



RF MEASUREMENT REPORT

FCC ID: YIY-ASMB0911
Applicant: Industrea Mining Technology Pty Ltd
Product: Mini Dual RF UHF Module SiLabs
Model No.: ASMB0911
Brand Name: Digital Mining Technology
FCC Classification: Digital Transmission System (DTS)
FCC Rule Part(s): Part 15 Subpart C (Section 15.247)
Result: Complies
Received Date: 2024-05-07
Test Date: 2024-05-09 ~ 2024-05-22

Reviewed By:

Denise Zhou

Denise Zhou

Approved By:

Robin Wu

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.

Revision History

Report No.	Version	Description	Issue Date	Note
2401RSU009-U1	V01	Initial Report	2024-08-13	Valid

CONTENTS

Description	Page
1. General Information	5
1.1. Applicant	5
1.2. Manufacturer	5
1.3. Testing Facility	5
1.4. Product Information.....	6
1.5. Radio Specification under Test.....	6
1.6. Working Frequencies	6
1.7. Antenna Details.....	7
2. Test Configuration	8
2.1. Test Mode.....	8
2.2. Test System Connection Diagram.....	8
2.3. Test Software	9
2.4. Applied Standards	9
2.5. Test Environment Condition	9
3. Antenna Requirements	10
4. Measuring Instrument	11
5. Decision Rules and Measurement Uncertainty	12
5.1. Decision Rules	12
5.2. Measurement Uncertainty	12
6. Test Result.....	13
6.1. Summary	13
6.2. 6dB Bandwidth Measurement.....	14
6.2.1. Test Limit	14
6.2.2. Test Procedure	14
6.2.3. Test Setting	14
6.2.4. Test Setup	14
6.2.5. Test Result	14
6.3. Output Power Measurement	15
6.3.1. Test Limit	15
6.3.2. Test Procedure	15
6.3.3. Test Setting	15
6.3.4. Test Setup	15
6.3.5. Test Result	15
6.4. Power Spectral Density Measurement.....	16
6.4.1. Test Limit	16

6.4.2.	Test Procedure	16
6.4.3.	Test Setting	16
6.4.4.	Test Setup	16
6.4.5.	Test Result	16
6.5.	Conducted Band Edge and Out-of-Band Emissions Measurement	17
6.5.1.	Test Limit	17
6.5.2.	Test Procedure	17
6.5.3.	Test Setting	17
6.5.4.	Test Setup	18
6.5.5.	Test Result	18
6.6.	Radiated Spurious Emission Measurement.....	19
6.6.1.	Test Limit	19
6.6.2.	Test Procedure	19
6.6.3.	Test Setting	19
6.6.4.	Test Setup	21
6.6.5.	Test Result	22
6.7.	Radiated Restricted Band Edge Measurement	23
6.7.1.	Test Limit	23
6.7.2.	Test Procedure	24
6.7.3.	Test Setting	24
6.7.4.	Test Setup	25
6.7.5.	Test Result	25
6.8.	AC Conducted Emissions Measurement	26
6.8.1.	Test Limit	26
6.8.2.	Test Setup	26
6.8.3.	Test Result	26
Appendix A - Test Result.....		27
A.1	Duty Cycle Test Result	27
A.2	6dB Bandwidth Test Result	28
A.3	Output Power Test Result	30
A.4	Power Spectral Density Test Result	31
A.5	Conducted Band Edge and Out-of-Band Emissions Test Result.....	33
A.6	Radiated Spurious Emission Test Result	38
A.7	Radiated Restricted Band Edge Test Result.....	50
Appendix B - Test Setup Photograph		66
Appendix C - EUT Photograph		67

1. General Information

1.1. Applicant

Industrea Mining Technology Pty Ltd
T/A Digital Mining Technology
3 Co-Wyn Close Fountaindale NSW 2258 Australia

1.2. Manufacturer

Industrea Mining Technology Pty Ltd
T/A Digital Mining Technology
3 Co-Wyn Close Fountaindale NSW 2258 Australia

1.3. Testing Facility

☒	Test Site – MRT Suzhou Laboratory
	Laboratory Location (Suzhou - Wuzhong) D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China
	Laboratory Location (Suzhou - SIP) 4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China
	Laboratory Accreditations
	A2LA: 3628.01 FCC: CN1166 VCCI:
	CNAS: L10551 ISED: CN0001 ☐R-20025 ☐G-20034 ☐C-20020 ☐T-20020 ☐R-20141 ☐G-20134 ☐C-20103 ☐T-20104
☐	Test Site – MRT Shenzhen Laboratory
	Laboratory Location (Shenzhen) 1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China
	Laboratory Accreditations
	A2LA: 3628.02 FCC: CN1284
	CNAS: L10551 ISED: CN0105
☐	Test Site – MRT Taiwan Laboratory
	Laboratory Location (Taiwan) No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)
	Laboratory Accreditations
	TAF: 3261 FCC: 291082, TW3261
	ISED: TW3261

1.4. Product Information

Product Name	Mini Dual RF UHF Module SiLabs
Model No.	ASMB0911
EUT Identification No.	20240105Sample#01
SRD Specification	902 ~ 928MHz
Antenna Information	Refer to Section 1.7
Module Voltage	3.3Vdc
Test Fixture Voltage	6 ~ 18Vdc, nominal 12Vdc
Operating Temperature	-40 ~ 75°C
Note: The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.	

1.5. Radio Specification under Test

Frequency Range	902 ~ 928MHz
Channel Number	25
Type of modulation	4GFSK

1.6. Working Frequencies

Channel	Frequency	Channel	Frequency	Channel	Frequency
00	920MHz	01	921MHz	02	922MHz
03	923MHz	04	924MHz	05	925MHz
06	926MHz	07	927MHz	08	903MHz
09	904MHz	10	905MHz	11	906MHz
12	907MHz	13	908MHz	14	909MHz
15	910MHz	16	911MHz	17	912MHz
18	913MHz	19	914MHz	20	915MHz
21	916MHz	22	917MHz	23	918MHz
24	919MHz	--	--	--	--

1.7. Antenna Details

Antenna Part No.	Antenna Type	Antenna Gain
EA2-0287-N01SP-050	Omni-directional	8.0dBi
PROD1196	Omni-directional	2.9dBi
MISC1626	Monopole	2.0dBi

Note 1: All antenna information is provided by the manufacturer.

Note 2: For conducted test items, we chose the antenna “EA2-0287-N01SP-050” which has highest antenna gain to test.

Note 3: For radiated test items, the antenna “EA2-0287-N01SP-050” and “PROD1196” have the same antenna type, so we chose the antenna “EA2-0287-N01SP-050” which has higher antenna gain and “MISC1626” which has different antenna type to test.

2. Test Configuration

2.1. Test Mode

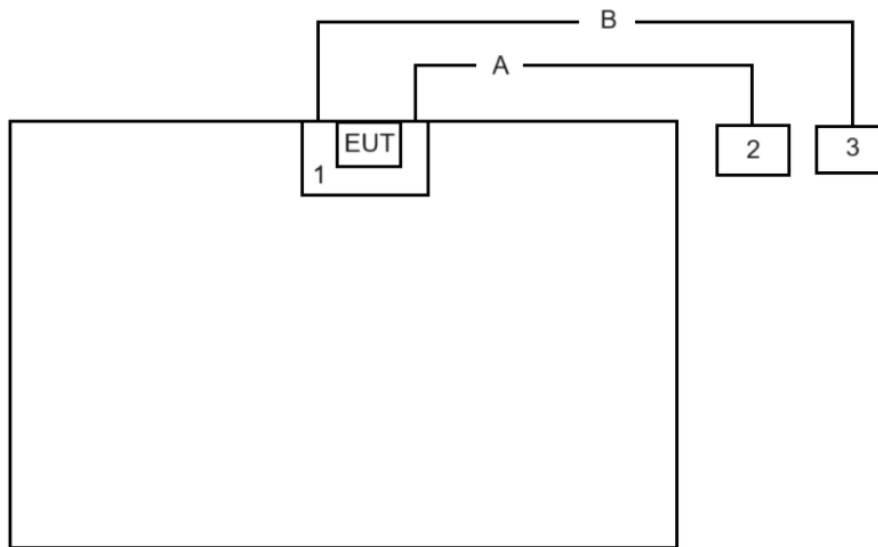
Mode 1: Transmit by Module A and Receive by Module B

Mode 2: Transmit by Module B and Receive by Module A

2.2. 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



Cable Type		Cable Description	Length
A	USB Cable	Shielded	>10.0m
B	DC Cable	Non-Shielded	>10.0m
Product		Manufacturer	Model No.
1	Test Fixture	Wabtec	ASMB0885
2	Notebook	Lenovo	ThinkPad E495
3	DC Power Supply	MESTEK	DP3010B

2.3. Test Software

The test utility software used during testing was “PT Manager” and the version was 00.05.012.

2.4. Applied Standards

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

- FCC Part 15.247
- KDB 558074 D01v05r02
- ANSI C63.10-2013

2.5. 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 that uses a **unique coupling**.

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
EMI Test Receiver	R&S	ESR7	MRTSUE06001	1 year	2024-12-17	WZ-AC1
Signal Analyzer	Keysight	N9010B	MRTSUE06607	1 year	2024-10-23	WZ-AC1
Active Loop Antenna	Schwarzbeck	FMZB 1519-60 D	MRTSUE07076	1 year	2024-12-04	WZ-AC1
TRILOG Antenna	Schwarzbeck	VULB 9168	MRTSUE06172	1 year	2024-06-09	WZ-AC1
Horn Antenna	Schwarzbeck	BBHA 9120D	MRTSUE06023	1 year	2024-08-09	WZ-AC1
Preamplifier	Agilent	83017A	MRTSUE06076	1 year	2024-11-09	WZ-AC1
Thermohygrometer	testo	608-H1	MRTSUE11039	1 year	2024-10-25	WZ-AC1
Anechoic Chamber	TDK	WZ-AC1	MRTSUE06212	1 year	2025-04-19	WZ-AC1
USB Power Sensor	Keysight	U2021XA	MRTSUE06446	1 year	2025-05-08	WZ-SR4
Signal Analyzer	Keysight	N9010B	MRTSUE06457	1 year	2025-05-08	WZ-SR4
Attenuator	MVE	MVE2213	MRTSUE11090	1 year	2024-06-08	WZ-SR4
Thermohygrometer	testo	608-H1	MRTSUE11256	1 year	2024-10-19	WZ-SR4
Shielding Room	HUAMING	WZ-SR4	MRTSUE06441	N/A	N/A	WZ-SR4

Software	Version	Function
EMI Software	V3.0.0	EMI Test Software
Controller_MF 7802	2.03C	RE Antenna & Turntable
BenchVue Power Meter	2018.1	Power

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 Emission Measurement	
The maximum measurement uncertainty is evaluated as:	
Coaxial:	9kHz~30MHz: 2.61dB
Coplanar:	9kHz~30MHz: 2.62dB
Horizontal:	30MHz~200MHz: 3.79dB
	200MHz~1GHz: 3.91dB
	1GHz~40GHz: 4.99dB
Vertical:	30MHz~200MHz: 4.06dB
	200MHz~1GHz: 5.21dB
	1GHz~40GHz: 4.90dB
Spurious Emissions, Conducted	
Measuring Uncertainty for a Level of Confidence of 95% ($U=2Uc(y)$):	
2.2dB	
Output Power	
Measuring Uncertainty for a Level of Confidence of 95% ($U=2Uc(y)$):	
1.4dB	
Power Spectrum Density	
Measuring Uncertainty for a Level of Confidence of 95% ($U=2Uc(y)$):	
2.2dB	
Occupied Bandwidth	
Measuring Uncertainty for a Level of Confidence of 95% ($U=2Uc(y)$):	
2.7%	

6. Test Result

6.1. Summary

FCC Section(s)	Test Description	Test Condition	Verdict
15.247(a)(2)	6dB Bandwidth	Conducted	Pass
15.247(b)(3)	Output Power		Pass
15.247(e)	Power Spectral Density		Pass
15.247(d)	Band Edge / Out-of-Band Emissions		Pass
15.205 15.209	General Field Strength (Restricted Bands and Radiated Emission)	Radiated	Pass
15.207	AC Conducted Emissions 150kHz - 30MHz	Line Conducted	N/A

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.
3. "N/A" means that this item is not applicable, and the detail information refer to relevant section.

6.2. 6dB Bandwidth Measurement

6.2.1. Test Limit

The minimum 6dB bandwidth shall be at least 500 kHz.

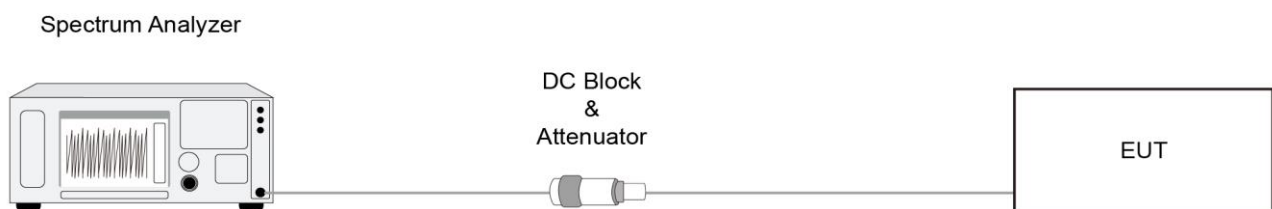
6.2.2. Test Procedure

ANSI C63.10 - 2013 - Section 11.8

6.2.3. Test Setting

1. The Spectrum's automatic bandwidth measurement capability was used to perform the 6dB bandwidth measurement. The "X" dB bandwidth parameter was set to $X = 6$. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. Set RBW = 100 kHz
3. $VBW \geq 3 \times RBW$
4. Detector = Peak
5. Trace mode = Max hold
6. Sweep = Auto couple
7. Allow the trace to stabilize

6.2.4. Test Setup



6.2.5. Test Result

Refer to Appendix A.2.

6.3. Output Power Measurement

6.3.1. Test Limit

The maximum output power shall be less 1 Watt (30dBm).

The conducted output power limit specified in paragraph FCC Part 15.247(b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs FCC Part 15.247(b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

6.3.2. Test Procedure

ANSI C63.10 - 2013 - Section 11.9.1.3

ANSI C63.10 - 2013 - Section 11.9.2.3.2

6.3.3. Test Setting

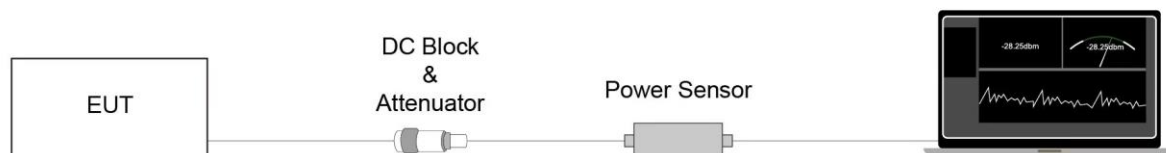
Method PKPM1 (Peak Power Measurement of Signals with DTS BW $\leq$ 50MHz)

Peak power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The pulse sensor employs a VBW = 50MHz so this method was only used for signals whose DTS bandwidth was less than or equal to 50MHz.

Average Power Measurement

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter.

6.3.4. Test Setup



6.3.5. Test Result

Refer to Appendix A.3.

6.4. Power Spectral Density Measurement

6.4.1. Test Limit

The maximum permissible power spectral density is 8dBm in any 3 kHz band.

The same method of determining the conducted output power shall be used to determine the power spectral density.

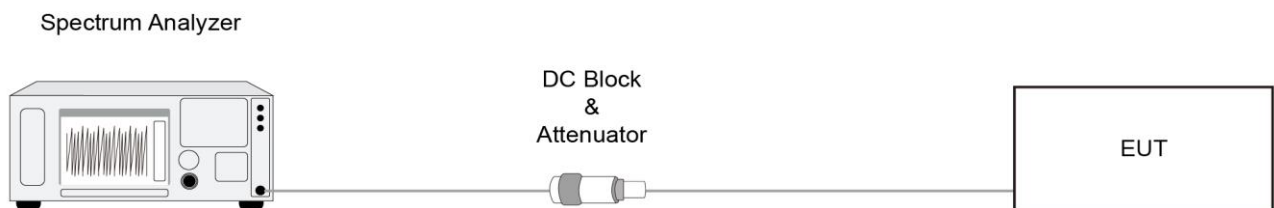
6.4.2. Test Procedure

ANSI C63.10-2013 Section 11.10.2

6.4.3. Test Setting

1. Analyzer was set to the center frequency of the DTS channel under investigation
2. Span = 1.5 times the DTS channel bandwidth
3. RBW = 3kHz
4. VBW = 10kHz
5. Detector = peak
6. Sweep time = auto couple
7. Trace mode = max hold
8. Trace was allowed to stabilize

6.4.4. Test Setup



6.4.5. Test Result

Refer to Appendix A.4.

6.5. Conducted Band Edge and Out-of-Band Emissions Measurement

6.5.1. Test Limit

The limit for out-of-band spurious emissions at the band edge is 20dB below the fundamental emission level, as determined from the in-band power measurement of the DTS channel performed in a 100 kHz bandwidth per the PSD procedure.

6.5.2. Test Procedure

ANSI C63.10-2013 - Section 11.11

6.5.3. Test Settling

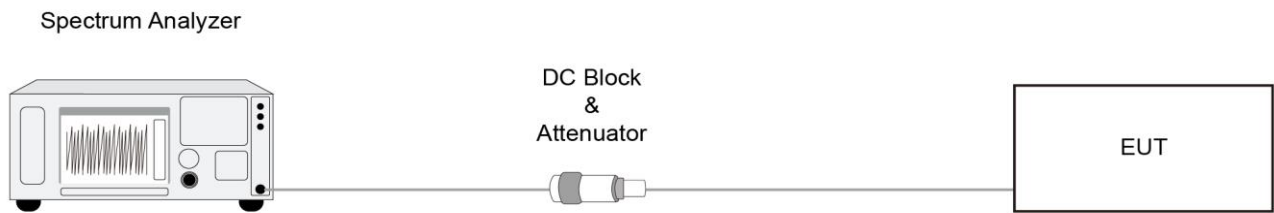
Reference level measurement

1. Set instrument center frequency to DTS channel center frequency
2. Set the span to ≥ 1.5 times the DTS bandwidth
3. Set the RBW = 100 kHz
4. Set the VBW $\geq 3 \times$ RBW
5. Detector = peak
6. Sweep time = auto couple
7. Trace mode = max hold
8. Allow trace to fully stabilize

Emission level measurement

1. Set the center frequency and span to encompass frequency range to be measured
2. RBW = 100kHz
3. VBW = 300kHz
4. Detector = Peak
5. Trace mode = max hold
6. Sweep time = auto couple
7. The trace was allowed to stabilize

6.5.4. Test Setup



6.5.5. Test Result

Refer to Appendix A.5.

