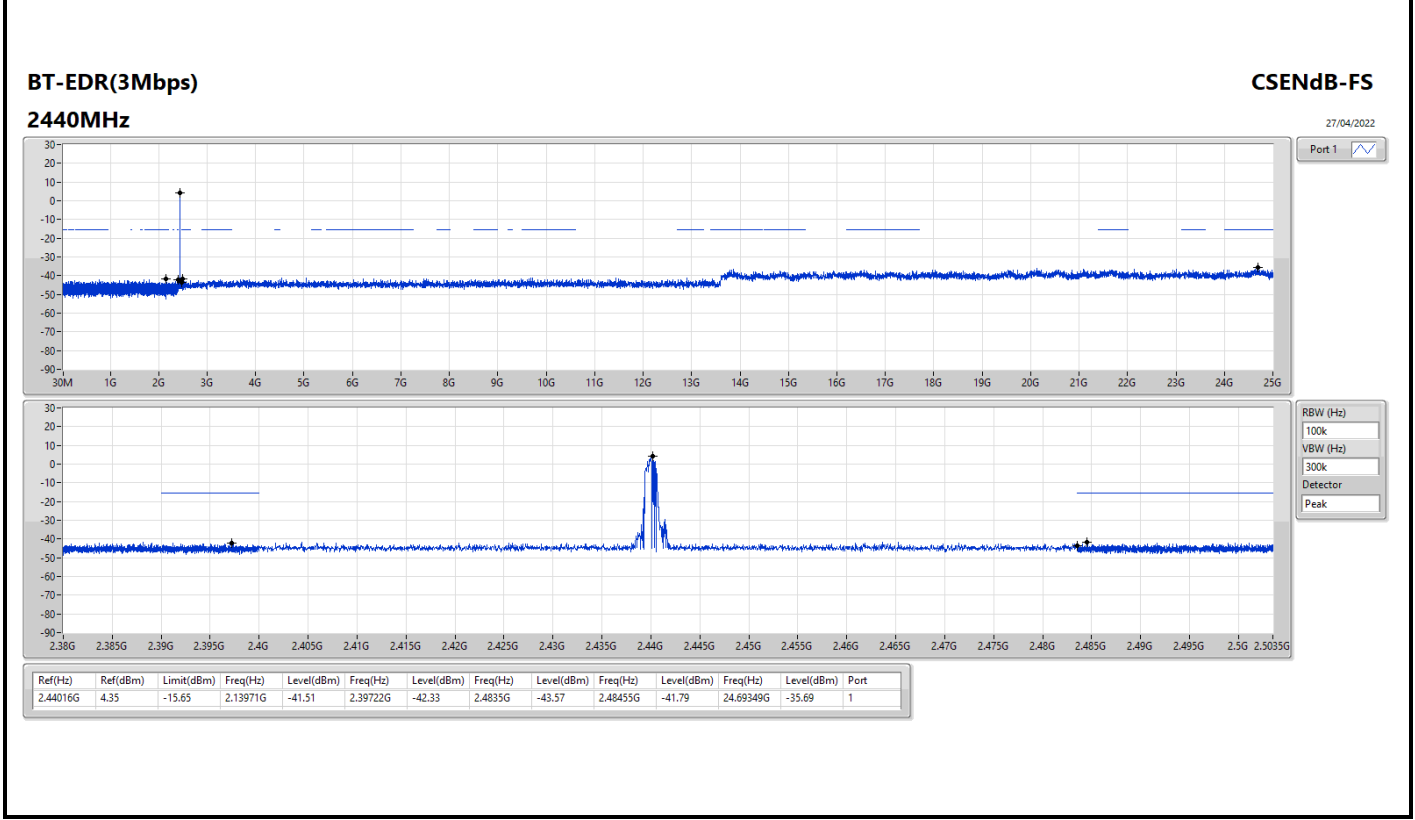
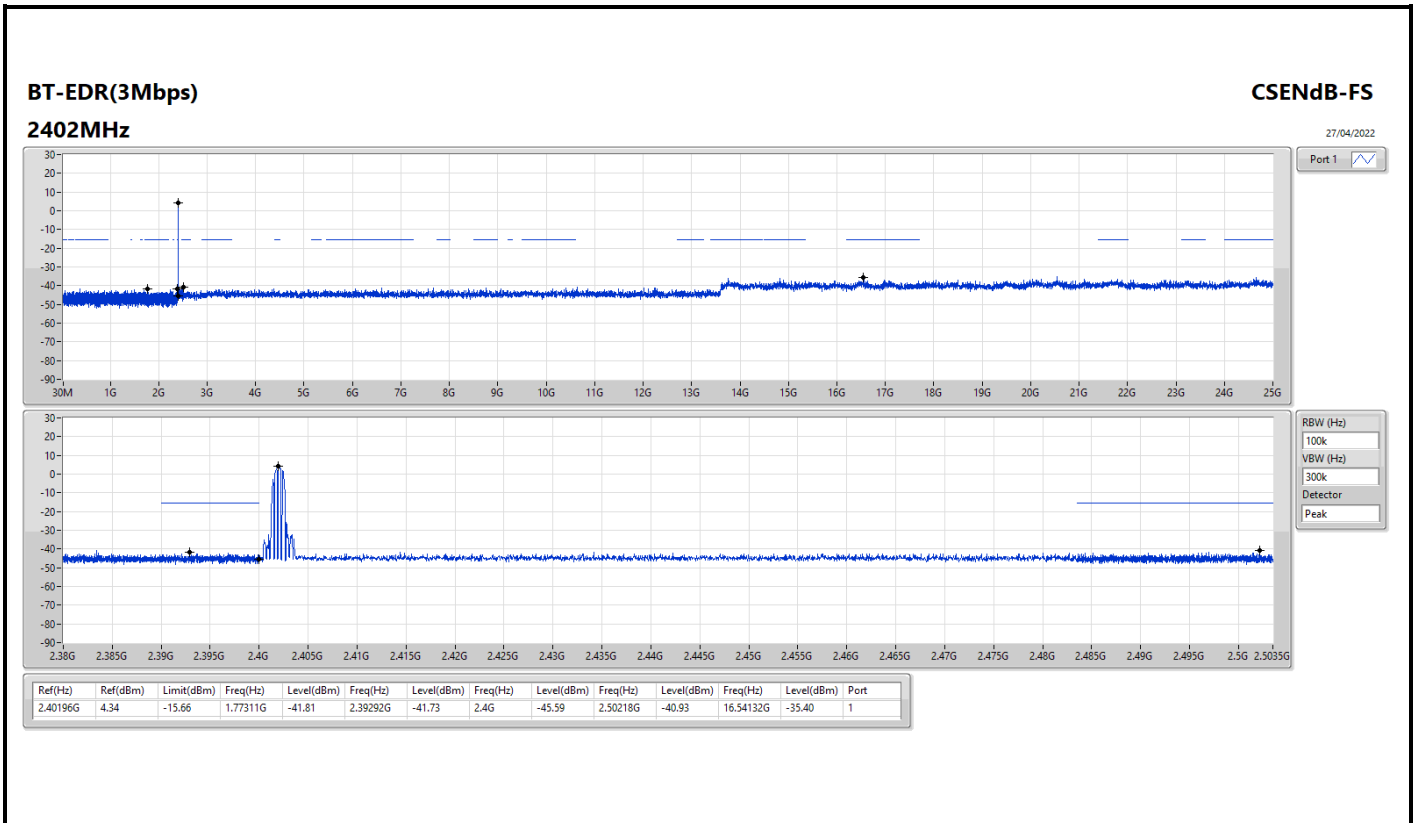
Result

