



# FCC Radio Test Report

**FCC ID** : 2A8MT-ROUTE10  
**Equipment** : ROUTE10  
**Brand Name** : ALTA LABS [Λ] ALTA LABS  
**Model Name** : Route10  
**Applicant** : SoundVision Technologies, dba Alta Labs  
192 N Old Hwy 91, Unit 1 Hurricane,Utah,United States 84737  
**Manufacturer** : SoundVision Technologies, dba Alta Labs  
192 N Old Hwy 91, Unit 1 Hurricane,Utah,United States 84737  
**Standard** : 47 CFR FCC Part 15.247

The product was received on Jul. 10, 2024, and testing was started from Jul. 11, 2024 and completed on Jul. 15, 2024. We, SPORTON INTERNATIONAL INC. Hsinhua Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. Hsinhua Laboratory, the test report shall not be reproduced except in full.

Approved by: Jackson Tsai

**SPORTON INTERNATIONAL INC. Hsinhua Laboratory**

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



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### History of this test report

Report No.	Version	Description	Issued Date
FR470405AL	01	Initial issue of report	Aug. 09, 2024



### Summary of Test Result

Report Clause	Ref.Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
3.2	15.247(a)	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
2.4-2.4835GHz	BT-LE(2Mbps)	2.0	1TX

Note:
<ul style="list-style-type: none"> <li>◆ Bluetooth LE uses a GFSK (1Mbps/2Mbps) modulation.</li> <li>◆ BWch is the nominal channel bandwidth.</li> </ul>

### 1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector	Support	Gain
1	LITEON	20301-003860A000	PIFA	I-Pex	BT	2.7 dBi

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			
EUT Power Type	From AC Adapter		
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)	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)
BT-LE(2Mbps)	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)

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	CON04-HY	Wayne Chiu	22.5~22.9°C / 53~55%	15/Jul/2024
RF Conducted	TH07-HY	Yuna Lin	23.2~23.7°C / 50~54%	11/Jul/2024
Radiated	03CH02-HY	Simon Cheng	22.2~23.4°C / 50~52%	11/Jul/2024
<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
AC Power-line Conducted Emissions	4.53 dB	Confidence levels of 95%
Bandwidth	3 MHz	Confidence levels of 95%
Maximum Conducted Output Power	2 dB	Confidence levels of 95%
Power Spectral Density	2 dB	Confidence levels of 95%
Emissions in Non-restricted Frequency Bands	0.14 dB	Confidence levels of 95%
Emissions in Restricted Frequency Bands	4.8 dB	Confidence levels of 95%
Temperature	0.41 °C	Confidence levels of 95%
Humidity	3.4 %	Confidence levels of 95%



## 2 Test Configuration of EUT

### 2.1 Test Channel Mode

Test Software Version	PuTTY Release 0.62
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Mode	Power Setting
BT-LE(1Mbps)	-
2402MHz	4
2440MHz	4
2480MHz	4
BT-LE(2Mbps)	-
2402MHz	4
2440MHz	4
2480MHz	4



## 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

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	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		



### 2.3 Accessories

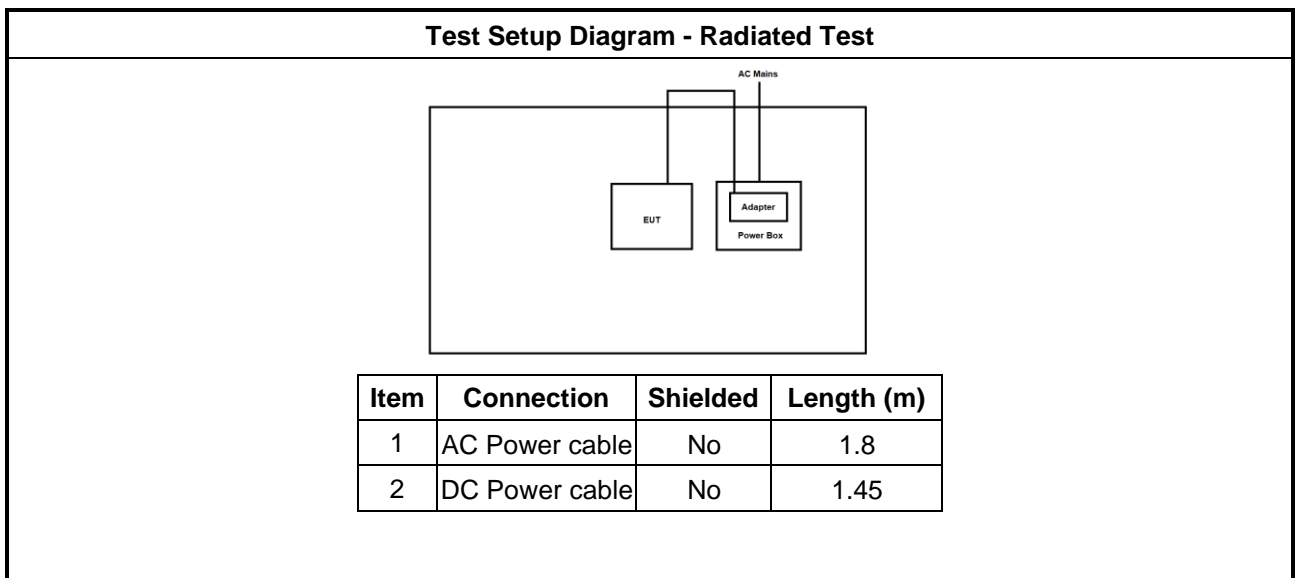
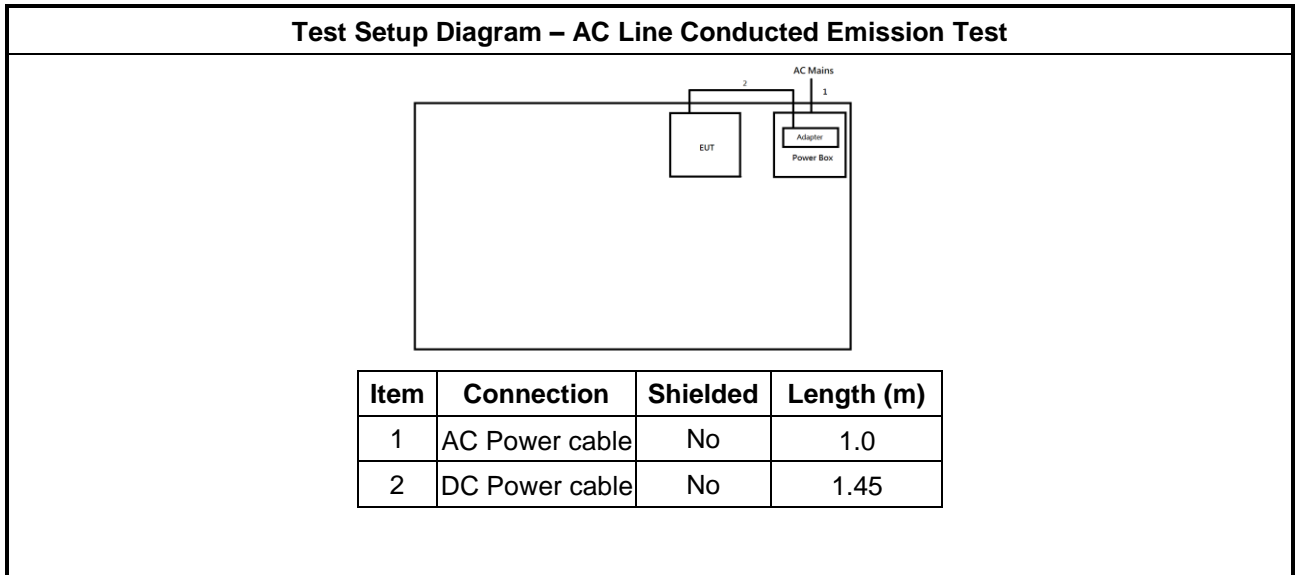
Accessories				
AC Adapter	<b>Brand Name</b>	APD	<b>Model Name</b>	WA-70A54FU
	<b>Power Rating</b>	I/P: 100 – 240 Vac, 1.6 A, O/P: 54.0 Vdc, 1.3A		
	<b>Power Cord</b>	1.45 meter, non-shielded cable, w/o ferrite core		
AC Adapter	<b>Brand Name</b>	APD	<b>Model Name</b>	WA-70A54R
	<b>Power Rating</b>	I/P: 100 – 240 Vac, 1.6 A, O/P: 54.0 Vdc, 1.3A		
	<b>Power Cord</b>	1.45 meter, non-shielded cable, w/o ferrite core		
Wallmount	<b>Brand Name</b>	NA	<b>Model Name</b>	NA

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

### 2.4 Support Equipment

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

## 2.5 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

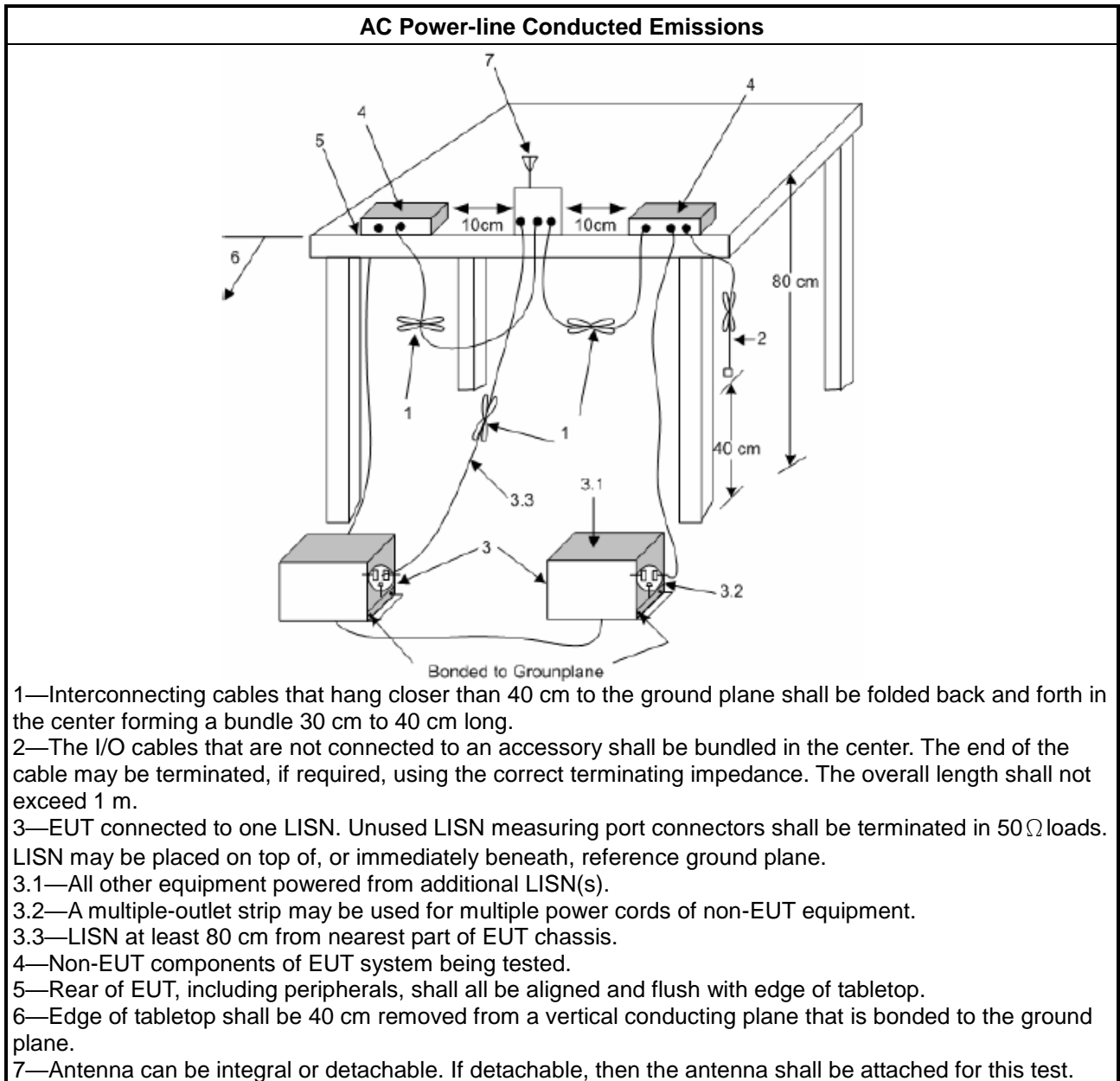
Test Method
<ul style="list-style-type: none"> <li>Refer as ANSI C63.10-2013, clause 6.2 foray power-line conducted emissions.</li> </ul>

##### 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).

### 3.1.5 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	
Systems using digital modulation techniques:	
▪	6 dB bandwidth $\geq$ 500 kHz.

