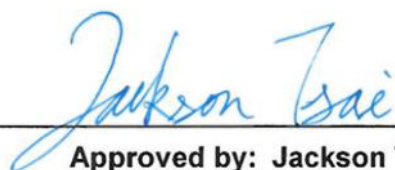


# FCC Radio Test Report

FCC ID : 2BAH4WF-3  
Equipment : Silvanet Wildfire Sensor  
Brand Name :  DRYAD   DRYAD  
Model Name : WF-3  
Applicant : Dryad Networks GmbH  
Eisenbahnstr. 37, 16225 Eberswalde, Germany  
Manufacturer : Dryad Networks GmbH  
Eisenbahnstr. 37, 16225 Eberswalde, Germany  
Standard : 47 CFR FCC Part 15.247

The product was received on Dec. 19, 2024, and testing was started from Jan. 08, 2025 and completed on Jan. 21, 2025. 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

[illegible]

## Summary of Test Result

| Report Clause | Ref. Std. Clause | Test Items                                         | Result (PASS/FAIL) | Remark                         |
|---------------|------------------|----------------------------------------------------|--------------------|--------------------------------|
| 1.1.2         | 15.203           | Antenna Requirement                                | PASS               | -                              |
| -             | 15.207           | AC Power-line Conducted Emissions                  | Not Required       | Only employ Solar Panel power. |
| 3.1           | 15.247(a)        | 20dB Bandwidth                                     | PASS               | -                              |
| 3.1           | 15.247(a)        | Carrier Frequency Separation                       | PASS               | -                              |
| 3.2           | 15.247(b)        | Maximum Conducted Output Power                     | PASS               | -                              |
| 3.3           | 15.247(e)        | Power Spectral Density                             | PASS               | -                              |
| 3.4           | 15.247(a)        | Number of Hopping Frequencies and Hopping Bandedge | PASS               | -                              |
| 3.5           | 15.247(a)        | Time of Occupancy (Dwell Time)                     | PASS               | -                              |
| 3.6           | 15.247(d)        | Emissions in Non-restricted Frequency Bands        | PASS               | -                              |
| 3.7           | 15.247(d)        | Emissions in Restricted Frequency Bands            | PASS               | -                              |

**Declaration of Conformity:**

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

**Comments and Explanations:**

None

**Reviewed by: Ryan Hsiao**

**Report Producer: Michelle Tsai**

# 1 General Description

## 1.1 Information

### 1.1.1 RF General Information

| Frequency Range (MHz) | Modulation    | Ch. Frequency (MHz) | Channel Number |
|-----------------------|---------------|---------------------|----------------|
| 902-928 MHz           | LoRa (125kHz) | 902.3-914.9         | 64             |
| 902-928 MHz           | LoRa (500kHz) | 903-914.2           | 8              |
| 902-928 MHz           | LoRa (500kHz) | 923.3-927.5         | 8              |

| Band       | Mode          | BWch (MHz) | Nant |
|------------|---------------|------------|------|
| 902-928MHz | LoRa (500kHz) | 0.5        | 1TX  |
| 902-928MHz | LoRa (500kHz) | 0.5        | 1TX  |
| 902-928MHz | LoRa (125kHz) | 0.125      | 1TX  |

Note:

- ♦ 902-928 MHz Band uses as a hybrid system.
- ♦ LoRa (125kHz) uses FHSS.
- ♦ LoRa (500kHz) uses DTS.
- ♦ BWch is the nominal channel bandwidth.

### 1.1.2 Antenna Information

| Ant. | Port | Brand | Model Name    | Antenna Type          | Connector | Gain (dBi) |
|------|------|-------|---------------|-----------------------|-----------|------------|
| 1    | 1    | Dryad | Sensor01Gen-3 | Wire Monopole Antenna | N/A       | 2.6        |

**For LoRa function:**

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

### 1.1.3 Type of EUT

| Operational Condition               |                                                                               |
|-------------------------------------|-------------------------------------------------------------------------------|
| <b>EUT Power Type</b>               | From Solar Panel                                                              |
| 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 Test Signal Duty Cycle**

| Mode          | DC    | DCF<br>(dB) | T<br>(s) | VBW<br>(Hz)_1/T |
|---------------|-------|-------------|----------|-----------------|
| LoRa (500kHz) | 0.296 | 5.29        | 25m      | 50              |
| LoRa (125kHz) | 0.589 | 2.3         | 98.125m  | 20              |

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<br>(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               |
| RF Conducted                                               | TH07-HY                                                                                        | Xun Hsieh     | 23.8~24.2℃ / 55~58% | 14/Jan/2025~21/Jan/2025 |
| Radiated                                                   | 03CH02-HY                                                                                      | Daniel Lin    | 20.5~22.4℃ / 50~55% | 08/Jan/2025             |
| <input type="checkbox"/> Wenhua 3rd.<br>(TAF: 3785)        | ADD: No. 58, Aly. 75, Ln. 564, Wenhua 3rd Rd., Guishan Dist. Taoyuan City 333, Taiwan (R.O.C.) |               |                     |                         |
|                                                            | TEL: 886-3-327-0868                                                                            |               |                     |                         |
|                                                            | Test site Designation No. TW3785 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                   |
|---------------------------------------------|-------------|--------------------------|
| 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 Condition

| RF Conducted | Abbreviation | Remark |
|--------------|--------------|--------|
| TX           | Tnom         | 20°C   |
| -            | Vnom         | 1.5V   |

### 2.2 Test Channel Mode

|                       |                    |
|-----------------------|--------------------|
| Test Software Version | hercules_3-2-8.exe |
|-----------------------|--------------------|

| Mode          | Power Setting |
|---------------|---------------|
| LoRa (500kHz) | -             |
| 903MHz        | 14            |
| 909.4MHz      | 14            |
| 914.2MHz      | 14            |
| LoRa (500kHz) |               |
| 923.3MHz      | 14            |
| 927.5MHz      | 14            |
| LoRa (125kHz) |               |
| 902.3MHz      | 14            |
| 908.7MHz      | 14            |
| 914.9MHz      | 14            |

## 2.3 The Worst Case Measurement Configuration

| The Worst Case Mode for Following Conformance Tests                                     |                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Tests Item</b>                                                                       | RF Output Power, 20dB Bandwidth, Carrier Frequency Separation (ChS)<br>Number of Hopping Frequencies (N), Hopping Bandedge<br>Time of Occupancy (Dwell Time)<br>Emissions in Non-restricted Frequency Bands |
| <b>Test Condition</b>                                                                   | Conducted measurement at transmit chains                                                                                                                                                                    |
|                                                                                         | <input checked="" type="checkbox"/> Non-adaptive frequency hopping systems (Non-AFH)<br><input checked="" type="checkbox"/> adaptive frequency hopping systems (AFH)                                        |
| Non-AFH Mode configuration was found to be the worst case and measured during the test. |                                                                                                                                                                                                             |

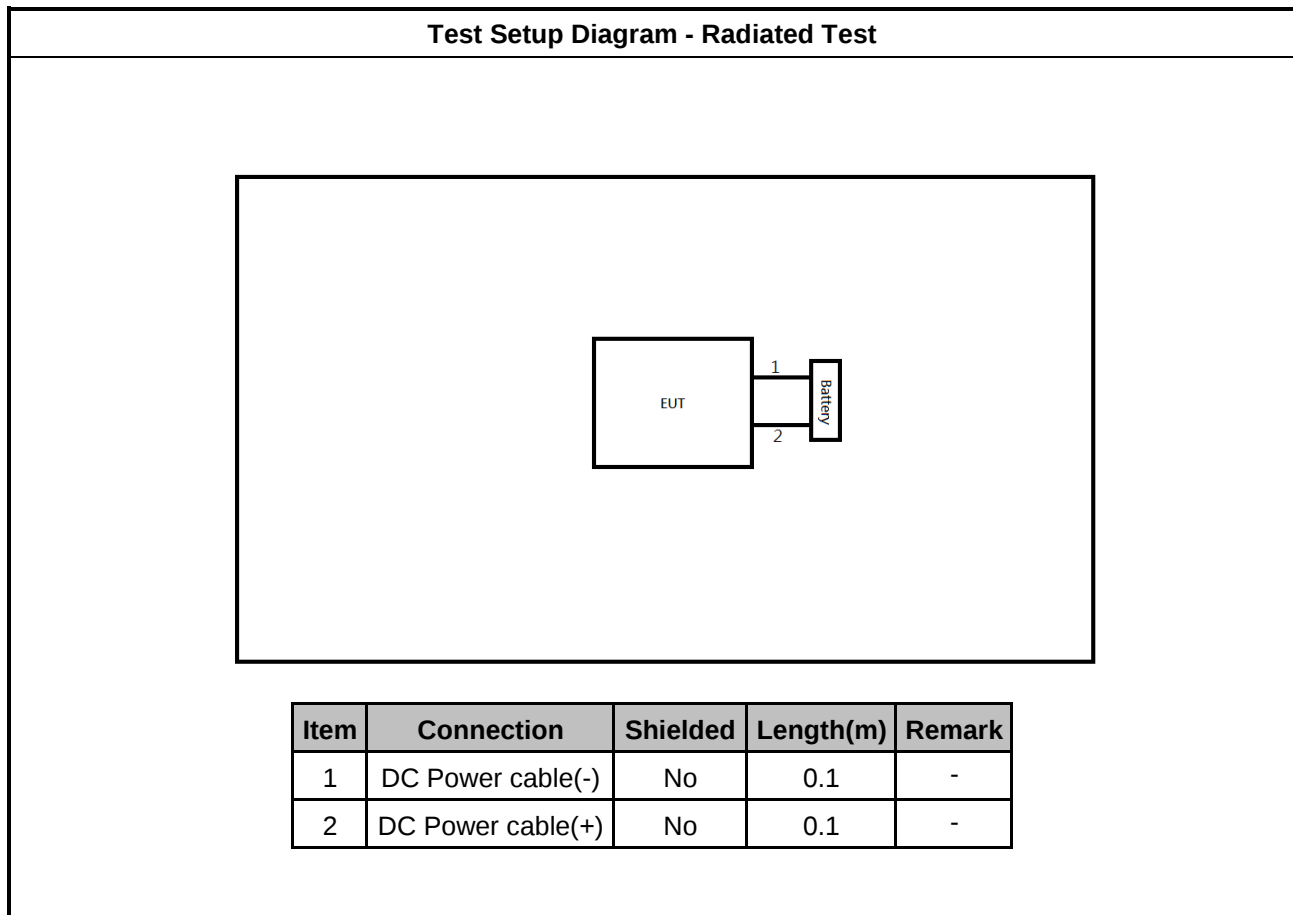
| The Worst Case Mode for Following Conformance Tests |                                                                                                                                                                                                                                                     |                                                                                     |                                                                                       |
|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>Tests Item</b>                                   | Emissions in Restricted Frequency Bands                                                                                                                                                                                                             |                                                                                     |                                                                                       |
| <b>Test Condition</b>                               | Radiated measurement<br>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                                                   | Battery 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                                                                                     |

## 2.4 Support Equipment

| Support Equipment – Conducted |                |            |            |        |        |
|-------------------------------|----------------|------------|------------|--------|--------|
| No.                           | Equipment      | Brand Name | Model Name | FCC ID | Remark |
| 1                             | Notebook       | DELL       | E5410      | -      | -      |
| 2                             | Adapter for NB | DELL       | HA65NM130  | -      | -      |
| 3                             | Battery        | Panasonic  | R6P UM-3N  | -      | -      |

| Support Equipment – Radiated |           |            |            |        |        |
|------------------------------|-----------|------------|------------|--------|--------|
| No.                          | Equipment | Brand Name | Model Name | FCC ID | Remark |
| 1                            | Battery   | Panasonic  | R6P UM-3N  | -      | -      |

## 2.5 Test Setup Diagram



### 3 Transmitter Test Result

#### 3.1 20dB Bandwidth and Carrier Frequency Separation

##### 3.1.1 20dB Bandwidth and Carrier Frequency Separation Limit

| 20dB Bandwidth and Carrier Frequency Separation Limit for Frequency Hopping Systems |
|-------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>902-928 MHz Band:</li> </ul>                 |
| N: Number of Hopping Frequencies; ChS: Hopping Channel Separation                   |

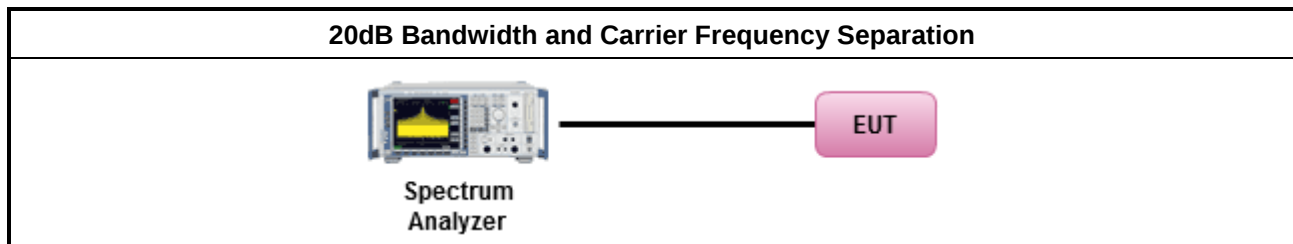
##### 3.1.2 Measuring Instruments

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

##### 3.1.3 Test Procedures

| Test Method                                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> Refer as ANSI C63.10-2013, clause 6.9.2 for 20 dB bandwidth measurement.              |
| <input checked="" type="checkbox"/> Refer as ANSI C63.10-2013, clause 7.8.2 for carrier frequency separation measurement. |

##### 3.1.4 Test Setup



##### 3.1.5 Test Result of 20dB Bandwidth

Refer as Appendix A

##### 3.1.6 Test Result of Carrier Frequency Separation

Refer as Appendix A

## 3.2 Maximum Conducted Output Power

### 3.2.1 Maximum Conducted Output Power Limit

| Maximum Conducted Output Power Limit |                                                          |
|--------------------------------------|----------------------------------------------------------|
| ▪ 902-928 MHz Band:                  |                                                          |
|                                      | ▪ $N \geq 50$ and hybrid system; Power 30dBm; EIRP 36dBm |
|                                      | ▪ $50 > N \geq 25$ ; Power 24dBm; EIRP 30dBm             |
| N: Number of Hopping Frequencies     |                                                          |

