



RADIO TEST REPORT

Equipment : Vocollect Talkman
Brand Name : Honeywell
Model Name : TAP1030-01
Applicant : 漢威聯合股份有限公司
新北市板橋區遠東路 3 號 5 樓
Manufacturer : Honeywell International Inc.
9680 Old Bailes Road, Fort Mill, SC 29707 USA
Standard : LP0002 Section 4.10.1 (2020-07-01)

The product was received on Sep. 09, 2021, and testing was started from Oct. 01, 2021 and completed on Jan. 06, 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 variant 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: Cliff Chang

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



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	4.10.1.4	Antenna Requirement	PASS	-
3.1	3.3	AC Power-line Conducted Emissions	PASS	-
3.2	4.10.1.6	20dB Bandwidth	PASS	-
3.2	4.10.1.6	Carrier Frequency Separation	PASS	-
3.3	4.10.1.2	Maximum Conducted Output Power	PASS	-
3.4	4.10.1.6	Number of Hopping Frequencies and Hopping Band edge	PASS	-
3.5	4.10.1.6	Time of Occupancy (Dwell Time)	PASS	-
3.6	4.10.1.5	Emissions in Non-restricted Frequency Bands	PASS	-
3.7	4.10.1.5	Emissions in Restricted Frequency Bands	PASS	-

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

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(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.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)		
						WLAN 2.4GHz	WLAN 5GHz	Bluetooth
1	1	Honeywell	VOC_A700x_antWifi	PCB Antenna	I-PEX	2.59	3.84	-
2	1	Honeywell	VOC_A700x_ant_bt	PCB Antenna	N/A	-	-	-3.17

Note: The above information was declared by manufacturer.

For 2.4GHz function:

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

Only Port 1 can be used as transmitting/receiving functions

For 5GHz function:

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

Only Port 1 can be used as transmitting/receiving functions

For Bluetooth function (1TX, 1RX):

Only Port 1 can be used as transmitting/receiving functions

**1.1.3 Mode Test Duty Cycle**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
BT-BR(1Mbps)	0.743	1.29	2.893m	1k
BT-EDR(3Mbps)	0.742	1.3	2.891m	1k

Note:

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

1.1.4 EUT Operational Condition

EUT Power Type	From Rechargeable Lithium ion battery
Test Software Version	Tera Term VT 4.75

1.1.5 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: TR190323AC

Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
Adding model name TAP1030-01, The difference from the original one was additional the scanner board.	1. AC Conducted Emissions 2. Emissions in Restricted Frequency Bands Below 1GHz

Note: Other test results were based on original test report.



1.2 Applicable Standards

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

- ♦ LP0002 Section 4.10.1 (2020-07-01)

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	TH02-CB	Gino Huang	21.2~21.6 / 58~62	Oct. 26, 2021~ Nov. 03, 2021
Radiated (Intentional – CTX: Below 1GHz and Unintentional – CRX: Below 1GHz)	03CH05-CB	Gino Huang	23.7~24.8 / 56~59	Nov. 18, 2021
Radiated (1GHz~5 th Harmonic)	03CH04-CB	Ken Yeh	24.4~25.5 / 55~58	Nov. 02, 2021
Radiated (Intentional – CTX: band-edge)	03CH05-CB	Ken Yeh	23.5~24.6 / 55~59	Oct. 01, 2021~ Nov. 02, 2021
	03CH03-CB	Ken Yeh	23.7~24.8 / 56~59	Oct. 01, 2021~ Nov. 02, 2021
Radiated (Intentional – CTX: 1GHz~10 th Harmonic)	03CH03-CB	Ken Yeh	23.7~24.8 / 56~59	Oct. 01, 2021~ Nov. 02, 2021
AC Conduction (Intentional – CTX and Unintentional – CRX)	CO01-CB	Peter Wu	21~22 / 61~62	Jan. 06, 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)	2.0 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: 110Vac / 60Hz
Operating Mode	Intentional - CTX
1	Bluetooth - Powered from Rechargeable Lithium ion battery 1
2	WLAN 2.4GHz - Powered from Rechargeable Lithium ion battery 1
3	WLAN 5GHz - Powered from Rechargeable Lithium ion battery 1
For operating mode 1 is the worst case and it was record in this test report.	
Operating Mode	Unintentional - CRX
1	Bluetooth - Powered from Rechargeable Lithium ion battery 1
2	WLAN 2.4GHz - Powered from Rechargeable Lithium ion battery 1
3	WLAN 5GHz - Powered from Rechargeable Lithium ion battery 1
For operating mode 1 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 oppBandedge 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	Intentional - CTX
1. For WLAN-2.4GHz and WLAN-5GHz: The EUT performed the test at X-axis, Y-axis and Z-axis. EUT Y axis has been evaluated to be the worst case at Emissions in Emissions in Restricted Frequency Bands <Intentional – CTX: Above 1GHz>; thus, the measurement will follow this same test configuration.	
2. For Bluetooth: The EUT performed the test at X-axis, Y-axis and Z-axis. EUT X axis has been evaluated to be the worst case at Emissions in Emissions in Restricted Frequency Bands <Intentional – CTX: Above 1GHz>; thus, the measurement will follow this same test configuration.	
1	EUT in X axis / Bluetooth - Powered from Rechargeable Lithium ion battery 1
2	EUT in X axis / Bluetooth - Powered from Rechargeable Lithium ion battery 2
Mode 1 has been evaluated to be the worst case between Mode 1~2, thus measurement for Mode 3 ~ 4 will follow this same test mode.	
3	EUT in Y axis / WLAN 2.4GHz - Powered from Rechargeable Lithium ion battery 1
4	EUT in Y axis / WLAN 5GHz - Powered from Rechargeable Lithium ion battery 1
For operating mode 1 is the worst case and it was record in this test report.	
Operating Mode < 1GHz	Unintentional - CRX
1. For WLAN-2.4GHz and WLAN-5GHz: The EUT performed the test at X-axis, Y-axis and Z-axis. EUT Y axis has been evaluated to be the worst case at Emissions in Emissions in Restricted Frequency Bands <Intentional – CTX: Above 1GHz>; thus, the measurement will follow this same test configuration.	
2. For Bluetooth: The EUT performed the test at X-axis, Y-axis and Z-axis. EUT X axis has been evaluated to be the worst case at Emissions in Emissions in Restricted Frequency Bands <Intentional – CTX: Above 1GHz>; thus, the measurement will follow this same test configuration.	
3. The EUT performed the test at Rechargeable Lithium ion battery 1 and Rechargeable Lithium ion battery 2, Rechargeable Lithium ion battery 1 has been evaluated to be the worst case at Emissions in Restricted Frequency Bands <Intentional – CTX: Below 1GHz>; thus, the measurement will follow this same test configuration.	
1	EUT in X axis / Bluetooth - Powered from Rechargeable Lithium ion battery 1
2	EUT in Y axis / WLAN 2.4GHz - Powered from Rechargeable Lithium ion battery 1
3	EUT in Y axis / WLAN 5GHz - Powered from Rechargeable Lithium ion battery 1
For operating mode 1 is the worst case and it was record in this test report.	



Operating Mode Unintentional 1GHz~5th Harmonic	Unintentional - CRX
1. For WLAN-2.4GHz and WLAN-5GHz: The EUT performed the test at X-axis, Y-axis and Z-axis. EUT Y axis has been evaluated to be the worst case at Emissions in Emissions in Restricted Frequency Bands <Intentional – CTX: Above 1GHz>; thus, the measurement will follow this same test configuration. 2. For Bluetooth: The EUT performed the test at X-axis, Y-axis and Z-axis. EUT X axis has been evaluated to be the worst case at Emissions in Emissions in Restricted Frequency Bands <Intentional – CTX: Above 1GHz>; thus, the measurement will follow this same test configuration. 3. The EUT performed the test Rechargeable Lithium ion battery 1 and Rechargeable Lithium ion battery 2, Rechargeable Lithium ion battery 1 has been evaluated to be the worst case at Emissions in Restricted Frequency Bands <Intentional – CTX: Below 1GHz>; thus, the measurement will follow this same test configuration.	
1	EUT in X axis / Bluetooth - Powered from Rechargeable Lithium ion battery 1
2	EUT in Y axis / WLAN 2.4GHz - Powered from Rechargeable Lithium ion battery 1
3	EUT in Y axis / WLAN 5GHz - Powered from Rechargeable Lithium ion battery 1
For operating mode 1 is the worst case and it was record in this test report.	
Operating Mode Intentional 1GHz~10th Harmonic	Intentional - CTX
The EUT performed the test at X-axis, Y-axis and Z-axis. After evaluating, X-axis was the worst case, so the test will follow this same test configuration.	
1	EUT in X axis+ Bluetooth

Note: The applicant declared that the accessories of this case were for measurement only and it would not be marketed. The accessories will be provided and inspected by the laboratory (or the applicant).

2.3 EUT Operation during Test

The EUT was programmed to be in continuously transmitting/receiving mode.

2.4 Accessories

Accessories			
Equipment Name	Brand Name	Model Name	Rating
Rechargeable Lithium ion battery 1	Honeywell	TBA901-03	Nominal Voltage: 3.65Vdc Rated capacity: 2.75Ah/10.04Wh
Rechargeable Lithium ion battery 2	Honeywell	TBA902-03	Nominal Voltage: 3.65Vdc Rated capacity: 5.5Ah/20.08Wh



2.5 Support Equipment

For AC Conduction

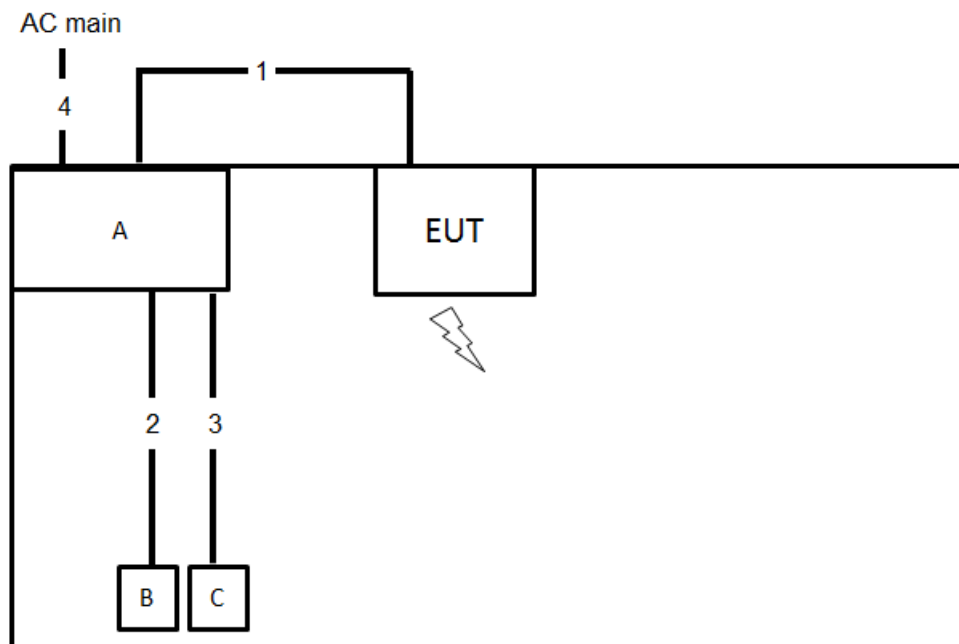
Support Equipment					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
A	NB	DELL	PP13S	N/A	Provided by Lab
B	Earphone	SHYARO CHI	MIC-04	N/A	Provided by Lab
C	Mouse	Logitech	M-U0026	N/A	Provided by Lab

For Radiated and RF Conducted:

Support Equipment					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
A	NB	DELL	E4300	N/A	Provided by Lab

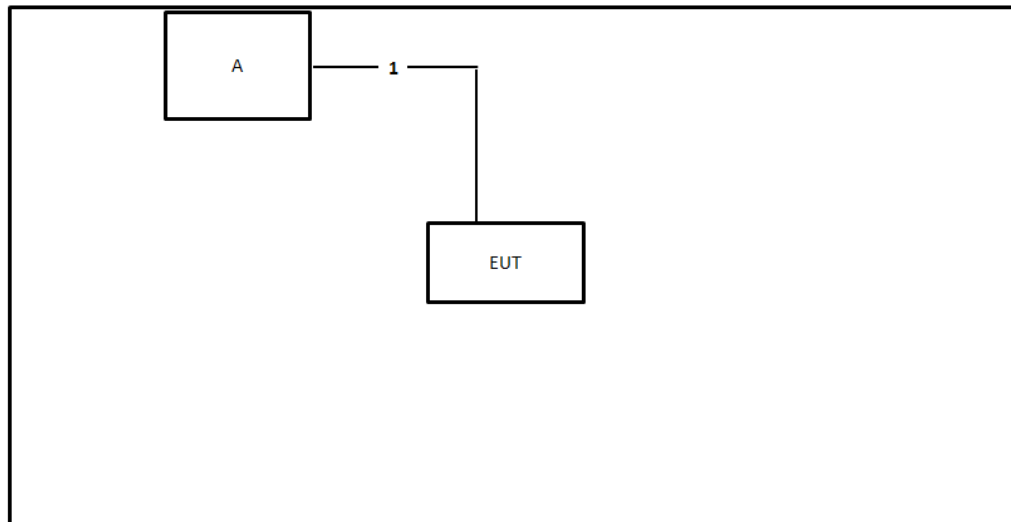
2.6 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



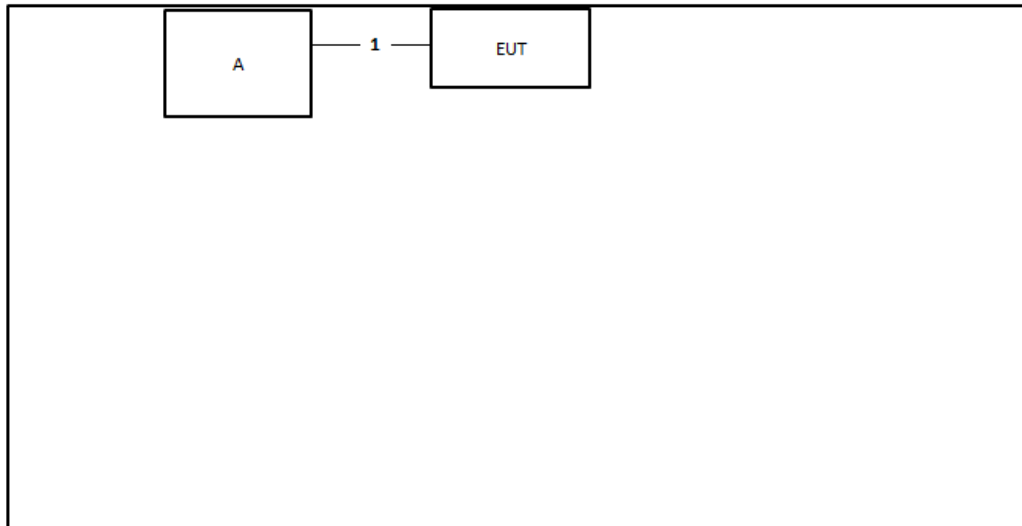
Item	Connection	Shielded	Length	Brand Name	Model Name	Remark
1	USB cable	Yes	1.8m	FDTI	TTL232RG	Provided by applicant.
2	Audio cable	No	1.2m	-	-	Provided by Lab.
3	USB cable	Yes	1.8m	-	-	Provided by Lab.
4	Power cable	No	1.8m	-	-	Provided by Lab.

**Test Setup Diagram - Radiated Test
(Intentional - CTX: Below 1GHz and 1GHz~10th Harmonic)**



Item	Connection	Shielded	Length	Brand Name	Model Name	Remark
1	USB cable	Yes	1.8m	FDTI	TTL232RG	Provided by applicant.

**Test Setup Diagram - Radiated Test
(Unintentional - CRX: Below 1GHz and 1GHz~5th Harmonic)**



Item	Connection	Shielded	Length	Brand Name	Model Name	Remark
1	USB cable	Yes	1.8m	FDTI	TTL232RG	Provided by applicant.

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.

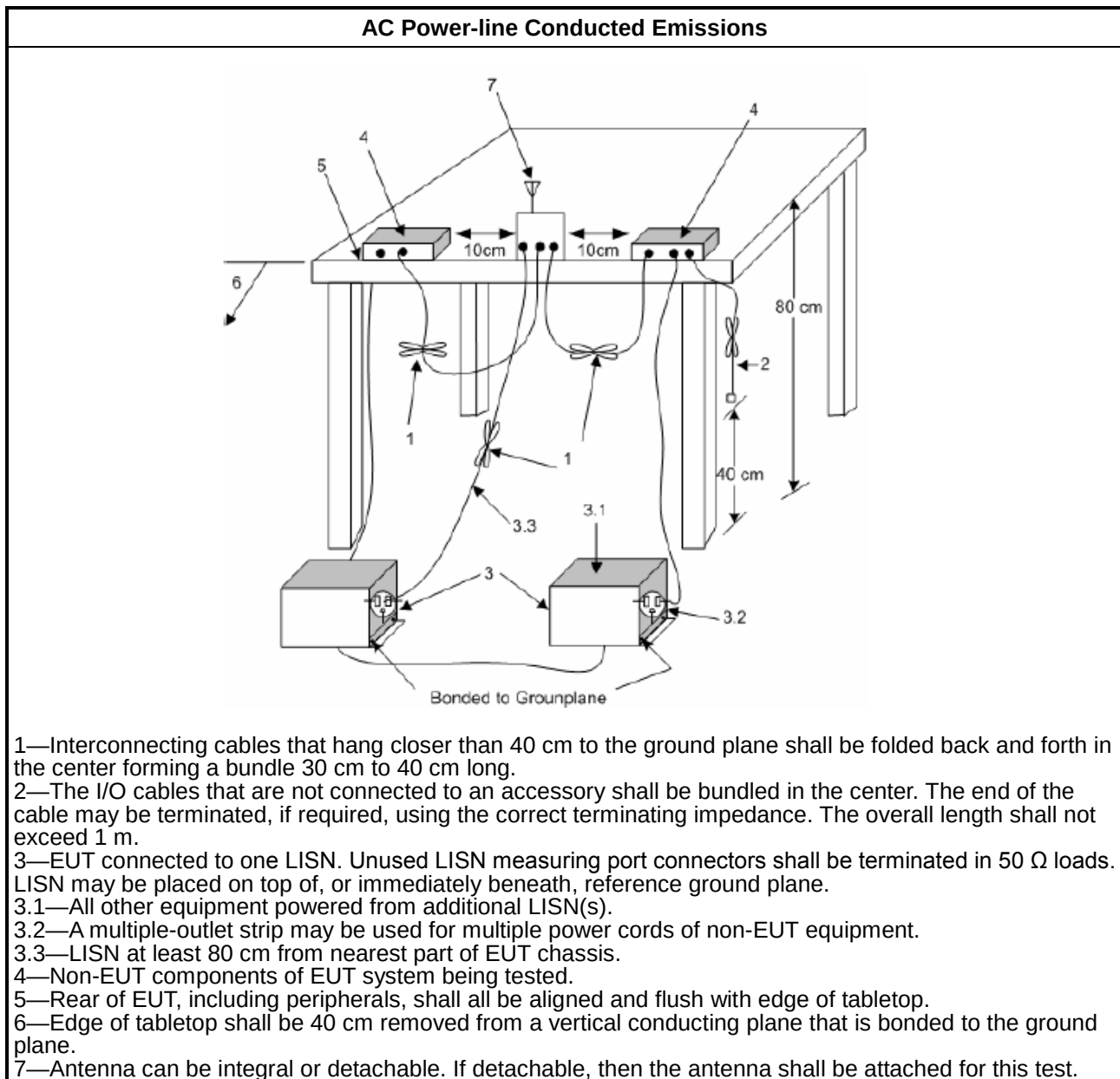
3.1.2 Measuring Instruments

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:

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

3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 20dB Bandwidth and Carrier Frequency Separation

3.2.1 20dB Bandwidth and Carrier Frequency Separation Limit

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

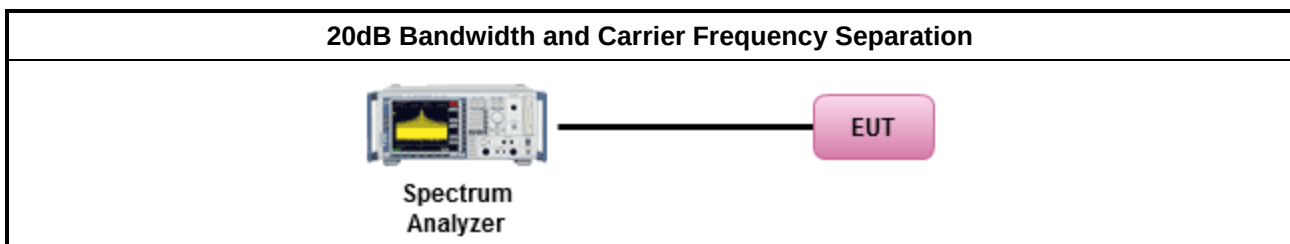
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

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

3.2.4 Test Setup



3.2.5 Test Result of 20dB Bandwidth

Refer as Appendix B

3.2.6 Test Result of Carrier Frequency Separation

Refer as Appendix B

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

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

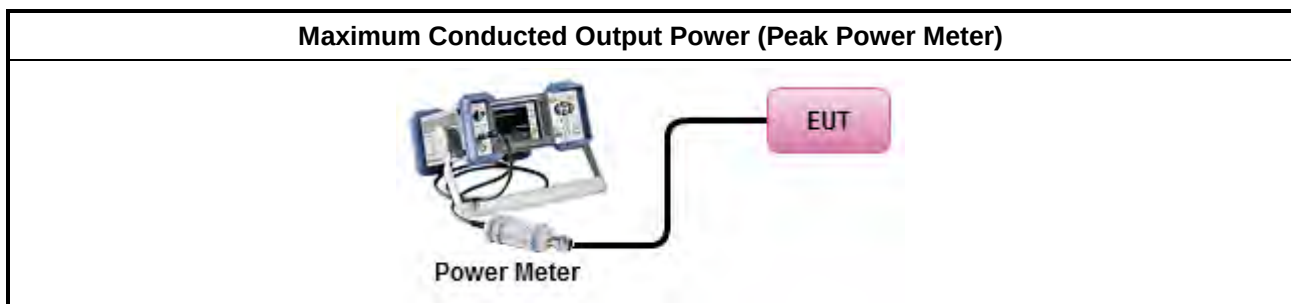
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

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

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

3.4 Number of Hopping Frequencies and Hopping Bandedge

3.4.1 Number of Hopping Frequencies Limit

Number of Hopping Frequencies Limit	
▪ 902-928 MHz Band:	
	▪ $N \geq 50$ and $ChS \geq MAX$ (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

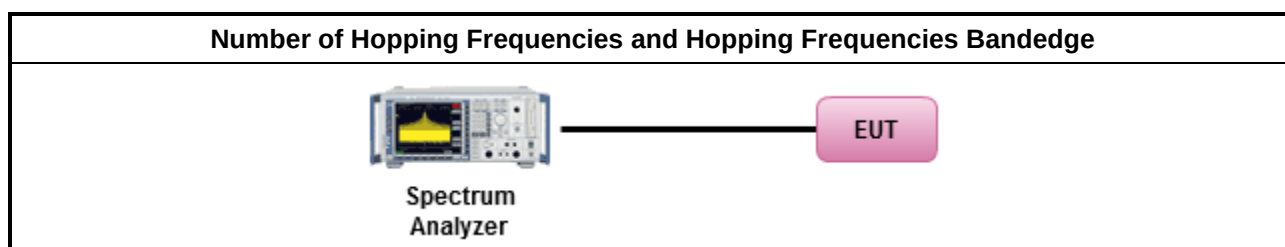
3.4.3 Measuring Instruments

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	

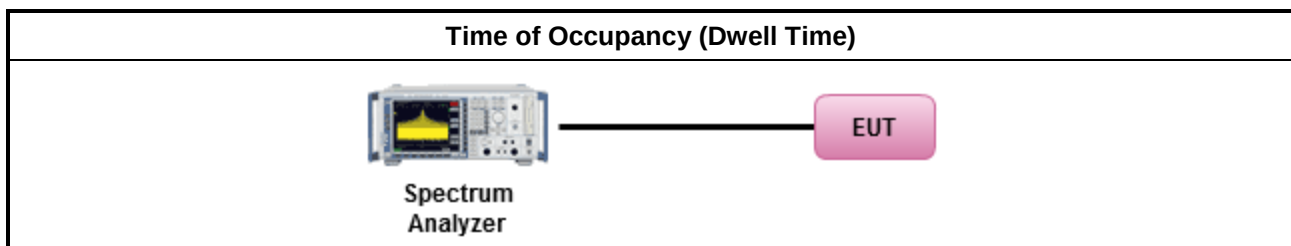
3.5.2 Measuring Instruments

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.	

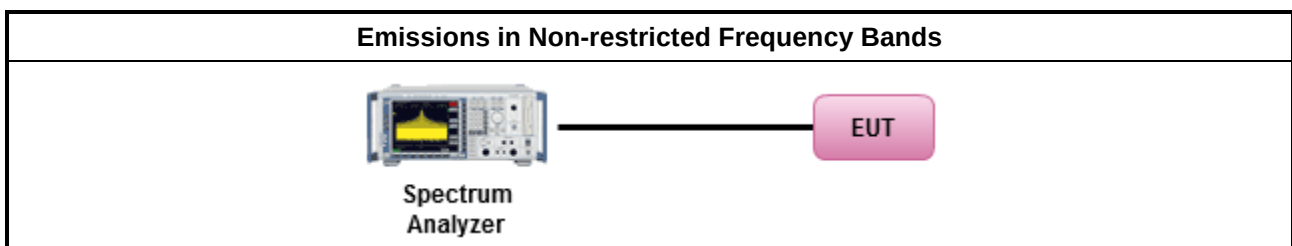
3.6.2 Measuring Instruments

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.

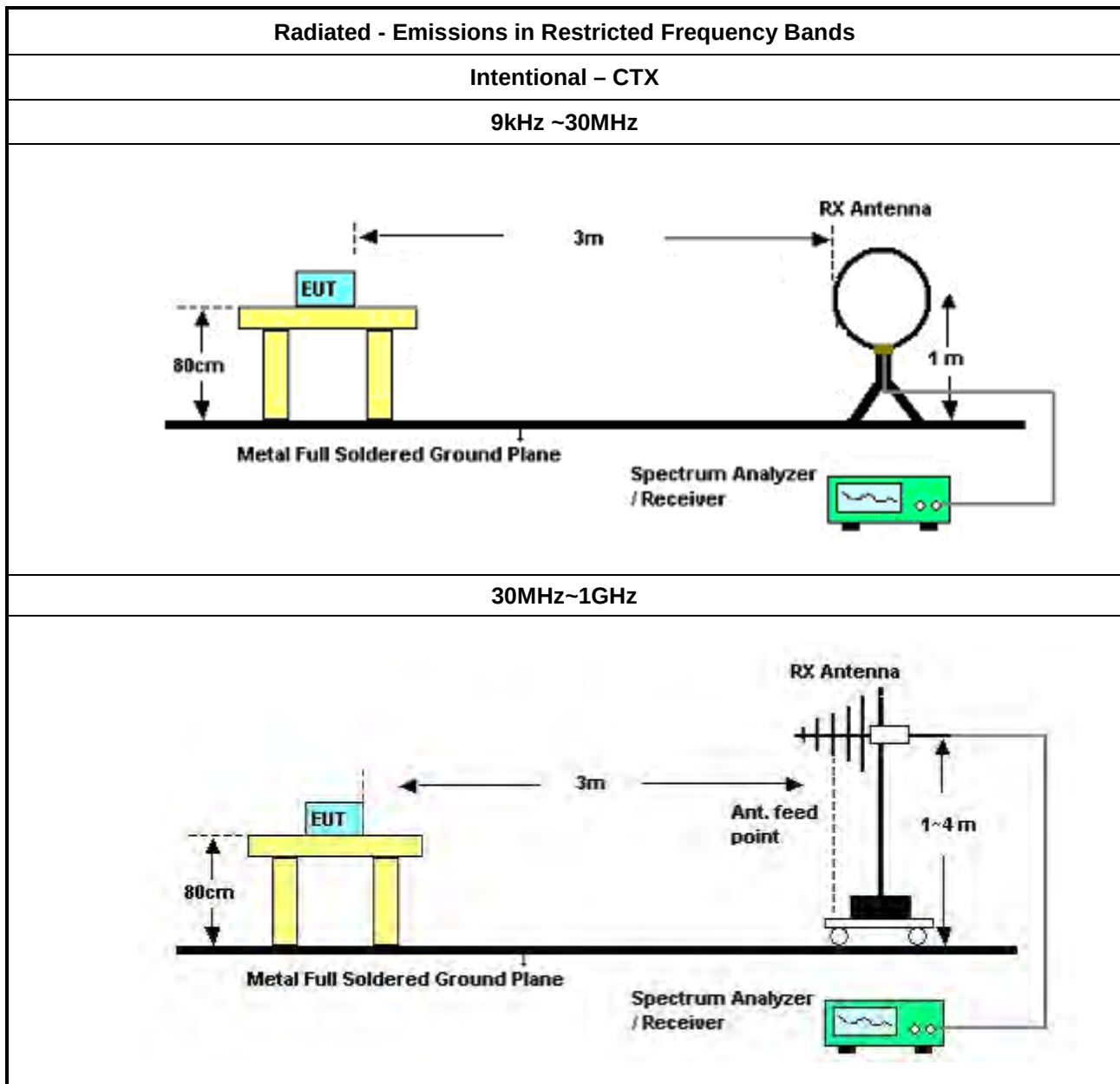
3.7.2 Measuring Instruments

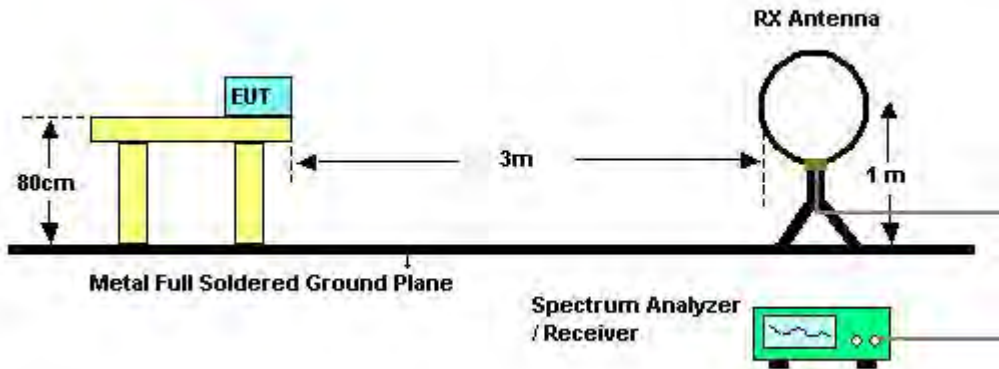
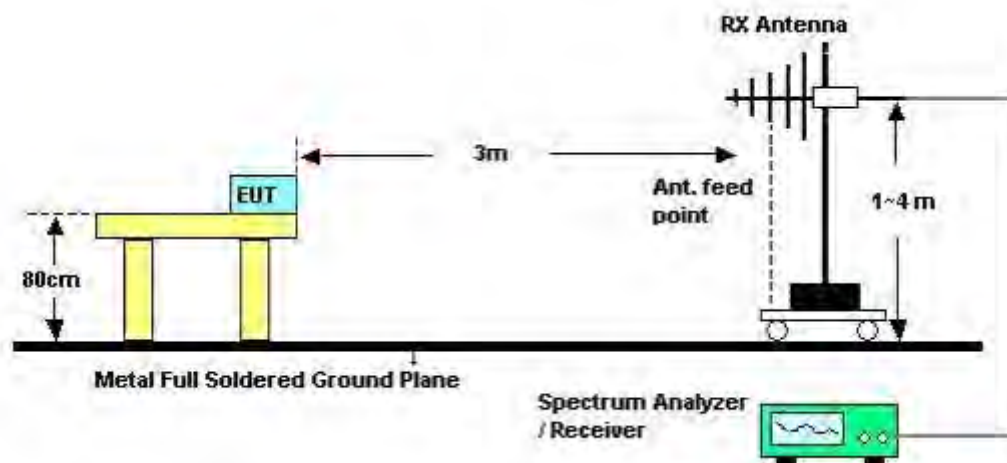
Refer a test equipment and calibration data table in this test report.

