

FCC PART 15.225 TEST REPORT

For

BIONOTE, Inc.

22, Samsung 1-ro 4-gil, Hwaseong-si,
Gyeonggi-do, 18449, Republic of Korea

Tested Model: Vcheck H6
FCC ID: 2BQN5VC7806EA

Report Type: Original Report	Product Name: Automatic Hematology Analyzer
Report Number:	RSC250717001-0C
Date of Report Issue:	2025-08-22
Reviewed By:	Sula Huang 
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Chengdu) No.5040, Huilongwan Plaza, No. 1, Shawan Road, Jinniu District, Chengdu, Sichuan, China Tel: +86-28-65525123 Fax: +86-28-65525125 www.baclcorp.com

Note: BACL is not responsible for the authenticity of any test data or information provided by the applicant. Test data or information included from the applicant that may affect test results are marked with an asterisk "*". Do not include customer model name, addresses, names and trademarks.

This report cannot be reproduced except in full, without prior written approval of the company.

This report may contain data that are not covered by the NVLAP accreditation scope and shall be marked with an asterisk " ◇ "

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

TABLE OF CONTENTS

GENERAL INFORMATION	3
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	3
OBJECTIVE	3
MEASUREMENT UNCERTAINTY	4
TEST METHODOLOGY	4
TEST FACILITY	4
SYSTEM TEST CONFIGURATION	5
DESCRIPTION OF TEST CONFIGURATION	5
EQUIPMENT MODIFICATIONS	5
EUT EXERCISE SOFTWARE.....	5
SUPPORT TEST DEVICES DESCRIPTION.....	5
SUPPORT TEST CABLE DESCRIPTION	5
BLOCK DIAGRAM OF TEST SETUP	6
SUMMARY OF TEST RESULTS.....	7
TEST EQUIPMENTS LIST.....	8
RF EXPOSURE EVALUATION.....	10
APPLICABLE STANDARD.....	10
FCC §15.203 - ANTENNA REQUIREMENT	11
APPLICABLE STANDARD.....	11
ANTENNA INFORMATION*	11
FCC §15.207 – AC POWER LINE CONDUCTED EMISSIONS	12
APPLICABLE STANDARD.....	12
EUT SETUP.....	12
EMI TEST RECEIVER SETUP	12
TEST PROCEDURE	13
CORRECTED AMPLITUDE & MARGIN CALCULATION.....	13
TEST DATA	13
FCC §15.225, §15.205, §15.209 - RADIATED SPURIOUS EMISSIONS	16
APPLICABLE STANDARD.....	16
EUT SETUP.....	16
EMI TEST RECEIVER & SIGNAL ANALYZER SETUP.....	17
TEST PROCEDURE	17
CORRECTED AMPLITUDE & MARGIN CALCULATION.....	18
TEST DATA	18
FCC §15.225(e) - FREQUENCY STABILITY	27
APPLICABLE STANDARD.....	27
TEST SETUP BLOCK.....	27
TEST PROCEDURE	27
TEST DATA	29
FCC §15.215(c) – 20dB EMISSION BANDWIDTH	30
APPLICABLE STANDARD.....	30
EUT SETUP.....	30
TEST PROCEDURE	30
TEST DATA	32
LABELING AND LOCATION	33
TEST SETUP PHOTOGRAPHS	34
EUT PHOTOGRAPHS.....	35

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant	BIONOTE, Inc.
Address	22, Samsung 1-ro 4-gil, Hwaseong-si, Gyeonggi-do, 18449, Republic of Korea
Email	jhyejin0128@bionote.co.kr
Product	Automatic Hematology Analyzer
Tested Model	Vcheck H6
FCC ID	2BQN5VC7806EA
Radio Mode	NFC
Frequency*	13.56 MHz
Modulation Type*	ASK
Voltage*	AC 100-240V, 50/60Hz
Measure approximately	474 mm (L) x 320 mm (W) x 471 mm (H)
Sample serial number	250717001/01 (RF Radiated Test) (assigned by the BACL, Chengdu)
Sample/EUT Status	The test sample was in good condition and received: 2025-07-17

Note: Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Objective

This report is prepared on behalf of **BIONOTE, Inc.** in accordance according to the measurement procedure described in ANSI C63.10-2020.

The tests were performed in order to determine the compliance of the EUT with FCC Part 15, Subpart C, § 15.203, 15.205, 15.207, 15.209, 15.215 and 15.225 rules.

Measurement Uncertainty

Item			Uncertainty	U_{cispr}
AC Power line conducted emission			2.65 dB	3.4 dB
Radiated Emission	30 MHz-1 GHz	H	6.08 dB	6.3 dB
		V	7.81 dB	6.3 dB

Item	Measurement Uncertainty
RF Frequency	$\pm 0.86 \times 10^{-7}$
Humidity	$\pm 5\%$
Temperature	$\pm 1^{\circ}\text{C}$
Voltage(AC,<10kHz)	$\pm 1\%$
Time	1%

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the corresponding inclusion factor K when the inclusion probability is about 95%.

Test Methodology

All measurements contained in this report were conducted with:

ANSI C63.10-2020 American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Chengdu) to collect test data is located No.5040, Huilongwan Plaza, No. 1, Shawan Road, Jinniu District, Chengdu, Sichuan, China.

Bay Area Compliance Laboratories Corp. (Chengdu) lab is accredited to ISO/IEC 17025 by NVLAP (Lab code: 600346-0) and the FCC designation No.: CN5056.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured in testing mode, which was provided by manufacturer.

Test Mode 1: TX with card (worst case)

Test Mode 2: TX without card

The two modes were pre-scan during test and only the worst case(TX with card) was recorded in report.

Equipment Modifications

No modification was made to the EUT tested.

EUT Exercise Software

No.

Support Test Devices Description

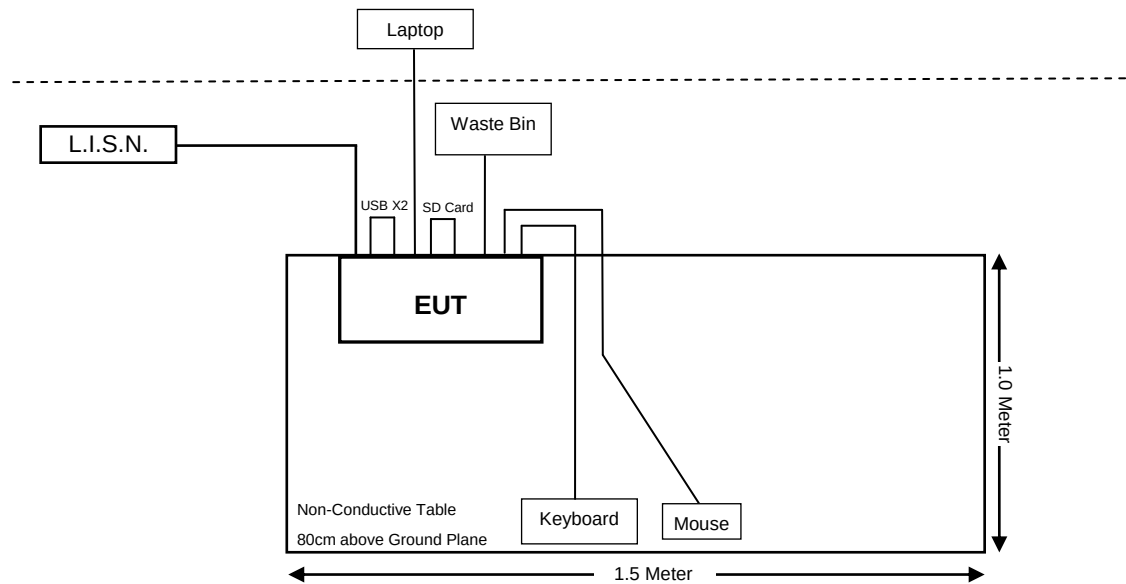
Manufacturer	Device Name	Model	Serial Number
Local			
Lenovo	Keyboard	SK-8821	022289469
Logic	Mouse	M100r	1941HS075418
Kinston	USB disk x 2	No	No
BIONOTE, Inc.	Waste Bin	No	No
BIONOTE, Inc.	Reagents Card·Diluent	No	0D31D00030660
Sandisk	SD Card	16GB	No
BIONOTE, Inc.	Card	No	No
Remote			
Lenovo	Laptop	L540	00330-50000-00000 -AAOEM