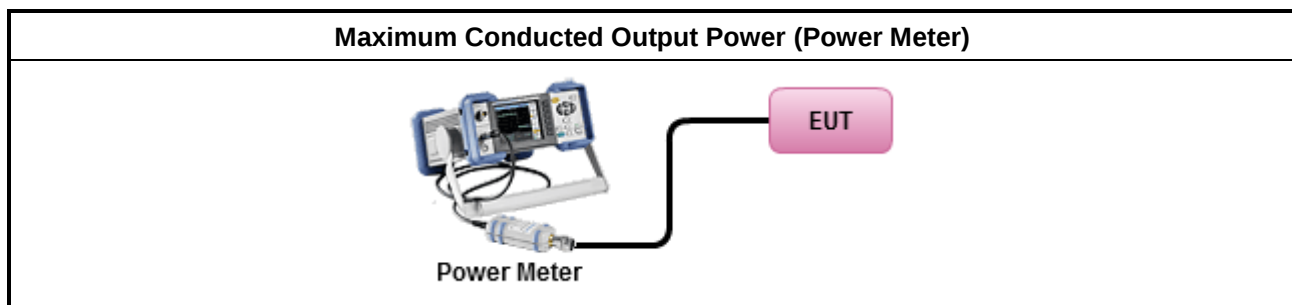
### 3.2.2 Measuring Instruments

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

### 3.2.3 Test Procedures

| Test Method                                                                                                                                                                                                                                                                                                           |                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| ▪ Maximum Peak Conducted Output Power                                                                                                                                                                                                                                                                                 |                                                                                             |
| <input type="checkbox"/>                                                                                                                                                                                                                                                                                              | Refer as KDB 558074, clause 8.3.1.1 (11.9.1.1 of ANSI C63.10) RBW $\geq$ 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 checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                   | Refer as KDB 558074, clause 8.3.1.3 (11.9.1.3 of ANSI C63.10) peak power meter.             |
| ▪ Maximum Average Conducted Output Power                                                                                                                                                                                                                                                                              |                                                                                             |
| <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.          |
| ▪ For conducted measurement.                                                                                                                                                                                                                                                                                          |                                                                                             |
| ▪ If the EUT supports multiple transmit chains using options given below:<br>Refer as FCC 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. |                                                                                             |
| ▪ If multiple transmit chains, EIRP calculation could be following as methods:<br>$P_{total} = P_1 + P_2 + \dots + P_n$<br>(calculated in linear unit [mW] and transfer to log unit [dBm])<br>$EIRP_{total} = P_{total} + DG$                                                                                         |                                                                                             |

### 3.2.4 Test Setup



### 3.2.5 Test Result of Maximum Conducted Output Power

Refer as Appendix B

### 3.3 Power Spectral Density

#### 3.3.1 Power Spectral Density Limit

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

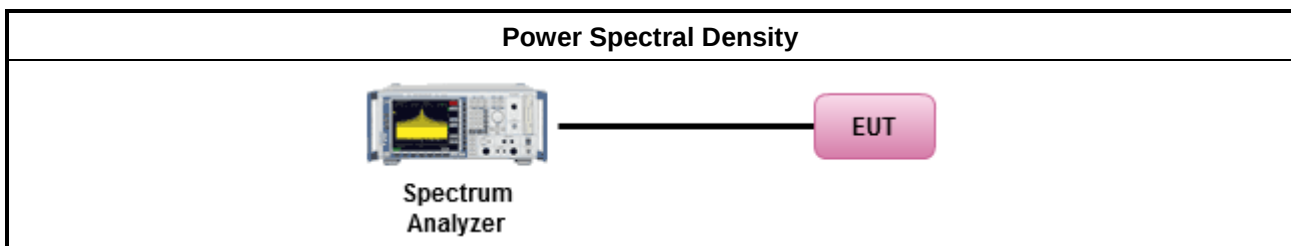
#### 3.3.2 Measuring Instruments

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>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 FCC 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> |

#### 3.3.4 Test Setup



#### 3.3.5 Test Result of Power Spectral Density

Refer as Appendix C

### 3.4 Number of Hopping Frequencies and Hopping Bandedge

#### 3.4.1 Number of Hopping Frequencies Limit

| Number of Hopping Frequencies Limit                                                                                                                   |                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>902-928 MHz Band:</li> </ul>                                                                                   |                                                                                                                                                   |
|                                                                                                                                                       | <ul style="list-style-type: none"> <li>ChS <math>\geq</math> MAX (20 dB bandwidth, 25 kHz); 20 dB bandwidth <math>\leq</math> 250 kHz.</li> </ul> |
|                                                                                                                                                       | <ul style="list-style-type: none"> <li>ChS <math>\geq</math> MAX (20 dB bandwidth, 25 kHz); 20 dB bandwidth <math>&gt;</math> 250 kHz.</li> </ul> |
| <b>Note :</b><br>1. ChS : Hopping Channel Separation<br>2. There is no minimum number of hopping channels associated with this type of hybrid system. |                                                                                                                                                   |

#### 3.4.2 Hopping Bandedge Limit

Refer clause 3.6.1 and clause 3.7.1

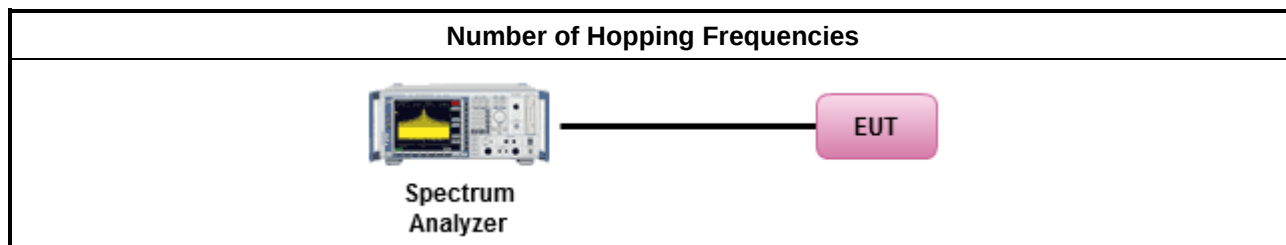
#### 3.4.3 Measuring Instruments

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

#### 3.4.4 Test Procedures

| Test Method                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> Refer as ANSI C63.10-2013, clause 7.8.3 for number of hopping frequencies measurement. |
| <input checked="" type="checkbox"/> Refer as ANSI C63.10-2013, clause 7.8.6 for hopping frequencies Bandedge measurement.  |

#### 3.4.5 Test Setup



#### 3.4.6 Test Result of Number of Hopping Frequencies

Refer as Appendix D

#### 3.4.7 Test Result of Number of Hopping Frequencies Bandedge

Refer as Appendix D

### 3.5 Time of Occupancy (Dwell Time)

#### 3.5.1 Time of Occupancy (Dwell Time) Limit

| 20dB Bandwidth and Carrier Frequency Separation Limit for Frequency Hopping Systems |                                                                                                      |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>902-928 MHz Band:</li> </ul>                 |                                                                                                      |
|                                                                                     | <ul style="list-style-type: none"> <li>N <math>\geq</math> 50; 0.4s in 20s period</li> </ul>         |
|                                                                                     | <ul style="list-style-type: none"> <li>50 &gt; N <math>\geq</math> 25; 0.4s in 10s period</li> </ul> |
| N: Number of Hopping Frequencies                                                    |                                                                                                      |

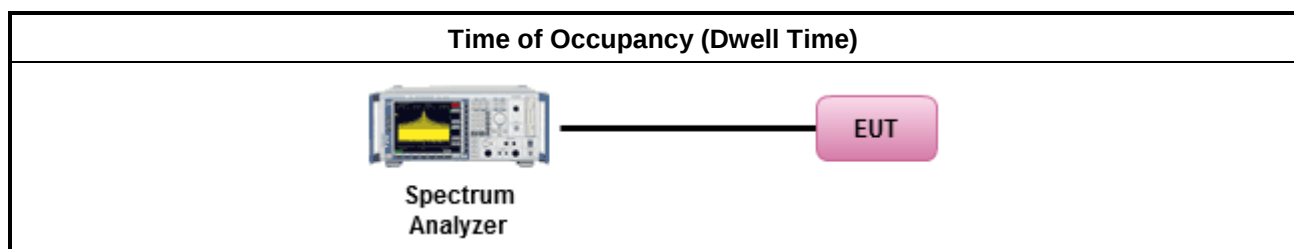
#### 3.5.2 Measuring Instruments

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

#### 3.5.3 Test Procedures

| Test Method                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Refer as ANSI C63.10-2013, clause 7.8.4 for dwell time measurement.</li> </ul> |

#### 3.5.4 Test Setup



#### 3.5.5 Test Result of Time of Occupancy (Dwell Time)

Refer as Appendix E

### 3.6 Emissions in Non-restricted Frequency Bands

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

| Un-restricted Band Emissions Limit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| RF output power procedure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Limit (dB) |
| Peak output power procedure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 20         |
| Average output power procedure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 30         |
| <p>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.</p> <p>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.</p> |            |

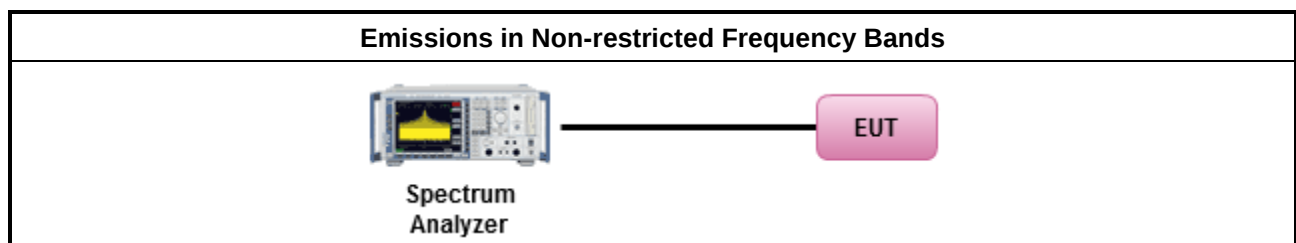
#### 3.6.2 Measuring Instruments

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

#### 3.6.3 Test Procedures

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

#### 3.6.4 Test Setup



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

Refer as Appendix F

### 3.7 Emissions in Restricted Frequency Bands

#### 3.7.1 Emissions in Restricted Frequency Bands Limit

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

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

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

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

#### 3.7.2 Measuring Instruments

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

### 3.7.3 Test Procedures

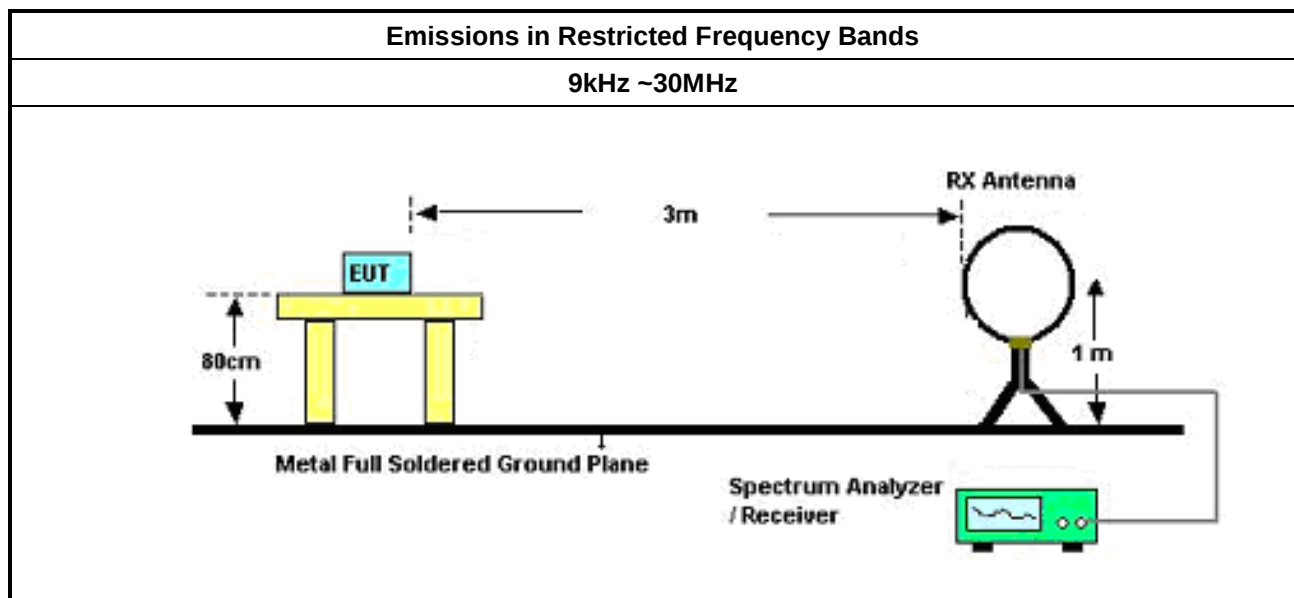
| Test Method |                                                                                                                                                                                                                                                                           |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | <ul style="list-style-type: none"> <li>The average emission levels shall be measured in [hopping duty factor].</li> </ul>                                                                                                                                                 |
|             | <ul style="list-style-type: none"> <li>Refer as ANSI C63.10; clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.</li> </ul>                                               |
|             | <ul style="list-style-type: none"> <li>For the transmitter unwanted emissions shall be measured using following options below:</li> </ul>                                                                                                                                 |
|             | <ul style="list-style-type: none"> <li>Refer as ANSI C63.10, clause 4.1.4.2.1 QP value.</li> <li>Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak.</li> <li>Refer as ANSI C63.10, clause 4.1.4.2.4 average value of hopping pulsed emissions.</li> </ul> |
|             | <ul style="list-style-type: none"> <li>KDB 414788 Open-Field Test Sites and Chamber Correlation Justification.</li> </ul>                                                                                                                                                 |
|             | <ul style="list-style-type: none"> <li>Based on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in regulations; however, an attempt should be made to avoid making measurements in the near field.</li> </ul>                   |
|             | <ul style="list-style-type: none"> <li>Open-field site and chamber correlation testing had been performed and chamber measured test result is the worst case test result.</li> </ul>                                                                                      |

