



## RF MEASUREMENT REPORT

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**FCC ID:** 2A82LSPOT-V1  
**Applicant:** Nova Labs, Inc.  
**Product:** Spot Mapper  
**Model No.:** Spot-US  
**Brand Name:** Helium  
**FCC Classification:** FCC Part 15 Spread Spectrum Transmitter (DSS)  
**FCC Rule Part(s):** Part 15 Subpart C (Section 15.247)  
**Result:** Complies  
**Test Date:** 2022-11-24

**Reviewed By:**

\_\_\_\_\_  
Sunny Sun

**Approved By:**

\_\_\_\_\_  
Robin Wu



The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.10-2013. Test results reported herein relate only to the item(s) tested.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

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### Revision History

Report No.	Version	Description	Issue Date	Note
2209RSU059-U4	Rev. 01	Initial Report	2023-01-04	Invalid
2209RSU059-U4	Rev. 02	Modify the Product Name	2023-01-06	Valid

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## 1. General Information

### 1.1. Applicant

Nova Labs, Inc.

2202 South Figueroa #408, Los Angeles, California, United States

## 1.2. Manufacturer

Nova Labs, Inc.

2202 South Figueroa #408, Los Angeles, California, United States

### 1.3. Testing Facility

<input checked="" type="checkbox"/>	<b>Test Site – MRT Suzhou Laboratory</b>  <b>Laboratory Location (Suzhou - Wuzhong)</b> D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China <b>Laboratory Location (Suzhou - SIP)</b> 4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China <b>Laboratory Accreditations</b> A2LA: 3628.01 CNAS: L10551 FCC: CN1166 ISED: CN0001 VCCI: <input type="checkbox"/> R-20025 <input type="checkbox"/> G-20034 <input type="checkbox"/> C-20020 <input type="checkbox"/> T-20020 <input type="checkbox"/> R-20141 <input type="checkbox"/> G-20134 <input type="checkbox"/> C-20103 <input type="checkbox"/> T-20104
<input type="checkbox"/>	<b>Test Site – MRT Shenzhen Laboratory</b>  <b>Laboratory Location (Shenzhen)</b> 1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China <b>Laboratory Accreditations</b> A2LA: 3628.02 CNAS: L10551 FCC: CN1284 ISED: CN0105
<input type="checkbox"/>	<b>Test Site – MRT Taiwan Laboratory</b>  <b>Laboratory Location (Taiwan)</b> No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) <b>Laboratory Accreditations</b> TAF: L3261-190725 FCC: 291082, TW3261 ISED: TW3261

#### 1.4. Product Information

Product Name	Spot Mapper
Model No.	Spot-US
Brand Name	Helium
Test Serial No.	20220926Sample#08
E-UTRA Band	FDD Band: 2, 4, 5, 66, 71 TDD Band: 48
NR Band	TDD Band: n41, n48
Wi-Fi Specification	802.11 b/g/n/ac/ax
Bluetooth Specification	V5.1 dual mode
Lora Specification	902 ~ 928 MHz
Operating Temperature	-20 ~ 55 °C
Integrated WWAN Modular Information	
Model No.	RM505Q-AE
FCC ID	XMR2020RM505QAE
Brand Name	Quectel
Integrated BT & Wi-Fi Modular Information	
Model No.	FG50V
FCC ID	XMR202103FG50V
Brand Name	Quectel
Integrated Lora Modular Information	
Model No.	LoRa-E5-HF
FCC ID	Z4T-LORA-E5
Brand Name	Seeed
Accessories	
Rechargeable Li-ion Battery	Model No.: QDM044 Rated Voltage: 3.8V Rated Capacity: 4000mAh/15.2Wh Limited Charge Voltage: 4.35V
Remark:	
<ol style="list-style-type: none"> <li>The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.</li> <li>This device is based on certification module, FCC ID “Z4T-LORA-E5” to assessing the output power, radiated spurious emission.</li> </ol>	

### 1.5. Radio Specification under Test

Bluetooth Frequency	902 ~ 928MHz
Channel Number	64
Antenna Information	PIFA Antenna, 3.91dBi

### 1.6. Working Frequencies

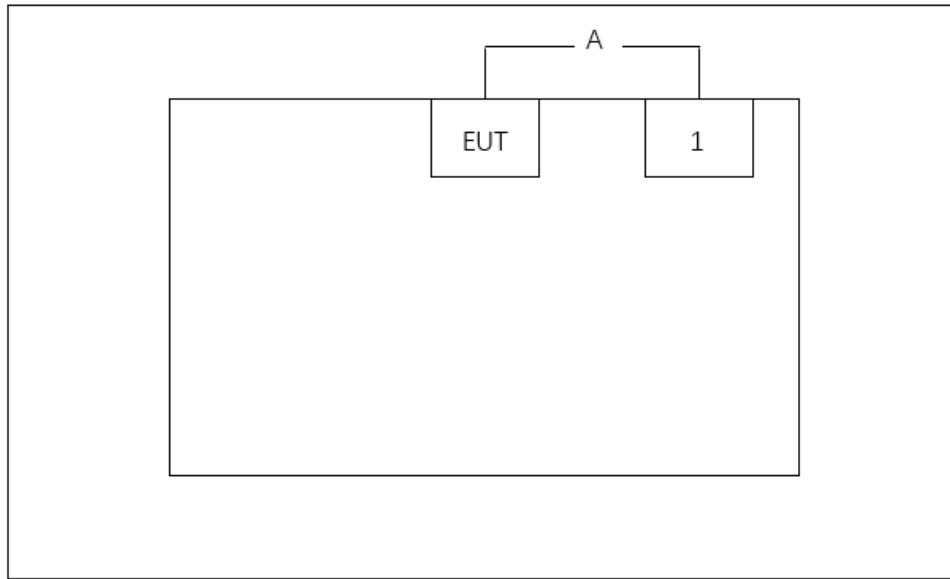
Channel	Frequency	Channel	Frequency	Channel	Frequency
00	902.3	22	906.7	44	911.1
01	902.5	23	906.9	45	911.3
02	902.7	24	907.1	46	911.5
03	902.9	25	907.3	47	911.7
04	903.1	26	907.5	48	911.9
05	903.3	27	907.7	49	912.1
06	903.5	28	907.9	50	912.3
07	903.7	29	908.1	51	912.5
08	903.9	30	908.3	52	912.7
09	904.1	31	908.5	53	912.9
10	904.3	32	908.7	54	913.1
11	904.5	33	908.9	55	913.3
12	904.7	34	909.1	56	913.5
13	904.9	35	909.3	57	913.7
14	905.1	36	909.5	58	913.9
15	905.3	37	909.7	59	914.1
16	905.5	38	909.9	60	914.3
17	905.7	39	910.1	61	914.5
18	905.9	40	910.3	62	914.7
19	906.1	41	910.5	63	914.9
20	906.3	42	910.7	--	--
21	906.5	43	910.9	--	--