Support Test Cable Description

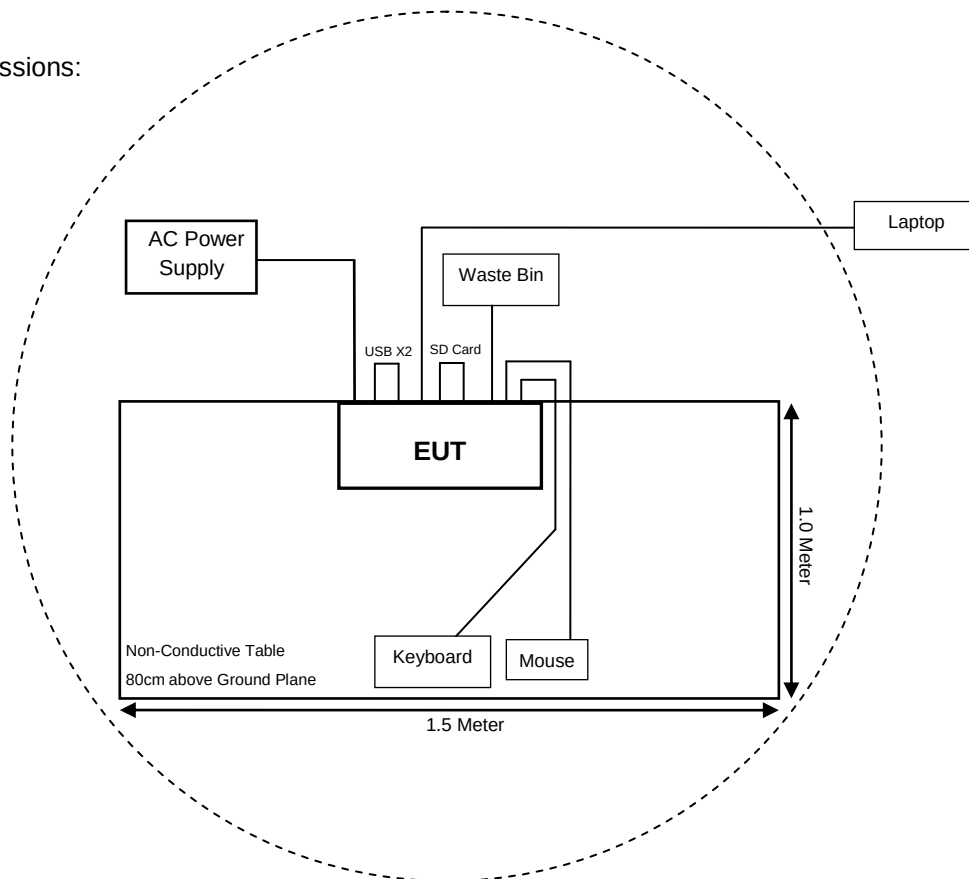
Cable Description	Length (m)	From / Port	To
Unshielded AC Power Cable	1.5	L.I.S.N. or AC Power Supply	EUT
Unshielded RJ45 Cable	10	EUT	Laptop
Shielded BNC Sensor Cable with Ferrite Core	1.5	EUT	Waste Bin
Keyboard Cable	1.5	Keyboard	EUT
Mouse Cable	1.5	Mouse	EUT

Block Diagram of Test Setup

Conducted Emissions:



Radiated Emissions:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1307(b)(3)(i)	RF Exposure Evaluation	Compliant
§15.203	Antenna Requirement	Compliant
§15.207	Conducted Emissions	Compliant
§15.225 §15.209 §15.205	Radiated Spurious Emissions	Compliant
§15.225(e)	Frequency Stability	Compliant
§15.215(c)	20 dB Bandwidth	Compliant

Note: Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

TEST EQUIPMENTS LIST

Manufacturer	Description	Model Number	Serial Number	Calibration Date	Calibration Due Date
Conducted Emissions					
Rohde & Schwarz	EMI Test Receiver	ESCI	100028	2025-03-27	2026-03-26
Rohde & Schwarz	L.I.S.N.	ENV216	101112	2025-03-27	2026-03-26
HP	RF Limiter	11947A	3107A01270	2024-08-03	2025-08-02
UTIFLEX	Conducted Cable	L-E-003	000003	2024-08-03	2025-08-02
Rohde & Schwarz	EMC32	EMC32	V 8.52.0	NCR	NCR
Radiated Emissions (9kHz-30MHz)& 20 dB Bandwidth					
EMCT	Semi-Anechoic Chamber	966	001	2023-04-15	2026-04-14
Rohde & Schwarz	EMI Test Receiver	ESR3	102456	2025-03-27	2026-03-26
BACL CORP	Active Loop Antenna	1313-1A	4031411	2025-06-09	2026-06-08
Xin Hang Xun Wei Bo	RF Cable (Below 1GHz)	XH500A-N/J- N/J-2Mbps-A	T-E271	2024-11-18	2025-11-17
Xin Hang Xun Wei Bo	RF Cable (Below 1GHz)	XH500A-N/J- N/J-7M-A	T-E268	2024-11-18	2025-11-17
Rohde & Schwarz	EMC32	EMC32	V9.10.00	NCR	NCR
Radiated Emissions (30MHz-1GHz)					
EMCT	Semi-Anechoic Chamber	966	001	2023-04-15	2026-04-14
INMET	Attenuator	18N-6dB	64671	2025-01-16	2026-01-15
Sunol Sciences	Broadband Antenna	JB3	A121808	2025-01-16	2026-01-15
Rohde & Schwarz	EMI Test Receiver	ESR3	102456	2025-03-27	2026-03-26
Huber+Suhener	RF Cable (Below 1GHz)	L-E-015	000005	2024-11-18	2025-11-17
Xin Hang Xun Wei Bo	RF Cable (Below 1GHz)	XH500A-N/J-N/J -2M-A	T-E271	2024-11-18	2025-11-17
Xin Hang Xun Wei Bo	RF Cable (Below 1GHz)	XH500A-N/J-N/J -7M-A	T-E268	2024-11-18	2025-11-17
Rohde & Schwarz	EMC32	EMC32	V9.10.00	NCR	NCR

Manufacturer	Description	Model Number	Serial Number	Calibration Date	Calibration Due Date
Frequency stability Test					
Rohde & Schwarz	Signal Analyzer	FSV40	101943	2025-03-26	2026-03-25
BACL CORP	Active Loop Antenna	1313-1A	4031411	2025-06-09	2026-06-08
Chongqing Yinhe	High Temperature Test Chamber	SDH051F	2002.8.5	2024-08-06	2025-08-05
Shenzhen HXL	AC Power Source	HXL-1105	HXL20231225 0388	2024-12-12	2025-12-11

Statement of Traceability: Bay Area Compliance Laboratories Corp. (Chengdu) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

RF EXPOSURE EVALUATION

Applicable Standard

According to KDB447498 D04 Interim General RF Exposure Guidance v01

1-mW Test Exemption

Calculated Data and Result:

For NFC, the max E Field@3m is 72.58dBuV/m

→ EIRP = -22.62dBm, ERP = -24.77dBm(0.0033mW) < 1mW

Note: E[dBuV/m] = EIRP[dBm] + 95.2 for d = 3 m.

