FCC Radio Test Report

FCC ID	:	**XN6-SL512X86**
Contains FCC ID	:	**2AS8LATM210**
Equipment	:	**5.1.2 Soundbar System**
Brand Name	:	**VIZIO**
Model Name	:	**SL512X-0806**
Applicant	:	**Zylux Acoustic Corporation 7F, 70, Rui Guang Road, Neihu District, Taipei 114, Taiwan**
Manufacturer	:	**Zylux Acoustic Corporation 7F, 70, Rui Guang Road, Neihu District, Taipei 114, Taiwan**
Standard	:	**47 CFR FCC Part 15.247**

The product was received on Mar. 19, 2024, and testing was started from Mar. 22, 2024 and completed on Apr. 11, 2024. We, SPORTON INTERNATIONAL INC. Hsinhua 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. Hsinhua Laboratory, the test report shall not be reproduced except in full.

Approved by: Jackson Tsai

SPORTON INTERNATIONAL INC. Hsinhua Laboratory

No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)

Table of Contents

History of this test report

Report No.	Version	Description	Issued Date
FR420501AD	01	Initial issue of report	Apr. 29, 2024

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 Bandedge	PASS	-
3.5	15.247(a)	Time of Occupancy (Dwell Time)	PASS	-
3.6	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	-
3.7	15.247(d)	Emissions in Restricted Frequency Bands	PASS	-

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and explanations:
None

Reviewed by: Ben Tseng

Report Producer: Ann Hou

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

1.1.2 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	1	WIESON	ARY196-4044-002-00	Omni directional	MHF 1	3.61

Note 1: The EUT has one antenna.

For BT function:

Ant. 1 (port 1) could transmit/receive.

1.1.3 EUT Information

Operational Condition				
EUT Power Type	From Switching Power Supply			
EUT Function	☒	Point-to-multipoint	☐	Point-to-point
Type of EUT				
☒	Stand-alone			
☐	Combined (EUT where the radio part is fully integrated within another device)			
	Combined Equipment - Brand Name / Model No.:	…		
☐	Plug-in radio (EUT intended for a variety of host systems)			
	Host System - Brand Name / Model No.:	…		
☐	Other:			

1.1.4 Mode Test Duty Cycle

Mode	DC	DCF (dB)	T (s)	VBW (Hz)_1/T
BT-BR(1Mbps)	0.78	1.08	2.87m	1k
BT-EDR(2Mbps)	0.775	1.11	2.882m	1k
BT-EDR(3Mbps)	0.767	1.15	2.883m	1k

Note. If DC < 0.98, the DCF was added while measuring Output power and PSD.

1.2 Testing Applied Standards

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

- 47 CFR FCC Part 15
- ANSI C63.10-2013

The following reference test guidance is not within the scope of accreditation of TAF:

- KDB 558074 D01 v05r02
- KDB 414788 D01 v01r01

1.3 Testing Location Information

Test Lab.：Sporton International Inc. Hsinhua Laboratory				
☒ Hsinhua **(TAF:** 3785**)**	**ADD:** No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)			
	TEL: 886-3-327-3456		**FAX:** 886-3-327-0973	
Test site Designation No. TW3785 with FCC.				
Test Condition	**Test Site No.**	**Test Engineer**	**Test Environment**	**Test Date**
AC Conduction	CO04-HY	Edward Wang	21.1~21.4°C / 50~52%	23/Mar/2024
RF Conducted	TH01-HY	Raven Chien	22.5~23.1°C / 55~59%	23/Mar/2024
Radiated	03CH03-HY	Edward Wang	22.2~23.4°C / 50~52%	22/Mar/2024~23/Mar/2024
Radiated (Co-location)	03CH03-HY	Jack Tang	20.1~22.1°C / 51~54%	11/Apr/2024
☐ Wen 33rd.St. **(TAF:** 3785**)**	**ADD:** No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)			
	TEL: 886-3-318-0787		**FAX:** 886-3-318-0287	
Test site Designation No. TW0008 with FCC.				

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
AC Power-line Conducted Emissions	4.53 dB	Confidence levels of 95%
Bandwidth	3 MHz	Confidence levels of 95%
Maximum Conducted Output Power	2 dB	Confidence levels of 95%
Emissions in Non-restricted Frequency Bands	0.14 dB	Confidence levels of 95%
Emissions in Restricted Frequency Bands	4.8 dB	Confidence levels of 95%
Temperature	0.41 °C	Confidence levels of 95%
Humidity	3.4 %	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Channel Mode

Test Software Version	FCC_Test_Tools_V2.25

Mode	Power Setting
BT-BR(1Mbps)	-
2402MHz	10
2440MHz	10
2480MHz	10
BT-EDR(2Mbps)	-
2402MHz	10
2440MHz	10
2480MHz	10
BT-EDR(3Mbps)	-
2402MHz	10
2440MHz	10
2480MHz	10

2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral Test Voltage: 120Vac / 60Hz
Operating Mode	CTX
1	Switching Power Supply mode

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 ☒ Non-adaptive frequency hopping systems (Non-AFH) ☐ adaptive frequency hopping systems (AFH)
Non-AFH Mode configuration was found to be the worst case and measured during the test.	

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		
1	Switching Power Supply mode		
Operating Mode > 1GHz	CTX		
Orthogonal Planes of EUT	**X Plane**	**Y Plane**	**Z Plane**
			
Worst Planes of EUT		V	

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis
Operating Mode	CTX
1	Bluetooth+WLAN 5GHz
Refer to Sporton Test Report No.: FA420501 for Co-location RF Exposure Evaluation and Appendix H for Radiated Emission Co-location.	

2.3 Accessories

Accessories				
AC Power Cord (* 2 pcs)	**Signal Line**	1.5 meter, Non-Shielded cable, without ferrite core		
HDMI Cable (X1 PCS)	**Signal Line**	1.83 meter, Non-Shielded cable, without ferrite core		
Audio Cable (X 2 PCS) (for Surround Speaker)	**Signal Line**	8 meter, Non-Shielded cable, witout ferrite core		
Surround Speaker (X 2 PCS)	**Brand Name**	VIZIO	**Model Name**	SL512X-0806 Surround
	Manufacturer	Zylux		
Wireless Subwoofer (X1 PCS)	**Brand Name**	VIZIO	**Model Name**	SL512X-0806 subwoofer
	Manufacturer	Zylux		

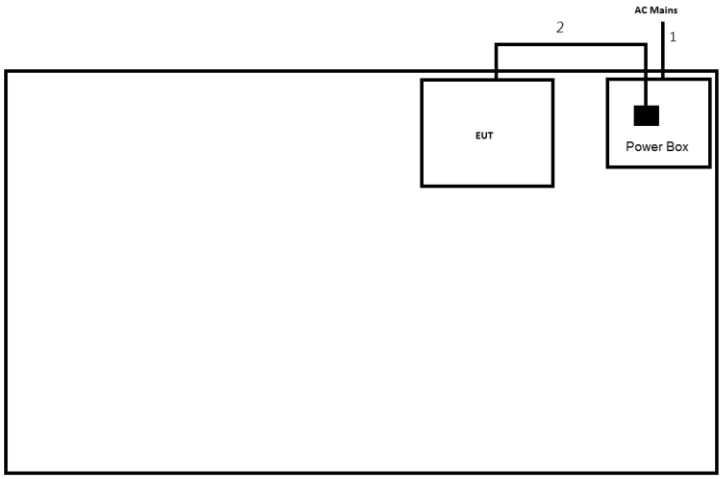
Reminder: Regarding to more detail and other information, please refer to user manual.

2.4 Support Equipment

Support Equipment – Conducted					
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**	**Remark**
1	Notebook	DELL	E5410	-	-
2	Adapter for NB	DELL	HA65NM130	-	-
3	Test Fixture	ZYLUX	-	-	Provided by Customer

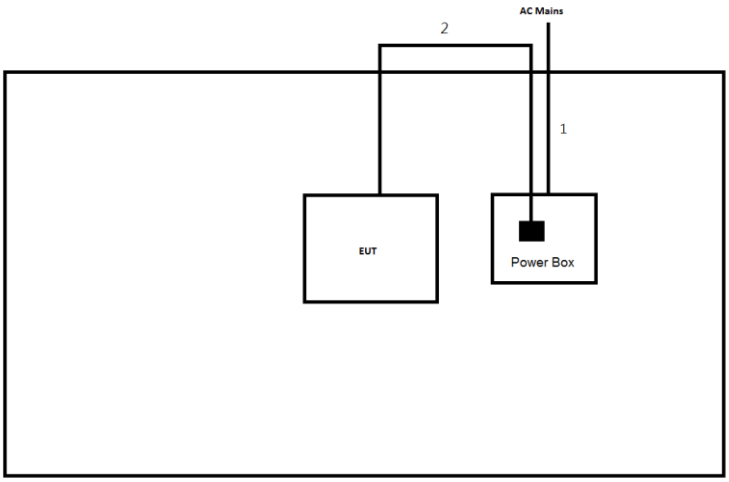
2.5 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



Item	Connection	Shielded	Length (m)
1	AC Power Cable	No	1.8
2	AC Power Cord	No	1.5

Test Setup Diagram - Radiated Test



Item	Connection	Shielded	Length(m)
1	AC Power Cable	No	1.8
2	AC Power Cord	No	1.5

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

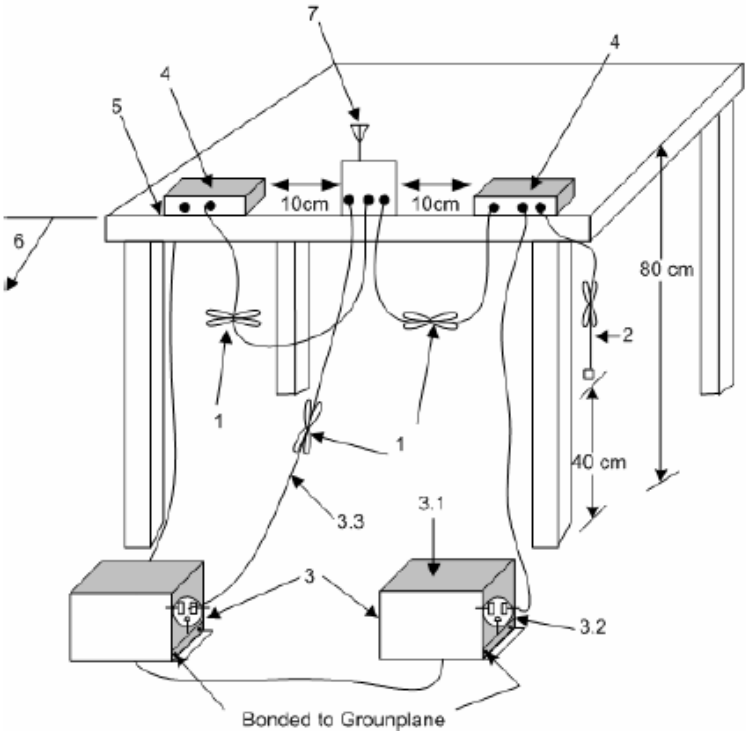
Test Method
▪ Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

3.1.4 Measurement Results Calculation

The measured Level is calculated using:
Corrected Reading: Raw(Read Level) +LISN(LISN Factor) + CL(Cable Loss) + AT(Attenuator).

3.1.5 Test Setup

AC Power-line Conducted Emissions



1—Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 cm to 40 cm long.
2—The I/O cables that are not connected to an accessory shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
3—EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50Ω loads. LISN may be placed on top of, or immediately beneath, reference ground plane.
3.1—All other equipment powered from additional LISN(s).
3.2—A multiple-outlet strip may be used for multiple power cords of non-EUT equipment.
3.3—LISN at least 80 cm from nearest part of EUT chassis.
4—Non-EUT components of EUT system being tested.
5—Rear of EUT, including peripherals, shall all be aligned and flush with edge of tabletop.
6—Edge of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.
7—Antenna can be integral or detachable. If detachable, then the antenna shall be attached for this test.

3.1.6 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	
▪ 2400-2483.5 MHz Band:	
	▪ N ≥75 and ChS ≥ MAX (20 dB bandwidth, 25 kHz).
	▪ 75>N ≥ 15 and ChS ≥ MAX (20 dB bandwidth 2/3,25 kHz).
N:Number of Hopping Frequencies; **ChS**: Hopping Channel Separation	

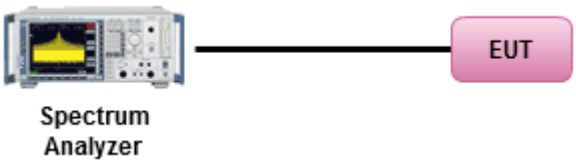
3.2.2 Measuring Instruments

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 6.9.2 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

20dB Bandwidth and Carrier Frequency Separation


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	
▪ 2400-2483.5 MHz Band:	
	▪ N ≥ 75; Power 30dBm; EIRP 36dBm
	▪ 75 >N ≥ 15; Power 21dBm; EIRP 27dBm
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)


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	
▪ 2400-2483.5 MHz Band:	
	▪ N ≥ 75 and ChS ≥ MAX (20 dB bandwidth, 25 kHz).
	▪ 75 >N ≥ 15 and ChS ≥ MAX (20 dB bandwidth 2/3,25 kHz).
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

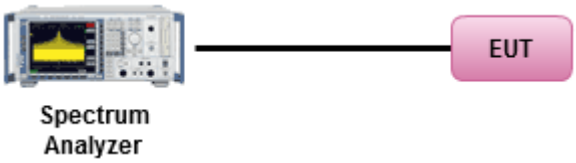
3.4.3 Measuring Instruments

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

Number of Hopping Frequencies and Hopping Frequencies Bandedge


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

Time of Occupancy (Dwell Time) Limit for Frequency Hopping Systems	
▪ 2400-2483.5 MHz Band:	
	▪ N ≥ 75; 0.4s in N x 0.4 period
	▪ 75 >N ≥ 15; 0.4s in N x 0.4 period
N:Number of Hopping Frequencies	

3.5.2 Measuring Instruments

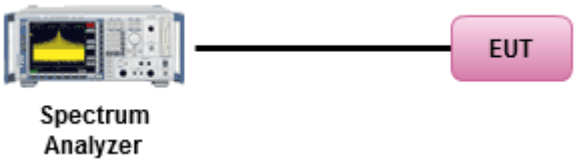
Refer a test equipment and calibration data table in this test report.

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

Time of Occupancy (Dwell Time)



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 (dB)**
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.	

