

# FCC Radio Test Report

**FCC ID** : TTUBEOPLAYPLPC  
**Equipment** : Wireless Gaming Headphones  
**Brand Name** : Bang & Olufsen  
**Model Name** : Beoplay Portal PC PS  
**Applicant** : Bang & Olufsen A/S  
Bang og Olufsen Allé 1, 7600 Struer, Denmark  
**Manufacturer** : Bang & Olufsen A/S  
Bang og Olufsen Allé 1, 7600 Struer, Denmark  
**Standard** : 47 CFR FCC Part 15.247

The product was received on Sep. 29, 2021, and testing was started from Nov. 13, 2021 and completed on Jan. 03, 2022. 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.)



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### Summary of Test Result

Report Clause	Ref. Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
3.2	15.247(a)	20dB Bandwidth	PASS	-
3.2	15.247(a)	Carrier Frequency Separation	PASS	-
3.3	15.247(b)	Maximum Conducted Output Power	PASS	-
3.4	15.247(a)	Number of Hopping Frequencies and Hopping 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	-

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

Reviewed by: Sam Tsai

Report Producer: Ann Hou



# 1 General Description

## 1.1 Information

### 1.1.1 RF General Information

Frequency Range (MHz)	Modulation	Ch. Frequency (MHz)	Channel Number
2400-2483.5	GFSK(1Mbps)	2402-2480	0-39 [40]
2400-2483.5	GFSK(2Mbps)	2404-2478	0-37 [38]

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	GFSK(1Mbps)	1	1TX
2.4-2.4835GHz	GFSK(2Mbps)	2	1TX

GFSK(1Mbps)							
Channel	Freq.(MHz)	Channel	Freq.(MHz)	Channel	Freq.(MHz)	Channel	Freq.(MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

GFSK(2Mbps)							
Channel	Freq.(MHz)	Channel	Freq.(MHz)	Channel	Freq.(MHz)	Channel	Freq.(MHz)
0	2404	10	2424	20	2444	30	2464
1	2406	11	2426	21	2446	31	2466
2	2408	12	2428	22	2448	32	2468
3	2410	13	2430	23	2450	33	2470
4	2412	14	2432	24	2452	34	2472
5	2414	15	2434	25	2454	35	2474
6	2416	16	2436	26	2456	36	2476
7	2418	17	2438	27	2458	37	2478
8	2420	18	2440	28	2460		
9	2422	19	2442	29	2462		

Note:

- ◆ SRD uses a GFSK (1Mbps/2Mbps).
- ◆ SRD 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	B&O	DH2 PS-ANT100	PCB Printed Antenna	N/A	3.5

Note 1: The EUT has one antenna.

**For SRD 2.4GHz function:**

For SRD 2.4G mode (1TX/1RX)

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

1.1.3 EUT Information

Operational Condition	
EUT Power Type	From AC Adapter / Host system / Battery
EUT Function	<input type="checkbox"/> Point-to-multipoint <input checked="" type="checkbox"/> Point-to-point
Type of EUT	
<input checked="" type="checkbox"/>	Stand-alone
<input type="checkbox"/>	Combined (EUT where the radio part is fully integrated within another device)
	Combined Equipment - Brand Name / Model No.: ...
<input type="checkbox"/>	Plug-in radio (EUT intended for a variety of host systems)
	Host System - Brand Name / Model No.: ...
<input type="checkbox"/>	Other:

1.1.4 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
GFSK(1Mbps)	0.647	1.89	405u	3k
GFSK(2Mbps)	0.597	2.24	19.375u	10k

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

1.1.5 Table for Multiple Listing

The brand/model names in the following table are all refer to the identical product.

EUT	Color	Description
Sample 1	Blue	All the Samples are identical. The only difference is the color of enclosure as different sales marketing.
Sample 2	Gray	

## 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				
<input checked="" type="checkbox"/> 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	Daniel Lin	21.2~22.4°C / 51~56%	13/Dec/2021
RF Conducted	TH01-HY	Barry Hsiao	24~26.9°C / 56~60%	27/Dec/2021~03/Jan/2022
<input checked="" type="checkbox"/> 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.				
Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
Radiated	03CH09-HY	Ryan Hsiao	21.2~22.3°C / 52~56%	13/Nov/2021~14/Dec/2021
Radiated (Co-location)	03CH09-HY	Ryan Hsiao	21.3~24.3°C / 53~57%	28/Dec/2021

## 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)	0.9 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	2.4 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.0 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	testsuite_guiVb8c1fe4b0795cfef0e6d96881610dfcfe724b38
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Mode	Power Setting
GFSK(1Mbps)	-
2402MHz	2
2440MHz	2
2480MHz	2
GFSK(2Mbps)	-
2404MHz	2
2440MHz	2
2478MHz	2



## 2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
<b>Tests Item</b>	AC power-line conducted emissions
<b>Condition</b>	AC power-line conducted measurement for line and neutral Test Voltage: 120Vac / 60Hz
<b>Operating Mode</b>	CTX
1	Adapter mode
2	USB mode

The Worst Case Mode for Following Conformance Tests	
<b>Tests Item</b>	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
<b>Test Condition</b>	Conducted measurement at transmit chains <input checked="" type="checkbox"/> Non-adaptive frequency hopping systems (Non-AFH) <input checked="" type="checkbox"/> 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			
<b>Tests Item</b>	Emissions in Restricted Frequency Bands		
<b>Test Condition</b>	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.		
<b>Operating Mode &lt; 1GHz</b>	CTX		
1	Adapter mode		
2	USB mode		
<b>Operating Mode &gt; 1GHz</b>	CTX		
<b>Orthogonal Planes of EUT</b>	<b>X Plane</b>	<b>Y Plane</b>	<b>Z Plane</b>
			
<b>Worst Planes of EUT</b>		V	

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis
Test Condition	Radiated measurement
Operating Mode	CTX
1	Bluetooth+WLAN 2.4GHz SRD
Refer to Sporton Test Report No.: Appendix H for Radiated Emission Co-location.	

### 2.3 Accessories

Accessories				
Battery	Brand Name	Synergy	Model Name	AHB723938PCT
	Power Rating	3.7Vdc, 1110mAh	Type	Lithium-ion Polymer Battery Pack
C-A Adapter	Brand Name	Bang & Olufsen	Model Name	ADP100AC
USB Cable	Brand Name	Bang & Olufsen	Model Name	4021XW01907ZEU
	Power Cord	1.2 meter, D-shielded cable, w/o ferrite core		
Audio Cable	Brand Name	Bang & Olufsen	Model Name	4021XW01906ZAS
	Power Cord	1.2 meter, non-shielded cable, w/o ferrite core		

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

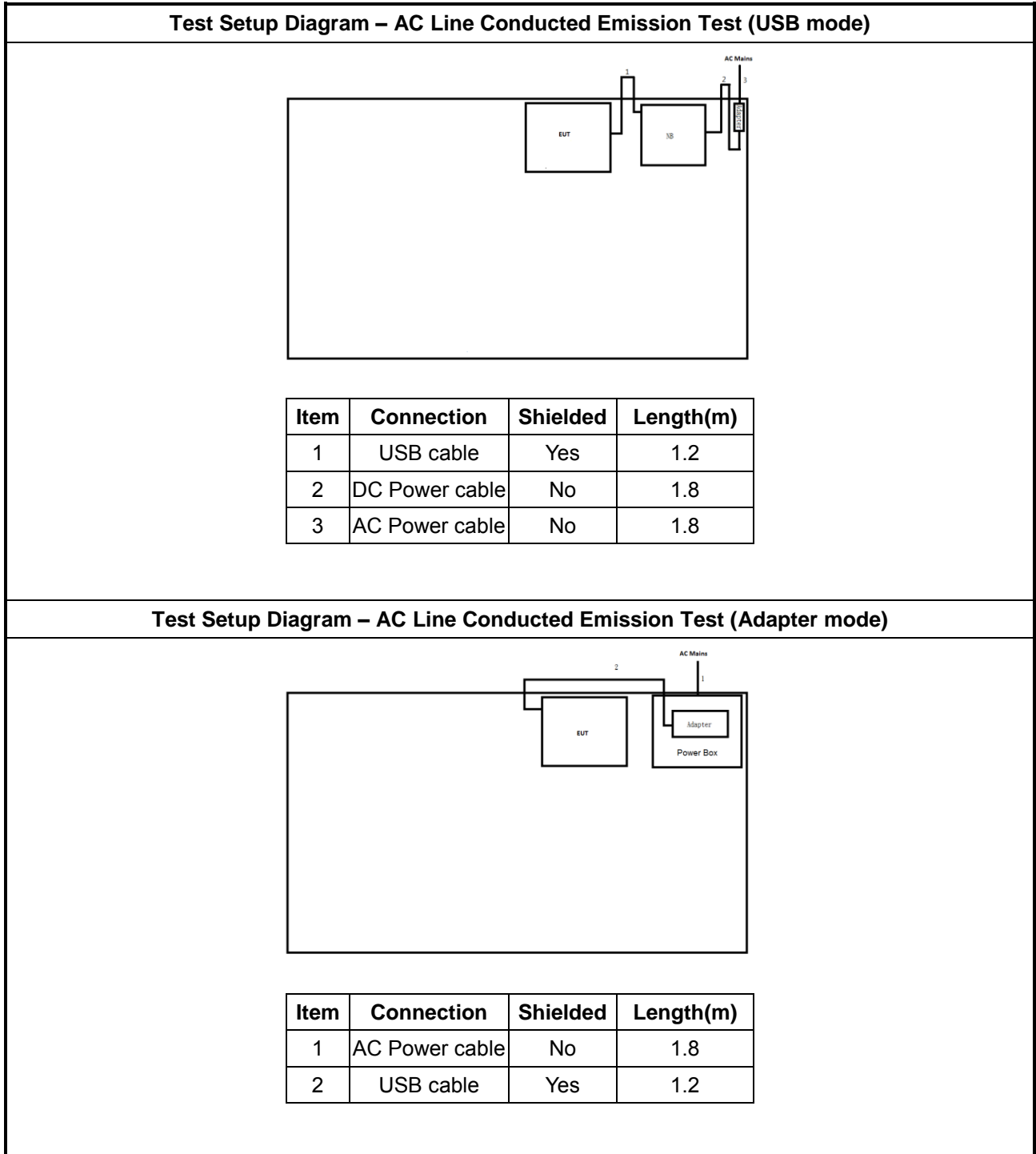
### 2.4 Support Equipment

Support Equipment – AC Conduction					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Notebook	HP	HSTNN-142C	-	-
2	Adapter	APPLE	A1357	-	For EUT
3	AC Power Cable	Power sync	PW-GPC180-3	-	-
4	Adapter	HP	HSTNN-CA40	-	For NB

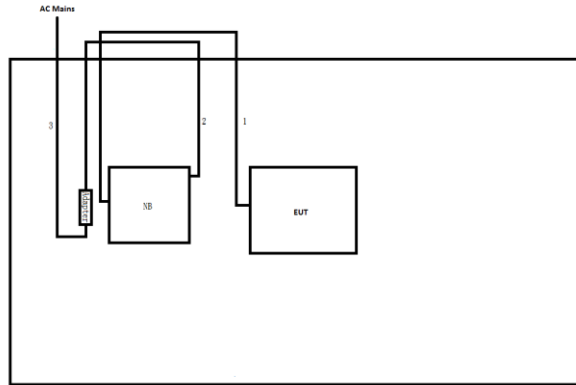
Support Equipment – Conducted					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Notebook	HP	HSTNN-142C	-	-
2	Adapter for NB	HP	HSTNN-CA40	-	-
3	DC Power Supply	GW	GPS-3030DD	-	-

Support Equipment – Radiated					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Notebook	HP	HSTNN-142C	-	-
2	Adapter	APPLE	A1357	-	For EUT
3	AC Power Cable	Power sync	PW-GPC180-3	-	-
4	Adapter	HP	HSTNN-CA40	-	For NB

## 2.5 Test Setup Diagram

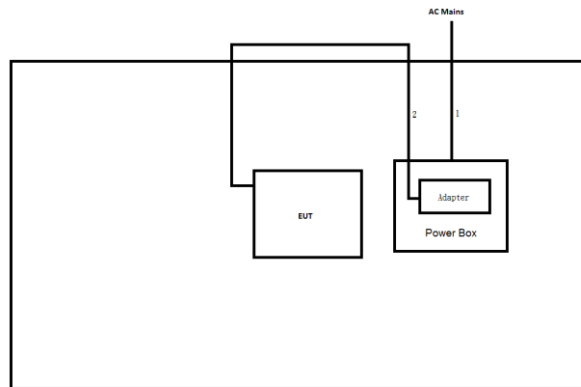


**Test Setup Diagram - Radiated Test (USB mode)**



Item	Connection	Shielded	Length(m)
1	USB cable	Yes	1.2
2	DC Power cable	No	1.8
3	AC Power cable	No	1.8

**Test Setup Diagram - Radiated Test (Adapter mode)**



Item	Connection	Shielded	Length(m)
1	AC Power cable	No	1.8
2	USB cable	Yes	1.2

### 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

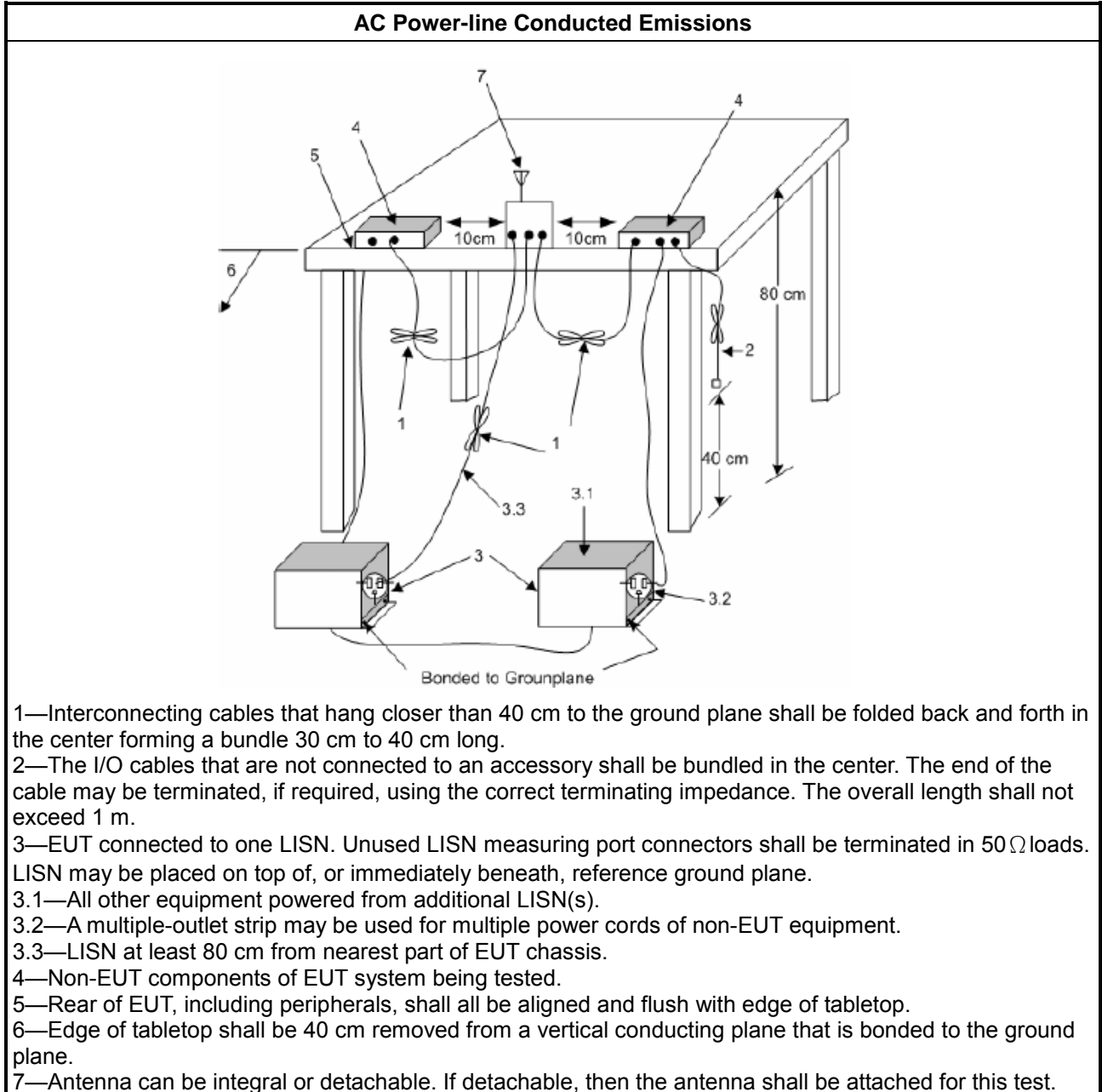
Test Method
<ul style="list-style-type: none"> <li>Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.</li> </ul>

##### 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



### 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	
<ul style="list-style-type: none"> <li>2400-2483.5 MHz Band:</li> </ul>	
	<ul style="list-style-type: none"> <li><math>N \geq 75</math> and <math>ChS \geq MAX</math> (20 dB bandwidth, 25 kHz).</li> </ul>
	<ul style="list-style-type: none"> <li><math>75 &gt; N \geq 15</math> and <math>ChS \geq MAX</math> (20 dB bandwidth 2/3,25 kHz).</li> </ul>
<b>N:</b> Number of Hopping Frequencies; <b>ChS:</b> Hopping Channel Separation	

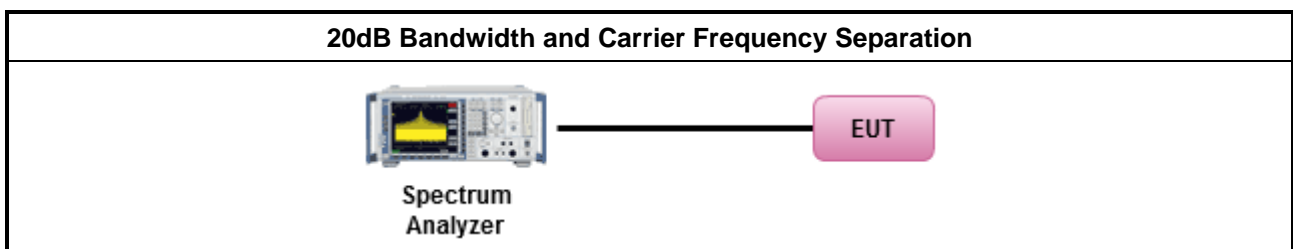
#### 3.2.2 Measuring Instruments

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

#### 3.2.3 Test Procedures

Test Method
<ul style="list-style-type: none"> <li>Refer as ANSI C63.10-2013, clause 6.9.2 for 20 dB bandwidth measurement.</li> </ul>
<ul style="list-style-type: none"> <li>Refer as ANSI C63.10-2013, clause 7.8.2 for carrier frequency separation measurement.</li> </ul>

#### 3.2.4 Test Setup



#### 3.2.5 Test Result of 20dB Bandwidth

Refer as Appendix B

#### 3.2.6 Test Result of Carrier Frequency Separation

Refer as Appendix B

### 3.3 Maximum Conducted Output Power

#### 3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
<ul style="list-style-type: none"> <li>2400-2483.5 MHz Band:</li> </ul>	
	<ul style="list-style-type: none"> <li><math>N \geq 75</math>; Power 30dBm; EIRP 36dBm</li> </ul>
	<ul style="list-style-type: none"> <li><math>75 &gt; N \geq 15</math>; Power 21dBm; EIRP 27dBm</li> </ul>
<b>N:</b> Number of Hopping Frequencies	

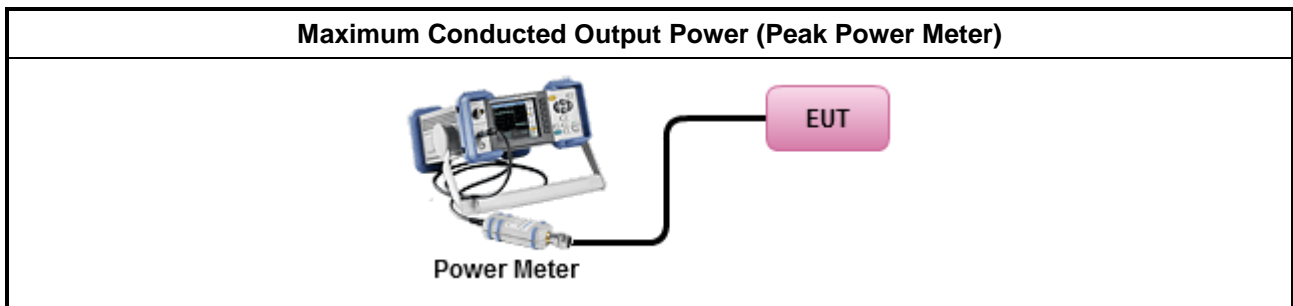
#### 3.3.2 Measuring Instruments

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

#### 3.3.3 Test Procedures

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

#### 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	
<ul style="list-style-type: none"> <li>▪ 2400-2483.5 MHz Band:</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ <math>N \geq 75</math> and <math>ChS \geq MAX</math> (20 dB bandwidth, 25 kHz).</li> </ul>
	<ul style="list-style-type: none"> <li>▪ <math>75 &gt; N \geq 15</math> and <math>ChS \geq MAX</math> (20 dB bandwidth 2/3, 25 kHz).</li> </ul>
<b>N:</b> Number of Hopping Frequencies; <b>ChS</b> : Hopping Channel Separation	

#### 3.4.2 Hopping Bandedge Limit

Refer clause 3.6.1 and clause 3.7.1

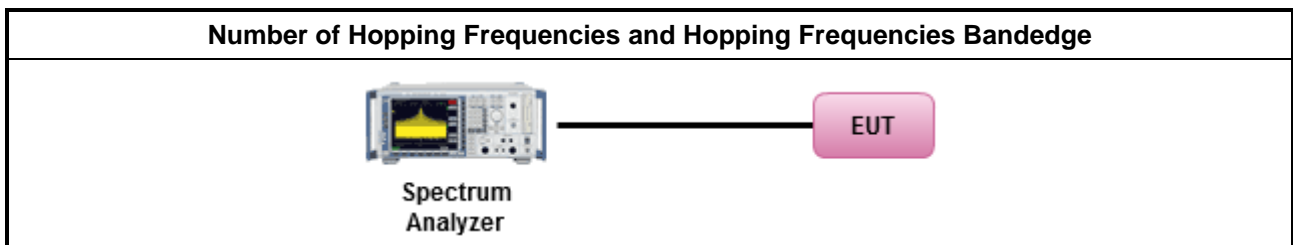
#### 3.4.3 Measuring Instruments

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

#### 3.4.4 Test Procedures

Test Method
<ul style="list-style-type: none"> <li>▪ Refer as ANSI C63.10-2013, clause 7.8.3 for number of hopping frequencies measurement.</li> </ul>
<ul style="list-style-type: none"> <li>▪ Refer as ANSI C63.10-2013, clause 7.8.6 for hopping frequencies Bandedge measurement.</li> </ul>

#### 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

Time of Occupancy (Dwell Time) Limit for Frequency Hopping Systems	
<ul style="list-style-type: none"> <li>2400-2483.5 MHz Band:</li> </ul>	
	<ul style="list-style-type: none"> <li><math>N \geq 75</math>; 0.4s in <math>N \times 0.4</math> period</li> </ul>
	<ul style="list-style-type: none"> <li><math>75 &gt; N \geq 15</math>; 0.4s in <math>N \times 0.4</math> period</li> </ul>
<b>N:</b> Number of Hopping Frequencies	

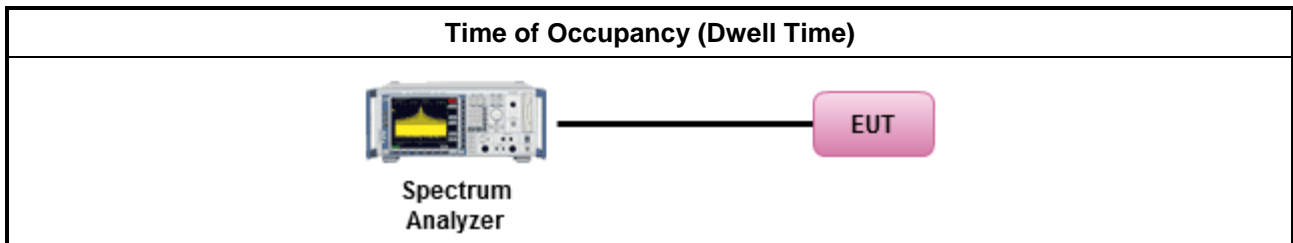
#### 3.5.2 Measuring Instruments

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

#### 3.5.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> <li>Refer as ANSI C63.10-2013, clause 7.8.4 for dwell time measurement.</li> </ul>	
<ul style="list-style-type: none"> <li>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.</li> </ul>	
	<ul style="list-style-type: none"> <li>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 <math>5/1600</math> seconds, or 3.125ms. DH5 Packet permit maximum <math>1600 / 79 / 6 = 3.37</math> hops per second in each channel.</li> </ul>

#### 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 (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.	

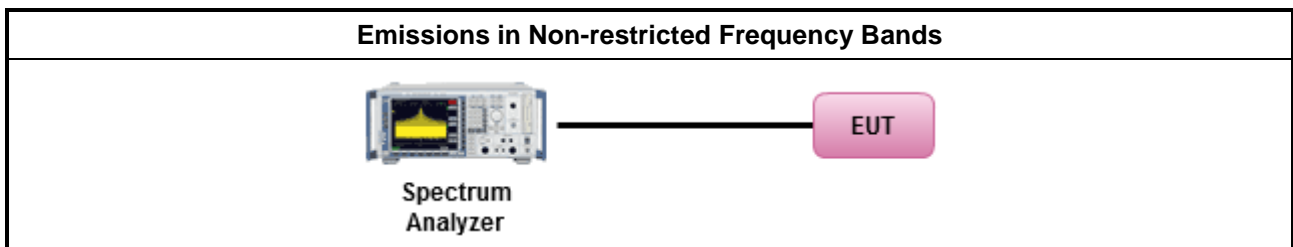
#### 3.6.2 Measuring Instruments

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

#### 3.6.3 Test Procedures

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

#### 3.6.4 Test Setup



#### 3.6.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix F

### 3.7 Emissions in Restricted Frequency Bands

#### 3.7.1 Emissions in Restricted Frequency Bands Limit

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

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

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

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

#### 3.7.2 Measuring Instruments

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

### 3.7.3 Test Procedures

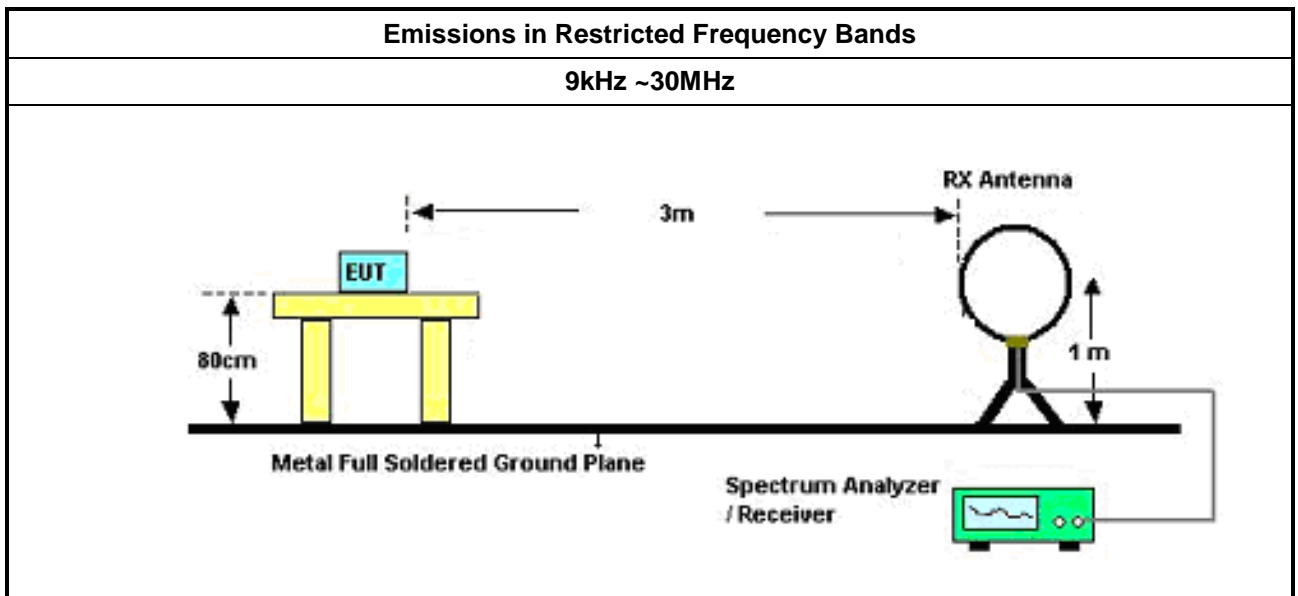
Test Method	
<ul style="list-style-type: none"> <li>The average emission levels shall be measured in [hopping duty factor].</li> </ul>	
<ul style="list-style-type: none"> <li>Refer as ANSI C63.10; clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.</li> </ul>	
<ul style="list-style-type: none"> <li>For the transmitter unwanted emissions shall be measured using following options below:</li> </ul>	
	<ul style="list-style-type: none"> <li>Refer as ANSI C63.10, clause 4.1.4.2.1 QP value.</li> </ul>
	<ul style="list-style-type: none"> <li>Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak.</li> </ul>
	<ul style="list-style-type: none"> <li>Refer as ANSI C63.10, clause 4.1.4.2.4 average value of hopping pulsed emissions.</li> </ul>
<ul style="list-style-type: none"> <li>KDB 414788 Open-Field Test Sites and Chamber Correlation Justification.</li> </ul>	
<ul style="list-style-type: none"> <li>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.</li> </ul>	
<ul style="list-style-type: none"> <li>Open-field site and chamber correlation testing had been performed and chamber measured test result is the worst case test result.</li> </ul>	

