TEST REPORT

Applicant Name :	Zeeva International Limited
Address :	Suite 1007B, 10th Floor, Exchange Tower, 33 Wang Chiu Road, Kowloon Bay, Hong Kong
Report Number:	SZ3220804-35519E-RF-00B
FCC ID:	2ADM5-SP-0207B

Test Standard (s)

FCC PART 15.249

Sample Description

Product Type:	BT MULTIROOM SPEAKER
Model No.:	SP-0207B
Trade Name:	N/A
Date Received:	2022-08-04
Date of Test:	2022-09-30 to 2022-10-14
Report Date:	2022-10-18

Test Result:	Pass*

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

Prepared and Checked By:

Roger.Ling

EMC Engineer

Approved By:

Candy Li

EMC Engineer

Note: This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk "★".
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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	BT MULTIROOM SPEAKER
Tested Model	SP-0207B
SKU	GRAY - 6895095, BLACK - 6895096, BLUE - 6895098, PINK - 6895097
UPC	GRAY - 1922347800589, BLACK - 1922347800596 , BLUE - 1922347800619, PINK - 1922347800602
Model difference	Please refer to DOS letter
Frequency Range	5731-5795MHz
Maximum E-Field Strength (Peak)	96.83dBμV/m@3m
Modulation Technique	GFSK
Antenna Specification	Internal Antenna: 4.05dBi (It is provided by the applicant)
Voltage Range	DC 3.7V from battery or DC 5V from USB port.
Sample serial number	SZ3220808-35519E-RF-S1 (CE&RE Test), SZ3220808-35519E-RF-S2 (RF Conducted Test). (Assigned by ATC, Shenzhen)
Sample/EUT Status	Good condition

Objective

This type approval report is in accordance with Part 2-Subpart J, and Part 15-Subparts A and C of the Federal Communication Commissions rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.249 rules.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliant Testing of Unlicensed Wireless Devices.

All emissions measurement was performed at Shenzhen Accurate Technology Co., Ltd. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		5%
RF Frequency		$0.082*10^{-7}$
RF output power, conducted		0.73dB
Unwanted Emission, conducted		1.6dB
AC Power Lines Conducted Emissions		2.72dB
Emissions, Radiated	9kHz - 30MHz	2.66dB
	30MHz - 1GHz	4.28dB
	1GHz - 18GHz	4.98dB
	18GHz - 26.5GHz	5.06dB
	26.5GHz - 40GHz	4.72dB
Temperature		1℃
Humidity		6%
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 Shenzhen Accurate Technology Co., Ltd. to collect test data is located on the 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 708358, the FCC Designation No.: CN1189.

Accredited by American Association for Laboratory Accreditation (A2LA). The Certificate Number is 4297.01

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0016. The Registration Number is 5077A.

SYSTEM TEST CONFIGURATION

Justification

The system was configured for testing by manufacturer.

Frequency list:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	**5731**	22	5753	44	5775
1	5732	23	5754	45	5776
2	5733	24	5755	46	5777
3	5734	25	5756	47	5778
4	5735	26	5757	48	5779
5	5736	27	5758	49	5780
6	5737	28	5759	50	5781
7	5738	29	5760	51	5782
8	5739	30	5761	52	5783
9	5740	31	5762	53	5784
10	5741	32	5763	54	5785
11	5742	33	5764	55	5786
12	5743	34	5765	56	5787
13	5744	35	5766	57	5788
14	5745	**36**	**5767**	58	5789
15	5746	37	5768	59	5790
16	5747	38	5769	60	5791
17	5748	39	5770	61	5792
18	5749	40	5771	62	5793
19	5750	41	5772	63	5794
20	5751	42	5773	**64**	**5795**
21	5752	43	5774	/	/

Channel 0, Channel 36 and Channel 64 were selected for testing.

EUT Exercise Software

Software " sscom V5.13.1.exe"* was used during testing and the power level was default *.

Equipment Modifications

No modifications were made to the unit tested.

Support Equipment List and Details

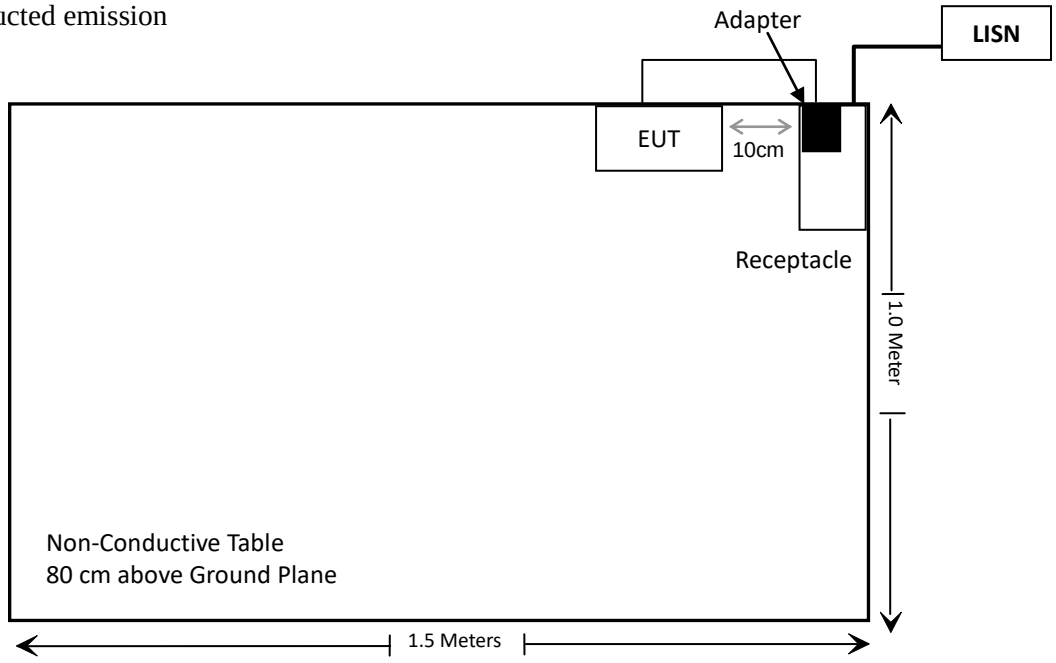
Manufacturer	Description	Model	Serial Number
HUAWEI	Adapter	HW-050100C01	H779KBK6V19398