EIRP = ERP+2.15

Result: The device meets the exemption requirement.

FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall 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 manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

- a. Antenna must be permanently attached to the unit.
- b. Antenna must use a unique type of connector to attach to the EUT.
- c. Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

Antenna Information*

The EUT has one integral loop antenna, which fulfill the requirement of this section. Please refer to the EUT photos.

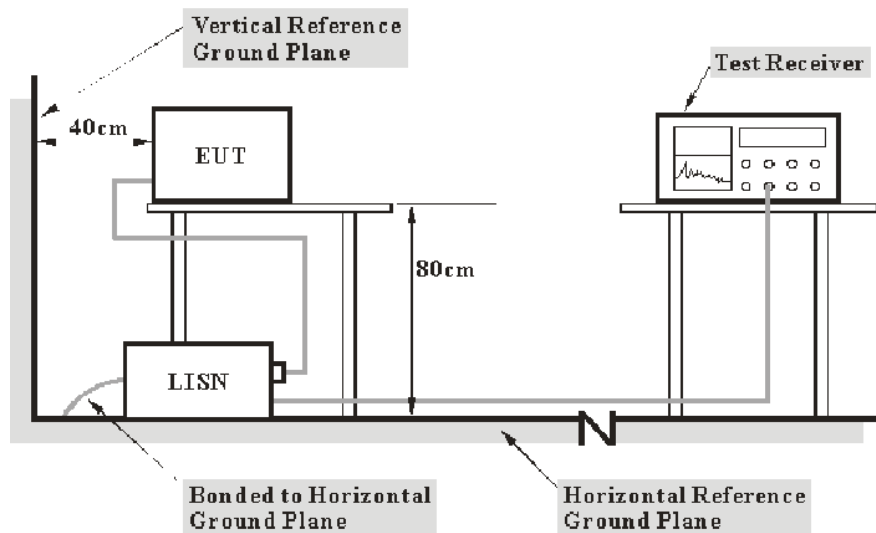
Result: Compliance

FCC §15.207 – AC POWER LINE CONDUCTED EMISSIONS

Applicable Standard

FCC§15.207

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2020 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

$$V_C = V_R + A_C + VDF$$

$$C_f = A_C + VDF$$

Herein,

V_C (cord. Reading): corrected voltage amplitude

V_R : reading voltage amplitude

A_C : attenuation caused by cable loss

VDF: voltage division factor of AMN

C_f : Correction Factor

The “**Margin**” column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Data

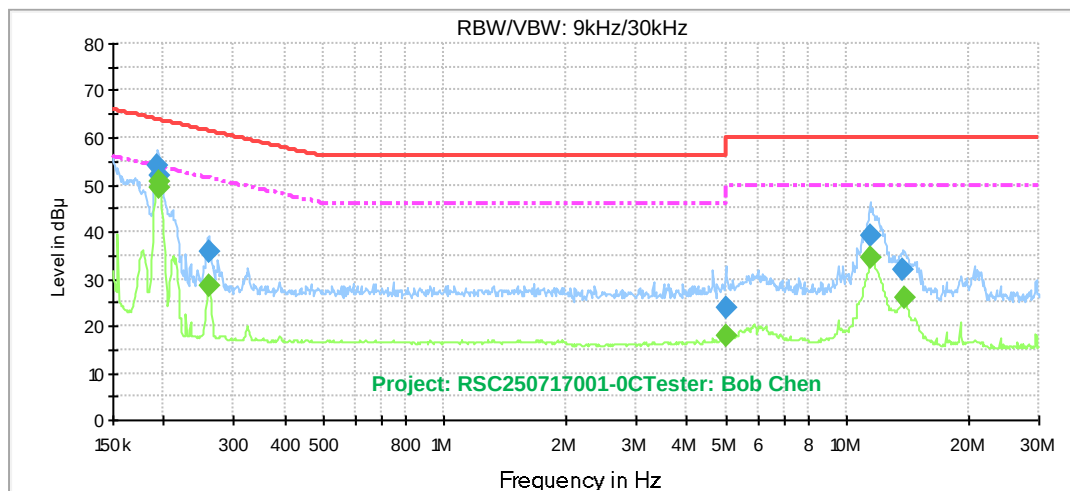
Test Environment Conditions

Temperature:	26 °C
Relative Humidity:	45 %
ATM Pressure:	95 kPa

The testing was performed by Bob Chen on 2025-07-23.

Test Mode: Transmitting

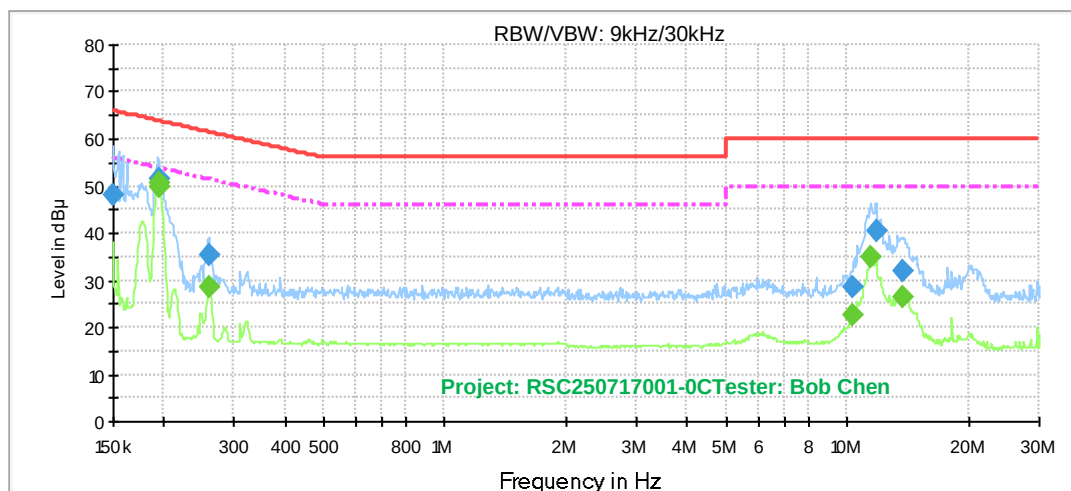
AC120V/60Hz, Line:



Frequency (MHz)	QuasiPeak (dBμ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμ V)
0.193446	54.1	5000.0	9.000	On	L1	20.8	9.8	63.9
0.196363	51.9	5000.0	9.000	On	L1	20.8	11.9	63.8
0.259632	35.8	5000.0	9.000	On	L1	20.8	25.6	61.4
4.998423	23.6	5000.0	9.000	On	L1	20.8	32.4	56.0
11.439294	39.3	5000.0	9.000	On	L1	20.8	20.7	60.0
13.826414	32.0	5000.0	9.000	On	L1	20.9	28.0	60.0

Frequency (MHz)	CAverage (dBμ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμ V)
0.194414	50.6	5000.0	9.000	On	L1	20.8	3.2	53.8
0.196363	49.2	5000.0	9.000	On	L1	20.8	4.6	53.8
0.259632	28.5	5000.0	9.000	On	L1	20.8	22.9	51.4
4.998423	17.9	5000.0	9.000	On	L1	20.8	28.1	46.0
11.439294	34.4	5000.0	9.000	On	L1	20.8	15.6	50.0
13.895546	25.9	5000.0	9.000	On	L1	20.9	24.1	50.0

AC120V/60Hz, Neutral:



Frequency (MHz)	QuasiPeak (dBμ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμ V)
0.150000	48.1	5000.0	9.000	On	N	20.8	17.9	66.0
0.196363	51.7	5000.0	9.000	On	N	20.8	12.1	63.8
0.259632	35.5	5000.0	9.000	On	N	20.7	25.9	61.4
10.353280	28.7	5000.0	9.000	On	N	20.9	31.3	60.0
11.786791	40.6	5000.0	9.000	On	N	20.9	19.4	60.0
13.757626	31.8	5000.0	9.000	On	N	20.9	28.2	60.0

