TEST REPORT

Applicant Name:	Valerion Technology USA Co.,Ltd
Address :	FCC: 1312 17th Street, Unit Num 2955, Denver, CO 80202, United States. IC: 1312 17th Street, Unit Num 2955 Denver CO 80202 United States Of America (Excluding The States Of Alaska
Report Number :	2501V34991E-RF
FCC ID:	2BKWN-RC01
IC:	33030-RC01

Test Standard (s)

FCC PART 15.231
RSS-GEN ISSUE 5, FEBRUARY 2021 AMENDMENT 2; RSS-210, ISSUE 11, JUNE 25, 2024

Sample Description

Product Type:	RF Remote Control
Model No.:	PVRC-01
Multiple Model(s) No.:	N/A
Trade Mark:	N/A
Date Received:	2025/07/17
Issue Date:	2025/10/30

Test Result:	Pass▲

▲ In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:

Ekko Wu
RF Engineer

Approved By:

Nancy Wang
RF Supervisor

Note: The information marked# is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report. Customer model name, addresses, names, trademarks etc. are included.

This report may contain data that are not covered by the NVLAP accreditation and are marked with an asterisk "▼".

TABLE OF CONTENTS

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	2501V34991E-RF	Original Report	2025/10/30

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

HVIN	PVRC-01
FVIN	N/A
Product	RF Remote Control
Tested Model	PVRC-01
Multiple Model(s)	N/A
Frequency Range	433.92MHz
E-field strength@ Peak	79.82dBuV/m@3m
Modulation Technique	ASK
Voltage Range	DC 3V from battery(AAA Battery *2)
Sample number	36T6-2 (RF Conducted Test), 36T6-1 (RF Radiated Test) (Assigned by BACL, Shenzhen)
Sample/EUT Status	Good condition
Adapter Information	N/A
Note: The product has three buttons and the worst-case is the first button.	

Objective

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, section 15.203, 15.205, 15.209, 15.35(c) and 15.231 rules and RSS-Gen Issue 5, February 2021 AMENDMENT 2 and RSS-210 Issue 11, June 25, 2024 of the Innovation, Science and Economic Development Canada rules.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2020 + Cor.1-2023▾, RSS-Gen and RSS-210.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Each test item follows test standards and with no deviation.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		109.2kHz(k=2, 95% level of confidence)
AC Power Lines Conducted Emissions	9kHz-150kHz	3.63dB(k=2, 95% level of confidence)
	150kHz-30MHz	3.66dB(k=2, 95% level of confidence)
Radiated Emissions	9kHz - 30MHz	3.60dB(k=2, 95% level of confidence)
	30MHz~200MHz (Horizontal)	5.32dB(k=2, 95% level of confidence)
	30MHz~200MHz (Vertical)	5.43dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Horizontal)	5.77dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Vertical)	5.73dB(k=2, 95% level of confidence)
	1GHz - 6GHz	5.34dB(k=2, 95% level of confidence)
	6GHz - 18GHz	5.40dB(k=2, 95% level of confidence)
	18GHz - 40GHz	5.64dB(k=2, 95% level of confidence)
Temperature		±1℃
Humidity		±1%
Supply voltages		±0.4%

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 5F(B-West) , 6F, 7F, the 3rd Phase of Wan Li Industrial Building D, Shihua Rd, FuTian Free Trade Zone, Shenzhen, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 715558, the FCC Designation No. : CN5045.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0023.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing by manufacturer.

Special Accessories

No special accessories was used

Equipment Modifications

No modification was made to the EUT.

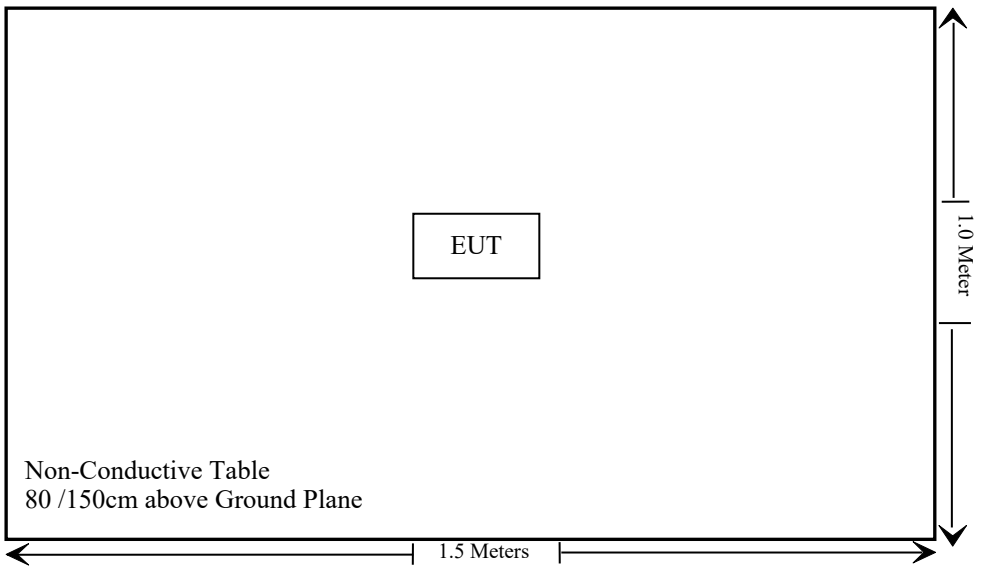
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
/	/	/	/

External I/O Cable

Cable Description	Length (m)	From Port	To
/	/	/	/

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

Test Rules		Description of Test	Result
FCC §1.1307 (b)	/	RF Exposure	Compliant
/	RSS-102 § 6.3	SAR Exemption Limits	Compliant
FCC §15.203	RSS-Gen §6.8	Antenna Requirement	Compliant
FCC §15.207 (a)	RSS-Gen §8.8	AC Line Conducted Emissions	Not Applicable
FCC §15.205, §15.209, §15.231(b)	RSS-210 Annex A 1.3 RSS-Gen Clause 8.10	Radiated Emissions	Compliant
FCC §15.231 (a) (1)	RSS-210 Annex A 1.2	Deactivation	Compliant
FCC §15.231 (c)	RSS-210 Annex A 1.4 RSS-Gen §6.7	99% Occupied Bandwidth & 20dB Emission Bandwidth	Compliant

Not Applicable: The EUT is powered by battery only.