Support Cable Descriptions

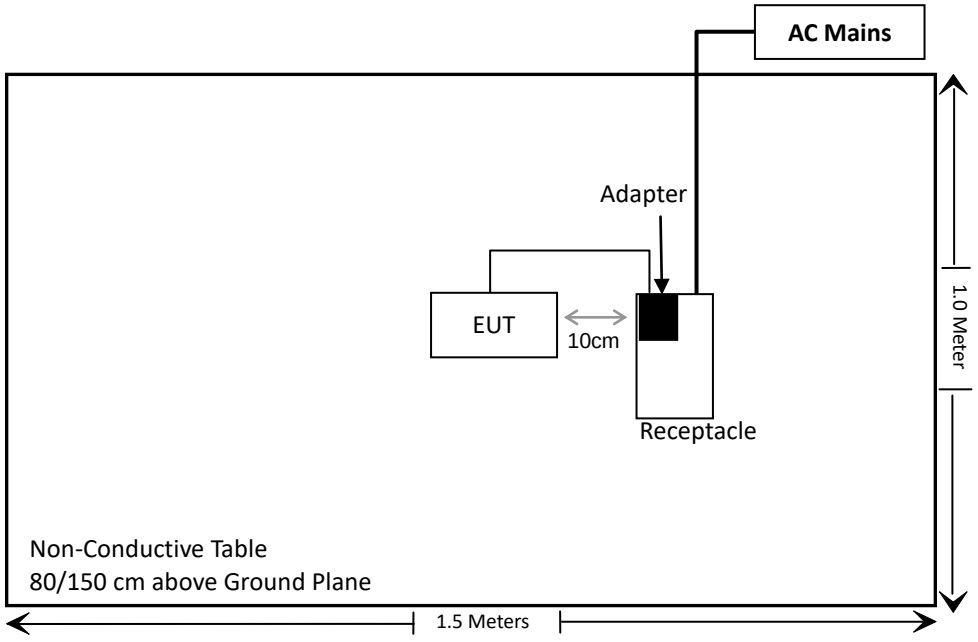
Cable Description	Length (m)	From/Port	To
Un-shielding Detachable USB Cable	0.5	EUT	Adapter

Block Diagram of Test Setup

For conducted emission



For radiated emission:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1307 (b)	RF Exposure	Compliant
§15.203	Antenna Requirement	Compliant
§15.207(a)	AC Line Conducted Emissions	Compliant
15.205, §15.209, §15.249(d)	Radiated Emissions & Outside of Band Emission	Compliant
§15.215 (c)	20dB Bandwidth	Compliant

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESCI	100784	2021/12/13	2022/12/12
Rohde & Schwarz	L.I.S.N.	ENV216	101314	2021/12/13	2022/12/12
Anritsu Corp	50 Coaxial Switch	MP59B	6100237248	2021/12/13	2022/12/12
Unknown	RF Coaxial Cable	No.17	N0350	2021/12/14	2022/12/13
Conducted Emission Test Software: e3 19821b (V9)					
Radiated Emission Test					
Rohde & Schwarz	Test Receiver	ESR	102725	2021/12/13	2022/12/12
Rohde & Schwarz	Spectrum Analyzer	FSV40	101949	2021/12/13	2022/12/12
A.H. Systems, inc.	Preamplifier	PAM-0118P	135	2021/11/09	2022/11/08
SONOMA INSTRUMENT	Amplifier	310 N	186131	2021/11/09	2022/11/08
Quinstar	Amplifier	QLW-18405536-J0	15964001002	2021/11/11	2022/11/10
Schwarzbeck	Bilog Antenna	VULB9163	9163-323	2021/07/06	2024/07/05
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-1067	2020/01/05	2023/01/04
Schwarzbeck	HORN ANTENNA	BBHA9170	9170-359	2020/01/05	2023/01/04
Unknown	RF Coaxial Cable	No.10	N050	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.11	N1000	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.12	N040	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.13	N300	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.14	N800	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.15	N600	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.16	N650	2021/12/14	2022/12/13
Radiated Emission Test Software: e3 19821b (V9)					
RF Conducted Test					
Rohde & Schwarz	Spectrum Analyzer	FSV-40	101948	2021/12/13	2022/12/12
WEINSCHEL	10dB Attenuator	5324	AU 3842	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.33	RF-03	Each time	

*** Statement of Traceability:** Shenzhen Accurate Technology Co., Ltd. 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 KDB 447498 D04 Interim General RF Exposure Guidance v01, clause 2.1.4 –MPE-Based Exemption:

An alternative to the SAR-based exemption is provided in § 1.1307(b)(3)(i)(C), for a much wider frequency range, from 300 kHz to 100 GHz, applicable for separation distances greater or equal to $\lambda/2\pi$, where λ is the free-space operating wavelength in meters. The MPE-based test exemption condition is in terms of ERP, defined as the product of the maximum antenna gain and the delivered maximum time-averaged power. For this case, a RF source is an RF exempt device if its ERP (watts) is no more than a frequency-dependent value, as detailed tabular form in Appendix B. These limits have been derived based on the basic specifications on Maximum Permissible Exposure (MPE) considered for the FCC rules in § 1.1310(e)(1).

