

# 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 Oct. 12, 2021 and completed on Dec. 28, 2021. 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)	DTS Bandwidth	PASS	-
3.3	15.247(b)	Maximum Conducted Output Power	PASS	-
3.4	15.247(e)	Power Spectral Density	PASS	-
3.5	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	-
3.6	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)	Bluetooth Mode	Ch. Frequency (MHz)	Channel Number
2400-2483.5	LE	2402-2480	0-39 [40]

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	BT-LE(1Mbps)	1.0	1TX
2.4-2.4835GHz	BT-LE(2Mbps)	2.0	1TX

Note:

- ♦ Bluetooth LE uses a GFSK (1Mbps/2Mbps) 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 BT function:**

For IEEE 802.15.1 Bluetooth mode (1TX/1RX)

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

### 1.1.3 EUT Information

Operational Condition	
<b>EUT Power Type</b>	From AC Adapter / Host system / Battery
<b>EUT Function</b>	<input checked="" type="checkbox"/> Point-to-multipoint <input 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
BT-LE(1Mbps)	0.637	1.96	398.438u	3k
BT-LE(2Mbps)	0.342	4.66	214.375u	10k

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

1.1.5 Table for Multiple Listing

The samples 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	21.4~22.3°C / 51~54%	17/Nov/2021
RF Conducted	TH01-HY	Barry Hsiao	24~26.9°C / 56~60%	12/Oct/2021~13/Dec/2021
<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	23.2~24.8°C / 55~61%	11/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




<b>Test Software Version</b>	BlueTest3
<b>Mode</b>	<b>Power Setting</b>
BT-LE(1Mbps)	-
2402MHz	default
2440MHz	default
2480MHz	default
BT-LE(2Mbps)	-
2402MHz	default
2440MHz	default
2480MHz	default



## 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>	DTS Bandwidth Maximum Conducted Output Power Power Spectral Density Emissions in Non-restricted Frequency Bands
<b>Test Condition</b>	Conducted measurement at transmit chains

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	USB mode		
2	Adapter 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	
<b>Tests Item</b>	Simultaneous Transmission Analysis
<b>Test Condition</b>	Radiated measurement
<b>Operating Mode</b>	CTX
1	Bluetooth+WLAN 2.4GHz SRD
Refer to Sporton Test Report No.: Appendix G for Radiated Emission Co-location.	

## 2.3 Accessories

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

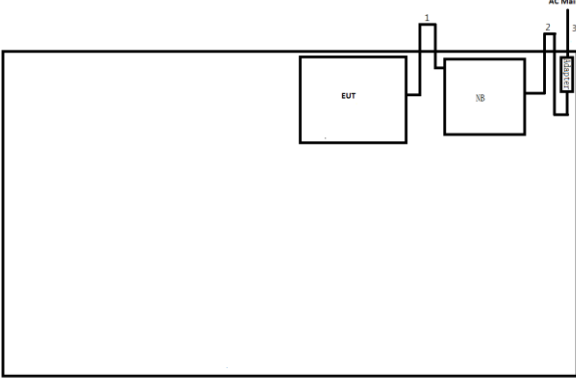
Support Equipment – AC Conduction					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Notebook	HP	HSTNN-142C	-	-
2	Adapter	APPLE	A1357	-	For EUT
3	AC Power Cable	Power sync	PW-GPC180-3	-	-
4	Adapter	HP	HSTNN-CA40	-	For NB

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

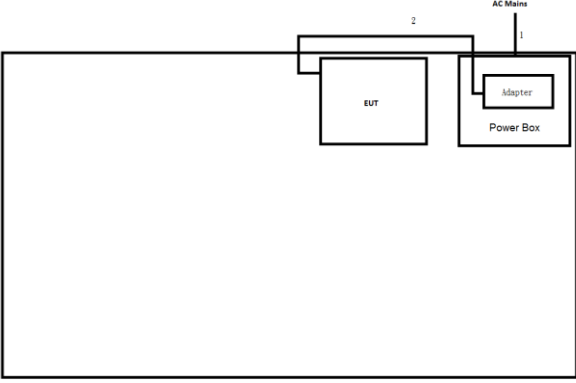
**Test Setup Diagram – AC Line Conducted Emission Test (USB mode)**



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

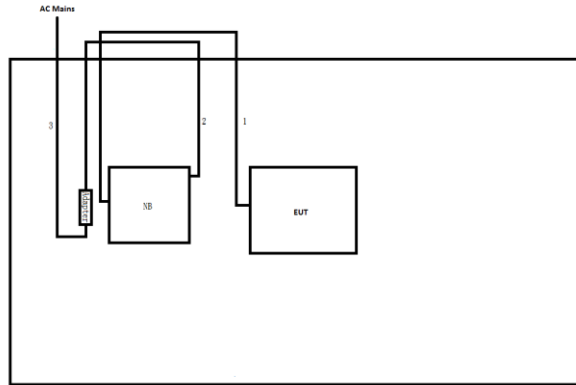
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**Test Setup Diagram – AC Line Conducted Emission Test (Adapter mode)**



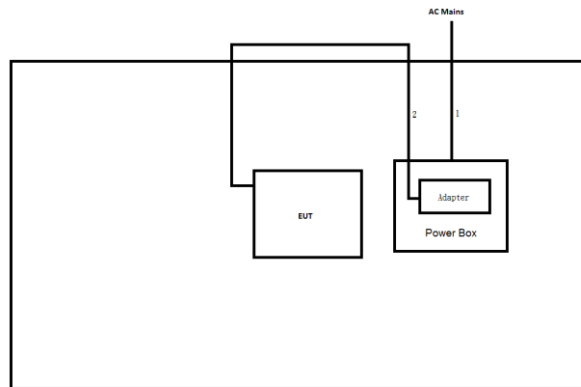
Item	Connection	Shielded	Length(m)
1	AC Power cable	No	1.8
2	USB cable	Yes	1.2

**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 foray 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).



### 3.2 DTS Bandwidth

#### 3.2.1 6dB Bandwidth Limit

6dB Bandwidth Limit
<b>Systems using digital modulation techniques:</b>
<ul style="list-style-type: none"> <li>▪ 6 dB bandwidth <math>\geq</math> 500 kHz.</li> </ul>

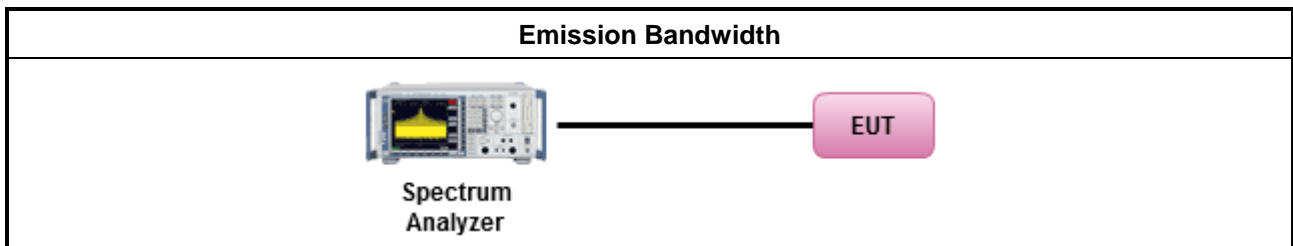
#### 3.2.2 Measuring Instruments

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>▪ For the emission bandwidth shall be measured using one of the options below:</li> </ul>
<input checked="" type="checkbox"/> Refer as KDB 558074, clause 8.2 (11.8 of ANSI C63.10) DTS bandwidth measurement.
<input type="checkbox"/> Refer as RSS-Gen, clause 6.7 for for occupied bandwidth testing.
<input type="checkbox"/> Refer as ANSI C63.10, clause 6.9.3 for occupied bandwidth testing.

#### 3.2.4 Test Setup



#### 3.2.5 Test Result of Emission Bandwidth

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>▪ If <math>G_{TX} \leq 6</math> dBi, then <math>P_{Out} \leq 30</math> dBm (1 W)</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Point-to-multipoint systems (P2M): If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)</math> dBm</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Point-to-point systems (P2P): If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)/3</math> dBm</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Smart antenna system (SAS):</li> </ul>
	<ul style="list-style-type: none"> <li>- Single beam: If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)/3</math> dBm</li> </ul>
	<ul style="list-style-type: none"> <li>- Overlap beam: If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)/3</math> dBm</li> </ul>
	<ul style="list-style-type: none"> <li>- Aggregate power on all beams: If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)/3 + 8</math> dB dBm</li> </ul>
<b>e.i.r.p. Power Limit:</b>	
	<ul style="list-style-type: none"> <li>▪ 2400-2483.5 MHz Band</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Point-to-multipoint systems (P2M): <math>P_{eirp} \leq 36</math> dBm (4 W)</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Point-to-point systems (P2P): <math>P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX}])</math> dBm</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Smart antenna system (SAS)</li> </ul>
	<ul style="list-style-type: none"> <li>- Single beam: <math>P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})</math> dBm</li> </ul>
	<ul style="list-style-type: none"> <li>- Overlap beam: <math>P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})</math> dBm</li> </ul>
	<ul style="list-style-type: none"> <li>- Aggregate power on all beams: <math>P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX} + 8])</math> dBm</li> </ul>
$P_{Out}$ = maximum peak conducted output power or maximum conducted output power in dBm, $G_{TX}$ = the maximum transmitting antenna directional gain in dBi.	

#### 3.3.2 Measuring Instruments

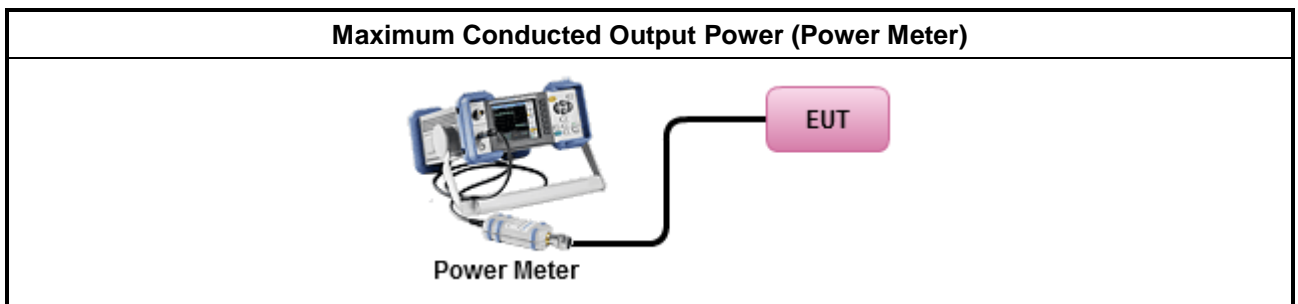
Refer a test equipment and calibration data table in this test report.



### 3.3.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> <li>▪ Maximum Peak Conducted Output Power</li> </ul>	
<input type="checkbox"/>	Refer as KDB 558074, clause 8.3.1.1 (11.9.1.1 of ANSI C63.10) RBW ≥ EBW method.
<input type="checkbox"/>	Refer as KDB 558074, clause 8.3.1.2 (11.9.1.2 of ANSI C63.10) integrated band power method.
<input type="checkbox"/>	Refer as KDB 558074, clause 8.3.1.3 (11.9.1.3 of ANSI C63.10) peak power meter.
<ul style="list-style-type: none"> <li>▪ Maximum Average Conducted Output Power</li> </ul>	
<input type="checkbox"/>	Refer as KDB 558074, clause 8.3.2.2 (11.9.2.2 of ANSI C63.10) using a spectrum analyzer.
<input checked="" type="checkbox"/>	Refer as KDB 558074, clause 8.3.2.3 (11.9.2.3 of ANSI C63.10) using a power meter.
<ul style="list-style-type: none"> <li>▪ For conducted measurement.</li> </ul>	
<ul style="list-style-type: none"> <li>▪ If the EUT supports multiple transmit chains using options given below: Refer as KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.</li> </ul>	
<ul style="list-style-type: none"> <li>▪ If multiple transmit chains, EIRP calculation could be following as methods:  <math>P_{total} = P_1 + P_2 + \dots + P_n</math>                      (calculated in linear unit [mW] and transfer to log unit [dBm])  <math>EIRP_{total} = P_{total} + DG</math> </li> </ul>	

### 3.3.4 Test Setup



### 3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

### 3.4 Power Spectral Density

#### 3.4.1 Power Spectral Density Limit

Power Spectral Density Limit
<ul style="list-style-type: none"> <li>Power Spectral Density (PSD) ≤ 8 dBm/3kHz</li> </ul>

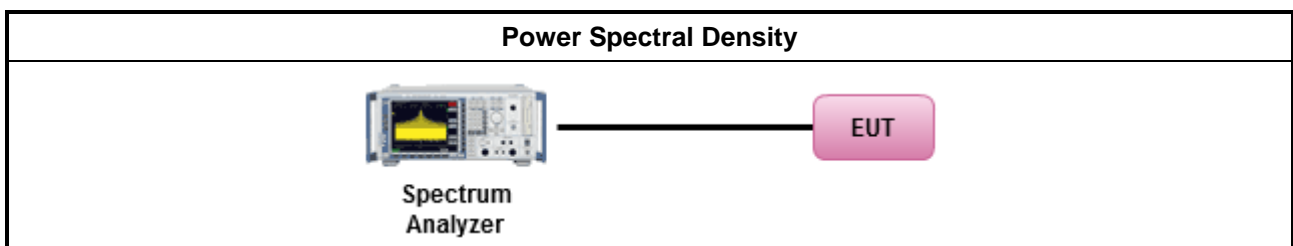
#### 3.4.2 Measuring Instruments

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

#### 3.4.3 Test Procedures

Test Method
<ul style="list-style-type: none"> <li>Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).</li> </ul>
<input checked="" type="checkbox"/> Refer as KDB 558074, clause 8.4 (11.10 of ANSI C63.10) Max. PSD.
<ul style="list-style-type: none"> <li>For conducted measurement.</li> </ul>
<ul style="list-style-type: none"> <li>If The EUT supports multiple transmit chains using options given below:</li> </ul>
<ul style="list-style-type: none"> <li>Measure and sum the spectra across the outputs. Refer as KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.</li> </ul>

#### 3.4.4 Test Setup



#### 3.4.5 Test Result of Power Spectral Density

Refer as Appendix D

### 3.5 Emissions in Non-restricted Frequency Bands

#### 3.5.1 Emissions in Non-restricted Frequency Bands Limit

Un-restricted Band Emissions Limit	
RF output power procedure	Limit (dB)
Peak output power procedure	20
Average output power procedure	30

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 level.

Note 2: If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average level.

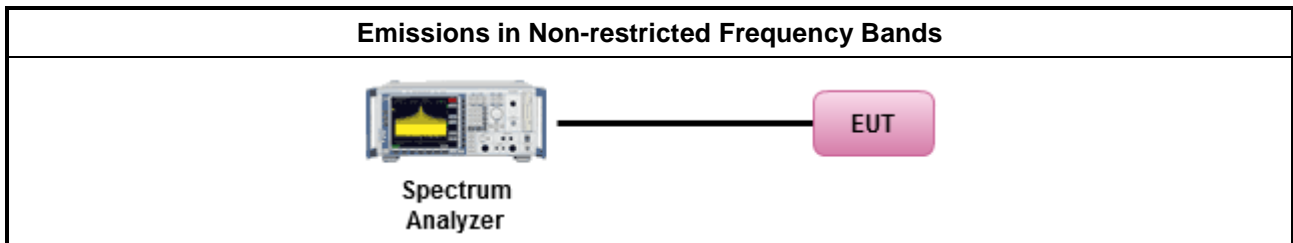
#### 3.5.2 Measuring Instruments

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 KDB 558074, clause 8.5 (11.11 of ANSI C63.10) for non-restricted frequency bands.</li> </ul>

#### 3.5.4 Test Setup



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

Refer as Appendix E

### 3.6 Emissions in Restricted Frequency Bands

#### 3.6.1 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.

#### 3.6.2 Measuring Instruments

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

### 3.6.3 Test Procedures

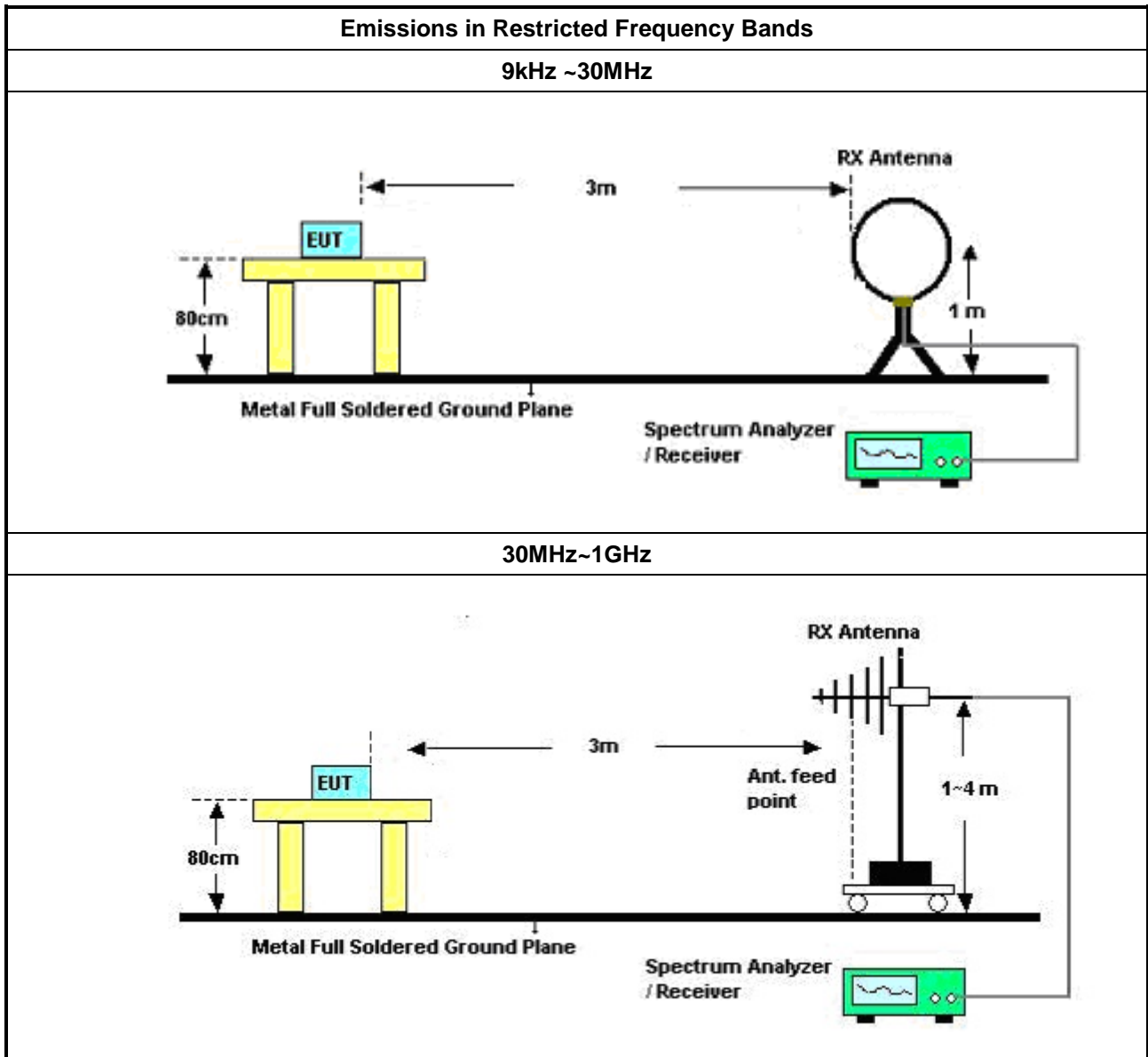
Test Method	
	<ul style="list-style-type: none"> <li>▪ The average emission levels shall be measured in [duty cycle <math>\geq</math> 98 or duty factor].</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency 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:               <ul style="list-style-type: none"> <li>▪ Refer as KDB 558074, clause 8.6 (11.12 of ANSI C63.10) for restricted frequency bands.</li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li>▪ For the transmitter band-edge emissions shall be measured using following options below:               <ul style="list-style-type: none"> <li>▪ Refer as KDB 558074 clause 8.7.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below.</li> <li>▪ Refer as KDB 558074, clause 8.7.2 (6.10.6 of ANSI C63.10) for marker-delta method for band-edge measurements.</li> <li>▪ Refer as KDB 558074, clause 8.7.3 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels.</li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li>▪ Use the following spectrum analyzer settings:               <ul style="list-style-type: none"> <li>▪ Set RBW=100 kHz for <math>f &lt; 1</math> GHz; VBW=3 * RBW; Sweep = auto; Detector function = peak; Trace = max hold.</li> <li>▪ Set RBW = 1 MHz, VBW= 3MHz for <math>f \geq 1</math> GHz for peak measurement. For average measurement, refer as 1.1.4.</li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li>▪ KDB 414788 Open-Field Test Sites and Chamber Correlation Justification.               <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> <li>▪ Open-field site and chamber correlation testing had been performed and chamber measured test result is the worst case test result.</li> </ul> </li> </ul>

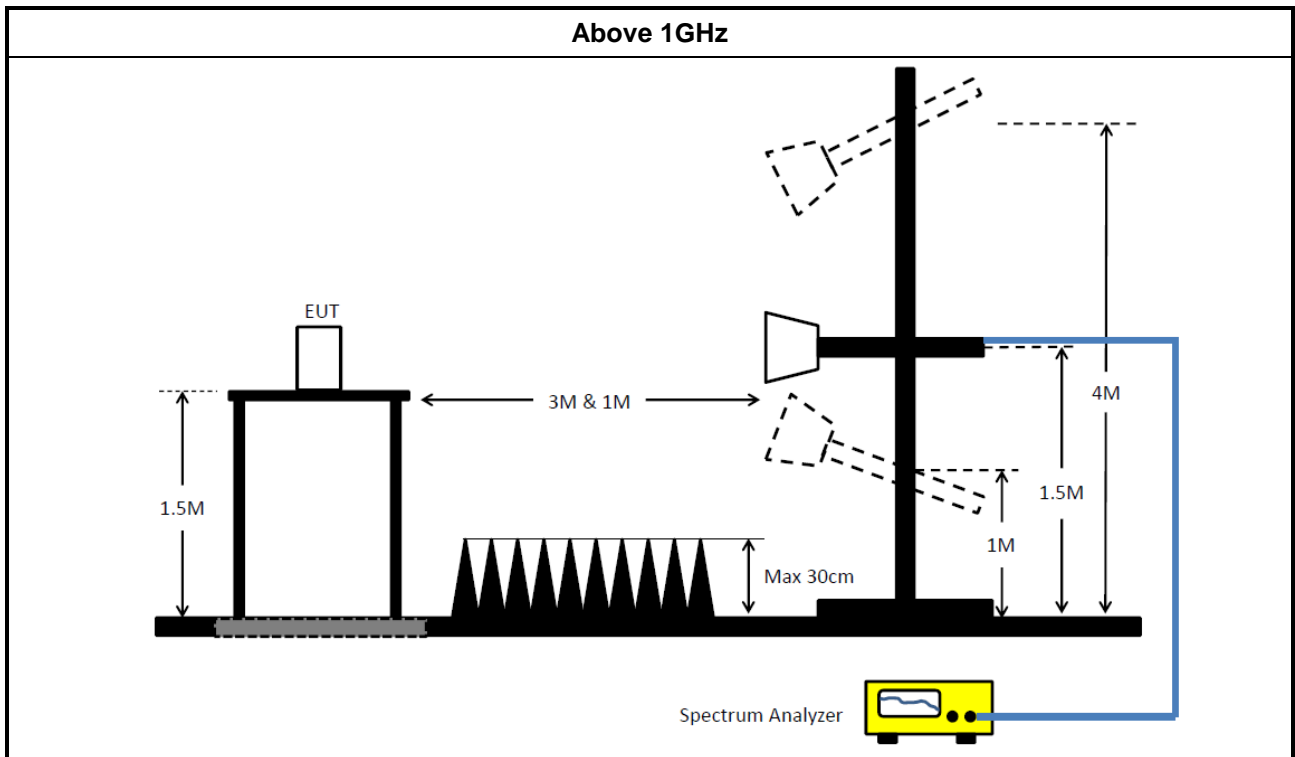
### 3.6.4 Measurement Results Calculation

