

# FCC Radio Test Report

**FCC ID** : 2AAAS-CM09  
**Equipment** : Vivint Doorbell Camera Pro  
**Brand Name** : Vivint  
**Model Name** : CM09  
**Applicant** : Vivint, Inc.  
4931 N. 300 W., Provo, UT 84604 USA  
**Manufacturer** : Chicony Electronics Co.,Ltd.  
No.69, Sec. 2, Guangfu Rd., Sanchong  
Dist. New Taipei City 241 Taiwan  
**Standard** : 47 CFR FCC Part 15.247

The product was received on Dec. 08, 2021, and testing was started from Dec. 25, 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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## History of this test report

Report No.	Version	Description	Issued Date
FR1D0217AL	01	Initial issue of report	Jan. 25, 2022



### 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: Ben Tseng

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

Note:

- ♦ Bluetooth LE uses a GFSK (1Mbps) modulation.
- ♦ BWch is the nominal channel bandwidth.

### 1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector
0	Amphenol	CY5765-15-001-C	PIFA	I-PEX
1	Amphenol	CY5765-15-002-C	PIFA	I-PEX

Ant.	Port	Gain (dBi)		
		2.4G	5G	BT
0	0	2.66	4.12	2.66
1	1	0.05	4.41	-

Note 1: The EUT has two antennas.

#### For 2.4GHz function:

For IEEE 802.11 b/g/n mode (2TX/2RX)

Ant. 0 (port 0) and Ant. 1(port 1) could transmit/receive simultaneously.

#### For BT function:

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

Ant. 0 (port 0) could transmit/receive.

#### For 5GHz function:

For IEEE 802.11 a/n/ac mode (2TX/2RX)

Ant. 0 (port 0) and Ant. 1(port 1) could transmit/receive simultaneously.



1.1.3 EUT Information

Operational Condition	
EUT Power Type	From Transformer
EUT Function	<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)	0.643	1.92	391.25u	3k

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

## 1.2 Testing Applied Standards

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

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

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

- ◆ KDB 558074 D01 v05r02
- ◆ KDB 414788 D01 v01r01

## 1.3 Testing Location Information

Test Lab. : Sporton International Inc. Hsinhua Laboratory				
<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	Edward Wang	21.5~22.0°C / 50~54%	30/Dec/2021
RF Conducted	TH06-HY	Alan Chien	20.1~26.9°C / 50~60%	29/Dec/2021~03/Jan/2022
Radiated	03CH03-HY	Edward Wang	20.1~23.4°C / 50~60%	25/Dec/2021~30/Dec/2021
<input 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.				

## 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>	DOS v6.1
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<b>Mode</b>	<b>Power Setting</b>
BT-LE(1Mbps)	-
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	Transformer 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	Transformer 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		

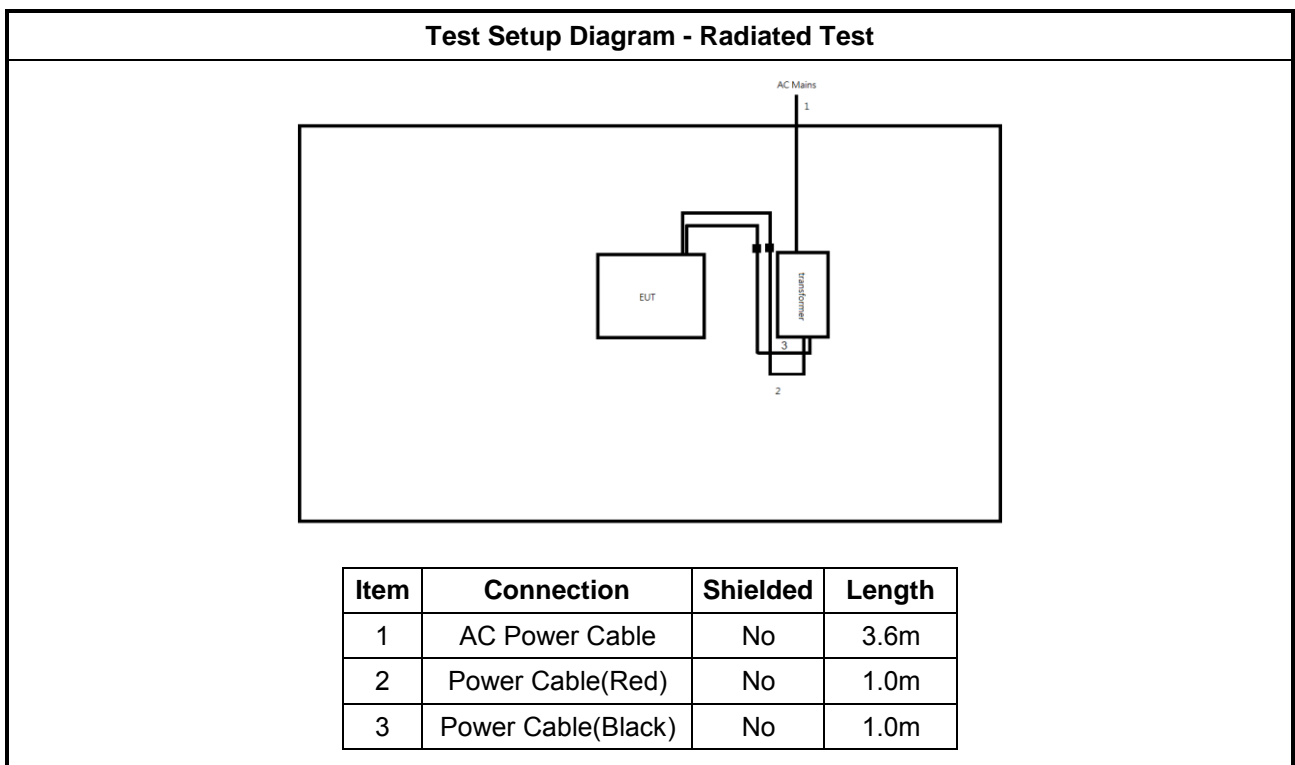
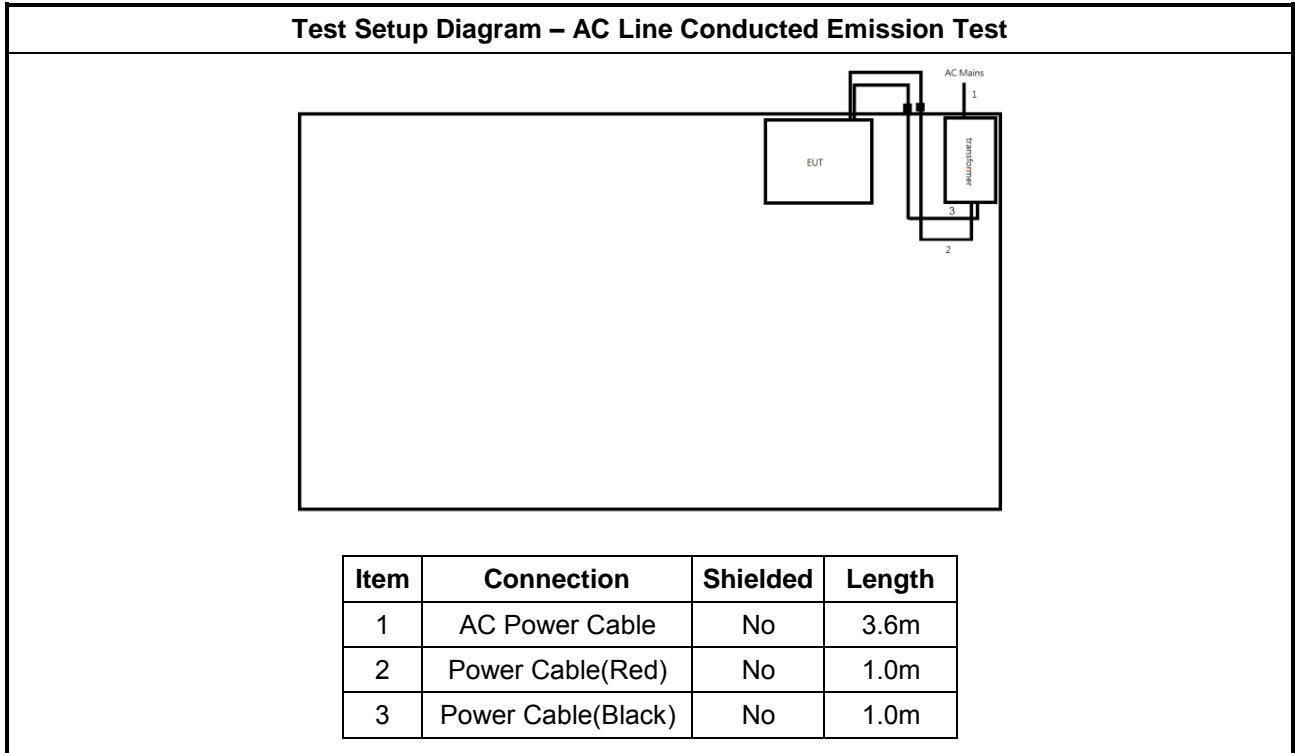
## 2.3 Support Equipment

Support Equipment – AC Conduction					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Transformer	DONGGUAN	YJH-BYQ482405-F	-	Provided by Customer
2	Power Cable(Red)	-	-	-	-
3	Power Cable(Black)	-	-	-	-

Support Equipment – Conducted					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Notebook	DELL	E5410	-	-
2	Adapter for NB	DELL	HA65NM130	-	-

Support Equipment – Radiated					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Transformer	DONGGUAN	YJH-BYQ482405-F	-	Provided by Customer
2	Power Cable(Red)	-	-	-	-
3	Power Cable(Black)	-	-	-	-

## 2.4 Test Setup Diagram





### 3 Transmitter Test Result

#### 3.1 AC Power-line Conducted Emissions

##### 3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

Note 1: \* Decreases with the logarithm of the frequency.

##### 3.1.2 Measuring Instruments

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

##### 3.1.3 Test Procedures

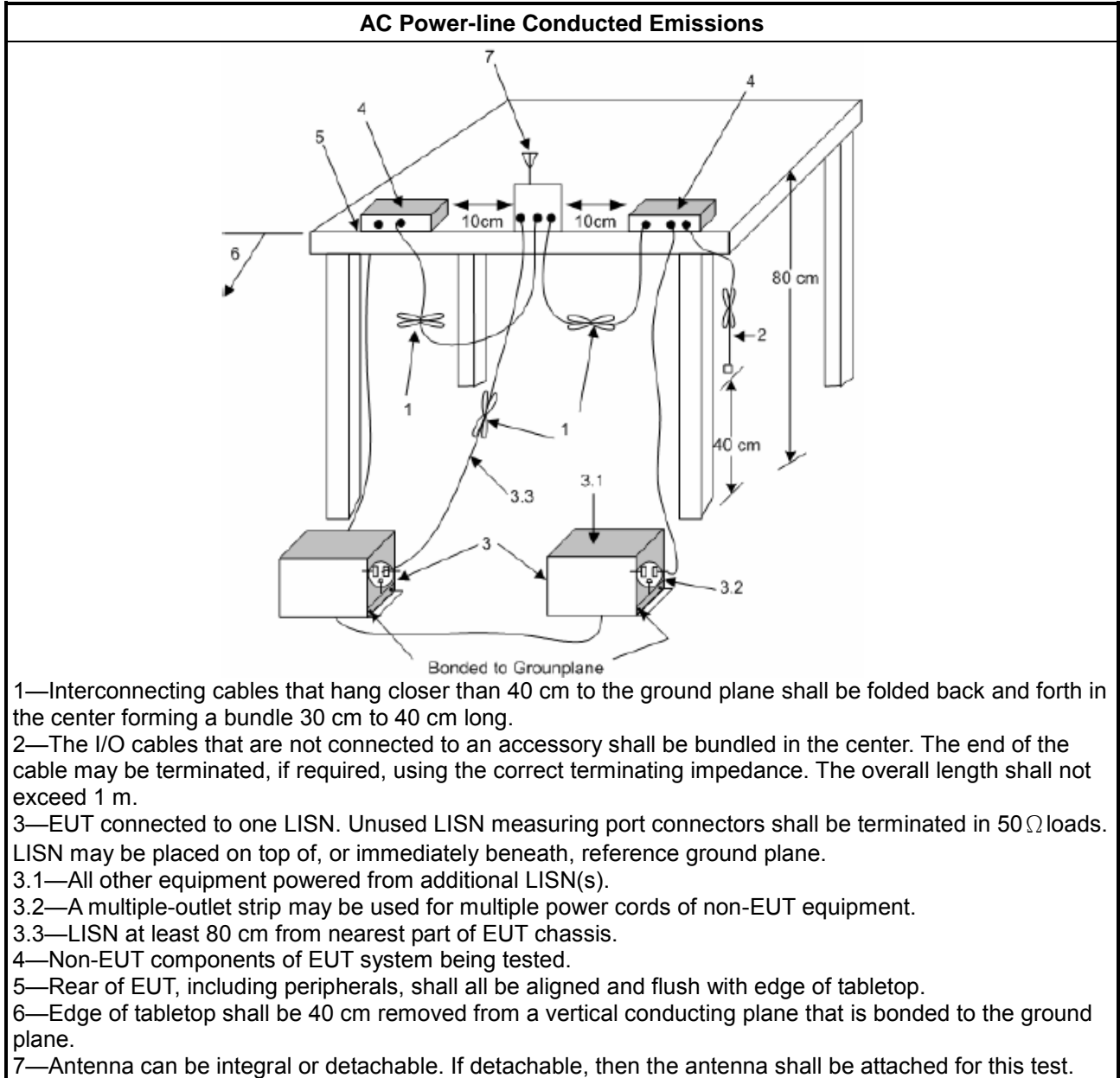
Test Method
▪ Refer as ANSI C63.10-2013, clause 6.2 foray power-line conducted emissions.