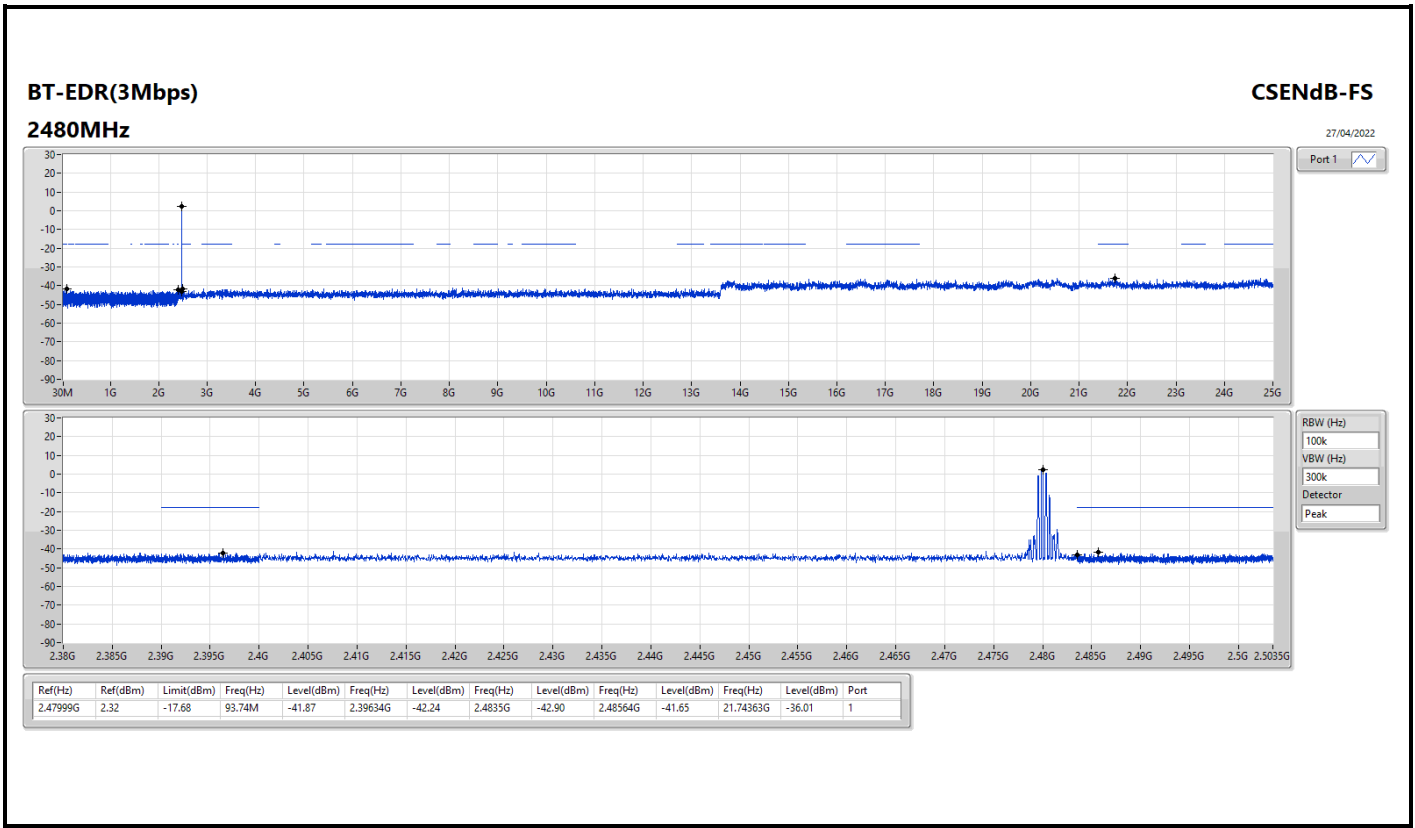
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40217G	4.43	-15.57	1.9335G	-42.44	2.39943G	-41.65	2.4835G	-44.94	2.49888G	-41.47	16.54132G	-35.22	1
2440MHz	Pass	2.44021G	3.99	-16.01	878.35M	-41.52	2.39311G	-41.80	2.4835G	-44.47	2.49848G	-41.84	17.07561G	-35.19	1
2480MHz	Pass	2.47991G	3.20	-16.80	1.73669G	-42.13	2.39898G	-41.51	2.4835G	-45.20	2.49306G	-41.75	24.08889G	-35.31	1
BT-EDR(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40209G	3.57	-16.43	712.38M	-42.14	2.39975G	-42.64	2.4835G	-43.50	2.48546G	-41.64	16.47101G	-35.41	1
2440MHz	Pass	2.44G	4.02	-15.98	350.48M	-41.76	2.39807G	-42.26	2.4835G	-44.59	2.48941G	-41.63	21.67614G	-35.73	1
2480MHz	Pass	2.48003G	3.64	-16.36	393.37M	-41.91	2.39597G	-42.10	2.4G	-45.50	2.48668G	-41.48	24.71317G	-36.22	1
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40196G	4.34	-15.66	1.77311G	-41.81	2.39292G	-41.73	2.4G	-45.59	2.50218G	-40.93	16.54132G	-35.40	1
2440MHz	Pass	2.44016G	4.35	-15.65	2.13971G	-41.51	2.39722G	-42.33	2.4835G	-43.57	2.48455G	-41.79	24.69349G	-35.69	1
2480MHz	Pass	2.47999G	2.32	-17.68	93.74M	-41.87	2.39634G	-42.24	2.4835G	-42.90	2.48564G	-41.65	21.74363G	-36.01	1









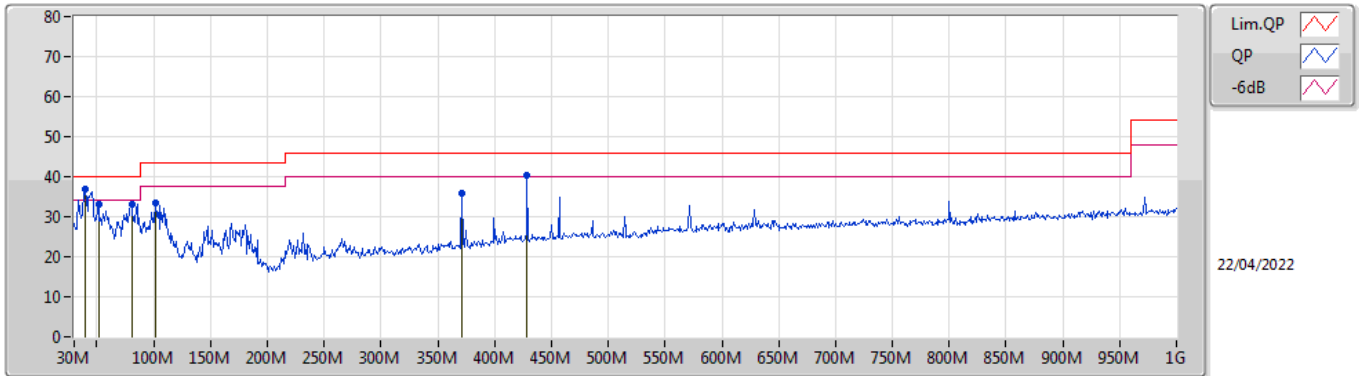




Summary

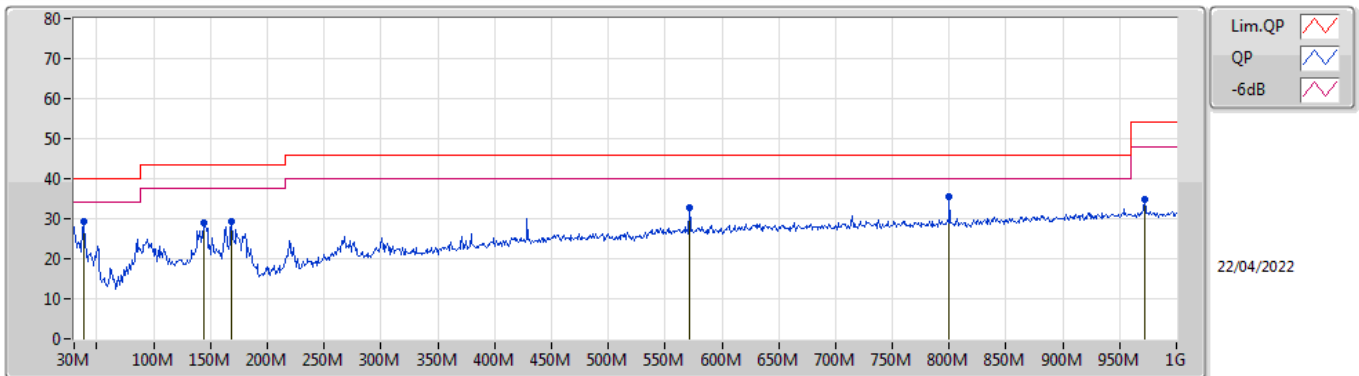
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 4	Pass	QP	39.7M	36.92	40.00	-3.08	Vertical