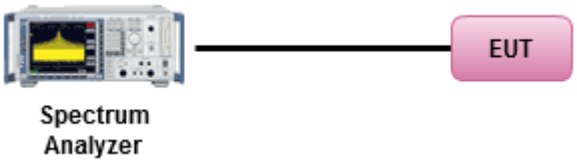
3.6.2 Measuring Instruments

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

Emissions in Non-restricted Frequency Bands


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 below30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB / decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

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

3.7.2 Measuring Instruments

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

3.7.3 Test Procedures

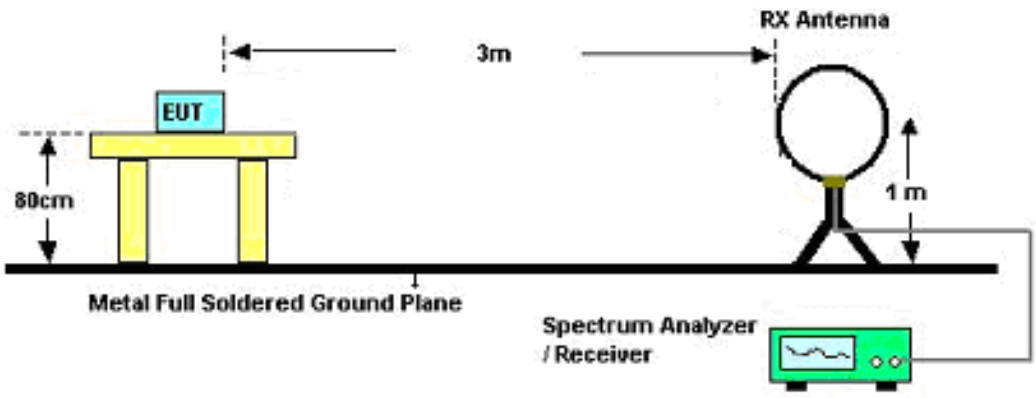
Test Method	
▪	The average emission levels shall be measured in [hopping duty factor].
▪	Refer as ANSI C63.10; clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.
▪	For the transmitter unwanted emissions shall be measured using following options below:
	▪ Refer as ANSI C63.10, clause 4.1.4.2.1 QP value.
	▪ Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak.
	▪ Refer as ANSI C63.10, clause 4.1.4.2.4 average value of hopping pulsed emissions.
▪	KDB 414788 Open-Field Test Sites and Chamber Correlation Justification.
	▪ Based on FCC 15.31(f)(2): measurements may be performed at a distance closer than that specified in regulations; however, an attempt should be made to avoid making measurements in the near field.
	▪ Open-field site and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

3.7.4 Measurement Results Calculation

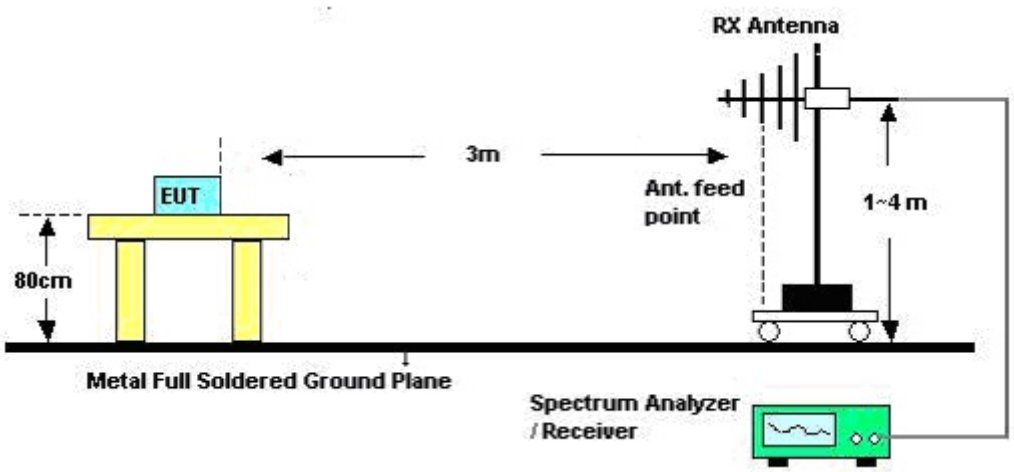
The measured Level is calculated using:
Corrected Reading: Raw(Read Level) + AF(Antenna Factor) + CL(Cable Loss) - PA(Preamp Factor)

3.7.5 Test Setup

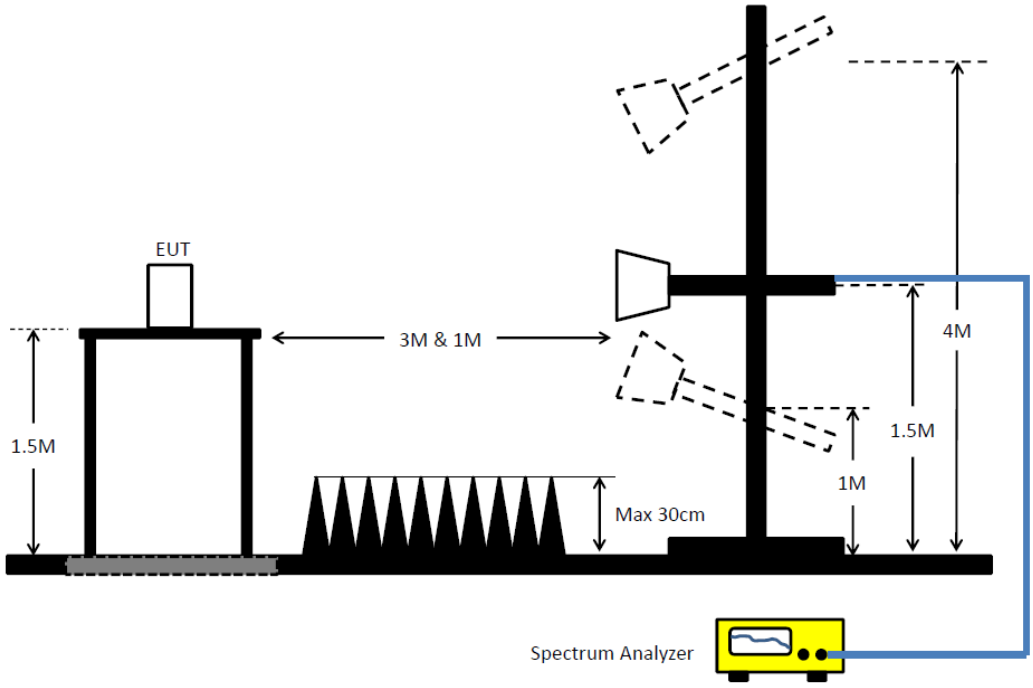
Emissions in Restricted Frequency Bands
9kHz ~30MHz



30MHz~1GHz



Above 1GHz



3.7.6 Test Result of Emissions in Restricted Frequency Bands (Below 30MHz)

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

3.7.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix G

4 Test Equipment and Calibration Data

Instrument for AC Conduction

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
EMI Test Receiver	R&S	ESR	102051	9kHz ~ 3.6GHz	16/May/2023	15/May/2024
Two-Line V-Network	R&S	ENV 216	101295	9kHz ~ 30MHz	05/Feb/2024	04/Feb/2025
RF Cable 5m	TITAN	TITAN	CO04-cable-01	9kHz ~ 200MHz	27/Feb/2024	26/Feb/2025
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9kHz ~ 30MHz	18/Oct/2023	17/Oct/2024
Software	Sporton	SENSE-EMI	V5.11.3	-	NCR	NCR

NCR: No Calibration Required

Instrument for Conducted Test

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Signal Analyzer	R&S	FSV 40	101013	10Hz~40GHz	10/Apr/2023	09/Apr/2024
SMB100A Signal Generator	R&S	SMB100A	181147	100kHz~40GHz	20/Oct/2023	19/Oct/2024
Power Meter	Anritsu	ML2495A	0949003	300MHz~40GHz	17/Feb/2024	26/Feb/2025
Pulse Sensor	Anritsu	MA2411B	0917017	300MHz~40GHz	17/Feb/2024	26/Feb/2025
SENSE-15247_FS	Sporton	V5.11.17	N/A	N/A	N/A	N/A

Instrument for Radiated Test

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	1GHz~18GHz 3m	28/Jul/2023	27/Jul/2024
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30MHz~1GHz 3m	30/Jul/2023	29/Jul/2024
EMI Test Receiver	R&S	ESR3	102051	9kHz~3.6GHz	16/May/2023	15/May/2024
Signal Analyzer	R&S	FSV40	101500	10Hz~40GHz	26/Oct/2023	25/Oct/2024
Loop Antenna	TESEQ	HLA 6121	65417	9kHz~30MHz	13/Oct/2023	12/Oct/2024
Bilog Antenna & 6dB Attenuator	SCHAFFNER / EMCI	CBL6112B / N-6-05	22237 / AT-N-0603	30MHz~1GHz	15/Oct/2023	14/Oct/2024
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	2267	1GHz~18GHz	04/Oct/2023	03/Oct/2024
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	1248	18GHz ~ 40GHz	21/Aug/2023	20/Aug/2024
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz~30MHz	13/Jun/2023	12/Jun/2024
RF Cable-R03m	Jye Bao	RG142	03CH03-cable-02	30MHz~1GHz	13/Jun/2023	12/Jun/2024
RF CABLE 5+8 m	HUBER+SUHNER	SUOFLEX 104	03CH03-cable-03	1GHz~40GHz	20/Feb/2024	19/Feb/2025
Amplifier	Aglient	8447D	2944A08033	100kHz~1.3GHz	14/Sep/2023	13/Sep/2024
Microwave Preamplifier	Agilent	8449B	3008A02326	1GHz~26.5GHz	26/Jul/2023	25/Jul/2024
Amplifier	EM	EM18G40GA	60874	18GHz ~ 40GHz	18/Aug/2023	17/Aug/2024
SENSE-15247_FS	Sporton	V5.11.16	N/A	N/A	N/A	N/A

Instrument for Radiated Test (Co-location)

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	1GHz~18GHz 3m	28/Jul/2023	27/Jul/2024
Signal Analyzer	R&S	FSV40	101500	10Hz~40GHz	26/Oct/2023	25/Oct/2024
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	02267	1GHz~18GHz	04/Oct/2023	03/Oct/2024
RF CABLE 5+6m	HUBER+SUHNER	SUOFLEX 104	03CH03-cable-01	1GHz~40GHz	29/Jun/2023	28/Jun/2024
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170154	18GHz~40GHz	01/Jun/2023	31/May/2024
Microwave Premplifier	Agilent	8449B	3008A02326	1GHz~26.5GHz	14/Jul/2023	13/Jul/2024
Preamplifier	EMEC	EM18G40GA	060887	18GHz ~ 40GHz	05/Oct/2023	04/Oct/2024
Software	Sporton	SENSE-EMI	V5.11.6	-	-	-

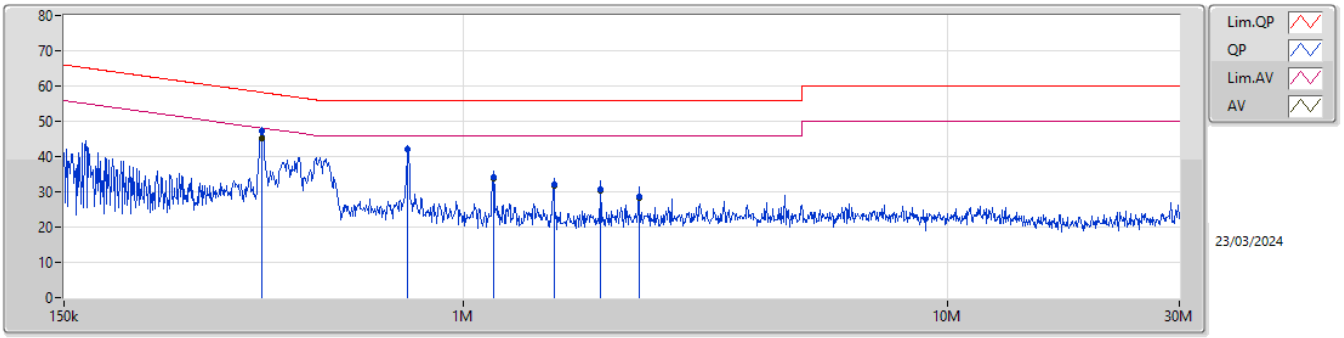
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	384.811k	45.11	48.18	-3.07	Neutral

Result

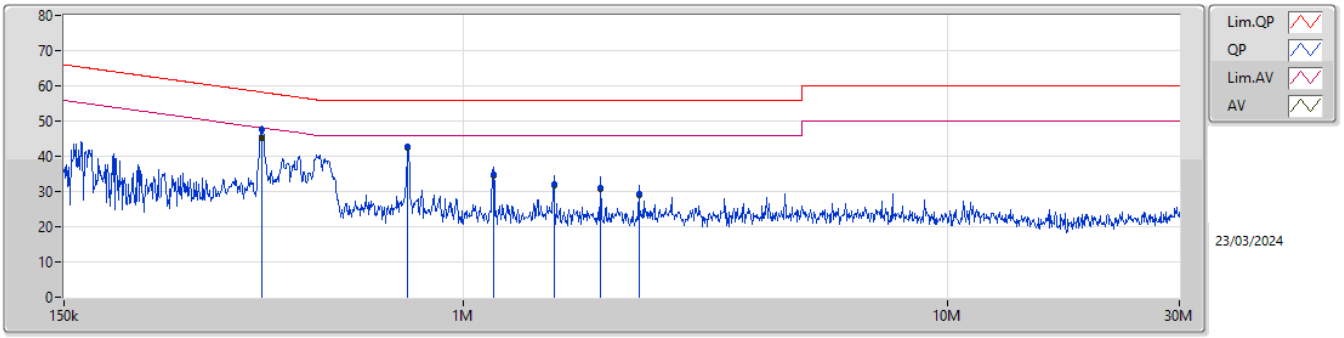
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	384.811k	47.31	58.18	-10.87	Line
Mode 1	Pass	AV	384.811k	45.08	48.18	-3.10	Line
Mode 1	Pass	QP	767.679k	42.21	56.00	-13.79	Line
Mode 1	Pass	AV	767.679k	41.99	46.00	-4.01	Line
Mode 1	Pass	QP	1.154M	34.11	56.00	-21.89	Line
Mode 1	Pass	AV	1.154M	33.95	46.00	-12.05	Line
Mode 1	Pass	QP	1.538M	32.06	56.00	-23.94	Line
Mode 1	Pass	AV	1.538M	31.69	46.00	-14.31	Line
Mode 1	Pass	QP	1.923M	30.57	56.00	-25.43	Line
Mode 1	Pass	AV	1.923M	30.36	46.00	-15.64	Line
Mode 1	Pass	QP	2.301M	28.71	56.00	-27.29	Line
Mode 1	Pass	AV	2.301M	28.43	46.00	-17.57	Line
Mode 1	Pass	QP	384.811k	47.54	58.18	-10.64	Neutral
Mode 1	Pass	AV	384.811k	45.11	48.18	-3.07	Neutral
Mode 1	Pass	QP	767.679k	42.60	56.00	-13.40	Neutral
Mode 1	Pass	AV	767.679k	42.36	46.00	-3.64	Neutral
Mode 1	Pass	QP	1.154M	34.71	56.00	-21.29	Neutral
Mode 1	Pass	AV	1.154M	34.52	46.00	-11.48	Neutral
Mode 1	Pass	QP	1.538M	32.15	56.00	-23.85	Neutral
Mode 1	Pass	AV	1.538M	31.69	46.00	-14.31	Neutral
Mode 1	Pass	QP	1.923M	30.98	56.00	-25.02	Neutral
Mode 1	Pass	AV	1.923M	30.70	46.00	-15.30	Neutral
Mode 1	Pass	QP	2.301M	29.15	56.00	-26.85	Neutral
Mode 1	Pass	AV	2.301M	28.80	46.00	-17.20	Neutral

Conducted Emissions at Powerline_Mode 1



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	384.811k	47.31	58.18	-10.87	19.49	Line	-	27.82	9.61	0.12	9.76
AV	384.811k	45.08	48.18	-3.10	19.49	Line	-	25.59	9.61	0.12	9.76
QP	767.679k	42.21	56.00	-13.79	19.50	Line	-	22.71	9.61	0.10	9.79
AV	767.679k	41.99	46.00	-4.01	19.50	Line	-	22.49	9.61	0.10	9.79
QP	1.154M	34.11	56.00	-21.89	19.50	Line	-	14.61	9.61	0.09	9.80
AV	1.154M	33.95	46.00	-12.05	19.50	Line	-	14.45	9.61	0.09	9.80
QP	1.538M	32.06	56.00	-23.94	19.52	Line	-	12.54	9.62	0.10	9.80
AV	1.538M	31.69	46.00	-14.31	19.52	Line	-	12.17	9.62	0.10	9.80
QP	1.923M	30.57	56.00	-25.43	19.53	Line	-	11.04	9.62	0.11	9.80
AV	1.923M	30.36	46.00	-15.64	19.53	Line	-	10.83	9.62	0.11	9.80
QP	2.301M	28.71	56.00	-27.29	19.52	Line	-	9.19	9.62	0.10	9.80
AV	2.301M	28.43	46.00	-17.57	19.52	Line	-	8.91	9.62	0.10	9.80