TEST EQUIPMENT LIST AND DETAILS

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emissions Test					
Rohde & Schwarz	EMI Test Receiver	ESR3	102455	2024/12/04	2025/12/03
Sonoma instrument	Pre-amplifier	310 N	186238	2025/04/29	2026/04/28
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2023/07/20	2026/07/19
Unknown	Cable	Chamber A Cable 1	N/A	2025/04/29	2026/04/28
Unknown	Cable	XH500C	J-10M-A	2025/04/29	2026/04/28
BACL	Active Loop Antenna	1313-1A	4031911	2024/05/14	2027/05/13
Unknown	Cable	2Y194	0735	2024/12/04	2025/12/03
Unknown	Cable	PNG214	1354	2024/12/04	2025/12/03
Audix	EMI Test software	E3	19821b(V9)	NCR	NCR
Rohde & Schwarz	Spectrum Analyzer	FSV40	101605	2025/03/26	2026/03/25
A.H.System	Preamplifier	PAM-0118P	489	2024/11/15	2025/11/14
Schwarzbeck	Horn Antenna	BBHA9120D(1201)	1143	2023/07/26	2026/07/25
Unknown	RF Cable	KMSE	735	2024/12/06	2025/12/05
Unknown	RF Cable	UFA147	219661	2024/12/06	2025/12/05
Unknown	RF Cable	XH750A-N	J-10M	2024/12/06	2025/12/05
JD	Filter Switch Unit	DT7220FSU	DS79906	2024/09/09	2025/09/08
JD	Multiplex Switch Test Control Set	DT7220SCU	DS79903	2024/09/09	2025/09/08
Audix	EMI Test software	E3	191218(V9)	NCR	NCR
RF Conducted Test					
Rohde & Schwarz	Spectrum Analyzer	FSU26	200120	2024/12/04	2025/12/03
Unknown	10dB Attenuator	Unknown	F-03-EM190	2025/06/26	2026/06/25

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

FCC §1.1307 (b) - RF EXPOSURE

Applicable Standard

According to §1.1307(b), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

According to KDB 447498 D04 Interim General RF Exposure Guidance v01, clause 2.1.2 – 1-mW test Exemption:

Per § 1.1307(b)(3)(i)(A), a single RF source is exempt RF device (from the requirement to show data demonstrating compliance to RF exposure limits, as previously mentioned) if the available maximum time-averaged power is no more than 1 mW, regardless of separation distance.

This exemption applies to all operating configurations and exposure conditions, for the frequency range 100 kHz to 100 GHz, regardless of fixed, mobile, or portable device exposure conditions. This is a standalone exemption, and it cannot be applied in conjunction with any other test exemption.

Test Result:

For worst case:

Mode	Frequency (MHz)	Maximum E-Field (dBuV/m@3m)	Maximum EIRP		Test Exemption (mW)
			(dBm)	(mW)	
SRD	433.92	79.82	-15.38	0.029	1

Note: EIRP = E-Field - 95.2 @3m

Result: Compliant.

RSS-102 § 6.3 –SAR EXEMPTION LIMITS

Applicable Standard

According to RSS-102 Issue 6 § (6.3), Devices operating at or below the applicable output power levels (adjusted for tune-up tolerance) specified in table 11, based on the separation distance, are exempt from SAR evaluation. The separation distance, defined as the distance between the user and/or bystander and the antenna and/or radiating element of the device or the outer surface of the device, shall be less than or equal to 20 cm for these exemption limits to apply.

Table 11: Power limits for exemption from routine SAR evaluation based on the separation distance

Frequency (MHz)	≤ 5 mm (mW)	10 mm (mW)	15 mm (mW)	20 mm (mW)	25 mm (mW)	30 mm (mW)	35 mm (mW)	40 mm (mW)	45 mm (mW)	> 50 mm (mW)
≤ 300	45	116	139	163	189	216	246	280	319	362
450	32	71	87	104	124	147	175	208	248	296
835	21	32	41	54	72	96	129	172	228	298
1900	6	10	18	33	57	92	138	194	257	323
2450	3	7	16	32	56	89	128	170	209	245
3500	2	6	15	29	50	72	94	114	134	158
5800	1	5	13	23	32	41	54	74	102	128

The exemption limits in table 11 are based on measurements and simulations of half-wave dipole antennas at separation distances of 5 mm to 50 mm from a flat phantom, which provides a SAR value of approximately 0.4 W/kg for 1 g of tissue.

For limb-worn devices where the 10 gram of tissue applies, the exemption limits for routine evaluation in table 11 are multiplied by a factor of 2.5.

For controlled-use devices where the 8 W/kg for 1 gram of tissue applies, the exemption limits for routine evaluation in table 11 are multiplied by a factor of 5.

When the operating frequency of the device is between two frequencies located in table 11, linear interpolation shall be applied for the applicable separation distance. If the separation distance of the device is between two distances located in table 11, linear interpolation may be applied for the applicable frequency. Alternatively, the limit corresponding to the smaller distance may be employed. For example, in case of a 7 mm separation distance, either use the exception value for a 5 mm separation distance or interpolate between the limits corresponding to 5 mm and 10 mm separation distances.

For implanted medical devices, the exemption limit for routine SAR evaluation is set at an output power of 1 mW, regardless of frequency.

The SAR levels from exempted transmitters shall be included in the compliance assessment and the determination of the TER. Detailed guidance is included in sections 7.1.8 and 8.2.2.1.

Test Result:

The power of EUT: E Field@3m is 79.82dBuV/m = -15.38dBm (0.029mW)

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

SAR test exclusion threshold for SRD(433.92MHz) separation distance ≤ 5mm

E.I.R.P= -15.38dBm (0.029mW) << 32mW

So the stand-alone SAR test is not required.

FCC §15.203 & RSS-GEN CLAUSE 6.8 - 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.

Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be res ponsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

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.

And according to FCC 47 CFR section 15.247 (b), if the transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).

When measurements at the antenna port are used to determine the RF output power, the effective gain of the device’s antenna shall be stated, based on a measurement or on data from the antenna’s manufacturer.

The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested.

For licence-exempt equipment with detachable antennas, the user manual shall also contain the following notice in a conspicuous location:

This radio transmitter [enter the device's ISED certification number] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device. Immediately following the above notice, the manufacturer shall provide a list of all antenna types which can be used with the transmitter, indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna type.