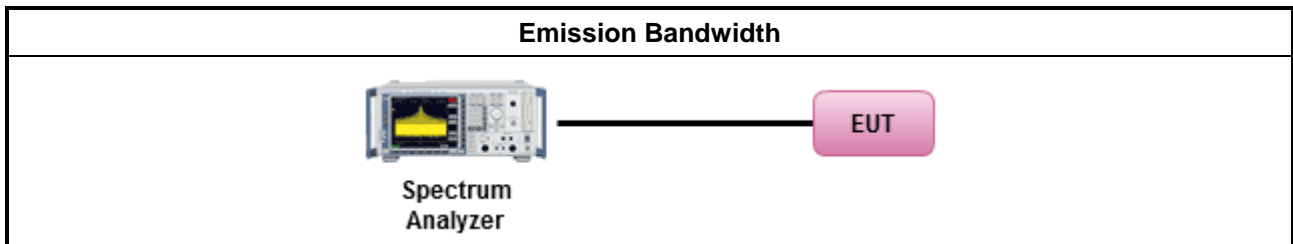
#### 3.2.2 Measuring Instruments

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

#### 3.2.3 Test Procedures

Test Method	
▪	For the emission bandwidth shall be measured using one of the options below:
<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 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>
e.i.r.p. Power Limit:	
	<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.	

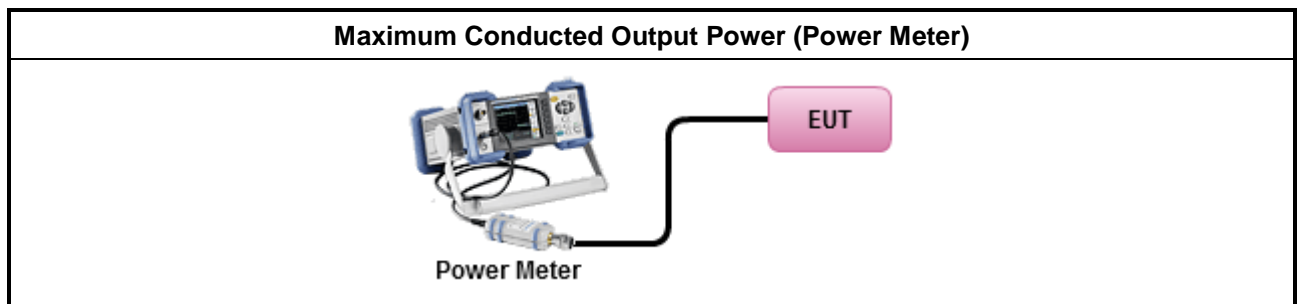
#### 3.3.2 Measuring Instruments

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>

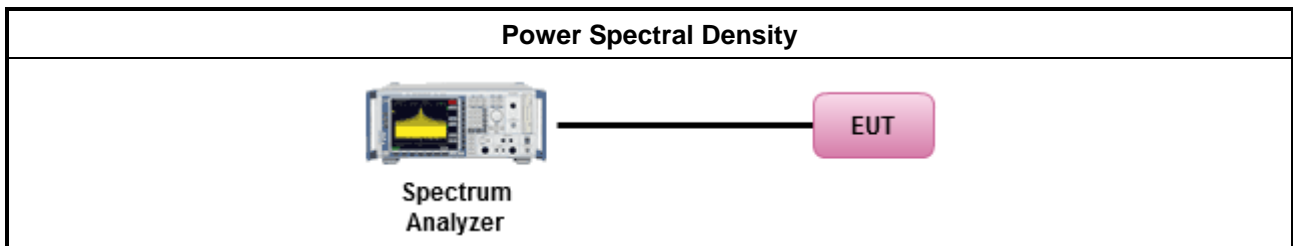
#### 3.4.2 Measuring Instruments

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.               <ul style="list-style-type: none"> <li>If The EUT supports multiple transmit chains using options given below:                   <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> </li> </ul> </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.

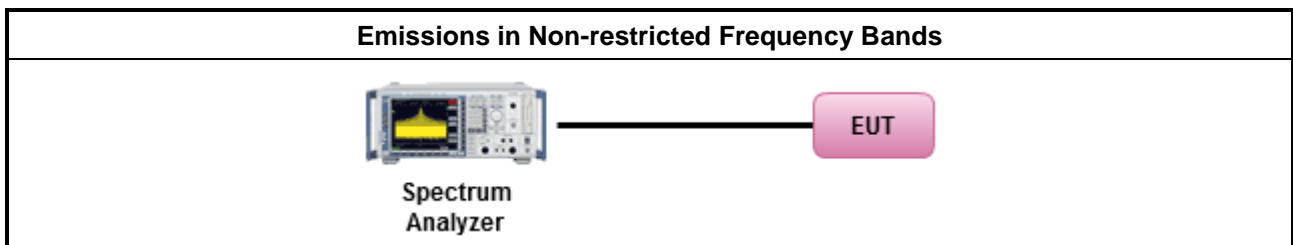
#### 3.5.2 Measuring Instruments

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**

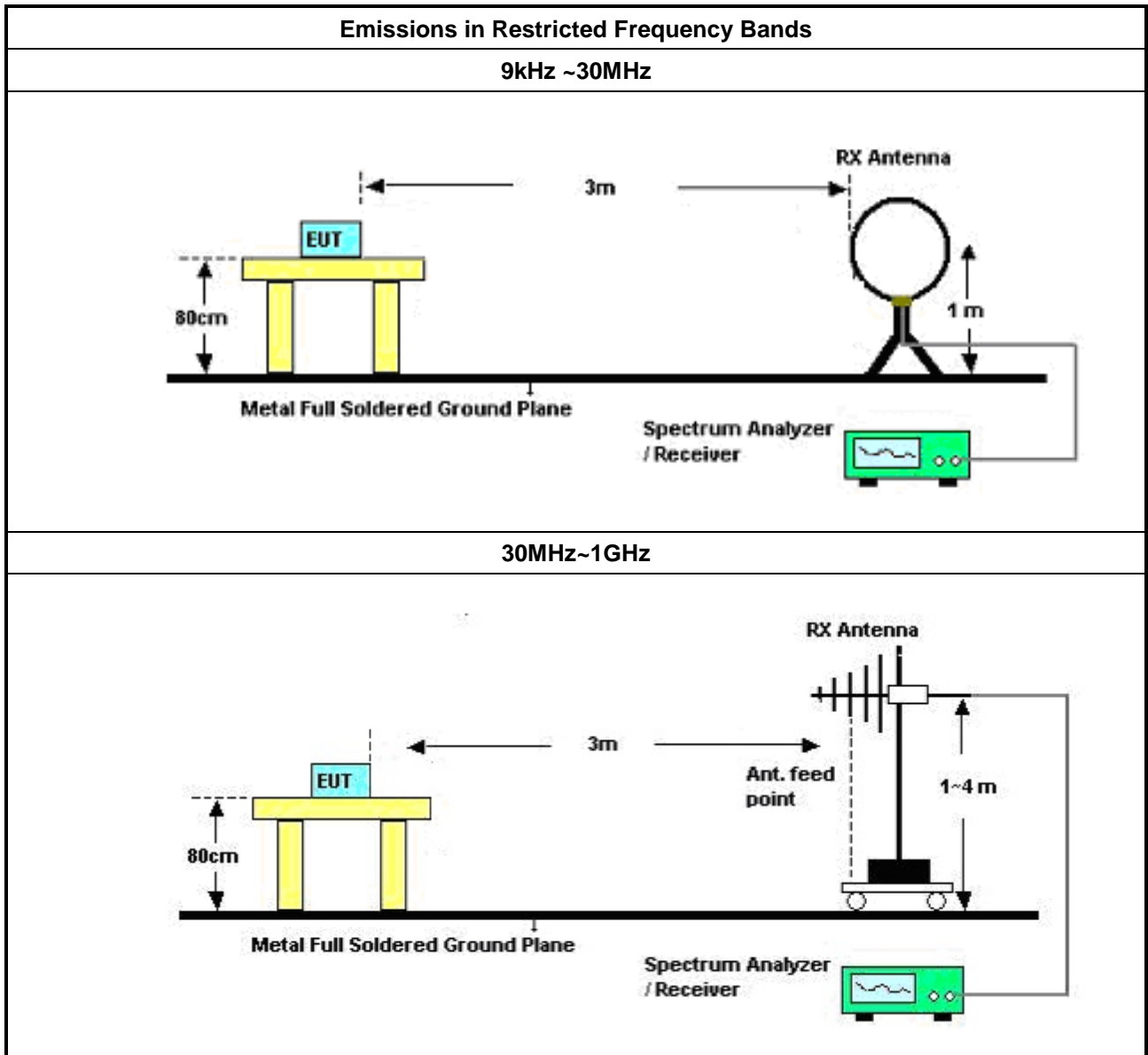
<b>Test Method</b>	
	<ul style="list-style-type: none"> <li>▪ The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel 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:</li> </ul>
	<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>
	<ul style="list-style-type: none"> <li>▪ For the transmitter band-edge emissions shall be measured using following options below:</li> </ul>
	<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> </ul>
	<ul style="list-style-type: none"> <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> </ul>
	<ul style="list-style-type: none"> <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>
	<ul style="list-style-type: none"> <li>▪ Use the following spectrum analyzer settings:</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Set RBW=100 kHz for f &lt; 1 GHz; VBW=3 * RBW; Sweep = auto; Detector function = peak; Trace = max hold.</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Set RBW = 1 MHz, VBW= 3MHz for f ≥ 1 GHz for peak measurement. For average measurement, refer as 1.1.4.</li> </ul>
	<ul style="list-style-type: none"> <li>▪ KDB 414788 Open-Field Test Sites and Chamber Correlation Justification.</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Based on FCC 15.31(f)(2): measurements may be performed at a distance closer than that specified in regulations; however, an attempt should be made to avoid making measurements in the near field.</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Open-field site and chamber correlation testing had been performed and chamber measured test result is the worst case test result.</li> </ul>