The measured Level is calculated using:

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

### 3.6.5 Test Setup





### 3.6.6 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.

### 3.6.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F

## 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
Signal Generator	R&S	SMB100A	181239	100kHz~40GHz	30/Dec/2020	29/Dec/2021
Pulse Sensor	Anritsu	MA2411B	1027452	300MHz~40GHz	25/Mar/2021	24/Mar/2022
Power Meter	Anritsu	ML2495A	1124009	300MHz~40GHz	25/Mar/2021	24/Mar/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 Prempifier	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**

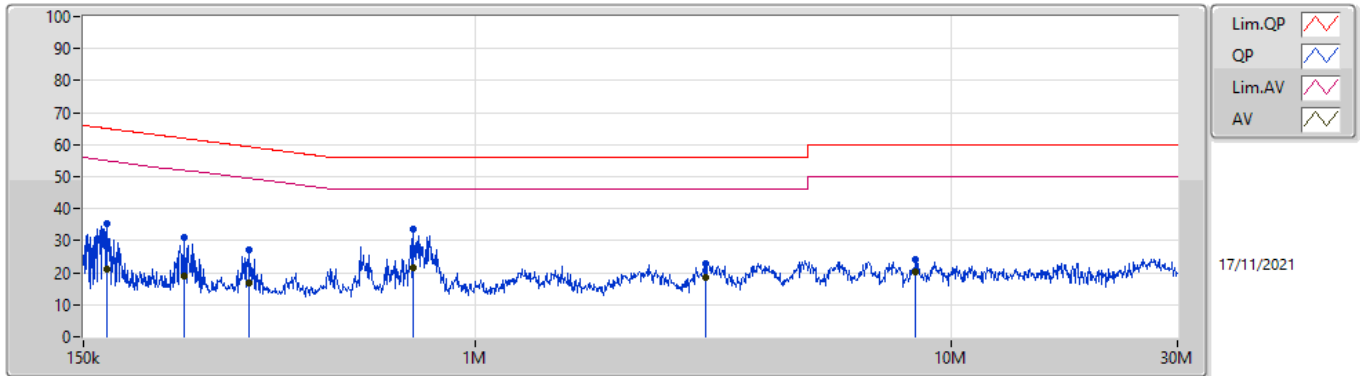
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	761.574k	25.23	46.00	-20.77	Neutral
Mode 2	Pass	QP	165.082k	51.40	65.20	-13.80	Neutral



Result

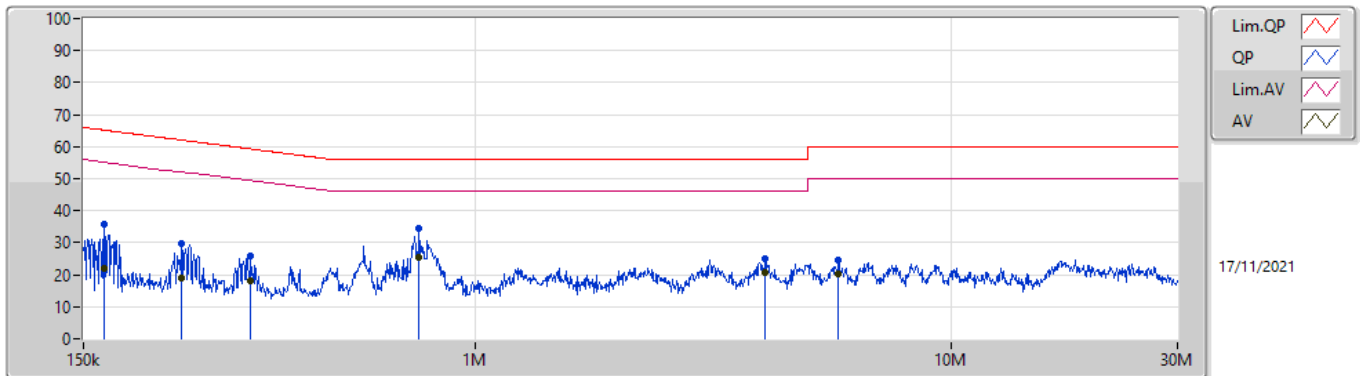
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition	Comments
Mode 1	Pass	QP	168.41k	35.14	65.04	-29.90	Line	-
Mode 1	Pass	AV	168.41k	21.18	55.04	-33.86	Line	-
Mode 1	Pass	QP	245.097k	30.94	61.93	-30.99	Line	-
Mode 1	Pass	AV	245.097k	18.89	51.93	-33.04	Line	-
Mode 1	Pass	QP	334.632k	27.33	59.33	-32.00	Line	-
Mode 1	Pass	AV	334.632k	16.68	49.33	-32.65	Line	-
Mode 1	Pass	QP	740.588k	33.65	56.00	-22.35	Line	-
Mode 1	Pass	AV	740.588k	21.72	46.00	-24.28	Line	-
Mode 1	Pass	QP	3.043M	22.70	56.00	-33.30	Line	-
Mode 1	Pass	AV	3.043M	18.57	46.00	-27.43	Line	-
Mode 1	Pass	QP	8.456M	24.25	60.00	-35.75	Line	-
Mode 1	Pass	AV	8.456M	20.08	50.00	-29.92	Line	-
Mode 1	Pass	QP	165.743k	35.80	65.18	-29.38	Neutral	-
Mode 1	Pass	AV	165.743k	22.09	55.18	-33.09	Neutral	-
Mode 1	Pass	QP	241.214k	29.66	62.06	-32.40	Neutral	-
Mode 1	Pass	AV	241.214k	18.94	52.06	-33.12	Neutral	-
Mode 1	Pass	QP	337.314k	25.92	59.27	-33.35	Neutral	-
Mode 1	Pass	AV	337.314k	17.96	49.27	-31.31	Neutral	-
Mode 1	Pass	QP	761.574k	34.35	56.00	-21.65	Neutral	-
Mode 1	Pass	AV	761.574k	25.23	46.00	-20.77	Neutral	-
Mode 1	Pass	QP	4.073M	25.17	56.00	-30.83	Neutral	-
Mode 1	Pass	AV	4.073M	20.60	46.00	-25.40	Neutral	-
Mode 1	Pass	QP	5.81M	24.65	60.00	-35.35	Neutral	-
Mode 1	Pass	AV	5.81M	20.30	50.00	-29.70	Neutral	-
Mode 2	Pass	QP	165.743k	51.33	65.18	-13.85	Line	-
Mode 2	Pass	AV	165.743k	35.50	55.18	-19.68	Line	-
Mode 2	Pass	QP	191.358k	46.62	63.97	-17.35	Line	-
Mode 2	Pass	AV	191.358k	29.42	53.97	-24.55	Line	-
Mode 2	Pass	QP	244.12k	37.76	61.95	-24.19	Line	-
Mode 2	Pass	AV	244.12k	23.12	51.95	-28.83	Line	-
Mode 2	Pass	QP	494.848k	32.61	56.10	-23.49	Line	-
Mode 2	Pass	AV	494.848k	25.92	46.10	-20.18	Line	-
Mode 2	Pass	QP	3.599M	27.83	56.00	-28.17	Line	-
Mode 2	Pass	AV	3.599M	20.23	46.00	-25.77	Line	-
Mode 2	Pass	QP	7.037M	26.48	60.00	-33.52	Line	-
Mode 2	Pass	AV	7.037M	22.14	50.00	-27.86	Line	-
Mode 2	Pass	QP	165.082k	51.40	65.20	-13.80	Neutral	-
Mode 2	Pass	AV	165.082k	35.62	55.20	-19.58	Neutral	-
Mode 2	Pass	QP	173.876k	49.26	64.78	-15.52	Neutral	-
Mode 2	Pass	AV	173.876k	32.28	54.78	-22.50	Neutral	-
Mode 2	Pass	QP	221.817k	42.46	62.75	-20.29	Neutral	-
Mode 2	Pass	AV	221.817k	28.47	52.75	-24.28	Neutral	-
Mode 2	Pass	QP	498.814k	31.09	56.02	-24.93	Neutral	-
Mode 2	Pass	AV	498.814k	24.55	46.02	-21.47	Neutral	-
Mode 2	Pass	QP	1.431M	27.40	56.00	-28.60	Neutral	-
Mode 2	Pass	AV	1.431M	23.79	46.00	-22.21	Neutral	-
Mode 2	Pass	QP	7.236M	29.53	60.00	-30.47	Neutral	-
Mode 2	Pass	AV	7.236M	25.17	50.00	-24.83	Neutral	-

### Conducted Emissions at Powerline\_Mode 1



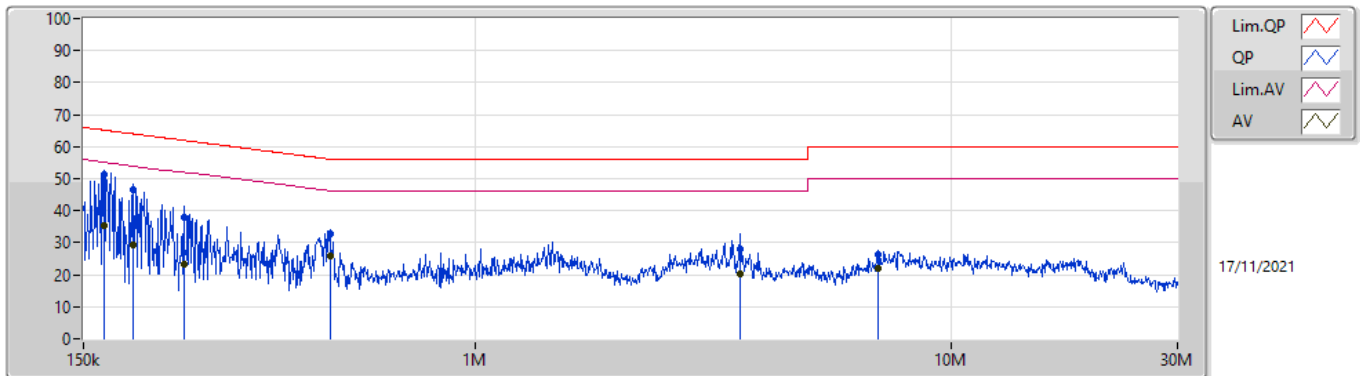
Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)
QP	168.41k	35.14	65.04	-29.90	19.62	Line	-	15.52	9.69	0.04	9.89
AV	168.41k	21.18	55.04	-33.86	19.62	Line	-	1.56	9.69	0.04	9.89
QP	245.097k	30.94	61.93	-30.99	19.62	Line	-	11.32	9.68	0.05	9.89
AV	245.097k	18.89	51.93	-33.04	19.62	Line	-	-0.73	9.68	0.05	9.89
QP	334.632k	27.33	59.33	-32.00	19.61	Line	-	7.72	9.67	0.05	9.89
AV	334.632k	16.68	49.33	-32.65	19.61	Line	-	-2.93	9.67	0.05	9.89
QP	740.588k	33.65	56.00	-22.35	19.64	Line	-	14.01	9.68	0.07	9.89
AV	740.588k	21.72	46.00	-24.28	19.64	Line	-	2.08	9.68	0.07	9.89
QP	3.043M	22.70	56.00	-33.30	19.71	Line	-	2.99	9.70	0.12	9.89
AV	3.043M	18.57	46.00	-27.43	19.71	Line	-	-1.14	9.70	0.12	9.89
QP	8.456M	24.25	60.00	-35.75	19.85	Line	-	4.40	9.77	0.19	9.89
AV	8.456M	20.08	50.00	-29.92	19.85	Line	-	0.23	9.77	0.19	9.89

Conducted Emissions at Powerline\_Mode 1



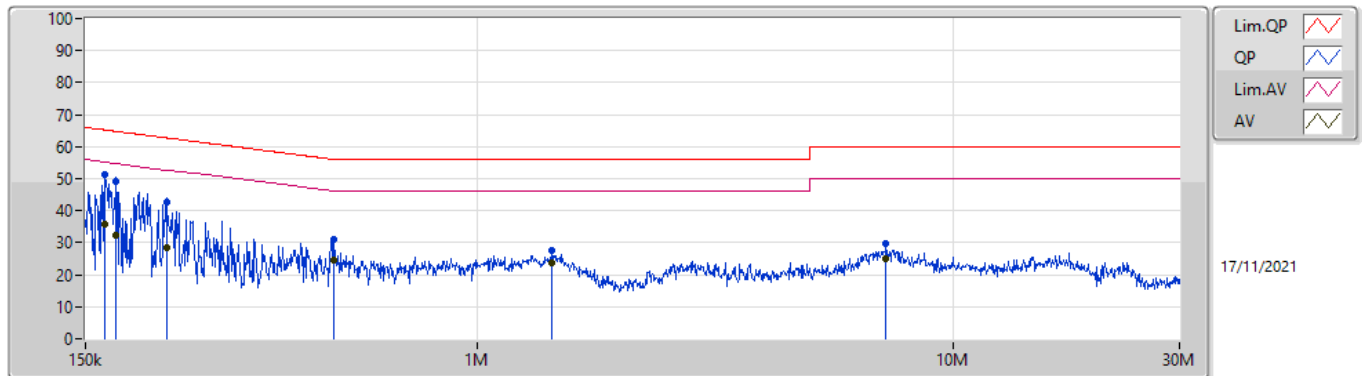
Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)
QP	165.743k	35.80	65.18	-29.38	19.62	Neutral	-	16.18	9.69	0.04	9.89
AV	165.743k	22.09	55.18	-33.09	19.62	Neutral	-	2.47	9.69	0.04	9.89
QP	241.214k	29.66	62.06	-32.40	19.62	Neutral	-	10.04	9.68	0.05	9.89
AV	241.214k	18.94	52.06	-33.12	19.62	Neutral	-	-0.68	9.68	0.05	9.89
QP	337.314k	25.92	59.27	-33.35	19.62	Neutral	-	6.30	9.67	0.06	9.89
AV	337.314k	17.96	49.27	-31.31	19.62	Neutral	-	-1.66	9.67	0.06	9.89
QP	761.574k	34.35	56.00	-21.65	19.63	Neutral	-	14.72	9.67	0.07	9.89
AV	761.574k	25.23	46.00	-20.77	19.63	Neutral	-	5.60	9.67	0.07	9.89
QP	4.073M	25.17	56.00	-30.83	19.73	Neutral	-	5.44	9.70	0.14	9.89
AV	4.073M	20.60	46.00	-25.40	19.73	Neutral	-	0.87	9.70	0.14	9.89
QP	5.81M	24.65	60.00	-35.35	19.80	Neutral	-	4.85	9.75	0.16	9.89
AV	5.81M	20.30	50.00	-29.70	19.80	Neutral	-	0.50	9.75	0.16	9.89

### 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	165.743k	51.33	65.18	-13.85	19.62	Line	-	31.71	9.69	0.04	9.89
AV	165.743k	35.50	55.18	-19.68	19.62	Line	-	15.88	9.69	0.04	9.89
QP	191.358k	46.62	63.97	-17.35	19.61	Line	-	27.01	9.68	0.04	9.89
AV	191.358k	29.42	53.97	-24.55	19.61	Line	-	9.81	9.68	0.04	9.89
QP	244.12k	37.76	61.95	-24.19	19.62	Line	-	18.14	9.68	0.05	9.89
AV	244.12k	23.12	51.95	-28.83	19.62	Line	-	3.50	9.68	0.05	9.89
QP	494.848k	32.61	56.10	-23.49	19.62	Line	-	12.99	9.67	0.06	9.89
AV	494.848k	25.92	46.10	-20.18	19.62	Line	-	6.30	9.67	0.06	9.89
QP	3.599M	27.83	56.00	-28.17	19.72	Line	-	8.11	9.70	0.13	9.89
AV	3.599M	20.23	46.00	-25.77	19.72	Line	-	0.51	9.70	0.13	9.89
QP	7.037M	26.48	60.00	-33.52	19.83	Line	-	6.65	9.76	0.18	9.89
AV	7.037M	22.14	50.00	-27.86	19.83	Line	-	2.31	9.76	0.18	9.89

### 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	165.082k	51.40	65.20	-13.80	19.62	Neutral	-	31.78	9.69	0.04	9.89
AV	165.082k	35.62	55.20	-19.58	19.62	Neutral	-	16.00	9.69	0.04	9.89
QP	173.876k	49.26	64.78	-15.52	19.61	Neutral	-	29.65	9.68	0.04	9.89
AV	173.876k	32.28	54.78	-22.50	19.61	Neutral	-	12.67	9.68	0.04	9.89
QP	221.817k	42.46	62.75	-20.29	19.61	Neutral	-	22.85	9.68	0.04	9.89
AV	221.817k	28.47	52.75	-24.28	19.61	Neutral	-	8.86	9.68	0.04	9.89
QP	498.814k	31.09	56.02	-24.93	19.62	Neutral	-	11.47	9.67	0.06	9.89
AV	498.814k	24.55	46.02	-21.47	19.62	Neutral	-	4.93	9.67	0.06	9.89
QP	1.431M	27.40	56.00	-28.60	19.65	Neutral	-	7.75	9.68	0.09	9.88
AV	1.431M	23.79	46.00	-22.21	19.65	Neutral	-	4.14	9.68	0.09	9.88
QP	7.236M	29.53	60.00	-30.47	19.85	Neutral	-	9.68	9.78	0.18	9.89
AV	7.236M	25.17	50.00	-24.83	19.85	Neutral	-	5.32	9.78	0.18	9.89



Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
BT-LE(1Mbps)	717.5k	1.039M	1M04F1D	713.75k	1.037M
BT-LE(2Mbps)	1.26M	2.059M	2M06F1D	1.253M	2.051M

Max-N dB = Maximum 6dB down bandwidth; Max-OBW = Maximum 99% occupied bandwidth;  
Min-N dB = Minimum 6dB down bandwidth; Min-OBW = Minimum 99% occupied bandwidth

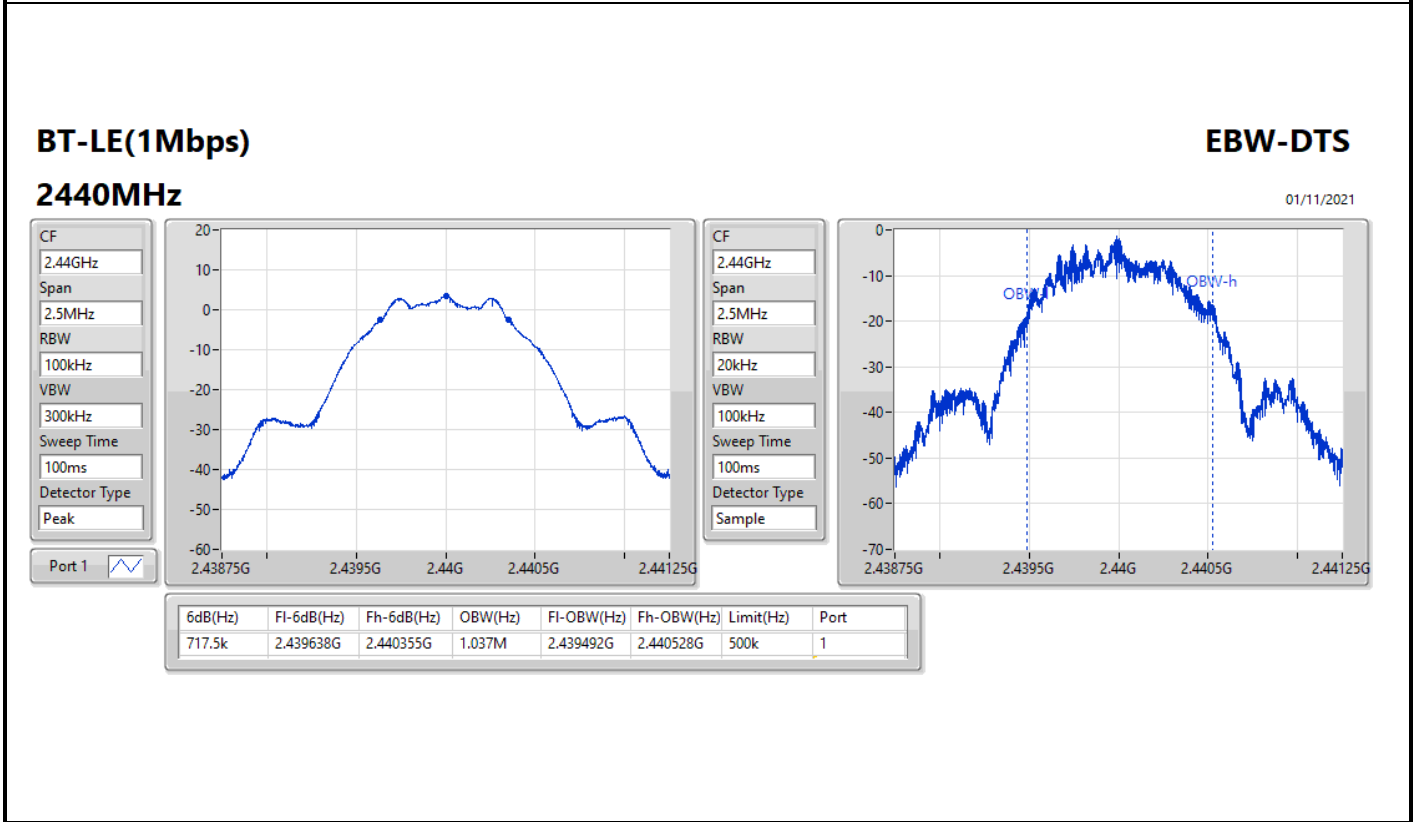
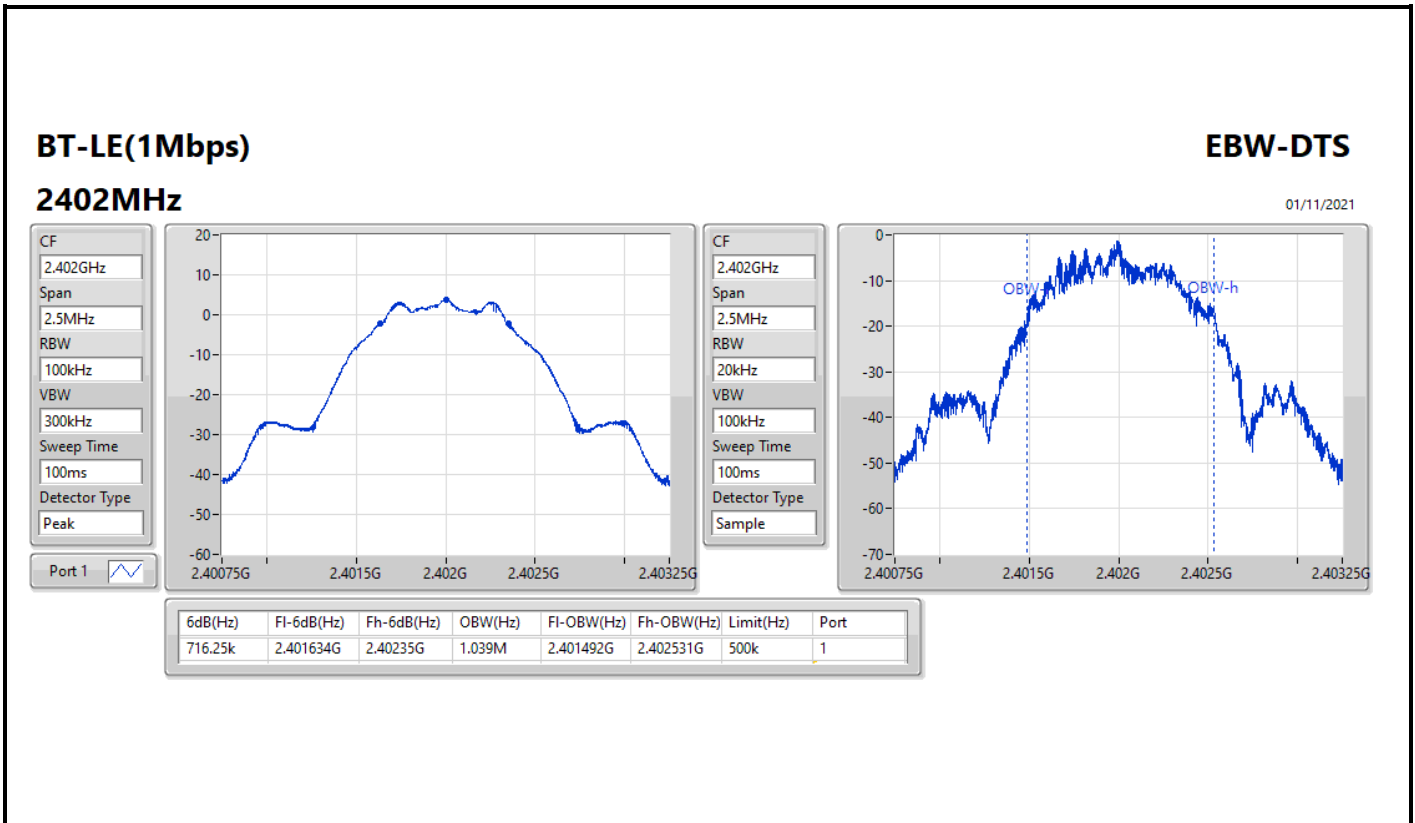