Conducted Emissions at Powerline_Mode 1



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	384.811k	47.54	58.18	-10.64	19.49	Neutral	-	28.05	9.61	0.12	9.76
AV	384.811k	45.11	48.18	-3.07	19.49	Neutral	-	25.62	9.61	0.12	9.76
QP	767.679k	42.60	56.00	-13.40	19.50	Neutral	-	23.10	9.61	0.10	9.79
AV	767.679k	42.36	46.00	-3.64	19.50	Neutral	-	22.86	9.61	0.10	9.79
QP	1.154M	34.71	56.00	-21.29	19.50	Neutral	-	15.21	9.61	0.09	9.80
AV	1.154M	34.52	46.00	-11.48	19.50	Neutral	-	15.02	9.61	0.09	9.80
QP	1.538M	32.15	56.00	-23.85	19.52	Neutral	-	12.63	9.62	0.10	9.80
AV	1.538M	31.69	46.00	-14.31	19.52	Neutral	-	12.17	9.62	0.10	9.80
QP	1.923M	30.98	56.00	-25.02	19.53	Neutral	-	11.45	9.62	0.11	9.80
AV	1.923M	30.70	46.00	-15.30	19.53	Neutral	-	11.17	9.62	0.11	9.80
QP	2.301M	29.15	56.00	-26.85	19.52	Neutral	-	9.63	9.62	0.10	9.80
AV	2.301M	28.80	46.00	-17.20	19.52	Neutral	-	9.28	9.62	0.10	9.80

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)	937.75k	873.313k	873KF1D	880k	864.568k
BT-EDR(2Mbps)	1.317M	1.191M	1M19G1D	1.196M	1.158M
BT-EDR(3Mbps)	1.328M	1.186M	1M19G1D	1.169M	1.168M

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

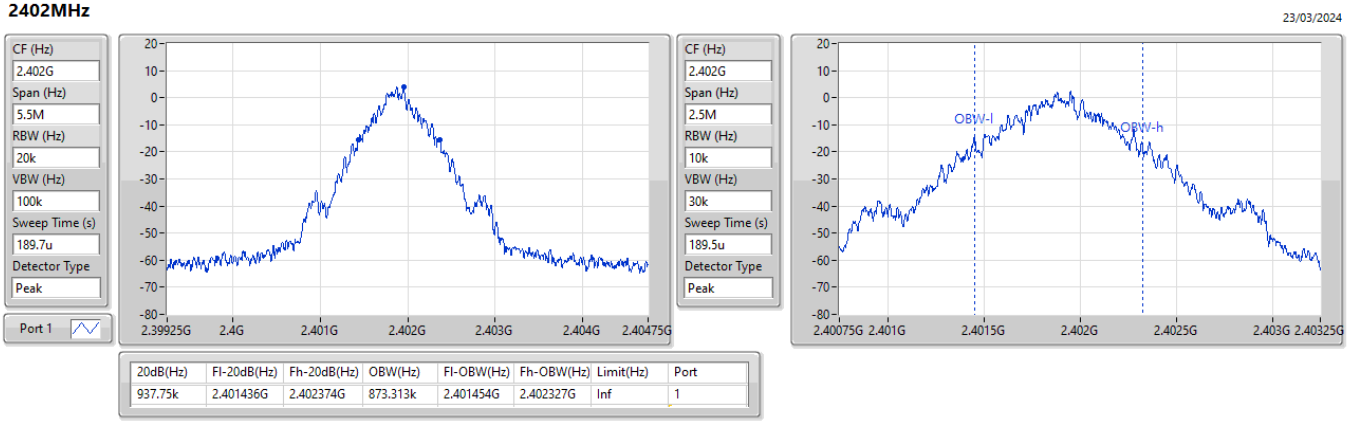
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	Inf	937.75k	873.313k
2440MHz	Pass	Inf	918.5k	864.568k
2480MHz	Pass	Inf	880k	865.817k
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.317M	1.158M
2440MHz	Pass	Inf	1.265M	1.172M
2480MHz	Pass	Inf	1.196M	1.191M
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.169M	1.181M
2440MHz	Pass	Inf	1.185M	1.186M
2480MHz	Pass	Inf	1.328M	1.168M

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

2.4-2.4835GHz_BT-BR(1Mbps) **EBW-FS**

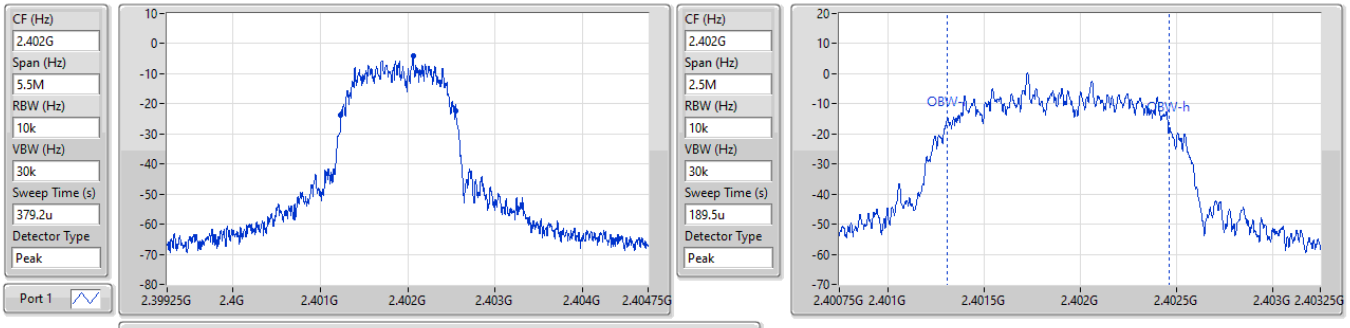
2402MHz



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
937.75k	2.401436G	2.402374G	873.313k	2.401454G	2.402327G	Inf	1

2.4-2.4835GHz_BT-EDR(2Mbps) **EBW-FS**

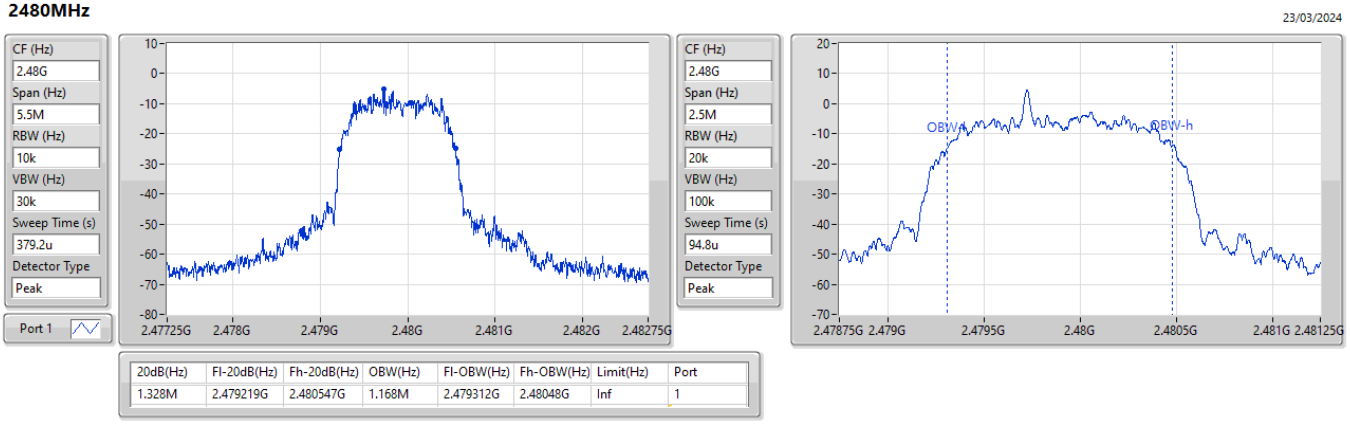
2402MHz



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.317M	2.401236G	2.402553G	1.158M	2.401308G	2.402466G	Inf	1

2.4-2.4835GHz_BT-EDR(3Mbps) **EBW-FS**

2480MHz



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.328M	2.479219G	2.480547G	1.168M	2.479312G	2.48048G	Inf	1

Summary

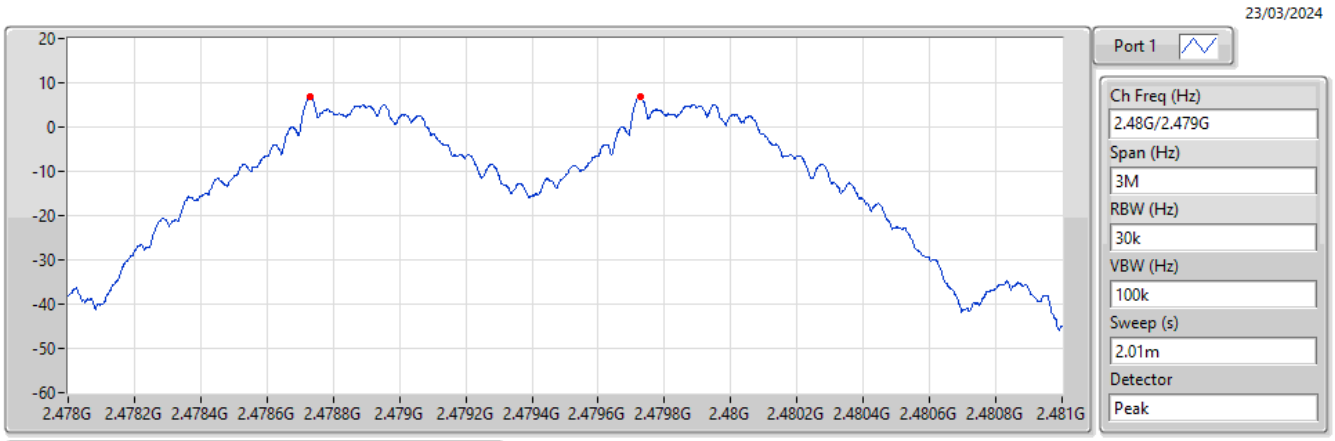
Mode	Max-Space (Hz)	Min-Space (Hz)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	1.002M	996k
BT-EDR(2Mbps)	1.002M	996k
BT-EDR(3Mbps)	1.005M	993k

Result

Mode	Result	Fl (Hz)	Fh (Hz)	Ch.Space (Hz)	Limit (Hz)
BT-BR(1Mbps)	-	-	-	-	-
2402MHz	Pass	2.401728G	2.40273G	1.002M	624.5415k
2440MHz	Pass	2.439729G	2.44073G	1.0005M	611.721k
2480MHz	Pass	2.478731G	2.479727G	996k	586.08k
BT-EDR(2Mbps)	-	-	-	-	-
2402MHz	Pass	2.40189G	2.402892G	1.002M	877.122k
2440MHz	Pass	2.439891G	2.440889G	997.5k	842.49k
2480MHz	Pass	2.478891G	2.479887G	996k	796.536k
BT-EDR(3Mbps)	-	-	-	-	-
2402MHz	Pass	2.401731G	2.402736G	1.005M	778.554k
2440MHz	Pass	2.439731G	2.440724G	993k	789.21k
2480MHz	Pass	2.478729G	2.479725G	996k	884.448k

2.4-2.4835GHz_BT-BR(1Mbps) **Channel Separation-FS**

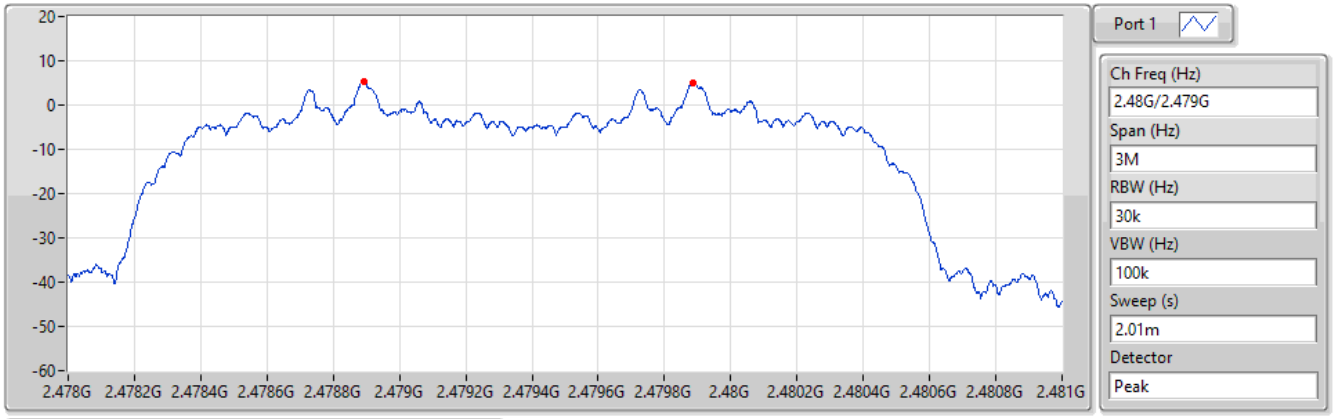
2.48G/2.479GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.478731G	2.479727G	996k	586.08k

2.4-2.4835GHz_BT-EDR(2Mbps) **Channel Separation-FS**

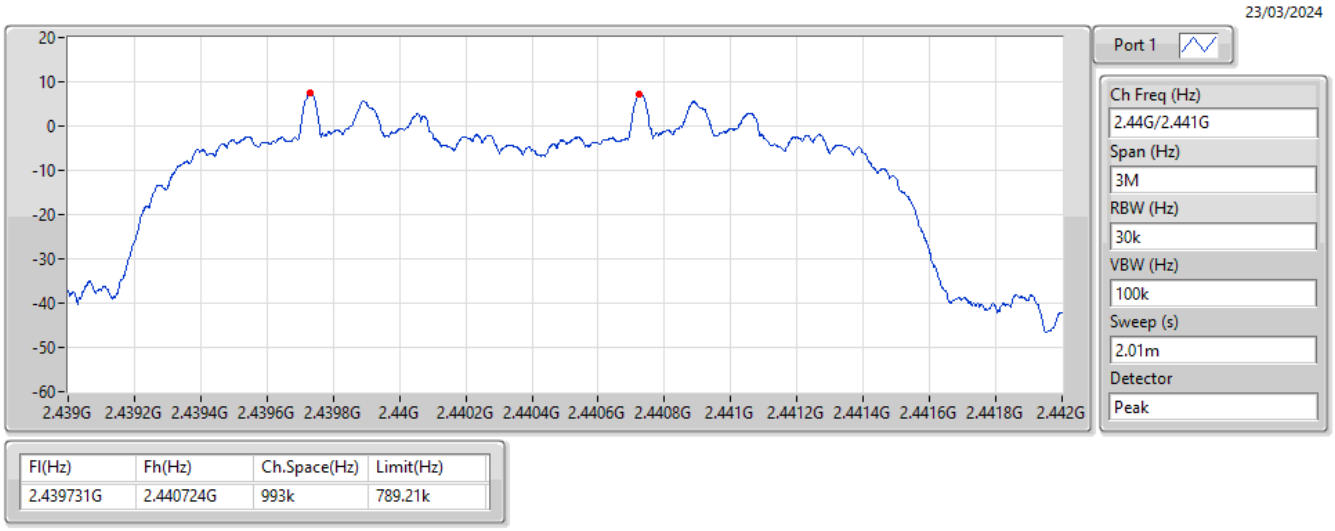
2.48G/2.479GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.478891G	2.479887G	996k	796.536k

