FCC Radio Test Report

Contains FCC ID	:	**2A8O9-EM2050**
FCC ID	:	**2BAH4SMG-3**
Equipment	:	**Silvanet Mesh Gateway**
Brand Name	:	**DRYAD Dryad DRYAD**
Model Name	:	**SMG-3X (Where X = "empty" or "S" that represents satellite variant)**
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. 04, 2024, and testing was started from Dec. 10, 2024 and completed on Dec. 17, 2024. We, SPORTON INTERNATIONAL INC. Hsinhua Laboratory would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

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

Approved by: Jackson Tsai

SPORTON INTERNATIONAL INC. Hsinhua Laboratory

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

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History of this test report

Report No.	Version	Description	Issued Date
FR481501AF	01	Initial issue of report	Jan. 09, 2025
FR481501AF	02	Revised typo and updated photographs of EUT. (This report is the latest version replacing for the report issued on Jan. 09, 2025.)	Jan. 24, 2025

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: Sam Tsai

Report Producer: Julie Tseng

1 General Description

1.1 Information

1.1.1 RF General Information

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

Band	Mode	BWch	Nant
902-928MHz	LoRa (125kHz)	0.2	1TX
902-928MHz	LoRa (500kHz)	0.5	1TX
902-928MHz	LoRa (500kHz)	0.5	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.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	Dryad	LORA01Gen-3	PCB Antenna	N/A	-0.4

1.1.3 Type of EUT

Operational Condition		
EUT Power Type	From Solar Panel	
Type of EUT		
☒	Stand-alone	
☐	Combined (EUT where the radio part is fully integrated within another device)	
	Combined Equipment - Brand Name / Model No.:	…
☐	Plug-in radio (EUT intended for a variety of host systems)	
	Host System - Brand Name / Model No.:	…
☐	Other:	

1.1.4 Table for Multiple Listing

Model Name		Description
SMG-3X (Where X = “empty” or “S” that represents satellite variant)	SMG-3	without satellite
	SMG-3S	with satellite

Note: The model SMG-3S was measured during the test.

1.1.5 Test Signal Duty Cycle

Mode	DC	DCF (dB)	T (s)	VBW (Hz)_1/T
LoRa (500kHz)	0.036	14.44	36.25m	30
LoRa (125kHz)	0.115	9.39	144.063m	10

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				
☒ Hsinhua **(TAF:** 3785**)**	**ADD:** No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)			
	TEL: 886-3-327-3456		**FAX:** 886-3-327-0973	
Test site Designation No. TW3785 with FCC.				
Test Condition	**Test Site No.**	**Test Engineer**	**Test Environment**	**Test Date**
RF Conducted	TH07-HY	Xun Hsieh	23.1~23.6°C / 55~58%	12/Dec/2024~17/Dec/2024
Radiated	03CH02-HY	Daniel Lin	20.7~22.4°C / 55~57%	10/Dec/2024~13/Dec/2024
Radiated (Co-Location)	03CH02-HY	Ian Liou	21.3~22.1°C / 54~57%	16/Dec/2024
☐ Wen 33rd.St. **(TAF:** 3785**)**	**ADD:** No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)			
	TEL: 886-3-318-0787		**FAX:** 886-3-318-0287	
Test site Designation No. TW0008 with FCC.				

1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)

Test Items	**Uncertainty**	**Remark**
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-DTS	Abbreviation	Remark
TX-DTS	Tnom	20°C
-	Vnom	24V

2.2 Test Channel Mode

Test Software Version	Tera Term Version 4.76

Mode	Power Setting
LoRa (500kHz)	-
903MHz	22
909.4MHz	22
914.2MHz	22
LoRa (500kHz)	
923.3MHz	22
927.5MHz	22
LoRa (125kHz)	
902.3MHz	22
908.7MHz	22
914.9MHz	22

2.3 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	RF Output Power, 20dB Bandwidth, Carrier Frequency Separation (ChS) Number of Hopping Frequencies (N), Hopping Bandedge Time of Occupancy (Dwell Time) Emissions in Non-restricted Frequency Bands
Test Condition	Conducted measurement at transmit chains
	☒ Non-adaptive frequency hopping systems (Non-AFH) ☒ 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			
Tests Item	Emissions in Restricted Frequency Bands		
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.		
Operating Mode < 1GHz	CTX		
1	DC Power Supply		
Operating Mode > 1GHz	CTX		
Orthogonal Planes of EUT	**X Plane**	**Y Plane**	**Z Plane**
			
Worst Planes of EUT			V

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis
Test Condition	Radiated measurement
Operating Mode	Normal Link
1	Lora + Satellite
Refer to Sporton Test Report No.: FA481501 for Co-location RF Exposure Evaluation and Appendix H for Radiated Emission Co-location.	

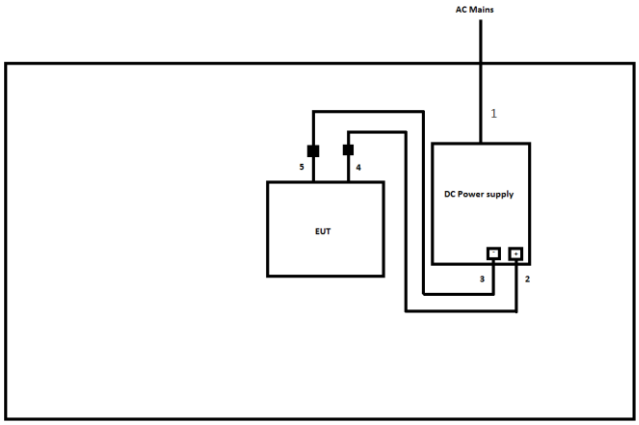
2.4 Support Equipment

Support Equipment – Conducted					
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**	**Remark**
1	Notebook	DELL	E5410	-	-
2	Adapter for NB	DELL	HA65NM130	-	-
3	DC Power Source	GW	GPC-6030D	-	-

Support Equipment – Radiated					
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**	**Remark**
1	DC Power Supply	GW	GPR-3510HD	-	-
2	AC Power Cable	Power sync	PW-GPC180-3	-	-
3	DC Power Cable	MiSUMi	WTN1228-RED	-	-
4	DC Power Cable	MiSUMi	WTN1228-BLACK	-	-
5	DC Power Cable*2	Sporton	Sporton	-	-

2.5 Test Setup Diagram

Test Setup Diagram - Radiated Test



Item	Connection	Shielded	Length(m)	Remark
1	AC Power cable	No	1.8	-
2	DC Power cable	No	1.0	-
3	DC Power cable	No	1.0	-
4	DC Power cable	No	1.0	-
5	DC Power cable	No	1.0	-

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
▪ 902-928 MHz Band:
N:Number of Hopping Frequencies; **ChS**: Hopping Channel Separation

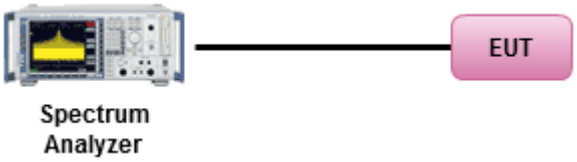
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

Test Method
☒ Refer as ANSI C63.10-2013, clause 6.9.2 for 20 dB bandwidth measurement.
☒ Refer as ANSI C63.10-2013, clause 7.8.2 for carrier frequency separation measurement.

3.1.4 Test Setup

20dB Bandwidth and Carrier Frequency Separation


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 ≥50 and hybrid system; Power 30dBm; EIRP 36dBm
	▪ 50 >N≥ 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	
	☐ Refer as KDB 558074, clause 8.3.1.1 (11.9.1.1 of ANSI C63.10) RBW ≥ EBW method.
	☐ Refer as KDB 558074, clause 8.3.1.2 (11.9.1.2 of ANSI C63.10) integrated band power method.
	☒ 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	
	☐ Refer as KDB 558074, clause 8.3.2.2 (11.9.2.2 of ANSI C63.10) using a spectrum analyzer.
	☒ 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: 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: $P_{total} = P_1 + P_2 + \ldots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$

3.2.4 Test Setup

Maximum Conducted Output Power (Power Meter)


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
▪ Power Spectral Density (PSD)≤8 dBm/3kHz

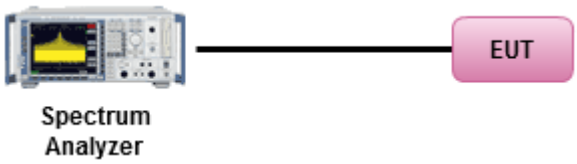
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method		
▪ 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).		
	☒ Refer as KDB 558074, clause 8.4 (11.10 of ANSI C63.10) Max. PSD.	
▪ For conducted measurement.		
	▪ If The EUT supports multiple transmit chains using options given below:	
		▪ 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.

3.3.4 Test Setup

Power Spectral Density


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
▪ 902-928 MHz Band:
▪ ChS ≥ MAX (20 dB bandwidth, 25 kHz); 20 dB bandwidth≤ 250 kHz.
▪ ChS ≥ MAX (20 dB bandwidth, 25 kHz); 20 dB bandwidth>250 kHz.
Note : **1. ChS** : Hopping Channel Separation **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

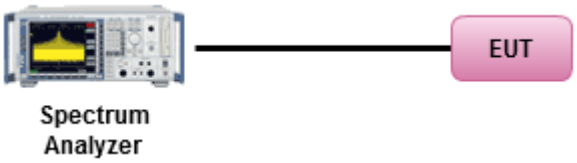
3.4.3 Measuring Instruments

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

3.4.4 Test Procedures

Test Method
☒ Refer as ANSI C63.10-2013, clause 7.8.3 for number of hopping frequencies measurement.
☒ Refer as ANSI C63.10-2013, clause 7.8.6 for hopping frequencies Bandedge measurement.

3.4.5 Test Setup

Number of Hopping Frequencies


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	
▪ 902-928 MHz Band:	
	▪ N ≥50; 0.4s in 20s period
	▪ 50 >N≥ 25; 0.4s in 10s period
N:Number of Hopping Frequencies	

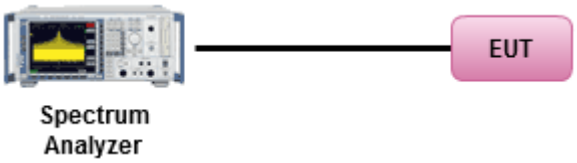
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

Test Method
▪ Refer as ANSI C63.10-2013, clause 7.8.4 for dwell time measurement.

3.5.4 Test Setup

Time of Occupancy (Dwell Time)
 Spectrum Analyzer

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
Note 1: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak level. Note 2: If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average level.	

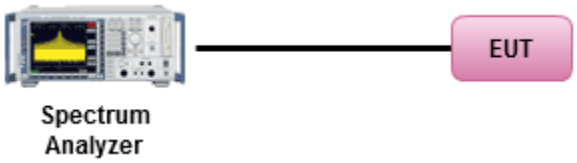
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

Test Method
▪ Refer as ANSI C63.10-2013, clause 7.8.8 for unwanted emissions into non-restricted bands.