## 2. Test Configuration

### 2.1. Test System Connection Diagram

The device was tested per the guidance ANSI C63.10: 2013 was used to reference the appropriate EUT setup for radiated emissions testing.

Connection Diagram – Radiated Emission testing



Cable Type		Cable Description	
A	USB Cable	Shielded, 1.5m	
Product		Manufacturer	Model No.
1	Notebook	Lenovo	E431



## 2.2. Test Software

The test utility software used during testing was “adb\_tool”, and commands were provided by manufacturer.

## 2.3. Applied Standards

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

- FCC Part 15.247
- ANSI C63.10-2013

## 2.4. Test Environment Condition

Ambient Temperature	15 ~ 35°C
Relative Humidity	20 ~ 75%RH

### 3. Antenna Requirements

#### **Excerpt from §15.203 of the FCC Rules/Regulations:**

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.”

- The antenna of the device is **permanently attached**.
- There are no provisions for connection to an external antenna.

#### **Conclusion:**

The unit complies with the requirement of §15.203.

#### 4. Measuring Instrument

Instrument	Manufacturer	Model No.	Asset No.	Cali. Interval	Cali. Due Date	Test Site
TRILOG Antenna	Schwarzbeck	VULB 9162	MRTSUE06022	1 year	2023-05-20	WZ-AC2
EMI Test Receiver	Agilent	N9038A	MRTSUE06125	1 year	2023-06-04	WZ-AC2
Thermohygrometer	Mingle	ETH529	MRTSUE06170	1 year	2022-12-01	WZ-AC2
Horn Antenna	Schwarzbeck	BBHA 9120D	MRTSUE06171	1 year	2023-10-13	WZ-AC2
Preamplifier	Schwarzbeck	BBV 9718	MRTSUE06176	1 year	2023-05-08	WZ-AC2
Anechoic Chamber	RIKEN	WZ-AC2	MRTSUE06213	1 year	2023-04-21	WZ-AC2
Thermohygrometer	testo	608-H1	MRTSUE11038	1 year	2023-11-01	WZ-AC2
Thermohygrometer	testo	608-H1	MRTSUE06402	1 year	2023-06-06	WZ-SR5
Shielding Room	HUAMING	WZ-SR5	MRTSUE06442	N/A	N/A	WZ-SR5
USB Power Sensor	Keysight	U2021XA	MRTSUE06446	1 year	2023-06-04	WZ-SR5
Signal Analyzer	Keysight	N9010B	MRTSUE06457	1 year	2023-06-04	WZ-SR5

Software	Version	Function
EMI Software	V3.0.0	EMI Test Software
Controller_MF 7802	2.03C	RE Antenna & Turntable

## 5. Decision Rules and Measurement Uncertainty

### 5.1. Decision Rules

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4: 2012 Clause 8.2.  
(Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

### 5.2. Measurement Uncertainty

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .

Radiated Disturbance	
The maximum measurement uncertainty is evaluated as:	
Horizontal:	30MHz~200MHz: 3.85dB
	200MHz~1GHz: 4.36dB
	1GHz~10GHz: 4.98dB
Vertical:	30MHz~200MHz: 4.06dB
	200MHz~1GHz: 5.28dB
	1GHz~10GHz: 4.91dB
Output Power	
Measuring Uncertainty for a Level of Confidence of 95% ( $U=2U_c(y)$ ):	
2.30dB	

## 6. Test Result

### 6.1. Summary

FCC Section(s)	Test Description	Test Condition	Verdict
15.247(b)(1)	Peak Transmitter Output Power	Conducted	Pass
15.205 15.209	General Field Strength (Restricted Bands and Radiated Emission)	Radiated	Pass

**Notes:**

1. The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.
2. For radiated emission test, every axis (X, Y, Z) was also verified. The test results shown in the following sections represent the worst-case emissions.

## 6.2. Output Power Measurement

### 6.2.1. Test Limit

For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels.