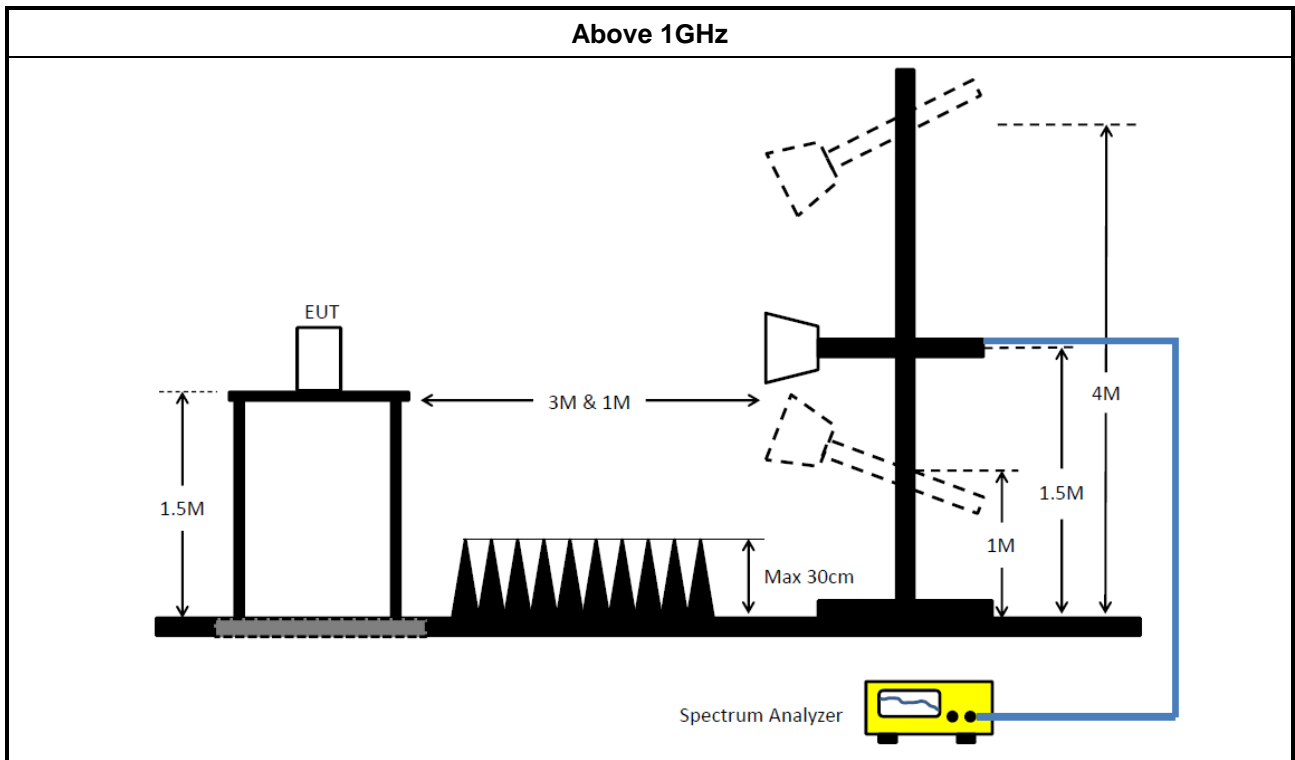
**3.6.4 Measurement Results Calculation**

The measured Level is calculated using:

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

### 3.6.5 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



### 4 Test Equipment and Calibration Data

#### Instrument for AC Conduction

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
EMI Test Receiver	R&S	ESR	102051	9kHz ~ 3.6GHz	17/May/2024	16/May/2025
Two-Line V-Network	R&S	ENV 216	101274	9kHz ~ 30MHz	18/Jun/2024	17/Jun/2025
RF Cable 5m	TITAN	TITAN	CO04-cable-01	9 kHz~200MHz	27/Feb/2024	26/Feb/2025
Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9kHz ~ 30MHz	18/Oct/2023	17/Oct/2024
Software	Sporton	SENSE-EMI	V5.11.3	-	NCR	NCR

NCR: No Calibration Required

#### Instrument for Conducted Test

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Signal Analyzer	R&S	FSV 40	101515	9kHz~40GHz	02/Feb/2024	01/Feb/2025
SMB100A Signal Generator	R&S	SMB100A	181147	100kHz~40GHz	20/Oct/2023	19/Oct/2024
Power Meter	Anritsu	ML2495A	1517010	300MHz~40GHz	15/Dec/2023	14/Dec/2024
Pulse Sensor	Anritsu	MA2411B	1339407	300MHz~40GHz	15/Dec/2023	14/Dec/2024
SENSE-15247_FS	Sporton	V5.11.18	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	03CH02-HY	30MHz~1GHz 3m	29/Jul/2023	28/Jul/2024
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	1GHz~18GHz 3m	28/Jul/2023	27/Jul/2024
EMI Test Receiver	R&S	ESR	102052	9kHz~3.6GHz	03/May/2024	02/May/2025
Signal Analyzer	R&S	FSP 40	100593	9kHz~40GHz	11/Mar/2024	10/Mar/2025
Loop Antenna	TESEQ	HLA 6120	31244	9kHz~30MHz	19/Mar/2024	18/Mar/2025
Bilog Antenna & 5dB Attenuator	SCHAFFNER / MTJ	CBL 6112B / MTJ6102-05	2723/2	30MHz~1GHz	27/Aug/2023	26/Aug/2024
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	02268	1GHz~18GHz	23/Sep/2023	22/Sep/2024
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	01248	18GHz~40GHz	21/Aug/2023	20/Aug/2024
RF Cable	MVE	400LL+SN 200207	03CH02-cable-02	9kHz~30MHz	19/Dec/2023	18/Dec/2024
RF Cable	MVE	400LL+SN 200207	03CH02-cable-02	30MHz~1GHz	19/Dec/2023	18/Dec/2024
RF Cable-R03m	HUBER+SUHNE R	SUCOFLEX 104	03CH02-cable-01	1GHz~40GHz	15/Feb/2024	14/Feb/2025
Amplifier	Agilent	8447D	2944A11149	100kHz~1.3GHz	29/Jun/2024	28/Jun/2025
Microwave Preamplifier	Agilent	8449B	3008A02373	1GHz~26.5GHz	24/Oct/2023	23/Oct/2024
Amplifier	EM	EM18G40GA	060874	18GHz ~40GHz	15/Apr/2024	14/Apr/2025
SENSE-15247-FS	Sporton	V5.11.18	NA	NA	NA	NA





**Summary**

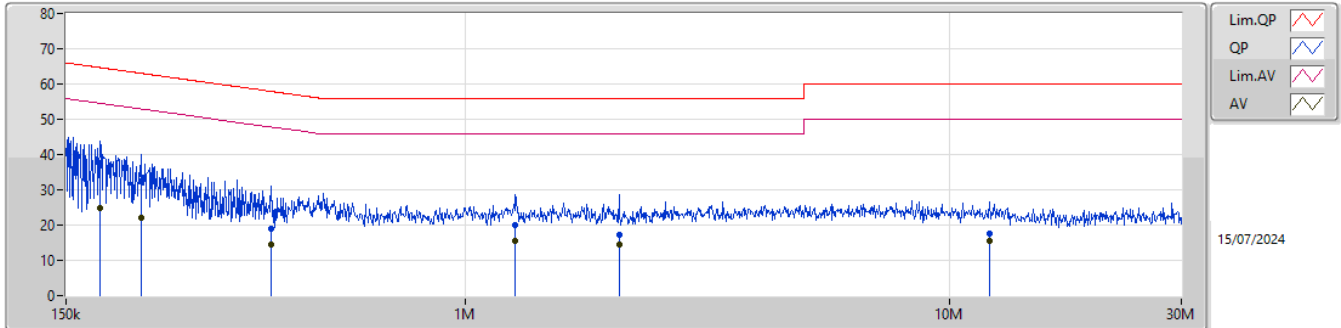
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	451.436k	19.98	46.84	-26.86	Neutral



Result

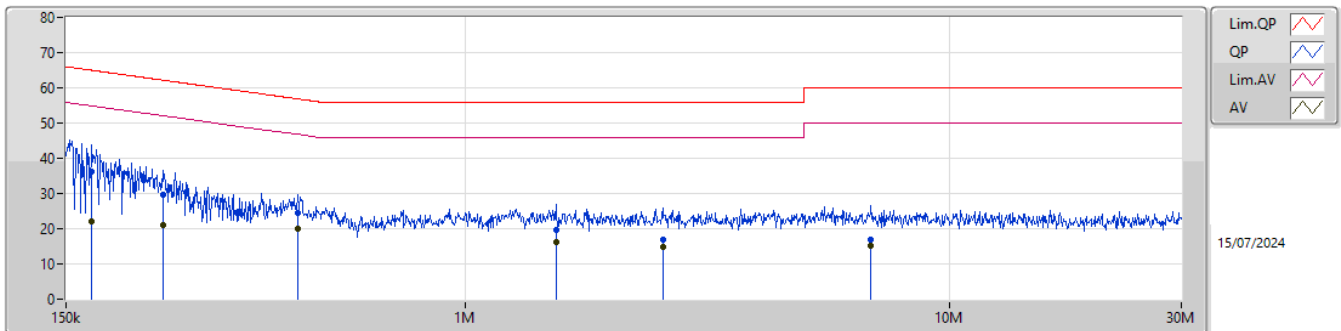
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition	Comments
Mode 1	Pass	QP	176.674k	37.51	64.64	-27.13	Line	-
Mode 1	Pass	AV	176.674k	24.67	54.64	-29.97	Line	-
Mode 1	Pass	QP	213.989k	32.45	63.06	-30.61	Line	-
Mode 1	Pass	AV	213.989k	22.14	53.06	-30.92	Line	-
Mode 1	Pass	QP	397.299k	18.92	57.91	-38.99	Line	-
Mode 1	Pass	AV	397.299k	14.46	47.91	-33.45	Line	-
Mode 1	Pass	QP	1.269M	20.14	56.00	-35.86	Line	-
Mode 1	Pass	AV	1.269M	15.66	46.00	-30.34	Line	-
Mode 1	Pass	QP	2.074M	17.29	56.00	-38.71	Line	-
Mode 1	Pass	AV	2.074M	14.50	46.00	-31.50	Line	-
Mode 1	Pass	QP	12.063M	17.54	60.00	-42.46	Line	-
Mode 1	Pass	AV	12.063M	15.47	50.00	-34.53	Line	-
Mode 1	Pass	QP	169.76k	36.26	64.97	-28.71	Neutral	-
Mode 1	Pass	AV	169.76k	22.21	54.97	-32.76	Neutral	-
Mode 1	Pass	QP	237.393k	29.62	62.20	-32.58	Neutral	-
Mode 1	Pass	AV	237.393k	20.95	52.20	-31.25	Neutral	-
Mode 1	Pass	QP	451.436k	24.35	56.84	-32.49	Neutral	-
Mode 1	Pass	AV	451.436k	19.98	46.84	-26.86	Neutral	-
Mode 1	Pass	QP	1.538M	19.71	56.00	-36.29	Neutral	-
Mode 1	Pass	AV	1.538M	16.18	46.00	-29.82	Neutral	-
Mode 1	Pass	QP	2.553M	17.06	56.00	-38.94	Neutral	-
Mode 1	Pass	AV	2.553M	14.70	46.00	-31.30	Neutral	-
Mode 1	Pass	QP	6.87M	16.79	60.00	-43.21	Neutral	-
Mode 1	Pass	AV	6.87M	15.08	50.00	-34.92	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	176.674k	37.51	64.64	-27.13	19.44	Line	-	18.07	9.65	0.08	9.71
AV	176.674k	24.67	54.64	-29.97	19.44	Line	-	5.23	9.65	0.08	9.71
QP	213.989k	32.45	63.06	-30.61	19.43	Line	-	13.02	9.65	0.09	9.69
AV	213.989k	22.14	53.06	-30.92	19.43	Line	-	2.71	9.65	0.09	9.69
QP	397.299k	18.92	57.91	-38.99	19.53	Line	-	-0.61	9.65	0.12	9.76
AV	397.299k	14.46	47.91	-33.45	19.53	Line	-	-5.07	9.65	0.12	9.76
QP	1.269M	20.14	56.00	-35.86	19.56	Line	-	0.58	9.66	0.10	9.80
AV	1.269M	15.66	46.00	-30.34	19.56	Line	-	-3.90	9.66	0.10	9.80
QP	2.074M	17.29	56.00	-38.71	19.58	Line	-	-2.29	9.67	0.11	9.80
AV	2.074M	14.50	46.00	-31.50	19.58	Line	-	-5.08	9.67	0.11	9.80
QP	12.063M	17.54	60.00	-42.46	19.58	Line	-	-2.04	9.70	0.07	9.81
AV	12.063M	15.47	50.00	-34.53	19.58	Line	-	-4.11	9.70	0.07	9.81