Table to § 1.1307(b)(3)(i)(C) - Single RF Sources Subject to Routine Environmental Evaluation

RF Source frequency (MHz)	Threshold ERP (watts)
0.3-1.34	1,920 R^2.
1.34-30	3,450 R^2/f^2.
30-300	3.83 R^2.
300-1,500	0.0128 R^2f.
1,500-100,000	19.2R^2.

f = frequency in MHz;
R = minimum separation distance from the body of a nearby person (appropriate units, e.g., m);

For multiple RF sources: Multiple RF sources are exempt if:

in the case of fixed RF sources operating in the same time-averaging period, or of multiple mobile or portable RF sources within a device operating in the same time averaging period, if the sum of the fractional contributions to the applicable thresholds is less than or equal to 1 as indicated in the following equation:

$$\sum_{i=1}^{a} \frac{P_i}{P_{th,i}} + \sum_{j=1}^{b} \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^{c} \frac{Evaluated_k}{Exposure\ Limit_k} \leq 1$$

Test Result

For worst case:

Mode	Frequency Range (MHz)	Tune-up Output Power		Antenna Gain		ERP		Evaluation Distance (cm)	MPE-Based Exemption Threshold (mW)
		(dBm)	(mW)	(dBi)	(dBd)	(dBm)	(mW)		
BT	2402-2480	3.5	2.24	0.2	-1.95	1.55	1.43	20	768
5.8G SRD	5731-5795	/	/	4.05	1.9	0	1	20	768

Note 1: EIRP(dBm)=E(dBuV/m)-95.2, for d=3 meters, for 5.8G SRD, the maximum E-field strength is 96.83dBuV/m@3m, the maximum EIRP=(96.83 - 95.2) dBm =1.63dBm
Note 2: ERP=EIRP-2.15, for 5.8G SRD, the maximum ERP = (1.63 -2.15) dBm = -0.52 dBm, so the tune-up ERP is 0dBm
Note 3: The tune-up power was declared by the applicant
Note 4: 0dBd=2.15dBi
Note 5: the BT and 5.8G SRD can transmit at same time.

Simultaneous transmitting consideration (worst case):

The ratio=ERP_{BT}/limit+$ERP_{5.8G\ SRD}$/limit=1.43/768+1/768=0.003＜1.0, so simultaneous exposure is compliant.

To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.

Result: Compliant.

FCC§15.203 – ANTENNA REQUIREMENT

Applicable Standard

According to FCC § 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 use of a standard antenna jack or electrical connector is prohibited.

Antenna Connector Construction

The EUT has one internal antenna which was permanently attached and the antenna gain is 4.05dBi, fulfill the requirement of this section. Please refer to the EUT photos.

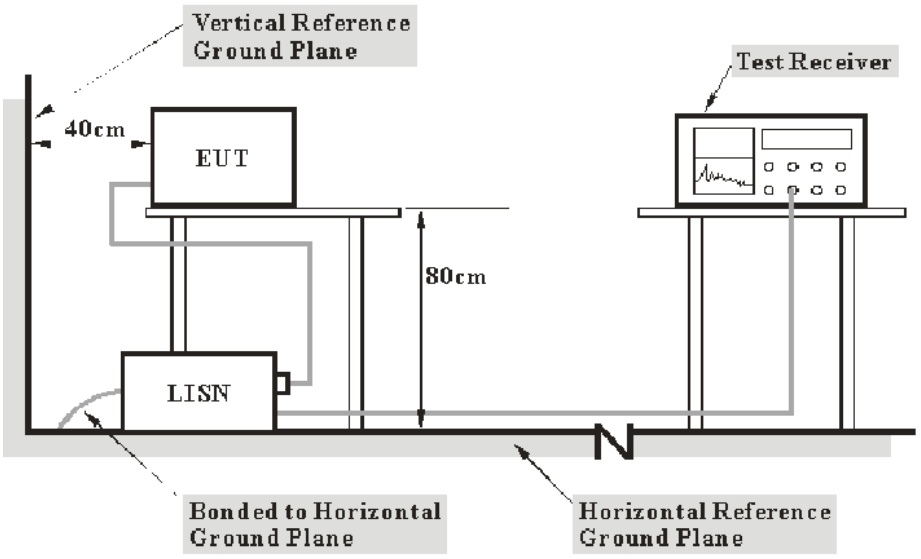
Result: Compliant.

FCC§15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207(a)

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 measurement procedure of EUT setup is according with ANSI C63.10-2013. The related limit was specified in FCC Part 15.207.

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

During the conducted emission test, the adapter was connected to the outlet of the LISN.