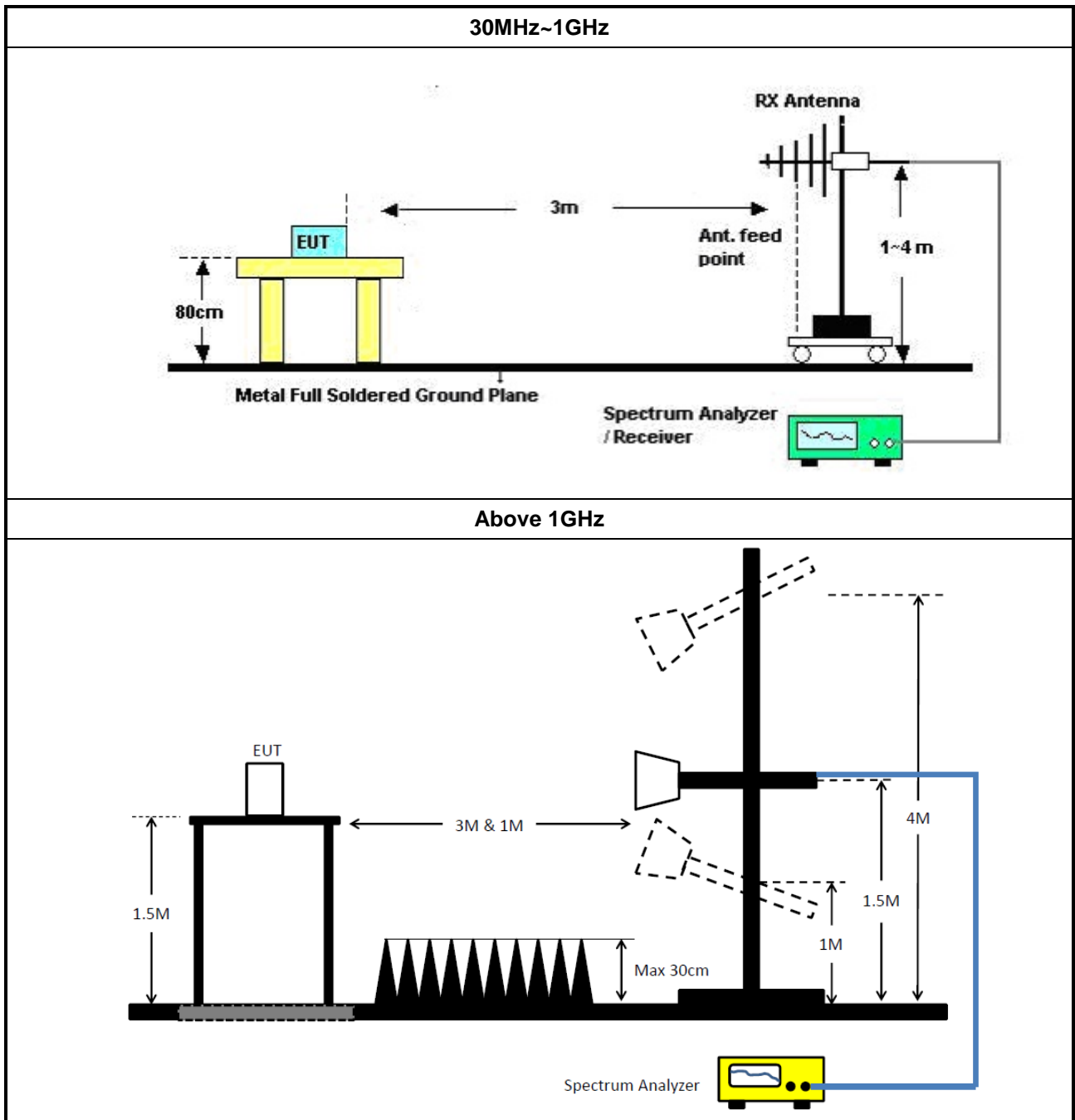
### 3.7.4 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Raw(Read Level) + AF(Antenna Factor) + CL(Cable Loss) - PA(Preamplifier Factor)

### 3.7.5 Test Setup





### 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	ESR3	102051	9kHz ~ 3.6GHz	21/May/2021	20/May/2022
LISN	R&S	ENV216	100003	9kHz ~ 30MHz	15/Dec/2020	14/Dec/2021
RF Cable 5m	TITAN	TITAN	CO04-cable-01	0.1MHz~200MHz	03/Mar/2021	02/Mar/2022
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9kHz ~ 30MHz	15/Sep/2021	14/Sep/2022

### 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	30/Mar/2021	29/Mar/2022
SMB100A Signal Generator	R&S	SMB100A03	181147	100kHz~40GHz	21/Oct/2021	20/Oct/2022
Pulse Sensor	Anritsu	MA2411B	0917017	300MHz~40GHz	23/Feb/2021	22/Feb/2022
Power Meter	Anritsu	ML2495A	0949003	300MHz~40GHz	23/Feb/2021	22/Feb/2022

### Instrument for Radiated Test

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	30MHz~1GHz 3m	26/Mar/2021	25/Mar/2022
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	1GHz~18GHz 3m	18/Mar/2021	17/Mar/2022
EXA Signal Analyzer	KEYSIGHT	N9010A	MY54200885	10Hz~44GHz	13/Aug/2021	12/Aug/2022
Amplifier	EMC	EMC9135	980232	9kHz~1GHz	12/Apr/2021	11/Apr/2022
Microwave Preamplifier	Agilent	8449B	3008A02096	1GHz~26.5GHz	23/Jul/2021	22/Jul/2022
Bilog Antenna & 5dB Attenuator	TESEQ & MTJ	CBL6111D&MT J6102-05	35418 & 3	30MHz~1GHz	04/Sep/2021	03/Sep/2022
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA9120 D 1534	1GHz~18GHz	18/May/2021	17/May/2022
RF Cable-low	Jye Bao	RG142	CB031+324530/4	9kHz~30MHz	30/Aug/2021	29/Aug/2022
RF Cable-low	Jye Bao	RG142	CB031+324530/4	30MHz~1GHz	09/Feb/2021	08/Feb/2022
RF CABLE 5m+3m+1m	HUBER+SUHNER	SUCOFLEX104	CB009	1GHz~40GHz	13/Aug/2021	12/Aug/2022
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170221	18GHz~40GHz	11/Mar/2021	10/Mar/2022
Microwave Preamplifier	EMC INSTRUMENTS	EM18G40G	060604	18GHz ~ 40GHz	09/Mar/2021	08/Mar/2022
Loop Antenna	TESEQ	HLA 6120	31244	9kHz~30MHz	16/Mar/2021	15/Mar/2022
EMI Test Receiver	R&S	ESR3	102052	9kHz~3.6GHz	19/Apr/2021	18/Apr/2022



Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	749.51k	25.35	46.00	-20.65	Neutral
Mode 2	Pass	QP	168.41k	49.94	65.04	-15.10	Line

Mode Configure

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition	Comments
Mode 1	Pass	QP	165.743k	35.60	65.18	-29.58	Line	-
Mode 1	Pass	AV	165.743k	21.74	55.18	-33.44	Line	-
Mode 1	Pass	QP	251.038k	30.70	61.72	-31.02	Line	-
Mode 1	Pass	AV	251.038k	18.42	51.72	-33.30	Line	-
Mode 1	Pass	QP	331.971k	27.20	59.40	-32.20	Line	-
Mode 1	Pass	AV	331.971k	16.83	49.40	-32.57	Line	-
Mode 1	Pass	QP	740.588k	33.05	56.00	-22.95	Line	-
Mode 1	Pass	AV	740.588k	21.33	46.00	-24.67	Line	-
Mode 1	Pass	QP	4.816M	23.70	56.00	-32.30	Line	-
Mode 1	Pass	AV	4.816M	19.47	46.00	-26.53	Line	-
Mode 1	Pass	QP	7.714M	23.42	60.00	-36.58	Line	-
Mode 1	Pass	AV	7.714M	19.36	50.00	-30.64	Line	-
Mode 1	Pass	QP	165.082k	35.61	65.20	-29.59	Neutral	-
Mode 1	Pass	AV	165.082k	21.94	55.20	-33.26	Neutral	-
Mode 1	Pass	QP	255.079k	29.10	61.58	-32.48	Neutral	-
Mode 1	Pass	AV	255.079k	18.80	51.58	-32.78	Neutral	-
Mode 1	Pass	QP	335.971k	26.15	59.31	-33.16	Neutral	-
Mode 1	Pass	AV	335.971k	18.09	49.31	-31.22	Neutral	-
Mode 1	Pass	QP	749.51k	33.77	56.00	-22.23	Neutral	-
Mode 1	Pass	AV	749.51k	25.35	46.00	-20.65	Neutral	-
Mode 1	Pass	QP	4.04M	25.14	56.00	-30.86	Neutral	-
Mode 1	Pass	AV	4.04M	20.79	46.00	-25.21	Neutral	-
Mode 1	Pass	QP	17.555M	25.30	60.00	-34.70	Neutral	-
Mode 1	Pass	AV	17.555M	21.22	50.00	-28.78	Neutral	-
Mode 2	Pass	QP	152.414k	48.05	65.87	-17.82	Line	-
Mode 2	Pass	AV	152.414k	26.68	55.87	-29.19	Line	-
Mode 2	Pass	QP	168.41k	49.94	65.04	-15.10	Line	-
Mode 2	Pass	AV	168.41k	34.96	55.04	-20.08	Line	-
Mode 2	Pass	QP	191.358k	46.22	63.97	-17.75	Line	-
Mode 2	Pass	AV	191.358k	28.97	53.97	-25.00	Line	-
Mode 2	Pass	QP	469.822k	31.77	56.52	-24.75	Line	-
Mode 2	Pass	AV	469.822k	27.32	46.52	-19.20	Line	-
Mode 2	Pass	QP	3.627M	28.13	56.00	-27.87	Line	-
Mode 2	Pass	AV	3.627M	20.37	46.00	-25.63	Line	-
Mode 2	Pass	QP	7.382M	27.69	60.00	-32.31	Line	-
Mode 2	Pass	AV	7.382M	23.35	50.00	-26.65	Line	-
Mode 2	Pass	QP	152.414k	46.54	65.87	-19.33	Neutral	-
Mode 2	Pass	AV	152.414k	26.04	55.87	-29.83	Neutral	-
Mode 2	Pass	QP	168.41k	49.83	65.04	-15.21	Neutral	-
Mode 2	Pass	AV	168.41k	35.25	55.04	-19.79	Neutral	-
Mode 2	Pass	QP	203.167k	44.23	63.48	-19.25	Neutral	-
Mode 2	Pass	AV	203.167k	27.51	53.48	-25.97	Neutral	-
Mode 2	Pass	QP	494.848k	31.37	56.10	-24.73	Neutral	-



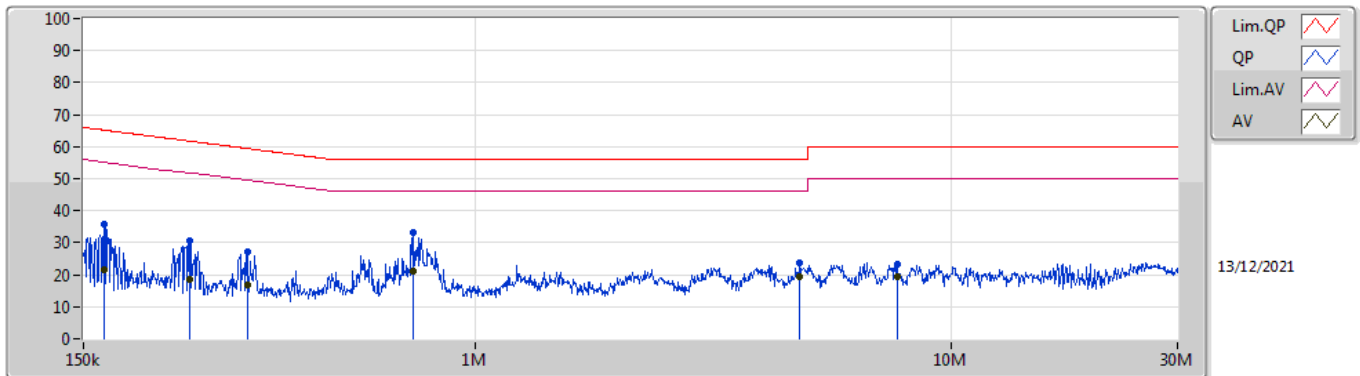


## Conducted Emissions at Powerline

## Appendix A

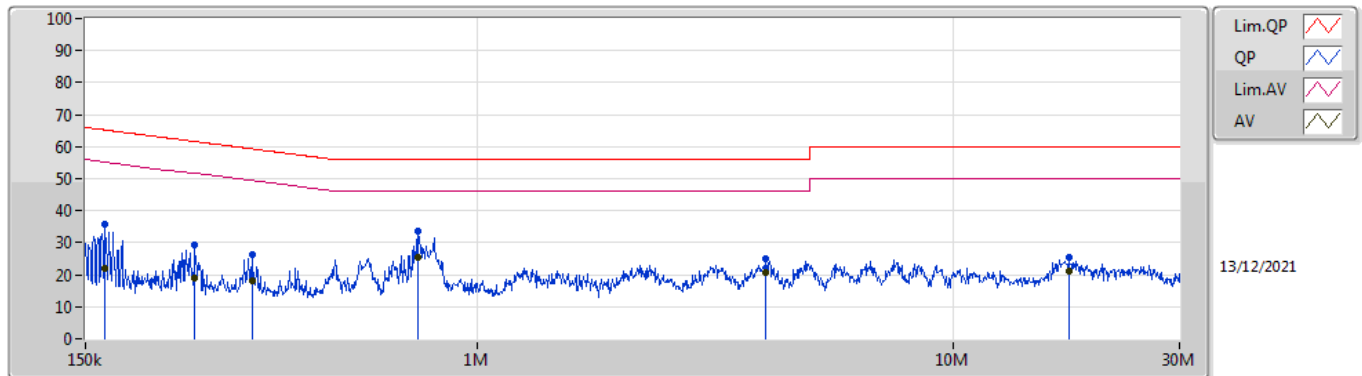
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition	Comments
Mode 2	Pass	AV	494.848k	24.56	46.10	-21.54	Neutral	-
Mode 2	Pass	QP	1.442M	27.59	56.00	-28.41	Neutral	-
Mode 2	Pass	AV	1.442M	24.06	46.00	-21.94	Neutral	-
Mode 2	Pass	QP	7.179M	29.46	60.00	-30.54	Neutral	-
Mode 2	Pass	AV	7.179M	25.32	50.00	-24.68	Neutral	-

### Conducted Emissions at Powerline\_Mode 1



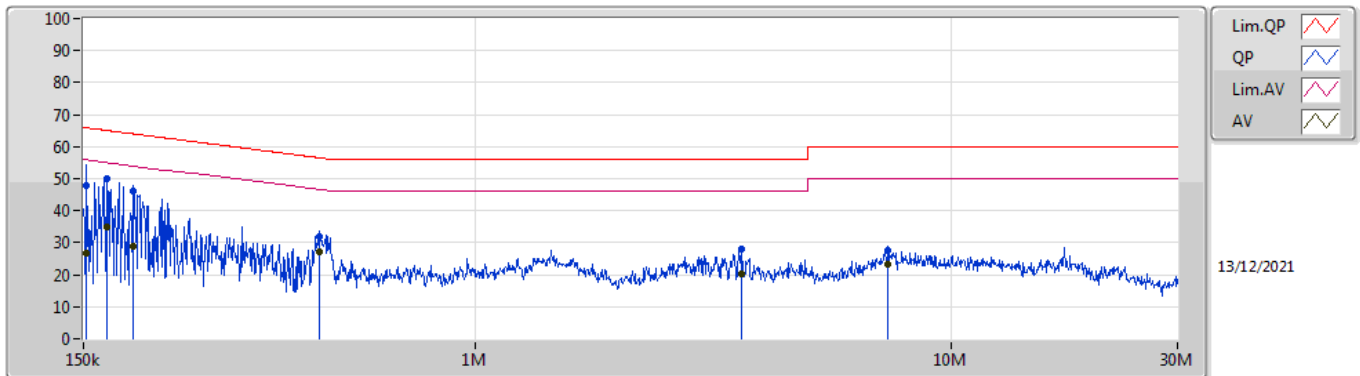
Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)
QP	165.743k	35.60	65.18	-29.58	19.64	Line	-	15.96	9.69	0.04	9.91
AV	165.743k	21.74	55.18	-33.44	19.64	Line	-	2.10	9.69	0.04	9.91
QP	251.038k	30.70	61.72	-31.02	19.64	Line	-	11.06	9.68	0.05	9.91
AV	251.038k	18.42	51.72	-33.30	19.64	Line	-	-1.22	9.68	0.05	9.91
QP	331.971k	27.20	59.40	-32.20	19.63	Line	-	7.57	9.67	0.05	9.91
AV	331.971k	16.83	49.40	-32.57	19.63	Line	-	-2.80	9.67	0.05	9.91
QP	740.588k	33.05	56.00	-22.95	19.67	Line	-	13.38	9.68	0.07	9.92
AV	740.588k	21.33	46.00	-24.67	19.67	Line	-	1.66	9.68	0.07	9.92
QP	4.816M	23.70	56.00	-32.30	19.79	Line	-	3.91	9.72	0.15	9.92
AV	4.816M	19.47	46.00	-26.53	19.79	Line	-	-0.32	9.72	0.15	9.92
QP	7.714M	23.42	60.00	-36.58	19.87	Line	-	3.55	9.76	0.18	9.93
AV	7.714M	19.36	50.00	-30.64	19.87	Line	-	-0.51	9.76	0.18	9.93

Conducted Emissions at Powerline\_Mode 1



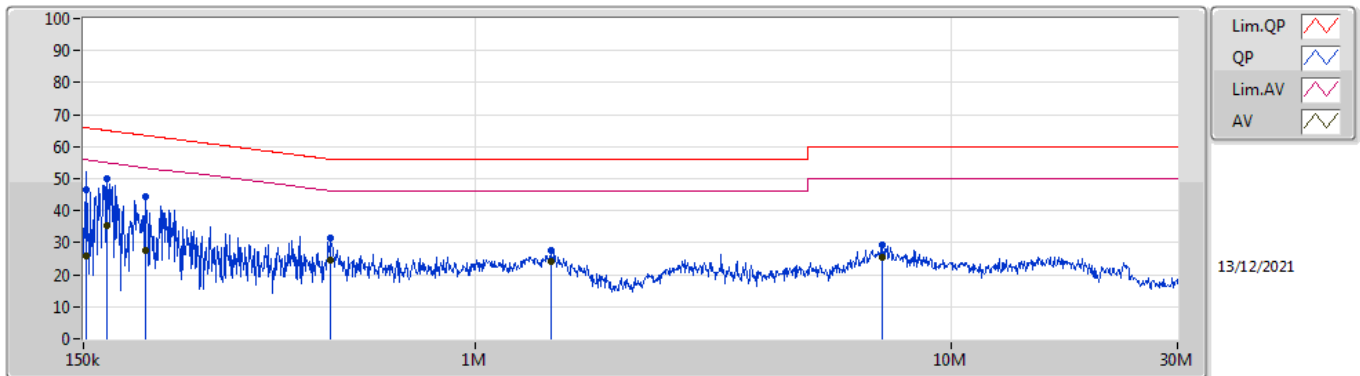
Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)
QP	165.082k	35.61	65.20	-29.59	19.64	Neutral	-	15.97	9.69	0.04	9.91
AV	165.082k	21.94	55.20	-33.26	19.64	Neutral	-	2.30	9.69	0.04	9.91
QP	255.079k	29.10	61.58	-32.48	19.64	Neutral	-	9.46	9.68	0.05	9.91
AV	255.079k	18.80	51.58	-32.78	19.64	Neutral	-	-0.84	9.68	0.05	9.91
QP	335.971k	26.15	59.31	-33.16	19.63	Neutral	-	6.52	9.67	0.05	9.91
AV	335.971k	18.09	49.31	-31.22	19.63	Neutral	-	-1.54	9.67	0.05	9.91
QP	749.51k	33.77	56.00	-22.23	19.66	Neutral	-	14.11	9.67	0.07	9.92
AV	749.51k	25.35	46.00	-20.65	19.66	Neutral	-	5.69	9.67	0.07	9.92
QP	4.04M	25.14	56.00	-30.86	19.76	Neutral	-	5.38	9.70	0.14	9.92
AV	4.04M	20.79	46.00	-25.21	19.76	Neutral	-	1.03	9.70	0.14	9.92
QP	17.555M	25.30	60.00	-34.70	20.11	Neutral	-	5.19	9.90	0.28	9.93
AV	17.555M	21.22	50.00	-28.78	20.11	Neutral	-	1.11	9.90	0.28	9.93

### Conducted Emissions at Powerline\_Mode 2



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	152.414k	48.05	65.87	-17.82	19.64	Line	-	28.41	9.69	0.04	9.91			
AV	152.414k	26.68	55.87	-29.19	19.64	Line	-	7.04	9.69	0.04	9.91			
QP	168.41k	49.94	65.04	-15.10	19.64	Line	-	30.30	9.69	0.04	9.91			
AV	168.41k	34.96	55.04	-20.08	19.64	Line	-	15.32	9.69	0.04	9.91			
QP	191.358k	46.22	63.97	-17.75	19.63	Line	-	26.59	9.68	0.04	9.91			
AV	191.358k	28.97	53.97	-25.00	19.63	Line	-	9.34	9.68	0.04	9.91			
QP	469.822k	31.77	56.52	-24.75	19.64	Line	-	12.13	9.67	0.06	9.91			
AV	469.822k	27.32	46.52	-19.20	19.64	Line	-	7.68	9.67	0.06	9.91			
QP	3.627M	28.13	56.00	-27.87	19.75	Line	-	8.38	9.70	0.13	9.92			
AV	3.627M	20.37	46.00	-25.63	19.75	Line	-	0.62	9.70	0.13	9.92			
QP	7.382M	27.69	60.00	-32.31	19.87	Line	-	7.82	9.76	0.18	9.93			
AV	7.382M	23.35	50.00	-26.65	19.87	Line	-	3.48	9.76	0.18	9.93			

Conducted Emissions at Powerline\_Mode 2



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)
QP	152.414k	46.54	65.87	-19.33	19.64	Neutral	-	26.90	9.69	0.04	9.91
AV	152.414k	26.04	55.87	-29.83	19.64	Neutral	-	6.40	9.69	0.04	9.91
QP	168.41k	49.83	65.04	-15.21	19.64	Neutral	-	30.19	9.69	0.04	9.91
AV	168.41k	35.25	55.04	-19.79	19.64	Neutral	-	15.61	9.69	0.04	9.91
QP	203.167k	44.23	63.48	-19.25	19.63	Neutral	-	24.60	9.68	0.04	9.91
AV	203.167k	27.51	53.48	-25.97	19.63	Neutral	-	7.88	9.68	0.04	9.91
QP	494.848k	31.37	56.10	-24.73	19.64	Neutral	-	11.73	9.67	0.06	9.91
AV	494.848k	24.56	46.10	-21.54	19.64	Neutral	-	4.92	9.67	0.06	9.91
QP	1.442M	27.59	56.00	-28.41	19.69	Neutral	-	7.90	9.68	0.09	9.92
AV	1.442M	24.06	46.00	-21.94	19.69	Neutral	-	4.37	9.68	0.09	9.92
QP	7.179M	29.46	60.00	-30.54	19.89	Neutral	-	9.57	9.78	0.18	9.93
AV	7.179M	25.32	50.00	-24.68	19.89	Neutral	-	5.43	9.78	0.18	9.93



**Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
GFSK(1Mbps)	1.113M	1.019M	1M02F1D	1.058M	1.014M
GFSK(2Mbps)	1.945M	2.018M	2M02F1D	1.85M	2.017M