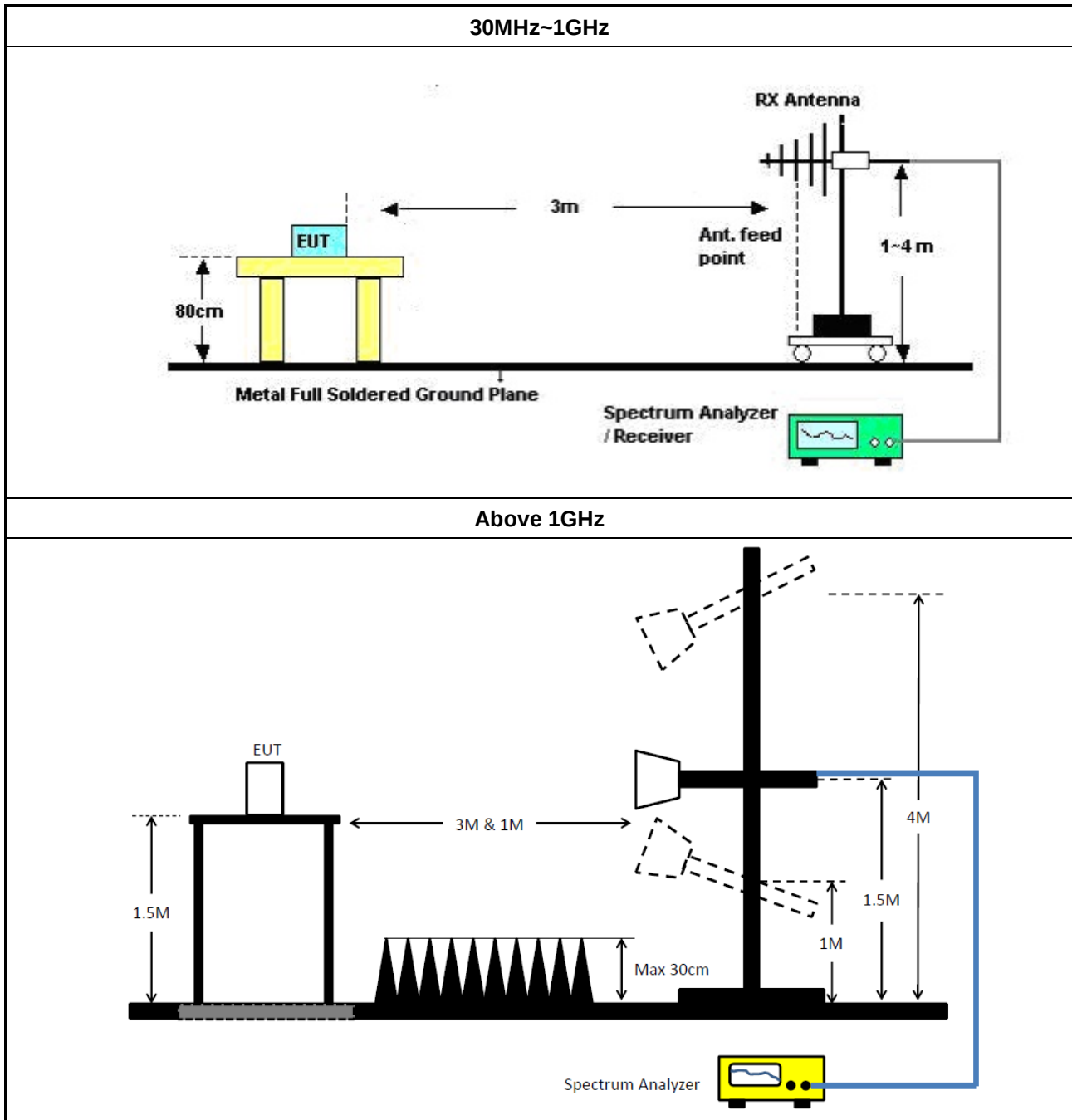
### 3.7.4 Measurement Results Calculation

The measured Level is calculated using:

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

### 3.7.5 Test Setup





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

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

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

Refer as Appendix G



## 4 Test Equipment and Calibration Data

### Instrument for Conducted Test

| Instrument                     | Manufacturer/<br>Brand Name | Model No. | Serial No. | Spec.        | Calibration<br>Date | Calibration Due<br>Date |
|--------------------------------|-----------------------------|-----------|------------|--------------|---------------------|-------------------------|
| Signal Analyzer                | R&S                         | FSV 40    | 101515     | 9kHz~40GHz   | 02/Feb/2024         | 01/Feb/2025             |
| SMB100A<br>Signal<br>Generator | R&S                         | SMB100A   | 181147     | 100kHz~40GHz | 16/Oct/2024         | 15/Oct/2025             |
| Power Meter                    | Anritsu                     | ML2495A   | 1517010    | 300MHz~40GHz | 18/Dec/2024         | 17/Dec/2025             |
| Pulse Sensor                   | Anritsu                     | MA2411B   | 1339407    | 300MHz~40GHz | 18/Dec/2024         | 17/Dec/2025             |
| SENSE-15247_<br>FS             | Sporton                     | V5.11.21  | N/A        | N/A          | N/A                 | N/A                     |

### Instrument for Radiated Test

| Instrument                             | Manufacturer/<br>Brand Name | Model No.                 | Serial No.          | Spec.            | Calibration<br>Date | Calibration Due<br>Date |
|----------------------------------------|-----------------------------|---------------------------|---------------------|------------------|---------------------|-------------------------|
| N.S.A.<br>Measurement                  | SIDT FRANKONIA              | SAC-3M                    | 03CH02-HY           | 30MHz~1GHz<br>3M | 14/Jul/2024         | 13/Jul/2025             |
| Site V.S.W.R                           | SIDT FRANKONIA              | SAC-3M                    | 03CH02-HY           | 1GHz~18GHz<br>3M | 14/Jul/2024         | 13/Jul/2025             |
| 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 &<br>5dB Attenuator      | SCHAFFNER / MTJ             | CBL 6112B /<br>MTJ6102-05 | 2723 / 2            | 30MHz~1GHz       | 26/Aug/2024         | 25/Aug/2025             |
| Double Ridged<br>Guide Horn<br>Antenna | SCHWARZBECK                 | BBHA 9120 D               | 02268               | 1GHz~18GHz       | 23/Sep/2024         | 22/Sep/2025             |
| RF Cable                               | MVE                         | 400LL+SN<br>200207        | 03CH02-cable<br>-02 | 9kHz~30MHz       | 26/Nov/2024         | 25/Nov/2025             |
| RF Cable                               | MVE                         | 400LL+SN<br>200207        | 03CH02-cable<br>-02 | 30MHz~1GHz       | 26/Nov/2024         | 25/Nov/2025             |
| RF Cable-R03m                          | HUBER+SUHNER                | SUCOFLEX<br>104           | 03CH02-cable<br>-01 | 1GHz~40GHz       | 15/Feb/2024         | 14/Feb/2025             |
| Amplifier                              | Agilent                     | 8447D                     | 2944A11149          | 100kHz~1.3GHz    | 29/Jun/2024         | 28/Jun/2025             |
| Microwave<br>Preamplifier              | Agilent                     | 8449B                     | 3008A02373          | 1GHz~26.5GHz     | 01/Oct/2024         | 30/Sep/2025             |
| SENSE-15247-FS                         | Sporton                     | V5.11.18                  | N/A                 | N/A              | N/A                 | N/A                     |



**Summary**

| Mode          | Max-N dB | Max-OBW  | ITU-Code | Min-N dB | Min-OBW  |
|---------------|----------|----------|----------|----------|----------|
|               | (Hz)     | (Hz)     |          | (Hz)     | (Hz)     |
| 902-928MHz    | -        | -        | -        | -        | -        |
| LoRa (125kHz) | 146.85k  | 128.936k | 129KF1D  | 145.75k  | 125.187k |

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

**Result**

| Mode          | Result | Limit | Port 1-N dB | Port 1-OBW |
|---------------|--------|-------|-------------|------------|
|               |        | (Hz)  | (Hz)        | (Hz)       |
| LoRa (125kHz) | -      | -     | -           | -          |
| 902.3MHz      | Pass   | Inf   | 146.3k      | 125.187k   |
| 908.7MHz      | Pass   | Inf   | 146.85k     | 126.937k   |
| 914.9MHz      | Pass   | Inf   | 145.75k     | 128.936k   |

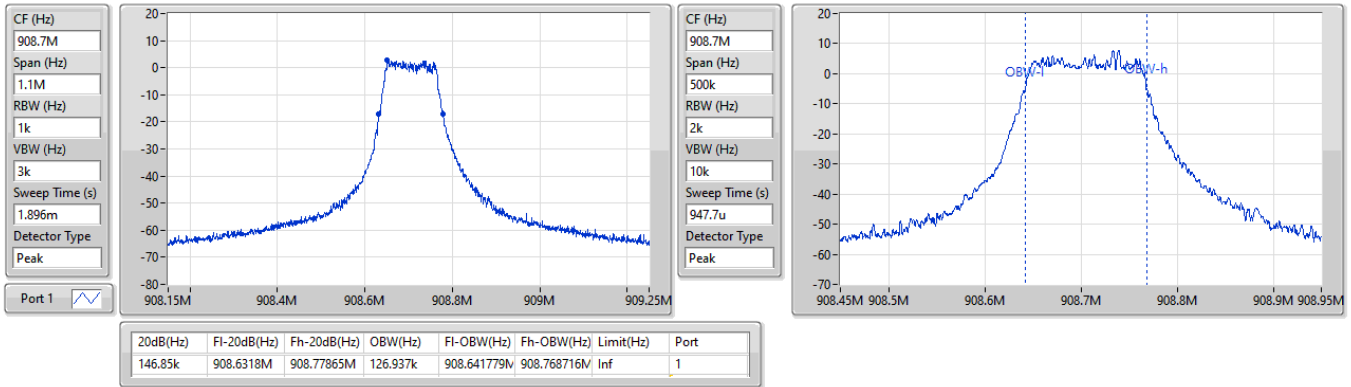
Port X-N dB = Port X 20dB down bandwidth;  
Port X-OBW = Port X 99% occupied bandwidth

902-928MHz\_LoRa (125kHz)

EBW-FS

908.7MHz

14/01/2025





**Summary**

| Mode          | Max-Space | Min-Space |
|---------------|-----------|-----------|
|               | (Hz)      | (Hz)      |
| 902-928MHz    | -         | -         |
| LoRa (125kHz) | 188.7k    | 152.1k    |

**Result**

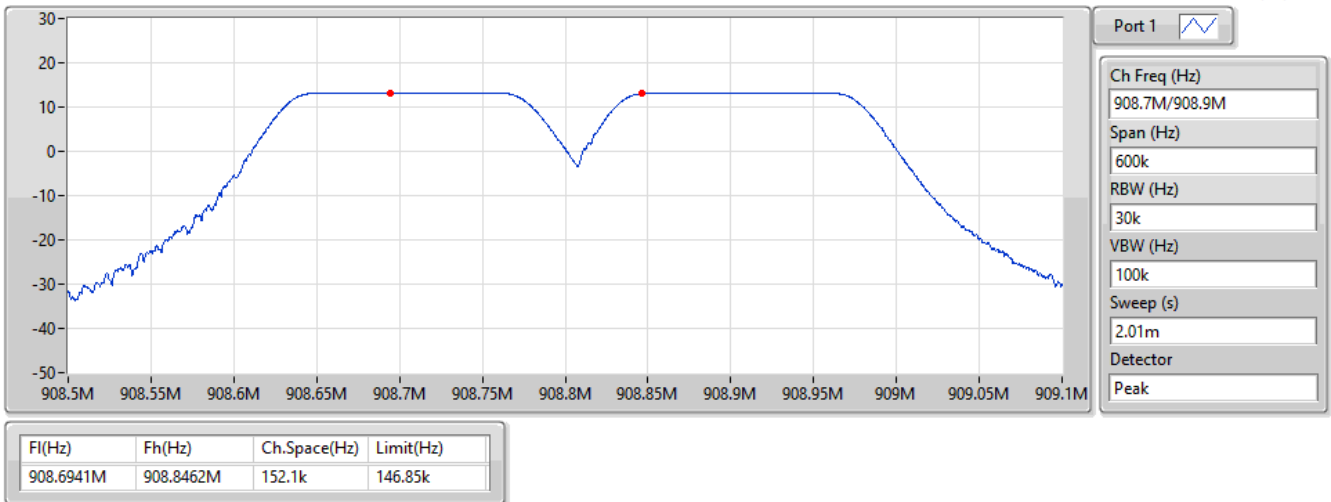
| Mode          | Result | Fl        | Fh        | Ch.Space | Limit   |
|---------------|--------|-----------|-----------|----------|---------|
|               |        | (Hz)      | (Hz)      | (Hz)     | (Hz)    |
| LoRa (125kHz) | -      | -         | -         | -        | -       |
| 902.3MHz      | Pass   | 902.2581M | 902.4468M | 188.7k   | 146.3k  |
| 908.7MHz      | Pass   | 908.6941M | 908.8462M | 152.1k   | 146.85k |
| 914.9MHz      | Pass   | 914.6776M | 914.854M  | 176.4k   | 145.75k |

902-928MHz\_LoRa (125kHz)

Channel Separation-FS

908.7M/908.9MHz

14/01/2025



**Summary**

| Mode          | Max-N dB<br>(Hz) | Max-OBW<br>(Hz) | ITU-Code | Min-N dB<br>(Hz) | Min-OBW<br>(Hz) |
|---------------|------------------|-----------------|----------|------------------|-----------------|
| 902-928MHz    | -                | -               | -        | -                | -               |
| LoRa (500kHz) | 621.25k          | 510.37k         | 510KF1D  | 621.25k          | 504.748k        |
| 902-928MHz    | -                | -               | -        | -                | -               |
| LoRa (500kHz) | 621.875k         | 520.99k         | 521KF1D  | 621.25k          | 517.866k        |

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 | Port 1-N dB | Port 1-OBW |
|---------------|--------|-------|-------------|------------|
|               |        | (Hz)  | (Hz)        | (Hz)       |
| LoRa (500kHz) | -      | -     | -           | -          |
| 903MHz        | Pass   | 500k  | 621.25k     | 504.748k   |
| 909.4MHz      | Pass   | 500k  | 621.25k     | 510.37k    |
| 914.2MHz      | Pass   | 500k  | 621.25k     | 509.745k   |
| LoRa (500kHz) |        |       |             |            |
| 923.3MHz      | Pass   | 500k  | 621.25k     | 520.99k    |
| 927.5MHz      | Pass   | 500k  | 621.875k    | 517.866k   |

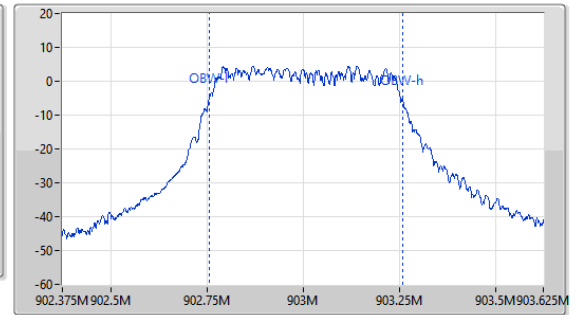
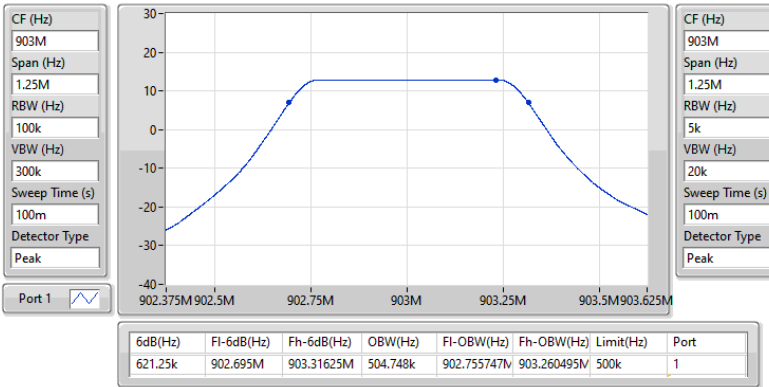
Port X-N dB = Port X 6dB down bandwidth;  
Port X-OBW = Port X 99% occupied bandwidth

902-928MHz\_LoRa (500kHz)