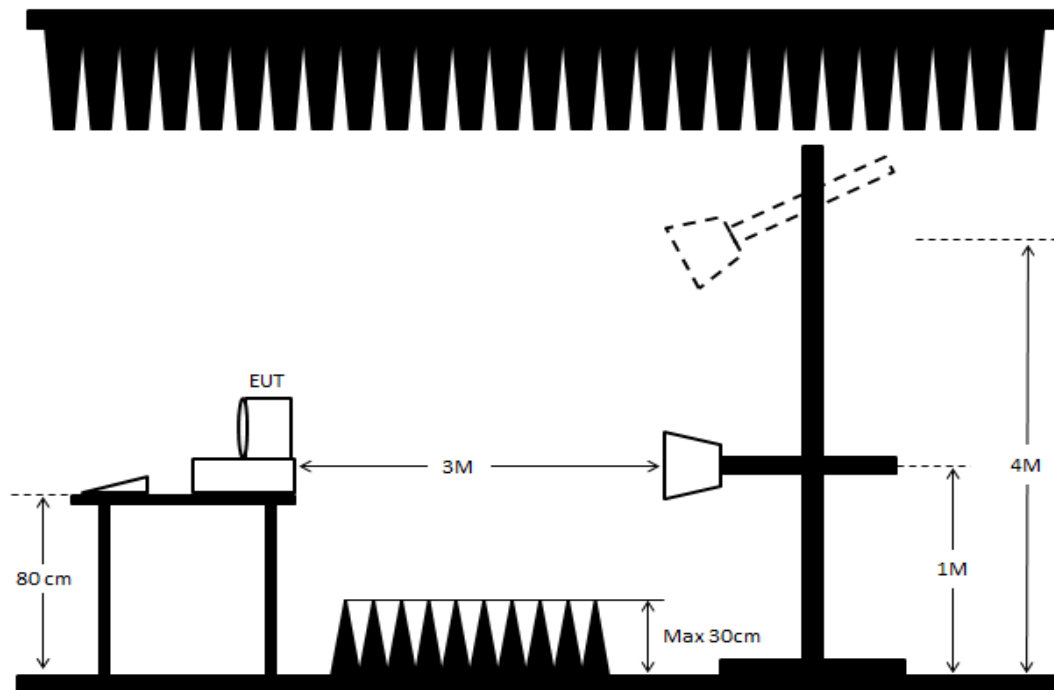
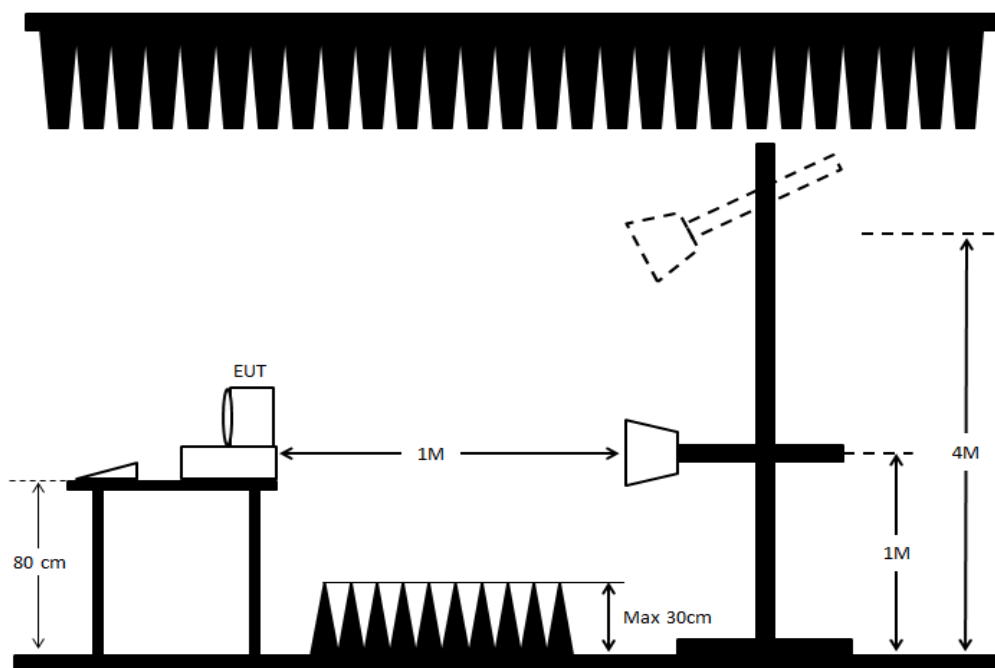
3.7.3 Test Procedures

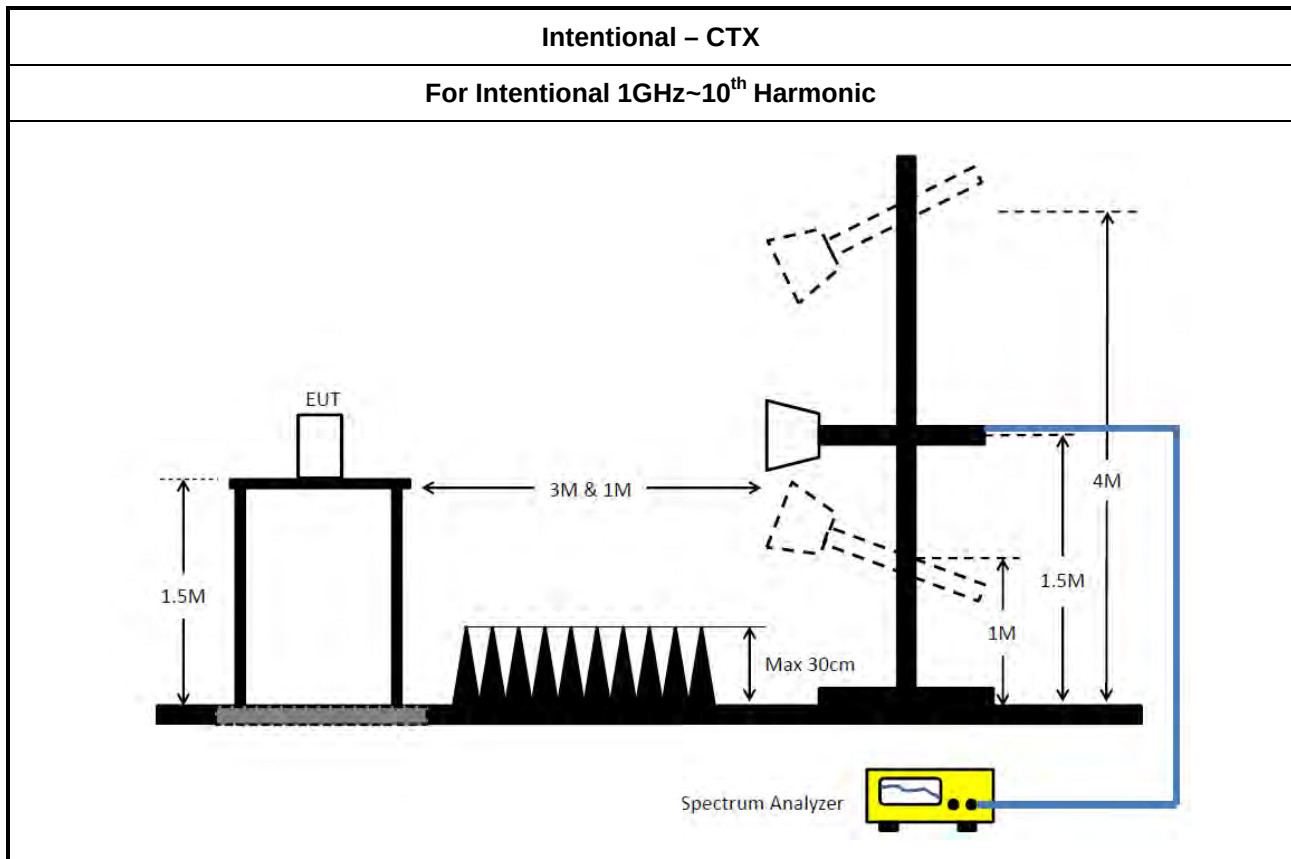
Test Method	
▪ The average emission levels shall be measured in [hopping duty factor].	
▪ Refer as ANSI C63.10; clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.	
▪ For the transmitter unwanted emissions 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



Unintentional – CRX
9kHz ~30MHz

30MHz~1GHz


Unintentional – CRX
For Unintentional 1GHz~5th Harmonic (1,000~18,000 MHz)

For Unintentional 1GHz~5th Harmonic (18,000~30,000 MHz)




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	Mar. 03, 2021	Mar. 02, 2022	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Dec. 22, 2021	Dec. 21, 2022	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	Jan. 30, 2021	Jan. 29, 2022	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)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH03-CB	1GHz ~18GHz 3m	May 06, 2021	May 05, 2022	Radiation (03CH03-CB)
Horn Antenna	ETS • Lindgren	3115	6821	750MHz~18GHz	Jan. 26, 2021	Jan. 25, 2022	Radiation (03CH03-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Aug. 05, 2021	Aug. 04, 2022	Radiation (03CH03-CB)
Pre-Amplifier	Agilent	8449B	3008A02097	1GHz ~ 26.5GHz	Jul. 02, 2021	Jul. 01, 2022	Radiation (03CH03-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 13, 2021	Jul. 12, 2022	Radiation (03CH03-CB)
Spectrum Analyzer	R&S	FSP40	100019	9kHz ~ 40GHz	Jun. 04, 2021	Jun. 03, 2022	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-20+29	1GHz ~ 18GHz	Aug. 20, 2021	Aug. 19, 2022	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-29	1GHz ~ 18GHz	Aug. 20, 2021	Aug. 19, 2022	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 15, 2021	Jul. 14, 2022	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 15, 2021	Jul. 14, 2022	Radiation (03CH03-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH03-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH04-CB	1GHz ~18GHz 3m	Feb. 25, 2021	Feb. 24, 2022	Radiation (03CH04-CB)
Horn Antenna	COM-POWER	AH-118	071028	1GHz ~ 18GHz	Jun. 23, 2021	Jun. 22, 2022	Radiation (03CH04-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Aug. 05, 2021	Aug. 04, 2022	Radiation (03CH04-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Pre-Amplifier	Agilent	83017A	MY53270063	0.5GHz~26.5GHz	Jul. 12, 2021	Jul. 11, 2022	Radiation (03CH04-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 13, 2021	Jul. 12, 2022	Radiation (03CH04-CB)
Spectrum Analyzer	R&S	FSP40	100142	9kHz~40GHz	Feb. 19, 2021	Feb. 18, 2022	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21	1GHz - 18GHz	Oct. 04, 2021	Oct. 03, 2022	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21+67	1GHz - 18GHz	Oct. 04, 2021	Oct. 03, 2022	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 15, 2021	Jul. 14, 2022	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 15, 2021	Jul. 14, 2022	Radiation (03CH04-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH04-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)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH05-CB	1GHz ~18GHz 3m	Nov. 08, 2020	Nov. 07, 2021	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)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1370	1GHz~18GHz	Sep. 14, 2021	Sep. 13, 2022	Radiation (03CH05-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Aug. 05, 2021	Aug. 04, 2022	Radiation (03CH05-CB)
Pre-Amplifier	EMCI	EMC330N	980331	20MHz ~ 3GHz	Apr. 27, 2021	Apr. 26, 2022	Radiation (03CH05-CB)
Pre-Amplifier	EMCI	EMC12630SE	980287	1GHz ~ 26.5GHz	Jul. 02, 2021	Jul. 01, 2022	Radiation (03CH05-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 13, 2021	Jul. 12, 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)
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)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-28	1GHz~18GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH05-CB)
RF Cable-high	Woken	RG402	High Cable-28	1GHz~18GHz	Oct. 04, 2021	Oct. 03, 2022	Radiation (03CH05-CB)
RF Cable-high	Woken	RG402	High Cable-04+28	1GHz~18GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH05-CB)
RF Cable-high	Woken	RG402	High Cable-04+28	1GHz~18GHz	Oct. 04, 2021	Oct. 03, 2022	Radiation (03CH05-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 15, 2021	Jul. 14, 2022	Radiation (03CH05-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 15, 2021	Jul. 14, 2022	Radiation (03CH05-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH05-CB)
Spectrum analyzer	R&S	FSV40	101027	9kHz~40GHz	Aug. 02, 2021	Aug. 01, 2022	Conducted (TH02-CB)
Power Sensor	Anritsu	MA2411B	1126203	300MHz~40GHz	Oct. 25, 2021	Oct. 24, 2022	Conducted (TH02-CB)
Power Meter	Anritsu	ML2495A	1210004	300MHz~40GHz	Oct. 25, 2021	Oct. 24, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-01	1 GHz – 18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-02	1 GHz – 18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-03	1 GHz – 18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-04	1 GHz – 18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-05	1 GHz – 18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH02-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conducted (TH02-CB)

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

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

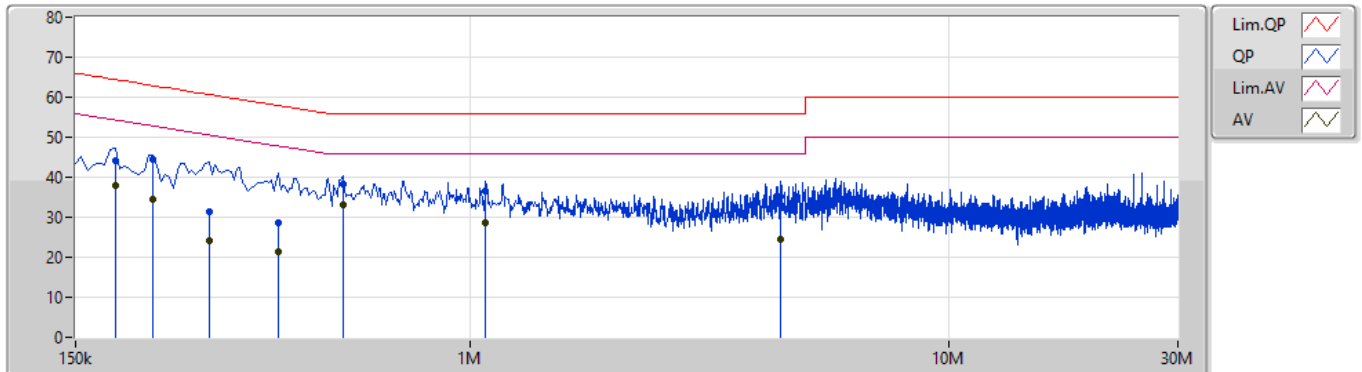


Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	541.5k	33.12	46.00	-12.88	Line

Test Mode 1

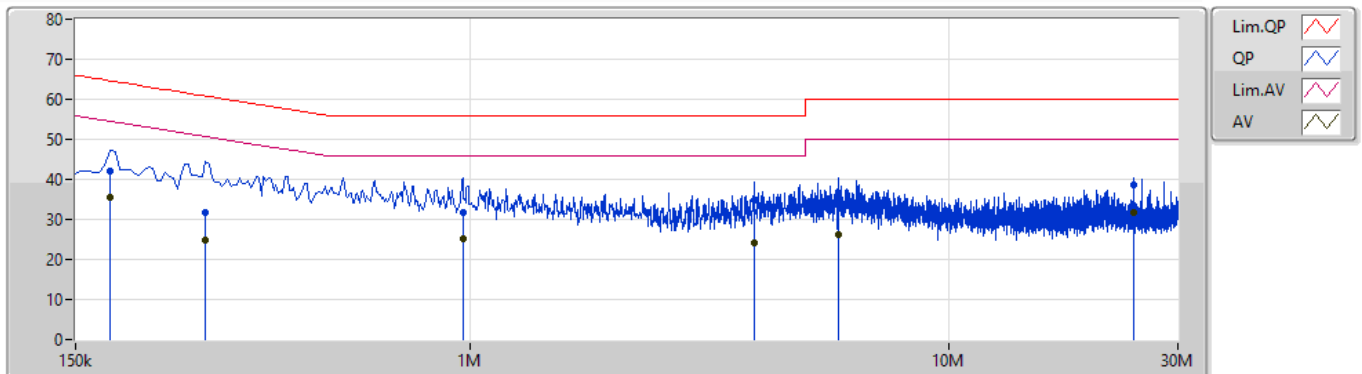
06/01/2022



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	181.5k	44.13	64.41	-20.28	9.89	Line	-	34.24	0.04	0.04	9.81			
AV	181.5k	37.82	54.41	-16.59	9.89	Line	-	27.93	0.04	0.04	9.81			
QP	217.5k	44.58	62.92	-18.34	9.89	Line	-	34.69	0.04	0.04	9.81			
AV	217.5k	34.58	52.92	-18.34	9.89	Line	-	24.69	0.04	0.04	9.81			
QP	285k	31.23	60.67	-29.44	9.90	Line	-	21.33	0.04	0.04	9.82			
AV	285k	24.20	50.67	-26.47	9.90	Line	-	14.30	0.04	0.04	9.82			
QP	397.5k	28.68	57.91	-29.23	9.90	Line	-	18.78	0.04	0.04	9.82			
AV	397.5k	21.51	47.91	-26.40	9.90	Line	-	11.61	0.04	0.04	9.82			
QP	541.5k	38.30	56.00	-17.70	9.91	Line	-	28.39	0.05	0.04	9.82			
AV	541.5k	33.12	46.00	-12.88	9.91	Line	"Worst"	23.21	0.05	0.04	9.82			
QP	1.077M	36.67	56.00	-19.33	9.93	Line	-	26.74	0.06	0.04	9.83			
AV	1.077M	28.49	46.00	-17.51	9.93	Line	-	18.56	0.06	0.04	9.83			
QP	4.457M	35.27	56.00	-20.73	10.13	Line	-	25.14	0.14	0.12	9.87			
AV	4.457M	24.48	46.00	-21.52	10.13	Line	-	14.35	0.14	0.12	9.87			

Test Mode 1

06/01/2022



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	177k	41.90	64.62	-22.72	9.88	Neutral	-	32.02	0.03	0.04	9.81			
AV	177k	35.58	54.62	-19.04	9.88	Neutral	-	25.70	0.03	0.04	9.81			
QP	280.5k	31.85	60.80	-28.95	9.88	Neutral	-	21.97	0.03	0.04	9.81			
AV	280.5k	24.97	50.80	-25.83	9.88	Neutral	-	15.09	0.03	0.04	9.81			
QP	964.5k	31.65	56.00	-24.35	9.92	Neutral	-	21.73	0.05	0.04	9.83			
AV	964.5k	25.03	46.00	-20.97	9.92	Neutral	-	15.11	0.05	0.04	9.83			
QP	3.917M	34.93	56.00	-21.07	10.09	Neutral	-	24.84	0.10	0.12	9.87			
AV	3.917M	24.17	46.00	-21.83	10.09	Neutral	-	14.08	0.10	0.12	9.87			
QP	5.861M	35.85	60.00	-24.15	10.16	Neutral	-	25.69	0.14	0.14	9.88			
AV	5.861M	26.06	50.00	-23.94	10.16	Neutral	-	15.90	0.14	0.14	9.88			
QP	24.243M	38.52	60.00	-21.48	10.64	Neutral	-	27.88	0.36	0.27	10.01			
AV	24.243M	31.67	50.00	-18.33	10.64	Neutral	"Worst"	21.03	0.36	0.27	10.01			

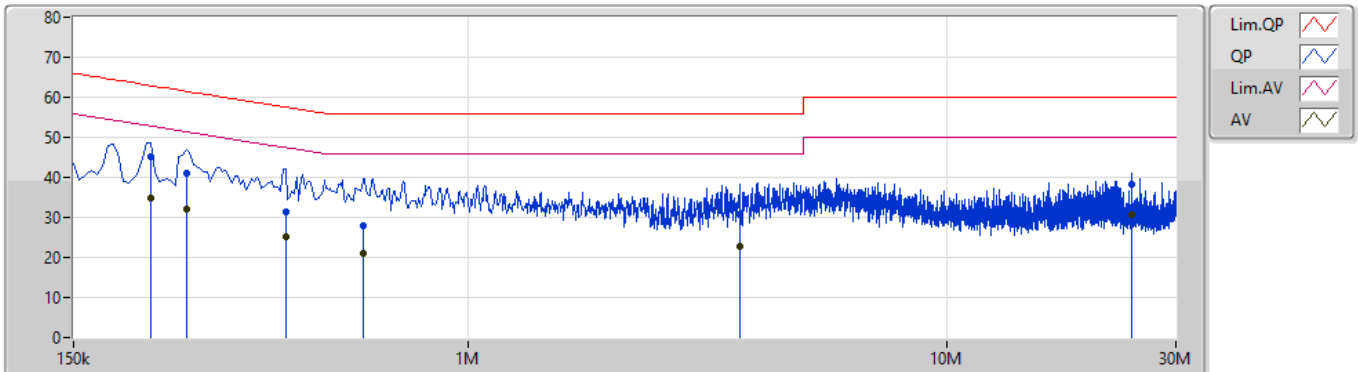


Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	631.5k	33.53	46.00	-12.47	Neutral

Test Mode 1

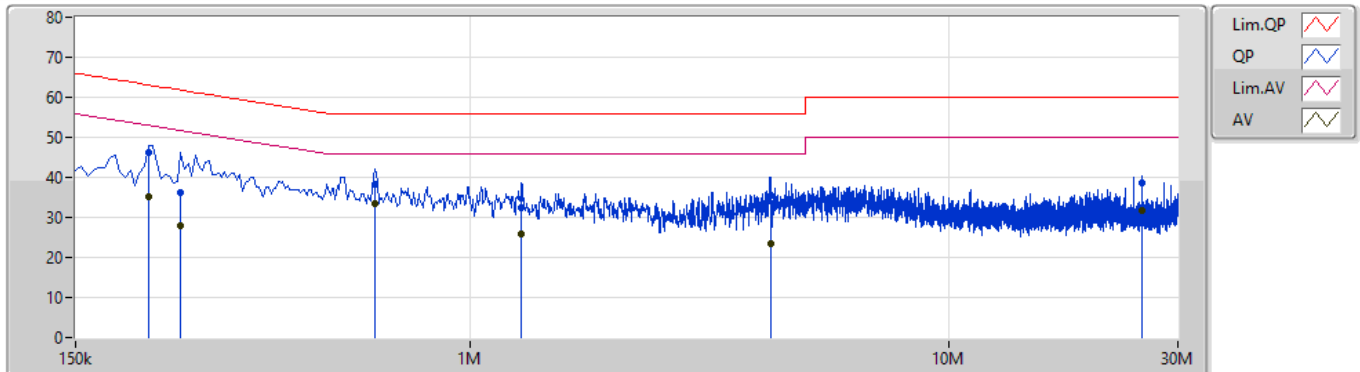
06/01/2022



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	217.5k	45.07	62.92	-17.85	9.89	Line	"Worst"	35.18	0.04	0.04	9.81			
AV	217.5k	34.84	52.92	-18.08	9.89	Line	-	24.95	0.04	0.04	9.81			
QP	258k	41.10	61.49	-20.39	9.89	Line	-	31.21	0.04	0.04	9.81			
AV	258k	32.03	51.49	-19.46	9.89	Line	-	22.14	0.04	0.04	9.81			
QP	415.5k	31.36	57.53	-26.17	9.90	Line	-	21.46	0.04	0.04	9.82			
AV	415.5k	25.07	47.53	-22.46	9.90	Line	-	15.17	0.04	0.04	9.82			
QP	604.5k	27.90	56.00	-28.10	9.91	Line	-	17.99	0.05	0.04	9.82			
AV	604.5k	20.98	46.00	-25.02	9.91	Line	-	11.07	0.05	0.04	9.82			
QP	3.696M	30.52	56.00	-25.48	10.10	Line	-	20.42	0.13	0.11	9.86			
AV	3.696M	22.72	46.00	-23.28	10.10	Line	-	12.62	0.13	0.11	9.86			
QP	24.243M	38.12	60.00	-21.88	10.63	Line	-	27.49	0.35	0.27	10.01			
AV	24.243M	30.85	50.00	-19.15	10.63	Line	-	20.22	0.35	0.27	10.01			

06/01/2022

Test Mode 1



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	213k	46.31	63.09	-16.78	9.88	Neutral	-	36.43	0.03	0.04	9.81			
AV	213k	35.33	53.09	-17.76	9.88	Neutral	-	25.45	0.03	0.04	9.81			
QP	249k	36.29	61.79	-25.50	9.88	Neutral	-	26.41	0.03	0.04	9.81			
AV	249k	27.86	51.79	-23.93	9.88	Neutral	-	17.98	0.03	0.04	9.81			
QP	631.5k	38.14	56.00	-17.86	9.90	Neutral	-	28.24	0.04	0.04	9.82			
AV	631.5k	33.53	46.00	-12.47	9.90	Neutral	"Worst"	23.63	0.04	0.04	9.82			
QP	1.28M	32.36	56.00	-23.64	9.94	Neutral	-	22.42	0.06	0.05	9.83			
AV	1.28M	25.98	46.00	-20.02	9.94	Neutral	-	16.04	0.06	0.05	9.83			
QP	4.232M	35.35	56.00	-20.65	10.10	Neutral	-	25.25	0.11	0.12	9.87			
AV	4.232M	23.46	46.00	-22.54	10.10	Neutral	-	13.36	0.11	0.12	9.87			
QP	25.224M	38.49	60.00	-21.51	10.67	Neutral	-	27.82	0.38	0.28	10.01			
AV	25.224M	31.62	50.00	-18.38	10.67	Neutral	-	20.95	0.38	0.28	10.01			

**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)	1.023M	995.752k	996KF1D	1.021M	995.752k
BT-EDR(2Mbps)	1.085M	1.059M	1M06G1D	1.083M	1.057M
BT-EDR(3Mbps)	1.175M	1.116M	1M12G1D	1.174M	1.113M

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

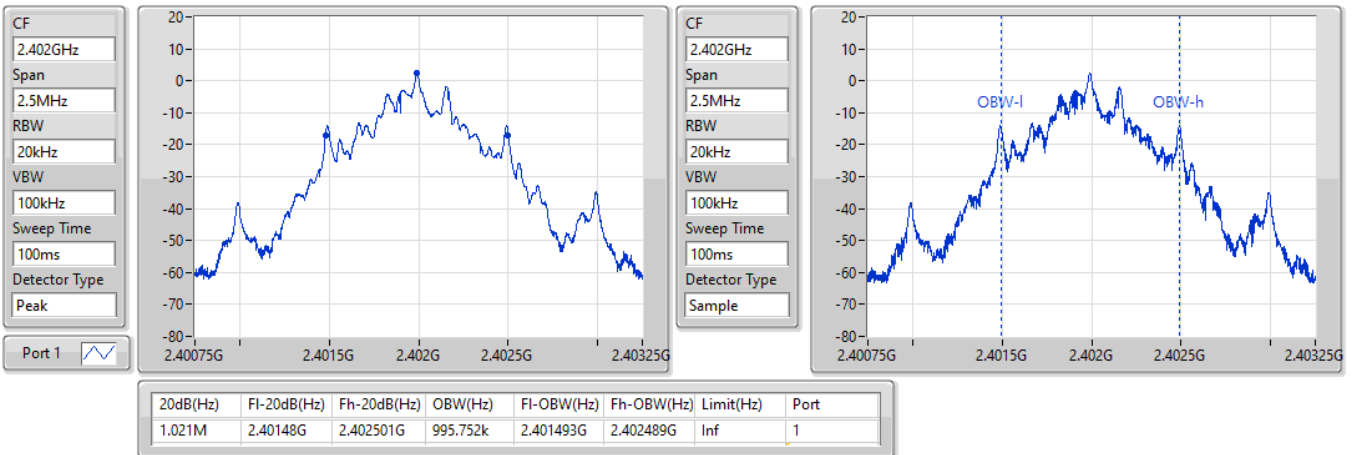
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.021M	995.752k
2440MHz	Pass	Inf	1.023M	995.752k
2480MHz	Pass	Inf	1.023M	995.752k
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.085M	1.057M
2440MHz	Pass	Inf	1.083M	1.059M
2480MHz	Pass	Inf	1.084M	1.058M
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.174M	1.116M
2440MHz	Pass	Inf	1.174M	1.113M
2480MHz	Pass	Inf	1.175M	1.114M

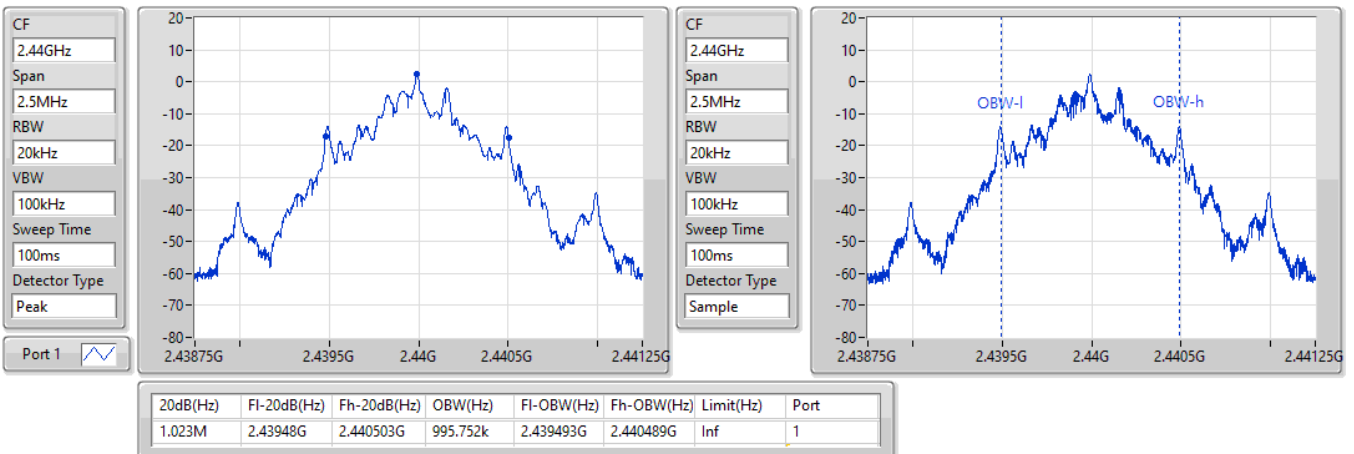
Port X-N dB = Port X 20dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth

