

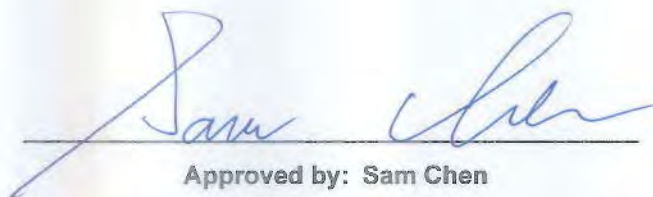


RADIO TEST REPORT

FCC ID : MSQ-RTAX4Q00
Equipment : AX11000 Tri Band WiFi Router
Brand Name : ASUS
Model Name : XT12
Applicant : ASUSTeK COMPUTER INC.
1F., No. 15, Lide Rd., Beitou, Taipei 112, Taiwan
Manufacturer (1) : Compal Networking (KunShan) Co., LTD.
No. 520, Nanbang Rd., Economic & Technical
Development Zone Kunshan, Jiangsu Province China
Manufacturer (2) : ARCADYAN TECHNOLOGY (VIETNAM) CO., LTD.
Ba Thien Industrial Park, Ba Hien commune, Binh
Xuyen district, Vinh Phuc Province
Standard : 47 CFR FCC Part 15.247

The product was received on Jul. 21, 2021, and testing was started from Jul. 21, 2021 and completed on Apr. 07, 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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History of this test report

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

Page Number : 3 of 28
Issued Date : Apr. 18, 2022
Report Version : 01



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	-
Note: Reference to Sporton Project No.: 0D2518				

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:

1. The test configuration, test mode and test software were written in this test report are declared by the manufacturer.
2. The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Sam Chen**Report Producer: Jessie Wei**



1 General Description

1.1 Information

1.1.1 RF General Information

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

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

Note:

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


1.1.2 Antenna Information

Ant.	2.4GHz Port	5GHz Port		Blue tooth	Brand Name	Model Name	Antenna Type	Connector	Gain (dBi)
		UNII 1~2A	UNII 2C~4						
1	-	-	1	-	WALSIN	RFDPA110521IM5B901	Dipole	I-PEX	Note 1
2	-	-	2	-	WALSIN	RFDPA110517IM5B901	Dipole	I-PEX	
3	-	-	3	-	WALSIN	RFDPA110521IM5B903	Dipole	I-PEX	
4	-	-	4	-	WALSIN	RFDPA110521IM5B902	Dipole	I-PEX	
5	1	1	-	-	WALSIN	RFDPA200513IMLB901	Dipole	I-PEX	
6	2	2	-	-	WALSIN	RFDPA200513IMLB902	Dipole	I-PEX	
7	3	3	-	-	WALSIN	RFDPA200509IMLB901	Dipole	I-PEX	
8	4	4	-	-	WALSIN	RFDPA200509IMLB902	Dipole	I-PEX	
9	-	-	-	1	YAGEO	ANT3216A063R2400A	Chip	N/A	

Note 1:

Ant.	Gain (dBi)						
	2.4GHz	UNII 1	UNII 2A	UNII 2C	UNII 3	UNII 4	Bluetooth
1	-	-	-	2.6	2.39	1.98	-
2	-	-	-	2.44	1.96	2.12	-
3	-	-	-	1.68	1.72	1.22	-
4	-	-	-	3.09	2.53	2.47	-
5	1.67	2.63	2.74	-	-	-	-
6	1.19	2.82	2.9	-	-	-	-
7	2.93	3.2	2.73	-	-	-	-
8	2.12	3.87	3.16	-	-	-	-
9	-	-	-	-	-	-	1.69
Max Gain (dBi)	2.93	3.87	3.16	3.09	2.53	2.47	-
DG (4T1S) (dBi)	6.34	5.31	5.97	6.05	6.09	5.91	-
DG (4T2S) (dBi)	3.34	3.87	3.16	3.09	3.09	2.91	-
DG (4T4S) (dBi)	0.37	0.09	0.26	0.06	0.19	0.03	-

Note 2: The above information was declared by manufacturer.

Note 3: WLAN 2.4GHz/5GHz: The directional gain is measured which follows the procedure of KDB 662911 D03.

The antenna report is provided in the operational description for this application.

Note 4: **For 2.4GHz function:**

For IEEE 802.11 b/g/n/VHT/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 5GHz function:****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 Bluetooth Function (1TX/1RX):

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

1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
BT-BR(1Mbps)	0.745	1.28	2.9m	1k
BT-EDR(2Mbps)	0.746	1.27	2.749m	1k
BT-EDR(3Mbps)	0.813	0.9	2.751m	1k

Note:

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

**1.1.4 EUT Operational Condition**

EUT Power Type	From Power Adapter
Test Software Version	DOS [6.1.7601]

1.1.5 Table for Components Source Information

Items	Main Source	Second Source
Transceiver (2.5G LAN)	Brand Name: MAXLINEAR Model Name: GPY211	Brand Name: Broadcom Model Name: BCM50991

Note: The above information was declared by manufacturer.

1.1.6 Table for EUT Information

EUT	Transceiver (2.5G LAN)
EUT 1	Main Source (2500 / 1000 / 100 /10 Mbps)
EUT 2	Second Source (2500 / 1000 / 100 Mbps)

Note: After evaluating, EUT 1 was selected to test and recorded in the test report.

1.1.7 Table for EUT supports function

Function	Supports type
AP Router	Master
Bridge	Slave without radar detection
Repeater	Master
Mesh	Master

Note1: After evaluating, only AP Router was selected to test and record in the report.

Note2: 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 ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)				
(TAF: 3787) TEL: 886-3-656-9065 FAX: 886-3-656-9085				
Test site Designation No. TW3787 with FCC.				
Conformity Assessment Body Identifier (CABID) TW3787 with ISCED.				

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
RF Conducted	TH01-CB	Lucas Huang	22.4~22.8 / 55~60	Sep. 28, 2021~ Oct. 06, 2021
Radiated below 1GHz	03CH05-CB	Ken Yeh	24.5~25.6 / 56~59	Sep. 15, 2021~ Apr. 07, 2022
	03CH06-CB	Ken Yeh	23.5~24.6 / 55~59	
Radiated above 1GHz	03CH06-CB	Stim Sung	24.4~25.5 / 55~58	Jul. 21, 2021 ~ Sep. 30, 2021
AC Conduction	CO01-CB	Peter Wu	22~24 / 52~53	Mar. 04, 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)	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%

2 Test Configuration of EUT

2.1 Test Channel Mode

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

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 router – EUT 1 + Adapter 1
2	AP router – EUT 1 + Adapter 2
For operating mode 2 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
1	EUT 1

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
The EUT was performed at X axis, Y axis and Z axis position for Emissions in Restricted Frequency Bands above 1GHz test, and the worst case was found at Y axis. So the measurement will follow this same test configuration.	
1	CTX – EUT 1 in Y axis + Adapter 1 – WLAN 2.4GHz
2	CTX – EUT 1 in Y axis + Adapter 2 – WLAN 2.4GHz
Mode 2 has been evaluated to be the worst case among Mode 1~2, thus measurement for Mode 3~5 will follow this same test mode.	
3	CTX – EUT 1 in Y axis + Adapter 2 – Bluetooth
4	CTX – EUT 1 in Y axis + Adapter 2 – WLAN 5GHz (UNII 1~UNII 2A)
5	CTX – EUT 1 in Y axis + Adapter 2 – WLAN 5GHz (UNII 2C~UNII 4)
Mode 2 has been evaluated to be the worst case among Mode 1~5, thus measurement for Mode 6 will follow this same test mode.	
6	CTX – EUT 2 in Y axis + Adapter 2 – WLAN 2.4GHz
For operating mode 2 is the worst case and it was record in this test report.	
Operating Mode > 1GHz	CTX
The EUT was performed at X axis, Y axis and Z axis position, and the worst case was found at Y axis. So the measurement will follow this same test configuration.	
1	EUT 1 in Y axis

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	EUT 1 – WLAN 2.4GHz + WLAN 5GHz (UNII 1~UNII 2A) + WLAN 5GHz (UNII 2C~UNII 4) + Bluetooth
Refer to Sporton Test Report No.: FA170127-01 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

Accessories				
Equipment Name	Brand Name	Model Name	Rating	DC cable
Adapter 1	DELTA	ADP-45FE F	INPUT: 100-240V~1.2A, 50-60Hz OUTPUT: 19.0V, 2.37A, 45.0W	Non-shielded, 1.5m
Adapter 2	AcBel	ADH011	INPUT: 100-240V~1.4A, 50-60Hz OUTPUT: 19.5V, 2.31A, 45.0W MAX.	Non-shielded, 1.5m
Others				
Power cable*2: Non-shielded, 0.9m				
RJ-45 cable*1: Non-shielded, 1.5m				

2.5 Support Equipment

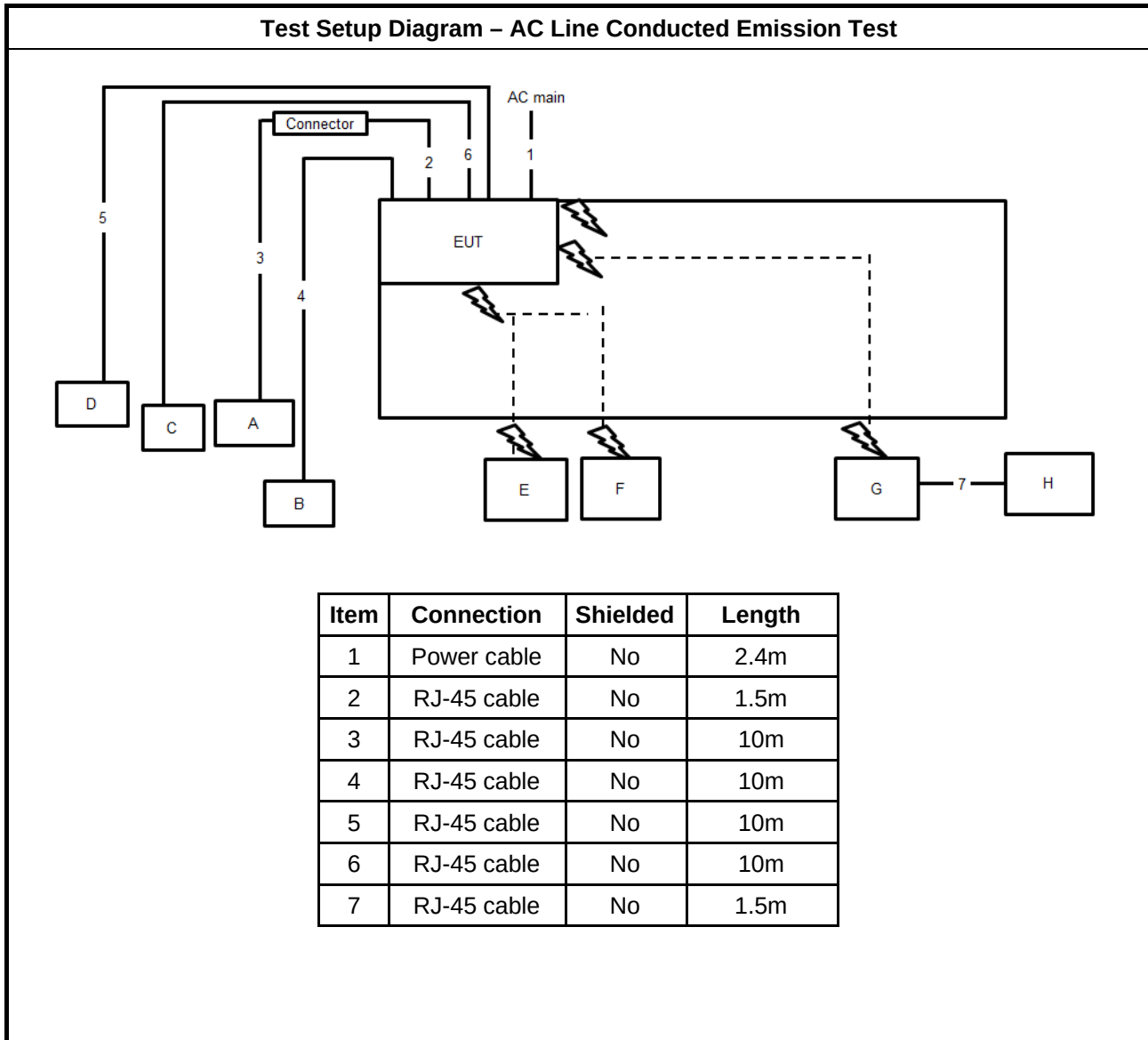
For AC Conduction:

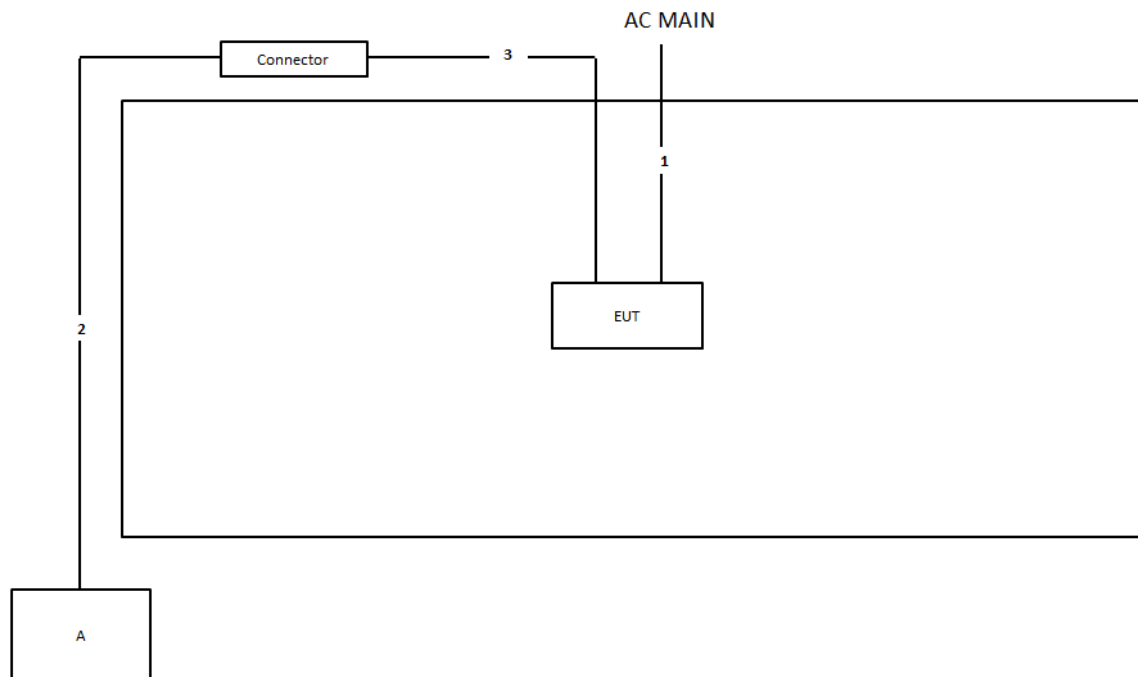
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	2.5G WAN PC	DELL	T3400	N/A
B	2.5G LAN PC	DELL	T3400	N/A
C	LAN1 NB	DELL	E6430	N/A
D	LAN2 NB	DELL	E6430	N/A
E	2.4G NB	DELL	E6430	N/A
F	5G-L NB	DELL	E6430	N/A
G	5G-H Client	ASUS	XT12	MSQ-RTAX4Q00
H	5G-H NB	DELL	E6430	N/A

For Radiated and RF Conducted:

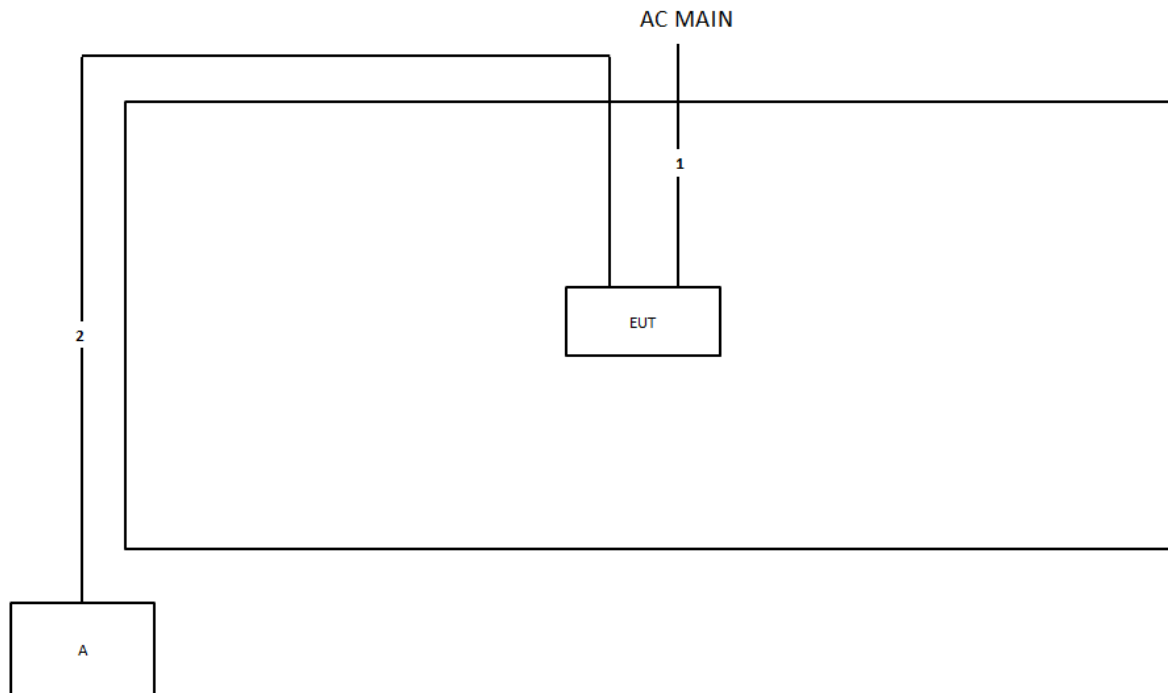
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A

2.6 Test Setup Diagram



Test Setup Diagram - Radiated Test < 1GHz


Item	Connection	Shielded	Length
1	Power cable	No	2.4m
2	RJ-45 cable	No	10m
3	RJ-45 cable	No	1.5m

Test Setup Diagram - Radiated Test > 1GHz


Item	Connection	Shielded	Length
1	Power cable	No	2.4m
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.

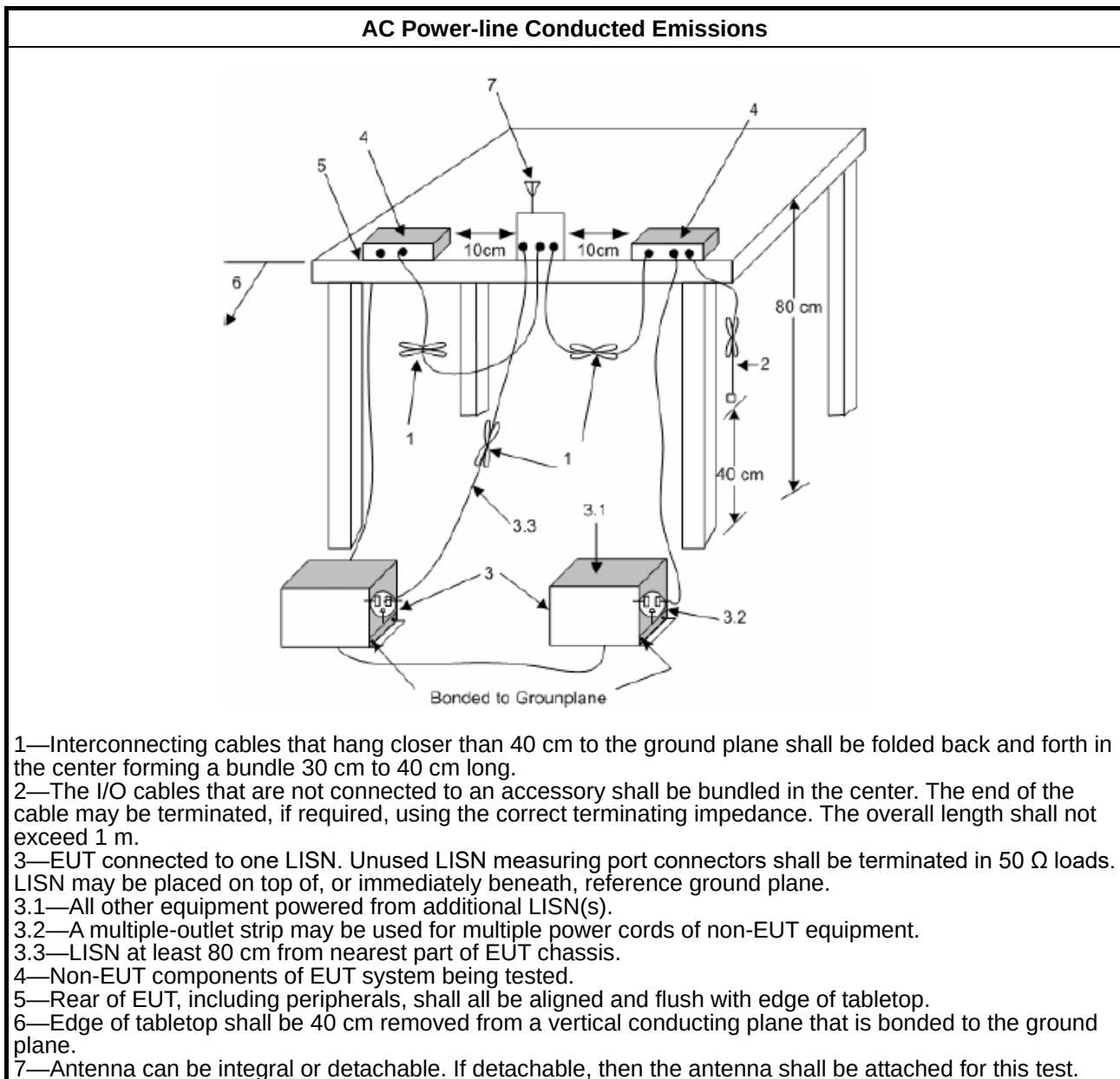
3.1.2 Measuring Instruments

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

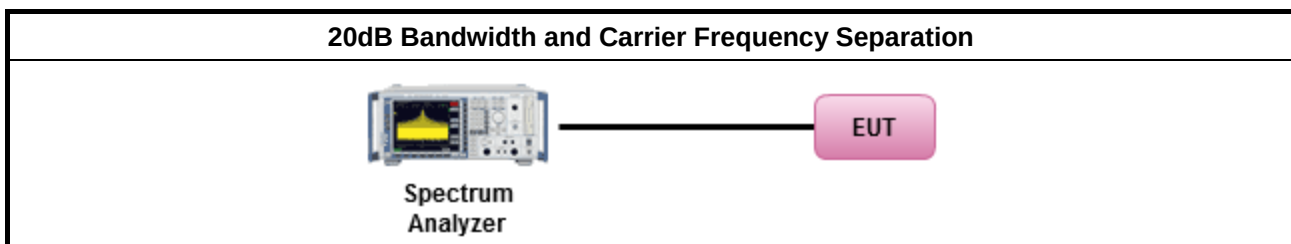
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

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

3.2.4 Test Setup



3.2.5 Test Result of 20dB Bandwidth

Refer as Appendix B

3.2.6 Test Result of Carrier Frequency Separation

Refer as Appendix B

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
▪ 902-928 MHz Band:	
▪ $N \geq 50$; Power 30dBm; EIRP 36dBm	
▪ $50 > N \geq 25$; Power 23.98dBm; EIRP 29.98dBm	
▪ 2400-2483.5 MHz Band:	
▪ $N \geq 75$; Power 30dBm; EIRP 36dBm	
▪ $75 > N \geq 15$; Power 21dBm; EIRP 27dBm	
▪ 5725-5850 MHz Band:	
▪ $N \geq 75$; Power 30dBm; EIRP 36dBm	
N: Number of Hopping Frequencies	

3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

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

3.3.4 Test Setup

Maximum Conducted Output Power (Peak Power Meter)
 The diagram illustrates the test setup for measuring Maximum Conducted Output Power. It shows a Power Meter (a blue and white device with a screen and buttons) connected via a cable to an EUT (Equipment Under Test, represented by a pink box). The Power Meter is also connected to a computer (represented by a monitor and tower unit) for data logging.

3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

3.4 Number of Hopping Frequencies and Hopping Bandedge

3.4.1 Number of Hopping Frequencies Limit

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

3.4.2 Hopping Bandedge Limit

Refer clause 3.6.1 and clause 3.7.1

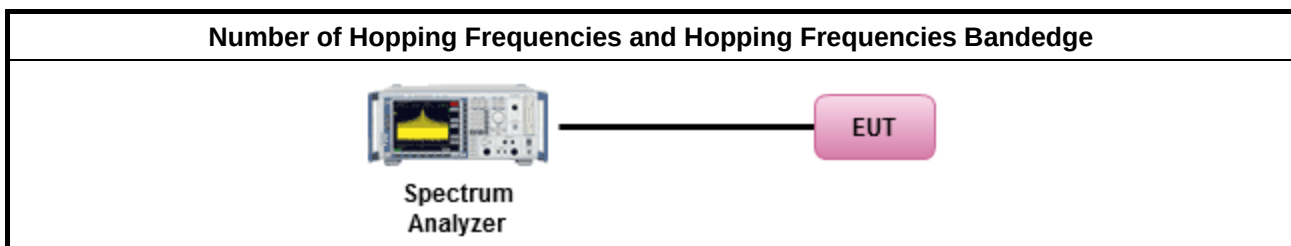
3.4.3 Measuring Instruments

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

3.4.4 Test Procedures

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

3.4.5 Test Setup



3.4.6 Test Result of Number of Hopping Frequencies

Refer as Appendix D

3.4.7 Test Result of Number of Hopping Frequencies Bandedge

Refer as Appendix D

3.5 Time of Occupancy (Dwell Time)

3.5.1 Time of Occupancy (Dwell Time) Limit

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

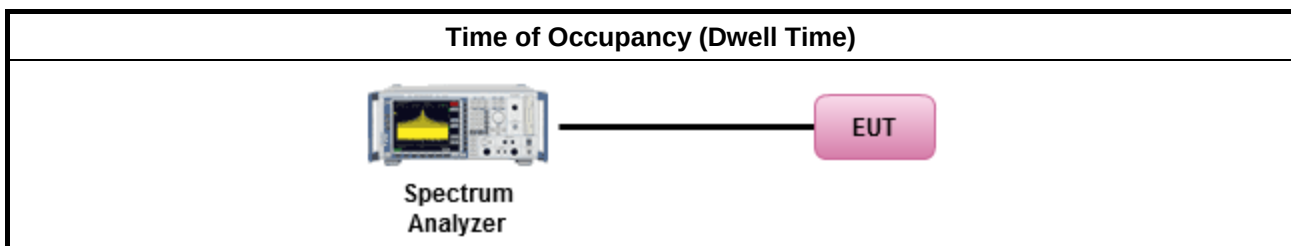
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

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

3.5.4 Test Setup



3.5.5 Test Result of Time of Occupancy (Dwell Time)

Refer as Appendix E

3.6 Emissions in Non-restricted Frequency Bands

3.6.1 Emissions in Non-restricted Frequency Bands Limit

Un-restricted Band Emissions Limit	
RF output power procedure	Limit (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.	