##### 3.1.4 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Raw(Read Level) + LISN(LISN Factor) + CL(Cable Loss) + AT(Attenuator).

### 3.1.5 Test Setup



### 3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

### 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>

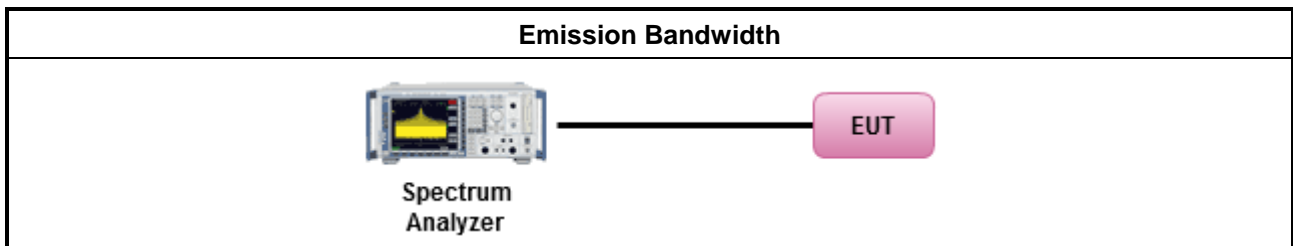
#### 3.2.2 Measuring Instruments

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.	

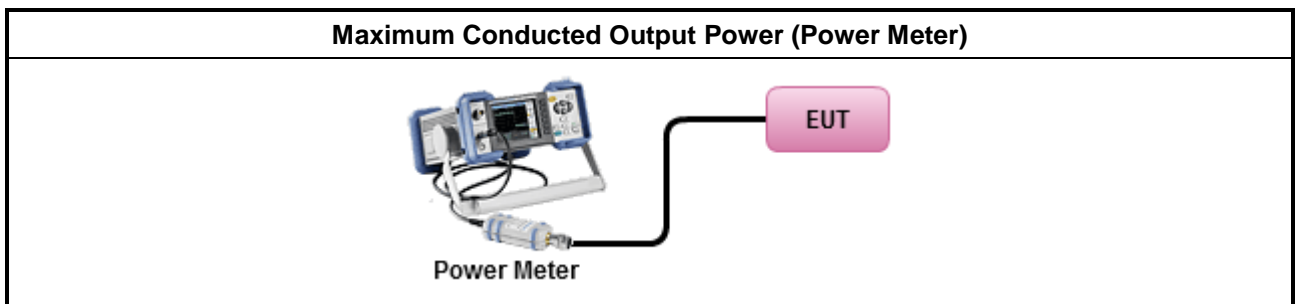
#### 3.3.2 Measuring Instruments

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>

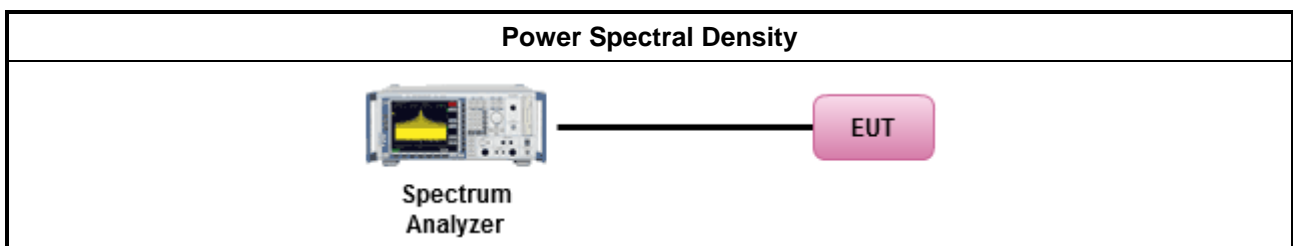
#### 3.4.2 Measuring Instruments

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.

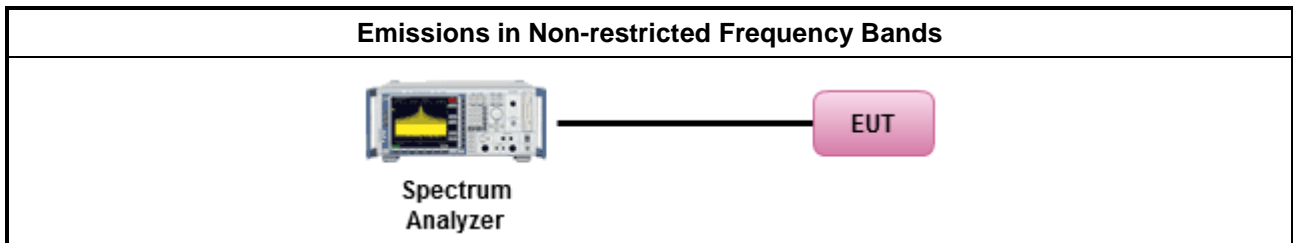
#### 3.5.2 Measuring Instruments

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

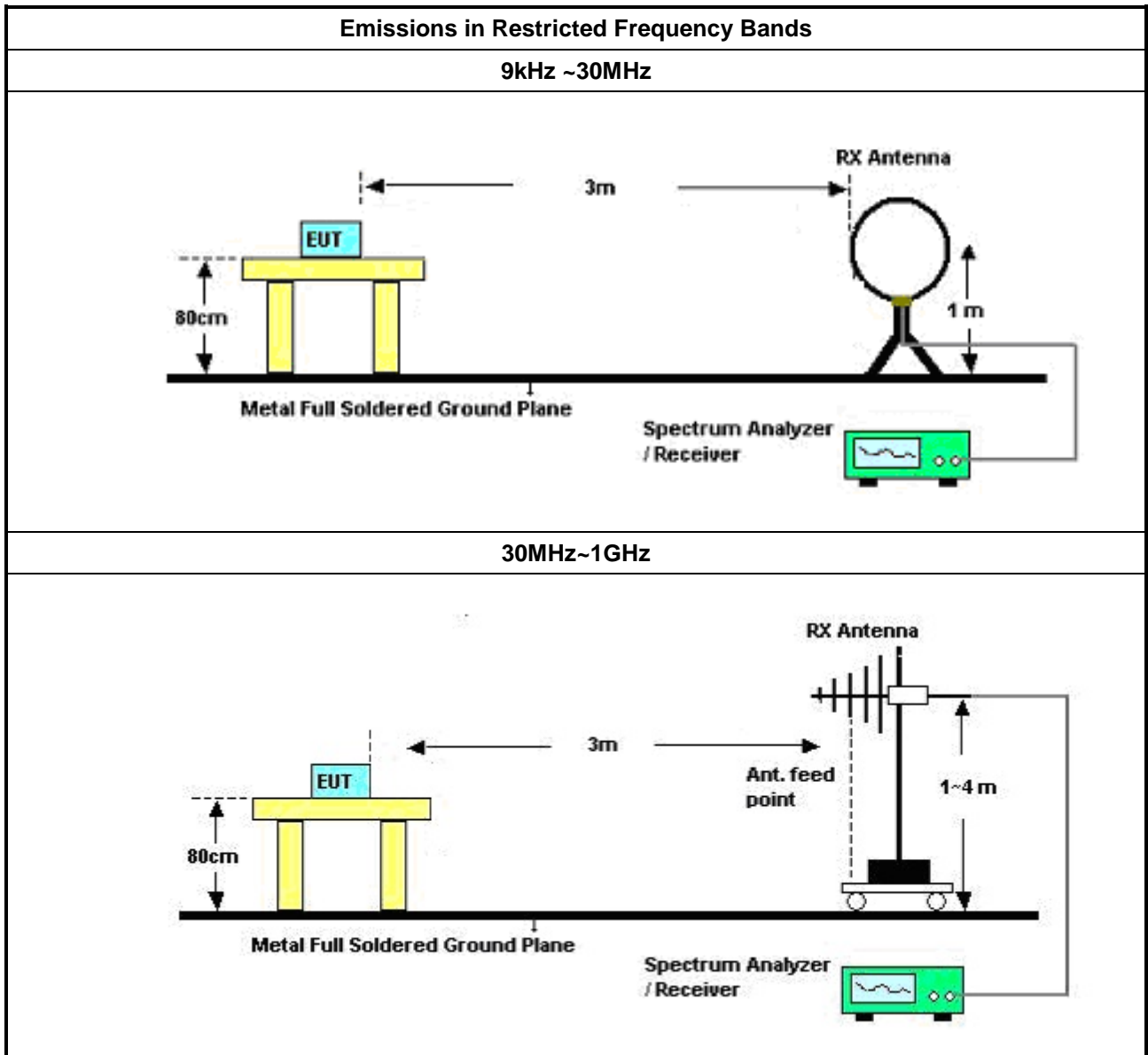
Test Method	
	<ul style="list-style-type: none"> <li>▪ The average emission levels shall be measured in [duty cycle <math>\geq</math> 98 or duty factor].</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency 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>

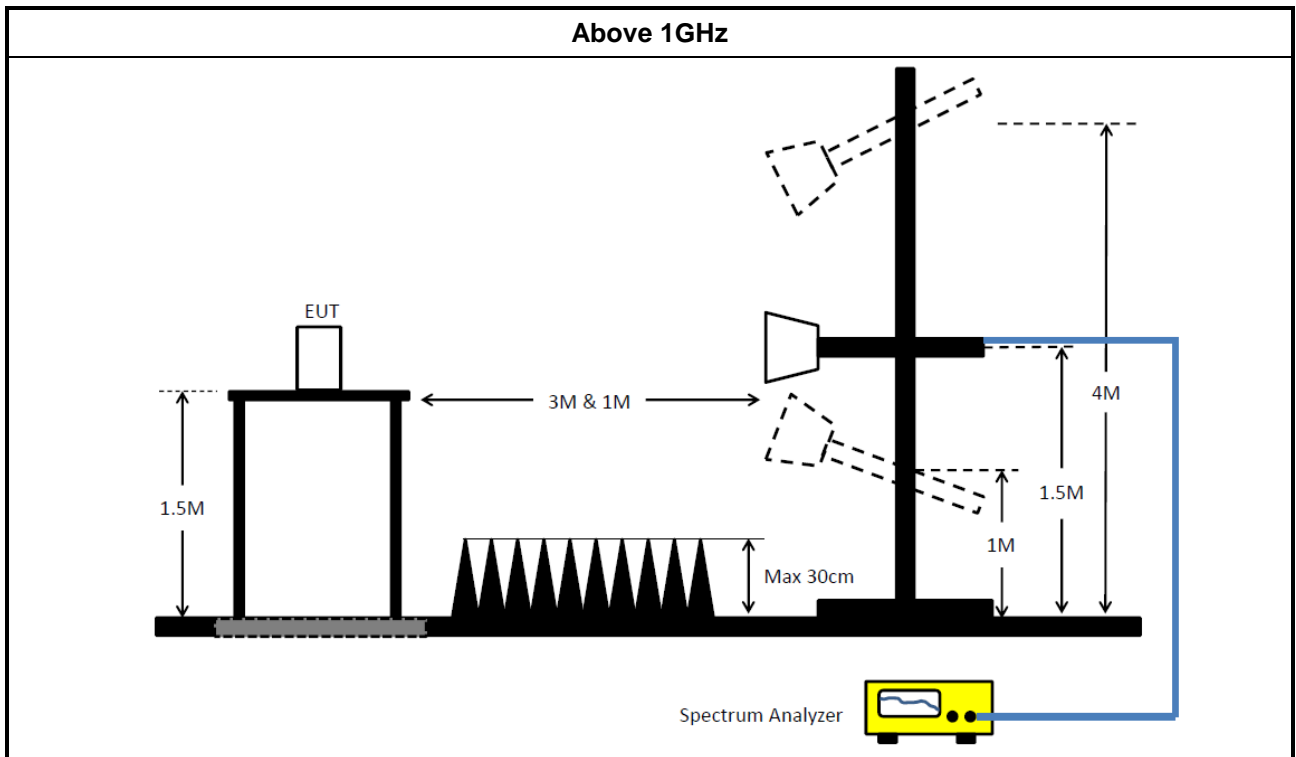
### 3.6.4 Measurement Results Calculation