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

03/11/2021

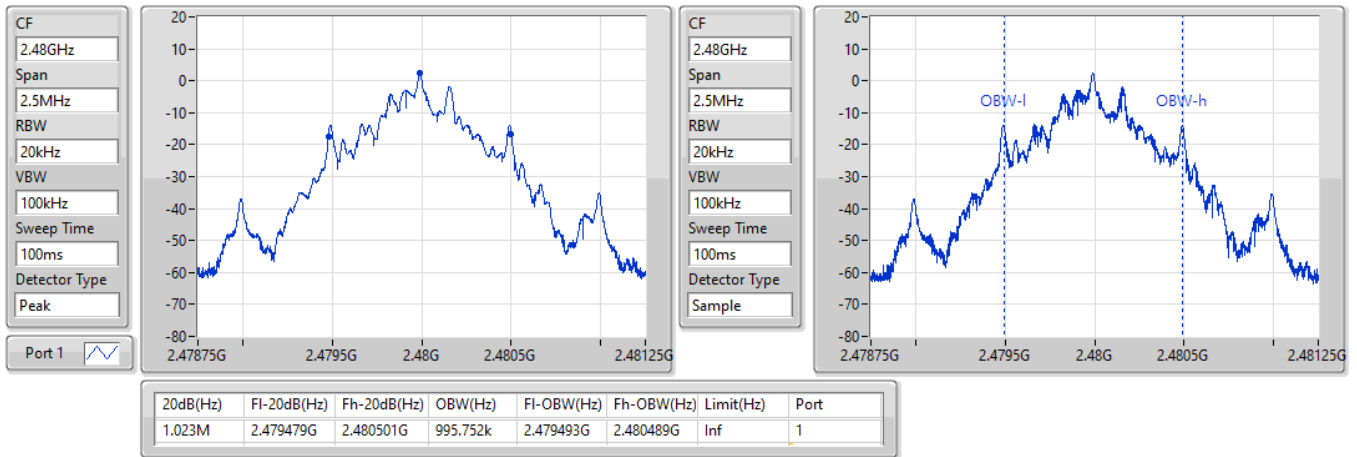

BT-BR(1Mbps)
2440MHz
EBW-FS

03/11/2021

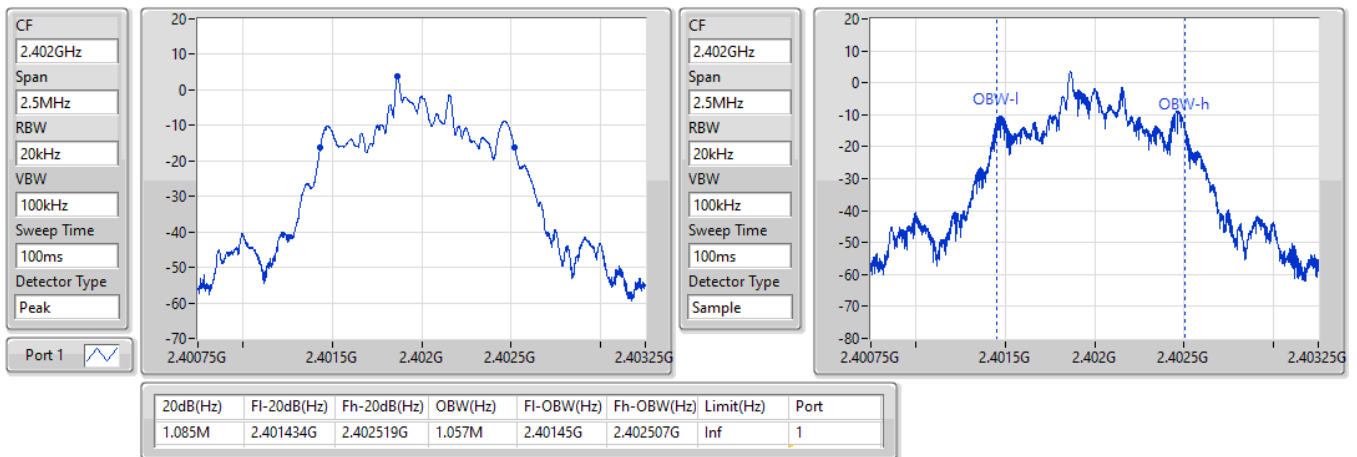


BT-BR(1Mbps)
2480MHz
EBW-FS

03/11/2021

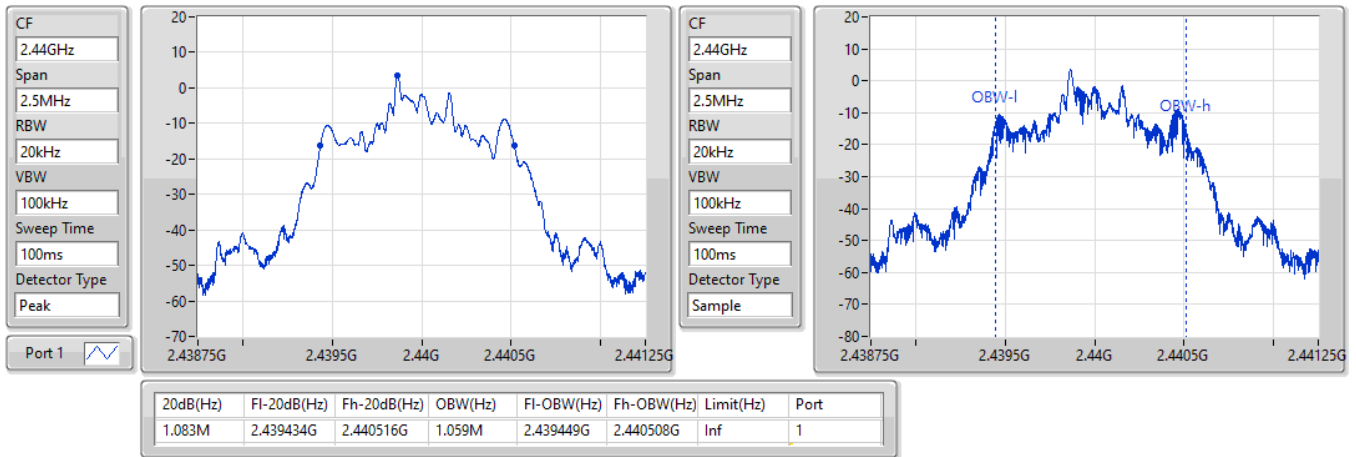

BT-EDR(2Mbps)
2402MHz
EBW-FS

03/11/2021

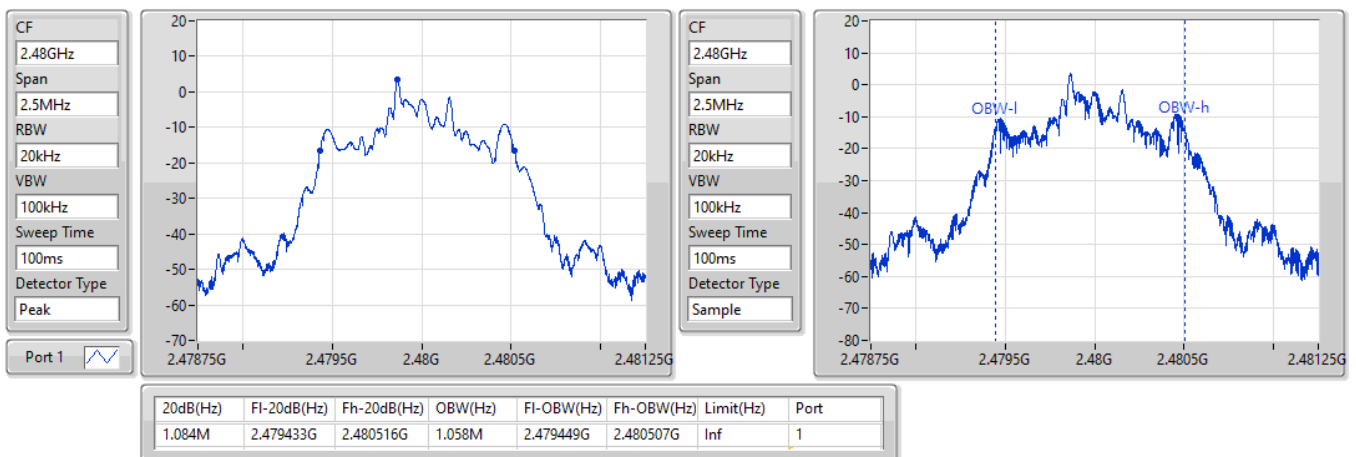


BT-EDR(2Mbps)
EBW-FS
2440MHz

03/11/2021

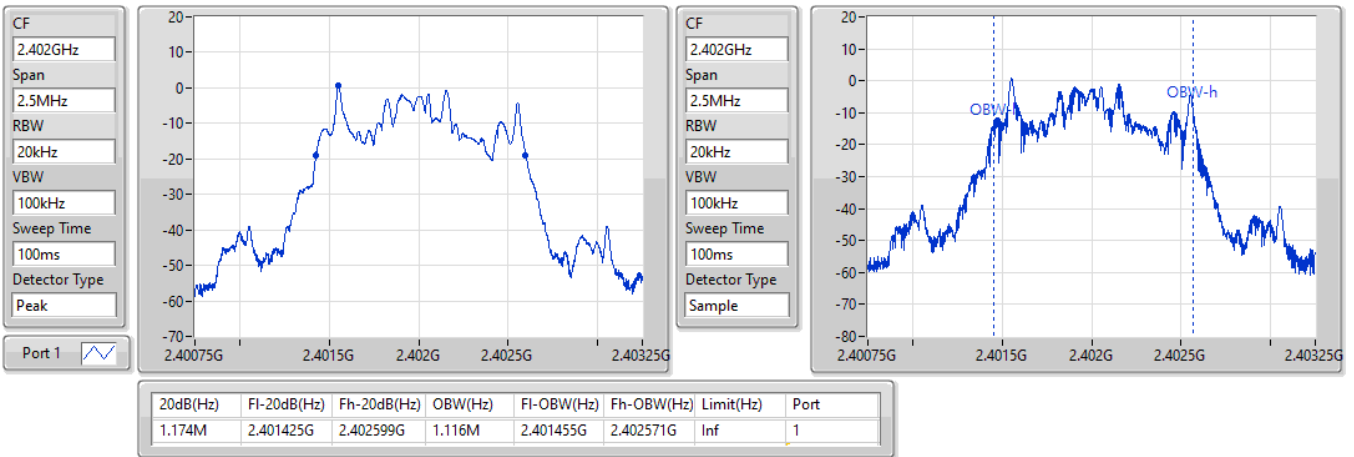

BT-EDR(2Mbps)
EBW-FS
2480MHz

03/11/2021

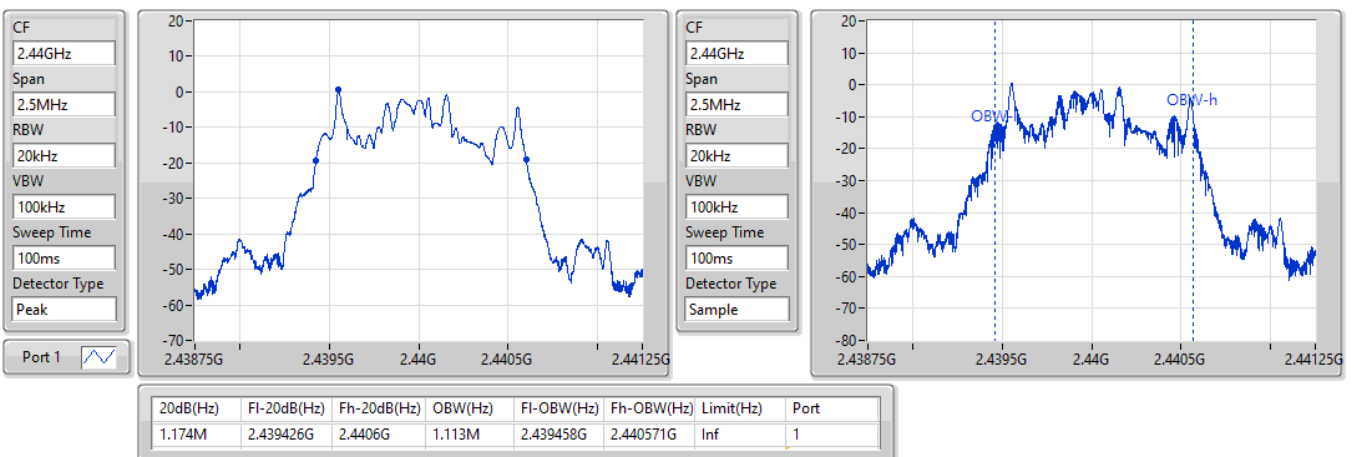


BT-EDR(3Mbps)
EBW-FS
2402MHz

03/11/2021

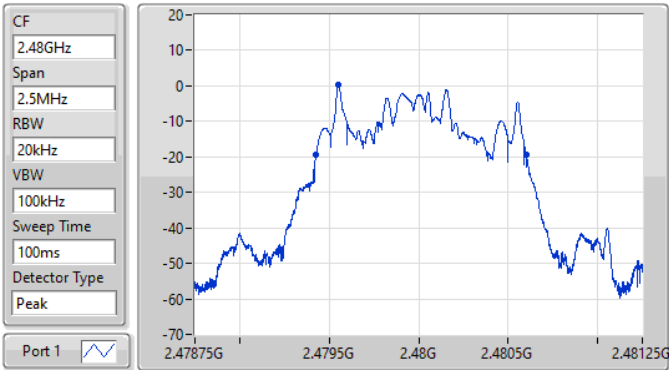

BT-EDR(3Mbps)
EBW-FS
2440MHz

03/11/2021



BT-EDR(3Mbps)

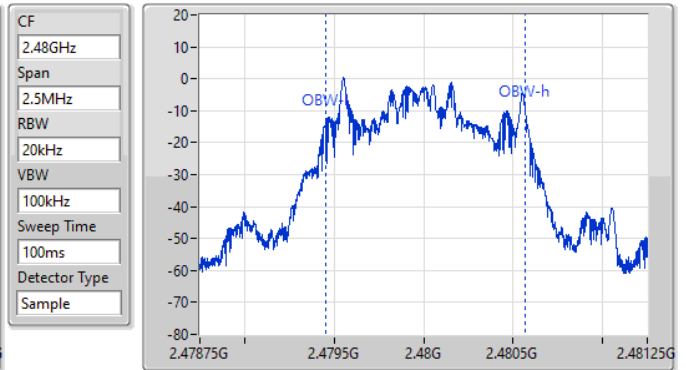
2480MHz



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.175M	2.479426G	2.480601G	1.114M	2.479457G	2.480571G	Inf	1

EBW-FS

03/11/2021





Summary

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

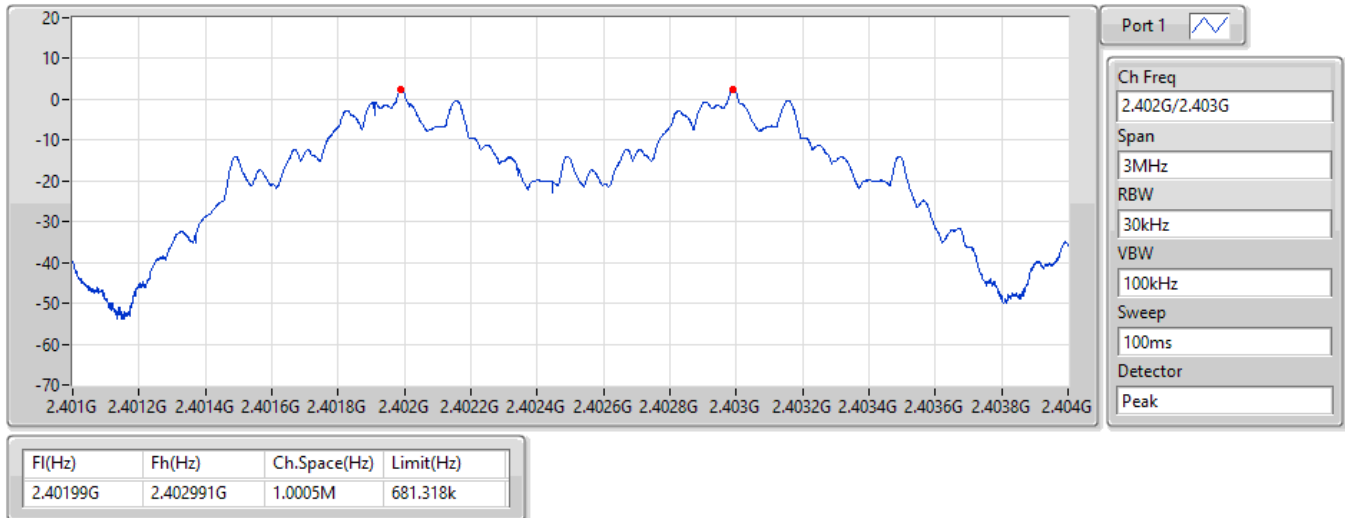
Result

Mode	Result	Fl (Hz)	Fh (Hz)	Ch.Space (Hz)	Limit (Hz)
BT-BR(1Mbps)	-	-	-	-	-
2402MHz	Pass	2.40199G	2.402991G	1.0005M	681.318k
2440MHz	Pass	2.43999G	2.440991G	1.0005M	681.318k
2480MHz	Pass	2.47899G	2.479991G	1.0005M	681.318k
BT-EDR(2Mbps)	-	-	-	-	-
2402MHz	Pass	2.401866G	2.402866G	1.0005M	722.61k
2440MHz	Pass	2.439866G	2.440866G	1.0005M	721.278k
2480MHz	Pass	2.478866G	2.479866G	1.0005M	721.944k
BT-EDR(3Mbps)	-	-	-	-	-
2402MHz	Pass	2.401552G	2.402554G	1.002M	781.884k
2440MHz	Pass	2.440154G	2.441156G	1.002M	781.884k
2480MHz	Pass	2.479154G	2.480156G	1.002M	782.55k

BT-BR(1Mbps)

2.402G/2.403GHz

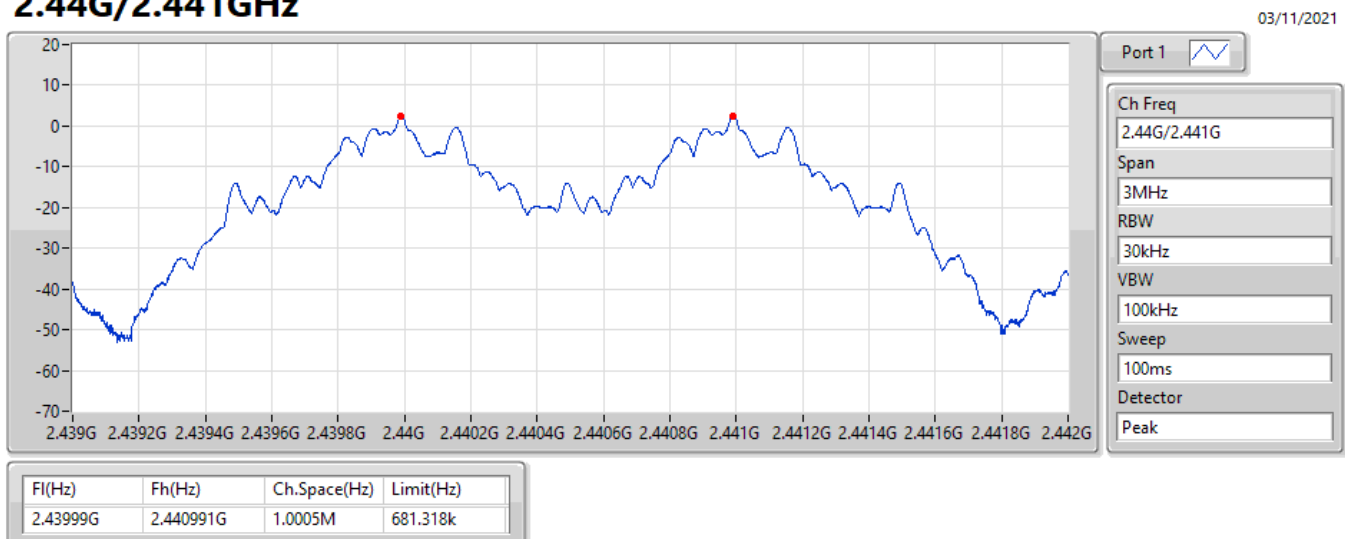
Channel Separation-FS



BT-BR(1Mbps)

2.44G/2.441GHz

Channel Separation-FS



BT-BR(1Mbps)

2.48G/2.479GHz

Channel Separation-FS

03/11/2021

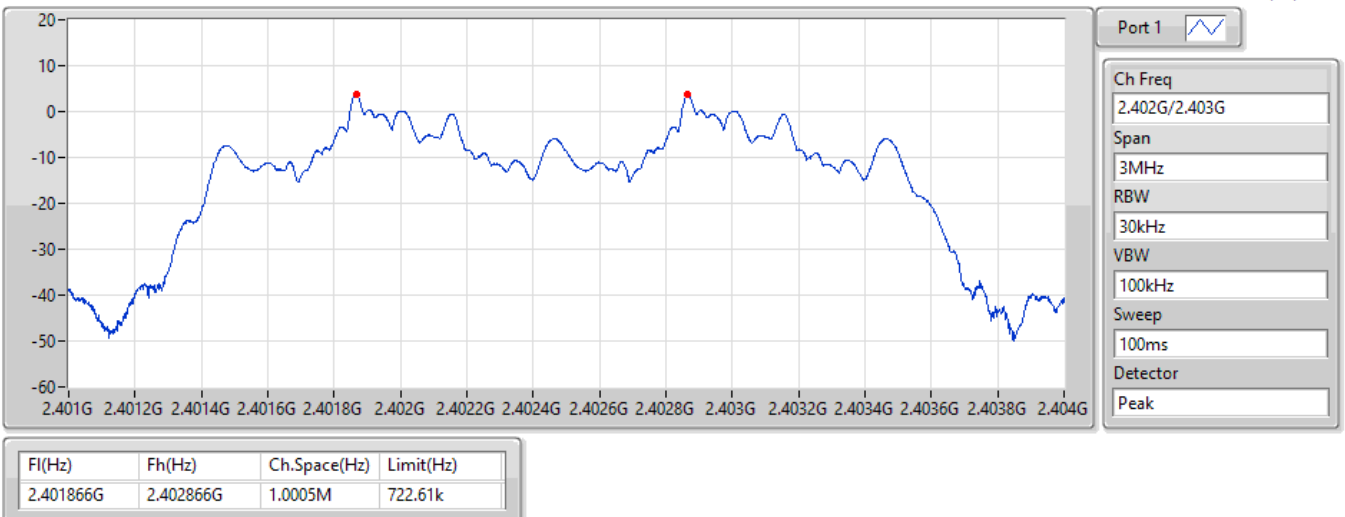


BT-EDR(2Mbps)

2.402G/2.403GHz

Channel Separation-FS

03/11/2021

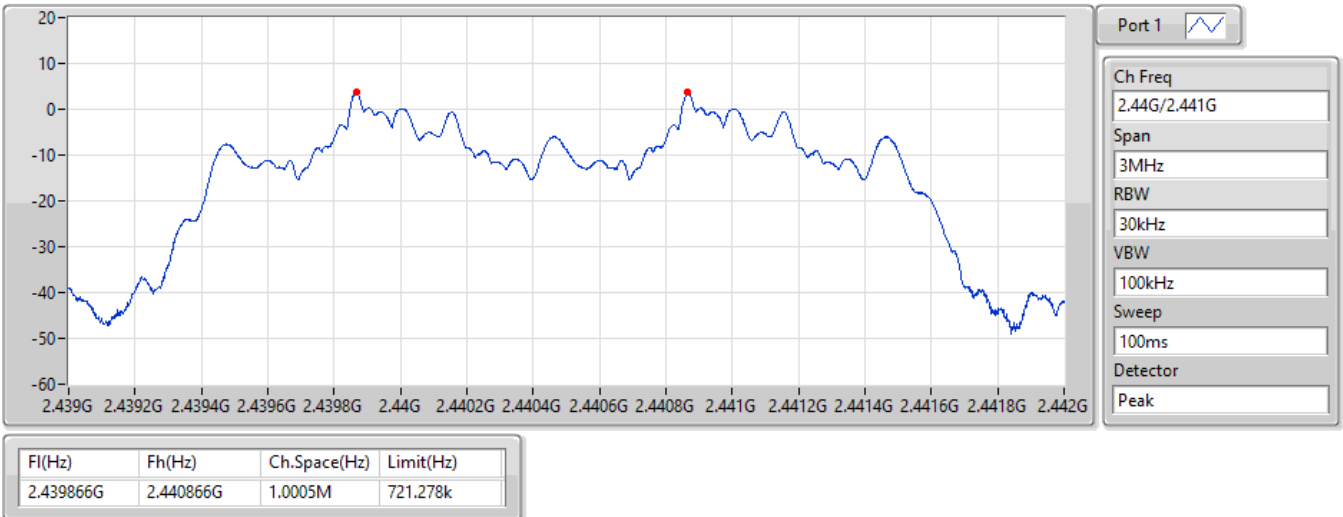


BT-EDR(2Mbps)

2.44G/2.441GHz

Channel Separation-FS

03/11/2021

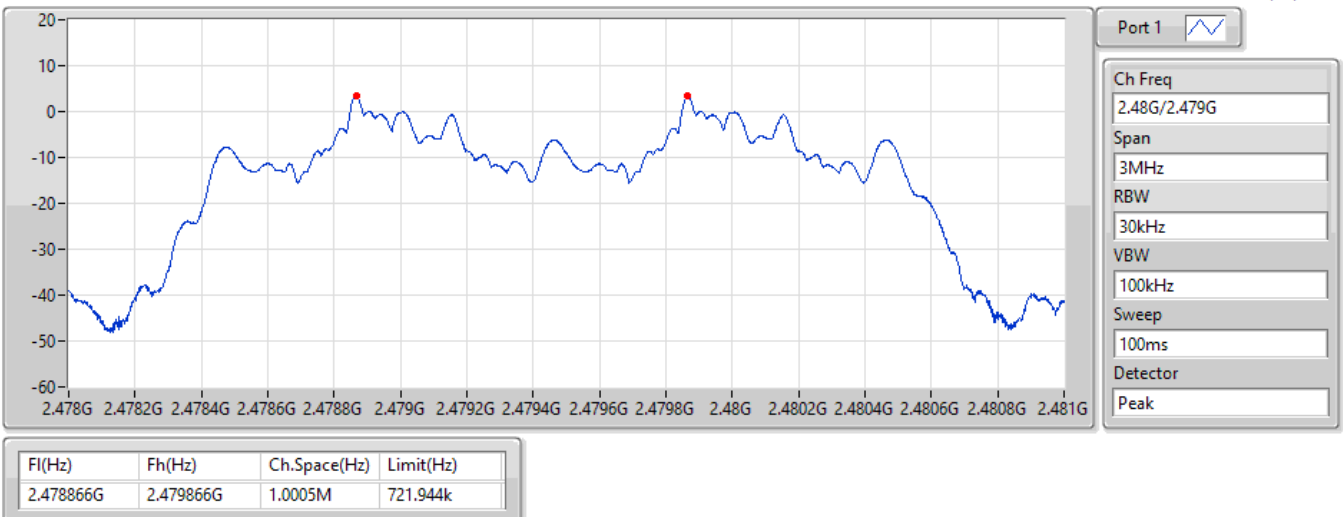


BT-EDR(2Mbps)

2.48G/2.479GHz

Channel Separation-FS

03/11/2021

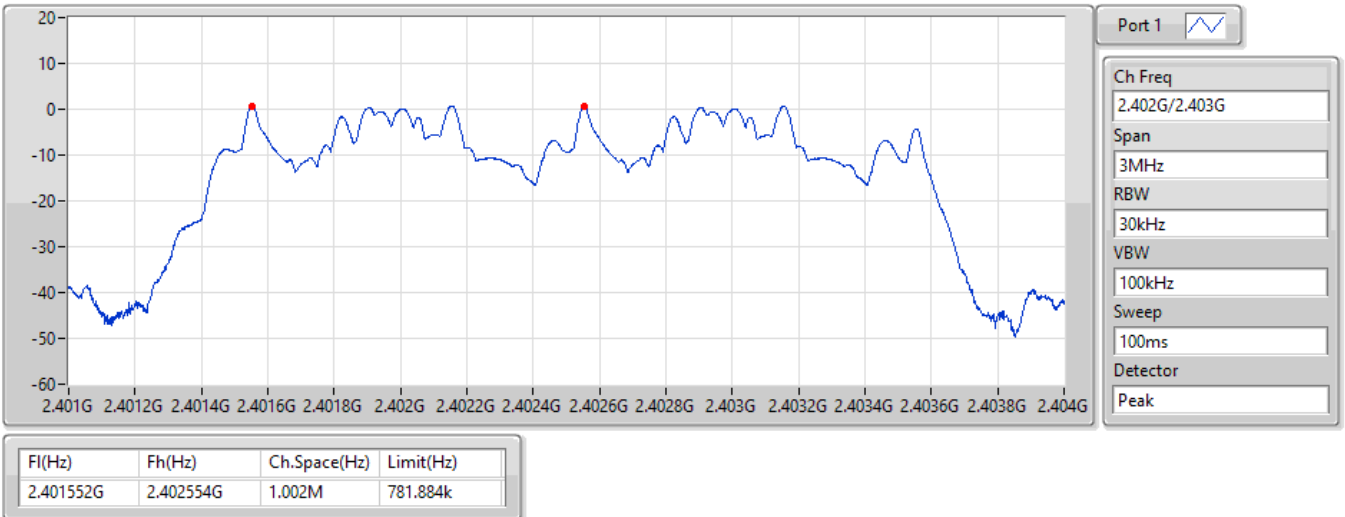


BT-EDR(3Mbps)

2.402G/2.403GHz

Channel Separation-FS

03/11/2021

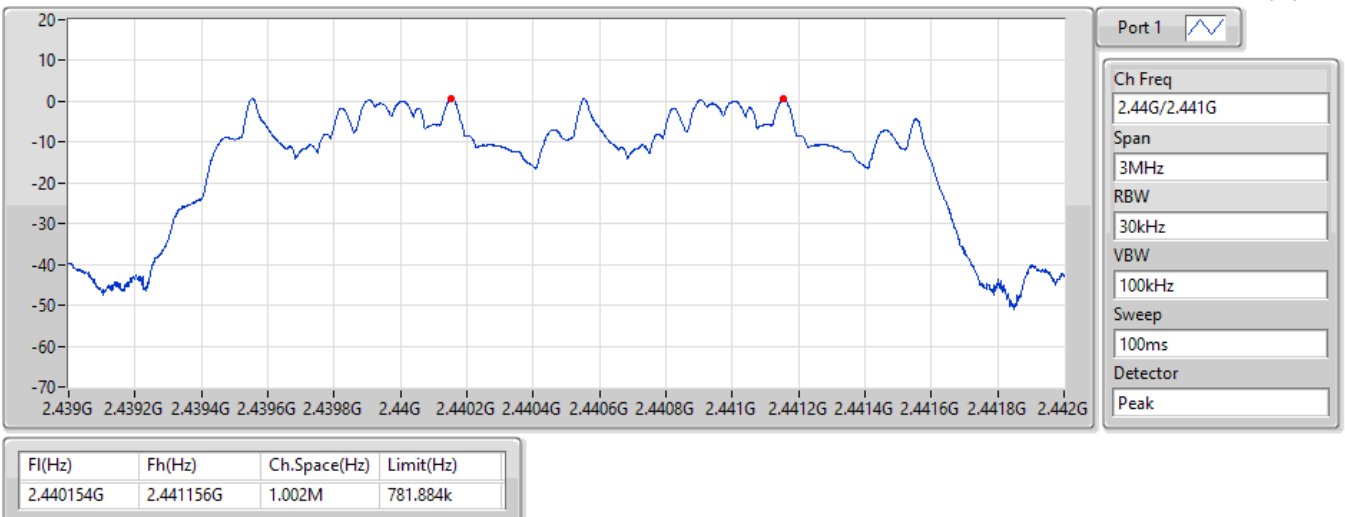


BT-EDR(3Mbps)