Mode 4



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	36.92	40.00	-3.08	-11.98	3	Vertical	202	1.00	"Worst"	48.90	18.78	0.90	31.66
PK	51.34M	33.09	40.00	-6.91	-17.17	3	Vertical	289	1.00	-	50.26	13.50	1.10	31.77
PK	80.44M	33.00	40.00	-7.00	-17.72	3	Vertical	254	1.50	-	50.72	12.80	1.40	31.92
PK	101.78M	33.50	43.50	-10.00	-13.47	3	Vertical	356	1.00	-	46.97	16.90	1.51	31.88
PK	371.44M	35.89	46.00	-10.11	-8.28	3	Vertical	259	2.00	-	44.17	20.77	3.09	32.14
PK	428.67M	40.25	46.00	-5.75	-6.61	3	Vertical	231	1.50	-	46.86	22.26	3.37	32.24

Mode 4



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	38.73M	29.36	40.00	-10.64	-11.39	3	Horizontal	280	1.25	"Worst"	40.75	19.35	0.90	31.64
PK	144.46M	29.05	43.50	-14.45	-13.59	3	Horizontal	46	2.00	-	42.64	16.53	1.84	31.96
PK	168.71M	29.27	43.50	-14.23	-14.40	3	Horizontal	173	1.50	-	43.67	15.52	2.04	31.96
PK	571.26M	32.81	46.00	-13.19	-4.30	3	Horizontal	181	1.25	-	37.11	24.29	3.89	32.48
PK	800.18M	35.36	46.00	-10.64	-2.18	3	Horizontal	35	1.25	-	37.54	25.61	4.90	32.69
PK	971.87M	34.72	54.00	-19.28	-0.17	3	Horizontal	10	1.00	-	34.89	26.80	5.60	32.57

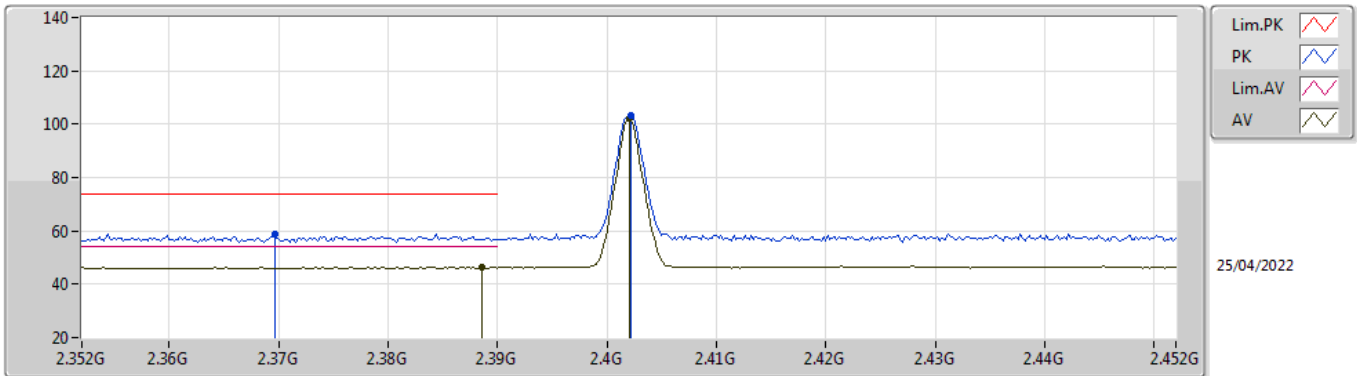


Summary

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	47.10	54.00	-6.90	3	Vertical	317	1.70	-
BT-EDR(3Mbps)	Pass	AV	2.4835G	47.27	54.00	-6.73	3	Vertical	316	1.71	-

BT-BR(1Mbps)

2402MHz_TX

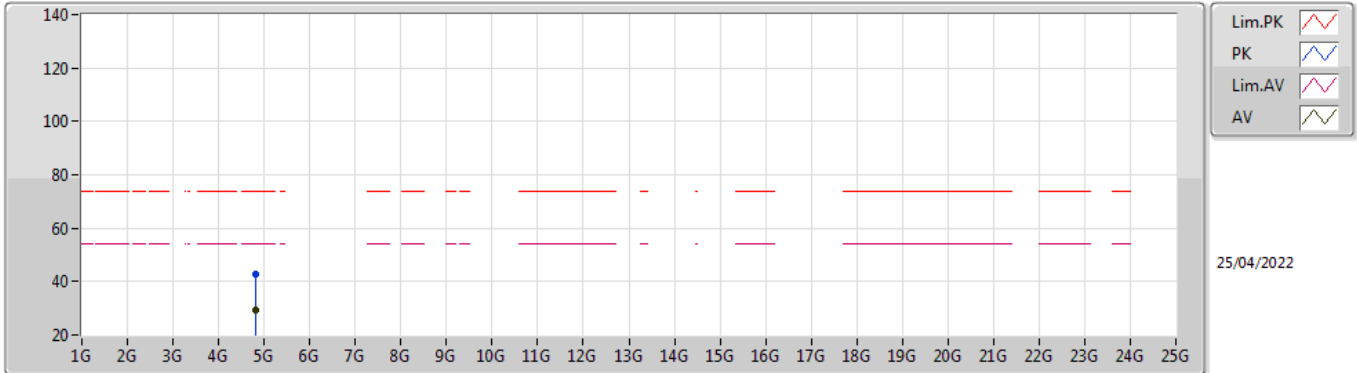


EUT Y_1TX
Setting 00
02-B-B-2

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	2.3696G	58.64	74.00	-15.36	28.20	3	Vertical	326	1.82	-	27.66	2.78	-
AV	2.3886G	46.30	54.00	-7.70	15.89	3	Vertical	326	1.82	-	27.62	2.79	-
PK	2.4022G	103.04	Inf	-Inf	72.64	3	Vertical	326	1.82	-	27.60	2.80	-
AV	2.402G	102.11	Inf	-Inf	71.71	3	Vertical	326	1.82	-	27.60	2.80	-

BT-BR(1Mbps)