EBW-DTS

903MHz

14/01/2025

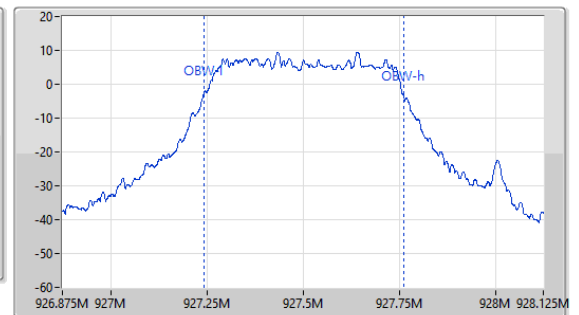
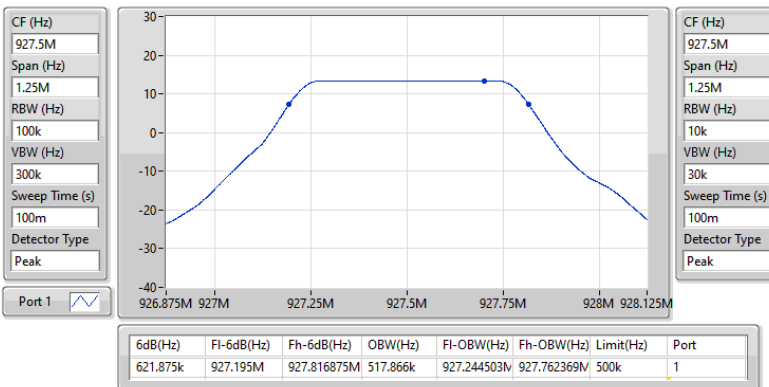


902-928MHz\_LoRa (500kHz)

EBW-DTS

927.5MHz

14/01/2025





**Summary**

| Mode          | Total Power | Total Power |
|---------------|-------------|-------------|
|               | (dBm)       | (W)         |
| 902-928MHz    | -           | -           |
| LoRa (125kHz) | 13.40       | 0.02188     |



**Result**

| Mode          | Result | DG    | Total Power | Power Limit |
|---------------|--------|-------|-------------|-------------|
|               |        | (dBi) | (dBm)       | (dBm)       |
| LoRa (125kHz) | -      | -     | -           | -           |
| 902.3MHz      | Pass   | 2.60  | 13.16       | 30.00       |
| 908.7MHz      | Pass   | 2.60  | 13.29       | 30.00       |
| 914.9MHz      | Pass   | 2.60  | 13.40       | 30.00       |

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



**Summary**

| Mode          | Total Power | Total Power |
|---------------|-------------|-------------|
|               | (dBm)       | (W)         |
| 902-928MHz    | -           | -           |
| LoRa (125kHz) | 13.34       | 0.02158     |



## Average Power-FHSS

## Appendix B.2

### Result

| Mode          | Result | DG    | Total Power | Power Limit |
|---------------|--------|-------|-------------|-------------|
|               |        | (dBi) | (dBm)       | (dBm)       |
| LoRa (125kHz) | -      | -     | -           | -           |
| 902.3MHz      | Pass   | 2.60  | 13.10       | 30.00       |
| 908.7MHz      | Pass   | 2.60  | 13.23       | 30.00       |
| 914.9MHz      | Pass   | 2.60  | 13.34       | 30.00       |

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



**Summary**

| Mode          | Total Power | Total Power |
|---------------|-------------|-------------|
|               | (dBm)       | (W)         |
| 902-928MHz    | -           | -           |
| LoRa (500kHz) | 13.39       | 0.02183     |
| 902-928MHz    | -           | -           |
| LoRa (500kHz) | 13.58       | 0.02280     |



**Result**

| Mode          | Result | DG    | Total Power | Power Limit |
|---------------|--------|-------|-------------|-------------|
|               |        | (dBi) | (dBm)       | (dBm)       |
| LoRa (500kHz) | -      | -     | -           | -           |
| 903MHz        | Pass   | 2.60  | 13.20       | 30.00       |
| 909.4MHz      | Pass   | 2.60  | 13.31       | 30.00       |
| 914.2MHz      | Pass   | 2.60  | 13.39       | 30.00       |
| LoRa (500kHz) |        |       |             |             |
| 923.3MHz      | Pass   | 2.60  | 13.52       | 30.00       |
| 927.5MHz      | Pass   | 2.60  | 13.58       | 30.00       |

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



**Summary**

| Mode          | Total Power | Total Power |
|---------------|-------------|-------------|
|               | (dBm)       | (W)         |
| 902-928MHz    | -           | -           |
| LoRa (500kHz) | 13.31       | 0.02143     |
| 902-928MHz    | -           | -           |
| LoRa (500kHz) | 13.46       | 0.02218     |



**Result**

| Mode          | Result | DG    | Total Power | Power Limit |
|---------------|--------|-------|-------------|-------------|
|               |        | (dBi) | (dBm)       | (dBm)       |
| LoRa (500kHz) | -      | -     | -           | -           |
| 903MHz        | Pass   | 2.60  | 13.10       | 30.00       |
| 909.4MHz      | Pass   | 2.60  | 13.24       | 30.00       |
| 914.2MHz      | Pass   | 2.60  | 13.31       | 30.00       |
| LoRa (500kHz) |        |       |             |             |
| 923.3MHz      | Pass   | 2.60  | 13.46       | 30.00       |
| 927.5MHz      | Pass   | 2.60  | 13.45       | 30.00       |

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



**Summary**

| Mode          | PD<br>(dBm/RBW) |
|---------------|-----------------|
| 902-928MHz    | -               |
| LoRa (500kHz) | 0.40            |
| 902-928MHz    | -               |
| LoRa (500kHz) | 0.83            |

RBW = 3kHz;



Result

| Mode          | Result | DG    | PD        | PD Limit  |
|---------------|--------|-------|-----------|-----------|
|               |        | (dBi) | (dBm/RBW) | (dBm/RBW) |
| LoRa (500kHz) | -      | -     | -         | -         |
| 903MHz        | Pass   | 2.60  | -0.05     | 8.00      |
| 909.4MHz      | Pass   | 2.60  | 0.28      | 8.00      |
| 914.2MHz      | Pass   | 2.60  | 0.40      | 8.00      |
| LoRa (500kHz) |        |       |           |           |
| 923.3MHz      | Pass   | 2.60  | 0.51      | 8.00      |
| 927.5MHz      | Pass   | 2.60  | 0.83      | 8.00      |

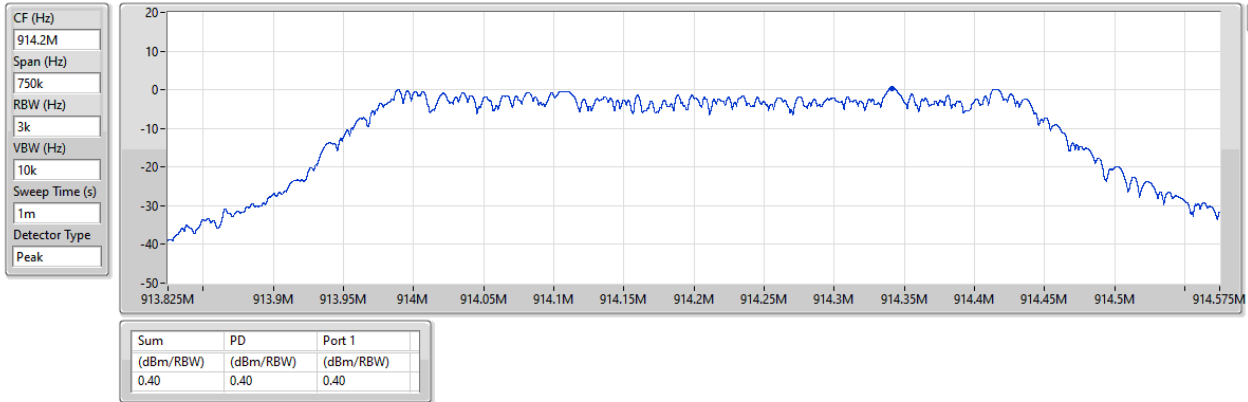
DG = Directional Gain; RBW = 3kHz;  
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;  
Inf = There's no restriction for the limit.

902-928MHz\_LoRa (500kHz)

PSD

914.2MHz

14/01/2025

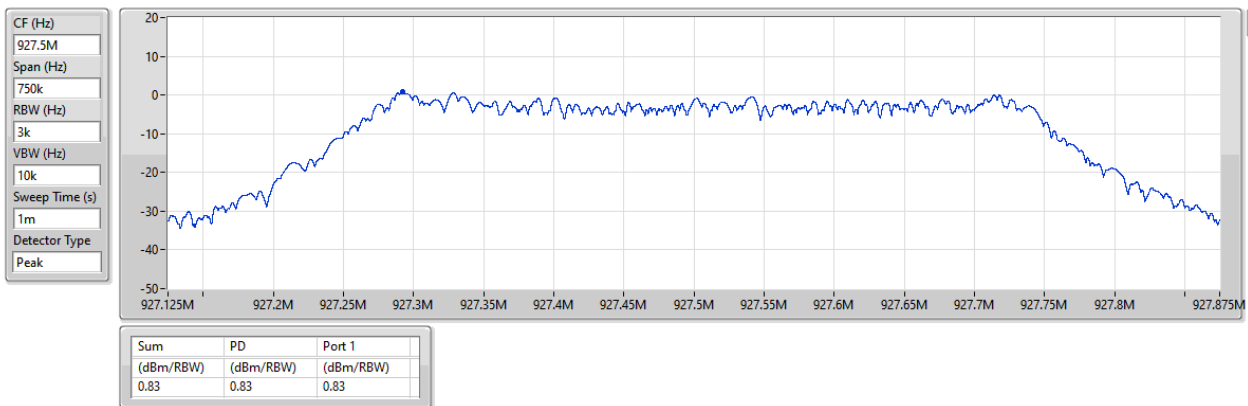


902-928MHz\_LoRa (500kHz)

PSD

927.5MHz

14/01/2025





**Summary**

| Mode          | Max-Hop No |
|---------------|------------|
| 902-928MHz    | -          |
| LoRa (125kHz) | 64         |



**Result**

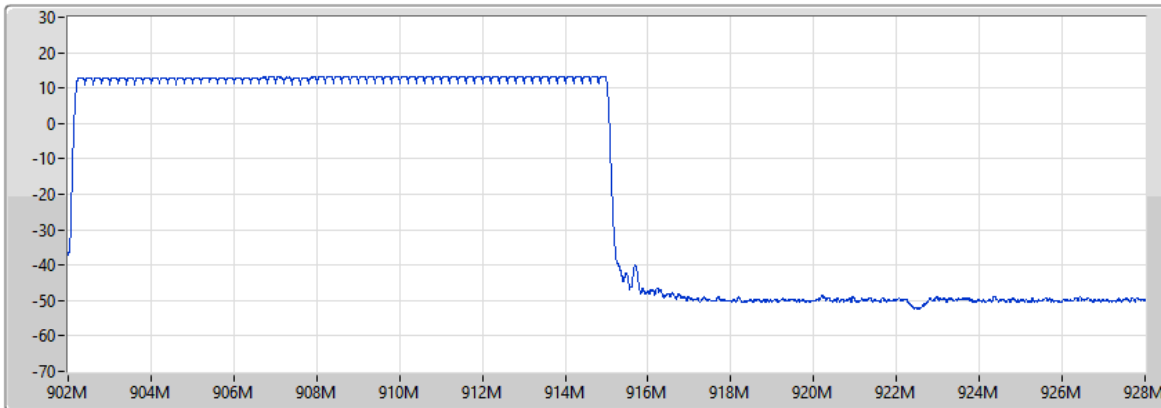
| Mode          | Result | Hopping No | Limit |
|---------------|--------|------------|-------|
| LoRa (125kHz) | -      | -          | -     |
| 908.7MHz      | Pass   | 64         | 50    |

902-928MHz\_LoRa (125kHz)

Hopping-FS

908.7MHz

14/01/2025



Port 1 

Hopping No  
64

Span (Hz)  
26M

RBW (Hz)  
100k

VBW (Hz)  
300kHz

Sweep (s)  
75.8us

Detector  
Peak

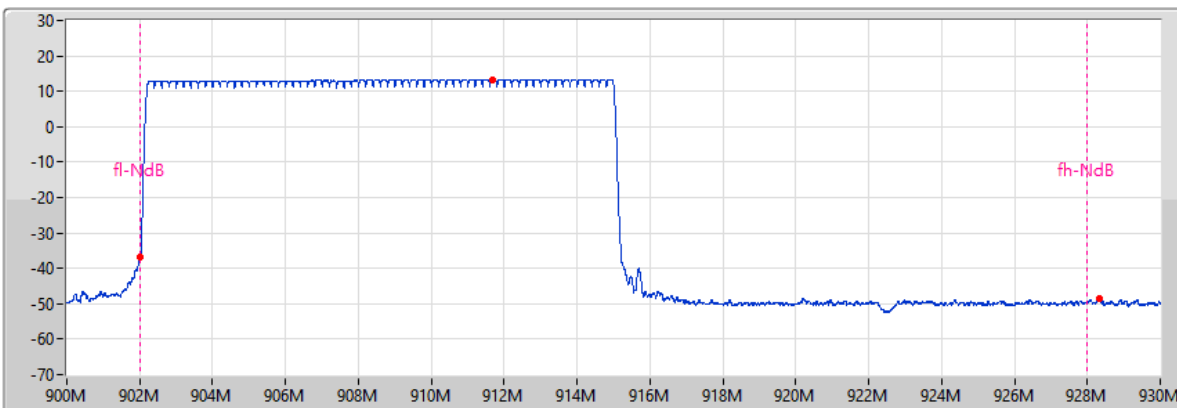
| Hopping No | Limit |
|------------|-------|
| 64         | 50    |

902-928MHz\_LoRa (125kHz)

908.7MHz

Hopping Ch Bandedge (Non-restricted Band)

14/01/2025



Port 1 

Span (Hz)  
30M

RBW (Hz)  
100k

VBW (Hz)  
300k

Sweep (s)  
75.8u

Detector  
Peak

| Limit(dBm) | Ref(Hz)    | Ref(dBm) | BE-l(Hz)   | BE-l(dBm) | BE-h(Hz) | BE-h(dBm) |
|------------|------------|----------|------------|-----------|----------|-----------|
| -6.83      | 911.67375M | 13.17    | 901.99875M | -36.81    | 928.32M  | -48.69    |



**Summary**

| Mode          | Dwell   |
|---------------|---------|
| 902-928MHz    | (s)     |
| LoRa (125kHz) | 390.45m |