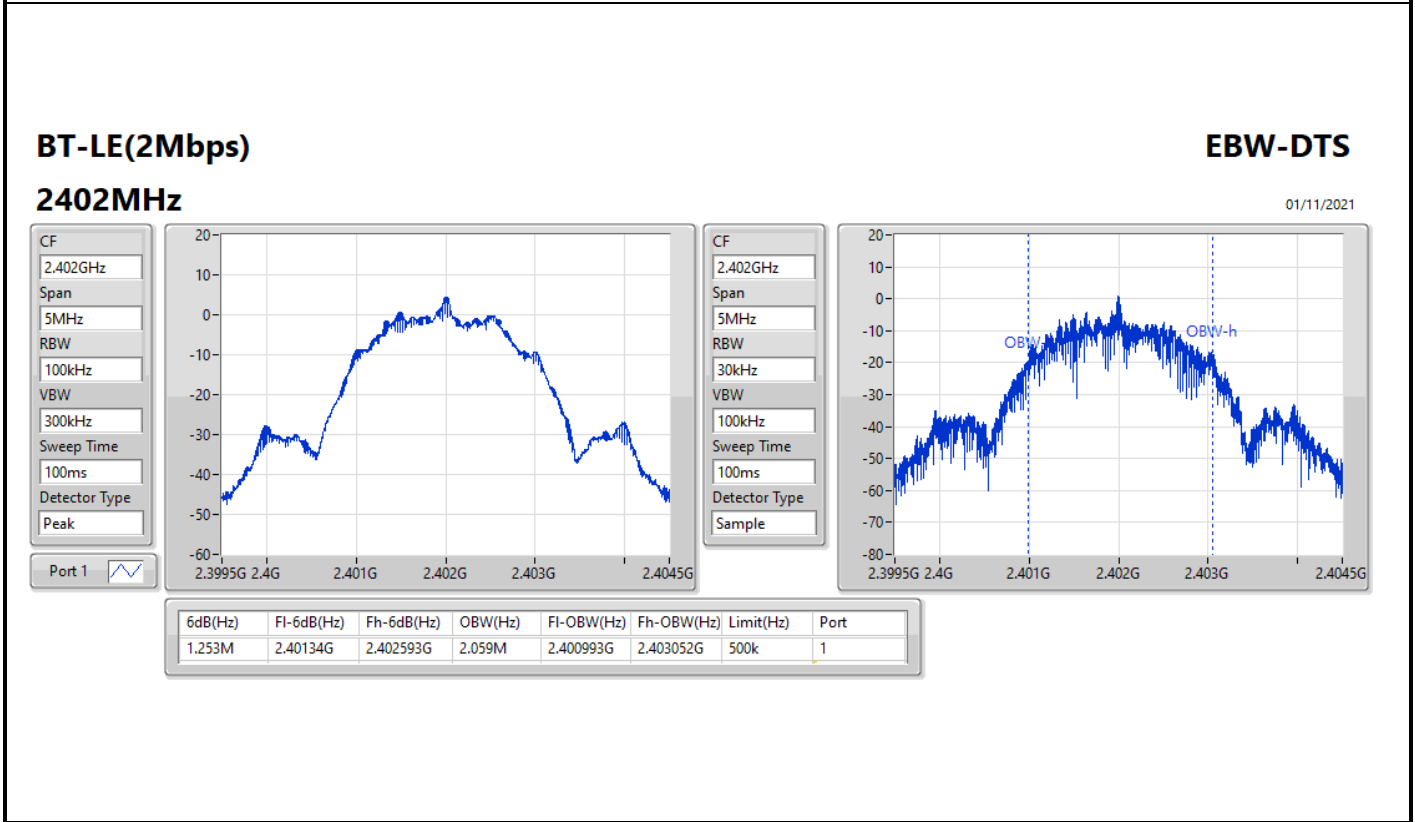
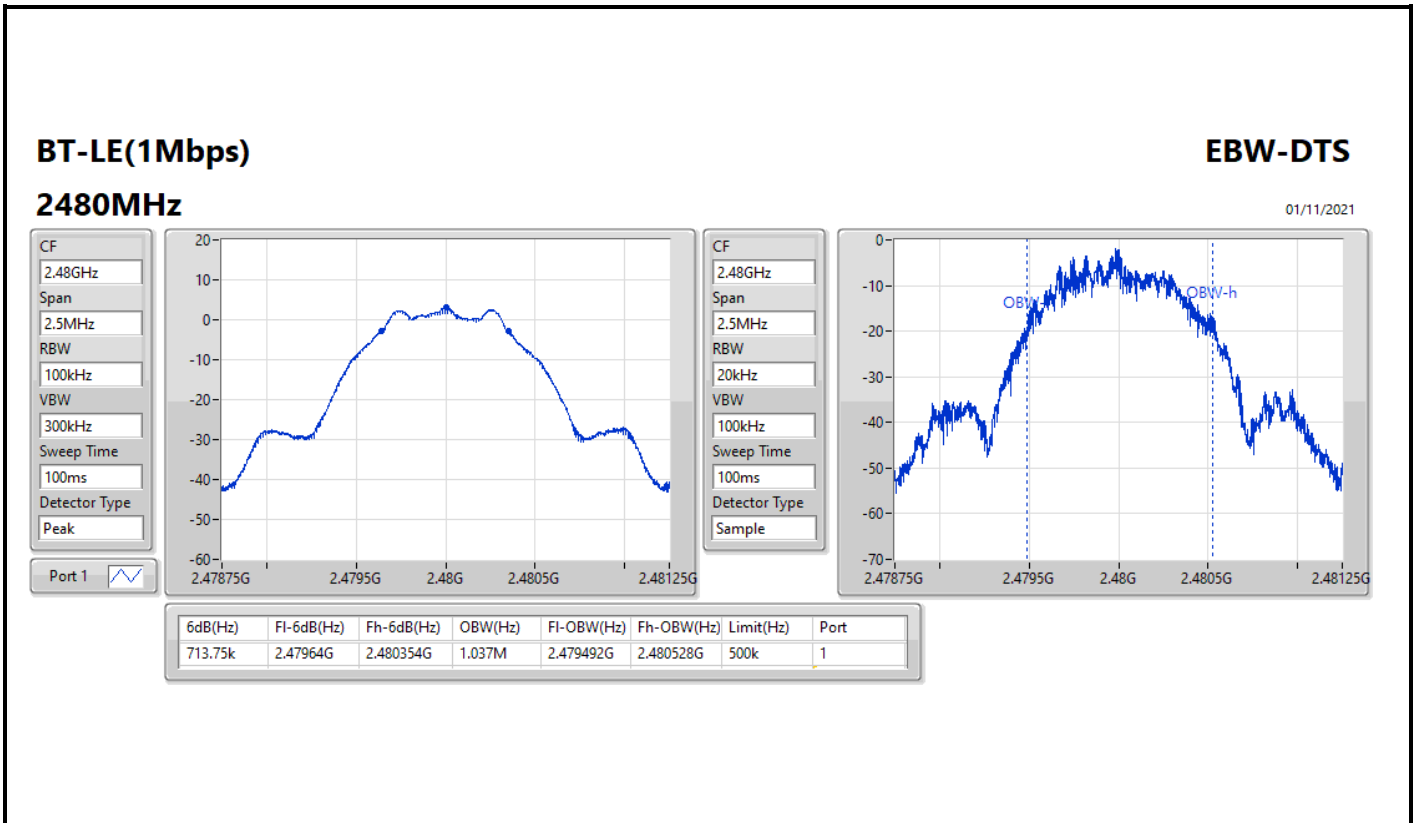
Result

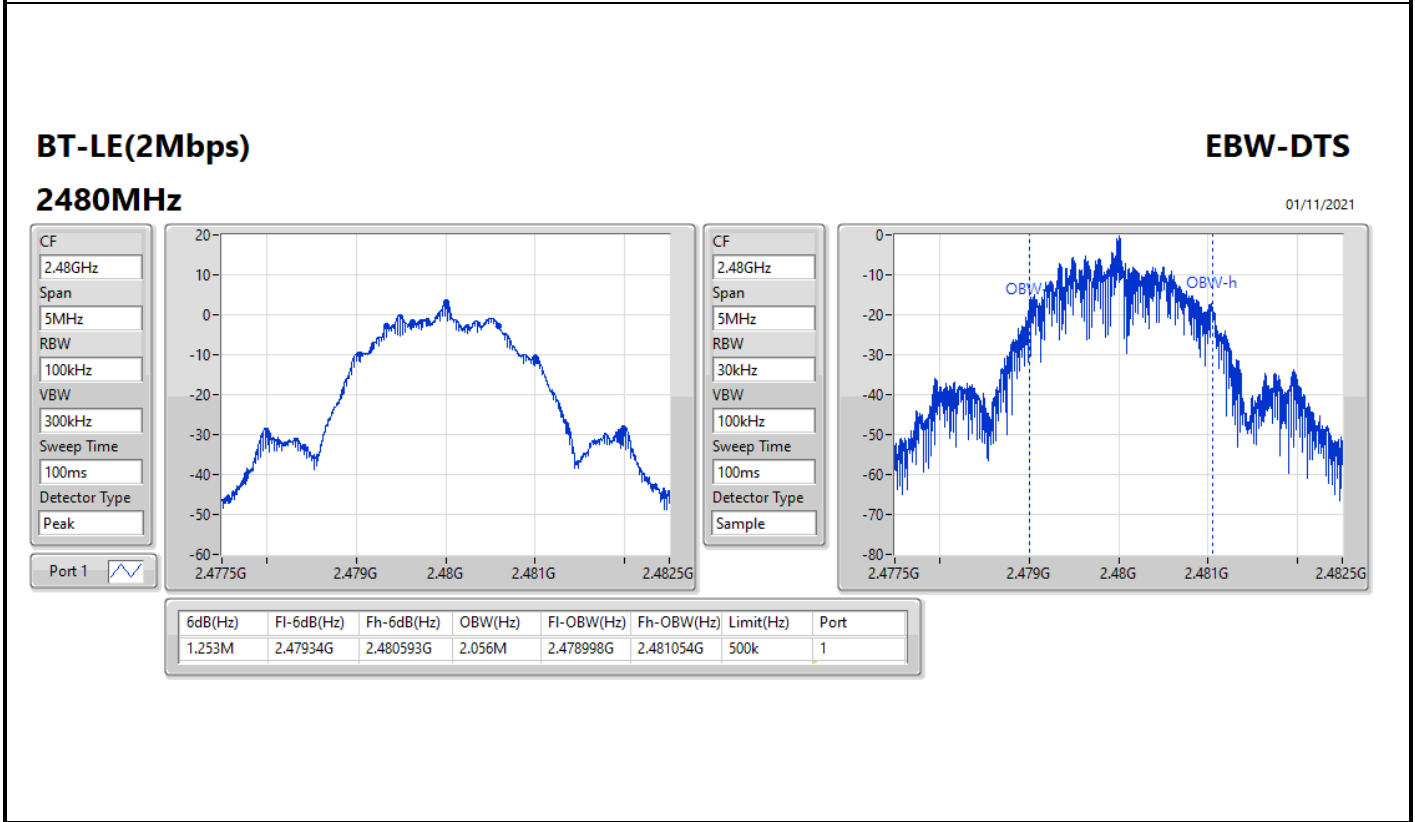
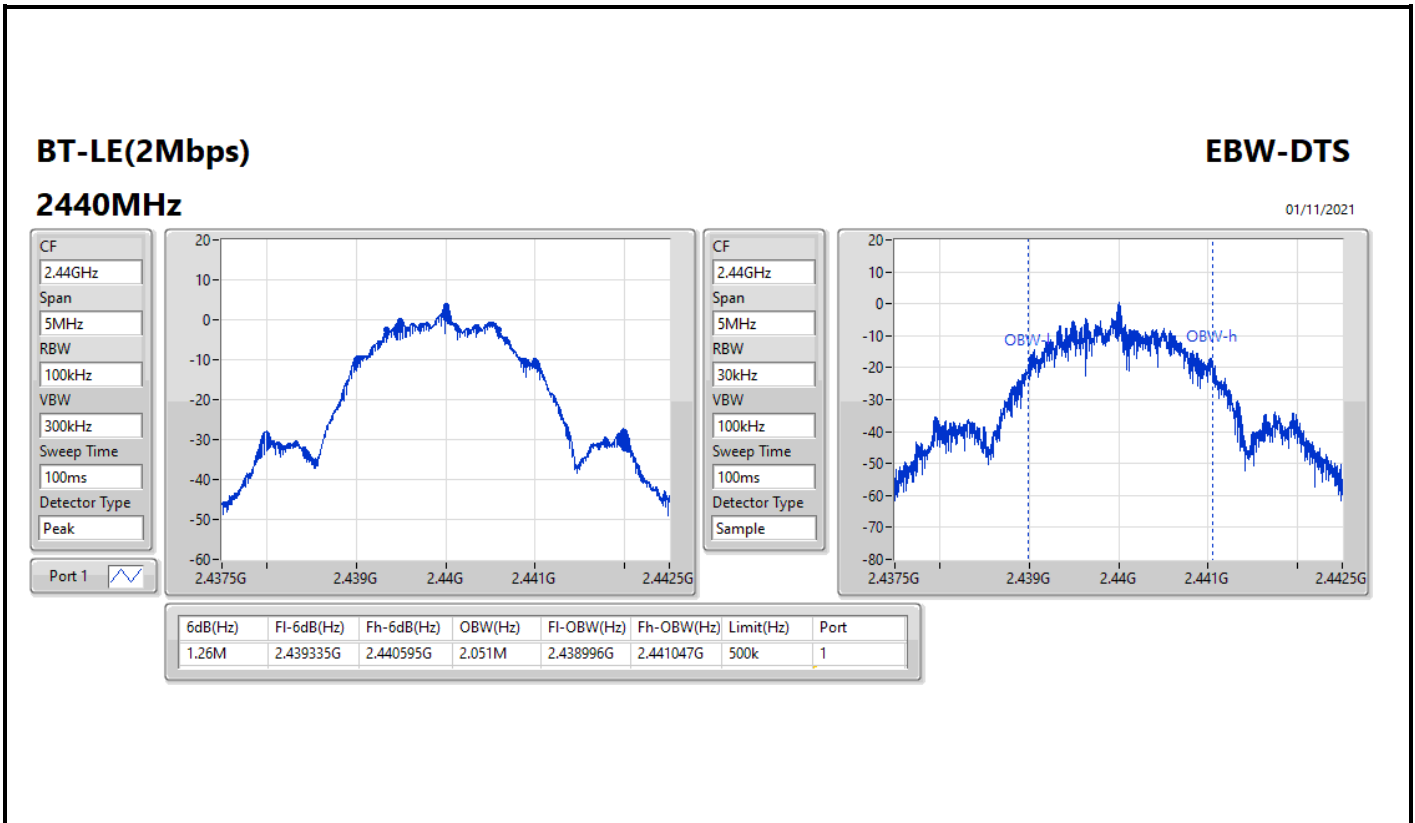
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	716.25k	1.039M
2440MHz	Pass	500k	717.5k	1.037M
2480MHz	Pass	500k	713.75k	1.037M
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	500k	1.253M	2.059M
2440MHz	Pass	500k	1.26M	2.051M
2480MHz	Pass	500k	1.253M	2.056M

Port X-N dB = Port X 6dB down bandwidth;  
Port X-OBW = Port X 99% occupied bandwidth











**Summary**

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	0.16	0.00104
BT-LE(2Mbps)	-0.11	0.00097



Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	3.50	0.16	30.00
2440MHz	Pass	3.50	-0.11	30.00
2480MHz	Pass	3.50	-0.46	30.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	3.50	-0.11	30.00
2440MHz	Pass	3.50	-0.39	30.00
2480MHz	Pass	3.50	-0.70	30.00

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



Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-15.68
BT-LE(2Mbps)	-18.43

RBW = 3kHz;



Result

Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	3.50	-15.68	8.00
2440MHz	Pass	3.50	-16.23	8.00
2480MHz	Pass	3.50	-17.55	8.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	3.50	-18.43	8.00
2440MHz	Pass	3.50	-20.03	8.00
2480MHz	Pass	3.50	-19.68	8.00

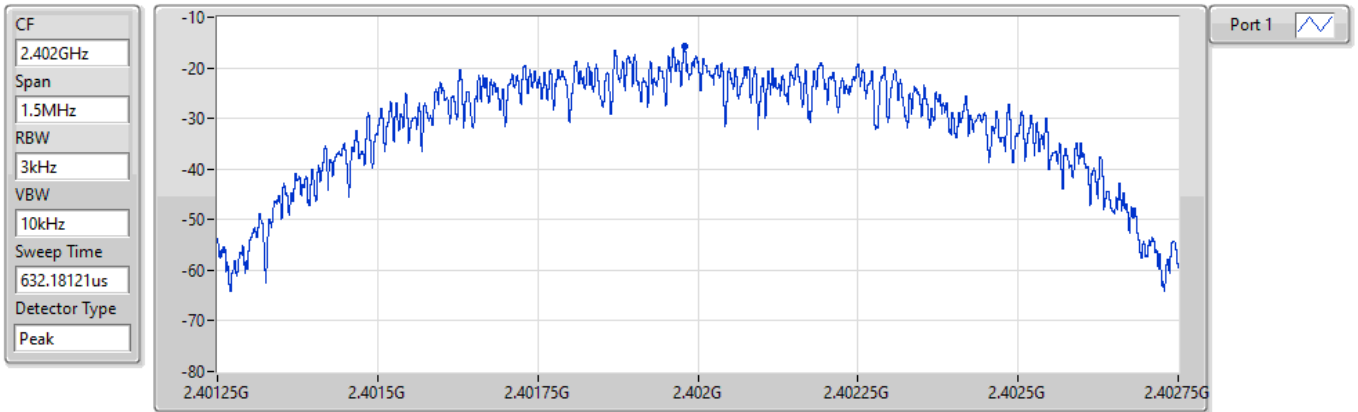
DG = Directional Gain; RBW = 3kHz;  
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;

### BT-LE(1Mbps)

### PSD

#### 2402MHz

03/11/2021



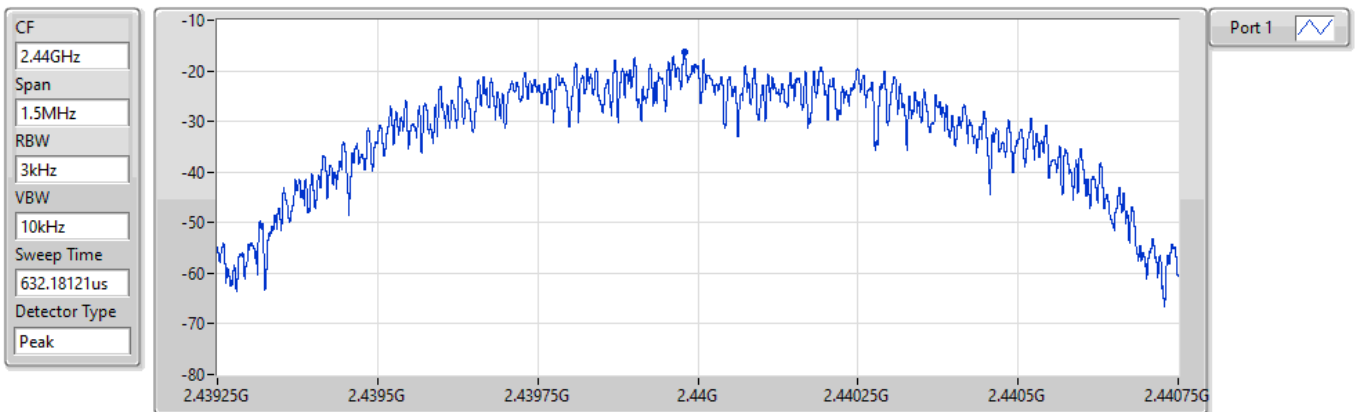
Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-15.68	-15.68	-15.68