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	101274	9kHz ~ 30MHz	13/May/2021	12/May/2022
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	26/Oct/2021	25/Oct/2022
SENSE-EMI	Sporton	V5.10.7.13	N/A	N/A	N/A	N/A

### Instrument for Conducted Test

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Signal Analyzer	R&S	FSV 40	101029	10Hz~40GHz	20/Oct/2021	19/Oct/2022
SMB100A Signal Generator	R&S	SMB100A03	181147	100kHz~40GHz	21/Oct/2021	20/Oct/2022
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
SENSE-15247 _DTS	Sporton	V5.10.7.13	N/A	N/A	N/A	N/A



Instrument for Radiated Test

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30MHz~1GHz 3m	03/Aug/2021	02/Aug/2022
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	1GHz~18GHz 3m	03/Aug/2021	02/Aug/2022
Signal Analyzer	R&S	FSV40	101500	10Hz~40GHz	12/Oct/2021	11/Oct/2022
Amplifier	HP	8447D	2944A08033	10kHz~1.3GHz	13/Apr/2021	12/Apr/2022
Microwave Preampfier	Agilent	8449B	3008A02326	1GHz~26.5GHz	15/Jul/2021	14/Jul/2022
Bilog Antenna & 6dB Attenuator	SCHAFFNER / EMC1	CBL6112B / N-6-05	22237 / AT-N-0603	30MHz~1GHz	17/Oct/2021	16/Oct/2022
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	02267	1GHz~18GHz	14/Sep/2021	13/Sep/2022
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz~30MHz	16/Jun/2021	15/Jun/2022
RF Cable-R03m	Jye Bao	RG142	MY37335/4+CB021-1+CB021-2	30MHz~1GHz	17/Mar/2021	16/Mar/2022
RF CABLE 5+6m	HUBER+SUHNER	SUOFLEX 104	SN MY38596/4+SN 804300/4	1GHz~40GHz	28/Jul/2021	27/Jul/2022
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170221	15GHz~40GHz	11/Mar/2021	10/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
SENSE 15247_FS	Sporton	v5.10.7.13	N/A	N/A	N/A	N/A





**Summary**

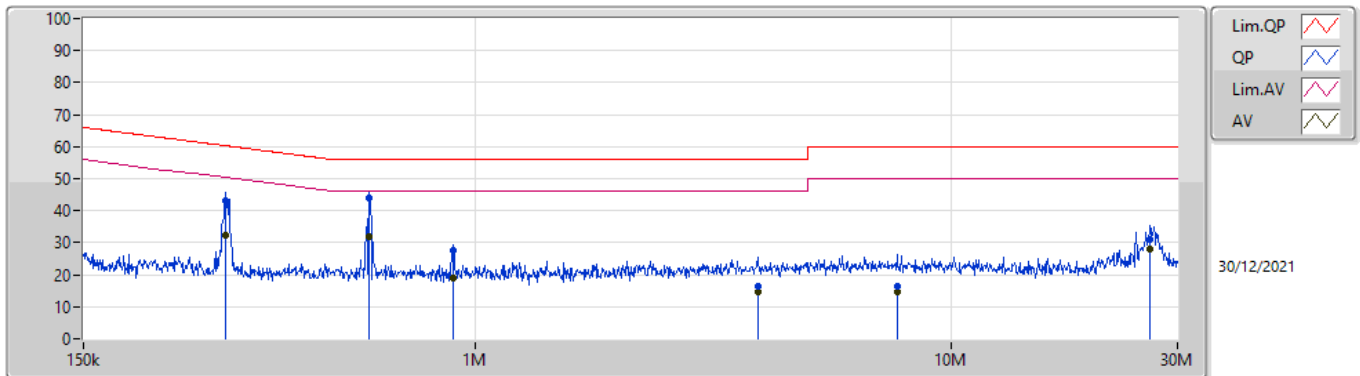
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	599.363k	43.84	56.00	-12.16	Line



Mode Configure

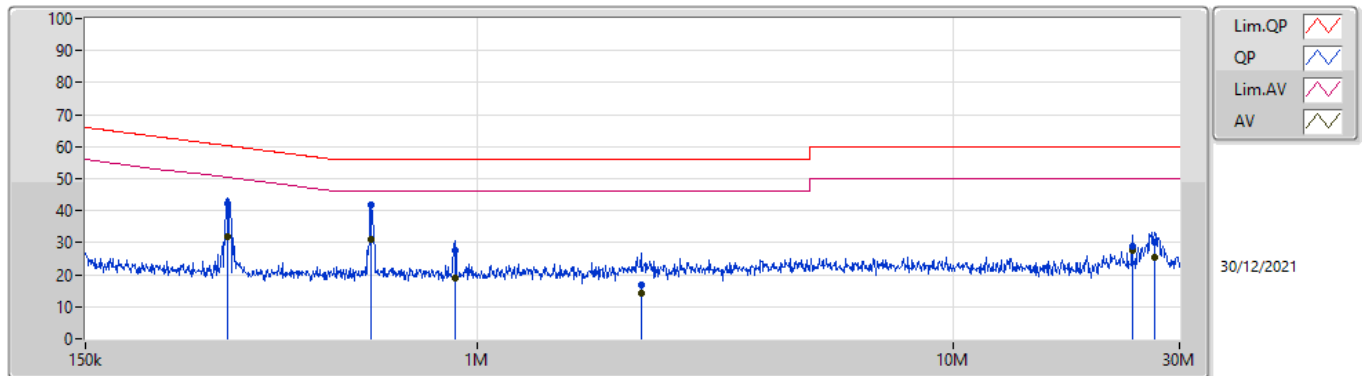
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition	Comments
Mode 1	Pass	QP	299.243k	43.02	60.26	-17.24	Line	-
Mode 1	Pass	AV	299.243k	32.27	50.26	-17.99	Line	-
Mode 1	Pass	QP	599.363k	43.84	56.00	-12.16	Line	-
Mode 1	Pass	AV	599.363k	31.94	46.00	-14.06	Line	-
Mode 1	Pass	QP	897.004k	27.64	56.00	-28.36	Line	-
Mode 1	Pass	AV	897.004k	19.09	46.00	-26.91	Line	-
Mode 1	Pass	QP	3.929M	16.33	56.00	-39.67	Line	-
Mode 1	Pass	AV	3.929M	14.53	46.00	-31.47	Line	-
Mode 1	Pass	QP	7.714M	16.20	60.00	-43.80	Line	-
Mode 1	Pass	AV	7.714M	14.61	50.00	-35.39	Line	-
Mode 1	Pass	QP	26.273M	31.23	60.00	-28.77	Line	-
Mode 1	Pass	AV	26.273M	27.98	50.00	-22.02	Line	-
Mode 1	Pass	QP	298.051k	42.23	60.30	-18.07	Neutral	-
Mode 1	Pass	AV	298.051k	31.70	50.30	-18.60	Neutral	-
Mode 1	Pass	QP	596.975k	41.86	56.00	-14.14	Neutral	-
Mode 1	Pass	AV	596.975k	30.91	46.00	-15.09	Neutral	-
Mode 1	Pass	QP	897.004k	27.73	56.00	-28.27	Neutral	-
Mode 1	Pass	AV	897.004k	19.01	46.00	-26.99	Neutral	-
Mode 1	Pass	QP	2.211M	16.79	56.00	-39.21	Neutral	-
Mode 1	Pass	AV	2.211M	14.12	46.00	-31.88	Neutral	-
Mode 1	Pass	QP	23.873M	29.09	60.00	-30.91	Neutral	-
Mode 1	Pass	AV	23.873M	27.63	50.00	-22.37	Neutral	-
Mode 1	Pass	QP	26.59M	30.02	60.00	-29.98	Neutral	-
Mode 1	Pass	AV	26.59M	25.64	50.00	-24.36	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	299.243k	43.02	60.26	-17.24	19.64	Line	-	23.38	9.68	0.05	9.91
AV	299.243k	32.27	50.26	-17.99	19.64	Line	-	12.63	9.68	0.05	9.91
QP	599.363k	43.84	56.00	-12.16	19.66	Line	-	24.18	9.68	0.07	9.91
AV	599.363k	31.94	46.00	-14.06	19.66	Line	-	12.28	9.68	0.07	9.91
QP	897.004k	27.64	56.00	-28.36	19.68	Line	-	7.96	9.68	0.08	9.92
AV	897.004k	19.09	46.00	-26.91	19.68	Line	-	-0.59	9.68	0.08	9.92
QP	3.929M	16.33	56.00	-39.67	19.76	Line	-	-3.43	9.70	0.14	9.92
AV	3.929M	14.53	46.00	-31.47	19.76	Line	-	-5.23	9.70	0.14	9.92
QP	7.714M	16.20	60.00	-43.80	19.83	Line	-	-3.63	9.72	0.18	9.93
AV	7.714M	14.61	50.00	-35.39	19.83	Line	-	-5.22	9.72	0.18	9.93
QP	26.273M	31.23	60.00	-28.77	19.87	Line	-	11.36	9.61	0.33	9.93
AV	26.273M	27.98	50.00	-22.02	19.87	Line	-	8.11	9.61	0.33	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	298.051k	42.23	60.30	-18.07	19.63	Neutral	-	22.60	9.67	0.05	9.91
AV	298.051k	31.70	50.30	-18.60	19.63	Neutral	-	12.07	9.67	0.05	9.91
QP	596.975k	41.86	56.00	-14.14	19.65	Neutral	-	22.21	9.67	0.07	9.91
AV	596.975k	30.91	46.00	-15.09	19.65	Neutral	-	11.26	9.67	0.07	9.91
QP	897.004k	27.73	56.00	-28.27	19.67	Neutral	-	8.06	9.67	0.08	9.92
AV	897.004k	19.01	46.00	-26.99	19.67	Neutral	-	-0.66	9.67	0.08	9.92
QP	2.211M	16.79	56.00	-39.21	19.71	Neutral	-	-2.92	9.68	0.11	9.92
AV	2.211M	14.12	46.00	-31.88	19.71	Neutral	-	-5.59	9.68	0.11	9.92
QP	23.873M	29.09	60.00	-30.91	19.98	Neutral	-	9.11	9.73	0.32	9.93
AV	23.873M	27.63	50.00	-22.37	19.98	Neutral	-	7.65	9.73	0.32	9.93
QP	26.59M	30.02	60.00	-29.98	19.99	Neutral	-	10.03	9.73	0.33	9.93
AV	26.59M	25.64	50.00	-24.36	19.99	Neutral	-	5.65	9.73	0.33	9.93



**Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
BT-LE(1Mbps)	713.75k	1.056M	1M06F1D	711.25k	1.052M

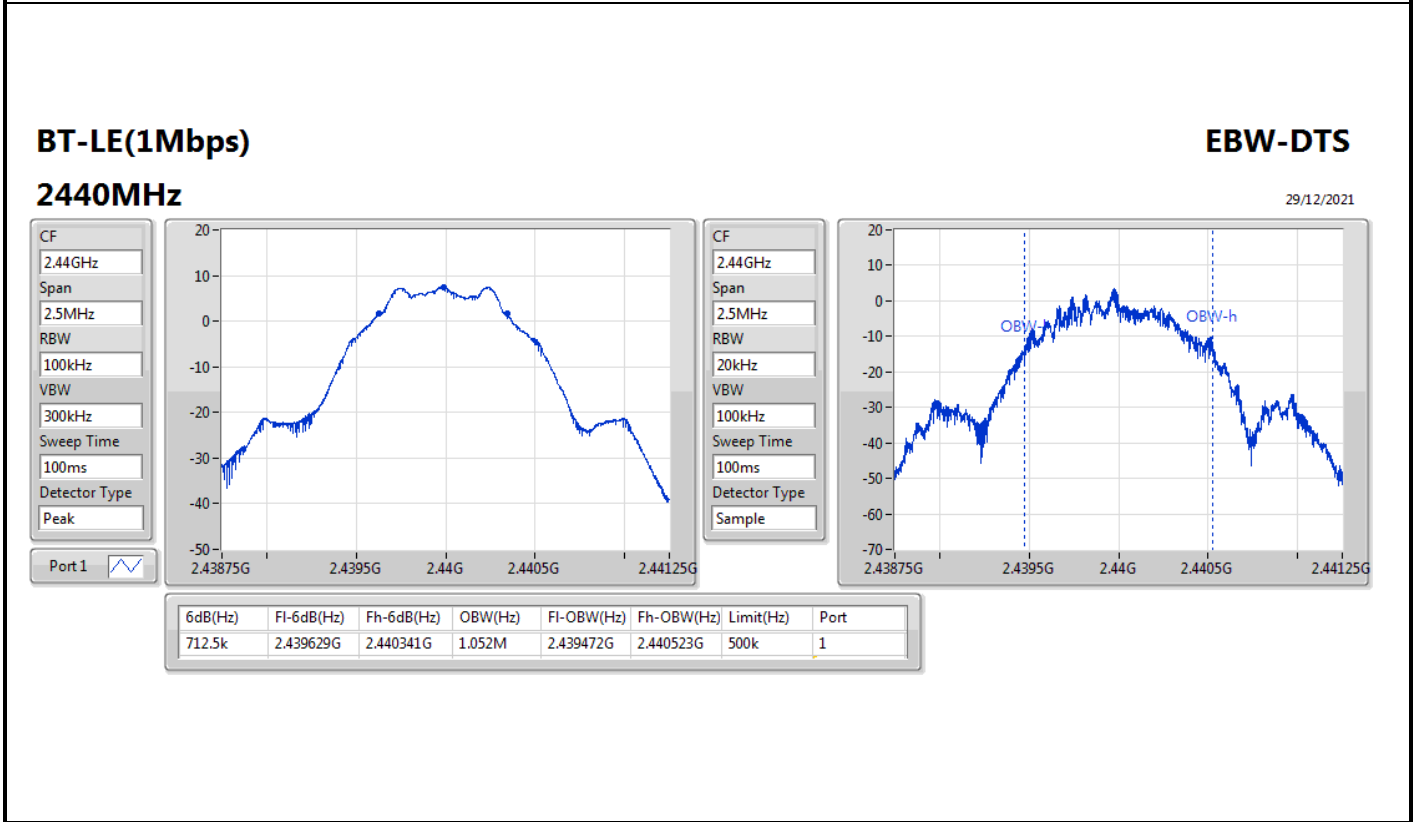
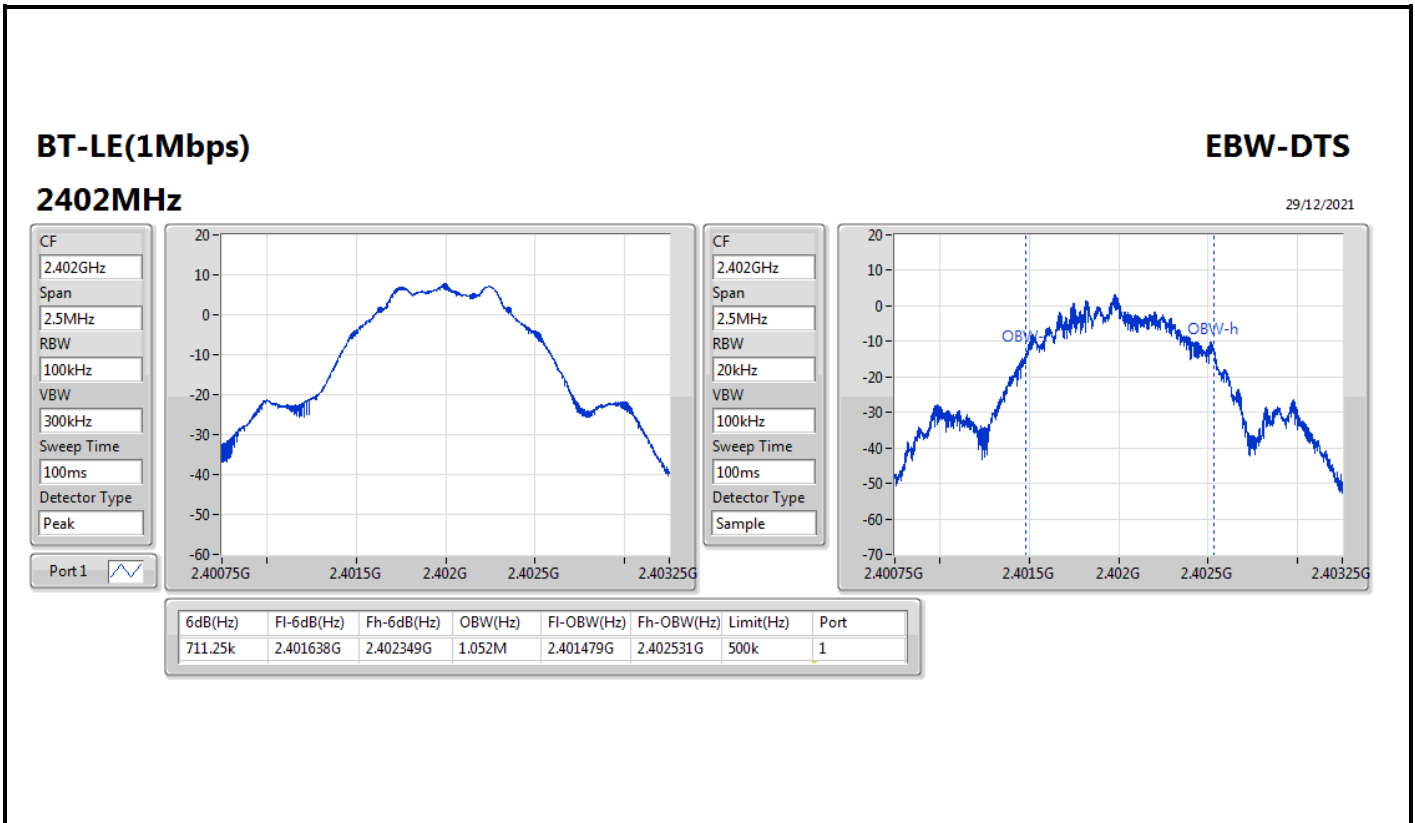
Max-N dB = Maximum 6dB down bandwidth; Max-OBW = Maximum 99% occupied bandwidth;  
Min-N dB = Minimum 6dB down bandwidth; Min-OBW = Minimum 99% occupied bandwidth



Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	711.25k	1.052M
2440MHz	Pass	500k	712.5k	1.052M
2480MHz	Pass	500k	713.75k	1.056M

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

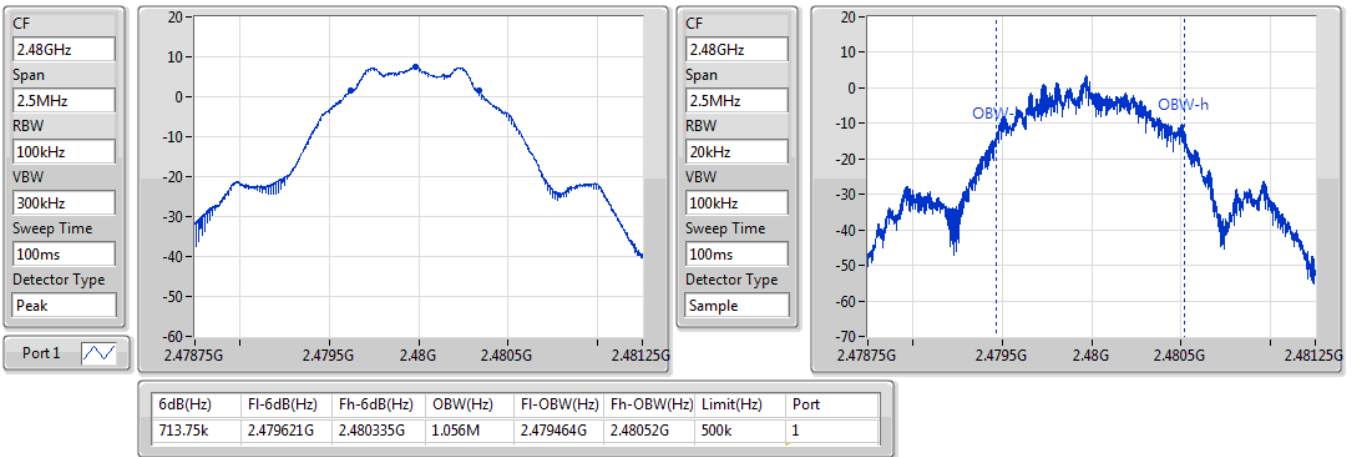


**BT-LE(1Mbps)**

**2480MHz**

**EBW-DTS**

29/12/2021







**Summary**

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	8.13	0.00650



**Result**

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.66	7.92	30.00
2440MHz	Pass	2.66	8.13	30.00
2480MHz	Pass	2.66	8.06	30.00

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



**Summary**

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-6.23

RBW = 3kHz;



Result

Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.66	-7.44	8.00
2440MHz	Pass	2.66	-6.23	8.00
2480MHz	Pass	2.66	-6.36	8.00

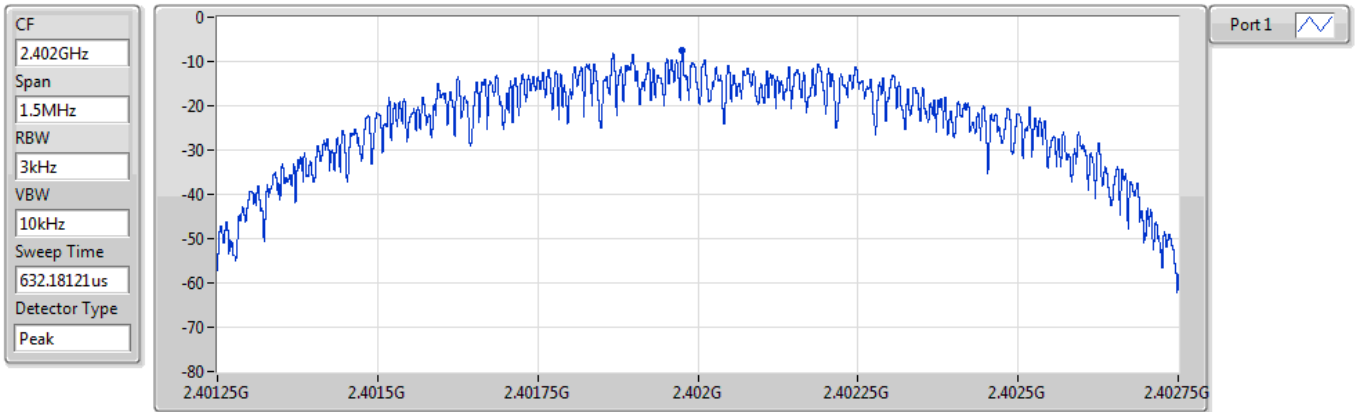
DG = Directional Gain; RBW = 3kHz;  
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;

**BT-LE(1Mbps)**

**PSD**

**2402MHz**

29/12/2021



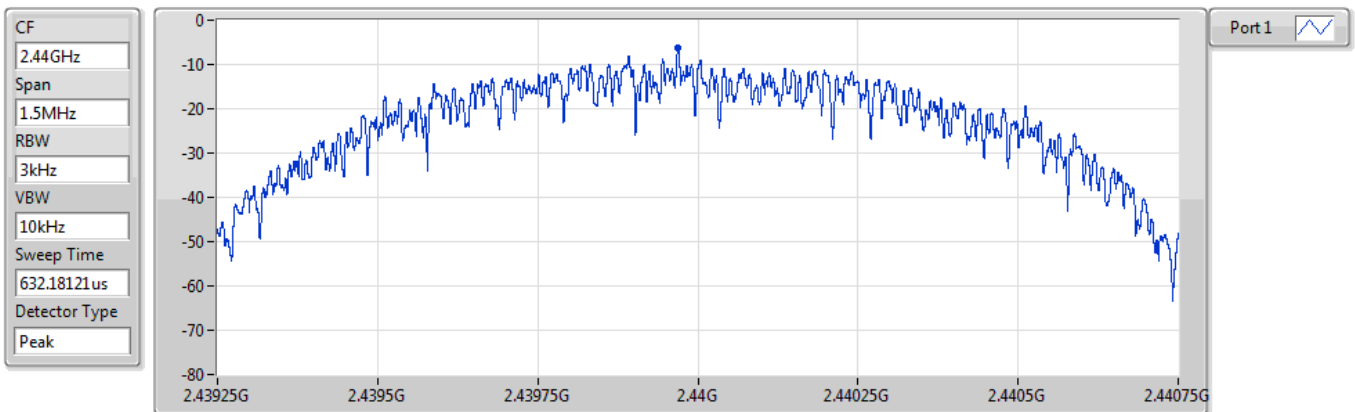
Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-7.44	-7.44	-7.44