3.6.4 Test Setup

Emissions in Non-restricted Frequency Bands


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.

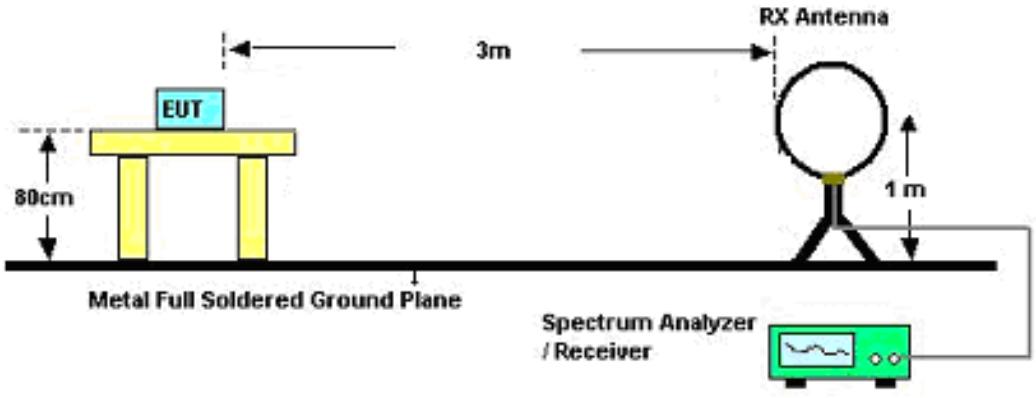
3.7.3 Test Procedures

Test Method	
▪ The average emission levels shall be measured in [hopping duty factor].	
▪ 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.	
▪ For the transmitter unwanted emissions shall be measured using following options below:	
	▪ Refer as ANSI C63.10, clause 4.1.4.2.1 QP value.
	▪ Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak.
	▪ Refer as ANSI C63.10, clause 4.1.4.2.4 average value of hopping pulsed emissions.
▪	KDB 414788 Open-Field Test Sites and Chamber Correlation Justification.
	▪ 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.
	▪ Open-field site and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

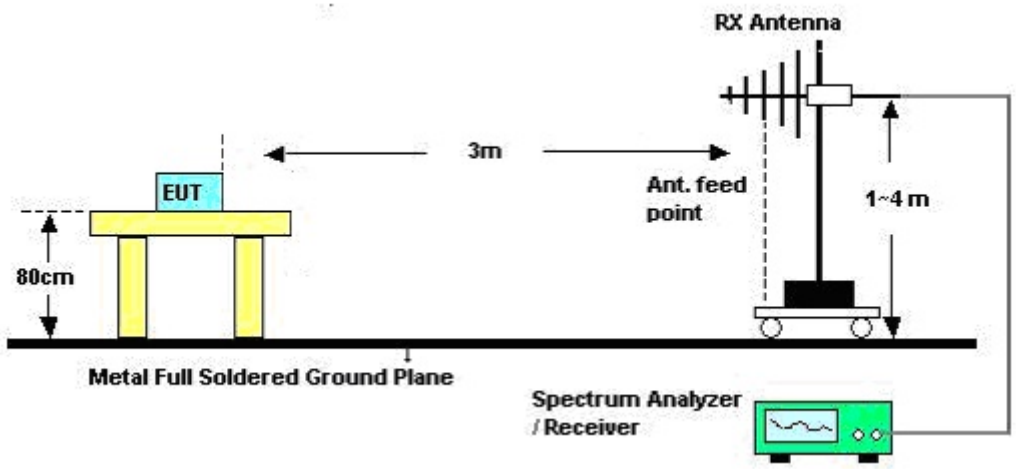
3.7.4 Measurement Results Calculation

The measured Level is calculated using:
Corrected Reading: Raw(Read Level) + AF(Antenna Factor) + CL(Cable Loss) - PA(Preamp Factor)

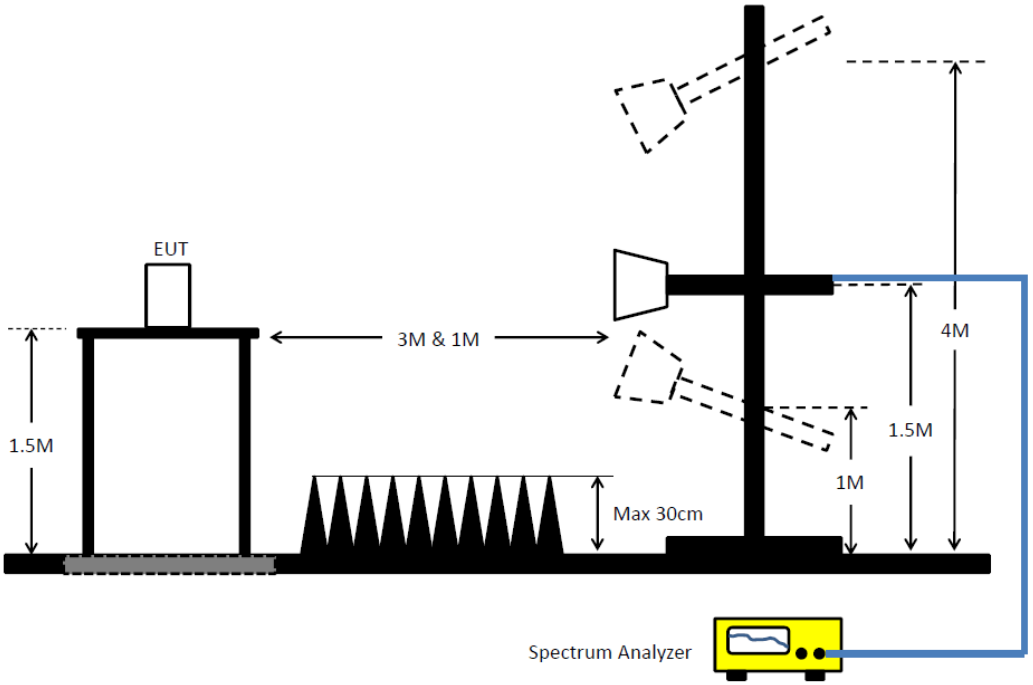
3.7.5 Test Setup

Emissions in Restricted Frequency Bands
9kHz ~30MHz


30MHz~1GHz



Above 1GHz



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

3.8 Test Equipment and Calibration Data

Instrument for Conducted Test

Instrument	Manufacturer/ Brand Name	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Signal Analyzer	R&S	FSV 40	101515	9kHz~40GHz	02/Feb/2024	01/Feb/2025
SMB100A Signal Generator	R&S	SMB100A	181147	100kHz~40GHz	16/Oct/2024	15/Oct/2025
Power Meter	Anritsu	ML2495A	2105003	300MHz~40GHz	13/Sep/2024	12/Sep/2025
Pulse Sensor	Anritsu	MA2411B	1911254	300MHz~40GHz	13/Sep/2024	12/Sep/2025
SENSE-15247_FS	Sporton	V5.11.21	N/A	N/A	N/A	N/A

Instrument for Radiated Test

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

Instrument for Radiated Test (Co-location)

Instrument	Manufacturer/ Brand Name	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Site V.S.W.R	SIDT FRANKONIA	SAC-3M	03CH02-HY	1GHz~18GHz 3M	14/Jul/2024	13/Jul/2025
Signal Analyzer	R&S	FSP 40	100593	9kHz~40GHz	11/Mar/2024	10/Mar/2025
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	02268	1GHz~18GHz	23/Sep/2024	22/Sep/2025
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170154	18GHz~40GHz	04/Jun/2024	03/Jun/2025
RF Cable-R03m	HUBER+SUHNER	SUCOFLEX 104	03CH02-cable-01	1GHz~40GHz	15/Feb/2024	14/Feb/2025
Microwave Preamplifier	Agilent	8449B	3008A02373	1GHz~26.5GHz	01/Oct/2024	30/Sep/2025
Microwave Preamplifier	EMC INSTRUMENTS	EM18G40G	060604	18GHz ~40GHz	19/Apr/2024	18/Apr/2025
SENSE-EMI	Sporton	V5.11.9	NA	NA	19/Apr/2024	18/Apr/2025

Summary

Mode	Max-N dB	Max-OBW	ITU-Code	Min-N dB	Min-OBW
	(Hz)	(Hz)		(Hz)	(Hz)
902-928MHz	-	-	-	-	-
LoRa (125kHz)	146.85k	123.938k	124KF1D	133.1k	118.941k

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

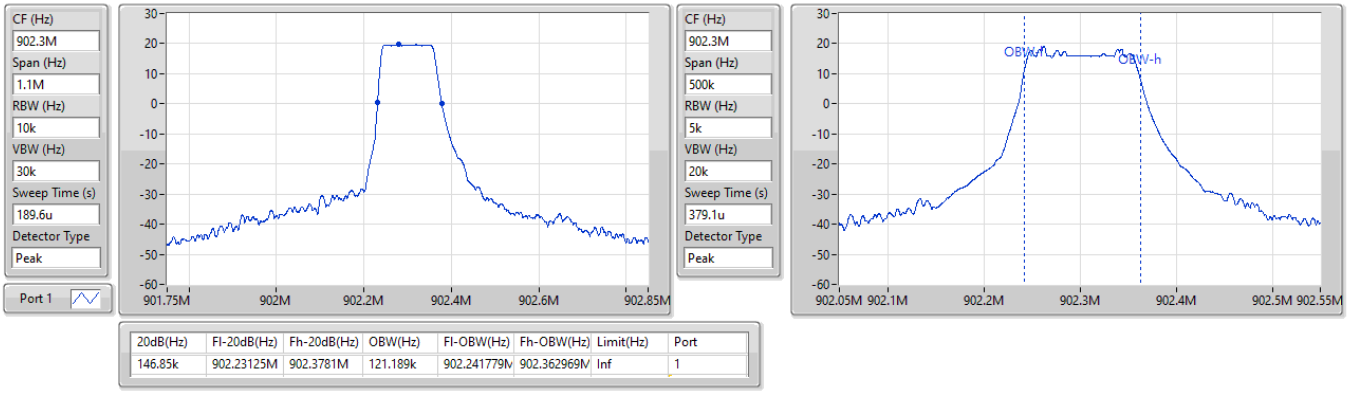
Mode	Result	Limit	Port 1-N dB	Port 1-OBW
		(Hz)	(Hz)	(Hz)
LoRa (125kHz)	-	-	-	-
902.3MHz	Pass	Inf	146.85k	121.189k
908.7MHz	Pass	Inf	133.1k	123.938k
914.9MHz	Pass	Inf	134.75k	118.941k

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

902-928MHz_LoRa (125kHz) **EBW-FS**

902.3MHz

12/12/2024



20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
146.85k	902.23125M	902.3781M	121.189k	902.241779M	902.362969M	Inf	1