### BT-LE(1Mbps)

### PSD

#### 2440MHz

03/11/2021



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-16.23	-16.23	-16.23



### BT-LE(1Mbps)

### PSD

2480MHz

03/11/2021

CF  
2.48GHz

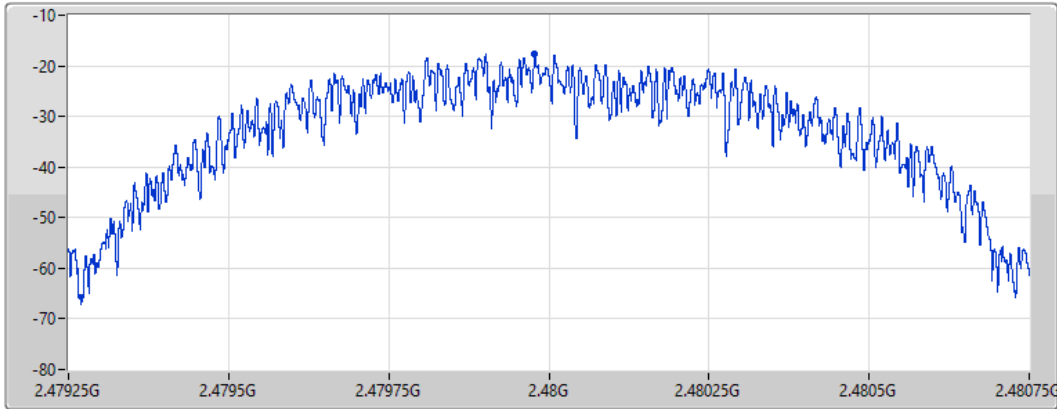
Span  
1.5MHz


RBW  
3kHz

VBW  
10kHz

Sweep Time  
632.18121us

Detector Type  
Peak



Port 1 

Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-17.55	-17.55	-17.55

### BT-LE(2Mbps)

### PSD

2402MHz

03/11/2021

CF  
2.402GHz

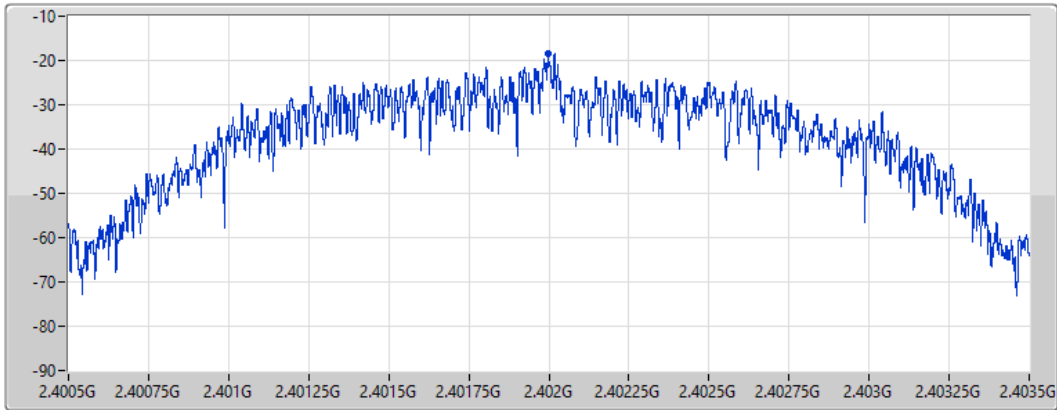
Span  
3MHz


RBW  
3kHz

VBW  
10kHz

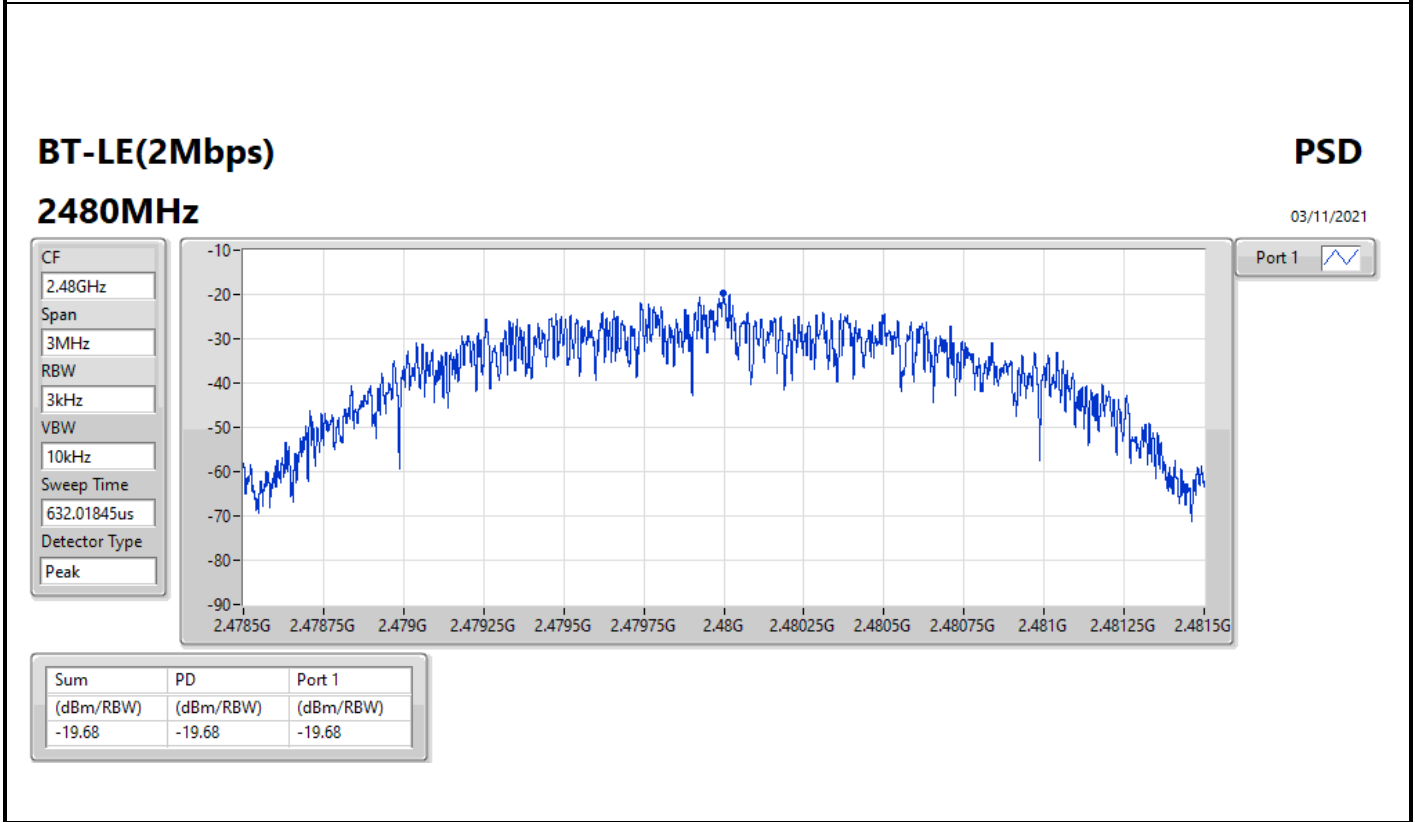
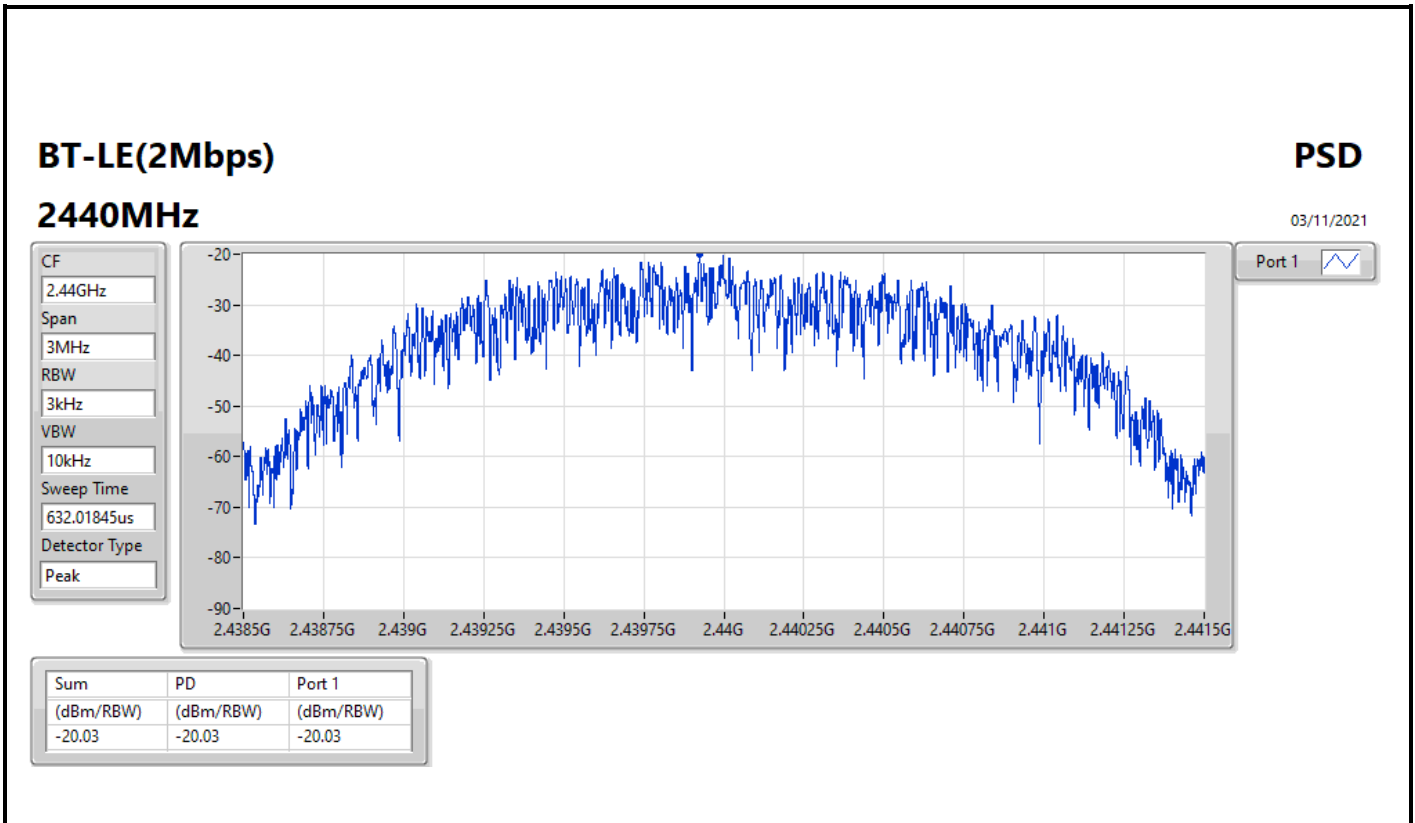
Sweep Time  
632.01845us

Detector Type  
Peak



Port 1 

Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-18.43	-18.43	-18.43





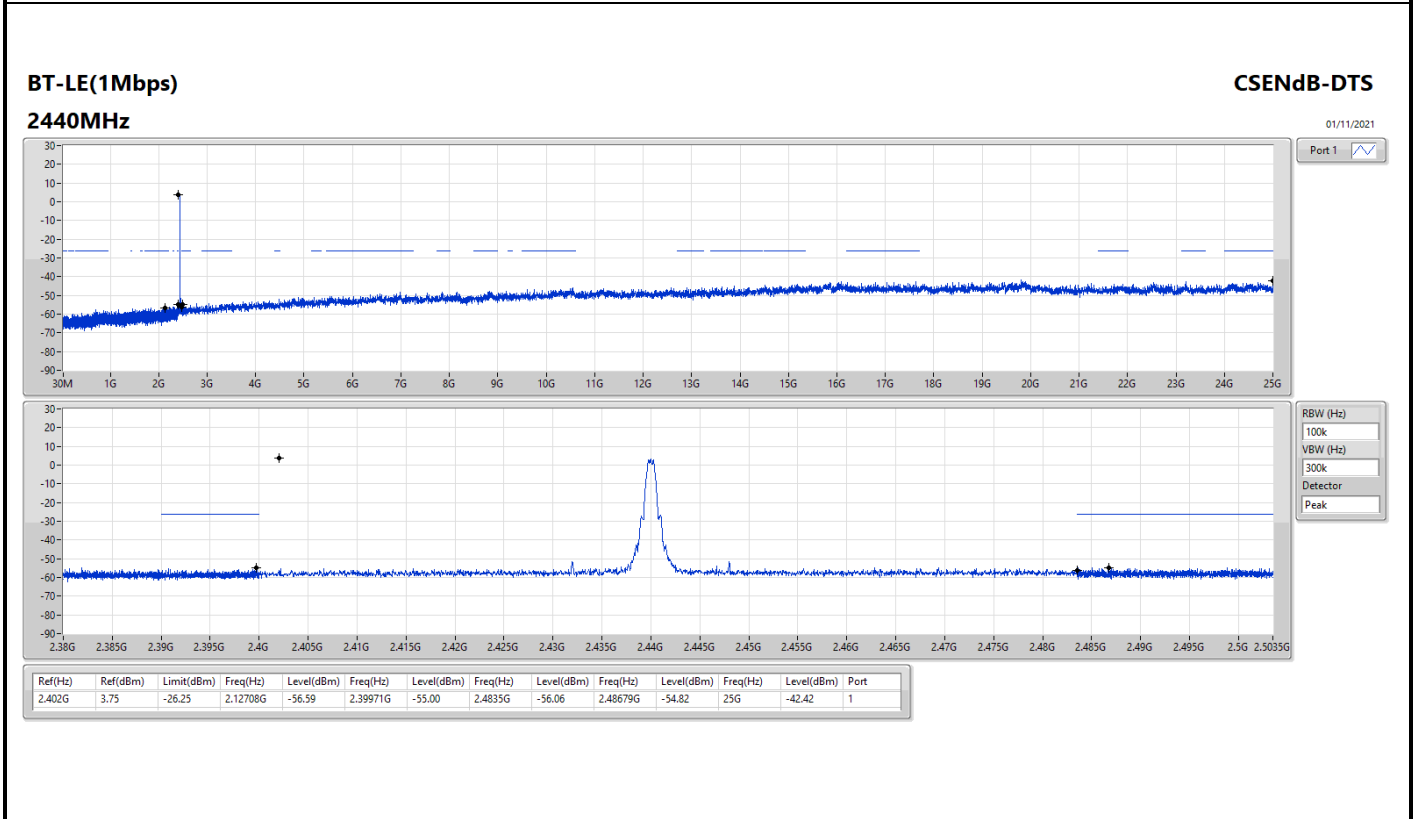
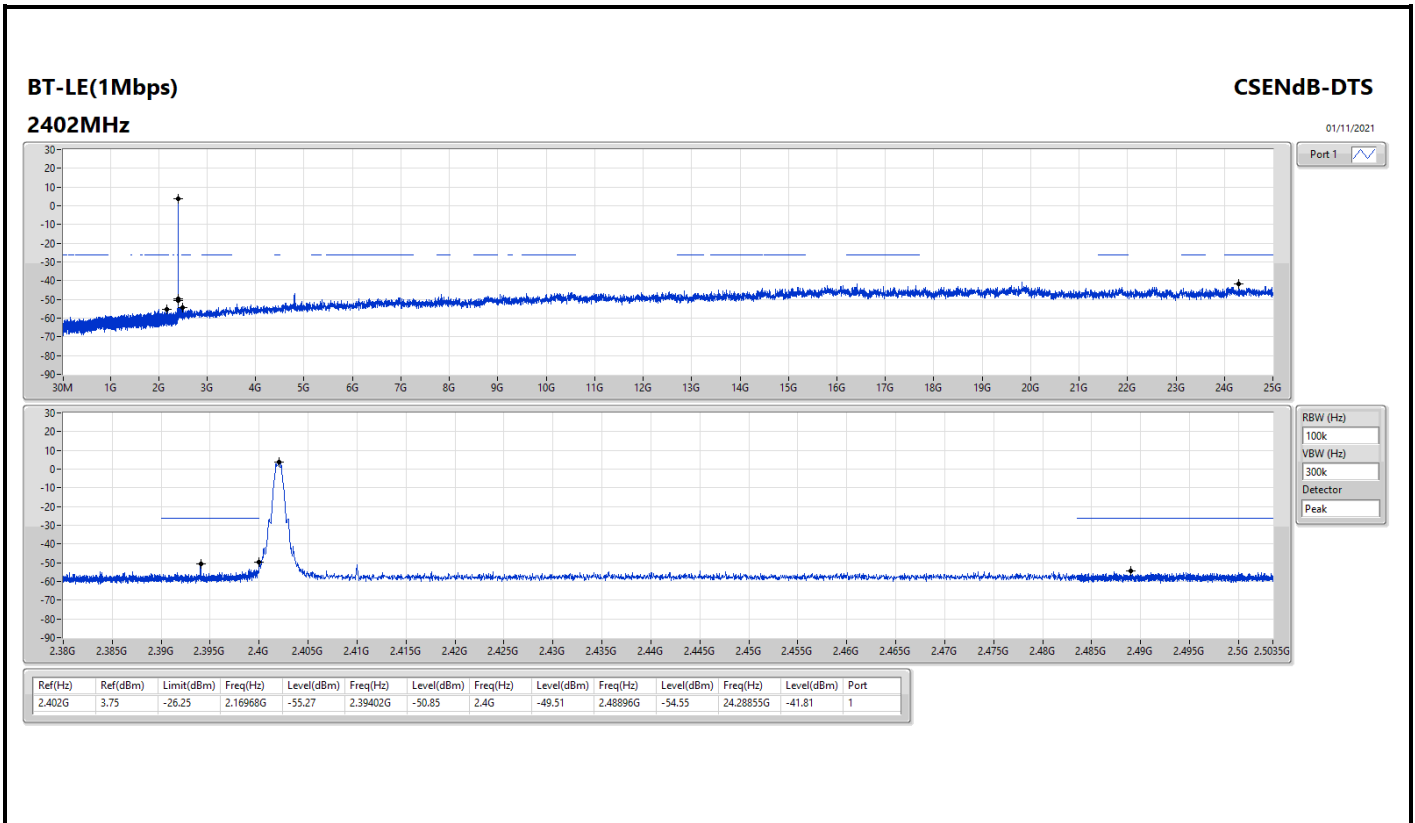
Summary

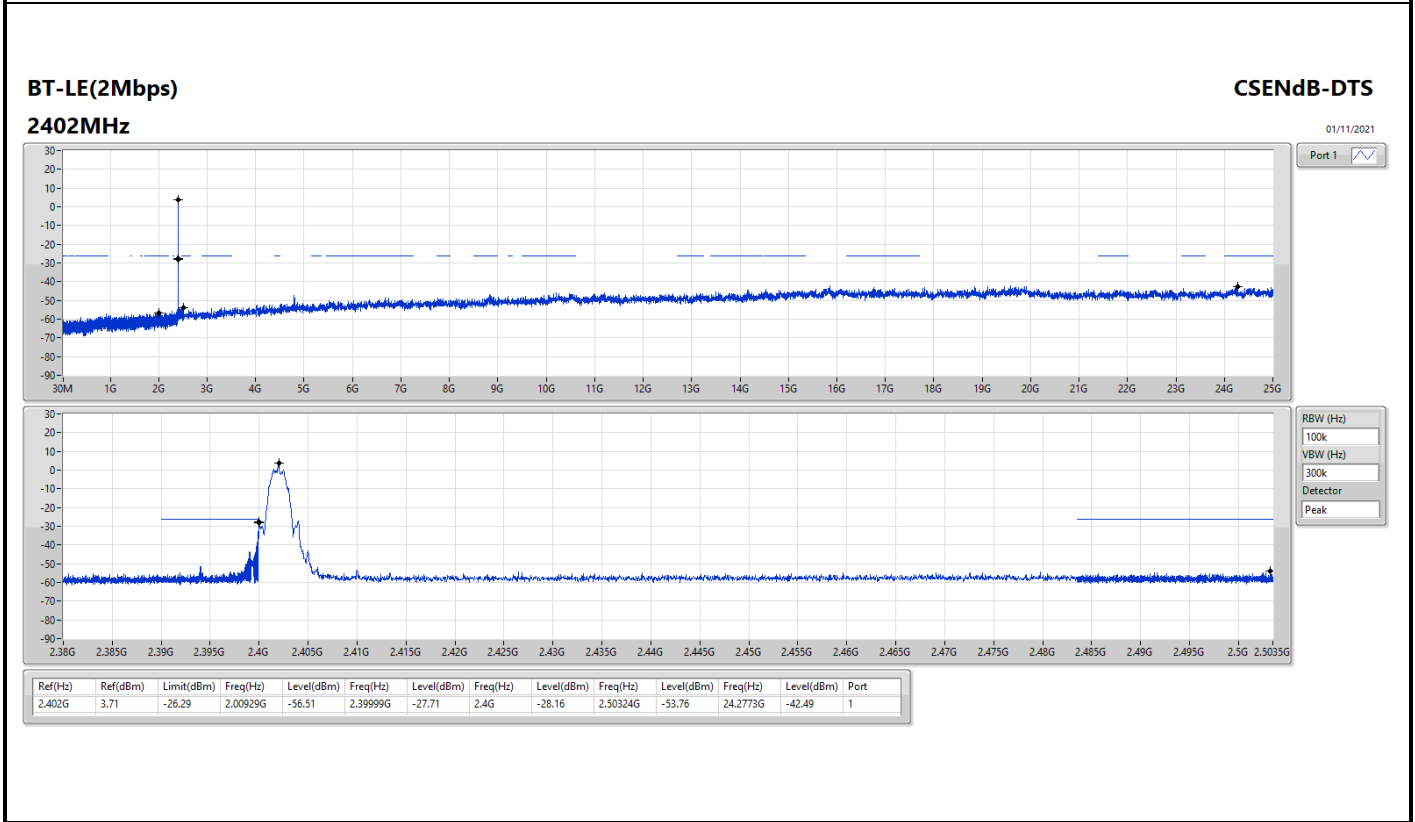
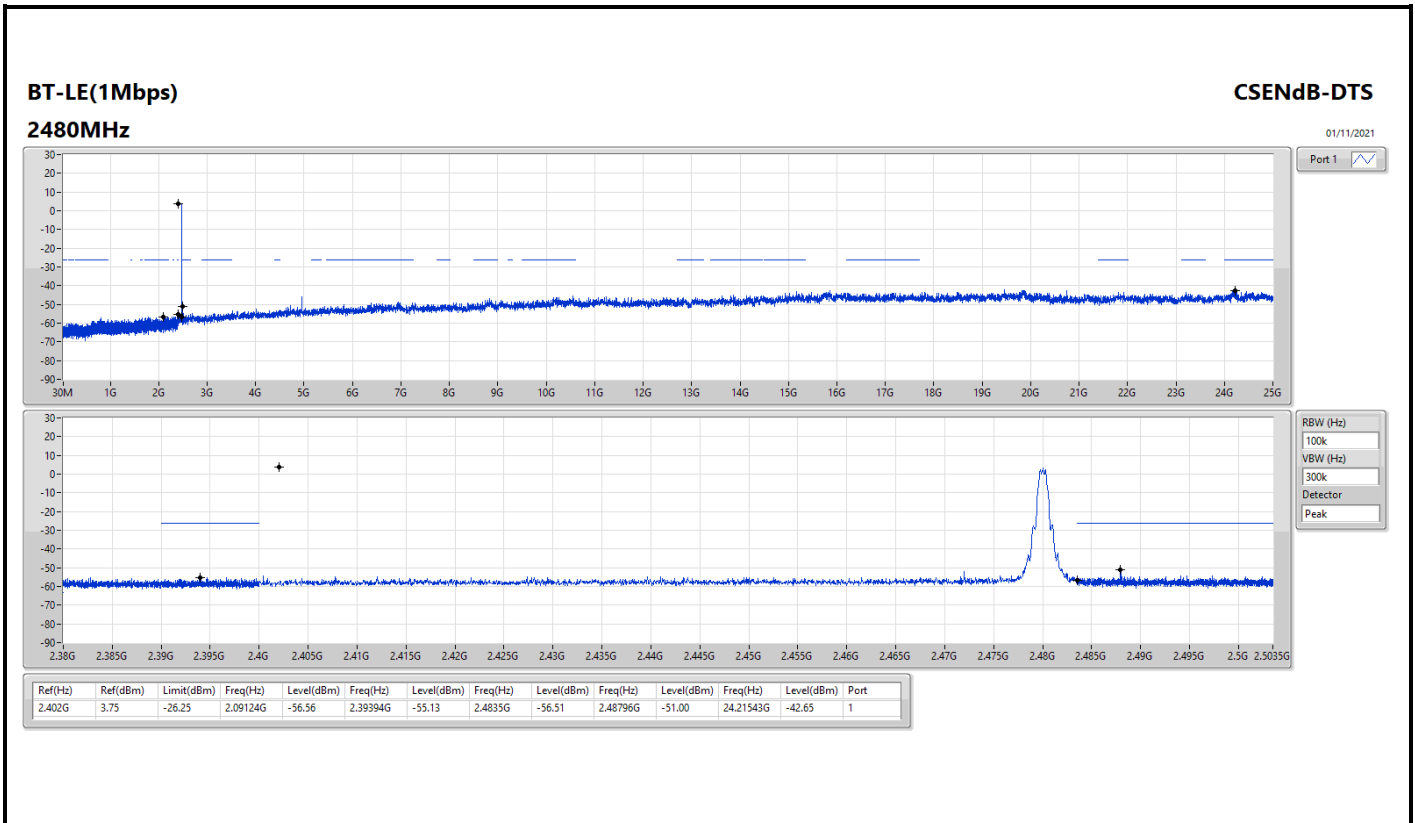
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	2.402G	3.75	-26.25	2.16968G	-55.27	2.39402G	-50.85	2.4G	-49.51	2.48896G	-54.55	24.28855G	-41.81	1
BT-LE(2Mbps)	Pass	2.402G	3.71	-26.29	2.00929G	-56.51	2.39999G	-27.71	2.4G	-28.16	2.50324G	-53.76	24.2773G	-42.49	1