**BT-LE(1Mbps)**

**PSD**

**2440MHz**

29/12/2021



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-6.23	-6.23	-6.23

**BT-LE(1Mbps)**

**PSD**

**2480MHz**

29/12/2021

CF  
2.48GHz

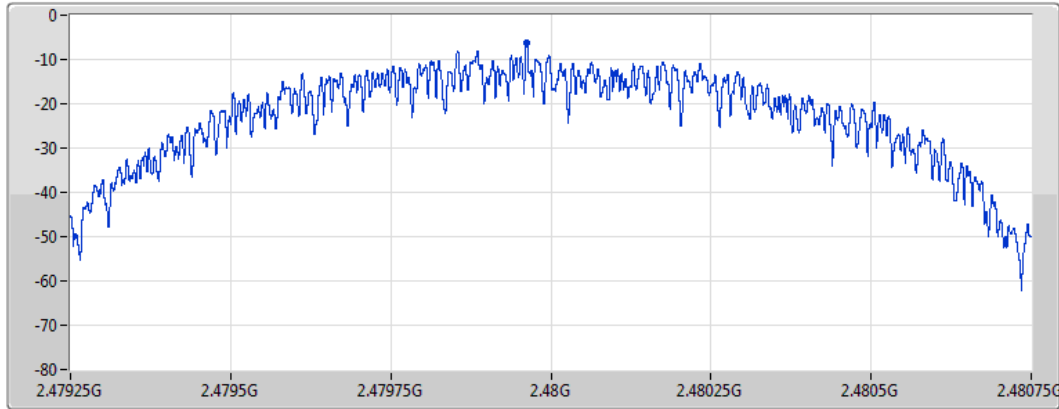
Span  
1.5MHz

RBW  
3kHz

VBW  
10kHz

Sweep Time  
632.18121us

Detector Type  
Peak



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-6.36	-6.36	-6.36



Summary

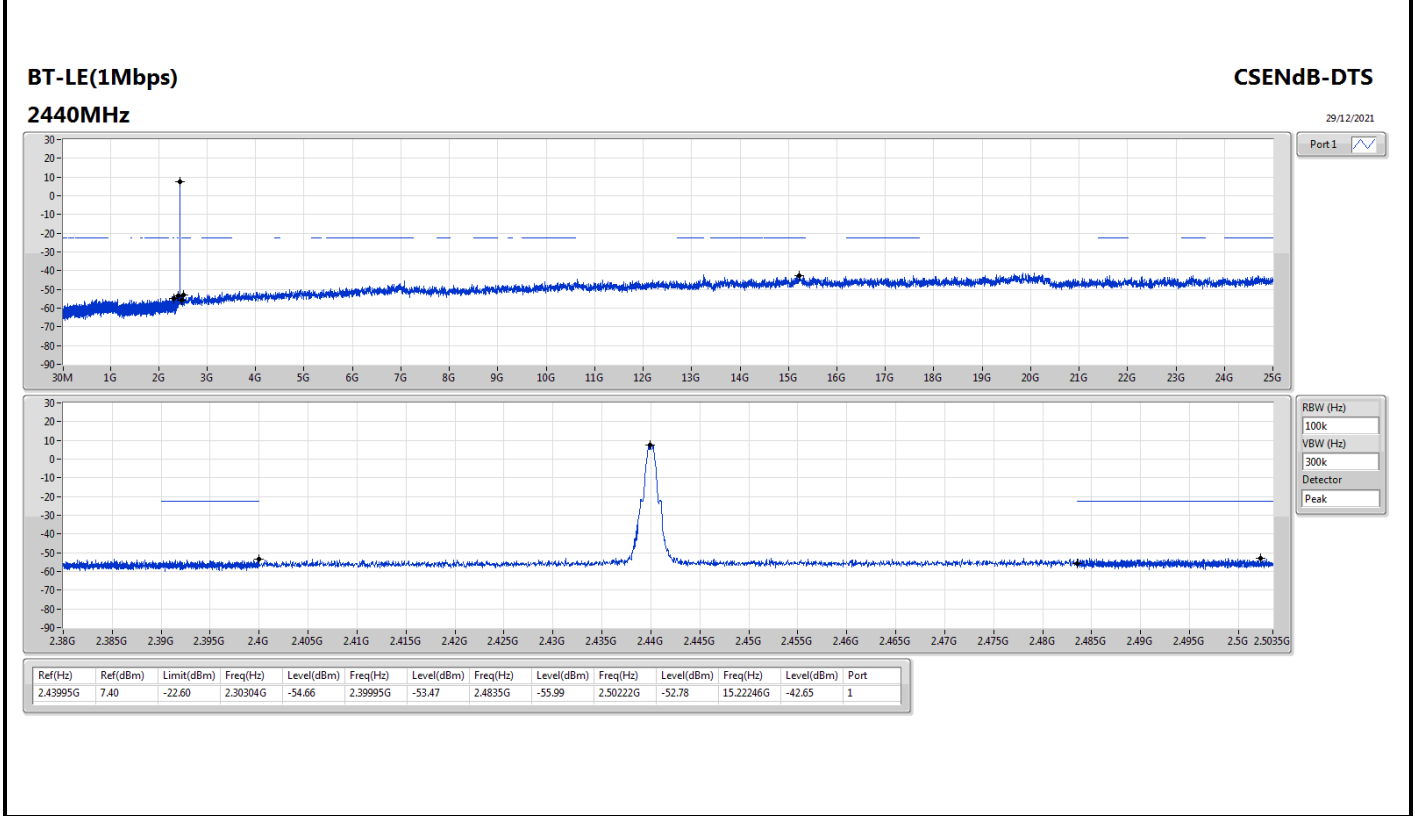
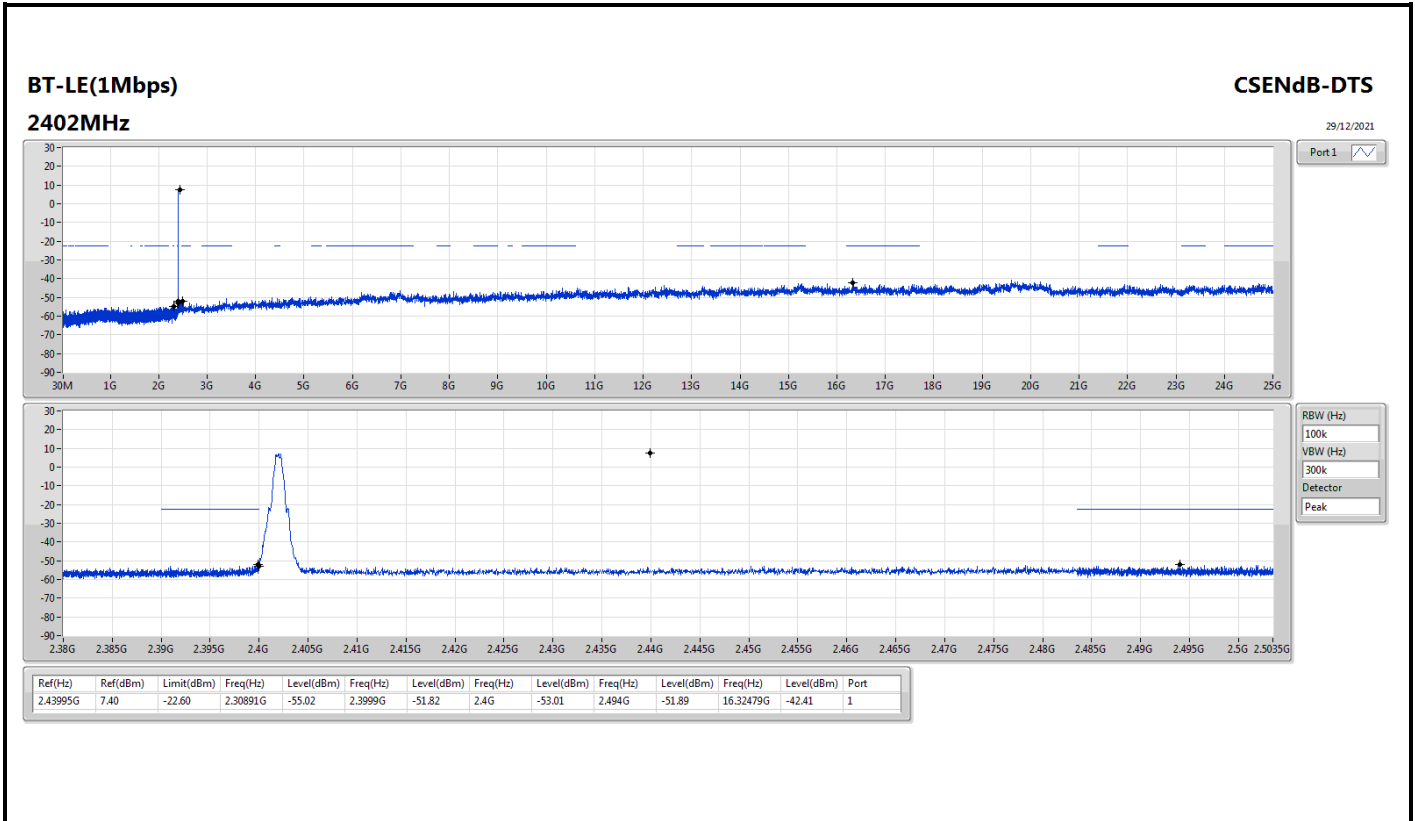
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	2.43995G	7.40	-22.60	707.68M	-54.95	2.39149G	-53.78	2.4835G	-54.33	2.50216G	-51.73	15.25058G	-42.58	1

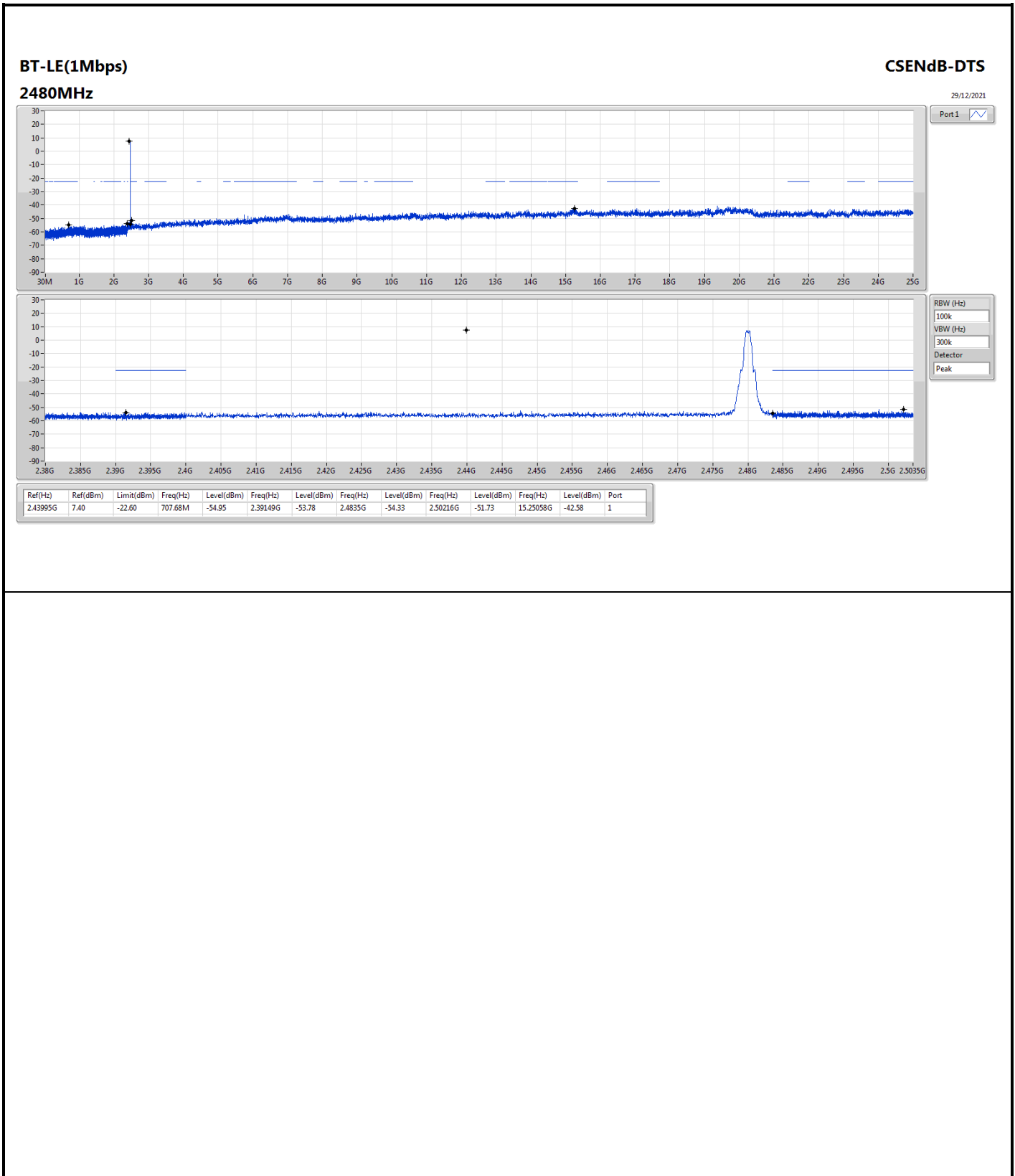


Result

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	2.43995G	7.40	-22.60	2.30891G	-55.02	2.3999G	-51.82	2.4G	-53.01	2.494G	-51.89	16.32479G	-42.41	1
2440MHz	Pass	2.43995G	7.40	-22.60	2.30304G	-54.66	2.39995G	-53.47	2.4835G	-55.99	2.50222G	-52.78	15.22246G	-42.65	1
2480MHz	Pass	2.43995G	7.40	-22.60	707.68M	-54.95	2.39149G	-53.78	2.4835G	-54.33	2.50216G	-51.73	15.25058G	-42.58	1