Summary

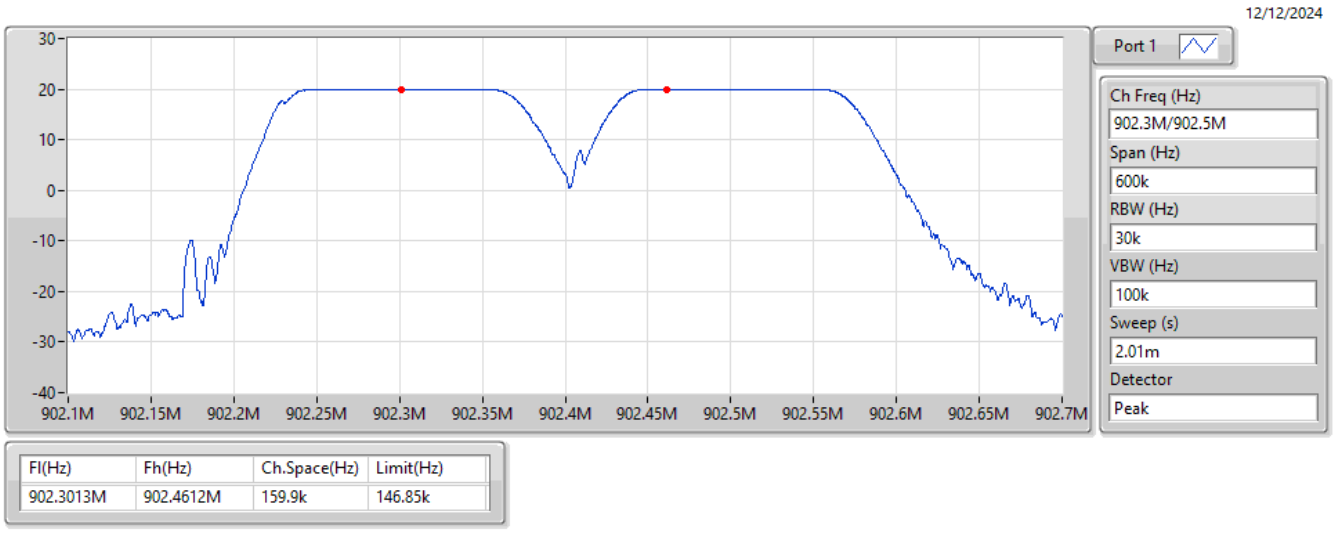
Mode	Max-Space	Min-Space
	(Hz)	(Hz)
902-928MHz	-	-
LoRa (125kHz)	209.4k	159.9k

Result

Mode	Result	Fl	Fh	Ch.Space	Limit
		(Hz)	(Hz)	(Hz)	(Hz)
LoRa (125kHz)	-	-	-	-	-
902.3MHz	Pass	902.3013M	902.4612M	159.9k	146.85k
908.7MHz	Pass	908.6503M	908.8597M	209.4k	133.1k
914.9MHz	Pass	914.6686M	914.8663M	197.7k	134.75k

902-928MHz_LoRa (125kHz) **Channel Separation-FS**

902.3M/902.5MHz



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
902.3013M	902.4612M	159.9k	146.85k

Summary

Mode	Max-N dB	Max-OBW	ITU-Code	Min-N dB	Min-OBW
	(Hz)	(Hz)		(Hz)	(Hz)
902-928MHz	-	-	-	-	-
LoRa (500kHz)	643.125k	535.982k	536KF1D	606.25k	510.37k
902-928MHz	-	-	-	-	-
LoRa (500kHz)	646.875k	510.995k	511KF1D	612.5k	492.254k

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

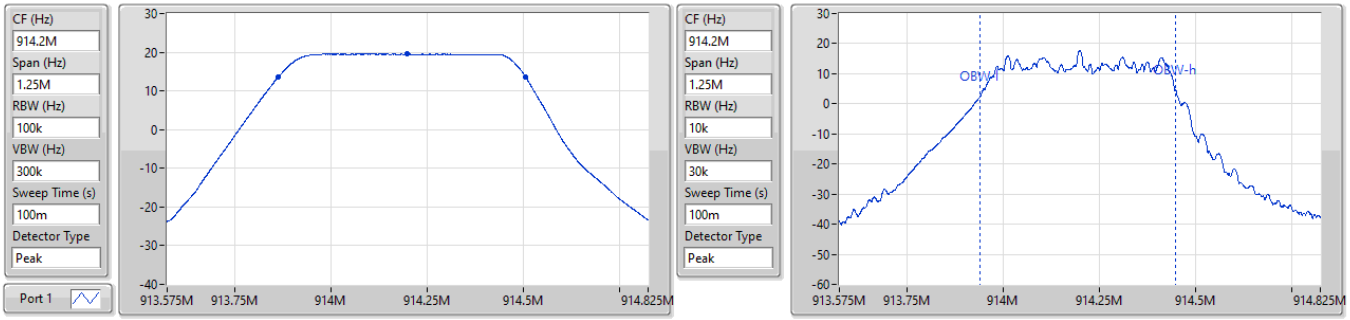
Mode	Result	Limit	Port 1-N dB	Port 1-OBW
		(Hz)	(Hz)	(Hz)
LoRa (500kHz)	-	-	-	-
903MHz	Pass	500k	627.5k	525.987k
909.4MHz	Pass	500k	606.25k	535.982k
914.2MHz	Pass	500k	643.125k	510.37k
LoRa (500kHz)				
923.3MHz	Pass	500k	646.875k	510.995k
927.5MHz	Pass	500k	612.5k	492.254k

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

902-928MHz_LoRa (500kHz) **EBW-DTS**

914.2MHz

12/12/2024

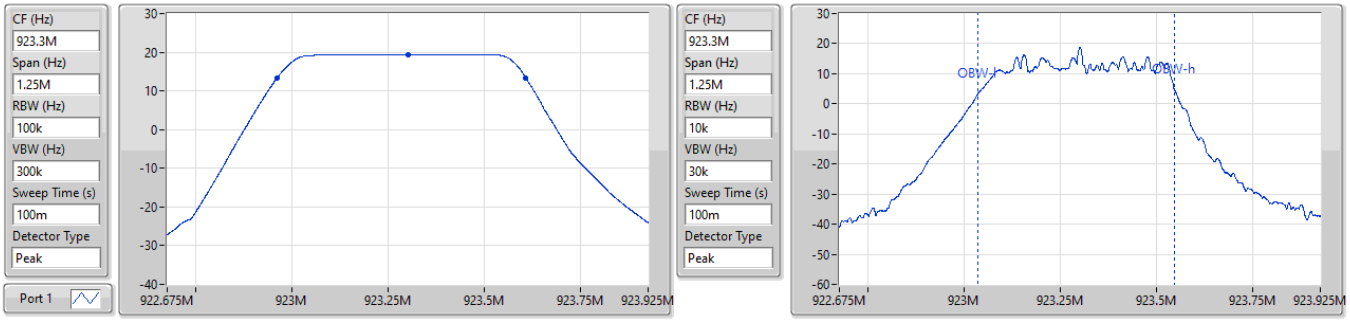


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
643.125k	913.86375M	914.506875M	510.37k	913.939505M	914.449875M	500k	1

902-928MHz_LoRa (500kHz) **EBW-DTS**

923.3MHz

12/12/2024



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
646.875k	922.960625M	923.6075M	510.995k	923.035132M	923.546127M	500k	1

Summary

Mode	Total Power	Total Power
	(dBm)	(W)
902-928MHz	-	-
LoRa (125kHz)	20.02	0.10046

Result

Mode	Result	DG	Total Power	Power Limit
		(dBi)	(dBm)	(dBm)
LoRa (125kHz)	-	-	-	-
902.3MHz	Pass	-0.40	20.02	30.00
908.7MHz	Pass	-0.40	19.79	30.00
914.9MHz	Pass	-0.40	19.57	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)	19.87	0.09705

Result

Mode	Result	DG	Total Power	Power Limit
		(dBi)	(dBm)	(dBm)
LoRa (125kHz)	-	-	-	-
902.3MHz	Pass	-0.40	19.87	30.00
908.7MHz	Pass	-0.40	19.57	30.00
914.9MHz	Pass	-0.40	19.42	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)	19.97	0.09931
902-928MHz	-	-
LoRa (500kHz)	19.59	0.09099

Result

Mode	Result	DG	Total Power	Power Limit
		(dBi)	(dBm)	(dBm)
LoRa (500kHz)	-	-	-	-
903MHz	Pass	-0.40	19.97	30.00
909.4MHz	Pass	-0.40	19.78	30.00
914.2MHz	Pass	-0.40	19.60	30.00
LoRa (500kHz)	-	-	-	-
923.3MHz	Pass	-0.40	19.41	30.00
927.5MHz	Pass	-0.40	19.59	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)	19.53	0.08974
902-928MHz	-	-
LoRa (500kHz)	19.07	0.08072

Result

Mode	Result	DG	Total Power	Power Limit
		(dBi)	(dBm)	(dBm)
LoRa (500kHz)	-	-	-	-
903MHz	Pass	-0.40	19.53	30.00
909.4MHz	Pass	-0.40	19.27	30.00
914.2MHz	Pass	-0.40	19.12	30.00
LoRa (500kHz)	-	-	-	-
923.3MHz	Pass	-0.40	18.93	30.00
927.5MHz	Pass	-0.40	19.07	30.00

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

Summary

Mode	PD
	(dBm/RBW)
902-928MHz	-
LoRa (500kHz)	6.45
902-928MHz	-
LoRa (500kHz)	5.40

RBW = 3kHz;

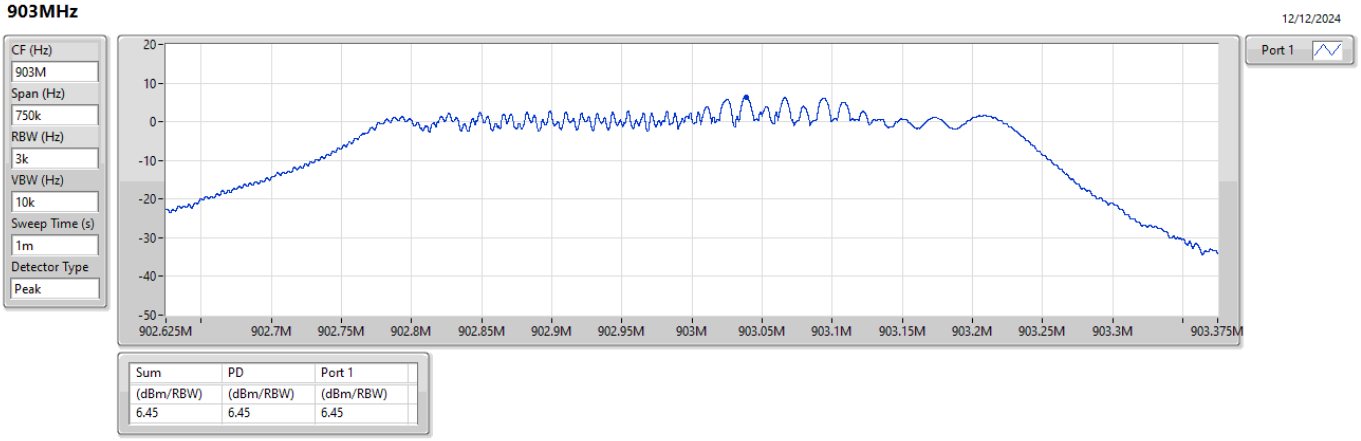
Result

Mode	Result	DG	PD	PD Limit
		(dBi)	(dBm/RBW)	(dBm/RBW)
LoRa (500kHz)	-	-	-	-
903MHz	Pass	-0.40	6.45	8.00
909.4MHz	Pass	-0.40	5.51	8.00
914.2MHz	Pass	-0.40	6.13	8.00
LoRa (500kHz)	-	-	-	-
923.3MHz	Pass	-0.40	5.09	8.00
927.5MHz	Pass	-0.40	5.40	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**