### 6.2.2. Test Procedure

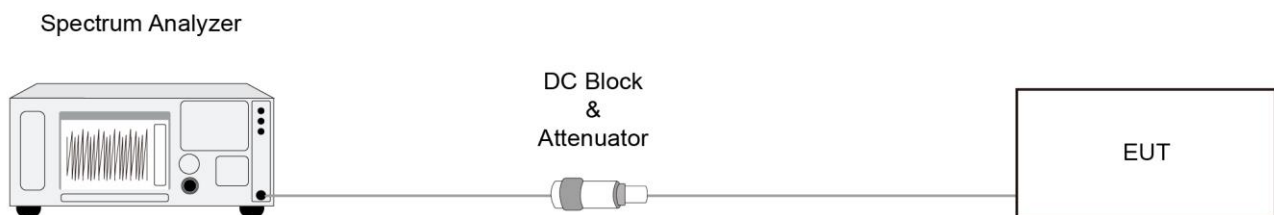
ANSI C63.10-2013 - Section 7.8.5

### 6.2.3. Test Setting

1. Set RBW  $\geq$  the 20 dB bandwidth of the emission being measured.
2. VBW  $\geq$  RBW
3. Span = approximately five times the 20dB bandwidth, centered on a hopping channel
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. Allow the trace to stabilize, Use the marker-to-peak function to set the marker to the peak of the emission.

The indicated level is the peak output power (don't forget added the external attenuation and cable loss)

### 6.2.4. Test Setup



### 6.2.5. Test Result

Refer to Appendix A.1.

### 6.3. Radiated Spurious Emission Measurement

#### 6.3.1. Test Limit

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [uV/m]	Measured Distance [Meters]
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

#### 6.3.2. Test Procedure

ANSI C63.10 - 2013 - Section 11.11 & 11.12

ANSI C63.10 - 2013 - Section 6.3 (General Requirements)

ANSI C63.10 - 2013 - Section 6.4 (Standard test method below 30MHz)

ANSI C63.10 - 2013 - Section 6.5 (Standard test method above 30MHz to 1GHz)

ANSI C63.10 - 2013 - Section 6.6 (Standard test method above 1GHz)

#### 6.3.3. Test Setting

**Table 1 - RBW as a function of frequency**

Frequency	RBW
9 ~ 150 kHz	200 ~ 300 Hz
0.15 ~ 30 MHz	9 ~ 10 kHz
30 ~ 1000 MHz	100 ~ 120 kHz
> 1000MHz	1MHz

**Quasi-Peak Measurements below 1GHz**

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. Span was set greater than 1MHz
3. RBW = as specified in Table 1
4. Detector = CISPR quasi-peak
5. Sweep time = auto couple
6. Trace was allowed to stabilize

**Peak Measurements above 1GHz**

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

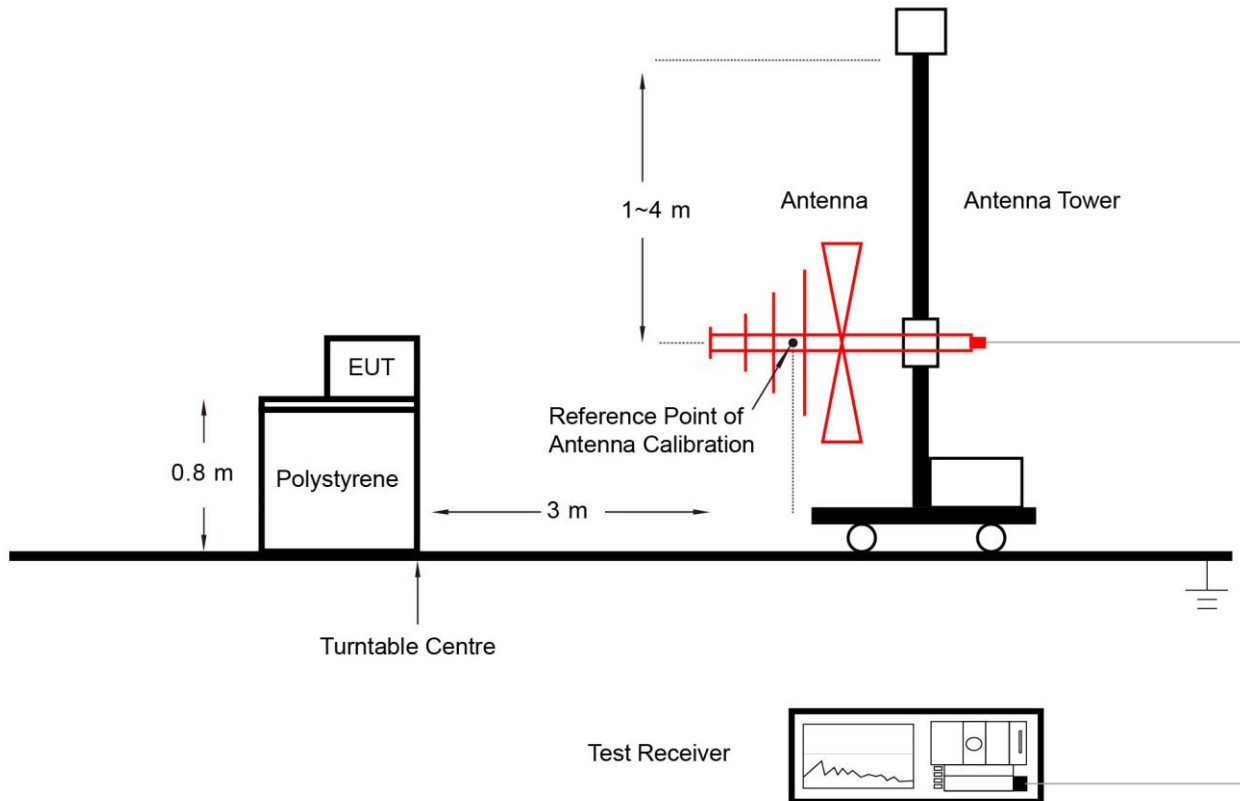
**Average Measurements above 1GHz (Method VB)**

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW; If the EUT is configured to transmit with duty cycle  $\geq 98\%$ , set VBW = 10 Hz.  
If the EUT duty cycle is  $< 98\%$ , set VBW  $\geq 1/T$ . T is the minimum transmission duration.
4. Detector = Peak
5. Sweep time = auto
6. Trace mode = max hold
7. Trace was allowed to stabilize