Summary

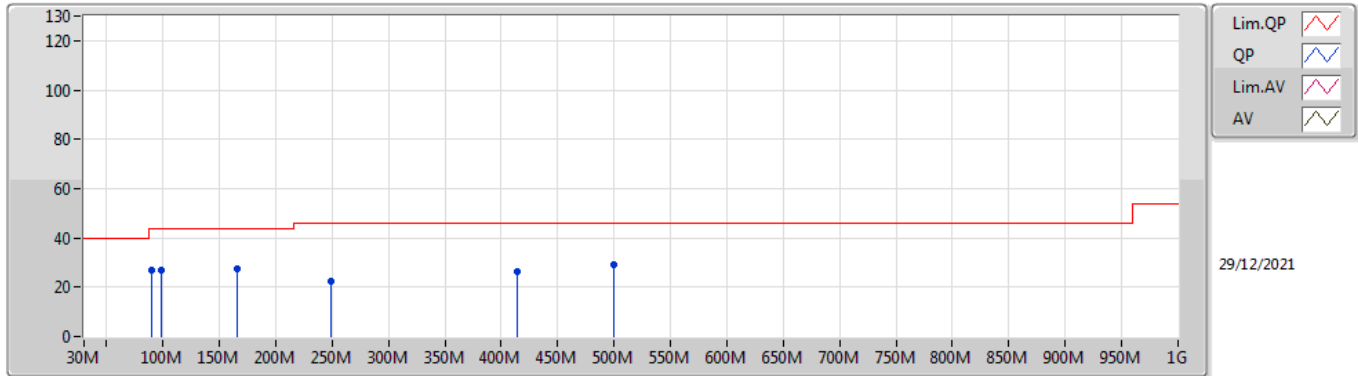
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	PK	577.08M	34.23	46.00	-11.77	3	Horizontal	0	1.00	-



Result

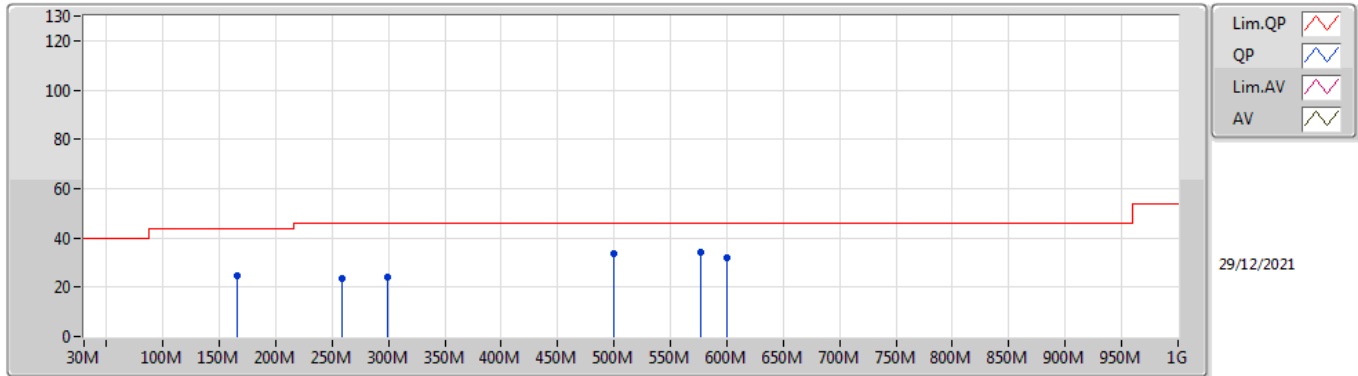
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-
2440MHz_Transformer	Pass	PK	90.14M	27.03	43.50	-16.47	3	Vertical	360	1.00	-
2440MHz_Transformer	Pass	PK	97.9M	26.79	43.50	-16.71	3	Vertical	360	1.00	-
2440MHz_Transformer	Pass	PK	165.8M	27.53	43.50	-15.97	3	Vertical	360	1.00	-
2440MHz_Transformer	Pass	PK	249.22M	22.53	46.00	-23.47	3	Vertical	360	1.00	-
2440MHz_Transformer	Pass	PK	414.12M	26.33	46.00	-19.67	3	Vertical	360	1.00	-
2440MHz_Transformer	Pass	PK	499.48M	29.39	46.00	-16.61	3	Vertical	360	1.00	-
2440MHz_Transformer	Pass	PK	165.8M	24.57	43.50	-18.93	3	Horizontal	0	1.00	-
2440MHz_Transformer	Pass	PK	258.92M	23.40	46.00	-22.60	3	Horizontal	0	1.00	-
2440MHz_Transformer	Pass	PK	299.66M	24.17	46.00	-21.83	3	Horizontal	0	1.00	-
2440MHz_Transformer	Pass	PK	499.48M	33.57	46.00	-12.43	3	Horizontal	0	1.00	-
2440MHz_Transformer	Pass	PK	577.08M	34.23	46.00	-11.77	3	Horizontal	0	1.00	-
2440MHz_Transformer	Pass	PK	600.36M	31.89	46.00	-14.11	3	Horizontal	0	1.00	-

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



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	90.14M	27.03	43.50	-16.47	-11.86	3	Vertical	360	1.00	-	38.89	14.03	1.58	27.47
PK	97.9M	26.79	43.50	-16.71	-10.14	3	Vertical	360	1.00	-	36.93	15.60	1.68	27.42
PK	165.8M	27.53	43.50	-15.97	-10.14	3	Vertical	360	1.00	-	37.67	14.88	2.16	27.18
PK	249.22M	22.53	46.00	-23.47	-6.62	3	Vertical	360	1.00	-	29.15	17.44	2.67	26.73
PK	414.12M	26.33	46.00	-19.67	-2.24	3	Vertical	360	1.00	-	28.57	21.65	3.51	27.40
PK	499.48M	29.39	46.00	-16.61	-1.13	3	Vertical	360	1.00	-	30.52	22.68	3.87	27.68

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



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	165.8M	24.57	43.50	-18.93	-10.14	3	Horizontal	0	1.00	-	34.71	14.88	2.16	27.18
PK	258.92M	23.40	46.00	-22.60	-5.45	3	Horizontal	0	1.00	-	28.85	18.57	2.71	26.73
PK	299.66M	24.17	46.00	-21.83	-5.58	3	Horizontal	0	1.00	-	29.75	18.29	2.92	26.79
PK	499.48M	33.57	46.00	-12.43	-1.13	3	Horizontal	0	1.00	-	34.70	22.68	3.87	27.68
PK	577.08M	34.23	46.00	-11.77	0.03	3	Horizontal	0	1.00	-	34.20	23.87	4.25	28.09
PK	600.36M	31.89	46.00	-14.11	0.11	3	Horizontal	0	1.00	-	31.78	23.76	4.39	28.04



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	2.4898G	47.42	54.00	-6.58	3	Vertical	177	1.55	-



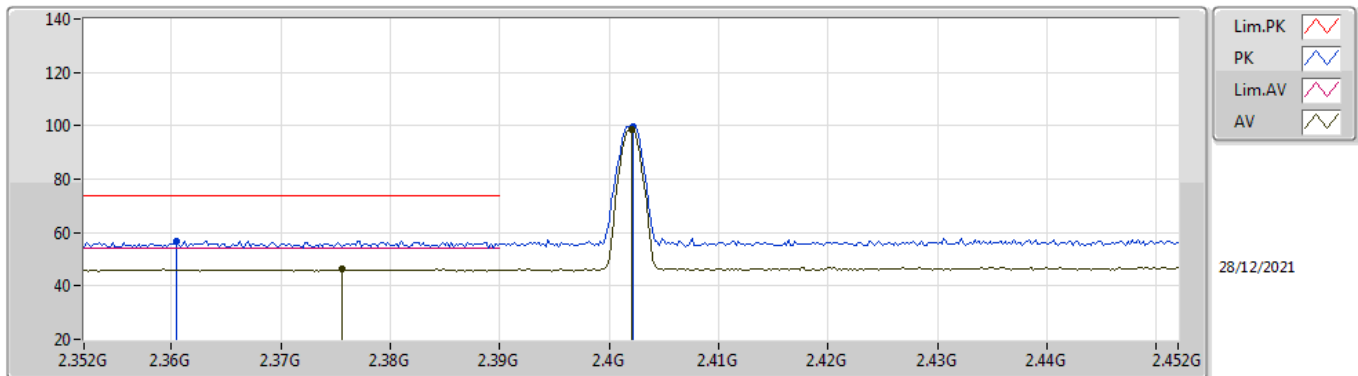
Result

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	2.3756G	46.57	54.00	-7.43	3	Vertical	121	2.44	-
2402MHz	Pass	AV	2.402G	98.59	Inf	-Inf	3	Vertical	121	2.44	-
2402MHz	Pass	PK	2.3604G	56.80	74.00	-17.20	3	Vertical	121	2.44	-
2402MHz	Pass	PK	2.4022G	99.51	Inf	-Inf	3	Vertical	121	2.44	-
2402MHz	Pass	AV	2.3832G	46.81	54.00	-7.19	3	Horizontal	48	1.41	-
2402MHz	Pass	AV	2.402G	104.23	Inf	-Inf	3	Horizontal	48	1.41	-
2402MHz	Pass	PK	2.3552G	56.94	74.00	-17.06	3	Horizontal	48	1.41	-
2402MHz	Pass	PK	2.4022G	105.17	Inf	-Inf	3	Horizontal	48	1.41	-
2402MHz	Pass	AV	4.80375G	32.00	54.00	-22.00	3	Vertical	258	1.50	-
2402MHz	Pass	PK	4.80301G	43.05	74.00	-30.95	3	Vertical	258	1.50	-
2402MHz	Pass	AV	4.80108G	31.86	54.00	-22.14	3	Horizontal	155	1.78	-
2402MHz	Pass	PK	4.80284G	43.25	74.00	-30.75	3	Horizontal	155	1.78	-
2440MHz	Pass	AV	2.3896G	46.43	54.00	-7.57	3	Vertical	183	1.44	-
2440MHz	Pass	AV	2.44G	98.03	Inf	-Inf	3	Vertical	183	1.44	-
2440MHz	Pass	AV	2.4976G	47.23	54.00	-6.77	3	Vertical	183	1.44	-
2440MHz	Pass	PK	2.3412G	56.89	74.00	-17.11	3	Vertical	183	1.44	-
2440MHz	Pass	PK	2.4404G	99.00	Inf	-Inf	3	Vertical	183	1.44	-
2440MHz	Pass	PK	2.4956G	57.59	74.00	-16.41	3	Vertical	183	1.44	-
2440MHz	Pass	AV	2.3688G	46.34	54.00	-7.66	3	Horizontal	37	1.86	-
2440MHz	Pass	AV	2.44G	103.86	Inf	-Inf	3	Horizontal	37	1.86	-
2440MHz	Pass	AV	2.488G	47.19	54.00	-6.81	3	Horizontal	37	1.86	-
2440MHz	Pass	PK	2.356G	57.56	74.00	-16.44	3	Horizontal	37	1.86	-
2440MHz	Pass	PK	2.4404G	104.87	Inf	-Inf	3	Horizontal	37	1.86	-
2440MHz	Pass	PK	2.498G	57.87	74.00	-16.13	3	Horizontal	37	1.86	-
2440MHz	Pass	AV	4.8797G	32.03	54.00	-21.97	3	Vertical	43	1.66	-
2440MHz	Pass	PK	4.88071G	42.97	74.00	-31.03	3	Vertical	43	1.66	-
2440MHz	Pass	AV	4.88206G	32.04	54.00	-21.96	3	Horizontal	311	2.06	-
2440MHz	Pass	PK	4.87754G	43.48	74.00	-30.52	3	Horizontal	311	2.06	-
2480MHz	Pass	AV	2.48G	98.88	Inf	-Inf	3	Vertical	177	1.55	-
2480MHz	Pass	AV	2.4898G	47.42	54.00	-6.58	3	Vertical	177	1.55	-
2480MHz	Pass	PK	2.4798G	99.85	Inf	-Inf	3	Vertical	177	1.55	-
2480MHz	Pass	PK	2.4846G	57.81	74.00	-16.19	3	Vertical	177	1.55	-
2480MHz	Pass	AV	2.48G	104.13	Inf	-Inf	3	Horizontal	38	1.55	-
2480MHz	Pass	AV	2.49G	47.42	54.00	-6.58	3	Horizontal	38	1.55	-
2480MHz	Pass	PK	2.4798G	105.07	Inf	-Inf	3	Horizontal	38	1.55	-
2480MHz	Pass	PK	2.4874G	58.34	74.00	-15.66	3	Horizontal	38	1.55	-
2480MHz	Pass	AV	4.96069G	32.58	54.00	-21.42	3	Vertical	171	1.41	-
2480MHz	Pass	PK	4.9609G	43.83	74.00	-30.17	3	Vertical	171	1.41	-
2480MHz	Pass	AV	4.96005G	32.67	54.00	-21.33	3	Horizontal	114	2.17	-
2480MHz	Pass	PK	4.96223G	43.61	74.00	-30.39	3	Horizontal	114	2.17	-