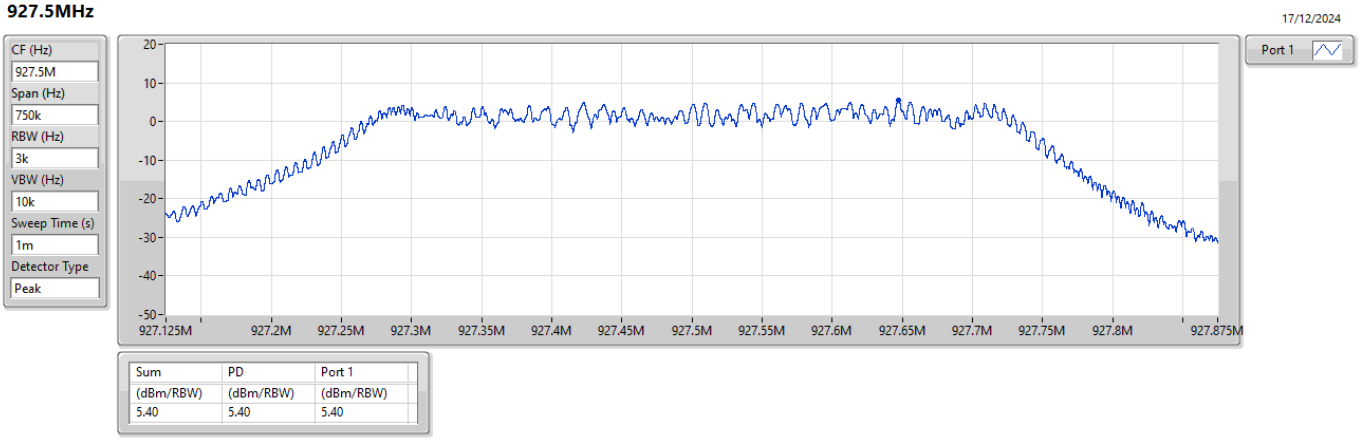
903MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
6.45	6.45	6.45

902-928MHz_LoRa (500kHz) **PSD**

927.5MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
5.40	5.40	5.40

Summary

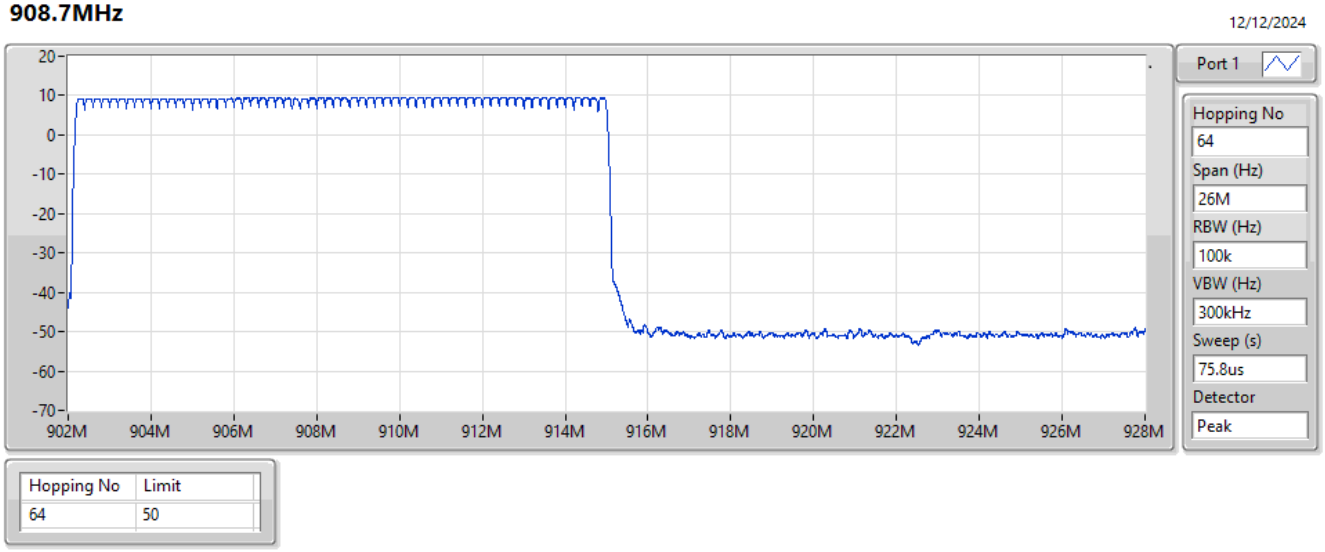
Mode	Max-Hop No
902-928MHz	-
LoRa (125kHz)	64

Result

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

902-928MHz_LoRa (125kHz) **Hopping-FS**

908.7MHz

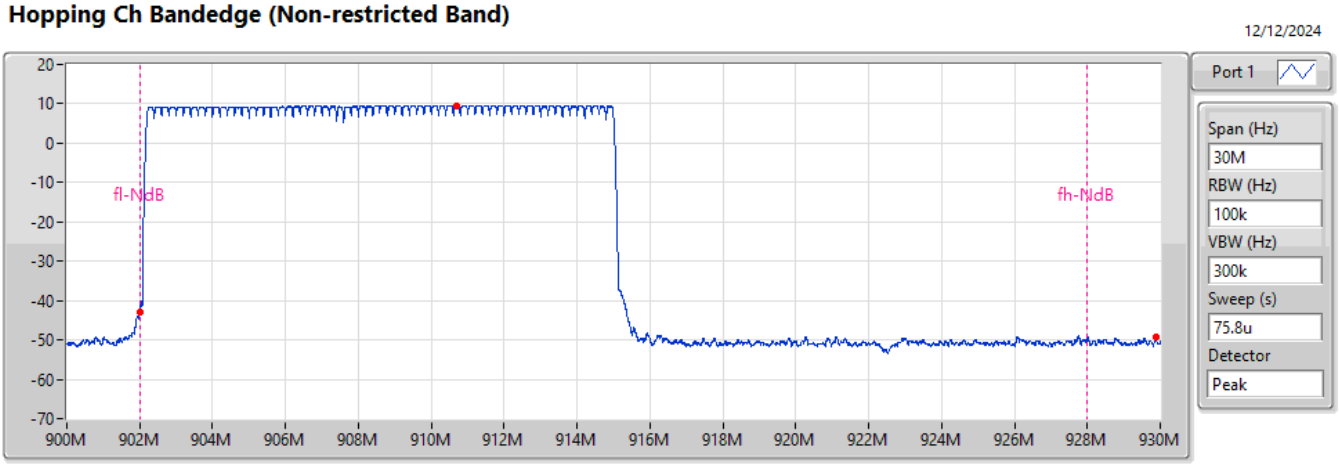


Hopping No	Limit
64	50

902-928MHz_LoRa (125kHz)

908.7MHz

Hopping Ch Bandedge (Non-restricted Band)



Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-10.61	910.695M	9.39	901.99875M	-43.1	929.86875M	-49.37

Summary

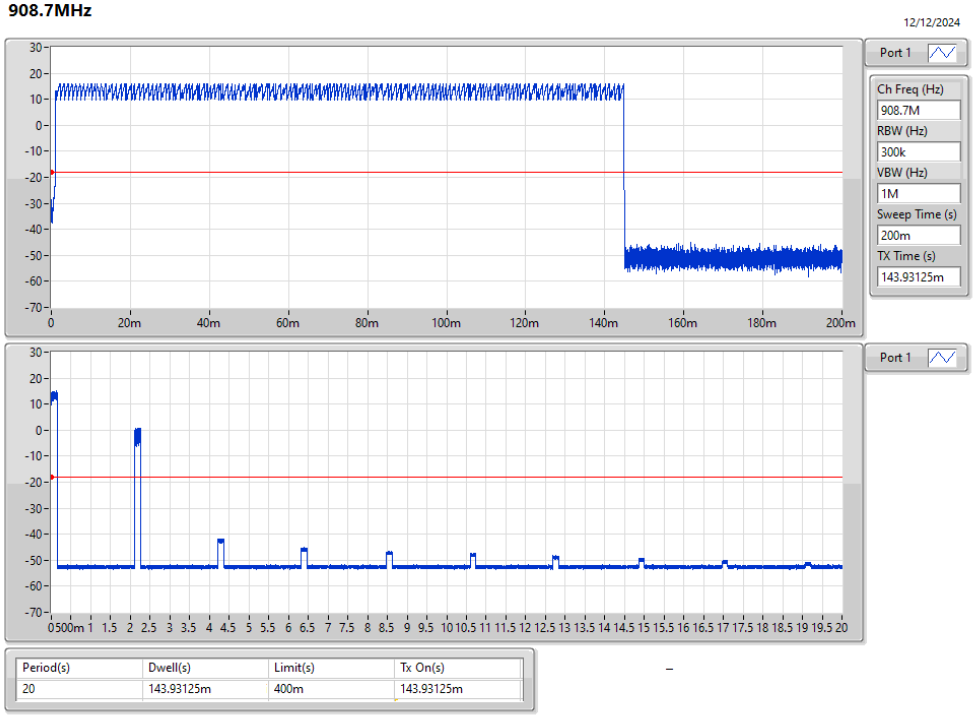
Mode	Dwell (s)
902-928MHz	
LoRa (125kHz)	143.93125m

Result

Mode	Result	Period (s)	Dwell (s)	Limit (s)	Tx On (s)
LoRa (125kHz)	-	-	-	-	-
908.7MHz	Pass	20	143.93125m	400m	143.93125m