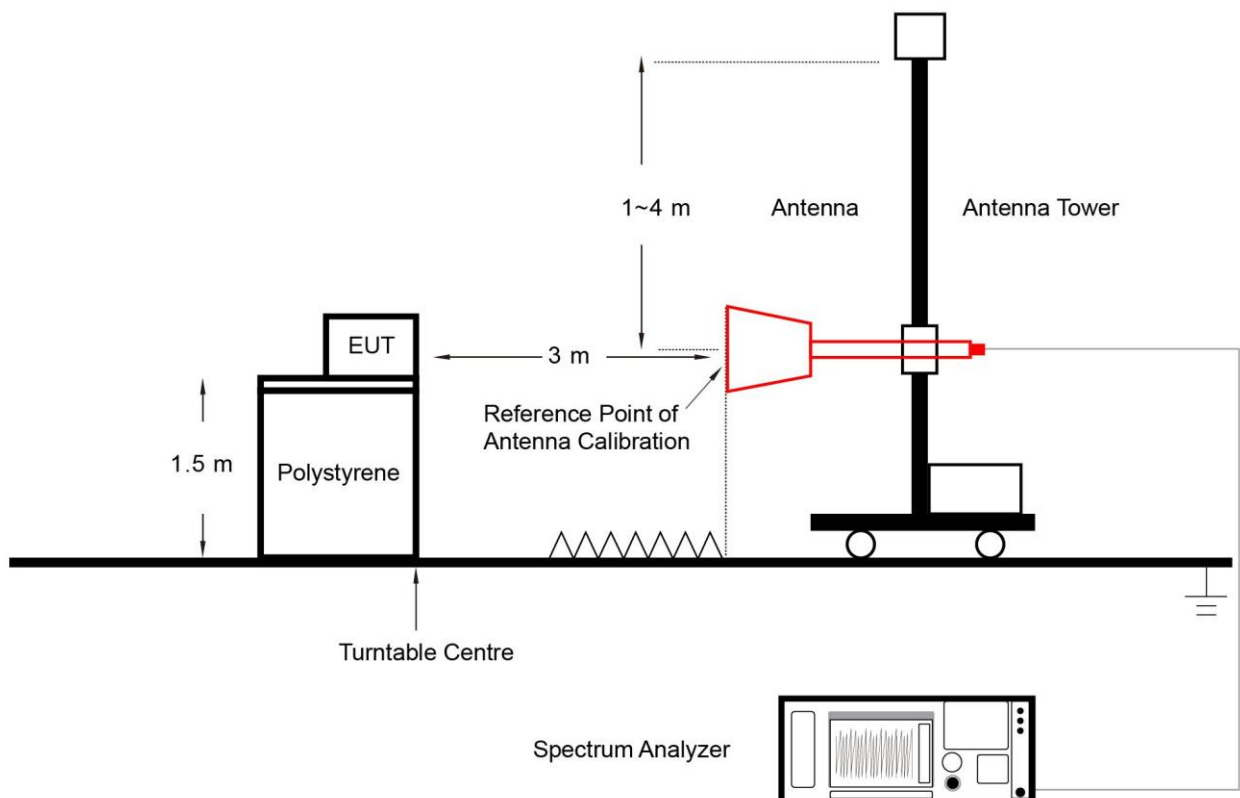


### 6.3.4. Test Setup

Below 1GHz Test Setup:



Above 1GHz Test Setup:



#### **6.3.5. Test Result**

Refer to Appendix A.2.

## Appendix A - Test Result

### A.1 Output Power Test Result

Test Site	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2022-11-24		

Channel No.	Frequency (MHz)	Peak Power (dBm)	Limit (dBm)	Result
00	902.3	15.45	$\leq 30.00$	Pass
31	908.5	15.15	$\leq 30.00$	Pass
63	914.9	15.00	$\leq 30.00$	Pass

## A.2 Radiated Spurious Emission Test Result

Test Site	WZ-AC2	Test Engineer	Dick Shen
Test Date	2022-11-24		
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