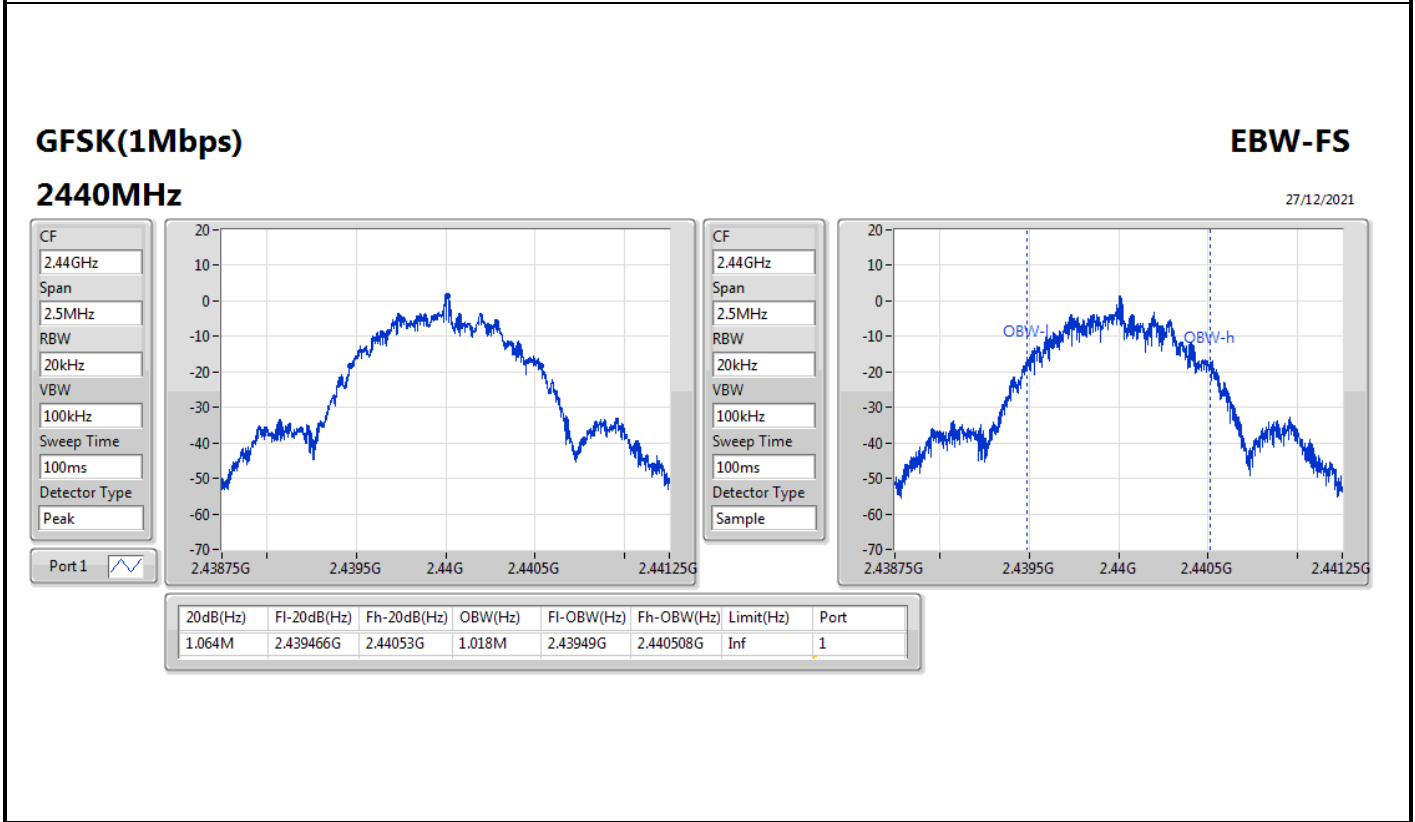
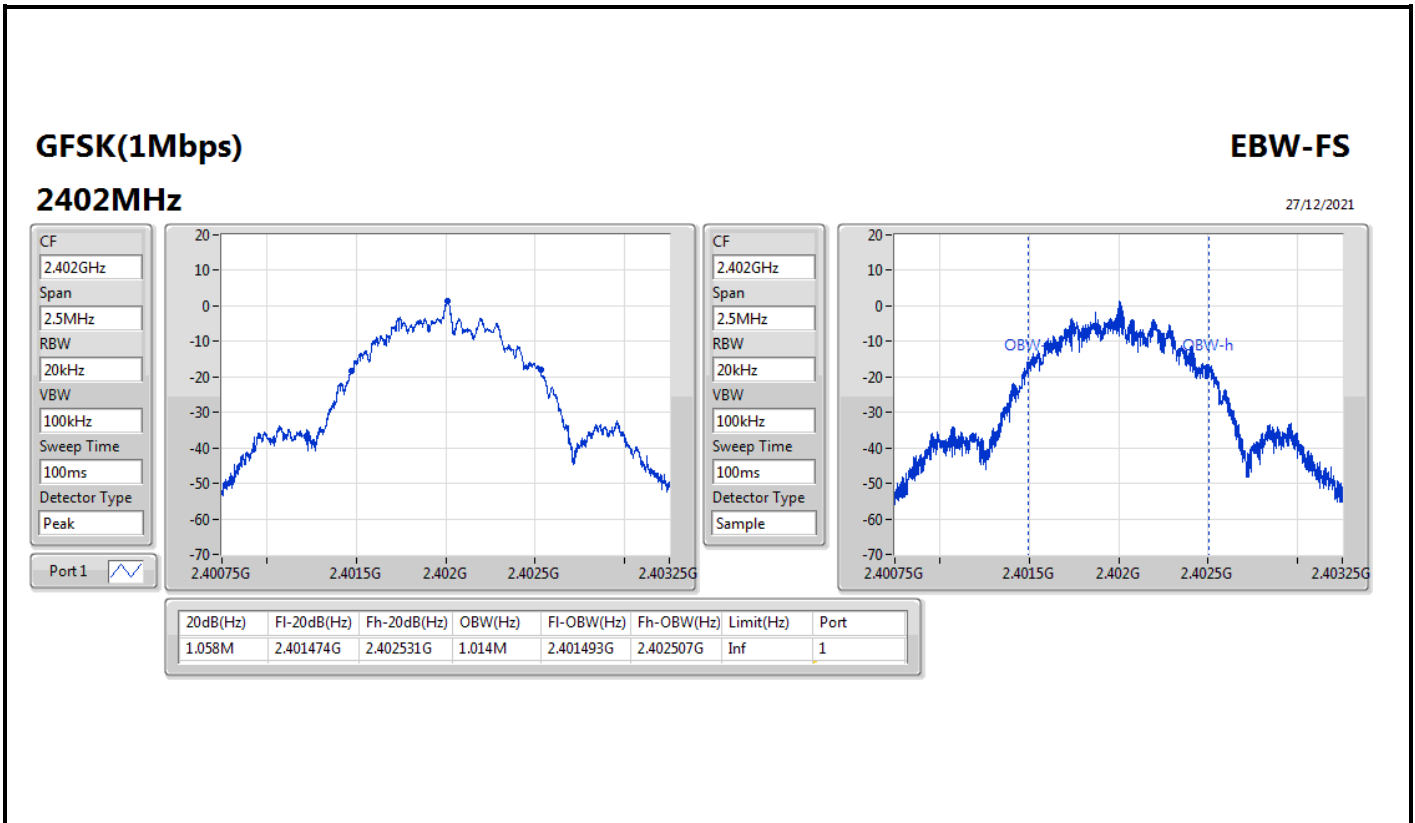
Max-N dB = Maximum 20dB down bandwidth; Max-OBW = Maximum 99% occupied bandwidth;  
Min-N dB = Minimum 20dB down bandwidth; Min-OBW = Minimum 99% occupied bandwidth



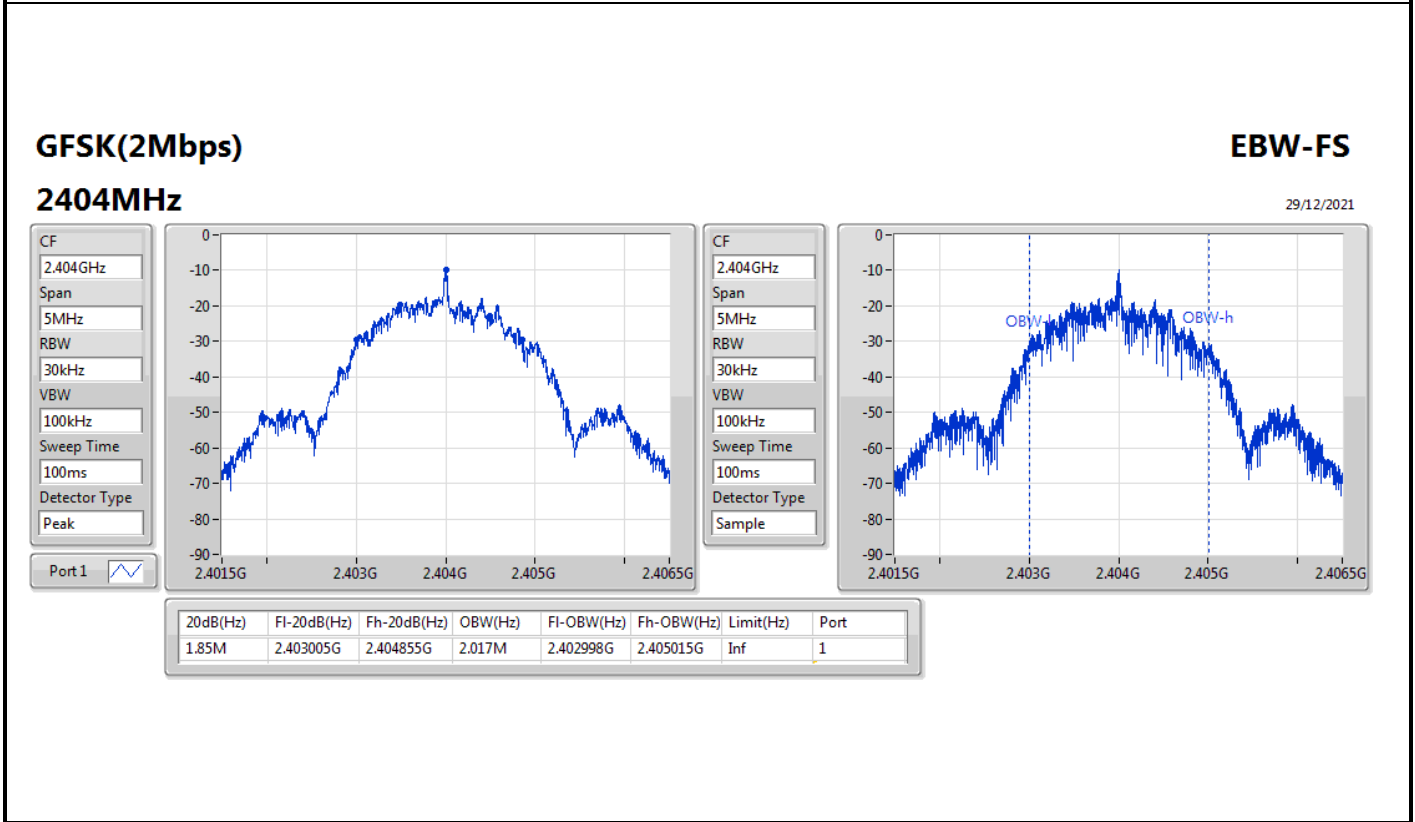
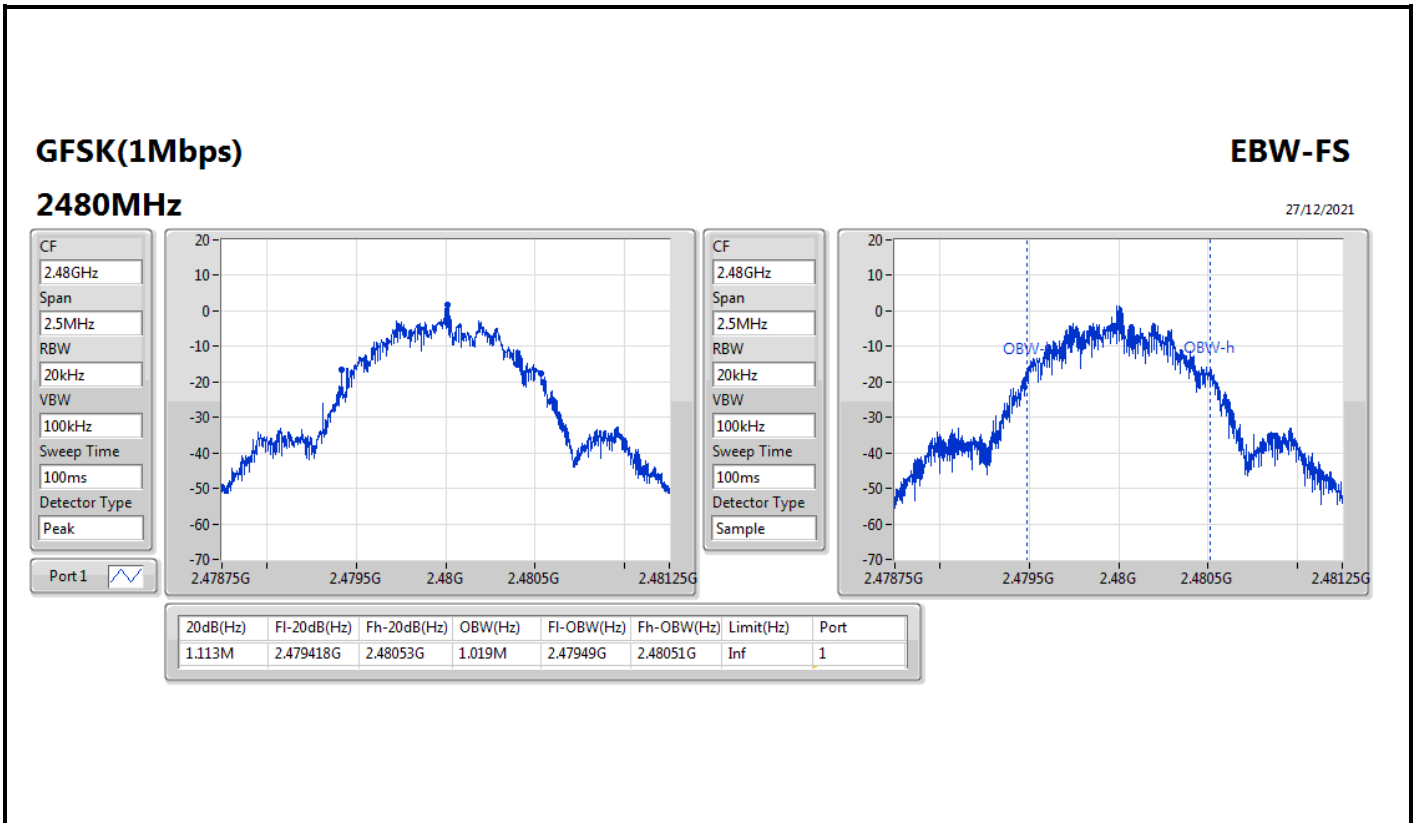
Result

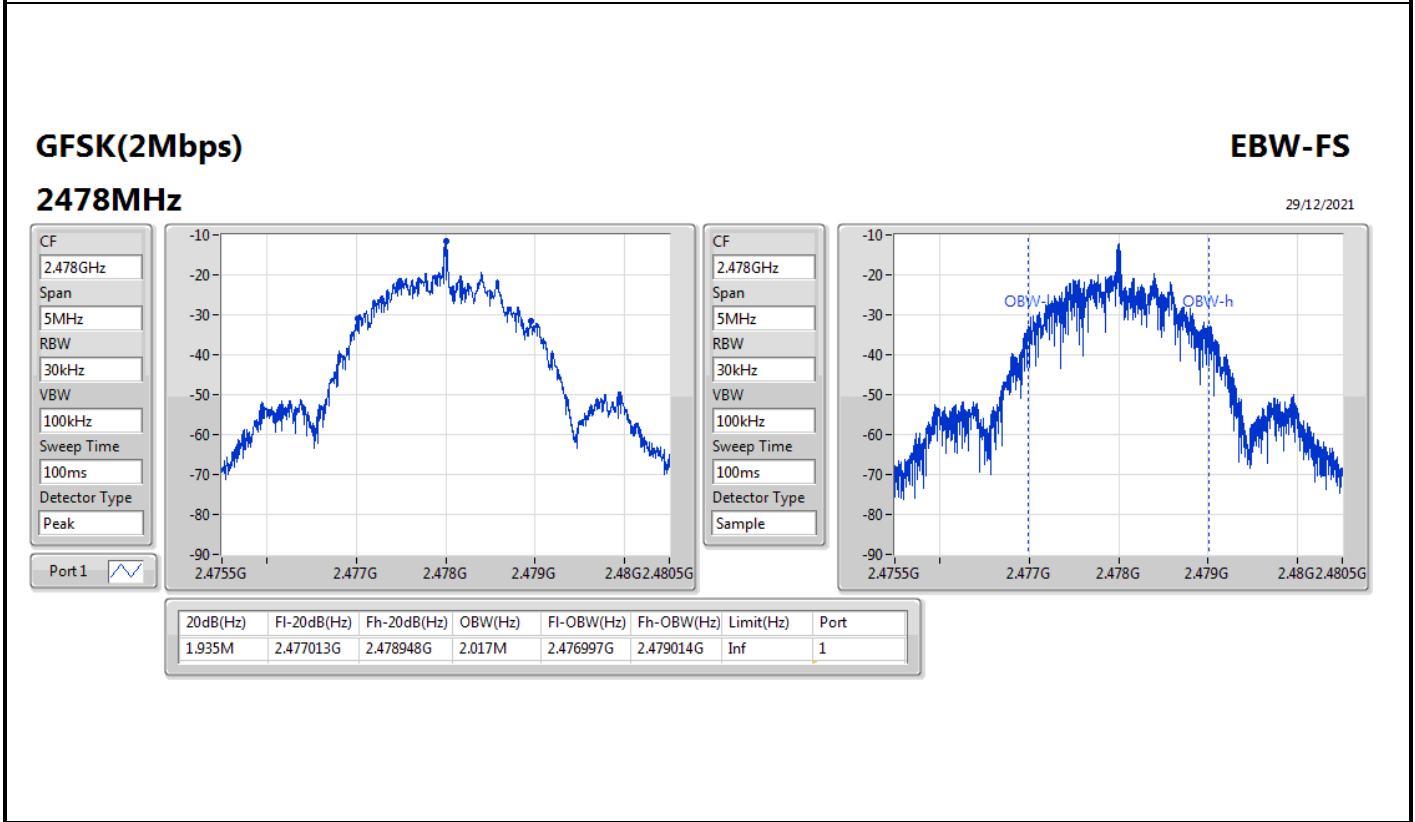
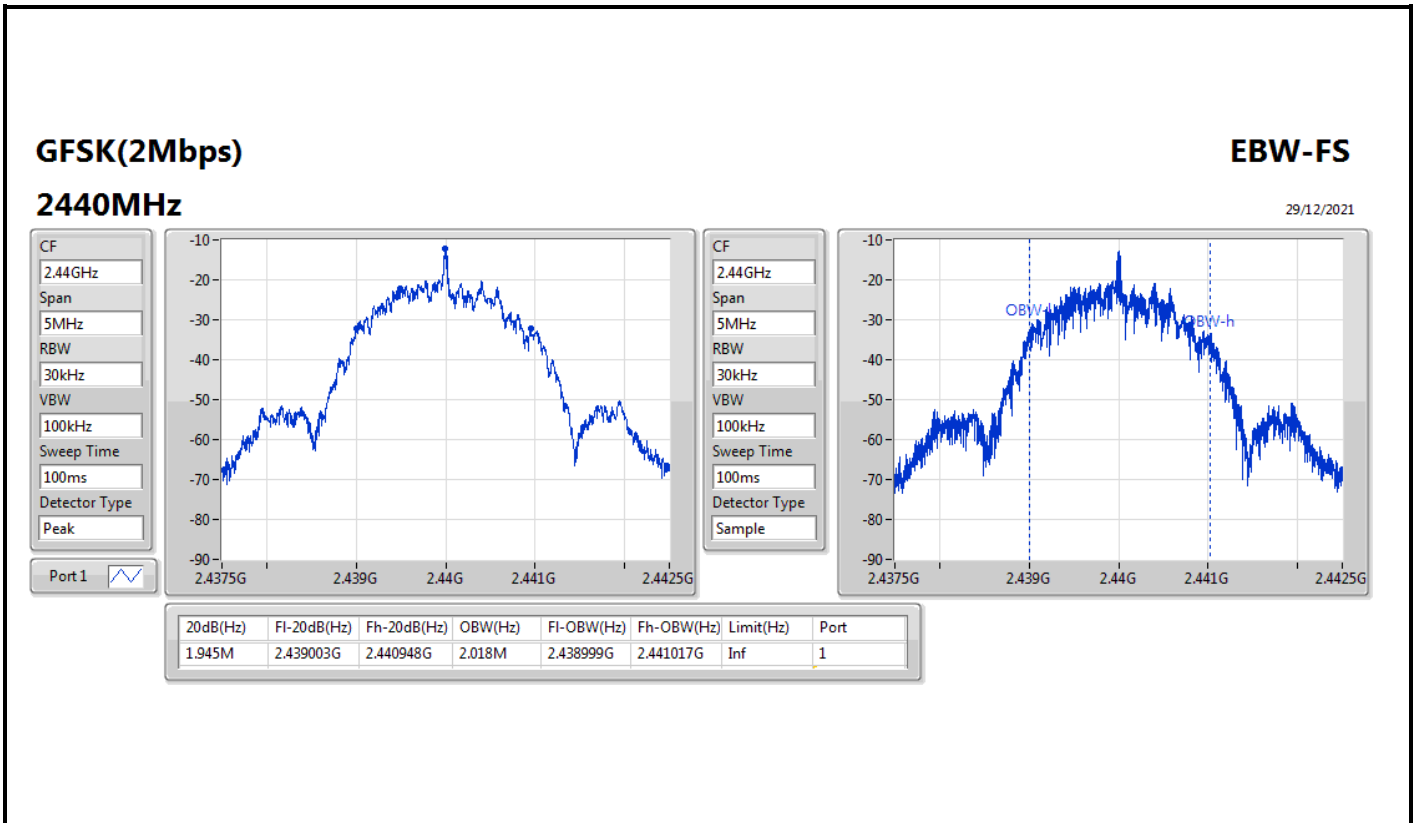
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
GFSK(1Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.058M	1.014M
2440MHz	Pass	Inf	1.064M	1.018M
2480MHz	Pass	Inf	1.113M	1.019M
GFSK(2Mbps)	-	-	-	-
2404MHz	Pass	Inf	1.85M	2.017M
2440MHz	Pass	Inf	1.945M	2.018M
2478MHz	Pass	Inf	1.935M	2.017M

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











**Summary**

Mode	Max-Space (Hz)	Min-Space (Hz)
2.4-2.4835GHz	-	-
GFSK(1Mbps)	2.0025M	2M
GFSK(2Mbps)	2.001M	1.005M



Result

Mode	Result	Fl (Hz)	Fh (Hz)	Ch.Space (Hz)	Limit (Hz)
GFSK(1Mbps)	-	-	-	-	-
2402MHz	Pass	2.40201G	2.404013G	2.0025M	704.628k
2440MHz	Pass	2.440008G	2.442008G	2M	708.624k
2480MHz	Pass	2.47801G	2.480013G	2.0025M	741.258k
GFSK(2Mbps)	-	-	-	-	-
2404MHz	Pass	2.403998G	2.405999G	2.001M	1.2321M
2440MHz	Pass	2.440004G	2.441996G	1.992M	1.29537M
2478MHz	Pass	2.475997G	2.477996G	1.999M	1.28871M

**GFSK(1Mbps)**

**Channel Separation-FS**

**2.402G/2.404GHz**

27/12/2021



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.40201G	2.404013G	2.0025M	704.628k

**GFSK(1Mbps)**

**Channel Separation-FS**

**2.44G/2.442GHz**

27/12/2021



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.440008G	2.442008G	2M	708.624k

**GFSK(1Mbps)**

**2.48G/2.478GHz**

**Channel Separation-FS**

27/12/2021



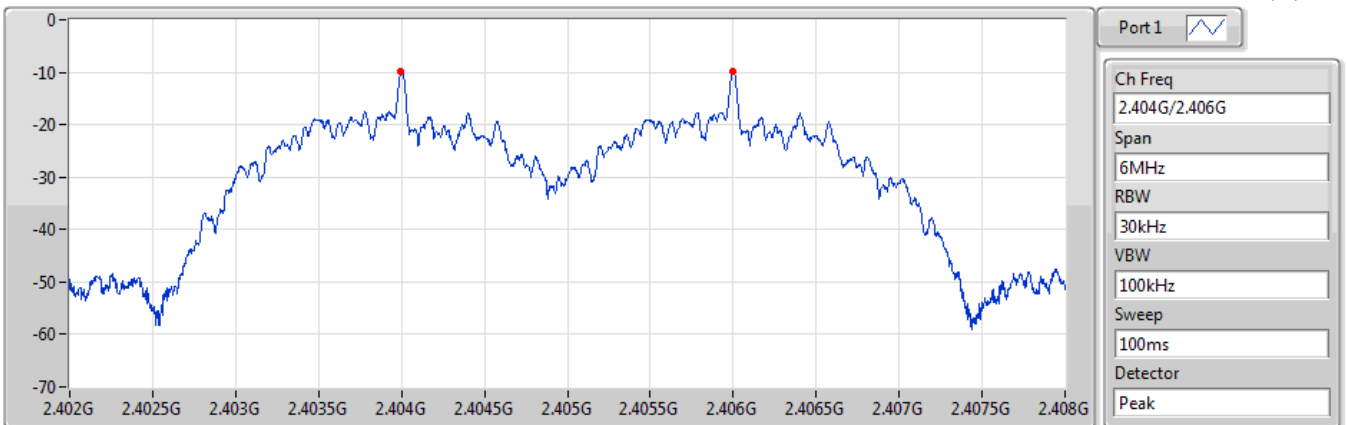
Ff(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.47801G	2.480013G	2.0025M	741.258k

**GFSK(2Mbps)**

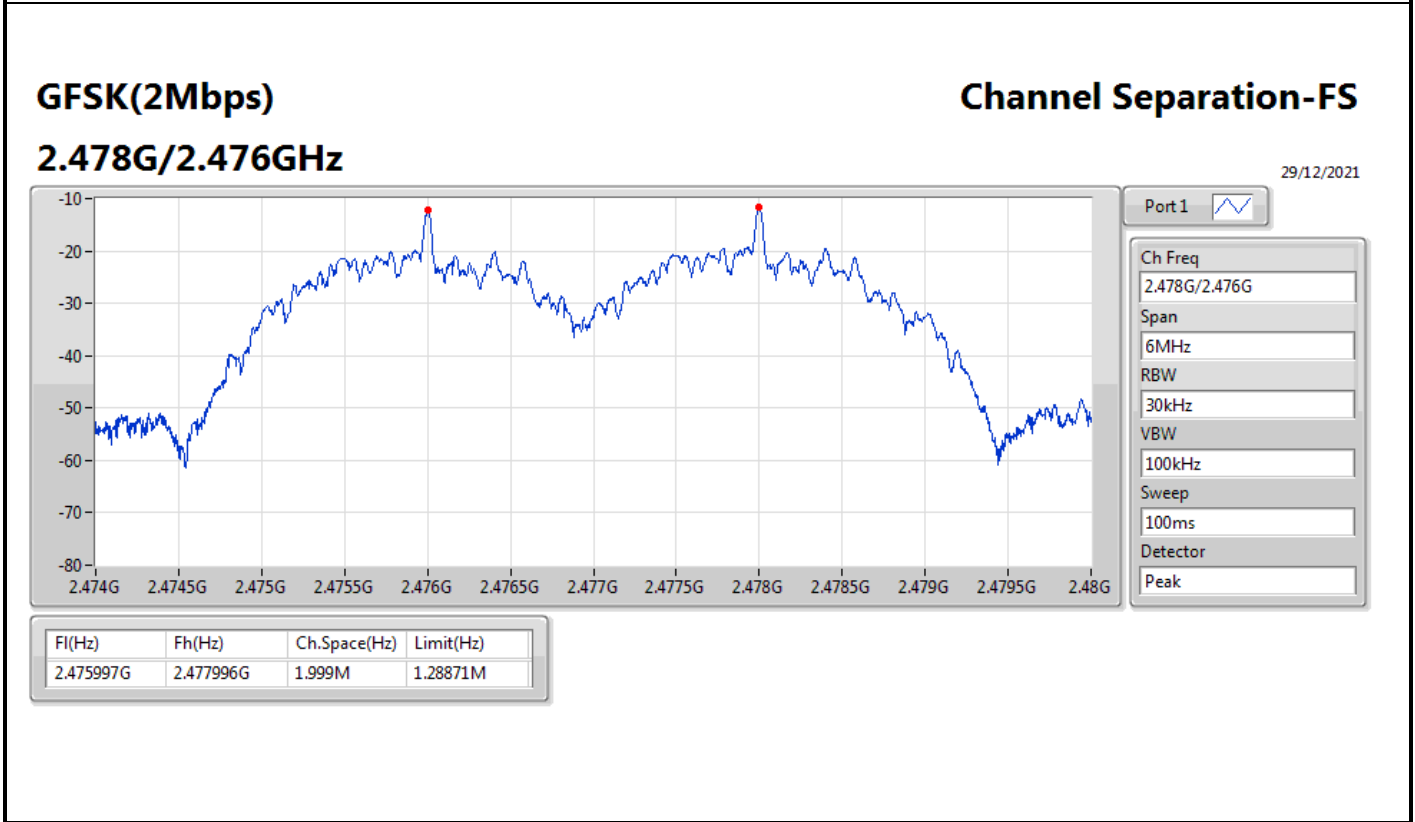
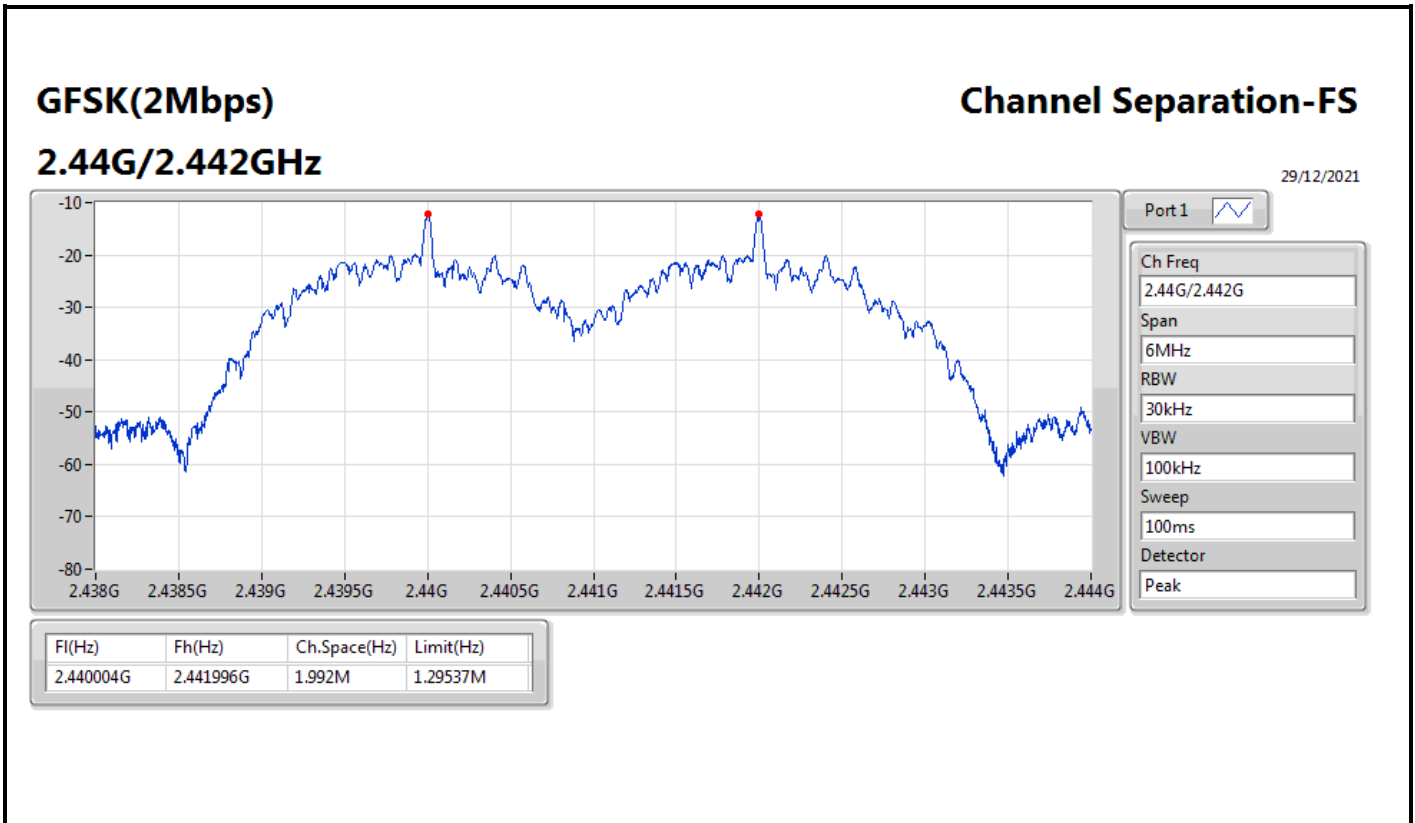
**2.404G/2.406GHz**