2.4-2.4835GHz_BT-EDR(3Mbps) **Channel Separation-FS**

2.44G/2.441GHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.439731G	2.440724G	993k	789.21k

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	8.71	0.00743
BT-EDR(2Mbps)	8.72	0.00745
BT-EDR(3Mbps)	9.05	0.00804

Result

Mode	Result	DG (dBi)	Total Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	3.61	8.71	21.00
2440MHz	Pass	3.61	8.45	21.00
2480MHz	Pass	3.61	8.22	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	3.61	8.72	21.00
2440MHz	Pass	3.61	8.45	21.00
2480MHz	Pass	3.61	8.19	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	3.61	9.05	21.00
2440MHz	Pass	3.61	8.78	21.00
2480MHz	Pass	3.61	8.53	21.00

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

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	8.31	0.00678
BT-EDR(2Mbps)	5.79	0.00379
BT-EDR(3Mbps)	5.81	0.00381

Result

Mode	Result	DG (dBi)	Total Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	3.61	8.31	21.00
2440MHz	Pass	3.61	8.02	21.00
2480MHz	Pass	3.61	7.76	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	3.61	5.79	21.00
2440MHz	Pass	3.61	5.51	21.00
2480MHz	Pass	3.61	5.18	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	3.61	5.81	21.00
2440MHz	Pass	3.61	5.54	21.00
2480MHz	Pass	3.61	5.27	21.00

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

Summary

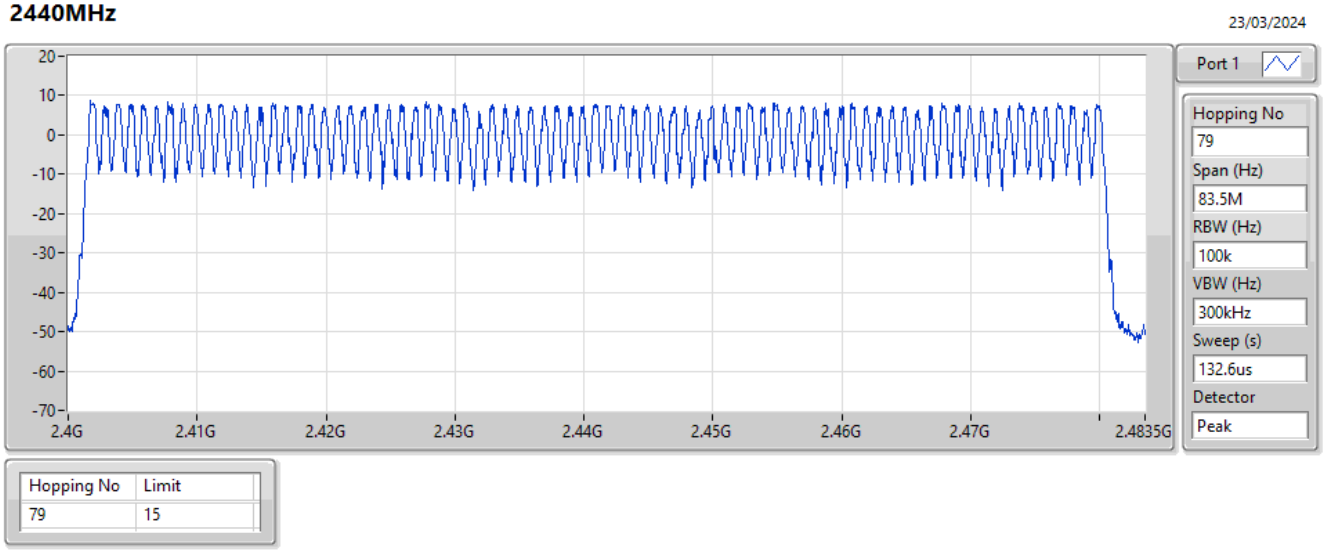
Mode 2.4-2.4835GHz	Max-Hop No -
BT-BR(1Mbps)	79
BT-EDR(2Mbps)	79
BT-EDR(3Mbps)	79

Result

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

2.4-2.4835GHz_BT-BR(1Mbps) **Hopping-FS**

2440MHz

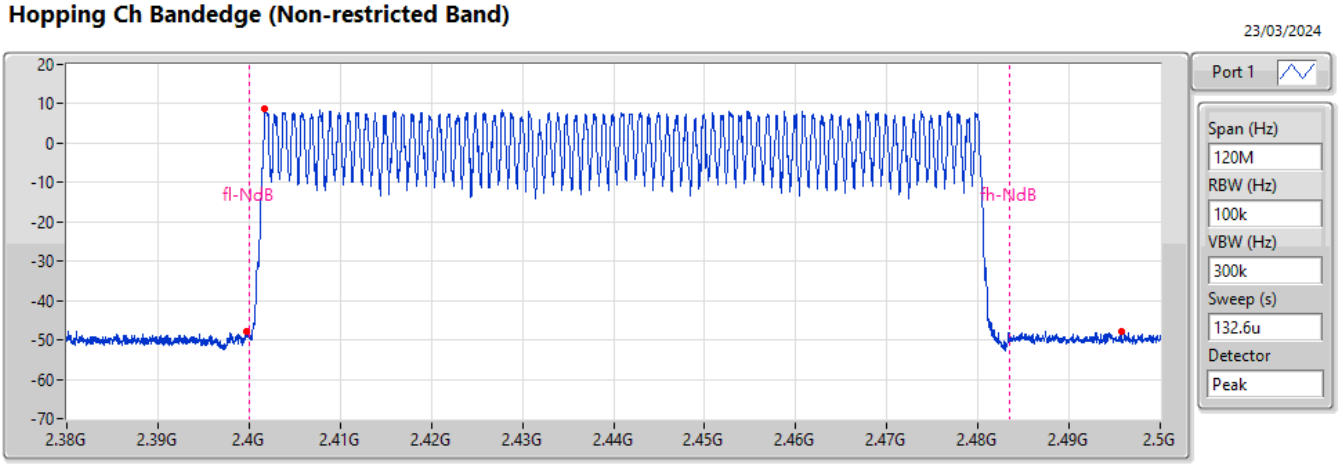


Hopping No	Limit
79	15

2.4-2.4835GHz_BT-BR(1Mbps)

2440MHz

Hopping Ch Bandedge (Non-restricted Band)

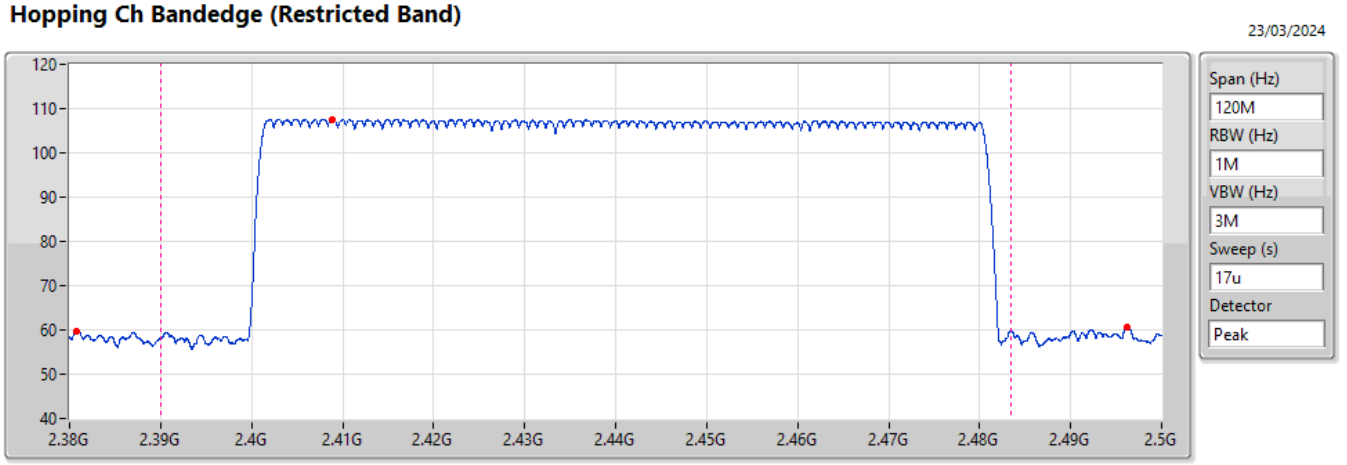


Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-11.4	2.40172G	8.6	2.39968G	-48	2.495695G	-47.76

2.4-2.4835GHz_BT-BR(1Mbps)

2440MHz

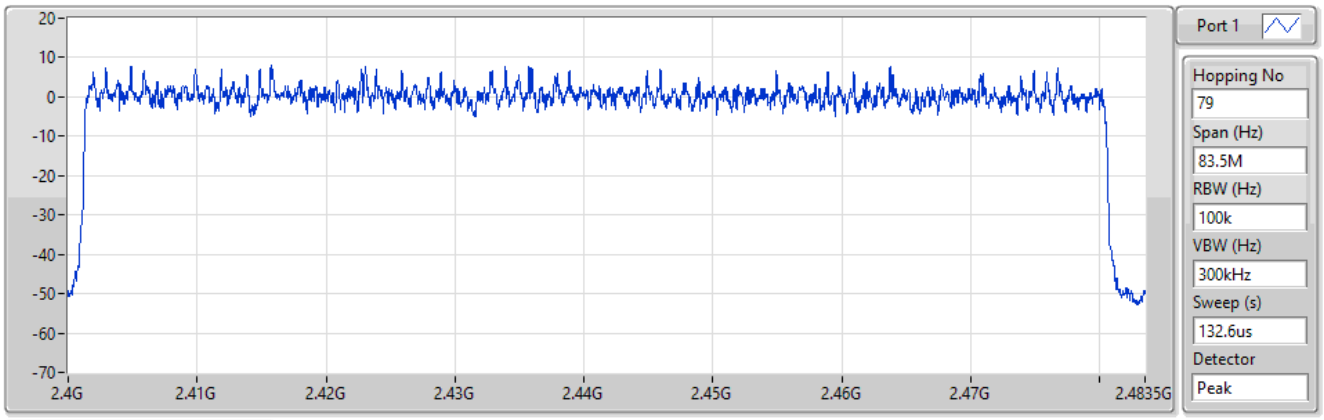
Hopping Ch Bandedge (Restricted Band)



Ref(Hz)	Ref(dBuV/m)	BE-I(Hz)	PK(dBuV/m)	AV(dBuV/m)	BE-h(Hz)	PK(dBuV/m)	AV(dBuV/m)	LimPK(dBuV/	LimAV(dBuV/	Tx On(ms)	DCF(dB)
2.4088G	107.63	2.380825G	59.73	29.63	2.49622G	60.69	30.59	74	54	3.125	-30.1

2.4-2.4835GHz_BT-EDR(2Mbps) **Hopping-FS**

2440MHz

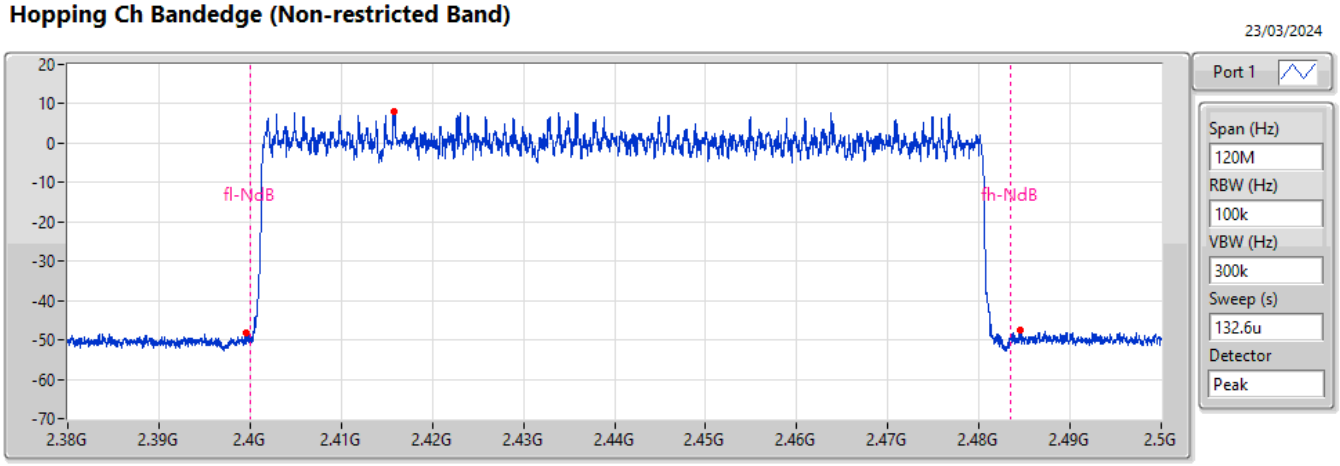


Hopping No	Limit
79	15

2.4-2.4835GHz_BT-EDR(2Mbps)

2440MHz

Hopping Ch Bandedge (Non-restricted Band)

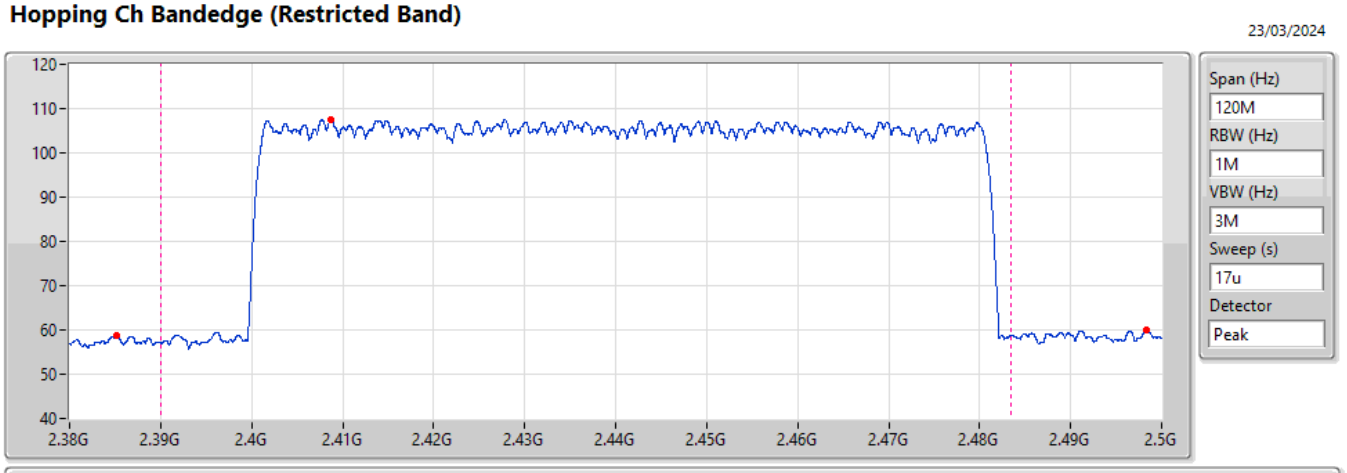


Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-12.03	2.41573G	7.97	2.39953G	-48.03	2.48458G	-47.38

2.4-2.4835GHz_BT-EDR(2Mbps)