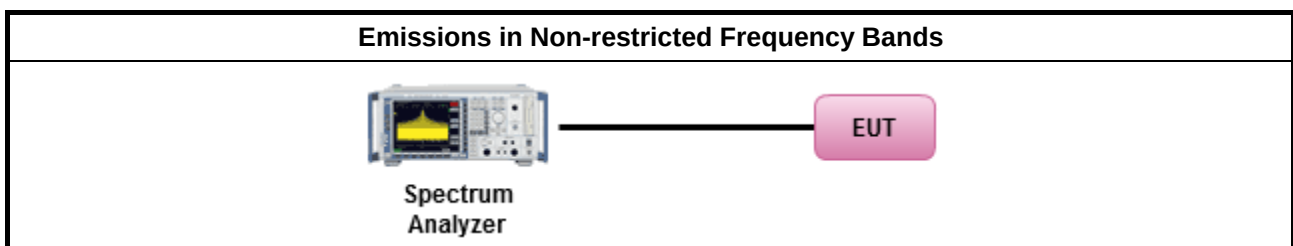
3.6.2 Measuring Instruments

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.

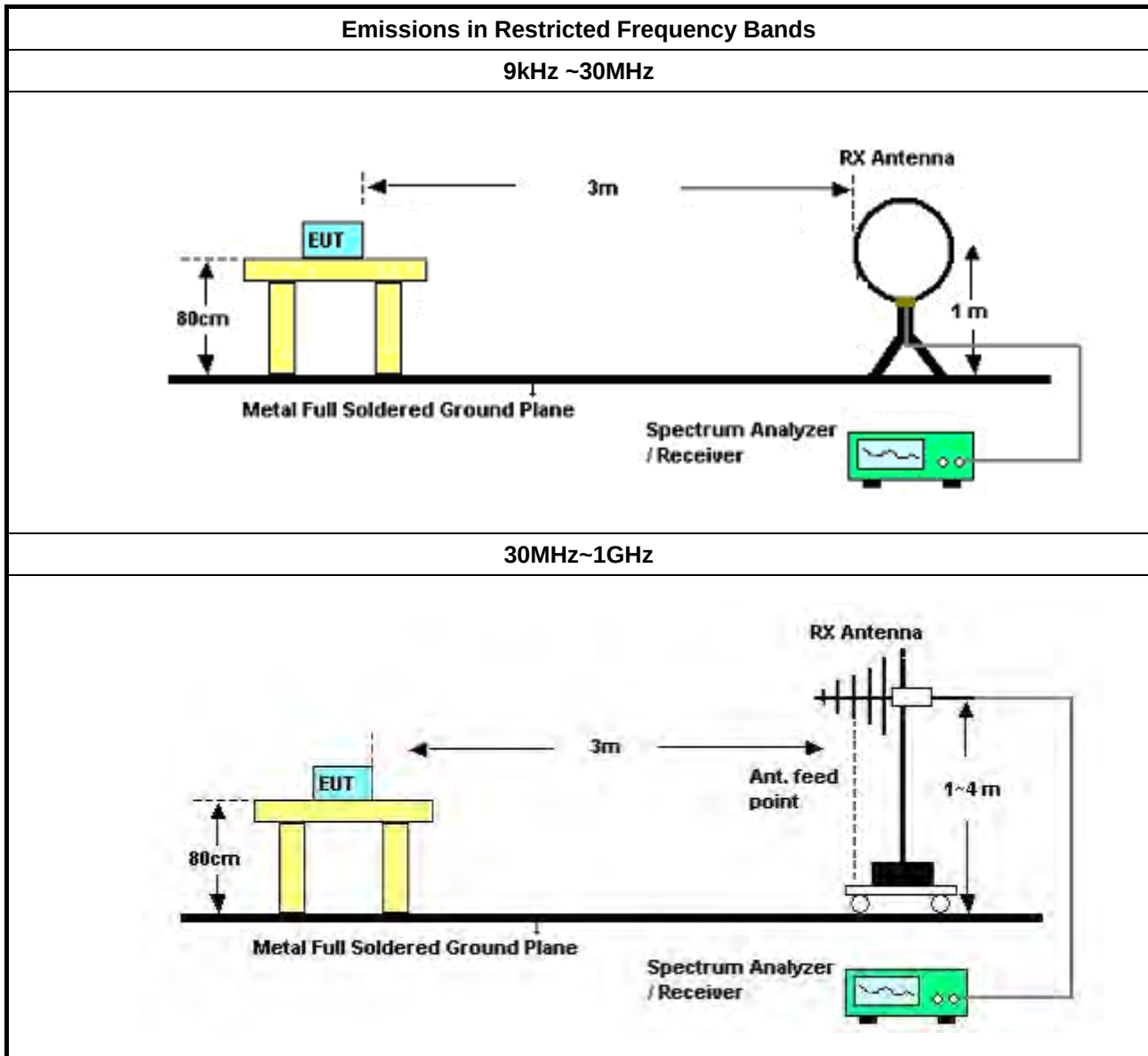
3.7.2 Measuring Instruments

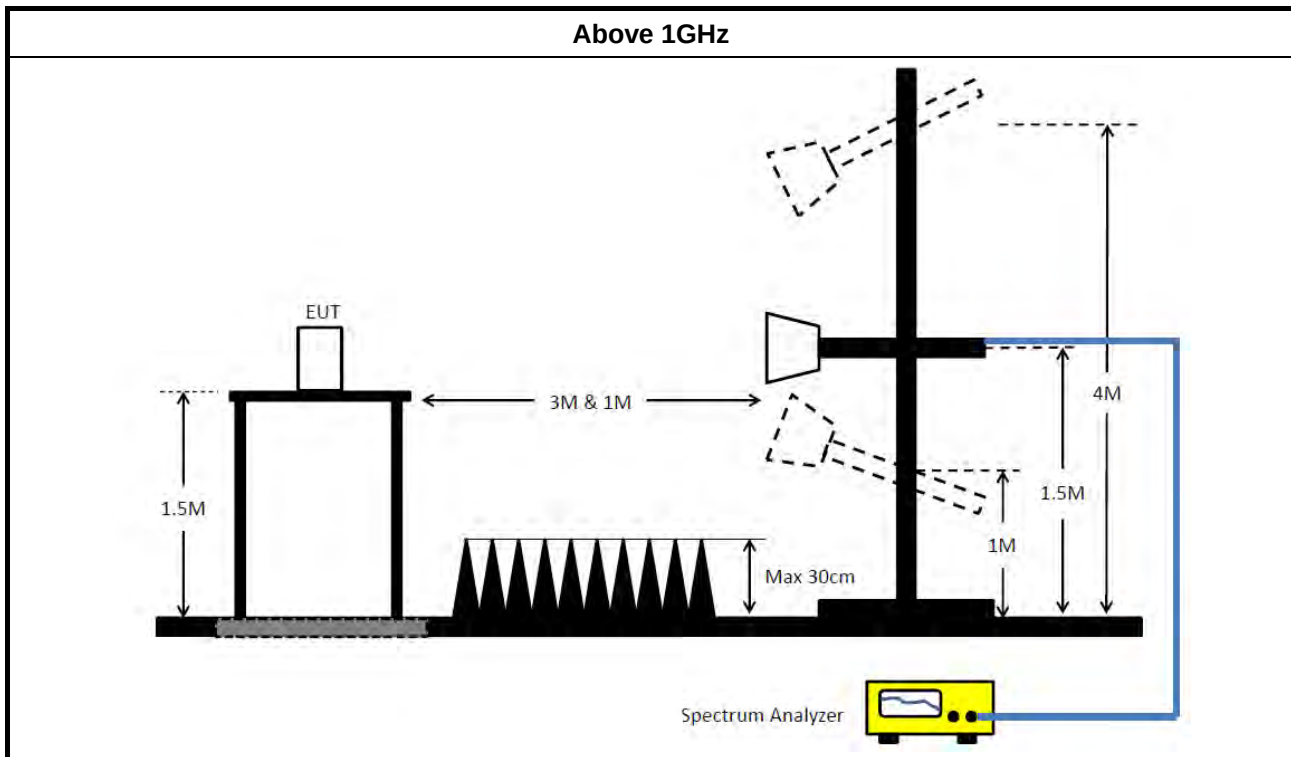
Refer a test equipment and calibration data table in this test report.

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	Mar. 07, 2021	Mar. 06, 2022	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	24155	9kHz - 30 MHz	Apr. 14, 2021	Apr. 13, 2022	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)
Bilog Antenna with 6dB Attenuator	TESEQ & EMCI	CBL 6112D & N-6-06	35236 & AT-N0610	30MHz ~ 2GHz	Mar. 26, 2021	Mar. 25, 2022	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. 27, 2021	Apr. 26, 2022	Radiation (03CH05-CB)
Spectrum Analyzer	R&S	FSP40	100304	9kHz ~ 40GHz	Nov. 10, 2020	Nov. 09, 2021	Radiation (03CH05-CB)
Signal Analyzer	R&S	FSV40	101903	9kHz ~ 40GHz	Mar. 22, 2021	Mar. 21, 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. 05, 2020	Oct. 04, 2021	Radiation (03CH05-CB)
RF Cable-low	Woken	RG402	Low Cable-04+23	30MHz~1GHz	Oct. 04, 2021	Oct. 03, 2022	Radiation (03CH05-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH05-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Apr. 14, 2021	Apr. 13, 2022	Radiation (03CH06-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH06-CB	30 MHz ~ 1 GHz	Aug. 09, 2021	Aug. 08, 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	Oct. 02, 2020	Oct. 01, 2021	Radiation (03CH06-CB)
Bilog Antenna with 6 dB attenuator	TESEQ & EMCI	CBL6112D & N-6-06	37878 & AT-N0606	20MHz ~ 2GHz	Jul. 31, 2021	Jul. 30, 2022	Radiation (03CH06-CB)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1370	1GHz~18GHz	Sep. 21, 2020	Sep. 20, 2021	Radiation (03CH06-CB)
Horn Antenna	SCHWARZBECK	BBHA9120D	BBHA 9120D-1292	1GHz~18GHz	Aug. 04, 2021	Aug. 03, 2022	Radiation (03CH06-CB)
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Jun. 18, 2021	Jun. 17, 2022	Radiation (03CH06-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Aug. 05, 2021	Aug. 04, 2022	Radiation (03CH06-CB)
Pre-Amplifier	Agilent	310N	187290	0.1MHz ~ 1GHz	Nov. 05, 2020	Nov. 04, 2021	Radiation (03CH06-CB)
Pre-Amplifier	Agilent	310N	187290	0.1MHz ~ 1GHz	Nov. 04, 2021	Nov. 03, 2022	Radiation (03CH06-CB)
Pre-Amplifier	Agilent	83017A	MY53270064	0.5GHz ~ 26.5GHz	May 06, 2021	May 05, 2022	Radiation (03CH06-CB)
Pre-Amplifier	MITEQ	TTA1840-35-H G	1864479	18GHz ~ 40GHz	Jul. 13, 2021	Jul. 12, 2022	Radiation (03CH06-CB)
Spectrum analyzer	R&S	FSP40	100080	9kHz~40GHz	Dec. 15, 2020	Dec. 14, 2021	Radiation (03CH06-CB)
Signal Analyzer	R&S	FSV40	101903	9kHz ~ 40GHz	Mar. 22, 2021	Mar. 21, 2022	Radiation (03CH06-CB)
Spectrum analyzer	R&S	FSP40	100080	9kHz~40GHz	Dec. 24, 2021	Dec. 23, 2022	Radiation (03CH06-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	Jun. 21, 2021	Jun. 20, 2022	Radiation (03CH06-CB)
RF Cable-low	Woken	RG402	Low Cable-05+24	30MHz~1GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH06-CB)
RF Cable-low	Woken	RG402	Low Cable-05+24	30MHz~1GHz	Oct. 04, 2021	Oct. 03, 2022	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-05	1GHz~18GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-05+24	1GHz~18GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 15, 2021	Jul. 14, 2022	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 15, 2021	Jul. 14, 2022	Radiation (03CH06-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH06-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	May 21, 2021	May 20, 2022	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz ~26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-06	1 GHz – 26.5 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz – 26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz – 26.5 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz – 26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz – 26.5 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz – 26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz – 26.5 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz – 26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz – 26.5 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-30	1 GHz – 26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-30	1 GHz – 26.5 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH01-CB)
Power Sensor	Agilent	E9327A	US40442088	50MHz~18GHz	Feb. 23, 2021	Feb. 22, 2022	Conducted (TH01-CB)
Power Meter	Agilent	E4416A	GB41291199	50MHz~18GHz	Feb. 23, 2021	Feb. 22, 2022	Conducted (TH01-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conducted (TH01-CB)

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

NCR means Non-Calibration required.



Conducted Emissions at Powerline

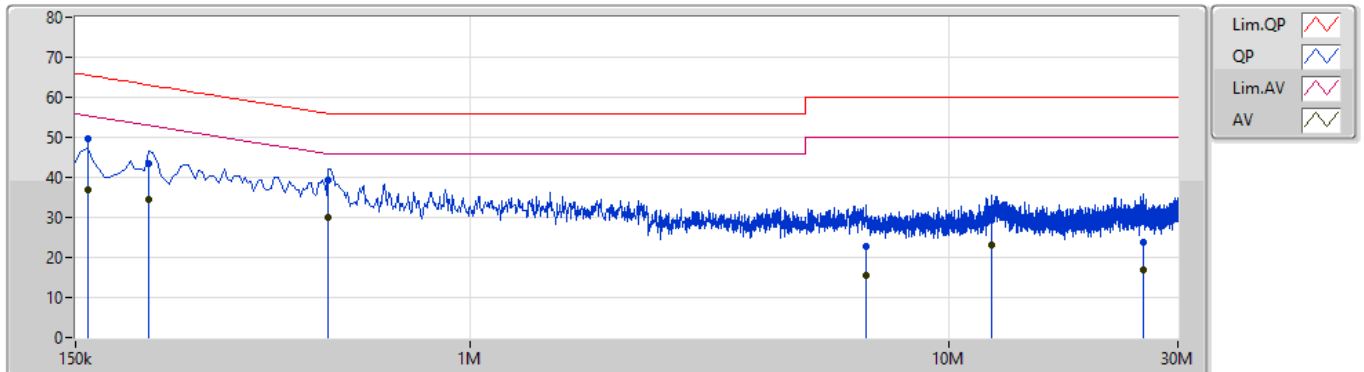
Appendix A

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 2	Pass	AV	510k	31.18	46.00	-14.82	Neutral

Mode 2

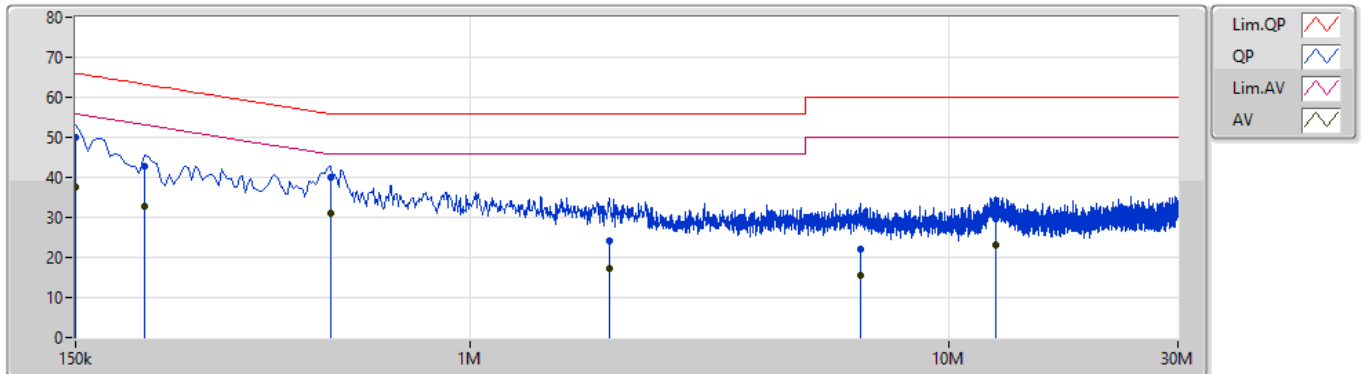
04/03/2022



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	159k	49.58	65.52	-15.94	10.03	Line	"Worst"	39.55	0.12	0.02	9.89			
AV	159k	36.96	55.52	-18.56	10.03	Line	-	26.93	0.12	0.02	9.89			
QP	213k	43.52	63.09	-19.57	10.03	Line	-	33.49	0.12	0.02	9.89			
AV	213k	34.38	53.09	-18.71	10.03	Line	-	24.35	0.12	0.02	9.89			
QP	505.5k	39.21	56.00	-16.79	10.04	Line	-	29.17	0.13	0.02	9.89			
AV	505.5k	30.00	46.00	-16.00	10.04	Line	-	19.96	0.13	0.02	9.89			
QP	6.725M	22.60	60.00	-37.40	10.26	Line	-	12.34	0.29	0.07	9.90			
AV	6.725M	15.60	50.00	-34.40	10.26	Line	-	5.34	0.29	0.07	9.90			
QP	12.273M	29.37	60.00	-30.63	10.37	Line	-	19.00	0.35	0.09	9.93			
AV	12.273M	23.14	50.00	-26.86	10.37	Line	-	12.77	0.35	0.09	9.93			
QP	25.395M	23.79	60.00	-36.21	10.57	Line	-	13.22	0.40	0.20	9.97			
AV	25.395M	16.88	50.00	-33.12	10.57	Line	-	6.31	0.40	0.20	9.97			

Mode 2

04/03/2022



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	150k	50.08	66.00	-15.92	10.07	Neutral	-	40.01	0.16	0.02	9.89			
AV	150k	37.57	56.00	-18.43	10.07	Neutral	-	27.50	0.16	0.02	9.89			
QP	208.5k	42.70	63.27	-20.57	10.07	Neutral	-	32.63	0.16	0.02	9.89			
AV	208.5k	32.75	53.27	-20.52	10.07	Neutral	-	22.68	0.16	0.02	9.89			
QP	510k	40.04	56.00	-15.96	10.07	Neutral	-	29.97	0.16	0.02	9.89			
AV	510k	31.18	46.00	-14.82	10.07	Neutral	"Worst"	21.11	0.16	0.02	9.89			
QP	1.95M	24.05	56.00	-31.95	10.13	Neutral	-	13.92	0.19	0.05	9.89			
AV	1.95M	17.08	46.00	-28.92	10.13	Neutral	-	6.95	0.19	0.05	9.89			
QP	6.509M	22.14	60.00	-37.86	10.23	Neutral	-	11.91	0.26	0.07	9.90			
AV	6.509M	15.49	50.00	-34.51	10.23	Neutral	-	5.26	0.26	0.07	9.90			
QP	12.494M	29.75	60.00	-30.25	10.32	Neutral	-	19.43	0.30	0.09	9.93			
AV	12.494M	23.17	50.00	-26.83	10.32	Neutral	-	12.85	0.30	0.09	9.93			

**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)	940k	900.8k	901KF1D	935k	897.051k
BT-EDR(2Mbps)	1.311M	1.203M	1M20G1D	1.31M	1.193M
BT-EDR(3Mbps)	1.273M	1.207M	1M21G1D	1.268M	1.199M

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	940k	898.301k
2440MHz	Pass	Inf	935k	897.051k
2480MHz	Pass	Inf	937.5k	900.8k
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.311M	1.193M
2440MHz	Pass	Inf	1.31M	1.197M
2480MHz	Pass	Inf	1.311M	1.203M
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.268M	1.199M
2440MHz	Pass	Inf	1.273M	1.199M
2480MHz	Pass	Inf	1.271M	1.207M

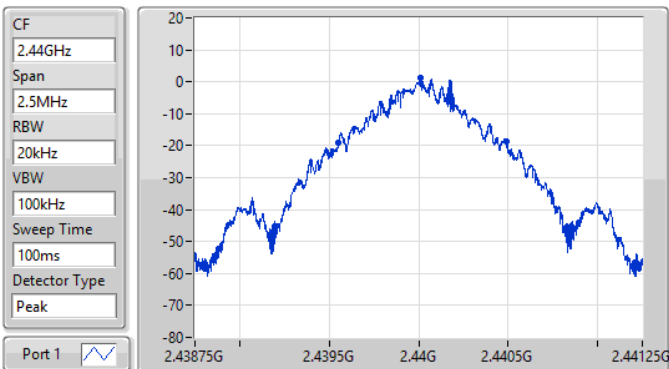
Port X-N dB = Port X 20dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth

BT-BR(1Mbps)
2402MHz


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
940k	2.401551G	2.402491G	898.301k	2.401565G	2.402464G	Inf	1

EBW-FS

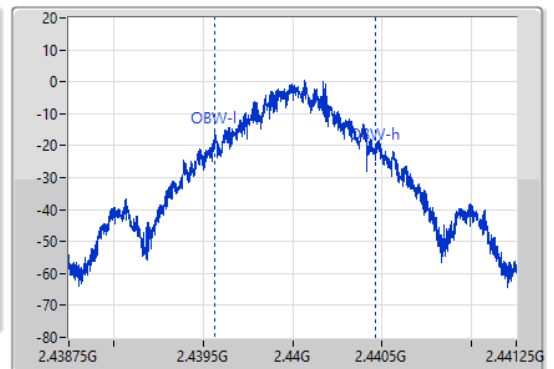
06/10/2021


BT-BR(1Mbps)
2440MHz


20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
935k	2.439553G	2.440488G	897.051k	2.439565G	2.440462G	Inf	1

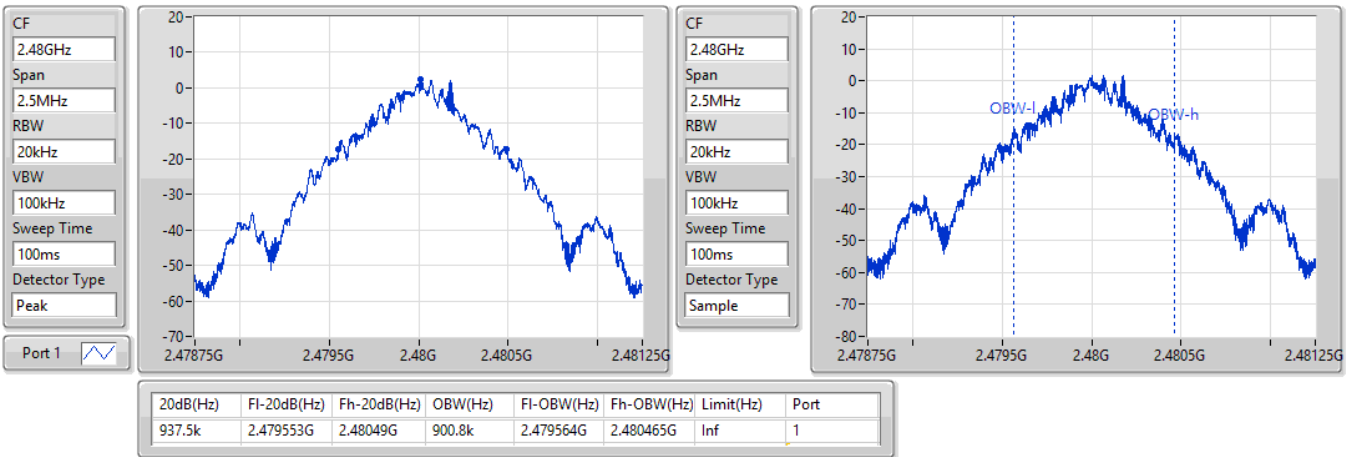
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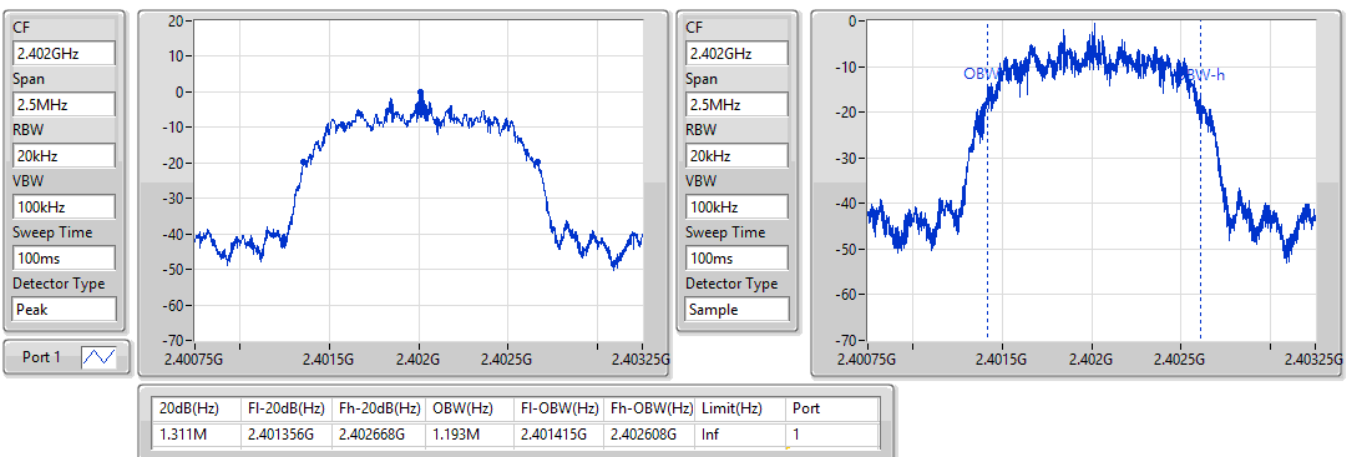