6.6. Radiated Spurious Emission Measurement

6.6.1. 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 [$\mu\text{V/m}$]	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

6.6.2. 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)

6.6.3. 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

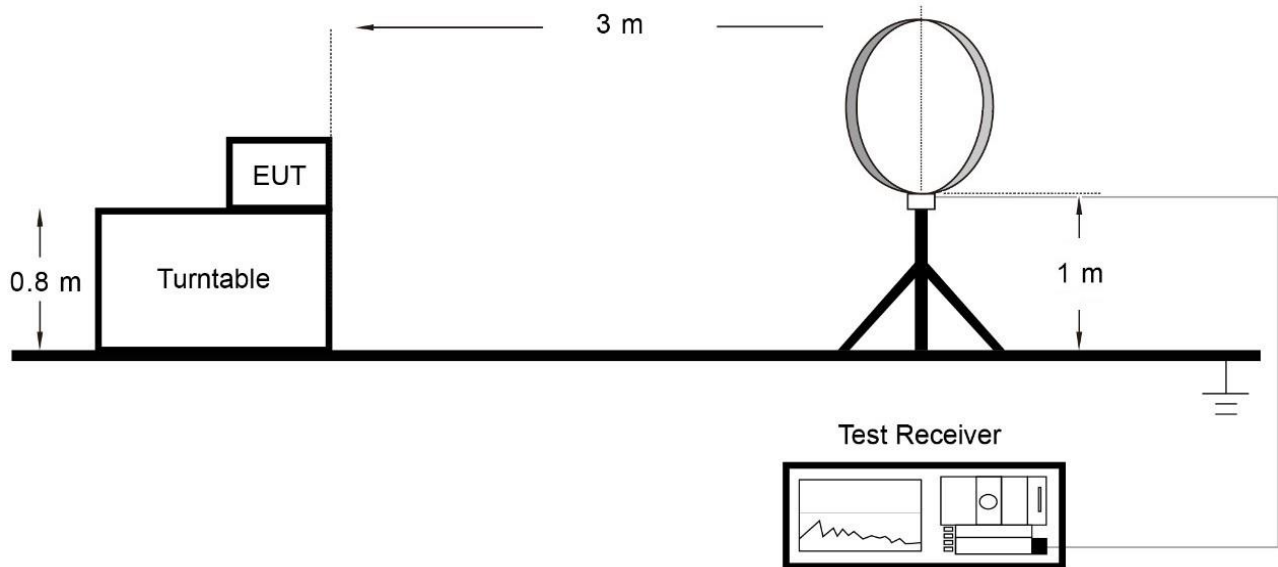
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Average Measurements above 1GHz (Method VB)

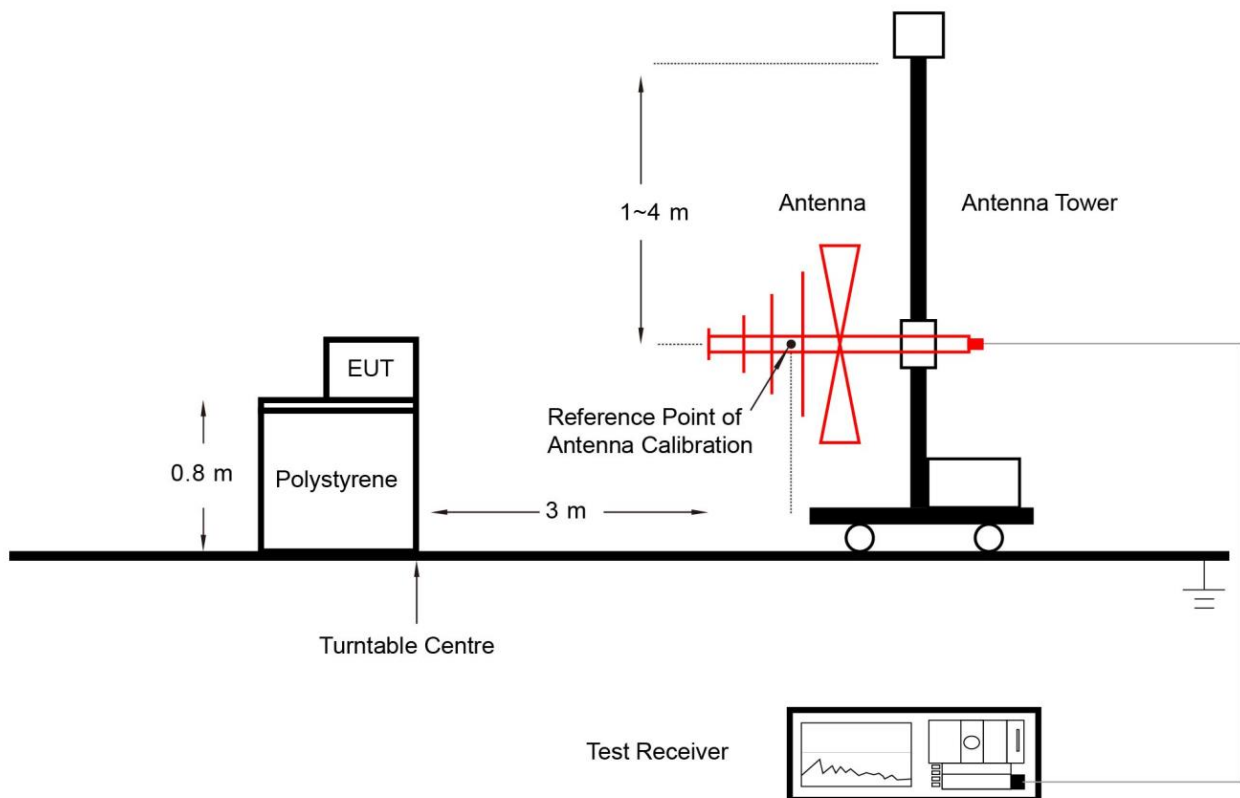
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW; If the EUT is configured to transmit with duty cycle $\geq 98\%$, set VBW = 10 Hz.
If the EUT duty cycle is $< 98\%$, set VBW $\geq 1/T$. T is the minimum transmission duration.
4.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

6.6.4. Test Setup

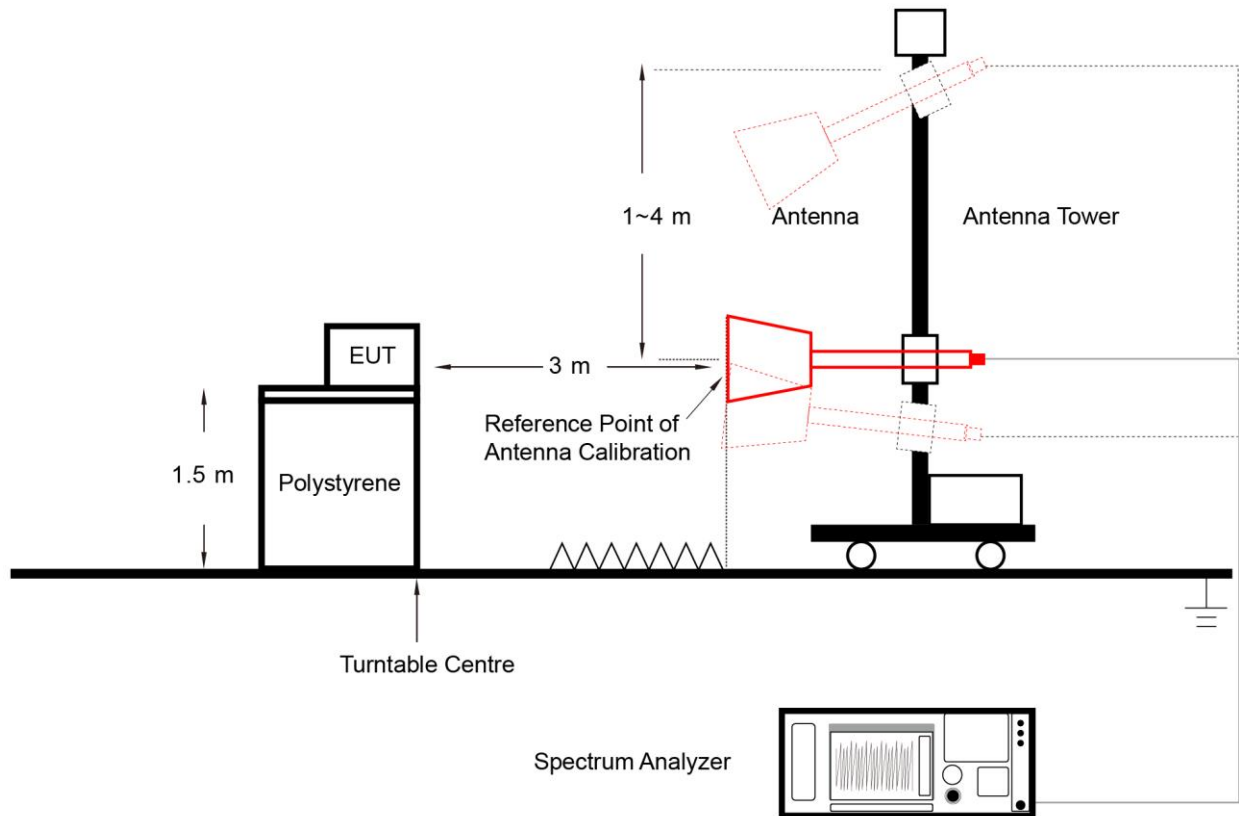
Below 30MHz Test Setup:



Below 1GHz Test Setup:



Above 1GHz Test Setup:



6.6.5. Test Result

Refer to Appendix A.6.

6.7. Radiated Restricted Band Edge Measurement

6.7.1. Test Limit

For 15.205 requirement:

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a).

Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)
13.36 - 13.41	--	--	--

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

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [μ V/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

6.7.2. Test Procedure

ANSI C63.10-2013 Section 6.3 & 6.5 & 11.12

6.7.3. Test Setting

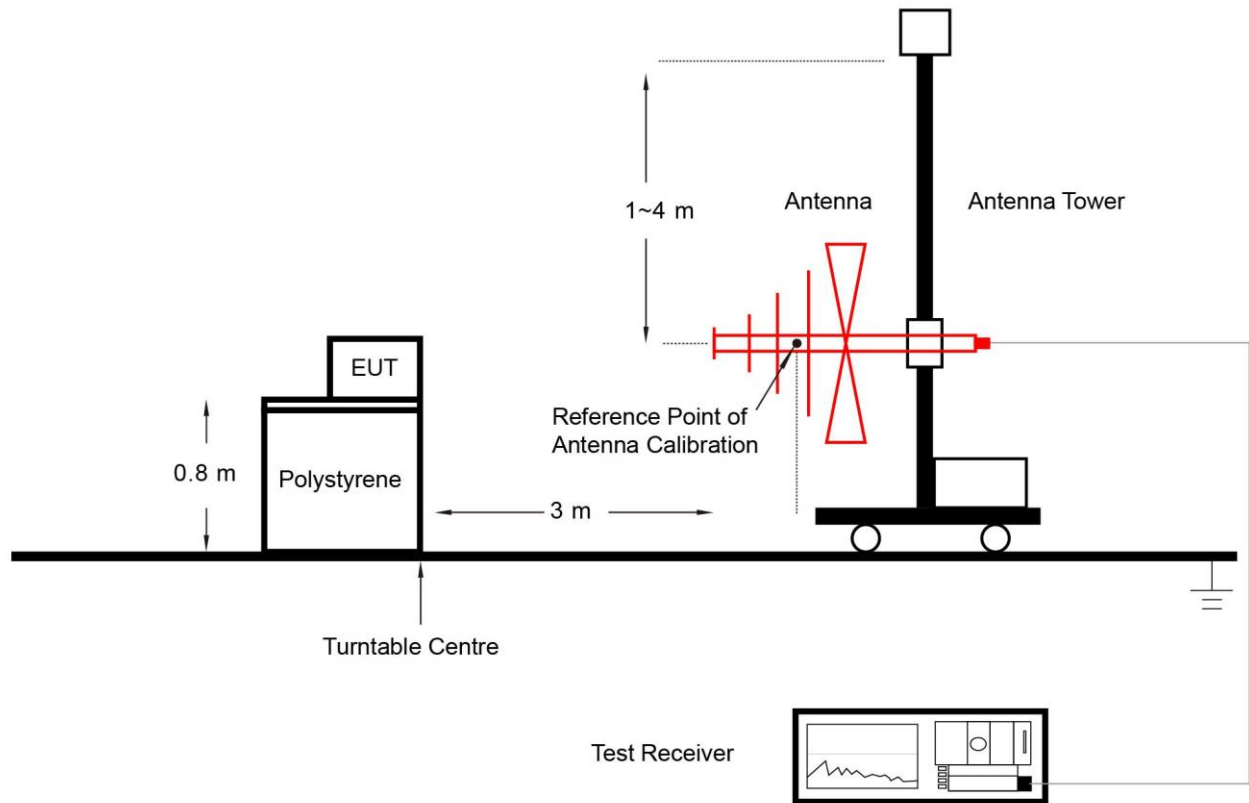
Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 100kHz
3. VBW = 300kHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Quasi-Peak Field Strength Measurements

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 = 100kHz
4. VBW = 300kHz
5. Detector = CISPR quasi-peak
6. Sweep time = auto couple
7. Trace was allowed to stabilize

6.7.4. Test Setup



6.7.5. Test Result

Refer to Appendix A.7.

6.8. AC Conducted Emissions Measurement

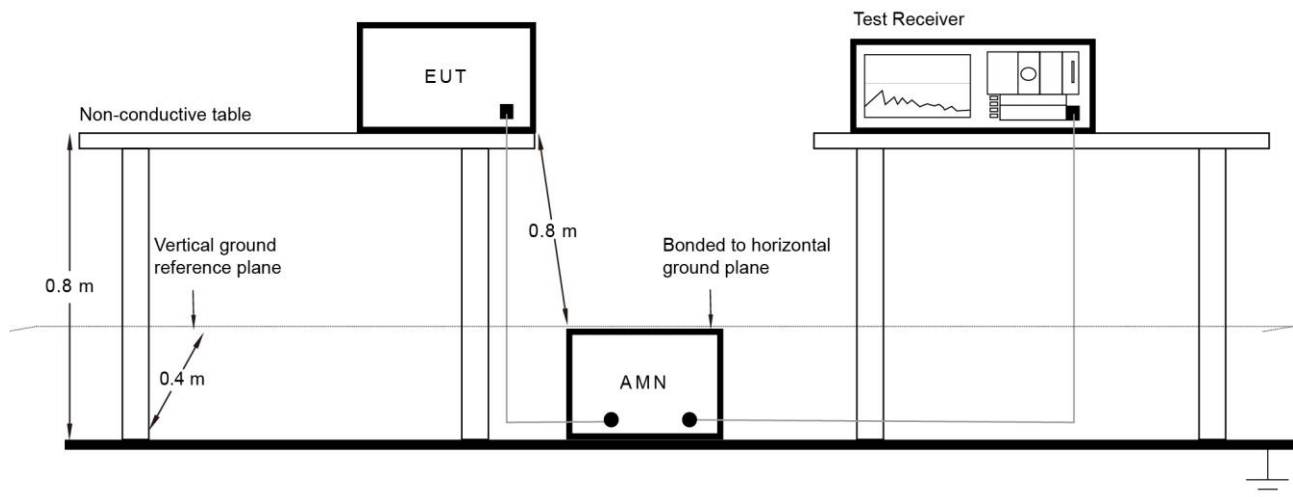
6.8.1. Test Limit

FCC Part 15 Subpart C Paragraph 15.207 Limits		
Frequency (MHz)	QP (dB μ V)	AV (dB μ V)
0.15 - 0.50	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Note 1: The lower limit shall apply at the transition frequencies.

Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.

6.8.2. Test Setup



6.8.3. Test Result

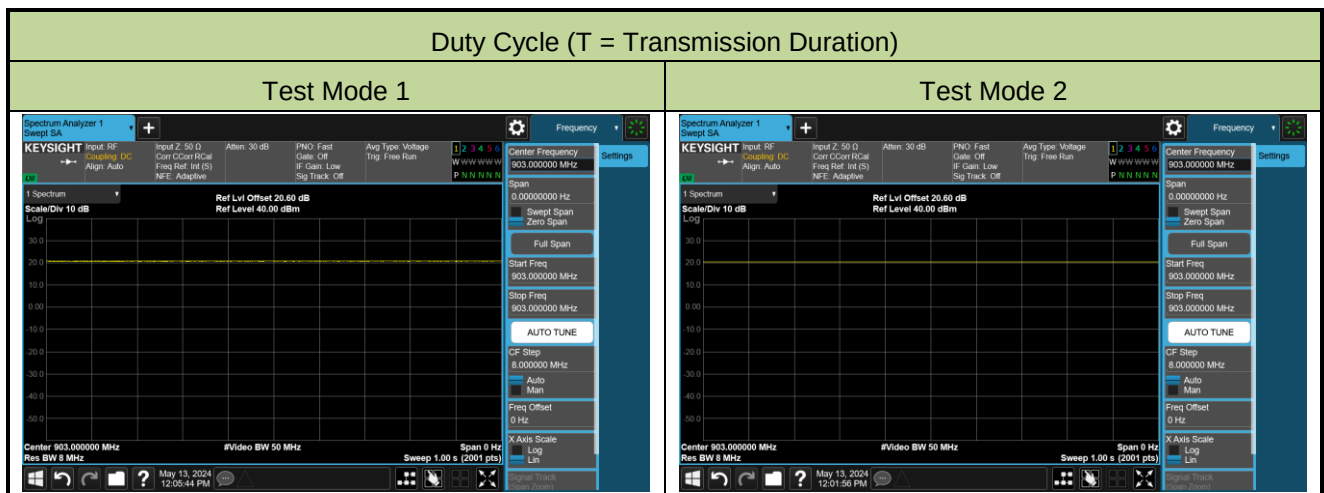
The EUT is powered by DC supply, so this item is not applicable.