**Channel Separation-FS**

29/12/2021



Ff(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.403998G	2.405999G	2.001M	1.2321M





**Summary**

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
GFSK(1Mbps)	6.33	0.00430
GFSK(2Mbps)	6.21	0.00418





Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
GFSK(1Mbps)	-	-	-	-
2402MHz	Pass	3.50	5.96	21.00
2440MHz	Pass	3.50	6.11	21.00
2480MHz	Pass	3.50	6.33	21.00
GFSK(2Mbps)	-	-	-	-
2404MHz	Pass	3.50	5.92	21.00
2440MHz	Pass	3.50	5.99	21.00
2478MHz	Pass	3.50	6.21	21.00

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



**Summary**

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
GFSK(1Mbps)	6.16	0.00413
GFSK(2Mbps)	6.18	0.00415



**Result**

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
GFSK(1Mbps)	-	-	-	-
2402MHz	Pass	3.50	5.85	21.00
2440MHz	Pass	3.50	6.02	21.00
2480MHz	Pass	3.50	6.16	21.00
GFSK(2Mbps)	-	-	-	-
2404MHz	Pass	3.50	5.91	21.00
2440MHz	Pass	3.50	5.90	21.00
2478MHz	Pass	3.50	6.18	21.00

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



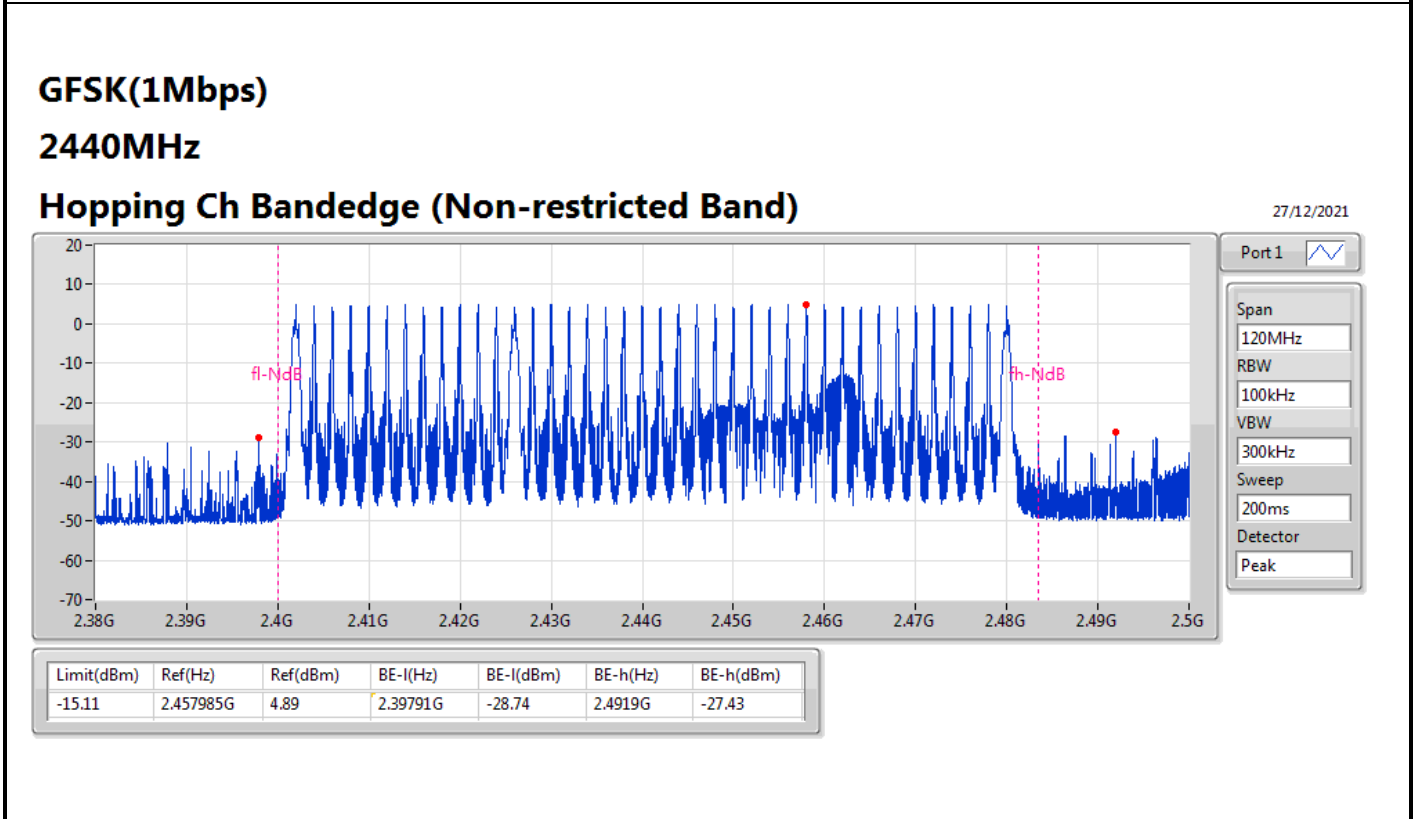
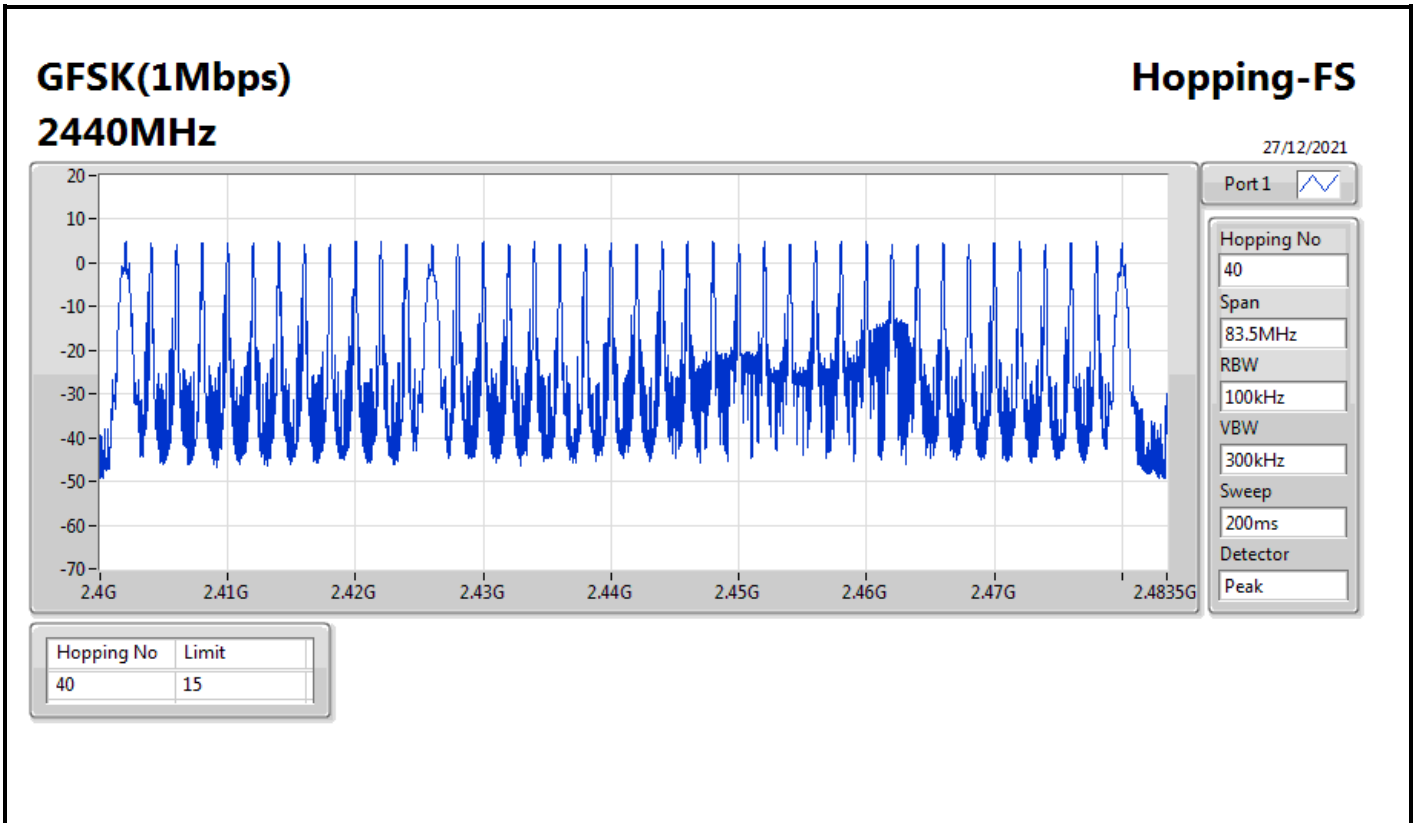
**Summary**

Mode	Max-Hop No
2.4-2.4835GHz	-
GFSK(1Mbps)	40
GFSK(2Mbps)	38



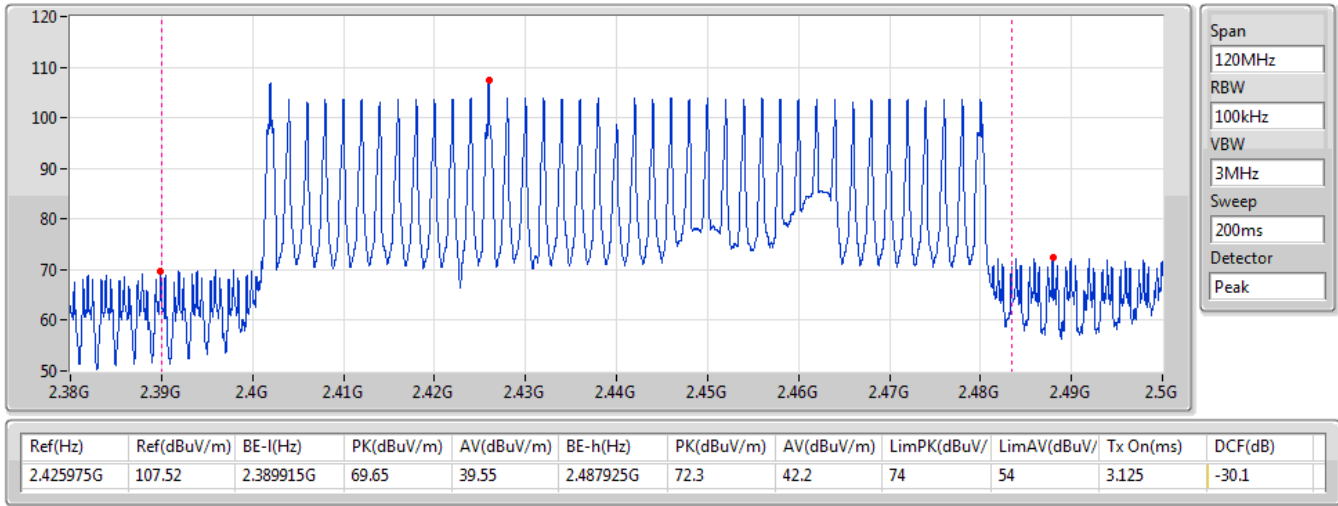
**Result**

Mode	Result	Hopping No	Limit
GFSK(1Mbps)	-	-	-
2440MHz	Pass	40	15
GFSK(2Mbps)	-	-	-
2440MHz	Pass	38	15



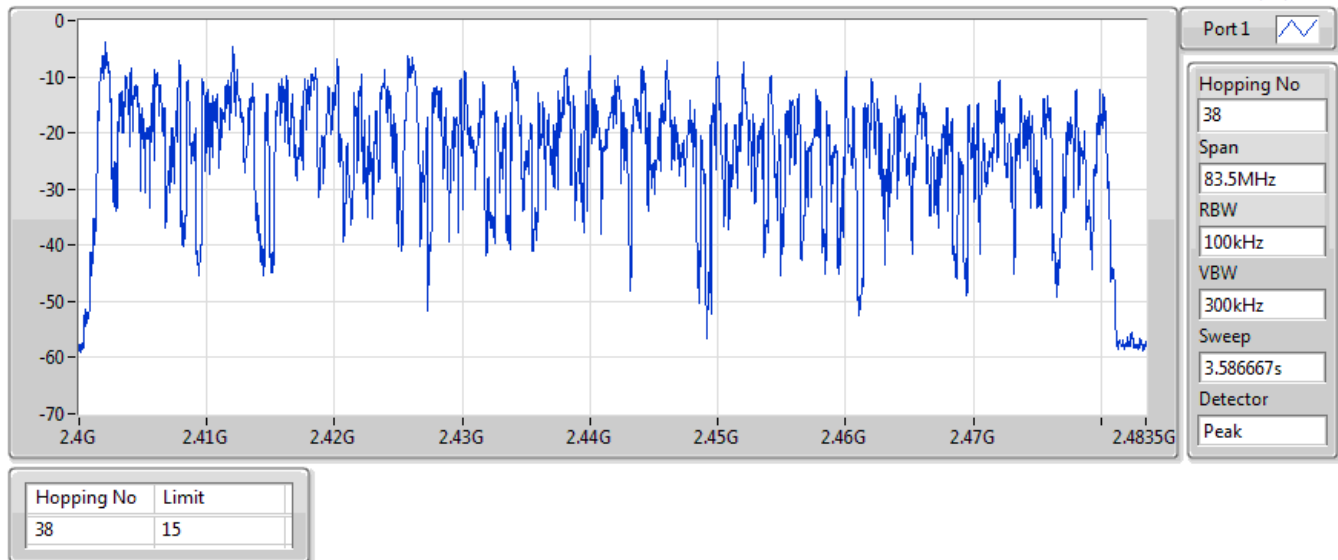
**GFSK(1Mbps)**  
**2440MHz**  
**Hopping Ch Bandedge (Restricted Band)**

27/12/2021



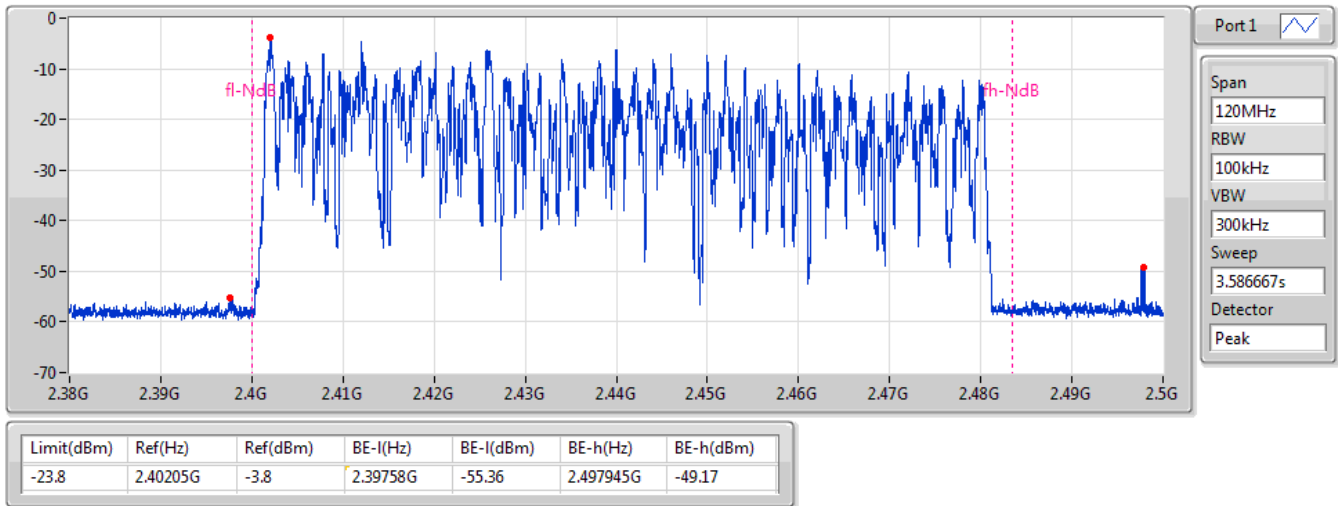
**GFSK(2Mbps)** **Hopping-FS**  
**2440MHz**

29/12/2021



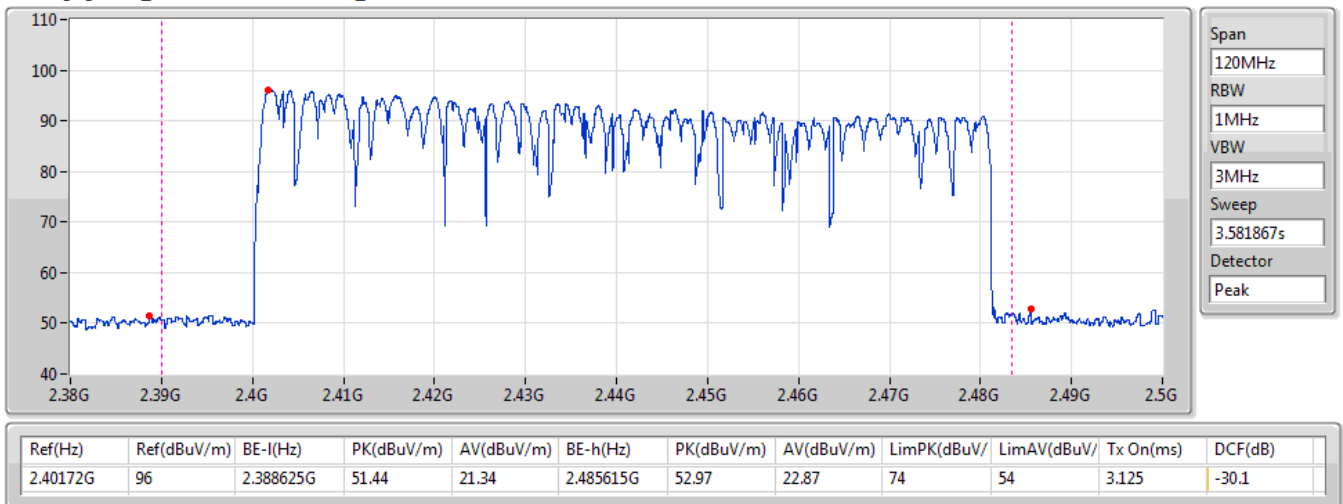
**GFSK(2Mbps)**  
**2440MHz**  
**Hopping Ch Bandedge (Non-restricted Band)**

29/12/2021



**GFSK(2Mbps)**  
**2440MHz**  
**Hopping Ch Bandedge (Restricted Band)**

29/12/2021







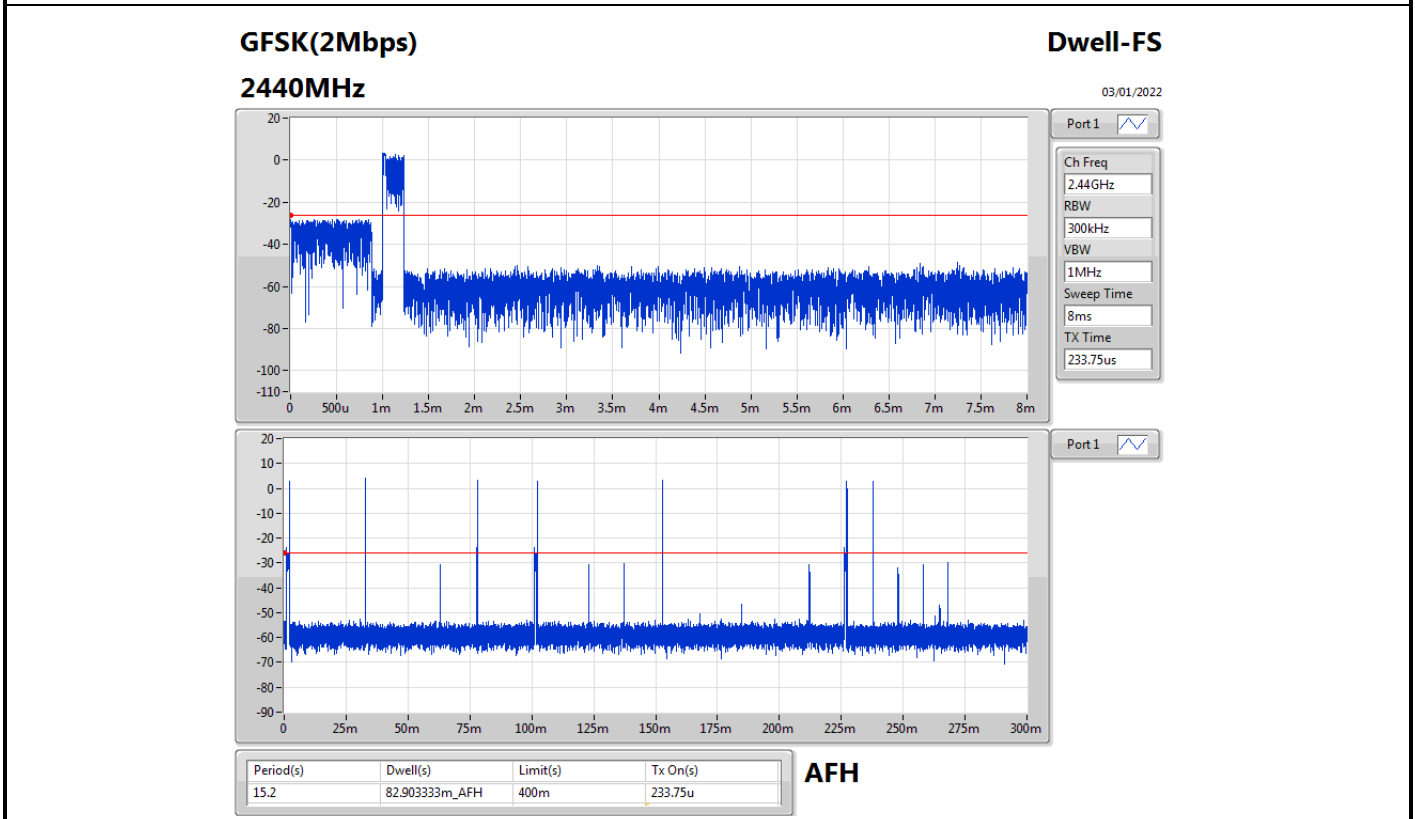
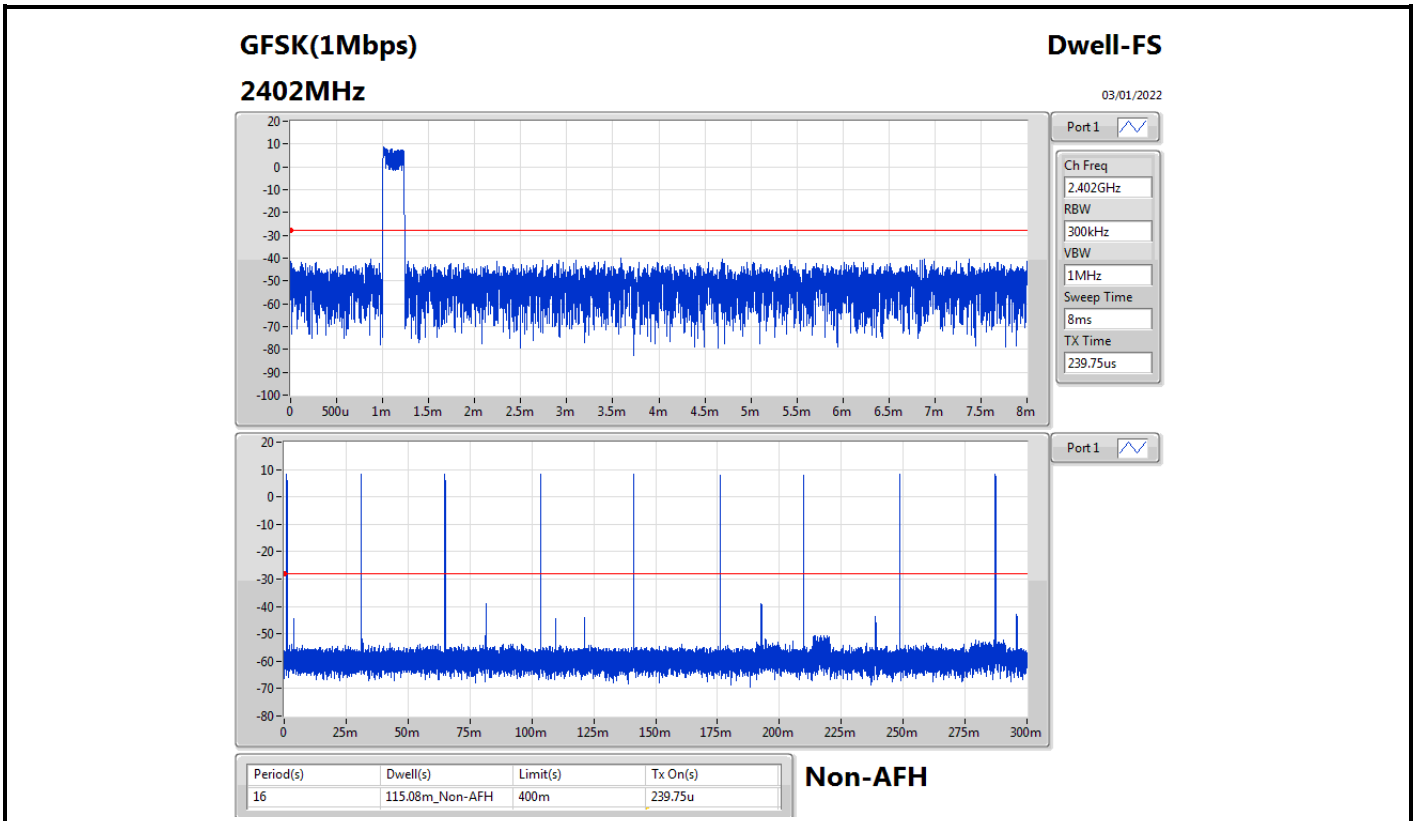
**Summary**