BT-BR(1Mbps)
EBW-FS
2480MHz

06/10/2021

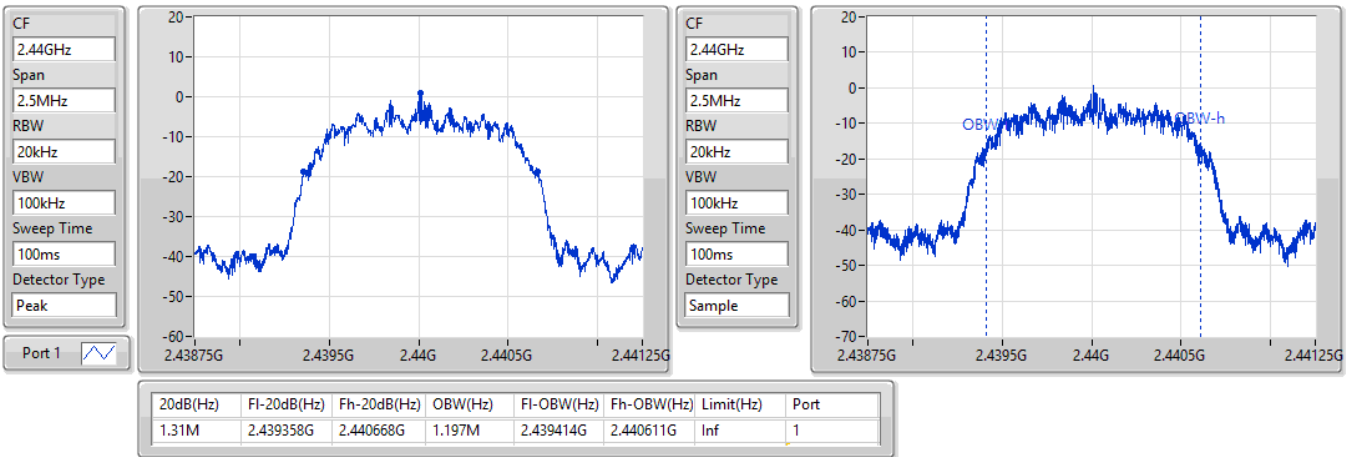

BT-EDR(2Mbps)
EBW-FS
2402MHz

06/10/2021

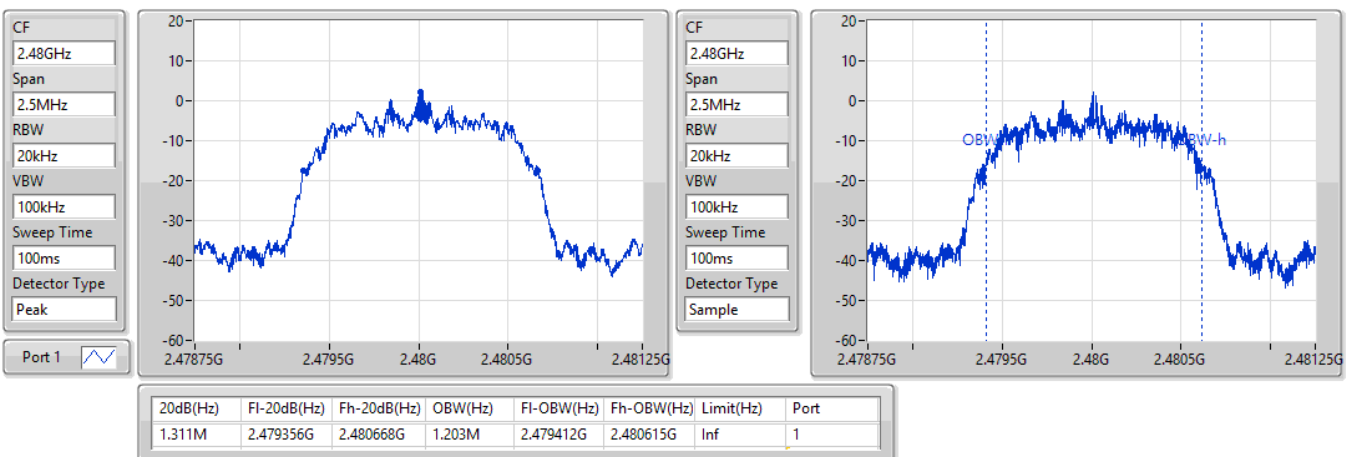


BT-EDR(2Mbps)
EBW-FS
2440MHz

06/10/2021

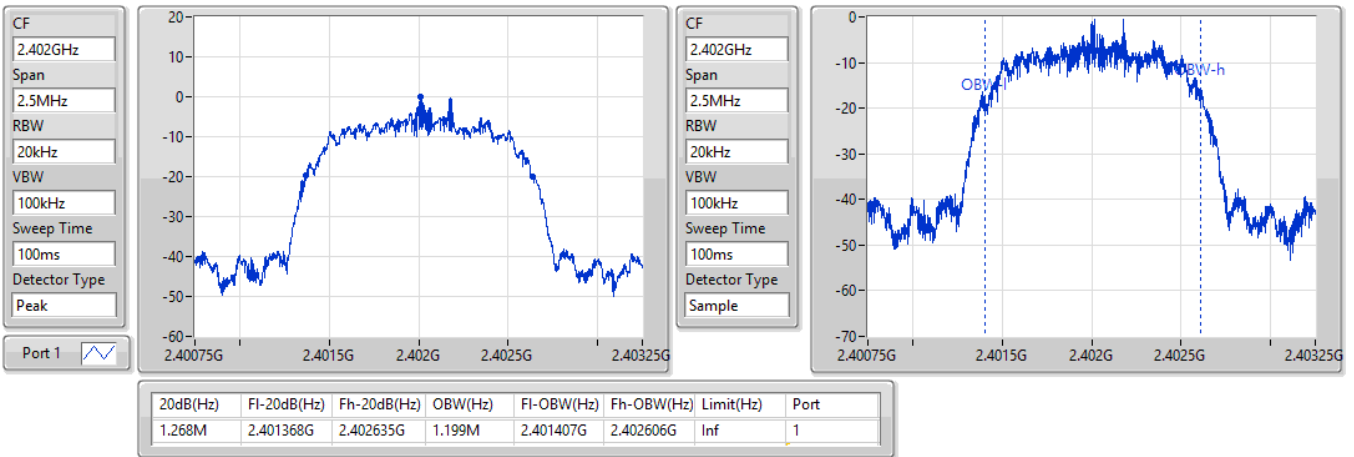

BT-EDR(2Mbps)
EBW-FS
2480MHz

06/10/2021

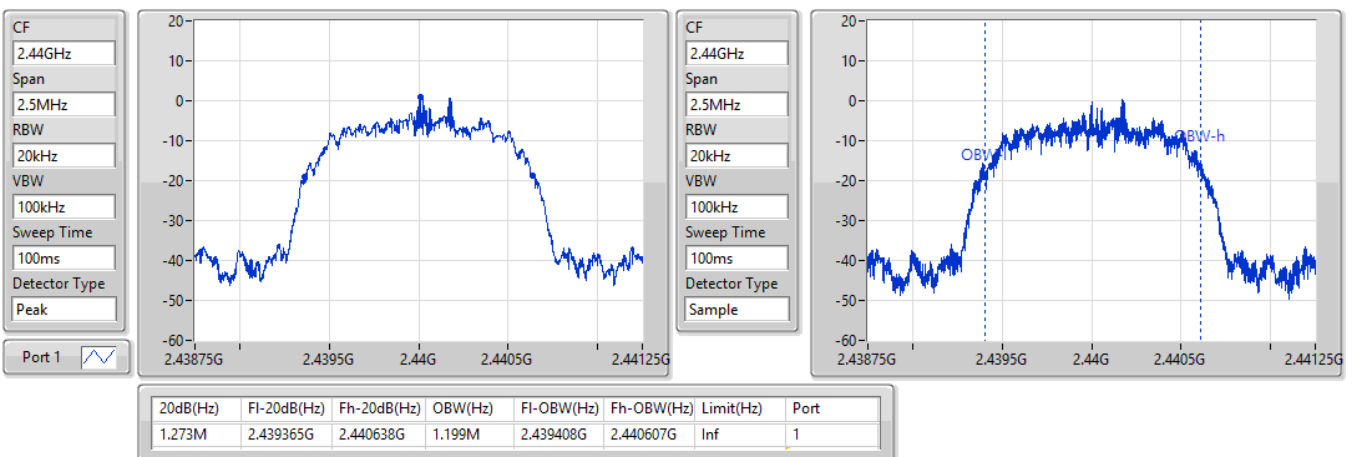


BT-EDR(3Mbps)
EBW-FS
2402MHz

06/10/2021

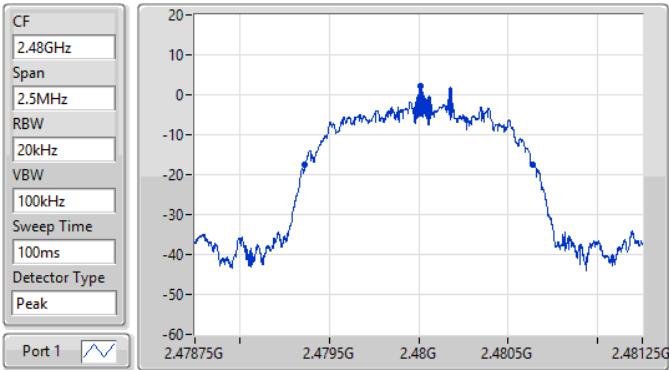

BT-EDR(3Mbps)
EBW-FS
2440MHz

06/10/2021



BT-EDR(3Mbps)

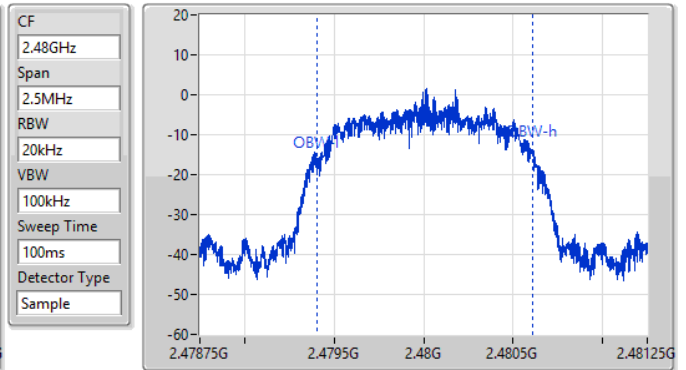
2480MHz



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.271M	2.479365G	2.480636G	1.207M	2.479403G	2.48061G	Inf	1

EBW-FS

06/10/2021



Summary

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

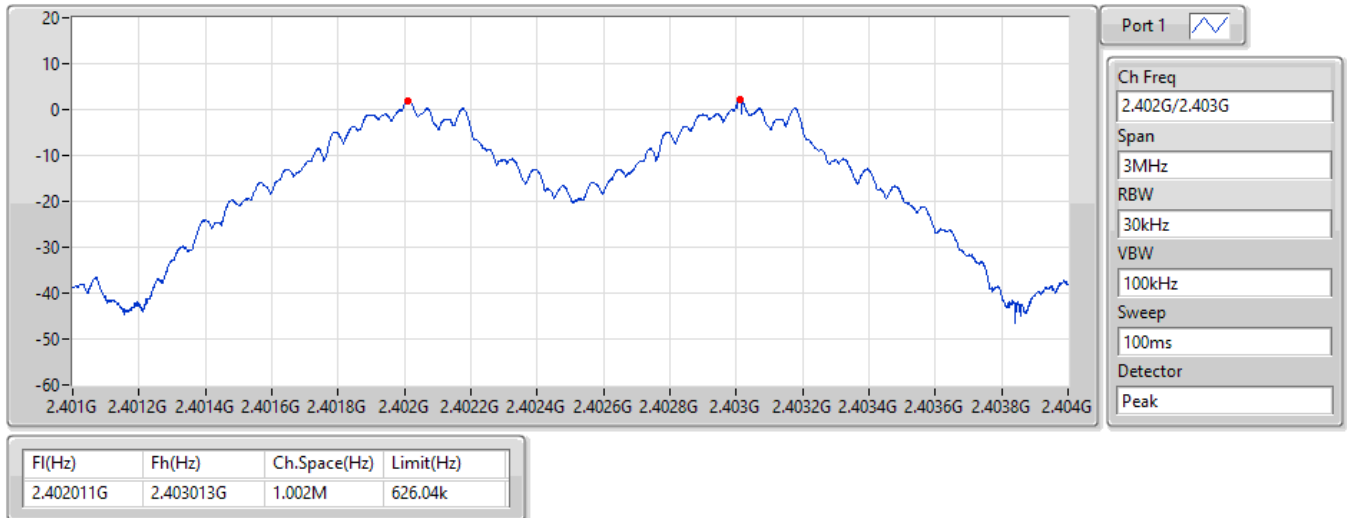
Result

Mode	Result	Fl (Hz)	Fh (Hz)	Ch.Space (Hz)	Limit (Hz)
BT-BR(1Mbps)	-	-	-	-	-
2402MHz	Pass	2.402011G	2.403013G	1.002M	626.04k
2440MHz	Pass	2.440013G	2.441015G	1.002M	622.71k
2480MHz	Pass	2.479011G	2.480013G	1.002M	624.375k
BT-EDR(2Mbps)	-	-	-	-	-
2402MHz	Pass	2.402011G	2.403013G	1.002M	873.126k
2440MHz	Pass	2.440011G	2.441012G	1.0005M	872.46k
2480MHz	Pass	2.479013G	2.480013G	1.0005M	873.126k
BT-EDR(3Mbps)	-	-	-	-	-
2402MHz	Pass	2.402013G	2.403013G	1.0005M	844.488k
2440MHz	Pass	2.440013G	2.441013G	1.0005M	847.818k
2480MHz	Pass	2.479013G	2.480012G	999k	846.486k

BT-BR(1Mbps)

2.402G/2.403GHz

Channel Separation-FS



BT-BR(1Mbps)

2.44G/2.441GHz

Channel Separation-FS



BT-BR(1Mbps)

2.48G/2.479GHz

Channel Separation-FS

06/10/2021

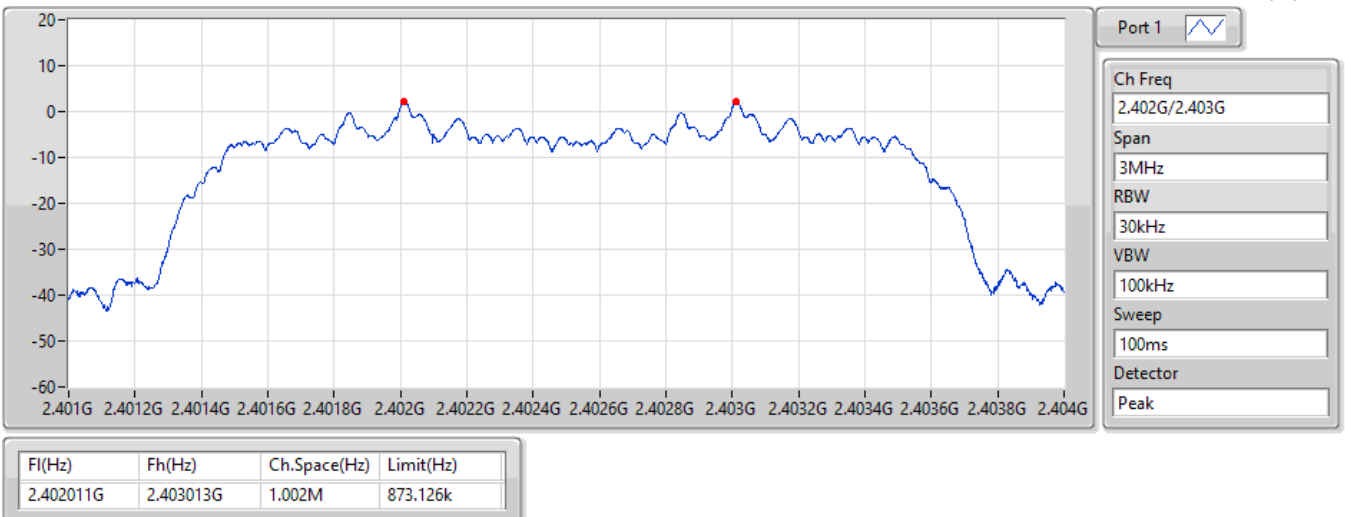


BT-EDR(2Mbps)

2.402G/2.403GHz

Channel Separation-FS

06/10/2021



BT-EDR(2Mbps)

2.44G/2.441GHz

Channel Separation-FS

06/10/2021

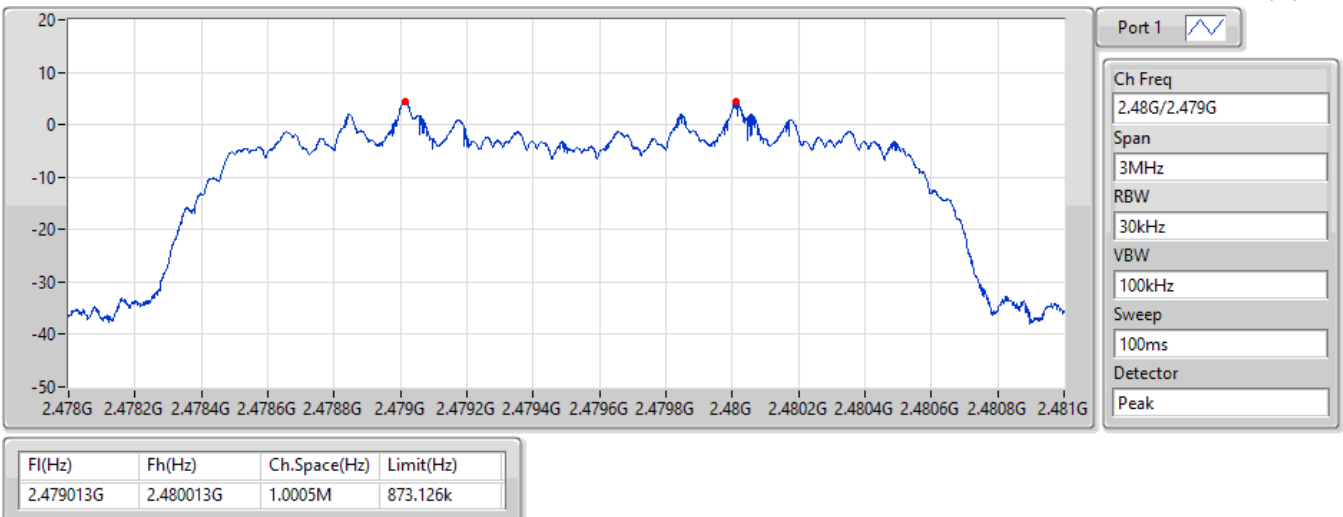


BT-EDR(2Mbps)

2.48G/2.479GHz

Channel Separation-FS

06/10/2021

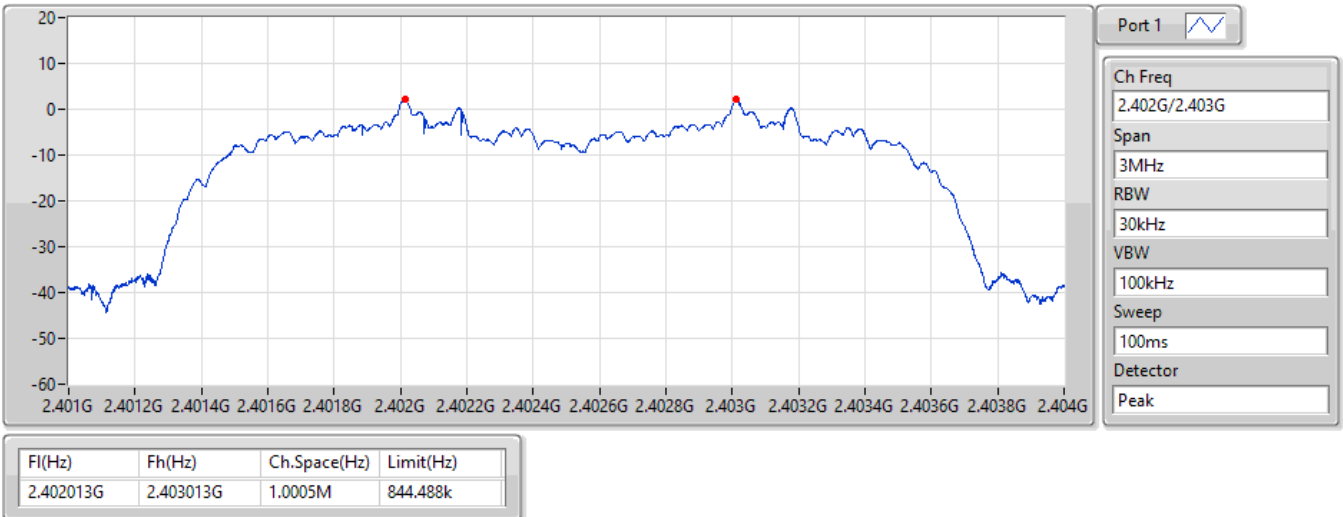


BT-EDR(3Mbps)

2.402G/2.403GHz

Channel Separation-FS

06/10/2021

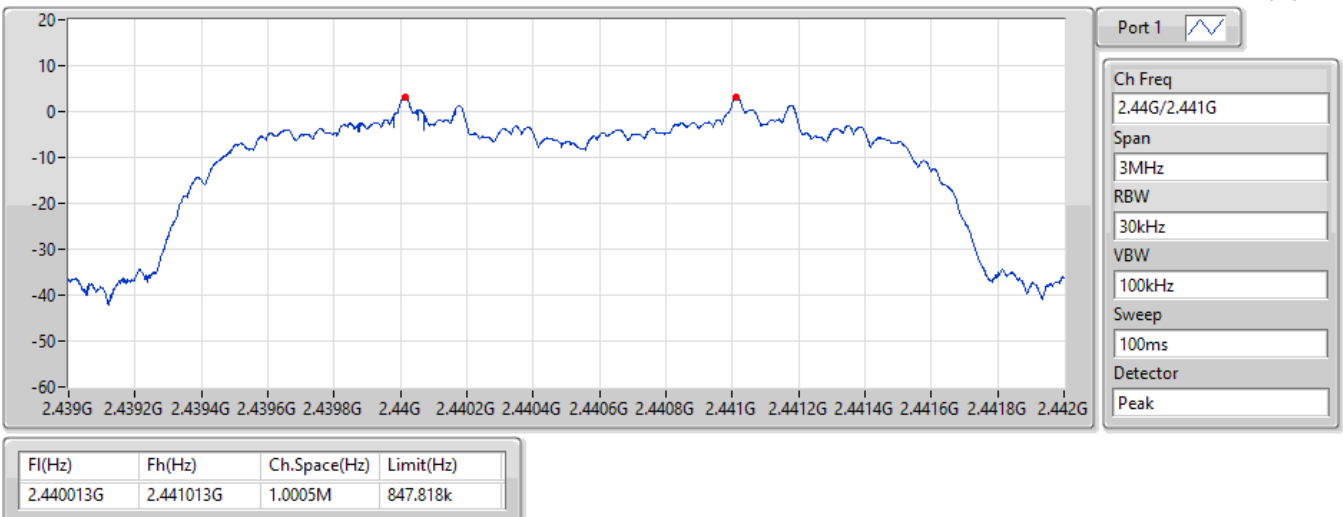


BT-EDR(3Mbps)

2.44G/2.441GHz

Channel Separation-FS

06/10/2021



BT-EDR(3Mbps)

2.48G/2.479GHz

Channel Separation-FS

06/10/2021





Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	5.62	0.00365
BT-EDR(2Mbps)	7.83	0.00607
BT-EDR(3Mbps)	8.26	0.00670

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	1.69	3.21	21.00
2440MHz	Pass	1.69	4.31	21.00
2480MHz	Pass	1.69	5.62	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	1.69	5.73	21.00
2440MHz	Pass	1.69	6.58	21.00
2480MHz	Pass	1.69	7.83	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	1.69	6.09	21.00
2440MHz	Pass	1.69	6.97	21.00
2480MHz	Pass	1.69	8.26	21.00

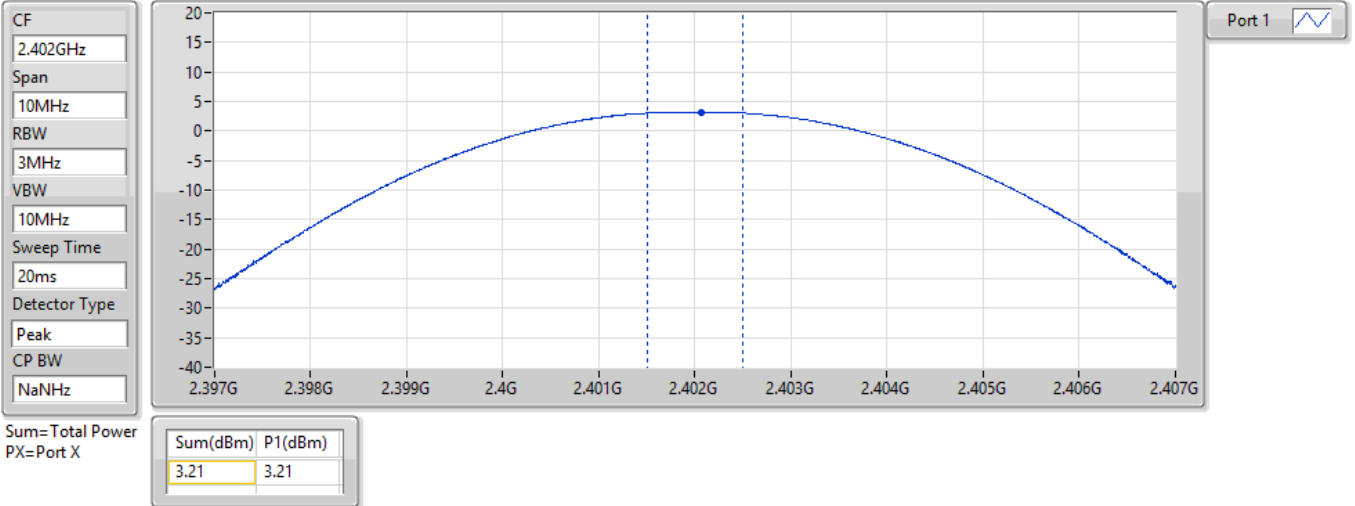
DG = Directional Gain; Port X = Port X output power

BT-BR(1Mbps)

PK Power-FS

2402MHz

06/10/2021

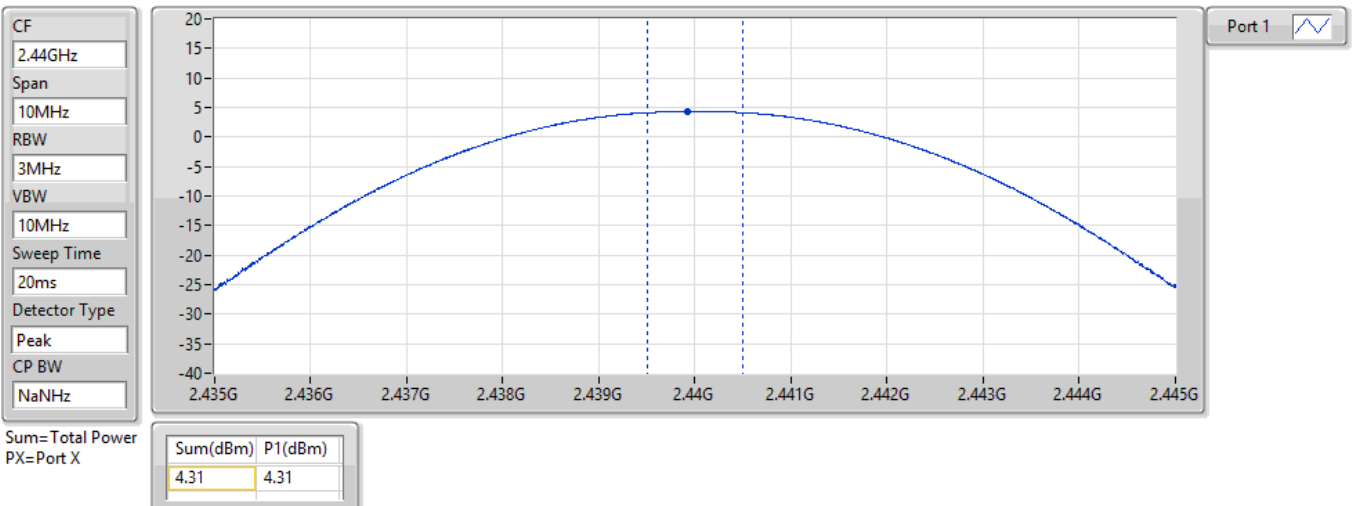


BT-BR(1Mbps)