Appendix A - Test Result

A.1 Duty Cycle Test Result

Test Site	WZ-SR4	Test Engineer	Jeff Yang
Test Date	2024-05-13		

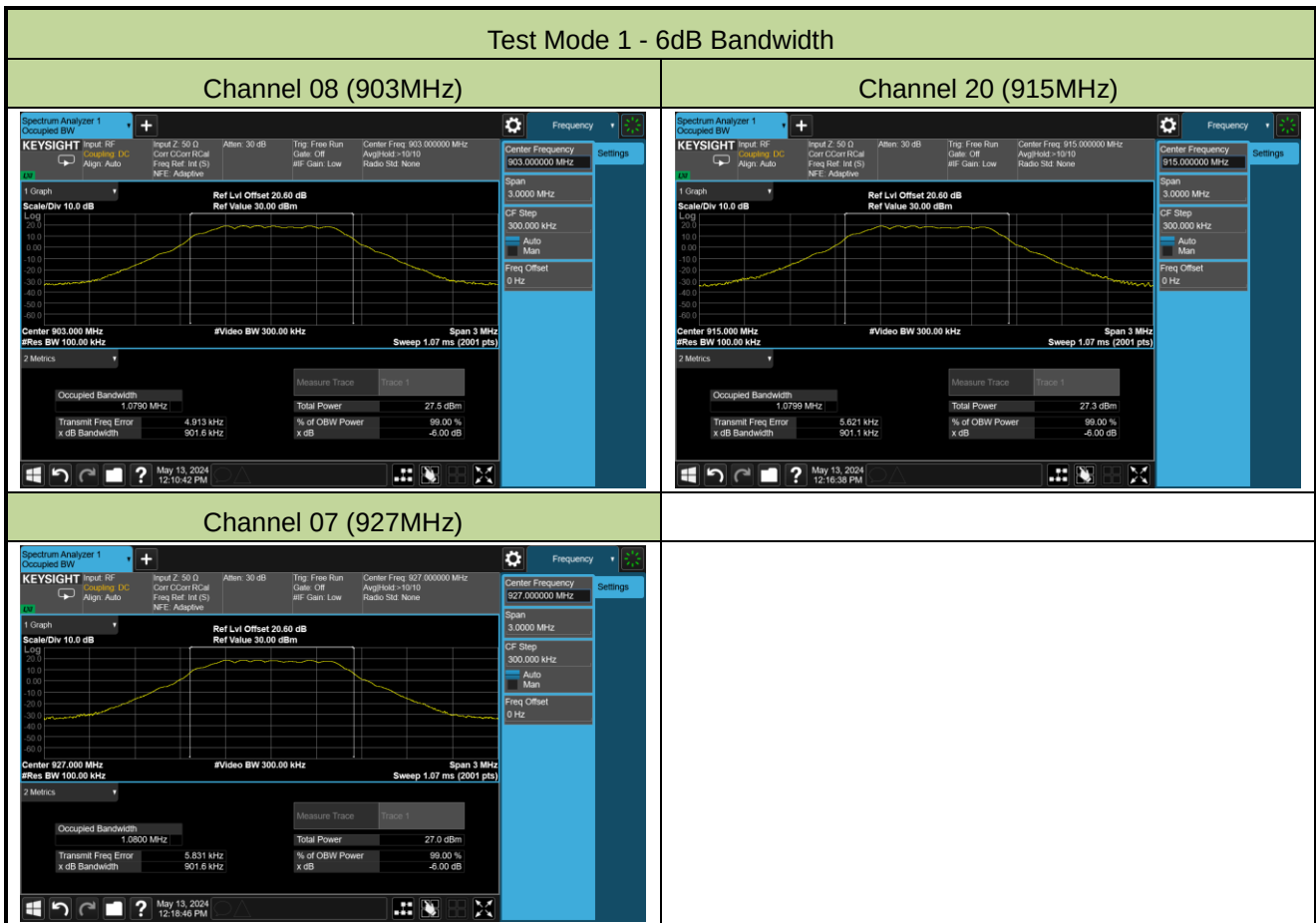
Test Mode	Duty Cycle
Mode 1	100.0%
Mode 2	100.0%



A.2 6dB Bandwidth Test Result

Test Site	WZ-SR4	Test Engineer	Jeff Yang
Test Date	2024-05-13		

Test Mode	Channel No.	Frequency (MHz)	6dB Bandwidth (kHz)	Limit (kHz)
Mode 1	08	903	901.6	≥ 500
	20	915	901.1	≥ 500
	07	927	901.6	≥ 500
Mode 2	08	903	900.6	≥ 500
	20	915	901.9	≥ 500
	07	927	901.4	≥ 500



Test Mode 2 - 6dB Bandwidth

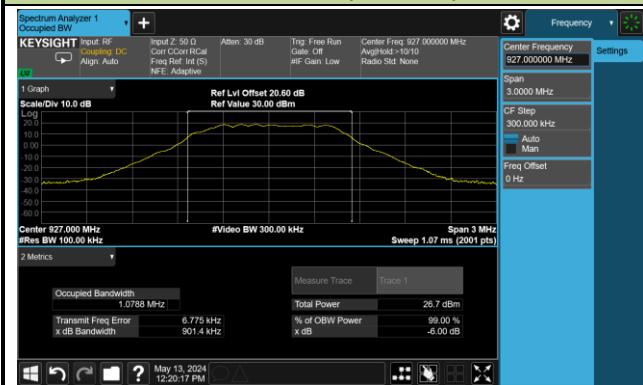
Channel 08 (903MHz)



Channel 20 (915MHz)



Channel 07 (927MHz)



A.3 Output Power Test Result

Test Site	WZ-SR4	Test Engineer	Jeff Yang
Test Date	2024-05-09		

Test Result of Peak Output Power

Test Mode	Channel No.	Frequency (MHz)	Peak Power (dBm)	Peak Power Limit (dBm)	Result
1	08	903	20.58	≤ 28.00	Pass
	20	915	20.43	≤ 28.00	Pass
	07	927	20.12	≤ 28.00	Pass
2	08	903	20.37	≤ 28.00	Pass
	20	915	20.21	≤ 28.00	Pass
	07	927	19.95	≤ 28.00	Pass

Note: Peak Power Limit (dBm) = 30dBm - (Antenna Gain (dBi) - 6dB) = 30dBm - (8dBi - 6dB) = 28dBm

Test Result of Average Output Power (Reporting Only)

Test Mode	Channel No.	Frequency (MHz)	Average Power (dBm)	AV Power Limit (dBm)	Result
1	08	903	20.56	≤ 28.00	Pass
	20	915	20.38	≤ 28.00	Pass
	07	927	20.09	≤ 28.00	Pass
2	08	903	20.32	≤ 28.00	Pass
	20	915	20.18	≤ 28.00	Pass
	07	927	19.90	≤ 28.00	Pass

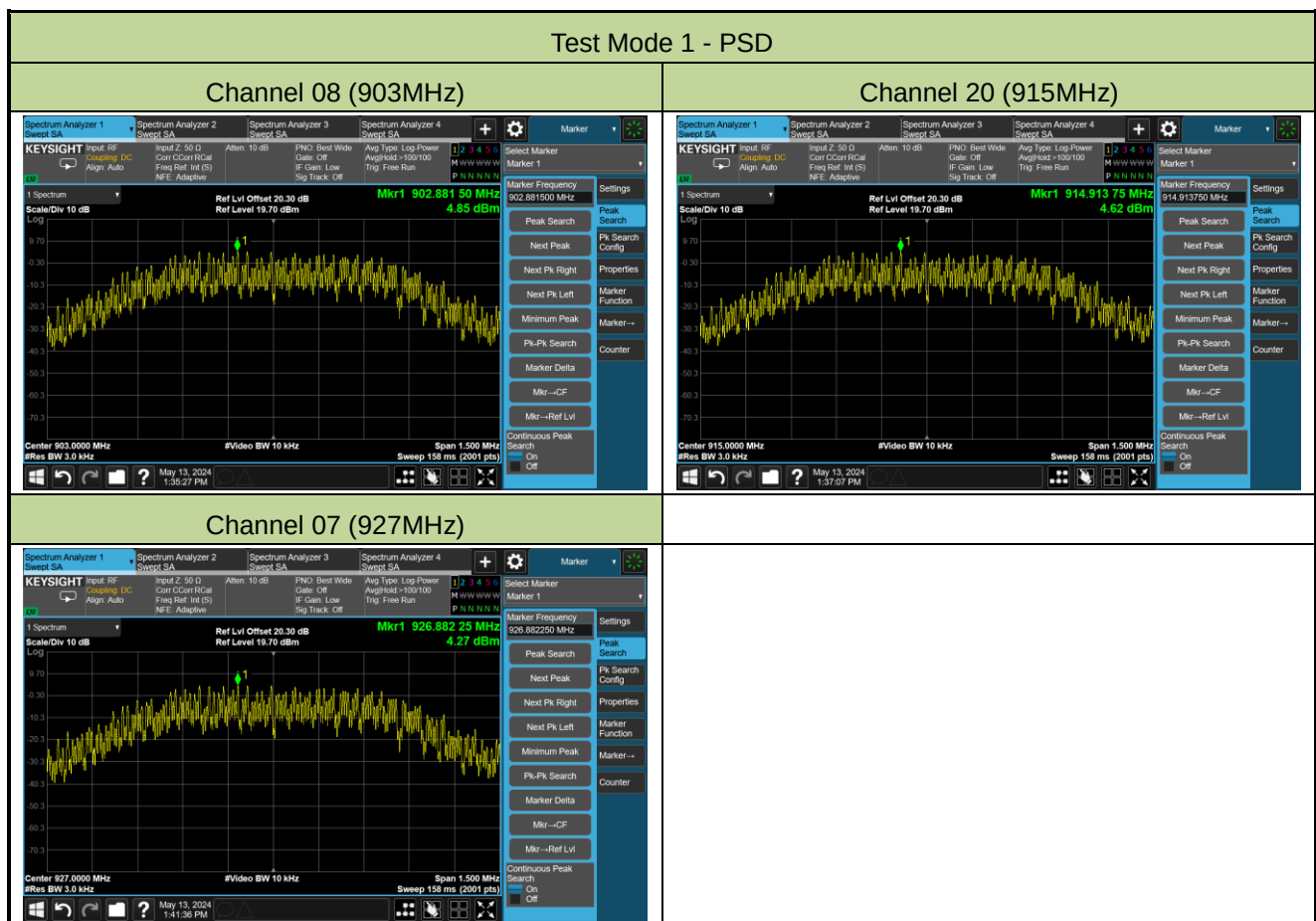
Note: AV Power Limit (dBm) = 30dBm - (Antenna Gain (dBi) - 6dB) = 30 dBm - (8dBi - 6dB) = 28dBm

A.4 Power Spectral Density Test Result

Test Site	WZ-SR4	Test Engineer	Jeff Yang
Test Date	2024-05-13		

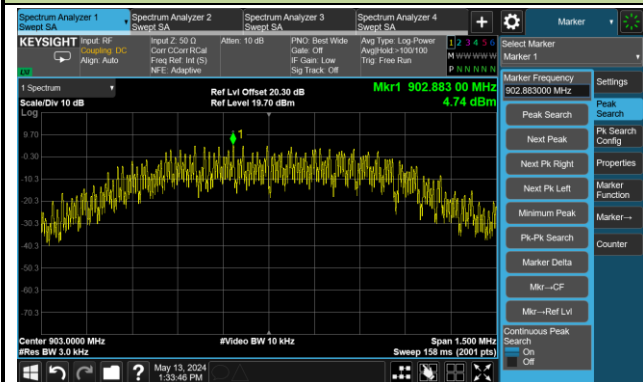
Test Mode	Channel No.	Frequency (MHz)	PKPSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
1	08	903	4.85	≤ 6.00	Pass
	20	915	4.62	≤ 6.00	Pass
	07	927	4.27	≤ 6.00	Pass
2	08	903	4.74	≤ 6.00	Pass
	20	915	4.47	≤ 6.00	Pass
	07	927	4.15	≤ 6.00	Pass

Note: Limit (dBm/3kHz) = 8dBm/3kHz - (Antenna Gain (dBi) - 6dB) = 8dBm/3kHz - (8dBi - 6dB) = 6dBm/3kHz

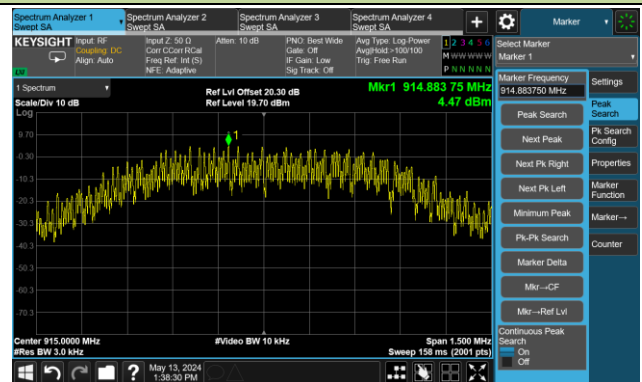


Test Mode 2 - PSD

Channel 08 (903MHz)



Channel 20 (915MHz)



Channel 07 (927MHz)



A.5 Conducted Band Edge and Out-of-Band Emissions Test Result

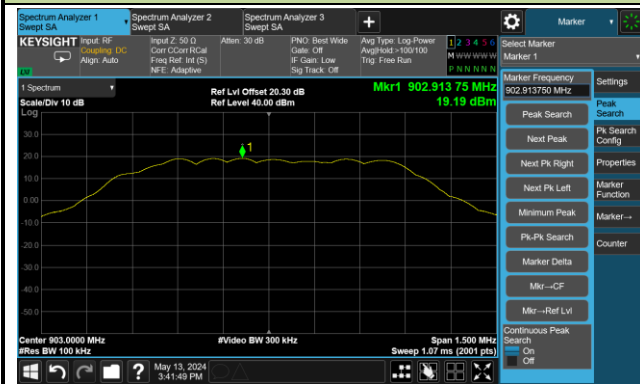
Test Site	WZ-SR4	Test Engineer	Jeff Yang
Test Date	2024-05-13		

Test Mode	Channel No.	Frequency (MHz)	Limit (dBc)	Result
Mode 1	08	903	20	Pass
	20	915	20	Pass
	07	927	20	Pass
Mode 2	08	903	20	Pass
	20	915	20	Pass
	07	927	20	Pass

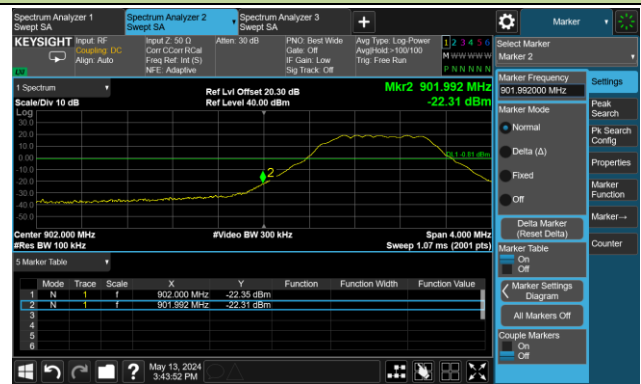
Test Mode 1 - Out-of-Band Emissions

Channel 08 (903MHz)

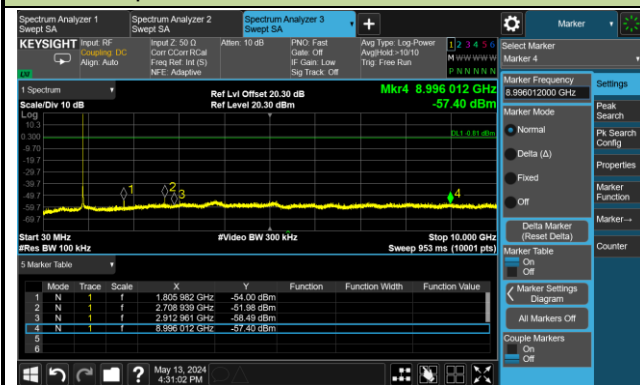
100kHz PSD Reference Level



Low Band Edge

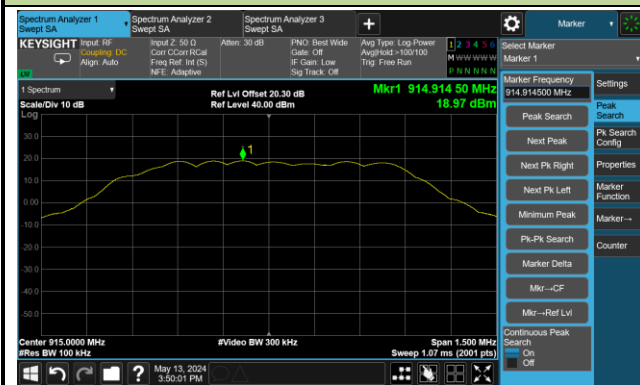


Spurious Emission 30MHz ~ 10GHz

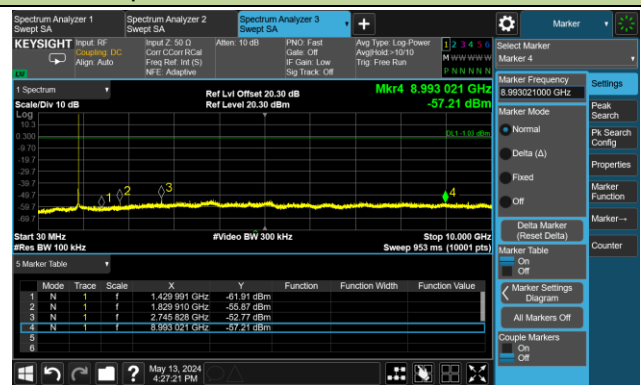


Channel 20 (915MHz)

100kHz PSD Reference Level



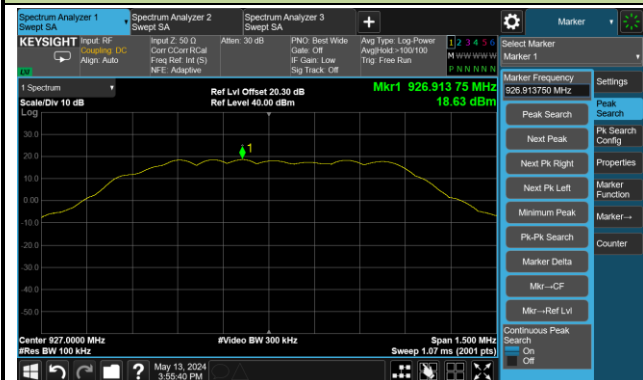
Spurious Emission 30MHz ~ 10GHz



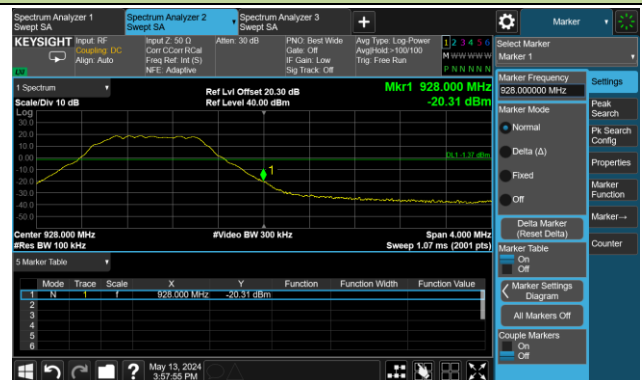
Test Mode 1 - Out-of-Band Emissions

Channel 07 (927MHz)

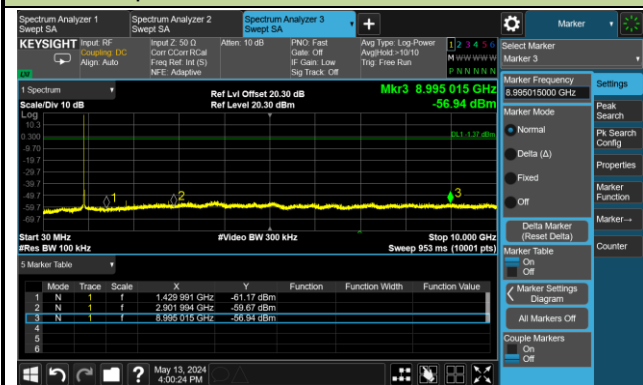
100kHz PSD Reference Level



High Band Edge



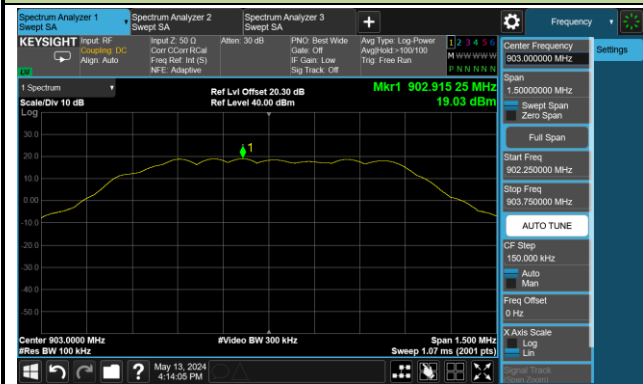
Spurious Emission 30MHz ~ 10GHz



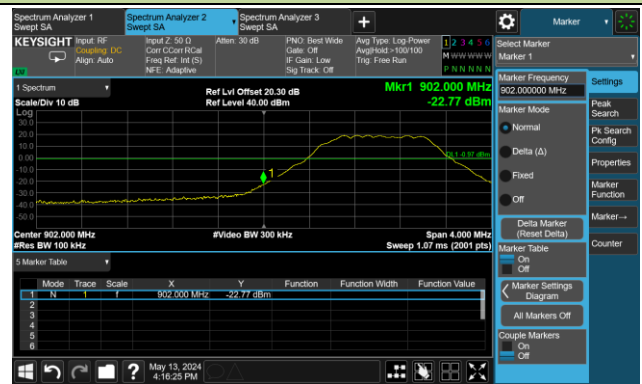
Test Mode 2 - Out-of-Band Emissions

Channel 08 (903MHz)