Frequency (MHz)	CAverage (dBμ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμ V)
0.194414	50.7	5000.0	9.000	On	N	20.8	3.1	53.8
0.196363	49.7	5000.0	9.000	On	N	20.8	4.1	53.8
0.259632	28.5	5000.0	9.000	On	N	20.7	22.9	51.4
10.353280	22.7	5000.0	9.000	On	N	20.9	27.3	50.0
11.439294	34.9	5000.0	9.000	On	N	20.9	15.1	50.0
13.689180	26.3	5000.0	9.000	On	N	20.9	23.7	50.0

Note:

- 1) Corrected Amplitude = Reading + Correction Factor
- 2) Correction Factor = LISN VDF (Voltage Division Factor) + Cable Loss + Transient Limiter
- 3) Margin = Limit – Corrected Amplitude

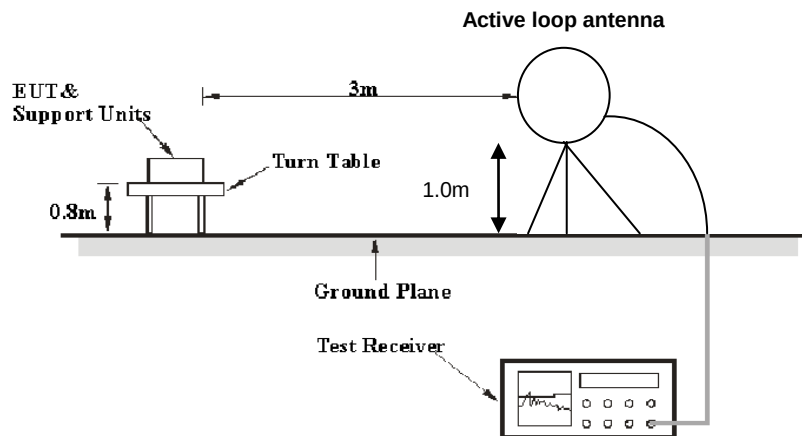
FCC §15.225, §15.205, §15.209 - RADIATED SPURIOUS EMISSIONS**Applicable Standard**

As per FCC Part 15.225

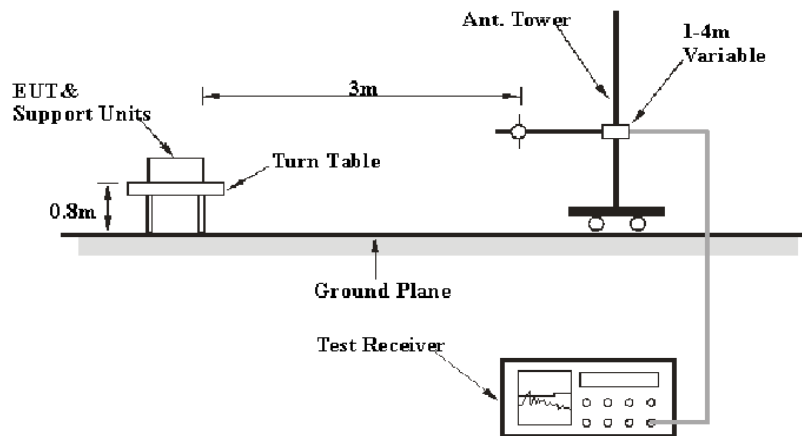
- (a) The field strength of any emissions within the band 13.553–13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.
- (b) Within the bands 13.410–13.553 MHz and 13.567–13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.
- (c) Within the bands 13.110–13.410 MHz and 13.710–14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.
- (d) The field strength of any emissions appearing outside of the 13.110–14.010 MHz band shall not exceed the general radiated emission limits in §15.209.

EUT Setup

9kHz - 30MHz:



30MHz - 1GHz:



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.10-2020. The specification used was the FCC 15.209, and FCC 15.225 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

EMI Test Receiver & Signal Analyzer Setup

The system was investigated from 9 kHz to 1 GHz.

During the radiated emission test, the EMI test receiver or Signal Analyzer was set with the following configurations:

Frequency Range	RBW	Video B/W	Detector	Measurement
9 kHz – 150 kHz	200 Hz	1 kHz	PK	PK
	200 Hz	/	QP/AV	QP/AV
150 kHz – 30 MHz	9 kHz	30 kHz	PK	PK
	9 kHz	/	QP/AV	QP/AV
30 MHz – 1000 MHz	120 kHz	500 kHz	PK	PK
	120 kHz	/	QP	QP

The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

If the maximized peak measured value complies with under the QP/Average limit more than 6dB, then it is unnecessary to perform an QP/Average measurement.

If the peak detected amplitude can be shown to comply with the average limit, then it is not necessary to perform a separate average measurement.

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1 GHz.

Corrected Amplitude & Margin Calculation

$$E_{Log} = 20 \times \log_{10}(E_{Linear})$$

where

E_{Linear} is the field strength of the emission, in $\mu\text{V/m}$

E_{Log} is the field strength of the emission, in $\text{dB}\mu\text{V/m}$

For 9 kHz-30 MHz test, the test distance is 3m, so the extrapolation limit shall be calculated by the below equation:

$$E_{MeaLimit} = E_{SpecLimit} + 40 \times \log(D_{Spec}/D_{Mea})$$

The Corrected Amplitude is calculated by adding the Antenna Loss and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude (MaxPeak or QuasiPeak)} = \text{Meter Reading} + \text{Antenna Loss} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