2440MHz

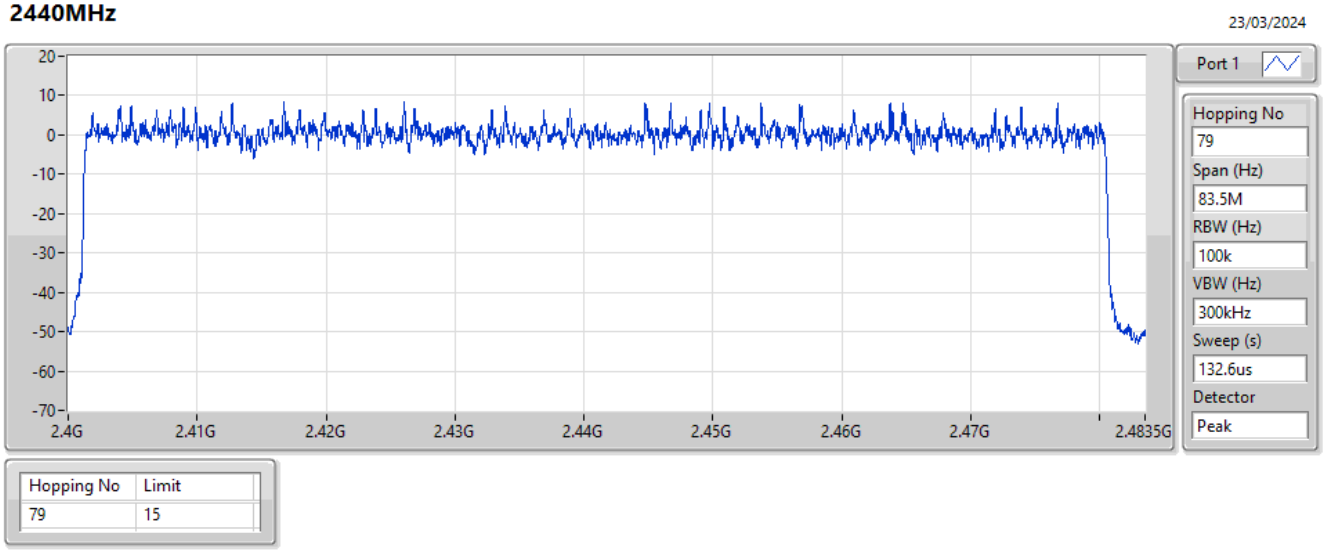
Hopping Ch Bandedge (Restricted Band)



Ref(Hz)	Ref(dBuV/m)	BE-l(Hz)	PK(dBuV/m)	AV(dBuV/m)	BE-h(Hz)	PK(dBuV/m)	AV(dBuV/m)	LimPK(dBuV/	LimAV(dBuV/	Tx On(ms)	DCF(dB)
2.408725G	107.5	2.385115G	58.68	28.58	2.498335G	59.93	29.83	74	54	3.125	-30.1

2.4-2.4835GHz_BT-EDR(3Mbps) **Hopping-FS**

2440MHz

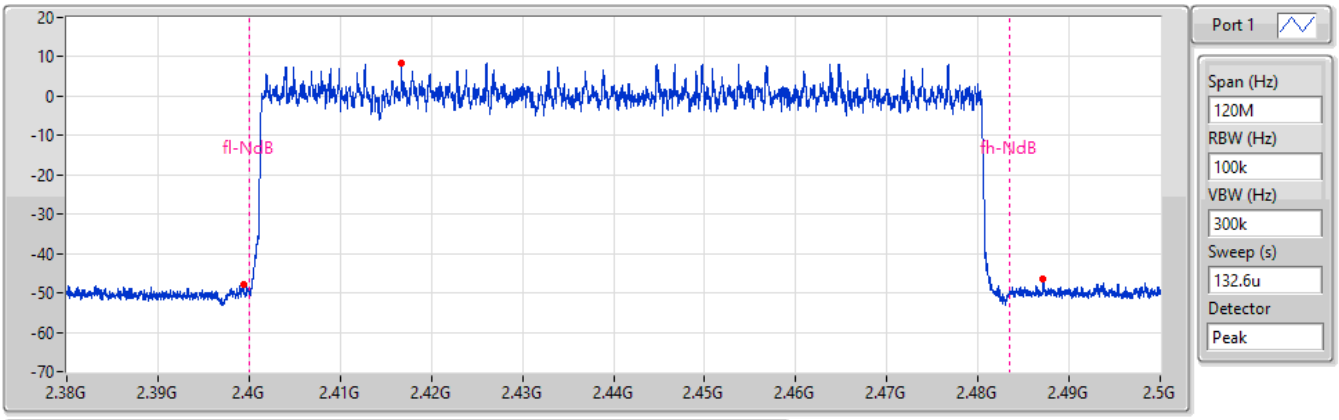


Hopping No	Limit
79	15

2.4-2.4835GHz_BT-EDR(3Mbps)

2440MHz

Hopping Ch Bandedge (Non-restricted Band)

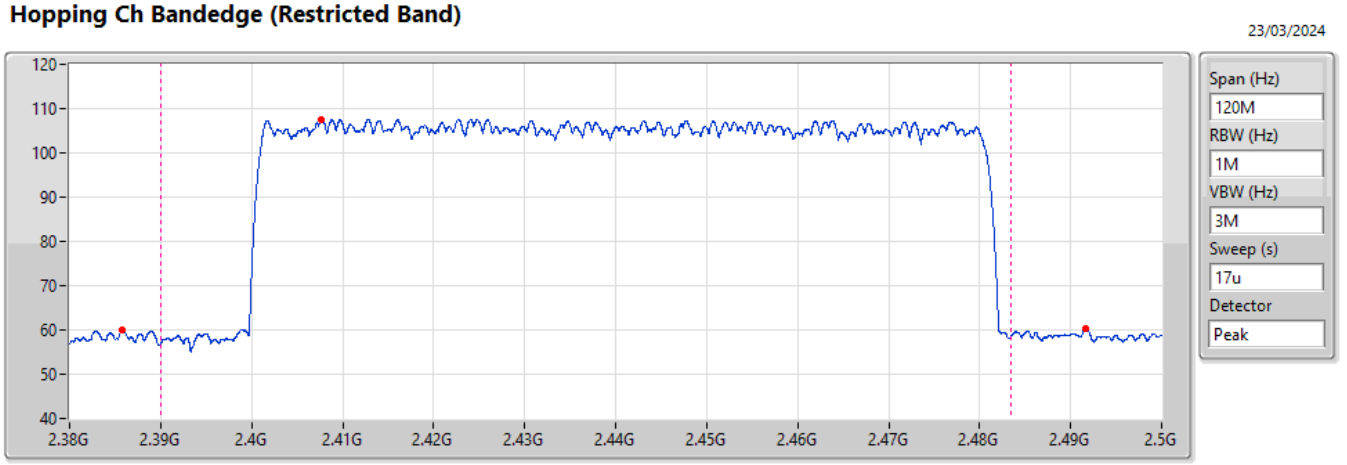


Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-11.45	2.41672G	8.55	2.399425G	-47.78	2.487145G	-46.59

2.4-2.4835GHz_BT-EDR(3Mbps)

2440MHz

Hopping Ch Bandedge (Restricted Band)



Ref(Hz)	Ref(dBuV/m)	BE-I(Hz)	PK(dBuV/m)	AV(dBuV/m)	BE-h(Hz)	PK(dBuV/m)	AV(dBuV/m)	LimPK(dBuV/	LimAV(dBuV/	Tx On(ms)	DCF(dB)
2.407705G	107.53	2.38582G	59.86	29.76	2.491705G	60.2	30.1	74	54	3.125	-30.1

Summary

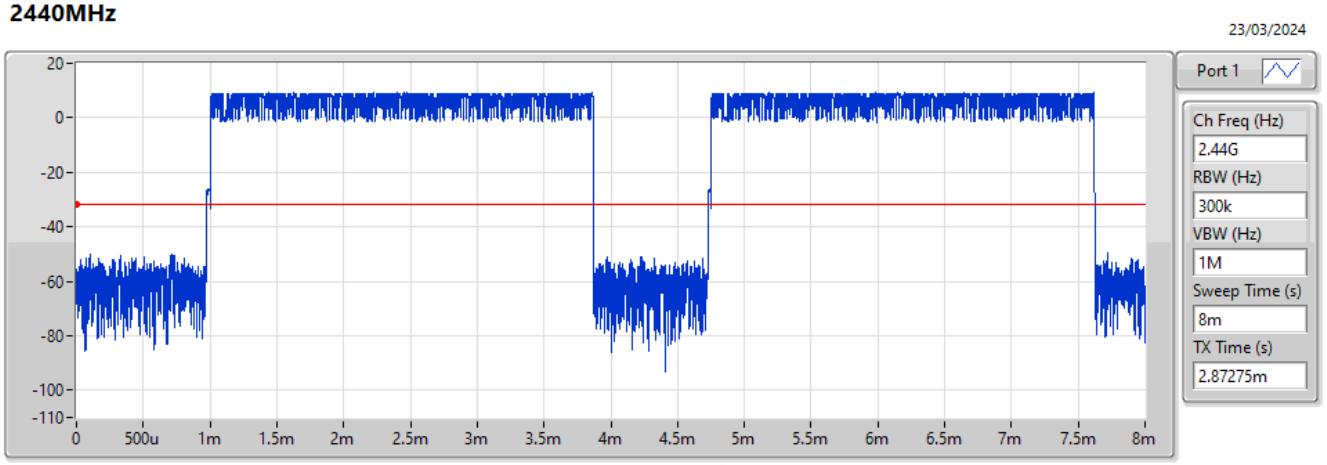
2.4-2.4835GHz	**-**
BT-BR(1Mbps)	306.23515m_DH5
BT-EDR(2Mbps)	110.1178m_DH5
BT-EDR(3Mbps)	55.45865m_DH5

Result

Mode	Result	Period (s)	Dwell (s)	Limit (s)	Tx On (s)
BT-BR(1Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	306.23515m_DH5	400m	2.87275m
BT-EDR(2Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	110.1178m_DH5	400m	1.033m
BT-EDR(3Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	55.45865m_DH5	400m	520.25u

2.4-2.4835GHz_BT-BR(1Mbps) **Dwell-FS**

2440MHz

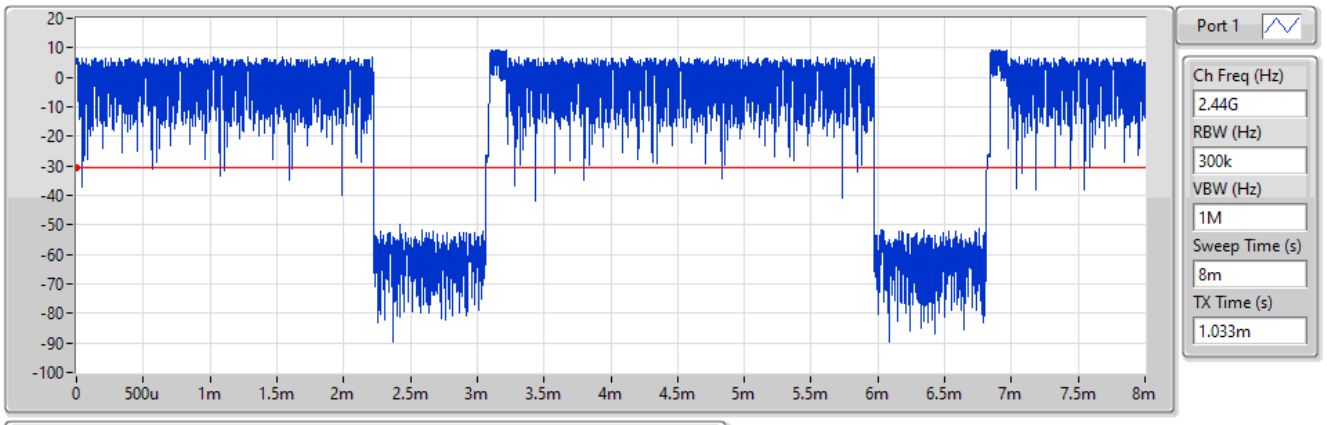


Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	306.23515m_DH5	400m	2.87275m