902-928MHz_LoRa (125kHz) **Dwell-FS**

908.7MHz



Period(s)	Dwell(s)	Limit(s)	Tx On(s)
20	143.93125m	400m	143.93125m

Summary

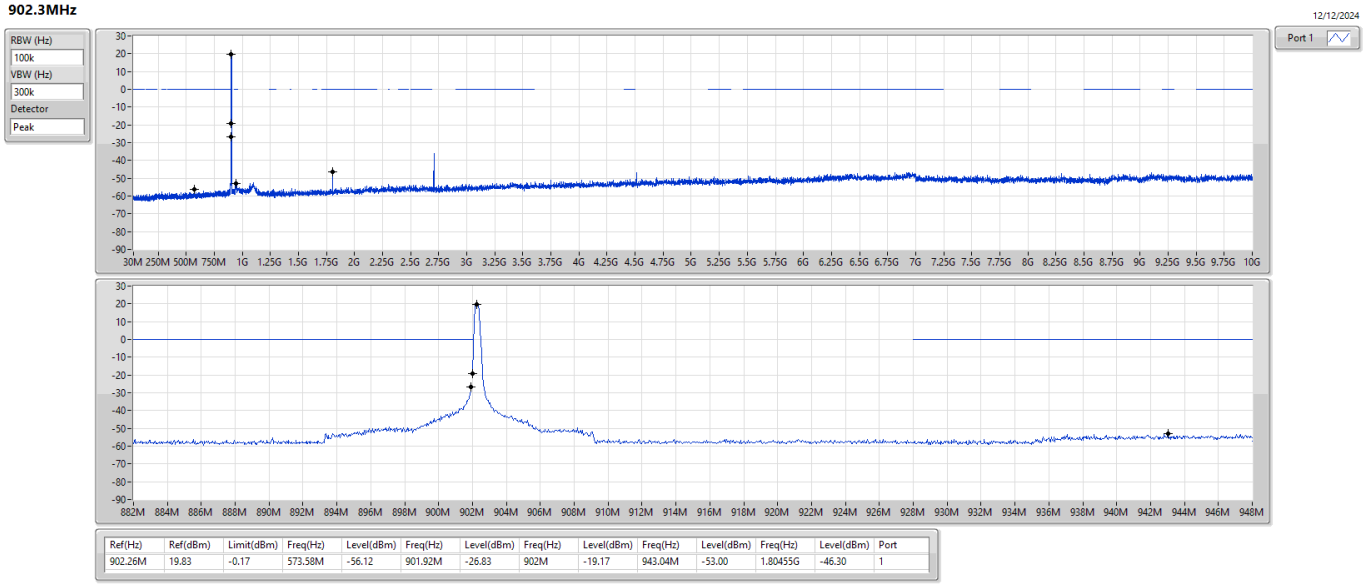
Mode	Result	Ref	Ref	Limit	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Port
		(Hz)	(dBm)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	
902-928MHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LoRa (125kHz)	Pass	902.26M	19.83	-0.17	573.58M	-56.12	901.92M	-26.83	902M	-19.17	943.04M	-53.00	1.80455G	-46.30	1

Result

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)	
LoRa (125kHz)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
902.3MHz	Pass	902.26M	19.83	-0.17	573.58M	-56.12	901.92M	-26.83	902M	-19.17	943.04M	-53.00	1.80455G	-46.30	1
908.7MHz	Pass	908.66M	20.71	0.71	849.62M	-55.28	901.88M	-49.21	902M	-50.32	940.72M	-51.18	6.99474G	-45.97	1
914.9MHz	Pass	914.95M	19.41	-0.59	841.1M	-52.86	882.96M	-52.44	928M	-55.19	928.28M	-53.87	6.90195G	-46.07	1

902-928MHz_LoRa (125kHz) CSENdB-FS

902.3MHz



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
902.26M	19.83	-0.17	573.58M	-56.12	901.92M	-26.83	902M	-19.17	943.04M	-53.00	1.80455G	-46.30	1

Summary

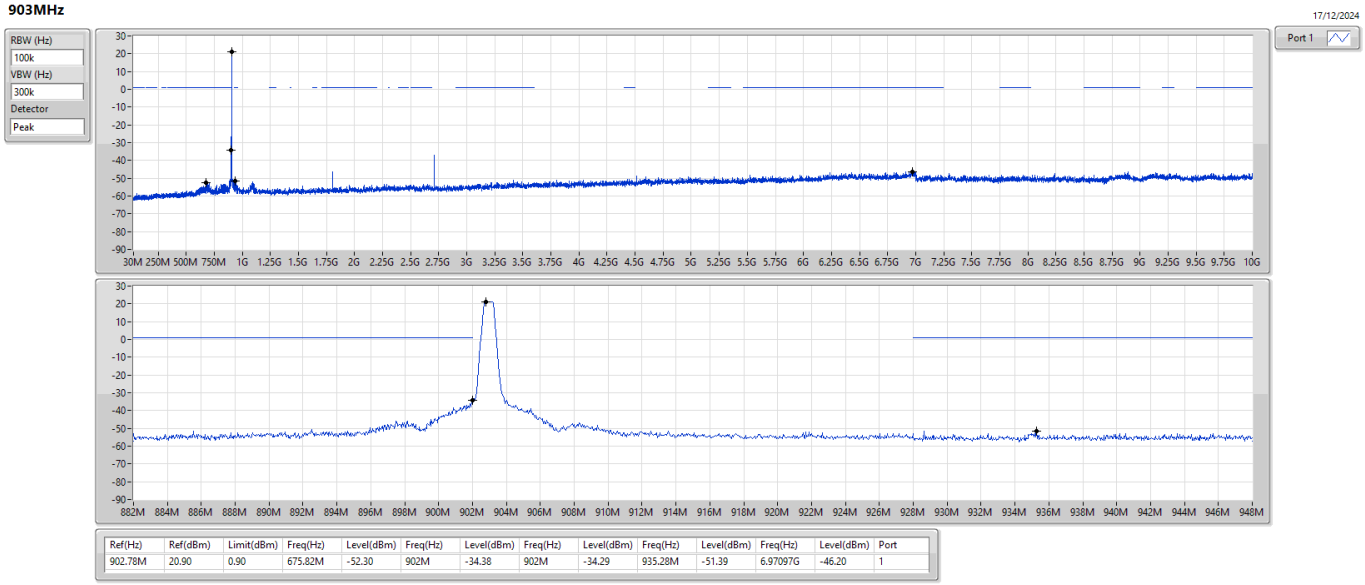
Mode	Result	Ref	Ref	Limit	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Port
		(Hz)	(dBm)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	
902-928MHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LoRa (500kHz)	Pass	902.78M	20.9	0.9	675.82M	-52.3	902M	-34.38	902M	-34.29	935.28M	-51.39	6.97097G	-46.2	1
902-928MHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LoRa (500kHz)	Pass	927.27M	19.8	-0.2	734.6M	-52.41	889.76M	-53.78	928M	-4.46	928M	-5.69	6.94382G	-46.66	1

Result

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)	
LoRa (500kHz)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
903MHz	Pass	902.78M	20.9	0.9	675.82M	-52.3	902M	-34.38	902M	-34.29	935.28M	-51.39	6.97097G	-46.2	1
909.4MHz	Pass	909.18M	20.7	0.7	849.62M	-52.85	901.92M	-49.9	902M	-51.25	929.12M	-52.32	6.99134G	-46.35	1
914.2MHz	Pass	914.17M	20.57	0.57	722.68M	-53.06	882.36M	-52.08	902M	-53.52	946.32M	-51.47	6.98342G	-45.6	1
LoRa (500kHz)															
923.3MHz	Pass	923.37M	20.37	0.37	723.95M	-51.3	891.44M	-52.25	928M	-48.34	929.12M	-47.23	6.97663G	-46.02	1
927.5MHz	Pass	927.27M	19.8	-0.2	734.6M	-52.41	889.76M	-53.78	928M	-4.46	928M	-5.69	6.94382G	-46.66	1

902-928MHz_LoRa (500kHz) CSENdB-DTS

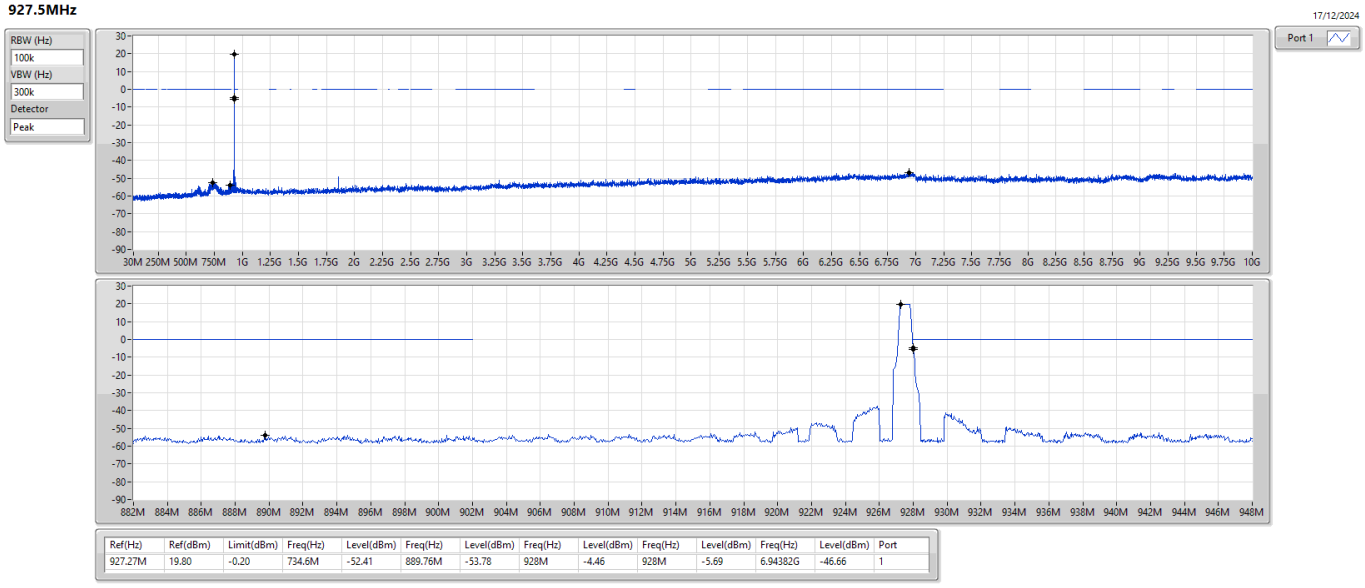
903MHz



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
902.78M	20.90	0.90	675.82M	-52.30	902M	-34.38	902M	-34.29	935.28M	-51.39	6.97097G	-46.20	1

902-928MHz_LoRa (500kHz) CSENdB-DTS

927.5MHz



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
927.27M	19.80	-0.20	734.6M	-52.41	889.76M	-53.78	928M	-4.46	928M	-5.69	6.94382G	-46.66	1