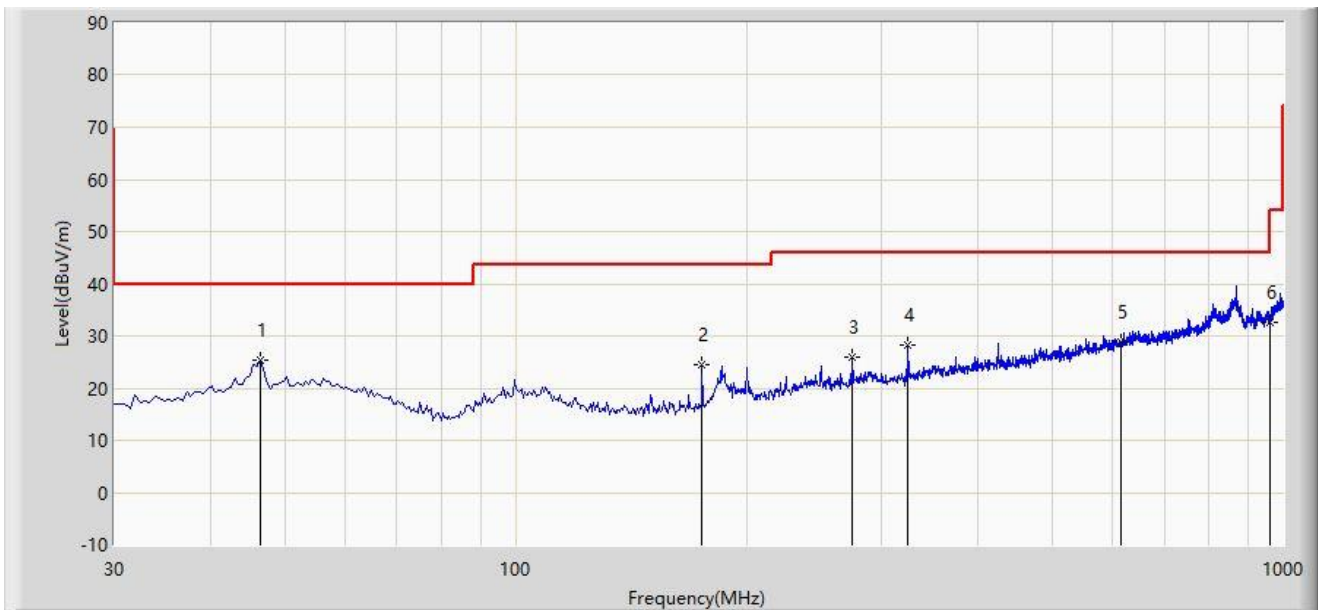
Test Channel	Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
00	3610.0	43.9	-0.5	43.4	74.0	-30.6	Peak	Horizontal
	5414.5	42.2	4.1	46.3	74.0	-27.7	Peak	Horizontal
	7475.5	33.1	11.4	44.5	74.0	-29.5	Peak	Horizontal
	4820.5	36.0	3.8	39.8	74.0	-34.2	Peak	Vertical
	5414.5	47.1	4.1	51.2	74.0	-22.8	Peak	Vertical
	5414.5	46.9	4.1	51.0	54.0	-3.0	Average	Vertical
	8119.0	37.5	11.7	49.2	74.0	-24.8	Peak	Vertical
31	3632.5	41.9	-0.5	41.4	74.0	-32.6	Peak	Horizontal
	4865.5	35.5	3.8	39.3	74.0	-34.7	Peak	Horizontal
	5450.5	44.1	4.0	48.1	74.0	-25.9	Peak	Horizontal
	4541.5	36.8	2.8	39.6	74.0	-34.4	Peak	Vertical
	5450.5	47.2	4.0	51.2	74.0	-22.8	Peak	Vertical
	5450.5	47.0	4.0	51.0	54.0	-3.0	Average	Vertical
	8177.5	36.1	11.7	47.8	74.0	-26.2	Peak	Vertical
63	2746.0	37.8	-2.5	35.3	74.0	-38.7	Peak	Horizontal
	3659.5	42.1	-0.3	41.8	74.0	-32.2	Peak	Horizontal
	4573.0	36.2	2.8	39.0	74.0	-35.0	Peak	Horizontal
	4825.0	35.4	3.8	39.2	74.0	-34.8	Peak	Vertical
	7318.0	35.2	11.2	46.4	74.0	-27.6	Peak	Vertical
	8236.0	36.0	11.6	47.6	74.0	-26.4	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre\_Amplifier Gain (dB)

### The Result of Radiated Emission below 1GHz:

Site: WZ-AC2	Test Date: 2022-11-24
Limit: FCC_Part15.209_RSE(3m)	Engineer: Dick Shen
Probe: VULB9162_30-7000MHz	Polarity: Horizontal
EUT: Spot Mapper	Power: AC 120V/60Hz
Note: Transmit by Lora at Channel 902.3MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		46.490	25.221	5.054	-14.779	40.000	20.167	PK
2		175.015	24.378	8.177	-19.122	43.500	16.201	PK
3		274.925	26.043	5.711	-19.957	46.000	20.332	PK
4		324.880	28.265	6.805	-17.735	46.000	21.460	PK
5		614.000	28.710	1.678	-17.290	46.000	27.032	PK
6	*	960.000	32.563	1.000	-13.437	46.000	31.563	PK

Note 1: " \* ", means this data is the worst emission level.

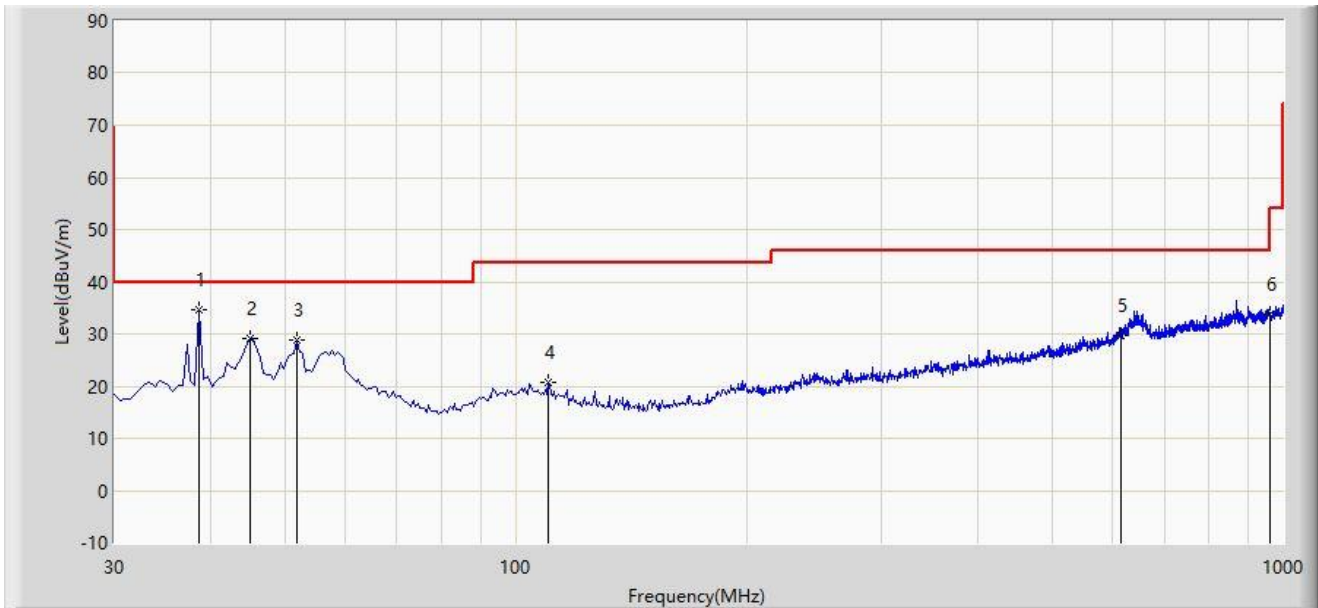
Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Note 4: Quasi-Peak measurement was not performed when peak measure level was lower than the quasi-peak limit.