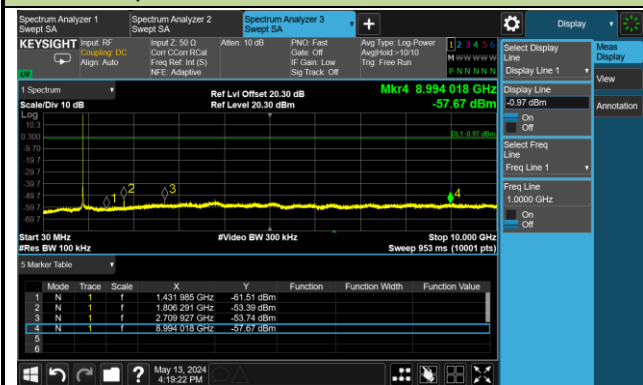
100kHz PSD Reference Level



Low Band Edge

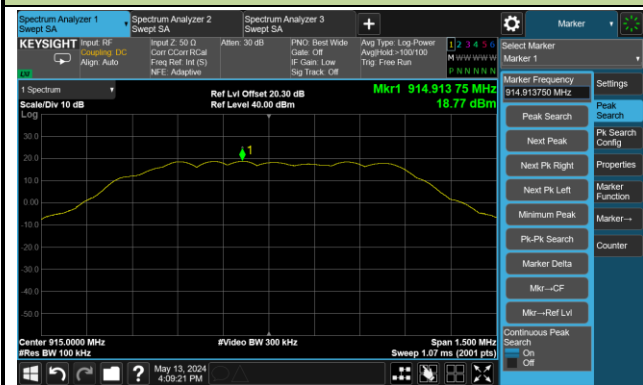


Spurious Emission 30MHz ~ 10GHz

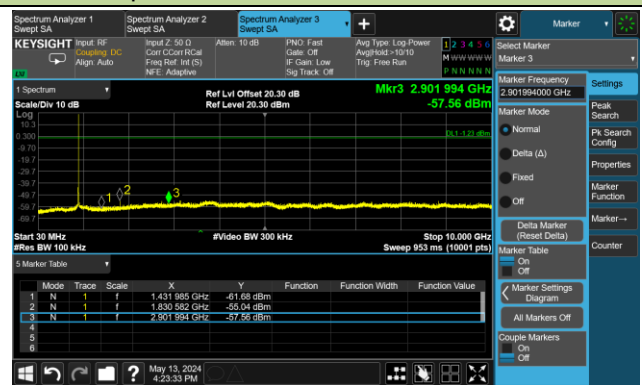


Channel 20 (915MHz)

100kHz PSD Reference Level



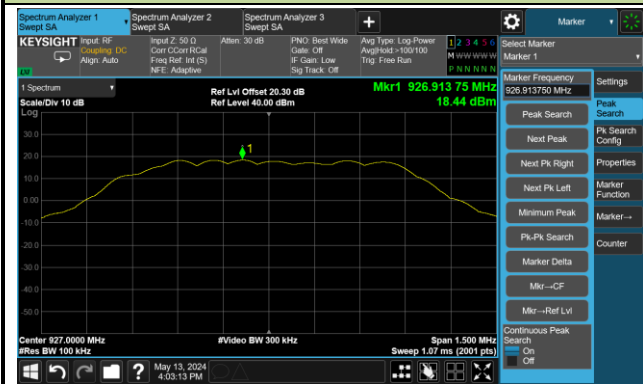
Spurious Emission 30MHz ~ 10GHz



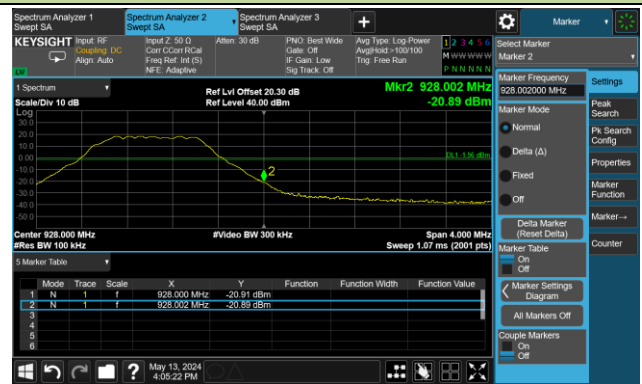
Test Mode 2 - Out-of-Band Emissions

Channel 07 (927MHz)

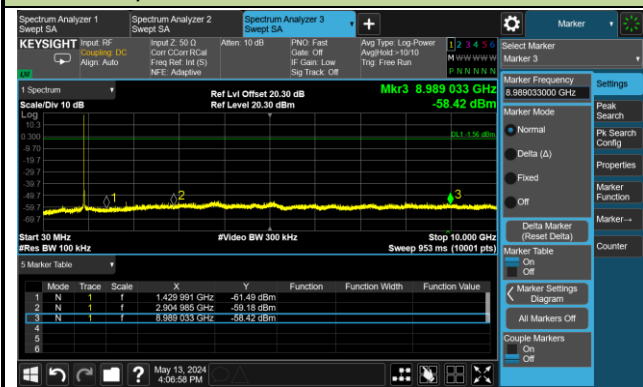
100kHz PSD Reference Level



High Band Edge



Spurious Emission 30MHz ~ 10GHz



A.6 Radiated Spurious Emission Test Result

Antenna EA2-0287-N01SP-050

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2024-05-19	Test Mode	Mode 1
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line, 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
08	1333.0	56.0	-5.0	51.0	74.0	-23.0	Peak	Horizontal
	2710.0	58.4	-1.6	56.8	74.0	-17.2	Peak	Horizontal
	2710.0	51.8	-1.6	50.2	54.0	-3.8	Average	Horizontal
	5419.0	43.9	5.0	48.9	74.0	-25.1	Peak	Horizontal
	1198.0	54.8	-6.1	48.7	74.0	-25.3	Peak	Vertical
	1333.0	54.6	-5.0	49.6	74.0	-24.4	Peak	Vertical
	5419.0	39.6	5.0	44.6	74.0	-29.4	Peak	Vertical
20	2746.0	55.8	-1.5	54.3	74.0	-19.7	Peak	Horizontal
	2746.0	48.5	-1.5	47.0	54.0	-7.0	Average	Horizontal
	3659.5	42.4	0.7	43.1	74.0	-30.9	Peak	Horizontal
	7570.0	36.7	9.2	45.9	74.0	-28.1	Peak	Horizontal
	1175.5	54.8	-6.2	48.6	74.0	-25.4	Peak	Vertical
	1328.5	53.5	-5.1	48.4	74.0	-25.6	Peak	Vertical
	2746.0	47.8	-1.5	46.3	74.0	-27.7	Peak	Vertical
07	2782.0	54.8	-1.3	53.5	74.0	-20.5	Peak	Horizontal
	2782.0	47.8	-1.3	46.5	54.0	-7.5	Average	Horizontal
	3704.5	43.8	1.1	44.9	74.0	-29.1	Peak	Horizontal
	4636.0	41.0	3.5	44.5	74.0	-29.5	Peak	Horizontal
	1328.5	57.2	-5.1	52.1	74.0	-21.9	Peak	Vertical
	1328.5	34.7	-5.1	29.6	54.0	-24.4	Average	Vertical
	2782.0	47.4	-1.3	46.1	74.0	-27.9	Peak	Vertical
	7664.5	37.8	9.2	47.0	74.0	-27.0	Peak	Vertical

Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

Note 2: For emission below 1GHz:

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)

For emission above 1GHz:

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2024-05-19	Test Mode	Mode 2
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line, 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
08	1198.0	52.5	-6.1	46.4	74.0	-27.6	Peak	Horizontal
	2710.0	55.9	-1.6	54.3	74.0	-19.7	Peak	Horizontal
	2710.0	49.8	-1.6	48.2	54.0	-5.8	Average	Horizontal
	5419.0	44.4	5.0	49.4	74.0	-24.6	Peak	Horizontal
	1193.5	59.6	-6.1	53.5	74.0	-20.5	Peak	Vertical
	1193.5	41.3	-6.1	35.2	54.0	-18.8	Average	Vertical
	2710.0	47.8	-1.6	46.2	74.0	-27.8	Peak	Vertical
	5419.0	42.3	5.0	47.3	74.0	-26.7	Peak	Vertical
20	1337.5	48.4	-4.9	43.5	74.0	-30.5	Peak	Horizontal
	2746.0	55.1	-1.5	53.6	74.0	-20.4	Peak	Horizontal
	2746.0	48.3	-1.5	46.8	54.0	-7.2	Average	Horizontal
	7475.5	36.3	9.2	45.5	74.0	-28.5	Peak	Horizontal
	1198.0	53.4	-6.1	47.3	74.0	-26.7	Peak	Vertical
	1333.0	54.3	-5.0	49.3	74.0	-24.7	Peak	Vertical
	2746.0	45.0	-1.5	43.5	74.0	-30.5	Peak	Vertical
07	2782.0	54.7	-1.3	53.4	74.0	-20.6	Peak	Horizontal
	2782.0	47.4	-1.3	46.1	54.0	-7.9	Average	Horizontal
	3704.5	44.2	1.1	45.3	74.0	-28.7	Peak	Horizontal
	7628.5	36.7	9.2	45.9	74.0	-28.1	Peak	Horizontal
	1198.0	52.8	-6.1	46.7	74.0	-27.3	Peak	Vertical
	1328.5	46.0	-5.1	40.9	74.0	-33.1	Peak	Vertical
	2782.0	48.2	-1.3	46.9	74.0	-27.1	Peak	Vertical

Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

Note 2: For emission below 1GHz:

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)

For emission above 1GHz:

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Antenna MISC1626

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2024-05-19	Test Mode	Mode 1
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line, 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
08	1193.5	57.5	-6.1	51.4	74.0	-22.6	Peak	Horizontal
	1193.5	40.9	-6.1	34.8	54.0	-19.2	Average	Horizontal
	1328.5	51.8	-5.1	46.7	74.0	-27.3	Peak	Horizontal
	5419.0	46.8	5.0	51.8	74.0	-22.2	Peak	Horizontal
	5419.0	35.7	5.0	40.7	54.0	-13.3	Average	Horizontal
	1198.0	50.7	-6.1	44.6	74.0	-29.4	Peak	Vertical
	1333.0	51.8	-5.0	46.8	74.0	-27.2	Peak	Vertical
	5419.0	39.6	5.0	44.6	74.0	-29.4	Peak	Vertical
20	1198.0	53.3	-6.1	47.2	74.0	-26.8	Peak	Horizontal
	1333.0	52.5	-5.0	47.5	74.0	-26.5	Peak	Horizontal
	2746.0	43.8	-1.5	42.3	74.0	-31.7	Peak	Horizontal
	1193.5	55.1	-6.1	49.0	74.0	-25.0	Peak	Vertical
	1328.5	54.5	-5.1	49.4	74.0	-24.6	Peak	Vertical
	7709.5	37.1	9.3	46.4	74.0	-27.6	Peak	Vertical
07	1198.0	52.4	-6.1	46.3	74.0	-27.7	Peak	Horizontal
	1333.0	53.3	-5.0	48.3	74.0	-25.7	Peak	Horizontal
	2782.0	46.0	-1.3	44.7	74.0	-29.3	Peak	Horizontal
	1216.0	53.4	-6.2	47.2	74.0	-26.8	Peak	Vertical
	1328.5	51.0	-5.1	45.9	74.0	-28.1	Peak	Vertical
	2782.0	43.1	-1.3	41.8	74.0	-32.2	Peak	Vertical

Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

Note 2: For emission below 1GHz:

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)

For emission above 1GHz:

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2024-05-19	Test Mode	Mode 2
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line, 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
08	1328.5	50.9	-5.1	45.8	74.0	-28.2	Peak	Horizontal
	2710.0	48.0	-1.6	46.4	74.0	-27.6	Peak	Horizontal
	5419.0	46.4	5.0	51.4	74.0	-22.6	Peak	Horizontal
	5419.0	35.7	5.0	40.7	54.0	-13.3	Average	Horizontal
	1198.0	54.9	-6.1	48.8	74.0	-25.2	Peak	Vertical
	1328.5	50.6	-5.1	45.5	74.0	-28.5	Peak	Vertical
	5414.5	43.9	4.9	48.8	74.0	-25.2	Peak	Vertical
20	1198.0	53.2	-6.1	47.1	74.0	-26.9	Peak	Horizontal
	1328.5	55.1	-5.1	50.0	74.0	-24.0	Peak	Horizontal
	2746.0	48.1	-1.5	46.6	74.0	-27.4	Peak	Horizontal
	1198.0	53.7	-6.1	47.6	74.0	-26.4	Peak	Vertical
	1333.0	51.1	-5.0	46.1	74.0	-27.9	Peak	Vertical
	2746.0	46.2	-1.5	44.7	74.0	-29.3	Peak	Vertical
07	1193.5	54.5	-6.1	48.4	74.0	-25.6	Peak	Horizontal
	1333.0	52.2	-5.0	47.2	74.0	-26.8	Peak	Horizontal
	2782.0	48.2	-1.3	46.9	74.0	-27.1	Peak	Horizontal
	1198.0	49.6	-6.1	43.5	74.0	-30.5	Peak	Vertical
	1328.5	48.8	-5.1	43.7	74.0	-30.3	Peak	Vertical
	7651.0	37.8	9.5	47.3	74.0	-26.7	Peak	Vertical

Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

Note 2: For emission below 1GHz:

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)

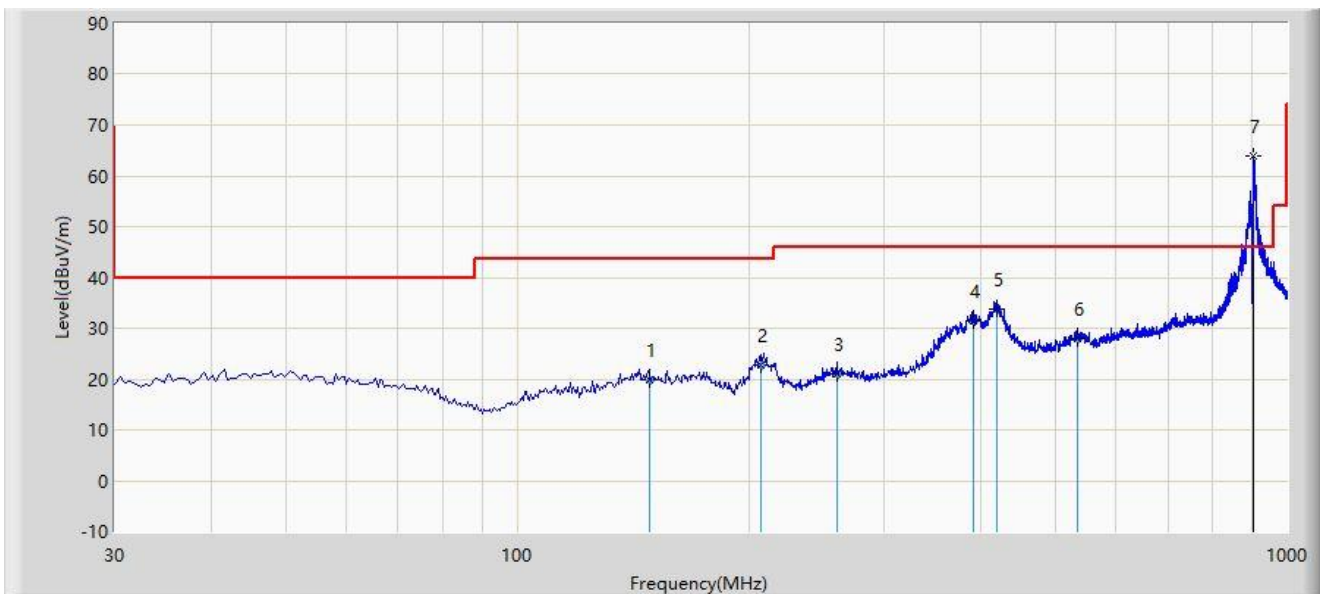
For emission above 1GHz:

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

The Result of Radiated Emission below 1GHz

Antenna EA2-0287-N01SP-050

Site: WZ-AC1	Test Date: 2024-05-22
Limit: FCC_Part15.209_RSE(3m)	Engineer: Ajin Fan
Probe: VULB 9168_25-2000MHz	Polarity: Horizontal
EUT: Mini Dual RF UHF Module SiLabs	Power: DC 12V
Test Mode: Transmit by Module A at 903MHz and Receive by Module B at 903MHz	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1		148.340	19.881	1.770	-23.619	43.500	18.112	QP
2		207.025	22.650	7.700	-20.850	43.500	14.950	QP
3		260.375	21.080	3.940	-24.920	46.000	17.140	QP
4		391.325	31.470	10.560	-14.530	46.000	20.910	QP
5	*	418.970	33.688	12.140	-12.312	46.000	21.548	QP
6		534.400	28.006	3.900	-17.994	46.000	24.106	QP
7		905.910	63.974	33.986	N/A	N/A	29.988	PK

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

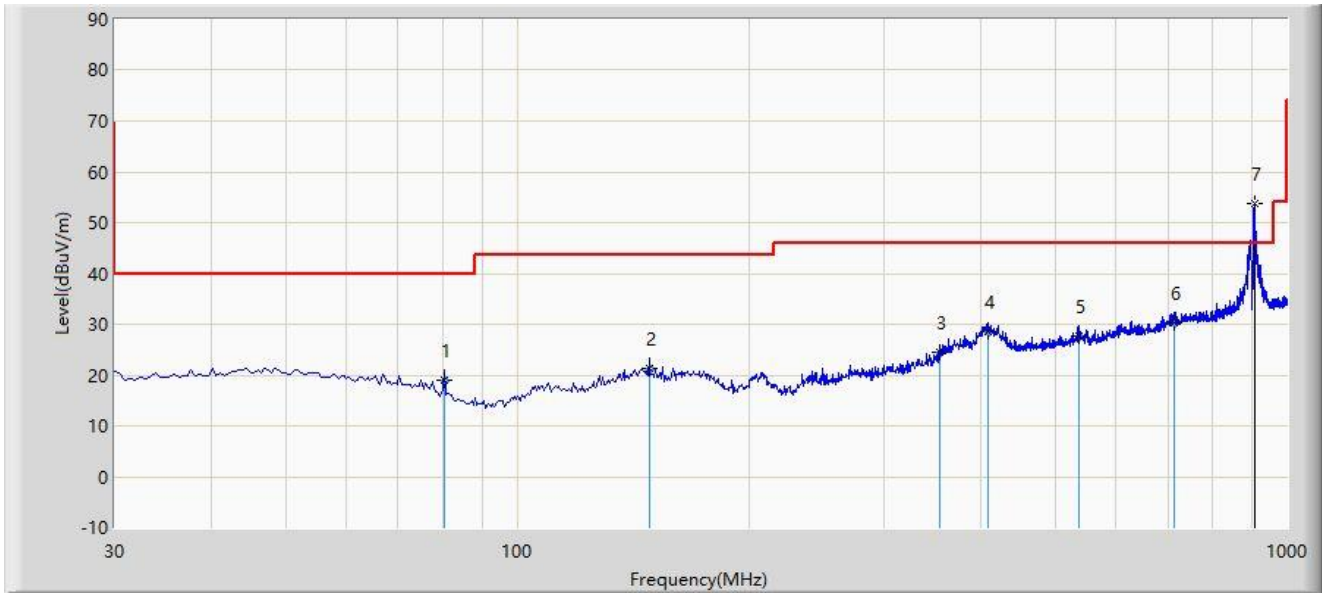
Note 2: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB/m).