2.44G/2.441GHz

Channel Separation-FS

03/11/2021

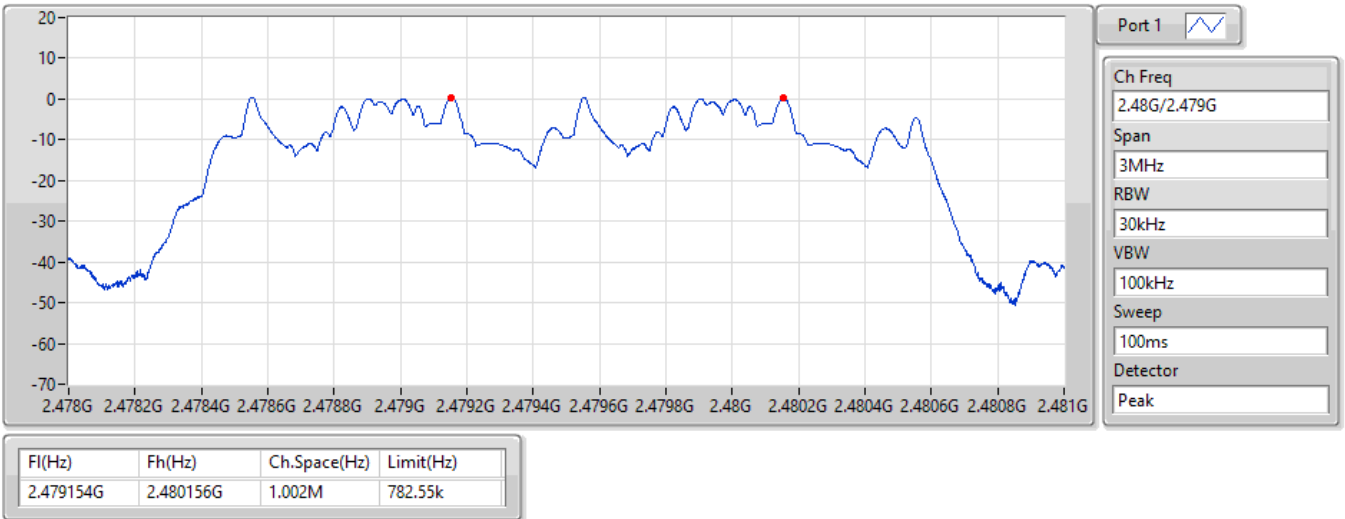


BT-EDR(3Mbps)

2.48G/2.479GHz

Channel Separation-FS

03/11/2021





Average Power-FHSS

Appendix C.1

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	3.54	0.00226
BT-EDR(2Mbps)	4.26	0.00267
BT-EDR(3Mbps)	4.00	0.00251



Average Power-FHSS

Appendix C.1

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	-3.17	3.32	21.00
2440MHz	Pass	-3.17	3.42	21.00
2480MHz	Pass	-3.17	3.54	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	-3.17	4.24	21.00
2440MHz	Pass	-3.17	4.26	21.00
2480MHz	Pass	-3.17	4.05	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	-3.17	3.98	21.00
2440MHz	Pass	-3.17	4.00	21.00
2480MHz	Pass	-3.17	3.85	21.00

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



Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	3.56	0.00227
BT-EDR(2Mbps)	5.76	0.00377
BT-EDR(3Mbps)	6.10	0.00407

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	-3.17	3.45	21.00
2440MHz	Pass	-3.17	3.48	21.00
2480MHz	Pass	-3.17	3.56	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	-3.17	5.76	21.00
2440MHz	Pass	-3.17	5.75	21.00
2480MHz	Pass	-3.17	5.60	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	-3.17	6.10	21.00
2440MHz	Pass	-3.17	6.09	21.00
2480MHz	Pass	-3.17	5.96	21.00

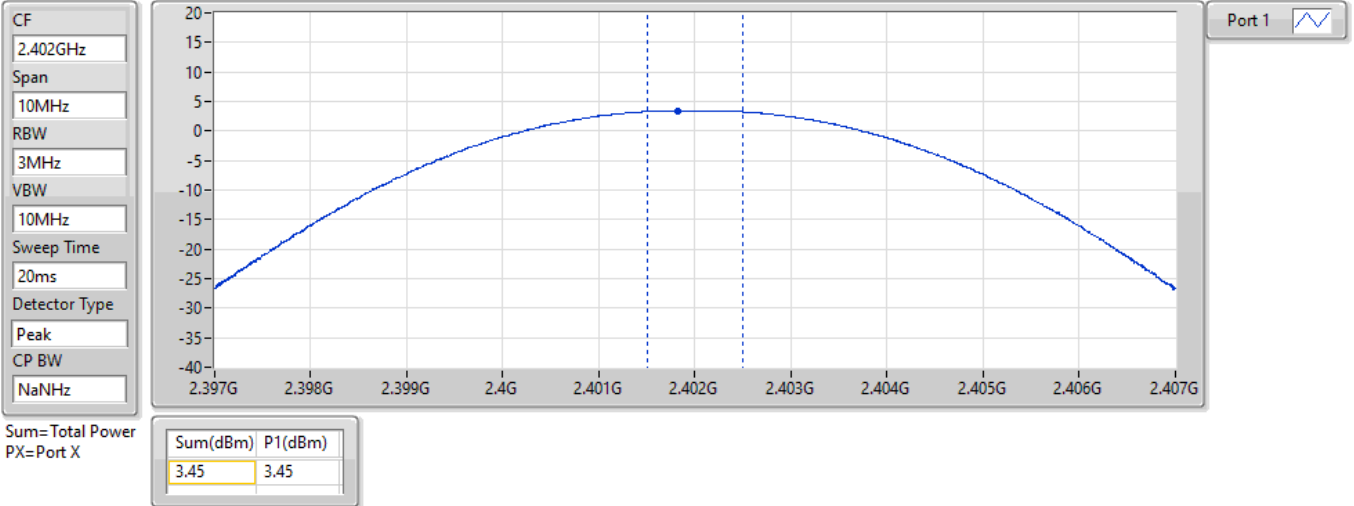
DG = Directional Gain; Port X = Port X output power

BT-BR(1Mbps)

PK Power-FS

2402MHz

03/11/2021

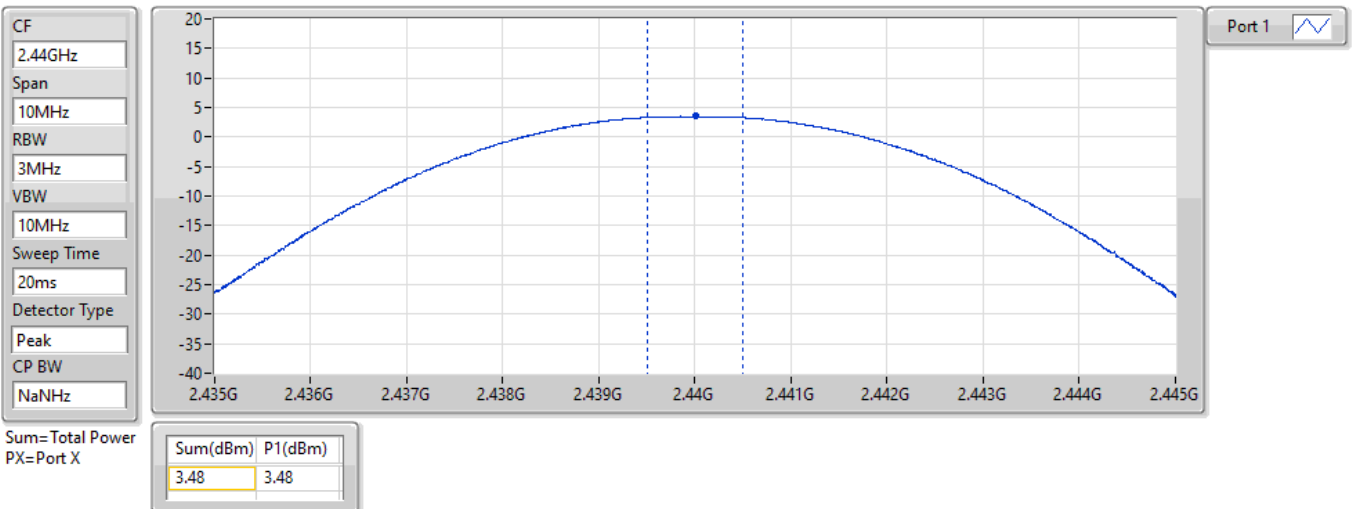


BT-BR(1Mbps)

PK Power-FS

2440MHz

03/11/2021

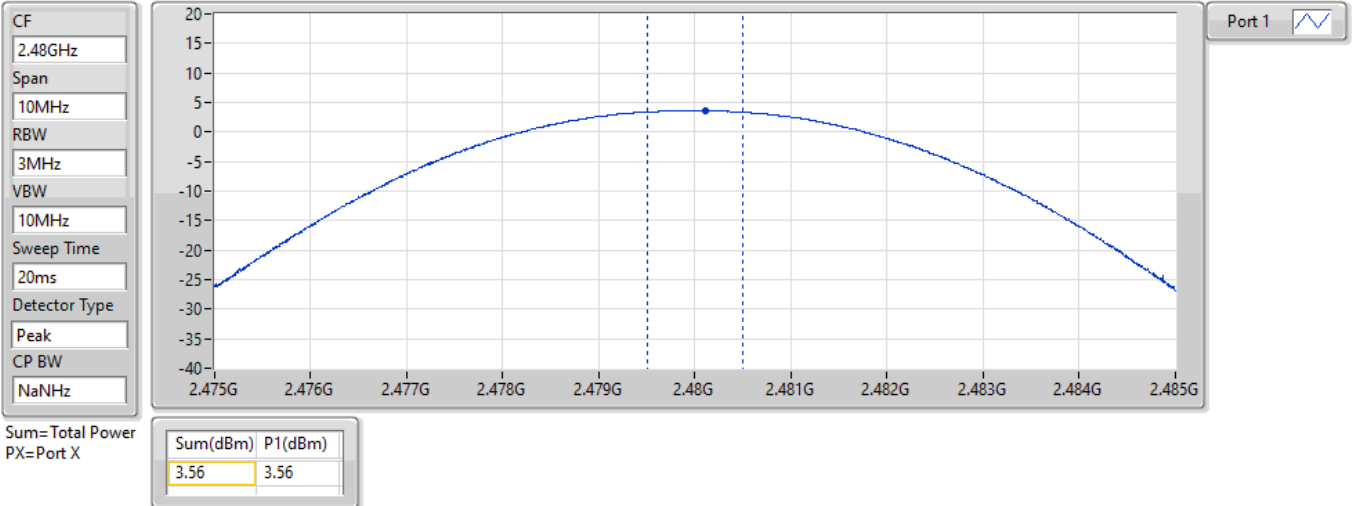


BT-BR(1Mbps)

PK Power-FS

2480MHz

03/11/2021

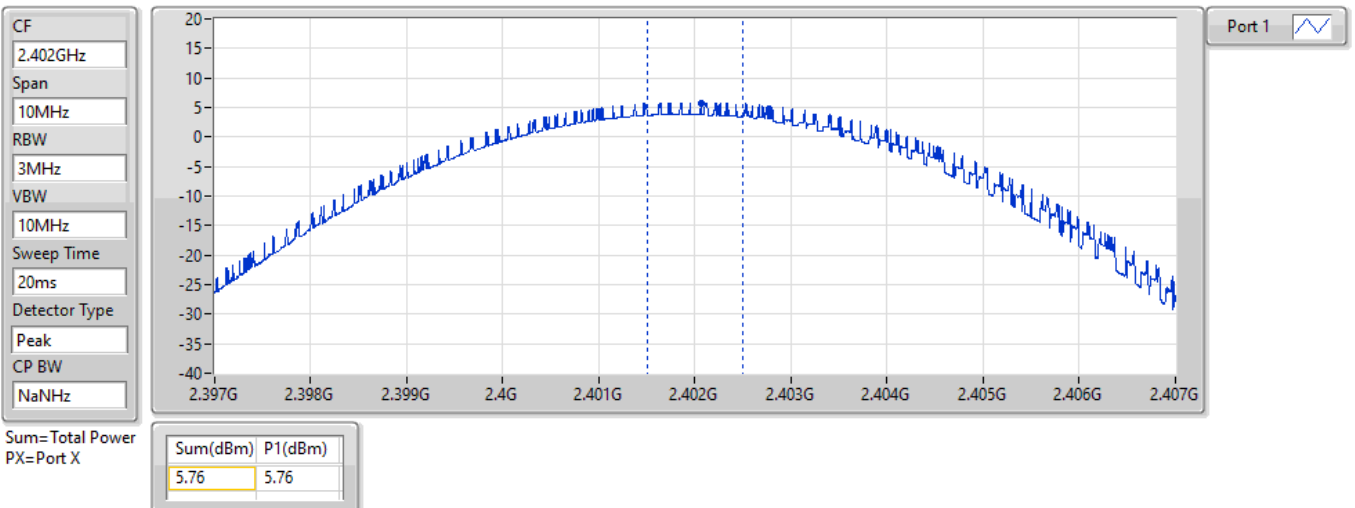


BT-EDR(2Mbps)

PK Power-FS

2402MHz

03/11/2021

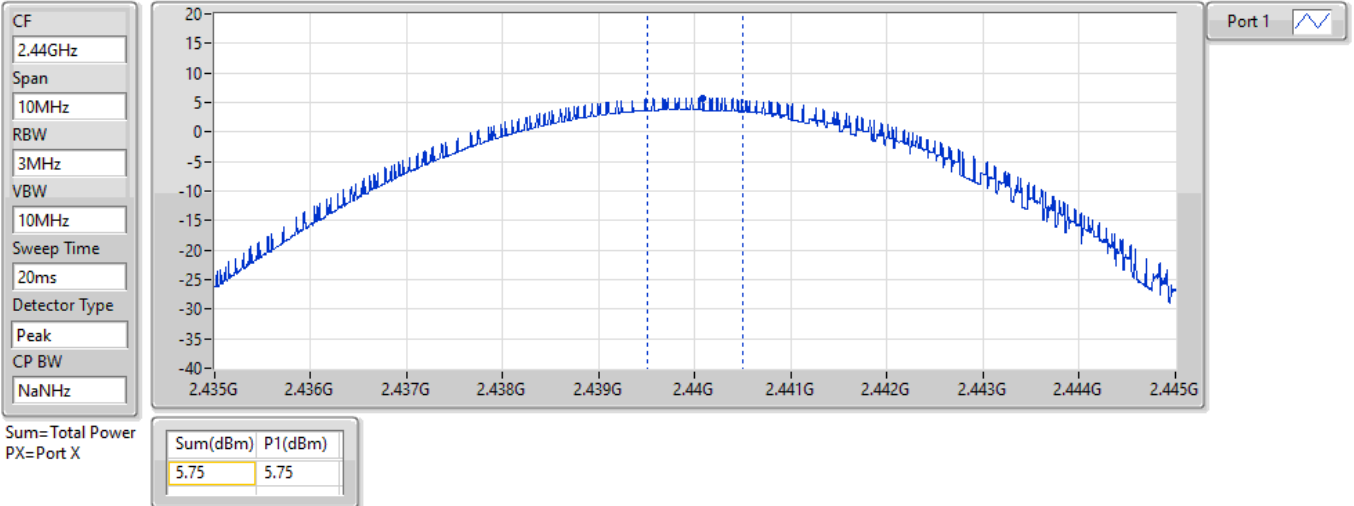


BT-EDR(2Mbps)

PK Power-FS

2440MHz

03/11/2021

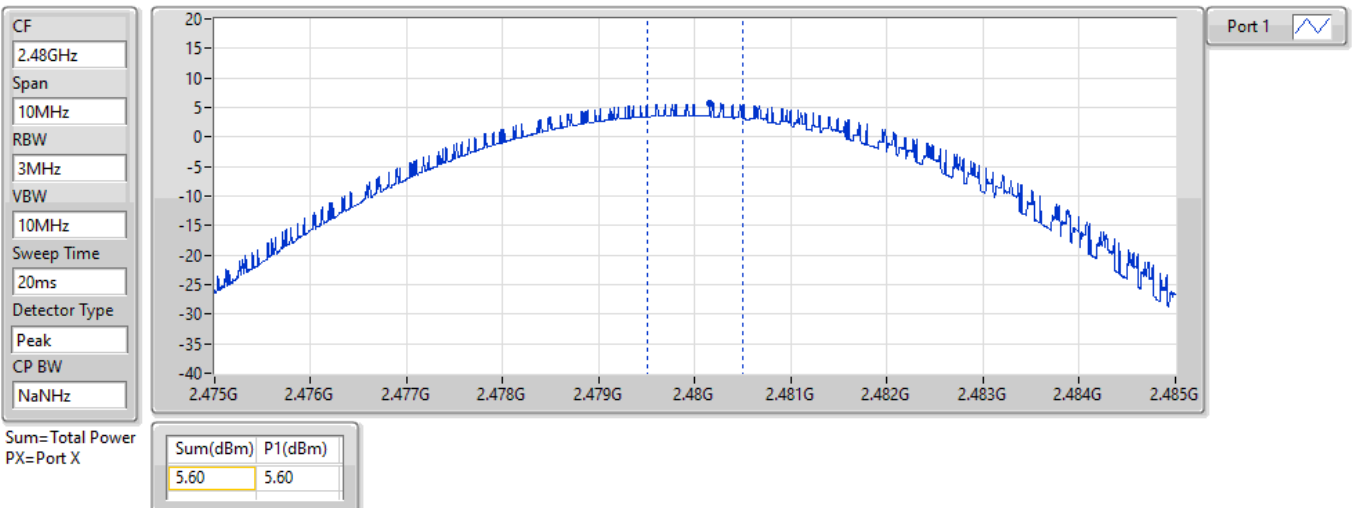


BT-EDR(2Mbps)

PK Power-FS

2480MHz

03/11/2021

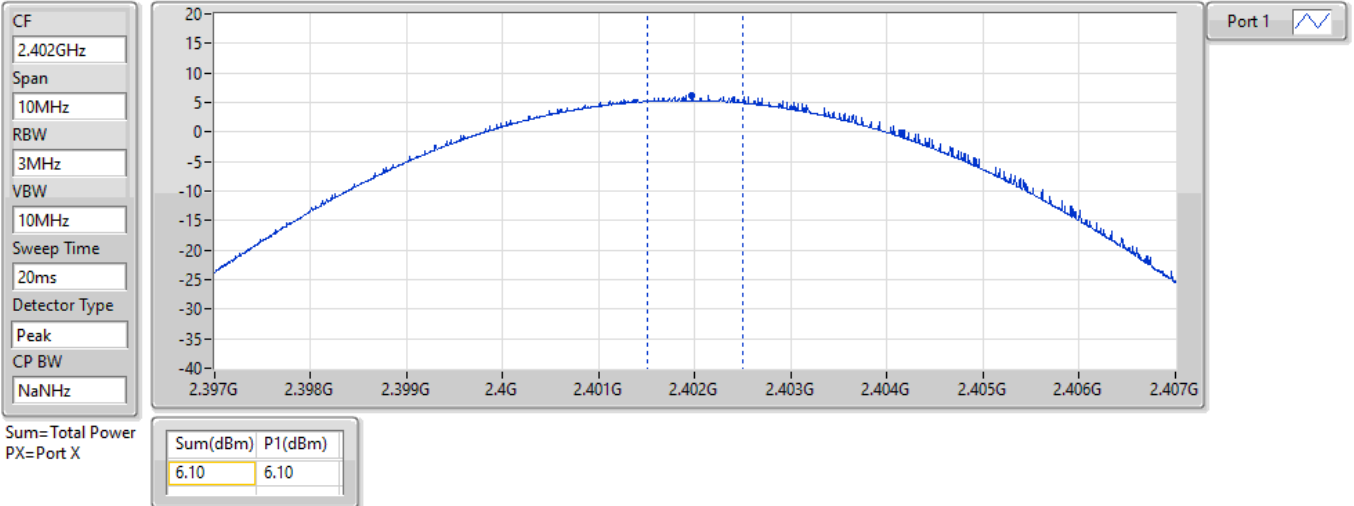


BT-EDR(3Mbps)

PK Power-FS

2402MHz

03/11/2021

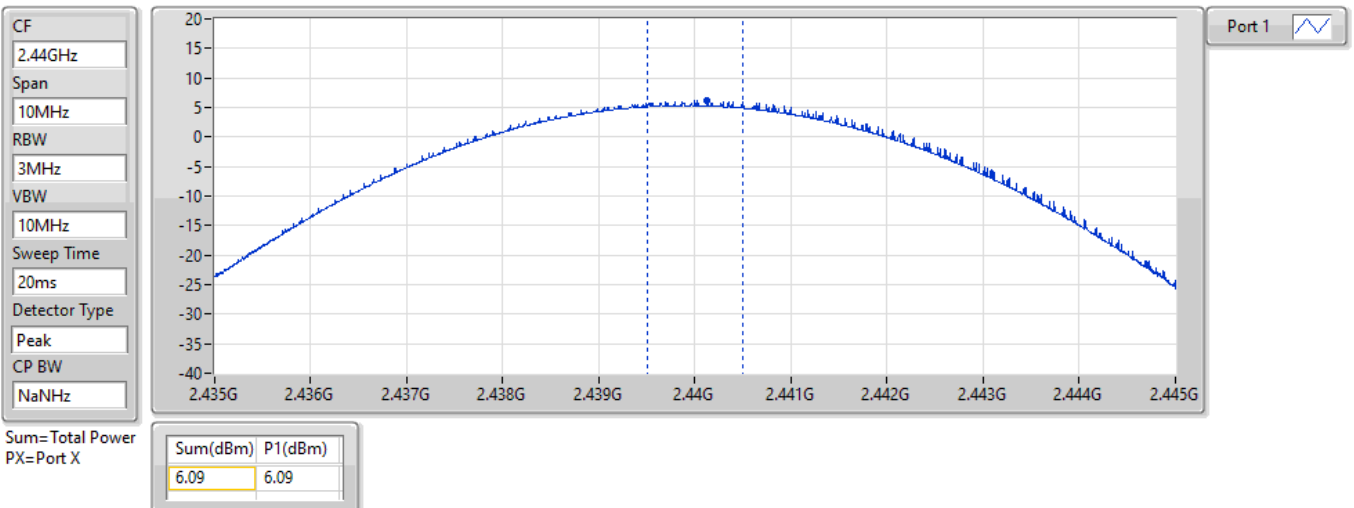


BT-EDR(3Mbps)

PK Power-FS

2440MHz

03/11/2021

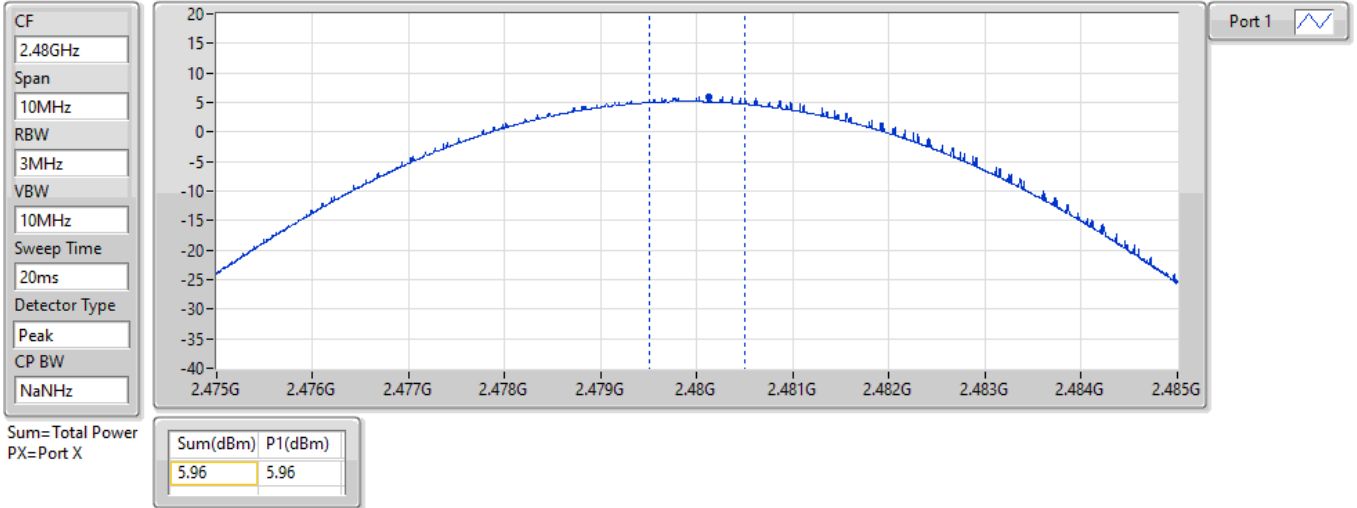


BT-EDR(3Mbps)

PK Power-FS

2480MHz

03/11/2021





Summary

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

Result

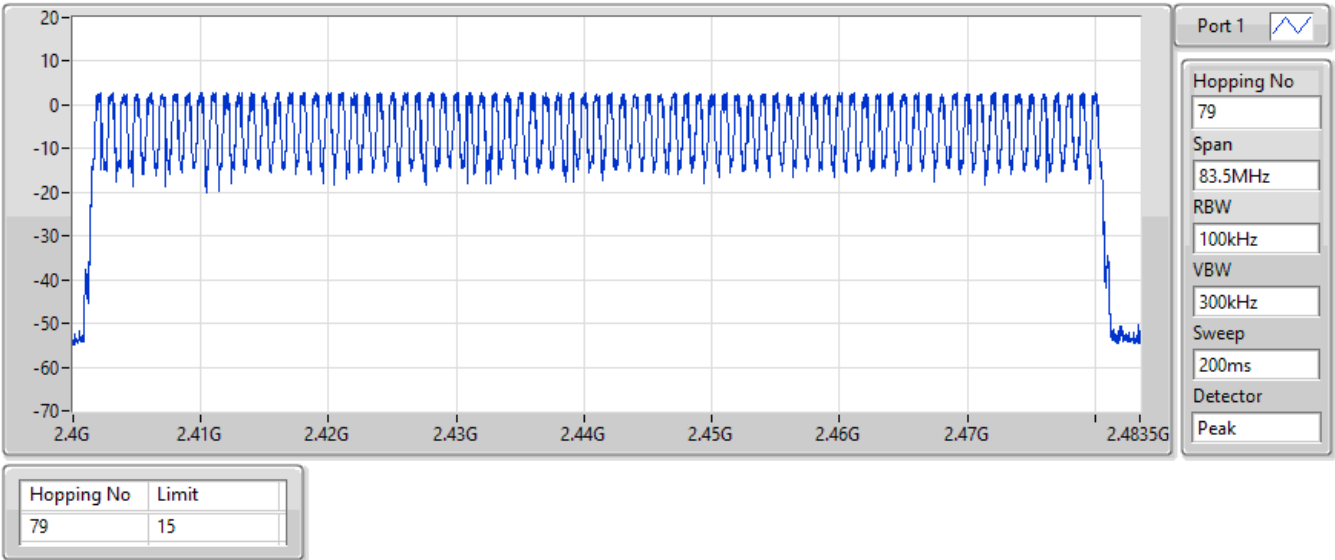
Mode	Result	Hopping No	Limit
BT-BR(1Mbps)	-	-	-
2440MHz	Pass	79	15
BT-EDR(2Mbps)	-	-	-
2440MHz	Pass	79	15
BT-EDR(3Mbps)	-	-	-
2440MHz	Pass	79	15

BT-BR(1Mbps)

2440MHz

Hopping-FS

03/11/2021

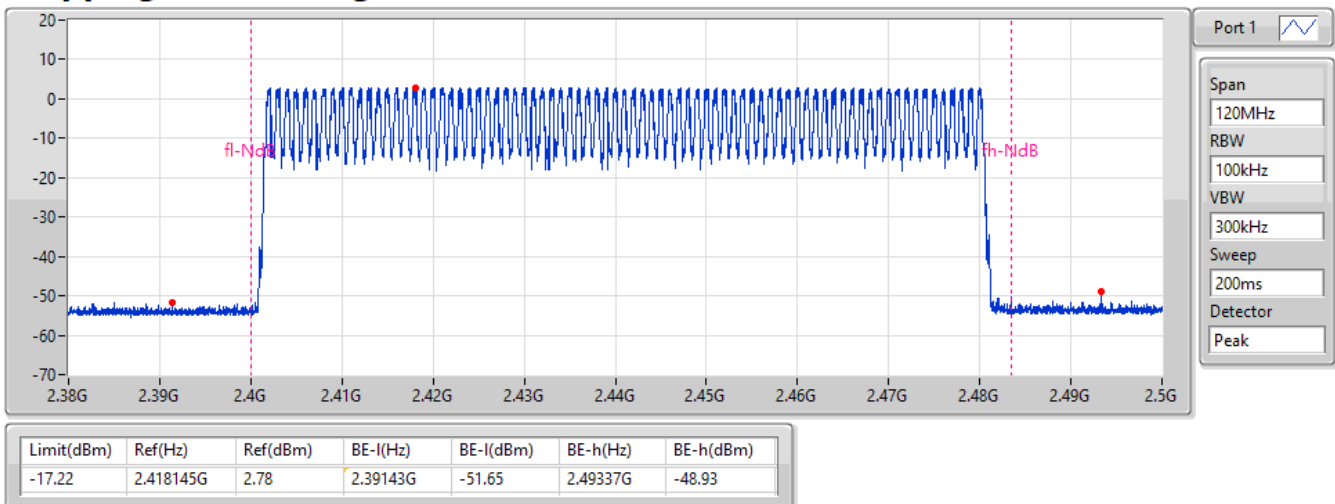


BT-BR(1Mbps)

2440MHz

Hopping Ch Bandedge (Non-restricted Band)

03/11/2021

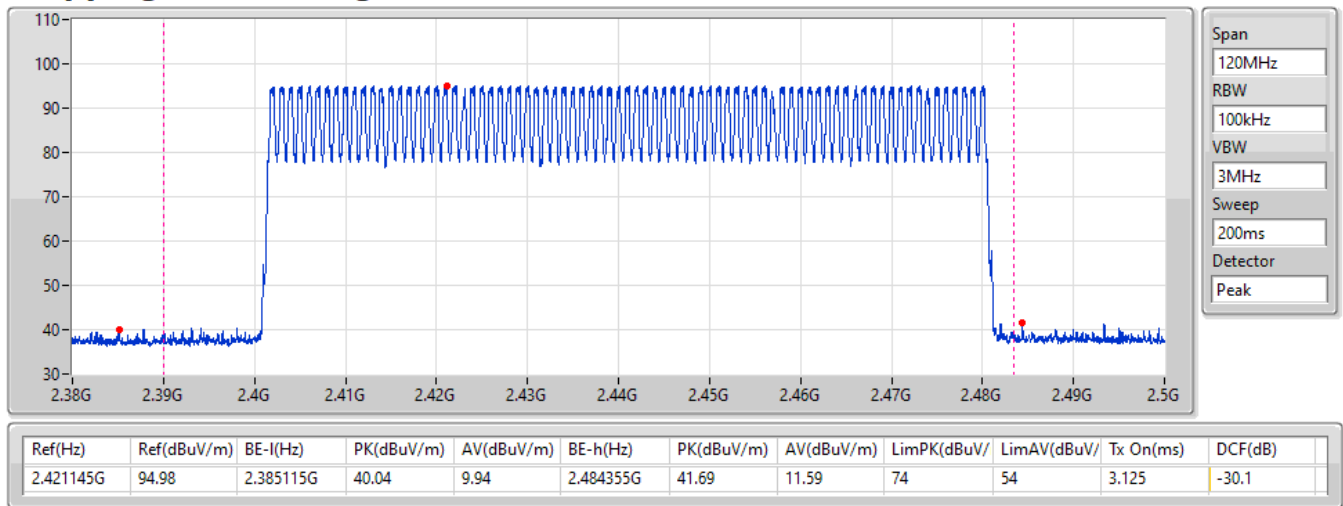


BT-BR(1Mbps)

2440MHz

Hopping Ch Bandedge (Restricted Band)