Antenna Connector Construction

The EUT has a PCB antenna arrangement which was permanently attached, fulfill the requirement of this section. Please refer to EUT photos.

Antenna Type	Antenna Gain#	Impedance
PCB	0dBi	50Ω

Result: Compliant

FCC §15.205, §15.209, §15.231 (B), RSS -GEN §8.10& RSS-210 ANNEX A.1.3 - RADIATED EMISSIONS

Applicable Standard

FCC §15.205, §15.209, §15.231 (b); RSS-GEN §8.10, RSS-210 Annex A.1.3.

According to FCC §15.231(b), the field strength of emissions from intentional radiators operated under this section shall not exceed the following:

Fundamental frequency (MHz)	Field Strength of Fundamental (Microvolts /meter)	Field Strength of spurious emissions ((Microvolts /meter)
40.66-40.70	2250	225
70-130	1250	125
130-174	1250 to 3750**	125 to 375**
174-260	3750	375
260-470	3750 to 12500**	375 to 1250**
Above 470	12500	1250

*Linear interpolations.

The above field strength limits are specified at a distance of 3-meters the tighter limits apply at the band edges.

As per RSS-210 Annex A.1.3

The device shall meet the following field strength requirements:

The field strength of emissions from momentarily operated intentional radiators shall not exceed the limits in table A1, based on the average value of the measured emissions. The requirements of the “Pulsed Operation” section of RSS-Gen apply for averaging pulsed emissions and limiting peak emissions. Alternatively, compliance with the limits in table A1 may be based on the use of a CISPR quasi-peak detector.

Unwanted emissions shall be 10 times below the fundamental emissions field strength limits in table A1 or comply with the limits specified in RSS-Gen, whichever is less stringent.

Table A1: Permissible field strength limits for momentarily operated devices

Fundamental frequency (MHz), excluding restricted frequency bands specified in RSS-Gen	Field strength of the fundamental emissions (µV/m at 3 m)
70-130	1,250
130-174	1,250 to 3,750*
174-260**	3,750
260-470**	3,750 to 12,500*
Above 470	12,500

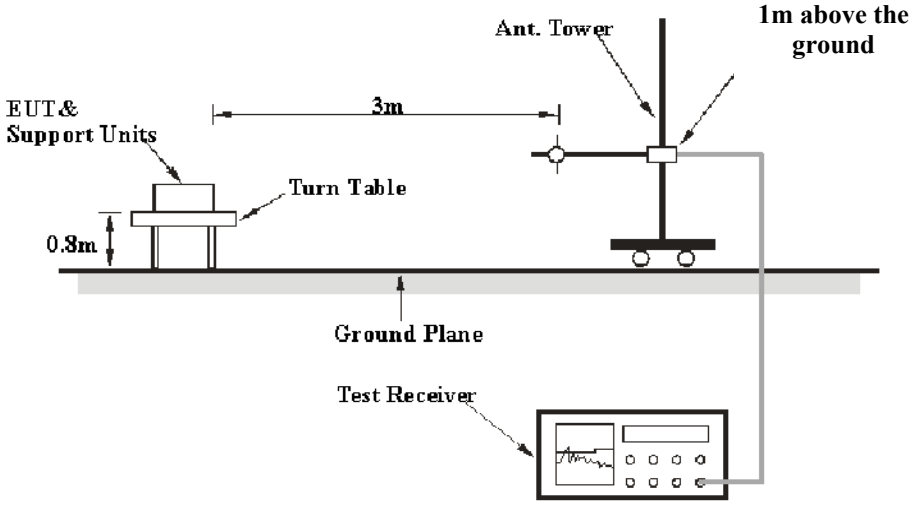
*Linear interpolation with frequency, f, in MHz:

- for 130-174 MHz: field strength (µV/m) = (56.81818 x f) - 6136.3636
- for 260-470 MHz: field strength (µV/m) = (41.6667 x f) - 7083.3333

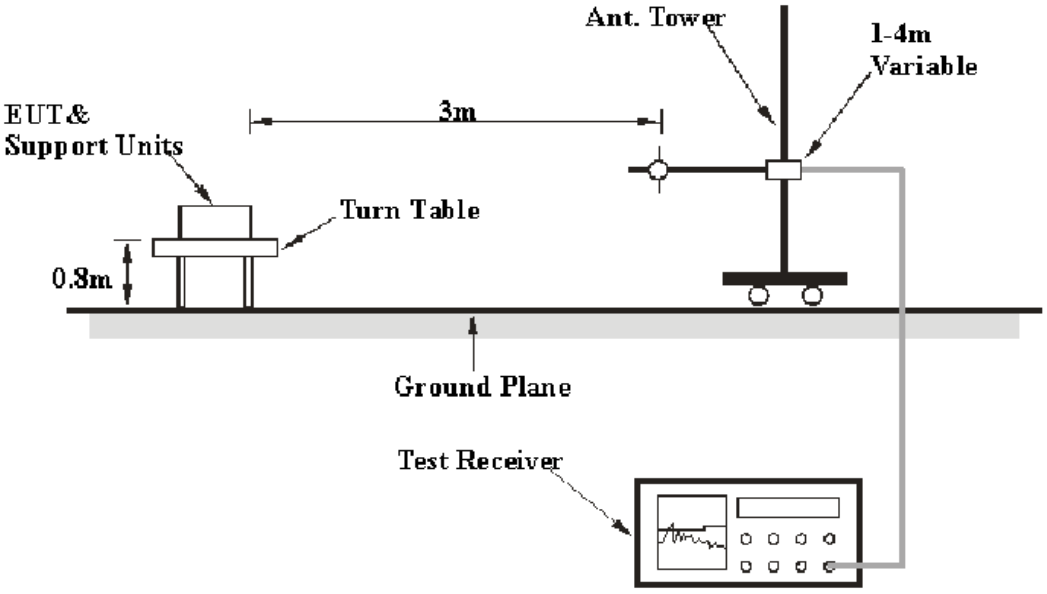
**Frequency bands 225-328.6 MHz and 335.4-399.9 MHz are designated for use by the Government of Canada. Manufacturers should be aware of possible harmful interference and degradation of their licence-exempt radio equipment in these frequency bands.