**Result**

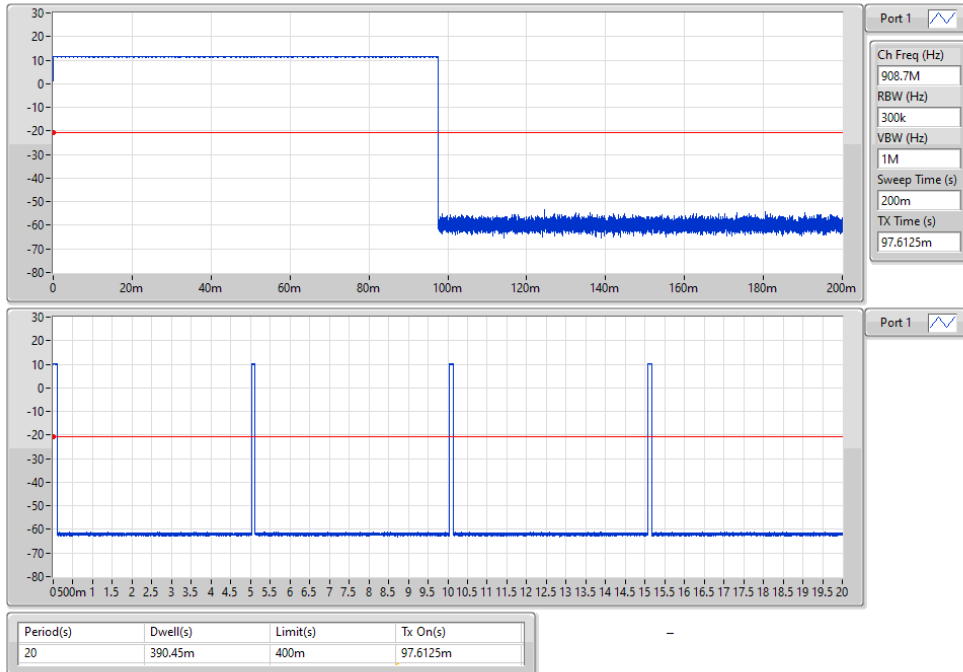
| Mode          | Result | Period | Dwell   | Limit | Tx On    |
|---------------|--------|--------|---------|-------|----------|
|               |        | (s)    | (s)     | (s)   | (s)      |
| LoRa (125kHz) | -      | -      | -       | -     | -        |
| 908.7MHz      | Pass   | 20     | 390.45m | 400m  | 97.6125m |

902-928MHz\_LoRa (125kHz)

908.7MHz

Dwell-FS

21/01/2025





Summary

| Mode          | Result | Ref     | Ref   | Limit | Freq    | Level  | Freq | Level  | Freq | Level  | Freq    | Level  | Freq     | Level  | Port |
|---------------|--------|---------|-------|-------|---------|--------|------|--------|------|--------|---------|--------|----------|--------|------|
|               |        | (Hz)    | (dBm) | (dBm) | (Hz)    | (dBm)  | (Hz) | (dBm)  | (Hz) | (dBm)  | (Hz)    | (dBm)  | (Hz)     | (dBm)  |      |
| 902-928MHz    | -      | -       | -     | -     | -       | -      | -    | -      | -    | -      | -       | -      | -        | -      | -    |
| LoRa (125kHz) | Pass   | 902.31M | 12.84 | -7.16 | 845.79M | -55.52 | 902M | -38.15 | 902M | -30.05 | 934.36M | -54.01 | 6.95513G | -46.27 | 1    |



Result

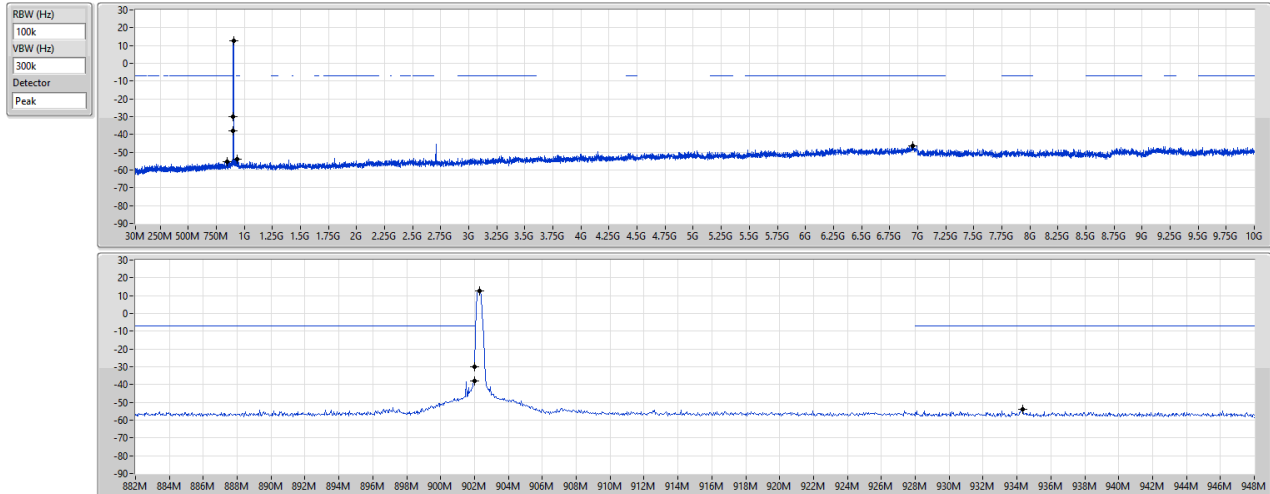
| Mode          | Result | Ref<br>(Hz) | Ref<br>(dBm) | Limit<br>(dBm) | Freq<br>(Hz) | Level<br>(dBm) | Freq<br>(Hz) | Level<br>(dBm) | Freq<br>(Hz) | Level<br>(dBm) | Freq<br>(Hz) | Level<br>(dBm) | Freq<br>(Hz) | Level<br>(dBm) | Port |
|---------------|--------|-------------|--------------|----------------|--------------|----------------|--------------|----------------|--------------|----------------|--------------|----------------|--------------|----------------|------|
| LoRa (125kHz) | -      | -           | -            | -              | -            | -              | -            | -              | -            | -              | -            | -              | -            | -              | -    |
| 902.3MHz      | Pass   | 902.31M     | 12.84        | -7.16          | 845.79M      | -55.52         | 902M         | -38.15         | 902M         | -30.05         | 934.36M      | -54.01         | 6.95513G     | -46.27         | 1    |
| 908.7MHz      | Pass   | 908.66M     | 12.96        | -7.04          | 734.18M      | -55.20         | 901.84M      | -53.77         | 928M         | -56.78         | 940.72M      | -54.17         | 6.96758G     | -45.46         | 1    |
| 914.9MHz      | Pass   | 914.9M      | 13.09        | -6.91          | 824.06M      | -55.85         | 882.84M      | -53.24         | 928M         | -56.16         | 946.88M      | -54.53         | 6.57042G     | -46.43         | 1    |

902-928MHz LoRa (125kHz)

CSEndB-FS

902.3MHz

14/01/2025



| 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 |
|---------|----------|------------|----------|------------|----------|------------|----------|------------|----------|------------|----------|------------|------|
| 902.31M | 12.84    | -7.16      | 845.79M  | -55.52     | 902M     | -38.15     | 902M     | -30.05     | 934.36M  | -54.01     | 6.95513G | -46.27     | 1    |

**Summary**

| Mode          | Result | Ref<br>(Hz) | Ref<br>(dBm) | Limit<br>(dBm) | Freq<br>(Hz) | Level<br>(dBm) | Freq<br>(Hz) | Level<br>(dBm) | Freq<br>(Hz) | Level<br>(dBm) | Freq<br>(Hz) | Level<br>(dBm) | Freq<br>(Hz) | Level<br>(dBm) | Port |
|---------------|--------|-------------|--------------|----------------|--------------|----------------|--------------|----------------|--------------|----------------|--------------|----------------|--------------|----------------|------|
| 902-928MHz    | -      | -           | -            | -              | -            | -              | -            | -              | -            | -              | -            | -              | -            | -              | -    |
| LoRa (500kHz) | Pass   | 902.99M     | 12.88        | -7.12          | 797.23M      | -55.32         | 901.04M      | -34.40         | 902M         | -35.06         | 935.12M      | -53.37         | 8.77119G     | -46.07         | 1    |
| 902-928MHz    | -      | -           | -            | -              | -            | -              | -            | -              | -            | -              | -            | -              | -            | -              | -    |
| LoRa (500kHz) | Pass   | 927.38M     | 13.33        | -6.67          | 828.75M      | -56.00         | 895.56M      | -53.88         | 928M         | -9.53          | 928M         | -14.07         | 9.97171G     | -46.15         | 1    |

**Result**

| Mode          | Result | Ref<br>(Hz) | Ref<br>(dBm) | Limit<br>(dBm) | Freq<br>(Hz) | Level<br>(dBm) | Freq<br>(Hz) | Level<br>(dBm) | Freq<br>(Hz) | Level<br>(dBm) | Freq<br>(Hz) | Level<br>(dBm) | Freq<br>(Hz) | Level<br>(dBm) | Port |
|---------------|--------|-------------|--------------|----------------|--------------|----------------|--------------|----------------|--------------|----------------|--------------|----------------|--------------|----------------|------|
| LoRa (500kHz) | -      | -           | -            | -              | -            | -              | -            | -              | -            | -              | -            | -              | -            | -              | -    |
| 903MHz        | Pass   | 902.99M     | 12.88        | -7.12          | 797.23M      | -55.32         | 901.04M      | -34.40         | 902M         | -35.06         | 935.12M      | -53.37         | 8.77119G     | -46.07         | 1    |
| 909.4MHz      | Pass   | 909.23M     | 13.03        | -6.97          | 826.19M      | -55.10         | 901.2M       | -54.17         | 902M         | -55.68         | 941.32M      | -53.90         | 9.2419G      | -46.25         | 1    |
| 914.2MHz      | Pass   | 913.96M     | 13.13        | -6.87          | 868.37M      | -55.66         | 882.04M      | -53.83         | 928M         | -55.93         | 946.2M       | -52.97         | 6.94495G     | -46.44         | 1    |
| LoRa (500kHz) |        |             |              |                |              |                |              |                |              |                |              |                |              |                |      |
| 923.3MHz      | Pass   | 923.37M     | 13.28        | -6.72          | 835.99M      | -55.60         | 891.2M       | -53.74         | 928M         | -43.98         | 928.16M      | -43.49         | 6.96532G     | -46.26         | 1    |
| 927.5MHz      | Pass   | 927.38M     | 13.33        | -6.67          | 828.75M      | -56.00         | 895.56M      | -53.88         | 928M         | -9.53          | 928M         | -14.07         | 9.97171G     | -46.15         | 1    |

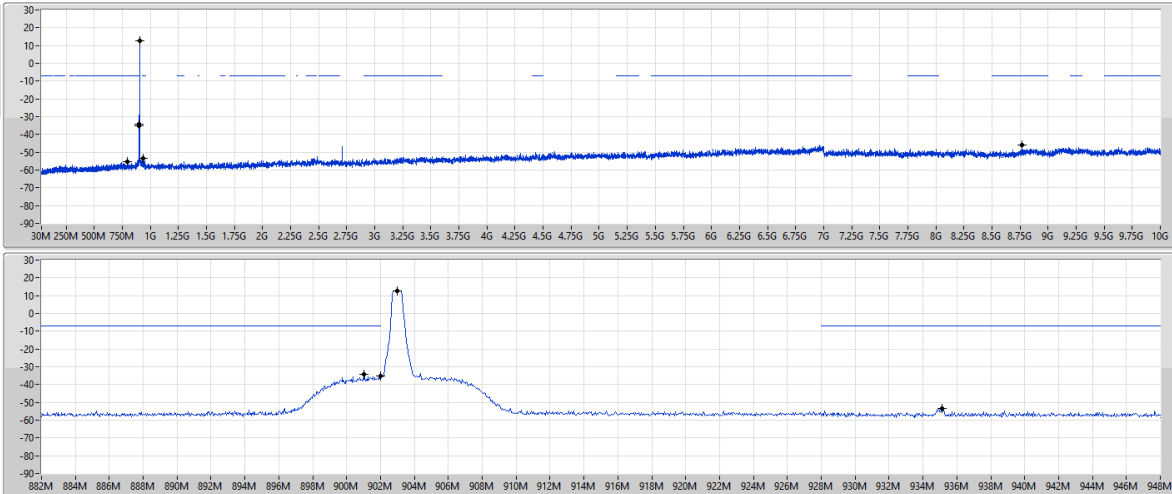
902-928MHz LoRa (500kHz)

CSEndB-DTS

903MHz

14/01/2025

RBW (Hz)  
100k  
VBW (Hz)  
300k  
Detector  
Peak



| 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 |
|---------|----------|------------|----------|------------|----------|------------|----------|------------|----------|------------|----------|------------|------|
| 902.99M | 12.88    | -7.12      | 797.23M  | -55.32     | 901.04M  | -34.40     | 902M     | -35.06     | 935.12M  | -53.37     | 8.77119G | -46.07     | 1    |

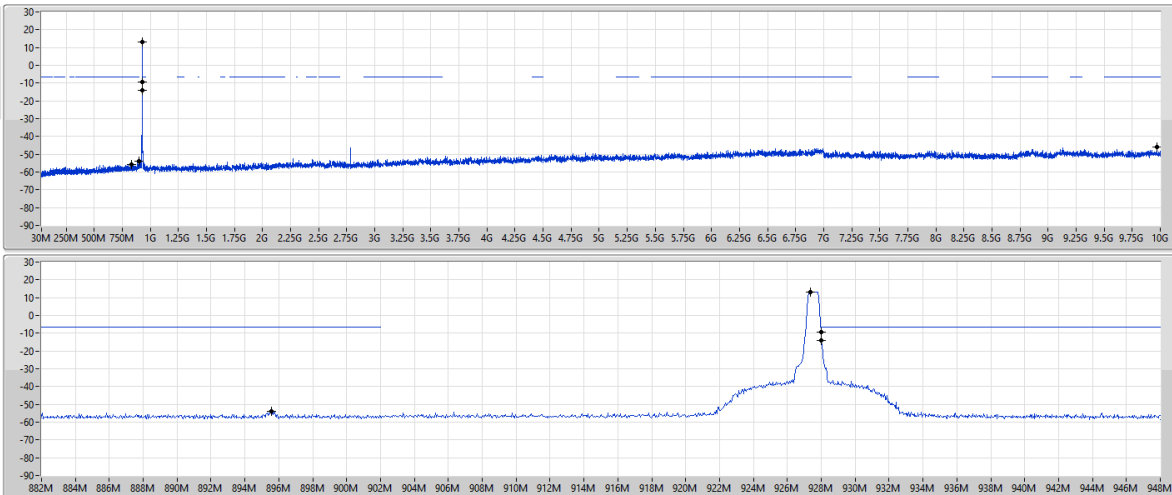
902-928MHz LoRa (500kHz)

CSEndB-DTS

927.5MHz

14/01/2025

RBW (Hz)  
100k  
VBW (Hz)  
300k  
Detector  
Peak



| 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 |
|---------|----------|------------|----------|------------|----------|------------|----------|------------|----------|------------|----------|------------|------|
| 927.38M | 13.33    | -6.67      | 828.75M  | -56.00     | 895.56M  | -53.88     | 928M     | -9.53      | 928M     | -14.07     | 9.97171G | -46.15     | 1    |