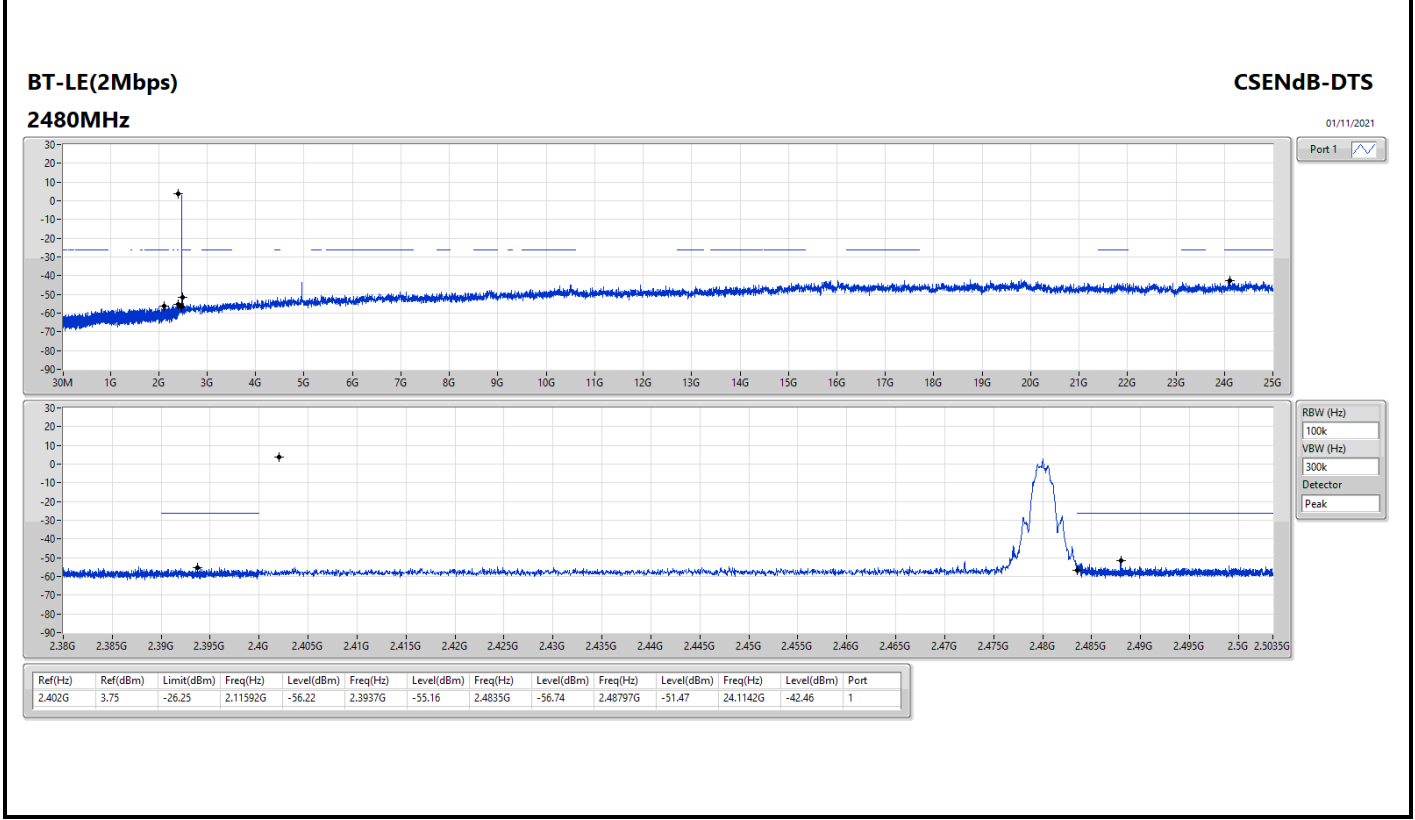
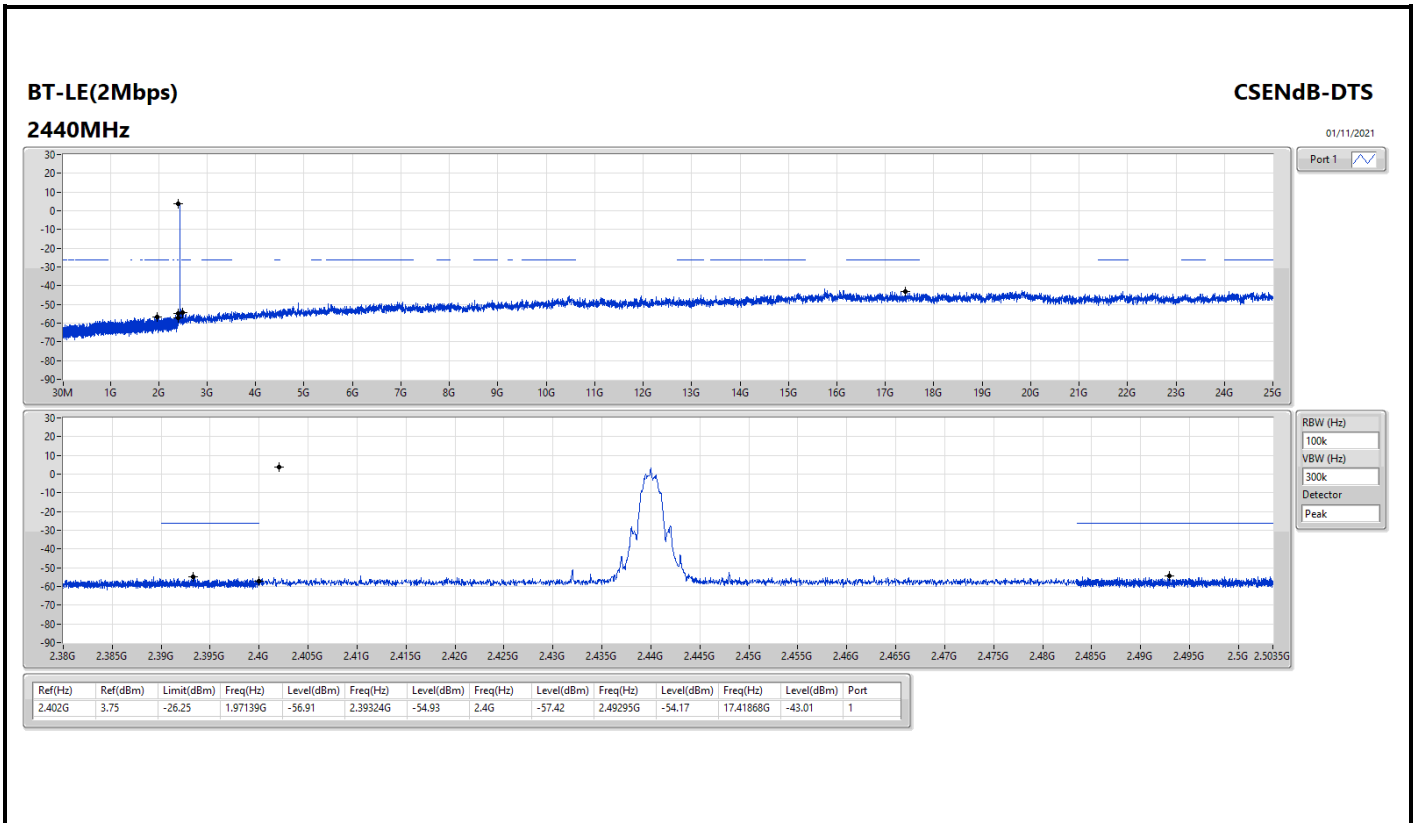


Result

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
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.402G	3.75	-26.25	2.16968G	-55.27	2.39402G	-50.85	2.4G	-49.51	2.48896G	-54.55	24.28855G	-41.81	1
2440MHz	Pass	2.402G	3.75	-26.25	2.12708G	-56.59	2.39971G	-55.00	2.4835G	-56.06	2.48679G	-54.82	25G	-42.42	1
2480MHz	Pass	2.402G	3.75	-26.25	2.09124G	-56.56	2.39394G	-55.13	2.4835G	-56.51	2.48796G	-51.00	24.21543G	-42.65	1
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.402G	3.71	-26.29	2.00929G	-56.51	2.39999G	-27.71	2.4G	-28.16	2.50324G	-53.76	24.2773G	-42.49	1
2440MHz	Pass	2.402G	3.75	-26.25	1.97139G	-56.91	2.39324G	-54.93	2.4G	-57.42	2.49295G	-54.17	17.41868G	-43.01	1
2480MHz	Pass	2.402G	3.75	-26.25	2.11592G	-56.22	2.3937G	-55.16	2.4835G	-56.74	2.48797G	-51.47	24.1142G	-42.46	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	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	PK	31.94M	29.87	40.00	-10.13	3	Horizontal	360	1.00	-

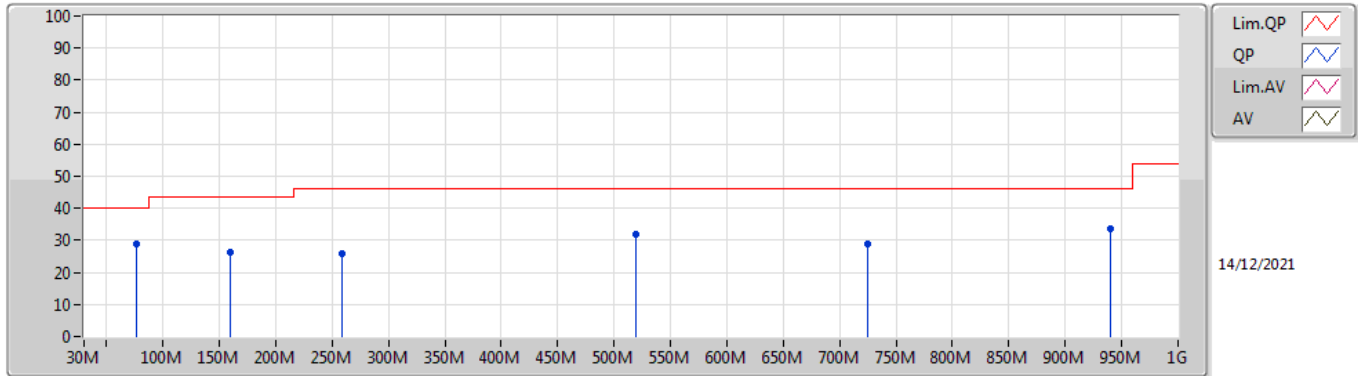




Result

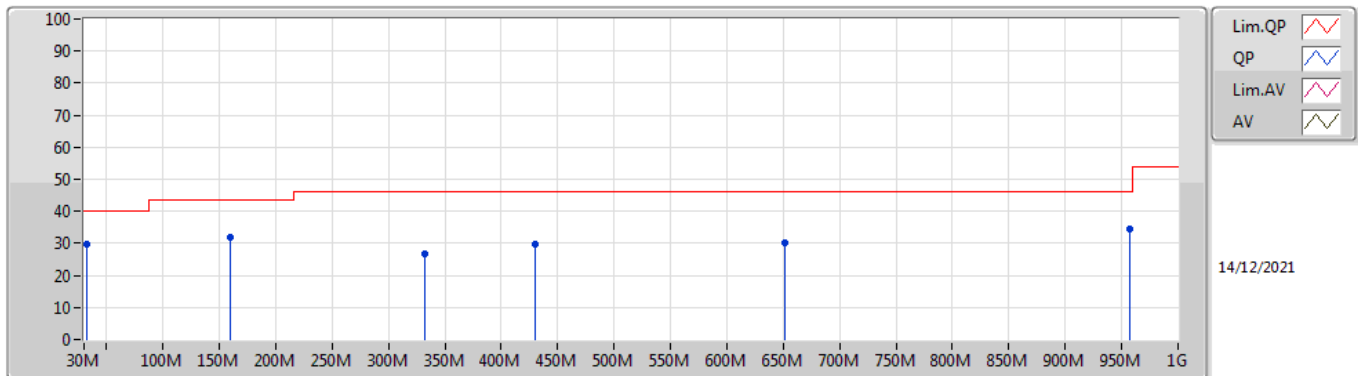
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	76.56M	28.76	40.00	-11.24	3	Vertical	0	1.00	-
2440MHz	Pass	PK	159.98M	26.36	43.50	-17.14	3	Vertical	0	1.00	-
2440MHz	Pass	PK	258.92M	25.73	46.00	-20.27	3	Vertical	0	1.00	-
2440MHz	Pass	PK	518.88M	31.70	46.00	-14.30	3	Vertical	0	1.00	-
2440MHz	Pass	PK	724.52M	28.84	46.00	-17.16	3	Vertical	0	1.00	-
2440MHz	Pass	PK	939.86M	33.48	46.00	-12.52	3	Vertical	0	1.00	-
2440MHz	Pass	PK	31.94M	29.87	40.00	-10.13	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	159.98M	31.82	43.50	-11.68	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	332.64M	26.91	46.00	-19.09	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	429.64M	29.87	46.00	-16.13	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	650.8M	30.37	46.00	-15.63	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	957.32M	34.35	46.00	-11.65	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	62.98M	28.77	40.00	-11.23	3	Vertical	360	1.00	-
2440MHz	Pass	PK	159.98M	26.67	43.50	-16.83	3	Vertical	360	1.00	-
2440MHz	Pass	PK	253.1M	26.66	46.00	-19.34	3	Vertical	360	1.00	-
2440MHz	Pass	PK	429.64M	25.85	46.00	-20.15	3	Vertical	360	1.00	-
2440MHz	Pass	PK	600.36M	31.69	46.00	-14.31	3	Vertical	360	1.00	-
2440MHz	Pass	PK	953.44M	34.70	46.00	-11.30	3	Vertical	360	1.00	-
2440MHz	Pass	PK	76.56M	22.16	40.00	-17.84	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	159.98M	31.71	43.50	-11.79	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	332.64M	26.20	46.00	-19.80	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	406.36M	30.72	46.00	-15.28	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	598.42M	29.64	46.00	-16.36	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	953.44M	34.79	46.00	-11.21	3	Horizontal	0	1.00	-

**BT-LE(1Mbps)**  
**2440MHz\_USB**



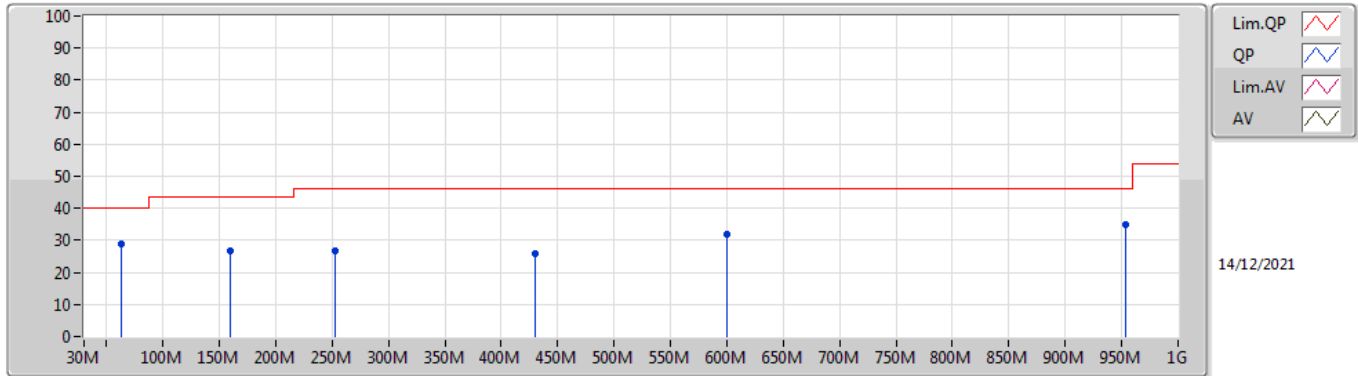
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	76.56M	28.76	40.00	-11.24	-23.90	3	Vertical	0	1.00	-	52.66	12.14	0.87	36.91
PK	159.98M	26.36	43.50	-17.14	-19.44	3	Vertical	0	1.00	-	45.80	15.70	1.23	36.37
PK	258.92M	25.73	46.00	-20.27	-15.62	3	Vertical	0	1.00	-	41.35	19.25	1.53	36.40
PK	518.88M	31.70	46.00	-14.30	-11.63	3	Vertical	0	1.00	-	43.33	23.10	2.29	37.02
PK	724.52M	28.84	46.00	-17.16	-8.16	3	Vertical	0	1.00	-	37.00	26.56	2.73	37.45
PK	939.86M	33.48	46.00	-12.52	-4.94	3	Vertical	0	1.00	-	38.42	29.55	3.08	37.57

**BT-LE(1Mbps)**  
**2440MHz\_USB**



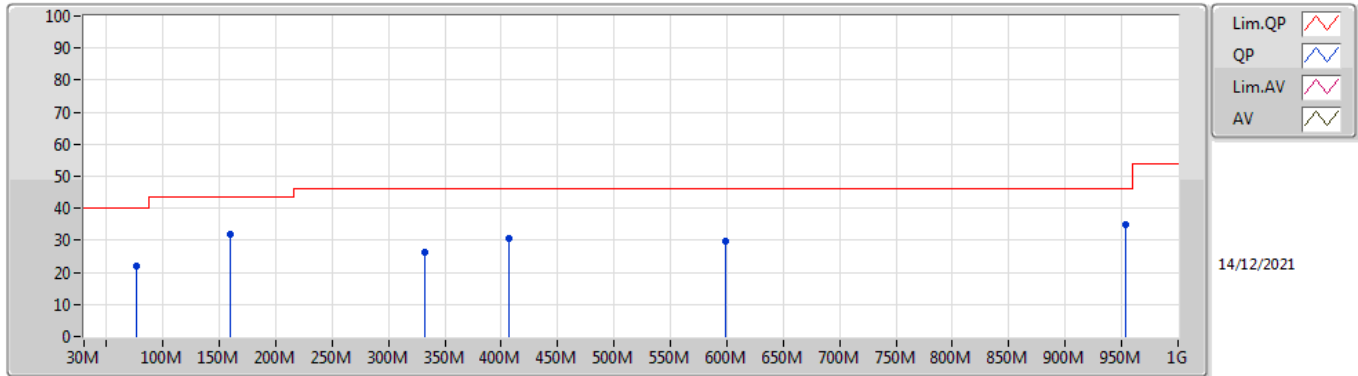
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	31.94M	29.87	40.00	-10.13	-13.91	3	Horizontal	360	1.00	-	43.78	22.61	0.60	37.12
PK	159.98M	31.82	43.50	-11.68	-19.44	3	Horizontal	360	1.00	-	51.26	15.70	1.23	36.37
PK	332.64M	26.91	46.00	-19.09	-15.77	3	Horizontal	360	1.00	-	42.68	18.99	1.74	36.50
PK	429.64M	29.87	46.00	-16.13	-12.54	3	Horizontal	360	1.00	-	42.41	22.04	2.02	36.60
PK	650.8M	30.37	46.00	-15.63	-8.98	3	Horizontal	360	1.00	-	39.35	25.65	2.62	37.25
PK	957.32M	34.35	46.00	-11.65	-4.25	3	Horizontal	360	1.00	-	38.60	30.14	3.11	37.50

**BT-LE(1Mbps)**  
**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	62.98M	28.77	40.00	-11.23	-25.08	3	Vertical	360	1.00	-	53.85	11.14	0.82	37.04
PK	159.98M	26.67	43.50	-16.83	-19.44	3	Vertical	360	1.00	-	46.11	15.70	1.23	36.37
PK	253.1M	26.66	46.00	-19.34	-16.58	3	Vertical	360	1.00	-	43.24	18.30	1.51	36.39
PK	429.64M	25.85	46.00	-20.15	-12.54	3	Vertical	360	1.00	-	38.39	22.04	2.02	36.60
PK	600.36M	31.69	46.00	-14.31	-9.89	3	Vertical	360	1.00	-	41.58	24.76	2.47	37.12
PK	953.44M	34.70	46.00	-11.30	-4.37	3	Vertical	360	1.00	-	39.07	30.07	3.10	37.54

**BT-LE(1Mbps)**  
**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	22.16	40.00	-17.84	-23.90	3	Horizontal	0	1.00	-	46.06	12.14	0.87	36.91
PK	159.98M	31.71	43.50	-11.79	-19.44	3	Horizontal	0	1.00	-	51.15	15.70	1.23	36.37
PK	332.64M	26.20	46.00	-19.80	-15.77	3	Horizontal	0	1.00	-	41.97	18.99	1.74	36.50
PK	406.36M	30.72	46.00	-15.28	-13.38	3	Horizontal	0	1.00	-	44.10	21.27	1.93	36.58
PK	598.42M	29.64	46.00	-16.36	-9.88	3	Horizontal	0	1.00	-	39.52	24.77	2.47	37.12
PK	953.44M	34.79	46.00	-11.21	-4.37	3	Horizontal	0	1.00	-	39.16	30.07	3.10	37.54



Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	AV	2.4904G	46.08	54.00	-7.92	3	Vertical	231	1.89	-
BT-LE(2Mbps)	Pass	AV	2.4835G	48.27	54.00	-5.73	3	Horizontal	264	1.49	-



Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3558G	45.62	54.00	-8.38	3	Vertical	95	1.27	-
2402MHz	Pass	AV	2.402G	93.84	Inf	-Inf	3	Vertical	95	1.27	-
2402MHz	Pass	PK	2.3846G	57.14	74.00	-16.86	3	Vertical	95	1.27	-
2402MHz	Pass	PK	2.4022G	94.91	Inf	-Inf	3	Vertical	95	1.27	-
2402MHz	Pass	AV	2.3656G	45.62	54.00	-8.38	3	Horizontal	246	1.15	-
2402MHz	Pass	AV	2.402G	98.18	Inf	-Inf	3	Horizontal	246	1.15	-
2402MHz	Pass	PK	2.3678G	57.23	74.00	-16.77	3	Horizontal	246	1.15	-
2402MHz	Pass	PK	2.402G	99.14	Inf	-Inf	3	Horizontal	246	1.15	-
2402MHz	Pass	AV	4.80402G	39.04	54.00	-14.96	3	Vertical	42	2.66	-
2402MHz	Pass	PK	4.80322G	48.56	74.00	-25.44	3	Vertical	42	2.66	-
2402MHz	Pass	AV	4.80374G	37.37	54.00	-16.63	3	Horizontal	152	1.33	-
2402MHz	Pass	PK	4.80438G	47.69	74.00	-26.31	3	Horizontal	152	1.33	-
2440MHz	Pass	AV	2.3824G	45.42	54.00	-8.58	3	Vertical	101	1.19	-
2440MHz	Pass	AV	2.44G	94.88	Inf	-Inf	3	Vertical	101	1.19	-
2440MHz	Pass	AV	2.494G	45.58	54.00	-8.42	3	Vertical	101	1.19	-
2440MHz	Pass	PK	2.3492G	56.59	74.00	-17.41	3	Vertical	101	1.19	-
2440MHz	Pass	PK	2.4404G	95.89	Inf	-Inf	3	Vertical	101	1.19	-
2440MHz	Pass	PK	2.4932G	57.23	74.00	-16.77	3	Vertical	101	1.19	-
2440MHz	Pass	AV	2.3488G	45.26	54.00	-8.74	3	Horizontal	266	1.01	-
2440MHz	Pass	AV	2.44G	99.06	Inf	-Inf	3	Horizontal	266	1.01	-
2440MHz	Pass	AV	2.4848G	45.55	54.00	-8.45	3	Horizontal	266	1.01	-
2440MHz	Pass	PK	2.3504G	57.04	74.00	-16.96	3	Horizontal	266	1.01	-
2440MHz	Pass	PK	2.4404G	100.06	Inf	-Inf	3	Horizontal	266	1.01	-
2440MHz	Pass	PK	2.4872G	57.84	74.00	-16.16	3	Horizontal	266	1.01	-
2440MHz	Pass	AV	4.87986G	37.63	54.00	-16.37	3	Vertical	42	2.45	-
2440MHz	Pass	AV	7.31942G	44.04	54.00	-9.96	3	Vertical	96	1.06	-
2440MHz	Pass	PK	4.87956G	47.86	74.00	-26.14	3	Vertical	42	2.45	-
2440MHz	Pass	PK	7.32085G	54.82	74.00	-19.18	3	Vertical	96	1.06	-
2440MHz	Pass	AV	4.87964G	36.14	54.00	-17.86	3	Horizontal	151	1.02	-
2440MHz	Pass	AV	7.31943G	44.54	54.00	-9.46	3	Horizontal	36	2.90	-
2440MHz	Pass	PK	4.87924G	46.54	74.00	-27.46	3	Horizontal	151	1.02	-
2440MHz	Pass	PK	7.31942G	54.37	74.00	-19.63	3	Horizontal	36	2.90	-
2480MHz	Pass	AV	2.48G	94.28	Inf	-Inf	3	Vertical	231	1.89	-
2480MHz	Pass	AV	2.4904G	46.08	54.00	-7.92	3	Vertical	231	1.89	-
2480MHz	Pass	PK	2.4802G	95.27	Inf	-Inf	3	Vertical	231	1.89	-
2480MHz	Pass	PK	2.4968G	58.37	74.00	-15.63	3	Vertical	231	1.89	-
2480MHz	Pass	AV	2.48G	97.56	Inf	-Inf	3	Horizontal	266	1.50	-
2480MHz	Pass	AV	2.4896G	45.66	54.00	-8.34	3	Horizontal	266	1.50	-
2480MHz	Pass	PK	2.4798G	98.51	Inf	-Inf	3	Horizontal	266	1.50	-
2480MHz	Pass	PK	2.4872G	57.28	74.00	-16.72	3	Horizontal	266	1.50	-
2480MHz	Pass	AV	4.96013G	37.93	54.00	-16.07	3	Vertical	43	2.28	-
2480MHz	Pass	AV	7.43938G	41.56	54.00	-12.44	3	Vertical	8	1.50	-
2480MHz	Pass	PK	4.95976G	48.35	74.00	-25.65	3	Vertical	43	2.28	-
2480MHz	Pass	PK	7.44081G	53.26	74.00	-20.74	3	Vertical	8	1.50	-
2480MHz	Pass	AV	4.95964G	36.57	54.00	-17.43	3	Horizontal	155	1.50	-
2480MHz	Pass	AV	7.4394G	44.96	54.00	-9.04	3	Horizontal	75	2.16	-
2480MHz	Pass	PK	4.96065G	47.43	74.00	-26.57	3	Horizontal	155	1.50	-
2480MHz	Pass	PK	7.44091G	54.90	74.00	-19.10	3	Horizontal	75	2.16	-
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3646G	47.02	54.00	-6.98	3	Vertical	93	1.28	-
2402MHz	Pass	AV	2.402G	93.22	Inf	-Inf	3	Vertical	93	1.28	-
2402MHz	Pass	PK	2.3678G	57.23	74.00	-16.77	3	Vertical	93	1.28	-
2402MHz	Pass	PK	2.4026G	95.67	Inf	-Inf	3	Vertical	93	1.28	-
2402MHz	Pass	AV	2.3812G	47.49	54.00	-6.51	3	Horizontal	246	1.18	-
2402MHz	Pass	AV	2.4022G	96.83	Inf	-Inf	3	Horizontal	246	1.18	-
2402MHz	Pass	PK	2.3704G	57.64	74.00	-16.36	3	Horizontal	246	1.18	-
2402MHz	Pass	PK	2.4014G	99.17	Inf	-Inf	3	Horizontal	246	1.18	-
2402MHz	Pass	AV	4.80296G	39.47	54.00	-14.53	3	Vertical	43	2.69	-
2402MHz	Pass	PK	4.80497G	47.73	74.00	-26.27	3	Vertical	43	2.69	-
2402MHz	Pass	AV	4.80298G	37.83	54.00	-16.17	3	Horizontal	149	1.00	-

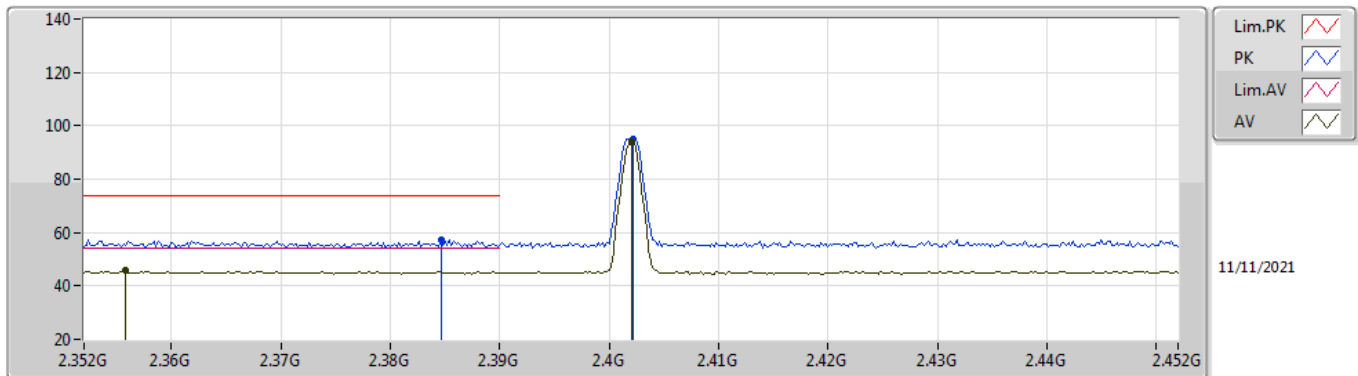


Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2402MHz	Pass	PK	4.80285G	47.32	74.00	-26.68	3	Horizontal	149	1.00	-
2440MHz	Pass	PK	2.346G	56.75	74.00	-17.25	3	Vertical	100	1.30	-
2440MHz	Pass	AV	2.3784G	46.90	54.00	-7.10	3	Vertical	100	1.30	-
2440MHz	Pass	PK	2.4404G	94.29	Inf	-Inf	3	Vertical	100	1.30	-
2440MHz	Pass	AV	2.44G	91.88	Inf	-Inf	3	Vertical	100	1.30	-
2440MHz	Pass	PK	2.4888G	56.97	74.00	-17.03	3	Vertical	100	1.30	-
2440MHz	Pass	AV	2.4852G	47.16	54.00	-6.84	3	Vertical	100	1.30	-
2440MHz	Pass	AV	2.3852G	47.06	54.00	-6.94	3	Horizontal	249	1.95	-
2440MHz	Pass	AV	2.44G	95.86	Inf	-Inf	3	Horizontal	249	1.95	-
2440MHz	Pass	AV	2.4835G	47.02	54.00	-6.98	3	Horizontal	249	1.95	-
2440MHz	Pass	PK	2.3652G	56.64	74.00	-17.36	3	Horizontal	249	1.95	-
2440MHz	Pass	PK	2.4404G	98.22	Inf	-Inf	3	Horizontal	249	1.95	-
2440MHz	Pass	PK	2.4912G	56.55	74.00	-17.45	3	Horizontal	249	1.95	-
2440MHz	Pass	AV	4.88007G	38.06	54.00	-15.94	3	Vertical	88	1.20	-
2440MHz	Pass	AV	7.31874G	44.72	54.00	-9.28	3	Vertical	97	1.09	-
2440MHz	Pass	PK	4.87916G	47.24	74.00	-26.76	3	Vertical	88	1.20	-
2440MHz	Pass	PK	7.3201G	53.46	74.00	-20.54	3	Vertical	97	1.09	-
2440MHz	Pass	AV	4.88013G	36.54	54.00	-17.46	3	Horizontal	155	1.32	-
2440MHz	Pass	AV	7.3188G	47.61	54.00	-6.39	3	Horizontal	56	2.19	-
2440MHz	Pass	PK	4.87978G	45.69	74.00	-28.31	3	Horizontal	155	1.32	-
2440MHz	Pass	PK	7.31829G	55.51	74.00	-18.49	3	Horizontal	56	2.19	-
2480MHz	Pass	AV	2.4802G	93.21	Inf	-Inf	3	Vertical	229	1.59	-
2480MHz	Pass	AV	2.4836G	47.22	54.00	-6.78	3	Vertical	229	1.59	-
2480MHz	Pass	PK	2.4796G	95.56	Inf	-Inf	3	Vertical	229	1.59	-
2480MHz	Pass	PK	2.4835G	57.39	74.00	-16.61	3	Vertical	229	1.59	-
2480MHz	Pass	AV	2.4802G	96.78	Inf	-Inf	3	Horizontal	264	1.49	-
2480MHz	Pass	AV	2.4835G	48.27	54.00	-5.73	3	Horizontal	264	1.49	-
2480MHz	Pass	PK	2.4794G	99.06	Inf	-Inf	3	Horizontal	264	1.49	-
2480MHz	Pass	PK	2.4835G	57.60	74.00	-16.40	3	Horizontal	264	1.49	-
2480MHz	Pass	AV	4.95996G	38.76	54.00	-15.24	3	Vertical	102	1.11	-
2480MHz	Pass	AV	7.44003G	41.57	54.00	-12.43	3	Vertical	11	1.50	-
2480MHz	Pass	PK	4.96086G	47.95	74.00	-26.05	3	Vertical	102	1.11	-
2480MHz	Pass	PK	7.43992G	51.21	74.00	-22.79	3	Vertical	11	1.50	-
2480MHz	Pass	AV	4.96004G	37.99	54.00	-16.01	3	Horizontal	164	3.00	-
2480MHz	Pass	AV	7.44001G	44.31	54.00	-9.69	3	Horizontal	59	2.15	-
2480MHz	Pass	PK	4.95904G	47.43	74.00	-26.57	3	Horizontal	164	3.00	-
2480MHz	Pass	PK	7.44007G	53.71	74.00	-20.29	3	Horizontal	59	2.15	-



**BT-LE(1Mbps)**

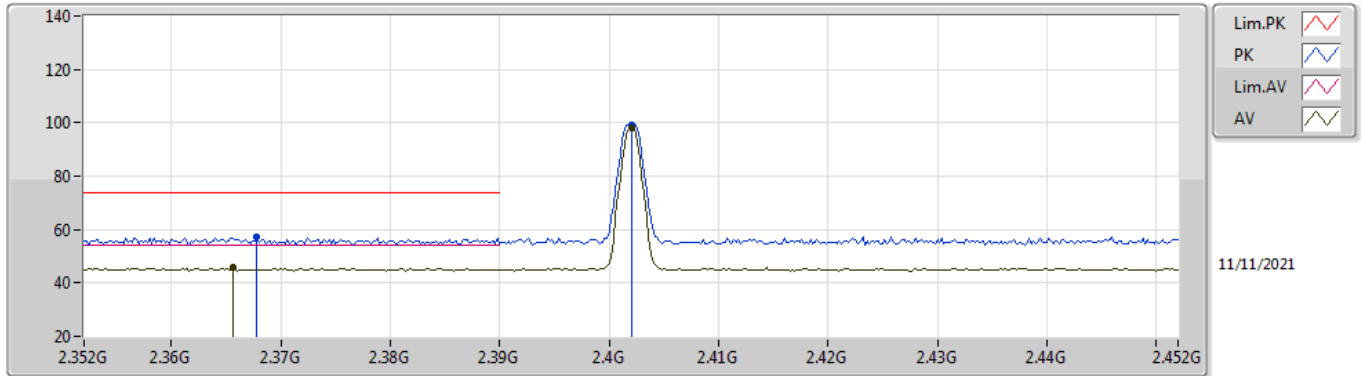
**2402MHz\_TX**



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	2.3558G	45.62	54.00	-8.38	32.32	3	Vertical	95	1.27	-	13.30	27.78	4.54	-
AV	2.402G	93.84	Inf	-Inf	32.18	3	Vertical	95	1.27	-	61.66	27.60	4.58	-
PK	2.3846G	57.14	74.00	-16.86	32.23	3	Vertical	95	1.27	-	24.91	27.66	4.57	-
PK	2.4022G	94.91	Inf	-Inf	32.18	3	Vertical	95	1.27	-	62.73	27.60	4.58	-

**BT-LE(1Mbps)**

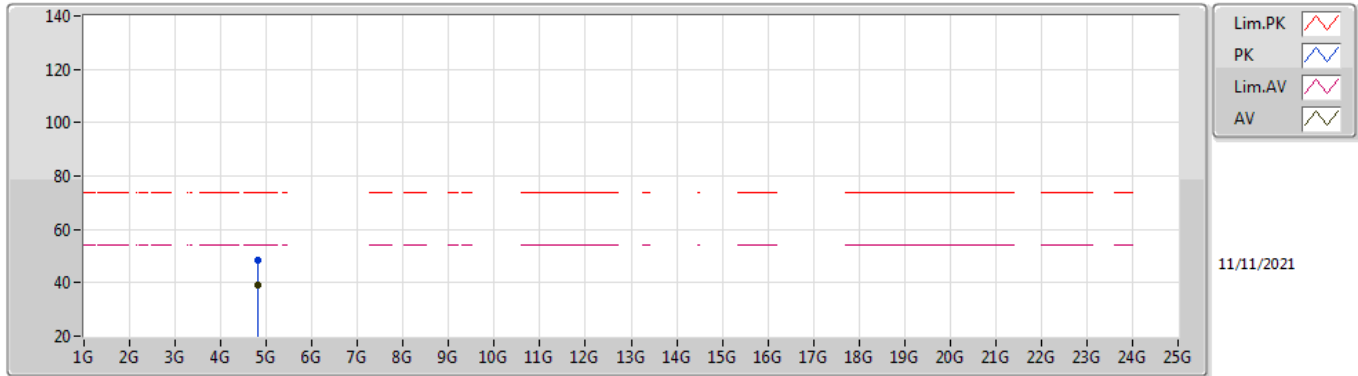
**2402MHz\_TX**



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	2.3656G	45.62	54.00	-8.38	32.29	3	Horizontal	246	1.15	-	13.33	27.74	4.55	-
AV	2.402G	98.18	Inf	-Inf	32.18	3	Horizontal	246	1.15	-	66.00	27.60	4.58	-
PK	2.3678G	57.23	74.00	-16.77	32.28	3	Horizontal	246	1.15	-	24.95	27.73	4.55	-
PK	2.402G	99.14	Inf	-Inf	32.18	3	Horizontal	246	1.15	-	66.96	27.60	4.58	-

**BT-LE(1Mbps)**

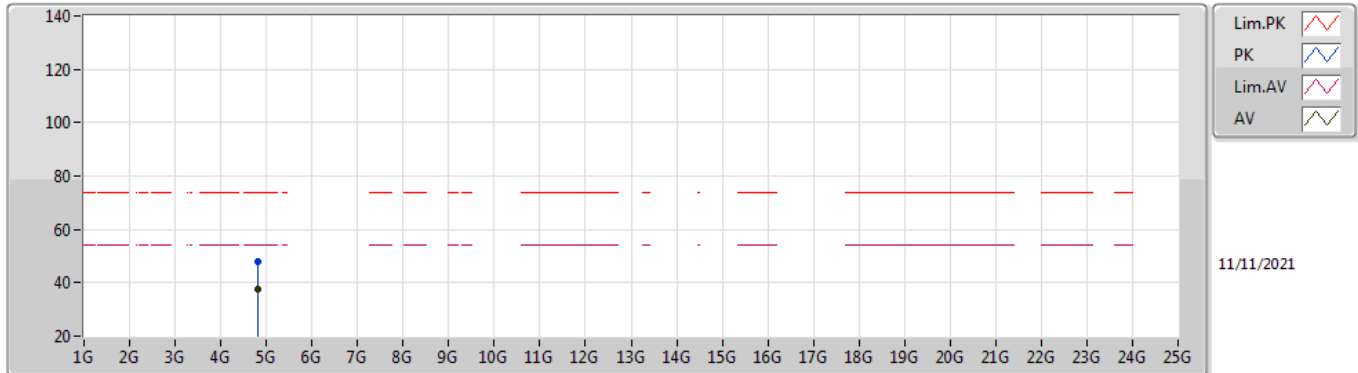
**2402MHz\_TX**



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	4.80402G	39.04	54.00	-14.96	2.95	3	Vertical	42	2.66	-	36.09	31.10	6.66	34.81
PK	4.80322G	48.56	74.00	-25.44	2.95	3	Vertical	42	2.66	-	45.61	31.10	6.66	34.81

### BT-LE(1Mbps)

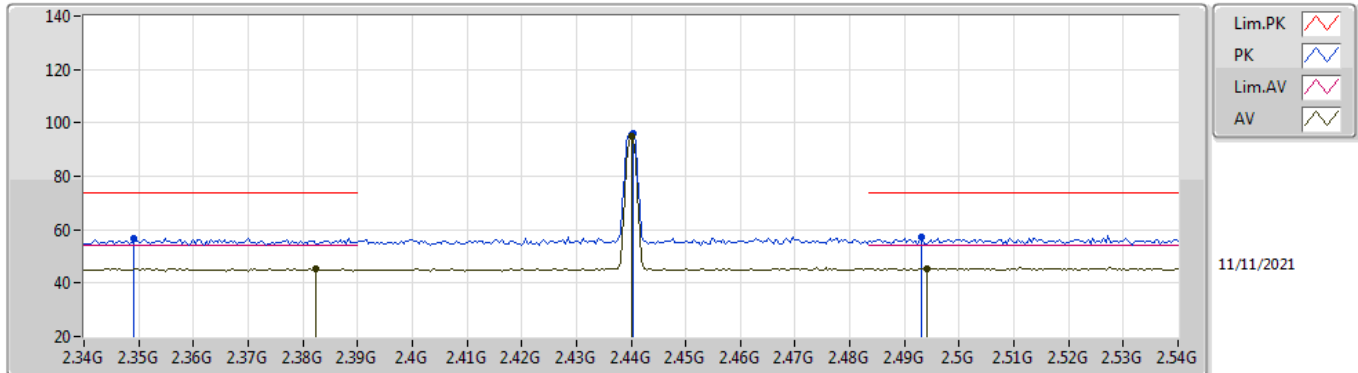
### 2402MHz\_TX



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	4.80374G	37.37	54.00	-16.63	2.95	3	Horizontal	152	1.33	-	34.42	31.10	6.66	34.81
PK	4.80438G	47.69	74.00	-26.31	2.95	3	Horizontal	152	1.33	-	44.74	31.10	6.66	34.81

### BT-LE(1Mbps)

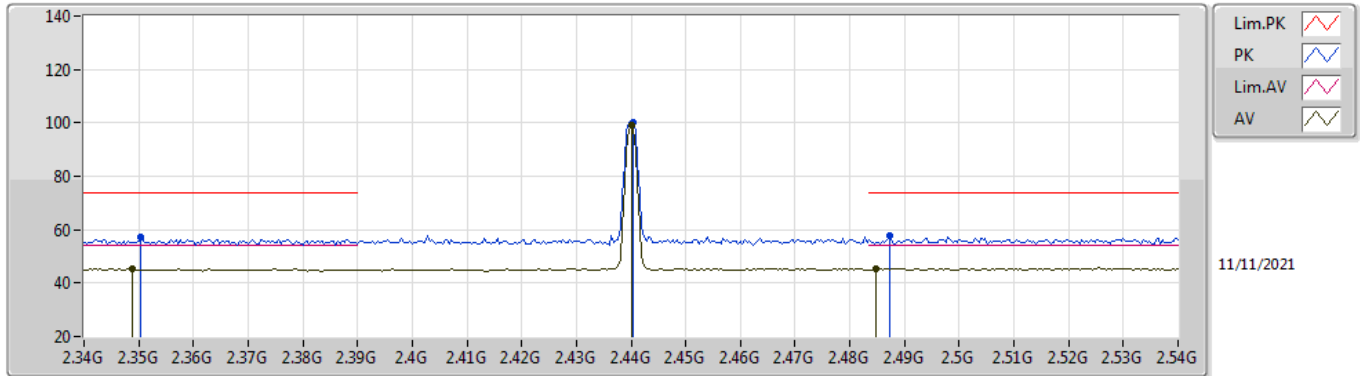
### 2440MHz\_TX



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	2.3824G	45.42	54.00	-8.58	32.23	3	Vertical	101	1.19	-	13.19	27.67	4.56	-
AV	2.44G	94.88	Inf	-Inf	32.12	3	Vertical	101	1.19	-	62.76	27.52	4.60	-
AV	2.494G	45.58	54.00	-8.42	32.12	3	Vertical	101	1.19	-	13.46	27.50	4.62	-
PK	2.3492G	56.59	74.00	-17.41	32.33	3	Vertical	101	1.19	-	24.26	27.80	4.53	-
PK	2.4404G	95.89	Inf	-Inf	32.12	3	Vertical	101	1.19	-	63.77	27.52	4.60	-
PK	2.4932G	57.23	74.00	-16.77	32.12	3	Vertical	101	1.19	-	25.11	27.50	4.62	-