## 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	169.76k	36.26	64.97	-28.71	19.40	Neutral	-	16.86	9.60	0.08	9.72
AV	169.76k	22.21	54.97	-32.76	19.40	Neutral	-	2.81	9.60	0.08	9.72
QP	237.393k	29.62	62.20	-32.58	19.40	Neutral	-	10.22	9.60	0.10	9.70
AV	237.393k	20.95	52.20	-31.25	19.40	Neutral	-	1.55	9.60	0.10	9.70
QP	451.436k	24.35	56.84	-32.49	19.49	Neutral	-	4.86	9.60	0.12	9.77
AV	451.436k	19.98	46.84	-26.86	19.49	Neutral	-	0.49	9.60	0.12	9.77
QP	1.538M	19.71	56.00	-36.29	19.51	Neutral	-	0.20	9.61	0.10	9.80
AV	1.538M	16.18	46.00	-29.82	19.51	Neutral	-	-3.33	9.61	0.10	9.80
QP	2.553M	17.06	56.00	-38.94	19.51	Neutral	-	-2.45	9.61	0.10	9.80
AV	2.553M	14.70	46.00	-31.30	19.51	Neutral	-	-4.81	9.61	0.10	9.80
QP	6.87M	16.79	60.00	-43.21	19.49	Neutral	-	-2.70	9.64	0.06	9.79
AV	6.87M	15.08	50.00	-34.92	19.49	Neutral	-	-4.41	9.64	0.06	9.79



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)	765k	1.06M	1M06F1D	712.5k	1.053M
BT-LE(2Mbps)	1.268M	2.111M	2M11F1D	1.208M	2.108M

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	765k	1.054M
2440MHz	Pass	500k	712.5k	1.06M
2480MHz	Pass	500k	733.75k	1.053M
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	500k	1.268M	2.11M
2440MHz	Pass	500k	1.213M	2.108M
2480MHz	Pass	500k	1.208M	2.111M

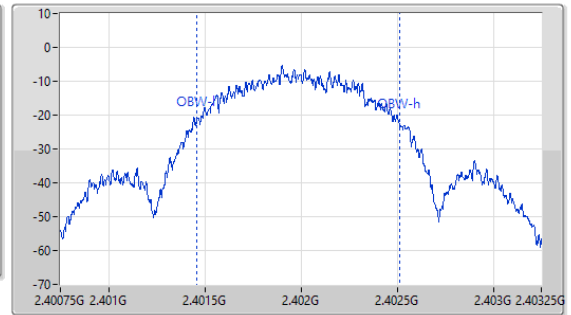
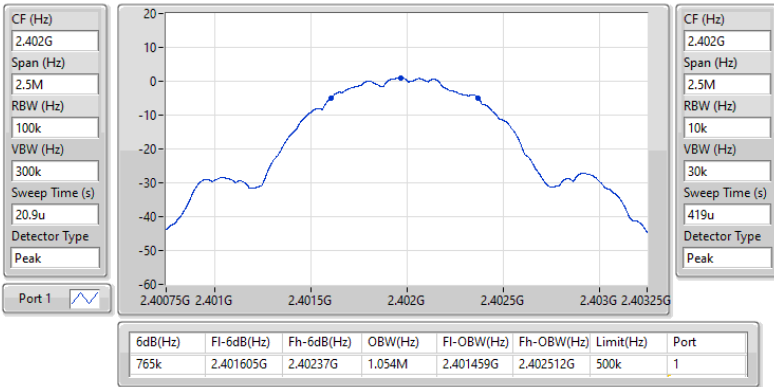
Port X-N dB = Port X 6dB down bandwidth;  
Port X-OBW = Port X 99% occupied bandwidth

2.4-2.4835GHz\_BT-LE(1Mbps)

EBW-DTS

2402MHz

11/07/2024

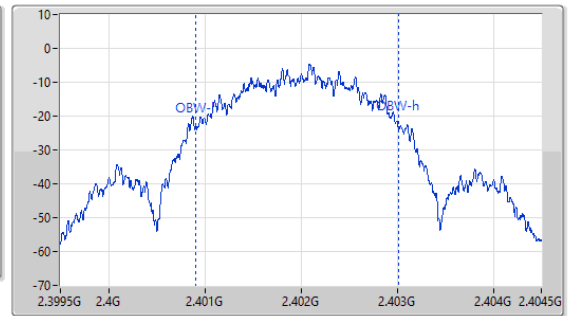
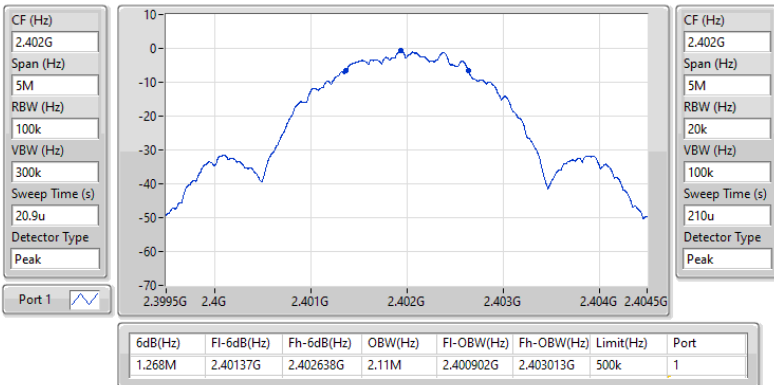


2.4-2.4835GHz\_BT-LE(2Mbps)

EBW-DTS

2402MHz

11/07/2024





**Summary**

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	2.87	0.00194
BT-LE(2Mbps)	2.87	0.00194



Result

Mode	Result	DG (dBi)	Total Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.70	2.79	30.00
2440MHz	Pass	2.70	2.87	30.00
2480MHz	Pass	2.70	2.85	30.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	2.70	2.79	30.00
2440MHz	Pass	2.70	2.87	30.00
2480MHz	Pass	2.70	2.85	30.00

DG = Directional Gain; Port X = Port X output power;  
Inf = There's no restriction for the limit.