03/11/2021

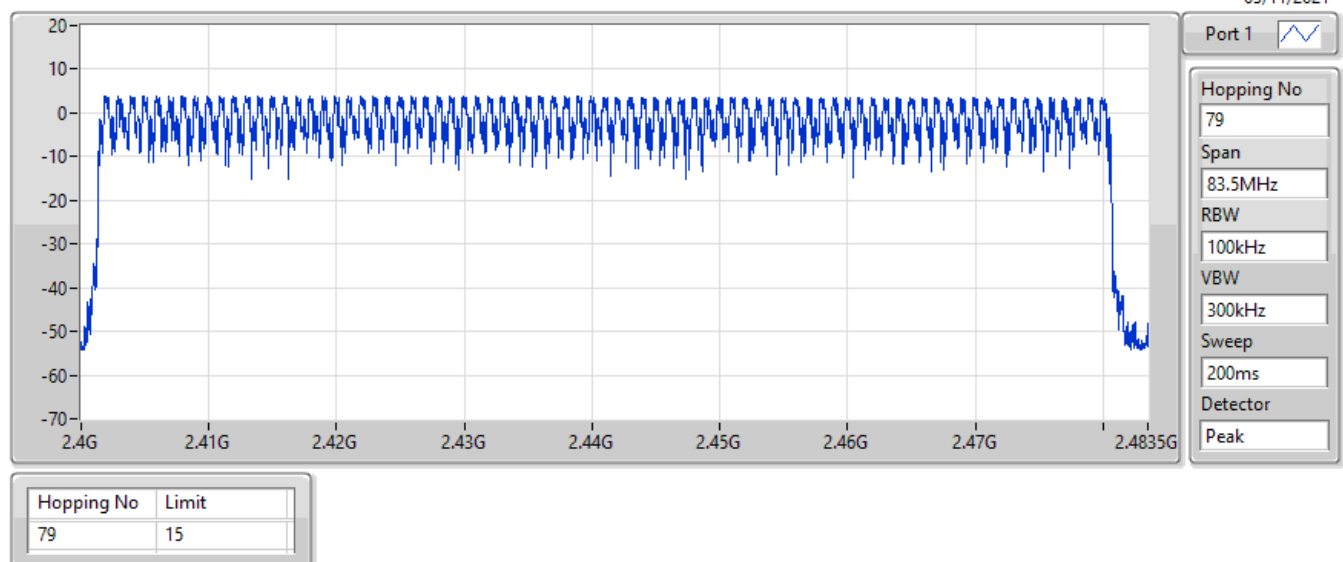


BT-EDR(2Mbps)

2440MHz

Hopping-FS

03/11/2021

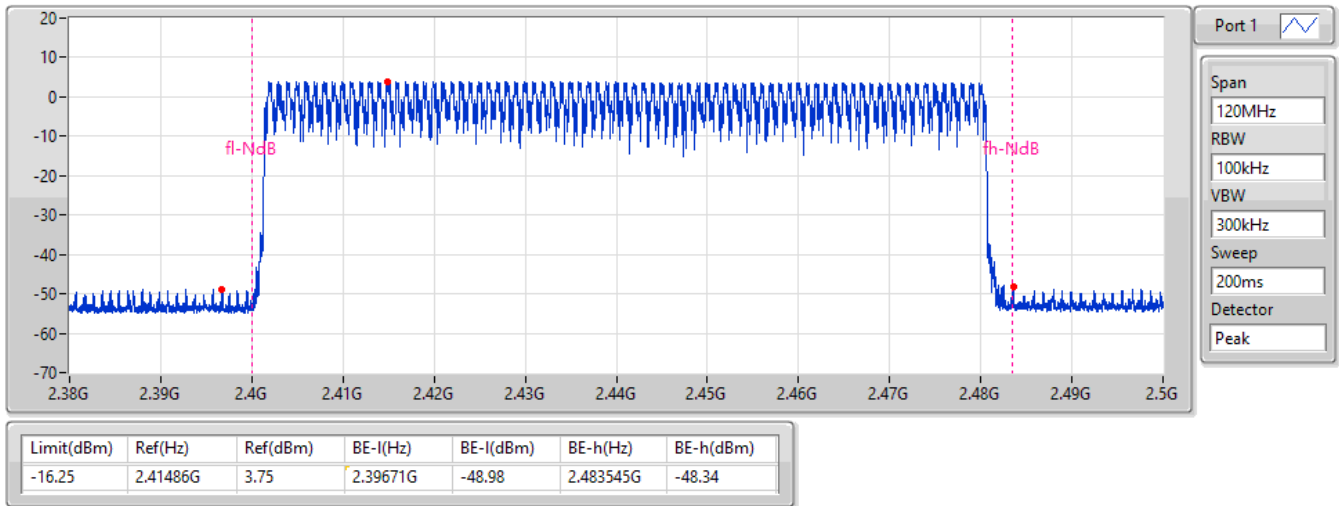


BT-EDR(2Mbps)

2440MHz

Hopping Ch Bandedge (Non-restricted Band)

03/11/2021

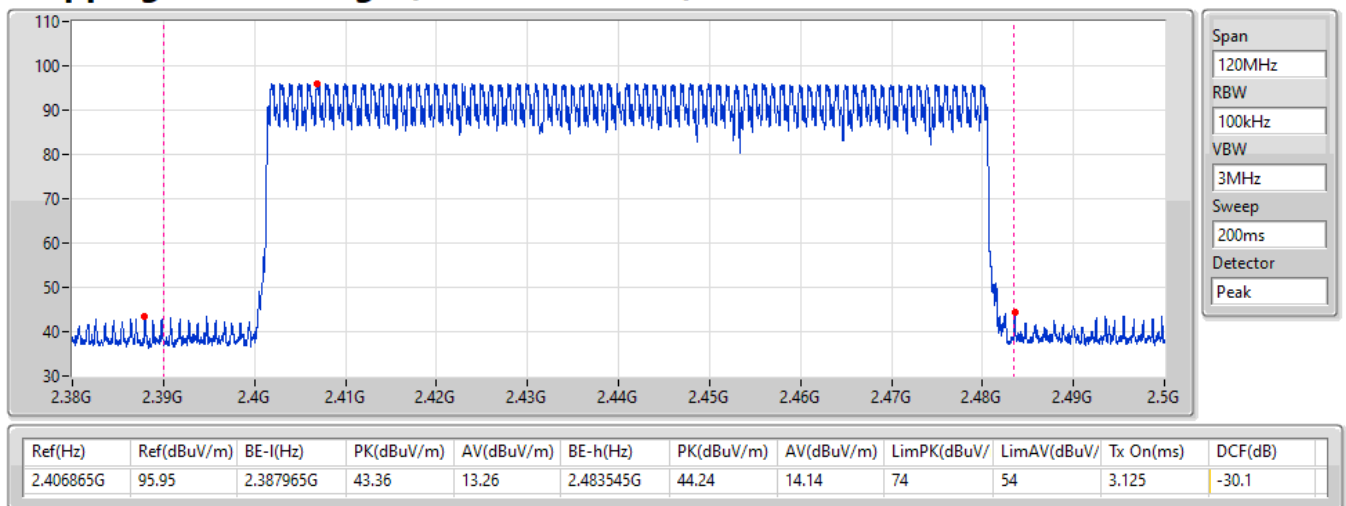


BT-EDR(2Mbps)

2440MHz

Hopping Ch Bandedge (Restricted Band)

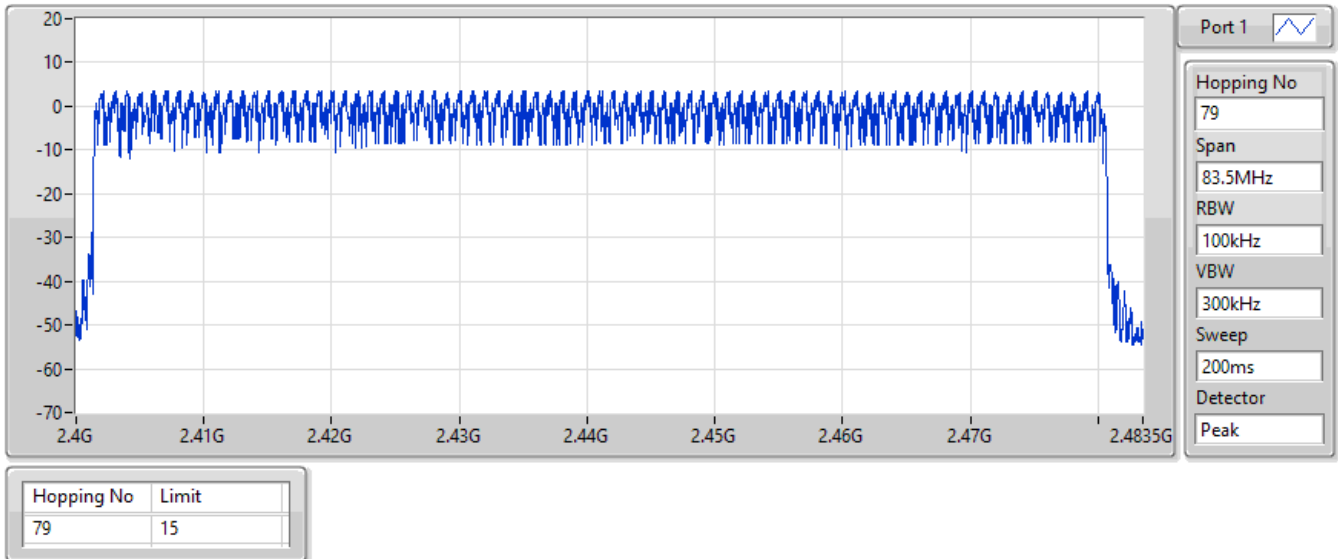
03/11/2021



BT-EDR(3Mbps) 2440MHz

Hopping-FS

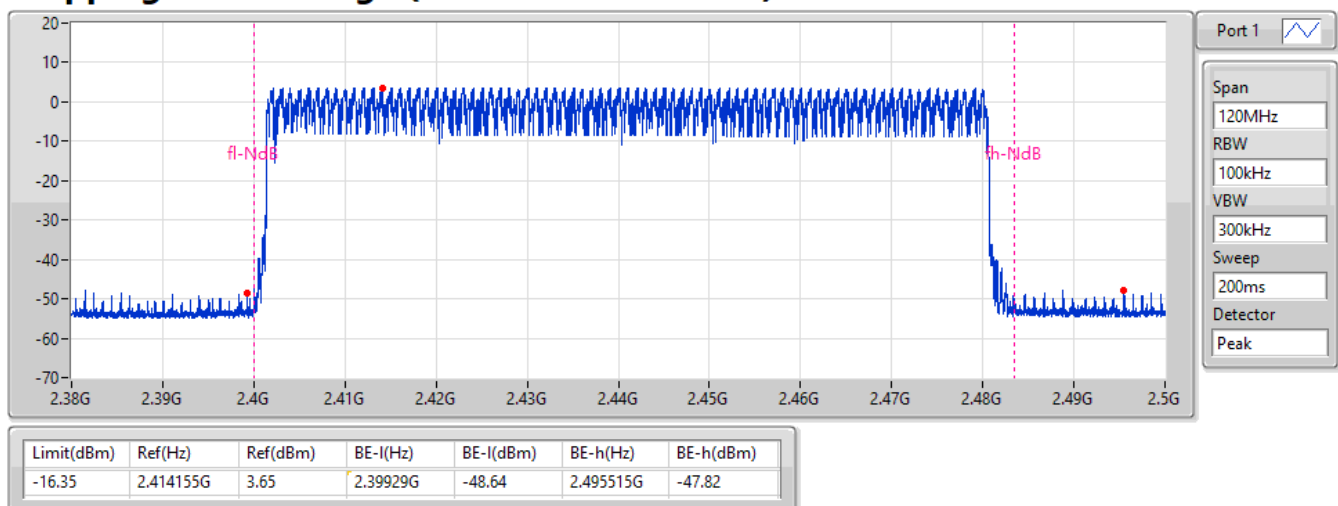
03/11/2021



BT-EDR(3Mbps) 2440MHz

Hopping Ch Bandedge (Non-restricted Band)

03/11/2021

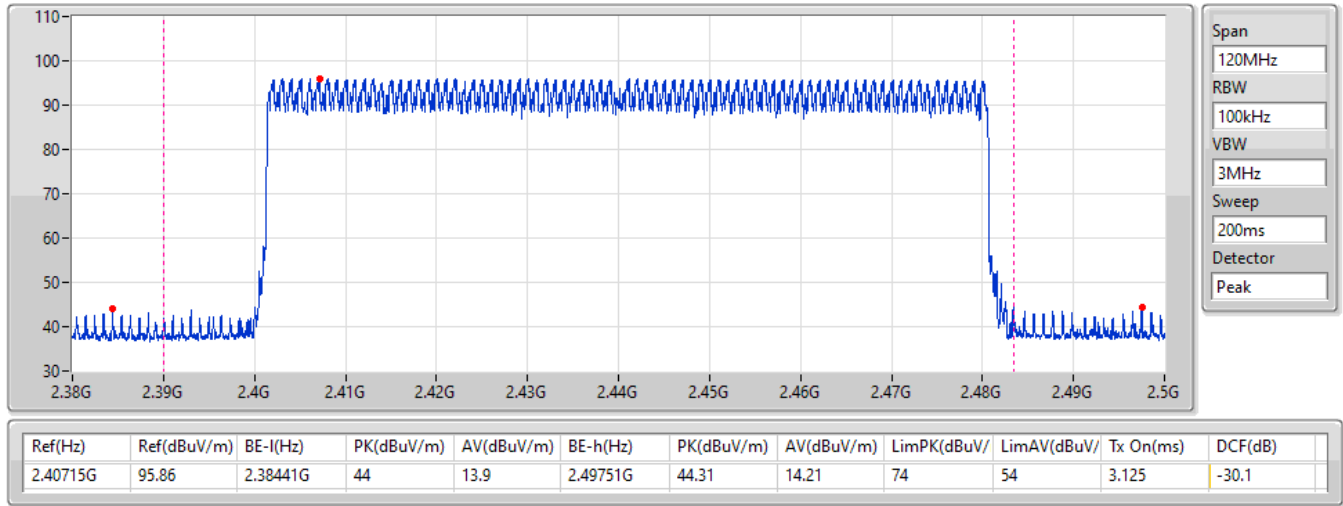


BT-EDR(3Mbps)

2440MHz

Hopping Ch Bandedge (Restricted Band)

03/11/2021





Summary

Mode	Max-Dwell (s)
2.4-2.4835GHz	-
BT-BR(1Mbps)	309.37985m_DH5
BT-EDR(2Mbps)	309.32655m_DH5
BT-EDR(3Mbps)	309.69965m_DH5

Result

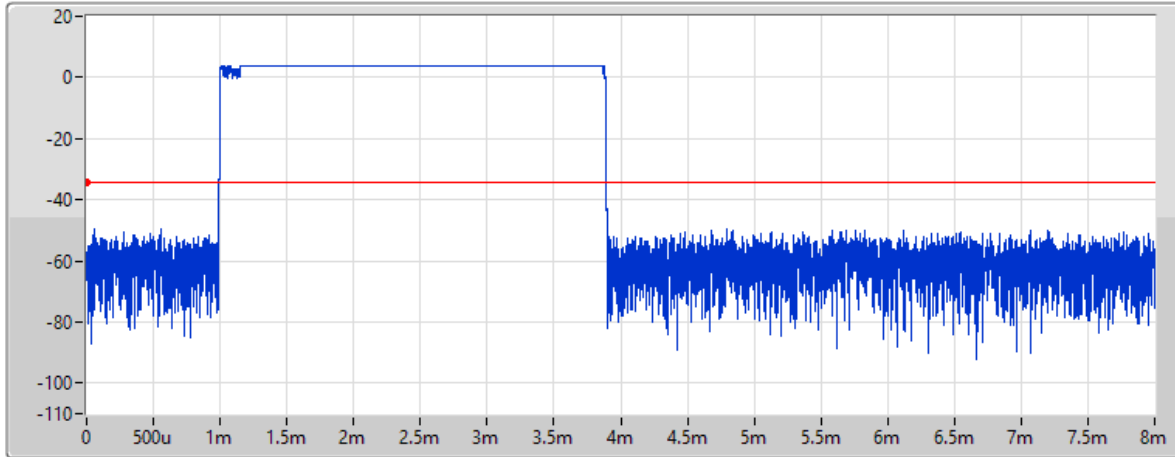
Mode	Result	Period (s)	Dwell (s)	Limit (s)	Tx On (s)
BT-BR(1Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	309.37985m_DH5	400m	2.90225m
BT-EDR(2Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	309.32655m_DH5	400m	2.90175m
BT-EDR(3Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	309.69965m_DH5	400m	2.90525m

BT-BR(1Mbps)

2440MHz

Dwell-FS

03/11/2021



Port 1 

Ch Freq
2.44GHz

RBW
300kHz

VBW
1MHz

Sweep Time
8ms

TX Time
2.90225ms

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	309.37985m_DH5	400m	2.90225m

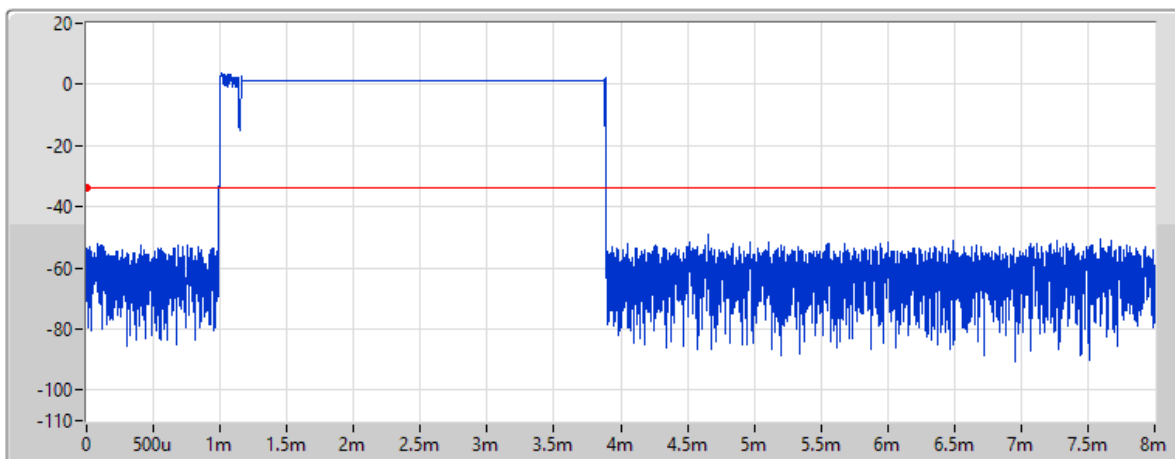
DH5

BT-EDR(2Mbps)

2440MHz

Dwell-FS

03/11/2021



Port 1 

Ch Freq
2.44GHz

RBW
300kHz

VBW
1MHz

Sweep Time
8ms

TX Time
2.90175ms

Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	309.32655m_DH5	400m	2.90175m

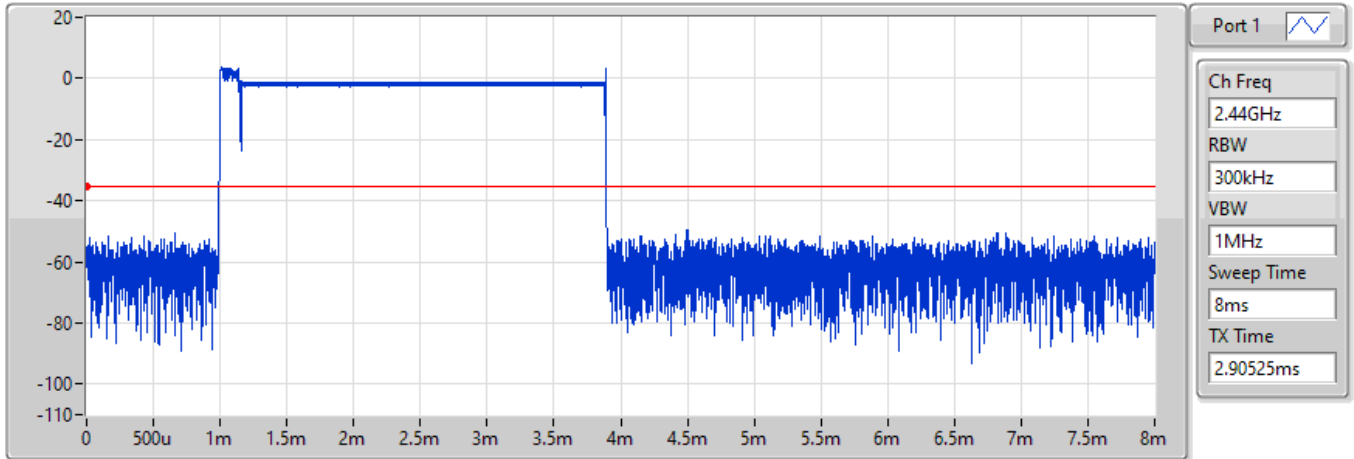
DH5

BT-EDR(3Mbps)

2440MHz

Dwell-FS

03/11/2021



Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	309.69965m_DH5	400m	2.90525m

DH5

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	2.47999G	2.56	-17.44	2.14265G	-52.97	2.39822G	-53.45	2.4G	-56.04	2.488G	-50.81	16.78315G	-46.95	1
BT-EDR(2Mbps)	Pass	2.43987G	3.65	-16.35	866.6M	-53.61	2.39815G	-53.06	2.4835G	-54.78	2.50244G	-48.58	16.7466G	-47.04	1
BT-EDR(3Mbps)	Pass	2.40217G	3.23	-16.77	951.2M	-53.32	2.39854G	-49.99	2.4G	-48.52	2.50149G	-51.88	16.85064G	-47.57	1

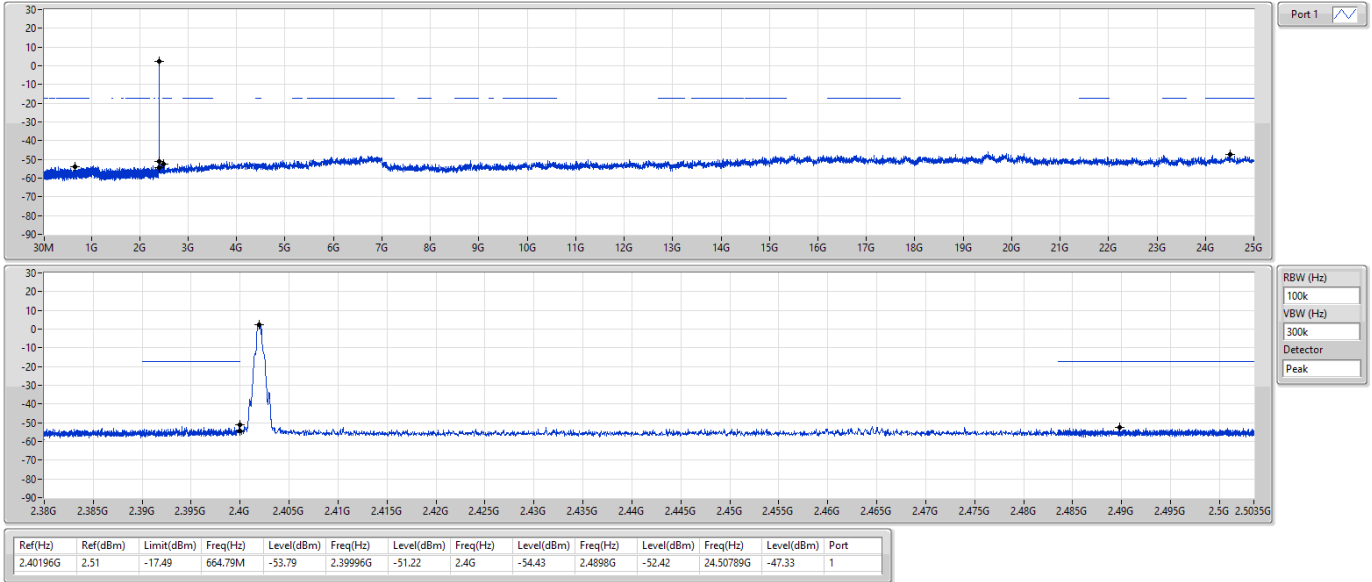
Result

Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40196G	2.51	-17.49	664.79M	-53.79	2.39996G	-51.22	2.4G	-54.43	2.4898G	-52.42	24.50789G	-47.33	1
2440MHz	Pass	2.44117G	2.56	-17.44	2.10123G	-53.25	2.39567G	-53.37	2.4835G	-55.48	2.48604G	-52.64	16.47664G	-47.43	1
2480MHz	Pass	2.47999G	2.56	-17.44	2.14265G	-52.97	2.39822G	-53.45	2.4G	-56.04	2.488G	-50.81	16.78315G	-46.95	1
BT-EDR(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40184G	3.70	-16.30	856.32M	-53.31	2.3999G	-51.29	2.4G	-54.21	2.49921G	-52.25	24.9297G	-47.06	1
2440MHz	Pass	2.43987G	3.65	-16.35	866.6M	-53.61	2.39815G	-53.06	2.4835G	-54.78	2.50244G	-48.58	16.7466G	-47.04	1
2480MHz	Pass	2.47987G	3.47	-16.53	2.12973G	-53.45	2.39351G	-52.75	2.4G	-54.74	2.49664G	-52.21	16.24605G	-46.66	1
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40217G	3.23	-16.77	951.2M	-53.32	2.39854G	-49.99	2.4G	-48.52	2.50149G	-51.88	16.85064G	-47.57	1
2440MHz	Pass	2.44016G	3.57	-16.43	751.16M	-51.70	2.39334G	-52.12	2.4835G	-55.53	2.50115G	-48.35	16.76909G	-47.34	1
2480MHz	Pass	2.48016G	3.36	-16.64	81.41M	-53.49	2.39282G	-52.89	2.4835G	-53.36	2.48355G	-50.71	16.72129G	-47.32	1

BT-BR(1Mbps)

CSENdB-FS

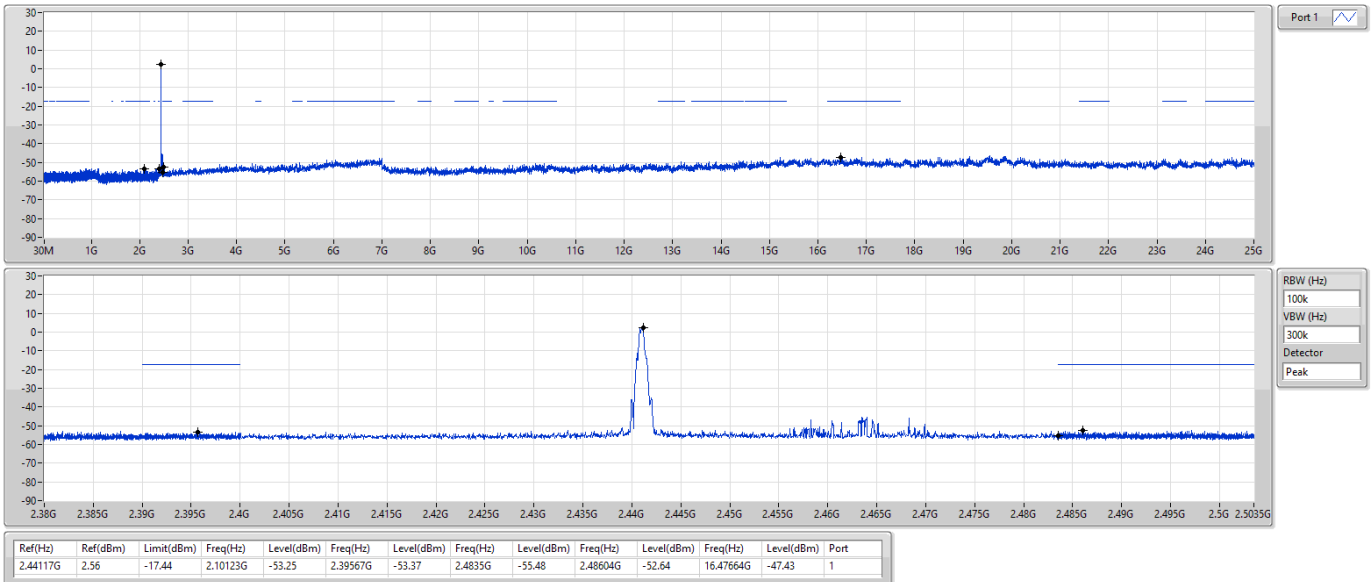
2402MHz



BT-BR(1Mbps)

CSENdB-FS

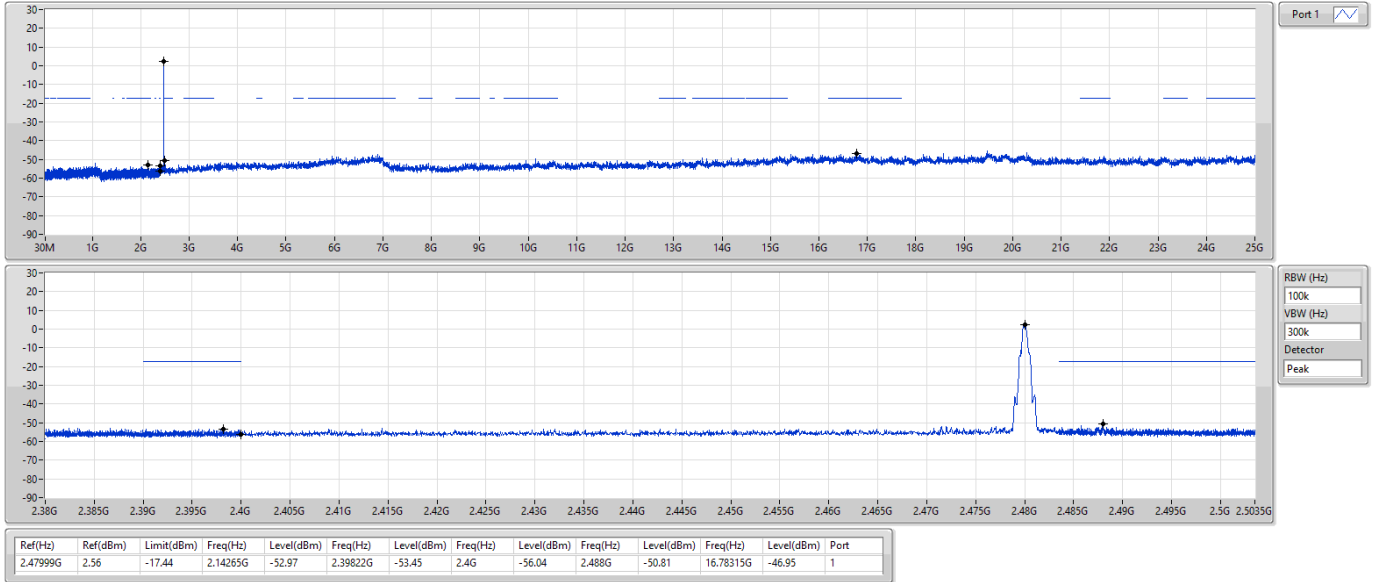
2440MHz



BT-BR(1Mbps)