### BT-LE(1Mbps)

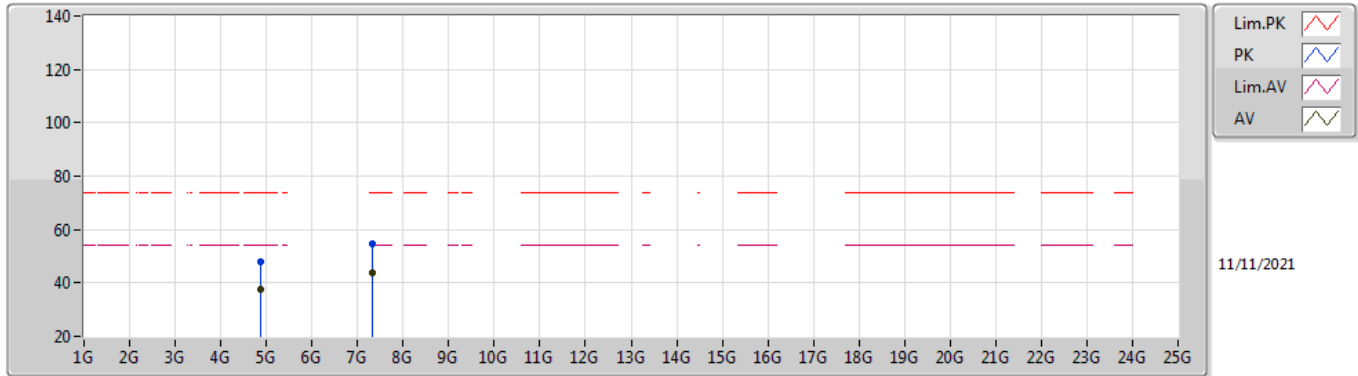
### 2440MHz\_TX



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	2.3488G	45.26	54.00	-8.74	32.33	3	Horizontal	266	1.01	-	12.93	27.80	4.53	-
AV	2.44G	99.06	Inf	-Inf	32.12	3	Horizontal	266	1.01	-	66.94	27.52	4.60	-
AV	2.4848G	45.55	54.00	-8.45	32.11	3	Horizontal	266	1.01	-	13.44	27.50	4.61	-
PK	2.3504G	57.04	74.00	-16.96	32.33	3	Horizontal	266	1.01	-	24.71	27.80	4.53	-
PK	2.4404G	100.06	Inf	-Inf	32.12	3	Horizontal	266	1.01	-	67.94	27.52	4.60	-
PK	2.4872G	57.84	74.00	-16.16	32.11	3	Horizontal	266	1.01	-	25.73	27.50	4.61	-

### BT-LE(1Mbps)

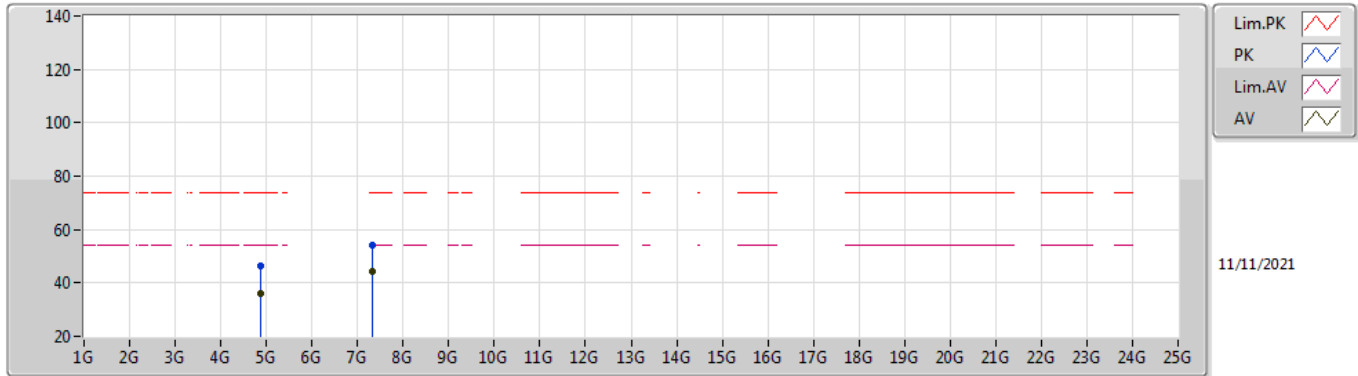
### 2440MHz\_TX



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	4.87986G	37.63	54.00	-16.37	3.03	3	Vertical	42	2.45	-	34.60	31.10	6.72	34.79
AV	7.31942G	44.04	54.00	-9.96	9.41	3	Vertical	96	1.06	-	34.63	36.36	7.87	34.82
PK	4.87956G	47.86	74.00	-26.14	3.03	3	Vertical	42	2.45	-	44.83	31.10	6.72	34.79
PK	7.32085G	54.82	74.00	-19.18	9.42	3	Vertical	96	1.06	-	45.40	36.36	7.88	34.82

### BT-LE(1Mbps)

### 2440MHz\_TX

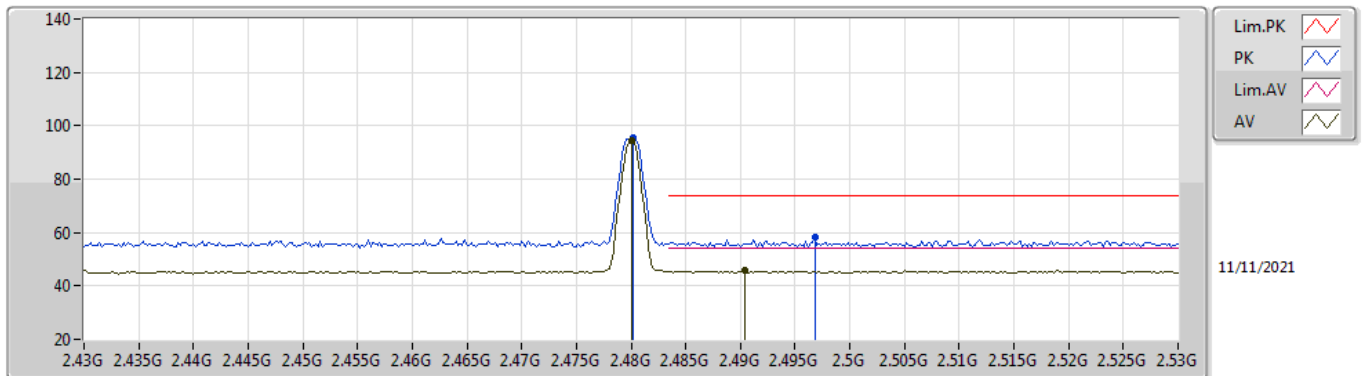


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.87964G	36.14	54.00	-17.86	3.03	3	Horizontal	151	1.02	-	33.11	31.10	6.72	34.79
AV	7.31943G	44.54	54.00	-9.46	9.41	3	Horizontal	36	2.90	-	35.13	36.36	7.87	34.82
PK	4.87924G	46.54	74.00	-27.46	3.03	3	Horizontal	151	1.02	-	43.51	31.10	6.72	34.79
PK	7.31942G	54.37	74.00	-19.63	9.41	3	Horizontal	36	2.90	-	44.96	36.36	7.87	34.82



**BT-LE(1Mbps)**

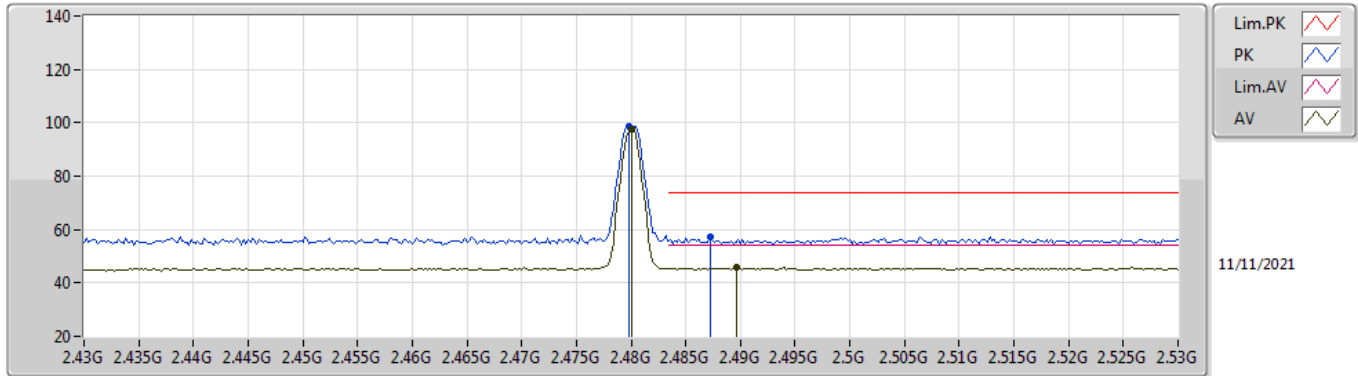
**2480MHz\_TX**



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	94.28	Inf	-Inf	32.11	3	Vertical	231	1.89	-	62.17	27.50	4.61	-
AV	2.4904G	46.08	54.00	-7.92	32.12	3	Vertical	231	1.89	-	13.96	27.50	4.62	-
PK	2.4802G	95.27	Inf	-Inf	32.11	3	Vertical	231	1.89	-	63.16	27.50	4.61	-
PK	2.4968G	58.37	74.00	-15.63	32.12	3	Vertical	231	1.89	-	26.25	27.50	4.62	-

**BT-LE(1Mbps)**

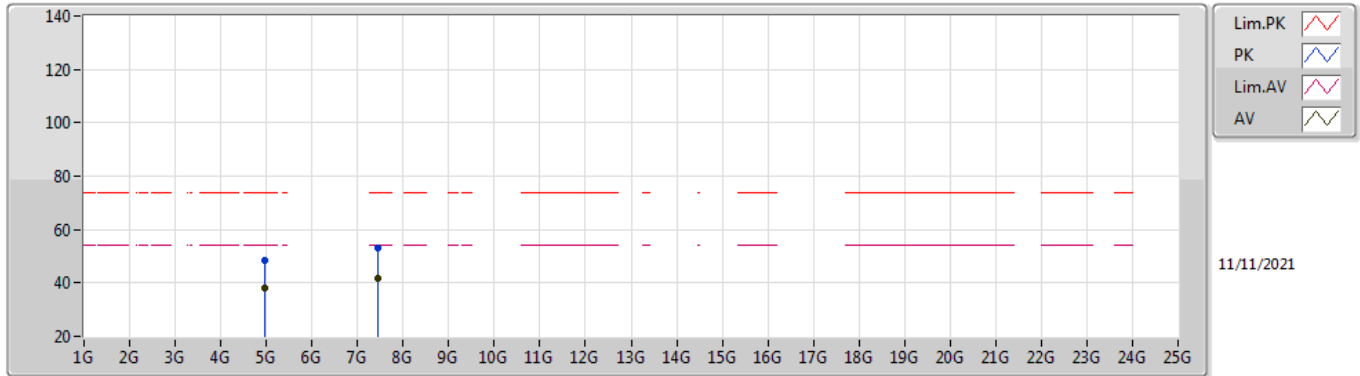
**2480MHz\_TX**



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	97.56	Inf	-Inf	32.11	3	Horizontal	266	1.50	-	65.45	27.50	4.61	-
AV	2.4896G	45.66	54.00	-8.34	32.12	3	Horizontal	266	1.50	-	13.54	27.50	4.62	-
PK	2.4798G	98.51	Inf	-Inf	32.11	3	Horizontal	266	1.50	-	66.40	27.50	4.61	-
PK	2.4872G	57.28	74.00	-16.72	32.11	3	Horizontal	266	1.50	-	25.17	27.50	4.61	-

**BT-LE(1Mbps)**

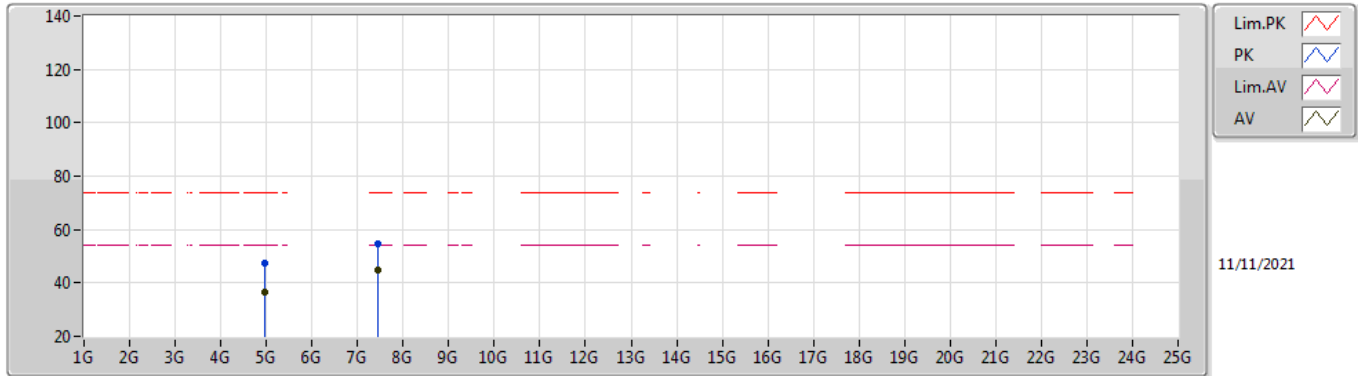
**2480MHz\_TX**



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	4.96013G	37.93	54.00	-16.07	3.35	3	Vertical	43	2.28	-	34.58	31.34	6.78	34.77
AV	7.43938G	41.56	54.00	-12.44	9.49	3	Vertical	8	1.50	-	32.07	36.28	8.05	34.84
PK	4.95976G	48.35	74.00	-25.65	3.35	3	Vertical	43	2.28	-	45.00	31.34	6.78	34.77
PK	7.44081G	53.26	74.00	-20.74	9.50	3	Vertical	8	1.50	-	43.76	36.28	8.06	34.84

### BT-LE(1Mbps)

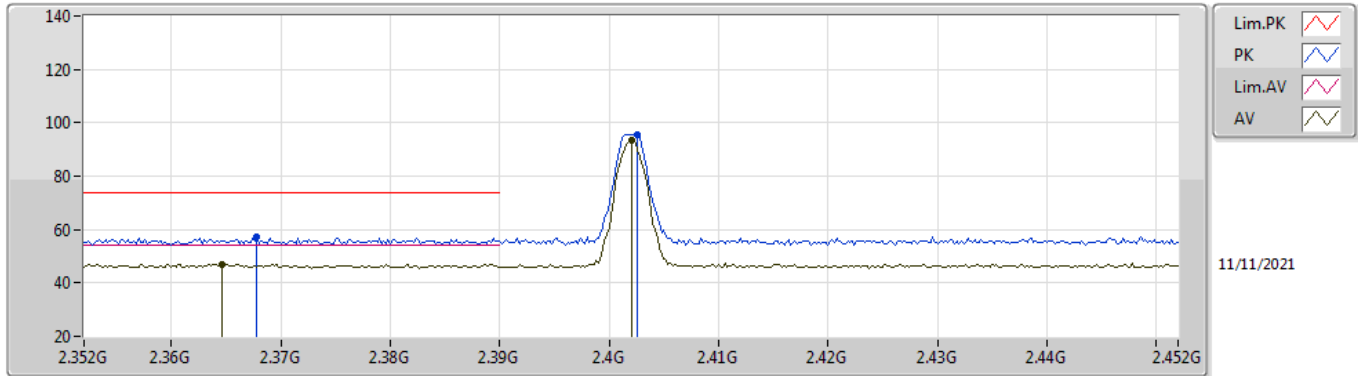
### 2480MHz\_TX



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	4.95964G	36.57	54.00	-17.43	3.35	3	Horizontal	155	1.50	-	33.22	31.34	6.78	34.77
AV	7.4394G	44.96	54.00	-9.04	9.49	3	Horizontal	75	2.16	-	35.47	36.28	8.05	34.84
PK	4.96065G	47.43	74.00	-26.57	3.35	3	Horizontal	155	1.50	-	44.08	31.34	6.78	34.77
PK	7.44091G	54.90	74.00	-19.10	9.50	3	Horizontal	75	2.16	-	45.40	36.28	8.06	34.84

**BT-LE(2Mbps)**

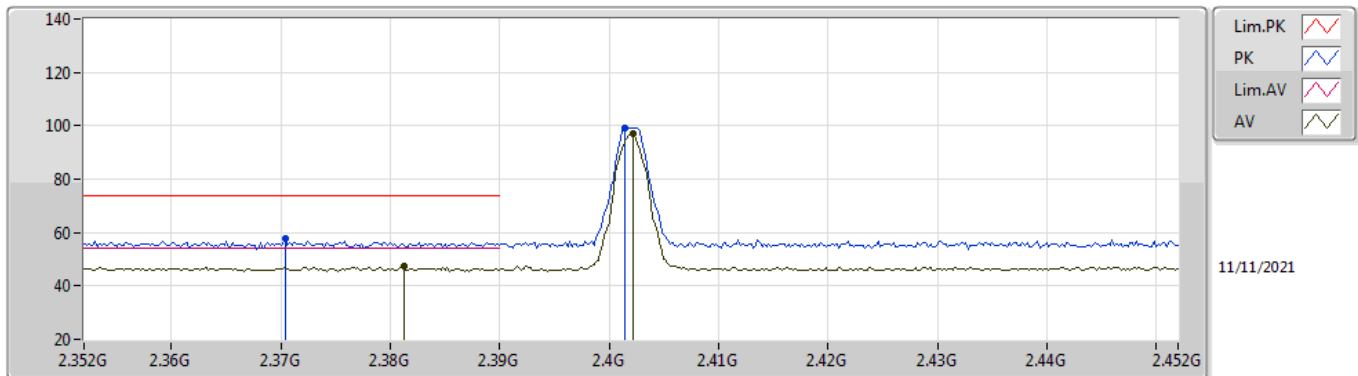
**2402MHz\_TX**



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	2.3646G	47.02	54.00	-6.98	32.29	3	Vertical	93	1.28	-	14.73	27.74	4.55	-
AV	2.402G	93.22	Inf	-Inf	32.18	3	Vertical	93	1.28	-	61.04	27.60	4.58	-
PK	2.3678G	57.23	74.00	-16.77	32.28	3	Vertical	93	1.28	-	24.95	27.73	4.55	-
PK	2.4026G	95.67	Inf	-Inf	32.17	3	Vertical	93	1.28	-	63.50	27.59	4.58	-

**BT-LE(2Mbps)**

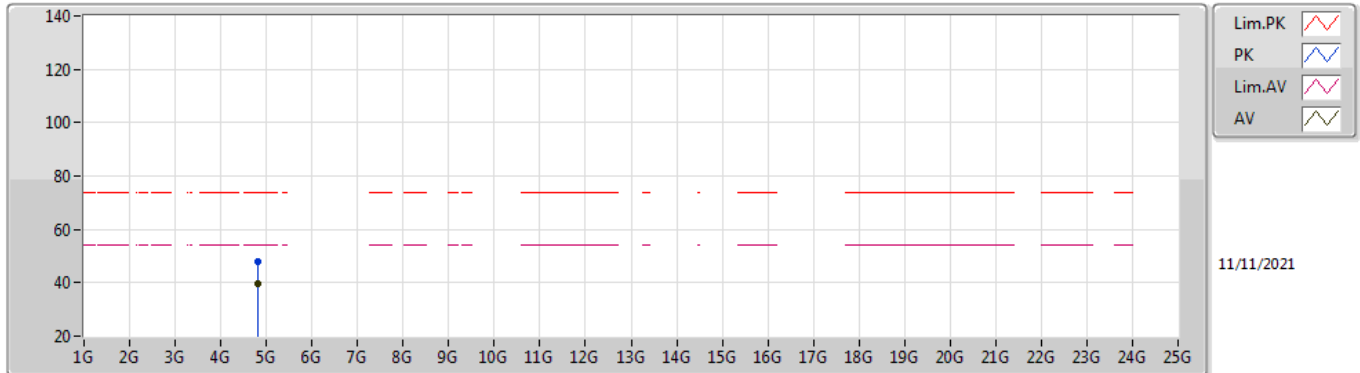
**2402MHz\_TX**



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	2.3812G	47.49	54.00	-6.51	32.24	3	Horizontal	246	1.18	-	15.25	27.68	4.56	-
AV	2.4022G	96.83	Inf	-Inf	32.18	3	Horizontal	246	1.18	-	64.65	27.60	4.58	-
PK	2.3704G	57.64	74.00	-16.36	32.27	3	Horizontal	246	1.18	-	25.37	27.72	4.55	-
PK	2.4014G	99.17	Inf	-Inf	32.18	3	Horizontal	246	1.18	-	66.99	27.60	4.58	-

### BT-LE(2Mbps)

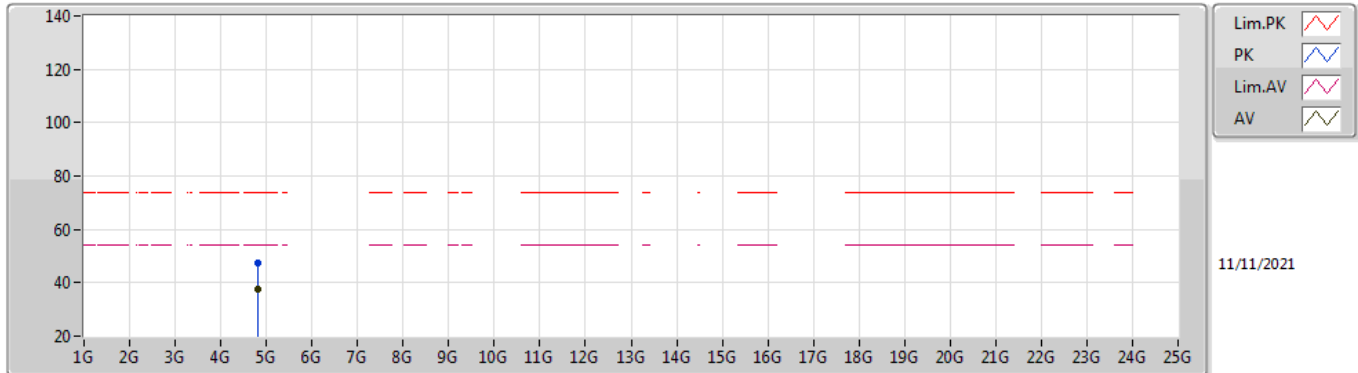
### 2402MHz\_TX



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	4.80296G	39.47	54.00	-14.53	2.95	3	Vertical	43	2.69	-	36.52	31.10	6.66	34.81
PK	4.80497G	47.73	74.00	-26.27	2.95	3	Vertical	43	2.69	-	44.78	31.10	6.66	34.81