2402MHz_TX

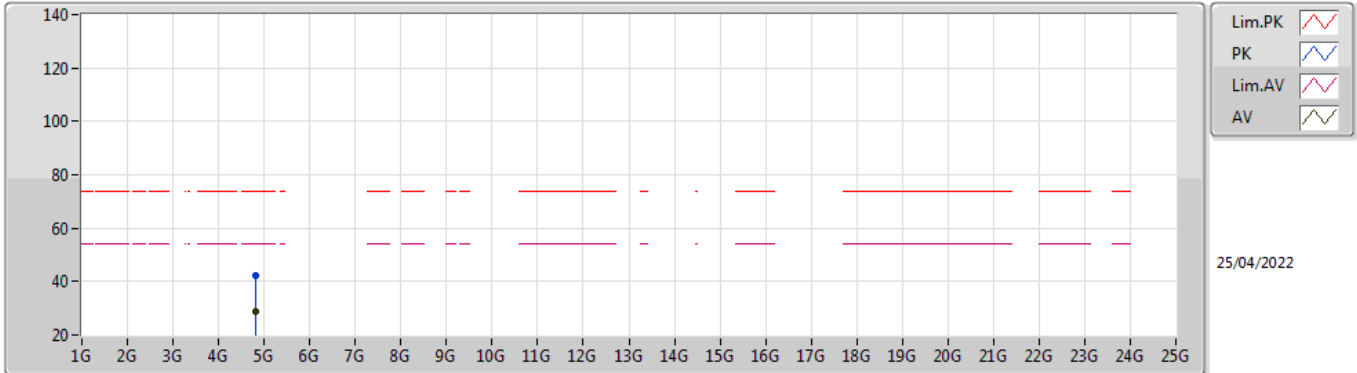


EUT Y_1TX
Setting 00
02-B-B-2

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	4.80486G	42.94	74.00	-31.06	38.68	3	Vertical	265	2.09	-	31.39	5.10	32.23
AV	4.80462G	29.15	54.00	-24.85	24.89	3	Vertical	265	2.09	-	31.39	5.10	32.23

BT-BR(1Mbps)

2402MHz_TX

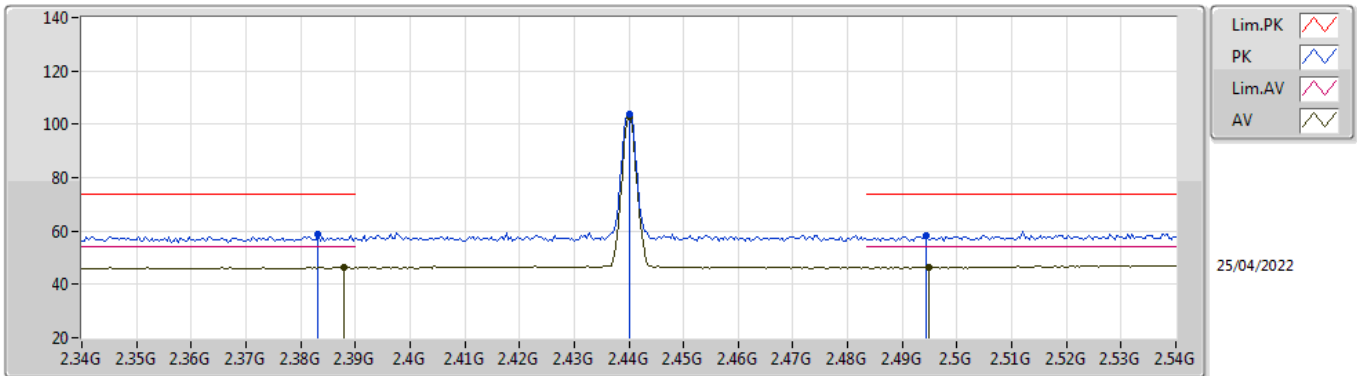


EUT Y_1TX
Setting 00
02-B-B-2

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	4.80333G	42.45	74.00	-31.55	38.19	3	Horizontal	273	1.25	-	31.39	5.10	32.23
AV	4.80486G	28.98	54.00	-25.02	24.72	3	Horizontal	273	1.25	-	31.39	5.10	32.23

BT-BR(1Mbps)

2440MHz_TX

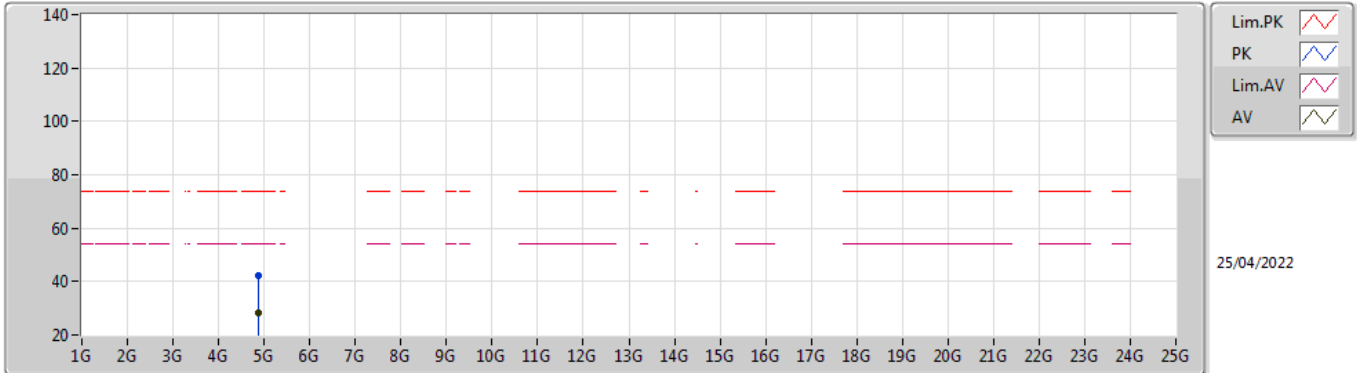


EUT_V_1TX
Setting 00
02-B-B-2

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	2.3832G	58.78	74.00	-15.22	28.36	3	Vertical	126	2.74	-	27.63	2.79	-
AV	2.388G	46.31	54.00	-7.69	15.90	3	Vertical	126	2.74	-	27.62	2.79	-
PK	2.44G	103.90	Inf	-Inf	73.54	3	Vertical	126	2.74	-	27.52	2.84	-
AV	2.44G	102.92	Inf	-Inf	72.56	3	Vertical	126	2.74	-	27.52	2.84	-
PK	2.4944G	58.05	74.00	-15.95	27.66	3	Vertical	126	2.74	-	27.50	2.89	-
AV	2.4948G	46.41	54.00	-7.59	16.02	3	Vertical	126	2.74	-	27.50	2.89	-

BT-BR(1Mbps)

2440MHz_TX

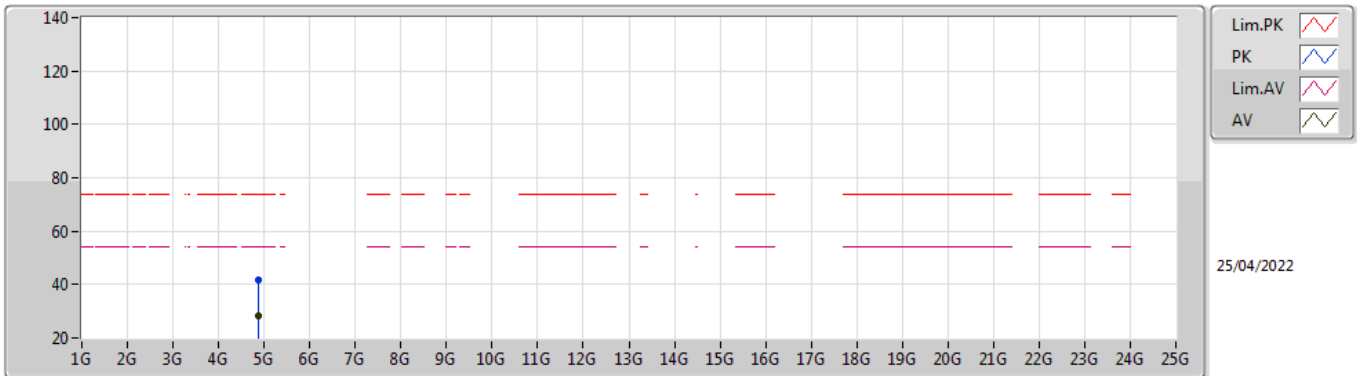


EUT Y_1TX
Setting 00
02-B-B-2

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	4.87999G	42.13	74.00	-31.87	37.93	3	Vertical	313	1.57	-	31.30	5.10	32.20
AV	4.88024G	28.53	54.00	-25.47	24.33	3	Vertical	313	1.57	-	31.30	5.10	32.20