Summary

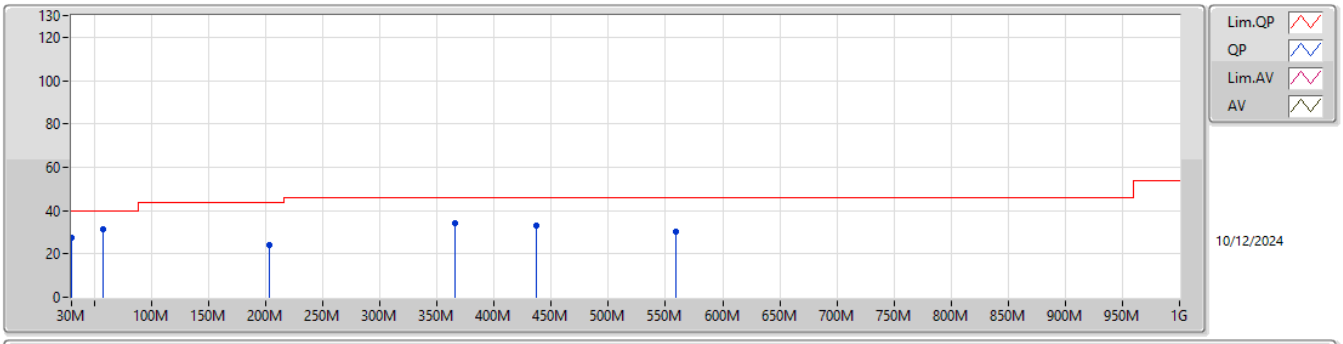
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
902-928MHz	-	-	-	-	-	-	-	-	-	-
LoRa (125kHz)	Pass	PK	796.3M	40.58	46.00	-5.42	3	Horizontal	0	1.00

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
LoRa (125kHz)	-	-	-	-	-	-	-	-	-	-
902.3MHz	Pass	PK	30M	27.48	40.00	-12.52	3	Vertical	360	1.00
902.3MHz	Pass	PK	57.16M	31.39	40.00	-8.61	3	Vertical	360	1.00
902.3MHz	Pass	PK	202.66M	24.36	43.50	-19.14	3	Vertical	360	1.00
902.3MHz	Pass	PK	365.62M	34.26	46.00	-11.74	3	Vertical	360	1.00
902.3MHz	Pass	PK	437.4M	33.20	46.00	-12.80	3	Vertical	360	1.00
902.3MHz	Pass	PK	559.62M	30.45	46.00	-15.55	3	Vertical	360	1.00
902.3MHz	Pass	PK	30M	27.22	40.00	-12.78	3	Horizontal	0	1.00
902.3MHz	Pass	PK	200.72M	25.98	43.50	-17.52	3	Horizontal	0	1.00
902.3MHz	Pass	PK	353.98M	34.10	46.00	-11.90	3	Horizontal	0	1.00
902.3MHz	Pass	PK	489.78M	29.13	46.00	-16.87	3	Horizontal	0	1.00
902.3MHz	Pass	PK	559.62M	30.14	46.00	-15.86	3	Horizontal	0	1.00
902.3MHz	Pass	PK	796.3M	40.58	46.00	-5.42	3	Horizontal	0	1.00

902-928MHz_LoRa (125kHz)

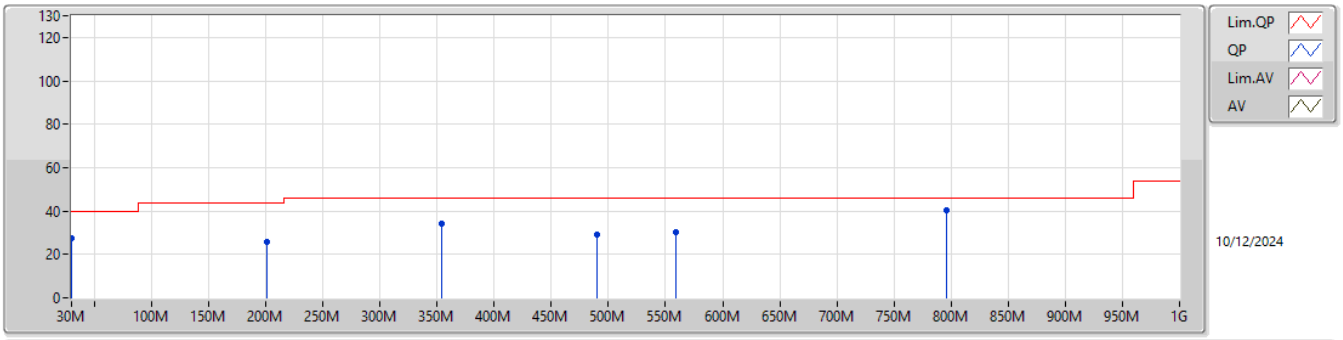
902.3MHz_DC Power Supply



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
PK	30M	27.48	40.00	-12.52	-3.12	3	Vertical	360	1.00	30.60	23.18	1.09	27.39
PK	57.16M	31.39	40.00	-8.61	-13.66	3	Vertical	360	1.00	45.05	11.32	1.50	26.48
PK	202.66M	24.36	43.50	-19.14	-10.46	3	Vertical	360	1.00	34.82	13.92	2.90	27.28
PK	365.62M	34.26	46.00	-11.74	-3.98	3	Vertical	360	1.00	38.24	19.56	3.94	27.48
PK	437.4M	33.20	46.00	-12.80	-2.43	3	Vertical	360	1.00	35.63	21.24	4.32	27.99
PK	559.62M	30.45	46.00	-15.55	-0.01	3	Vertical	360	1.00	30.46	23.40	4.92	28.33

902-928MHz_LoRa (125kHz)

902.3MHz_DC Power Supply



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
PK	30M	27.22	40.00	-12.78	-3.12	3	Horizontal	0	1.00	30.34	23.18	1.09	27.39
PK	200.72M	25.98	43.50	-17.52	-10.49	3	Horizontal	0	1.00	36.47	13.91	2.89	27.29
PK	353.98M	34.10	46.00	-11.90	-4.18	3	Horizontal	0	1.00	38.28	19.32	3.88	27.38
PK	489.78M	29.13	46.00	-16.87	-1.45	3	Horizontal	0	1.00	30.58	22.22	4.60	28.27
PK	559.62M	30.14	46.00	-15.86	-0.01	3	Horizontal	0	1.00	30.15	23.40	4.92	28.33
PK	796.3M	40.58	46.00	-5.42	2.37	3	Horizontal	0	1.00	38.21	24.25	6.05	27.93

Summary

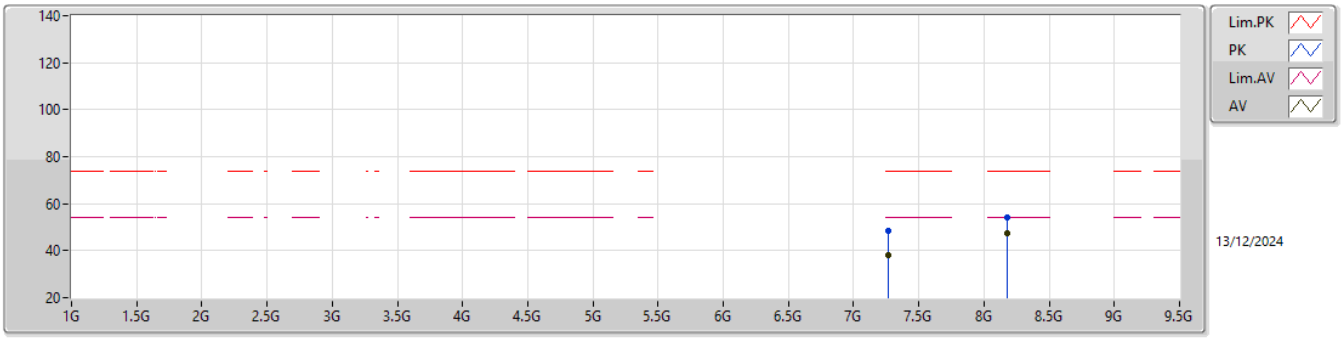
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
902-928MHz	-	-	-	-	-	-	-	-	-	-
LoRa (125kHz)	Pass	AV	8.17832G	47.64	54.00	-6.36	3	Vertical	44	2.92
LoRa (500kHz)	Pass	AV	7.4197G	46.12	54.00	-7.88	3	Vertical	0	1.06
LoRa (500kHz)	Pass	AV	7.31361G	43.26	54.00	-10.74	3	Vertical	355	1.42