CSEndB-FS

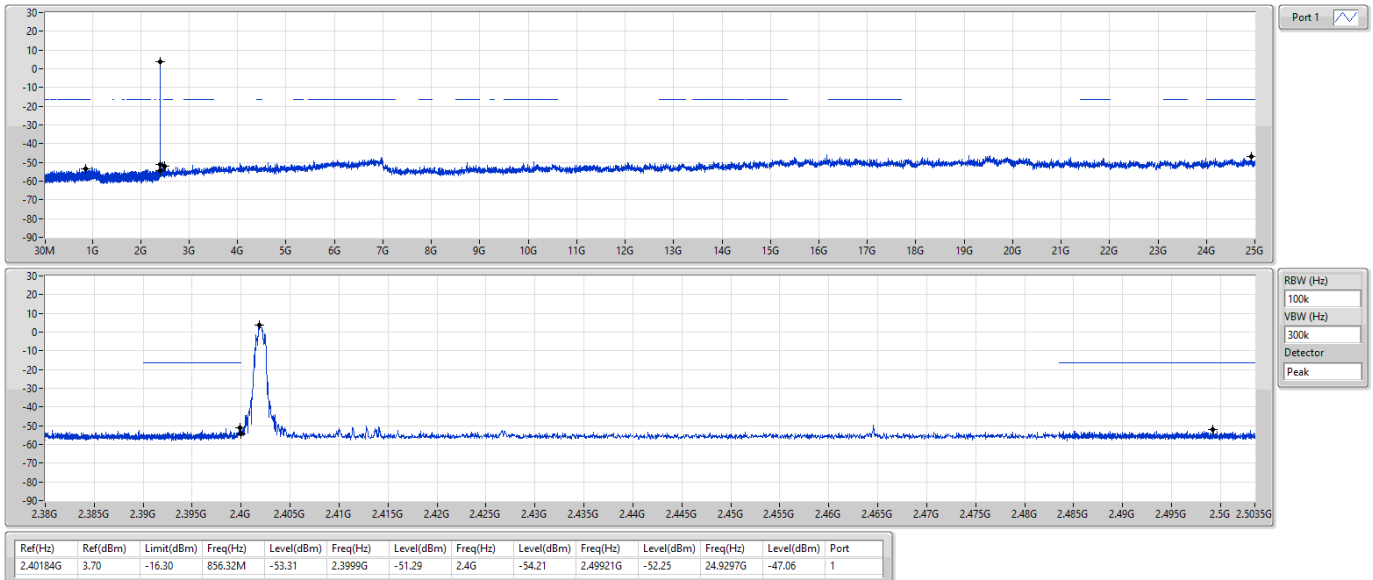
2480MHz



BT-EDR(2Mbps)

CSEndB-FS

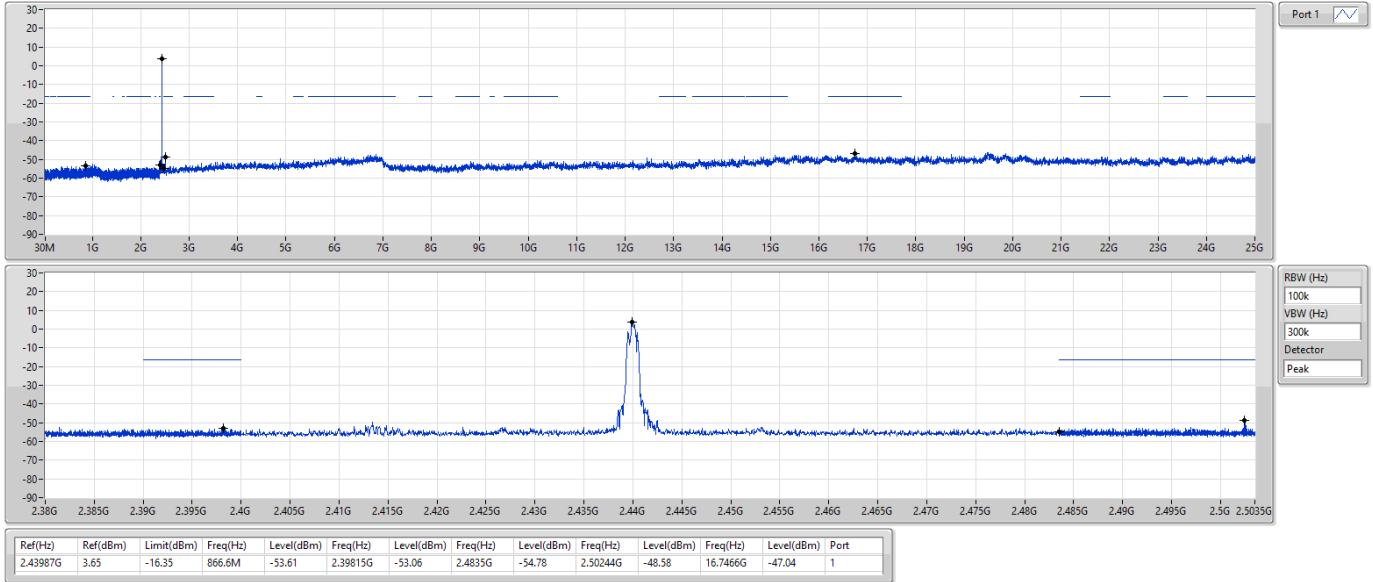
2402MHz



BT-EDR(2Mbps)

CSEndB-FS

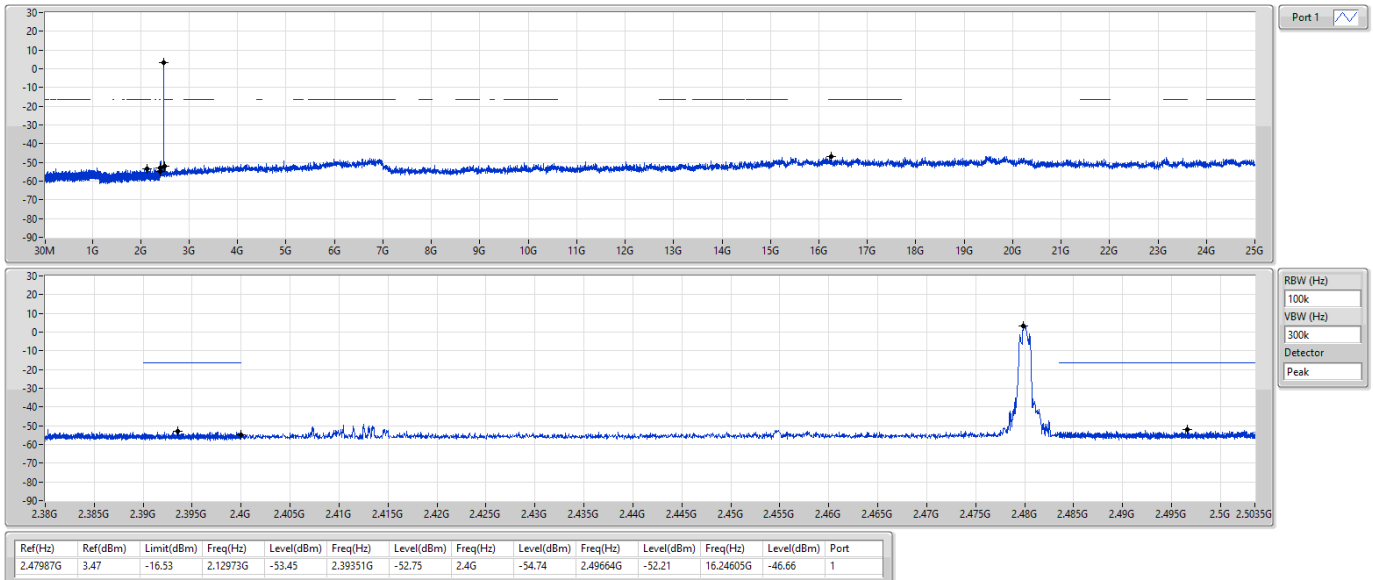
2440MHz



BT-EDR(2Mbps)

CSEndB-FS

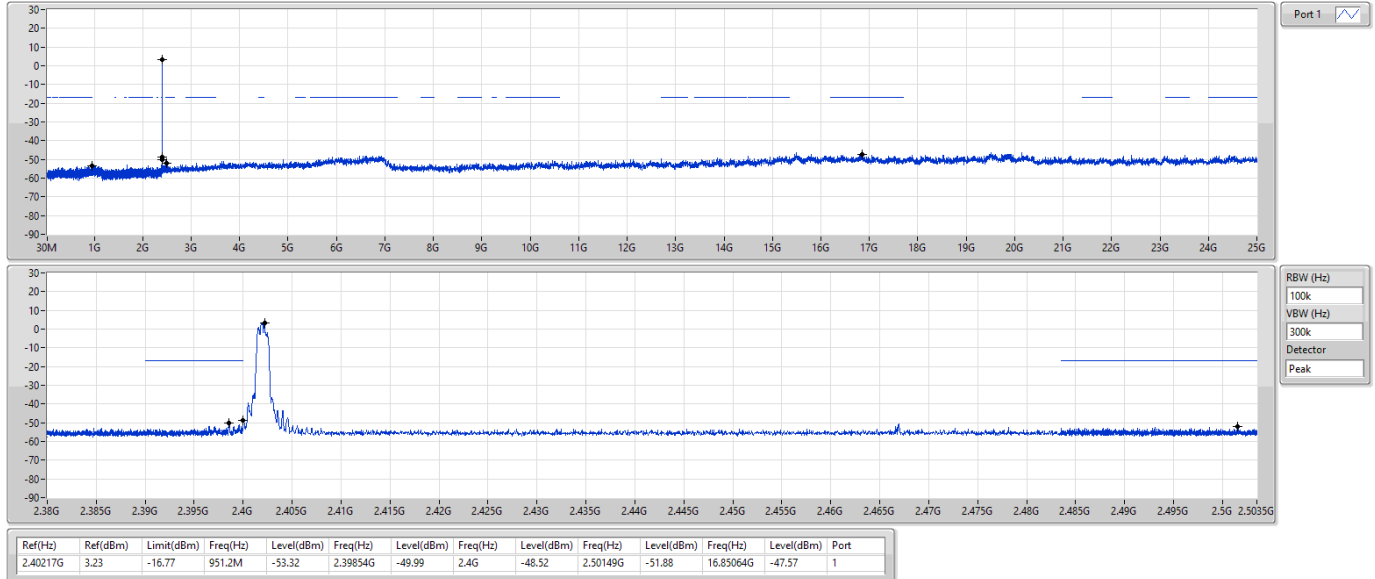
2480MHz



BT-EDR(3Mbps)

CSEndB-FS

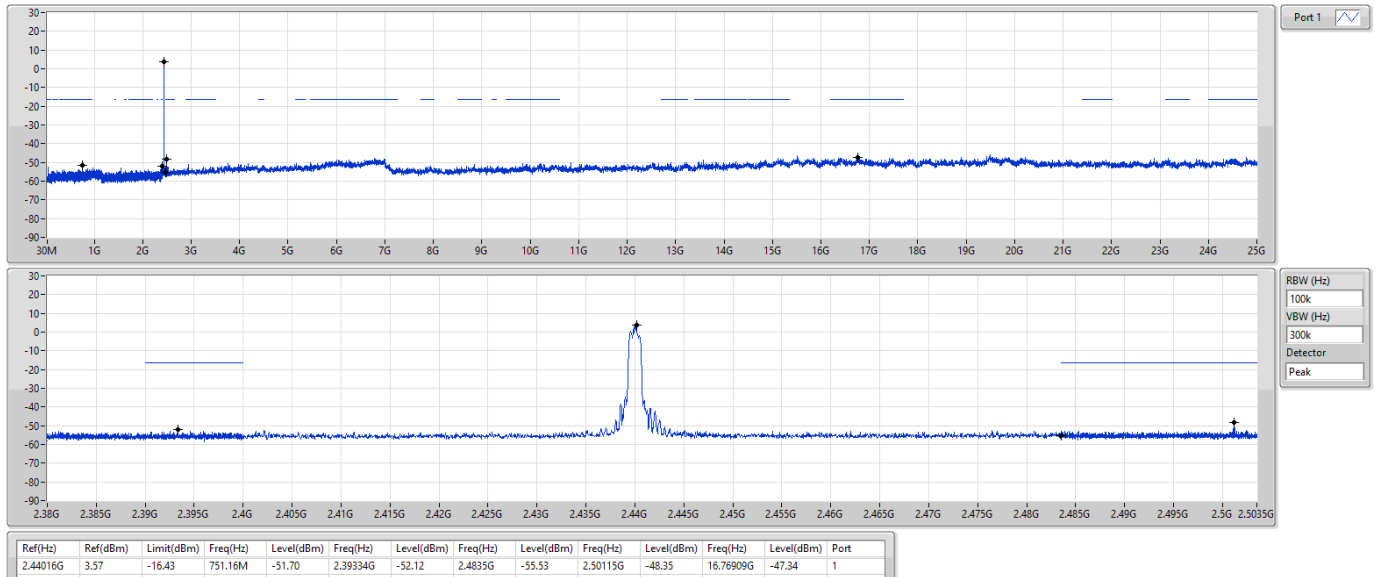
2402MHz



BT-EDR(3Mbps)

CSEndB-FS

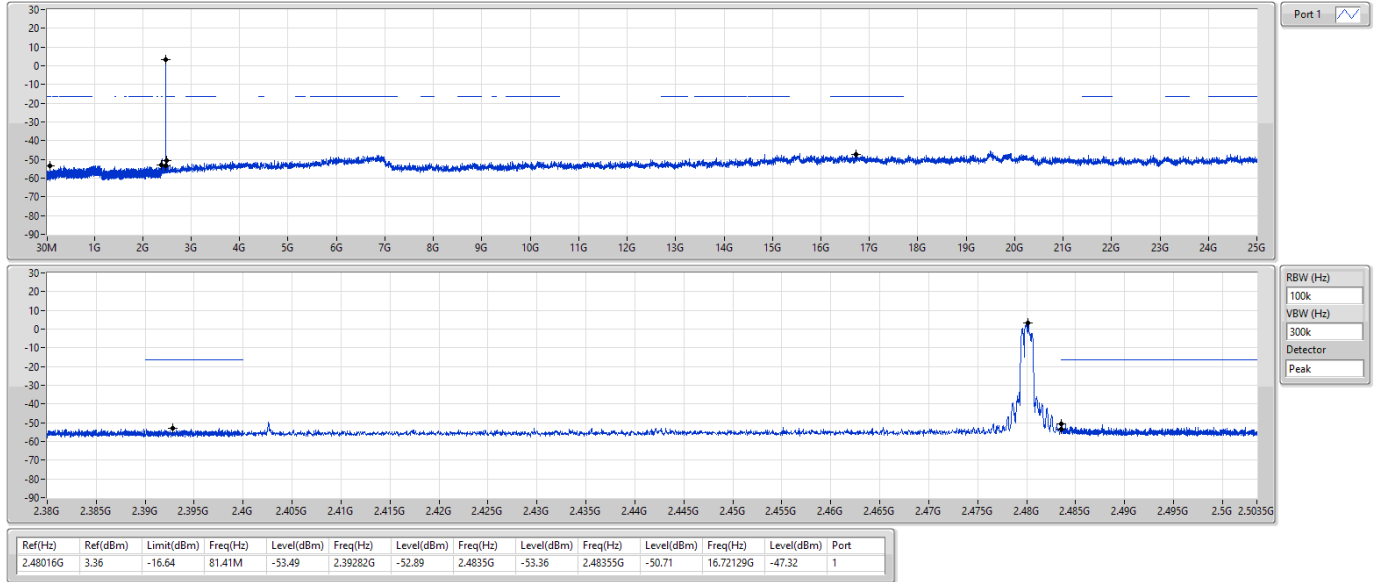
2440MHz



BT-EDR(3Mbps)

CSEndB-FS

2480MHz

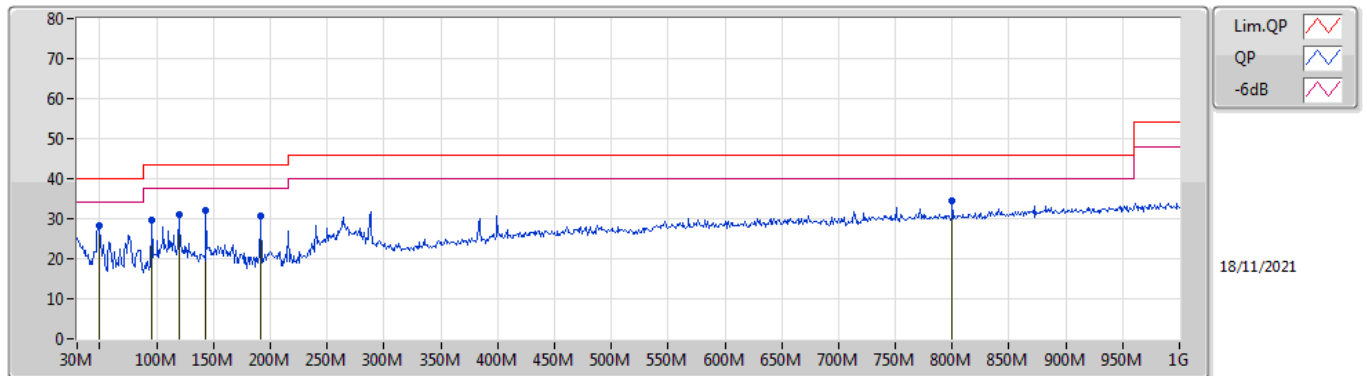




Summary

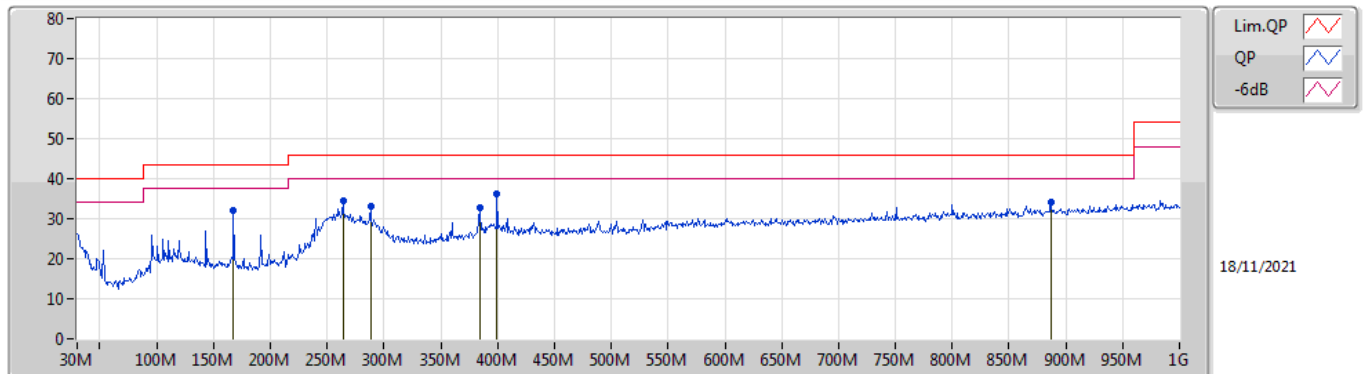
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	PK	399.57M	36.14	46.00	-9.86	Horizontal

Test Mode 1



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB/m)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV/m)	AF (dB/m)	CL (dB)	PA (dB)
PK	49.4M	28.38	40.00	-11.62	-16.62	3	Vertical	260	1.00	-	45.00	14.14	1.00	31.76
PK	95.96M	29.63	43.50	-13.87	-14.48	3	Vertical	89	1.25	-	44.11	15.91	1.50	31.89
PK	119.24M	31.11	43.50	-12.39	-12.32	3	Vertical	213	1.00	-	43.43	18.02	1.60	31.94
PK	143.49M	32.21	43.50	-11.29	-13.50	3	Vertical	161	1.00	"Worst"	45.71	16.64	1.82	31.96
PK	191.99M	30.75	43.50	-12.75	-15.04	3	Vertical	246	1.00	-	45.79	14.84	2.10	31.98
PK	800.18M	34.40	46.00	-11.60	-2.62	3	Vertical	136	1.50	-	37.02	25.57	4.50	32.69

Test Mode 1



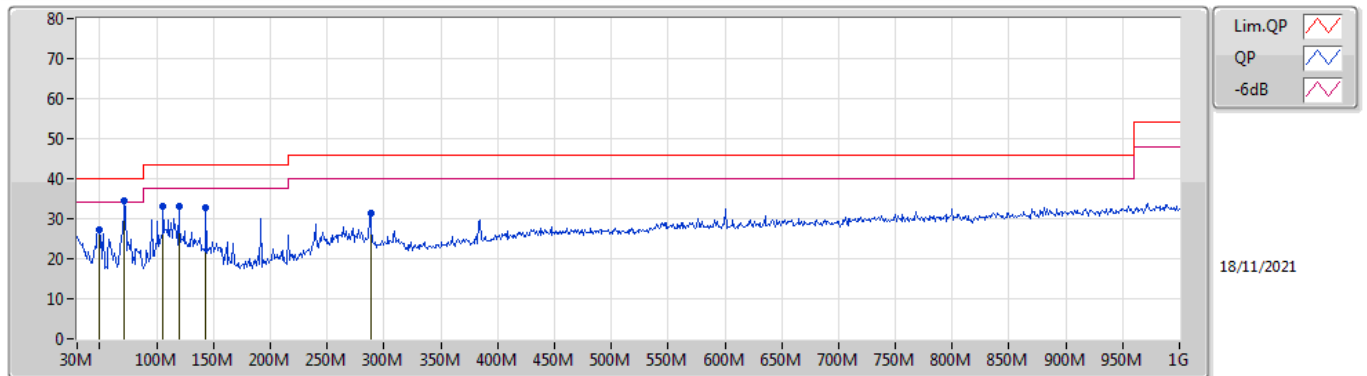
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB/m)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV/m)	AF (dB/m)	CL (dB)	PA (dB)
PK	167.74M	32.04	43.50	-11.46	-14.46	3	Horizontal	167	1.50	-	46.50	15.52	1.98	31.96
PK	263.77M	34.45	46.00	-11.55	-10.38	3	Horizontal	160	1.00	-	44.83	19.17	2.48	32.03
PK	288.02M	33.20	46.00	-12.80	-10.66	3	Horizontal	134	1.00	-	43.86	18.77	2.63	32.06
PK	384.05M	32.78	46.00	-13.22	-8.10	3	Horizontal	358	1.00	-	40.88	21.02	3.04	32.16
PK	399.57M	36.14	46.00	-9.86	-7.49	3	Horizontal	42	1.25	"Worst"	43.63	21.60	3.10	32.19
PK	886.51M	34.27	46.00	-11.73	-1.54	3	Horizontal	111	1.25	-	35.81	26.19	4.92	32.65



Summary

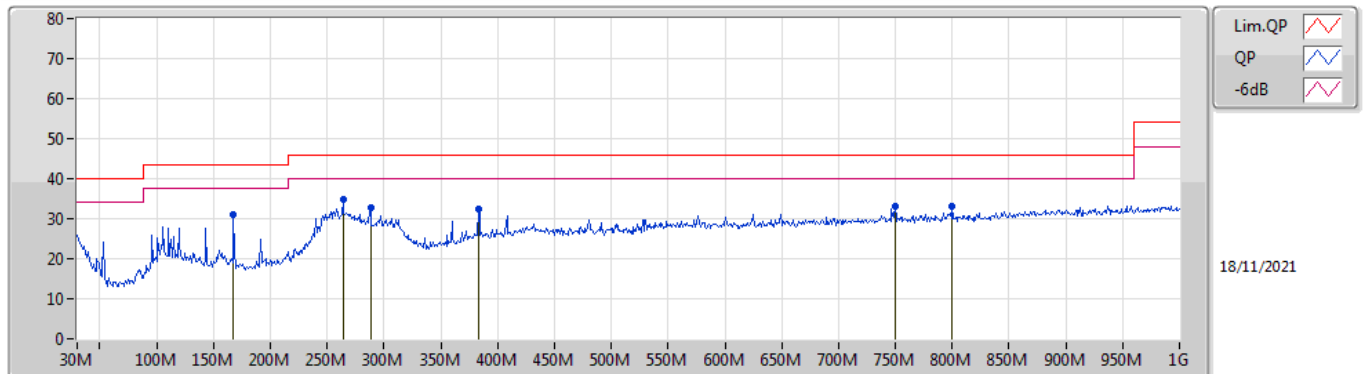
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	PK	71.71M	34.33	40.00	-5.67	Vertical

Test Mode 1



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB/m)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV/m)	AF (dB/m)	CL (dB)	PA (dB)
PK	49.4M	27.40	40.00	-12.60	-16.62	3	Vertical	253	1.00	-	44.02	14.14	1.00	31.76
PK	71.71M	34.33	40.00	-5.67	-18.36	3	Vertical	319	1.50	"Worst"	52.69	12.23	1.30	31.89
PK	105.66M	33.15	43.50	-10.35	-13.12	3	Vertical	227	1.25	-	46.27	17.24	1.53	31.89
PK	119.24M	33.00	43.50	-10.50	-12.32	3	Vertical	194	1.00	-	45.32	18.02	1.60	31.94
PK	143.49M	32.65	43.50	-10.85	-13.50	3	Vertical	152	1.00	-	46.15	16.64	1.82	31.96
PK	288.02M	31.43	46.00	-14.57	-10.66	3	Vertical	297	1.00	-	42.09	18.77	2.63	32.06

Test Mode 1



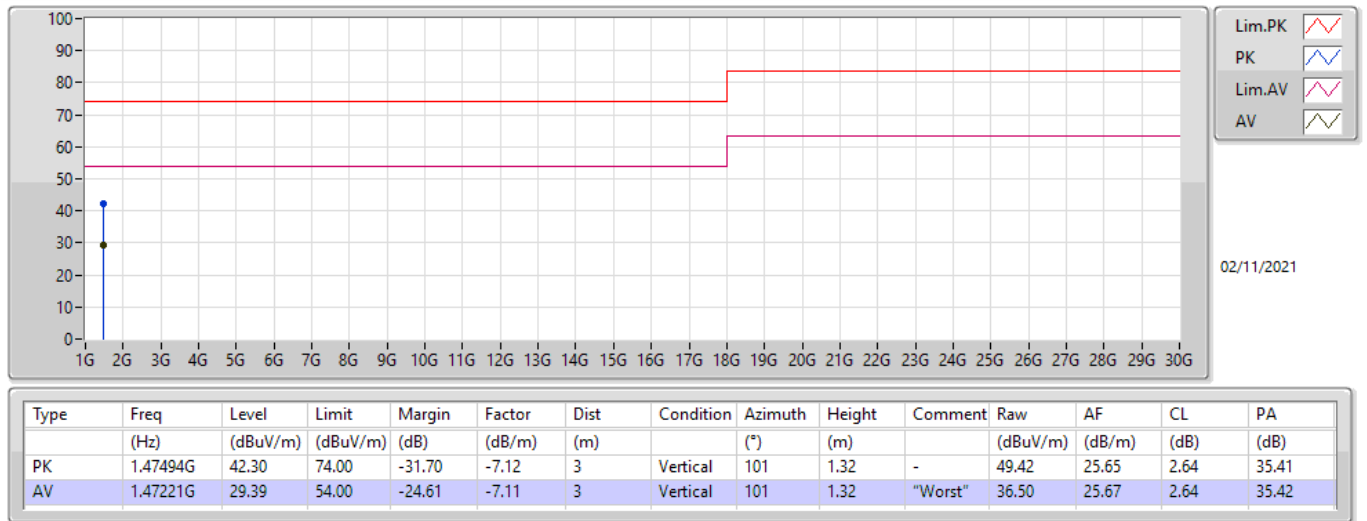
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB/m)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV/m)	AF (dB/m)	CL (dB)	PA (dB)
PK	167.74M	31.03	43.50	-12.47	-14.46	3	Horizontal	167	1.50	-	45.49	15.52	1.98	31.96
PK	263.77M	34.85	46.00	-11.15	-10.38	3	Horizontal	20	1.00	"Worst"	45.23	19.17	2.48	32.03
PK	288.02M	32.77	46.00	-13.23	-10.66	3	Horizontal	161	1.25	-	43.43	18.77	2.63	32.06
PK	383.08M	32.44	46.00	-13.56	-8.15	3	Horizontal	12	1.00	-	40.59	20.98	3.03	32.16
PK	749.74M	33.04	46.00	-12.96	-3.23	3	Horizontal	125	1.25	-	36.27	25.18	4.30	32.71
PK	800.18M	33.01	46.00	-12.99	-2.62	3	Horizontal	185	1.25	-	35.63	25.57	4.50	32.69

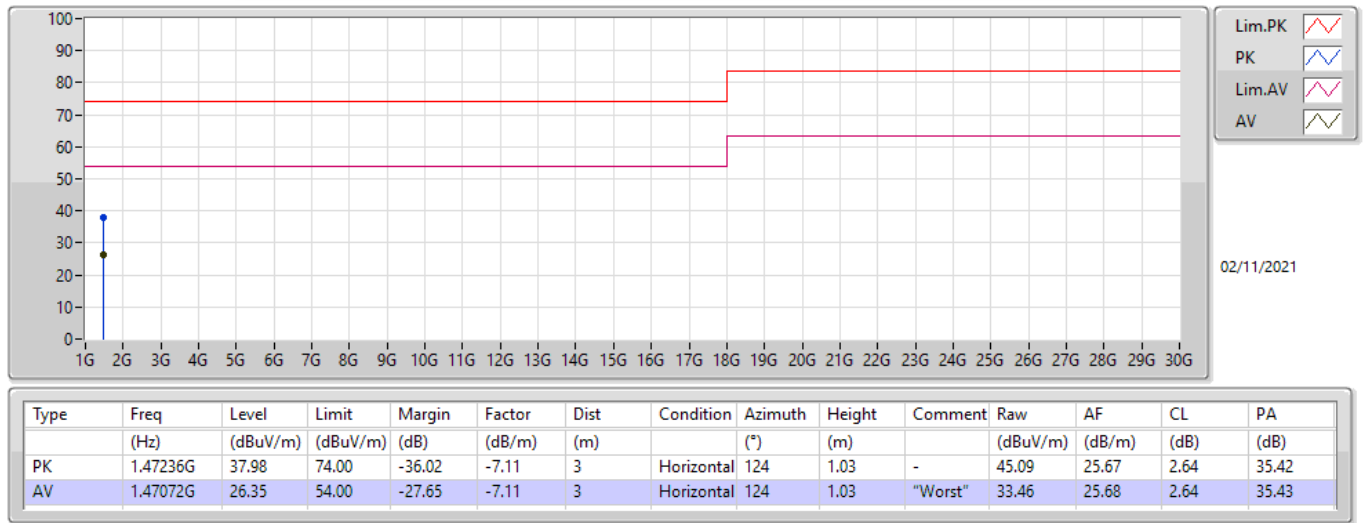


Radiated Emissions above 1GHz_Unintentional 1GHz~5thHarmonic ***Appendix G.3***

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	AV	1.47221G	29.39	54.00	-24.61	Vertical





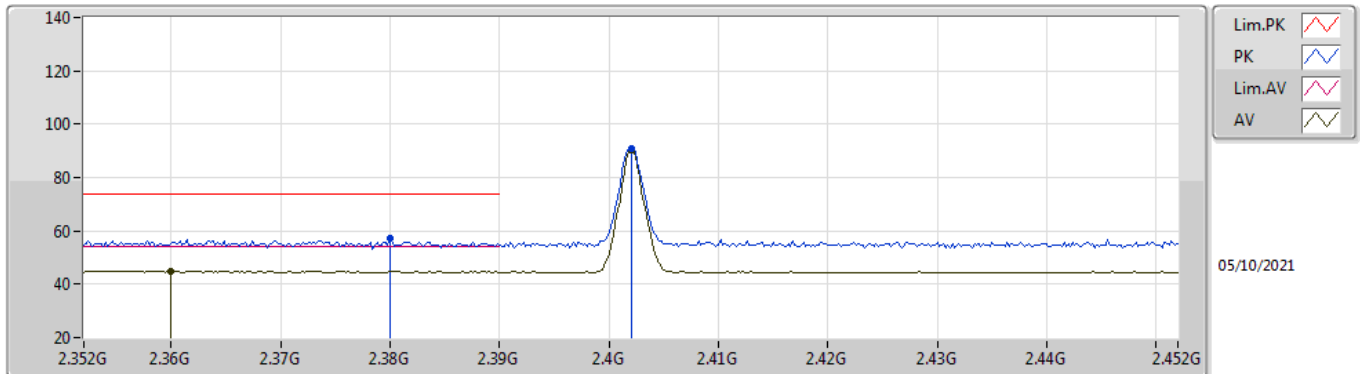


Summary

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	46.66	54.00	-7.34	3	Horizontal	74	2.34	-

BT-BR(1Mbps)