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

Note 4: The point (7) is fundamental frequency that is not evaluated in this standard.

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-AC1	Test Date: 2024-05-22
Limit: FCC_Part15.209_RSE(3m)	Engineer: Ajin Fan
Probe: VULB 9168_25-2000MHz	Polarity: Vertical
EUT: Mini Dual RF UHF Module SiLabs	Power: DC 12V
Test Mode: Transmit by Module A at 903MHz and Receive by Module B at 903MHz	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1		80.440	18.892	4.680	-21.108	40.000	14.212	QP
2		148.340	21.411	3.300	-22.089	43.500	18.112	QP
3		353.495	24.461	4.620	-21.539	46.000	19.841	QP
4		408.300	28.409	7.240	-17.591	46.000	21.169	QP
5		535.855	27.638	3.500	-18.362	46.000	24.138	QP
6	*	712.880	30.187	2.900	-15.813	46.000	27.287	QP
7		906.395	53.717	23.723	N/A	N/A	29.994	PK

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

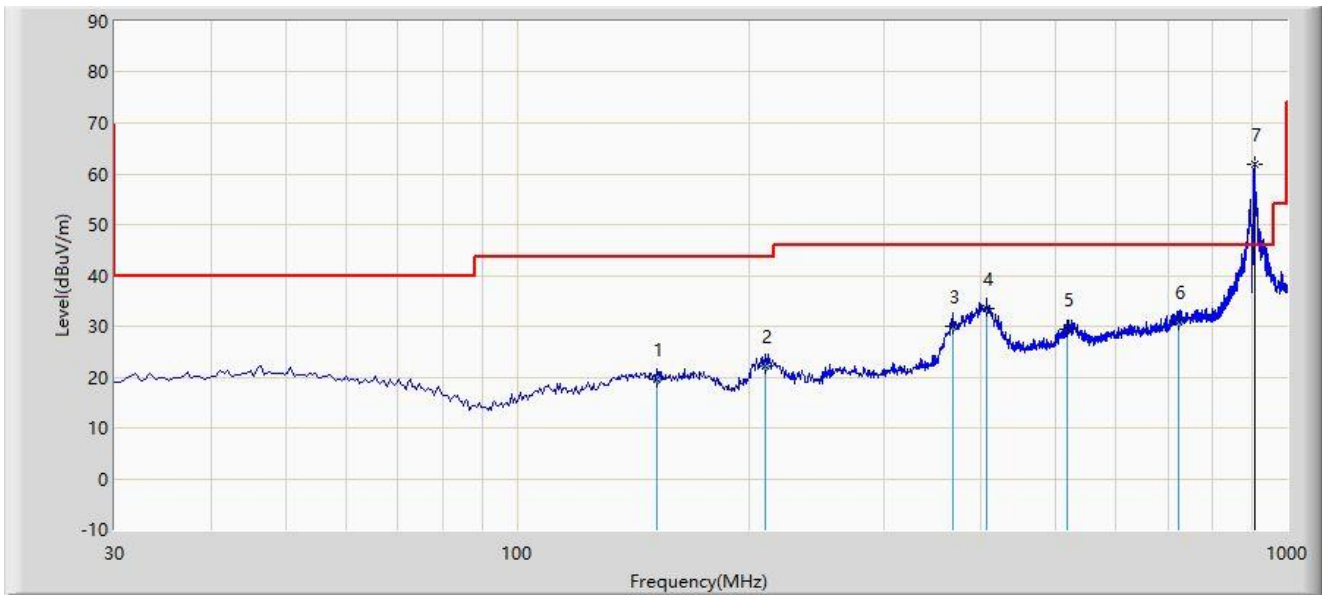
Note 2: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB/m).

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

Note 4: The point (7) is fundamental frequency that is not evaluated in this standard.

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-AC1	Test Date: 2024-05-22
Limit: FCC_Part15.209_RSE(3m)	Engineer: Ajin Fan
Probe: VULB 9168_25-2000MHz	Polarity: Horizontal
EUT: Mini Dual RF UHF Module SiLabs	Power: DC 12V
Test Mode: Transmit by Module B at 903MHz and Receive by Module A at 903MHz	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1		151.730	19.543	1.300	-23.957	43.500	18.243	QP
2		210.420	22.168	7.210	-21.332	43.500	14.958	QP
3		367.560	29.934	9.650	-16.066	46.000	20.284	QP
4	*	406.845	33.345	12.210	-12.655	46.000	21.135	QP
5		517.910	29.433	5.600	-16.567	46.000	23.833	QP
6		722.095	30.909	3.600	-15.091	46.000	27.310	QP
7		906.395	61.996	32.002	N/A	N/A	29.994	PK

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

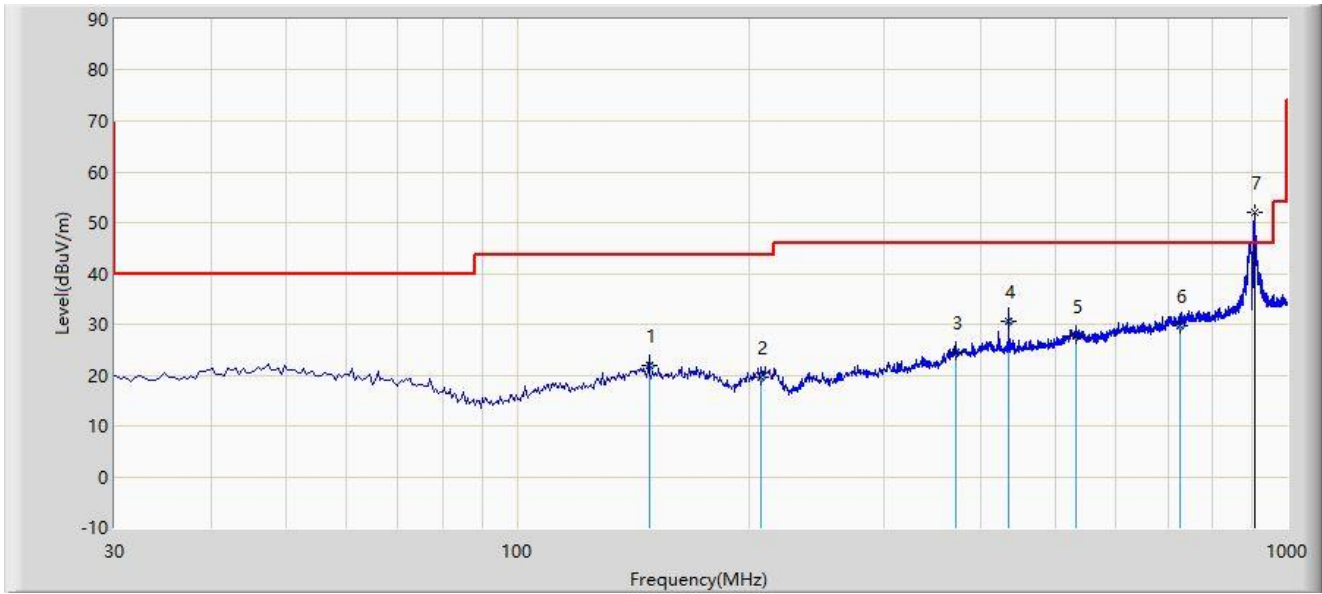
Note 2: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB/m).

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

Note 4: The point (7) is fundamental frequency that is not evaluated in this standard.

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-AC1	Test Date: 2024-05-22
Limit: FCC_Part15.209_RSE(3m)	Engineer: Ajin Fan
Probe: VULB 9168_25-2000MHz	Polarity: Vertical
EUT: Mini Dual RF UHF Module SiLabs	Power: DC 12V
Test Mode: Transmit by Module B at 903MHz and Receive by Module A at 903MHz	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1		148.340	21.991	3.880	-21.509	43.500	18.112	QP
2		207.025	19.650	4.700	-23.850	43.500	14.950	QP
3		371.440	24.617	4.210	-21.383	46.000	20.407	QP
4	*	434.490	30.442	8.210	-15.558	46.000	22.232	QP
5		531.000	27.590	3.540	-18.410	46.000	24.050	QP
6		726.460	29.589	2.120	-16.411	46.000	27.468	QP
7		906.880	52.161	22.152	N/A	N/A	30.009	PK

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

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

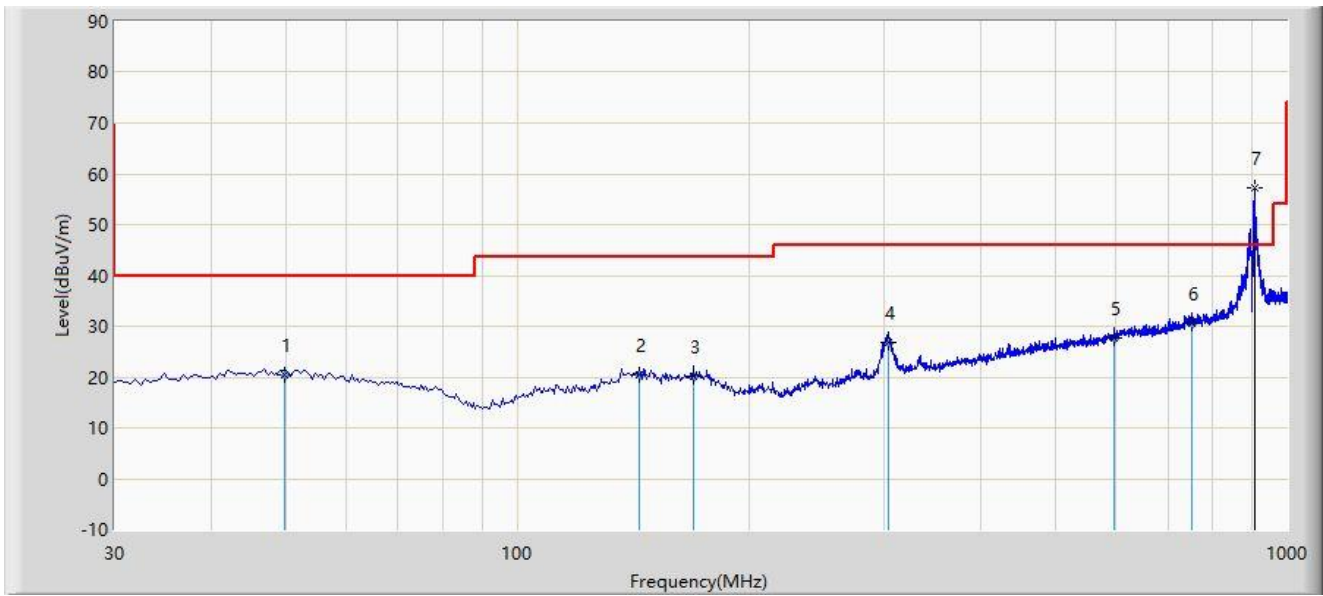
Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Note 4: The point (7) is fundamental frequency that is not evaluated in this standard.

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.

Antenna MISC1626

Site: WZ-AC1	Test Date: 2024-05-22
Limit: FCC_Part15.209_RSE(3m)	Engineer: Ajin Fan
Probe: VULB 9168_25-2000MHz	Polarity: Horizontal
EUT: Mini Dual RF UHF Module SiLabs	Power: DC 12V
Test Mode: Transmit by Module A at 903MHz and Receive by Module B at 903MHz	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1		49.975	20.447	1.800	-19.553	40.000	18.647	QP
2		143.975	20.511	2.500	-22.989	43.500	18.012	QP
3		169.195	20.022	1.980	-23.478	43.500	18.042	QP
4		303.540	26.702	7.980	-19.298	46.000	18.721	QP
5		595.510	27.658	2.060	-18.342	46.000	25.598	QP
6	*	752.650	30.686	2.400	-15.314	46.000	28.286	QP
7		906.395	57.122	27.128	N/A	N/A	29.994	PK

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

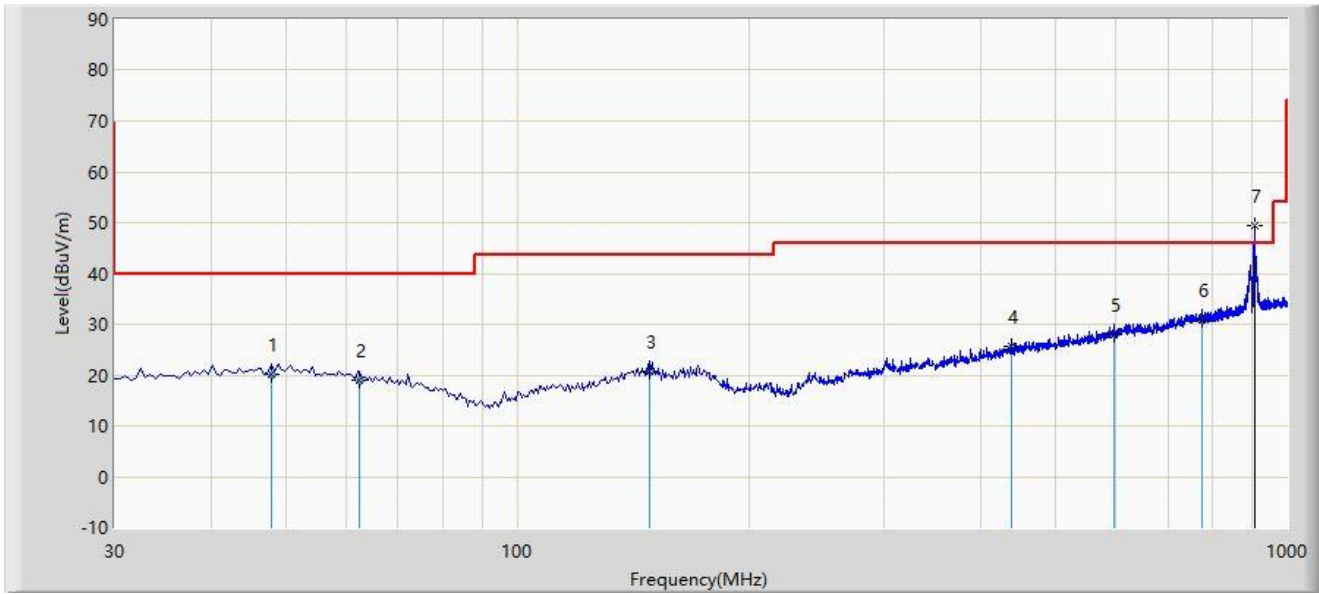
Note 2: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB/m).

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

Note 4: The point (7) is fundamental frequency that is not evaluated in this standard.

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-AC1	Test Date: 2024-05-22
Limit: FCC_Part15.209_RSE(3m)	Engineer: Ajin Fan
Probe: VULB 9168_25-2000MHz	Polarity: Vertical
EUT: Mini Dual RF UHF Module SiLabs	Power: DC 12V
Test Mode: Transmit by Module A at 903MHz and Receive by Module B at 903MHz	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1		47.945	20.262	1.650	-19.738	40.000	18.611	QP
2		62.495	19.027	1.300	-20.973	40.000	17.727	QP
3		148.340	20.811	2.700	-22.689	43.500	18.112	QP
4		437.885	25.531	3.200	-20.469	46.000	22.330	QP
5		596.000	27.918	2.300	-18.082	46.000	25.618	QP
6	*	776.415	30.899	2.540	-15.101	46.000	28.359	QP
7		906.880	49.445	19.436	N/A	N/A	30.009	PK

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

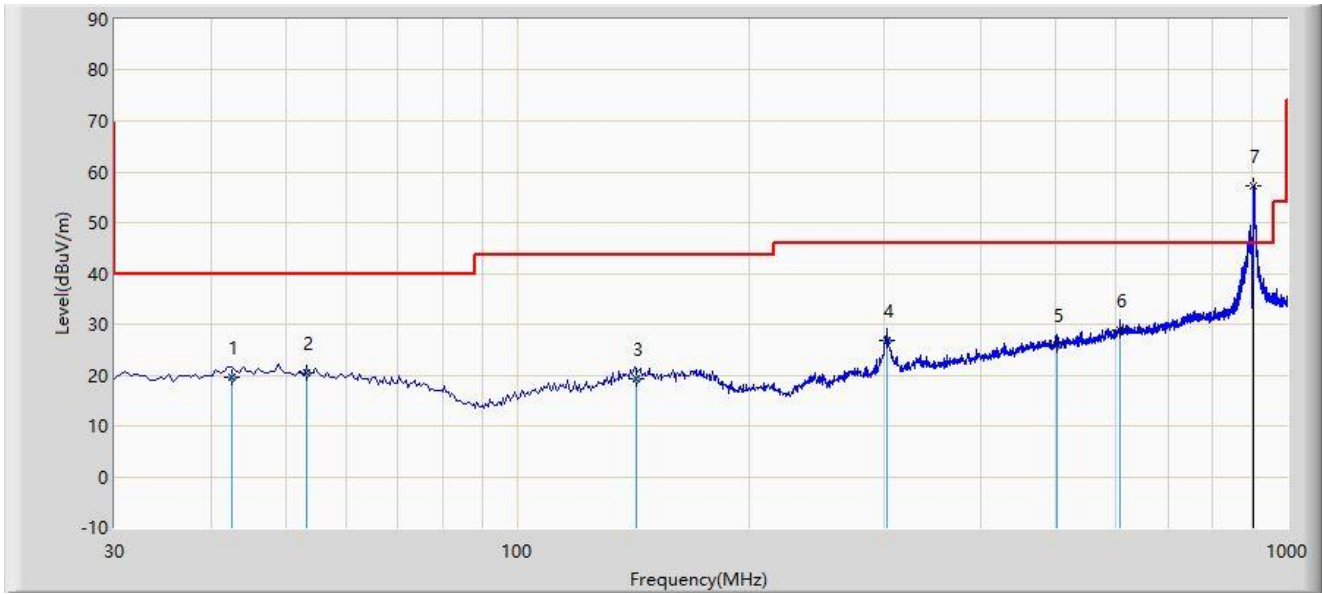
Note 2: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB/m).

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

Note 4: The point (7) is fundamental frequency that is not evaluated in this standard.