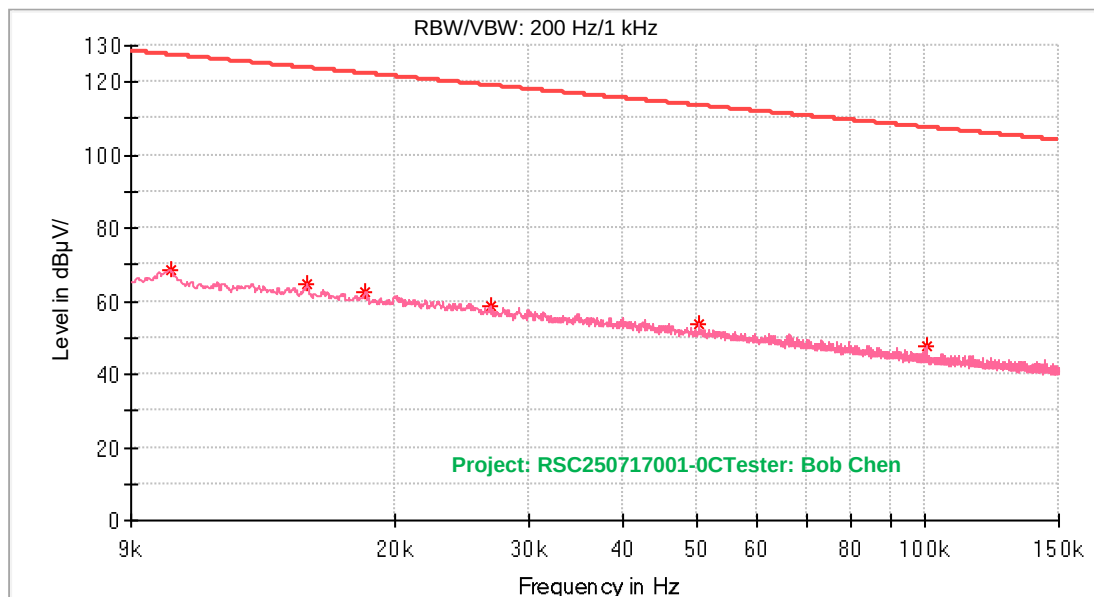
Test Data

Test Environment Conditions

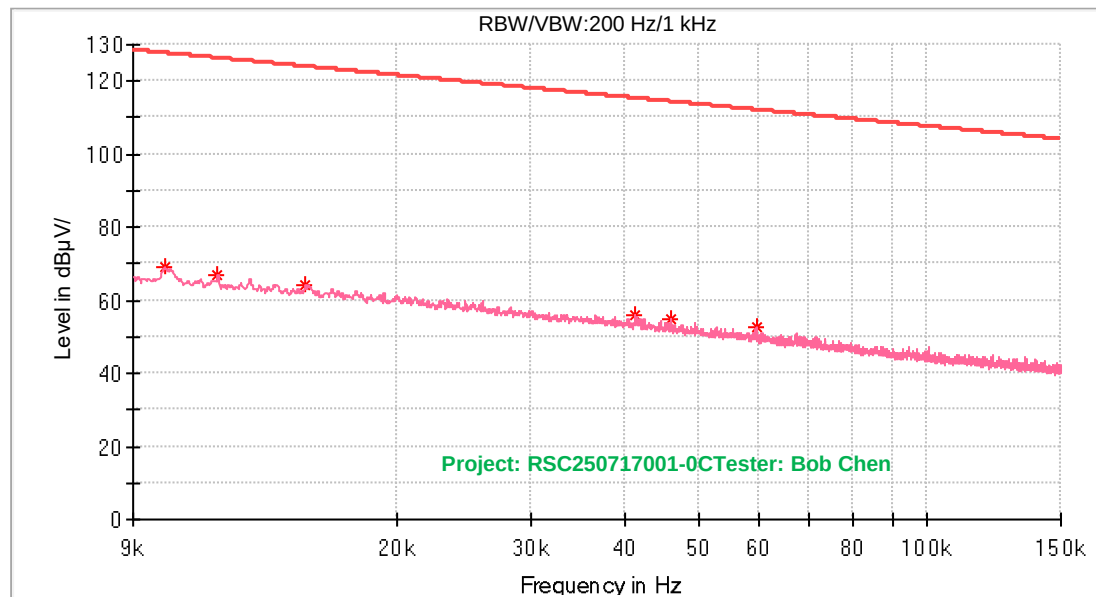
Temperature:	25 °C
Relative Humidity:	45 %
ATM Pressure:	97 kPa

The testing was performed by Bob Chen on 2025-07-23.

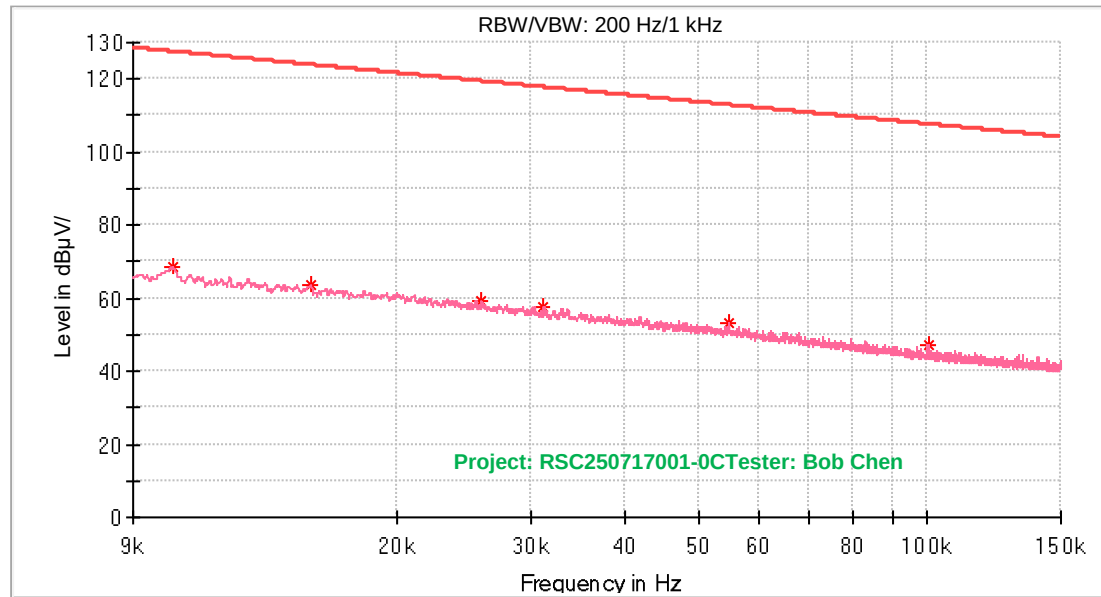
Test Mode: Transmitting

Radiated Spurious Emissions:**1) 9 kHz to 150 kHz****Parallel**

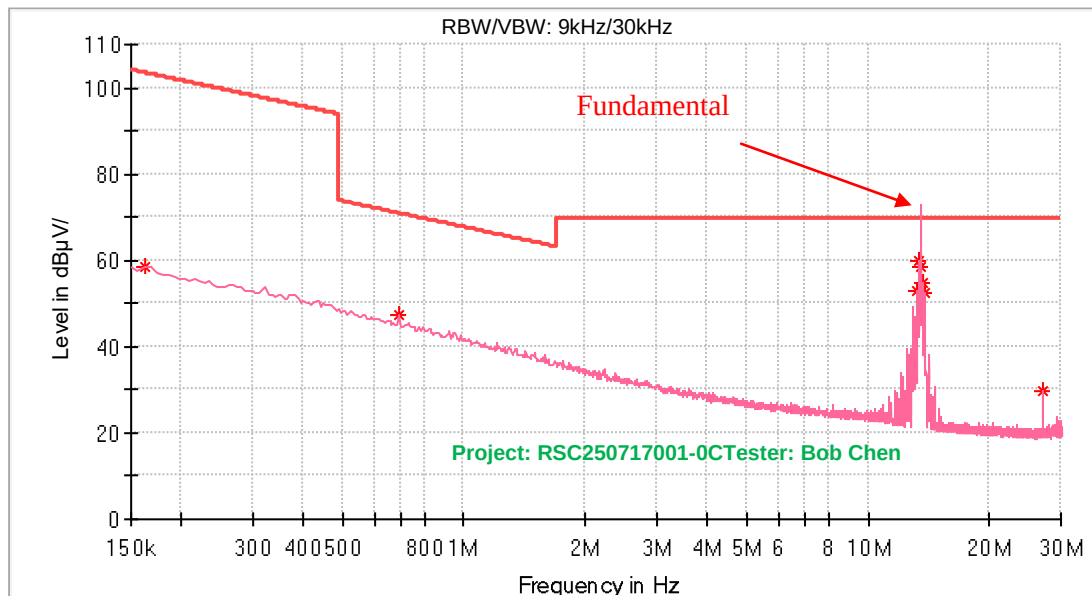
Frequency (MHz)	MaxPeak (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Height (cm)	Azimuth (deg)	Corr. (dB)
0.010146	68.70	127.46	58.76	100.0	251.0	17.6
0.015345	64.65	123.87	59.22	100.0	87.0	16.0
0.018324	62.71	122.33	59.62	100.0	25.0	15.4
0.026766	58.92	119.04	60.12	100.0	251.0	13.9
0.050454	53.66	113.54	59.88	100.0	0.0	12.6
0.100315	47.63	107.57	59.94	100.0	197.0	11.1