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	8.12117G	41.70	54.00	-12.30	3	Vertical	350	1.14
902.3MHz	Pass	PK	8.12045G	52.71	74.00	-21.29	3	Vertical	350	1.14
902.3MHz	Pass	AV	8.12079G	40.44	54.00	-13.56	3	Horizontal	353	1.01
902.3MHz	Pass	PK	8.12063G	50.16	74.00	-23.84	3	Horizontal	353	1.01
908.7MHz	Pass	AV	7.26961G	38.29	54.00	-15.71	3	Vertical	355	1.26
908.7MHz	Pass	AV	8.17832G	47.64	54.00	-6.36	3	Vertical	44	2.92
908.7MHz	Pass	PK	7.27012G	48.21	74.00	-25.79	3	Vertical	355	1.26
908.7MHz	Pass	PK	8.1779G	54.06	74.00	-19.94	3	Vertical	44	2.92
908.7MHz	Pass	AV	7.26955G	34.57	54.00	-19.43	3	Horizontal	353	1.00
908.7MHz	Pass	AV	8.17835G	42.05	54.00	-11.95	3	Horizontal	58	2.60
908.7MHz	Pass	PK	7.27015G	46.58	74.00	-27.42	3	Horizontal	353	1.00
908.7MHz	Pass	PK	8.17832G	51.12	74.00	-22.88	3	Horizontal	58	2.60
914.9MHz	Pass	AV	7.31916G	43.64	54.00	-10.36	3	Vertical	355	1.50
914.9MHz	Pass	AV	8.23436G	45.08	54.00	-8.92	3	Vertical	43	2.97
914.9MHz	Pass	PK	7.31882G	50.94	74.00	-23.06	3	Vertical	355	1.50
914.9MHz	Pass	PK	8.23438G	53.17	74.00	-20.83	3	Vertical	43	2.97
914.9MHz	Pass	AV	7.3192G	37.83	54.00	-16.17	3	Horizontal	26	2.87
914.9MHz	Pass	AV	8.23418G	38.42	54.00	-15.58	3	Horizontal	7	1.00
914.9MHz	Pass	PK	7.31895G	47.69	74.00	-26.31	3	Horizontal	26	2.87
914.9MHz	Pass	PK	8.23383G	48.78	74.00	-25.22	3	Horizontal	7	1.00
LoRa (500kHz)	-	-	-	-	-	-	-	-	-	-
903MHz	Pass	AV	8.12654G	37.82	54.00	-16.18	3	Vertical	40	2.94
903MHz	Pass	PK	8.12602G	53.99	74.00	-20.01	3	Vertical	40	2.94
903MHz	Pass	AV	8.12692G	35.49	54.00	-18.51	3	Horizontal	63	2.46
903MHz	Pass	PK	8.12672G	50.59	74.00	-23.41	3	Horizontal	63	2.46
909.4MHz	Pass	AV	7.27517G	38.44	54.00	-15.56	3	Vertical	0	1.00
909.4MHz	Pass	AV	8.18528G	36.45	54.00	-17.55	3	Vertical	351	1.55
909.4MHz	Pass	PK	7.27531G	48.40	74.00	-25.60	3	Vertical	0	1.00
909.4MHz	Pass	PK	8.18644G	52.12	74.00	-21.88	3	Vertical	351	1.55
909.4MHz	Pass	AV	7.27503G	34.28	54.00	-19.72	3	Horizontal	16	2.75
909.4MHz	Pass	AV	8.18356G	34.57	54.00	-19.43	3	Horizontal	55	1.76
909.4MHz	Pass	PK	7.27475G	46.52	74.00	-27.48	3	Horizontal	16	2.75
909.4MHz	Pass	PK	8.18234G	49.31	74.00	-24.69	3	Horizontal	55	1.76
914.2MHz	Pass	AV	7.31361G	43.26	54.00	-10.74	3	Vertical	355	1.42
914.2MHz	Pass	AV	8.22752G	35.61	54.00	-18.39	3	Vertical	10	1.06
914.2MHz	Pass	PK	7.31386G	50.60	74.00	-23.40	3	Vertical	355	1.42
914.2MHz	Pass	PK	8.2277G	50.67	74.00	-23.33	3	Vertical	10	1.06
914.2MHz	Pass	AV	7.31356G	36.32	54.00	-17.68	3	Horizontal	360	2.01
914.2MHz	Pass	AV	8.22828G	35.30	54.00	-18.70	3	Horizontal	59	2.53
914.2MHz	Pass	PK	7.3139G	47.92	74.00	-26.08	3	Horizontal	360	2.01
914.2MHz	Pass	PK	8.2277G	50.38	74.00	-23.62	3	Horizontal	59	2.53
LoRa (500kHz)	-	-	-	-	-	-	-	-	-	-
923.3MHz	Pass	AV	7.38639G	42.33	54.00	-11.67	3	Vertical	357	1.50
923.3MHz	Pass	AV	8.30982G	35.83	54.00	-18.17	3	Vertical	31	1.05
923.3MHz	Pass	PK	7.38462G	54.47	74.00	-19.53	3	Vertical	357	1.50
923.3MHz	Pass	PK	8.30986G	51.24	74.00	-22.76	3	Vertical	31	1.05
923.3MHz	Pass	AV	7.3866G	38.28	54.00	-15.72	3	Horizontal	22	2.97
923.3MHz	Pass	AV	8.30948G	33.54	54.00	-20.46	3	Horizontal	9	1.00
923.3MHz	Pass	PK	7.38668G	50.58	74.00	-23.42	3	Horizontal	22	2.97
923.3MHz	Pass	PK	8.30976G	47.89	74.00	-26.11	3	Horizontal	9	1.00
927.5MHz	Pass	AV	7.4197G	46.12	54.00	-7.88	3	Vertical	0	1.06
927.5MHz	Pass	AV	8.34698G	35.54	54.00	-18.46	3	Vertical	30	1.23
927.5MHz	Pass	PK	7.4217G	57.94	74.00	-16.06	3	Vertical	0	1.06
927.5MHz	Pass	PK	8.34904G	50.89	74.00	-23.11	3	Vertical	30	1.23
927.5MHz	Pass	AV	7.41935G	40.36	54.00	-13.64	3	Horizontal	0	1.04
927.5MHz	Pass	AV	8.34722G	33.11	54.00	-20.89	3	Horizontal	8	1.45
927.5MHz	Pass	PK	7.42145G	52.89	74.00	-21.11	3	Horizontal	0	1.04
927.5MHz	Pass	PK	8.34714G	46.86	74.00	-27.14	3	Horizontal	8	1.45

902-928MHz_LoRa (125kHz)

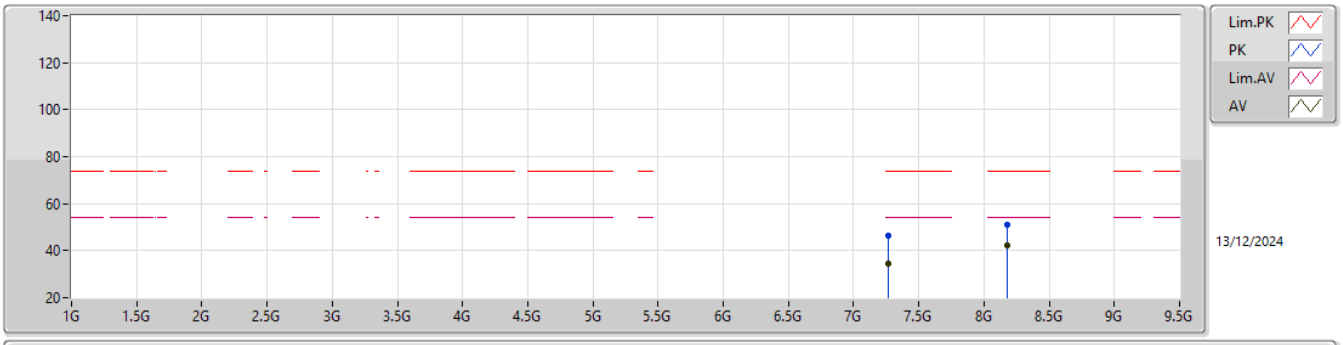
908.7MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	7.26961G	38.29	54.00	-15.71	9.80	3	Vertical	355	1.26	28.49	36.80	8.26	35.26
AV	8.17832G	47.64	54.00	-6.36	10.56	3	Vertical	44	2.92	37.08	36.94	8.65	35.03
PK	7.27012G	48.21	74.00	-25.79	9.80	3	Vertical	355	1.26	38.41	36.80	8.26	35.26
PK	8.1779G	54.06	74.00	-19.94	10.56	3	Vertical	44	2.92	43.50	36.94	8.65	35.03

902-928MHz_LoRa (125kHz)

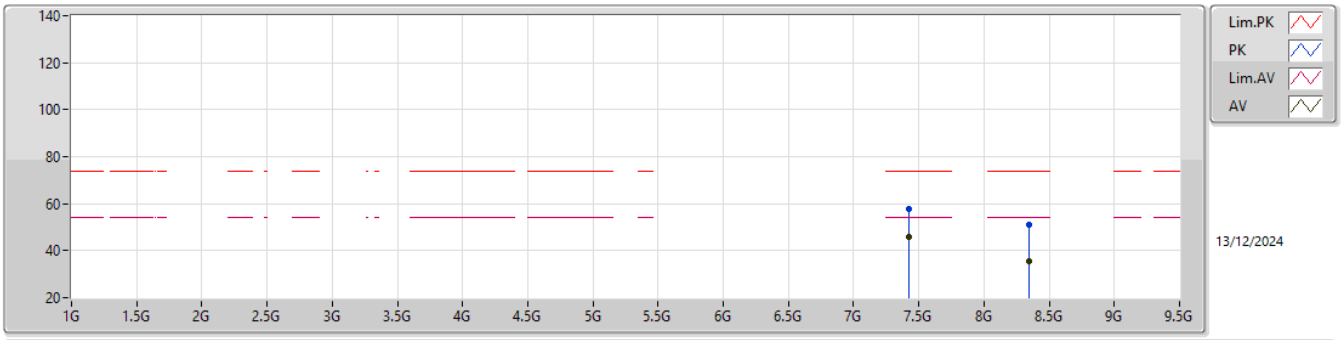
908.7MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	7.26955G	34.57	54.00	-19.43	9.80	3	Horizontal	353	1.00	24.77	36.80	8.26	35.26
AV	8.17835G	42.05	54.00	-11.95	10.56	3	Horizontal	58	2.60	31.49	36.94	8.65	35.03
PK	7.27015G	46.58	74.00	-27.42	9.80	3	Horizontal	353	1.00	36.78	36.80	8.26	35.26
PK	8.17832G	51.12	74.00	-22.88	10.56	3	Horizontal	58	2.60	40.56	36.94	8.65	35.03

902-928MHz_LoRa (500kHz)

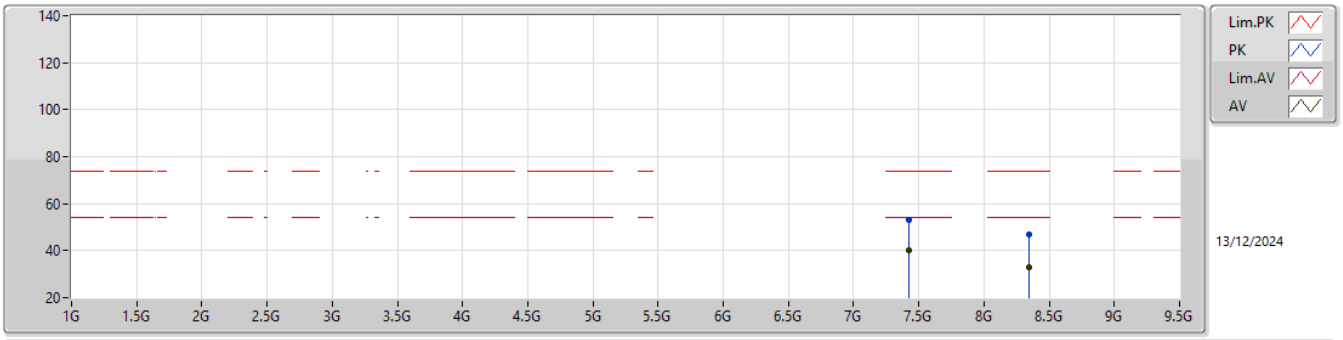
927.5MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	7.4197G	46.12	54.00	-7.88	9.57	3	Vertical	0	1.06	36.55	36.30	8.37	35.10
AV	8.34698G	35.54	54.00	-18.46	10.80	3	Vertical	30	1.23	24.74	37.00	8.78	34.98
PK	7.4217G	57.94	74.00	-16.06	9.57	3	Vertical	0	1.06	48.37	36.30	8.37	35.10
PK	8.34904G	50.89	74.00	-23.11	10.80	3	Vertical	30	1.23	40.09	37.00	8.78	34.98

902-928MHz_LoRa (500kHz)