**BT-LE(2Mbps)**

**2402MHz\_TX**

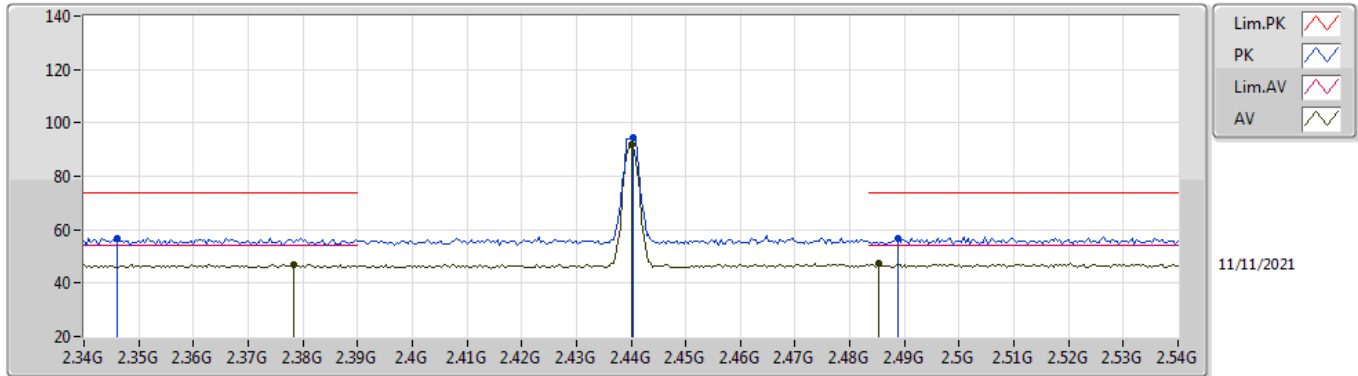


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.80298G	37.83	54.00	-16.17	2.95	3	Horizontal	149	1.00	-	34.88	31.10	6.66	34.81
PK	4.80285G	47.32	74.00	-26.68	2.95	3	Horizontal	149	1.00	-	44.37	31.10	6.66	34.81



**BT-LE(2Mbps)**

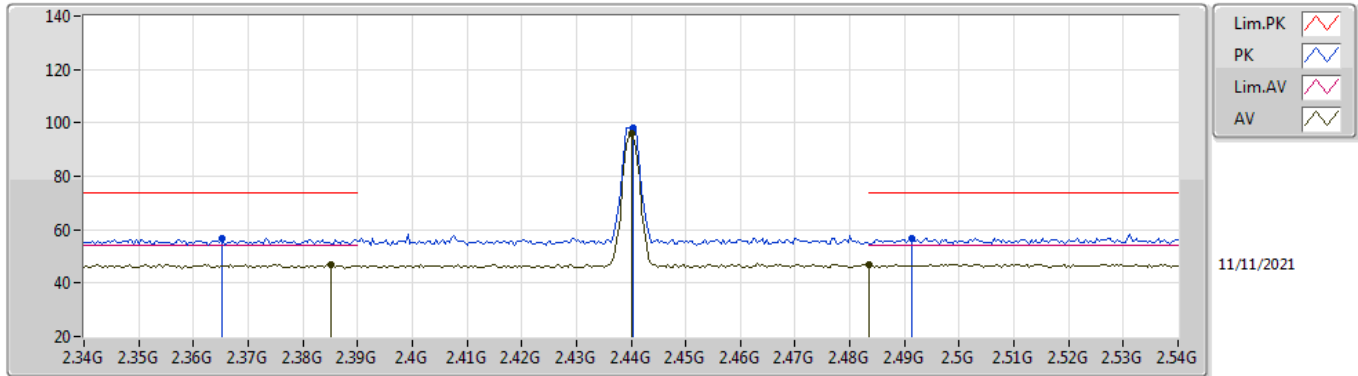
**2440MHz\_TX**



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)
PK	2.346G	56.75	74.00	-17.25	32.33	3	Vertical	100	1.30	-	24.42	27.80	4.53	-
AV	2.3784G	46.90	54.00	-7.10	32.25	3	Vertical	100	1.30	-	14.65	27.69	4.56	-
PK	2.4404G	94.29	Inf	-Inf	32.12	3	Vertical	100	1.30	-	62.17	27.52	4.60	-
AV	2.44G	91.88	Inf	-Inf	32.12	3	Vertical	100	1.30	-	59.76	27.52	4.60	-
PK	2.4888G	56.97	74.00	-17.03	32.12	3	Vertical	100	1.30	-	24.85	27.50	4.62	-
AV	2.4852G	47.16	54.00	-6.84	32.11	3	Vertical	100	1.30	-	15.05	27.50	4.61	-

**BT-LE(2Mbps)**

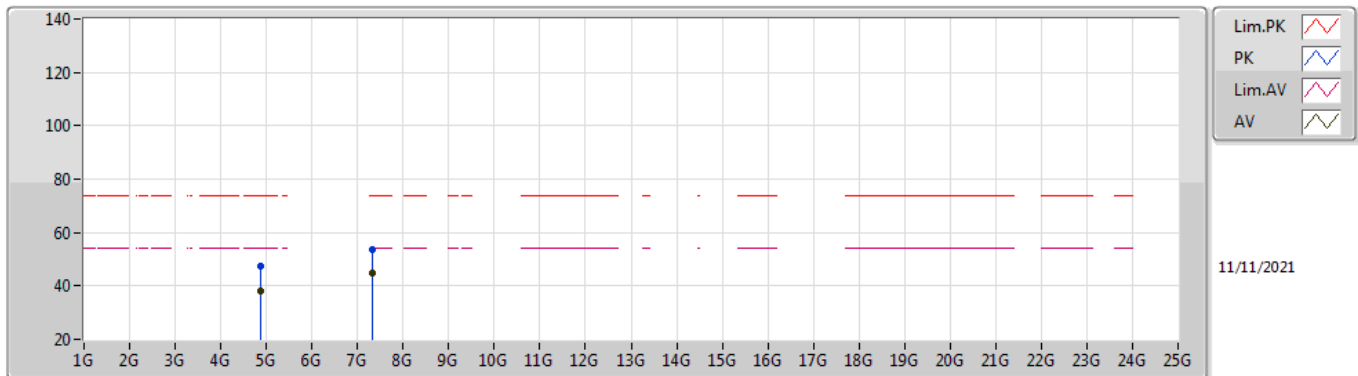
**2440MHz\_TX**



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	2.3852G	47.06	54.00	-6.94	32.23	3	Horizontal	249	1.95	-	14.83	27.66	4.57	-
AV	2.44G	95.86	Inf	-Inf	32.12	3	Horizontal	249	1.95	-	63.74	27.52	4.60	-
AV	2.4835G	47.02	54.00	-6.98	32.11	3	Horizontal	249	1.95	-	14.91	27.50	4.61	-
PK	2.3652G	56.64	74.00	-17.36	32.29	3	Horizontal	249	1.95	-	24.35	27.74	4.55	-
PK	2.4404G	98.22	Inf	-Inf	32.12	3	Horizontal	249	1.95	-	66.10	27.52	4.60	-
PK	2.4912G	56.55	74.00	-17.45	32.12	3	Horizontal	249	1.95	-	24.43	27.50	4.62	-

### BT-LE(2Mbps)

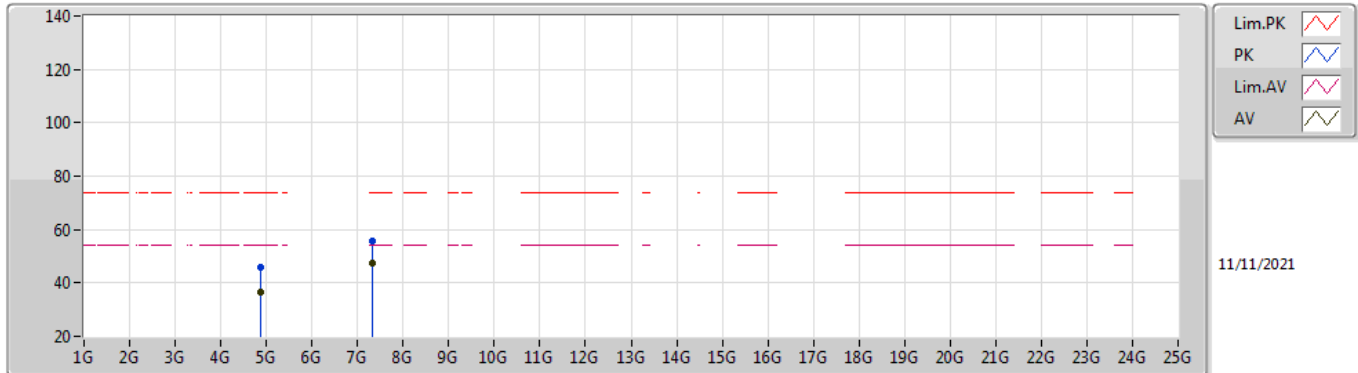
### 2440MHz\_TX



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	4.88007G	38.06	54.00	-15.94	3.03	3	Vertical	88	1.20	-	35.03	31.10	6.72	34.79
AV	7.31874G	44.72	54.00	-9.28	9.41	3	Vertical	97	1.09	-	35.31	36.36	7.87	34.82
PK	4.87916G	47.24	74.00	-26.76	3.03	3	Vertical	88	1.20	-	44.21	31.10	6.72	34.79
PK	7.3201G	53.46	74.00	-20.54	9.41	3	Vertical	97	1.09	-	44.05	36.36	7.87	34.82

**BT-LE(2Mbps)**

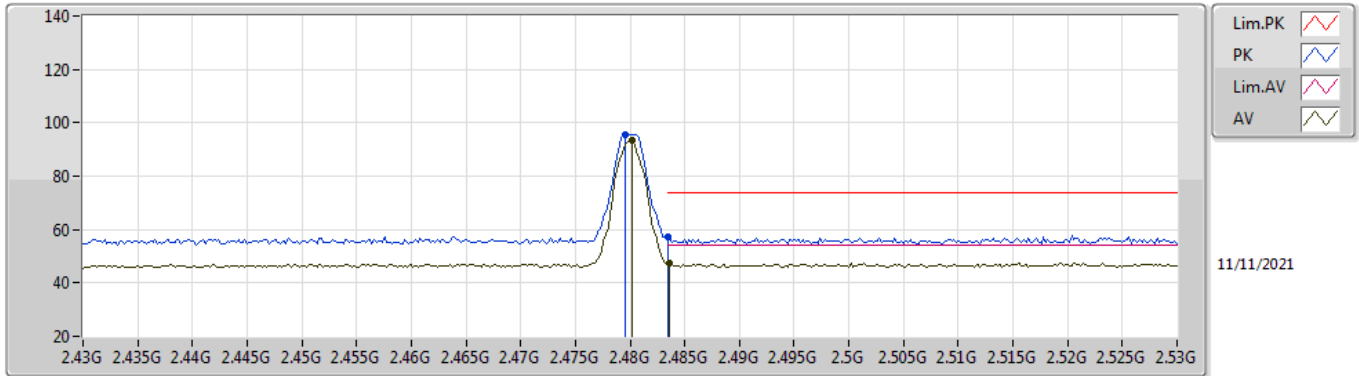
**2440MHz\_TX**



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	4.88013G	36.54	54.00	-17.46	3.03	3	Horizontal	155	1.32	-	33.51	31.10	6.72	34.79
AV	7.3188G	47.61	54.00	-6.39	9.41	3	Horizontal	56	2.19	-	38.20	36.36	7.87	34.82
PK	4.87978G	45.69	74.00	-28.31	3.03	3	Horizontal	155	1.32	-	42.66	31.10	6.72	34.79
PK	7.31829G	55.51	74.00	-18.49	9.41	3	Horizontal	56	2.19	-	46.10	36.36	7.87	34.82

**BT-LE(2Mbps)**

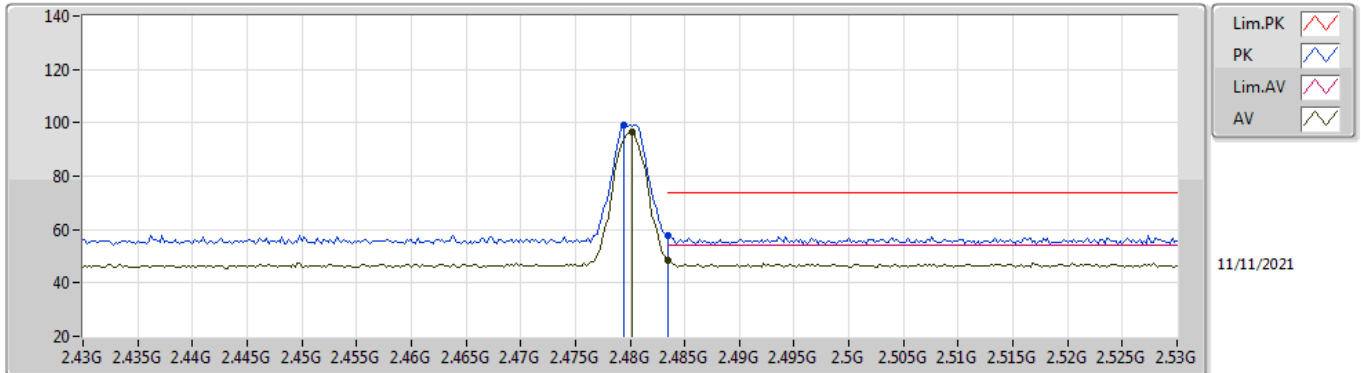
**2480MHz\_TX**



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	2.4802G	93.21	Inf	-Inf	32.11	3	Vertical	229	1.59	-	61.10	27.50	4.61	-
AV	2.4836G	47.22	54.00	-6.78	32.11	3	Vertical	229	1.59	-	15.11	27.50	4.61	-
PK	2.4796G	95.56	Inf	-Inf	32.11	3	Vertical	229	1.59	-	63.45	27.50	4.61	-
PK	2.4835G	57.39	74.00	-16.61	32.11	3	Vertical	229	1.59	-	25.28	27.50	4.61	-

**BT-LE(2Mbps)**

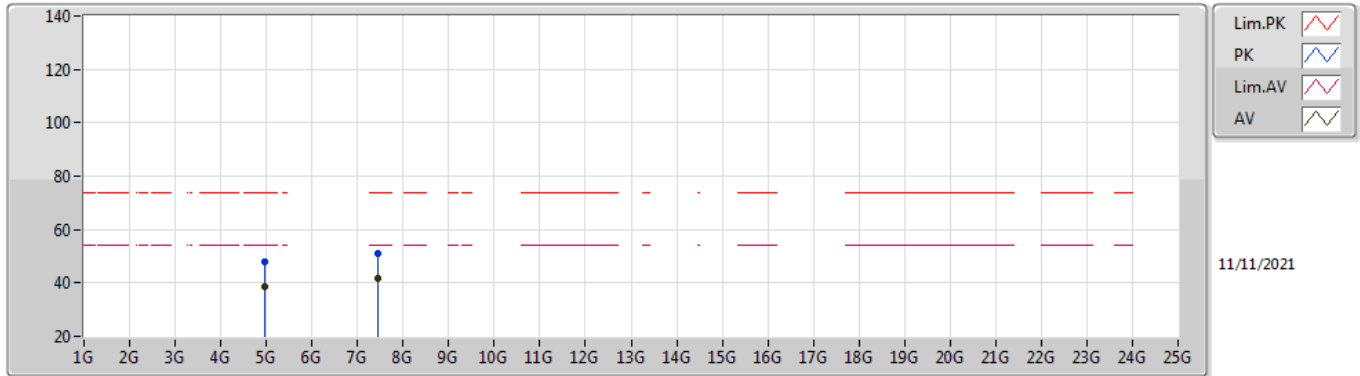
**2480MHz\_TX**



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	2.4802G	96.78	Inf	-Inf	32.11	3	Horizontal	264	1.49	-	64.67	27.50	4.61	-
AV	2.4835G	48.27	54.00	-5.73	32.11	3	Horizontal	264	1.49	-	16.16	27.50	4.61	-
PK	2.4794G	99.06	Inf	-Inf	32.11	3	Horizontal	264	1.49	-	66.95	27.50	4.61	-
PK	2.4835G	57.60	74.00	-16.40	32.11	3	Horizontal	264	1.49	-	25.49	27.50	4.61	-

**BT-LE(2Mbps)**

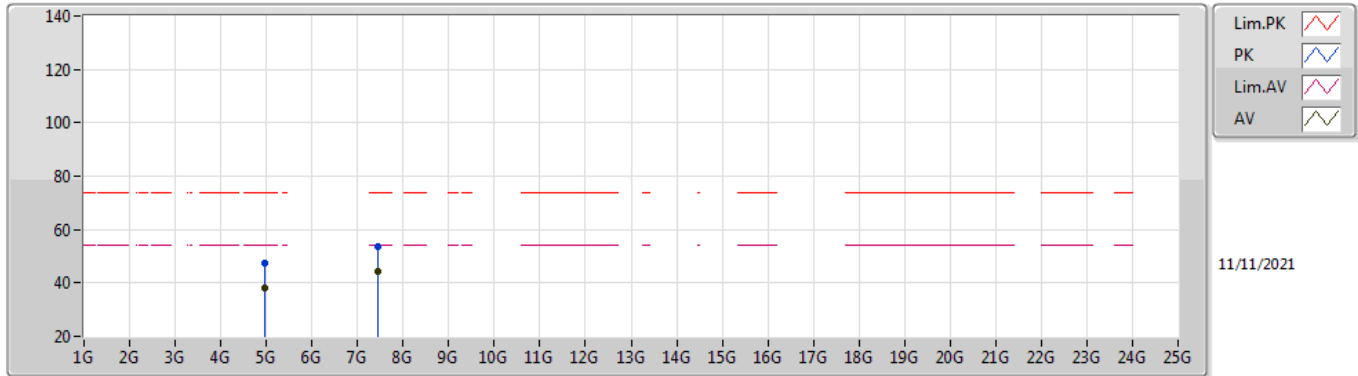
**2480MHz\_TX**



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	4.95996G	38.76	54.00	-15.24	3.35	3	Vertical	102	1.11	-	35.41	31.34	6.78	34.77
AV	7.44003G	41.57	54.00	-12.43	9.50	3	Vertical	11	1.50	-	32.07	36.28	8.06	34.84
PK	4.96086G	47.95	74.00	-26.05	3.35	3	Vertical	102	1.11	-	44.60	31.34	6.78	34.77
PK	7.43992G	51.21	74.00	-22.79	9.50	3	Vertical	11	1.50	-	41.71	36.28	8.06	34.84

### BT-LE(2Mbps)

### 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	4.96004G	37.99	54.00	-16.01	3.35	3	Horizontal	164	3.00	-	34.64	31.34	6.78	34.77
AV	7.44001G	44.31	54.00	-9.69	9.50	3	Horizontal	59	2.15	-	34.81	36.28	8.06	34.84
PK	4.95904G	47.43	74.00	-26.57	3.35	3	Horizontal	164	3.00	-	44.08	31.34	6.78	34.77
PK	7.44007G	53.71	74.00	-20.29	9.50	3	Horizontal	59	2.15	-	44.21	36.28	8.06	34.84





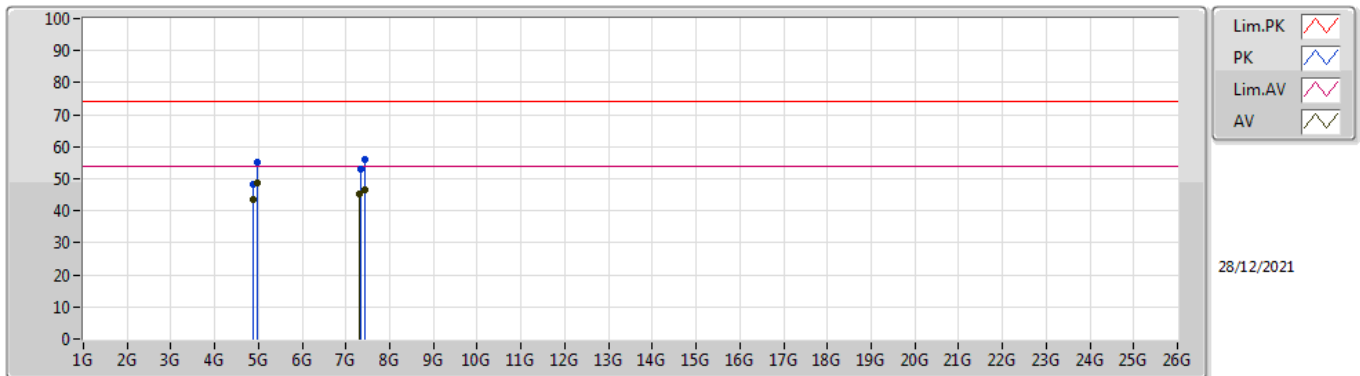
Summary

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

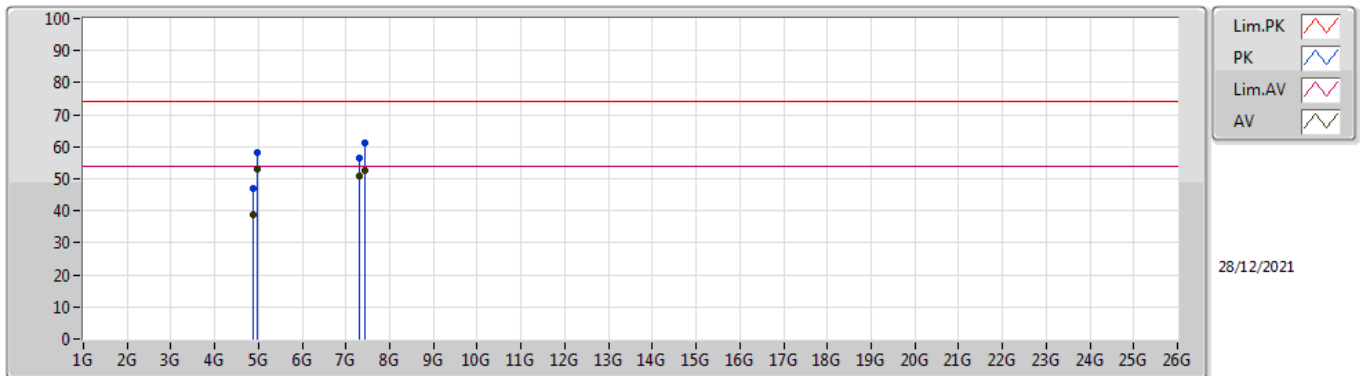
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
Mode 1	Pass	AV	4.87987G	43.32	54.00	-10.68	3	Vertical	215	2.64	-
Mode 1	Pass	AV	4.96021G	48.58	54.00	-5.42	3	Vertical	215	2.89	-
Mode 1	Pass	AV	7.31973G	45.29	54.00	-8.71	3	Vertical	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