BT-BR(1Mbps)

2440MHz_TX

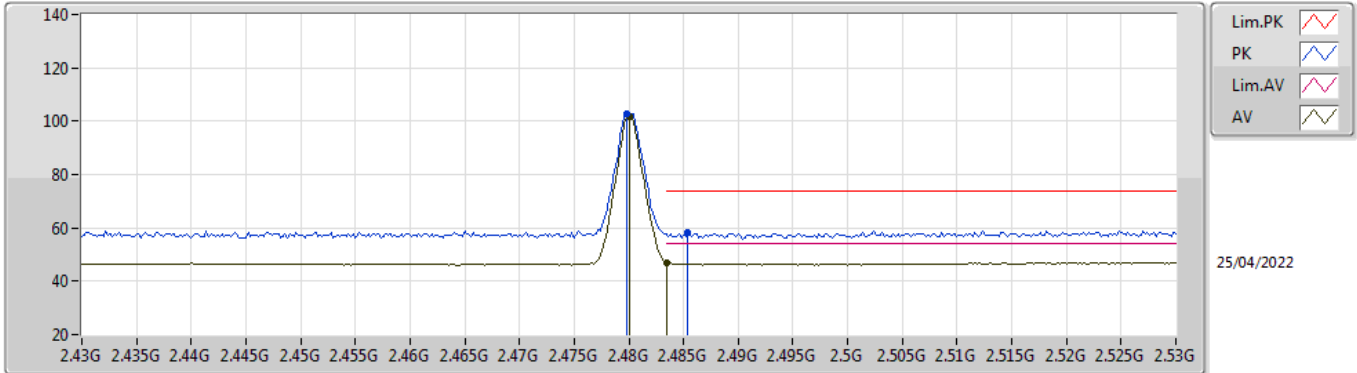


EUT_V_1TX
Setting 00
02-B-B-2

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	4.8795G	41.57	74.00	-32.43	37.37	3	Horizontal	333	2.60	-	31.30	5.10	32.20
AV	4.87974G	28.50	54.00	-25.50	24.30	3	Horizontal	333	2.60	-	31.30	5.10	32.20

BT-BR(1Mbps)

2480MHz_TX

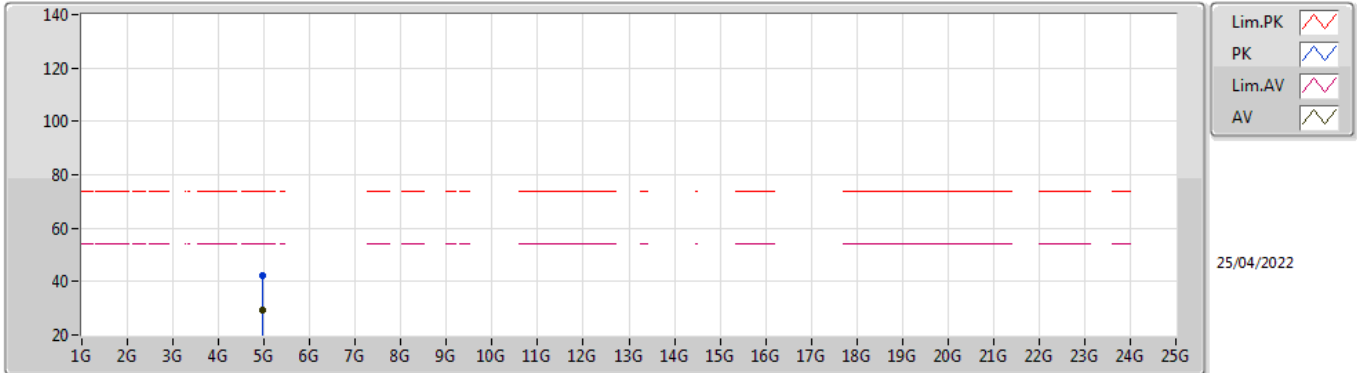


EUT Y_1TX
Setting 00
02-B-B-2

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	102.89	Inf	-Inf	72.51	3	Vertical	317	1.70	-	27.50	2.88	-
AV	2.48G	101.97	Inf	-Inf	71.59	3	Vertical	317	1.70	-	27.50	2.88	-
PK	2.4854G	58.04	74.00	-15.96	27.65	3	Vertical	317	1.70	-	27.50	2.89	-
AV	2.4835G	47.10	54.00	-6.90	16.72	3	Vertical	317	1.70	-	27.50	2.88	-

BT-BR(1Mbps)

2480MHz_TX

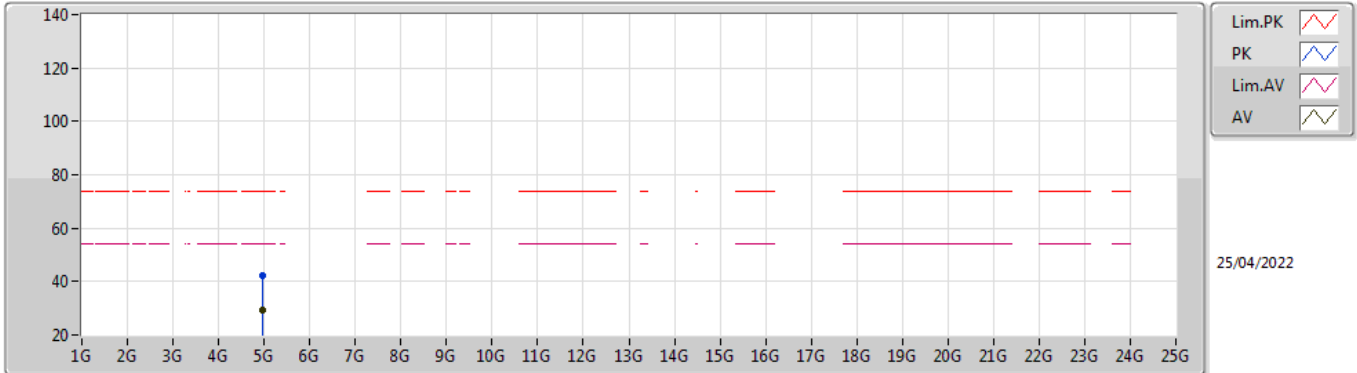


EUT Y_1TX
Setting 00
02-B-B-2

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	4.96014G	42.02	74.00	-31.98	37.55	3	Vertical	238	1.37	-	31.54	5.10	32.17
AV	4.9594G	29.19	54.00	-24.81	24.72	3	Vertical	238	1.37	-	31.54	5.10	32.17

BT-BR(1Mbps)