**Summary**

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-10.69
BT-LE(2Mbps)	-13.45

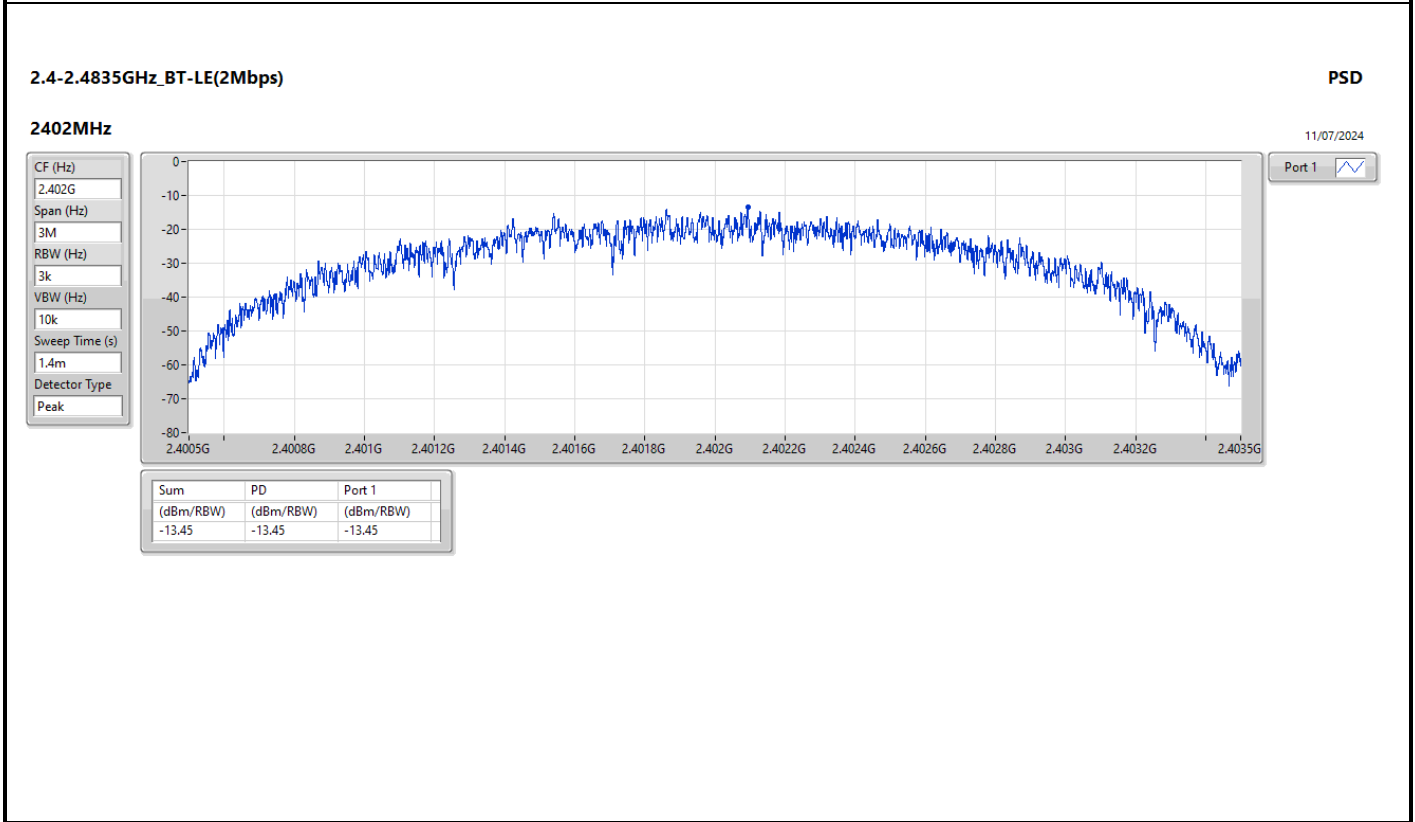
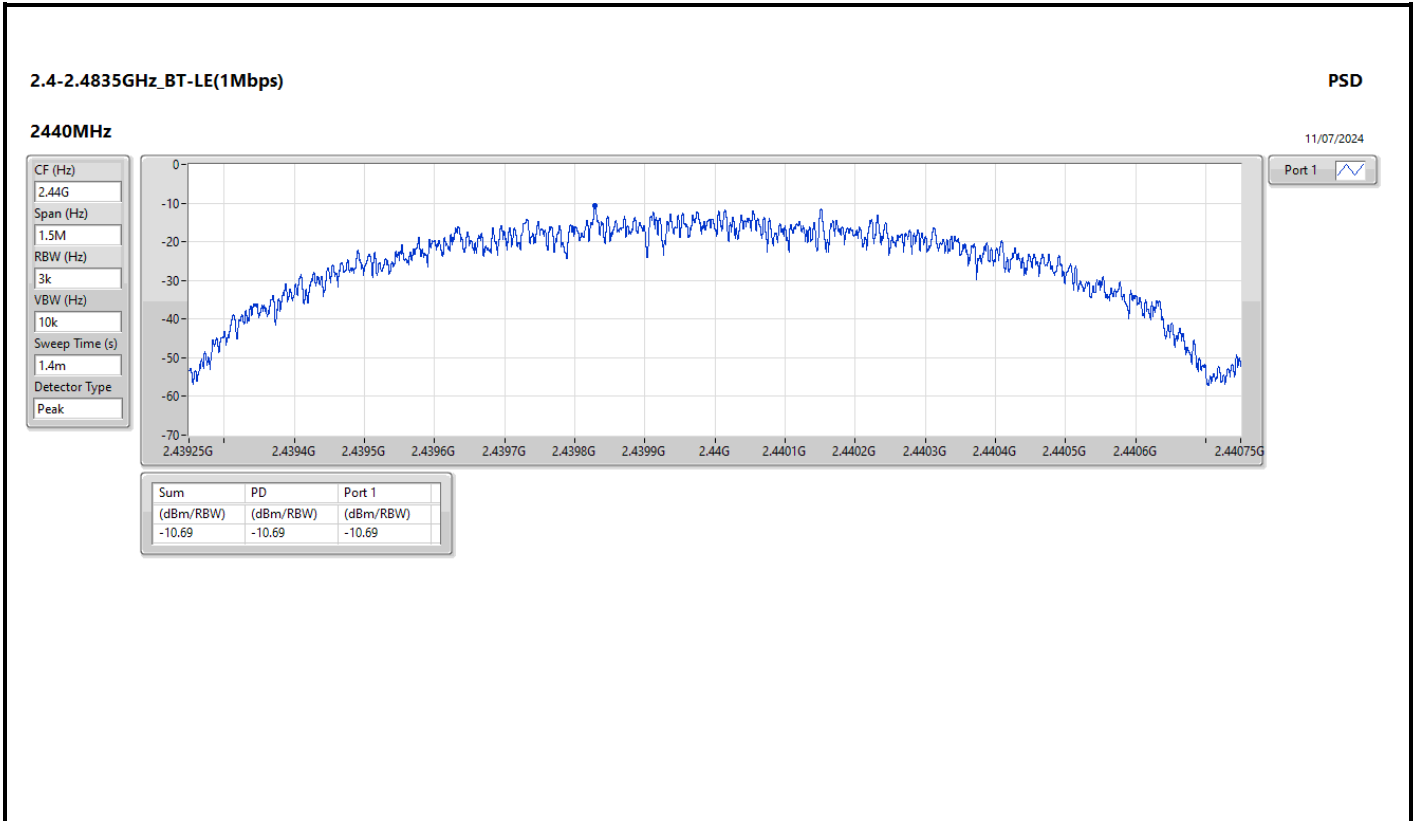
RBW = 3kHz;



Result

Mode	Result	DG (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.70	-11.33	8.00
2440MHz	Pass	2.70	-10.69	8.00
2480MHz	Pass	2.70	-11.01	8.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	2.70	-13.45	8.00
2440MHz	Pass	2.70	-13.59	8.00
2480MHz	Pass	2.70	-13.89	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;  
Inf = There's no restriction for the limit.





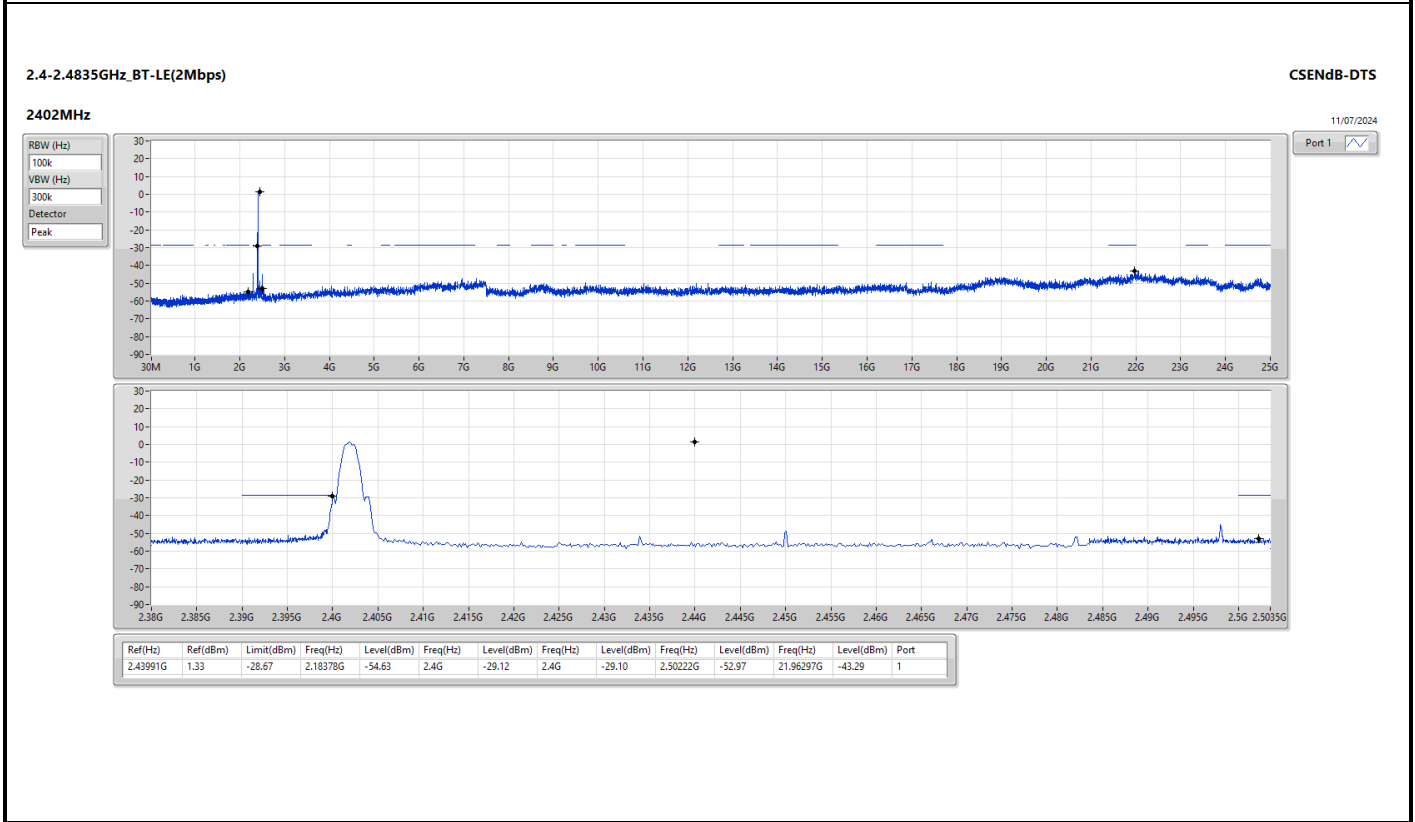
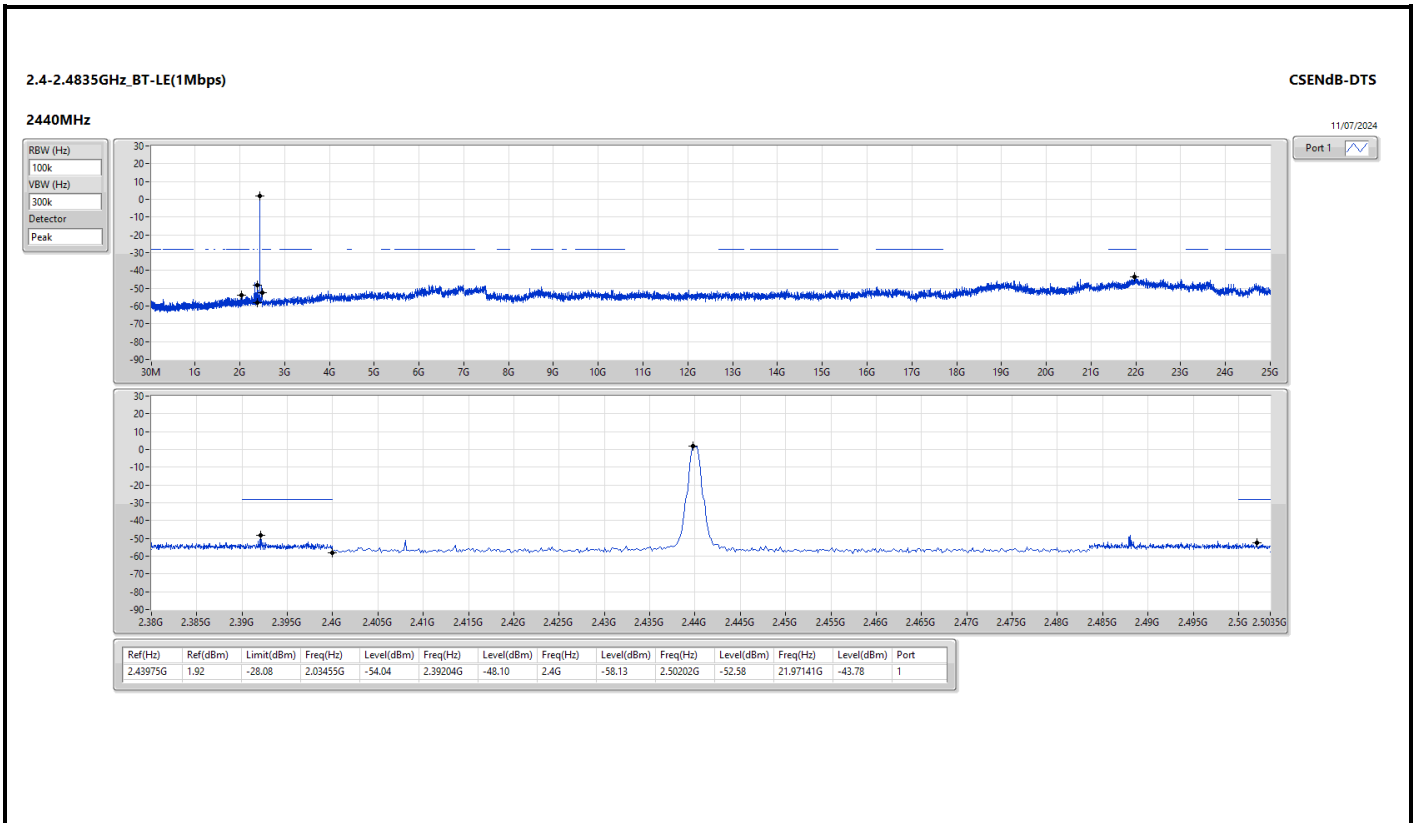
Summary