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

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

Factor & Margin Calculation

The factor is calculated by adding LISN VDF (Voltage Division Factor) and Cable Loss. The basic equation is as follows:

Factor = LISN VDF + Cable Loss

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

Over Limit = Level – Limit
Level = Read Level + Factor

Test Data

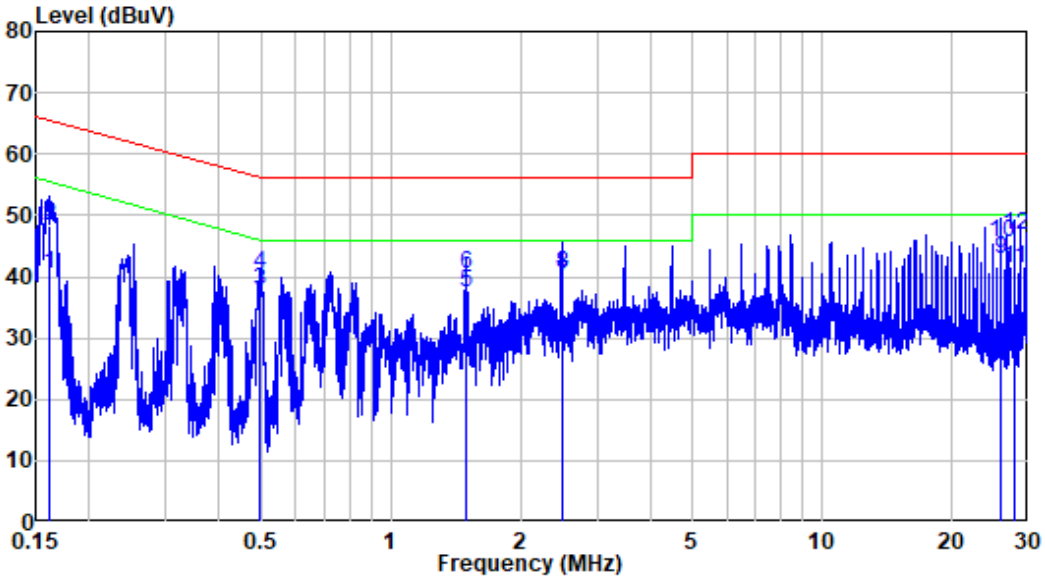
Environmental Conditions

Temperature:	23 ℃
Relative Humidity:	40 %
ATM Pressure:	101.5 kPa

The testing was performed by Jason Liu on 2022-10-14.

EUT operation mode: Transmitting(worst case low channel)

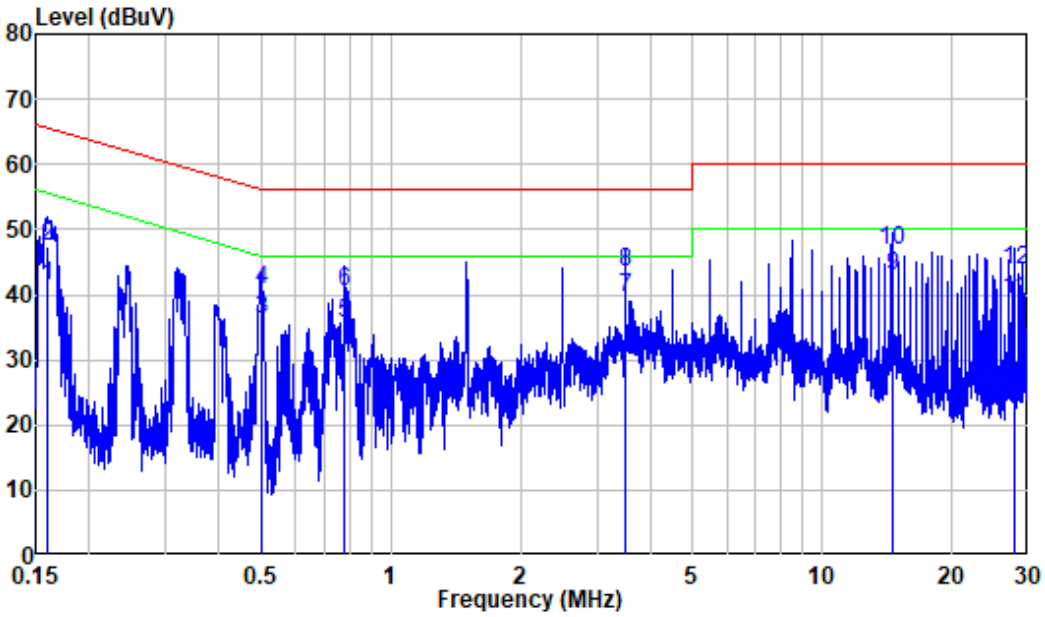
AC 120V/60 Hz, Line



Site : Shielding Room
Condition: Line
Job No. : SZ3220804-35519E-RF
Mode : Transmitting
Power : AC 120V 60Hz

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.161	9.80	30.64	40.44	55.42	-14.98	Average
2	0.161	9.80	38.51	48.31	65.42	-17.11	QP
3	0.497	9.80	28.04	37.84	46.05	-8.21	Average
4	0.497	9.80	30.73	40.53	56.05	-15.52	QP
5	1.494	9.81	27.66	37.47	46.00	-8.53	Average
6	1.494	9.81	30.56	40.37	56.00	-15.63	QP
7	2.487	9.82	29.01	38.83	46.00	-7.17	Average
8	2.487	9.82	30.73	40.55	56.00	-15.45	QP
9	25.898	10.06	32.93	42.99	50.00	-7.01	Average
10	25.898	10.06	35.60	45.66	60.00	-14.34	QP
11	27.855	10.08	31.37	41.45	50.00	-8.55	Average
12	27.855	10.08	36.65	46.73	60.00	-13.27	QP

AC 120V/60 Hz, Neutral



Site : Shielding Room
Condition: Neutral
Job No. : SZ3220804-35519E-RF
Mode : Transmitting
Power : AC 120V 60Hz