**Summary**

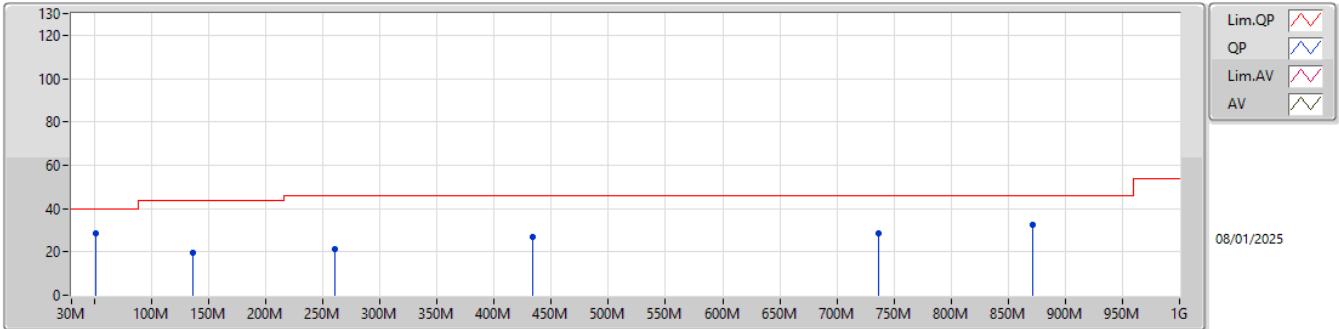
| Mode          | Result | Type | Freq<br>(Hz) | Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Dist<br>(m) | Condition  | Azimuth<br>(°) | Height<br>(m) |
|---------------|--------|------|--------------|-------------------|-------------------|----------------|-------------|------------|----------------|---------------|
| 902-928MHz    | -      | -    | -            | -                 | -                 | -              | -           | -          | -              | -             |
| LoRa (125kHz) | Pass   | PK   | 870.02M      | 41.78             | 46.00             | -4.22          | 3           | Horizontal | 0              | 1.00          |

**Result**

| Mode          | Result | Type | Freq<br>(Hz) | Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Dist<br>(m) | Condition  | Azimuth<br>(°) | Height<br>(m) |
|---------------|--------|------|--------------|-------------------|-------------------|----------------|-------------|------------|----------------|---------------|
| LoRa (125kHz) | -      | -    | -            | -                 | -                 | -              | -           | -          | -              | -             |
| 902.3MHz      | Pass   | PK   | 51.34M       | 28.47             | 40.00             | -11.53         | 3           | Vertical   | 360            | 1.00          |
| 902.3MHz      | Pass   | PK   | 136.7M       | 19.57             | 43.50             | -23.93         | 3           | Vertical   | 360            | 1.00          |
| 902.3MHz      | Pass   | PK   | 260.86M      | 21.02             | 46.00             | -24.98         | 3           | Vertical   | 360            | 1.00          |
| 902.3MHz      | Pass   | PK   | 433.52M      | 27.16             | 46.00             | -18.84         | 3           | Vertical   | 360            | 1.00          |
| 902.3MHz      | Pass   | PK   | 736.16M      | 28.39             | 46.00             | -17.61         | 3           | Vertical   | 360            | 1.00          |
| 902.3MHz      | Pass   | PK   | 871.96M      | 32.34             | 46.00             | -13.66         | 3           | Vertical   | 360            | 1.00          |
| 902.3MHz      | Pass   | PK   | 30M          | 24.48             | 40.00             | -15.52         | 3           | Horizontal | 0              | 1.00          |
| 902.3MHz      | Pass   | PK   | 115.36M      | 19.34             | 43.50             | -24.16         | 3           | Horizontal | 0              | 1.00          |
| 902.3MHz      | Pass   | PK   | 270.56M      | 29.85             | 46.00             | -16.15         | 3           | Horizontal | 0              | 1.00          |
| 902.3MHz      | Pass   | PK   | 427.7M       | 35.37             | 46.00             | -10.63         | 3           | Horizontal | 0              | 1.00          |
| 902.3MHz      | Pass   | PK   | 790.48M      | 39.73             | 46.00             | -6.27          | 3           | Horizontal | 0              | 1.00          |
| 902.3MHz      | Pass   | PK   | 870.02M      | 41.78             | 46.00             | -4.22          | 3           | Horizontal | 0              | 1.00          |

902-928MHz\_LoRa (125kHz)

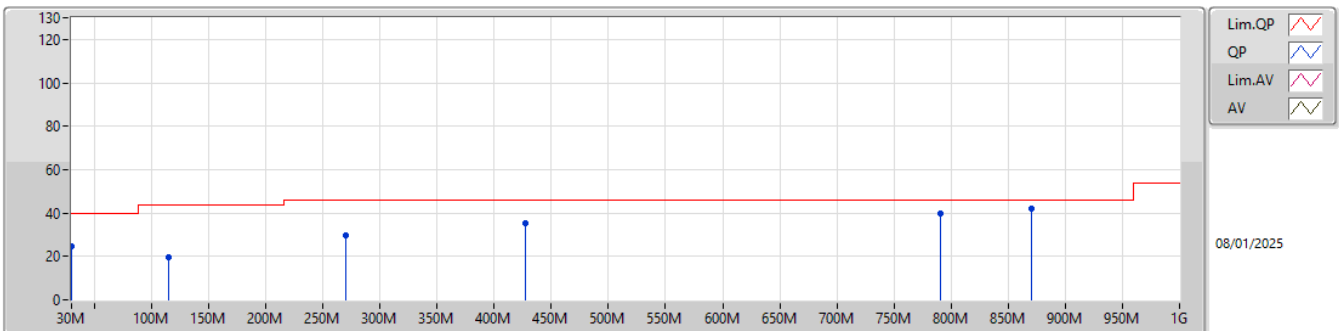
902.3MHz\_Battery



| Type | Freq<br>(Hz) | Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Factor<br>(dB) | Dist<br>(m) | Condition | Azimuth<br>(°) | Height<br>(m) | Raw<br>(dBuV) | AF<br>(dB) | CL<br>(dB) | PA<br>(dB) |
|------|--------------|-------------------|-------------------|----------------|----------------|-------------|-----------|----------------|---------------|---------------|------------|------------|------------|
| PK   | 51.34M       | 28.47             | 40.00             | -11.53         | -12.24         | 3           | Vertical  | 360            | 1.00          | 40.71         | 12.37      | 1.42       | 26.03      |
| PK   | 136.7M       | 19.57             | 43.50             | -23.93         | -8.98          | 3           | Vertical  | 360            | 1.00          | 28.55         | 16.24      | 2.34       | 27.56      |
| PK   | 260.86M      | 21.02             | 46.00             | -24.98         | -5.39          | 3           | Vertical  | 360            | 1.00          | 26.41         | 18.36      | 3.30       | 27.05      |
| PK   | 433.52M      | 27.16             | 46.00             | -18.84         | -2.44          | 3           | Vertical  | 360            | 1.00          | 29.60         | 21.22      | 4.30       | 27.96      |
| PK   | 736.16M      | 28.39             | 46.00             | -17.61         | 1.78           | 3           | Vertical  | 360            | 1.00          | 26.61         | 24.10      | 5.77       | 28.09      |
| PK   | 871.96M      | 32.34             | 46.00             | -13.66         | 3.58           | 3           | Vertical  | 360            | 1.00          | 28.76         | 24.89      | 6.30       | 27.61      |

902-928MHz\_LoRa (125kHz)

902.3MHz\_Battery



| Type | Freq<br>(Hz) | Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Factor<br>(dB) | Dist<br>(m) | Condition  | Azimuth<br>(°) | Height<br>(m) | Raw<br>(dBuV) | AF<br>(dB) | CL<br>(dB) | PA<br>(dB) |
|------|--------------|-------------------|-------------------|----------------|----------------|-------------|------------|----------------|---------------|---------------|------------|------------|------------|
| PK   | 30M          | 24.48             | 40.00             | -15.52         | -3.12          | 3           | Horizontal | 0              | 1.00          | 27.60         | 23.18      | 1.09       | 27.39      |
| PK   | 115.36M      | 19.34             | 43.50             | -24.16         | -8.70          | 3           | Horizontal | 0              | 1.00          | 28.04         | 16.76      | 2.15       | 27.61      |
| PK   | 270.56M      | 29.85             | 46.00             | -16.15         | -6.20          | 3           | Horizontal | 0              | 1.00          | 36.05         | 17.48      | 3.36       | 27.04      |
| PK   | 427.7M       | 35.37             | 46.00             | -10.63         | -2.46          | 3           | Horizontal | 0              | 1.00          | 37.83         | 21.20      | 4.27       | 27.93      |
| PK   | 790.48M      | 39.73             | 46.00             | -6.27          | 2.41           | 3           | Horizontal | 0              | 1.00          | 37.32         | 24.33      | 6.02       | 27.94      |
| PK   | 870.02M      | 41.78             | 46.00             | -4.22          | 3.55           | 3           | Horizontal | 0              | 1.00          | 38.23         | 24.88      | 6.29       | 27.62      |



**Summary**

| Mode          | Result | Type | Freq<br>(Hz) | Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Dist<br>(m) | Condition  | Azimuth<br>(°) | Height<br>(m) |
|---------------|--------|------|--------------|-------------------|-------------------|----------------|-------------|------------|----------------|---------------|
| 902-928MHz    | -      | -    | -            | -                 | -                 | -              | -           | -          | -              | -             |
| LoRa (125kHz) | Pass   | AV   | 2.72612G     | 49.62             | 54.00             | -4.38          | 3           | Horizontal | 234            | 1.14          |
| LoRa (500kHz) | Pass   | AV   | 2.78251G     | 45.91             | 54.00             | -8.09          | 3           | Horizontal | 233            | 1.13          |
| LoRa (500kHz) | Pass   | AV   | 2.72829G     | 46.17             | 54.00             | -7.83          | 3           | Horizontal | 236            | 1.12          |