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	2.43975G	1.92	-28.08	2.03455G	-54.04	2.39204G	-48.10	2.4G	-58.13	2.50202G	-52.58	21.97141G	-43.78	1
BT-LE(2Mbps)	Pass	2.43991G	1.33	-28.67	2.18378G	-54.63	2.4G	-29.12	2.4G	-29.10	2.50222G	-52.97	21.96297G	-43.29	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	2.43975G	1.92	-28.08	2.09213G	-54.21	2.39984G	-50.83	2.4G	-50.63	2.50038G	-53.05	21.97984G	-44.21	1
2440MHz	Pass	2.43975G	1.92	-28.08	2.03455G	-54.04	2.39204G	-48.10	2.4G	-58.13	2.50202G	-52.58	21.97141G	-43.78	1
2480MHz	Pass	2.43975G	1.92	-28.08	1.97345G	-54.54	2.39996G	-51.69	2.4G	-55.45	2.50106G	-52.18	21.99953G	-42.98	1
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.43991G	1.33	-28.67	2.18378G	-54.63	2.4G	-29.12	2.4G	-29.10	2.50222G	-52.97	21.96297G	-43.29	1
2440MHz	Pass	2.43991G	1.33	-28.67	2.17673G	-53.69	2.392G	-47.27	2.4G	-57.73	2.50074G	-52.41	21.99672G	-43.27	1
2480MHz	Pass	2.43991G	1.33	-28.67	2.3048G	-54.06	2.39996G	-51.29	2.4G	-50.63	2.50114G	-52.12	21.94891G	-44.16	1





Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
BT-LE(2Mbps)	Pass	PK	33.88M	36.56	40.00	-3.44	3	Vertical	0	1.00



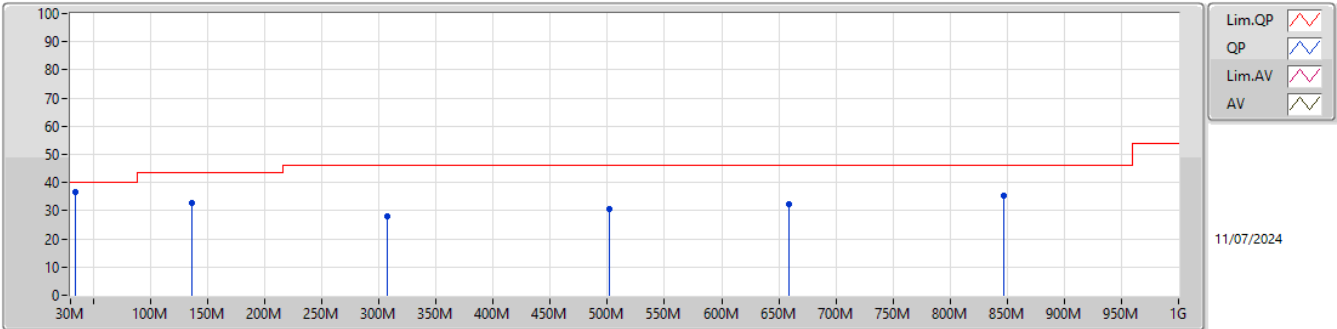
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	33.88M	36.56	40.00	-3.44	3	Vertical	0	1.00
2440MHz	Pass	PK	136.7M	32.88	43.50	-10.62	3	Vertical	0	1.00
2440MHz	Pass	PK	307.42M	28.19	46.00	-17.81	3	Vertical	0	1.00
2440MHz	Pass	PK	501.42M	30.44	46.00	-15.56	3	Vertical	0	1.00
2440MHz	Pass	PK	658.56M	32.44	46.00	-13.56	3	Vertical	0	1.00
2440MHz	Pass	PK	846.74M	35.13	46.00	-10.87	3	Vertical	0	1.00
2440MHz	Pass	PK	33.88M	35.27	40.00	-4.73	3	Horizontal	360	1.00
2440MHz	Pass	PK	148.34M	37.85	43.50	-5.65	3	Horizontal	360	1.00
2440MHz	Pass	PK	297.72M	32.93	46.00	-13.07	3	Horizontal	360	1.00
2440MHz	Pass	PK	499.48M	30.76	46.00	-15.24	3	Horizontal	360	1.00
2440MHz	Pass	PK	631.4M	32.17	46.00	-13.83	3	Horizontal	360	1.00
2440MHz	Pass	PK	844.8M	35.00	46.00	-11.00	3	Horizontal	360	1.00



2.4-2.4835GHz\_BT-LE(2Mbps)

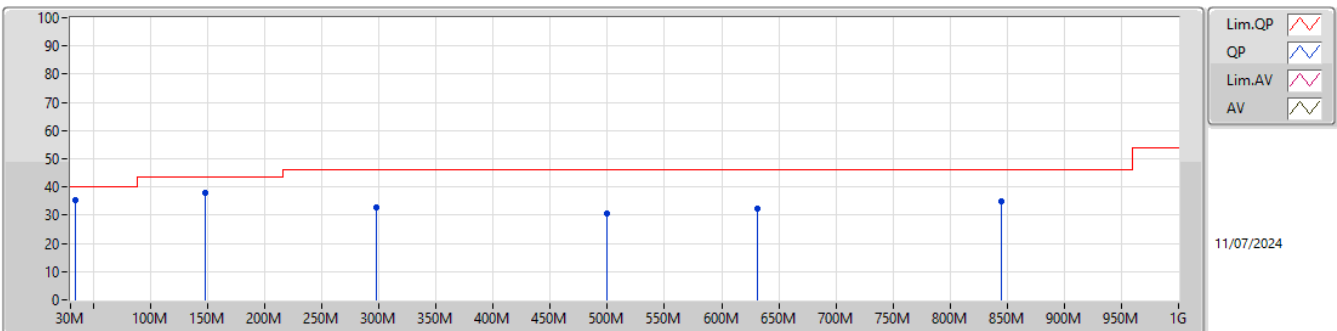
2440MHz\_Adapter



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	33.88M	36.56	40.00	-3.44	-4.90	3	Vertical	0	1.00	41.46	20.88	1.28	27.06
PK	136.7M	32.88	43.50	-10.62	-8.52	3	Vertical	0	1.00	41.40	16.67	2.37	27.56
PK	307.42M	28.19	46.00	-17.81	-4.87	3	Vertical	0	1.00	33.06	18.51	3.69	27.07
PK	501.42M	30.44	46.00	-15.56	-0.89	3	Vertical	0	1.00	31.33	22.54	4.89	28.32
PK	658.56M	32.44	46.00	-13.56	1.55	3	Vertical	0	1.00	30.89	24.03	5.73	28.21
PK	846.74M	35.13	46.00	-10.87	4.31	3	Vertical	0	1.00	30.82	25.33	6.69	27.71

2.4-2.4835GHz\_BT-LE(2Mbps)

2440MHz\_Adapter



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	33.88M	35.27	40.00	-4.73	-4.90	3	Horizontal	360	1.00	40.17	20.88	1.28	27.06
PK	148.34M	37.85	43.50	-5.65	-9.30	3	Horizontal	360	1.00	47.15	15.74	2.48	27.52
PK	297.72M	32.93	46.00	-13.07	-5.26	3	Horizontal	360	1.00	38.19	18.12	3.64	27.02
PK	499.48M	30.76	46.00	-15.24	-0.88	3	Horizontal	360	1.00	31.64	22.56	4.88	28.32
PK	631.4M	32.17	46.00	-13.83	1.59	3	Horizontal	360	1.00	30.58	24.16	5.72	28.29
PK	844.8M	35.00	46.00	-11.00	4.23	3	Horizontal	360	1.00	30.77	25.27	6.68	27.72



Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	AV	4.79986G	50.24	54.00	-3.76	3	Horizontal	66	2.04
BT-LE(2Mbps)	Pass	AV	4.79988G	50.60	54.00	-3.40	3	Horizontal	59	1.97