**BT-LE(1Mbps)**

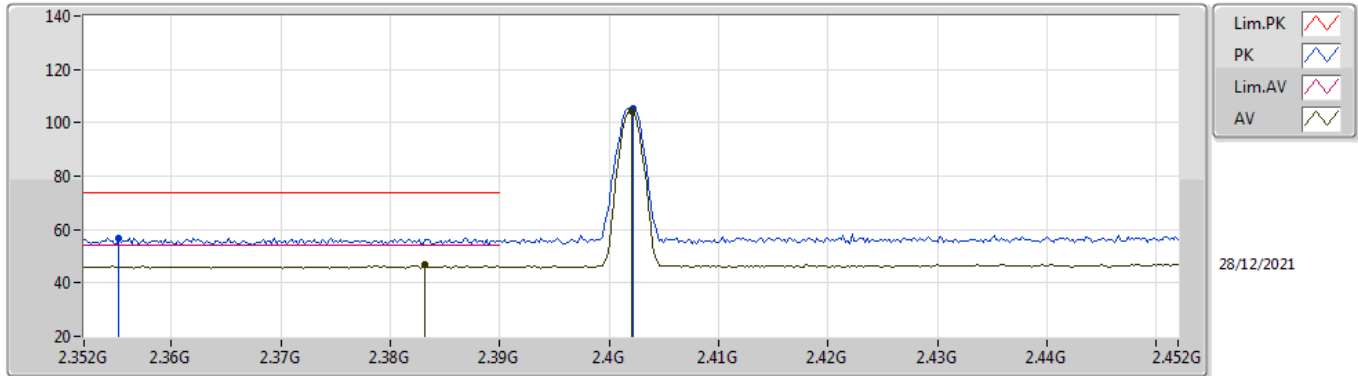
**2402MHz\_TX**



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	2.3756G	46.57	54.00	-7.43	31.70	3	Vertical	121	2.44	-	14.87	27.35	4.35	-
AV	2.402G	98.59	Inf	-Inf	31.79	3	Vertical	121	2.44	-	66.80	27.41	4.38	-
PK	2.3604G	56.80	74.00	-17.20	31.66	3	Vertical	121	2.44	-	25.14	27.32	4.34	-
PK	2.4022G	99.51	Inf	-Inf	31.79	3	Vertical	121	2.44	-	67.72	27.41	4.38	-

**BT-LE(1Mbps)**

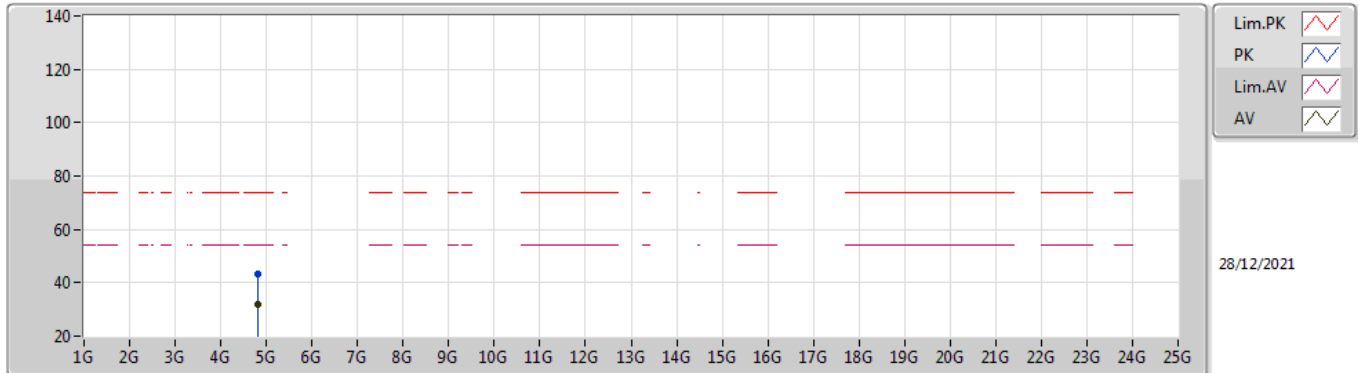
**2402MHz\_TX**



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	2.3832G	46.81	54.00	-7.19	31.73	3	Horizontal	48	1.41	-	15.08	27.37	4.36	-
AV	2.402G	104.23	Inf	-Inf	31.79	3	Horizontal	48	1.41	-	72.44	27.41	4.38	-
PK	2.3552G	56.94	74.00	-17.06	31.64	3	Horizontal	48	1.41	-	25.30	27.31	4.33	-
PK	2.4022G	105.17	Inf	-Inf	31.79	3	Horizontal	48	1.41	-	73.38	27.41	4.38	-

### BT-LE(1Mbps)

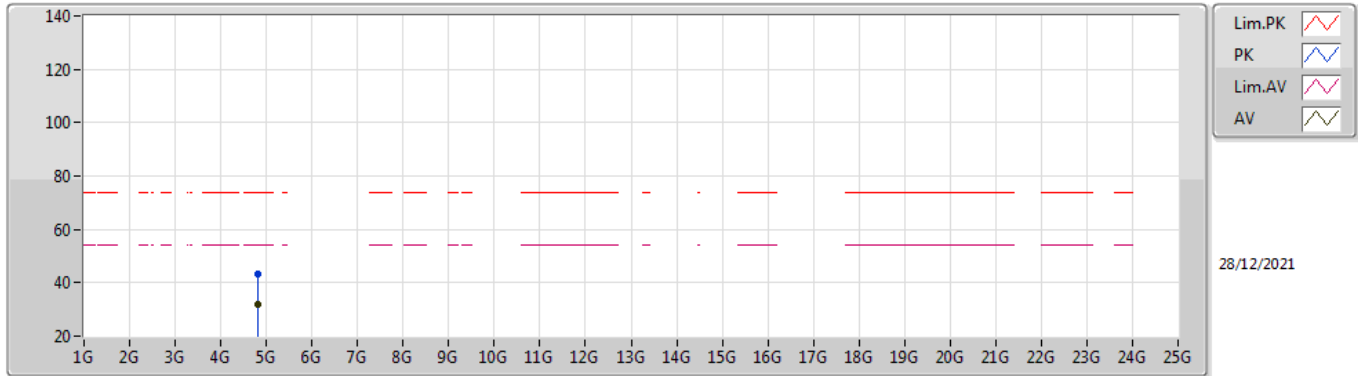
### 2402MHz\_TX



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	4.80375G	32.00	54.00	-22.00	4.33	3	Vertical	258	1.50	-	27.67	32.52	6.26	34.45
PK	4.80301G	43.05	74.00	-30.95	4.32	3	Vertical	258	1.50	-	38.73	32.51	6.26	34.45

**BT-LE(1Mbps)**

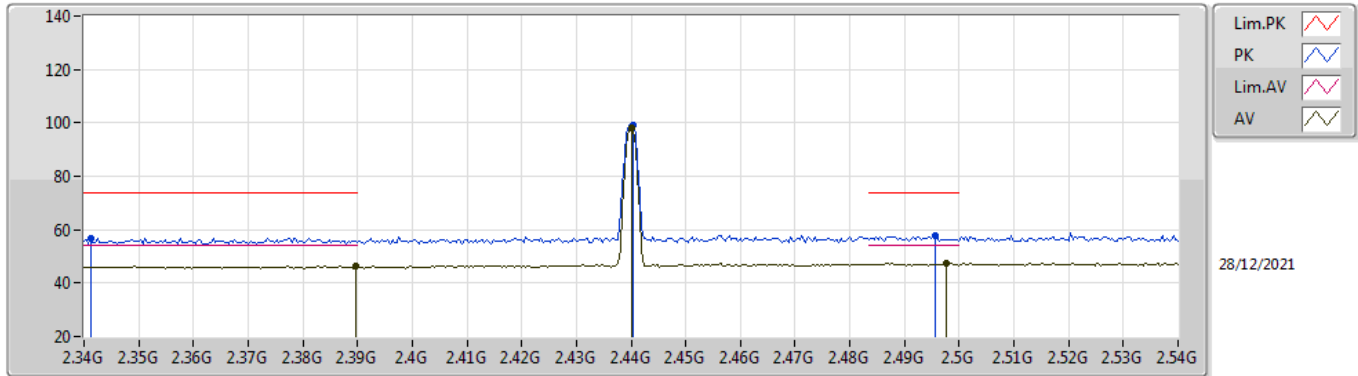
**2402MHz\_TX**



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	4.80108G	31.86	54.00	-22.14	4.31	3	Horizontal	155	1.78	-	27.55	32.50	6.26	34.45
PK	4.80284G	43.25	74.00	-30.75	4.32	3	Horizontal	155	1.78	-	38.93	32.51	6.26	34.45

**BT-LE(1Mbps)**

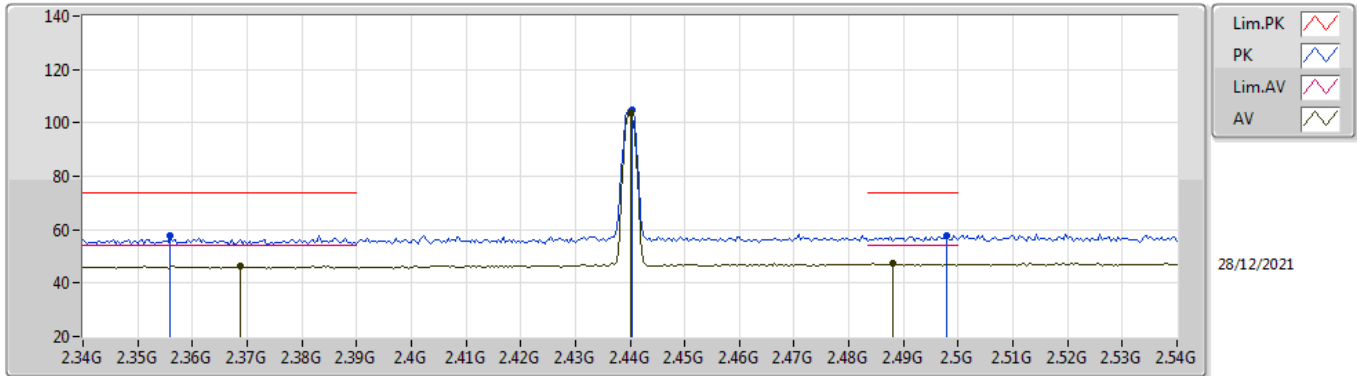
**2440MHz\_TX**



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	2.3896G	46.43	54.00	-7.57	31.75	3	Vertical	183	1.44	-	14.68	27.38	4.37	-
AV	2.44G	98.03	Inf	-Inf	32.00	3	Vertical	183	1.44	-	66.03	27.56	4.44	-
AV	2.4976G	47.23	54.00	-6.77	32.41	3	Vertical	183	1.44	-	14.82	27.89	4.52	-
PK	2.3412G	56.89	74.00	-17.11	31.58	3	Vertical	183	1.44	-	25.31	27.26	4.32	-
PK	2.4404G	99.00	Inf	-Inf	32.00	3	Vertical	183	1.44	-	67.00	27.56	4.44	-
PK	2.4956G	57.59	74.00	-16.41	32.39	3	Vertical	183	1.44	-	25.20	27.87	4.52	-