PK Power-FS

2440MHz

06/10/2021

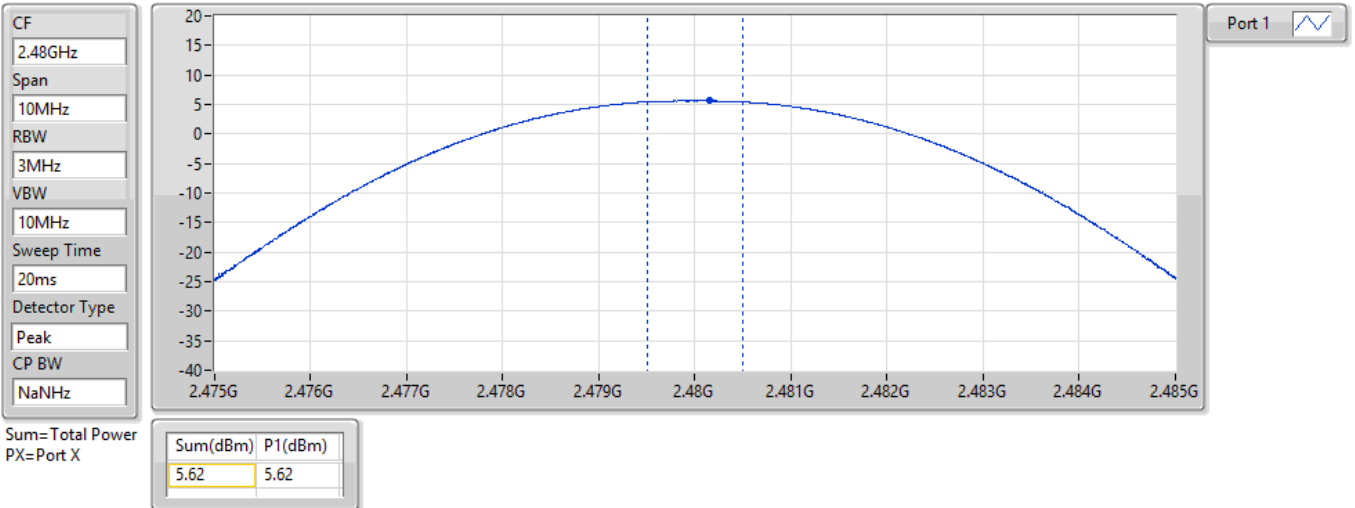


BT-BR(1Mbps)

PK Power-FS

2480MHz

06/10/2021

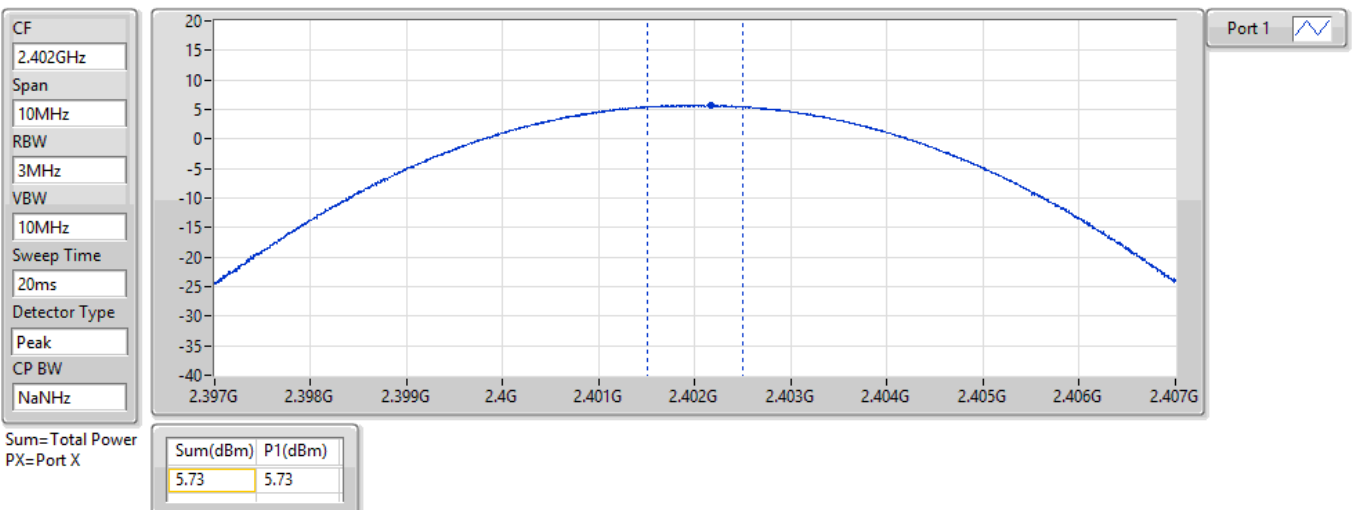


BT-EDR(2Mbps)

PK Power-FS

2402MHz

06/10/2021

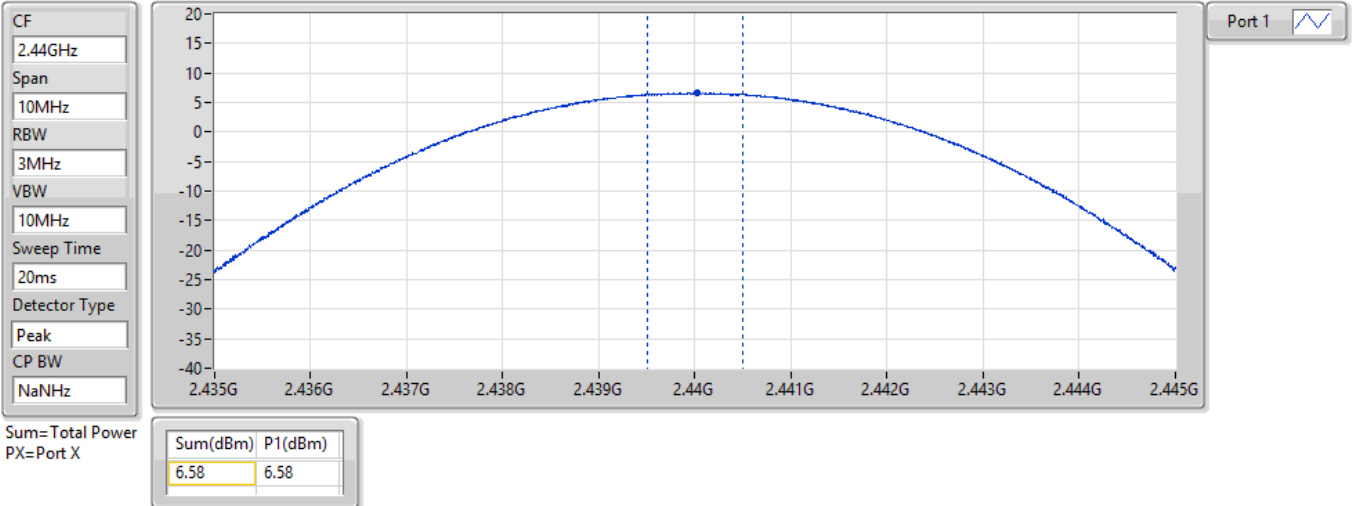


BT-EDR(2Mbps)

PK Power-FS

2440MHz

06/10/2021

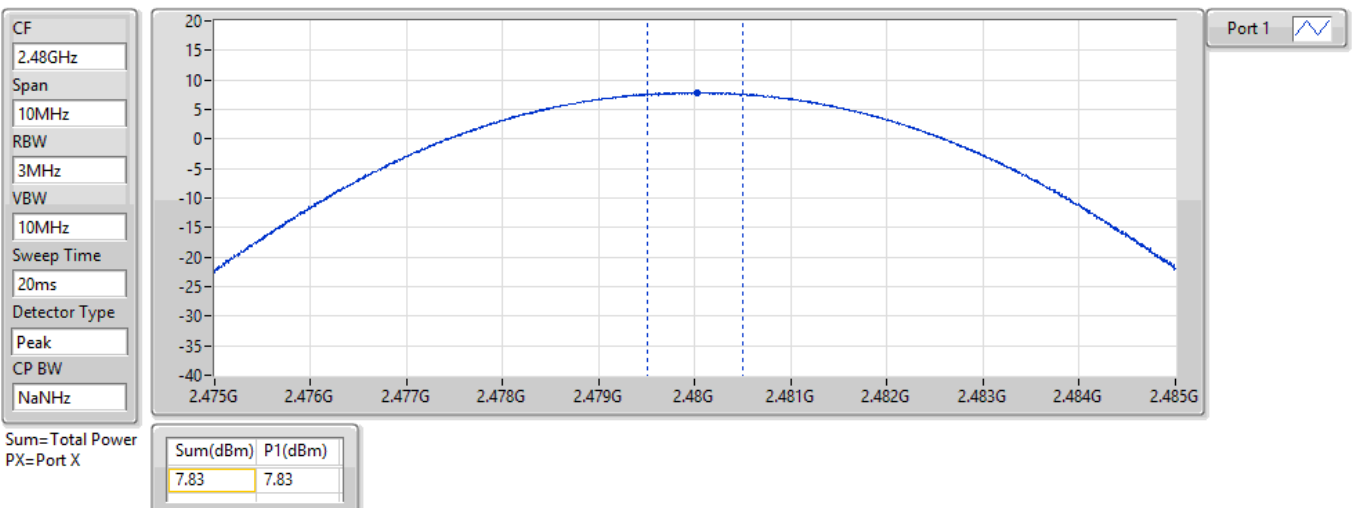


BT-EDR(2Mbps)

PK Power-FS

2480MHz

06/10/2021

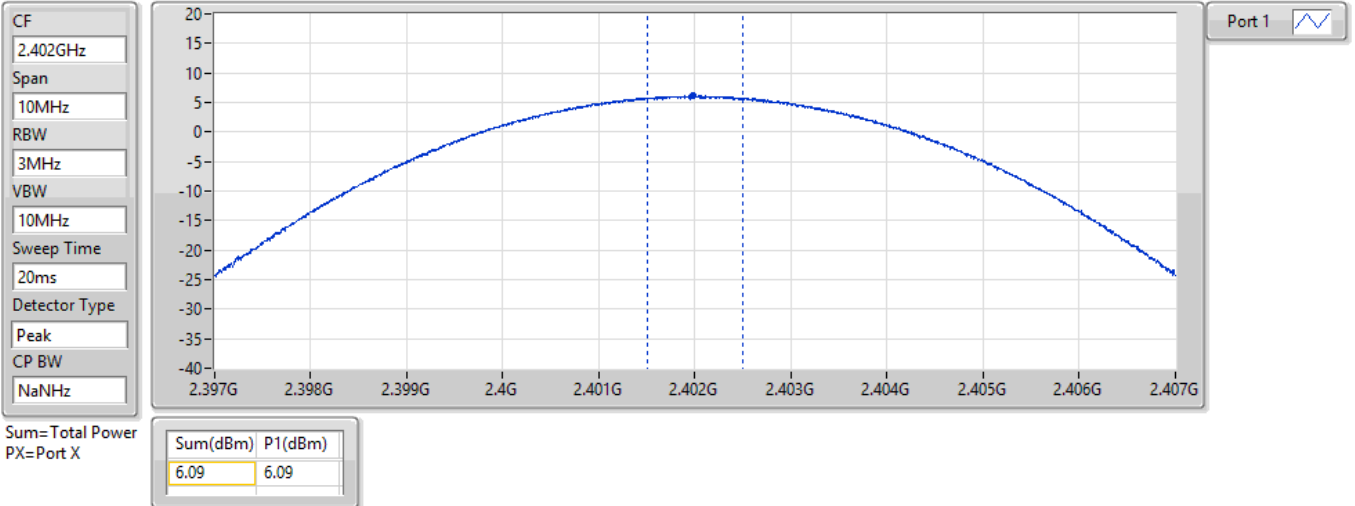


BT-EDR(3Mbps)

PK Power-FS

2402MHz

06/10/2021

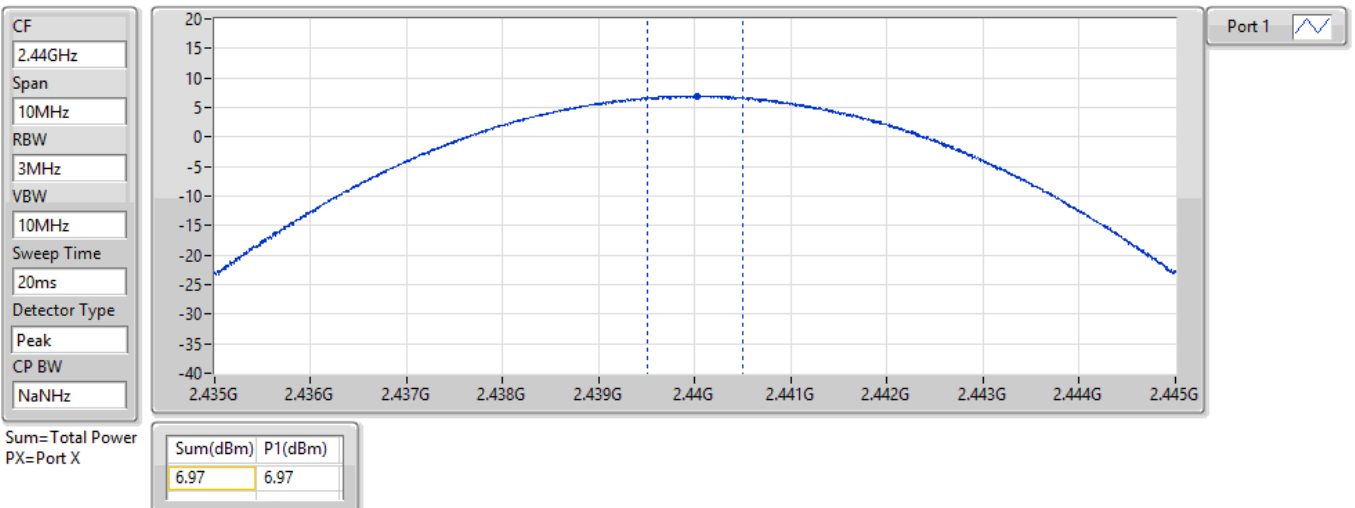


BT-EDR(3Mbps)

PK Power-FS

2440MHz

06/10/2021

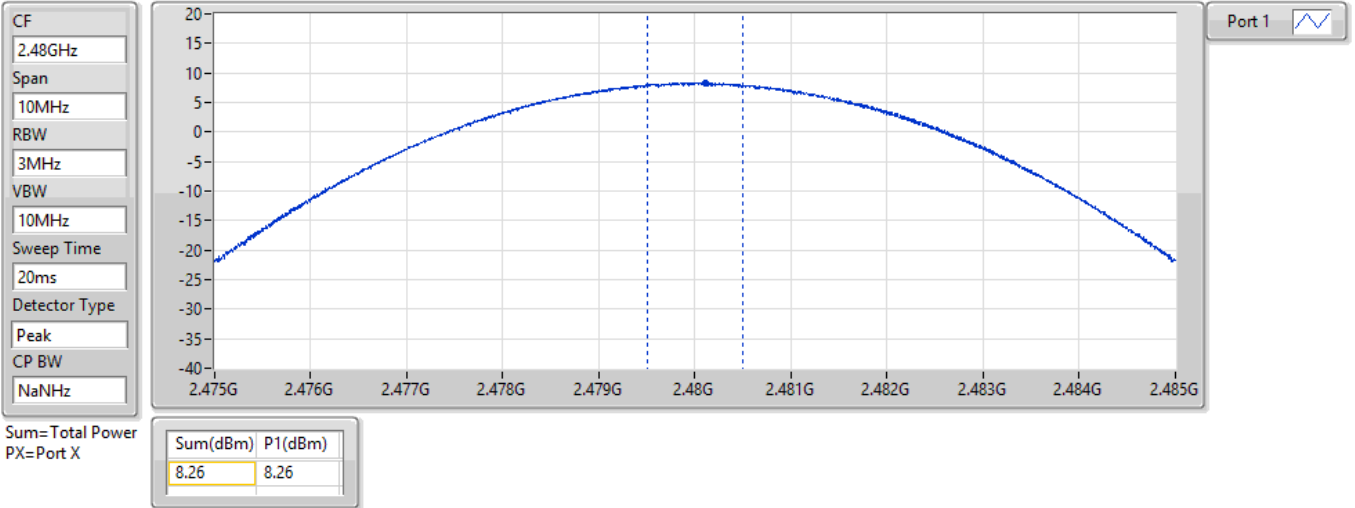


BT-EDR(3Mbps)

PK Power-FS

2480MHz

06/10/2021





Average Power-FHSS

Appendix C.2

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	5.48	0.00353
BT-EDR(2Mbps)	5.64	0.00366
BT-EDR(3Mbps)	5.60	0.00363

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	1.69	3.17	21.00
2440MHz	Pass	1.69	4.18	21.00
2480MHz	Pass	1.69	5.48	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	1.69	3.47	21.00
2440MHz	Pass	1.69	4.31	21.00
2480MHz	Pass	1.69	5.64	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	1.69	3.47	21.00
2440MHz	Pass	1.69	4.31	21.00
2480MHz	Pass	1.69	5.60	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

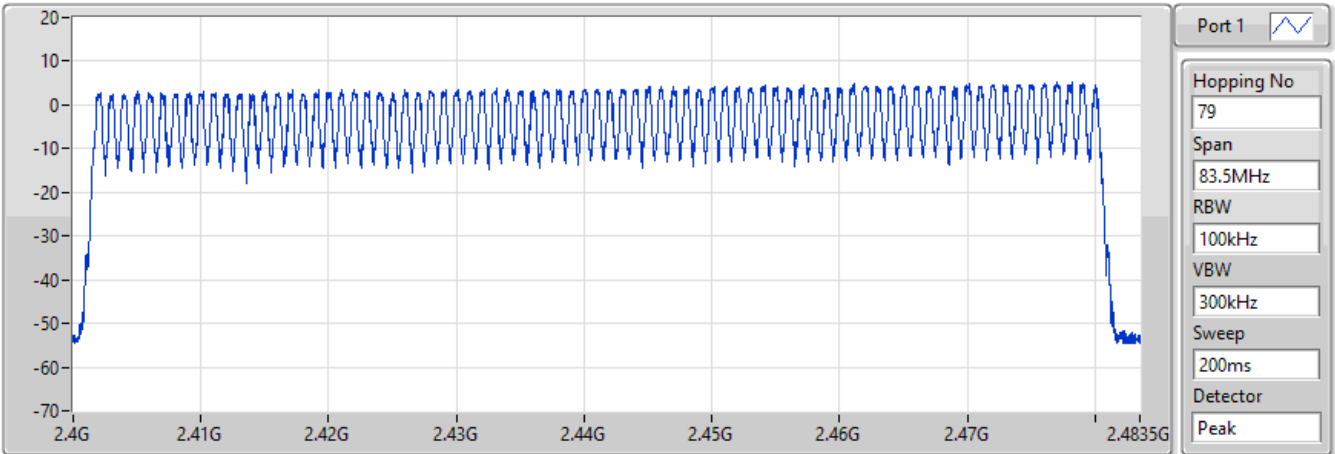
Mode	Result	Hopping No	Limit
BT-BR(1Mbps)	-	-	-
2440MHz	Pass	79	15
BT-EDR(2Mbps)	-	-	-
2440MHz	Pass	79	15
BT-EDR(3Mbps)	-	-	-
2440MHz	Pass	79	15

BT-BR(1Mbps)

2440MHz

Hopping-FS

06/10/2021



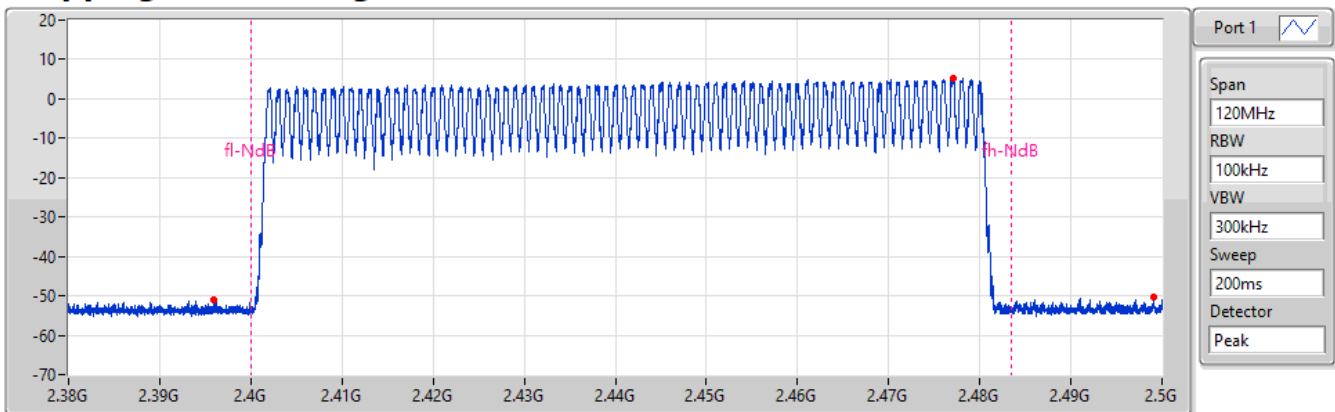
Hopping No	Limit
79	15

BT-BR(1Mbps)

2440MHz

Hopping Ch Bandedge (Non-restricted Band)

06/10/2021



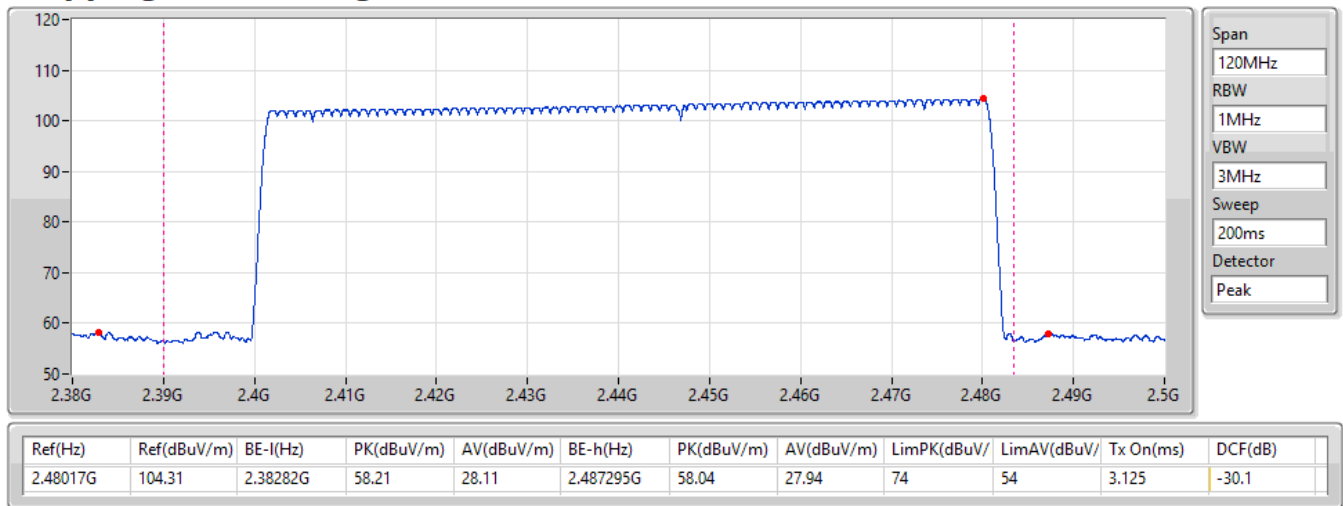
Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-14.78	2.47702G	5.22	2.395945G	-50.84	2.499055G	-50.2

BT-BR(1Mbps)

2440MHz

Hopping Ch Bandedge (Restricted Band)

06/10/2021

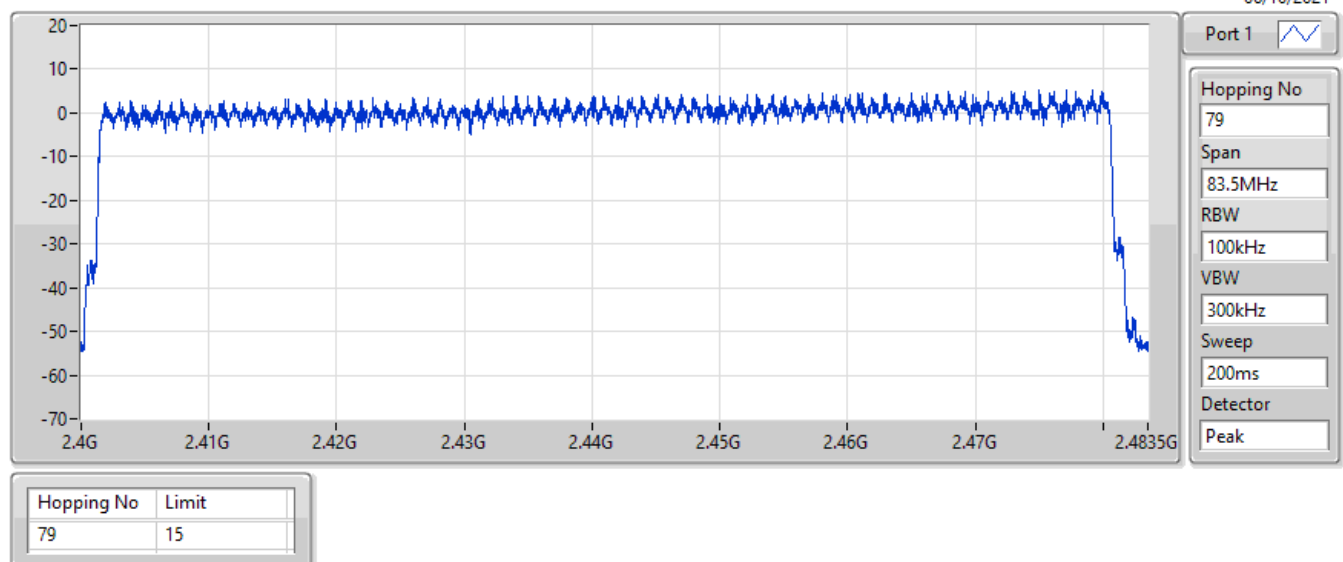


BT-EDR(2Mbps)