Perpendicular

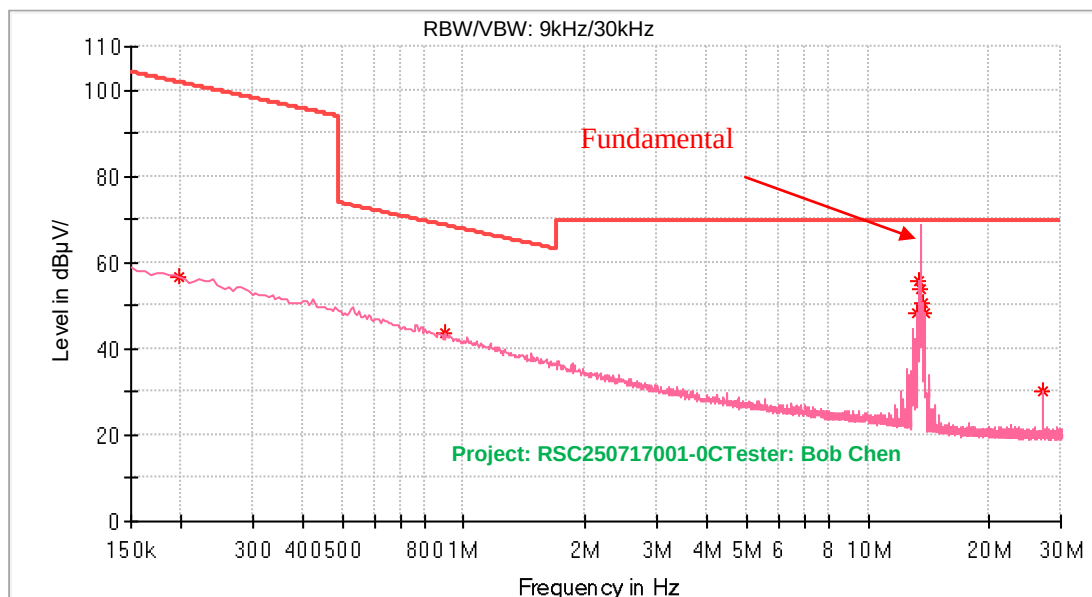
Frequency (MHz)	MaxPeak (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Height (cm)	Azimuth (deg)	Corr. (dB)
0.009916	68.91	127.66	58.75	100.0	195.0	17.7
0.011644	66.73	126.26	59.53	100.0	84.0	17.1
0.015204	64.38	123.95	59.57	100.0	316.0	16.1
0.041218	55.90	115.29	59.39	100.0	312.0	12.9
0.045977	54.68	114.34	59.66	100.0	1.0	12.7
0.059513	52.46	112.10	59.64	100.0	199.0	12.2

Ground Parallel

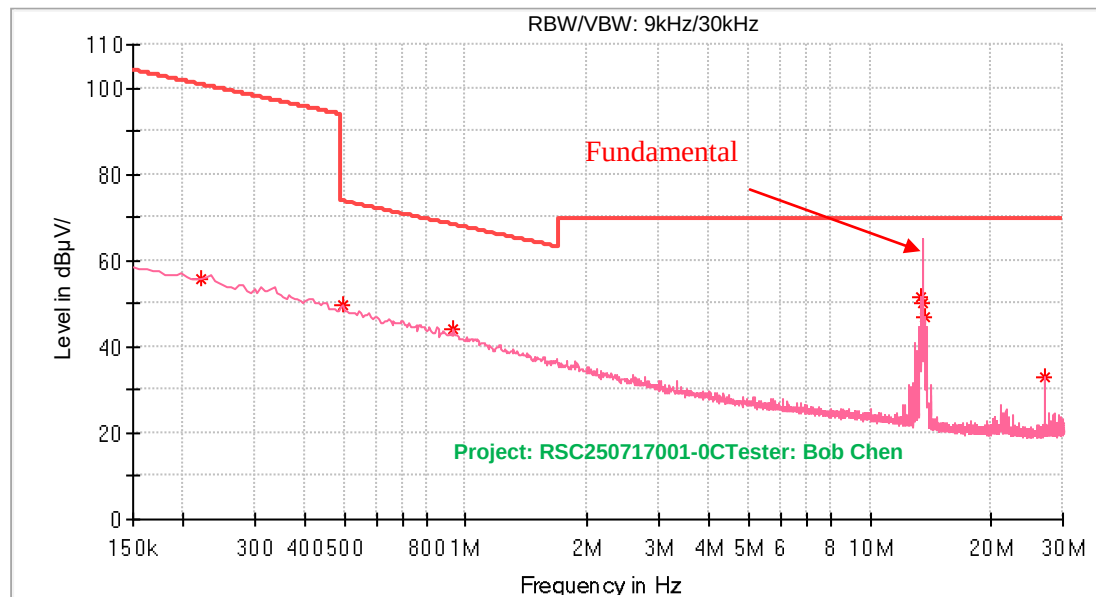
Frequency (MHz)	MaxPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Azimuth (deg)	Corr. (dB)
0.010163	68.31	127.44	59.13	100.0	43.0	17.6
0.015416	63.85	123.83	59.98	100.0	105.0	16.0
0.025902	59.43	119.32	59.89	100.0	22.0	14.0
0.031278	57.56	117.69	60.13	100.0	214.0	13.4
0.054843	52.96	112.81	59.85	100.0	268.0	12.4
0.100315	47.37	107.57	60.20	100.0	335.0	11.1

2) 150 kHz to 30 MHz**Parallel**

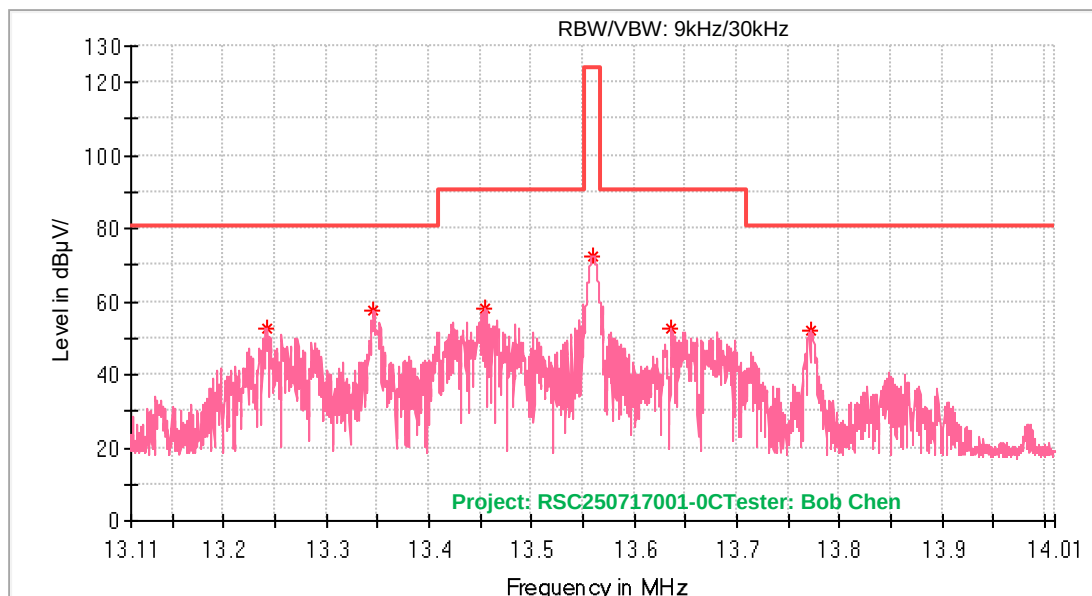
Frequency (MHz)	MaxPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Azimuth (deg)	Corr. (dB)
0.161940	58.47	103.41	44.94	100.0	78.0	11.3
0.687300	47.24	70.87	23.63	100.0	143.0	11.6
13.242210	52.93	69.50	16.57	100.0	0.0	11.4
13.349670	59.94	69.50	9.56	100.0	0.0	11.4
13.451160	58.52	69.50	10.98	100.0	0.0	11.4
13.666080	54.87	69.50	14.63	100.0	0.0	11.4
13.773540	52.52	69.50	16.98	100.0	0.0	11.4
27.122460	29.77	69.50	39.73	100.0	115.0	9.4