EUT Setup

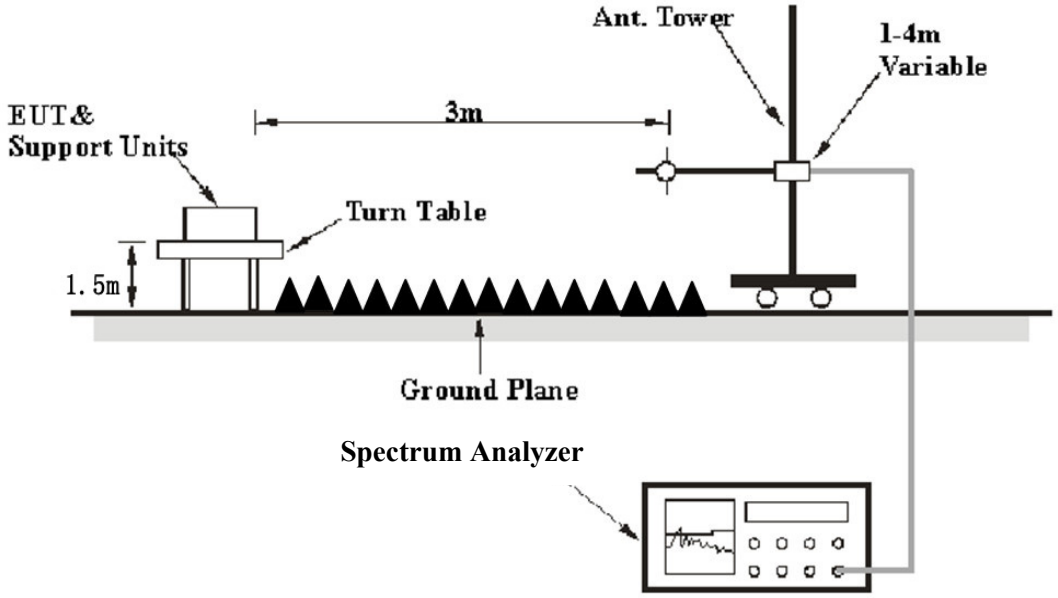
9 kHz-30MHz:



30MHz-1GHz:



Above 1 GHz:



The radiated emission tests were performed in the 3 meters test site, using the setup accordance with the ANSI C63.10 - 2020. The specification used was the FCC 15 § 15.209, 15.205, 15.231 RSS-Gen and RSS-210 limits..

EMI Test Receiver & Spectrum Analyzer Setup

The EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Measurement	Detector
9 kHz – 150 kHz	/	/	200 Hz	QP	QP
	300 Hz	1 kHz	/	PK	Peak
150 kHz – 30 MHz	/	/	9 kHz	QP	QP
	10 kHz	30 kHz	/	PK	Peak
30 MHz – 1000 MHz	/	/	120 kHz	QP	QP
	100 kHz	300 kHz	/	PK	Peak
Above 1 GHz	Fundamental & Harmonics				
	1MHz	3 MHz	/	PK	Peak
	Average Emission Level=Peak Emission Level+20*log(Duty cycle)				
	Other Emissions				
	1MHz	3 MHz	/	PK	Peak
	1MHz	≥10 Hz	/	Average	Peak

For Duty cycle measurement:

Use the duty cycle factor correction factor method per 15.35(c).
Duty cycle=On time/100milliseconds, On time=N1*L1+N2*L2+…Nn-1*Ln-1+Nn*Ln,
Where N1 is number of type 1 pulses, L1 is length of type 1 pulse, etc.

Test Procedure

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

All final data was recorded in Quasi-peak detection mode except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz, average detection modes for frequency bands 9–90 kHz and 110–490 kHz, peak and average detection modes for frequencies above 1 GHz.

For 9 kHz-30MHz, the report shall list the six emissions with the smallest margin relative to the limit, for each of the three antenna orientations (parallel, perpendicular, and ground-parallel) unless the margin is greater than 20 dB.

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.

All emissions under the average limit and under the noise floor have not recorded in the report.

Factor & Over Limit/Margin Calculation

The Factor is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain. The basic equation is as follows:

Factor = Antenna Factor + Cable Loss - Amplifier Gain

The "**Over Limit/Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, an Over Limit/margin of -7dB means the emission is 7dB below the limit. The equation for calculation is as follows:

Over Limit/Margin = Level / Corrected Amplitude – Limit
Level / Corrected Amplitude = Read Level + Factor

Test Data

Environmental Conditions

Temperature:	21.5~24.6 ℃
Relative Humidity:	50~57 %
ATM Pressure:	100.1~100.2 kPa

The testing was performed by Kungfumaster Liang on 2025-08-08 for below 1GHz, Leon Guo from2025-08-18 to 2025-08-19 for above 1GHz.

Test mode: Transmitting

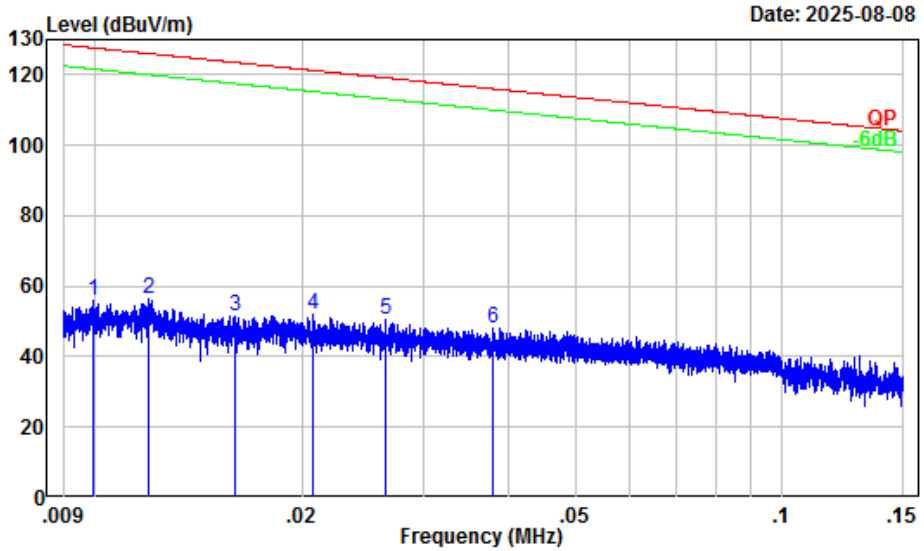
Note:

Pre-scan in the X, Y and Z axes of orientation, the worst case Z-axis of orientation was recorded.