Note 5: The amplitude of radiated emissions (frequency range from 9kHz to 30MHz) is that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value. Therefore, the data is not presented in the report.

Site: WZ-AC2	Test Date: 2022-11-24
Limit: FCC_Part15.209_RSE(3m)	Engineer: Dick Shen
Probe: VULB9162_30-7000MHz	Polarity: Vertical
EUT: Spot Mapper	Power: AC 120V/60Hz
Note: Transmit by Lora at Channel 902.3MHz	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1	*	38.730	34.609	16.299	-5.391	40.000	18.310	PK
2		45.035	29.264	9.297	-10.736	40.000	19.968	PK
3		51.825	28.785	8.359	-11.215	40.000	20.426	PK
4		110.510	20.813	2.790	-22.687	43.500	18.023	PK
5		614.000	29.739	2.707	-16.261	46.000	27.032	PK
6		960.000	33.656	2.093	-12.344	46.000	31.563	PK

Note 1: " \* ", means this data is the worst emission level.

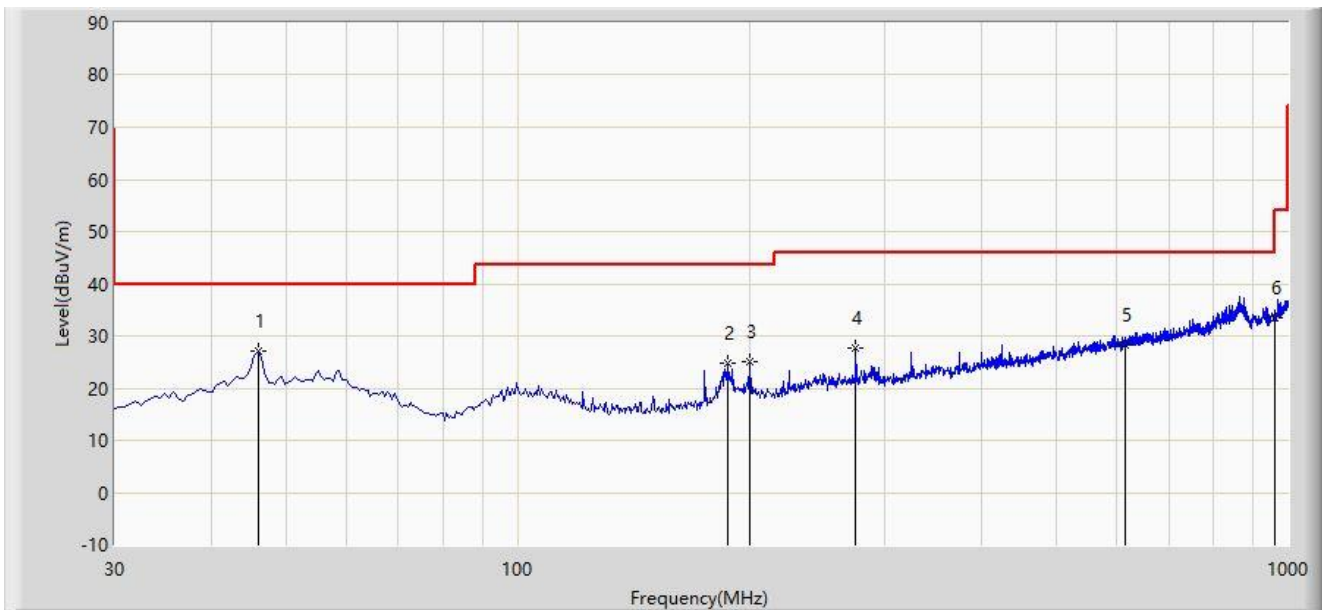
Note 2: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Note 4: Quasi-Peak measurement was not performed when peak measure level was lower than the quasi-peak limit.

Note 5: The amplitude of radiated emissions (frequency range from 9kHz to 30MHz) is that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value. Therefore, the data is not presented in the report.

Site: WZ-AC2	Test Date: 2022-11-24
Limit: FCC_Part15.209_RSE(3m)	Engineer: Dick Shen
Probe: VULB9162_30-7000MHz	Polarity: Horizontal
EUT: Spot Mapper	Power: AC 120V/60Hz
Note: Transmit by Lora at Channel 908.5MHz	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1		46.005	27.046	6.940	-12.954	40.000	20.106	PK
2		187.140	24.729	7.207	-18.771	43.500	17.522	PK
3		200.235	24.946	6.178	-18.554	43.500	18.768	PK
4		274.925	27.679	7.347	-18.321	46.000	20.332	PK
5		614.000	28.334	1.302	-17.666	46.000	27.032	PK
6	*	960.000	33.366	1.803	-12.634	46.000	31.563	PK

Note 1: " \* ", means this data is the worst emission level.