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.160	9.80	31.67	41.47	55.47	-14.00	Average
2	0.160	9.80	37.58	47.38	65.47	-18.09	QP
3	0.500	9.80	26.39	36.19	46.00	-9.81	Average
4	0.500	9.80	30.90	40.70	56.00	-15.30	QP
5	0.779	9.81	25.79	35.60	46.00	-10.40	Average
6	0.779	9.81	30.55	40.36	56.00	-15.64	QP
7	3.491	9.83	29.60	39.43	46.00	-6.57	Average
8	3.491	9.83	33.53	43.36	56.00	-12.64	QP
9	14.479	10.04	32.96	43.00	50.00	-7.00	Average
10	14.479	10.04	36.84	46.88	60.00	-13.12	QP
11	27.855	10.18	28.95	39.13	50.00	-10.87	Average
12	27.855	10.18	33.72	43.90	60.00	-16.10	QP

FCC§15.205, §15.209 & §15.249(d) – RADIATED EMISSIONS

Applicable Standard

As per FCC§15.249 (a), except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902–928 MHz	50	500
2400–2483.5 MHz	50	500
5725–5875 MHz	50	500
24.0–24.25 GHz	250	2500

As per FCC§15.249 ©, Field strength limits are specified at a distance of 3 meters.
As per FCC§15.249 (d), Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

Test Equipment Setup

The spectrum analyzer or receiver is set as:

Below 1000MHz:

RBW = 100 kHz / VBW = 300 kHz / Sweep = Auto

Above 1000MHz:

Peak: RBW = 1MHz / VBW = 1MHz / Sweep = Auto

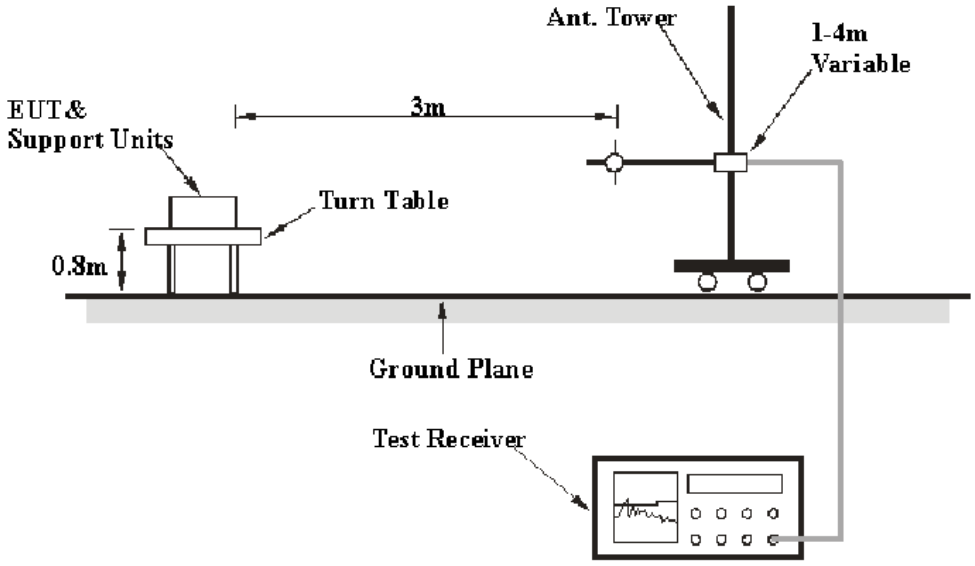
For average measurement:

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.
Average Emission Level=Peak Emission Level+20*log(Duty cycle)

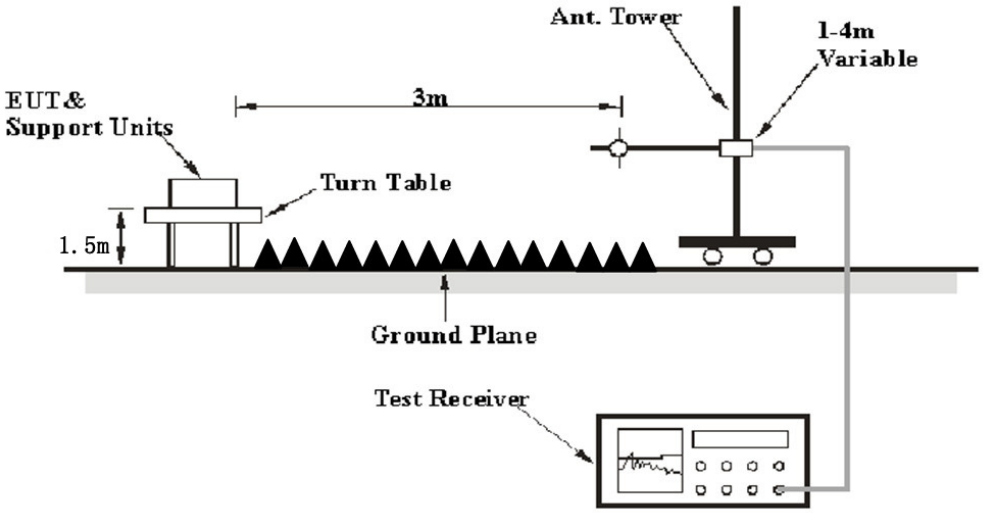
If the maximized peak measured value complies with the limit, then it is unnecessary to perform QP/Average measurement.

EUT Setup

Below 1GHz:



Above 1GHz:



The radiated emission and out of band emission tests were performed in the 3meters chamber test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209/15.205 and FCC 15.249 limits.