For the radiated spurious emission below 1GHz, When the test result of peak was less than the limit of QP/Average more than 6dB, just peak value were recorded.

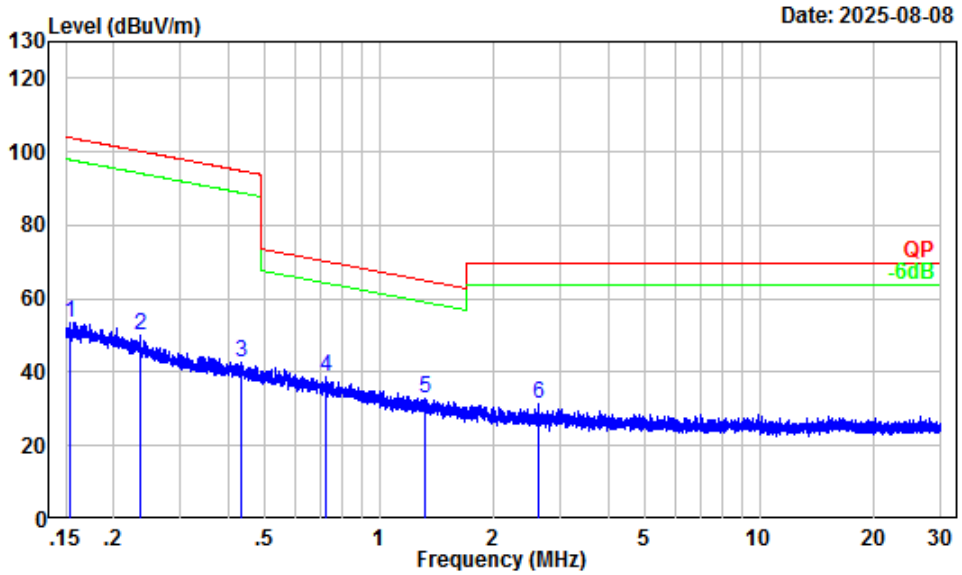
9 kHz-30MHz: *Parallel (worst case)*

Note: For the spurious emission from 9 kHz-30MHz, the unit of final result on the test plots are dBµV/m, so the limit should be added by 51,5 dB from dBµA/m to dBµV/m.



Site : Chamber A
Condition : 3m
Project Number : 2501V34991E-RF
Test Mode : SRD Transmitting
Detector: Peak RBW/VBW: 0.3/1kHz
Tester : Kungfumaster Liang

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.010	32.31	23.60	55.91	127.65	-71.74	Peak
2	0.012	31.92	24.30	56.22	126.04	-69.82	Peak
3	0.016	31.17	20.54	51.71	123.54	-71.83	Peak
4	0.021	30.24	21.78	52.02	121.23	-69.21	Peak
5	0.027	29.16	21.59	50.75	119.14	-68.39	Peak
6	0.038	27.66	20.36	48.02	116.01	-67.99	Peak

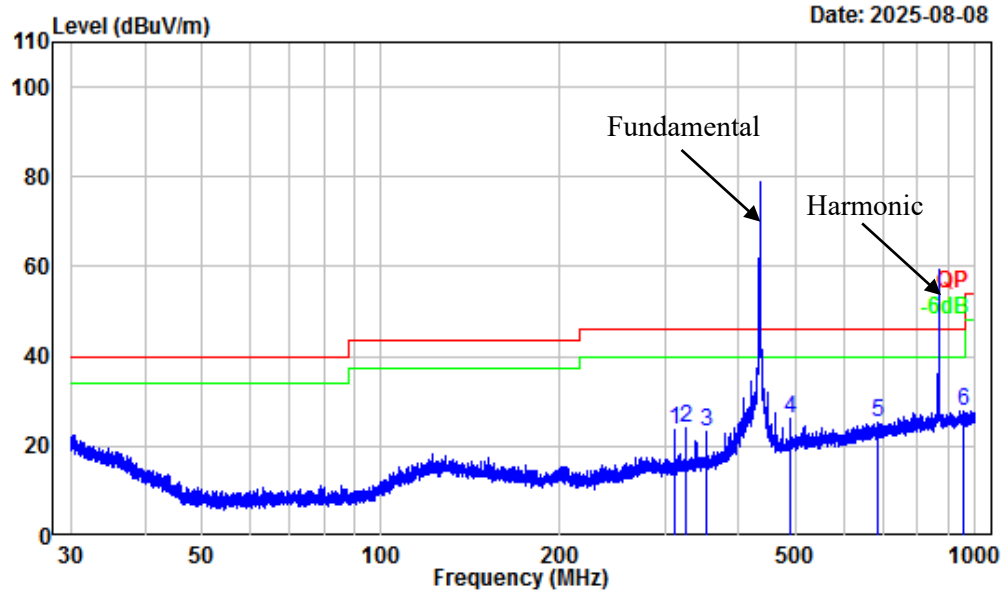


Site : Chamber A
Condition : 3m
Project Number : 2501V34991E-RF
Test Mode : SRD Transmitting
Detector: Peak RBW/VBW: 10/30kHz
Tester : Kungfumaster Liang

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.154	18.81	34.78	53.59	103.85	-50.26	Peak
2	0.235	14.06	35.76	49.82	100.20	-50.38	Peak
3	0.433	7.68	35.06	42.74	94.88	-52.14	Peak
4	0.721	3.68	35.28	38.96	70.38	-31.42	Peak
5	1.325	0.29	32.43	32.72	64.98	-32.26	Peak
6	2.626	-1.94	33.24	31.30	69.54	-38.24	Peak

30MHz – 1 GHz:

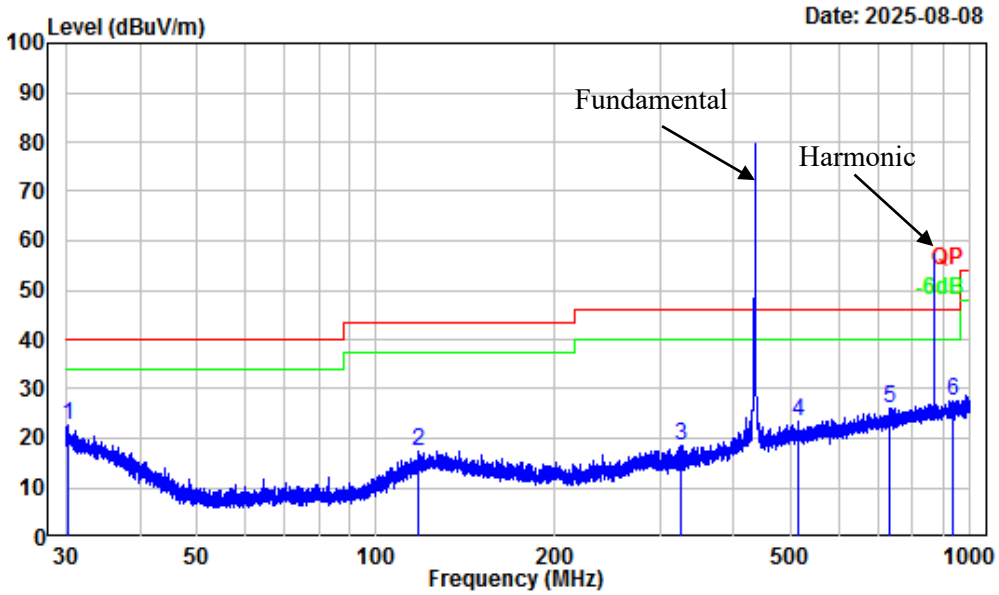
Horizontal



Site : Chamber A
Condition : 3m Horizontal
Project Number : 2501V34991E-RF
Test Mode : SRD Transmitting
Detector: Peak RBW/VBW: 100/300kHz
Tester : Kungfumaster Liang

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	311.91	-11.00	34.56	23.56	46.00	-22.44	Peak
2	325.45	-10.68	34.81	24.13	46.00	-21.87	Peak
3	352.63	-10.09	33.16	23.07	46.00	-22.93	Peak
4	488.17	-6.06	32.03	25.97	46.00	-20.03	Peak
5	685.95	-3.68	29.20	25.52	46.00	-20.48	Peak
6	953.35	-0.96	28.89	27.93	46.00	-18.07	Peak

Vertical



Site : Chamber A
Condition : 3m Vertical
Project Number : 2501V34991E-RF
Test Mode : SRD Transmitting
Detector: Peak RBW/VBW: 100/300kHz
Tester : Kungfumaster Liang

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	30.32	-6.12	28.61	22.49	40.00	-17.51	Peak
2	117.62	-11.72	28.99	17.27	43.50	-26.23	Peak
3	326.88	-10.67	29.02	18.35	46.00	-27.65	Peak
4	512.06	-5.82	29.33	23.51	46.00	-22.49	Peak
5	734.17	-3.09	29.00	25.91	46.00	-20.09	Peak
6	934.32	-1.04	28.70	27.66	46.00	-18.34	Peak

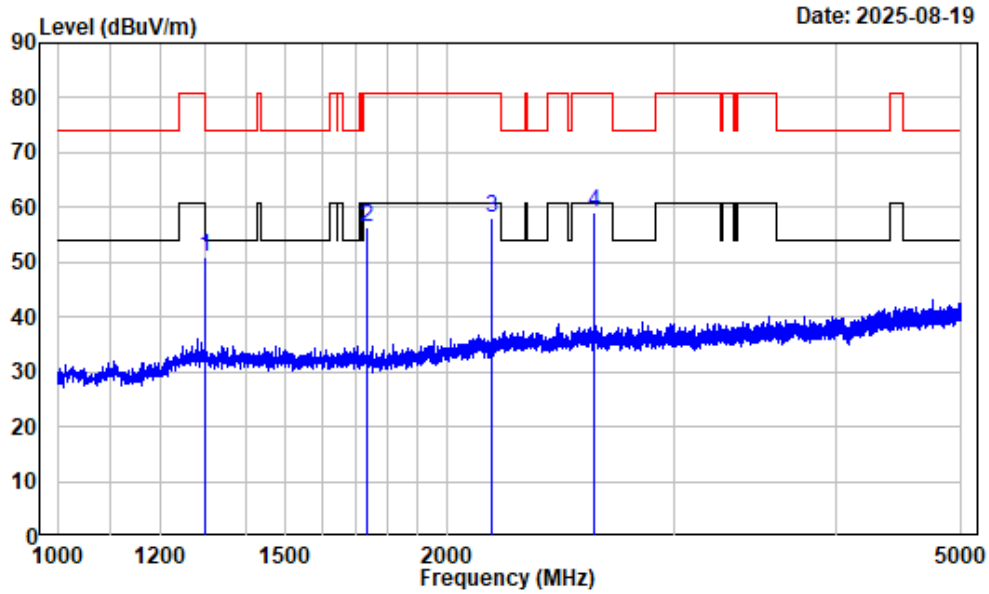
Fundamental & Harmonic:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Comment
	Reading (dBµV)	Detector (PK/QP/AV)						
433.92	86.94	PK	H	-7.82	79.12	100.83	-21.71	Fundamental
433.92	87.64	PK	V	-7.82	79.82	100.83	-21.01	Fundamental
867.84	60.96	PK	H	-1.62	59.34	80.83	-21.49	Harmonic
867.84	59.08	PK	V	-1.62	57.46	80.83	-23.37	Harmonic

Note:
Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
Corrected Amplitude = Factor + Reading
Margin = Corrected Amplitude – Limit
The other spurious emission which is in the noise floor level was not recorded.
The peak value under peak limit more than 20dB, compliance with the average limit, therefore, the average emission is not necessary.