Mode	Max-Dwell (s)
2.4-2.4835GHz	-
GFSK(1Mbps)	115.08m_Non-AFH
GFSK(2Mbps)	82.903333m_AFH



**Result**

Mode	Result	Period (s)	Dwell (s)	Limit (s)	Tx On (s)
GFSK(1Mbps)	-	-	-	-	-
2402MHz	Pass	16	115.08m_Non-AFH	400m	239.75u
GFSK(2Mbps)	-	-	-	-	-
2440MHz	Pass	15.2	82.903333m_AFH	400m	233.75u





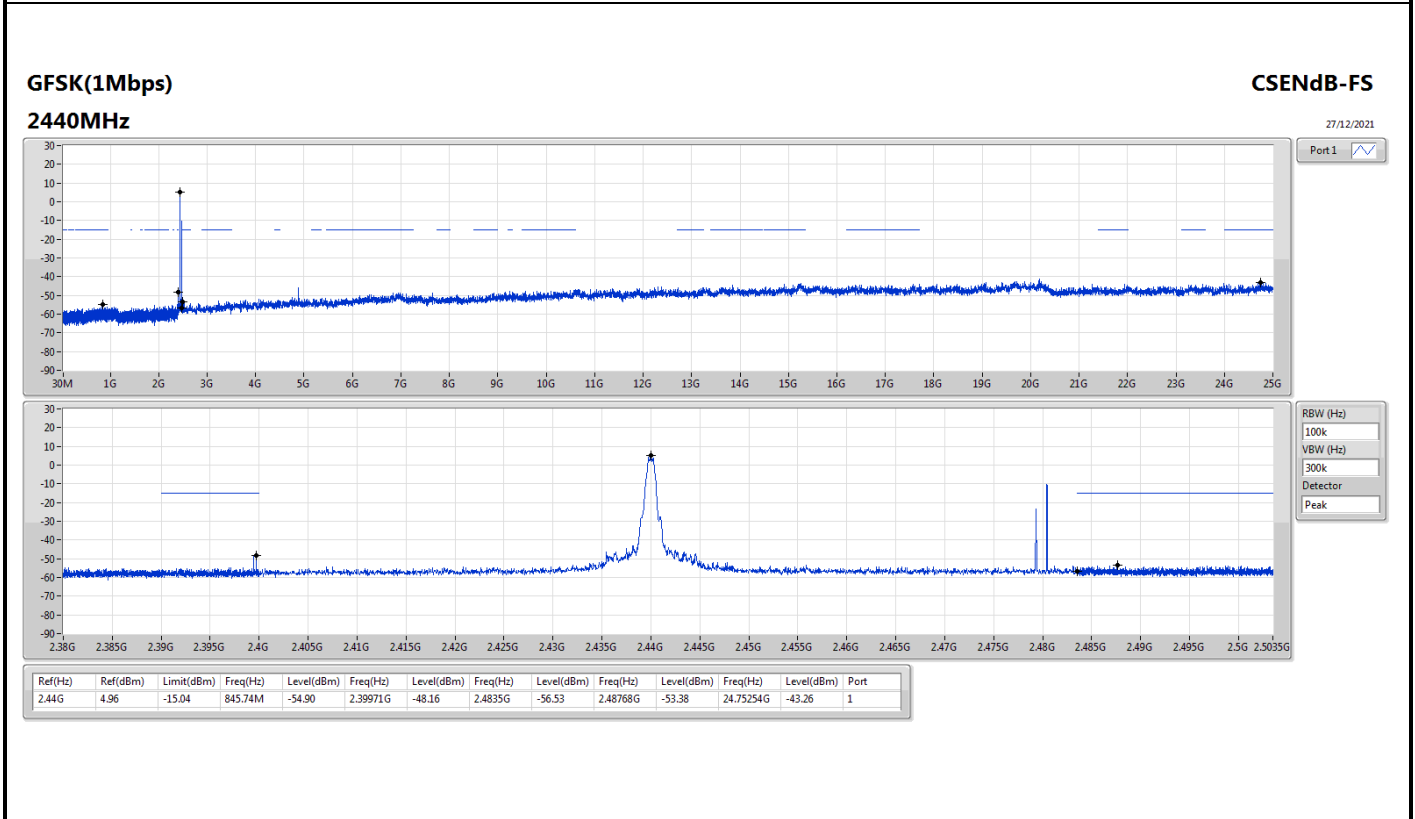
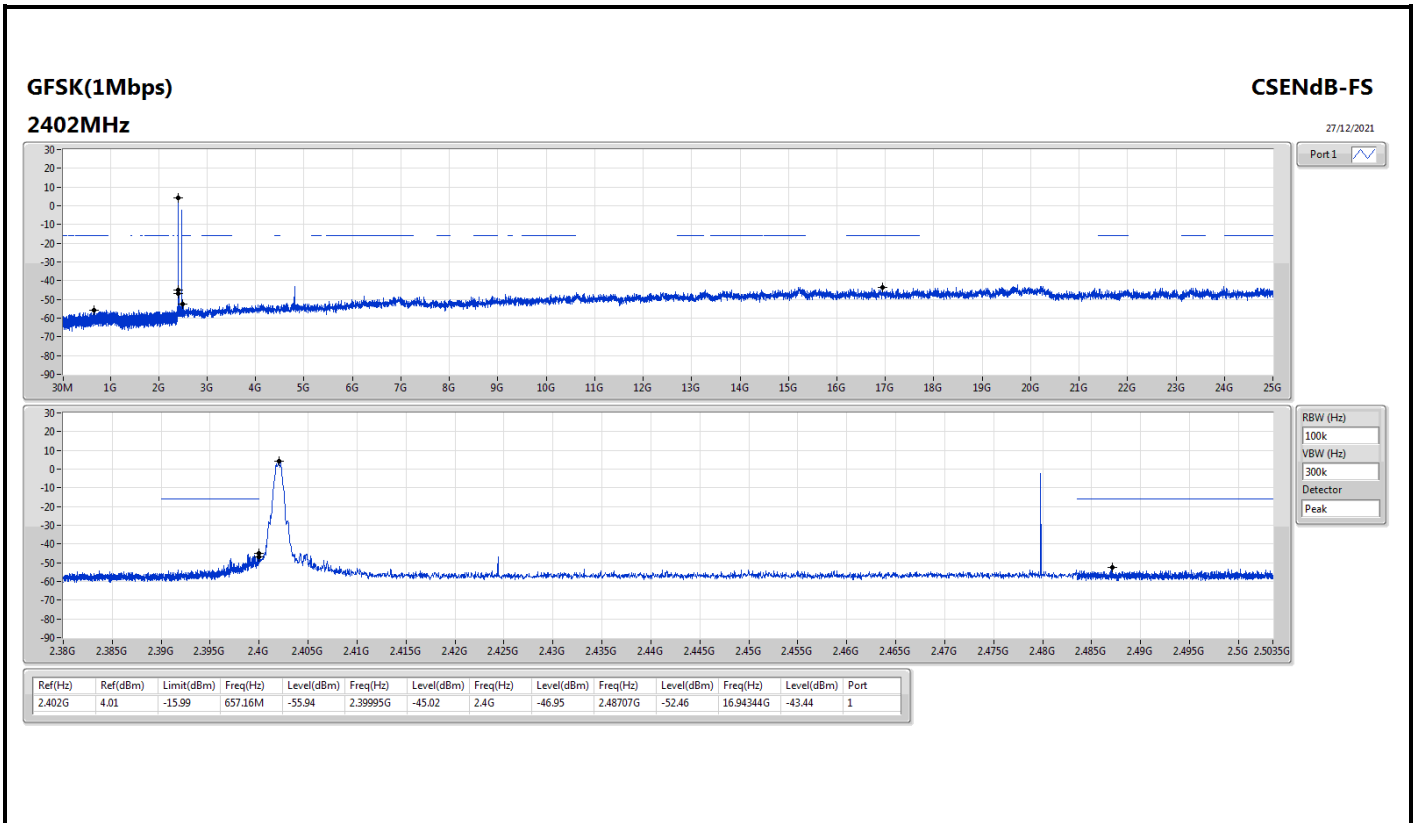
Summary

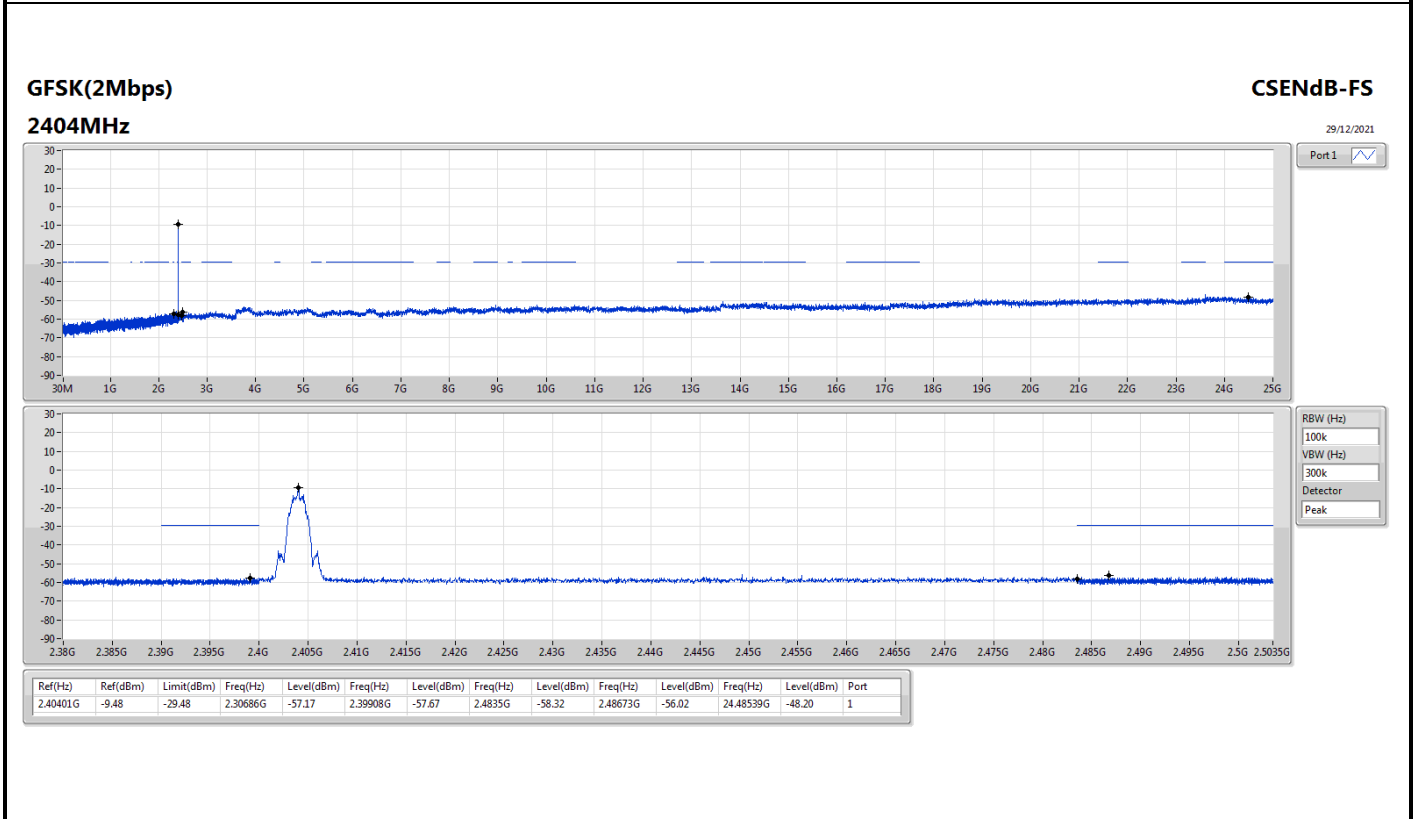
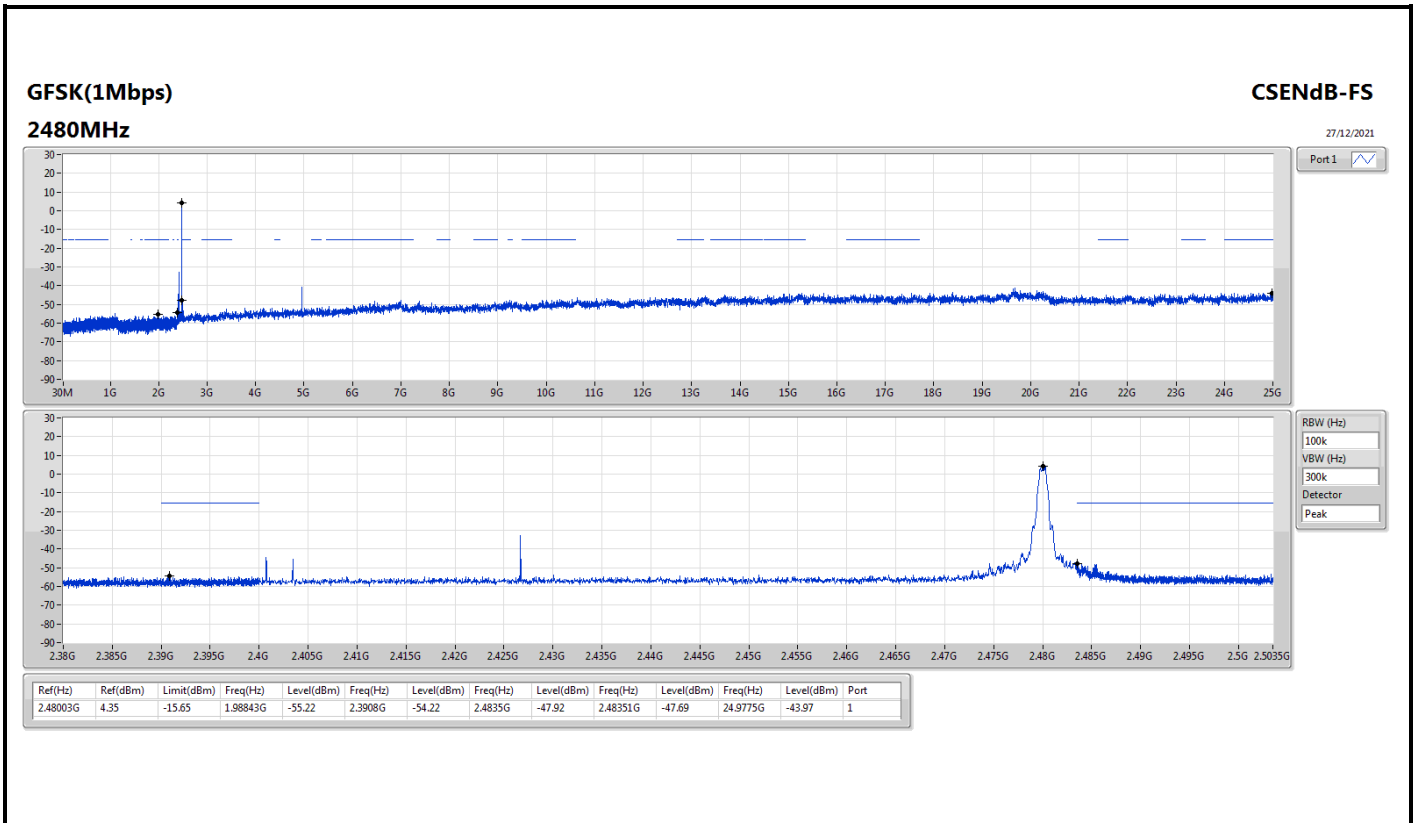
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GFSK(1Mbps)	Pass	2.402G	4.01	-15.99	657.16M	-55.94	2.39995G	-45.02	2.4G	-46.95	2.48707G	-52.46	16.94344G	-43.44	1
GFSK(2Mbps)	Pass	2.44G	-11.47	-31.47	2.15704G	-56.67	2.39505G	-57.59	2.4G	-58.79	2.49236G	-57.01	24.07202G	-47.49	1

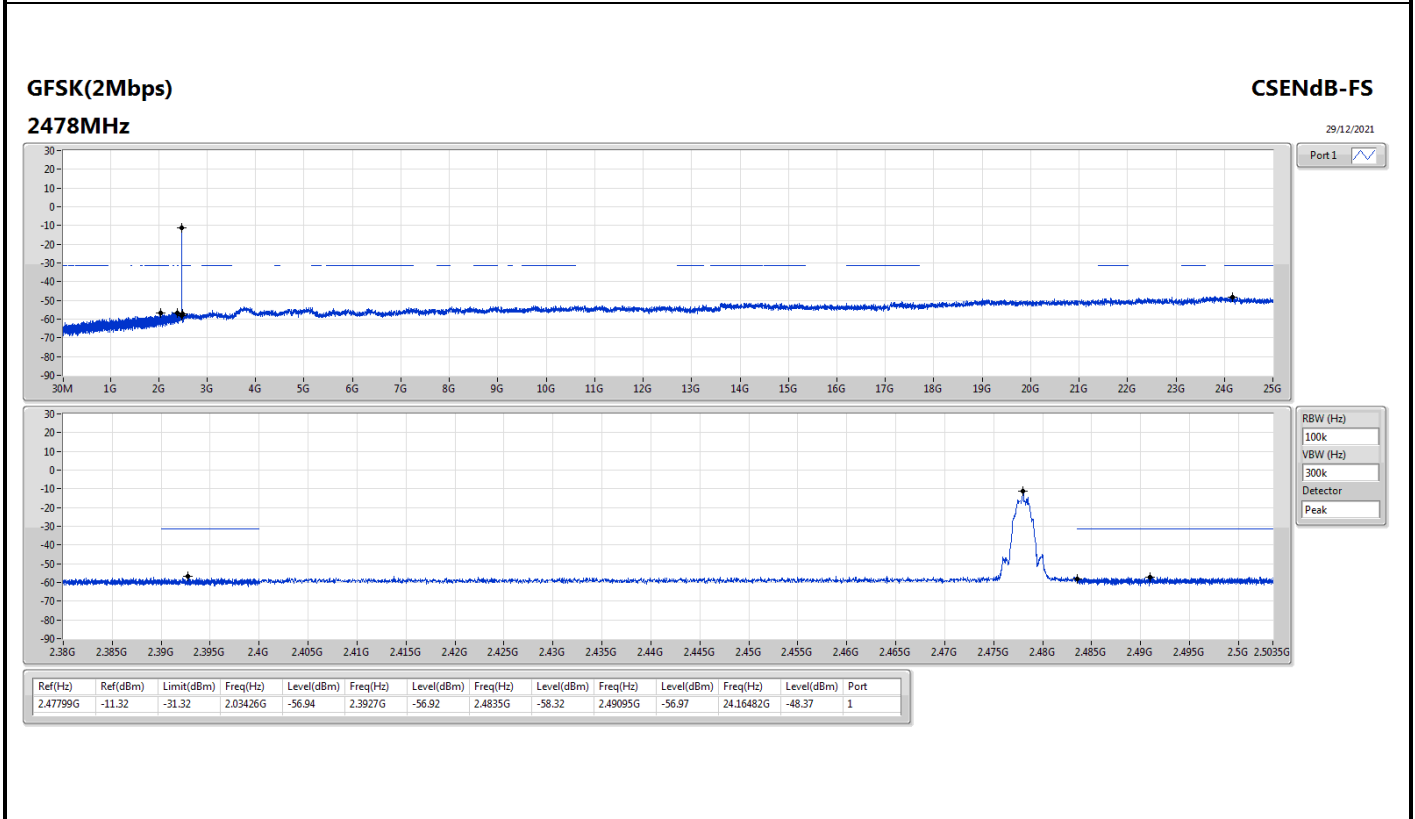
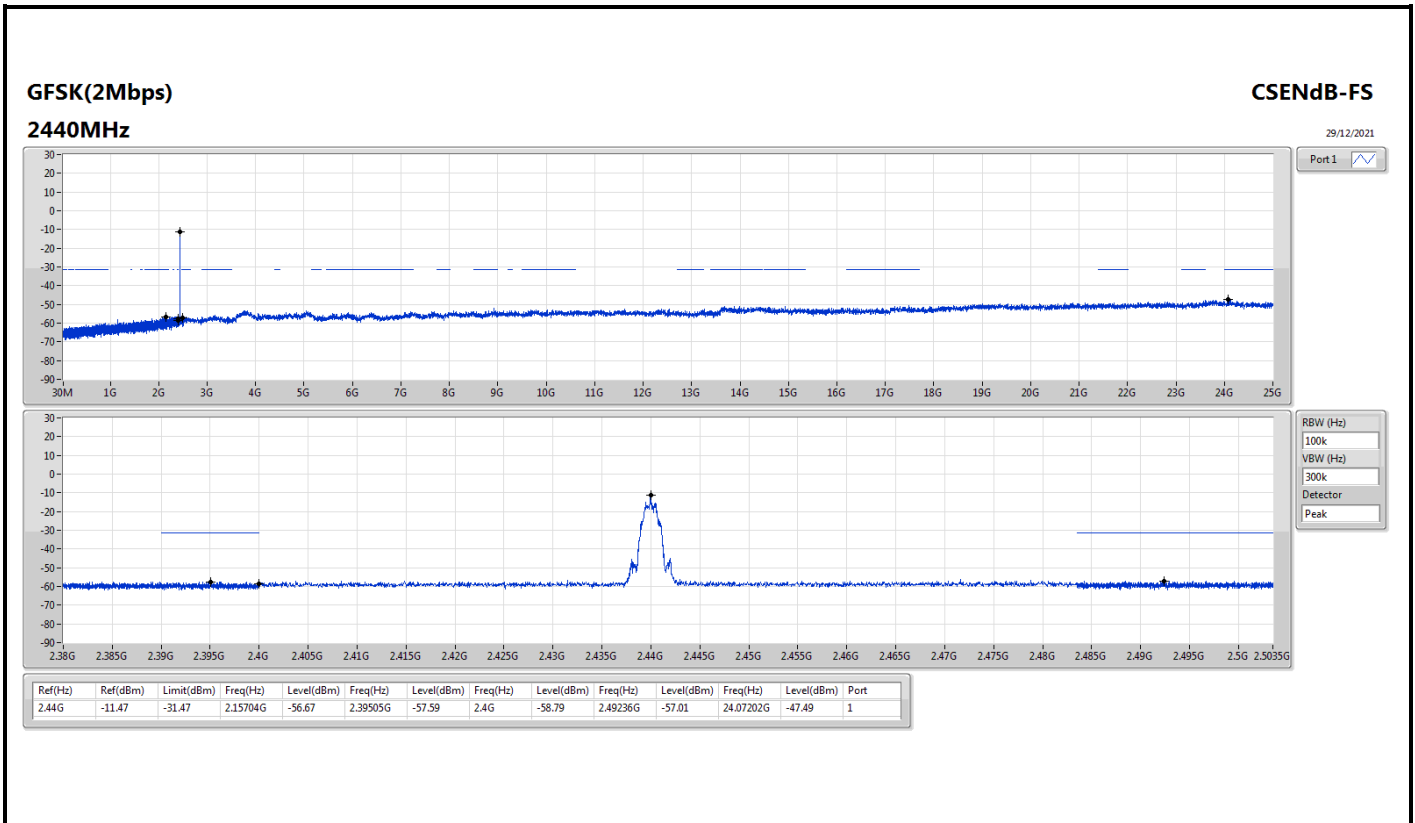


Result

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
GFSK(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.402G	4.01	-15.99	657.16M	-55.94	2.39995G	-45.02	2.4G	-46.95	2.48707G	-52.46	16.94344G	-43.44	1
2440MHz	Pass	2.44G	4.96	-15.04	845.74M	-54.90	2.39971G	-48.16	2.4835G	-56.53	2.48768G	-53.38	24.75254G	-43.26	1
2480MHz	Pass	2.48003G	4.35	-15.65	1.98843G	-55.22	2.3908G	-54.22	2.4835G	-47.92	2.48351G	-47.69	24.9775G	-43.97	1
GFSK(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2404MHz	Pass	2.40401G	-9.48	-29.48	2.30686G	-57.17	2.39908G	-57.67	2.4835G	-58.32	2.48673G	-56.02	24.48539G	-48.20	1
2440MHz	Pass	2.44G	-11.47	-31.47	2.15704G	-56.67	2.39505G	-57.59	2.4G	-58.79	2.49236G	-57.01	24.07202G	-47.49	1
2478MHz	Pass	2.47799G	-11.32	-31.32	2.03426G	-56.94	2.3927G	-56.92	2.4835G	-58.32	2.49095G	-56.97	24.16482G	-48.37	1











Summary

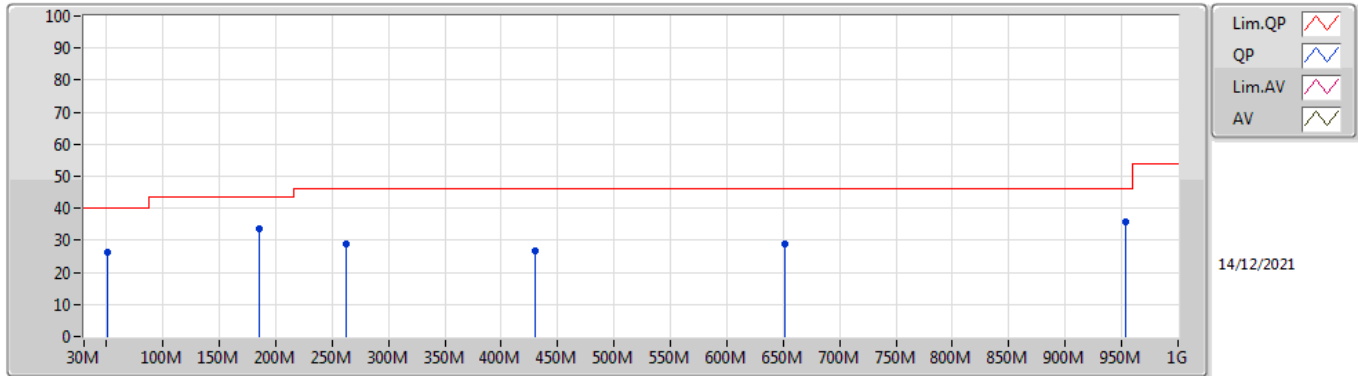
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
GFSK(2Mbps)	Pass	PK	185.2M	38.31	43.50	-5.19	3	Horizontal	0	1.00	-