2480MHz_TX

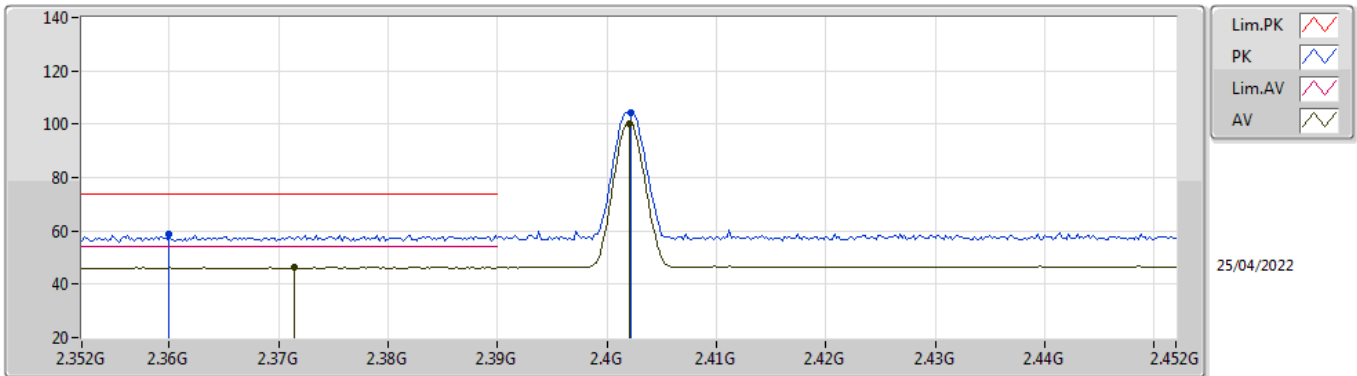


EUT Y_1TX
Setting 00
02-B-B-2

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	4.96003G	42.32	74.00	-31.68	37.85	3	Horizontal	58	1.20	-	31.54	5.10	32.17
AV	4.96006G	29.07	54.00	-24.93	24.60	3	Horizontal	58	1.20	-	31.54	5.10	32.17

BT-EDR(3Mbps)

2402MHz_TX

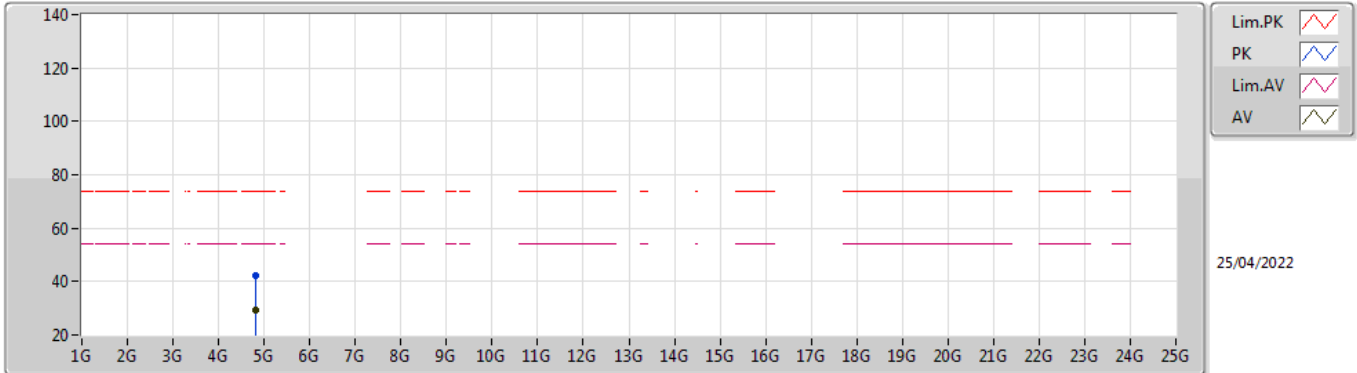


EUT Y_1TX
Setting 00
02-B-B-2

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	2.36G	58.54	74.00	-15.46	28.08	3	Vertical	323	1.80	-	27.68	2.78	-
AV	2.3714G	46.35	54.00	-7.65	15.90	3	Vertical	323	1.80	-	27.66	2.79	-
PK	2.4022G	104.45	Inf	-Inf	74.05	3	Vertical	323	1.80	-	27.60	2.80	-
AV	2.402G	100.29	Inf	-Inf	69.89	3	Vertical	323	1.80	-	27.60	2.80	-

BT-EDR(3Mbps)

2402MHz_TX

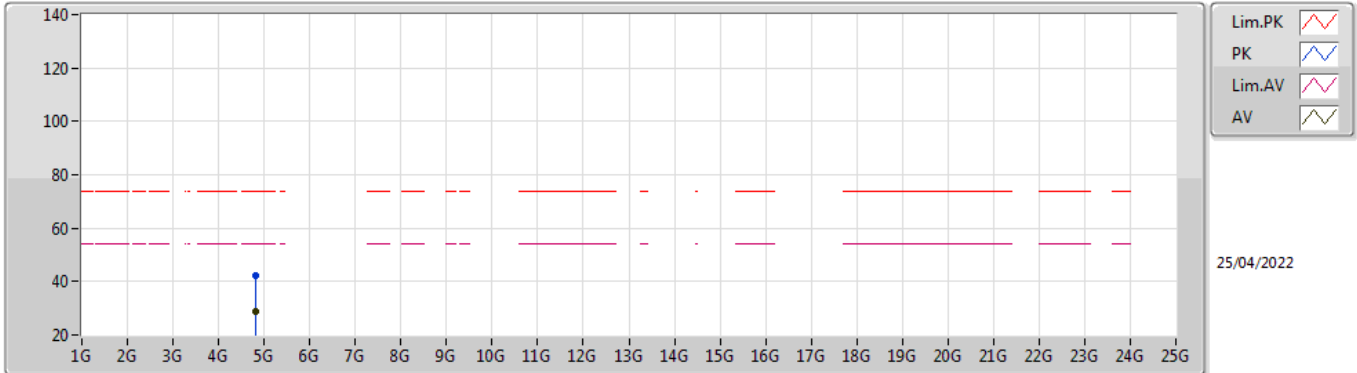


EUT Y_1TX
Setting 00
02-B-B-2

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	4.80321G	42.22	74.00	-31.78	37.96	3	Vertical	282	1.24	-	31.39	5.10	32.23
AV	4.8048G	29.15	54.00	-24.85	24.89	3	Vertical	282	1.24	-	31.39	5.10	32.23

BT-EDR(3Mbps)

2402MHz_TX

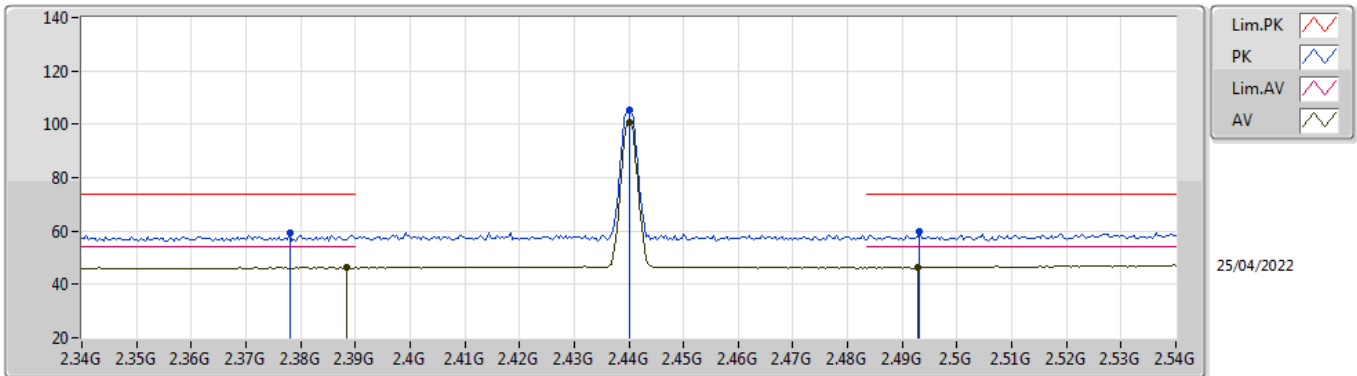


EUT Y_1TX
Setting 00
02-B-B-2

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	4.80403G	42.00	74.00	-32.00	37.74	3	Horizontal	357	2.90	-	31.39	5.10	32.23
AV	4.80316G	29.02	54.00	-24.98	24.76	3	Horizontal	357	2.90	-	31.39	5.10	32.23

BT-EDR(3Mbps)