Perpendicular

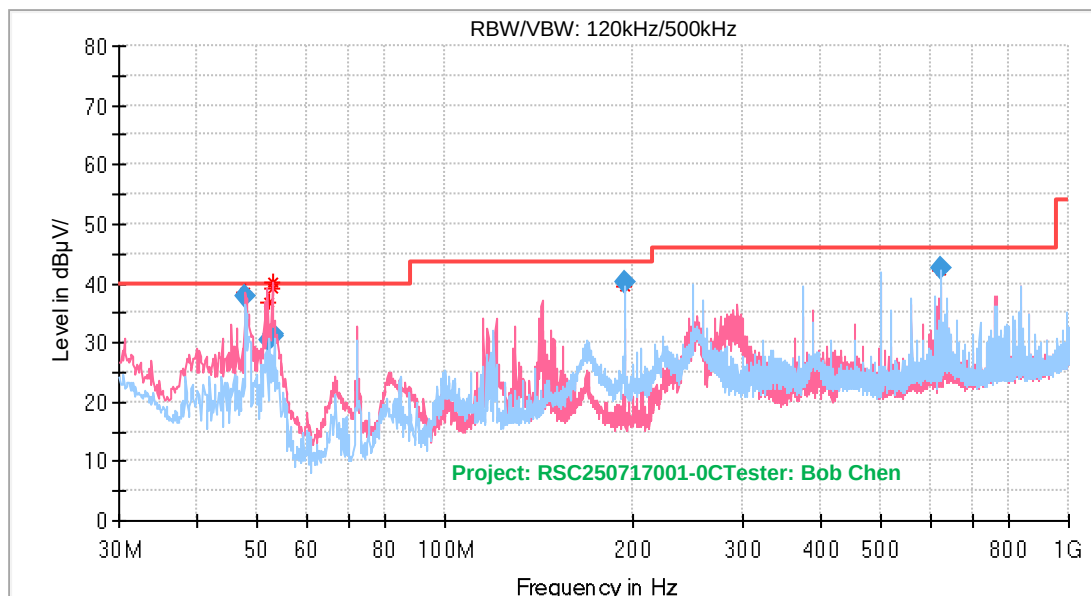
Frequency (MHz)	MaxPeak (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Height (cm)	Azimuth (deg)	Corr. (dB)
0.197760	56.52	101.68	45.16	100.0	19.0	11.4
0.902220	43.58	68.51	24.93	100.0	114.0	11.6
13.242210	48.46	69.50	21.04	100.0	60.0	11.4
13.349670	55.52	69.50	13.98	100.0	72.0	11.4
13.451160	54.07	69.50	15.43	100.0	60.0	11.4
13.666080	50.48	69.50	19.02	100.0	60.0	11.4
13.773540	48.19	69.50	21.31	100.0	72.0	11.4
27.122460	30.28	69.50	39.22	100.0	324.0	9.4

Ground Parallel

Frequency (MHz)	MaxPeak (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Height (cm)	Azimuth (deg)	Corr. (dB)
0.221640	55.77	100.69	44.92	100.0	143.0	11.5
0.496260	49.72	73.69	23.97	100.0	325.0	11.5
0.932070	44.14	68.23	24.09	100.0	176.0	11.6
13.349670	51.67	69.50	17.83	100.0	352.0	11.4
13.451160	50.25	69.50	19.25	100.0	352.0	11.4
13.666080	46.65	69.50	22.85	100.0	352.0	11.4
27.122460	32.90	69.50	36.60	100.0	93.0	9.4

Emission Mask (13.11MHz -14.01MHz)-Parallel-worst case

Frequency (MHz)	MaxPeak (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Height (cm)	Azimuth (deg)	Corr. (dB)
13.242840	52.63	80.50	27.87	100.0	355.0	11.4
13.346520	57.86	80.50	22.64	100.0	1.0	11.4
13.455060	58.01	90.47	32.46	100.0	3.0	11.4
13.560360	72.58	124.00	51.42	100.0	358.0	11.4
13.636140	52.40	90.47	38.07	100.0	356.0	11.4
13.772040	51.96	80.50	28.54	100.0	0.0	11.4

3) 30 MHz to 1 GHz

Frequency (MHz)	QuasiPeak (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
47.888550	37.95	40.00	2.05	1000.0	120.000	103.0	V	38.0	-17.4
52.373970	30.49	40.00	9.51	1000.0	120.000	165.0	V	4.0	-18.9
52.795480	31.30	40.00	8.70	1000.0	120.000	153.0	V	53.0	-19.0
52.817690	31.19	40.00	8.81	1000.0	120.000	189.0	V	0.0	-19.0
193.965280	40.25	43.50	3.25	1000.0	120.000	127.0	H	312.0	-13.7
625.022280	42.50	46.00	3.50	1000.0	120.000	190.0	H	257.0	-5.0

Note:

Corrected Amplitude = Corrected Factor + Reading

Corrected Factor= Antenna factor (RX) + Cable Loss – Preamplifier Factor

Margin = Limit- Corr. Amplitude

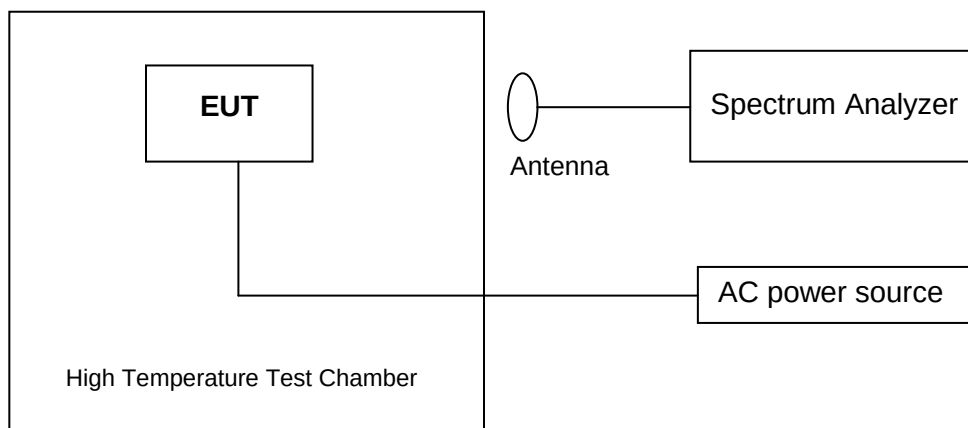
FCC §15.225(e) - FREQUENCY STABILITY

Applicable Standard

As per FCC Part 15.225:

The frequency tolerance of the carrier signal shall be maintained within $\pm 0.01\%$ of the operating frequency over a temperature variation of -20 degrees to $+50$ degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

Test Setup Block



Test Procedure

According to ANSI C63.10-2020 Section 6.8

Frequency stability with respect to ambient temperature

a) Supply the EUT with a nominal ac voltage or install a new or fully charged battery in the EUT. If possible, a dummy load shall be connected to the EUT because an antenna near the metallic walls of an environmental test chamber could affect the output frequency of the EUT. If the EUT is equipped with a permanently attached, adjustable-length antenna, then the EUT shall be placed in the center of the chamber with the antenna adjusted to the shortest length possible. Turn ON the EUT and tune it to one of the number of frequencies shown in 5.6.

b) Couple the unlicensed wireless device output to the measuring instrument by connecting an antenna to the measuring instrument with a suitable length of coaxial cable and placing the measuring antenna near the EUT (e.g., 15 cm away), or by connecting a dummy load to the measuring instrument, through an attenuator if necessary.

NOTE—An instrument that has an adequate level of accuracy as specified by the procuring or regulatory agency is the recommended measuring instrument.

c) Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).