2440MHz

Hopping-FS

06/10/2021

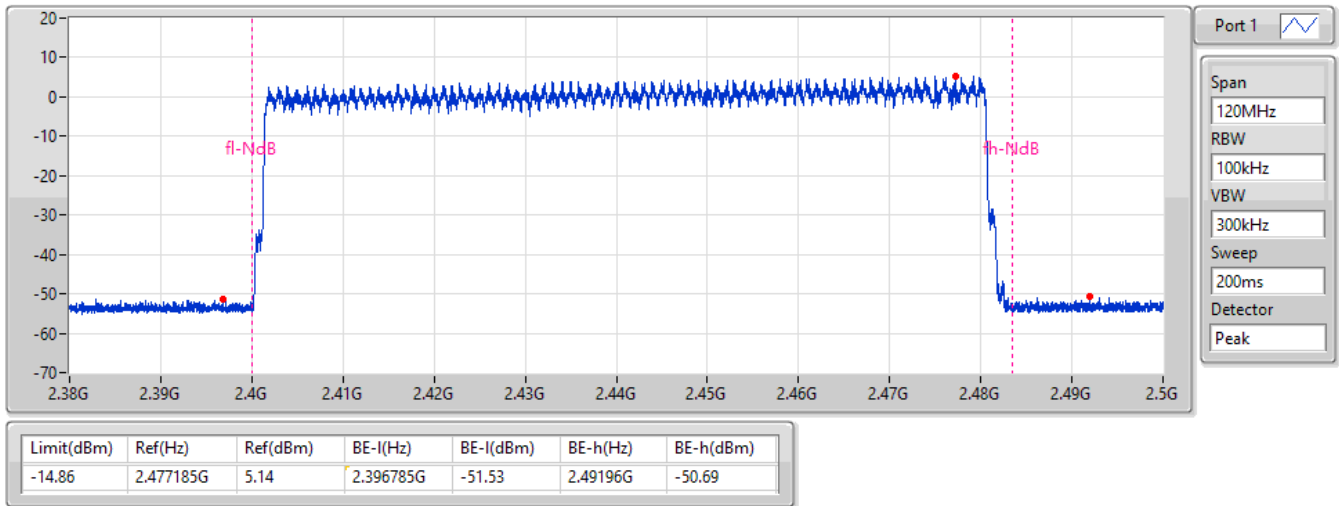


BT-EDR(2Mbps)

2440MHz

Hopping Ch Bandedge (Non-restricted Band)

06/10/2021

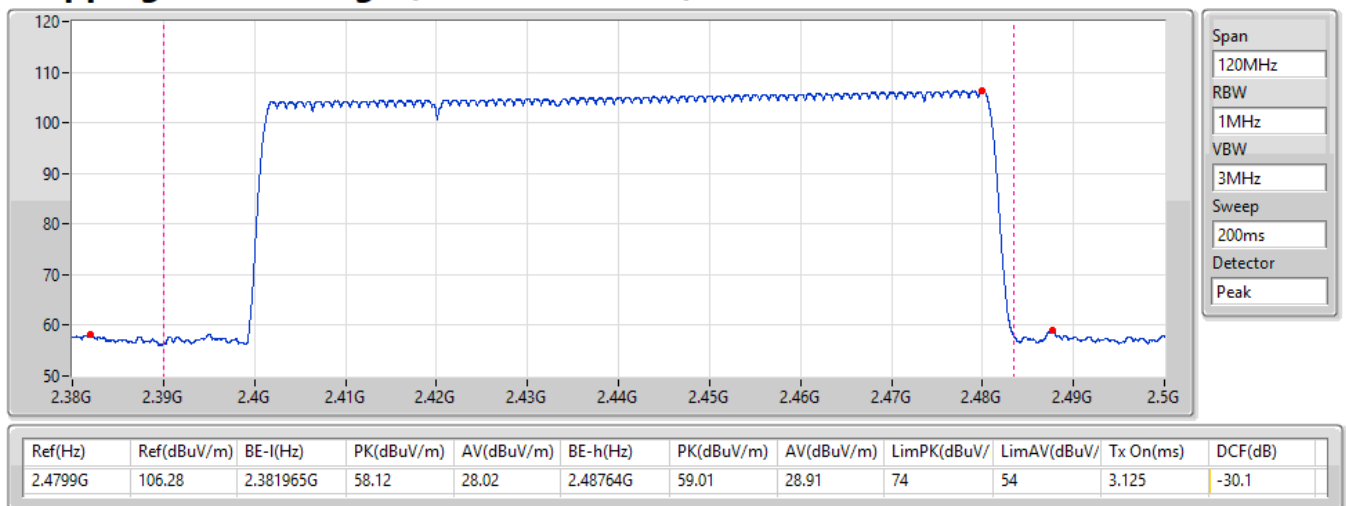


BT-EDR(2Mbps)

2440MHz

Hopping Ch Bandedge (Restricted Band)

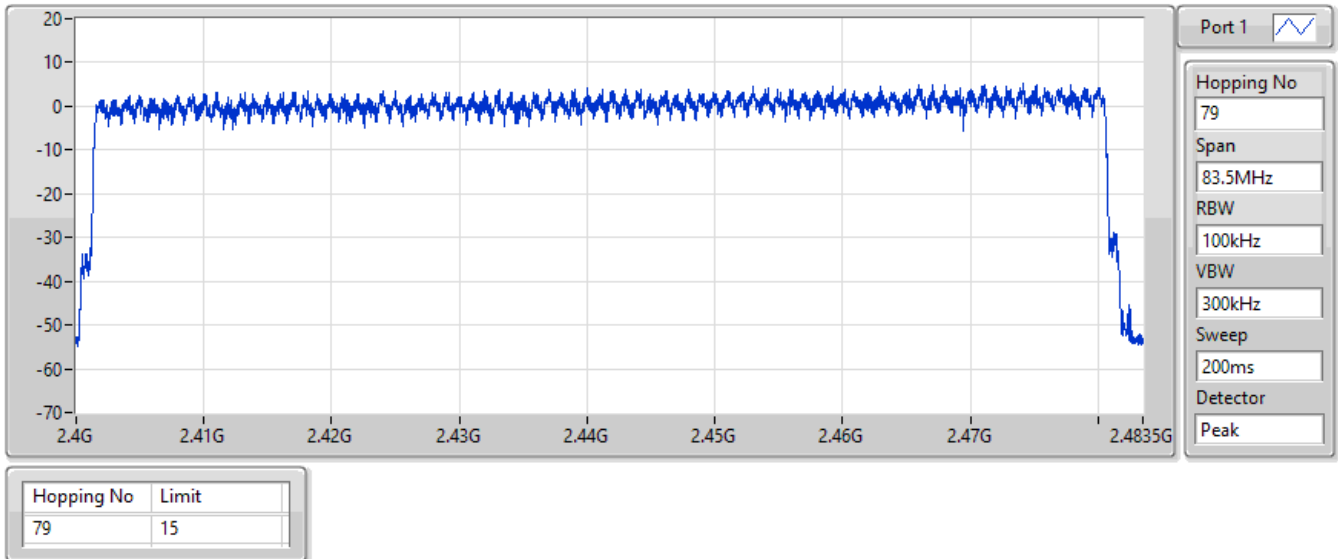
06/10/2021



BT-EDR(3Mbps) 2440MHz

Hopping-FS

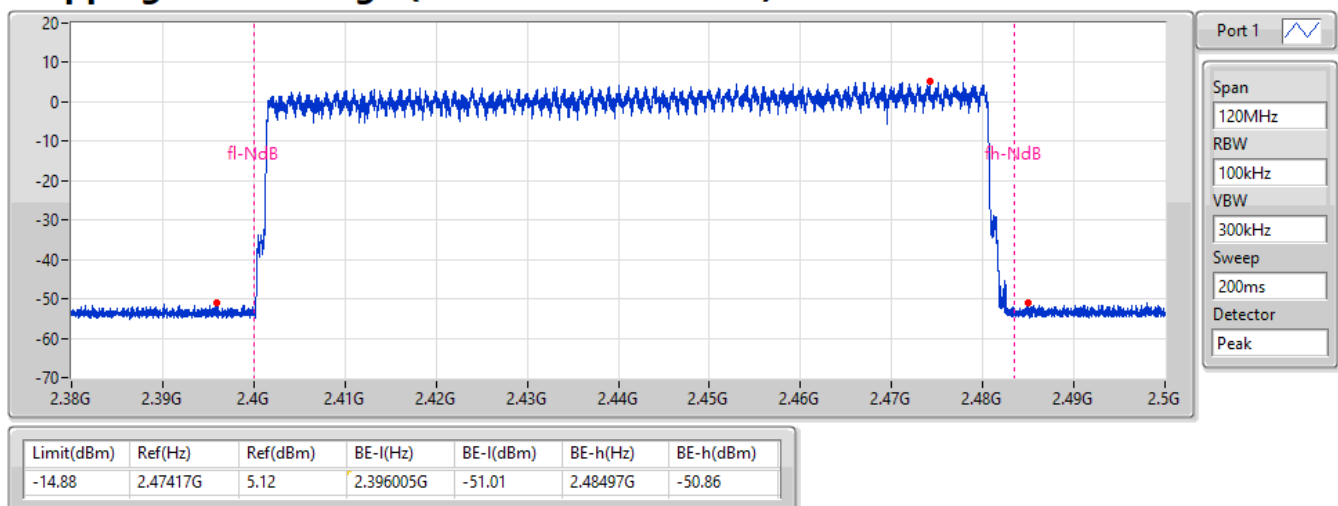
06/10/2021



BT-EDR(3Mbps) 2440MHz

Hopping Ch Bandedge (Non-restricted Band)

06/10/2021

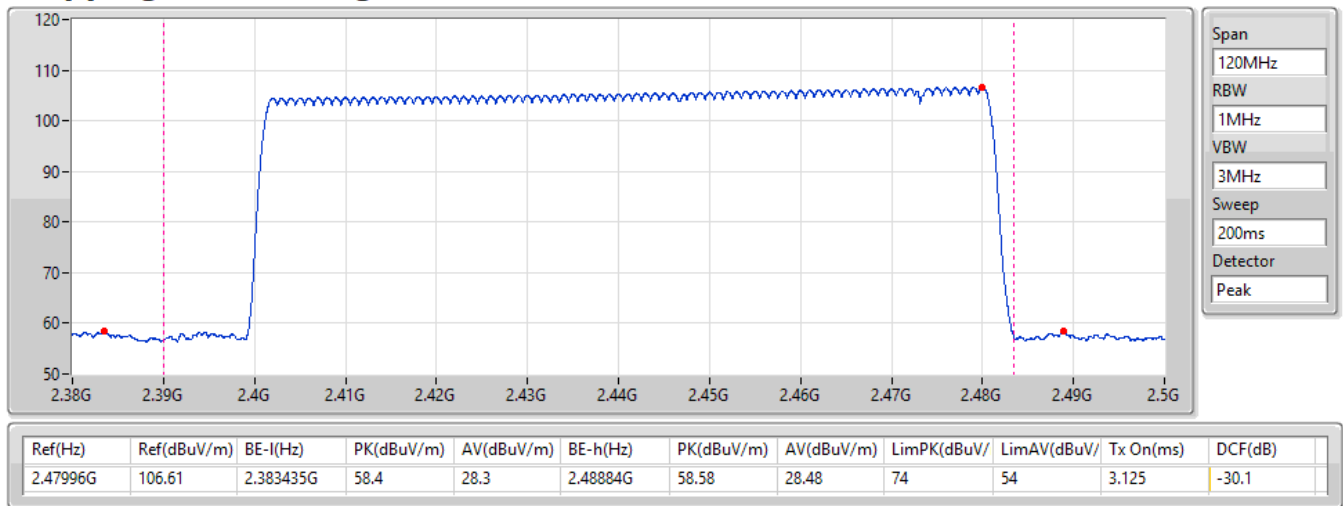


BT-EDR(3Mbps)

2440MHz

Hopping Ch Bandedge (Restricted Band)

06/10/2021





Summary

Mode	Max-Dwell (s)
2.4-2.4835GHz	-
BT-BR(1Mbps)	309.5131m_DH5
BT-EDR(2Mbps)	310.12605m_DH5
BT-EDR(3Mbps)	310.4725m_DH5

Result

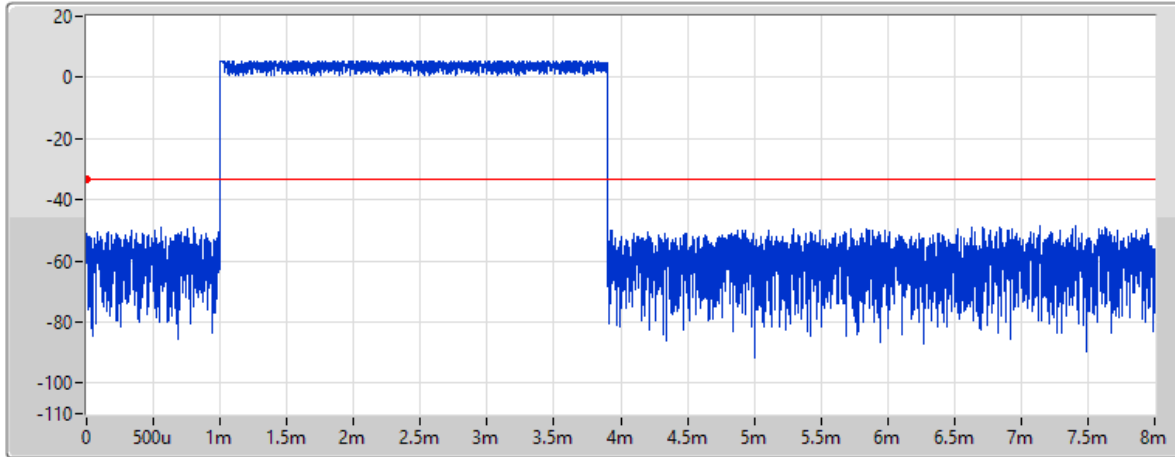
Mode	Result	Period (s)	Dwell (s)	Limit (s)	Tx On (s)
BT-BR(1Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	309.5131m_DH5	400m	2.9035m
2440MHz	Pass	8	154.743225m_DH5-AFH	400m	2.90325m
BT-EDR(2Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	310.12605m_DH5	400m	2.90925m
2440MHz	Pass	8	155.07635m_DH5-AFH	400m	2.9095m
BT-EDR(3Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	310.4725m_DH5	400m	2.9125m
2440MHz	Pass	8	155.23625m_DH5-AFH	400m	2.9125m

BT-BR(1Mbps)

Dwell-FS

2440MHz

06/10/2021



Port 1 

Ch Freq
2.44GHz

RBW
300kHz

VBW
1MHz

Sweep Time
8ms

TX Time
2.9035ms

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	309.5131m_DH5	400m	2.9035m

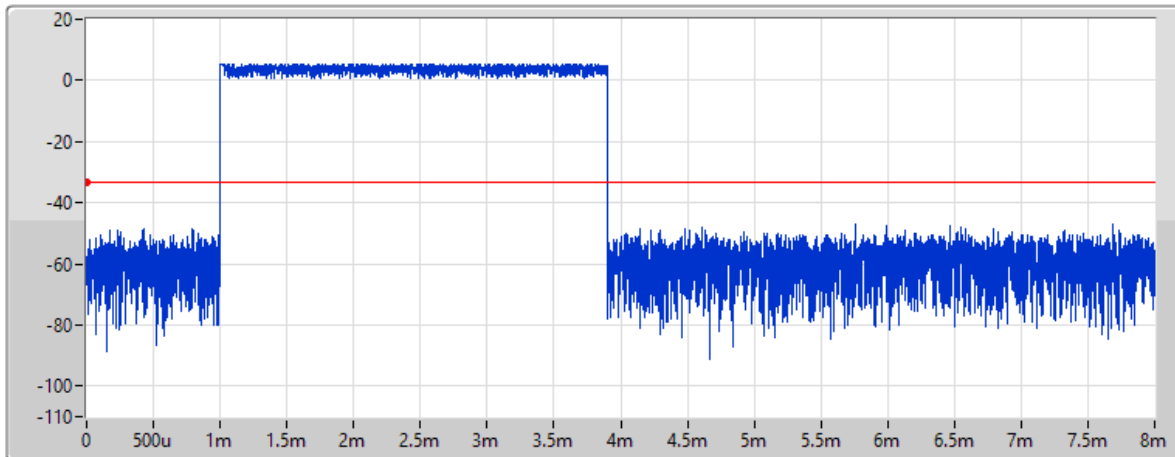
DH5

BT-BR(1Mbps)

Dwell-FS

2440MHz

06/10/2021



Port 1 

Ch Freq
2.44GHz

RBW
300kHz

VBW
1MHz

Sweep Time
8ms

TX Time
2.90325ms

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
8	154.743225m_DH5-AFI	400m	2.90325m

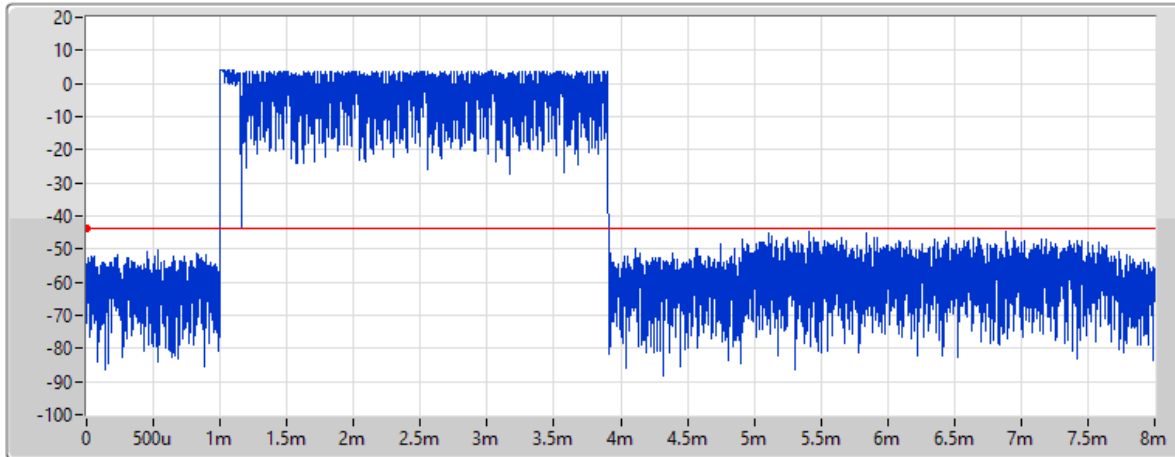
DH5-AFH

BT-EDR(2Mbps)

2440MHz

Dwell-FS

06/10/2021



Port 1 

Ch Freq
2.44GHz

RBW
300kHz

VBW
1MHz

Sweep Time
8ms

TX Time
2.90925ms

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	310.12605m_DH5	400m	2.90925m

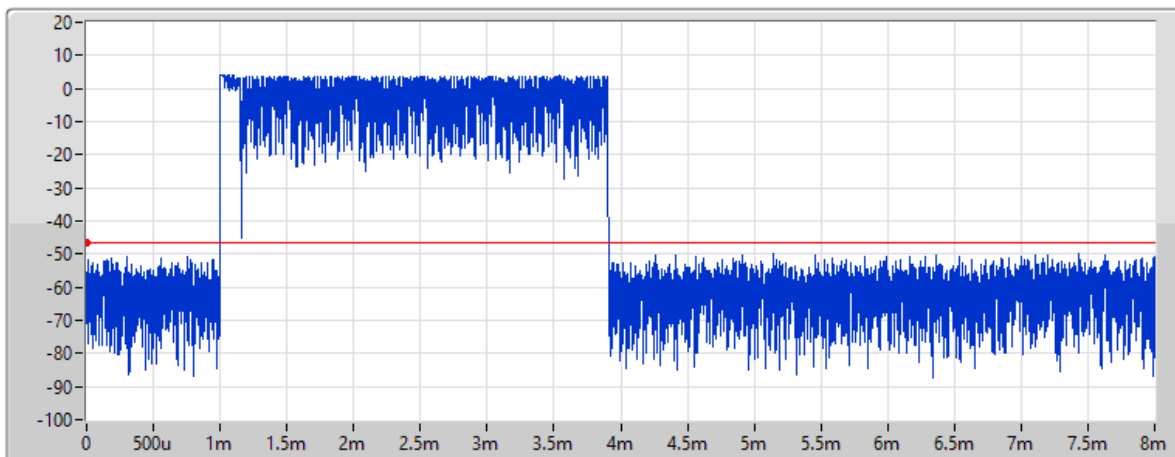
DH5

BT-EDR(2Mbps)

2440MHz

Dwell-FS

06/10/2021



Port 1 

Ch Freq
2.44GHz

RBW
300kHz

VBW
1MHz

Sweep Time
8ms

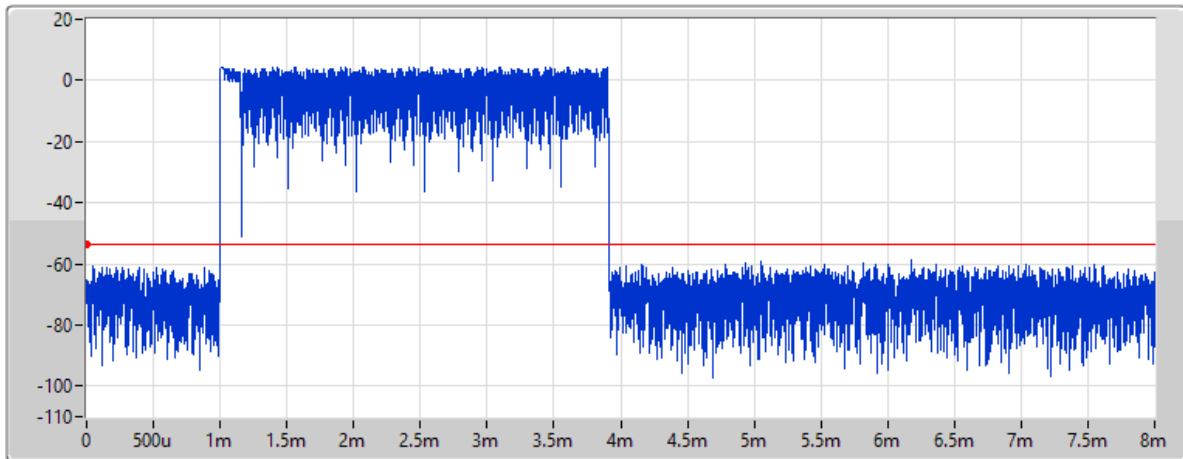
TX Time
2.9095ms

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
8	155.07635m_DH5-AFH	400m	2.9095m

DH5-AFH

BT-EDR(3Mbps)

2440MHz



06/10/2021

Port 1

Ch Freq

2.44GHz

RBW

300kHz

VBW

1MHz

Sweep Time

8ms

TX Time

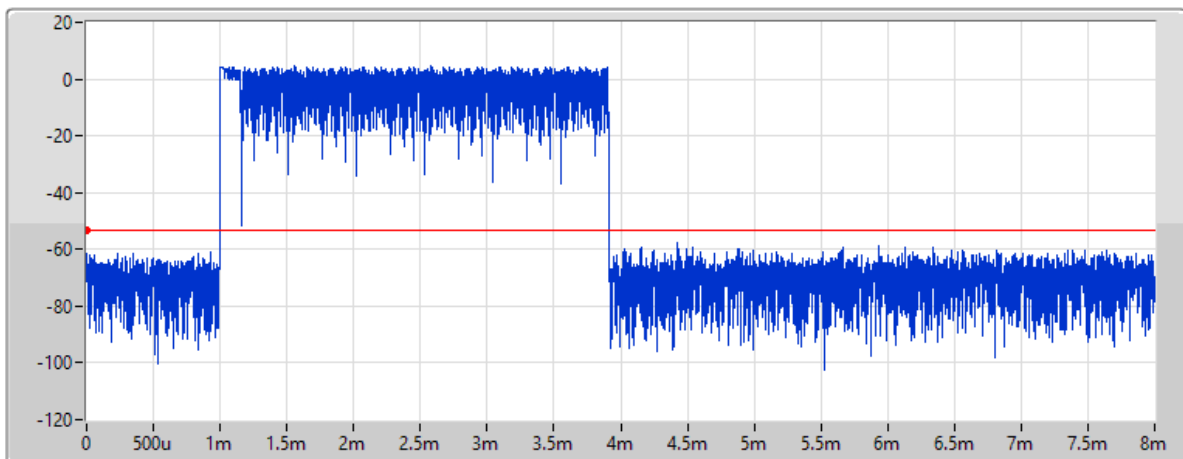
2.9125ms

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	310.4725m_DH5	400m	2.9125m

DH5

BT-EDR(3Mbps)

2440MHz



06/10/2021

Port 1

Ch Freq

2.44GHz

RBW

300kHz

VBW

1MHz

Sweep Time

8ms

TX Time

2.9125ms

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
8	155.23625m_DH5-AFH	400m	2.9125m

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	2.40217G	3.01	-16.99	821.36M	-54.05	2.39922G	-52.27	2.4G	-52.23	2.49958G	-52.34	16.8872G	-48.23	1
BT-EDR(2Mbps)	Pass	2.40196G	2.96	-17.04	2.30245G	-53.39	2.39956G	-52.30	2.4G	-52.07	2.49379G	-52.37	17.64927G	-48.46	1
BT-EDR(3Mbps)	Pass	2.402G	3.09	-16.91	2.1826G	-53.00	2.39902G	-51.06	2.4G	-53.71	2.48424G	-51.85	5.96796G	-48.32	1