2402MHz_TX

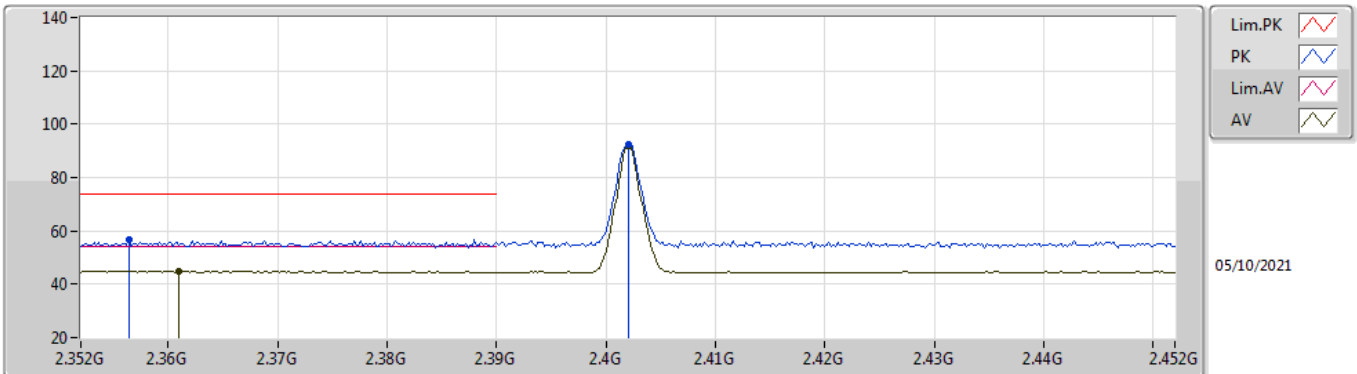


EUT X_1TX
Setting Default
03-D-K-5

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	2.38G	57.02	74.00	-16.98	24.99	3	Vertical	104	1.34	-	28.34	3.69	-	
AV	2.36G	44.86	54.00	-9.14	12.80	3	Vertical	104	1.34	-	28.38	3.68	-	
PK	2.402G	90.65	Inf	-Inf	58.65	3	Vertical	104	1.34	-	28.30	3.70	-	
AV	2.402G	90.09	Inf	-Inf	58.09	3	Vertical	104	1.34	-	28.30	3.70	-	

BT-BR(1Mbps)

2402MHz_TX

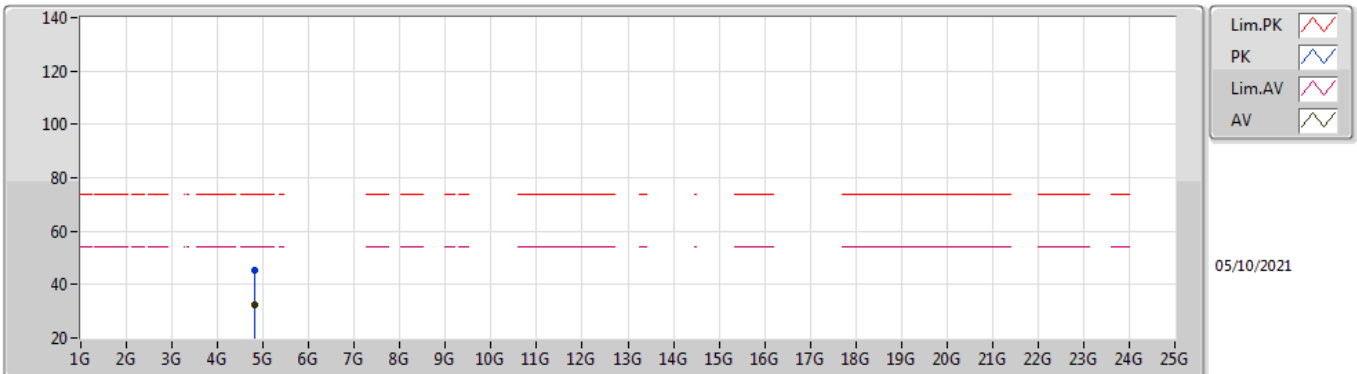


EUT X_1TX
Setting Default
03-D-K-5

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	2.3564G	56.69	74.00	-17.31	24.62	3	Horizontal	260	2.32	-	28.39	3.68	-	
AV	2.361G	44.77	54.00	-9.23	12.71	3	Horizontal	260	2.32	-	28.38	3.68	-	
PK	2.402G	92.24	Inf	-Inf	60.24	3	Horizontal	260	2.32	-	28.30	3.70	-	
AV	2.402G	91.72	Inf	-Inf	59.72	3	Horizontal	260	2.32	-	28.30	3.70	-	

BT-BR(1Mbps)

2402MHz_TX

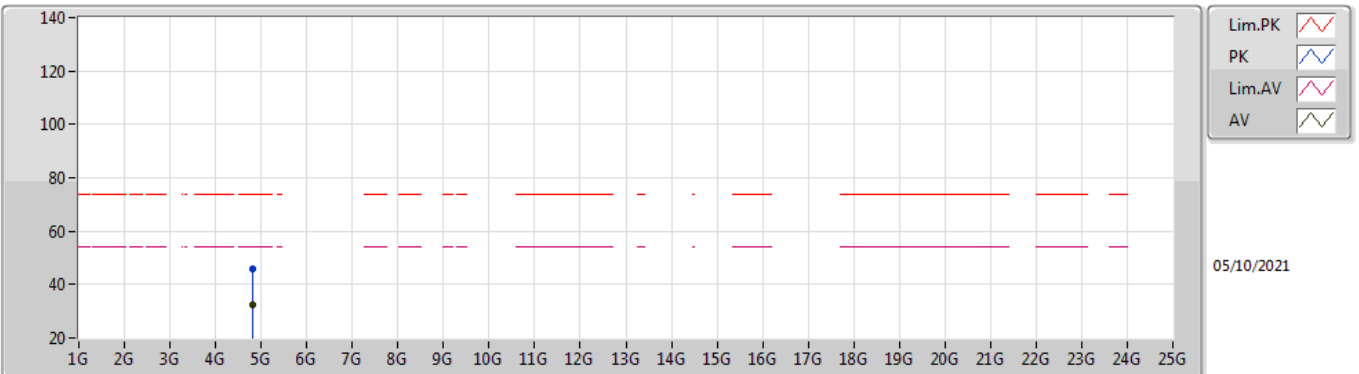


EUT X_1TX
Setting Default
03-D-K-5

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	4.80591G	45.60	74.00	-28.40	41.13	3	Vertical	183	2.59	-	33.40	6.50	35.43	
AV	4.80476G	32.67	54.00	-21.33	28.20	3	Vertical	183	2.59	-	33.40	6.50	35.43	

BT-BR(1Mbps)

2402MHz_TX

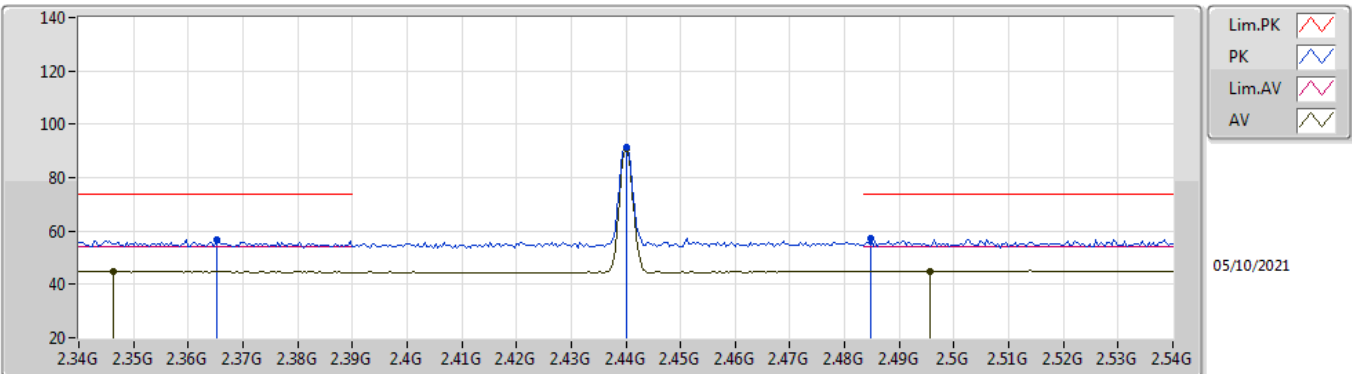


EUT X_1TX
Setting Default
03-D-K-5

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	4.80531G	45.94	74.00	-28.06	41.47	3	Horizontal	357	2.90	-	33.40	6.50	35.43	
AV	4.80209G	32.63	54.00	-21.37	28.16	3	Horizontal	357	2.90	-	33.40	6.50	35.43	

BT-BR(1Mbps)

2440MHz_TX

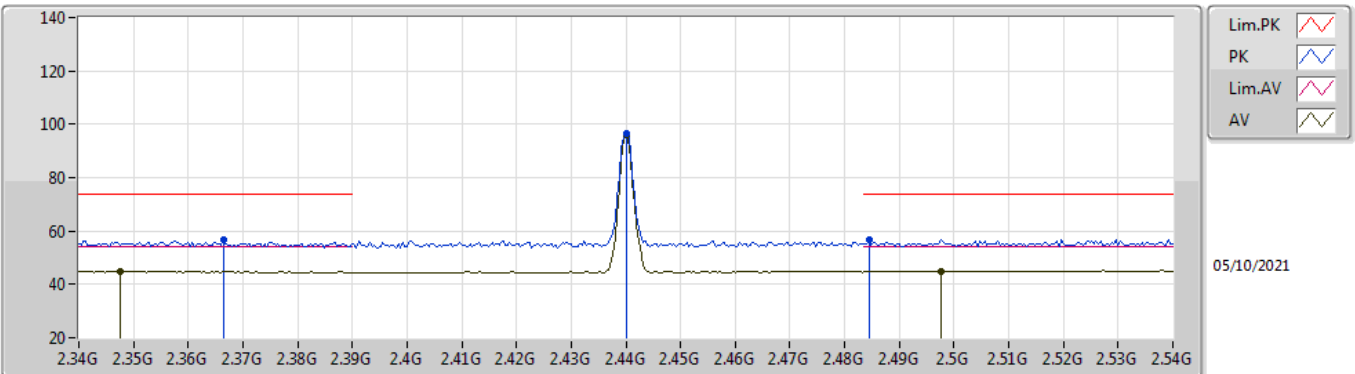


EUT X_1TX
Setting Default
03-D-K-5

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	2.3652G	56.69	74.00	-17.31	24.64	3	Vertical	85	1.41	-	28.37	3.68	-	
AV	2.3464G	44.84	54.00	-9.16	12.79	3	Vertical	85	1.41	-	28.38	3.67	-	
PK	2.44G	91.53	Inf	-Inf	59.41	3	Vertical	85	1.41	-	28.38	3.74	-	
AV	2.44G	90.97	Inf	-Inf	58.85	3	Vertical	85	1.41	-	28.38	3.74	-	
PK	2.4848G	57.43	74.00	-16.57	25.04	3	Vertical	85	1.41	-	28.61	3.78	-	
AV	2.4956G	44.97	54.00	-9.03	12.50	3	Vertical	85	1.41	-	28.67	3.80	-	

BT-BR(1Mbps)

2440MHz_TX

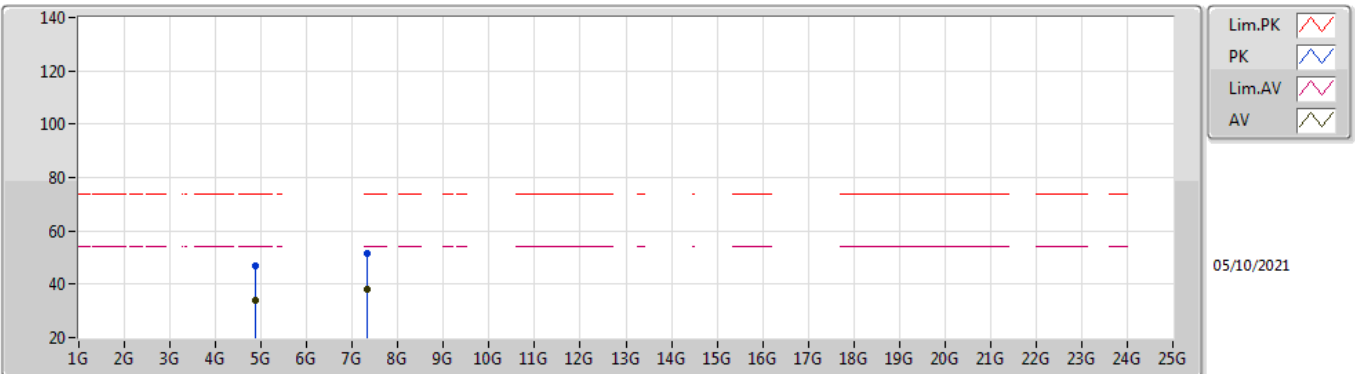


EUT X_1TX
Setting Default
03-D-K-5

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	2.3664G	56.69	74.00	-17.31	24.64	3	Horizontal	239	2.69	-	28.37	3.68	-	
AV	2.3476G	44.92	54.00	-9.08	12.86	3	Horizontal	239	2.69	-	28.39	3.67	-	
PK	2.44G	96.38	Inf	-Inf	64.26	3	Horizontal	239	2.69	-	28.38	3.74	-	
AV	2.44G	95.83	Inf	-Inf	63.71	3	Horizontal	239	2.69	-	28.38	3.74	-	
PK	2.4844G	56.56	74.00	-17.44	24.17	3	Horizontal	239	2.69	-	28.61	3.78	-	
AV	2.4976G	44.96	54.00	-9.04	12.47	3	Horizontal	239	2.69	-	28.69	3.80	-	

BT-BR(1Mbps)

2440MHz_TX

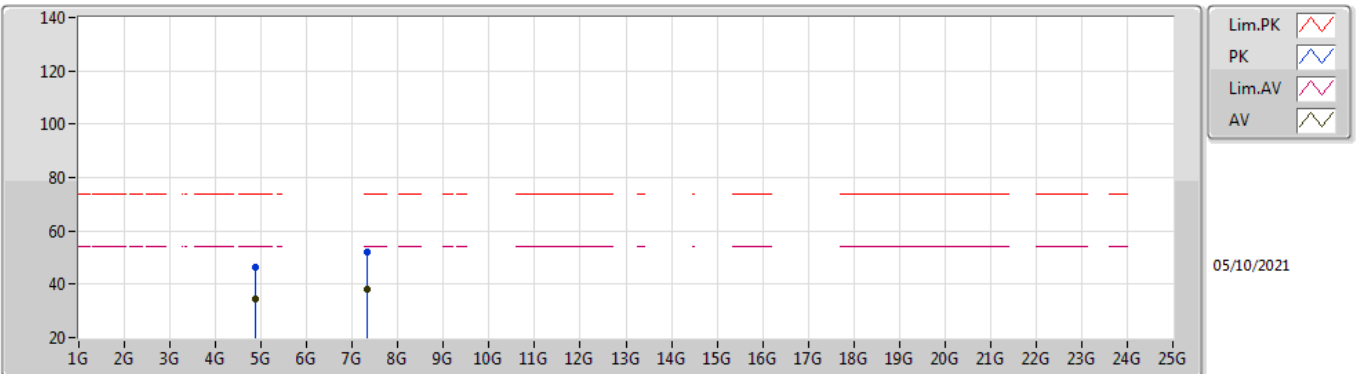


EUT X_1TX
Setting Default
03-D-K-5

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	4.87976G	46.80	74.00	-27.20	42.17	3	Vertical	157	1.80	-	33.52	6.50	35.39
AV	4.87992G	34.05	54.00	-19.95	29.42	3	Vertical	157	1.80	-	33.52	6.50	35.39
PK	7.32193G	51.46	74.00	-22.54	41.97	3	Vertical	69	2.21	-	37.00	8.06	35.57
AV	7.32205G	37.94	54.00	-16.06	28.45	3	Vertical	69	2.21	-	37.00	8.06	35.57

BT-BR(1Mbps)

2440MHz_TX

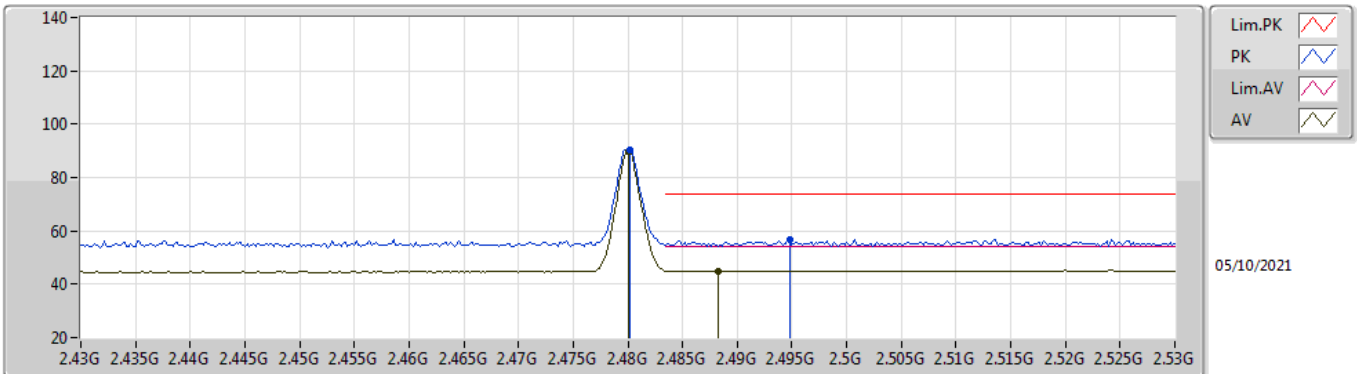


EUT X_1TX
Setting Default
03-D-K-5

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	4.88012G	46.61	74.00	-27.39	41.98	3	Horizontal	44	1.84	-	33.52	6.50	35.39	
AV	4.87991G	34.34	54.00	-19.66	29.71	3	Horizontal	44	1.84	-	33.52	6.50	35.39	
PK	7.32235G	51.83	74.00	-22.17	42.34	3	Horizontal	218	2.93	-	37.00	8.06	35.57	
AV	7.32226G	38.08	54.00	-15.92	28.59	3	Horizontal	218	2.93	-	37.00	8.06	35.57	

BT-BR(1Mbps)

2480MHz_TX

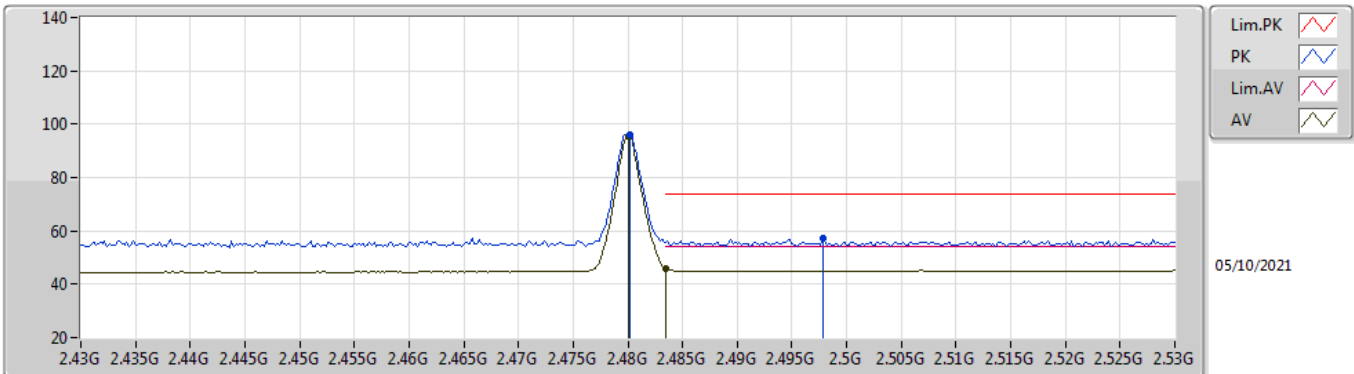


EUT X_1TX
Setting Default
03-D-K-5

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	2.4802G	90.56	Inf	-Inf	58.20	3	Vertical	61	1.71	-	28.58	3.78	-
AV	2.48G	90.00	Inf	-Inf	57.64	3	Vertical	61	1.71	-	28.58	3.78	-
PK	2.4948G	56.74	74.00	-17.26	24.28	3	Vertical	61	1.71	-	28.67	3.79	-
AV	2.4882G	45.03	54.00	-8.97	12.61	3	Vertical	61	1.71	-	28.63	3.79	-

BT-BR(1Mbps)

2480MHz_TX

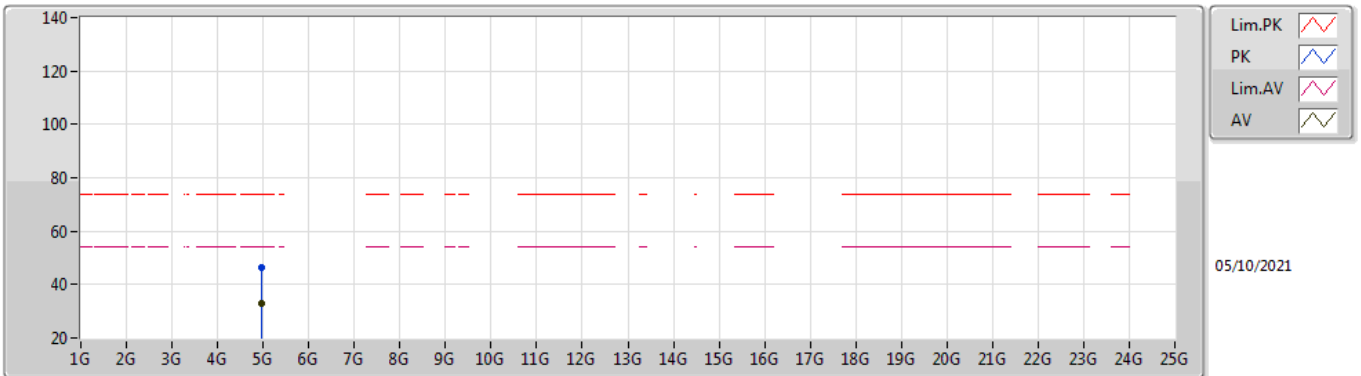


EUT X_1TX
Setting Default
03-D-K-5

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	2.4802G	96.21	Inf	-Inf	63.85	3	Horizontal	236	2.65	-	28.58	3.78	-	
AV	2.48G	95.65	Inf	-Inf	63.29	3	Horizontal	236	2.65	-	28.58	3.78	-	
PK	2.4978G	57.38	74.00	-16.62	24.89	3	Horizontal	236	2.65	-	28.69	3.80	-	
AV	2.4835G	46.00	54.00	-8.00	13.62	3	Horizontal	236	2.65	-	28.60	3.78	-	

BT-BR(1Mbps)

2480MHz_TX

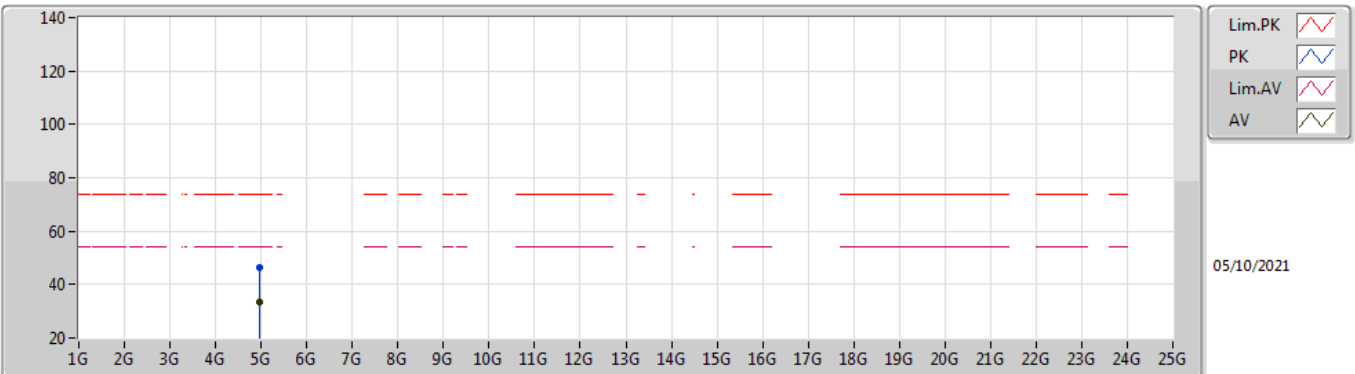


EUT X_1TX
Setting Default
03-D-K-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.95916G	46.48	74.00	-27.52	41.61	3	Vertical	246	1.93	-	33.72	6.50	35.35
AV	4.95961G	33.17	54.00	-20.83	28.30	3	Vertical	246	1.93	-	33.72	6.50	35.35

BT-BR(1Mbps)

2480MHz_TX

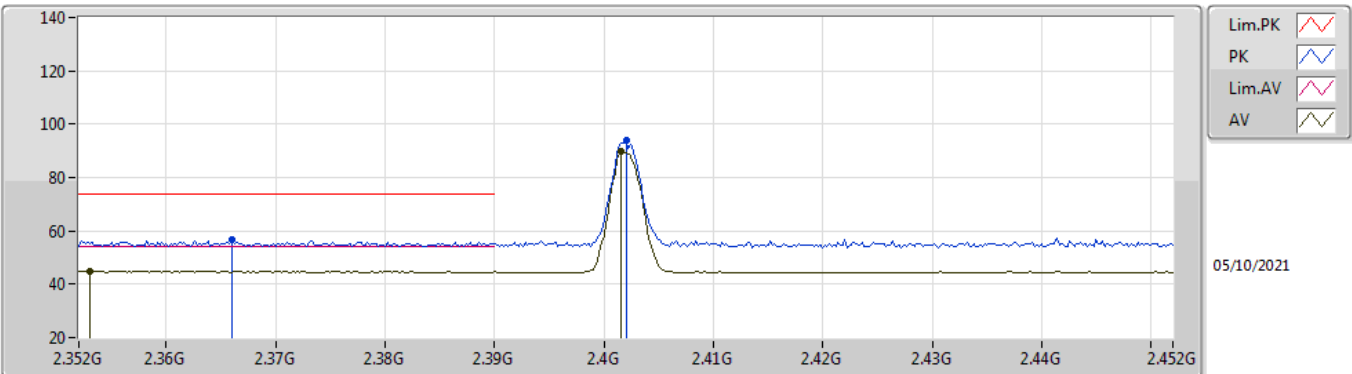


EUT X_1TX
Setting Default
03-D-K-5

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	4.9601G	46.43	74.00	-27.57	41.56	3	Horizontal	235	1.85	-	33.72	6.50	35.35
AV	4.95918G	33.37	54.00	-20.63	28.50	3	Horizontal	235	1.85	-	33.72	6.50	35.35

BT-EDR(3Mbps)

2402MHz_TX

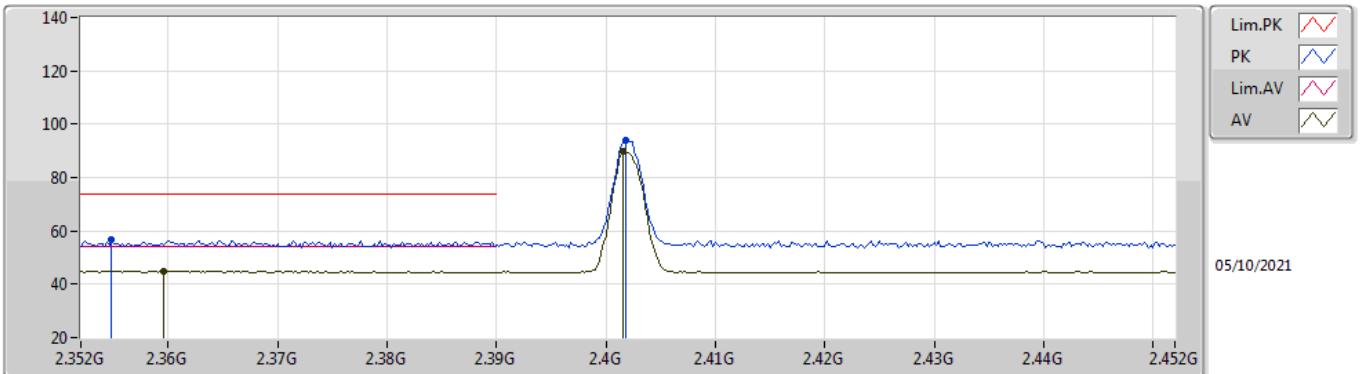


EUT X_1TX
Setting Default
03-D-K-5

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	2.366G	56.94	74.00	-17.06	24.89	3	Vertical	72	1.00	-	28.37	3.68	-	
AV	2.353G	44.87	54.00	-9.13	12.80	3	Vertical	72	1.00	-	28.39	3.68	-	
PK	2.402G	94.00	Inf	-Inf	62.00	3	Vertical	72	1.00	-	28.30	3.70	-	
AV	2.4016G	89.73	Inf	-Inf	57.73	3	Vertical	72	1.00	-	28.30	3.70	-	

BT-EDR(3Mbps)

2402MHz_TX

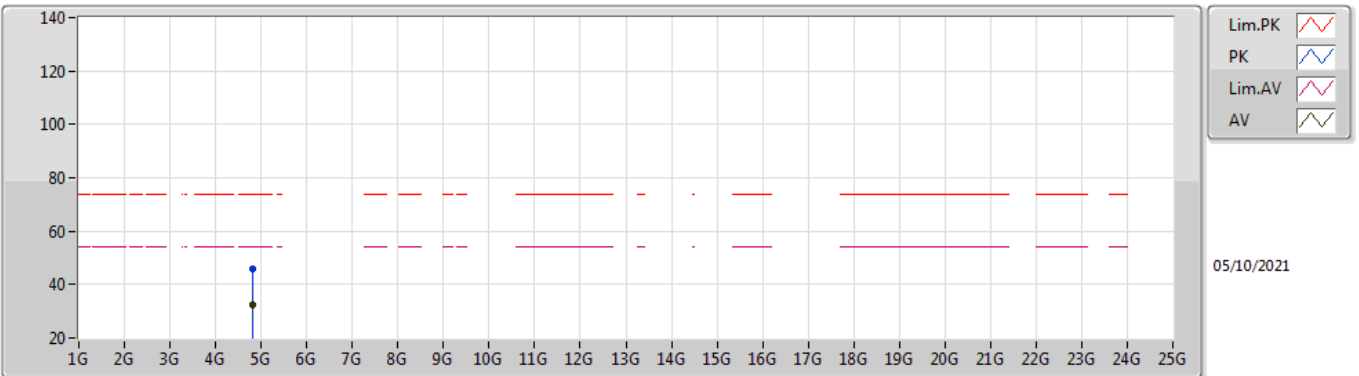


EUT X_1TX
Setting Default
03-D-K-5

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	2.3548G	56.85	74.00	-17.15	24.78	3	Horizontal	256	2.33	-	28.39	3.68	-	
AV	2.3596G	44.83	54.00	-9.17	12.77	3	Horizontal	256	2.33	-	28.38	3.68	-	
PK	2.4018G	93.96	Inf	-Inf	61.96	3	Horizontal	256	2.33	-	28.30	3.70	-	
AV	2.4016G	89.75	Inf	-Inf	57.75	3	Horizontal	256	2.33	-	28.30	3.70	-	

BT-EDR(3Mbps)