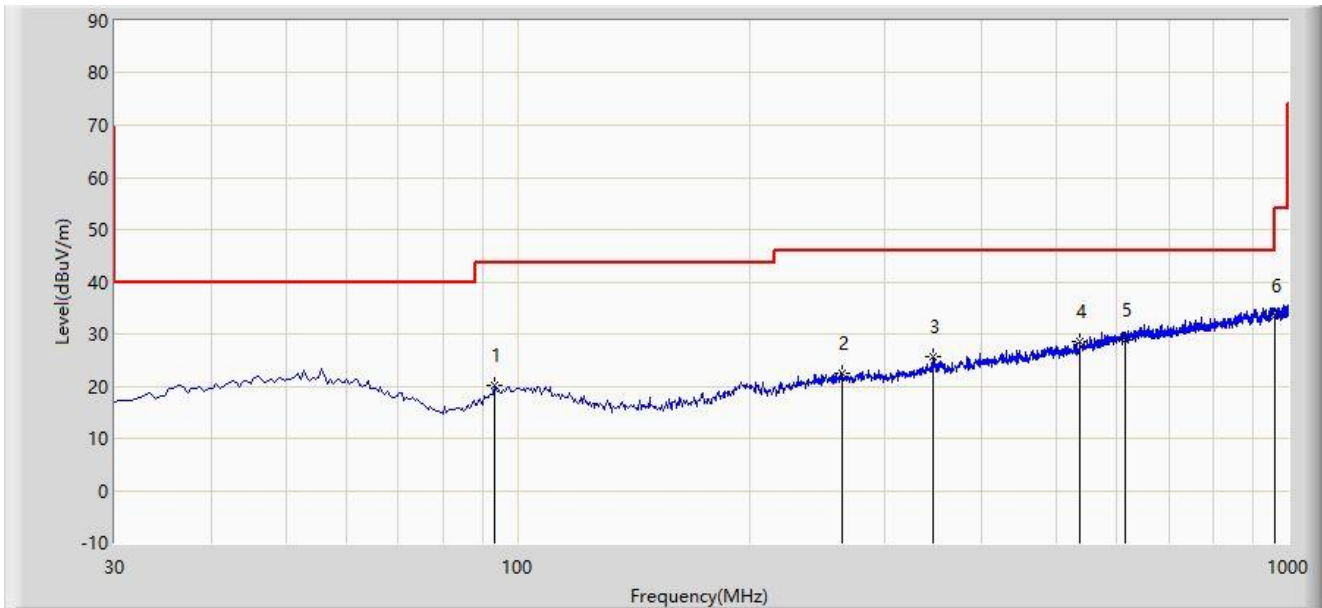
Note 2: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Note 4: Quasi-Peak measurement was not performed when peak measure level was lower than the quasi-peak limit.

Note 5: The amplitude of radiated emissions (frequency range from 9kHz to 30MHz) is that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value. Therefore, the data is not presented in the report.

Site: WZ-AC2	Test Date: 2022-11-24
Limit: FCC_Part15.209_RSE(3m)	Engineer: Dick Shen
Probe: VULB9162_30-7000MHz	Polarity: Vertical
EUT: Spot Mapper	Power: AC 120V/60Hz
Note: Transmit by Lora at Channel 908.5MHz	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1		93.535	20.172	2.721	-23.328	43.500	17.451	PK
2		264.255	22.461	2.372	-23.539	46.000	20.089	PK
3		345.735	25.690	3.143	-20.310	46.000	22.547	PK
4		536.340	28.546	3.013	-17.454	46.000	25.533	PK
5		614.000	28.890	1.858	-17.110	46.000	27.032	PK
6	*	960.000	33.471	1.908	-12.529	46.000	31.563	PK

Note 1: " \* ", means this data is the worst emission level.

Note 2: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB/m).

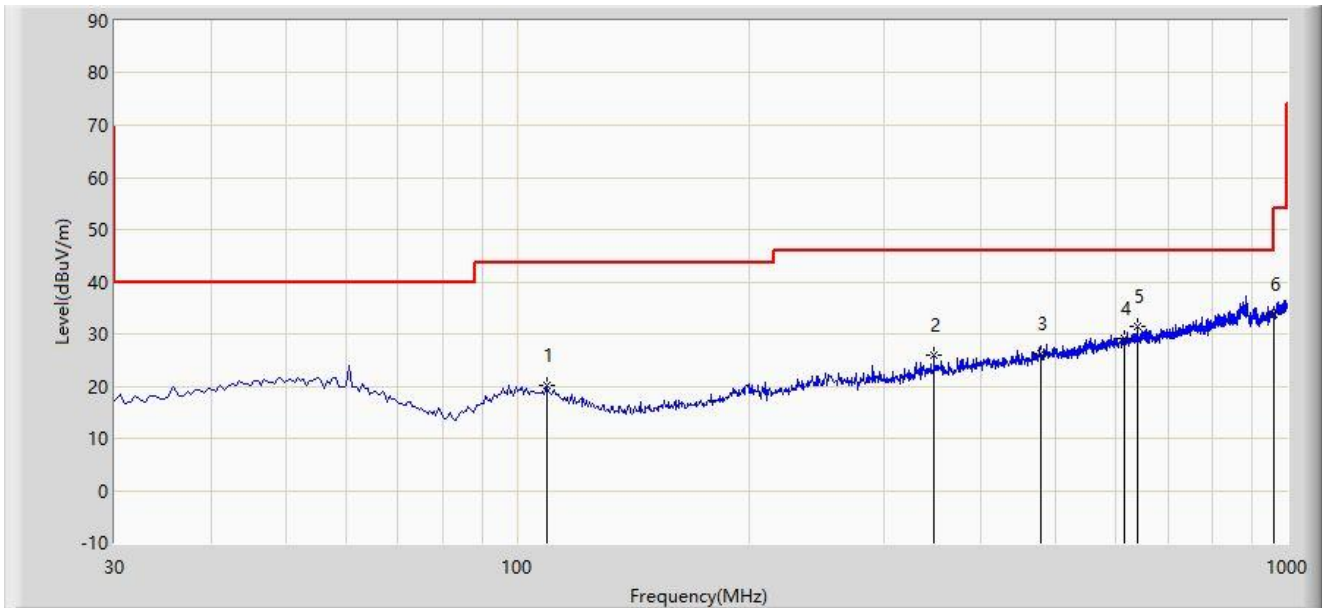
Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Note 4: Quasi-Peak measurement was not performed when peak measure level was lower than the quasi-peak limit.