Result

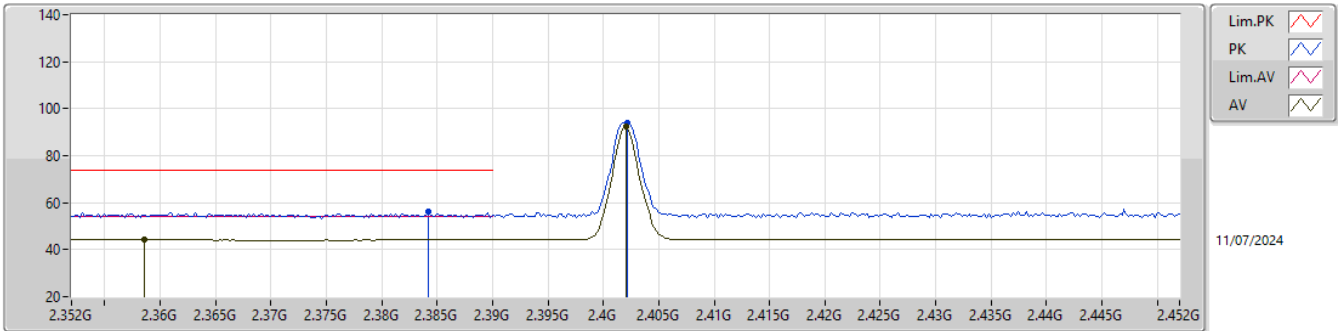
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3586G	44.14	54.00	-9.86	3	Vertical	109	1.13
2402MHz	Pass	AV	2.402G	92.19	Inf	-Inf	3	Vertical	109	1.13
2402MHz	Pass	PK	2.3842G	55.98	74.00	-18.02	3	Vertical	109	1.13
2402MHz	Pass	PK	2.4022G	93.89	Inf	-Inf	3	Vertical	109	1.13
2402MHz	Pass	AV	2.389G	44.15	54.00	-9.85	3	Horizontal	0	1.74
2402MHz	Pass	AV	2.402G	96.82	Inf	-Inf	3	Horizontal	0	1.74
2402MHz	Pass	PK	2.3696G	56.11	74.00	-17.89	3	Horizontal	0	1.74
2402MHz	Pass	PK	2.4022G	98.44	Inf	-Inf	3	Horizontal	0	1.74
2402MHz	Pass	AV	4.79986G	41.30	54.00	-12.70	3	Vertical	0	2.91
2402MHz	Pass	PK	4.80002G	47.70	74.00	-26.30	3	Vertical	0	2.91
2402MHz	Pass	AV	4.79986G	50.24	54.00	-3.76	3	Horizontal	66	2.04
2402MHz	Pass	PK	4.80036G	54.97	74.00	-19.03	3	Horizontal	66	2.04
2440MHz	Pass	AV	2.3592G	44.15	54.00	-9.85	3	Vertical	343	2.17
2440MHz	Pass	AV	2.44G	94.61	Inf	-Inf	3	Vertical	343	2.17
2440MHz	Pass	AV	2.4972G	44.58	54.00	-9.42	3	Vertical	343	2.17
2440MHz	Pass	PK	2.3516G	56.45	74.00	-17.55	3	Vertical	343	2.17
2440MHz	Pass	PK	2.4404G	96.29	Inf	-Inf	3	Vertical	343	2.17
2440MHz	Pass	PK	2.488G	56.42	74.00	-17.58	3	Vertical	343	2.17
2440MHz	Pass	AV	2.376G	44.42	54.00	-9.58	3	Horizontal	312	1.21
2440MHz	Pass	AV	2.44G	99.96	Inf	-Inf	3	Horizontal	312	1.21
2440MHz	Pass	AV	2.4968G	44.60	54.00	-9.40	3	Horizontal	312	1.21
2440MHz	Pass	PK	2.3496G	56.06	74.00	-17.94	3	Horizontal	312	1.21
2440MHz	Pass	PK	2.4396G	101.63	Inf	-Inf	3	Horizontal	312	1.21
2440MHz	Pass	PK	2.4844G	56.00	74.00	-18.00	3	Horizontal	312	1.21
2440MHz	Pass	AV	4.87998G	30.62	54.00	-23.38	3	Vertical	352	1.57
2440MHz	Pass	AV	7.31924G	33.78	54.00	-20.22	3	Vertical	248	1.50
2440MHz	Pass	PK	4.88062G	42.84	74.00	-31.16	3	Vertical	352	1.57
2440MHz	Pass	PK	7.31958G	46.74	74.00	-27.26	3	Vertical	248	1.50
2440MHz	Pass	AV	4.87992G	31.53	54.00	-22.47	3	Horizontal	305	1.68
2440MHz	Pass	AV	7.32052G	35.73	54.00	-18.27	3	Horizontal	283	1.50
2440MHz	Pass	PK	4.87952G	43.94	74.00	-30.06	3	Horizontal	305	1.68
2440MHz	Pass	PK	7.32082G	48.95	74.00	-25.05	3	Horizontal	283	1.50
2480MHz	Pass	AV	2.48G	96.01	Inf	-Inf	3	Vertical	352	1.73
2480MHz	Pass	AV	2.4835G	46.46	54.00	-7.54	3	Vertical	352	1.73
2480MHz	Pass	PK	2.4798G	97.71	Inf	-Inf	3	Vertical	352	1.73
2480MHz	Pass	PK	2.4864G	56.92	74.00	-17.08	3	Vertical	352	1.73
2480MHz	Pass	AV	2.48G	99.90	Inf	-Inf	3	Horizontal	304	1.01
2480MHz	Pass	AV	2.4835G	48.40	54.00	-5.60	3	Horizontal	304	1.01
2480MHz	Pass	PK	2.4798G	101.63	Inf	-Inf	3	Horizontal	304	1.01
2480MHz	Pass	PK	2.4984G	56.97	74.00	-17.03	3	Horizontal	304	1.01
2480MHz	Pass	AV	4.95998G	31.44	54.00	-22.56	3	Vertical	226	1.84
2480MHz	Pass	AV	7.43932G	34.10	54.00	-19.90	3	Vertical	248	1.60
2480MHz	Pass	PK	4.95952G	43.79	74.00	-30.21	3	Vertical	226	1.84
2480MHz	Pass	PK	7.43934G	47.10	74.00	-26.90	3	Vertical	248	1.60
2480MHz	Pass	AV	4.95976G	31.33	54.00	-22.67	3	Horizontal	93	2.96
2480MHz	Pass	AV	7.43932G	33.49	54.00	-20.51	3	Horizontal	8	1.50
2480MHz	Pass	PK	4.9593G	43.42	74.00	-30.58	3	Horizontal	93	2.96
2480MHz	Pass	PK	7.43984G	46.93	74.00	-27.07	3	Horizontal	8	1.50
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3586G	44.16	54.00	-9.84	3	Vertical	109	1.14
2402MHz	Pass	AV	2.402G	90.32	Inf	-Inf	3	Vertical	109	1.14
2402MHz	Pass	PK	2.3718G	56.30	74.00	-17.70	3	Vertical	109	1.14
2402MHz	Pass	PK	2.4026G	93.96	Inf	-Inf	3	Vertical	109	1.14
2402MHz	Pass	AV	2.3896G	44.24	54.00	-9.76	3	Horizontal	309	1.08
2402MHz	Pass	AV	2.402G	97.58	Inf	-Inf	3	Horizontal	309	1.08
2402MHz	Pass	PK	2.354G	56.61	74.00	-17.39	3	Horizontal	309	1.08
2402MHz	Pass	PK	2.4016G	101.20	Inf	-Inf	3	Horizontal	309	1.08
2402MHz	Pass	AV	4.79984G	41.71	54.00	-12.29	3	Vertical	-0.1	2.88
2402MHz	Pass	PK	4.79972G	49.05	74.00	-24.95	3	Vertical	-0.1	2.88
2402MHz	Pass	AV	4.79988G	50.60	54.00	-3.40	3	Horizontal	59	1.97



Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
2402MHz	Pass	PK	4.80016G	55.16	74.00	-18.84	3	Horizontal	59	1.97
2440MHz	Pass	AV	2.3588G	44.15	54.00	-9.85	3	Vertical	346	2.16
2440MHz	Pass	AV	2.44G	92.79	Inf	-Inf	3	Vertical	346	2.16
2440MHz	Pass	AV	2.5G	44.60	54.00	-9.40	3	Vertical	346	2.16
2440MHz	Pass	PK	2.3784G	56.10	74.00	-17.90	3	Vertical	346	2.16
2440MHz	Pass	PK	2.4396G	96.36	Inf	-Inf	3	Vertical	346	2.16
2440MHz	Pass	PK	2.4936G	56.22	74.00	-17.78	3	Vertical	346	2.16
2440MHz	Pass	AV	2.376G	44.34	54.00	-9.66	3	Horizontal	314	1.17
2440MHz	Pass	AV	2.44G	98.12	Inf	-Inf	3	Horizontal	314	1.17
2440MHz	Pass	AV	2.4992G	44.60	54.00	-9.40	3	Horizontal	314	1.17
2440MHz	Pass	PK	2.388G	56.83	74.00	-17.17	3	Horizontal	314	1.17
2440MHz	Pass	PK	2.4404G	101.66	Inf	-Inf	3	Horizontal	314	1.17
2440MHz	Pass	PK	2.4896G	56.08	74.00	-17.92	3	Horizontal	314	1.17
2440MHz	Pass	AV	4.88096G	30.38	54.00	-23.62	3	Vertical	348	1.60
2440MHz	Pass	AV	7.3212G	34.05	54.00	-19.95	3	Vertical	255	1.68
2440MHz	Pass	PK	4.87888G	42.93	74.00	-31.07	3	Vertical	348	1.60
2440MHz	Pass	PK	7.3182G	46.95	74.00	-27.05	3	Vertical	255	1.68
2440MHz	Pass	AV	4.88092G	30.66	54.00	-23.34	3	Horizontal	304	1.70
2440MHz	Pass	AV	7.32116G	35.55	54.00	-18.45	3	Horizontal	283	2.07
2440MHz	Pass	PK	4.88112G	43.36	74.00	-30.64	3	Horizontal	304	1.70
2440MHz	Pass	PK	7.31828G	48.09	74.00	-25.91	3	Horizontal	283	2.07
2480MHz	Pass	AV	2.48G	93.94	Inf	-Inf	3	Vertical	352	1.74
2480MHz	Pass	AV	2.4835G	47.92	54.00	-6.08	3	Vertical	352	1.74
2480MHz	Pass	PK	2.4794G	97.66	Inf	-Inf	3	Vertical	352	1.74
2480MHz	Pass	PK	2.4835G	57.28	74.00	-16.72	3	Vertical	352	1.74
2480MHz	Pass	AV	2.48G	97.73	Inf	-Inf	3	Horizontal	306	1.29
2480MHz	Pass	AV	2.4835G	50.31	54.00	-3.69	3	Horizontal	306	1.29
2480MHz	Pass	PK	2.4794G	101.37	Inf	-Inf	3	Horizontal	306	1.29
2480MHz	Pass	PK	2.4835G	60.18	74.00	-13.82	3	Horizontal	306	1.29
2480MHz	Pass	AV	4.96092G	30.58	54.00	-23.42	3	Vertical	229	2.98
2480MHz	Pass	AV	7.44116G	33.59	54.00	-20.41	3	Vertical	266	1.66
2480MHz	Pass	PK	4.95908G	43.38	74.00	-30.62	3	Vertical	229	2.98
2480MHz	Pass	PK	7.44828G	46.91	74.00	-27.09	3	Vertical	266	1.66
2480MHz	Pass	AV	4.96088G	31.83	54.00	-22.17	3	Horizontal	309	2.44
2480MHz	Pass	AV	7.44112G	37.17	54.00	-16.83	3	Horizontal	286	2.03
2480MHz	Pass	PK	4.9608G	44.12	74.00	-29.88	3	Horizontal	309	2.44
2480MHz	Pass	PK	7.44128G	49.10	74.00	-24.90	3	Horizontal	286	2.03

2.4-2.4835GHz\_BT-LE(1Mbps)

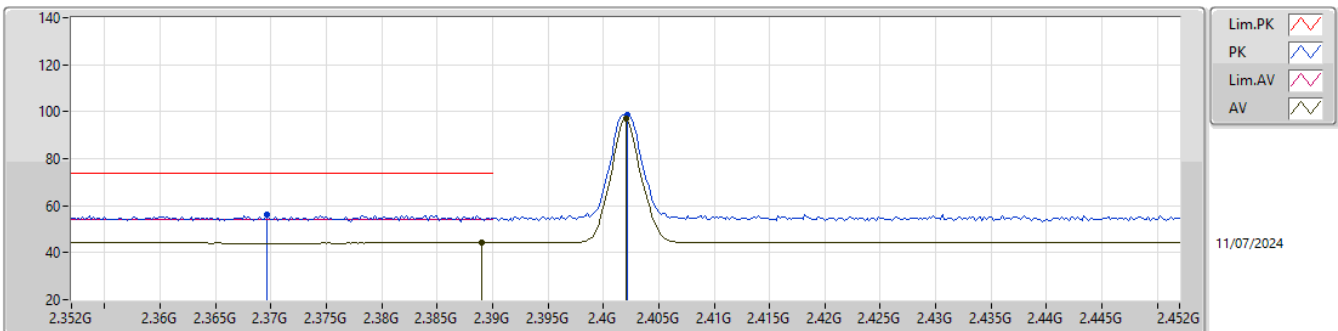
2402MHz\_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3586G	44.14	54.00	-9.86	31.69	3	Vertical	109	1.13	12.45	27.19	4.50	-
AV	2.402G	92.19	Inf	-Inf	31.94	3	Vertical	109	1.13	60.25	27.40	4.54	-
PK	2.3842G	55.98	74.00	-18.02	31.76	3	Vertical	109	1.13	24.22	27.24	4.52	-
PK	2.4022G	93.89	Inf	-Inf	31.94	3	Vertical	109	1.13	61.95	27.40	4.54	-

2.4-2.4835GHz\_BT-LE(1Mbps)