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-AC1	Test Date: 2024-05-22
Limit: FCC_Part15.209_RSE(3m)	Engineer: Ajin Fan
Probe: VULB 9168_25-2000MHz	Polarity: Horizontal
EUT: Mini Dual RF UHF Module SiLabs	Power: DC 12V
Test Mode: Transmit by Module B at 903MHz and Receive by Module A at 903MHz	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1		42.610	19.522	1.200	-20.478	40.000	18.321	QP
2		53.280	20.498	1.900	-19.502	40.000	18.598	QP
3		142.520	19.240	1.280	-24.260	43.500	17.960	QP
4		301.600	26.870	8.210	-19.130	46.000	18.659	QP
5		503.360	25.856	2.400	-20.144	46.000	23.455	QP
6	*	607.635	28.807	2.700	-17.193	46.000	26.107	QP
7		905.910	57.267	27.279	N/A	N/A	29.988	PK

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

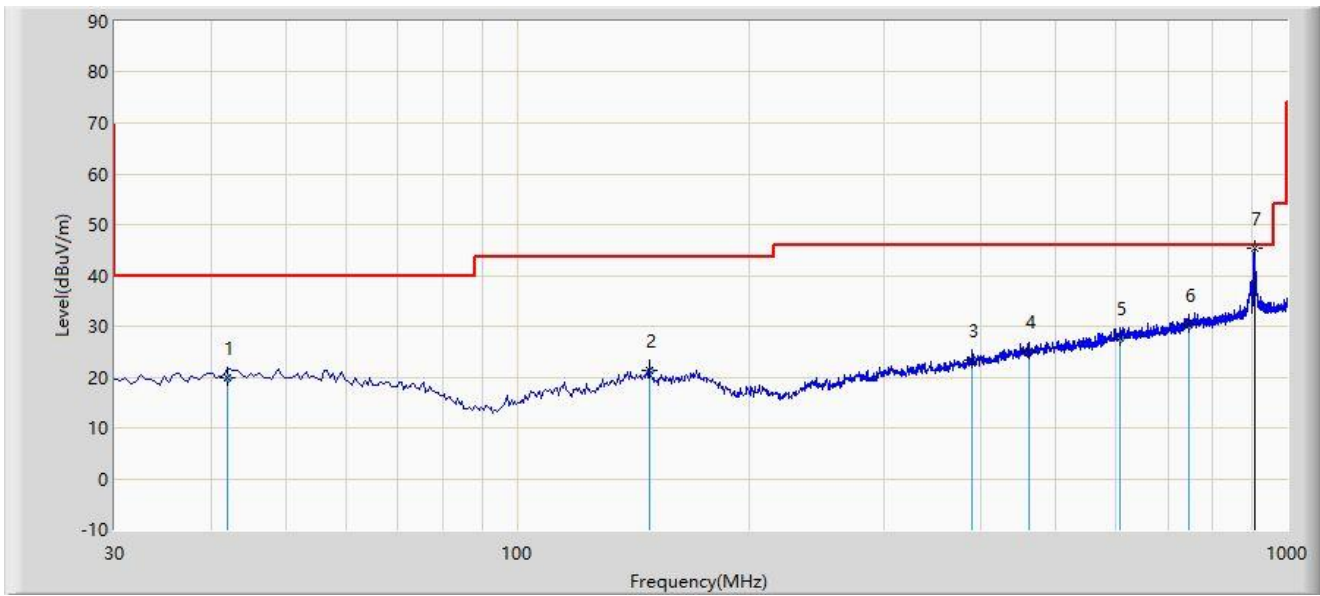
Note 2: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB/m).

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

Note 4: The point (7) is fundamental frequency that is not evaluated in this standard.

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-AC1	Test Date: 2024-05-22
Limit: FCC_Part15.209_RSE(3m)	Engineer: Ajin Fan
Probe: VULB 9168_25-2000MHz	Polarity: Vertical
EUT: Mini Dual RF UHF Module SiLabs	Power: DC 12V
Test Mode: Transmit by Module B at 903MHz and Receive by Module A at 903MHz	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1		42.125	19.907	1.630	-20.093	40.000	18.277	QP
2		148.340	21.411	3.300	-22.089	43.500	18.112	QP
3		390.355	23.284	2.400	-22.716	46.000	20.884	QP
4		461.650	24.992	2.200	-21.008	46.000	22.793	QP
5		607.635	27.607	1.500	-18.393	46.000	26.107	QP
6	*	746.345	30.177	1.900	-15.823	46.000	28.277	QP
7		906.395	45.415	15.421	N/A	N/A	29.994	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).

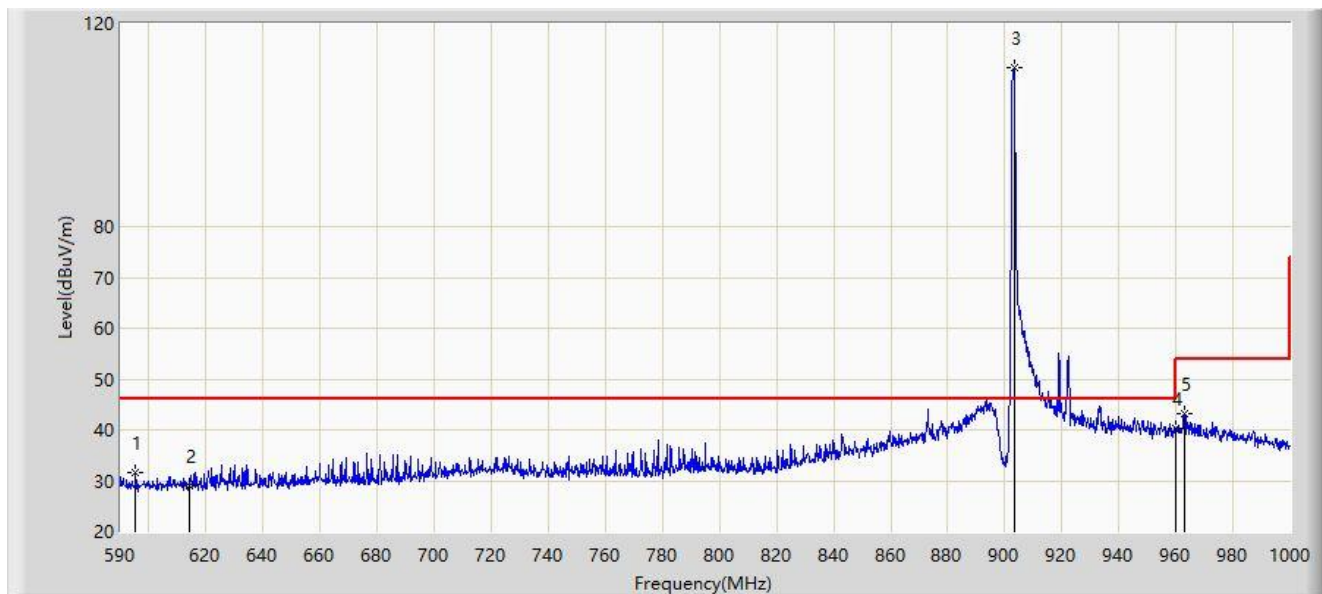
Note 4: The point (7) is fundamental frequency that is not evaluated in this standard.

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.

A.7 Radiated Restricted Band Edge Test Result

Antenna EA2-0287-N01SP-050

Site: WZ-AC1	Test Date: 2024-05-14
Limit: FCC_Part15.209_RSE(3m)	Engineer: Ajin Fan
Probe: VULB9162_30-7000MHz	Polarity: Horizontal
EUT: Mini Dual RF UHF Module SiLabs	Power: DC 12V
Test Mode: Transmit by Module A at 903MHz and Receive by Module B at 903MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		595.330	31.462	4.290	-14.538	46.000	27.172	PK
2		614.000	29.039	1.669	-16.961	46.000	27.371	PK
3		903.240	111.209	79.817	N/A	N/A	31.392	PK
4	*	960.000	40.352	9.025	-5.648	46.000	31.327	PK
5		962.895	43.184	11.815	-10.816	54.000	31.369	PK

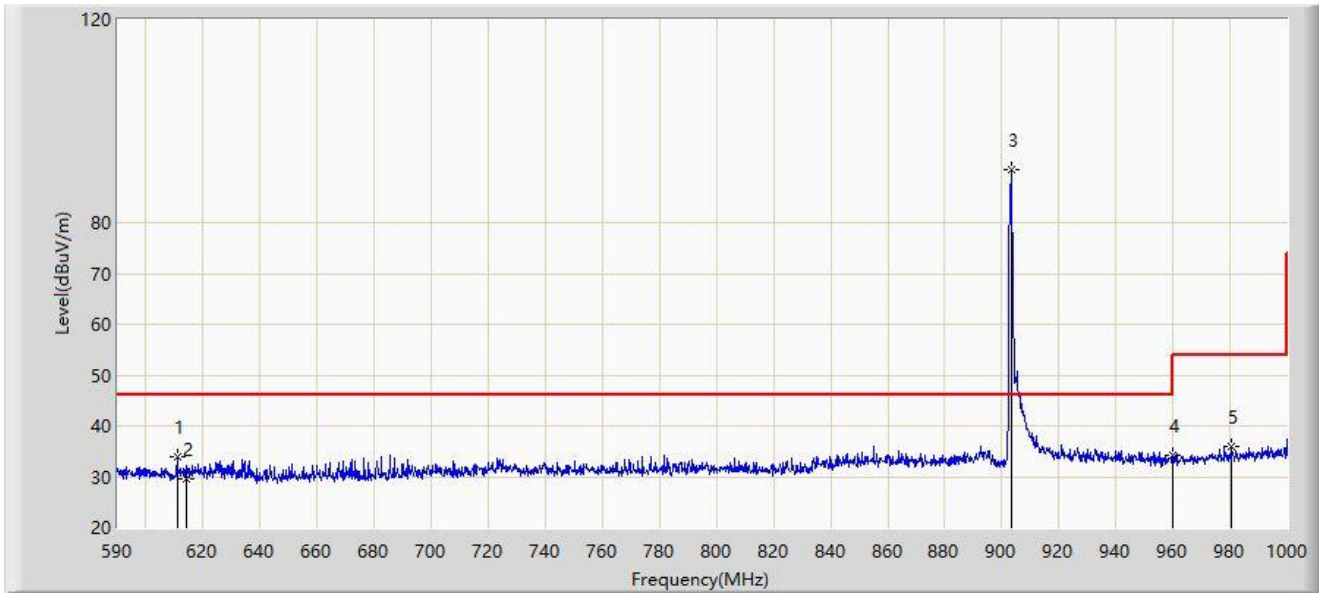
Note 1: " * ", means this data is the worst emission level.

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: The point (3) is fundamental frequency that is not evaluated in this standard.

Site: WZ-AC1	Test Date: 2024-05-14
Limit: FCC_Part15.209_RSE(3m)	Engineer: Ajin Fan
Probe: VULB9162_30-7000MHz	Polarity: Vertical
EUT: Mini Dual RF UHF Module SiLabs	Power: DC 12V
Test Mode: Transmit by Module A at 903MHz and Receive by Module B at 903MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		610.910	34.037	6.626	-11.963	46.000	27.411	PK
2		614.000	29.595	2.225	-16.405	46.000	27.371	PK
3		903.445	90.350	58.957	N/A	N/A	31.393	PK
4	*	960.000	34.093	2.766	-11.907	46.000	31.327	PK
5		980.730	35.903	3.900	-18.097	54.000	32.003	PK

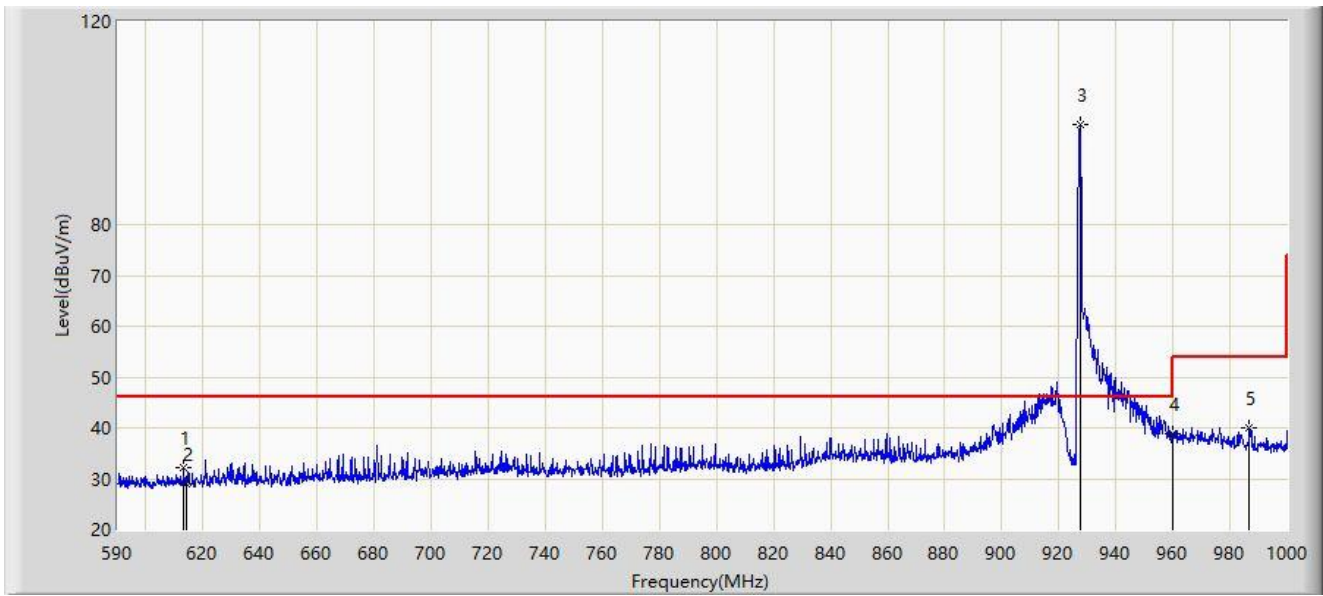
Note 1: " * ", means this data is the worst emission level.

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: The point (3) is fundamental frequency that is not evaluated in this standard.

Site: WZ-AC1	Test Date: 2024-05-14
Limit: FCC_Part15.209_RSE(3m)	Engineer: Ajin Fan
Probe: VULB9162_30-7000MHz	Polarity: Horizontal
EUT: Mini Dual RF UHF Module SiLabs	Power: DC 12V
Test Mode: Transmit by Module A at 927MHz and Receive by Module B at 927MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		613.370	32.059	4.679	-13.941	46.000	27.380	PK
2		614.000	29.097	1.727	-16.903	46.000	27.371	PK
3		927.430	99.728	68.255	N/A	N/A	31.473	PK
4	*	960.000	38.762	7.435	-7.238	46.000	31.327	PK
5		986.880	39.873	7.743	-14.127	54.000	32.130	PK

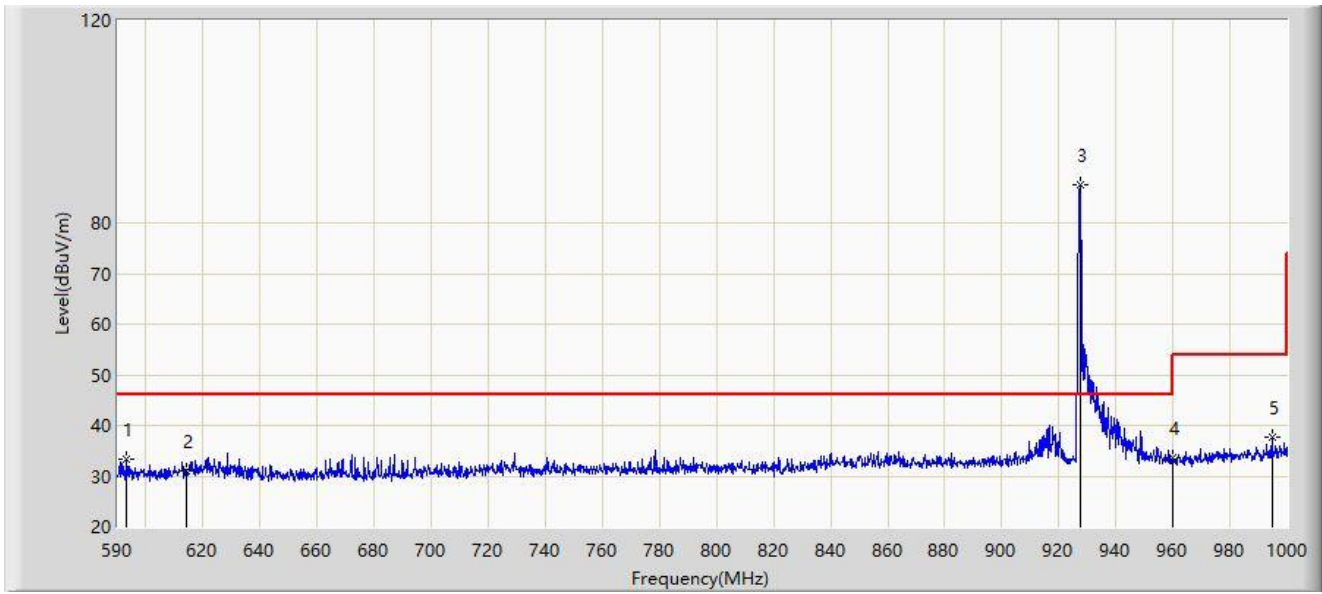
Note 1: " * ", means this data is the worst emission level.

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: The point (3) is fundamental frequency that is not evaluated in this standard.

Site: WZ-AC1	Test Date: 2024-05-14
Limit: FCC_Part15.209_RSE(3m)	Engineer: Ajin Fan
Probe: VULB9162_30-7000MHz	Polarity: Vertical
EUT: Mini Dual RF UHF Module SiLabs	Power: DC 12V
Test Mode: Transmit by Module A at 927MHz and Receive by Module B at 927MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		593.280	33.217	6.055	-12.783	46.000	27.162	PK
2		614.000	30.889	3.519	-15.111	46.000	27.371	PK
3		927.430	87.563	56.090	N/A	N/A	31.473	PK
4	*	960.000	33.665	2.338	-12.335	46.000	31.327	PK
5		994.670	37.765	5.584	-16.235	54.000	32.181	PK

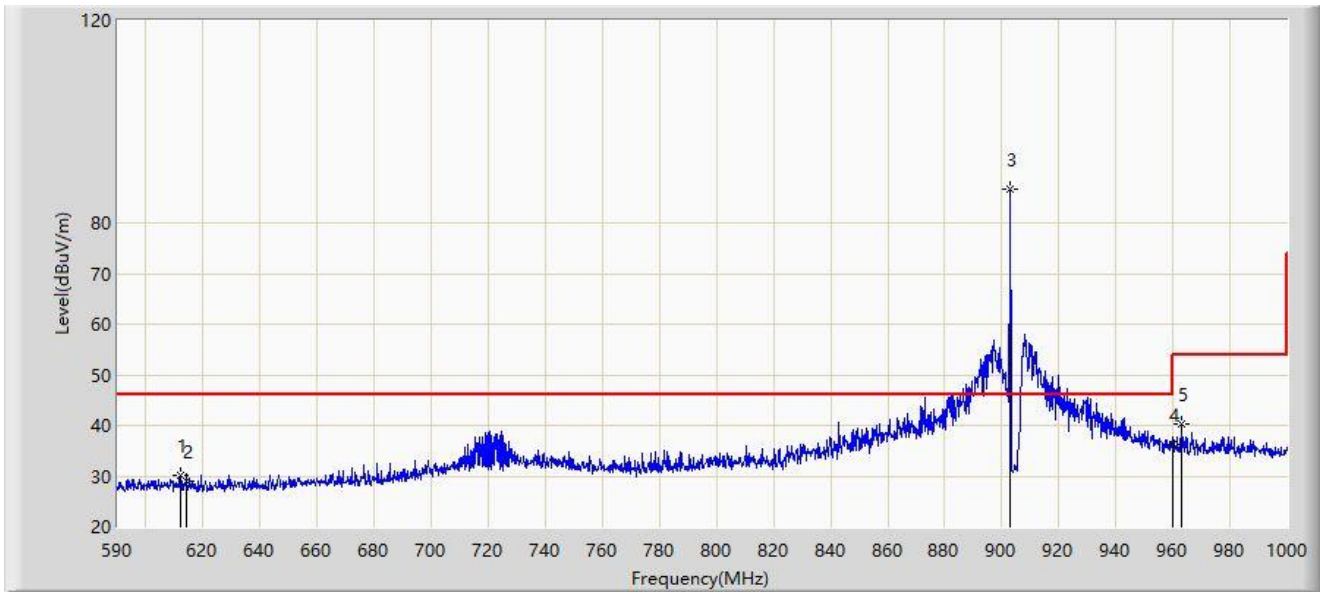
Note 1: " * ", means this data is the worst emission level.