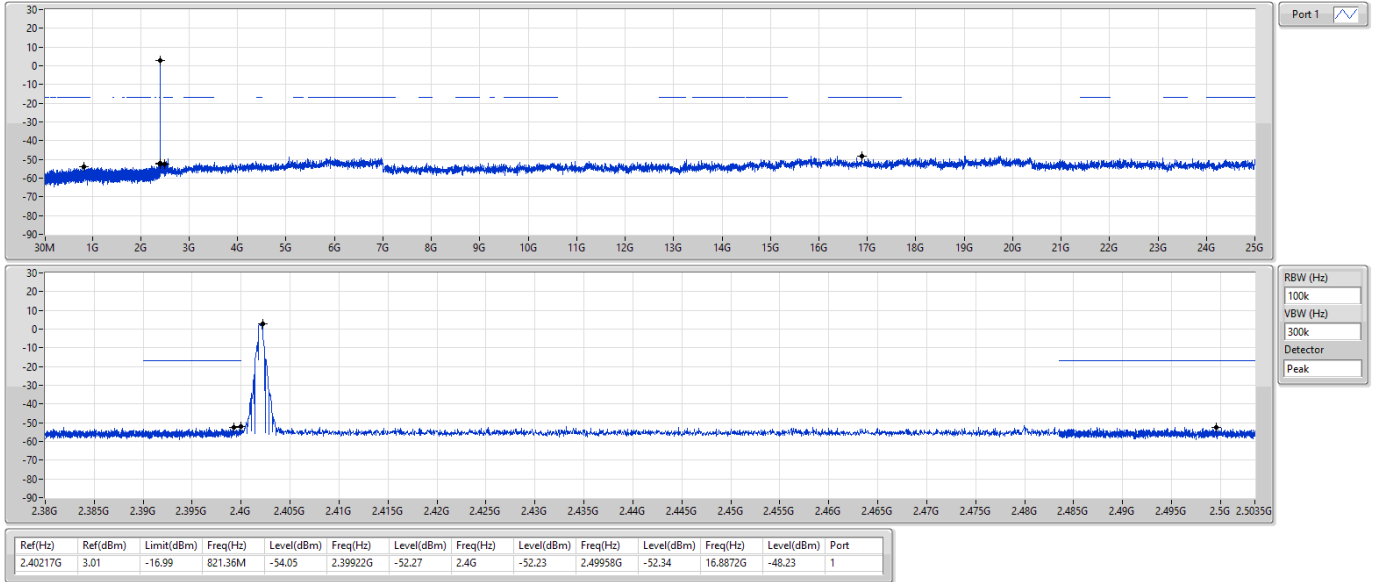
Result

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	3.01	-16.99	821.36M	-54.05	2.39922G	-52.27	2.4G	-52.23	2.49958G	-52.34	16.8872G	-48.23	1
2440MHz	Pass	2.44016G	3.43	-16.57	859.84M	-53.26	2.39205G	-53.23	2.4G	-53.88	2.49104G	-52.47	16.20949G	-48.34	1
2480MHz	Pass	2.4802G	5.43	-14.57	2.14148G	-52.69	2.39067G	-53.12	2.4835G	-54.61	2.48526G	-52.75	16.47383G	-48.72	1
BT-EDR(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40196G	2.96	-17.04	2.30245G	-53.39	2.39956G	-52.30	2.4G	-52.07	2.49379G	-52.37	17.64927G	-48.46	1
2440MHz	Pass	2.44016G	3.87	-16.13	833.7M	-53.63	2.3973G	-53.13	2.4G	-55.88	2.4923G	-52.10	16.25449G	-48.40	1
2480MHz	Pass	2.48008G	4.94	-15.06	877.47M	-53.74	2.39389G	-53.00	2.4835G	-53.18	2.49388G	-52.42	16.23199G	-48.03	1
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.402G	3.09	-16.91	2.1826G	-53.00	2.39902G	-51.06	2.4G	-53.71	2.48424G	-51.85	5.96796G	-48.32	1
2440MHz	Pass	2.44004G	3.95	-16.05	1.97933G	-53.39	2.39938G	-52.41	2.4835G	-53.77	2.48426G	-51.90	5.94828G	-48.60	1
2480MHz	Pass	2.47995G	4.02	-15.98	2.30891G	-52.83	2.39538G	-52.93	2.4835G	-53.76	2.48355G	-51.40	6.6766G	-48.69	1

BT-BR(1Mbps)

CSENdB-FS

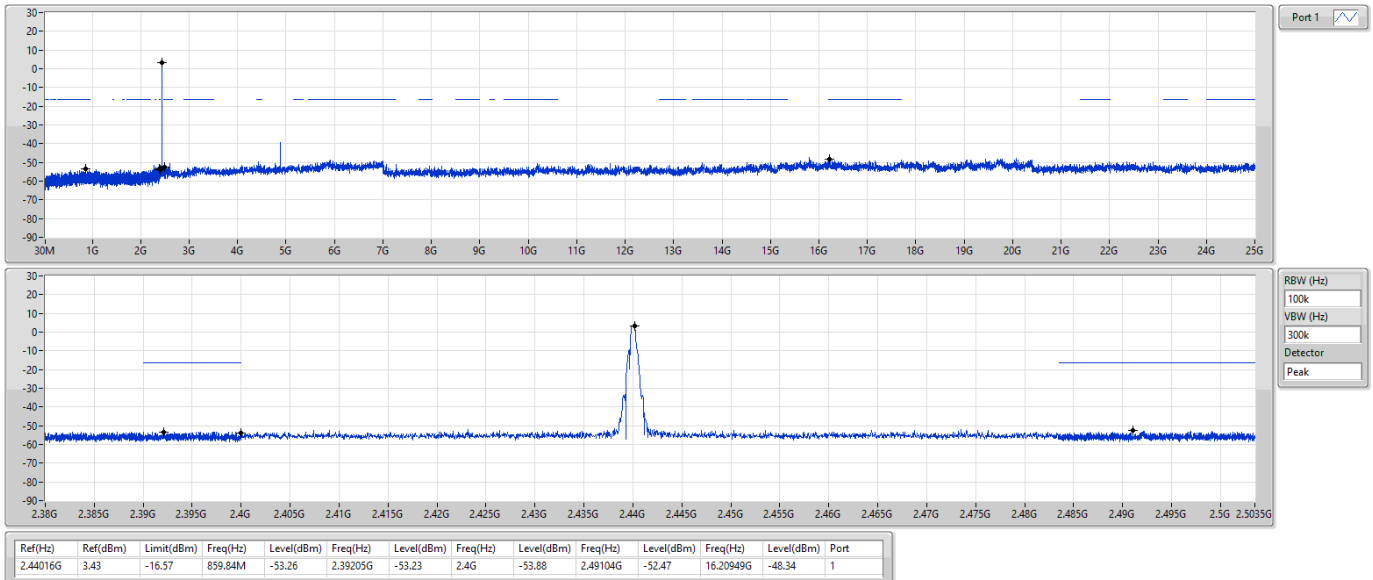
2402MHz



BT-BR(1Mbps)

CSENdB-FS

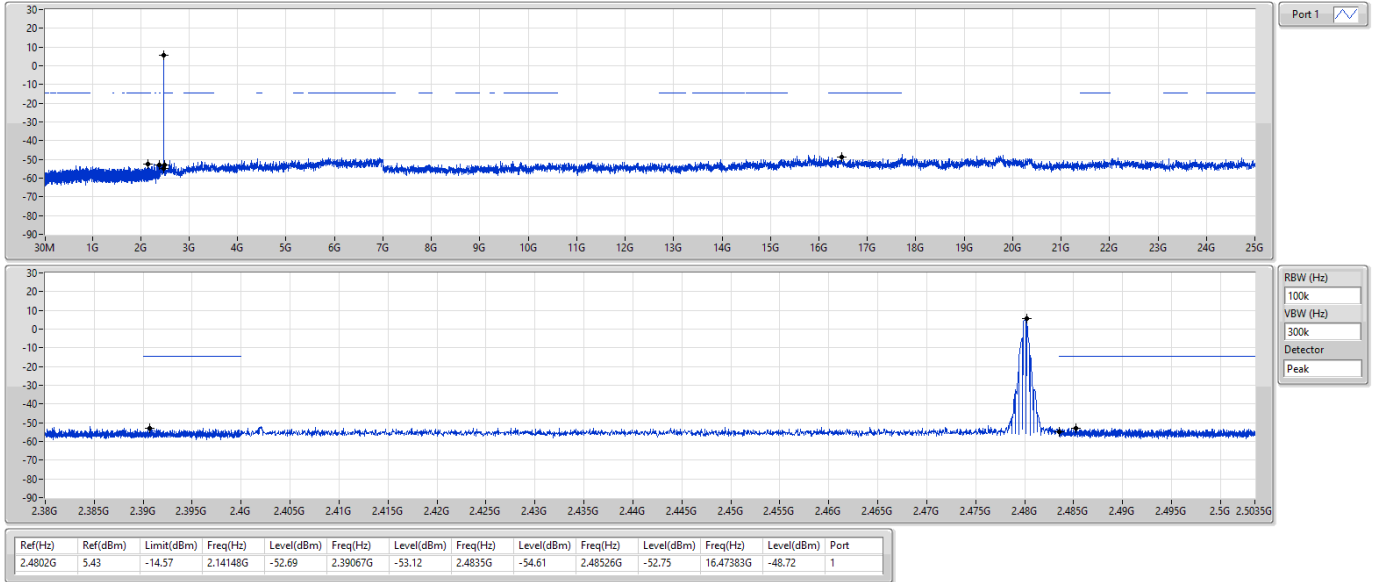
2440MHz



BT-BR(1Mbps)

CSEndB-FS

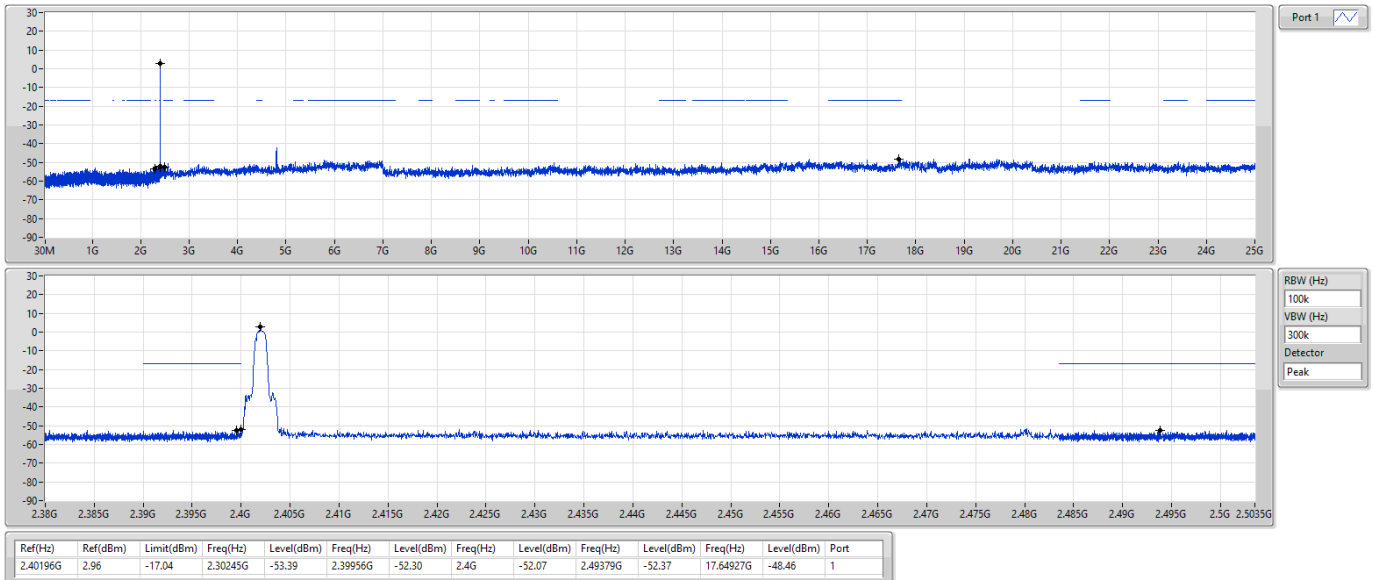
2480MHz



BT-EDR(2Mbps)

CSEndB-FS

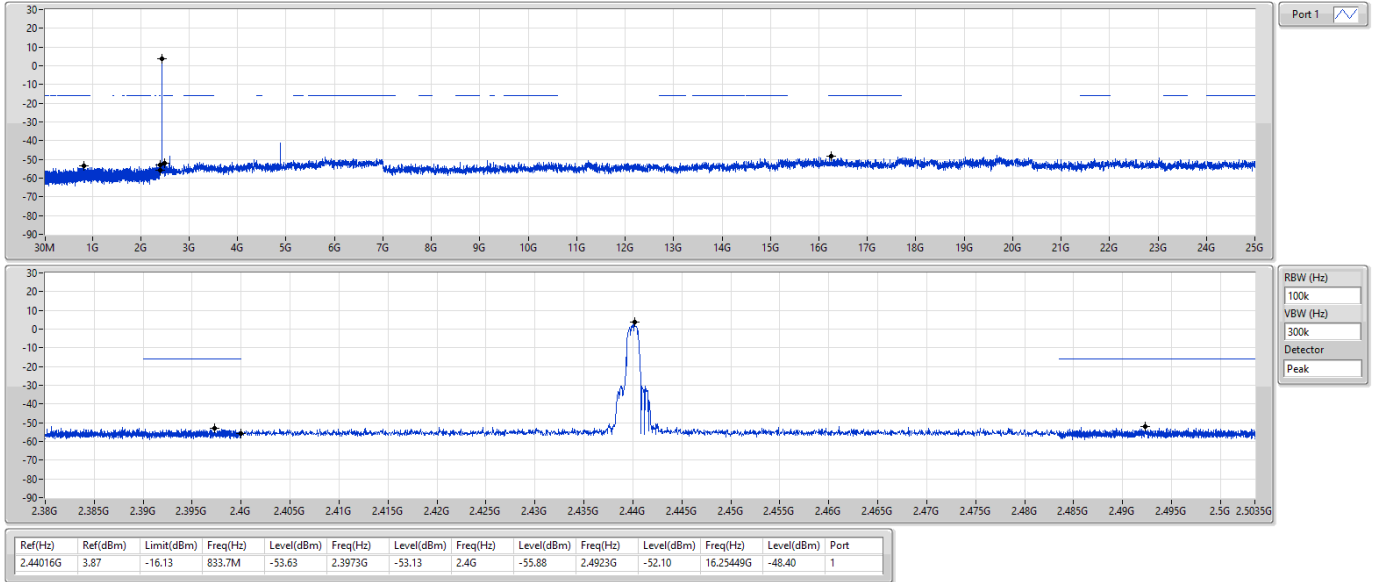
2402MHz



BT-EDR(2Mbps)

CSEndB-FS

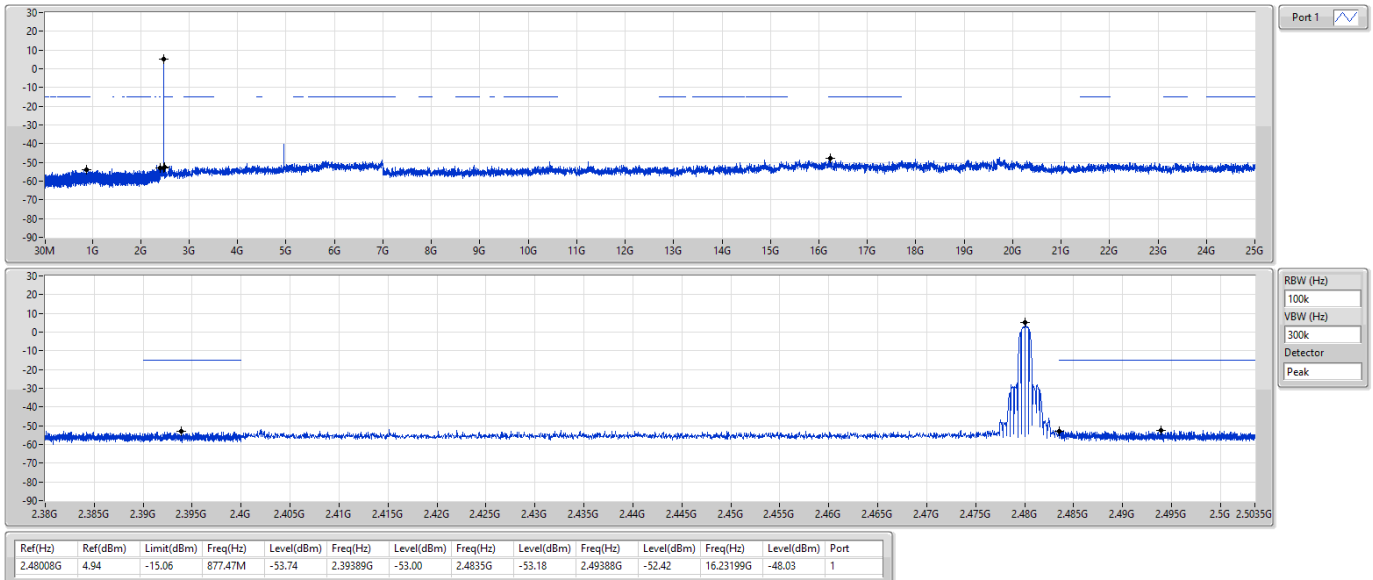
2440MHz



BT-EDR(2Mbps)

CSEndB-FS

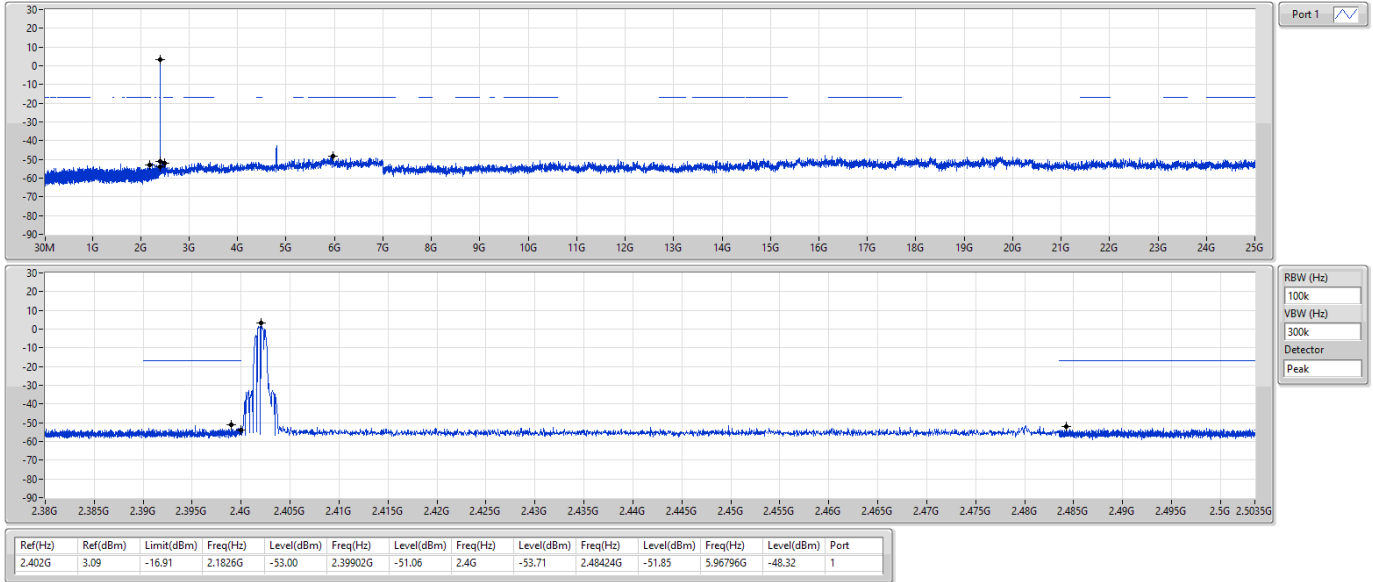
2480MHz



BT-EDR(3Mbps)

CSEndB-FS

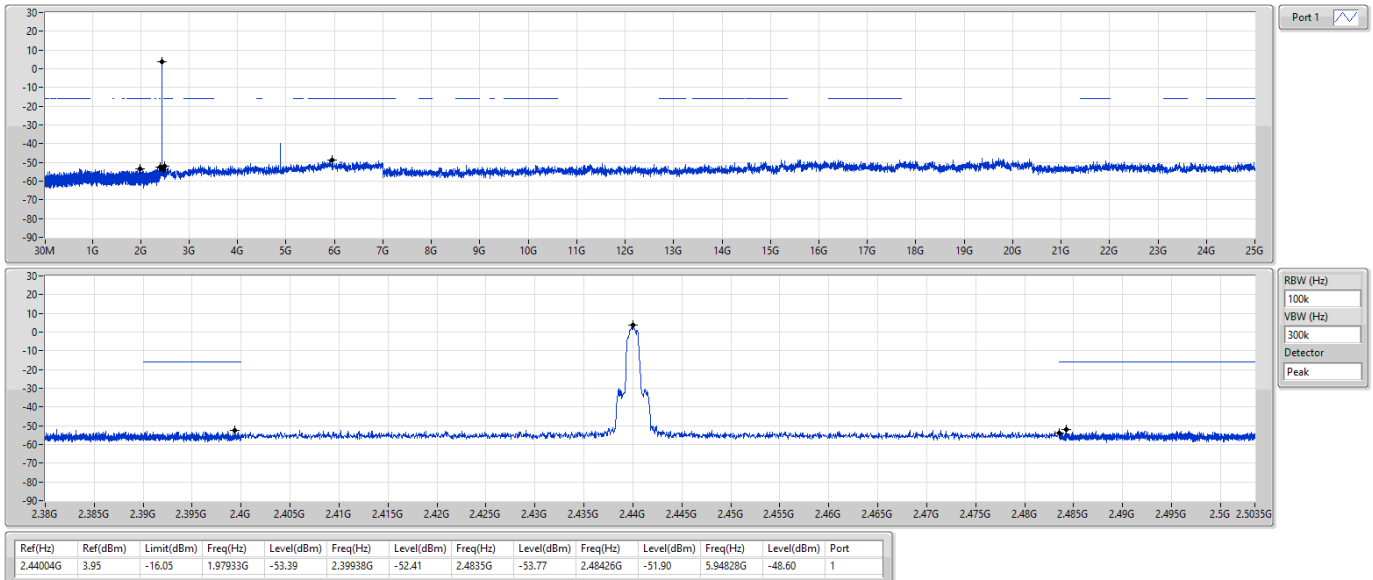
2402MHz



BT-EDR(3Mbps)

CSEndB-FS

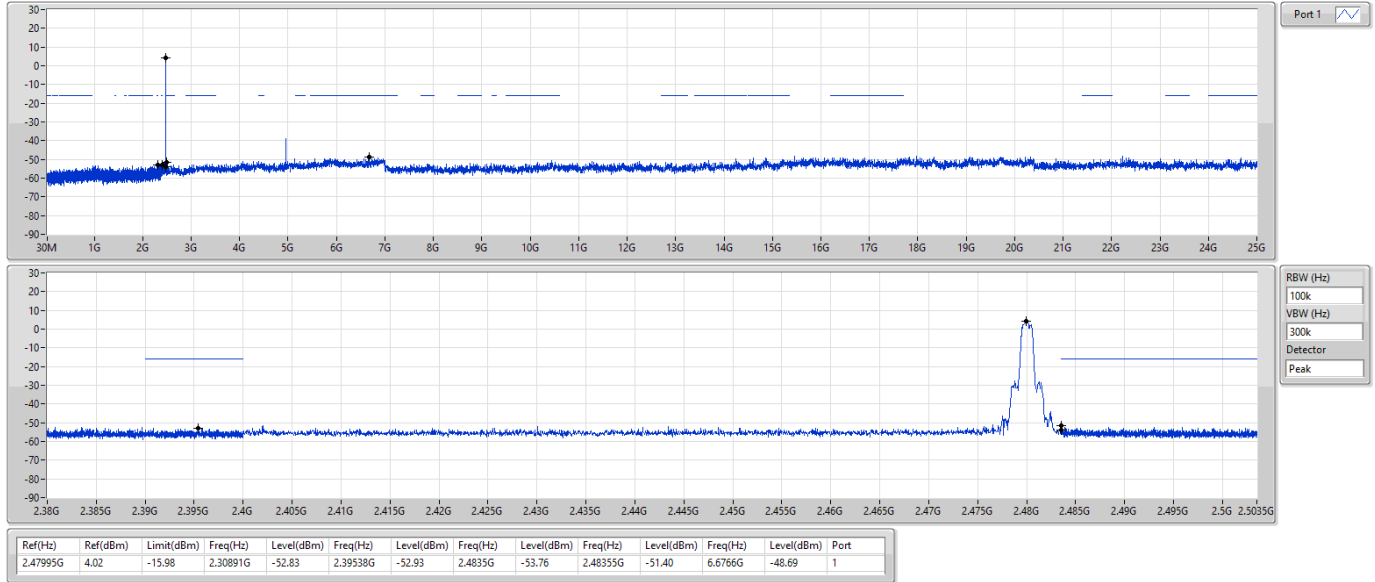
2440MHz



BT-EDR(3Mbps)

CSEndB-FS

2480MHz





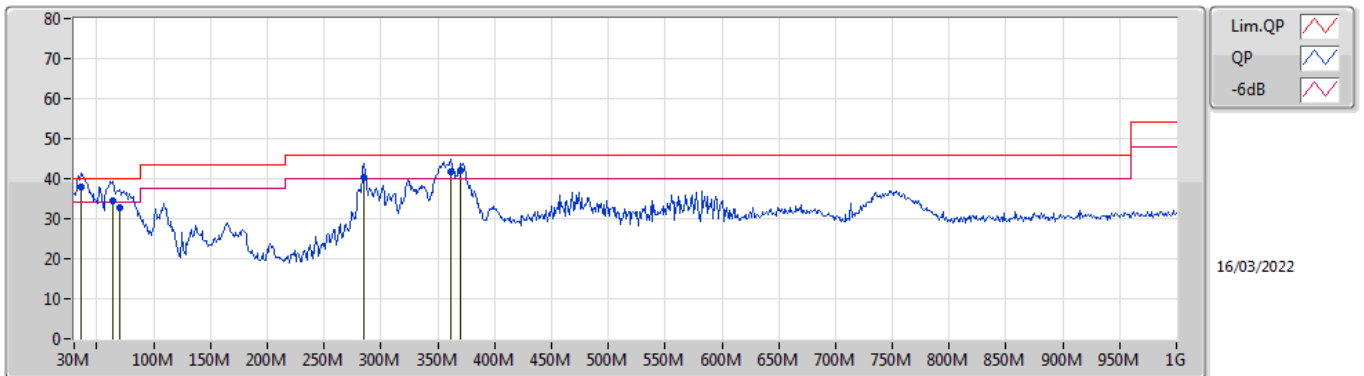
Radiated Emissions below 1GHz

Appendix G.1

Summary

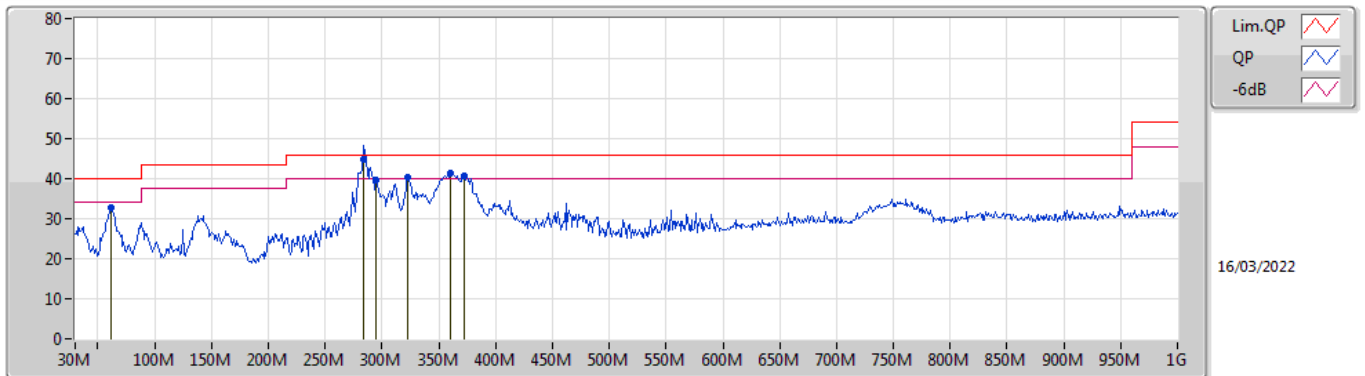
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 2	Pass	QP	284.14M	44.81	46.00	-1.19	Horizontal