Test Procedure

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

The EUT is set 3 meter away from the testing antenna, which is varied from 1-4 meter, and the EUT is placed on a turntable, which is 0.8 meter above ground plane for below 1GHz or 1.5 meter for above 1GHz, the table shall be rotated for 360 degrees to find out the highest emission. The receiving antenna should be changed the polarization both of horizontal and vertical.

Corrected Amplitude & 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 Results Summary

According to the EUT complied with the FCC Part 15.205, 15.209 & §15.249

Test Data

Environmental Conditions

Temperature:	24~26℃
Relative Humidity:	58~61%
ATM Pressure:	101.0~101.2kPa

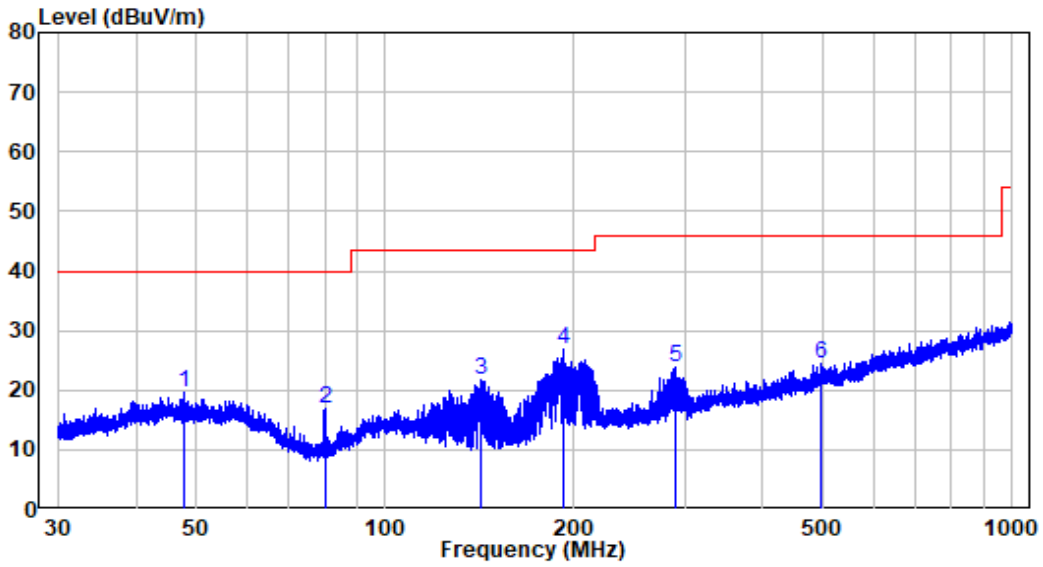
The testing was performed by Level Li from 2022-09-30 to 2022-10-14.

Test Mode: Transmitting (Pre-scan in the X, Y and Z axes of orientation, the worst case X-axis of orientation was recorded)

30MHz-1GHz: (Worst case low channel)

Low Channel

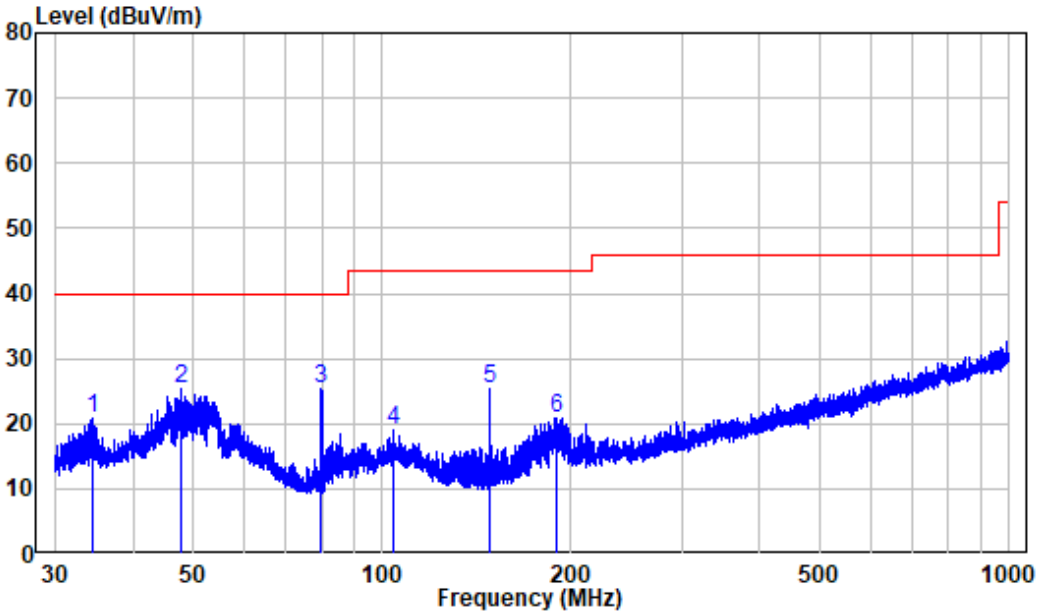
Horizontal



Site : chamber
Condition: 3m HORIZONTAL
Job No. : SZ3220804-35519E-RF
Test Mode: Transmitting

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	47.805	-10.00	29.56	19.56	40.00	-20.44	Peak
2	80.010	-16.79	33.85	17.06	40.00	-22.94	Peak
3	141.640	-15.52	37.27	21.75	43.50	-21.75	Peak
4	192.503	-11.27	38.23	26.96	43.50	-16.54	Peak
5	290.781	-9.30	33.02	23.72	46.00	-22.28	Peak
6	495.934	-4.42	28.87	24.45	46.00	-21.55	Peak