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: The point (3) is fundamental frequency that is not evaluated in this standard.

Site: WZ-AC1	Test Date: 2024-05-20
Limit: FCC_Part15.209_RSE(3m)	Engineer: Ajin Fan
Probe: VULB9162_30-7000MHz	Polarity: Horizontal
EUT: Mini Dual RF UHF Module SiLabs	Power: DC 12V
Test Mode: Transmit by Module B at 903MHz and Receive by Module A at 903MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		611.935	30.277	2.876	-15.723	46.000	27.401	PK
2		614.000	28.925	1.555	-17.075	46.000	27.371	PK
3		903.035	86.736	55.345	N/A	N/A	31.390	PK
4	*	960.000	36.338	5.011	-9.662	46.000	31.327	PK
5		962.895	40.402	9.033	-13.598	54.000	31.369	PK

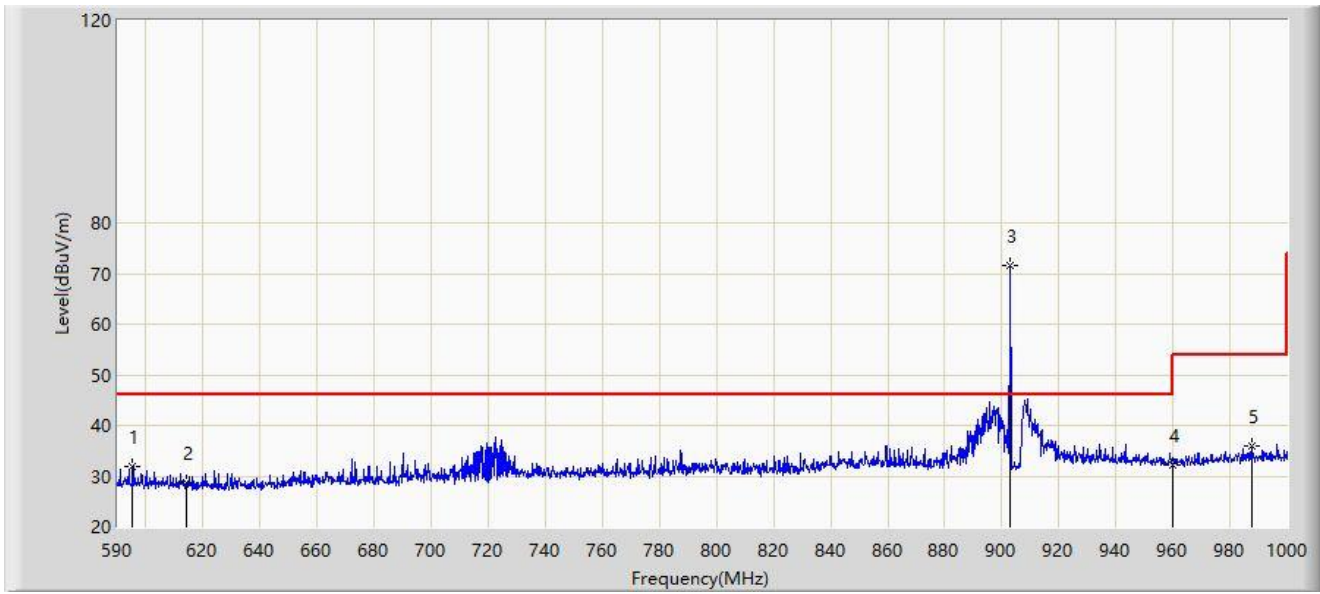
Note 1: " * ", means this data is the worst emission level.

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: The point (3) is fundamental frequency that is not evaluated in this standard.

Site: WZ-AC1	Test Date: 2024-05-20
Limit: FCC_Part15.209_RSE(3m)	Engineer: Ajin Fan
Probe: VULB9162_30-7000MHz	Polarity: Vertical
EUT: Mini Dual RF UHF Module SiLabs	Power: DC 12V
Test Mode: Transmit by Module B at 903MHz and Receive by Module A at 903MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		595.330	31.974	4.802	-14.026	46.000	27.172	PK
2		614.000	28.756	1.386	-17.244	46.000	27.371	PK
3		903.035	71.640	40.249	N/A	N/A	31.390	PK
4	*	960.000	32.240	0.913	-13.760	46.000	31.327	PK
5		987.495	35.994	3.860	-18.006	54.000	32.134	PK

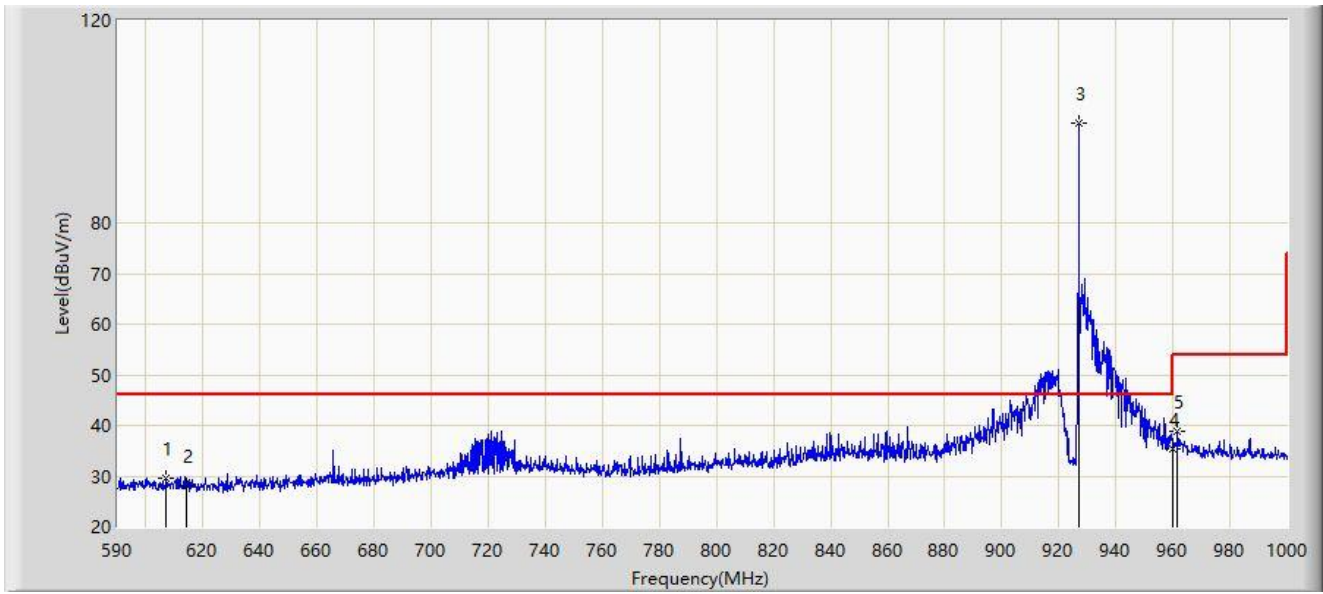
Note 1: " * ", means this data is the worst emission level.

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: The point (3) is fundamental frequency that is not evaluated in this standard.

Site: WZ-AC1	Test Date: 2024-05-20
Limit: FCC_Part15.209_RSE(3m)	Engineer: Ajin Fan
Probe: VULB9162_30-7000MHz	Polarity: Horizontal
EUT: Mini Dual RF UHF Module SiLabs	Power: DC 12V
Test Mode: Transmit by Module B at 927MHz and Receive by Module A at 927MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		607.015	29.638	2.223	-16.362	46.000	27.415	PK
2		614.000	27.997	0.627	-18.003	46.000	27.371	PK
3		927.020	99.672	68.192	N/A	N/A	31.481	PK
4	*	960.000	35.453	4.126	-10.547	46.000	31.327	PK
5		961.665	38.984	7.634	-15.016	54.000	31.349	PK

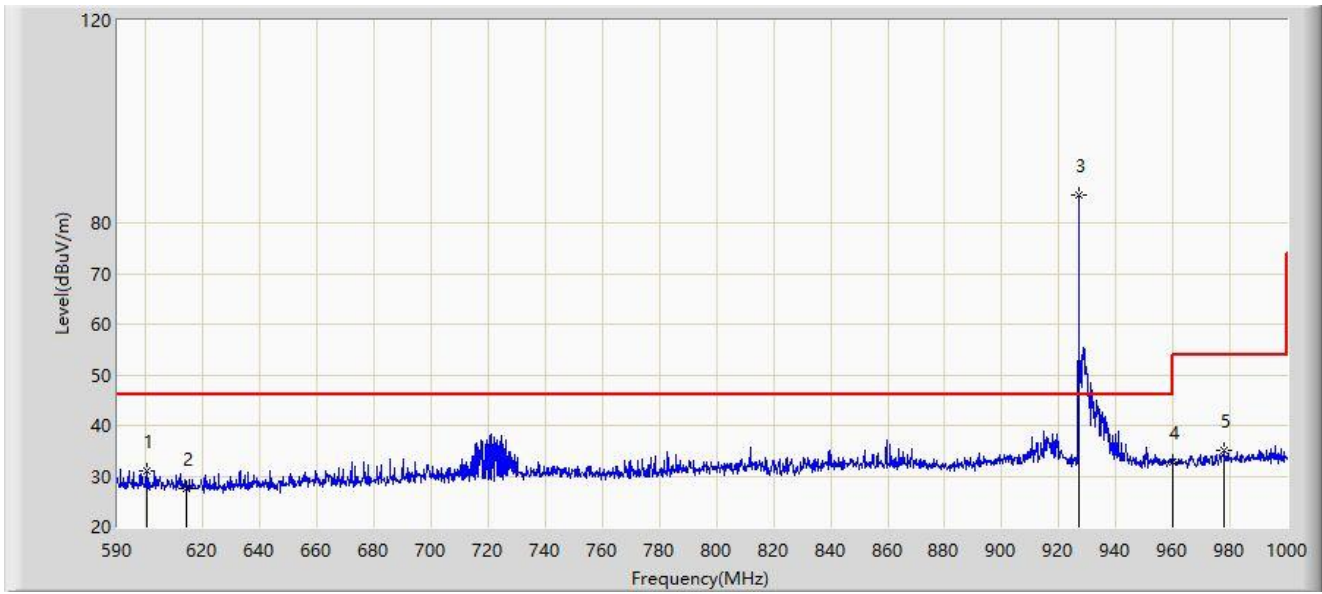
Note 1: " * ", means this data is the worst emission level.

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: The point (3) is fundamental frequency that is not evaluated in this standard.

Site: WZ-AC1	Test Date: 2024-05-20
Limit: FCC_Part15.209_RSE(3m)	Engineer: Ajin Fan
Probe: VULB9162_30-7000MHz	Polarity: Vertical
EUT: Mini Dual RF UHF Module SiLabs	Power: DC 12V
Test Mode: Transmit by Module B at 927MHz and Receive by Module A at 927MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		600.045	31.143	3.901	-14.857	46.000	27.242	PK
2		614.000	27.586	0.216	-18.414	46.000	27.371	PK
3		927.020	85.588	54.108	N/A	N/A	31.481	PK
4	*	960.000	32.665	1.338	-13.335	46.000	31.327	PK
5		977.860	35.158	3.247	-18.842	54.000	31.911	PK

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

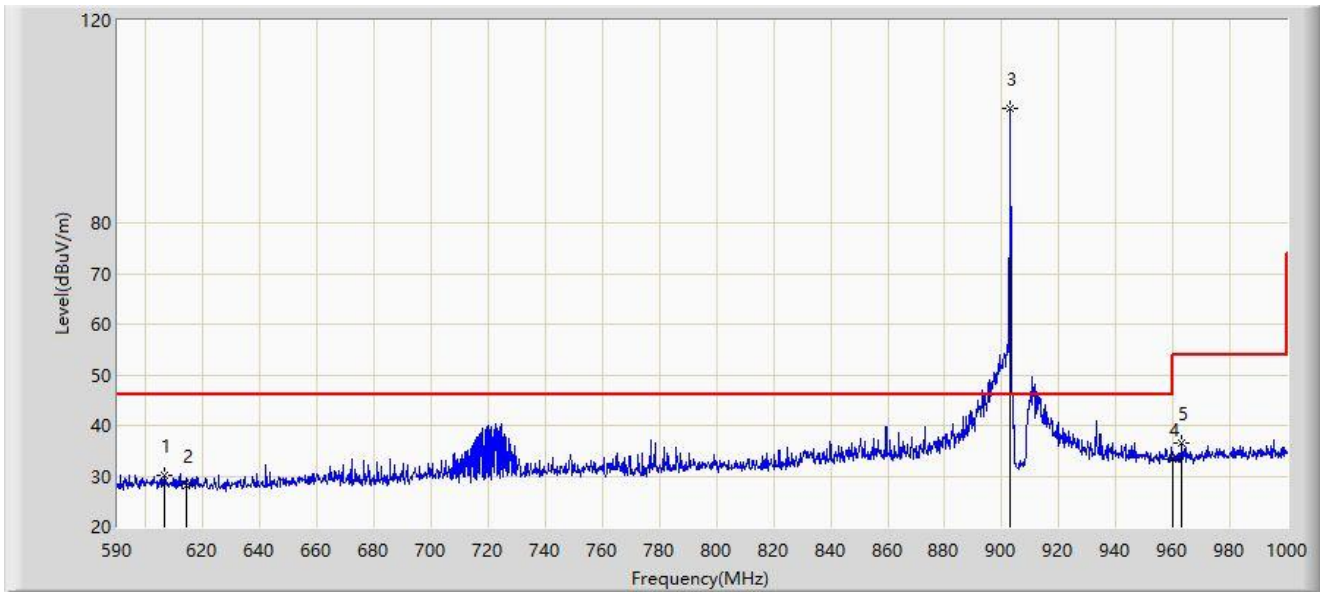
Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

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

Note 4: The point (3) is fundamental frequency that is not evaluated in this standard.

Antenna MISC1626

Site: WZ-AC1	Test Date: 2024-05-20
Limit: FCC_Part15.209_RSE(3m)	Engineer: Ajin Fan
Probe: VULB9162_30-7000MHz	Polarity: Horizontal
EUT: Mini Dual RF UHF Module SiLabs	Power: DC 12V
Test Mode: Transmit by Module A at 903MHz and Receive by Module B at 903MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		606.605	30.196	2.791	-15.804	46.000	27.405	PK
2		614.000	28.183	0.813	-17.817	46.000	27.371	PK
3		903.035	102.477	71.086	N/A	N/A	31.390	PK
4	*	960.000	33.382	2.055	-12.618	46.000	31.327	PK
5		962.895	36.585	5.216	-17.415	54.000	31.369	PK

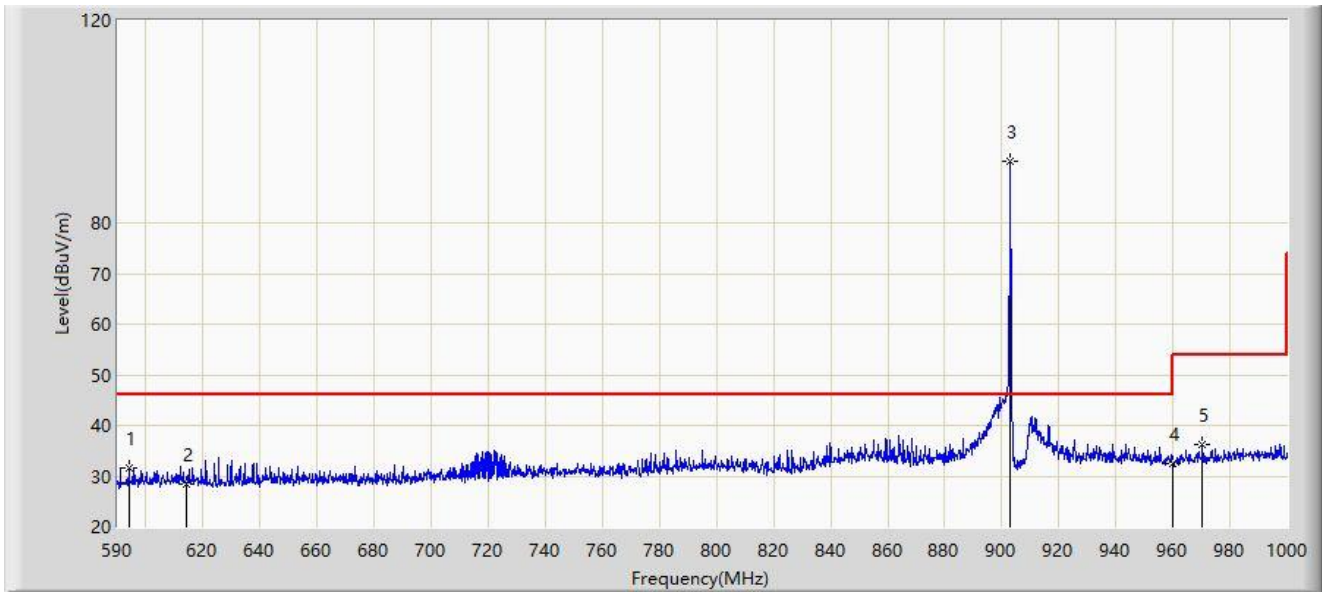
Note 1: " * ", means this data is the worst emission level.

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: The point (3) is fundamental frequency that is not evaluated in this standard.

Site: WZ-AC1	Test Date: 2024-05-20
Limit: FCC_Part15.209_RSE(3m)	Engineer: Ajin Fan
Probe: VULB9162_30-7000MHz	Polarity: Vertical
EUT: Mini Dual RF UHF Module SiLabs	Power: DC 12V
Test Mode: Transmit by Module A at 903MHz and Receive by Module B at 903MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		594.100	31.712	4.547	-14.288	46.000	27.165	PK
2		614.000	28.315	0.945	-17.685	46.000	27.371	PK
3		903.035	92.119	60.728	N/A	N/A	31.390	PK
4	*	960.000	32.364	1.037	-13.636	46.000	31.327	PK
5		970.275	36.230	4.630	-17.770	54.000	31.599	PK

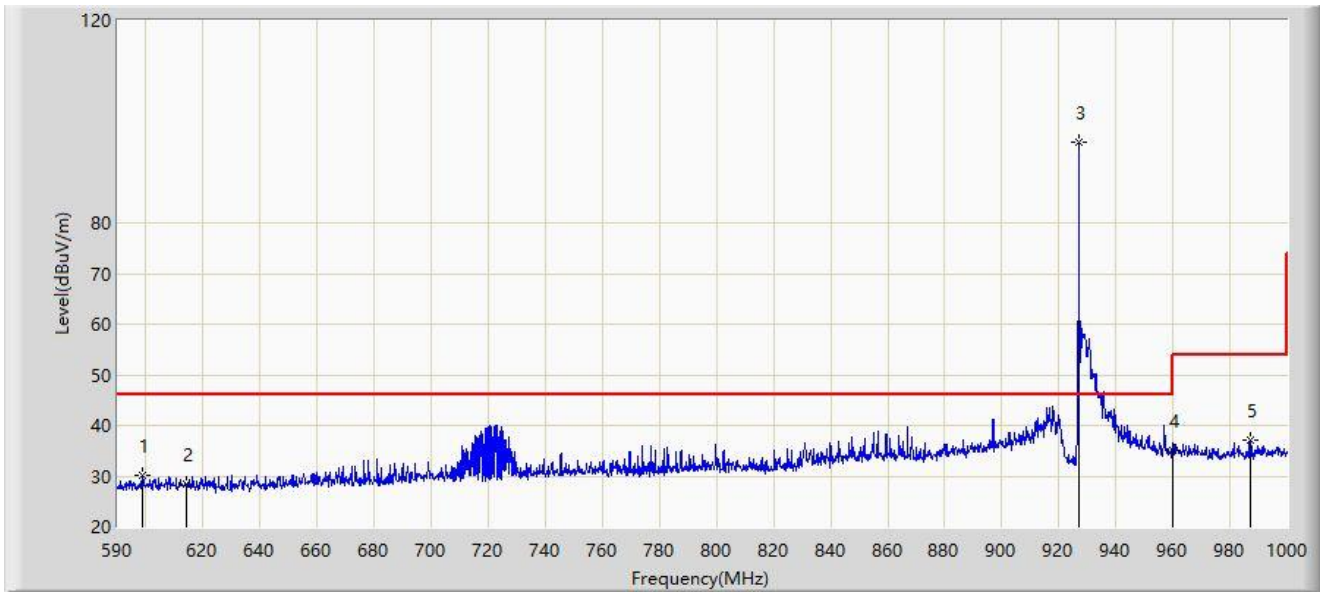
Note 1: " * ", means this data is the worst emission level.