DH5

2.4-2.4835GHz_BT-EDR(2Mbps) **Dwell-FS**

2440MHz

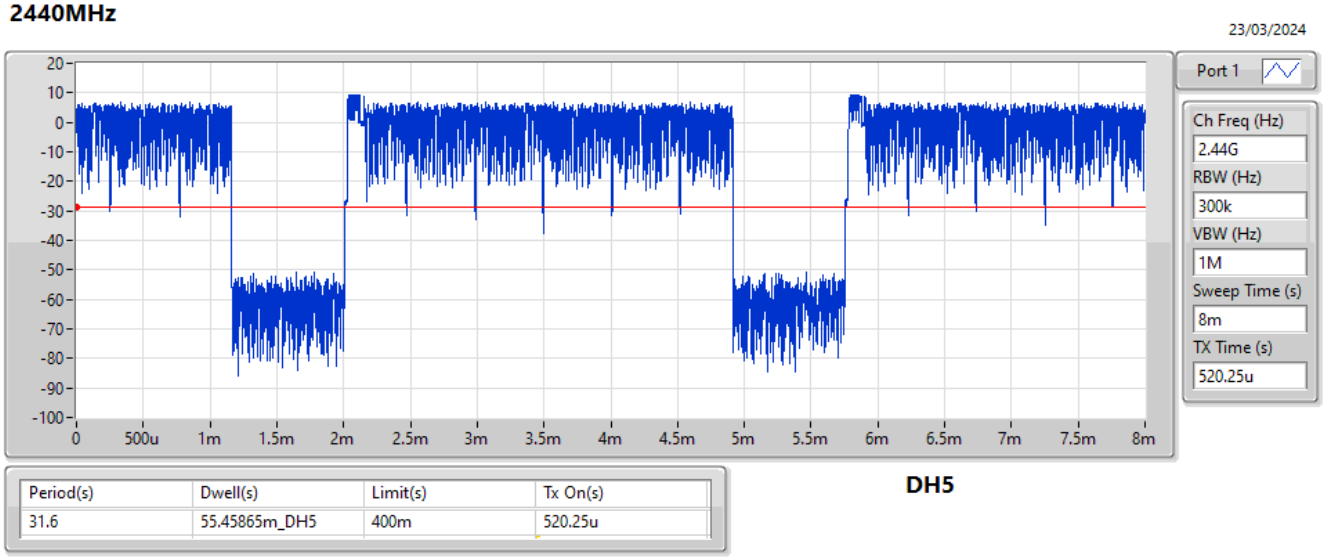


Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	110.1178m_DH5	400m	1.033m

DH5

2.4-2.4835GHz_BT-EDR(3Mbps) **Dwell-FS**

2440MHz



Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	55.45865m_DH5	400m	520.25u

DH5

Summary

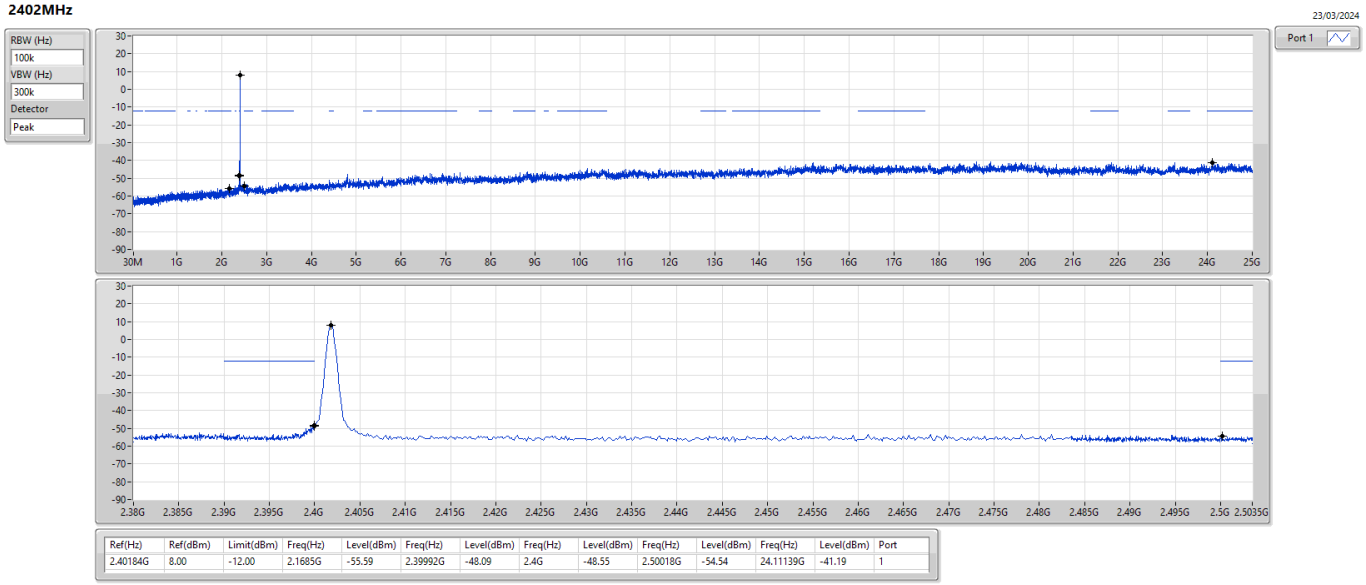
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	2.40184G	8.00	-12.00	2.1685G	-55.59	2.39992G	-48.09	2.4G	-48.55	2.50018G	-54.54	24.11139G	-41.19	1
BT-EDR(2Mbps)	Pass	2.40167G	7.63	-12.37	2.19905G	-53.91	2.39992G	-49.93	2.4G	-49.77	2.50046G	-53.22	24.12545G	-41.57	1
BT-EDR(3Mbps)	Pass	2.402G	8.04	-11.96	2.30363G	-54.97	2.39996G	-50.49	2.4G	-46.03	2.50018G	-54.12	24.46571G	-40.93	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	2.40184G	8.00	-12.00	2.1685G	-55.59	2.39992G	-48.09	2.4G	-48.55	2.50018G	-54.54	24.11139G	-41.19	1
2440MHz	Pass	2.43975G	7.78	-12.22	2.14735G	-55.68	2.39172G	-53.19	2.4G	-56.35	2.5015G	-53.60	24.82284G	-40.62	1
2480MHz	Pass	2.48016G	7.74	-12.26	2.0792G	-55.26	2.3992G	-54.32	2.4G	-56.34	2.5023G	-53.50	24.17044G	-40.57	1
BT-EDR(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40167G	7.63	-12.37	2.19905G	-53.91	2.39992G	-49.93	2.4G	-49.77	2.50046G	-53.22	24.12545G	-41.57	1
2440MHz	Pass	2.43991G	7.13	-12.87	2.00753G	-54.84	2.3986G	-53.50	2.4G	-56.06	2.50262G	-54.43	24.82846G	-41.16	1
2480MHz	Pass	2.47999G	6.97	-13.03	1.80778G	-55.45	2.3936G	-54.41	2.4G	-55.56	2.50326G	-53.62	24.82003G	-41.32	1
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.402G	8.04	-11.96	2.30363G	-54.97	2.39996G	-50.49	2.4G	-46.03	2.50018G	-54.12	24.46571G	-40.93	1
2440MHz	Pass	2.44008G	7.42	-12.58	2.16615G	-55.61	2.39176G	-53.33	2.4G	-55.18	2.50058G	-53.28	15.20277G	-40.32	1
2480MHz	Pass	2.47983G	7.77	-12.23	2.17203G	-55.42	2.39588G	-54.16	2.4G	-56.85	2.50274G	-54.32	17.47773G	-41.45	1

2.4-2.4835GHz_BT-BR(1Mbps) CSENdB-FS

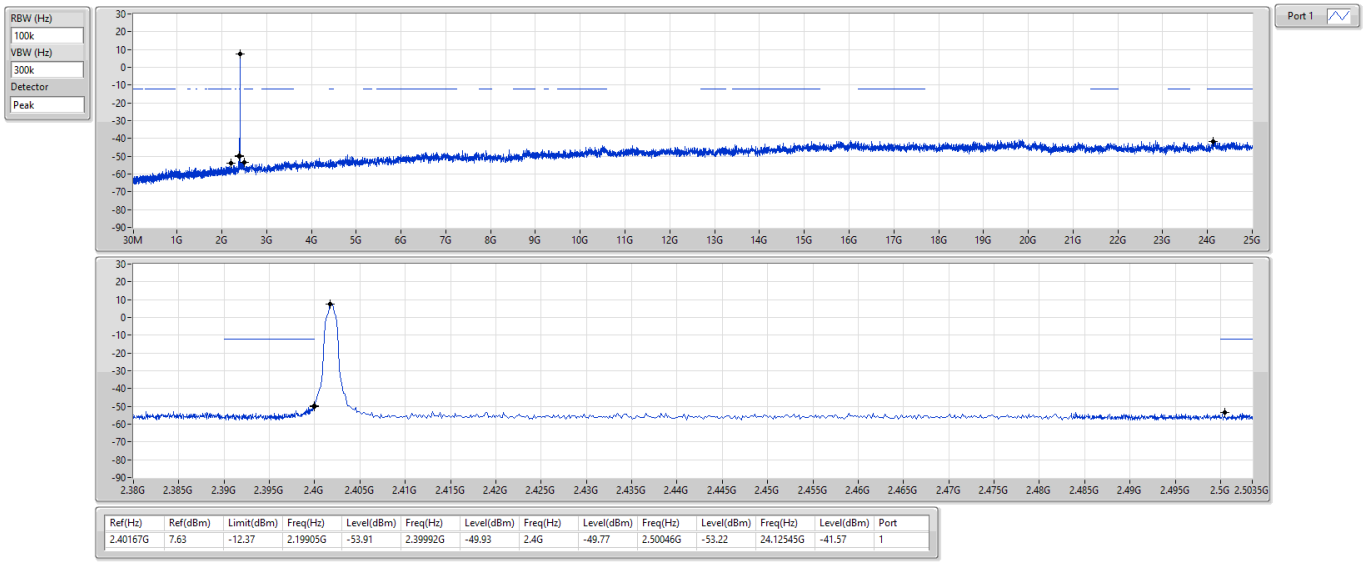
2402MHz



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
2.40184G	8.00	-12.00	2.1685G	-55.59	2.39992G	-48.09	2.4G	-48.55	2.50018G	-54.54	24.11139G	-41.19	1

2.4-2.4835GHz_BT-EDR(2Mbps) CSENdB-FS

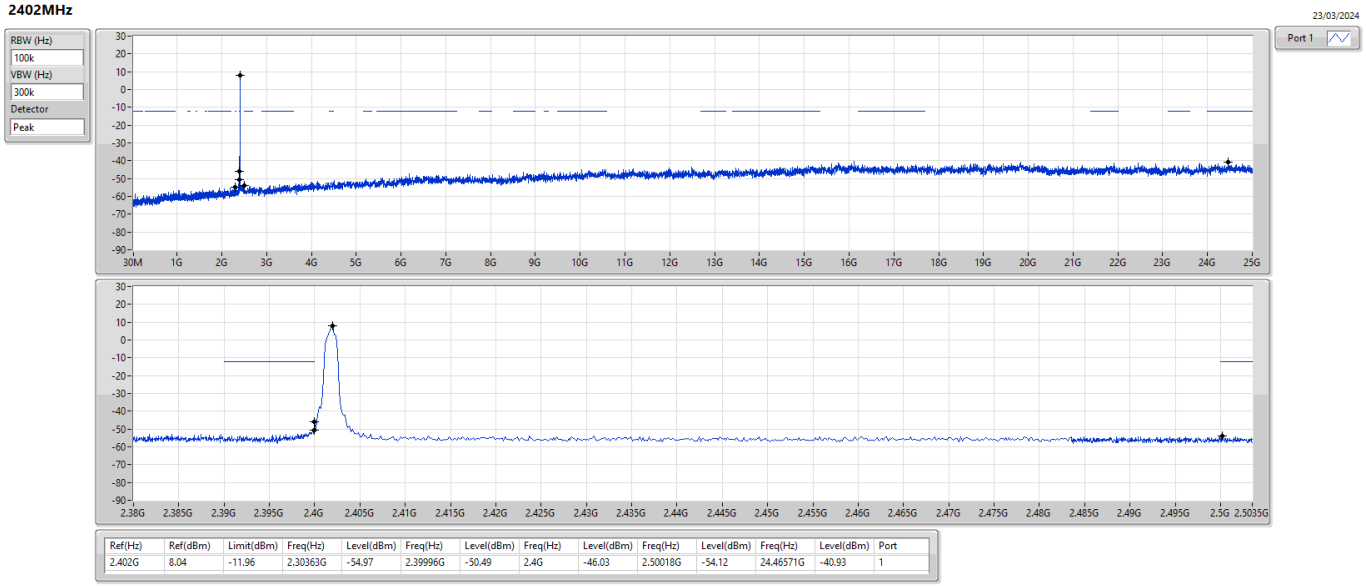
2402MHz



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
2.40167G	7.63	-12.37	2.19905G	-53.91	2.39992G	-49.93	2.4G	-49.77	2.50046G	-53.22	24.12545G	-41.57	1

2.4-2.4835GHz_BT-EDR(3Mbps) CSENdB-FS

2402MHz



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
2.402G	8.04	-11.96	2.30363G	-54.97	2.39996G	-50.49	2.4G	-46.03	2.50018G	-54.12	24.46571G	-40.93	1

Summary

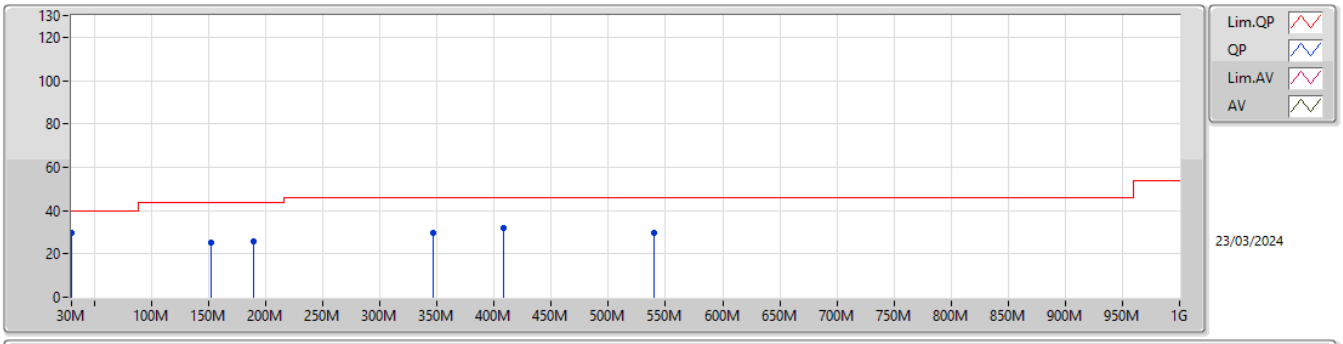
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	PK	30M	29.59	40.00	-10.41	3	Vertical	0	1.00

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	30M	29.59	40.00	-10.41	3	Vertical	0	1.00
2440MHz	Pass	PK	152.22M	25.06	43.50	-18.44	3	Vertical	0	1.00
2440MHz	Pass	PK	189.08M	25.52	43.50	-17.98	3	Vertical	0	1.00
2440MHz	Pass	PK	346.22M	29.97	46.00	-16.03	3	Vertical	0	1.00
2440MHz	Pass	PK	408.3M	32.15	46.00	-13.85	3	Vertical	0	1.00
2440MHz	Pass	PK	540.22M	29.66	46.00	-16.34	3	Vertical	0	1.00
2440MHz	Pass	PK	158.04M	31.22	43.50	-12.28	3	Horizontal	360	1.00
2440MHz	Pass	PK	231.76M	29.79	46.00	-16.21	3	Horizontal	360	1.00
2440MHz	Pass	PK	303.54M	34.04	46.00	-11.96	3	Horizontal	360	1.00
2440MHz	Pass	PK	334.58M	34.93	46.00	-11.07	3	Horizontal	360	1.00
2440MHz	Pass	PK	414.12M	34.57	46.00	-11.43	3	Horizontal	360	1.00
2440MHz	Pass	PK	976.72M	33.01	54.00	-20.99	3	Horizontal	360	1.00

2.4-2.4835GHz_BT-BR(1Mbps)

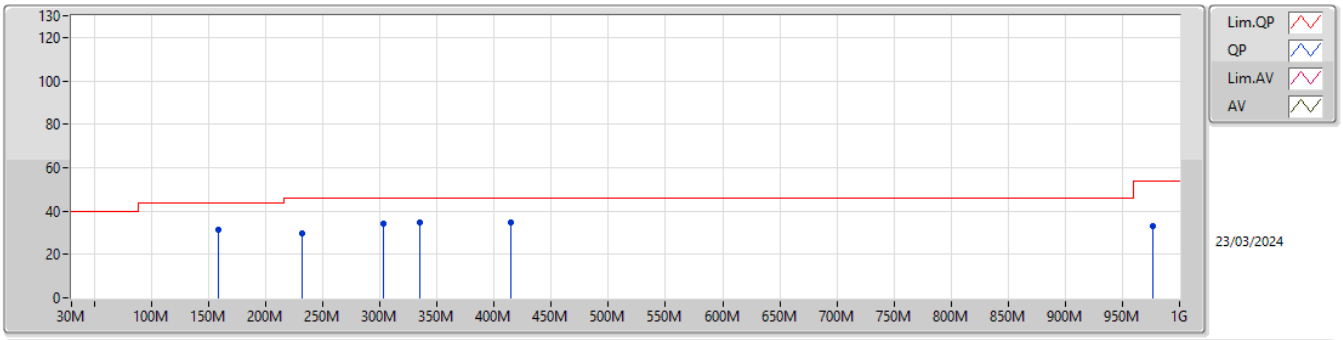
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
PK	30M	29.59	40.00	-10.41	-3.18	3	Vertical	0	1.00	32.77	23.49	0.92	27.59
PK	152.22M	25.06	43.50	-18.44	-9.85	3	Vertical	0	1.00	34.91	15.36	2.04	27.25
PK	189.08M	25.52	43.50	-17.98	-10.62	3	Vertical	0	1.00	36.14	14.23	2.28	27.13
PK	346.22M	29.97	46.00	-16.03	-4.70	3	Vertical	0	1.00	34.67	19.23	3.15	27.08
PK	408.3M	32.15	46.00	-13.85	-2.63	3	Vertical	0	1.00	34.78	21.43	3.41	27.47
PK	540.22M	29.66	46.00	-16.34	0.43	3	Vertical	0	1.00	29.23	24.67	3.96	28.20

2.4-2.4835GHz_BT-BR(1Mbps)

2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
PK	158.04M	31.22	43.50	-12.28	-10.10	3	Horizontal	360	1.00	41.32	15.05	2.08	27.23
PK	231.76M	29.79	46.00	-16.21	-9.12	3	Horizontal	360	1.00	38.91	15.42	2.53	27.07
PK	303.54M	34.04	46.00	-11.96	-5.57	3	Horizontal	360	1.00	39.61	18.47	2.93	26.97
PK	334.58M	34.93	46.00	-11.07	-4.98	3	Horizontal	360	1.00	39.91	18.98	3.09	27.05
PK	414.12M	34.57	46.00	-11.43	-2.33	3	Horizontal	360	1.00	36.90	21.74	3.44	27.51
PK	976.72M	33.01	54.00	-20.99	5.06	3	Horizontal	360	1.00	27.95	26.74	5.60	27.28