Result

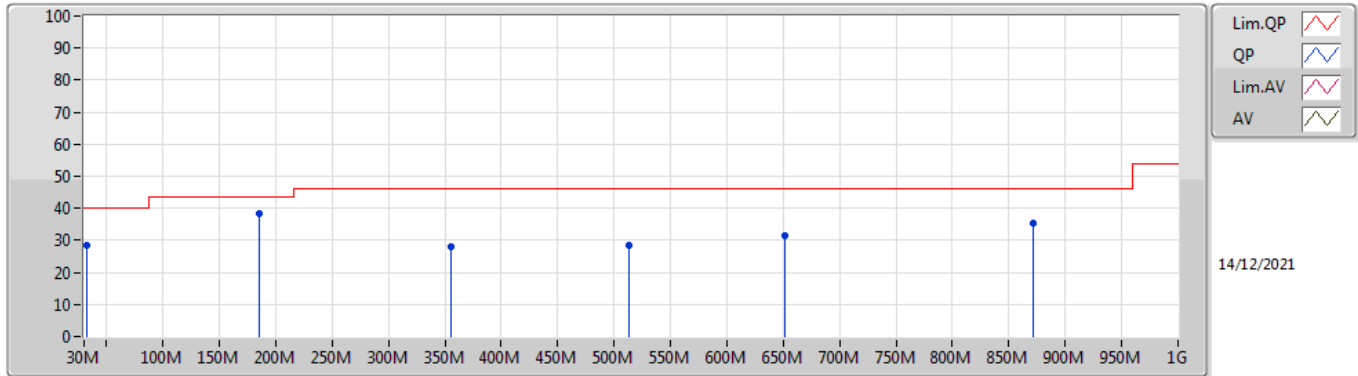
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
GFSK(2Mbps)	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	51.34M	26.40	40.00	-13.60	3	Vertical	360	1.00	-
2440MHz	Pass	PK	185.2M	33.69	43.50	-9.81	3	Vertical	360	1.00	-
2440MHz	Pass	PK	262.8M	28.72	46.00	-17.28	3	Vertical	360	1.00	-
2440MHz	Pass	PK	429.64M	26.51	46.00	-19.49	3	Vertical	360	1.00	-
2440MHz	Pass	PK	650.8M	28.83	46.00	-17.17	3	Vertical	360	1.00	-
2440MHz	Pass	PK	953.44M	35.59	46.00	-10.41	3	Vertical	360	1.00	-
2440MHz	Pass	PK	31.94M	28.65	40.00	-11.35	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	185.2M	38.31	43.50	-5.19	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	355.92M	28.03	46.00	-17.97	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	513.06M	28.39	46.00	-17.61	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	650.8M	31.34	46.00	-14.66	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	871.96M	35.48	46.00	-10.52	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	76.56M	28.77	40.00	-11.23	3	Vertical	0	1.00	-
2440MHz	Pass	PK	159.98M	26.84	43.50	-16.66	3	Vertical	0	1.00	-
2440MHz	Pass	PK	264.74M	24.77	46.00	-21.23	3	Vertical	0	1.00	-
2440MHz	Pass	PK	497.54M	28.68	46.00	-17.32	3	Vertical	0	1.00	-
2440MHz	Pass	PK	747.8M	30.47	46.00	-15.53	3	Vertical	0	1.00	-
2440MHz	Pass	PK	937.92M	33.71	46.00	-12.29	3	Vertical	0	1.00	-
2440MHz	Pass	PK	76.56M	22.13	40.00	-17.87	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	185.2M	31.28	43.50	-12.22	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	406.36M	29.57	46.00	-16.43	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	580.96M	28.66	46.00	-17.34	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	743.92M	37.36	46.00	-8.64	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	937.92M	34.01	46.00	-11.99	3	Horizontal	360	1.00	-

**GFSK(2Mbps)**  
**2440MHz\_USB**



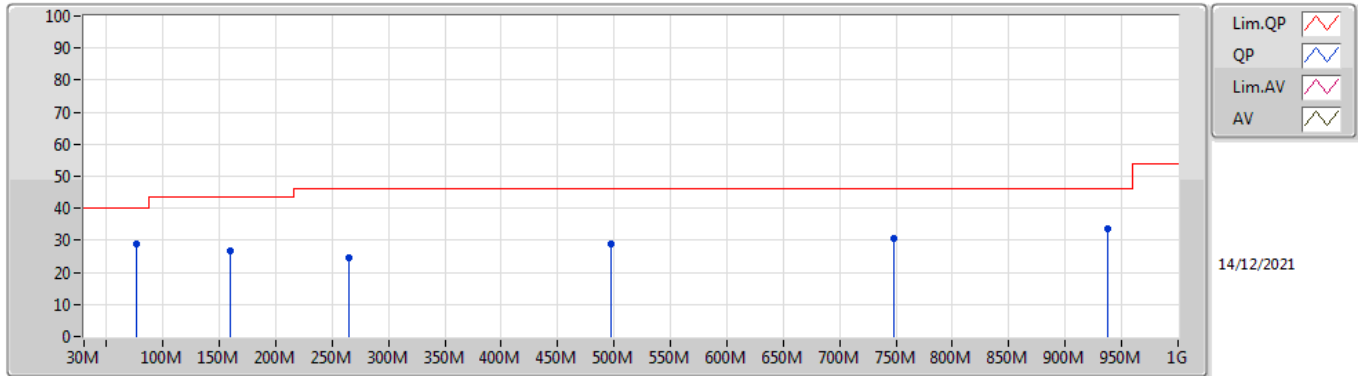
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	51.34M	26.40	40.00	-13.60	-23.43	3	Vertical	360	1.00	-	49.83	12.85	0.83	37.11
PK	185.2M	33.69	43.50	-9.81	-21.01	3	Vertical	360	1.00	-	54.70	14.09	1.29	36.39
PK	262.8M	28.72	46.00	-17.28	-15.56	3	Vertical	360	1.00	-	44.28	19.30	1.54	36.40
PK	429.64M	26.51	46.00	-19.49	-12.54	3	Vertical	360	1.00	-	39.05	22.04	2.02	36.60
PK	650.8M	28.83	46.00	-17.17	-8.98	3	Vertical	360	1.00	-	37.81	25.65	2.62	37.25
PK	953.44M	35.59	46.00	-10.41	-4.37	3	Vertical	360	1.00	-	39.96	30.07	3.10	37.54

**GFSK(2Mbps)**  
**2440MHz\_USB**



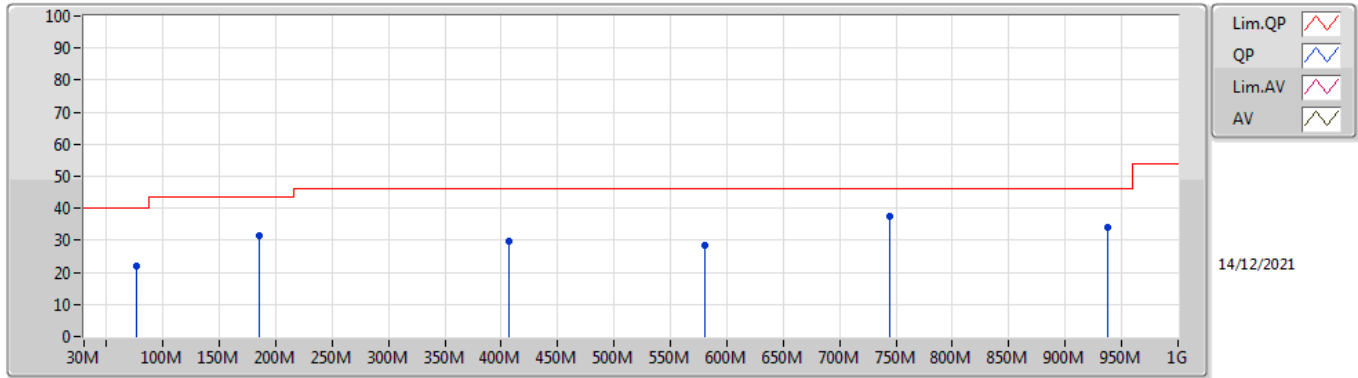
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	31.94M	28.65	40.00	-11.35	-13.91	3	Horizontal	0	1.00	-	42.56	22.61	0.60	37.12
PK	185.2M	38.31	43.50	-5.19	-21.01	3	Horizontal	0	1.00	-	59.32	14.09	1.29	36.39
PK	355.92M	28.03	46.00	-17.97	-14.93	3	Horizontal	0	1.00	-	42.96	19.81	1.79	36.53
PK	513.06M	28.39	46.00	-17.61	-11.60	3	Horizontal	0	1.00	-	39.99	23.14	2.27	37.01
PK	650.8M	31.34	46.00	-14.66	-8.98	3	Horizontal	0	1.00	-	40.32	25.65	2.62	37.25
PK	871.96M	35.48	46.00	-10.52	-6.22	3	Horizontal	0	1.00	-	41.70	28.40	2.97	37.59

**GFSK(2Mbps)**  
**2440MHz\_Adapter**



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	76.56M	28.77	40.00	-11.23	-23.90	3	Vertical	0	1.00	-	52.67	12.14	0.87	36.91
PK	159.98M	26.84	43.50	-16.66	-19.44	3	Vertical	0	1.00	-	46.28	15.70	1.23	36.37
PK	264.74M	24.77	46.00	-21.23	-15.64	3	Vertical	0	1.00	-	40.41	19.21	1.55	36.40
PK	497.54M	28.68	46.00	-17.32	-11.66	3	Vertical	0	1.00	-	40.34	23.09	2.22	36.97
PK	747.8M	30.47	46.00	-15.53	-7.61	3	Vertical	0	1.00	-	38.08	27.20	2.79	37.60
PK	937.92M	33.71	46.00	-12.29	-5.03	3	Vertical	0	1.00	-	38.74	29.46	3.08	37.57

**GFSK(2Mbps)**  
**2440MHz\_Adapter**



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	76.56M	22.13	40.00	-17.87	-23.90	3	Horizontal	360	1.00	-	46.03	12.14	0.87	36.91
PK	185.2M	31.28	43.50	-12.22	-21.01	3	Horizontal	360	1.00	-	52.29	14.09	1.29	36.39
PK	406.36M	29.57	46.00	-16.43	-13.38	3	Horizontal	360	1.00	-	42.95	21.27	1.93	36.58
PK	580.96M	28.66	46.00	-17.34	-9.76	3	Horizontal	360	1.00	-	38.42	24.90	2.44	37.10
PK	743.92M	37.36	46.00	-8.64	-7.65	3	Horizontal	360	1.00	-	45.01	27.14	2.78	37.57
PK	937.92M	34.01	46.00	-11.99	-5.03	3	Horizontal	360	1.00	-	39.04	29.46	3.08	37.57



Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
GFSK(1Mbps)	Pass	AV	4.96014G	53.18	54.00	-0.82	3	Horizontal	319	2.08	-
GFSK(2Mbps)	Pass	AV	7.43527G	51.21	54.00	-2.79	3	Horizontal	273	2.13	-



Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
GFSK(1Mbps)	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3556G	47.31	54.00	-6.69	3	Vertical	262	2.88	-
2402MHz	Pass	AV	2.402G	98.82	Inf	-Inf	3	Vertical	262	2.88	-
2402MHz	Pass	PK	2.373G	58.01	74.00	-15.99	3	Vertical	262	2.88	-
2402MHz	Pass	PK	2.4022G	99.59	Inf	-Inf	3	Vertical	262	2.88	-
2402MHz	Pass	AV	2.386G	46.48	54.00	-7.52	3	Horizontal	60.9	1.45	-
2402MHz	Pass	AV	2.402G	102.41	Inf	-Inf	3	Horizontal	60.9	1.45	-
2402MHz	Pass	PK	2.3534G	58.20	74.00	-15.80	3	Horizontal	60.9	1.45	-
2402MHz	Pass	PK	2.4018G	103.16	Inf	-Inf	3	Horizontal	60.9	1.45	-
2402MHz	Pass	AV	4.80416G	47.68	54.00	-6.32	3	Vertical	218	1.46	-
2402MHz	Pass	PK	4.80443G	53.33	74.00	-20.67	3	Vertical	218	1.46	-
2402MHz	Pass	AV	4.80415G	51.56	54.00	-2.44	3	Horizontal	324	1.90	-
2402MHz	Pass	PK	4.80344G	56.39	74.00	-17.61	3	Horizontal	324	1.90	-
2440MHz	Pass	AV	2.3652G	46.61	54.00	-7.39	3	Vertical	307.1	1.56	-
2440MHz	Pass	AV	2.44G	98.35	Inf	-Inf	3	Vertical	307.1	1.56	-
2440MHz	Pass	AV	2.4848G	46.66	54.00	-7.34	3	Vertical	307.1	1.56	-
2440MHz	Pass	PK	2.3452G	57.29	74.00	-16.71	3	Vertical	307.1	1.56	-
2440MHz	Pass	PK	2.4404G	99.10	Inf	-Inf	3	Vertical	307.1	1.56	-
2440MHz	Pass	PK	2.4972G	57.08	74.00	-16.92	3	Vertical	307.1	1.56	-
2440MHz	Pass	AV	2.3476G	46.39	54.00	-7.61	3	Horizontal	72	1.38	-
2440MHz	Pass	AV	2.44G	102.98	Inf	-Inf	3	Horizontal	72	1.38	-
2440MHz	Pass	AV	2.4956G	46.55	54.00	-7.45	3	Horizontal	72	1.38	-
2440MHz	Pass	PK	2.3404G	57.31	74.00	-16.69	3	Horizontal	72	1.38	-
2440MHz	Pass	PK	2.4404G	103.75	Inf	-Inf	3	Horizontal	72	1.38	-
2440MHz	Pass	PK	2.4852G	56.91	74.00	-17.09	3	Horizontal	72	1.38	-
2440MHz	Pass	AV	4.88019G	47.12	54.00	-6.88	3	Vertical	219	1.44	-
2440MHz	Pass	AV	7.31929G	46.92	54.00	-7.08	3	Vertical	172	2.10	-
2440MHz	Pass	PK	7.3209G	55.44	74.00	-18.56	3	Vertical	172	2.10	-
2440MHz	Pass	PK	4.88049G	52.85	74.00	-21.15	3	Vertical	219	1.44	-
2440MHz	Pass	AV	4.88017G	51.26	54.00	-2.74	3	Horizontal	323	2.04	-
2440MHz	Pass	AV	7.32056G	52.04	54.00	-1.96	3	Horizontal	232	1.80	-
2440MHz	Pass	PK	4.87944G	56.06	74.00	-17.94	3	Horizontal	323	2.04	-
2440MHz	Pass	PK	7.32084G	58.79	74.00	-15.21	3	Horizontal	232	1.80	-
2480MHz	Pass	AV	2.48G	99.15	Inf	-Inf	3	Vertical	306	1.31	-
2480MHz	Pass	AV	2.4835G	49.06	54.00	-4.94	3	Vertical	306	1.31	-
2480MHz	Pass	PK	2.4802G	99.89	Inf	-Inf	3	Vertical	306	1.31	-
2480MHz	Pass	PK	2.4838G	58.00	74.00	-16.00	3	Vertical	306	1.31	-
2480MHz	Pass	AV	2.48G	102.76	Inf	-Inf	3	Horizontal	228	1.56	-
2480MHz	Pass	AV	2.4835G	51.41	54.00	-2.59	3	Horizontal	228	1.56	-
2480MHz	Pass	PK	2.4802G	103.54	Inf	-Inf	3	Horizontal	228	1.56	-
2480MHz	Pass	PK	2.4835G	60.62	74.00	-13.38	3	Horizontal	228	1.56	-
2480MHz	Pass	AV	4.96016G	48.85	54.00	-5.15	3	Vertical	217	2.74	-
2480MHz	Pass	AV	7.44056G	47.23	54.00	-6.77	3	Vertical	108	1.87	-
2480MHz	Pass	PK	4.96038G	54.25	74.00	-19.75	3	Vertical	217	2.74	-
2480MHz	Pass	PK	7.43924G	55.29	74.00	-18.71	3	Vertical	108	1.87	-
2480MHz	Pass	AV	4.96014G	53.18	54.00	-0.82	3	Horizontal	319	2.08	-
2480MHz	Pass	AV	7.44056G	52.50	54.00	-1.50	3	Horizontal	272	2.10	-
2480MHz	Pass	PK	4.96049G	57.87	74.00	-16.13	3	Horizontal	319	2.08	-
2480MHz	Pass	PK	7.44061G	59.13	74.00	-14.87	3	Horizontal	272	2.10	-
GFSK(2Mbps)	-	-	-	-	-	-	-	-	-	-	-
2404MHz	Pass	AV	2.356G	47.16	54.00	-6.84	3	Vertical	265	2.90	-
2404MHz	Pass	AV	2.404G	97.87	Inf	-Inf	3	Vertical	265	2.90	-
2404MHz	Pass	PK	2.377G	57.99	74.00	-16.01	3	Vertical	265	2.90	-
2404MHz	Pass	PK	2.4044G	100.21	Inf	-Inf	3	Vertical	265	2.90	-
2404MHz	Pass	AV	2.3878G	46.53	54.00	-7.47	3	Horizontal	84	1.37	-
2404MHz	Pass	AV	2.404G	101.18	Inf	-Inf	3	Horizontal	84	1.37	-
2404MHz	Pass	PK	2.365G	57.35	74.00	-16.65	3	Horizontal	84	1.37	-
2404MHz	Pass	PK	2.4044G	103.42	Inf	-Inf	3	Horizontal	84	1.37	-
2404MHz	Pass	AV	4.80703G	45.32	54.00	-8.68	3	Vertical	196	1.50	-
2404MHz	Pass	PK	4.807G	52.73	74.00	-21.27	3	Vertical	196	1.50	-
2404MHz	Pass	AV	4.80702G	49.46	54.00	-4.54	3	Horizontal	322	2.01	-

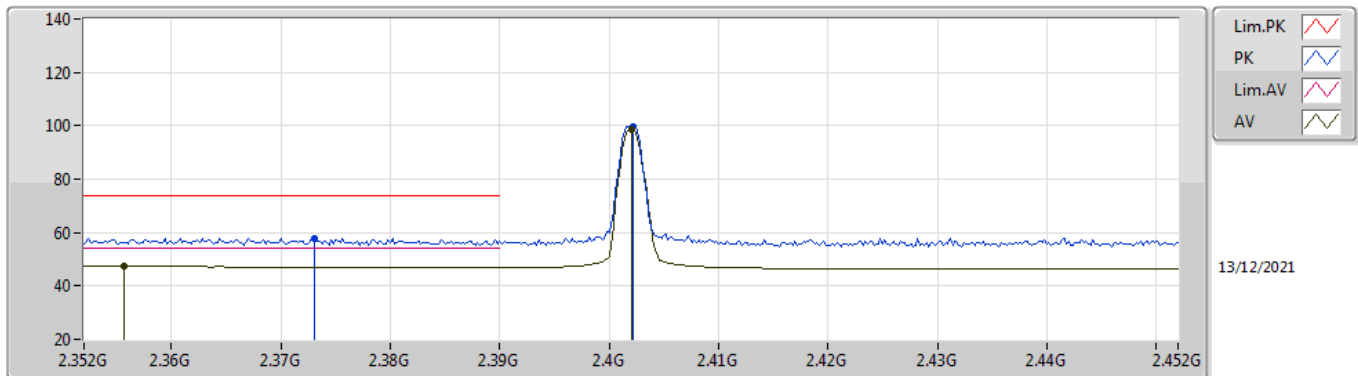




Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2404MHz	Pass	PK	4.80697G	56.25	74.00	-17.75	3	Horizontal	322	2.01	-
2440MHz	Pass	AV	2.3624G	46.65	54.00	-7.35	3	Vertical	307	1.55	-
2440MHz	Pass	AV	2.44G	96.78	Inf	-Inf	3	Vertical	307	1.55	-
2440MHz	Pass	AV	2.4952G	46.65	54.00	-7.35	3	Vertical	307	1.55	-
2440MHz	Pass	PK	2.3564G	57.66	74.00	-16.34	3	Vertical	307	1.55	-
2440MHz	Pass	PK	2.4404G	99.07	Inf	-Inf	3	Vertical	307	1.55	-
2440MHz	Pass	PK	2.4835G	57.23	74.00	-16.77	3	Vertical	307	1.55	-
2440MHz	Pass	AV	2.3564G	46.39	54.00	-7.61	3	Horizontal	71	1.39	-
2440MHz	Pass	AV	2.44G	101.40	Inf	-Inf	3	Horizontal	71	1.39	-
2440MHz	Pass	AV	2.498G	46.56	54.00	-7.44	3	Horizontal	71	1.39	-
2440MHz	Pass	PK	2.3508G	57.84	74.00	-16.16	3	Horizontal	71	1.39	-
2440MHz	Pass	PK	2.4404G	103.62	Inf	-Inf	3	Horizontal	71	1.39	-
2440MHz	Pass	PK	2.496G	57.57	74.00	-16.43	3	Horizontal	71	1.39	-
2440MHz	Pass	AV	4.88088G	45.33	54.00	-8.67	3	Vertical	219	2.63	-
2440MHz	Pass	AV	7.31861G	44.95	54.00	-9.05	3	Vertical	170	2.08	-
2440MHz	Pass	PK	4.88103G	52.97	74.00	-21.03	3	Vertical	219	2.63	-
2440MHz	Pass	PK	7.32131G	54.44	74.00	-19.56	3	Vertical	170	2.08	-
2440MHz	Pass	AV	4.87904G	48.74	54.00	-5.26	3	Horizontal	323	2.03	-
2440MHz	Pass	AV	7.32129G	50.51	54.00	-3.49	3	Horizontal	232	1.80	-
2440MHz	Pass	PK	4.8789G	55.56	74.00	-18.44	3	Horizontal	323	2.03	-
2440MHz	Pass	PK	7.32142G	58.18	74.00	-15.82	3	Horizontal	232	1.80	-
2478MHz	Pass	AV	2.478G	97.00	Inf	-Inf	3	Vertical	304	1.45	-
2478MHz	Pass	AV	2.4835G	47.44	54.00	-6.56	3	Vertical	304	1.45	-
2478MHz	Pass	PK	2.4774G	99.31	Inf	-Inf	3	Vertical	304	1.45	-
2478MHz	Pass	PK	2.4856G	58.41	74.00	-15.59	3	Vertical	304	1.45	-
2478MHz	Pass	AV	2.478G	101.03	Inf	-Inf	3	Horizontal	227	1.57	-
2478MHz	Pass	AV	2.4835G	49.05	54.00	-4.95	3	Horizontal	227	1.57	-
2478MHz	Pass	PK	2.4784G	103.33	Inf	-Inf	3	Horizontal	227	1.57	-
2478MHz	Pass	PK	2.4846G	59.05	74.00	-14.95	3	Horizontal	227	1.57	-
2478MHz	Pass	AV	4.95687G	46.33	54.00	-7.67	3	Vertical	215	3.00	-
2478MHz	Pass	AV	7.43528G	44.10	54.00	-9.90	3	Vertical	201	1.82	-
2478MHz	Pass	PK	4.95684G	53.50	74.00	-20.50	3	Vertical	215	3.00	-
2478MHz	Pass	PK	7.43253G	53.74	74.00	-20.26	3	Vertical	201	1.82	-
2478MHz	Pass	AV	4.95687G	51.02	54.00	-2.98	3	Horizontal	321	1.97	-
2478MHz	Pass	AV	7.43527G	51.21	54.00	-2.79	3	Horizontal	273	2.13	-
2478MHz	Pass	PK	4.95494G	57.35	74.00	-16.65	3	Horizontal	321	1.97	-
2478MHz	Pass	PK	7.43242G	58.69	74.00	-15.31	3	Horizontal	273	2.13	-

### GFSK(1Mbps)

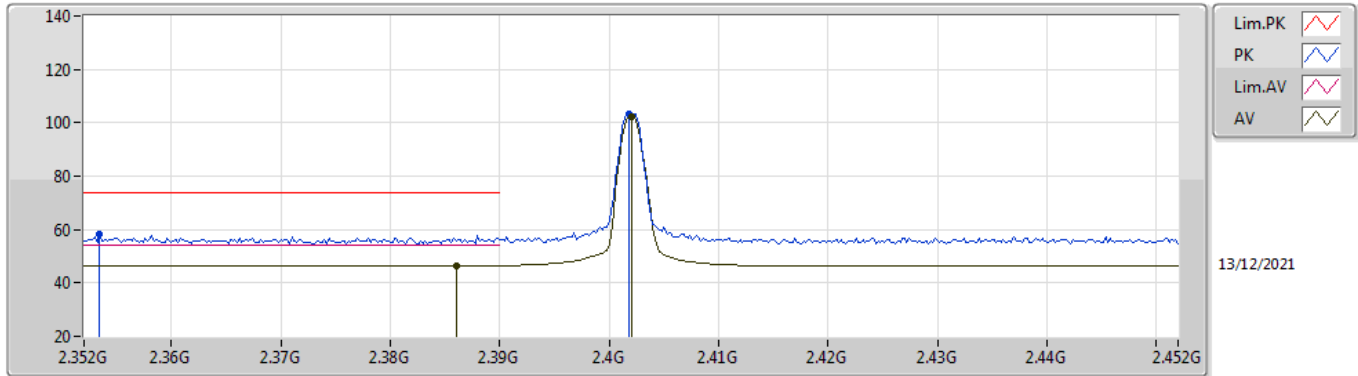
### 2402MHz\_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3556G	47.31	54.00	-6.69	32.32	3	Vertical	262	2.88	-	14.99	27.78	4.54	-
AV	2.402G	98.82	Inf	-Inf	32.18	3	Vertical	262	2.88	-	66.64	27.60	4.58	-
PK	2.373G	58.01	74.00	-15.99	32.26	3	Vertical	262	2.88	-	25.75	27.71	4.55	-
PK	2.4022G	99.59	Inf	-Inf	32.18	3	Vertical	262	2.88	-	67.41	27.60	4.58	-

**GFSK(1Mbps)**

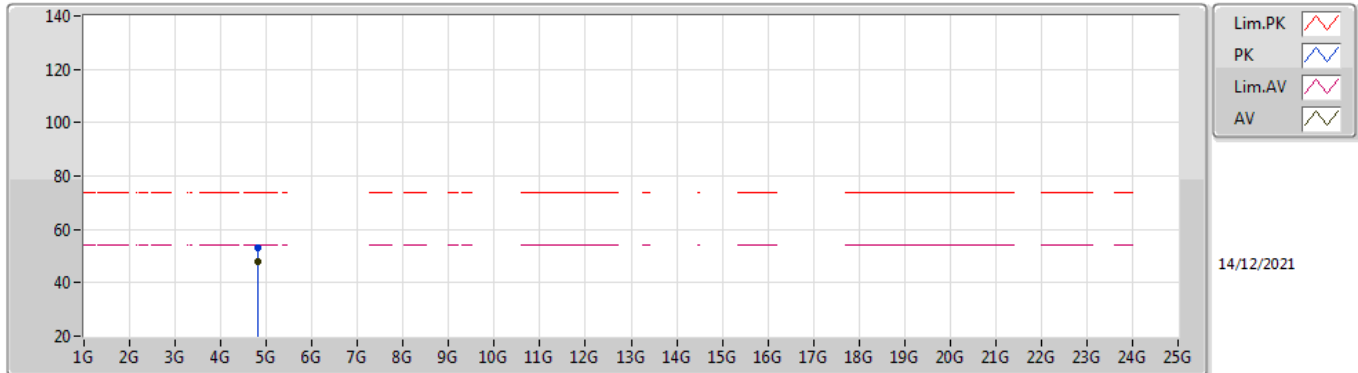
**2402MHz\_TX**



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.386G	46.48	54.00	-7.52	32.23	3	Horizontal	60.9	1.45	-	14.25	27.66	4.57	-
AV	2.402G	102.41	Inf	-Inf	32.18	3	Horizontal	60.9	1.45	-	70.23	27.60	4.58	-
PK	2.3534G	58.20	74.00	-15.80	32.33	3	Horizontal	60.9	1.45	-	25.87	27.79	4.54	-
PK	2.4018G	103.16	Inf	-Inf	32.18	3	Horizontal	60.9	1.45	-	70.98	27.60	4.58	-