Vertical



Site : chamber
Condition: 3m VERTICAL
Job No. : SZ3220804-35519E-RF
Test Mode: Transmitting

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	34.563	-11.68	32.48	20.80	40.00	-19.20	Peak
2	47.805	-10.00	35.47	25.47	40.00	-14.53	Peak
3	79.975	-16.79	42.13	25.34	40.00	-14.66	Peak
4	104.307	-11.77	30.70	18.93	43.50	-24.57	Peak
5	148.376	-15.36	40.69	25.33	43.50	-18.17	Peak
6	189.323	-11.67	32.61	20.94	43.50	-22.56	Peak

Above 1 GHz:

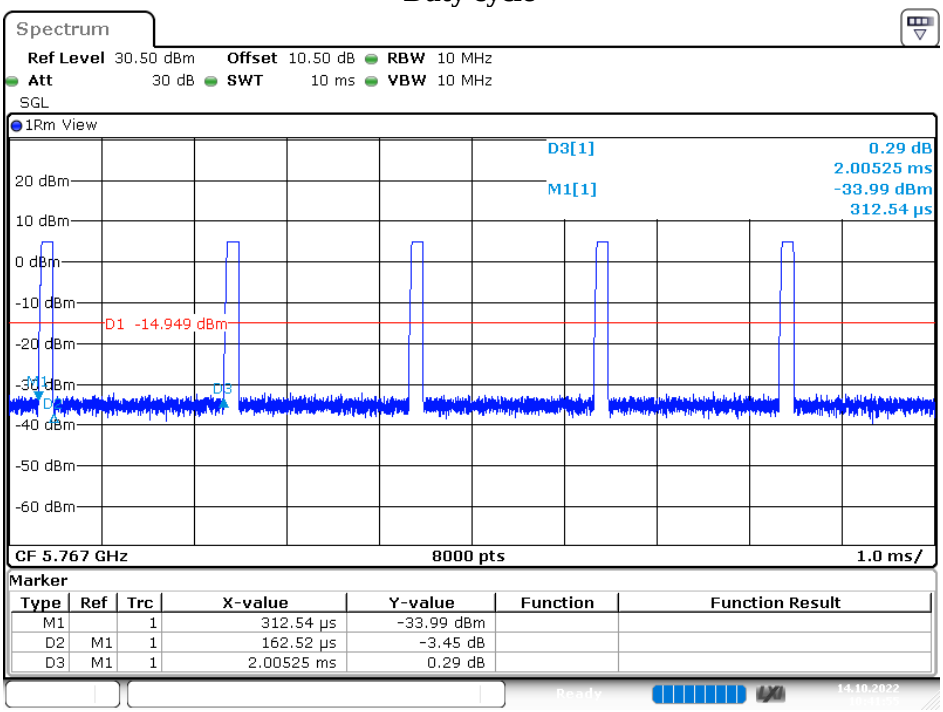
Frequency (MHz)	Receiver		Turntable Angle Degree	Rx Antenna		Factor (dB/m)	Absolute Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
	Reading (dBuV)	PK/AV		Height (m)	Polar (H/V)				
5731, Low Channel									
5731	97.26	PK	293	1.7	H	-1.95	95.31	114	-18.69
5731	98.78	PK	220	1.0	V	-1.95	**96.83**	114	-17.17
5725	55.93	PK	293	1.7	H	-1.95	53.98	74	-20.02
5725	57.12	PK	293	1.7	V	-1.95	55.17	74	-18.83
11462	46.80	PK	194	2.1	H	6.63	53.43	74	-20.57
11462	50.65	PK	215	1.5	V	6.63	57.28	74	-16.72
5767, Middle Channel									
5767	94.04	PK	198	1.5	H	-1.86	92.18	114	-21.82
5767	98.34	PK	49	1.7	V	-1.86	96.48	114	-17.52
11534	48.12	PK	198	1.5	H	6.59	54.71	74	-19.29
11534	50.11	PK	287	1.4	V	6.59	56.70	74	-17.30
5795, High Channel									
5795	86.03	PK	198	1.5	H	-1.84	84.19	114	-29.81
5795	92.88	PK	287	1.4	V	-1.84	91.04	114	-22.96
5875	56.14	PK	269	1.9	H	-1.84	54.30	74	-19.70
5875	57.20	PK	121	1.3	V	-1.84	55.36	74	-18.64
11590	46.23	PK	178	1.5	H	6.77	53.00	74	-21.00
11590	45.78	PK	169	1.5	V	6.77	52.55	74	-21.45

Field Strength of Average							
Frequency (MHz)	Peak Measurement @3m (dBµV/m)	Polar (H/V)	Duty Cycle Correction Factor(dB)	Corrected Ampitude (dBµV/m)	Part 15.249		
					Limit (dBµV/m)	Margin (dB)	Comment
5731 Low Channel							
5731	95.31	H	-21.83	73.48	94	-20.52	Fundamental
5731	96.83	V	-21.83	75.00	94	-19.00	Fundamental
5725	53.98	H	-21.83	32.15	54	-21.85	Band edge
5725	55.17	V	-21.83	33.34	54	-20.66	Band edge
11462	53.43	H	-21.83	31.60	54	-22.40	Harmonic
11462	57.28	V	-21.83	35.45	54	-18.55	Harmonic
5767 Middle Channel							
5767	92.18	H	-21.83	70.35	94	-23.65	Fundamental
5767	96.48	V	-21.83	74.65	94	-19.35	Fundamental
11534	54.71	H	-21.83	32.88	54	-21.12	Harmonic
11534	56.70	V	-21.83	34.87	54	-19.13	Harmonic
5795 High Channel							
5795	84.19	H	-21.83	62.36	94	-31.64	Fundamental
5795	91.04	V	-21.83	69.21	94	-24.79	Fundamental
5875	54.30	H	-21.83	32.47	54	-21.53	Band edge
5875	55.36	V	-21.83	33.53	54	-20.47	Band edge
11590	53.00	H	-21.83	31.17	54	-22.83	Harmonic
11590	52.55	V	-21.83	30.72	54	-23.28	Harmonic