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	PK	2.4838G	61.03	74.00	-12.97	3	Vertical	340	2.22
BT-EDR(3Mbps)	Pass	PK	2.4958G	60.57	74.00	-13.43	3	Vertical	341	2.23

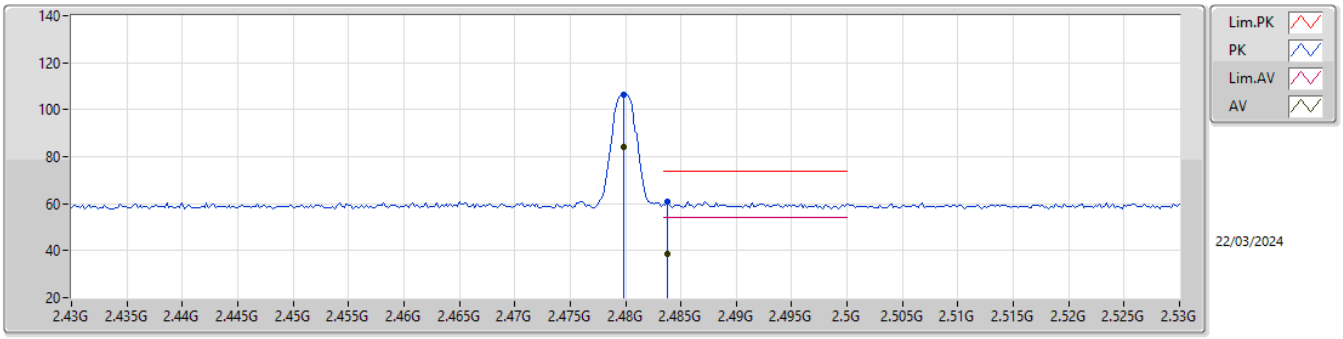
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3626G	37.52	54.00	-16.48	3	Vertical	0	2.60
2402MHz	Pass	AV	2.4018G	84.76	Inf	-Inf	3	Vertical	0	2.60
2402MHz	Pass	PK	2.3626G	60.02	74.00	-13.98	3	Vertical	0	2.60
2402MHz	Pass	PK	2.4018G	107.26	Inf	-Inf	3	Vertical	0	2.60
2402MHz	Pass	AV	2.3742G	37.02	54.00	-16.98	3	Horizontal	295	2.36
2402MHz	Pass	AV	2.4018G	81.80	Inf	-Inf	3	Horizontal	295	2.36
2402MHz	Pass	PK	2.3742G	59.52	74.00	-14.48	3	Horizontal	295	2.36
2402MHz	Pass	PK	2.4018G	104.30	Inf	-Inf	3	Horizontal	295	2.36
2402MHz	Pass	AV	4.8039G	25.17	54.00	-28.83	3	Vertical	0	1.81
2402MHz	Pass	PK	4.8039G	47.67	74.00	-26.33	3	Vertical	0	1.81
2402MHz	Pass	AV	4.80369G	24.17	54.00	-29.83	3	Horizontal	163	1.76
2402MHz	Pass	PK	4.80369G	46.67	74.00	-27.33	3	Horizontal	163	1.76
2440MHz	Pass	AV	2.3812G	37.02	54.00	-16.98	3	Vertical	341	2.35
2440MHz	Pass	AV	2.44G	85.01	Inf	-Inf	3	Vertical	341	2.35
2440MHz	Pass	AV	2.4976G	37.48	54.00	-16.52	3	Vertical	341	2.35
2440MHz	Pass	PK	2.3812G	59.52	74.00	-14.48	3	Vertical	341	2.35
2440MHz	Pass	PK	2.44G	107.51	Inf	-Inf	3	Vertical	341	2.35
2440MHz	Pass	PK	2.4976G	59.98	74.00	-14.02	3	Vertical	341	2.35
2440MHz	Pass	AV	2.3516G	36.94	54.00	-17.06	3	Horizontal	296	2.51
2440MHz	Pass	AV	2.44G	80.31	Inf	-Inf	3	Horizontal	296	2.51
2440MHz	Pass	AV	2.4992G	37.27	54.00	-16.73	3	Horizontal	296	2.51
2440MHz	Pass	PK	2.3516G	59.44	74.00	-14.56	3	Horizontal	296	2.51
2440MHz	Pass	PK	2.44G	102.81	Inf	-Inf	3	Horizontal	296	2.51
2440MHz	Pass	PK	2.4992G	59.77	74.00	-14.23	3	Horizontal	296	2.51
2440MHz	Pass	AV	4.8799G	26.88	54.00	-27.12	3	Vertical	190	1.05
2440MHz	Pass	PK	4.8799G	49.38	74.00	-24.62	3	Vertical	190	1.05
2440MHz	Pass	AV	4.88018G	25.57	54.00	-28.43	3	Horizontal	164	1.66
2440MHz	Pass	PK	4.88018G	48.07	74.00	-25.93	3	Horizontal	164	1.66
2480MHz	Pass	AV	2.4798G	84.09	Inf	-Inf	3	Vertical	340	2.22
2480MHz	Pass	AV	2.4838G	38.53	54.00	-15.47	3	Vertical	340	2.22
2480MHz	Pass	PK	2.4798G	106.59	Inf	-Inf	3	Vertical	340	2.22
2480MHz	Pass	PK	2.4838G	61.03	74.00	-12.97	3	Vertical	340	2.22
2480MHz	Pass	AV	2.4798G	78.10	Inf	-Inf	3	Horizontal	295	2.47
2480MHz	Pass	AV	2.497G	38.37	54.00	-15.63	3	Horizontal	295	2.47
2480MHz	Pass	PK	2.4798G	100.60	Inf	-Inf	3	Horizontal	295	2.47
2480MHz	Pass	PK	2.497G	60.87	74.00	-13.13	3	Horizontal	295	2.47
2480MHz	Pass	AV	4.95958G	26.01	54.00	-27.99	3	Vertical	176	1.08
2480MHz	Pass	PK	4.95958G	48.51	74.00	-25.49	3	Vertical	176	1.08
2480MHz	Pass	AV	4.95986G	24.51	54.00	-29.49	3	Horizontal	119	1.11
2480MHz	Pass	PK	4.95986G	47.01	74.00	-26.99	3	Horizontal	119	1.11
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3756G	37.18	54.00	-16.82	3	Vertical	0	2.59
2402MHz	Pass	AV	2.4022G	84.66	Inf	-Inf	3	Vertical	0	2.59
2402MHz	Pass	PK	2.3756G	59.68	74.00	-14.32	3	Vertical	0	2.59
2402MHz	Pass	PK	2.4022G	107.16	Inf	-Inf	3	Vertical	0	2.59
2402MHz	Pass	AV	2.389G	37.07	54.00	-16.93	3	Horizontal	283	2.36
2402MHz	Pass	AV	2.4018G	81.44	Inf	-Inf	3	Horizontal	283	2.36
2402MHz	Pass	PK	2.389G	59.57	74.00	-14.43	3	Horizontal	283	2.36
2402MHz	Pass	PK	2.4018G	103.94	Inf	-Inf	3	Horizontal	283	2.36
2402MHz	Pass	AV	4.80429G	24.66	54.00	-29.34	3	Vertical	176	1.49
2402MHz	Pass	PK	4.80429G	47.16	74.00	-26.84	3	Vertical	176	1.49
2402MHz	Pass	AV	4.80552G	24.35	54.00	-29.65	3	Horizontal	164	1.50
2402MHz	Pass	PK	4.80552G	46.85	74.00	-27.15	3	Horizontal	164	1.50
2440MHz	Pass	AV	2.3428G	36.77	54.00	-17.23	3	Vertical	341	2.34
2440MHz	Pass	AV	2.4396G	85.29	Inf	-Inf	3	Vertical	341	2.34
2440MHz	Pass	AV	2.4856G	37.56	54.00	-16.44	3	Vertical	341	2.34
2440MHz	Pass	PK	2.3428G	59.27	74.00	-14.73	3	Vertical	341	2.34
2440MHz	Pass	PK	2.4396G	107.79	Inf	-Inf	3	Vertical	341	2.34
2440MHz	Pass	PK	2.4856G	60.06	74.00	-13.94	3	Vertical	341	2.34
2440MHz	Pass	AV	2.3448G	36.65	54.00	-17.35	3	Horizontal	295	2.50

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2440MHz	Pass	AV	2.44G	80.69	Inf	-Inf	3	Horizontal	295	2.50
2440MHz	Pass	AV	2.4848G	37.68	54.00	-16.32	3	Horizontal	295	2.50
2440MHz	Pass	PK	2.3448G	59.15	74.00	-14.85	3	Horizontal	295	2.50
2440MHz	Pass	PK	2.44G	103.19	Inf	-Inf	3	Horizontal	295	2.50
2440MHz	Pass	PK	2.4848G	60.18	74.00	-13.82	3	Horizontal	295	2.50
2440MHz	Pass	AV	4.87964G	25.93	54.00	-28.07	3	Vertical	190	1.04
2440MHz	Pass	PK	4.87964G	48.43	74.00	-25.57	3	Vertical	190	1.04
2440MHz	Pass	AV	4.88043G	24.52	54.00	-29.48	3	Horizontal	163	1.62
2440MHz	Pass	PK	4.88043G	47.02	74.00	-26.98	3	Horizontal	163	1.62
2480MHz	Pass	AV	2.48G	84.32	Inf	-Inf	3	Vertical	341	2.23
2480MHz	Pass	AV	2.4958G	38.07	54.00	-15.93	3	Vertical	341	2.23
2480MHz	Pass	PK	2.48G	106.82	Inf	-Inf	3	Vertical	341	2.23
2480MHz	Pass	PK	2.4958G	60.57	74.00	-13.43	3	Vertical	341	2.23
2480MHz	Pass	AV	2.4798G	78.39	Inf	-Inf	3	Horizontal	295	2.47
2480MHz	Pass	AV	2.4854G	37.87	54.00	-16.13	3	Horizontal	295	2.47
2480MHz	Pass	PK	2.4798G	100.89	Inf	-Inf	3	Horizontal	295	2.47
2480MHz	Pass	PK	2.4854G	60.37	74.00	-13.63	3	Horizontal	295	2.47
2480MHz	Pass	AV	4.95994G	25.96	54.00	-28.04	3	Vertical	190	1.03
2480MHz	Pass	PK	4.95994G	48.46	74.00	-25.54	3	Vertical	190	1.03
2480MHz	Pass	AV	4.9608G	24.87	54.00	-29.13	3	Horizontal	347	1.72
2480MHz	Pass	PK	4.9608G	47.37	74.00	-26.63	3	Horizontal	347	1.72

2.4-2.4835GHz_BT-BR(1Mbps)

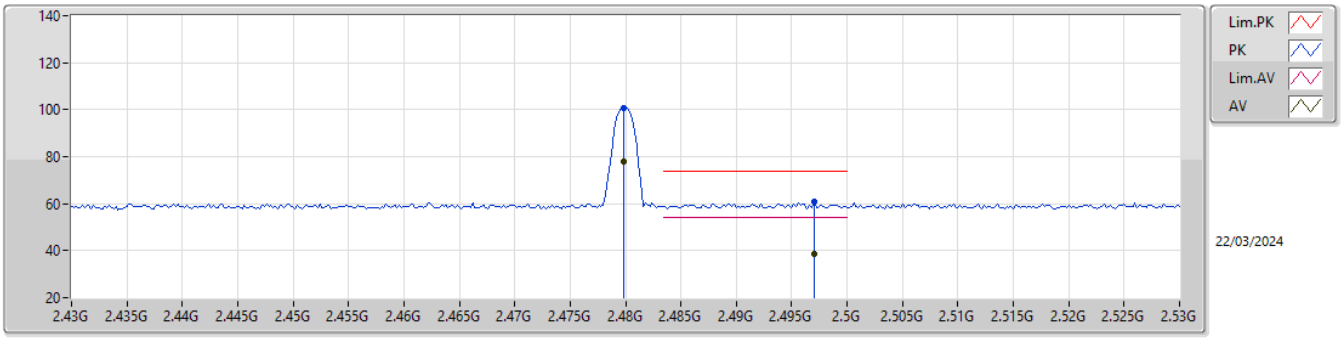
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	2.4798G	84.09	Inf	-Inf	33.21	3	Vertical	340	2.22	50.88	27.70	5.51	-
AV	2.4838G	38.53	54.00	-15.47	33.25	3	Vertical	340	2.22	5.28	27.74	5.51	-
PK	2.4798G	106.59	Inf	-Inf	33.21	3	Vertical	340	2.22	73.38	27.70	5.51	-
PK	2.4838G	61.03	74.00	-12.97	33.25	3	Vertical	340	2.22	27.78	27.74	5.51	-

2.4-2.4835GHz_BT-BR(1Mbps)

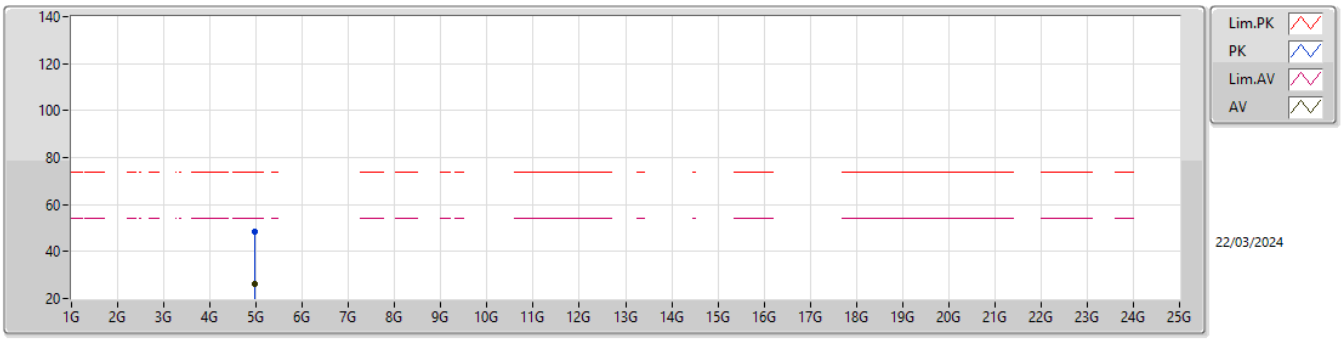
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	2.4798G	78.10	Inf	-Inf	33.21	3	Horizontal	295	2.47	44.89	27.70	5.51	-
AV	2.497G	38.37	54.00	-15.63	33.33	3	Horizontal	295	2.47	5.04	27.80	5.53	-
PK	2.4798G	100.60	Inf	-Inf	33.21	3	Horizontal	295	2.47	67.39	27.70	5.51	-
PK	2.497G	60.87	74.00	-13.13	33.33	3	Horizontal	295	2.47	27.54	27.80	5.53	-

2.4-2.4835GHz_BT-BR(1Mbps)