Mode 2



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	35.82M	37.99	40.00	-2.01	-9.71	3	Vertical	244	1.00	"Worst"	47.70	20.99	0.90	31.60
QP	63.95M	34.54	40.00	-5.46	-18.56	3	Vertical	124	2.00	-	53.10	12.10	1.20	31.86
QP	69.77M	32.68	40.00	-7.32	-18.32	3	Vertical	166	1.50	-	51.00	12.27	1.30	31.89
QP	285M	40.33	46.00	-5.67	-10.67	3	Vertical	181	1.50	-	51.00	18.75	2.64	32.06
QP	361.74M	41.58	46.00	-4.42	-8.42	3	Vertical	276	1.50	-	50.00	20.66	3.05	32.13
QP	370.47M	41.94	46.00	-4.06	-8.36	3	Vertical	188	1.25	-	50.30	20.70	3.08	32.14

Mode 2



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	62.01M	32.90	40.00	-7.10	-18.49	3	Horizontal	124	3.00	-	51.39	12.16	1.20	31.85
QP	284.14M	44.81	46.00	-1.19	-10.69	3	Horizontal	301	1.00	"Worst"	55.50	18.73	2.64	32.06
PK	294.81M	39.82	46.00	-6.18	-10.54	3	Horizontal	292	1.00	-	50.36	18.85	2.68	32.07
PK	322.94M	40.20	46.00	-5.80	-9.75	3	Horizontal	360	1.00	-	49.95	19.50	2.84	32.09
PK	360.77M	41.31	46.00	-4.69	-8.44	3	Horizontal	357	1.00	-	49.75	20.65	3.04	32.13
PK	372.41M	40.76	46.00	-5.24	-8.34	3	Horizontal	328	1.00	-	49.10	20.72	3.09	32.15

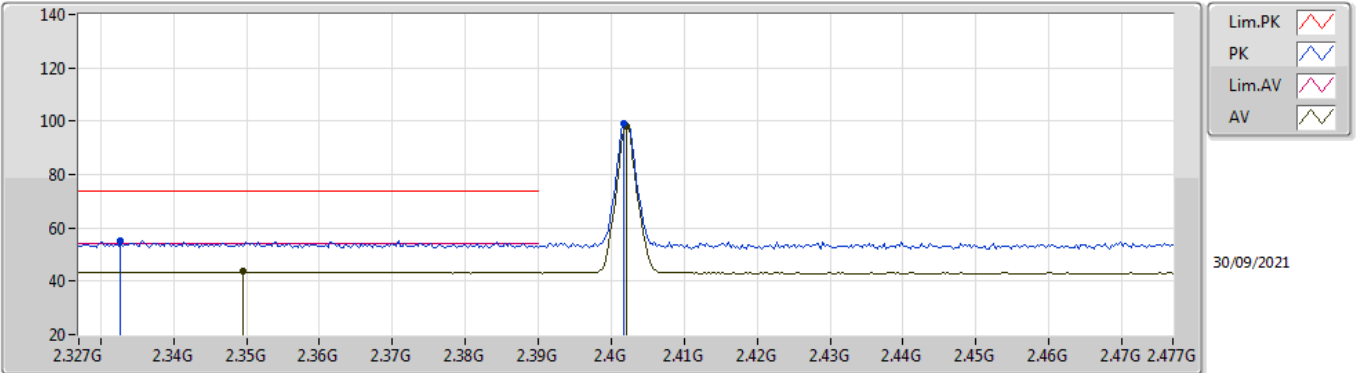


Summary

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-EDR(3Mbps)	Pass	AV	2.4835G	46.45	54.00	-7.55	3	Vertical	108	1.95	-

BT-BR(1Mbps)

2402MHz_TX

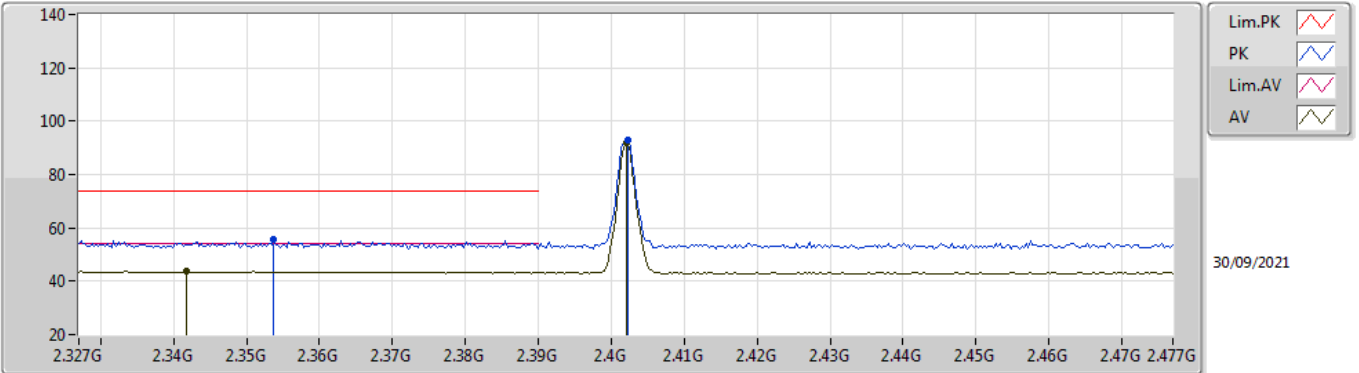


EUT V_1TX
Setting Default
06-F-S-5

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	2.3327G	55.06	74.00	-18.94	24.22	3	Vertical	102	2.05	-	27.87	2.97	-	
AV	2.3495G	43.59	54.00	-10.41	12.79	3	Vertical	102	2.05	-	27.80	3.00	-	
PK	2.4017G	99.08	Inf	-Inf	68.59	3	Vertical	102	2.05	-	27.39	3.10	-	
AV	2.402G	98.13	Inf	-Inf	67.64	3	Vertical	102	2.05	-	27.39	3.10	-	

BT-BR(1Mbps)

2402MHz_TX

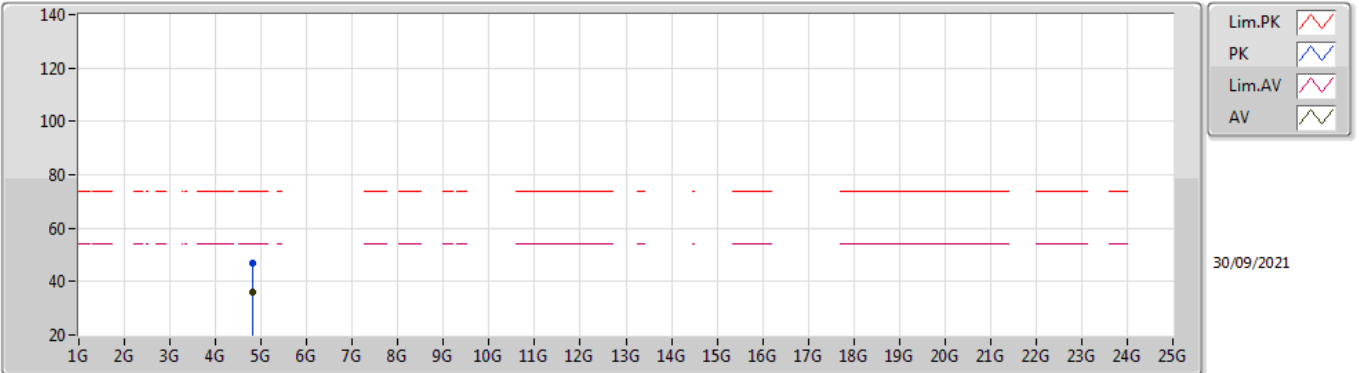


EUT_V_1TX
Setting Default
06-F-S-5

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	2.3537G	55.59	74.00	-18.41	24.81	3	Horizontal	155	2.75	-	27.77	3.01	-	
AV	2.3417G	43.60	54.00	-10.40	12.79	3	Horizontal	155	2.75	-	27.83	2.98	-	
PK	2.4023G	92.74	Inf	-Inf	62.25	3	Horizontal	155	2.75	-	27.39	3.10	-	
AV	2.402G	91.78	Inf	-Inf	61.29	3	Horizontal	155	2.75	-	27.39	3.10	-	

BT-BR(1Mbps)

2402MHz_TX

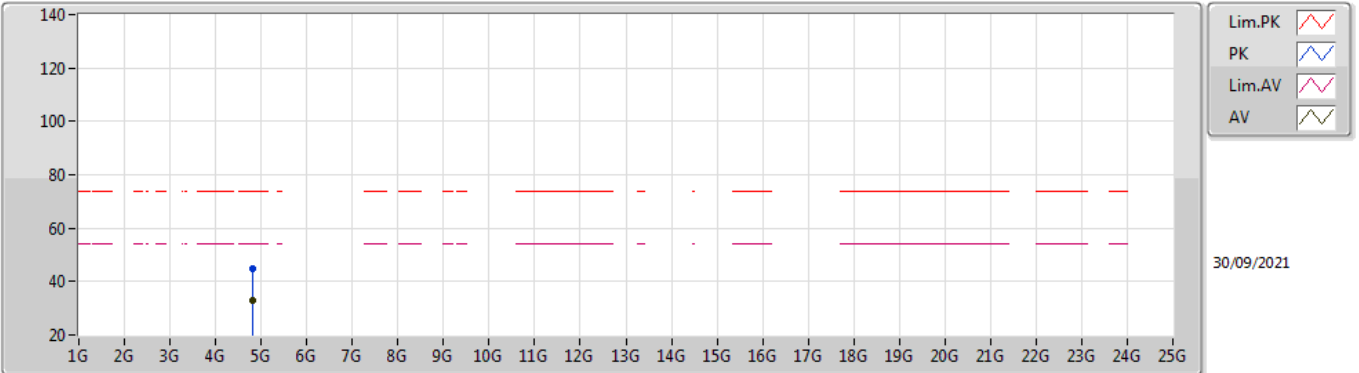


EUT V_1TX
Setting Default
06-F-S-5

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	46.98	74.00	-27.02	42.96	3	Vertical	92	1.80	-	31.09	5.00	32.07	
AV	4.80418G	35.93	54.00	-18.07	31.91	3	Vertical	92	1.80	-	31.09	5.00	32.07	

BT-BR(1Mbps)

2402MHz_TX

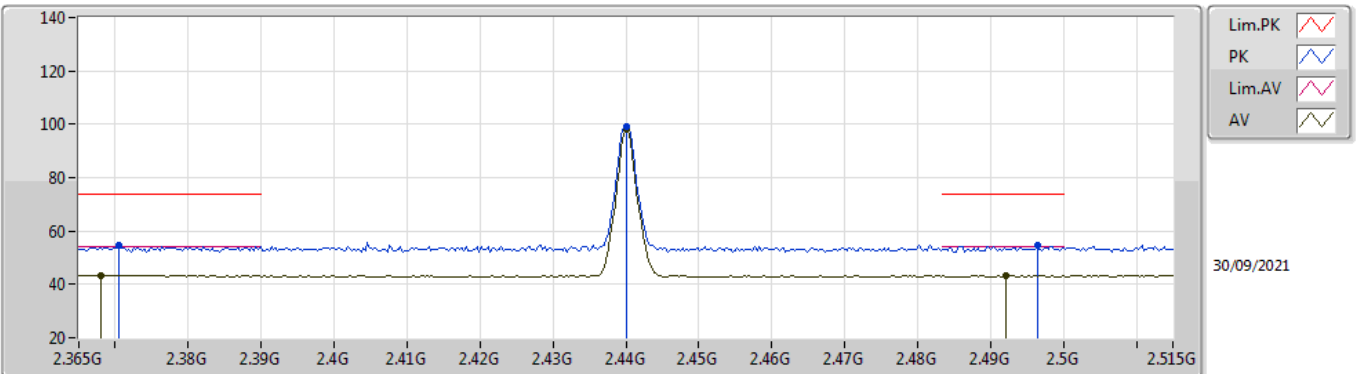


EUT V_1TX
Setting Default
06-F-S-5

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	44.94	74.00	-29.06	40.92	3	Horizontal	218	2.00	-	31.09	5.00	32.07	
AV	4.8038G	33.05	54.00	-20.95	29.03	3	Horizontal	218	2.00	-	31.09	5.00	32.07	

BT-BR(1Mbps)

2440MHz_TX

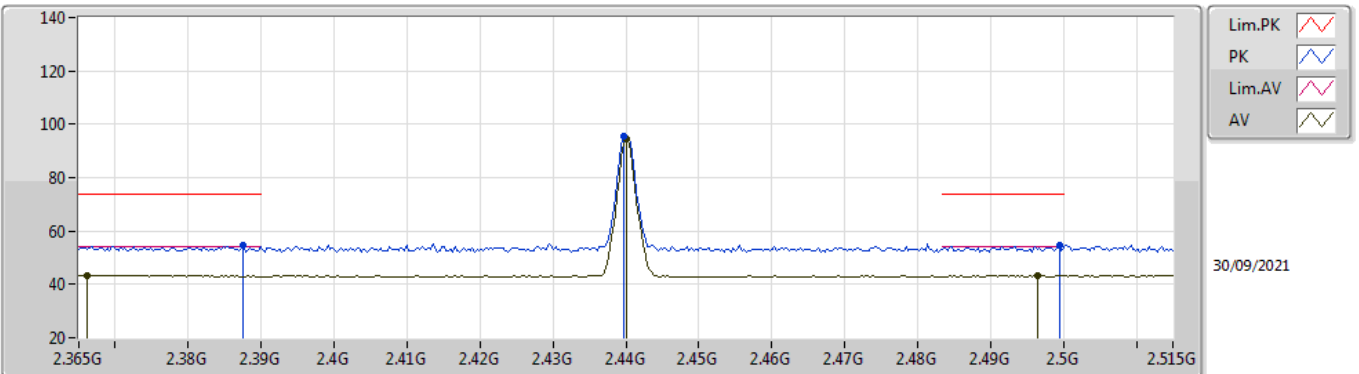


EUT V_1TX
Setting Default
06-F-S-5

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	2.3704G	54.51	74.00	-19.49	23.83	3	Vertical	106	1.97	-	27.64	3.04	-
AV	2.368G	43.40	54.00	-10.60	12.70	3	Vertical	106	1.97	-	27.66	3.04	-
PK	2.44G	99.33	Inf	-Inf	68.95	3	Vertical	106	1.97	-	27.24	3.14	-
AV	2.44G	98.34	Inf	-Inf	67.96	3	Vertical	106	1.97	-	27.24	3.14	-
PK	2.4964G	54.42	74.00	-19.58	23.93	3	Vertical	106	1.97	-	27.29	3.20	-
AV	2.4922G	43.30	54.00	-10.70	12.83	3	Vertical	106	1.97	-	27.28	3.19	-

BT-BR(1Mbps)

2440MHz_TX

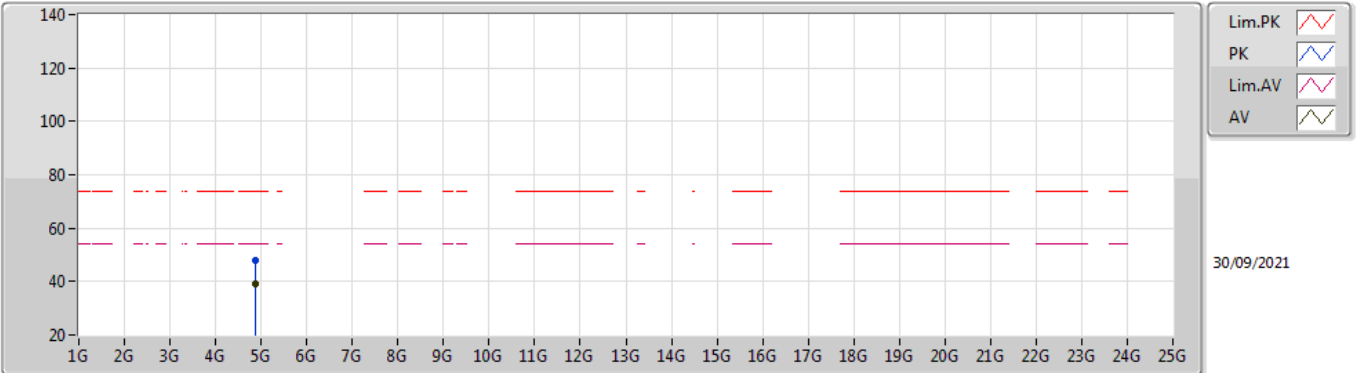


EUT V_1TX
Setting Default
06-F-S-5

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	54.41	74.00	-19.59	23.83	3	Horizontal	201	1.25	-	27.50	3.08	-
AV	2.3662G	43.30	54.00	-10.70	12.60	3	Horizontal	201	1.25	-	27.67	3.03	-
PK	2.4397G	95.61	Inf	-Inf	65.23	3	Horizontal	201	1.25	-	27.24	3.14	-
AV	2.44G	94.73	Inf	-Inf	64.35	3	Horizontal	201	1.25	-	27.24	3.14	-
PK	2.4994G	54.40	74.00	-19.60	23.90	3	Horizontal	201	1.25	-	27.30	3.20	-
AV	2.4964G	43.30	54.00	-10.70	12.81	3	Horizontal	201	1.25	-	27.29	3.20	-

BT-BR(1Mbps)

2440MHz_TX

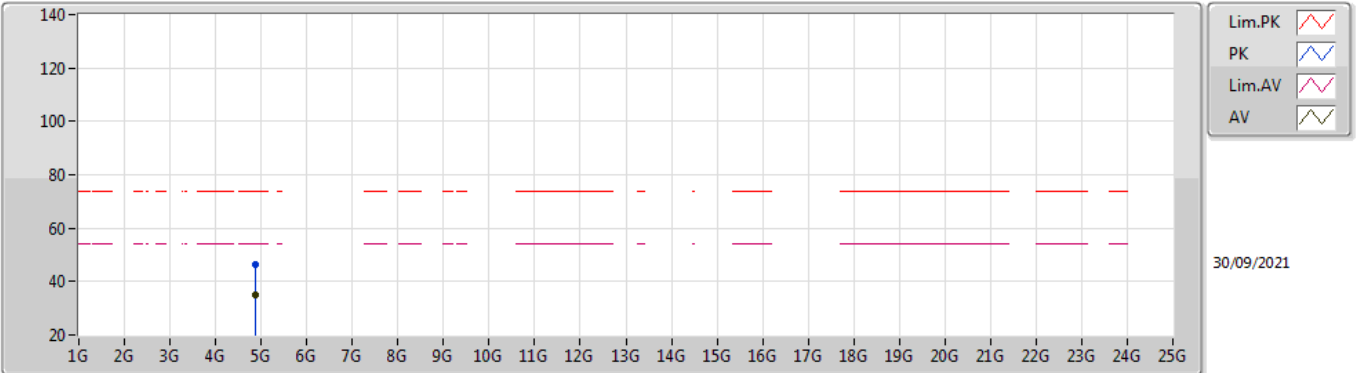


EUT V_1TX
Setting Default
06-F-S-5

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	4.87972G	47.68	74.00	-26.32	43.63	3	Vertical	160	2.07	-	31.06	5.00	32.01	
AV	4.88002G	39.12	54.00	-14.88	35.07	3	Vertical	160	2.07	-	31.06	5.00	32.01	

BT-BR(1Mbps)

2440MHz_TX

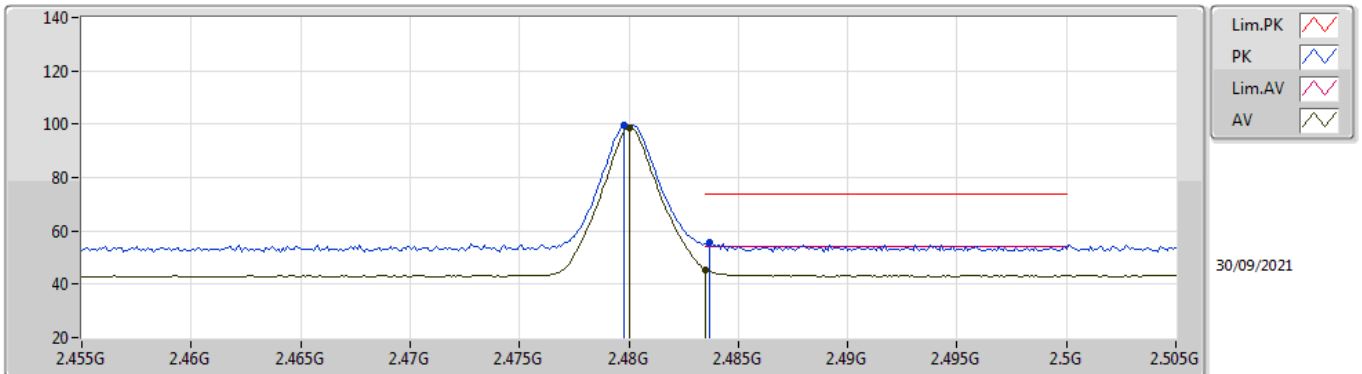


EUT Y_1TX
Setting Default
06-F-S-5

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	46.41	74.00	-27.59	42.36	3	Horizontal	131	2.35	-	31.06	5.00	32.01
AV	4.87992G	35.13	54.00	-18.87	31.08	3	Horizontal	131	2.35	-	31.06	5.00	32.01

BT-BR(1Mbps)

2480MHz_TX

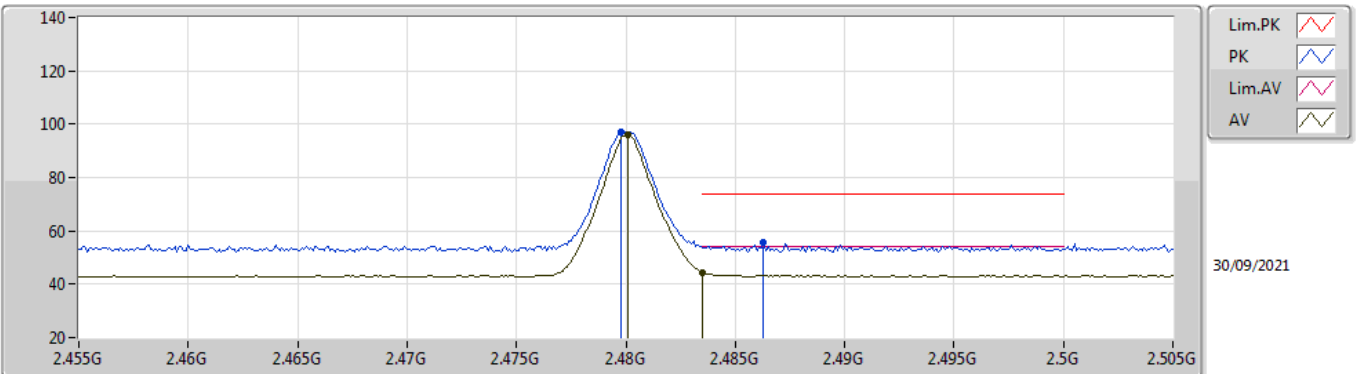


EUT V_1TX
Setting Default
06-F-S-5

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	99.50	Inf	-Inf	69.06	3	Vertical	99	2.16	-	27.26	3.18	-	
AV	2.48G	98.54	Inf	-Inf	68.10	3	Vertical	99	2.16	-	27.26	3.18	-	
PK	2.4837G	55.94	74.00	-18.06	25.49	3	Vertical	99	2.16	-	27.27	3.18	-	
AV	2.4835G	45.57	54.00	-8.43	15.12	3	Vertical	99	2.16	-	27.27	3.18	-	

BT-BR(1Mbps)

2480MHz_TX

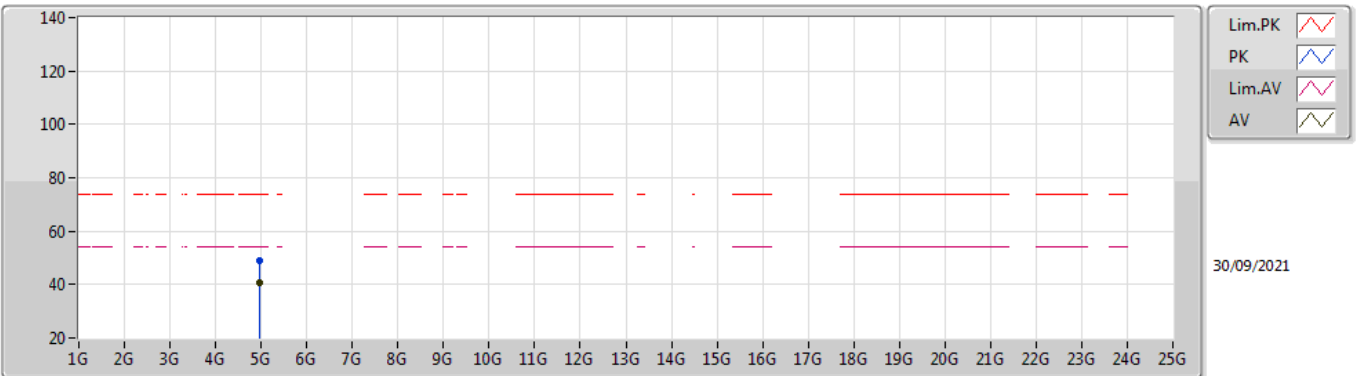


EUT V_1TX
Setting Default
06-F-S-5

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	96.87	Inf	-Inf	66.43	3	Horizontal	215	1.23	-	27.26	3.18	-	
AV	2.4801G	96.00	Inf	-Inf	65.56	3	Horizontal	215	1.23	-	27.26	3.18	-	
PK	2.4863G	55.52	74.00	-18.48	25.06	3	Horizontal	215	1.23	-	27.27	3.19	-	
AV	2.4835G	44.51	54.00	-9.49	14.06	3	Horizontal	215	1.23	-	27.27	3.18	-	

BT-BR(1Mbps)

2480MHz_TX

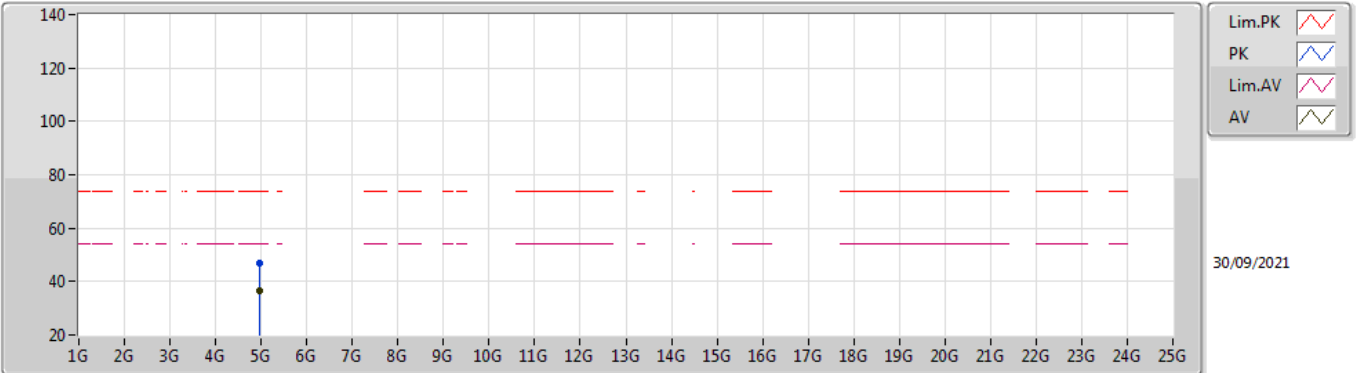


EUT V_1TX
Setting Default
06-F-S-5

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	4.96012G	48.81	74.00	-25.19	44.45	3	Vertical	152	1.96	-	31.30	5.00	31.94	
AV	4.96004G	40.94	54.00	-13.06	36.58	3	Vertical	152	1.96	-	31.30	5.00	31.94	