1 GHz - 5 GHz:

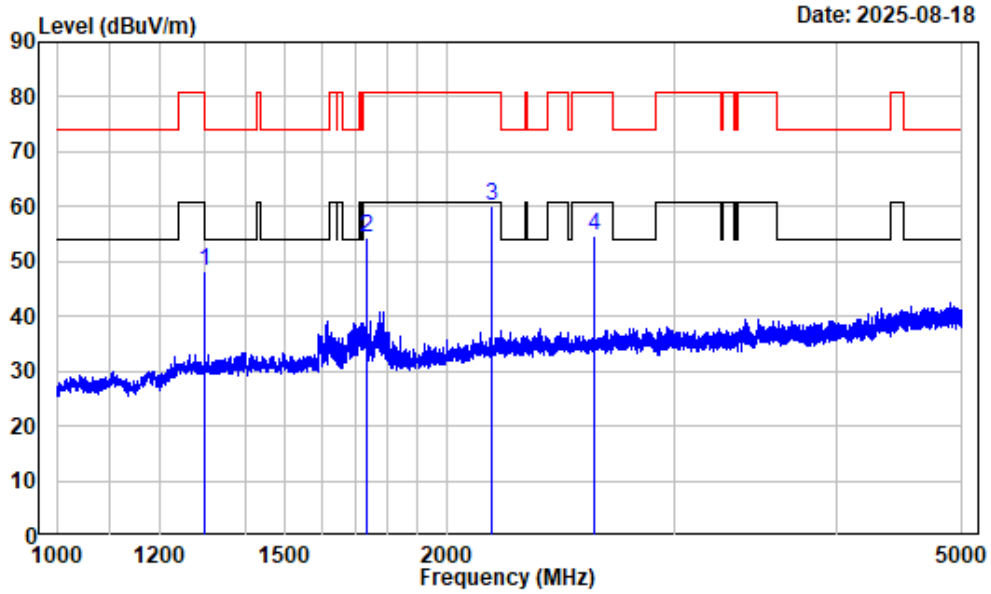
Horizontal



Condition : Horizontal
Project No. : 2501V34991E-RF
Tester : Leon Guo
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 433.92MHz

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	1301.760	-14.44	65.42	50.98	74.00	-23.02	Peak
2	1735.680	-13.98	70.34	56.36	80.83	-24.47	Peak
3	2169.600	-11.30	69.33	58.03	80.83	-22.80	Peak
4	2603.520	-10.77	69.82	59.05	80.83	-21.78	Peak

Vertical



Condition : Vertical
Project No. : 2501V34991E-RF
Tester : Leon Guo
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : 433.92MHz

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	1301.760	-14.44	62.72	48.28	74.00	-25.72	Peak
2	1735.680	-13.98	68.44	54.46	80.83	-26.37	Peak
3	2169.600	-11.30	71.30	60.00	80.83	-20.83	Peak
4	2603.520	-10.77	65.32	54.55	80.83	-26.28	Peak

Note:
Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
Level = Factor + Read Level
Over Limit = Level - Limit
The other spurious emission which is in the noise floor level was not recorded.
The test result of peak was less than the limit of average, so just peak values were recorded.

FCC §15.231(A) (1), RSS-210 ANNEX A.1.2 - DEACTIVATION TESTING

Applicable Standard

Per FCC §15.231(a) (1), A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

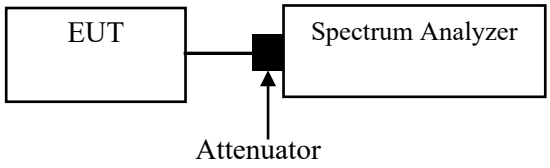
According to RSS-210 Annex A.1.2

Devices shall comply with the following requirements:

a. A manually operated transmitter shall be equipped with a push-to-operate switch and be under manual control at all times during transmission. When released, the transmitter shall cease transmission within no more than 5 seconds of being released.
b. A transmitter that has been activated automatically shall cease transmission within 5 seconds of activation.
c. Periodic transmissions at regular, predetermined intervals are not allowed, except as specified in section A.1.5. Nonetheless, polling or supervision transmissions that determine system integrity of transmitters used in security or safety applications are permitted as long as the total duration of transmission does not exceed 2 seconds per hour for each transmitter.
d. Intentional radiators used for radio control during emergencies involving fire, security of goods (e.g. burglar alarms) and safety-of-life, when activated to signal an alarm, may operate during the interval of the alarm condition.

Test Procedure

1. The EUT is setting to the transmit mode, the waveform was received by the test antenna which was connected to the spectrum analyzer.
2. Set center frequency of spectrum analyzer=operating frequency.
3. Set the spectrum analyzer as RBW=1MHz/ VBW=3MHz/ Span=0Hz.
4. Repeat above procedures until all frequency measured was complete.



Test Data

Environmental Conditions

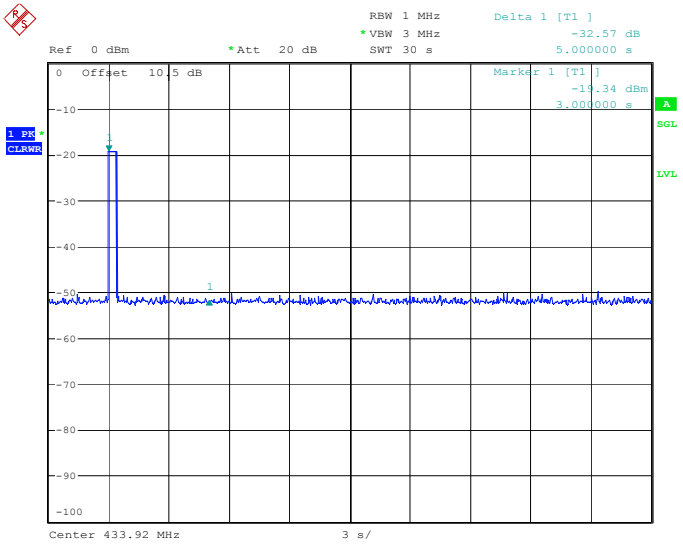
Temperature:	25.1 ℃
Relative Humidity:	49 %
ATM Pressure:	100.1 kPa

The testing was performed by Cheeb Huang on 2025-10-11.

Test mode: Transmitting

Test Result: Compliant.

This product will cease transmission within 5 seconds after activation. Please refer to following plots.



ProjectNo.:2501V34991E-RF Tester:Cheeb Huang
Date: 11.OCT.2025 15:37:32

FCC §15.231(c), RSS-GEN CLAUSE 6.7& RSS-210 ANNEX A.1.4 - 99% OCCUPIED BANDWIDTH & 20 dB EMISSION BANDWIDTH TESTING

Applicable Standard

Per 15.231(c), The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. Bandwidth is determined at the points 20 dB down from the modulated carrier.