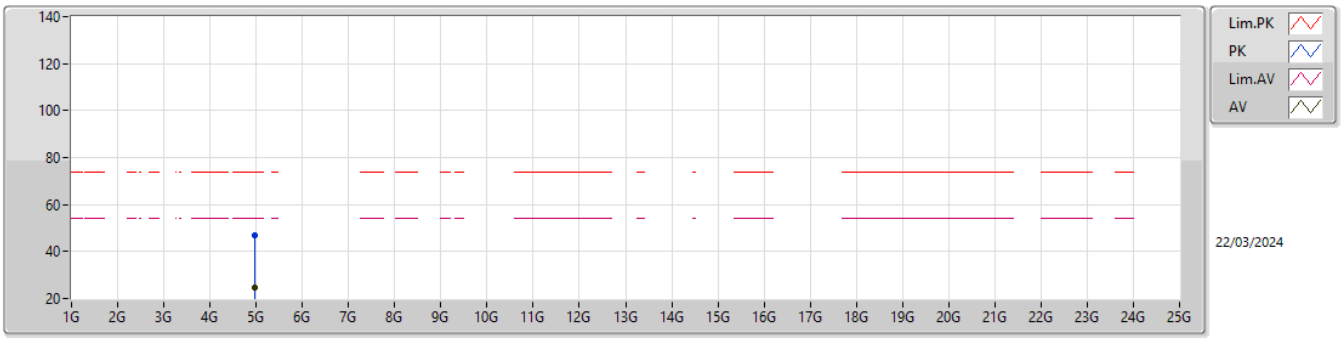
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	4.95958G	26.01	54.00	-27.99	6.85	3	Vertical	176	1.08	19.16	32.86	7.98	33.99
PK	4.95958G	48.51	74.00	-25.49	6.85	3	Vertical	176	1.08	41.66	32.86	7.98	33.99

2.4-2.4835GHz_BT-BR(1Mbps)

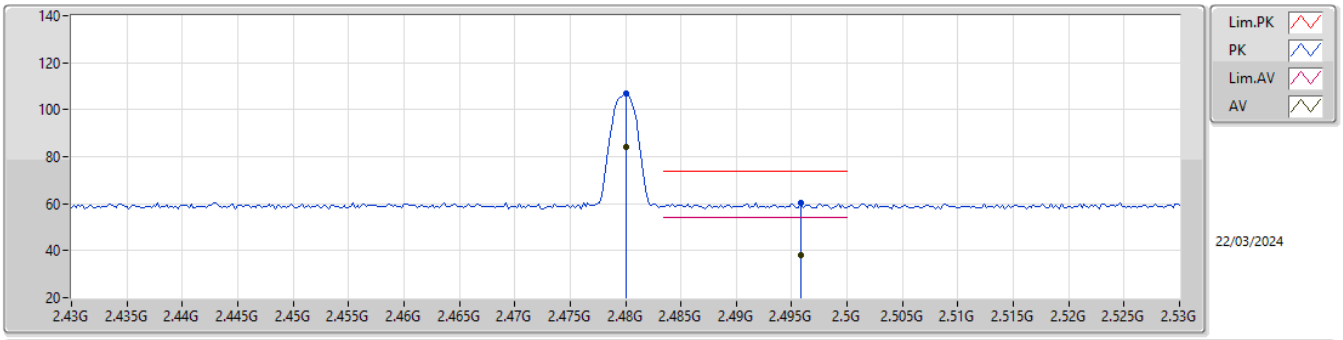
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	4.95986G	24.51	54.00	-29.49	6.85	3	Horizontal	119	1.11	17.66	32.86	7.98	33.99
PK	4.95986G	47.01	74.00	-26.99	6.85	3	Horizontal	119	1.11	40.16	32.86	7.98	33.99

2.4-2.4835GHz_BT-EDR(3Mbps)

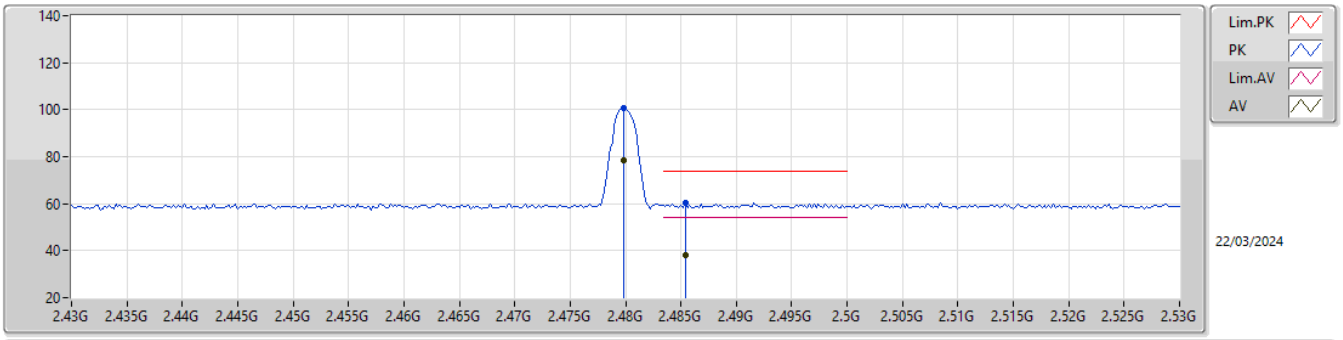
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	2.48G	84.32	Inf	-Inf	33.21	3	Vertical	341	2.23	51.11	27.70	5.51	-
AV	2.4958G	38.07	54.00	-15.93	33.33	3	Vertical	341	2.23	4.74	27.80	5.53	-
PK	2.48G	106.82	Inf	-Inf	33.21	3	Vertical	341	2.23	73.61	27.70	5.51	-
PK	2.4958G	60.57	74.00	-13.43	33.33	3	Vertical	341	2.23	27.24	27.80	5.53	-

2.4-2.4835GHz_BT-EDR(3Mbps)

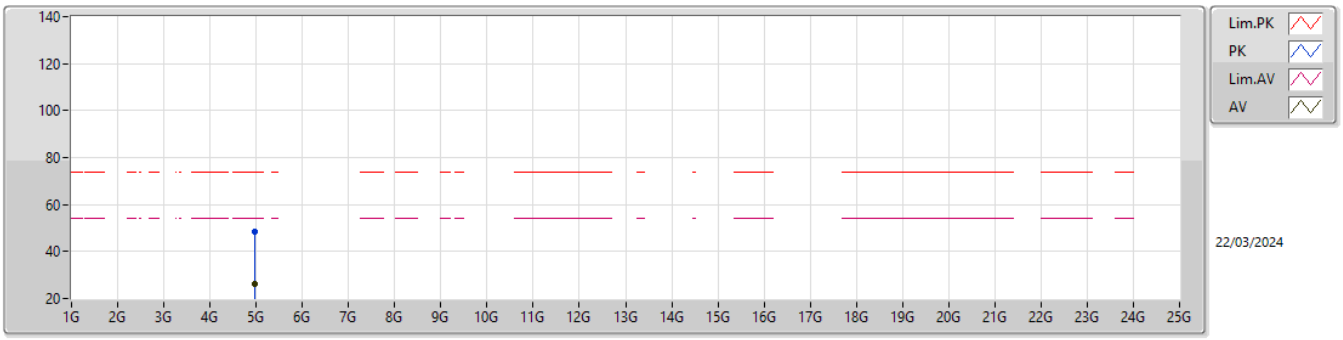
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	2.4798G	78.39	Inf	-Inf	33.21	3	Horizontal	295	2.47	45.18	27.70	5.51	-
AV	2.4854G	37.87	54.00	-16.13	33.27	3	Horizontal	295	2.47	4.60	27.75	5.52	-
PK	2.4798G	100.89	Inf	-Inf	33.21	3	Horizontal	295	2.47	67.68	27.70	5.51	-
PK	2.4854G	60.37	74.00	-13.63	33.27	3	Horizontal	295	2.47	27.10	27.75	5.52	-

2.4-2.4835GHz_BT-EDR(3Mbps)

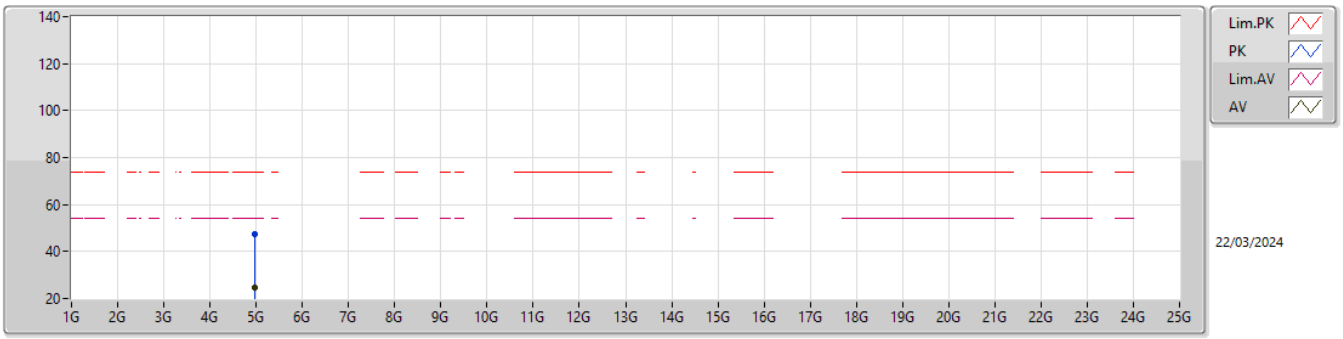
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	4.95994G	25.96	54.00	-28.04	6.85	3	Vertical	190	1.03	19.11	32.86	7.98	33.99
PK	4.95994G	48.46	74.00	-25.54	6.85	3	Vertical	190	1.03	41.61	32.86	7.98	33.99

2.4-2.4835GHz_BT-EDR(3Mbps)

2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	4.9608G	24.87	54.00	-29.13	6.85	3	Horizontal	347	1.72	18.02	32.86	7.98	33.99
PK	4.9608G	47.37	74.00	-26.63	6.85	3	Horizontal	347	1.72	40.52	32.86	7.98	33.99

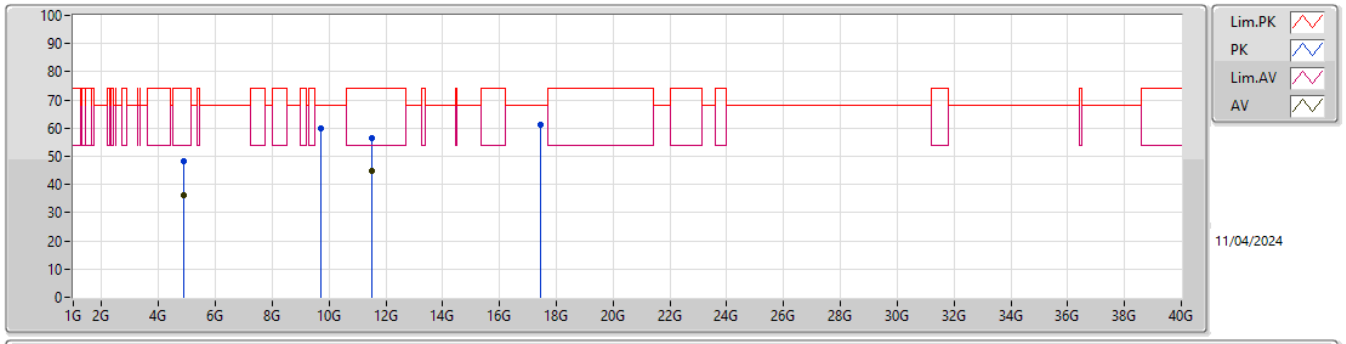
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	PK	17.467G	61.32	68.20	-6.88	Horizontal

Result

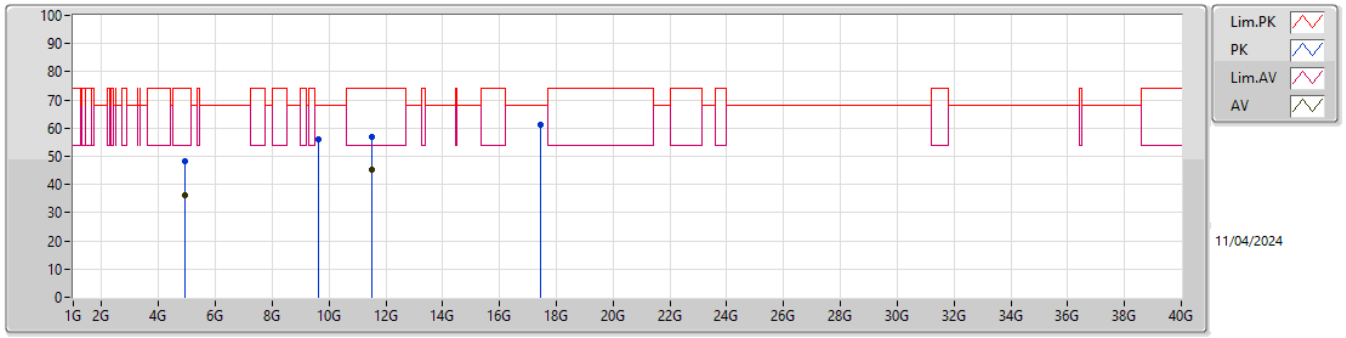
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
Mode 1	Pass	AV	4.889G	36.29	54.00	-17.71	3	Vertical	3	1.50
Mode 1	Pass	AV	11.527G	45.03	54.00	-8.97	3	Vertical	72	1.68
Mode 1	Pass	PK	4.889G	48.08	74.00	-25.92	3	Vertical	3	1.50
Mode 1	Pass	PK	9.704G	59.74	68.20	-8.46	3	Vertical	34	2.17
Mode 1	Pass	PK	11.527G	56.53	74.00	-17.47	3	Vertical	72	1.68
Mode 1	Pass	PK	17.44G	61.12	68.20	-7.08	3	Vertical	128	1.23
Mode 1	Pass	AV	4.93G	36.26	54.00	-17.74	3	Horizontal	0	1.50
Mode 1	Pass	AV	11.5G	45.34	54.00	-8.66	3	Horizontal	214	1.86
Mode 1	Pass	PK	4.93G	48.46	74.00	-25.54	3	Horizontal	0	1.50
Mode 1	Pass	PK	9.609G	56.10	68.20	-12.10	3	Horizontal	177	2.56
Mode 1	Pass	PK	11.5G	56.71	74.00	-17.29	3	Horizontal	214	1.86
Mode 1	Pass	PK	17.467G	61.32	68.20	-6.88	3	Horizontal	235	1.62

Radiated Emissions above 1GHz_Mode 1



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB/m)	(m)		(°)	(m)	(dBuV/m)	(dB/m)	(dB)	(dB)
AV	4.889G	36.29	54.00	-17.71	6.50	3	Vertical	3	1.50	29.79	32.53	7.97	34.00
AV	11.527G	45.03	54.00	-8.97	16.57	3	Vertical	72	1.68	28.46	38.75	11.84	34.02
PK	4.889G	48.08	74.00	-25.92	6.50	3	Vertical	3	1.50	41.58	32.53	7.97	34.00
PK	9.704G	59.74	68.20	-8.46	14.62	3	Vertical	34	2.17	45.12	37.91	11.40	34.69
PK	11.527G	56.53	74.00	-17.47	16.57	3	Vertical	72	1.68	39.96	38.75	11.84	34.02
PK	17.44G	61.12	68.20	-7.08	20.08	3	Vertical	128	1.23	41.04	38.70	14.87	33.49

Radiated Emissions above 1GHz_Mode 1



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB/m)	(m)		(°)	(m)	(dBuV/m)	(dB/m)	(dB)	(dB)
AV	4.93G	36.26	54.00	-17.74	6.69	3	Horizontal	0	1.50	29.57	32.72	7.97	34.00
AV	11.5G	45.34	54.00	-8.66	16.61	3	Horizontal	214	1.86	28.73	38.80	11.83	34.02
PK	4.93G	48.46	74.00	-25.54	6.69	3	Horizontal	0	1.50	41.77	32.72	7.97	34.00
PK	9.609G	56.10	68.20	-12.10	15.03	3	Horizontal	177	2.56	41.07	38.06	11.66	34.69
PK	11.5G	56.71	74.00	-17.29	16.61	3	Horizontal	214	1.86	40.10	38.80	11.83	34.02
PK	17.467G	61.32	68.20	-6.88	20.16	3	Horizontal	235	1.62	41.16	38.77	14.87	33.48