BT-BR(1Mbps)

2480MHz_TX

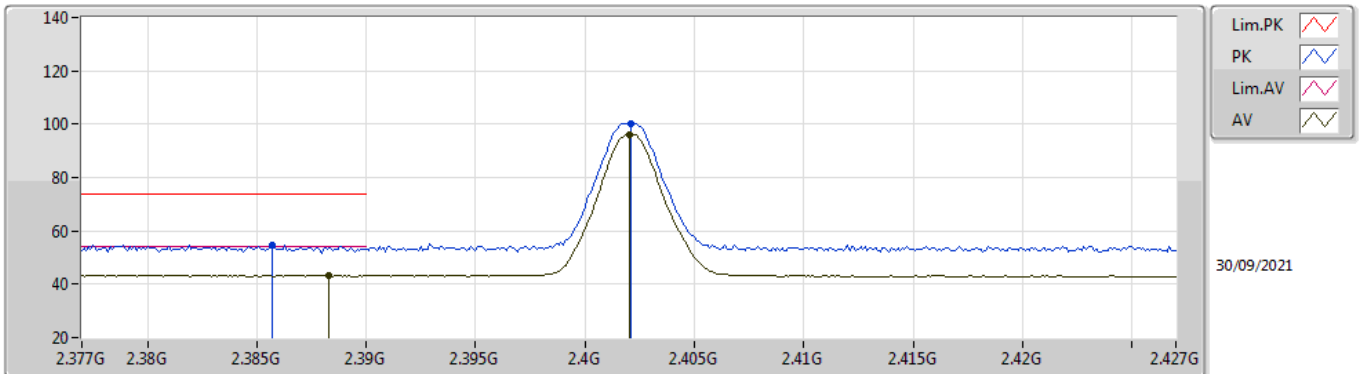


EUT V_1TX
Setting Default
06-F-S-5

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	4.96008G	46.85	74.00	-27.15	42.49	3	Horizontal	133	1.80	-	31.30	5.00	31.94	
AV	4.9601G	36.54	54.00	-17.46	32.18	3	Horizontal	133	1.80	-	31.30	5.00	31.94	

BT-EDR(3Mbps)

2402MHz_TX

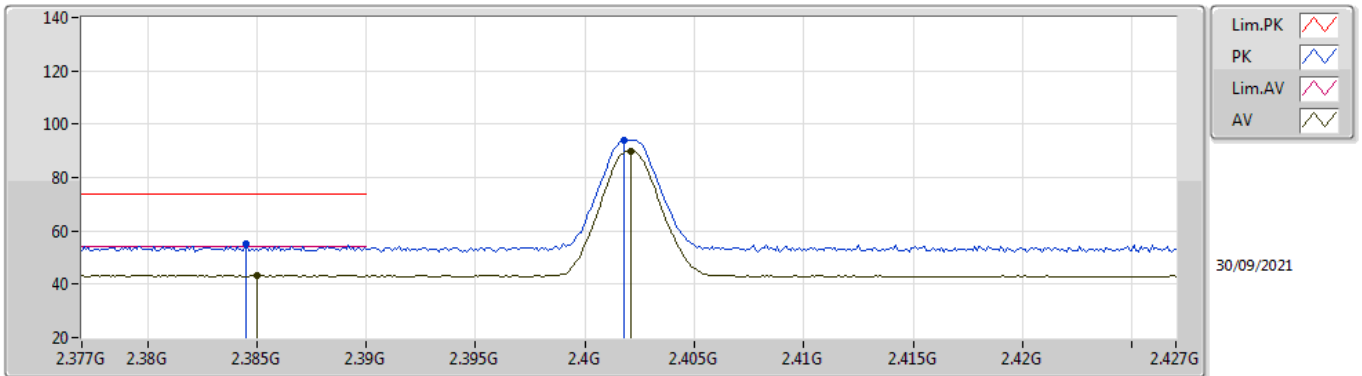


EUT V_1TX
Setting Default
06-F-S-5

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	54.86	74.00	-19.14	24.28	3	Vertical	105	2.26	-	27.51	3.07	-	
AV	2.3883G	43.37	54.00	-10.63	12.80	3	Vertical	105	2.26	-	27.49	3.08	-	
PK	2.4021G	100.29	Inf	-Inf	69.80	3	Vertical	105	2.26	-	27.39	3.10	-	
AV	2.402G	96.20	Inf	-Inf	65.71	3	Vertical	105	2.26	-	27.39	3.10	-	

BT-EDR(3Mbps)

2402MHz_TX

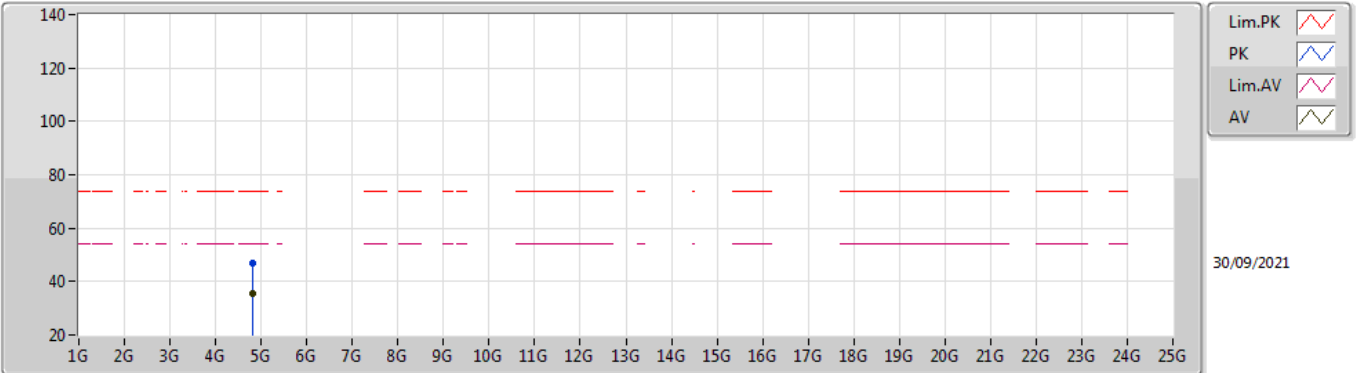


EUT V_1TX
Setting Default
06-F-S-5

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	2.3845G	55.31	74.00	-18.69	24.72	3	Horizontal	154	2.19	-	27.52	3.07	-	
AV	2.385G	43.23	54.00	-10.77	12.64	3	Horizontal	154	2.19	-	27.52	3.07	-	
PK	2.4018G	94.00	Inf	-Inf	63.51	3	Horizontal	154	2.19	-	27.39	3.10	-	
AV	2.4021G	89.94	Inf	-Inf	59.45	3	Horizontal	154	2.19	-	27.39	3.10	-	

BT-EDR(3Mbps)

2402MHz_TX

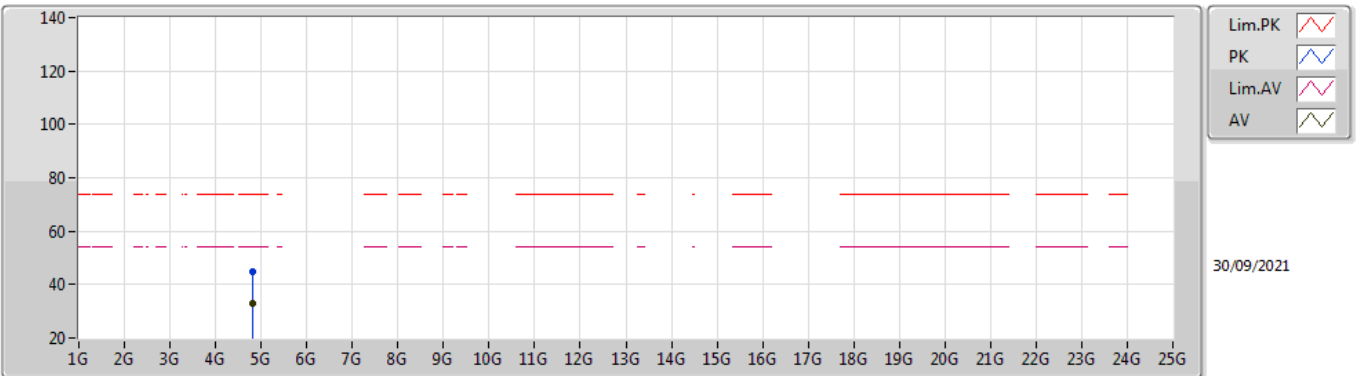


EUT V_1TX
Setting Default
06-F-S-5

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	4.80412G	46.87	74.00	-27.13	42.85	3	Vertical	93	1.78	-	31.09	5.00	32.07	
AV	4.80394G	35.61	54.00	-18.39	31.59	3	Vertical	93	1.78	-	31.09	5.00	32.07	

BT-EDR(3Mbps)

2402MHz_TX

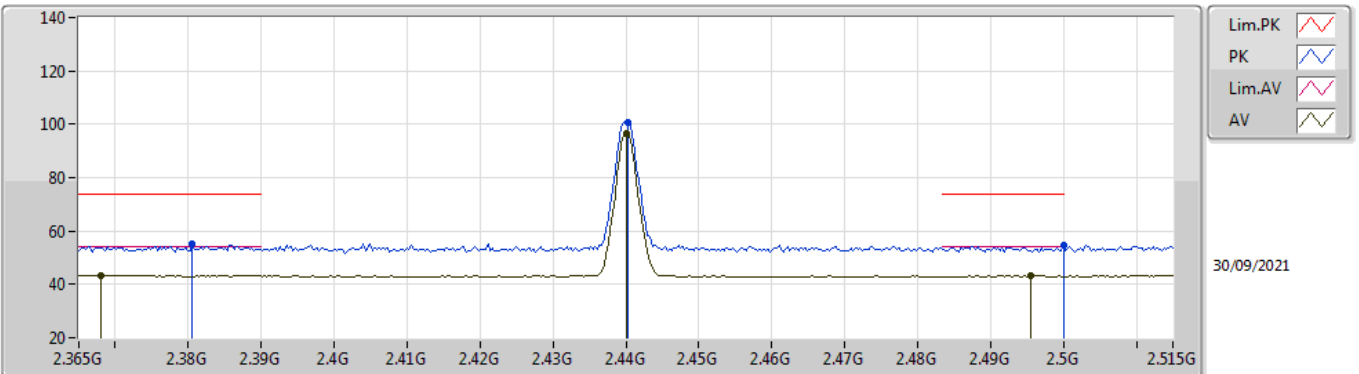


EUT V_1TX
Setting Default
06-F-S-5

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	4.80462G	45.02	74.00	-28.98	41.00	3	Horizontal	216	1.80	-	31.09	5.00	32.07	
AV	4.80426G	32.78	54.00	-21.22	28.76	3	Horizontal	216	1.80	-	31.09	5.00	32.07	

BT-EDR(3Mbps)

2440MHz_TX

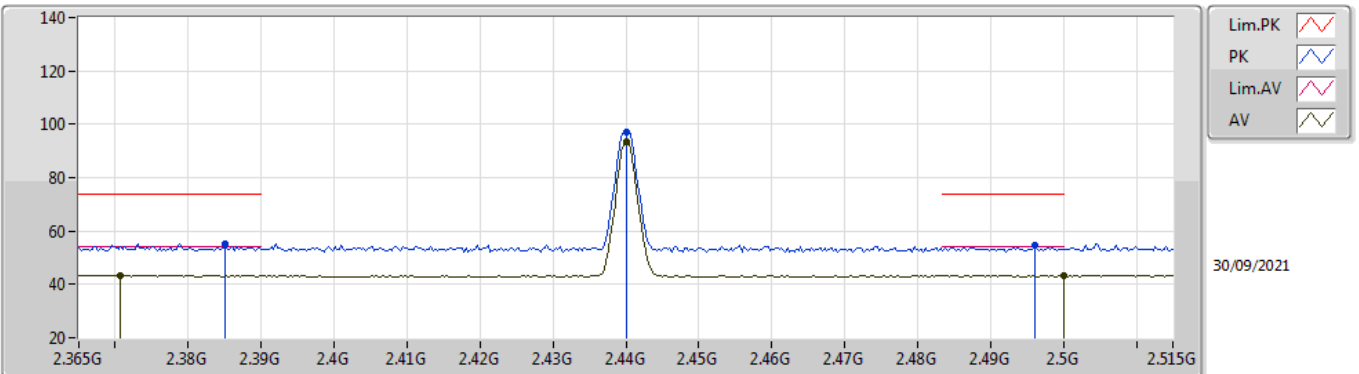


EUT V_1TX
Setting Default
06-F-S-5

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	2.3806G	55.07	74.00	-18.93	24.45	3	Vertical	108	1.99	-	27.56	3.06	-
AV	2.368G	43.30	54.00	-10.70	12.60	3	Vertical	108	1.99	-	27.66	3.04	-
PK	2.4403G	100.64	Inf	-Inf	70.26	3	Vertical	108	1.99	-	27.24	3.14	-
AV	2.44G	96.59	Inf	-Inf	66.21	3	Vertical	108	1.99	-	27.24	3.14	-
PK	2.5G	54.75	74.00	-19.25	24.25	3	Vertical	108	1.99	-	27.30	3.20	-
AV	2.4955G	43.19	54.00	-10.81	12.70	3	Vertical	108	1.99	-	27.29	3.20	-

BT-EDR(3Mbps)

2440MHz_TX

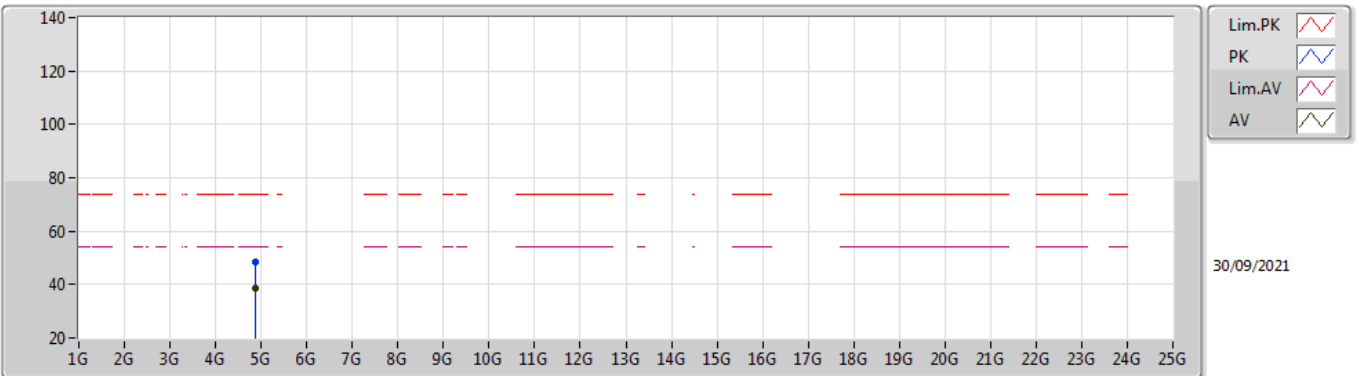


EUT V_1TX
Setting Default
06-F-S-5

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	2.3851G	55.02	74.00	-18.98	24.43	3	Horizontal	203	1.24	-	27.52	3.07	-
AV	2.3707G	43.37	54.00	-10.63	12.70	3	Horizontal	203	1.24	-	27.63	3.04	-
PK	2.44G	97.23	Inf	-Inf	66.85	3	Horizontal	203	1.24	-	27.24	3.14	-
AV	2.44G	93.31	Inf	-Inf	62.93	3	Horizontal	203	1.24	-	27.24	3.14	-
PK	2.4961G	54.48	74.00	-19.52	23.99	3	Horizontal	203	1.24	-	27.29	3.20	-
AV	2.5G	43.21	54.00	-10.79	12.71	3	Horizontal	203	1.24	-	27.30	3.20	-

BT-EDR(3Mbps)

2440MHz_TX

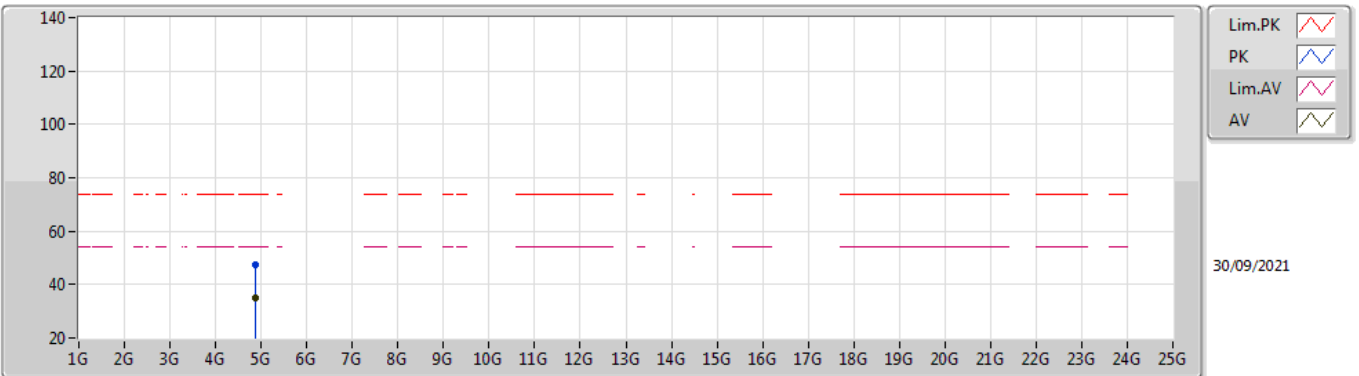


EUT V_1TX
Setting Default
06-F-S-5

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	4.88006G	48.33	74.00	-25.67	44.28	3	Vertical	159	1.95	-	31.06	5.00	32.01	
AV	4.88002G	38.67	54.00	-15.33	34.62	3	Vertical	159	1.95	-	31.06	5.00	32.01	

BT-EDR(3Mbps)

2440MHz_TX

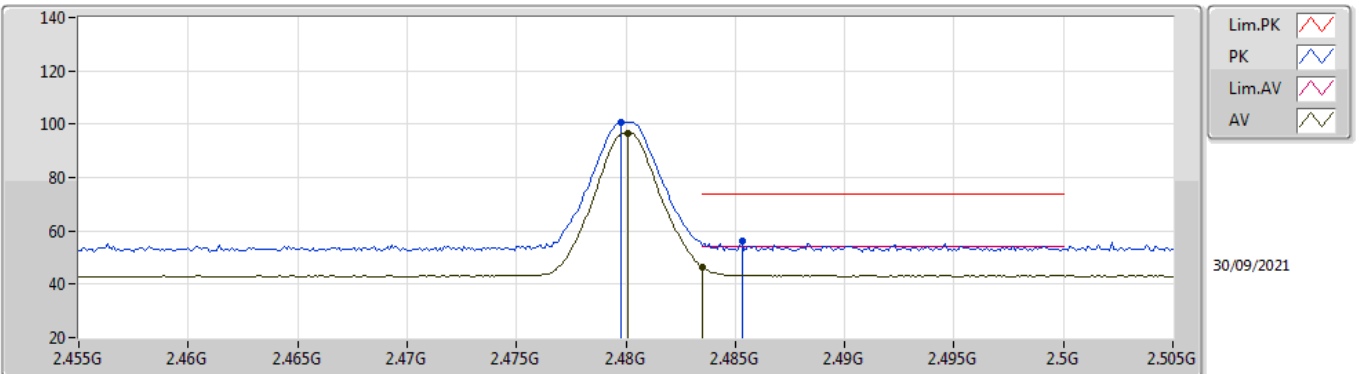


EUT Y_1TX
Setting Default
06-F-S-5

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	4.8799G	47.28	74.00	-26.72	43.23	3	Horizontal	131	2.31	-	31.06	5.00	32.01
AV	4.88002G	35.21	54.00	-18.79	31.16	3	Horizontal	131	2.31	-	31.06	5.00	32.01

BT-EDR(3Mbps)

2480MHz_TX

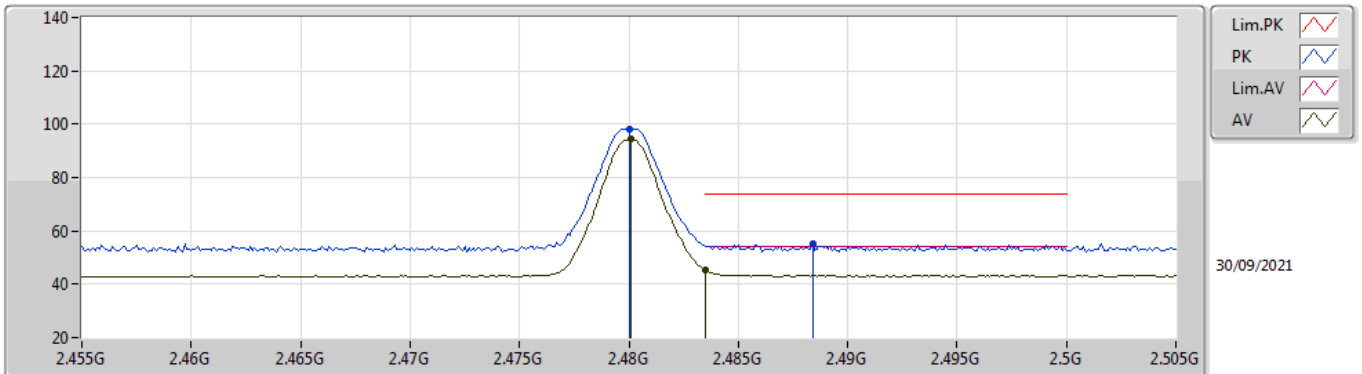


EUT V_1TX
Setting Default
06-F-S-5

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	100.71	Inf	-Inf	70.27	3	Vertical	108	1.95	-	27.26	3.18	-	
AV	2.4801G	96.72	Inf	-Inf	66.28	3	Vertical	108	1.95	-	27.26	3.18	-	
PK	2.4853G	55.97	74.00	-18.03	25.51	3	Vertical	108	1.95	-	27.27	3.19	-	
AV	2.4835G	46.45	54.00	-7.55	16.00	3	Vertical	108	1.95	-	27.27	3.18	-	

BT-EDR(3Mbps)

2480MHz_TX

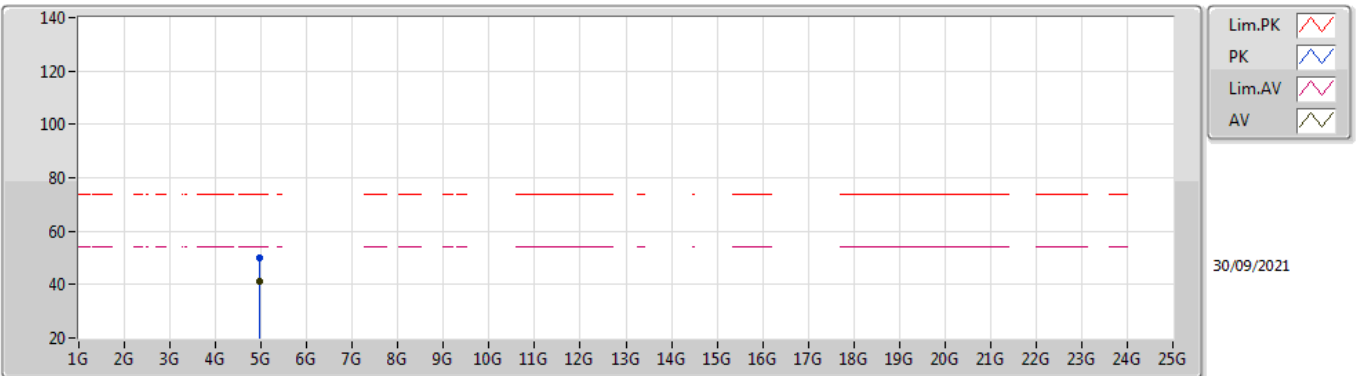


EUT_V_1TX
Setting Default
06-F-S-5

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	2.48G	98.31	Inf	-Inf	67.87	3	Horizontal	215	1.22	-	27.26	3.18	-	
AV	2.4801G	94.35	Inf	-Inf	63.91	3	Horizontal	215	1.22	-	27.26	3.18	-	
PK	2.4884G	55.12	74.00	-18.88	24.65	3	Horizontal	215	1.22	-	27.28	3.19	-	
AV	2.4835G	45.19	54.00	-8.81	14.74	3	Horizontal	215	1.22	-	27.27	3.18	-	

BT-EDR(3Mbps)

2480MHz_TX

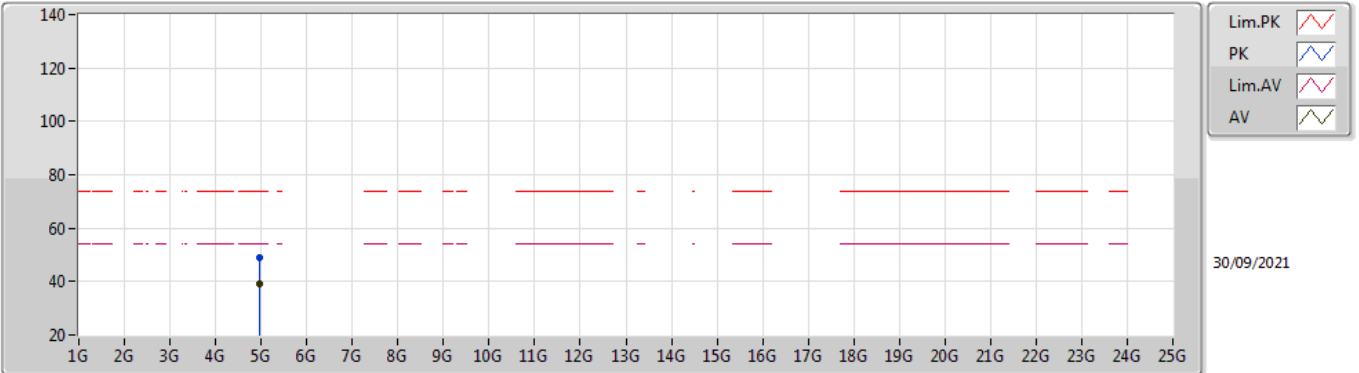


EUT V_1TX
Setting Default
06-F-S-5

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	4.96034G	50.13	74.00	-23.87	45.77	3	Vertical	158	1.95	-	31.30	5.00	31.94	
AV	4.9601G	40.97	54.00	-13.03	36.61	3	Vertical	158	1.95	-	31.30	5.00	31.94	

BT-EDR(3Mbps)

2480MHz_TX



EUT V_1TX
Setting Default
06-F-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	4.96026G	49.19	74.00	-24.81	44.83	3	Horizontal	131	2.30	-	31.30	5.00	31.94	
AV	4.96006G	38.99	54.00	-15.01	34.63	3	Horizontal	131	2.30	-	31.30	5.00	31.94	