### GFSK(1Mbps)

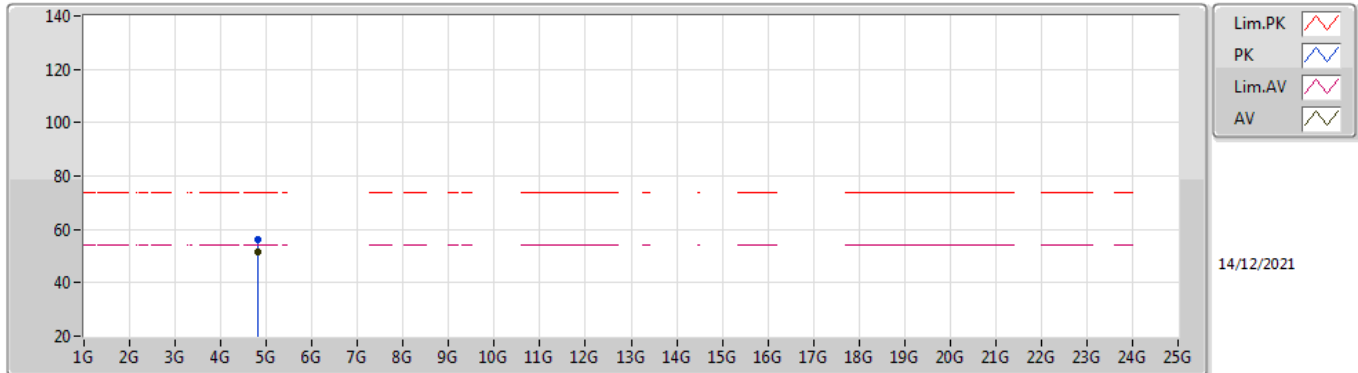
### 2402MHz\_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.80416G	47.68	54.00	-6.32	2.95	3	Vertical	218	1.46	-	44.73	31.10	6.66	34.81
PK	4.80443G	53.33	74.00	-20.67	2.95	3	Vertical	218	1.46	-	50.38	31.10	6.66	34.81

### GFSK(1Mbps)

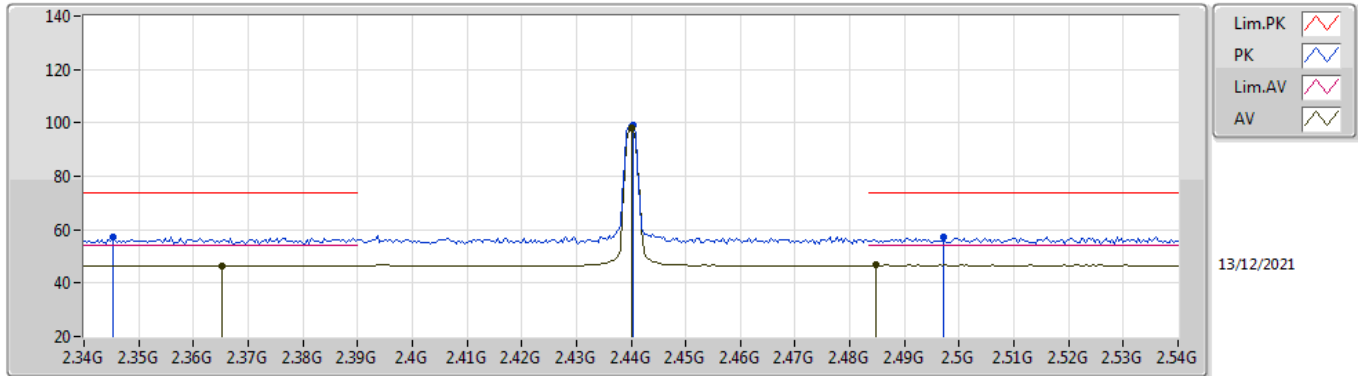
### 2402MHz\_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.80415G	51.56	54.00	-2.44	2.95	3	Horizontal	324	1.90	-	48.61	31.10	6.66	34.81
PK	4.80344G	56.39	74.00	-17.61	2.95	3	Horizontal	324	1.90	-	53.44	31.10	6.66	34.81

### GFSK(1Mbps)

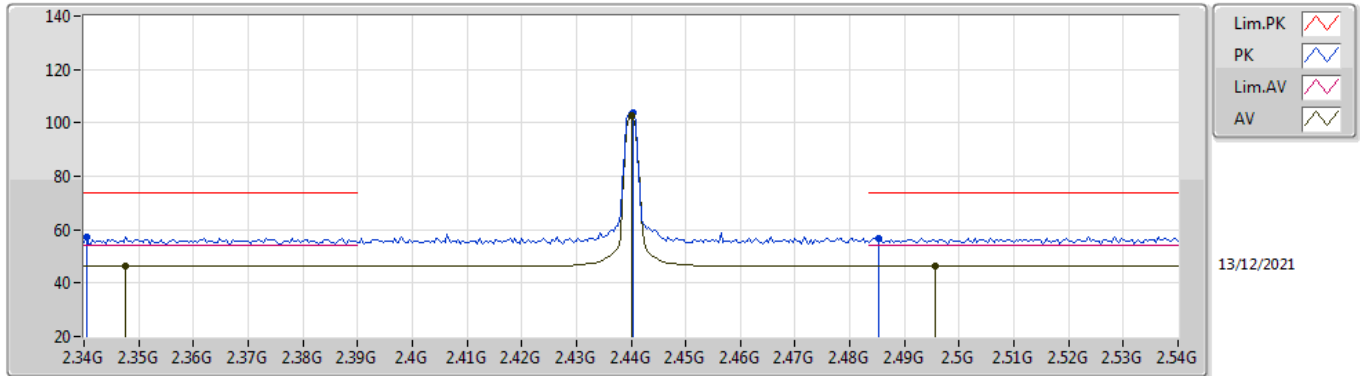
### 2440MHz\_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3652G	46.61	54.00	-7.39	32.29	3	Vertical	307.1	1.56	-	14.32	27.74	4.55	-
AV	2.44G	98.35	Inf	-Inf	32.12	3	Vertical	307.1	1.56	-	66.23	27.52	4.60	-
AV	2.4848G	46.66	54.00	-7.34	32.11	3	Vertical	307.1	1.56	-	14.55	27.50	4.61	-
PK	2.3452G	57.29	74.00	-16.71	32.33	3	Vertical	307.1	1.56	-	24.96	27.80	4.53	-
PK	2.4404G	99.10	Inf	-Inf	32.12	3	Vertical	307.1	1.56	-	66.98	27.52	4.60	-
PK	2.4972G	57.08	74.00	-16.92	32.12	3	Vertical	307.1	1.56	-	24.96	27.50	4.62	-

### GFSK(1Mbps)

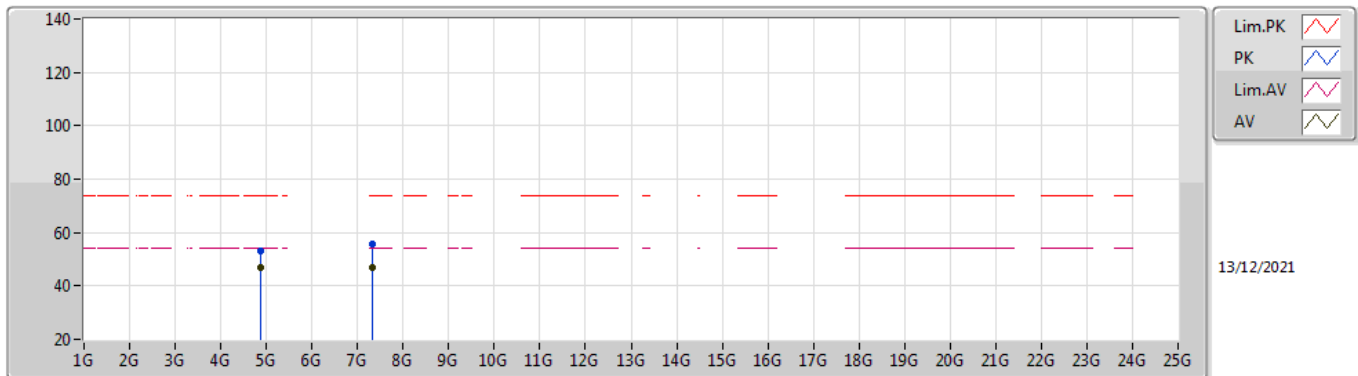
### 2440MHz\_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3476G	46.39	54.00	-7.61	32.33	3	Horizontal	72	1.38	-	14.06	27.80	4.53	-
AV	2.44G	102.98	Inf	-Inf	32.12	3	Horizontal	72	1.38	-	70.86	27.52	4.60	-
AV	2.4956G	46.55	54.00	-7.45	32.12	3	Horizontal	72	1.38	-	14.43	27.50	4.62	-
PK	2.3404G	57.31	74.00	-16.69	32.32	3	Horizontal	72	1.38	-	24.99	27.80	4.52	-
PK	2.4404G	103.75	Inf	-Inf	32.12	3	Horizontal	72	1.38	-	71.63	27.52	4.60	-
PK	2.4852G	56.91	74.00	-17.09	32.11	3	Horizontal	72	1.38	-	24.80	27.50	4.61	-

### GFSK(1Mbps)

### 2440MHz\_TX

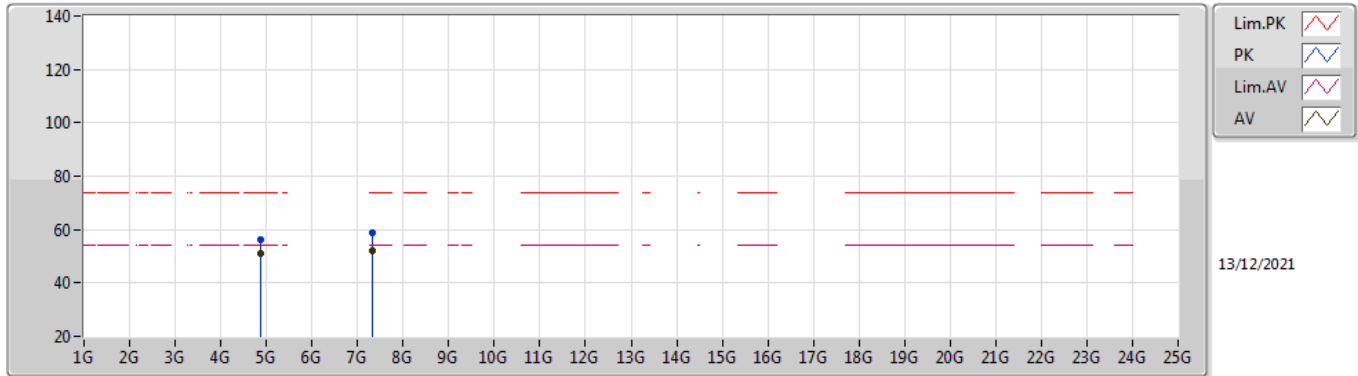


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.88019G	47.12	54.00	-6.88	3.03	3	Vertical	219	1.44	-	44.09	31.10	6.72	34.79
AV	7.31929G	46.92	54.00	-7.08	9.41	3	Vertical	172	2.10	-	37.51	36.36	7.87	34.82
PK	7.3209G	55.44	74.00	-18.56	9.42	3	Vertical	172	2.10	-	46.02	36.36	7.88	34.82
PK	4.88049G	52.85	74.00	-21.15	3.03	3	Vertical	219	1.44	-	49.82	31.10	6.72	34.79



### GFSK(1Mbps)

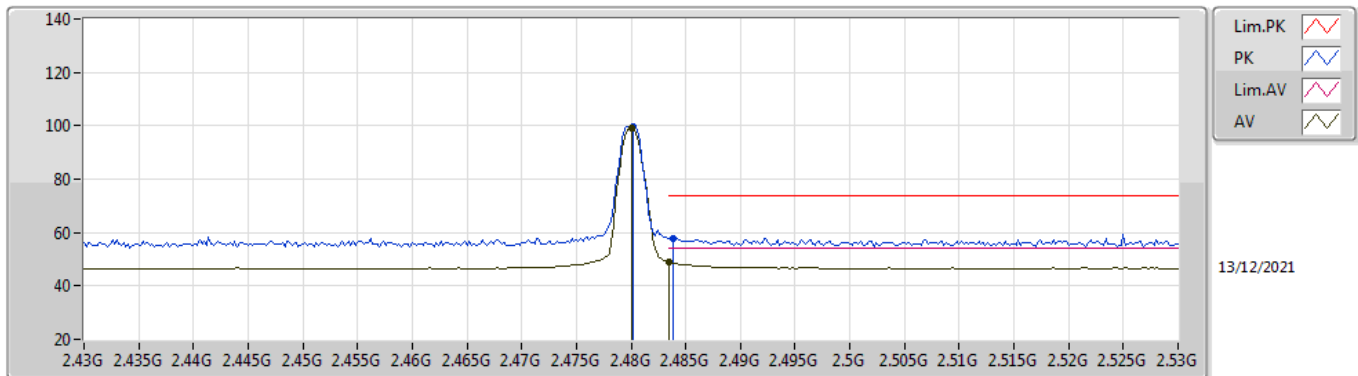
### 2440MHz\_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.88017G	51.26	54.00	-2.74	3.03	3	Horizontal	323	2.04	-	48.23	31.10	6.72	34.79
AV	7.32056G	52.04	54.00	-1.96	9.41	3	Horizontal	232	1.80	-	42.63	36.36	7.87	34.82
PK	4.87944G	56.06	74.00	-17.94	3.03	3	Horizontal	323	2.04	-	53.03	31.10	6.72	34.79
PK	7.32084G	58.79	74.00	-15.21	9.42	3	Horizontal	232	1.80	-	49.37	36.36	7.88	34.82

**GFSK(1Mbps)**

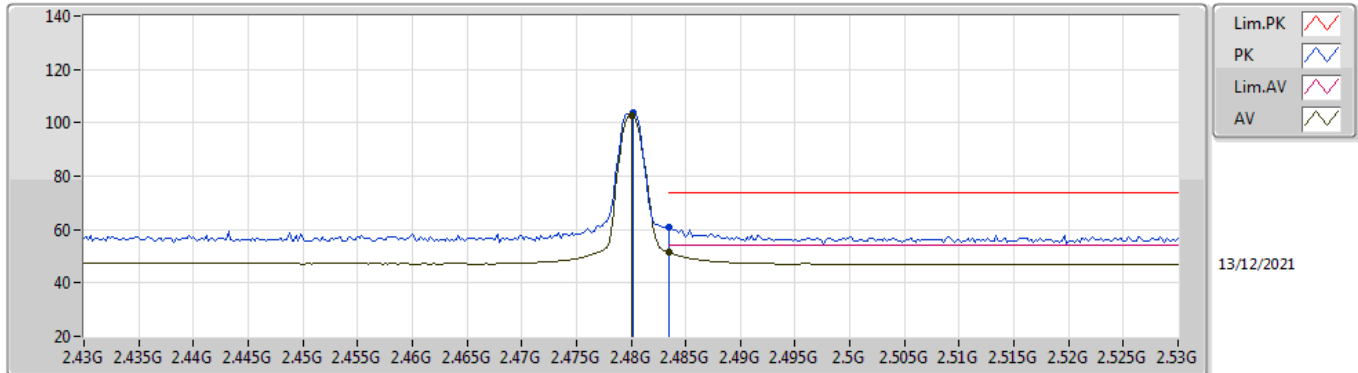
**2480MHz\_TX**



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.48G	99.15	Inf	-Inf	32.11	3	Vertical	306	1.31	-	67.04	27.50	4.61	-
AV	2.4835G	49.06	54.00	-4.94	32.11	3	Vertical	306	1.31	-	16.95	27.50	4.61	-
PK	2.4802G	99.89	Inf	-Inf	32.11	3	Vertical	306	1.31	-	67.78	27.50	4.61	-
PK	2.4838G	58.00	74.00	-16.00	32.11	3	Vertical	306	1.31	-	25.89	27.50	4.61	-

### GFSK(1Mbps)

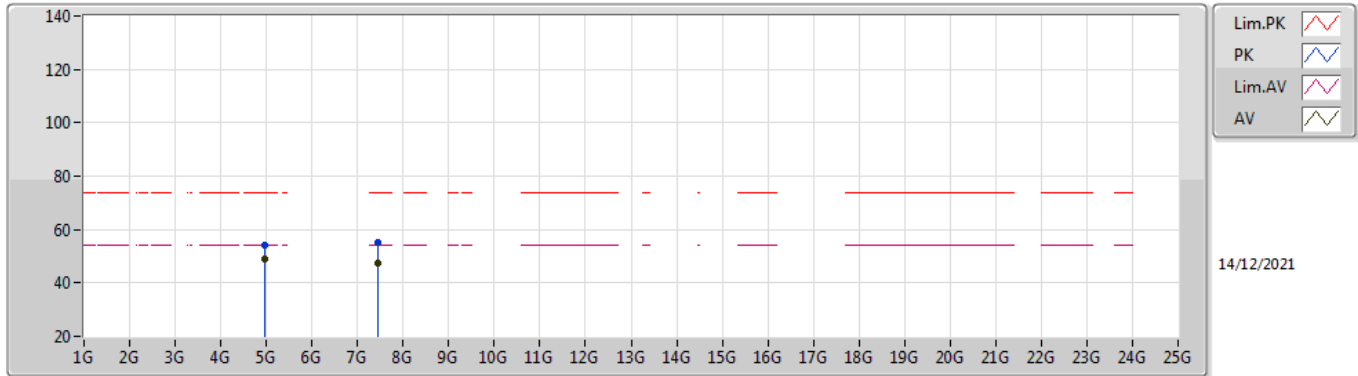
### 2480MHz\_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.48G	102.76	Inf	-Inf	32.11	3	Horizontal	228	1.56	-	70.65	27.50	4.61	-
AV	2.4835G	51.41	54.00	-2.59	32.11	3	Horizontal	228	1.56	-	19.30	27.50	4.61	-
PK	2.4802G	103.54	Inf	-Inf	32.11	3	Horizontal	228	1.56	-	71.43	27.50	4.61	-
PK	2.4835G	60.62	74.00	-13.38	32.11	3	Horizontal	228	1.56	-	28.51	27.50	4.61	-

### GFSK(1Mbps)

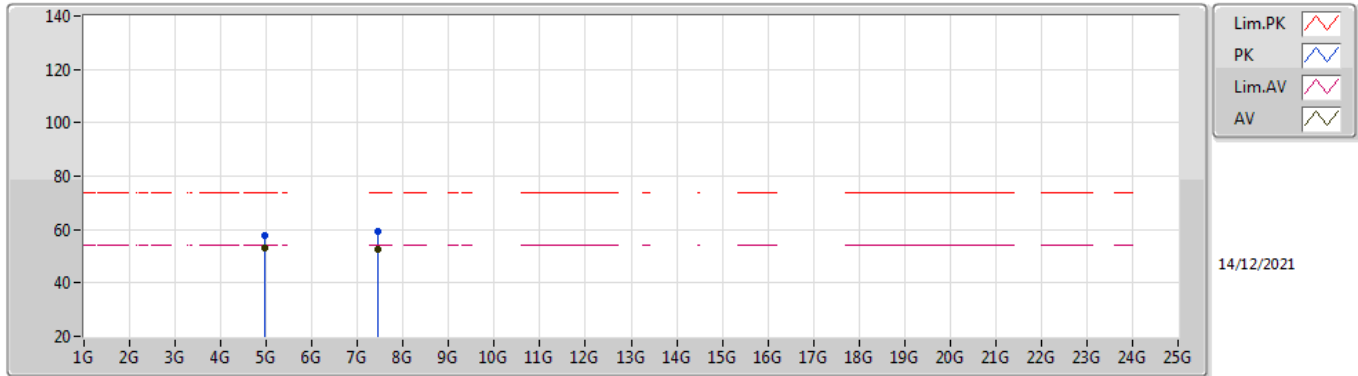
### 2480MHz\_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.96016G	48.85	54.00	-5.15	3.35	3	Vertical	217	2.74	-	45.50	31.34	6.78	34.77
AV	7.44056G	47.23	54.00	-6.77	9.50	3	Vertical	108	1.87	-	37.73	36.28	8.06	34.84
PK	4.96038G	54.25	74.00	-19.75	3.35	3	Vertical	217	2.74	-	50.90	31.34	6.78	34.77
PK	7.43924G	55.29	74.00	-18.71	9.49	3	Vertical	108	1.87	-	45.80	36.28	8.05	34.84

### GFSK(1Mbps)

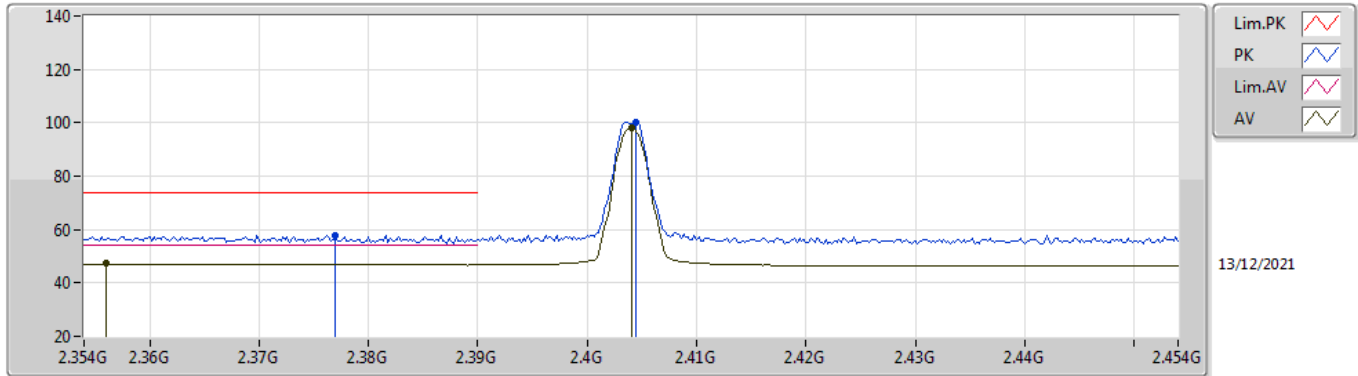
### 2480MHz\_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.96014G	53.18	54.00	-0.82	3.35	3	Horizontal	319	2.08	-	49.83	31.34	6.78	34.77
AV	7.44056G	52.50	54.00	-1.50	9.50	3	Horizontal	272	2.10	-	43.00	36.28	8.06	34.84
PK	4.96049G	57.87	74.00	-16.13	3.35	3	Horizontal	319	2.08	-	54.52	31.34	6.78	34.77
PK	7.44061G	59.13	74.00	-14.87	9.50	3	Horizontal	272	2.10	-	49.63	36.28	8.06	34.84

**GFSK(2Mbps)**

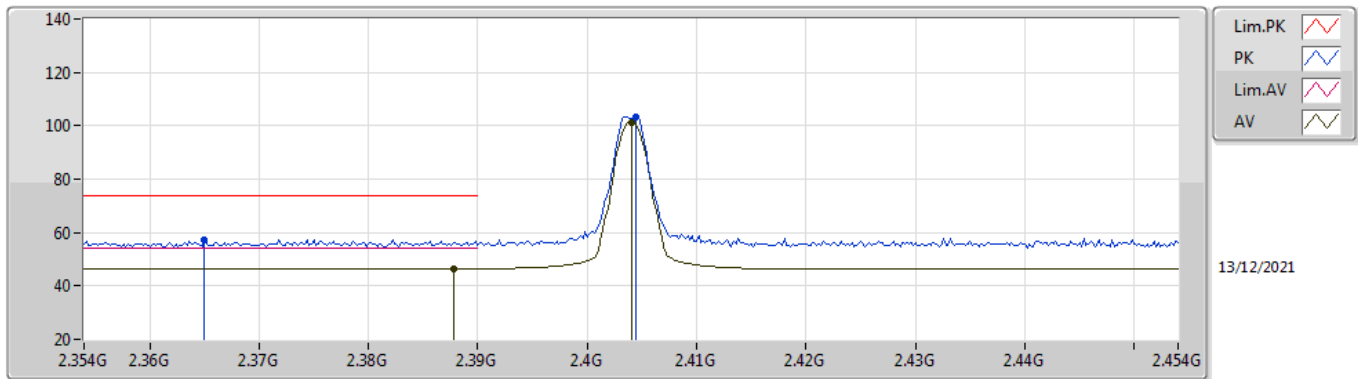
**2404MHz\_TX**



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.356G	47.16	54.00	-6.84	32.32	3	Vertical	265	2.90	-	14.84	27.78	4.54	-
AV	2.404G	97.87	Inf	-Inf	32.17	3	Vertical	265	2.90	-	65.70	27.59	4.58	-
PK	2.377G	57.99	74.00	-16.01	32.25	3	Vertical	265	2.90	-	25.74	27.69	4.56	-
PK	2.4044G	100.21	Inf	-Inf	32.17	3	Vertical	265	2.90	-	68.04	27.59	4.58	-

### GFSK(2Mbps)

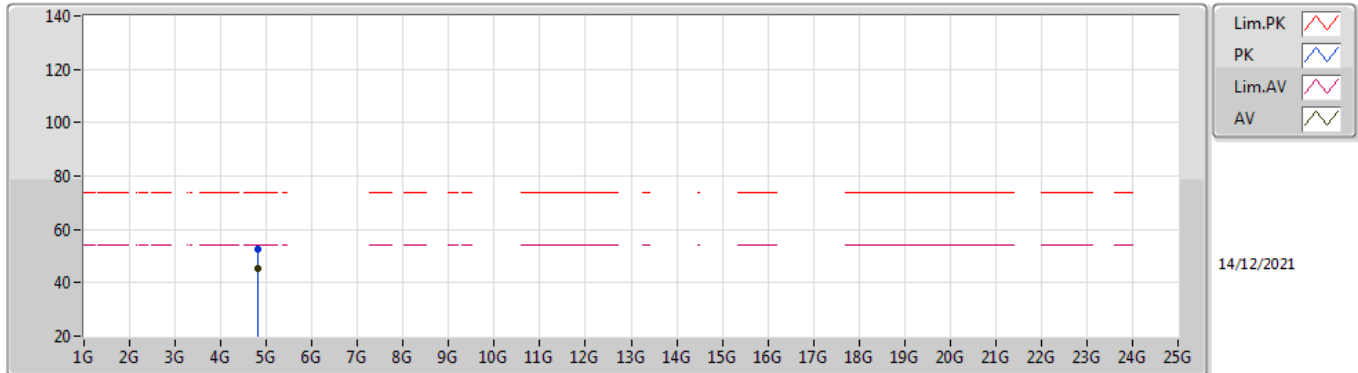
### 2404MHz\_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3878G	46.53	54.00	-7.47	32.22	3	Horizontal	84	1.37	-	14.31	27.65	4.57	-
AV	2.404G	101.18	Inf	-Inf	32.17	3	Horizontal	84	1.37	-	69.01	27.59	4.58	-
PK	2.365G	57.35	74.00	-16.65	32.29	3	Horizontal	84	1.37	-	25.06	27.74	4.55	-
PK	2.4044G	103.42	Inf	-Inf	32.17	3	Horizontal	84	1.37	-	71.25	27.59	4.58	-