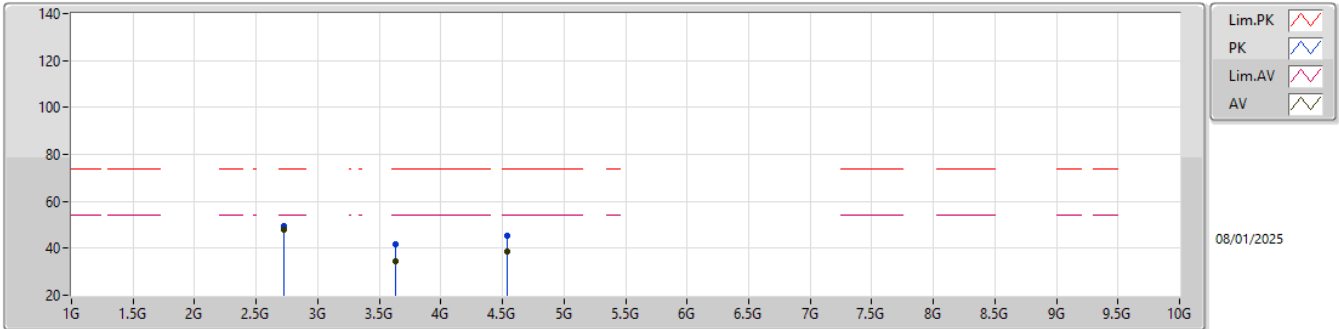
Result

| Mode          | Result | Type | Freq (Hz) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Dist (m) | Condition  | Azimuth (°) | Height (m) |
|---------------|--------|------|-----------|----------------|----------------|-------------|----------|------------|-------------|------------|
| LoRa (125kHz) | -      | -    | -         | -              | -              | -           | -        | -          | -           | -          |
| 902.3MHz      | Pass   | AV   | 2.7069G   | 45.70          | 54.00          | -8.30       | 3        | Vertical   | 117         | 2.57       |
| 902.3MHz      | Pass   | AV   | 3.60921G  | 35.77          | 54.00          | -18.23      | 3        | Vertical   | 335         | 1.24       |
| 902.3MHz      | Pass   | AV   | 4.5115G   | 39.70          | 54.00          | -14.30      | 3        | Vertical   | 187         | 1.00       |
| 902.3MHz      | Pass   | PK   | 2.7069G   | 48.00          | 74.00          | -26.00      | 3        | Vertical   | 117         | 2.57       |
| 902.3MHz      | Pass   | PK   | 3.6091G   | 42.29          | 74.00          | -31.71      | 3        | Vertical   | 335         | 1.24       |
| 902.3MHz      | Pass   | PK   | 4.51158G  | 45.25          | 74.00          | -28.75      | 3        | Vertical   | 187         | 1.00       |
| 902.3MHz      | Pass   | AV   | 2.70691G  | 48.85          | 54.00          | -5.15       | 3        | Horizontal | 232         | 1.00       |
| 902.3MHz      | Pass   | AV   | 3.61052G  | 25.44          | 54.00          | -28.56      | 3        | Horizontal | 208         | 1.50       |
| 902.3MHz      | Pass   | AV   | 4.51096G  | 26.88          | 54.00          | -27.12      | 3        | Horizontal | 16          | 1.50       |
| 902.3MHz      | Pass   | PK   | 2.70694G  | 50.67          | 74.00          | -23.33      | 3        | Horizontal | 232         | 1.00       |
| 902.3MHz      | Pass   | PK   | 3.60772G  | 38.68          | 74.00          | -35.32      | 3        | Horizontal | 208         | 1.50       |
| 902.3MHz      | Pass   | PK   | 4.51285G  | 40.03          | 74.00          | -33.97      | 3        | Horizontal | 16          | 1.50       |
| 908.7MHz      | Pass   | AV   | 2.7261G   | 47.70          | 54.00          | -6.30       | 3        | Vertical   | 183         | 1.04       |
| 908.7MHz      | Pass   | AV   | 3.63479G  | 34.45          | 54.00          | -19.55      | 3        | Vertical   | 180         | 1.05       |
| 908.7MHz      | Pass   | AV   | 4.54352G  | 38.73          | 54.00          | -15.27      | 3        | Vertical   | 76          | 1.08       |
| 908.7MHz      | Pass   | PK   | 2.7259G   | 49.65          | 74.00          | -24.35      | 3        | Vertical   | 183         | 1.04       |
| 908.7MHz      | Pass   | PK   | 3.63505G  | 41.95          | 74.00          | -32.05      | 3        | Vertical   | 180         | 1.05       |
| 908.7MHz      | Pass   | PK   | 4.54342G  | 45.09          | 74.00          | -28.91      | 3        | Vertical   | 76          | 1.08       |
| 908.7MHz      | Pass   | AV   | 2.72612G  | 49.62          | 54.00          | -4.38       | 3        | Horizontal | 234         | 1.14       |
| 908.7MHz      | Pass   | AV   | 3.63481G  | 34.47          | 54.00          | -19.53      | 3        | Horizontal | 214         | 1.26       |
| 908.7MHz      | Pass   | AV   | 4.54352G  | 39.50          | 54.00          | -14.50      | 3        | Horizontal | 220         | 1.22       |
| 908.7MHz      | Pass   | PK   | 2.72597G  | 51.34          | 74.00          | -22.66      | 3        | Horizontal | 234         | 1.14       |
| 908.7MHz      | Pass   | PK   | 3.6346G   | 41.80          | 74.00          | -32.20      | 3        | Horizontal | 214         | 1.26       |
| 908.7MHz      | Pass   | PK   | 4.54379G  | 45.70          | 74.00          | -28.30      | 3        | Horizontal | 220         | 1.22       |
| 914.9MHz      | Pass   | AV   | 2.74471G  | 46.25          | 54.00          | -7.75       | 3        | Vertical   | 133         | 1.05       |
| 914.9MHz      | Pass   | AV   | 3.6596G   | 34.28          | 54.00          | -19.72      | 3        | Vertical   | 165         | 1.22       |
| 914.9MHz      | Pass   | AV   | 4.57454G  | 38.30          | 54.00          | -15.70      | 3        | Vertical   | 168         | 2.91       |
| 914.9MHz      | Pass   | PK   | 2.7446G   | 48.60          | 74.00          | -25.40      | 3        | Vertical   | 133         | 1.05       |
| 914.9MHz      | Pass   | PK   | 3.6599G   | 42.02          | 74.00          | -31.98      | 3        | Vertical   | 165         | 1.22       |
| 914.9MHz      | Pass   | PK   | 4.57428G  | 44.45          | 74.00          | -29.55      | 3        | Vertical   | 168         | 2.91       |
| 914.9MHz      | Pass   | AV   | 2.7447G   | 48.74          | 54.00          | -5.26       | 3        | Horizontal | 235         | 1.13       |
| 914.9MHz      | Pass   | AV   | 3.65961G  | 34.72          | 54.00          | -19.28      | 3        | Horizontal | 272         | 1.00       |
| 914.9MHz      | Pass   | AV   | 4.57452G  | 40.37          | 54.00          | -13.63      | 3        | Horizontal | 268         | 1.00       |
| 914.9MHz      | Pass   | PK   | 2.74475G  | 50.76          | 74.00          | -23.24      | 3        | Horizontal | 235         | 1.13       |
| 914.9MHz      | Pass   | PK   | 3.65982G  | 42.58          | 74.00          | -31.42      | 3        | Horizontal | 272         | 1.00       |
| 914.9MHz      | Pass   | PK   | 4.57418G  | 46.07          | 74.00          | -27.93      | 3        | Horizontal | 268         | 1.00       |
| LoRa (500kHz) | -      | -    | -         | -              | -              | -           | -        | -          | -           | -          |
| 903MHz        | Pass   | AV   | 2.70893G  | 42.49          | 54.00          | -11.51      | 3        | Vertical   | 132         | 1.49       |
| 903MHz        | Pass   | AV   | 3.61188G  | 32.22          | 54.00          | -21.78      | 3        | Vertical   | 332         | 1.07       |
| 903MHz        | Pass   | AV   | 4.5148G   | 33.56          | 54.00          | -20.44      | 3        | Vertical   | 172         | 1.08       |
| 903MHz        | Pass   | PK   | 2.70938G  | 48.06          | 74.00          | -25.94      | 3        | Vertical   | 132         | 1.49       |
| 903MHz        | Pass   | PK   | 3.61248G  | 42.79          | 74.00          | -31.21      | 3        | Vertical   | 332         | 1.07       |
| 903MHz        | Pass   | PK   | 4.51486G  | 44.52          | 74.00          | -29.48      | 3        | Vertical   | 172         | 1.08       |
| 903MHz        | Pass   | AV   | 2.70905G  | 45.81          | 54.00          | -8.19       | 3        | Horizontal | 237         | 1.14       |
| 903MHz        | Pass   | AV   | 3.61201G  | 31.33          | 54.00          | -22.67      | 3        | Horizontal | 212         | 1.11       |
| 903MHz        | Pass   | AV   | 4.51464G  | 33.46          | 54.00          | -20.54      | 3        | Horizontal | 222         | 1.34       |
| 903MHz        | Pass   | PK   | 2.70907G  | 50.87          | 74.00          | -23.13      | 3        | Horizontal | 237         | 1.14       |
| 903MHz        | Pass   | PK   | 3.61164G  | 41.99          | 74.00          | -32.01      | 3        | Horizontal | 212         | 1.11       |
| 903MHz        | Pass   | PK   | 4.51484G  | 44.38          | 74.00          | -29.62      | 3        | Horizontal | 222         | 1.34       |
| 909.4MHz      | Pass   | AV   | 2.72819G  | 43.27          | 54.00          | -10.73      | 3        | Vertical   | 257         | 1.05       |
| 909.4MHz      | Pass   | AV   | 3.63757G  | 31.34          | 54.00          | -22.66      | 3        | Vertical   | 332         | 1.05       |
| 909.4MHz      | Pass   | AV   | 4.54673G  | 33.61          | 54.00          | -20.39      | 3        | Vertical   | 173         | 1.06       |
| 909.4MHz      | Pass   | PK   | 2.72886G  | 48.95          | 74.00          | -25.05      | 3        | Vertical   | 257         | 1.05       |
| 909.4MHz      | Pass   | PK   | 3.63803G  | 41.95          | 74.00          | -32.05      | 3        | Vertical   | 332         | 1.05       |
| 909.4MHz      | Pass   | PK   | 4.54781G  | 44.65          | 74.00          | -29.35      | 3        | Vertical   | 173         | 1.06       |
| 909.4MHz      | Pass   | AV   | 2.72829G  | 46.17          | 54.00          | -7.83       | 3        | Horizontal | 236         | 1.12       |
| 909.4MHz      | Pass   | AV   | 3.63759G  | 31.18          | 54.00          | -22.82      | 3        | Horizontal | 210         | 1.00       |
| 909.4MHz      | Pass   | AV   | 4.54668G  | 35.14          | 54.00          | -18.86      | 3        | Horizontal | 266         | 1.06       |
| 909.4MHz      | Pass   | PK   | 2.72882G  | 51.26          | 74.00          | -22.74      | 3        | Horizontal | 236         | 1.12       |
| 909.4MHz      | Pass   | PK   | 3.6377G   | 41.78          | 74.00          | -32.22      | 3        | Horizontal | 210         | 1.00       |

| Mode          | Result | Type | Freq<br>(Hz) | Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Dist<br>(m) | Condition  | Azimuth<br>(°) | Height<br>(m) |
|---------------|--------|------|--------------|-------------------|-------------------|----------------|-------------|------------|----------------|---------------|
| 909.4MHz      | Pass   | PK   | 4.54753G     | 45.91             | 74.00             | -28.09         | 3           | Horizontal | 266            | 1.06          |
| 914.2MHz      | Pass   | AV   | 2.74262G     | 43.83             | 54.00             | -10.17         | 3           | Vertical   | 248            | 1.00          |
| 914.2MHz      | Pass   | AV   | 3.65684G     | 31.13             | 54.00             | -22.87         | 3           | Vertical   | 332            | 1.00          |
| 914.2MHz      | Pass   | AV   | 4.57076G     | 33.33             | 54.00             | -20.67         | 3           | Vertical   | 174            | 1.23          |
| 914.2MHz      | Pass   | PK   | 2.74216G     | 49.22             | 74.00             | -24.78         | 3           | Vertical   | 248            | 1.00          |
| 914.2MHz      | Pass   | PK   | 3.65737G     | 41.57             | 74.00             | -32.43         | 3           | Vertical   | 332            | 1.00          |
| 914.2MHz      | Pass   | PK   | 4.57154G     | 44.39             | 74.00             | -29.61         | 3           | Vertical   | 174            | 1.23          |
| 914.2MHz      | Pass   | AV   | 2.74258G     | 40.05             | 54.00             | -13.95         | 3           | Horizontal | 41             | 2.71          |
| 914.2MHz      | Pass   | AV   | 3.65664G     | 31.04             | 54.00             | -22.96         | 3           | Horizontal | 214            | 1.06          |
| 914.2MHz      | Pass   | AV   | 4.57086G     | 34.97             | 54.00             | -19.03         | 3           | Horizontal | 268            | 1.02          |
| 914.2MHz      | Pass   | PK   | 2.7427G      | 46.46             | 74.00             | -27.54         | 3           | Horizontal | 41             | 2.71          |
| 914.2MHz      | Pass   | PK   | 3.65667G     | 42.01             | 74.00             | -31.99         | 3           | Horizontal | 214            | 1.06          |
| 914.2MHz      | Pass   | PK   | 4.57004G     | 45.81             | 74.00             | -28.19         | 3           | Horizontal | 268            | 1.02          |
| LoRa (500kHz) | -      | -    | -            | -                 | -                 | -              | -           | -          | -              | -             |
| 923.3MHz      | Pass   | AV   | 2.76997G     | 42.75             | 54.00             | -11.25         | 3           | Vertical   | 267            | 1.14          |
| 923.3MHz      | Pass   | AV   | 3.69313G     | 30.69             | 54.00             | -23.31         | 3           | Vertical   | 333            | 2.77          |
| 923.3MHz      | Pass   | AV   | 4.61614G     | 33.88             | 54.00             | -20.12         | 3           | Vertical   | 170            | 2.87          |
| 923.3MHz      | Pass   | PK   | 2.77038G     | 48.48             | 74.00             | -25.52         | 3           | Vertical   | 267            | 1.14          |
| 923.3MHz      | Pass   | PK   | 3.69381G     | 41.48             | 74.00             | -32.52         | 3           | Vertical   | 333            | 2.77          |
| 923.3MHz      | Pass   | PK   | 4.61553G     | 44.87             | 74.00             | -29.13         | 3           | Vertical   | 170            | 2.87          |
| 923.3MHz      | Pass   | AV   | 2.76997G     | 45.47             | 54.00             | -8.53          | 3           | Horizontal | 231            | 1.11          |
| 923.3MHz      | Pass   | AV   | 3.69314G     | 31.10             | 54.00             | -22.90         | 3           | Horizontal | 216            | 1.00          |
| 923.3MHz      | Pass   | AV   | 4.61676G     | 34.88             | 54.00             | -19.12         | 3           | Horizontal | 266            | 1.04          |
| 923.3MHz      | Pass   | PK   | 2.7696G      | 50.68             | 74.00             | -23.32         | 3           | Horizontal | 231            | 1.11          |
| 923.3MHz      | Pass   | PK   | 3.69226G     | 42.04             | 74.00             | -31.96         | 3           | Horizontal | 216            | 1.00          |
| 923.3MHz      | Pass   | PK   | 4.6155G      | 45.61             | 74.00             | -28.39         | 3           | Horizontal | 266            | 1.04          |
| 927.5MHz      | Pass   | AV   | 2.78258G     | 42.02             | 54.00             | -11.98         | 3           | Vertical   | 208            | 1.00          |
| 927.5MHz      | Pass   | AV   | 3.70977G     | 30.59             | 54.00             | -23.41         | 3           | Vertical   | 342            | 1.00          |
| 927.5MHz      | Pass   | AV   | 4.63695G     | 34.22             | 54.00             | -19.78         | 3           | Vertical   | 175            | 1.06          |
| 927.5MHz      | Pass   | PK   | 2.78305G     | 47.93             | 74.00             | -26.07         | 3           | Vertical   | 208            | 1.00          |
| 927.5MHz      | Pass   | PK   | 3.70933G     | 41.89             | 74.00             | -32.11         | 3           | Vertical   | 342            | 1.00          |
| 927.5MHz      | Pass   | PK   | 4.63809G     | 44.93             | 74.00             | -29.07         | 3           | Vertical   | 175            | 1.06          |
| 927.5MHz      | Pass   | AV   | 2.78251G     | 45.91             | 54.00             | -8.09          | 3           | Horizontal | 233            | 1.13          |
| 927.5MHz      | Pass   | AV   | 3.71001G     | 31.09             | 54.00             | -22.91         | 3           | Horizontal | 218            | 1.00          |
| 927.5MHz      | Pass   | AV   | 4.6373G      | 34.64             | 54.00             | -19.36         | 3           | Horizontal | 227            | 1.00          |
| 927.5MHz      | Pass   | PK   | 2.78275G     | 50.84             | 74.00             | -23.16         | 3           | Horizontal | 233            | 1.13          |
| 927.5MHz      | Pass   | PK   | 3.70964G     | 41.88             | 74.00             | -32.12         | 3           | Horizontal | 218            | 1.00          |
| 927.5MHz      | Pass   | PK   | 4.63842G     | 45.56             | 74.00             | -28.44         | 3           | Horizontal | 227            | 1.00          |

## 902-928MHz\_LoRa (125kHz)

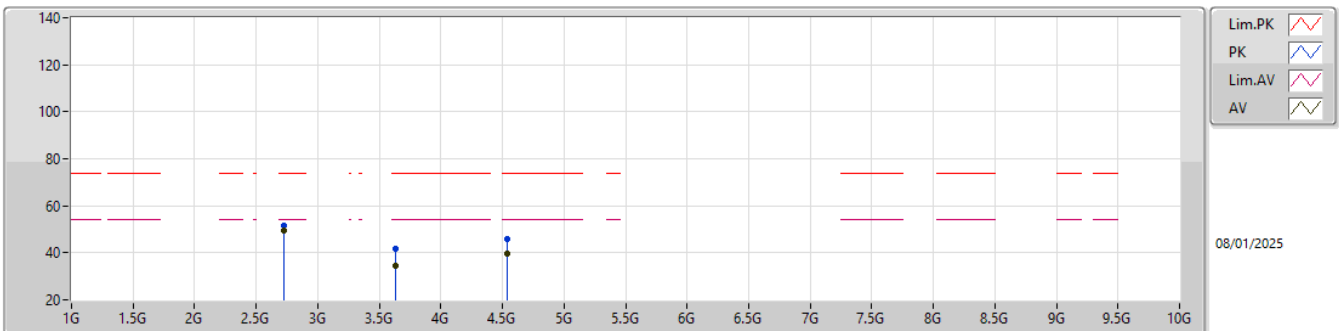
### 908.7MHz\_TX



| Type | Freq<br>(Hz) | Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Factor<br>(dB) | Dist<br>(m) | Condition | Azimuth<br>(°) | Height<br>(m) | Raw<br>(dBuV) | AF<br>(dB) | CL<br>(dB) | PA<br>(dB) |  |  |  |  |
|------|--------------|-------------------|-------------------|----------------|----------------|-------------|-----------|----------------|---------------|---------------|------------|------------|------------|--|--|--|--|
| AV   | 2.7261G      | 47.70             | 54.00             | -6.30          | -1.93          | 3           | Vertical  | 183            | 1.04          | 49.63         | 28.34      | 4.90       | 35.17      |  |  |  |  |
| AV   | 3.63479G     | 34.45             | 54.00             | -19.55         | 0.12           | 3           | Vertical  | 180            | 1.05          | 34.33         | 29.57      | 5.74       | 35.19      |  |  |  |  |
| AV   | 4.54352G     | 38.73             | 54.00             | -15.27         | 2.89           | 3           | Vertical  | 76             | 1.08          | 35.84         | 31.59      | 6.34       | 35.04      |  |  |  |  |
| PK   | 2.7259G      | 49.65             | 74.00             | -24.35         | -1.93          | 3           | Vertical  | 183            | 1.04          | 51.58         | 28.34      | 4.90       | 35.17      |  |  |  |  |
| PK   | 3.63505G     | 41.95             | 74.00             | -32.05         | 0.12           | 3           | Vertical  | 180            | 1.05          | 41.83         | 29.57      | 5.74       | 35.19      |  |  |  |  |
| PK   | 4.54342G     | 45.09             | 74.00             | -28.91         | 2.89           | 3           | Vertical  | 76             | 1.08          | 42.20         | 31.59      | 6.34       | 35.04      |  |  |  |  |