Note 5: The amplitude of radiated emissions (frequency range from 9kHz to 30MHz) is that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value. Therefore, the data is not presented in the report.



Site: WZ-AC2	Test Date: 2022-11-24
Limit: FCC_Part15.209_RSE(3m)	Engineer: Dick Shen
Probe: VULB9162_30-7000MHz	Polarity: Horizontal
EUT: Spot Mapper	Power: AC 120V/60Hz
Note: Transmit by Lora at Channel 914.9MHz	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1		109.540	20.039	1.878	-23.461	43.500	18.161	PK
2		347.675	25.875	3.233	-20.125	46.000	22.641	PK
3		479.110	26.131	1.401	-19.869	46.000	24.730	PK
4		614.000	29.066	2.034	-16.934	46.000	27.032	PK
5		638.675	31.530	4.214	-14.470	46.000	27.316	PK
6	*	960.000	33.626	2.063	-12.374	46.000	31.563	PK

Note 1: " \* ", means this data is the worst emission level.

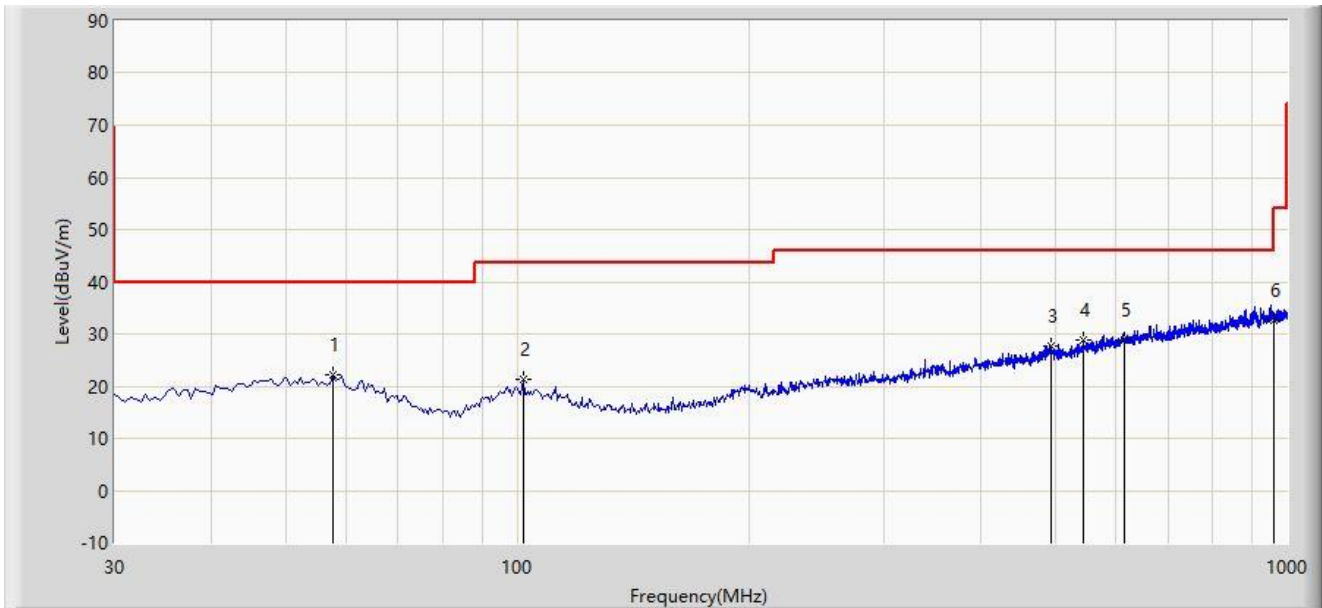
Note 2: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Note 4: Quasi-Peak measurement was not performed when peak measure level was lower than the quasi-peak limit.

Note 5: The amplitude of radiated emissions (frequency range from 9kHz to 30MHz) is that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value. Therefore, the data is not presented in the report.

Site: WZ-AC2	Test Date: 2022-11-24
Limit: FCC_Part15.209_RSE(3m)	Engineer: Dick Shen
Probe: VULB9162_30-7000MHz	Polarity: Vertical
EUT: Spot Mapper	Power: AC 120V/60Hz
Note: Transmit by Lora at Channel 914.9MHz	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1		57.645	22.164	2.206	-17.836	40.000	19.958	PK
2		101.780	21.429	2.843	-22.071	43.500	18.586	PK
3		493.660	27.735	2.599	-18.265	46.000	25.136	PK
4		542.645	28.731	2.857	-17.269	46.000	25.874	PK
5		614.000	28.966	1.934	-17.034	46.000	27.032	PK
6	*	960.000	32.665	1.102	-13.335	46.000	31.563	PK

Note 1: " \* ", means this data is the worst emission level.

Note 2: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Note 4: Quasi-Peak measurement was not performed when peak measure level was lower than the quasi-peak limit.

Note 5: The amplitude of radiated emissions (frequency range from 9kHz to 30MHz) is that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value. Therefore, the data is not presented in the report.

## **Appendix B - Test Setup Photograph**

Refer to “2209RSU059-UT” file.

## **Appendix C - EUT Photograph**

Refer to “2209RSU059-UE” file.

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