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: The point (3) is fundamental frequency that is not evaluated in this standard.

Site: WZ-AC1	Test Date: 2024-05-20
Limit: FCC_Part15.209_RSE(3m)	Engineer: Ajin Fan
Probe: VULB9162_30-7000MHz	Polarity: Horizontal
EUT: Mini Dual RF UHF Module SiLabs	Power: DC 12V
Test Mode: Transmit by Module A at 927MHz and Receive by Module B at 927MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		598.815	30.169	2.947	-15.831	46.000	27.222	PK
2		614.000	28.279	0.909	-17.721	46.000	27.371	PK
3		927.020	95.806	64.326	N/A	N/A	31.481	PK
4	*	960.000	35.147	3.820	-10.853	46.000	31.327	PK
5		987.085	37.105	4.973	-16.895	54.000	32.131	PK

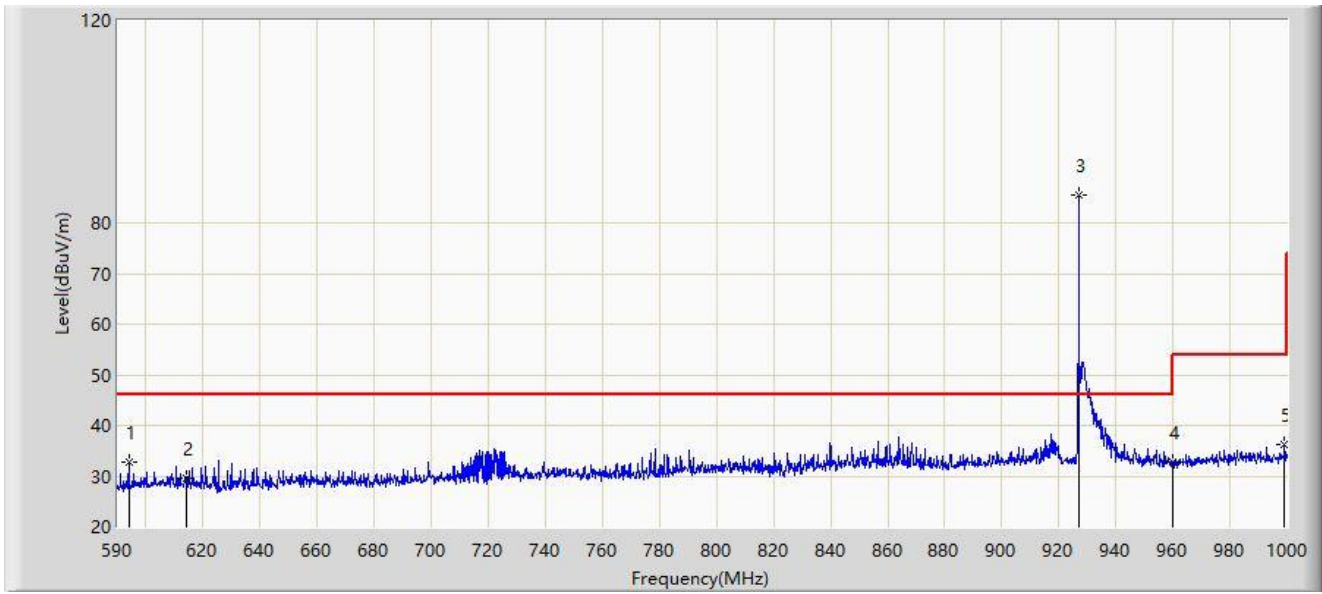
Note 1: " * ", means this data is the worst emission level.

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: The point (3) is fundamental frequency that is not evaluated in this standard.

Site: WZ-AC1	Test Date: 2024-05-20
Limit: FCC_Part15.209_RSE(3m)	Engineer: Ajin Fan
Probe: VULB9162_30-7000MHz	Polarity: Vertical
EUT: Mini Dual RF UHF Module SiLabs	Power: DC 12V
Test Mode: Transmit by Module A at 927MHz and Receive by Module B at 927MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		593.895	32.706	5.542	-13.294	46.000	27.164	PK
2		614.000	29.686	2.316	-16.314	46.000	27.371	PK
3		927.020	85.505	54.025	N/A	N/A	31.481	PK
4	*	960.000	32.794	1.467	-13.206	46.000	31.327	PK
5		998.975	36.201	3.988	-17.799	54.000	32.213	PK

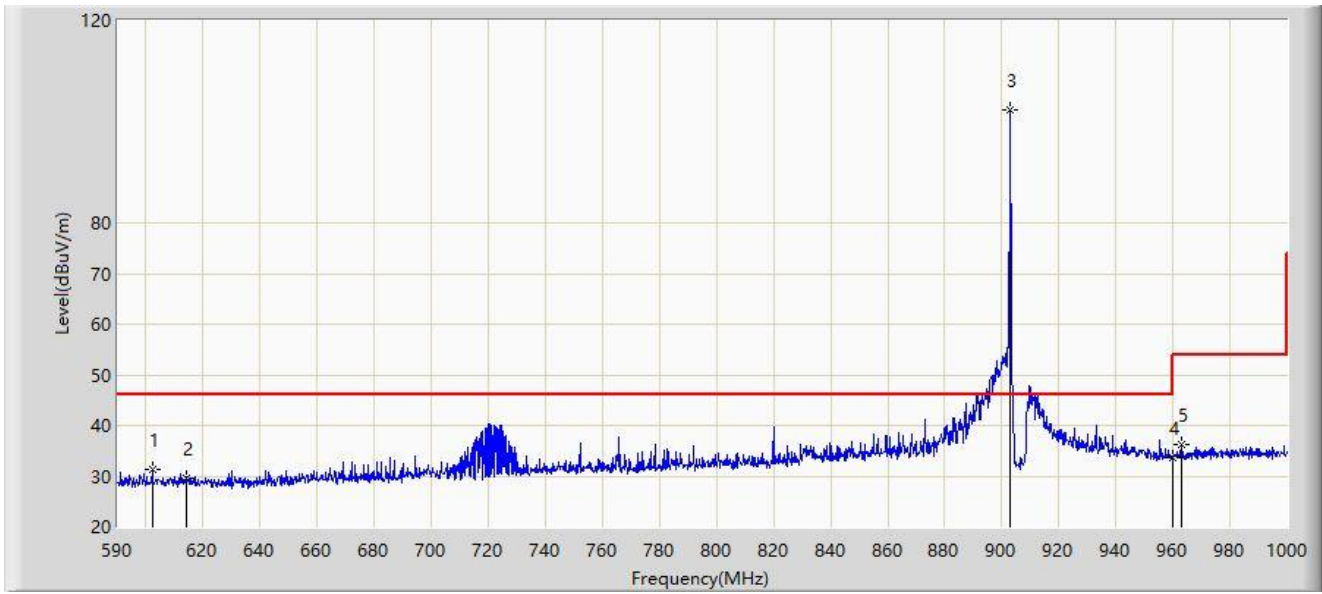
Note 1: " * ", means this data is the worst emission level.

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: The point (3) is fundamental frequency that is not evaluated in this standard.

Site: WZ-AC1	Test Date: 2024-05-20
Limit: FCC_Part15.209_RSE(3m)	Engineer: Ajin Fan
Probe: VULB9162_30-7000MHz	Polarity: Horizontal
EUT: Mini Dual RF UHF Module SiLabs	Power: DC 12V
Test Mode: Transmit by Module B at 903MHz and Receive by Module A at 903MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		602.300	31.372	4.089	-14.628	46.000	27.283	PK
2		614.000	29.661	2.291	-16.339	46.000	27.371	PK
3		903.035	102.309	70.918	N/A	N/A	31.390	PK
4	*	960.000	33.726	2.399	-12.274	46.000	31.327	PK
5		962.895	36.138	4.769	-17.862	54.000	31.369	PK

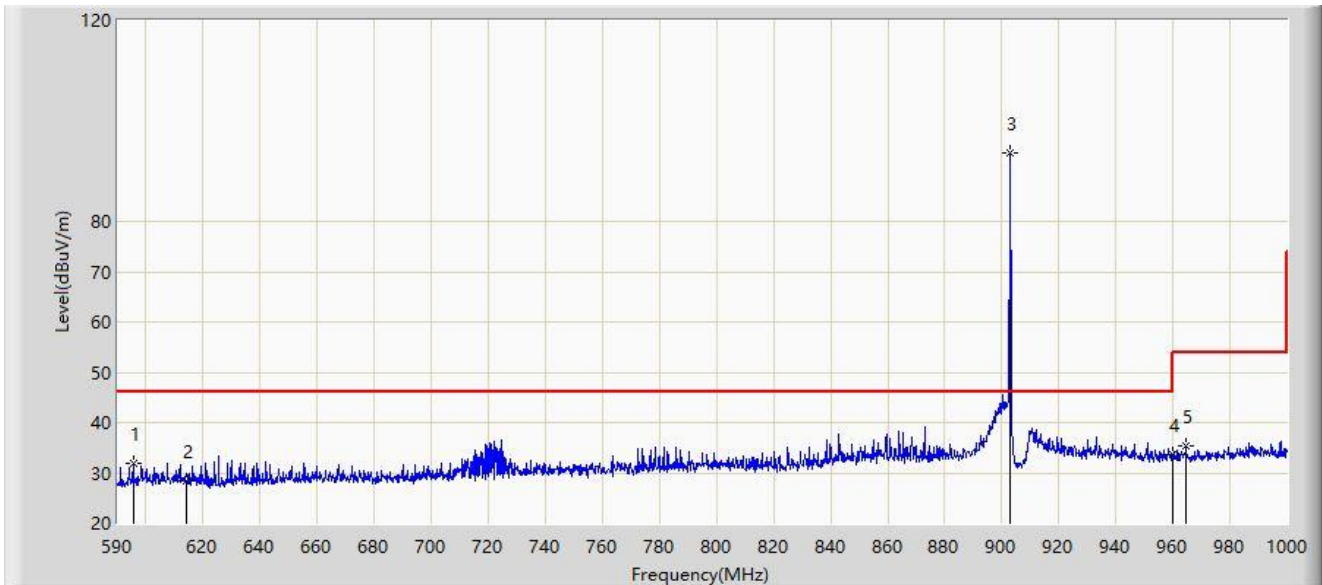
Note 1: " * ", means this data is the worst emission level.

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: The point (3) is fundamental frequency that is not evaluated in this standard.

Site: WZ-AC1	Test Date: 2024-05-20
Limit: FCC_Part15.209_RSE(3m)	Engineer: Ajin Fan
Probe: VULB9162_30-7000MHz	Polarity: Vertical
EUT: Mini Dual RF UHF Module SiLabs	Power: DC 12V
Test Mode: Transmit by Module B at 903MHz and Receive by Module A at 903MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		595.535	31.986	4.813	-14.014	46.000	27.173	PK
2		614.000	28.483	1.113	-17.517	46.000	27.371	PK
3		903.035	93.650	62.259	N/A	N/A	31.390	PK
4	*	960.000	33.578	2.251	-12.422	46.000	31.327	PK
5		964.535	35.393	3.989	-18.607	54.000	31.405	PK

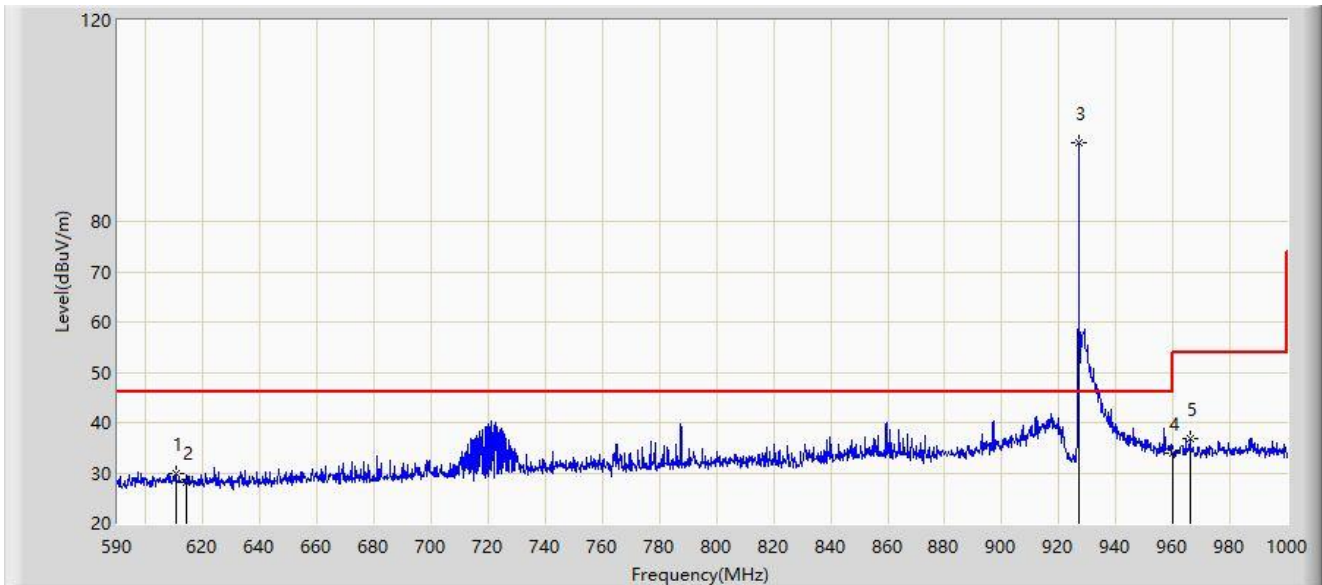
Note 1: " * ", means this data is the worst emission level.

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: The point (3) is fundamental frequency that is not evaluated in this standard.

Site: WZ-AC1	Test Date: 2024-05-20
Limit: FCC_Part15.209_RSE(3m)	Engineer: Ajin Fan
Probe: VULB9162_30-7000MHz	Polarity: Horizontal
EUT: Mini Dual RF UHF Module SiLabs	Power: DC 12V
Test Mode: Transmit by Module B at 927MHz and Receive by Module A at 927MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		610.500	29.962	2.547	-16.038	46.000	27.415	PK
2		614.000	28.029	0.659	-17.971	46.000	27.371	PK
3		927.020	95.646	64.166	N/A	N/A	31.481	PK
4	*	960.000	33.846	2.519	-12.154	46.000	31.327	PK
5		965.970	36.749	5.304	-17.251	54.000	31.445	PK

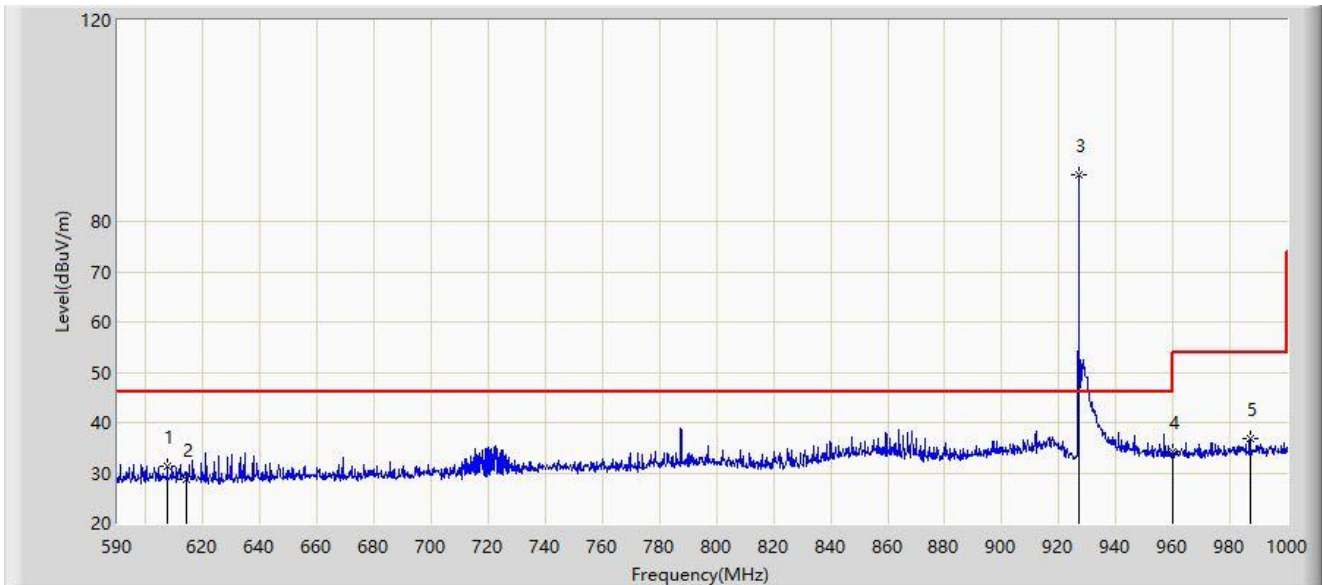
Note 1: " * ", means this data is the worst emission level.

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: The point (3) is fundamental frequency that is not evaluated in this standard.

Site: WZ-AC1	Test Date: 2024-05-20
Limit: FCC_Part15.209_RSE(3m)	Engineer: Ajin Fan
Probe: VULB9162_30-7000MHz	Polarity: Vertical
EUT: Mini Dual RF UHF Module SiLabs	Power: DC 12V
Test Mode: Transmit by Module B at 927MHz and Receive by Module A at 927MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		607.425	31.439	4.015	-14.561	46.000	27.424	PK
2		614.000	28.616	1.246	-17.384	46.000	27.371	PK
3		927.020	89.196	57.716	N/A	N/A	31.481	PK
4	*	960.000	34.200	2.873	-11.800	46.000	31.327	PK
5		987.085	36.695	4.563	-17.305	54.000	32.131	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: The point (3) is fundamental frequency that is not evaluated in this standard.

Appendix B - Test Setup Photograph

Refer to “2401RSU009-UT” file.

Appendix C - EUT Photograph

Refer to “2401RSU009-UE” file.

_____ The End _____