2402MHz_TX

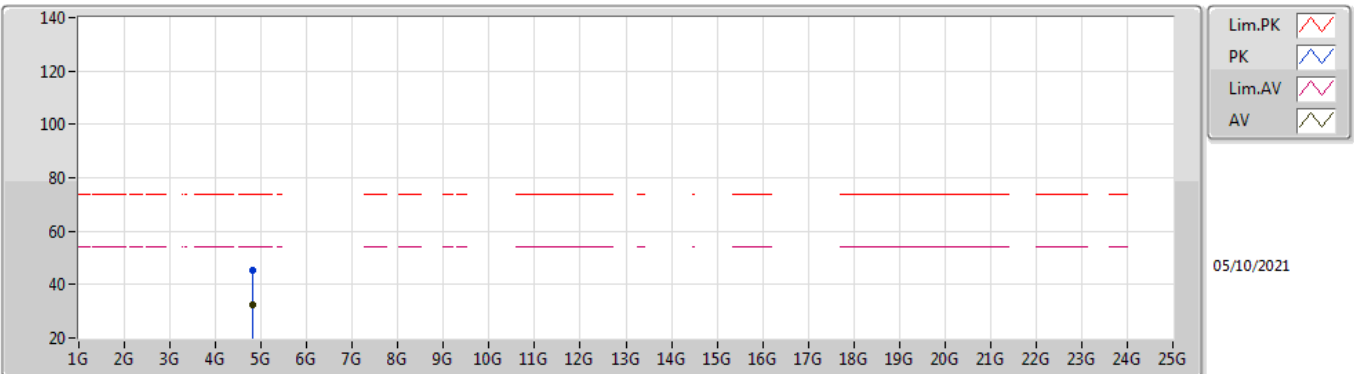


EUT X_1TX
Setting Default
03-D-K-5

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	4.8038G	45.75	74.00	-28.25	41.28	3	Vertical	238	1.47	-	33.40	6.50	35.43
AV	4.805G	32.43	54.00	-21.57	27.96	3	Vertical	238	1.47	-	33.40	6.50	35.43

BT-EDR(3Mbps)

2402MHz_TX

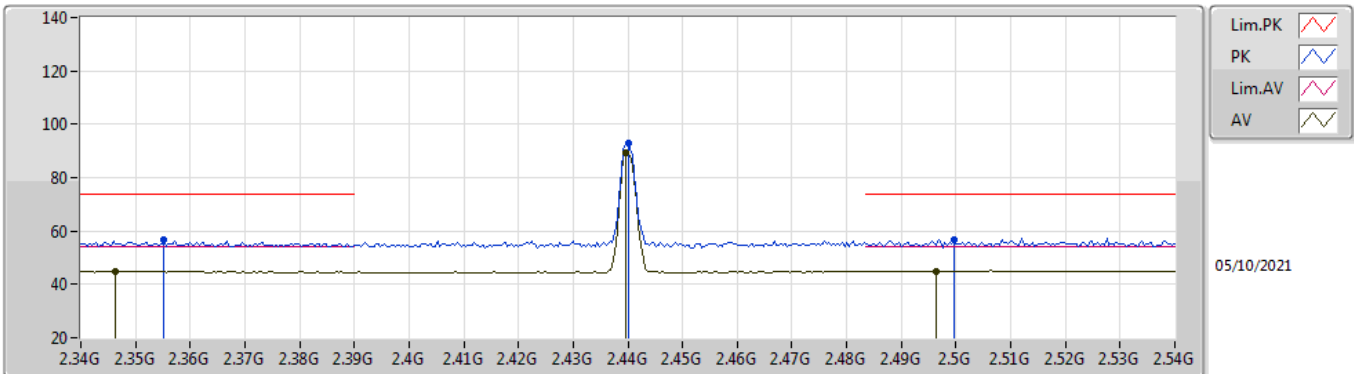


EUT X_1TX
Setting Default
03-D-K-5

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	4.8046G	45.54	74.00	-28.46	41.07	3	Horizontal	86	2.48	-	33.40	6.50	35.43	
AV	4.80542G	32.60	54.00	-21.40	28.13	3	Horizontal	86	2.48	-	33.40	6.50	35.43	

BT-EDR(3Mbps)

2440MHz_TX

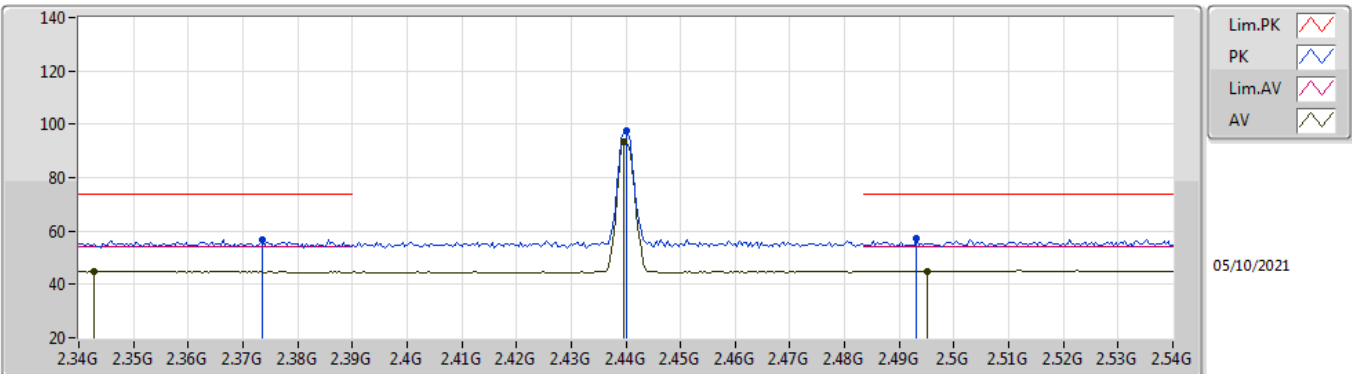


EUT X_1TX
Setting Default
03-D-K-5

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	2.3552G	56.50	74.00	-17.50	24.43	3	Vertical	87	1.00	-	28.39	3.68	-
AV	2.3464G	44.85	54.00	-9.15	12.80	3	Vertical	87	1.00	-	28.38	3.67	-
PK	2.44G	93.15	Inf	-Inf	61.03	3	Vertical	87	1.00	-	28.38	3.74	-
AV	2.4396G	89.27	Inf	-Inf	57.15	3	Vertical	87	1.00	-	28.38	3.74	-
PK	2.4996G	56.79	74.00	-17.21	24.29	3	Vertical	87	1.00	-	28.70	3.80	-
AV	2.4964G	45.06	54.00	-8.94	12.58	3	Vertical	87	1.00	-	28.68	3.80	-

BT-EDR(3Mbps)

2440MHz_TX

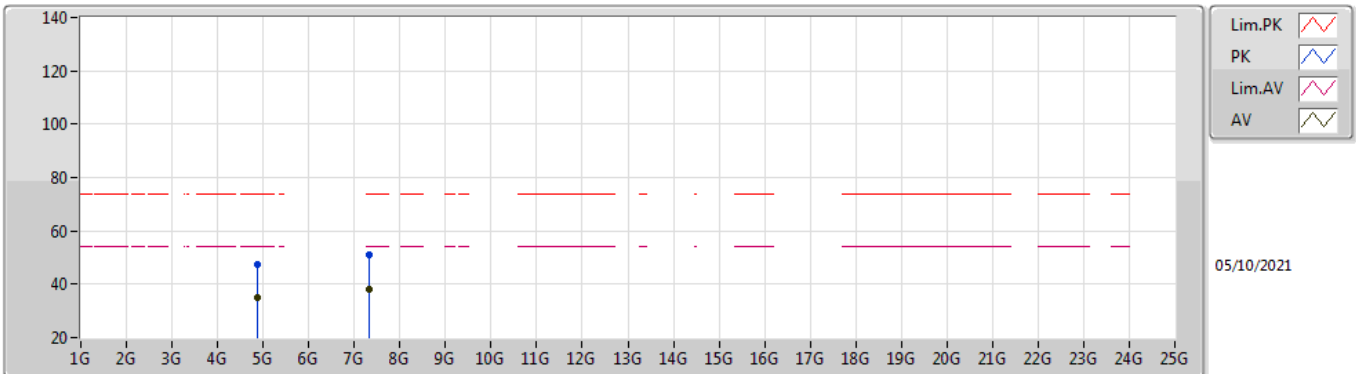


EUT X_1TX
Setting Default
03-D-K-5

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	2.3736G	56.85	74.00	-17.15	24.81	3	Horizontal	238	2.70	-	28.35	3.69	-
AV	2.3428G	44.93	54.00	-9.07	12.90	3	Horizontal	238	2.70	-	28.36	3.67	-
PK	2.44G	97.59	Inf	-Inf	65.47	3	Horizontal	238	2.70	-	28.38	3.74	-
AV	2.4396G	93.39	Inf	-Inf	61.27	3	Horizontal	238	2.70	-	28.38	3.74	-
PK	2.4932G	57.26	74.00	-16.74	24.81	3	Horizontal	238	2.70	-	28.66	3.79	-
AV	2.4952G	45.06	54.00	-8.94	12.59	3	Horizontal	238	2.70	-	28.67	3.80	-

BT-EDR(3Mbps)

2440MHz_TX

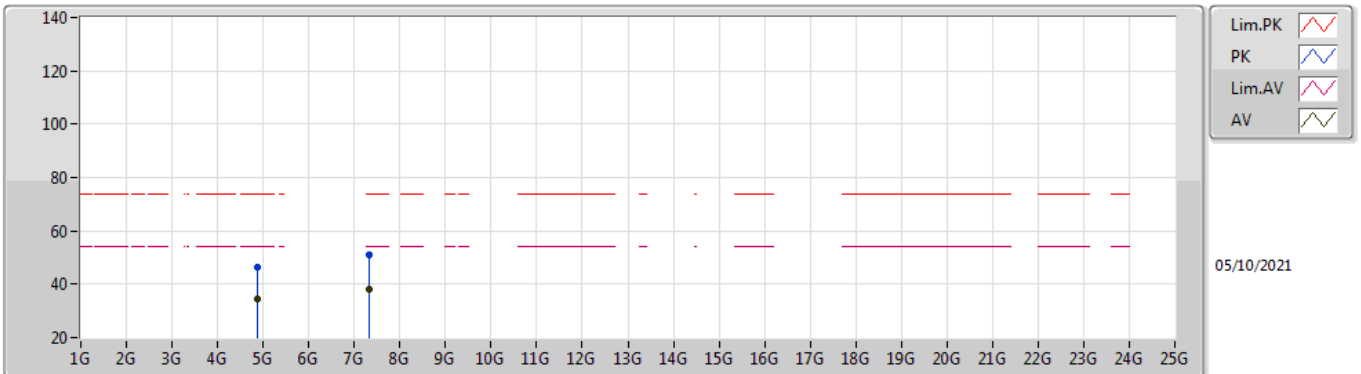


EUT X_1TX
Setting Default
03-D-K-5

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	4.8806G	47.22	74.00	-26.78	42.59	3	Vertical	165	1.80	-	33.52	6.50	35.39
AV	4.87955G	34.82	54.00	-19.18	30.19	3	Vertical	165	1.80	-	33.52	6.50	35.39
PK	7.31288G	51.03	74.00	-22.97	41.54	3	Vertical	314	2.68	-	37.00	8.06	35.57
AV	7.32808G	38.20	54.00	-15.80	28.72	3	Vertical	314	2.68	-	37.00	8.06	35.58

BT-EDR(3Mbps)

2440MHz_TX

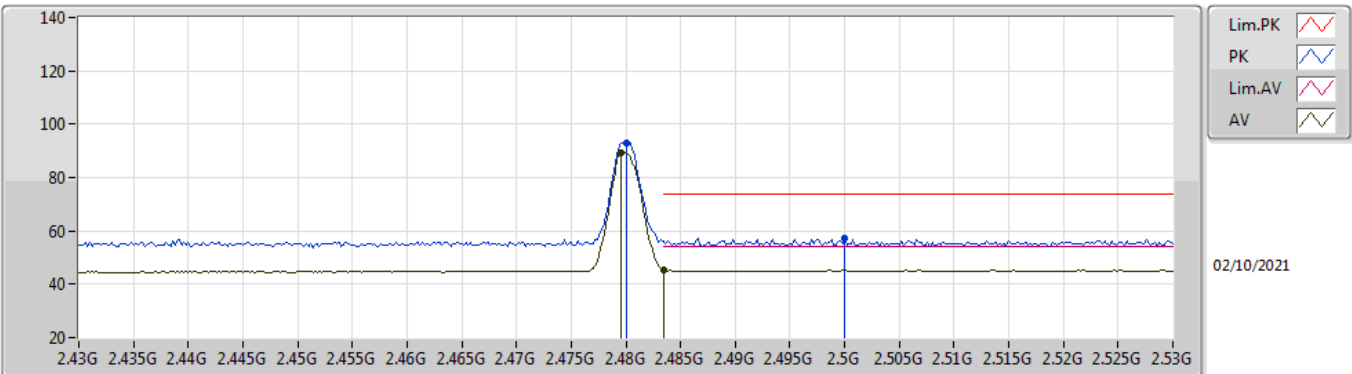


EUT X_1TX
Setting Default
03-D-K-5

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	4.88089G	46.53	74.00	-27.47	41.90	3	Horizontal	45	1.80	-	33.52	6.50	35.39
AV	4.8796G	34.34	54.00	-19.66	29.71	3	Horizontal	45	1.80	-	33.52	6.50	35.39
PK	7.31756G	51.06	74.00	-22.94	41.57	3	Horizontal	341	2.18	-	37.00	8.06	35.57
AV	7.31863G	38.00	54.00	-16.00	28.51	3	Horizontal	341	2.18	-	37.00	8.06	35.57

BT-EDR(3Mbps)

2480MHz_TX

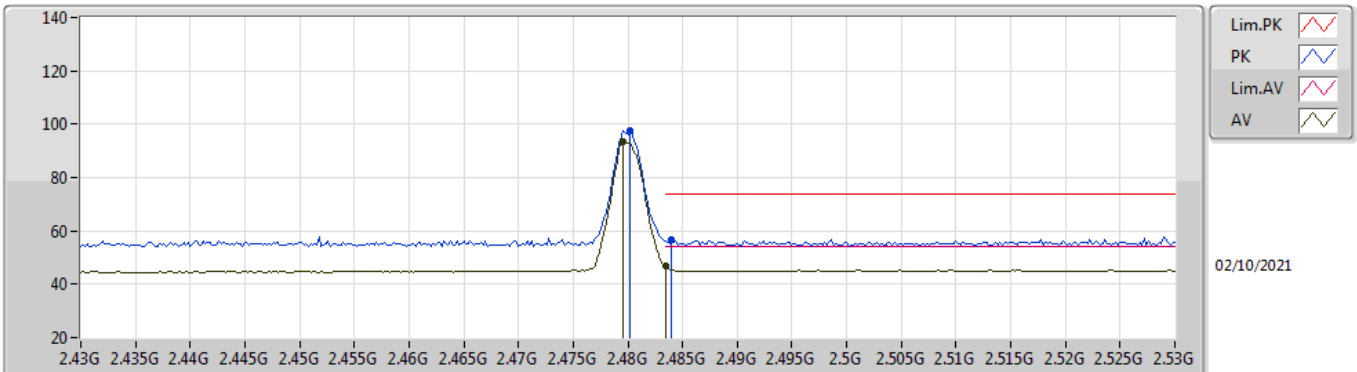


EUT X_1TX
Setting Default
03-D-K-5

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	92.88	Inf	-Inf	60.52	3	Vertical	277	1.20	-	28.58	3.78	-	
AV	2.4796G	89.33	Inf	-Inf	56.97	3	Vertical	277	1.20	-	28.58	3.78	-	
PK	2.5G	57.31	74.00	-16.69	24.81	3	Vertical	277	1.20	-	28.70	3.80	-	
AV	2.4835G	45.47	54.00	-8.53	13.09	3	Vertical	277	1.20	-	28.60	3.78	-	

BT-EDR(3Mbps)

2480MHz_TX

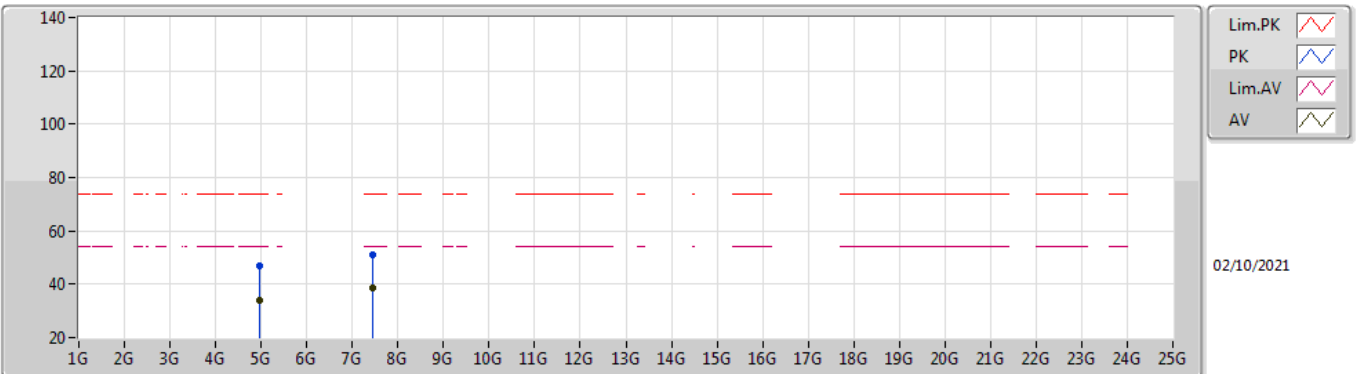


EUT X_1TX
Setting Default
03-D-K-5

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	2.4802G	97.54	Inf	-Inf	65.18	3	Horizontal	74	2.34	-	28.58	3.78	-	
AV	2.4796G	93.39	Inf	-Inf	61.03	3	Horizontal	74	2.34	-	28.58	3.78	-	
PK	2.484G	56.79	74.00	-17.21	24.41	3	Horizontal	74	2.34	-	28.60	3.78	-	
AV	2.4835G	46.66	54.00	-7.34	14.28	3	Horizontal	74	2.34	-	28.60	3.78	-	

BT-EDR(3Mbps)

2480MHz_TX

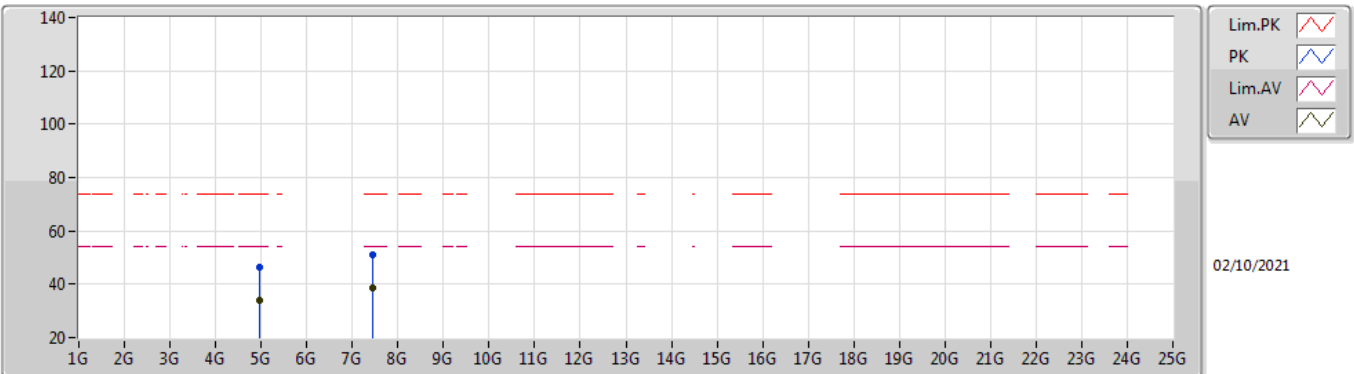


EUT X_1TX
Setting Default
03-D-K-5

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	4.95954G	47.04	74.00	-26.96	42.17	3	Vertical	114	2.84	-	33.72	6.50	35.35
AV	4.95956G	33.81	54.00	-20.19	28.94	3	Vertical	114	2.84	-	33.72	6.50	35.35
PK	7.43556G	51.22	74.00	-22.78	41.64	3	Vertical	213	2.67	-	37.03	8.15	35.60
AV	7.43758G	38.61	54.00	-15.39	29.03	3	Vertical	213	2.67	-	37.02	8.16	35.60

BT-EDR(3Mbps)

2480MHz_TX



EUT X_1TX
Setting Default
03-D-K-5

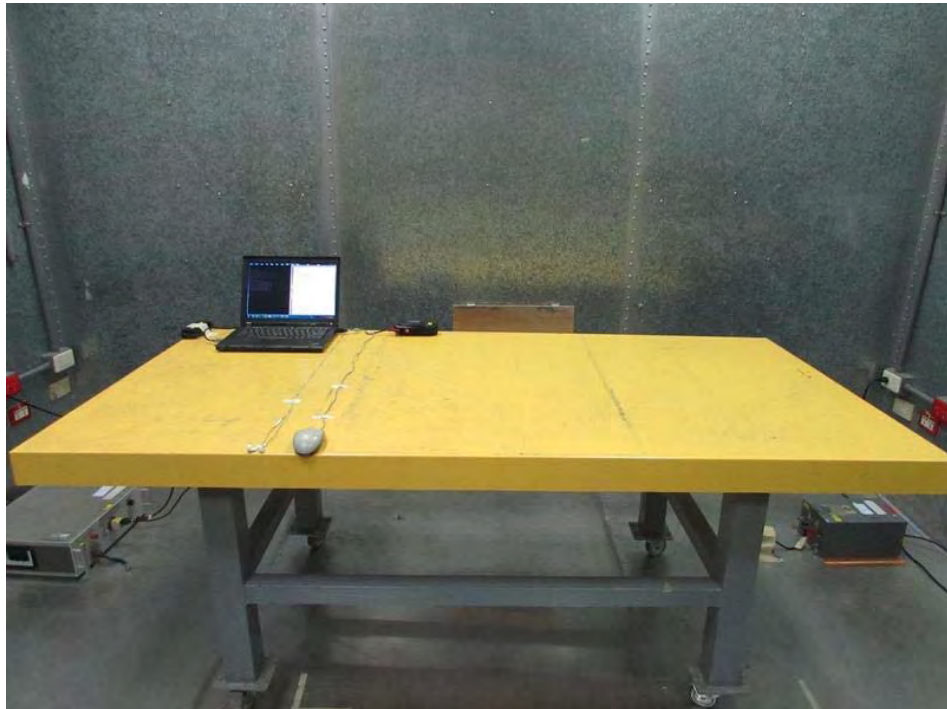
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	4.95854G	46.29	74.00	-27.71	41.42	3	Horizontal	268	2.36	-	33.72	6.50	35.35	
AV	4.95958G	33.80	54.00	-20.20	28.93	3	Horizontal	268	2.36	-	33.72	6.50	35.35	
PK	7.43846G	51.22	74.00	-22.78	41.64	3	Horizontal	161	2.13	-	37.02	8.16	35.60	
AV	7.4431G	38.46	54.00	-15.54	28.90	3	Horizontal	161	2.13	-	37.01	8.16	35.61	

1. Photographs of Conducted Emissions Test Configuration

Intentional – CTX and Unintentional – CRX

Test Mode: Mode 1

FRONT VIEW



REAR VIEW



2. Photographs of Radiated Emissions Test Configuration

Test Configuration: 30MHz~1GHz

Intentional – CTX

Test Mode: Mode 1

FRONT VIEW



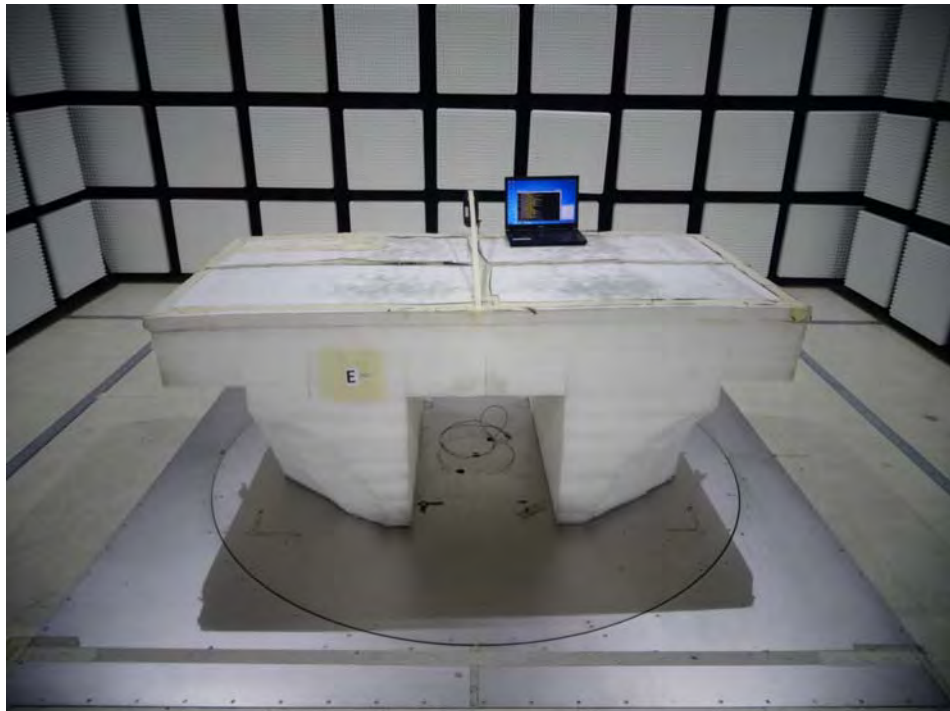
REAR VIEW



Unintentional – CRX

Test Mode: Mode 1

FRONT VIEW



REAR VIEW



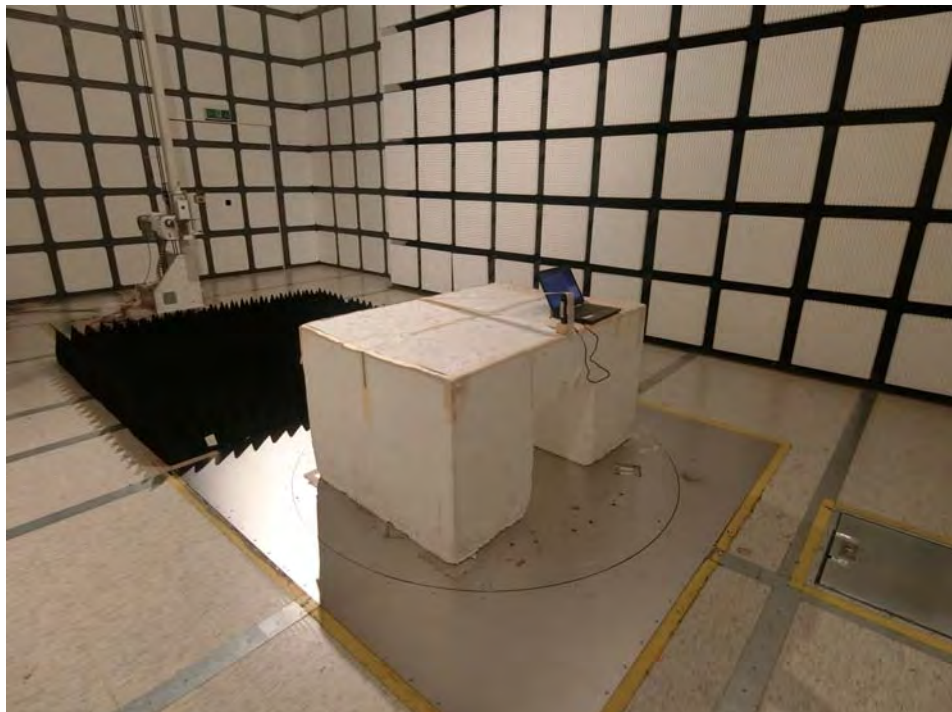
Test Configuration: Above 1GHz

Unintentional 1GHz~5th Harmonic – CRX / Test Mode: Mode 1

FRONT VIEW

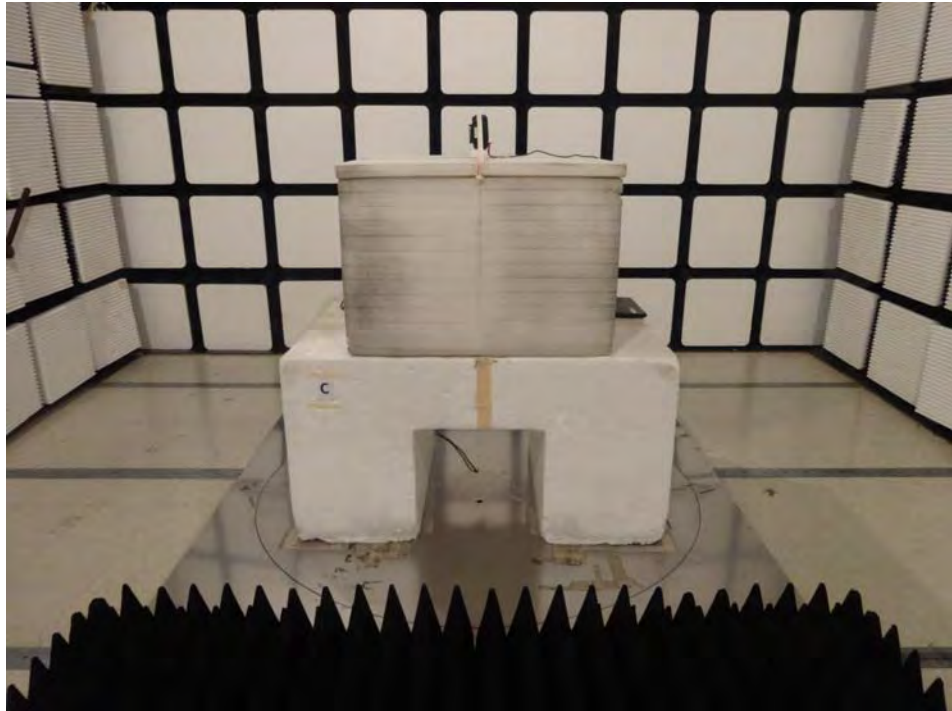


REAR VIEW

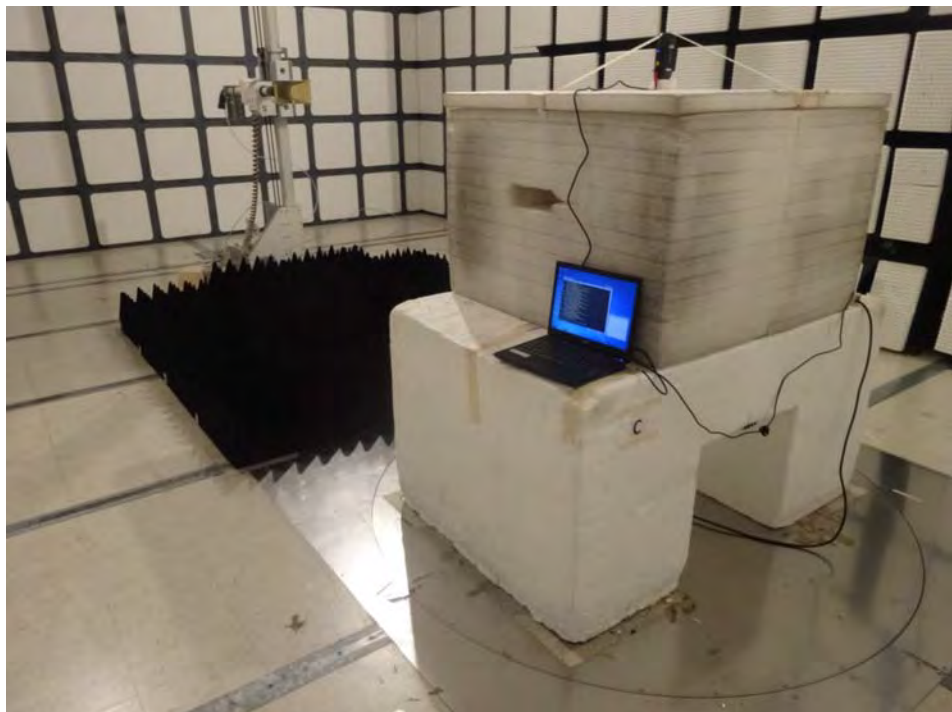


Intentional 1GHz~10th Harmonic – CTX

FRONT VIEW



REAR VIEW



————THE END————