- d) Turn the EUT OFF and place it inside the environmental temperature chamber. For devices that have oscillator heaters, energize only the heater circuit.
- e) Set the temperature control on the chamber to the highest specified in the regulatory requirements for the type of device and allow the oscillator heater and the chamber temperature to stabilize.
- f) While maintaining a constant temperature inside the environmental chamber, turn the EUT ON and record the operating frequency at startup, and at 2 minutes, 5 minutes, and 10 minutes after the EUT is energized. Four measurements in total are made.
- g) Measure the frequency at each of frequencies specified in 5.6.
- h) Switch OFF the EUT but do not switch OFF the oscillator heater.
- i) Lower the chamber temperature by not more than 10 °C, and allow the temperature inside the chamber to stabilize.
- j) Repeat step f) through step i) down to the lowest specified temperature.

Frequency stability when varying supply voltage

Unless otherwise specified, these tests shall be made at ambient room temperature (+15 °C to +25 °C). An antenna shall be connected to the antenna output terminals of the EUT if possible. If the EUT is equipped with or uses an adjustable-length antenna, then it shall be fully extended.

- a) Supply the EUT with nominal voltage or install a new or fully charged battery in the EUT. Turn ON the EUT and couple its output to a frequency counter or other frequency-measuring instrument.

NOTE—An instrument that has an adequate level of accuracy as specified by the procuring or regulatory agency is the recommended measuring instrument.

- b) Tune the EUT to one of the number of frequencies required in 5.6. Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).
- c) Measure the frequency at each of the frequencies specified in 5.6.
- d) Repeat the above procedure at 85% and 115% of the nominal supply voltage as described in 5.13.

Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	50 %
ATM Pressure:	90 kPa

The testing was performed by Bob Chen on 2025-07-18.

Test mode: Transmitting

Test Result: Compliance. Please refer to the following table.

f ₀ =13.560 MHz				
Temperature(°C)	Voltage (VAC)	Measured frequency (MHz)	Frequency Error (Hz)	Limit (Hz)
-20	120	13.560248	248	±1356
-10	120	13.560228	228	±1356
0	120	13.560206	206	±1356
10	120	13.560168	168	±1356
20	120	13.560168	168	±1356
	102	13.560164	164	±1356
	138	13.560166	166	±1356
30	120	13.560206	206	±1356
40	120	13.560188	188	±1356
50	120	13.560178	178	±1356

FCC §15.215(c) – 20dB EMISSION BANDWIDTH

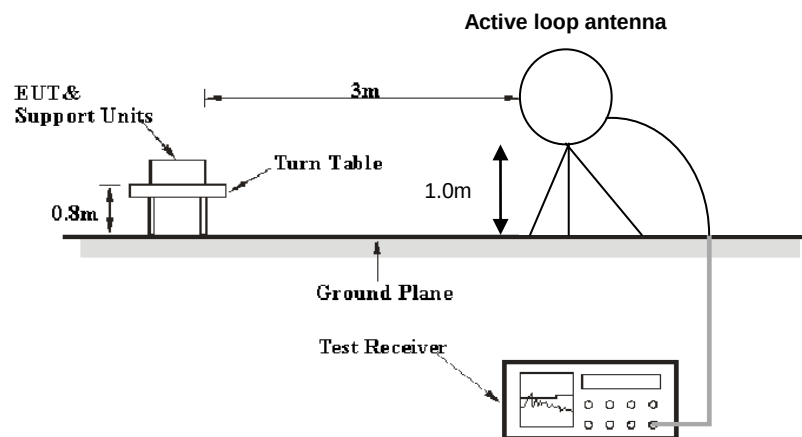
Applicable Standard

FCC §15.215(c)

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §15.217 through § 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of band operation.

EUT Setup

9kHz - 30MHz:



Test Procedure

According to ANSI C63.10-2020 Section 6.9.2

- The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the EMI receiver or spectrum analyzer shall be between two times and five times the OBW.
- The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW and video bandwidth (VBW) shall be approximately three times RBW, unless otherwise specified by the applicable requirement.
- Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than $[10 \log (OBW/RBW)]$ below the reference level. Specific guidance is given in 4.1.5.2

- d) Steps a) through c) might require iteration to adjust within the specified tolerances.
- e) The dynamic range of the instrument at the selected RBW shall be more than 10 dB below the target “-xx dB down” requirement; that is, if the requirement calls for measuring the -20 dB OBW, the instrument noise floor at the selected RBW shall be at least 30 dB below the reference value.
- f) Set detection mode to peak and trace mode to max hold.
- g) Determine the reference value: Set the EUT to transmit an unmodulated carrier or modulated signal, as applicable. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value).
- h) Determine the “-xx dB down amplitude” using [(reference value) - xx]. Alternatively, this calculation may be made by using the marker-delta function of the instrument.
- i) If the reference value is determined by an unmodulated carrier, then turn the EUT modulation ON, and either clear the existing trace or start a new trace on the spectrum analyzer and allow the new trace to stabilize. Otherwise, the trace from step g) shall be used for step j).
- j) Place two markers, one at the lowest frequency and the other at the highest frequency of the envelope of the spectral display, such that each marker is at or slightly below the “-xx dB down amplitude” determined in step h). If a marker is below this “-xx dB down amplitude” value, then it shall be as close as possible to this value. The occupied bandwidth is the frequency difference between the two markers. Alternatively, set a marker at the lowest frequency of the envelope of the spectral display, such that the marker is at or slightly below the “-xx dB down amplitude” determined in step h). Reset the marker-delta function and move the marker to the other side of the emission until the delta marker amplitude is at the same level as the reference marker amplitude. The marker-delta frequency reading at this point is the specified emission bandwidth.
- k) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	50 %
ATM Pressure:	90 kPa

The testing was performed by Bob Chen on 2025-07-18.

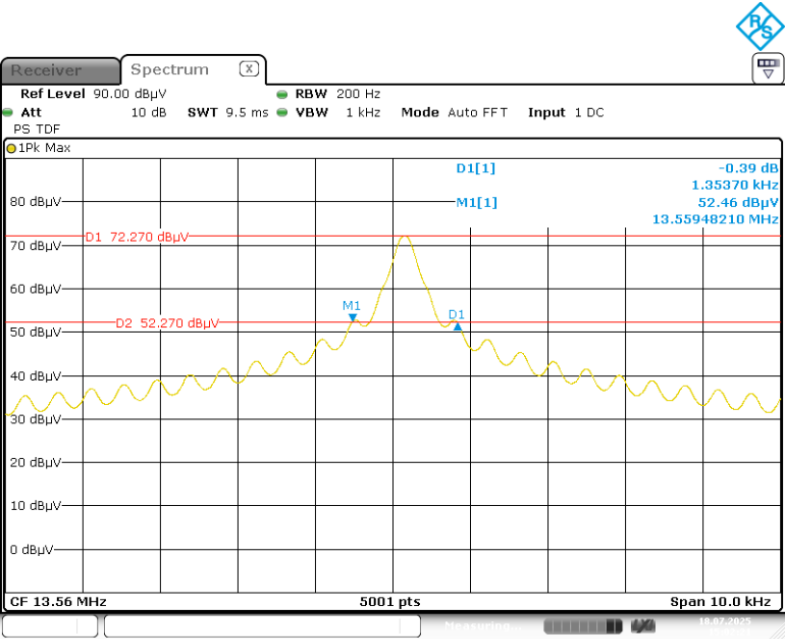
Test Mode: Transmitting

Test Result: Compliance.

Please refer to the following table and plots.

Frequency (MHz)	20dB Bandwidth (kHz)
13.56	1.35370

20dB Bandwidth



Project:RSC250717001-0C Tester:Bob Chen
Date: 18.JUL.2025 15:02:22

LABELING AND LOCATION

Refer to EXHIBIT A.

TEST SETUP PHOTOGRAPHS

Refer to EXHIBIT D.

EUT PHOTOGRAPHS

Refer to EXHIBIT B & C.

END OF REPORT