2440MHz_TX

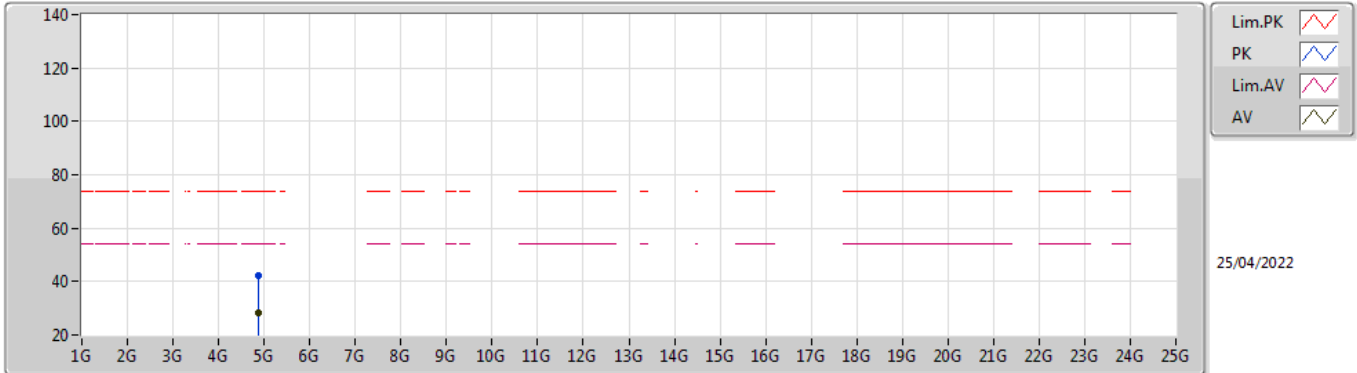


EUT_V_1TX
Setting 00
02-B-B-2

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	2.378G	59.28	74.00	-14.72	28.85	3	Vertical	126	2.74	-	27.64	2.79	-
AV	2.3884G	46.33	54.00	-7.67	15.92	3	Vertical	126	2.74	-	27.62	2.79	-
PK	2.44G	105.10	Inf	-Inf	74.74	3	Vertical	126	2.74	-	27.52	2.84	-
AV	2.44G	100.53	Inf	-Inf	70.17	3	Vertical	126	2.74	-	27.52	2.84	-
PK	2.4932G	59.66	74.00	-14.34	29.27	3	Vertical	126	2.74	-	27.50	2.89	-
AV	2.4928G	46.46	54.00	-7.54	16.07	3	Vertical	126	2.74	-	27.50	2.89	-

BT-EDR(3Mbps)

2440MHz_TX

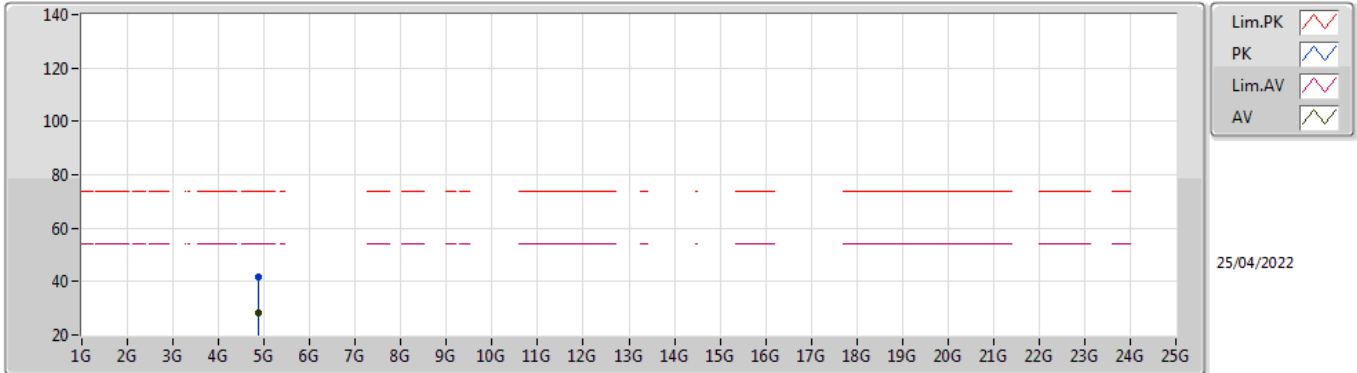


EUT Y_1TX
Setting 00
02-B-B-2

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	42.09	74.00	-31.91	37.89	3	Vertical	21	1.48	-	31.30	5.10	32.20
AV	4.88012G	28.46	54.00	-25.54	24.26	3	Vertical	21	1.48	-	31.30	5.10	32.20

BT-EDR(3Mbps)

2440MHz_TX

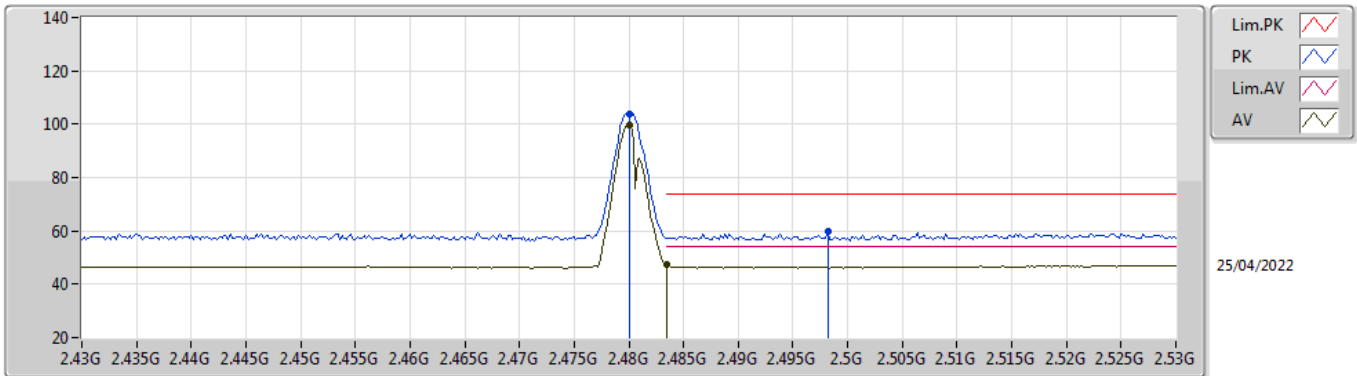


EUT Y_1TX
Setting 00
02-B-B-2

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	4.87936G	41.74	74.00	-32.26	37.54	3	Horizontal	322	2.52	-	31.30	5.10	32.20
AV	4.88039G	28.48	54.00	-25.52	24.28	3	Horizontal	322	2.52	-	31.30	5.10	32.20

BT-EDR(3Mbps)