## 902-928MHz\_LoRa (125kHz)

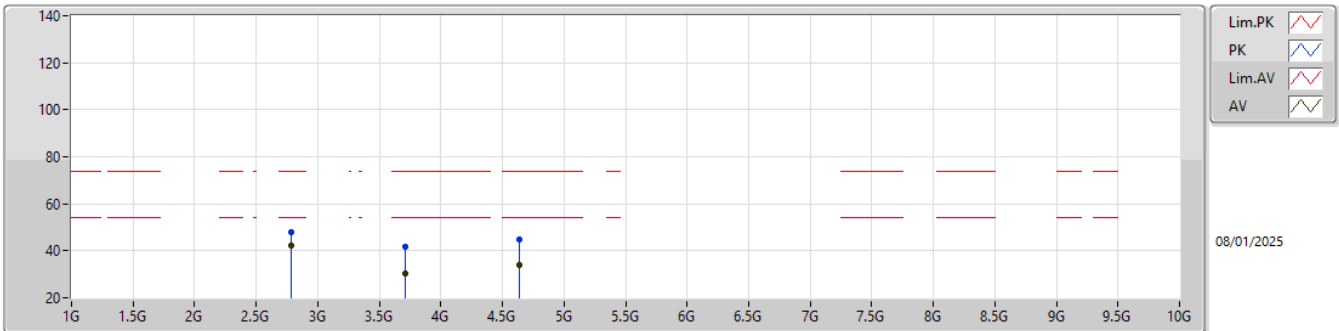
### 908.7MHz\_TX



| Type | Freq<br>(Hz) | Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Factor<br>(dB) | Dist<br>(m) | Condition  | Azimuth<br>(°) | Height<br>(m) | Raw<br>(dBuV) | AF<br>(dB) | CL<br>(dB) | PA<br>(dB) |  |  |  |  |
|------|--------------|-------------------|-------------------|----------------|----------------|-------------|------------|----------------|---------------|---------------|------------|------------|------------|--|--|--|--|
| AV   | 2.72612G     | 49.62             | 54.00             | -4.38          | -1.93          | 3           | Horizontal | 234            | 1.14          | 51.55         | 28.34      | 4.90       | 35.17      |  |  |  |  |
| AV   | 3.63481G     | 34.47             | 54.00             | -19.53         | 0.12           | 3           | Horizontal | 214            | 1.26          | 34.35         | 29.57      | 5.74       | 35.19      |  |  |  |  |
| AV   | 4.54352G     | 39.50             | 54.00             | -14.50         | 2.89           | 3           | Horizontal | 220            | 1.22          | 36.61         | 31.59      | 6.34       | 35.04      |  |  |  |  |
| PK   | 2.72597G     | 51.34             | 74.00             | -22.66         | -1.93          | 3           | Horizontal | 234            | 1.14          | 53.27         | 28.34      | 4.90       | 35.17      |  |  |  |  |
| PK   | 3.6346G      | 41.80             | 74.00             | -32.20         | 0.12           | 3           | Horizontal | 214            | 1.26          | 41.68         | 29.57      | 5.74       | 35.19      |  |  |  |  |
| PK   | 4.54379G     | 45.70             | 74.00             | -28.30         | 2.89           | 3           | Horizontal | 220            | 1.22          | 42.81         | 31.59      | 6.34       | 35.04      |  |  |  |  |

## 902-928MHz\_LoRa (500kHz)

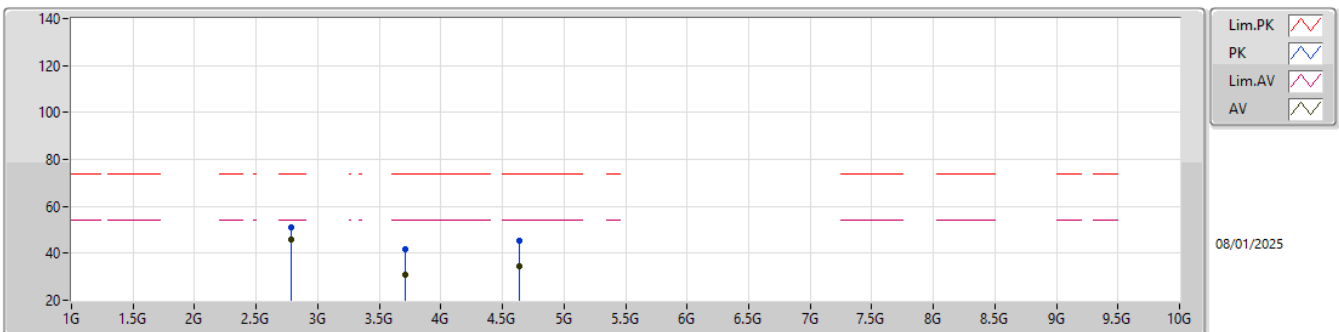
### 927.5MHz\_TX



| Type | Freq<br>(Hz) | Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Factor<br>(dB) | Dist<br>(m) | Condition | Azimuth<br>(°) | Height<br>(m) | Raw<br>(dBuV) | AF<br>(dB) | CL<br>(dB) | PA<br>(dB) |
|------|--------------|-------------------|-------------------|----------------|----------------|-------------|-----------|----------------|---------------|---------------|------------|------------|------------|
| AV   | 2.78258G     | 42.02             | 54.00             | -11.98         | -1.82          | 3           | Vertical  | 208            | 1.00          | 43.84         | 28.40      | 4.96       | 35.18      |
| AV   | 3.70977G     | 30.59             | 54.00             | -23.41         | 0.50           | 3           | Vertical  | 342            | 1.00          | 30.09         | 29.86      | 5.80       | 35.16      |
| AV   | 4.63695G     | 34.22             | 54.00             | -19.78         | 3.02           | 3           | Vertical  | 175            | 1.06          | 31.20         | 31.67      | 6.40       | 35.05      |
| PK   | 2.78305G     | 47.93             | 74.00             | -26.07         | -1.82          | 3           | Vertical  | 208            | 1.00          | 49.75         | 28.40      | 4.96       | 35.18      |
| PK   | 3.70933G     | 41.89             | 74.00             | -32.11         | 0.50           | 3           | Vertical  | 342            | 1.00          | 41.39         | 29.86      | 5.80       | 35.16      |
| PK   | 4.63809G     | 44.93             | 74.00             | -29.07         | 3.03           | 3           | Vertical  | 175            | 1.06          | 41.90         | 31.68      | 6.40       | 35.05      |

## 902-928MHz\_LoRa (500kHz)

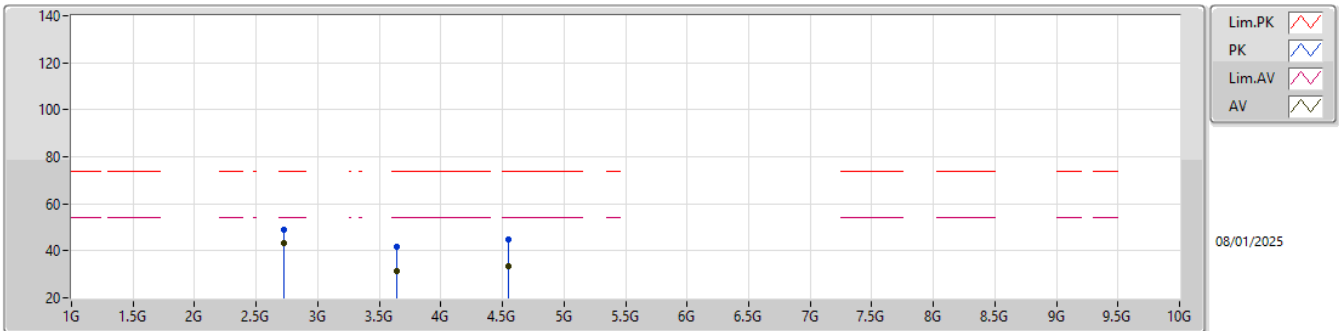
### 927.5MHz\_TX



| Type | Freq<br>(Hz) | Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Factor<br>(dB) | Dist<br>(m) | Condition  | Azimuth<br>(°) | Height<br>(m) | Raw<br>(dBuV) | AF<br>(dB) | CL<br>(dB) | PA<br>(dB) |
|------|--------------|-------------------|-------------------|----------------|----------------|-------------|------------|----------------|---------------|---------------|------------|------------|------------|
| AV   | 2.78251G     | 45.91             | 54.00             | -8.09          | -1.82          | 3           | Horizontal | 233            | 1.13          | 47.73         | 28.40      | 4.96       | 35.18      |
| AV   | 3.71001G     | 31.09             | 54.00             | -22.91         | 0.50           | 3           | Horizontal | 218            | 1.00          | 30.59         | 29.86      | 5.80       | 35.16      |
| AV   | 4.6373G      | 34.64             | 54.00             | -19.36         | 3.02           | 3           | Horizontal | 227            | 1.00          | 31.62         | 31.67      | 6.40       | 35.05      |
| PK   | 2.78275G     | 50.84             | 74.00             | -23.16         | -1.82          | 3           | Horizontal | 233            | 1.13          | 52.66         | 28.40      | 4.96       | 35.18      |
| PK   | 3.70964G     | 41.88             | 74.00             | -32.12         | 0.50           | 3           | Horizontal | 218            | 1.00          | 41.38         | 29.86      | 5.80       | 35.16      |
| PK   | 4.63842G     | 45.56             | 74.00             | -28.44         | 3.03           | 3           | Horizontal | 227            | 1.00          | 42.53         | 31.68      | 6.40       | 35.05      |

## 902-928MHz\_LoRa (500kHz)

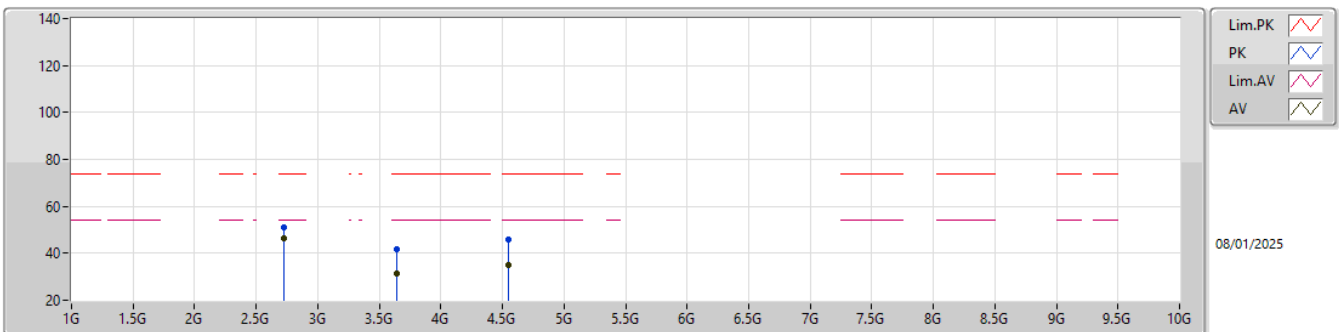
### 909.4MHz\_TX



| Type | Freq<br>(Hz) | Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Factor<br>(dB) | Dist<br>(m) | Condition | Azimuth<br>(°) | Height<br>(m) | Raw<br>(dBuV) | AF<br>(dB) | CL<br>(dB) | PA<br>(dB) |
|------|--------------|-------------------|-------------------|----------------|----------------|-------------|-----------|----------------|---------------|---------------|------------|------------|------------|
| AV   | 2.72819G     | 43.27             | 54.00             | -10.73         | -1.95          | 3           | Vertical  | 257            | 1.05          | 45.22         | 28.32      | 4.90       | 35.17      |
| AV   | 3.63757G     | 31.34             | 54.00             | -22.66         | 0.14           | 3           | Vertical  | 332            | 1.05          | 31.20         | 29.58      | 5.75       | 35.19      |
| AV   | 4.54673G     | 33.61             | 54.00             | -20.39         | 2.90           | 3           | Vertical  | 173            | 1.06          | 30.71         | 31.59      | 6.35       | 35.04      |
| PK   | 2.72886G     | 48.95             | 74.00             | -25.05         | -1.95          | 3           | Vertical  | 257            | 1.05          | 50.90         | 28.31      | 4.91       | 35.17      |
| PK   | 3.63803G     | 41.95             | 74.00             | -32.05         | 0.14           | 3           | Vertical  | 332            | 1.05          | 41.81         | 29.58      | 5.75       | 35.19      |
| PK   | 4.54781G     | 44.65             | 74.00             | -29.35         | 2.91           | 3           | Vertical  | 173            | 1.06          | 41.74         | 31.60      | 6.35       | 35.04      |

## 902-928MHz\_LoRa (500kHz)

### 909.4MHz\_TX



| Type | Freq<br>(Hz) | Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Factor<br>(dB) | Dist<br>(m) | Condition  | Azimuth<br>(°) | Height<br>(m) | Raw<br>(dBuV) | AF<br>(dB) | CL<br>(dB) | PA<br>(dB) |
|------|--------------|-------------------|-------------------|----------------|----------------|-------------|------------|----------------|---------------|---------------|------------|------------|------------|
| AV   | 2.72829G     | 46.17             | 54.00             | -7.83          | -1.95          | 3           | Horizontal | 236            | 1.12          | 48.12         | 28.32      | 4.90       | 35.17      |
| AV   | 3.63759G     | 31.18             | 54.00             | -22.82         | 0.14           | 3           | Horizontal | 210            | 1.00          | 31.04         | 29.58      | 5.75       | 35.19      |
| AV   | 4.54668G     | 35.14             | 54.00             | -18.86         | 2.90           | 3           | Horizontal | 266            | 1.06          | 32.24         | 31.59      | 6.35       | 35.04      |
| PK   | 2.72882G     | 51.26             | 74.00             | -22.74         | -1.95          | 3           | Horizontal | 236            | 1.12          | 53.21         | 28.31      | 4.91       | 35.17      |
| PK   | 3.6377G      | 41.78             | 74.00             | -32.22         | 0.14           | 3           | Horizontal | 210            | 1.00          | 41.64         | 29.58      | 5.75       | 35.19      |
| PK   | 4.54753G     | 45.91             | 74.00             | -28.09         | 2.91           | 3           | Horizontal | 266            | 1.06          | 43.00         | 31.60      | 6.35       | 35.04      |