### GFSK(2Mbps)

### 2404MHz\_TX

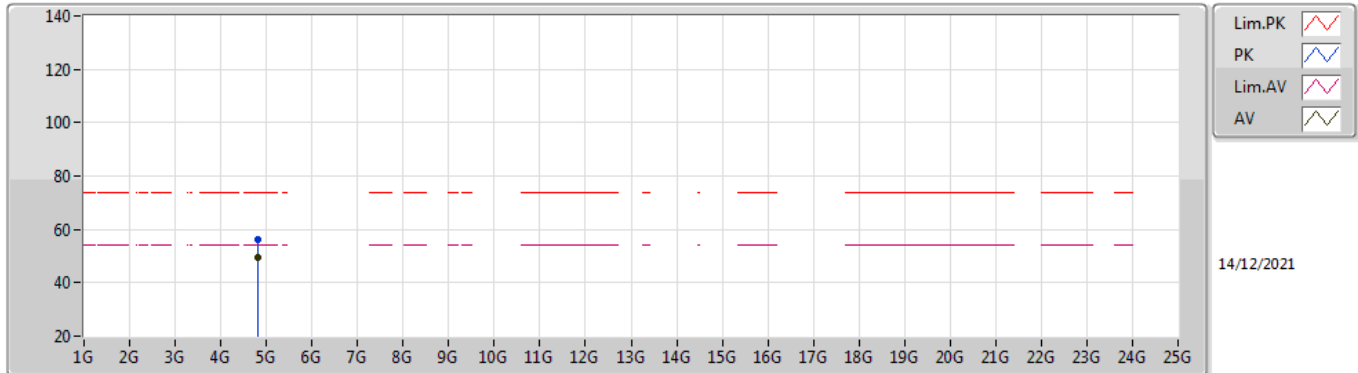


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.80703G	45.32	54.00	-8.68	2.96	3	Vertical	196	1.50	-	42.36	31.10	6.67	34.81
PK	4.807G	52.73	74.00	-21.27	2.96	3	Vertical	196	1.50	-	49.77	31.10	6.67	34.81



### GFSK(2Mbps)

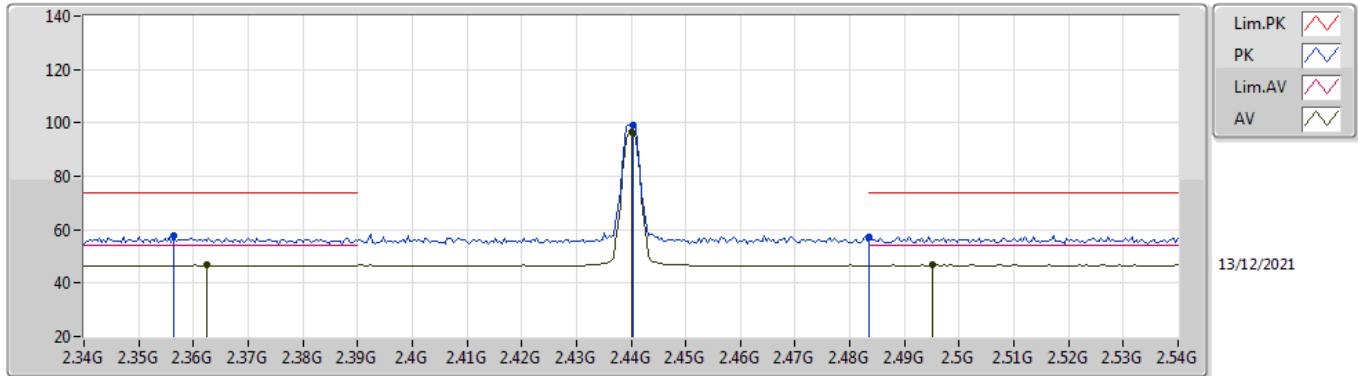
### 2404MHz\_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.80702G	49.46	54.00	-4.54	2.96	3	Horizontal	322	2.01	-	46.50	31.10	6.67	34.81
PK	4.80697G	56.25	74.00	-17.75	2.96	3	Horizontal	322	2.01	-	53.29	31.10	6.67	34.81

**GFSK(2Mbps)**

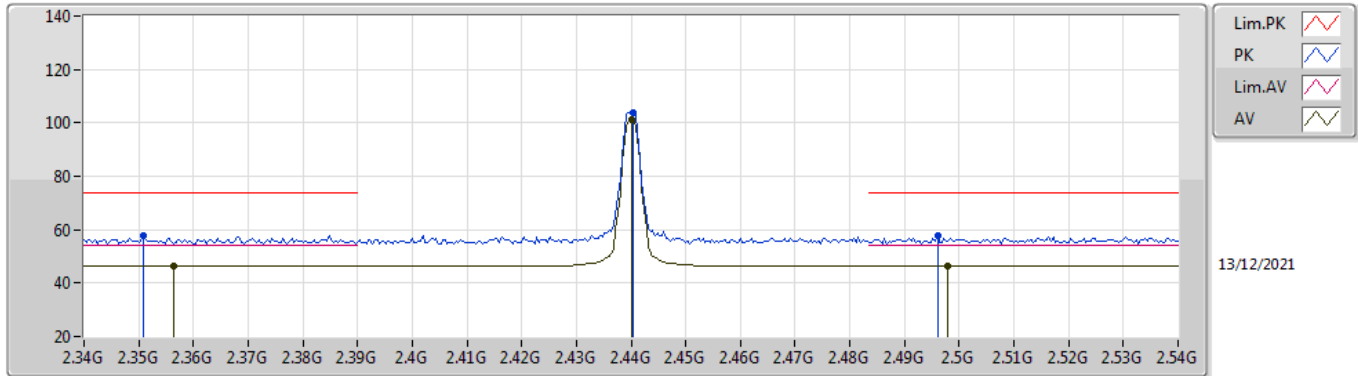
**2440MHz\_TX**



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3624G	46.65	54.00	-7.35	32.29	3	Vertical	307	1.55	-	14.36	27.75	4.54	-
AV	2.44G	96.78	Inf	-Inf	32.12	3	Vertical	307	1.55	-	64.66	27.52	4.60	-
AV	2.4952G	46.65	54.00	-7.35	32.12	3	Vertical	307	1.55	-	14.53	27.50	4.62	-
PK	2.3564G	57.66	74.00	-16.34	32.31	3	Vertical	307	1.55	-	25.35	27.77	4.54	-
PK	2.4404G	99.07	Inf	-Inf	32.12	3	Vertical	307	1.55	-	66.95	27.52	4.60	-
PK	2.4835G	57.23	74.00	-16.77	32.11	3	Vertical	307	1.55	-	25.12	27.50	4.61	-

### GFSK(2Mbps)

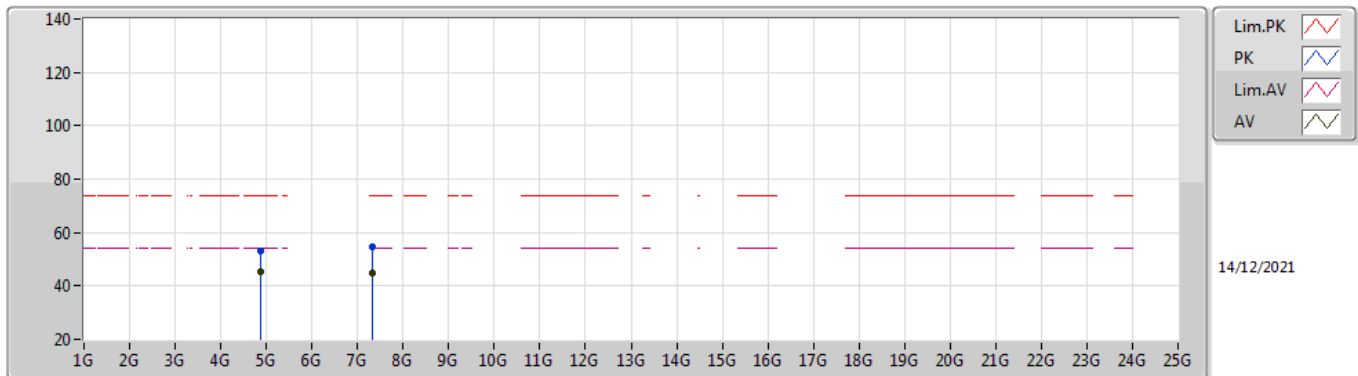
### 2440MHz\_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3564G	46.39	54.00	-7.61	32.31	3	Horizontal	71	1.39	-	14.08	27.77	4.54	-
AV	2.44G	101.40	Inf	-Inf	32.12	3	Horizontal	71	1.39	-	69.28	27.52	4.60	-
AV	2.498G	46.56	54.00	-7.44	32.12	3	Horizontal	71	1.39	-	14.44	27.50	4.62	-
PK	2.3508G	57.84	74.00	-16.16	32.33	3	Horizontal	71	1.39	-	25.51	27.80	4.53	-
PK	2.4404G	103.62	Inf	-Inf	32.12	3	Horizontal	71	1.39	-	71.50	27.52	4.60	-
PK	2.496G	57.57	74.00	-16.43	32.12	3	Horizontal	71	1.39	-	25.45	27.50	4.62	-

### GFSK(2Mbps)

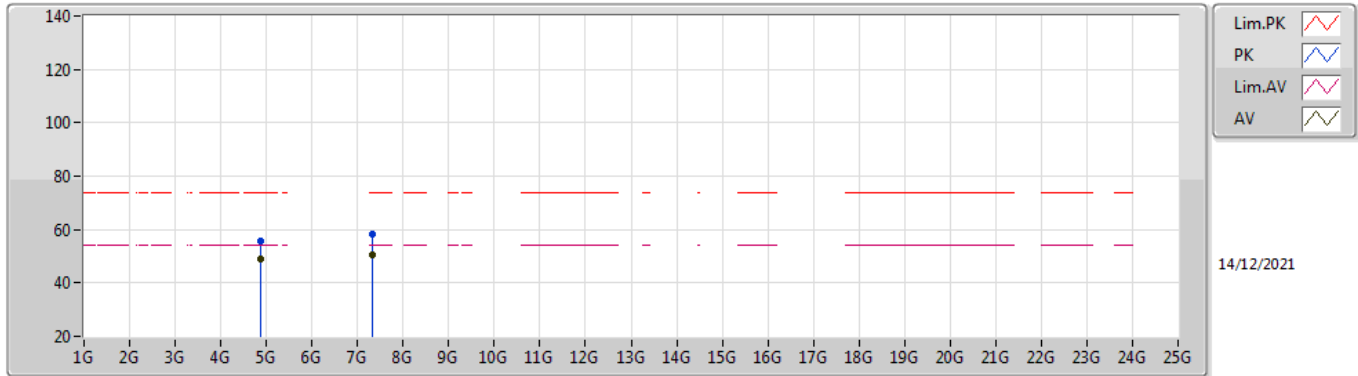
### 2440MHz\_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.88088G	45.33	54.00	-8.67	3.03	3	Vertical	219	2.63	-	42.30	31.10	6.72	34.79
AV	7.31861G	44.95	54.00	-9.05	9.41	3	Vertical	170	2.08	-	35.54	36.36	7.87	34.82
PK	4.88103G	52.97	74.00	-21.03	3.03	3	Vertical	219	2.63	-	49.94	31.10	6.72	34.79
PK	7.32131G	54.44	74.00	-19.56	9.42	3	Vertical	170	2.08	-	45.02	36.36	7.88	34.82

### GFSK(2Mbps)

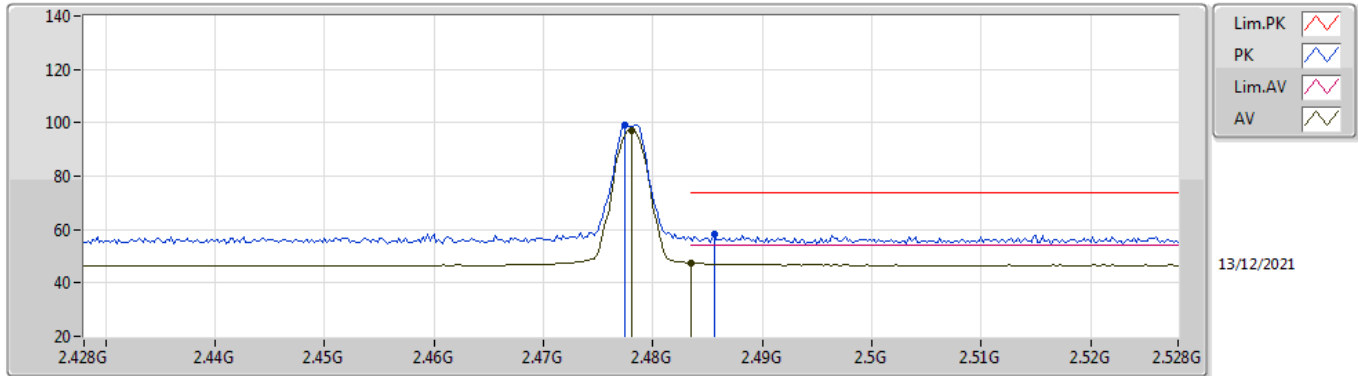
### 2440MHz\_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.87904G	48.74	54.00	-5.26	3.03	3	Horizontal	323	2.03	-	45.71	31.10	6.72	34.79
AV	7.32129G	50.51	54.00	-3.49	9.42	3	Horizontal	232	1.80	-	41.09	36.36	7.88	34.82
PK	4.8789G	55.56	74.00	-18.44	3.03	3	Horizontal	323	2.03	-	52.53	31.10	6.72	34.79
PK	7.32142G	58.18	74.00	-15.82	9.42	3	Horizontal	232	1.80	-	48.76	36.36	7.88	34.82

**GFSK(2Mbps)**

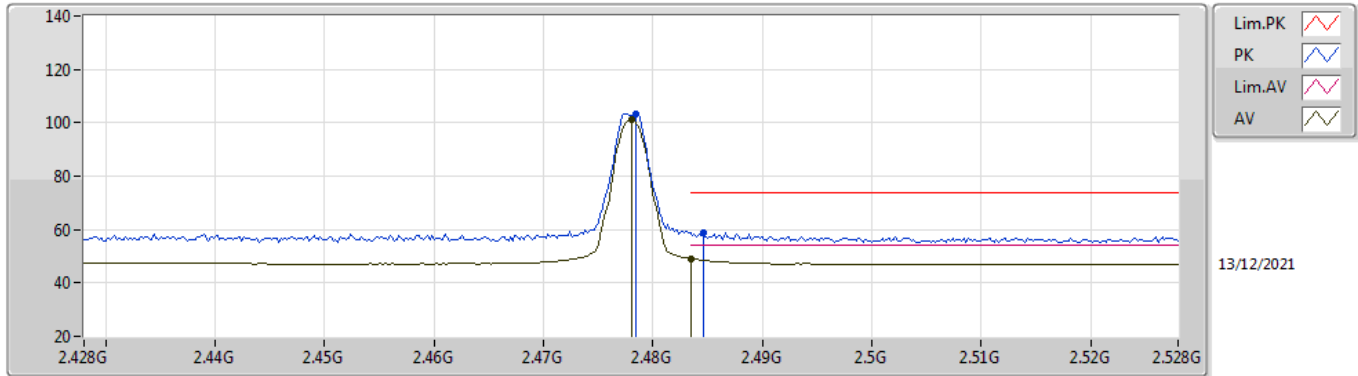
**2478MHz\_TX**



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.478G	97.00	Inf	-Inf	32.11	3	Vertical	304	1.45	-	64.89	27.50	4.61	-
AV	2.4835G	47.44	54.00	-6.56	32.11	3	Vertical	304	1.45	-	15.33	27.50	4.61	-
PK	2.4774G	99.31	Inf	-Inf	32.11	3	Vertical	304	1.45	-	67.20	27.50	4.61	-
PK	2.4856G	58.41	74.00	-15.59	32.11	3	Vertical	304	1.45	-	26.30	27.50	4.61	-

### GFSK(2Mbps)

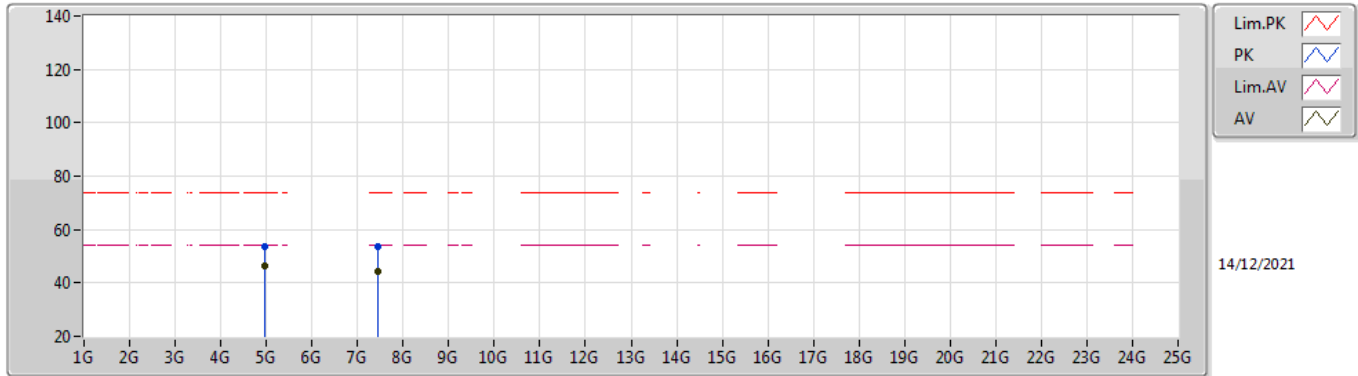
### 2478MHz\_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.478G	101.03	Inf	-Inf	32.11	3	Horizontal	227	1.57	-	68.92	27.50	4.61	-
AV	2.4835G	49.05	54.00	-4.95	32.11	3	Horizontal	227	1.57	-	16.94	27.50	4.61	-
PK	2.4784G	103.33	Inf	-Inf	32.11	3	Horizontal	227	1.57	-	71.22	27.50	4.61	-
PK	2.4846G	59.05	74.00	-14.95	32.11	3	Horizontal	227	1.57	-	26.94	27.50	4.61	-

### GFSK(2Mbps)

### 2478MHz\_TX

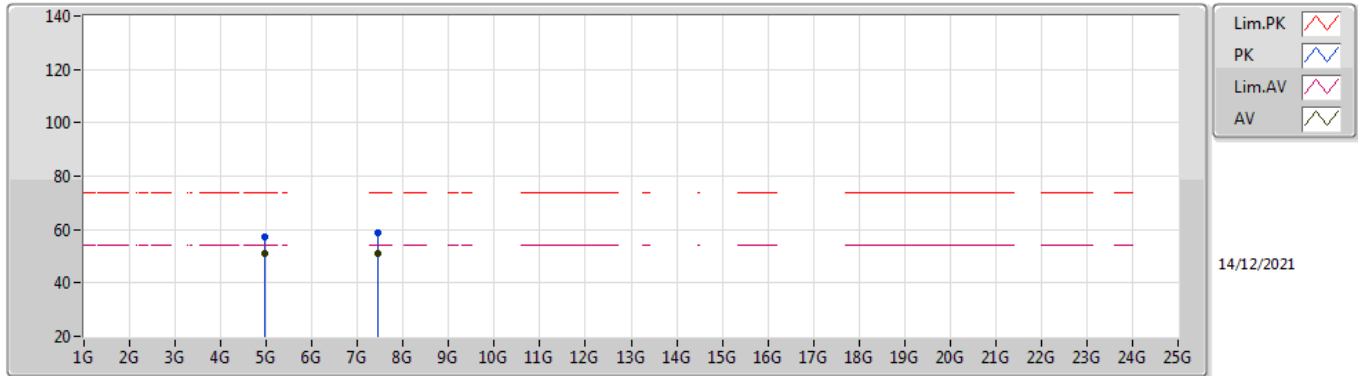


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.95687G	46.33	54.00	-7.67	3.34	3	Vertical	215	3.00	-	42.99	31.33	6.78	34.77
AV	7.43528G	44.10	54.00	-9.90	9.48	3	Vertical	201	1.82	-	34.62	36.27	8.05	34.84
PK	4.95684G	53.50	74.00	-20.50	3.34	3	Vertical	215	3.00	-	50.16	31.33	6.78	34.77
PK	7.43253G	53.74	74.00	-20.26	9.47	3	Vertical	201	1.82	-	44.27	36.27	8.04	34.84



### GFSK(2Mbps)

### 2478MHz\_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.95687G	51.02	54.00	-2.98	3.34	3	Horizontal	321	1.97	-	47.68	31.33	6.78	34.77
AV	7.43527G	51.21	54.00	-2.79	9.48	3	Horizontal	273	2.13	-	41.73	36.27	8.05	34.84
PK	4.95494G	57.35	74.00	-16.65	3.33	3	Horizontal	321	1.97	-	54.02	31.32	6.78	34.77
PK	7.43242G	58.69	74.00	-15.31	9.46	3	Horizontal	273	2.13	-	49.23	36.26	8.04	34.84



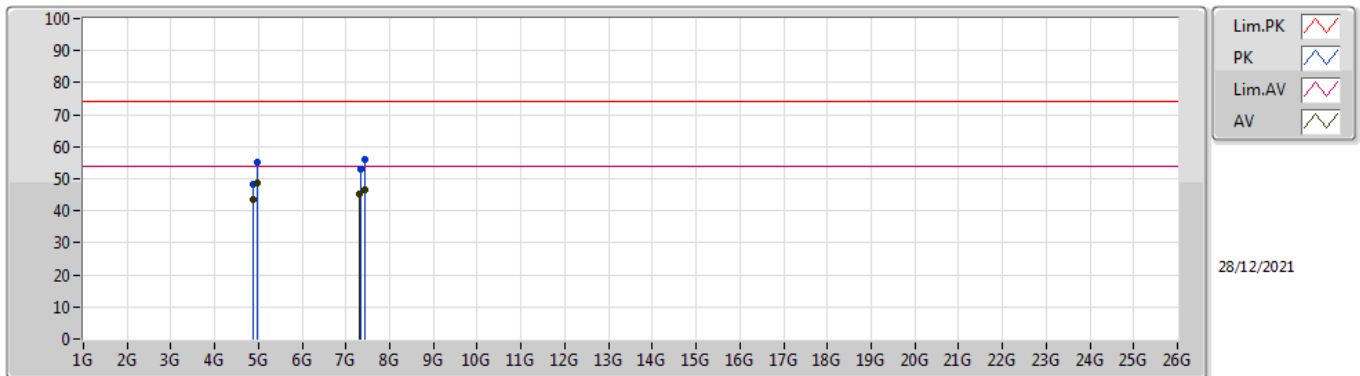
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	AV	4.9602G	53.20	54.00	-0.80	Horizontal

Mode Configure

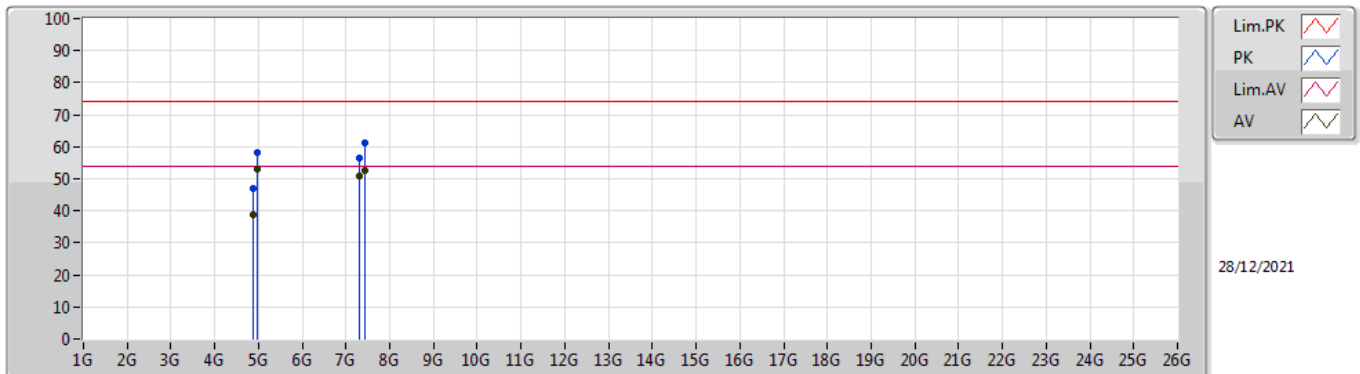
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
Mode 1	Pass	AV	4.87987G	43.32	54.00	-10.68	3	Vertical	215	2.64	-
Mode 1	Pass	AV	4.96021G	48.58	54.00	-5.42	3	Vertical	215	2.89	-
Mode 1	Pass	AV	7.31973G	45.29	54.00	-8.71	3	Vertical	0	1.44	-
Mode 1	Pass	AV	7.44057G	46.72	54.00	-7.28	3	Vertical	109	1.87	-
Mode 1	Pass	PK	4.87895G	48.48	74.00	-25.52	3	Vertical	215	2.64	-
Mode 1	Pass	PK	4.95963G	55.08	74.00	-18.92	3	Vertical	215	2.89	-
Mode 1	Pass	PK	7.32124G	52.97	74.00	-21.03	3	Vertical	0	1.44	-
Mode 1	Pass	PK	7.44078G	55.87	74.00	-18.13	3	Vertical	109	1.87	-
Mode 1	Pass	AV	4.87985G	38.92	54.00	-15.08	3	Horizontal	166	1.50	-
Mode 1	Pass	AV	4.9602G	53.20	54.00	-0.80	3	Horizontal	320	2.08	-
Mode 1	Pass	AV	7.3199G	50.72	54.00	-3.28	3	Horizontal	228	1.75	-
Mode 1	Pass	AV	7.44059G	52.58	54.00	-1.42	3	Horizontal	273	2.10	-
Mode 1	Pass	PK	4.87899G	46.82	74.00	-27.18	3	Horizontal	166	1.50	-
Mode 1	Pass	PK	4.95941G	58.06	74.00	-15.94	3	Horizontal	320	2.08	-
Mode 1	Pass	PK	7.31824G	56.45	74.00	-17.55	3	Horizontal	228	1.75	-
Mode 1	Pass	PK	7.44069G	61.05	74.00	-12.95	3	Horizontal	273	2.10	-

### Radiated Emissions above 1GHz\_Mode 1



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV/m)	AF (dB/m)	CL (dB)	PA (dB)
AV	4.87987G	43.32	54.00	-10.68	3.03	3	Vertical	215	2.64	-	40.29	31.10	6.72	34.79
AV	4.96021G	48.58	54.00	-5.42	3.35	3	Vertical	215	2.89	-	45.23	31.34	6.78	34.77
AV	7.31973G	45.29	54.00	-8.71	9.41	3	Vertical	0	1.44	-	35.88	36.36	7.87	34.82
AV	7.44057G	46.72	54.00	-7.28	9.50	3	Vertical	109	1.87	-	37.22	36.28	8.06	34.84
PK	4.87895G	48.48	74.00	-25.52	3.03	3	Vertical	215	2.64	-	45.45	31.10	6.72	34.79
PK	4.95963G	55.08	74.00	-18.92	3.35	3	Vertical	215	2.89	-	51.73	31.34	6.78	34.77
PK	7.32124G	52.97	74.00	-21.03	9.42	3	Vertical	0	1.44	-	43.55	36.36	7.88	34.82
PK	7.44078G	55.87	74.00	-18.13	9.50	3	Vertical	109	1.87	-	46.37	36.28	8.06	34.84

### Radiated Emissions above 1GHz\_Mode 1



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV/m)	AF (dB/m)	CL (dB)	PA (dB)
AV	4.87985G	38.92	54.00	-15.08	3.03	3	Horizontal	166	1.50	-	35.89	31.10	6.72	34.79
AV	4.9602G	53.20	54.00	-0.80	3.35	3	Horizontal	320	2.08	-	49.85	31.34	6.78	34.77
AV	7.3199G	50.72	54.00	-3.28	9.41	3	Horizontal	228	1.75	-	41.31	36.36	7.87	34.82
AV	7.44059G	52.58	54.00	-1.42	9.50	3	Horizontal	273	2.10	-	43.08	36.28	8.06	34.84
PK	4.87899G	46.82	74.00	-27.18	3.03	3	Horizontal	166	1.50	-	43.79	31.10	6.72	34.79
PK	4.95941G	58.06	74.00	-15.94	3.35	3	Horizontal	320	2.08	-	54.71	31.34	6.78	34.77
PK	7.31824G	56.45	74.00	-17.55	9.41	3	Horizontal	228	1.75	-	47.04	36.36	7.87	34.82
PK	7.44069G	61.05	74.00	-12.95	9.50	3	Horizontal	273	2.10	-	51.55	36.28	8.06	34.84