2480MHz_TX

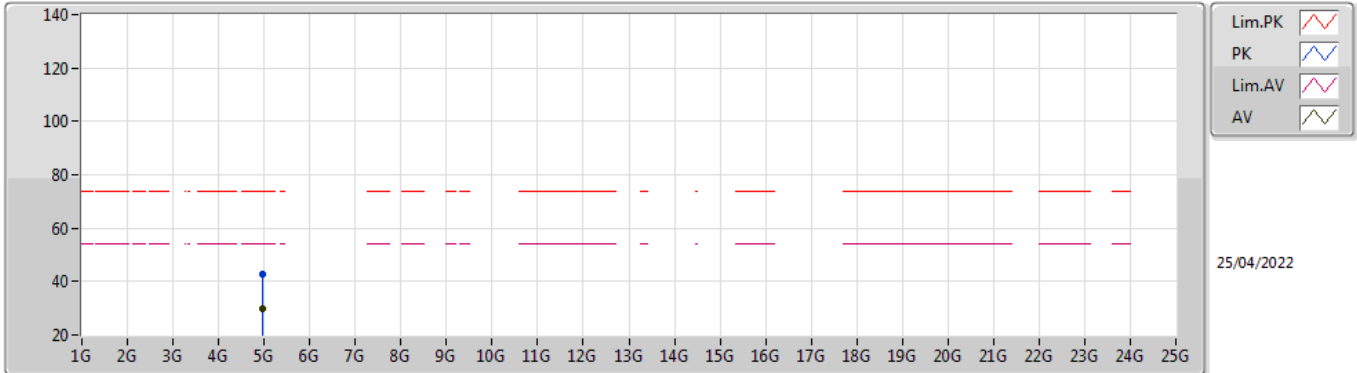


EUT Y_1TX
Setting 00
02-B-B-2

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.48G	103.86	Inf	-Inf	73.48	3	Vertical	316	1.71	-	27.50	2.88	-
AV	2.48G	99.79	Inf	-Inf	69.41	3	Vertical	316	1.71	-	27.50	2.88	-
PK	2.4982G	59.81	74.00	-14.19	29.41	3	Vertical	316	1.71	-	27.50	2.90	-
AV	2.4835G	47.27	54.00	-6.73	16.89	3	Vertical	316	1.71	-	27.50	2.88	-

BT-EDR(3Mbps)

2480MHz_TX

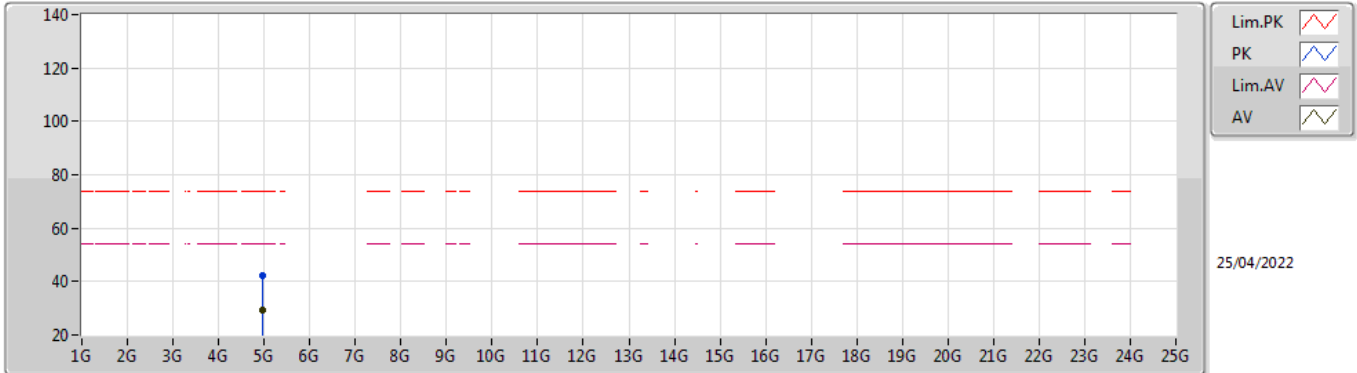


EUT Y_1TX
Setting 00
02-B-B-2

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	4.96003G	42.84	74.00	-31.16	38.37	3	Vertical	109	1.13	-	31.54	5.10	32.17
AV	4.96038G	29.61	54.00	-24.39	25.14	3	Vertical	109	1.13	-	31.54	5.10	32.17

BT-EDR(3Mbps)

2480MHz_TX



EUT Y_1TX
Setting 00
02-B-B-2

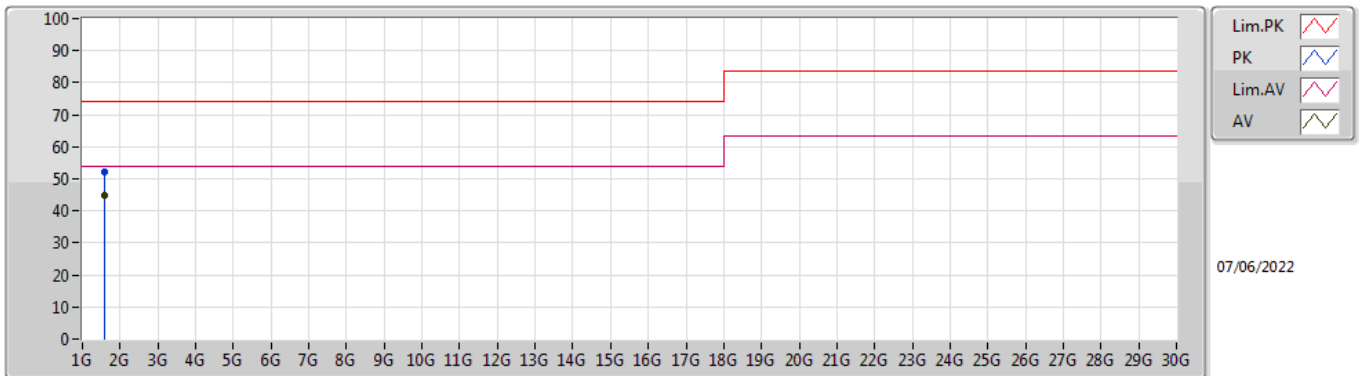
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.95997G	42.03	74.00	-31.97	37.56	3	Horizontal	210	1.97	-	31.54	5.10	32.17
AV	4.95981G	29.30	54.00	-24.70	24.83	3	Horizontal	210	1.97	-	31.54	5.10	32.17



Summary

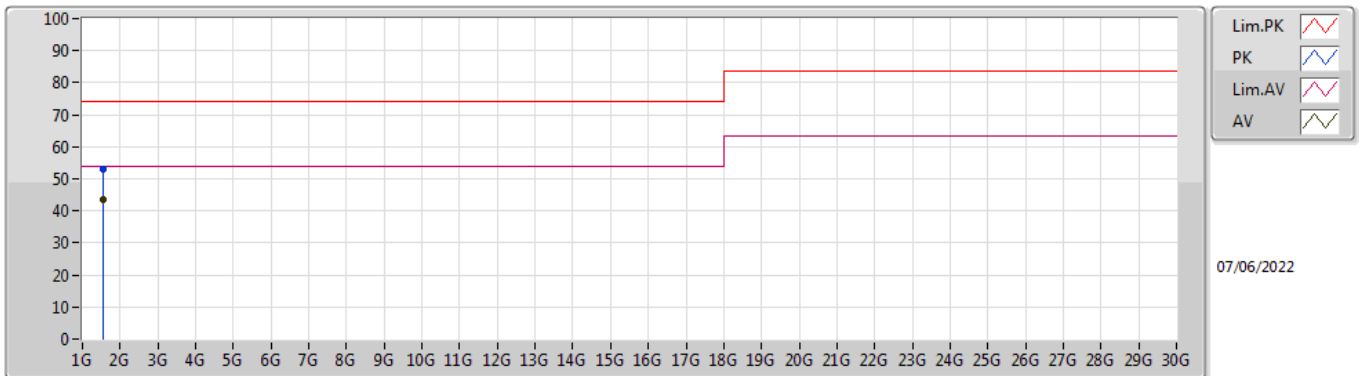
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	AV	1.5847G	44.82	54.00	-9.18	Vertical

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	1.5679G	52.16	74.00	-21.84	-4.13	-	Vertical	167	1.34	-	56.29	25.50	3.68	33.31
AV	1.5847G	44.82	54.00	-9.18	-4.11	-	Vertical	167	1.34	"Worst"	48.93	25.50	3.69	33.30

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	1.5597G	53.18	74.00	-20.82	-4.13	-	Vertical	254	1.12	-	57.31	25.50	3.68	33.31
AV	1.5621G	43.62	54.00	-10.38	-4.13	-	Vertical	254	1.12	"Worst"	47.75	25.50	3.68	33.31