According to RSS-Gen §6.7 and RSS-210 Annex A.1.4

The occupied bandwidth of momentarily operated devices shall be less than or equal to 0.25% of the centre frequency for devices operating between 70 MHz and 900 MHz. For devices operating above 900 MHz, the occupied bandwidth shall be less than or equal to 0.5% of the centre frequency.

The occupied bandwidth or the "99% emission bandwidth" is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.
In some cases, the "x dB bandwidth" is required, which is defined as the frequency range between two points, one at the lowest frequency below and one at the highest frequency above the carrier frequency, at which the maximum power level of the transmitted emission is attenuated x dB below the maximum in-band power level of the modulated signal, where the two points are on the outskirts of the in-band emission.
The following conditions shall be observed for measuring the occupied bandwidth and x dB bandwidth:
The Microphone shall be operated at its maximum carrier power measured under normal test conditions.
The span of the spectrum analyzer shall be set large enough to capture all products of the modulation process, including the emission skirts, around the carrier frequency, but small enough to avoid having other emissions (e.g. on adjacent channels) within the span.
The detector of the spectrum analyzer shall be set to "Sample". However, a peak, or peak hold, may be used in place of the sampling detector since this usually produces a wider bandwidth than the actual bandwidth (worst-case measurement). Use of a peak hold (or "Max Hold") may be necessary to determine the occupied / x dB bandwidth if the device is not transmitting continuously.
The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the actual occupied / x dB bandwidth and the video bandwidth (VBW) shall not be smaller than three times the RBW value. Video averaging is not permitted.

Note: It may be necessary to repeat the measurement a few times until the RBW and VBW are in compliance with the above requirement.
For the 99% emission bandwidth, the trace data points are recovered and directly summed in linear power level terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached, and that frequency recorded. The process is repeated for the highest frequency data points (starting at the highest frequency, at the right side of the span, and going down in frequency). This frequency is then recorded. The difference between the two recorded frequencies is the occupied bandwidth (or the 99% emission bandwidth)

Test Procedure

Test Method: ANSI C63.10-2020 Clause 6.9.2 & 6.9.3

a) 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.

b) 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 at least three times RBW, unless otherwise specified by the applicable requirement.

c) 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 4.1.6.2.

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 dBc 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 dBc bandwidth shall be reported by providing spectral 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).

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission. The following procedure shall be used for measuring 99% power bandwidth:

a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.

b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be at least three times the RBW, unless otherwise specified by the applicable requirement.

c) 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 4.1.6.2.

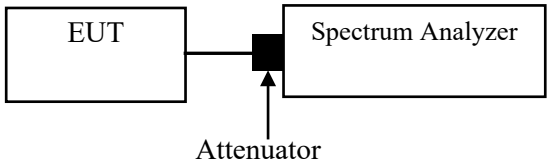
d) Step a) through step c) might require iteration to adjust within the specified range.

e) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max-hold mode (until the trace stabilizes) shall be used.

f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.

g) If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies.

h) The occupied bandwidth shall be reported by providing spectral 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:	25.1 °C
Relative Humidity:	49 %
ATM Pressure:	100.1 kPa

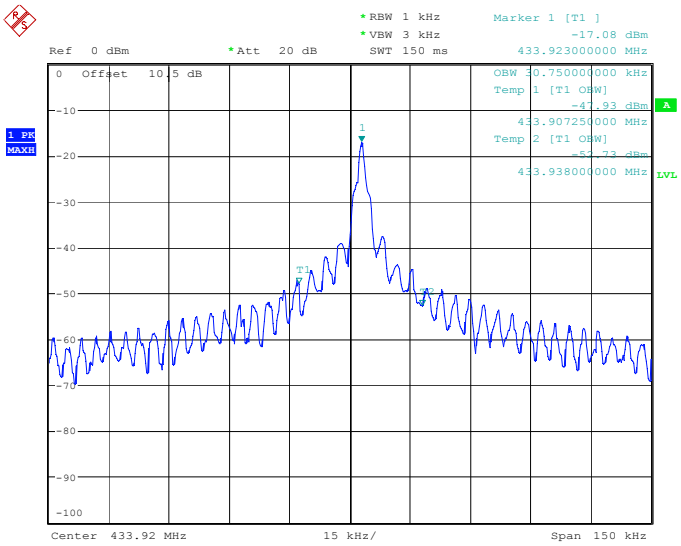
The testing was performed by Cheeb Huang on 2025-10-11.

Test Mode: Transmitting

Please refer to following table and plots.

Channel Frequency (MHz)	20dB Emission Bandwidth (kHz)	99% Occupied Bandwidth (kHz)	Limit (kHz)
433.92	11.894	30.75	1085

99% Occupied Bandwidth



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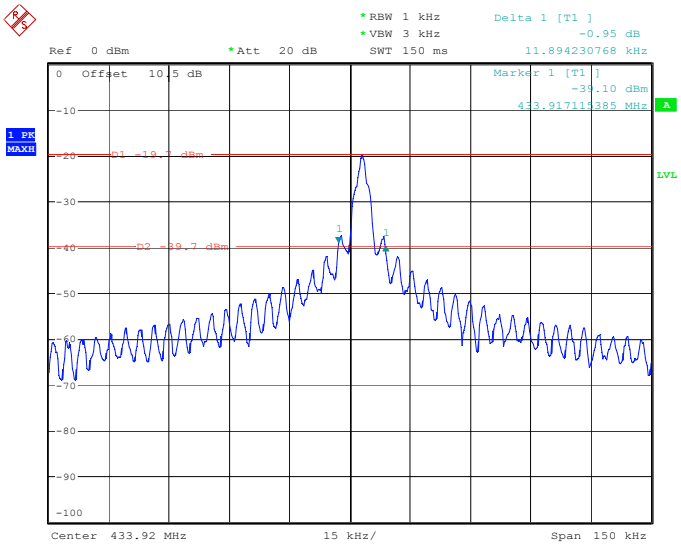
Date: 11.OCT.2025 15:28:54

20 dB Emission Bandwidth



ProjectNo.:2501V34991E-RF Tester:Cheeb Huang
Date: 11.OCT.2025 15:22:26

EUT PHOTOGRAPHS

Please refer to the attachment 2501V34991E-RF-EXP External photo and 2501V34991E-RF-INP Internal photo.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2501V34991E-RF-TSP Test Setup photo.

******* END OF REPORT *******