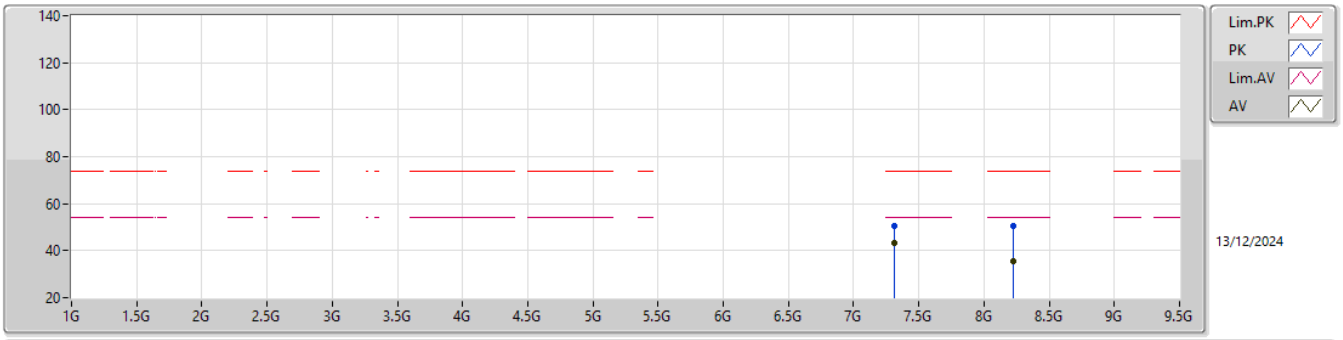
927.5MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	7.41935G	40.36	54.00	-13.64	9.57	3	Horizontal	0	1.04	30.79	36.30	8.37	35.10
AV	8.34722G	33.11	54.00	-20.89	10.80	3	Horizontal	8	1.45	22.31	37.00	8.78	34.98
PK	7.42145G	52.89	74.00	-21.11	9.57	3	Horizontal	0	1.04	43.32	36.30	8.37	35.10
PK	8.34714G	46.86	74.00	-27.14	10.80	3	Horizontal	8	1.45	36.06	37.00	8.78	34.98

902-928MHz_LoRa (500kHz)

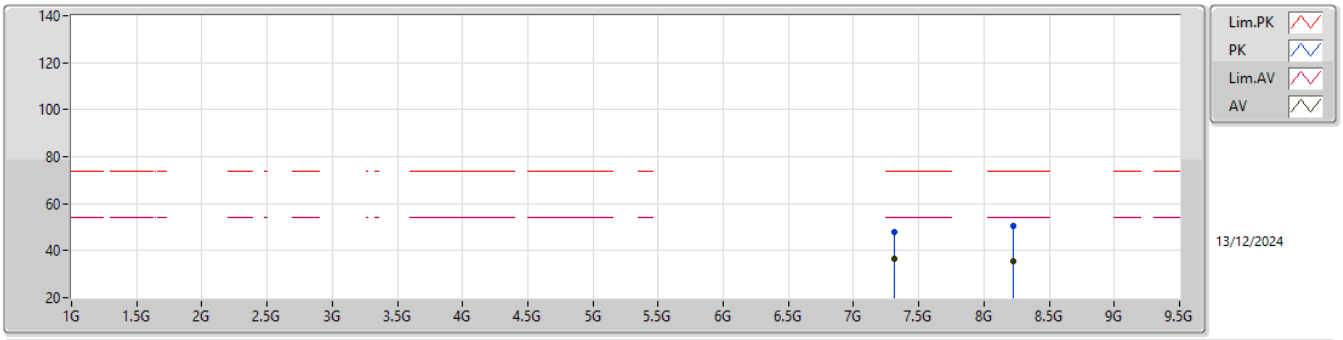
914.2MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	7.31361G	43.26	54.00	-10.74	9.84	3	Vertical	355	1.42	33.42	36.75	8.30	35.21
AV	8.22752G	35.61	54.00	-18.39	10.64	3	Vertical	10	1.06	24.97	36.96	8.69	35.01
PK	7.31386G	50.60	74.00	-23.40	9.83	3	Vertical	355	1.42	40.77	36.74	8.30	35.21
PK	8.2277G	50.67	74.00	-23.33	10.64	3	Vertical	10	1.06	40.03	36.96	8.69	35.01

902-928MHz_LoRa (500kHz)

914.2MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	7.31356G	36.32	54.00	-17.68	9.84	3	Horizontal	360	2.01	26.48	36.75	8.30	35.21
AV	8.22828G	35.30	54.00	-18.70	10.64	3	Horizontal	59	2.53	24.66	36.96	8.69	35.01
PK	7.3139G	47.92	74.00	-26.08	9.83	3	Horizontal	360	2.01	38.09	36.74	8.30	35.21
PK	8.2277G	50.38	74.00	-23.62	10.64	3	Horizontal	59	2.53	39.74	36.96	8.69	35.01

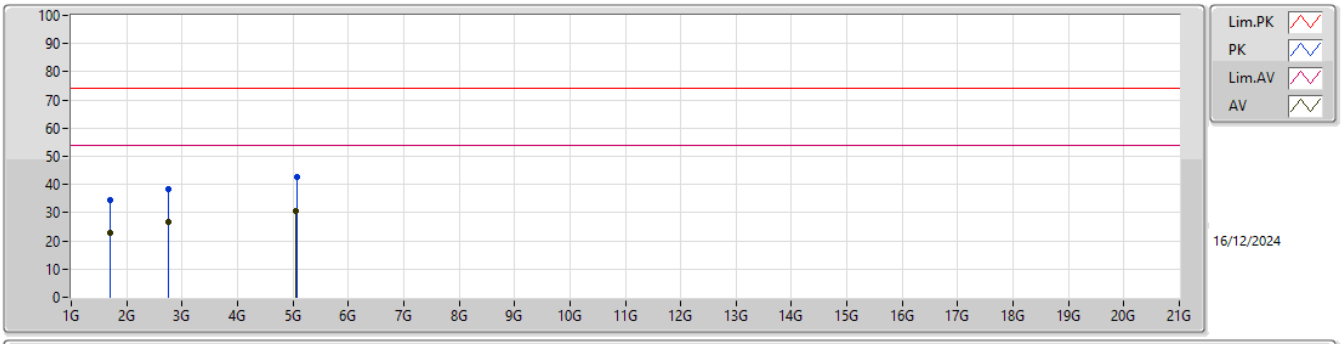
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	AV	5.06292G	30.61	54.00	-23.39	Vertical

Result

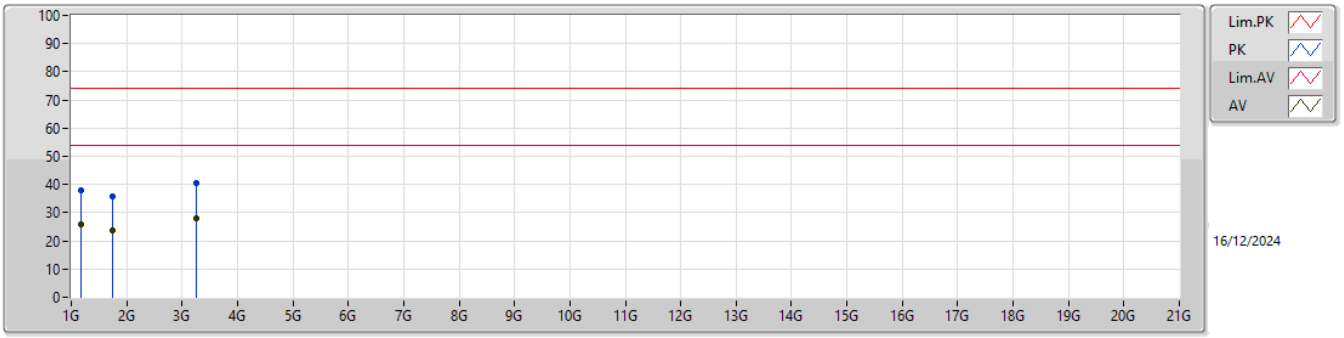
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
Mode 1	Pass	AV	1.69705G	23.01	54.00	-30.99	3	Vertical	97	1.00
Mode 1	Pass	AV	2.75846G	26.69	54.00	-27.31	3	Vertical	100	1.50
Mode 1	Pass	AV	5.06292G	30.61	54.00	-23.39	3	Vertical	19	1.00
Mode 1	Pass	PK	1.70536G	34.49	74.00	-39.51	3	Vertical	97	1.00
Mode 1	Pass	PK	2.75108G	38.39	74.00	-35.61	3	Vertical	100	1.50
Mode 1	Pass	PK	5.06712G	42.55	74.00	-31.45	3	Vertical	19	1.00
Mode 1	Pass	AV	1.18508G	25.75	54.00	-28.25	3	Horizontal	56	1.45
Mode 1	Pass	AV	1.74765G	23.74	54.00	-30.26	3	Horizontal	101	1.00
Mode 1	Pass	AV	3.25576G	27.95	54.00	-26.05	3	Horizontal	140	1.20
Mode 1	Pass	PK	1.18262G	38.02	74.00	-35.98	3	Horizontal	56	1.45
Mode 1	Pass	PK	1.7484G	35.71	74.00	-38.29	3	Horizontal	101	1.00
Mode 1	Pass	PK	3.24586G	40.36	74.00	-33.64	3	Horizontal	140	1.20

Radiated Emissions above 1GHz_Mode 1



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB/m)	(m)		(°)	(m)	(dBuV)	(dB/m)	(dB)	(dB)
AV	1.69705G	23.01	54.00	-30.99	-6.26	3	Vertical	97	1.00	29.27	25.03	3.77	35.06
AV	2.75846G	26.69	54.00	-27.31	-1.87	3	Vertical	100	1.50	28.56	28.37	4.94	35.18
AV	5.06292G	30.61	54.00	-23.39	4.62	3	Vertical	19	1.00	25.99	32.95	6.74	35.07
PK	1.70536G	34.49	74.00	-39.51	-6.23	3	Vertical	97	1.00	40.72	25.05	3.78	35.06
PK	2.75108G	38.39	74.00	-35.61	-2.03	3	Vertical	100	1.50	40.42	28.22	4.93	35.18
PK	5.06712G	42.55	74.00	-31.45	4.60	3	Vertical	19	1.00	37.95	32.93	6.74	35.07

Radiated Emissions above 1GHz_Mode 1



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB/m)	(m)		(°)	(m)	(dBuV)	(dB/m)	(dB)	(dB)
AV	1.18508G	25.75	54.00	-28.25	-6.35	3	Horizontal	56	1.45	32.10	26.10	3.13	35.58
AV	1.74765G	23.74	54.00	-30.26	-6.17	3	Horizontal	101	1.00	29.91	25.05	3.83	35.05
AV	3.25576G	27.95	54.00	-26.05	-0.25	3	Horizontal	140	1.20	28.20	29.60	5.39	35.24
PK	1.18262G	38.02	74.00	-35.98	-6.35	3	Horizontal	56	1.45	44.37	26.10	3.13	35.58
PK	1.7484G	35.71	74.00	-38.29	-6.15	3	Horizontal	101	1.00	41.86	25.07	3.83	35.05
PK	3.24586G	40.36	74.00	-33.64	-0.24	3	Horizontal	140	1.20	40.60	29.61	5.38	35.23