**BT-LE(1Mbps)**

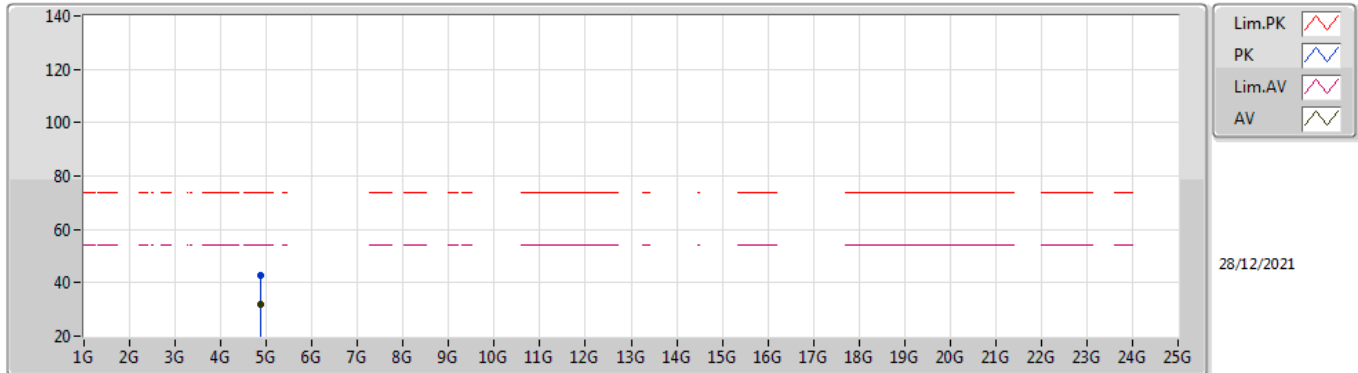
**2440MHz\_TX**



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	2.3688G	46.34	54.00	-7.66	31.69	3	Horizontal	37	1.86	-	14.65	27.34	4.35	-
AV	2.44G	103.86	Inf	-Inf	32.00	3	Horizontal	37	1.86	-	71.86	27.56	4.44	-
AV	2.488G	47.19	54.00	-6.81	32.34	3	Horizontal	37	1.86	-	14.85	27.83	4.51	-
PK	2.356G	57.56	74.00	-16.44	31.64	3	Horizontal	37	1.86	-	25.92	27.31	4.33	-
PK	2.4404G	104.87	Inf	-Inf	32.00	3	Horizontal	37	1.86	-	72.87	27.56	4.44	-
PK	2.498G	57.87	74.00	-16.13	32.41	3	Horizontal	37	1.86	-	25.46	27.89	4.52	-

### BT-LE(1Mbps)

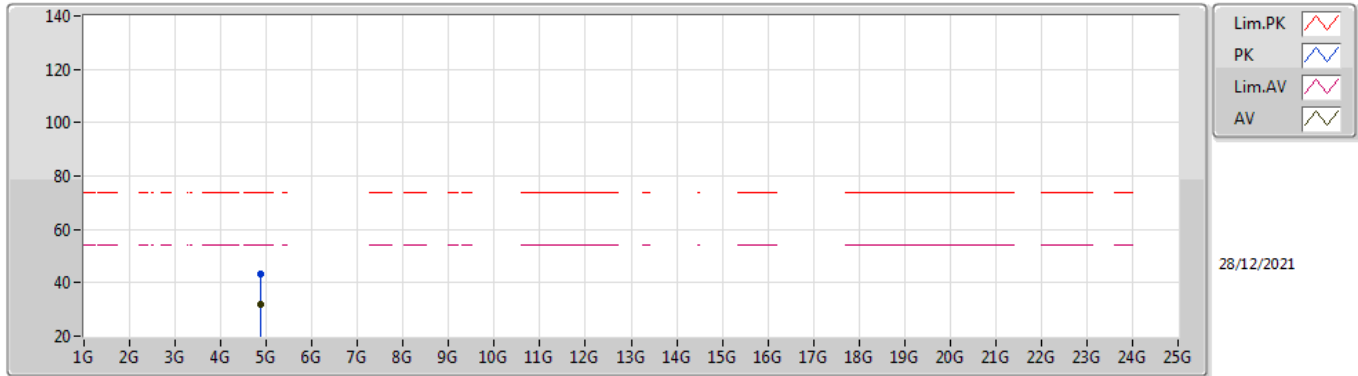
### 2440MHz\_TX



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	4.8797G	32.03	54.00	-21.97	4.63	3	Vertical	43	1.66	-	27.40	32.76	6.31	34.44
PK	4.88071G	42.97	74.00	-31.03	4.63	3	Vertical	43	1.66	-	38.34	32.76	6.31	34.44

**BT-LE(1Mbps)**

**2440MHz\_TX**

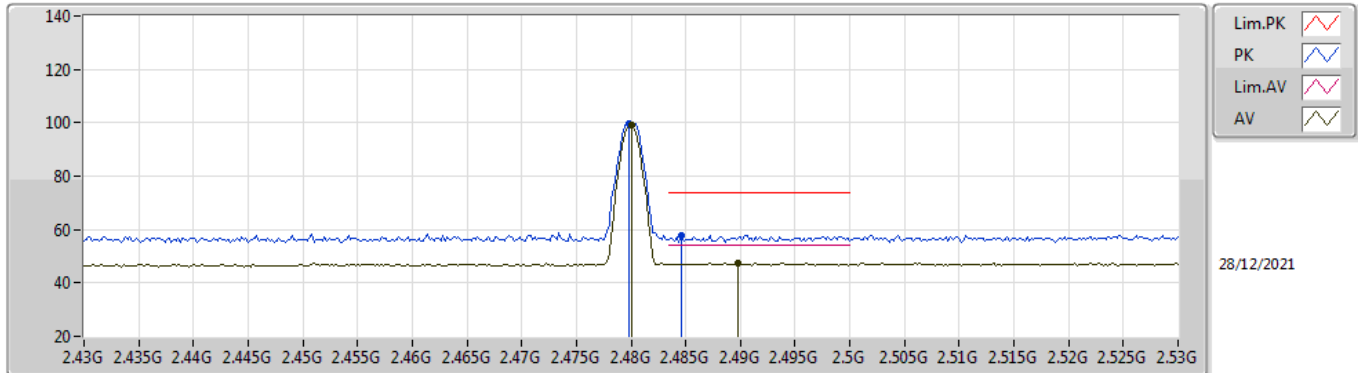


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.88206G	32.04	54.00	-21.96	4.63	3	Horizontal	311	2.06	-	27.41	32.76	6.31	34.44
PK	4.87754G	43.48	74.00	-30.52	4.63	3	Horizontal	311	2.06	-	38.85	32.76	6.31	34.44



**BT-LE(1Mbps)**

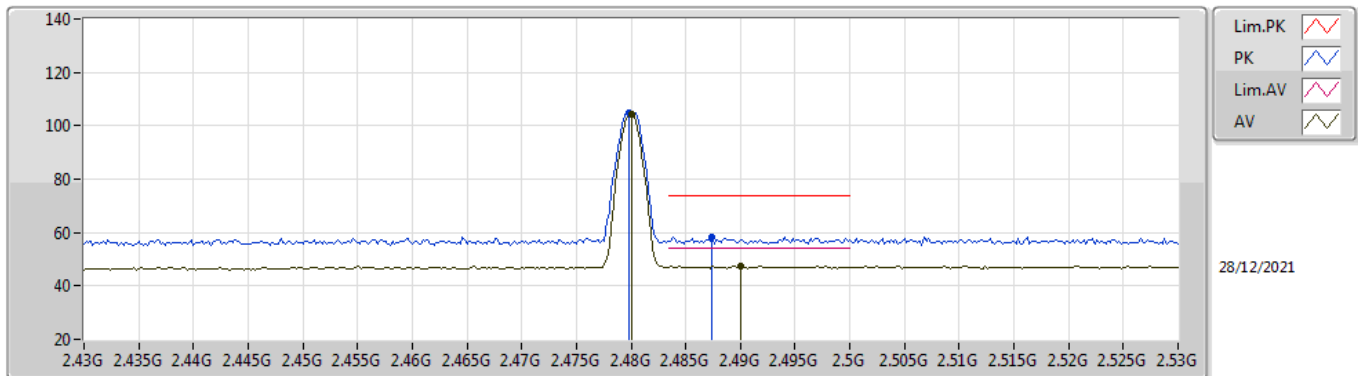
**2480MHz\_TX**



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	98.88	Inf	-Inf	32.28	3	Vertical	177	1.55	-	66.60	27.78	4.50	-
AV	2.4898G	47.42	54.00	-6.58	32.35	3	Vertical	177	1.55	-	15.07	27.84	4.51	-
PK	2.4798G	99.85	Inf	-Inf	32.28	3	Vertical	177	1.55	-	67.57	27.78	4.50	-
PK	2.4846G	57.81	74.00	-16.19	32.31	3	Vertical	177	1.55	-	25.50	27.81	4.50	-

**BT-LE(1Mbps)**

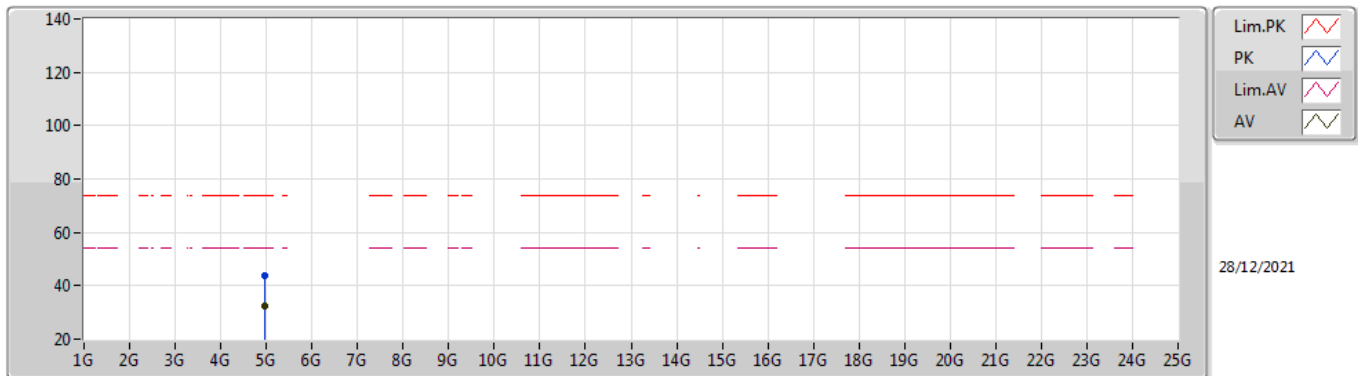
**2480MHz\_TX**



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	104.13	Inf	-Inf	32.28	3	Horizontal	38	1.55	-	71.85	27.78	4.50	-
AV	2.49G	47.42	54.00	-6.58	32.35	3	Horizontal	38	1.55	-	15.07	27.84	4.51	-
PK	2.4798G	105.07	Inf	-Inf	32.28	3	Horizontal	38	1.55	-	72.79	27.78	4.50	-
PK	2.4874G	58.34	74.00	-15.66	32.33	3	Horizontal	38	1.55	-	26.01	27.82	4.51	-

### BT-LE(1Mbps)

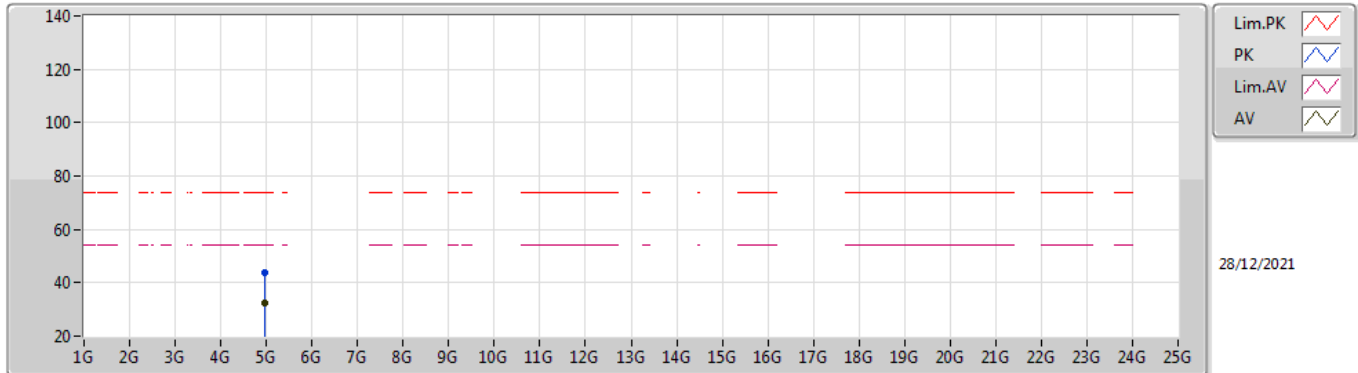
### 2480MHz\_TX



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	4.96069G	32.58	54.00	-21.42	5.07	3	Vertical	171	1.41	-	27.51	33.14	6.36	34.43
PK	4.9609G	43.83	74.00	-30.17	5.07	3	Vertical	171	1.41	-	38.76	33.14	6.36	34.43

**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	4.96005G	32.67	54.00	-21.33	5.07	3	Horizontal	114	2.17	-	27.60	33.14	6.36	34.43
PK	4.96223G	43.61	74.00	-30.39	5.08	3	Horizontal	114	2.17	-	38.53	33.15	6.36	34.43