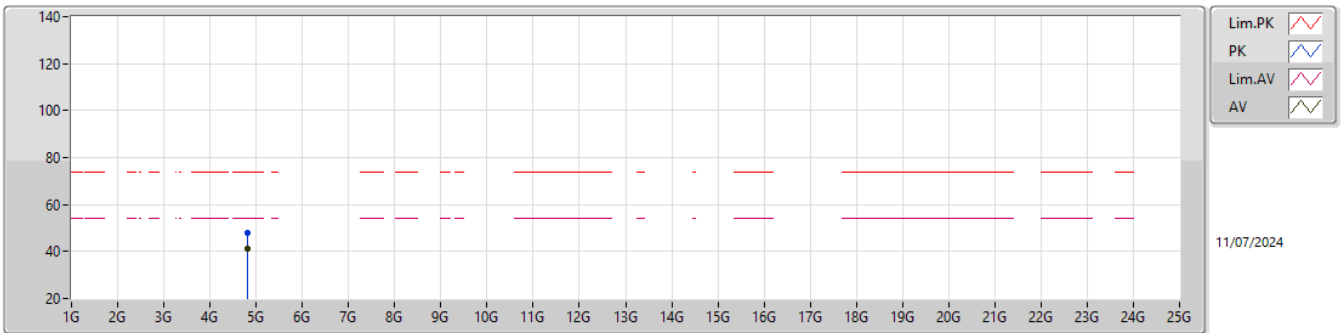
2402MHz\_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.389G	44.15	54.00	-9.85	31.82	3	Horizontal	0	1.74	12.33	27.29	4.53	-
AV	2.402G	96.82	Inf	-Inf	31.94	3	Horizontal	0	1.74	64.88	27.40	4.54	-
PK	2.3696G	56.11	74.00	-17.89	31.61	3	Horizontal	0	1.74	24.50	27.10	4.51	-
PK	2.4022G	98.44	Inf	-Inf	31.94	3	Horizontal	0	1.74	66.50	27.40	4.54	-

2.4-2.4835GHz\_BT-LE(1Mbps)

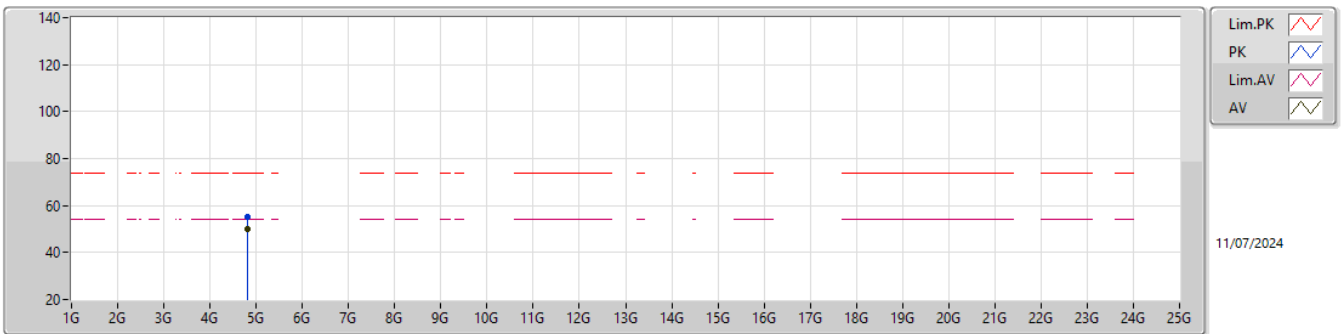
2402MHz\_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.79986G	41.30	54.00	-12.70	3.88	3	Vertical	0	2.91	37.42	32.20	6.51	34.83
PK	4.80002G	47.70	74.00	-26.30	3.88	3	Vertical	0	2.91	43.82	32.20	6.51	34.83

2.4-2.4835GHz\_BT-LE(1Mbps)

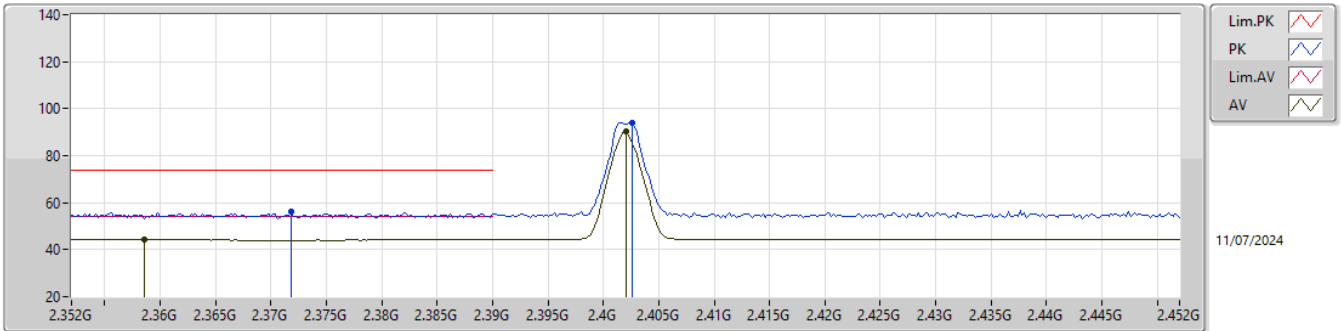
2402MHz\_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.79986G	50.24	54.00	-3.76	3.88	3	Horizontal	66	2.04	46.36	32.20	6.51	34.83
PK	4.80036G	54.97	74.00	-19.03	3.88	3	Horizontal	66	2.04	51.09	32.20	6.51	34.83

2.4-2.4835GHz\_BT-LE(2Mbps)

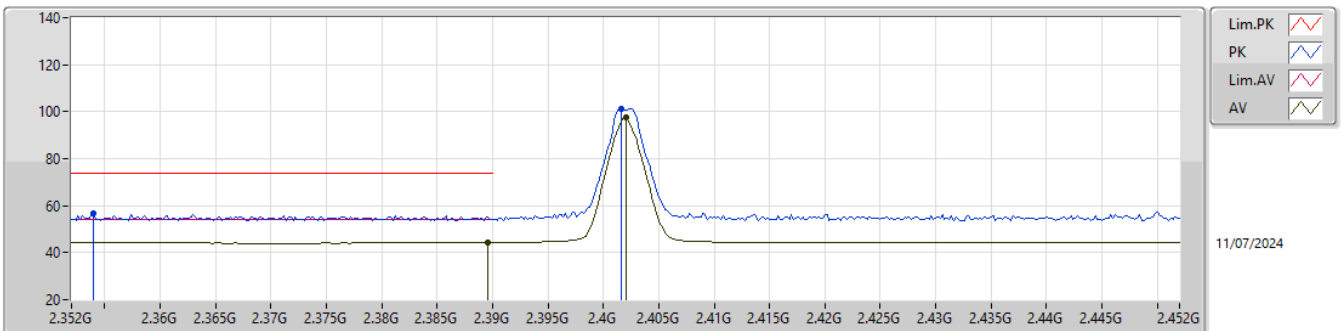
2402MHz\_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3586G	44.16	54.00	-9.84	31.69	3	Vertical	109	1.14	12.47	27.19	4.50	-
AV	2.402G	90.32	Inf	-Inf	31.94	3	Vertical	109	1.14	58.38	27.40	4.54	-
PK	2.3718G	56.30	74.00	-17.70	31.63	3	Vertical	109	1.14	24.67	27.12	4.51	-
PK	2.4026G	93.96	Inf	-Inf	31.94	3	Vertical	109	1.14	62.02	27.40	4.54	-

2.4-2.4835GHz\_BT-LE(2Mbps)

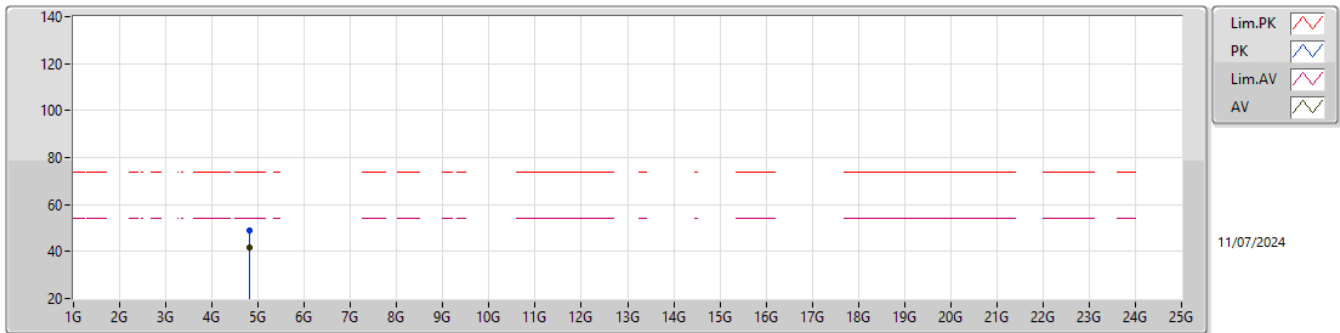
2402MHz\_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3896G	44.24	54.00	-9.76	31.83	3	Horizontal	309	1.08	12.41	27.30	4.53	-
AV	2.402G	97.58	Inf	-Inf	31.94	3	Horizontal	309	1.08	65.64	27.40	4.54	-
PK	2.354G	56.61	74.00	-17.39	31.63	3	Horizontal	309	1.08	24.98	27.14	4.49	-
PK	2.4016G	101.20	Inf	-Inf	31.94	3	Horizontal	309	1.08	69.26	27.40	4.54	-

2.4-2.4835GHz\_BT-LE(2Mbps)

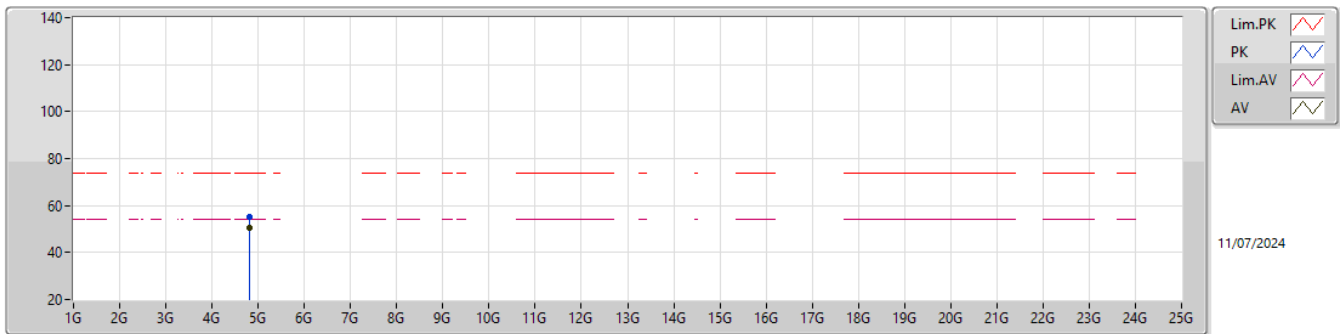
2402MHz\_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.79984G	41.71	54.00	-12.29	3.88	3	Vertical	-0.1	2.88	37.83	32.20	6.51	34.83
PK	4.79972G	49.05	74.00	-24.95	3.88	3	Vertical	-0.1	2.88	45.17	32.20	6.51	34.83

2.4-2.4835GHz\_BT-LE(2Mbps)

2402MHz\_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.79988G	50.60	54.00	-3.40	3.88	3	Horizontal	59	1.97	46.72	32.20	6.51	34.83
PK	4.80016G	55.16	74.00	-18.84	3.88	3	Horizontal	59	1.97	51.28	32.20	6.51	34.83