Note:
Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
Absolute Level (Corrected Amplitude) = Factor + Reading
Margin = Absolute Level (Corrected Amplitude) – Limit
The other spurious emission which is in the noise floor level was not recorded.
Average=Peak + duty cycle factor

The device use constant duty cycle
Duty cycle=Ton/Tp=0.163ms/2.005ms=0.081
Duty cycle factor=20*log(duty cycle)=20*log(0.081)=-21.83

Duty cycle



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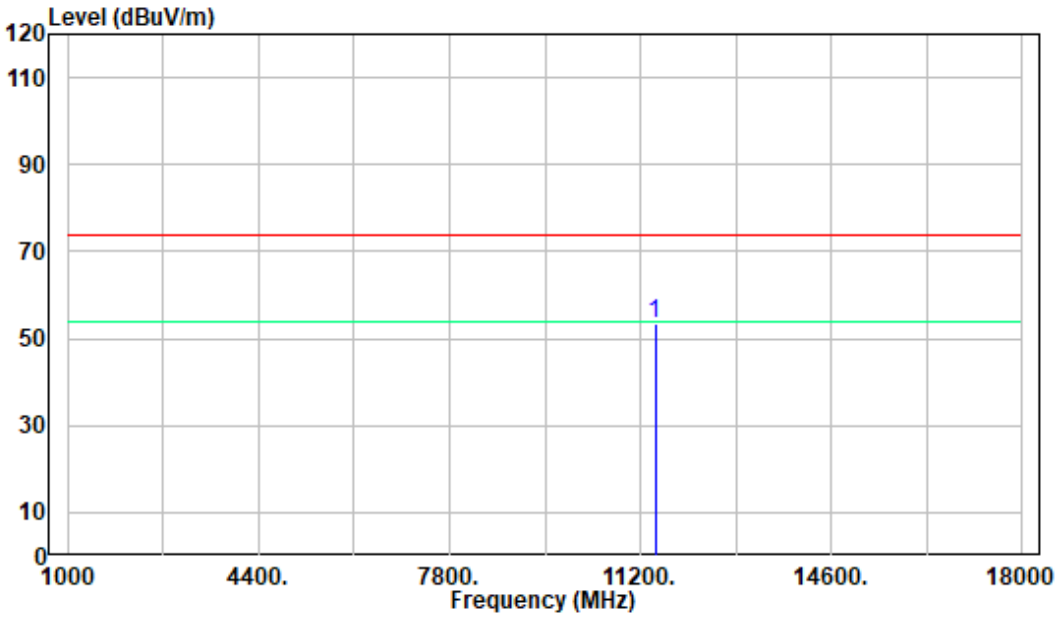
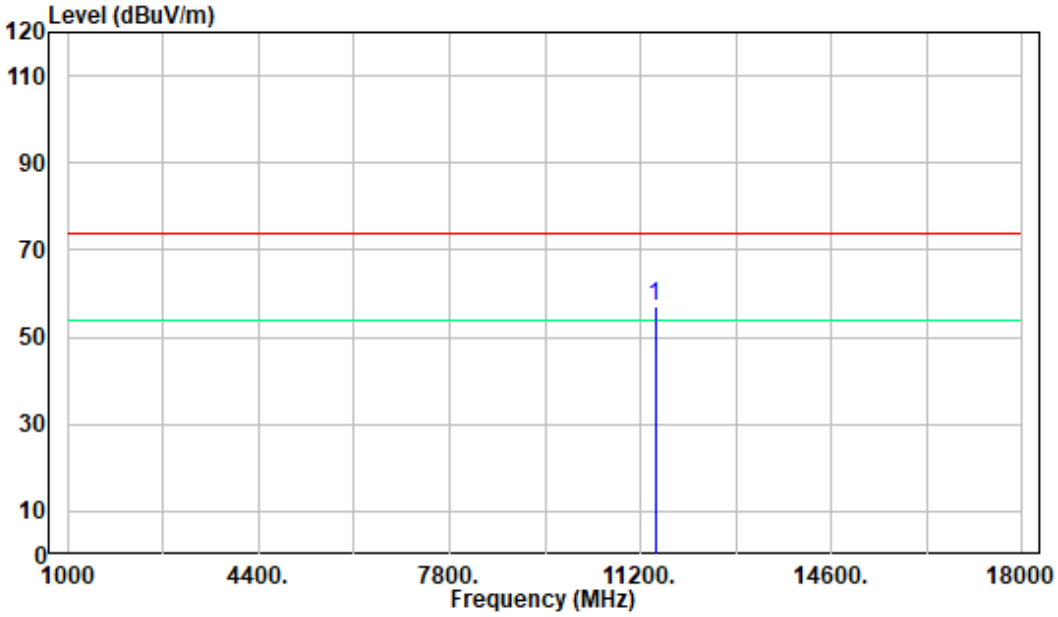
Pre-scan plots: (worst case for low channel)

1-18GHz:

Horizontal

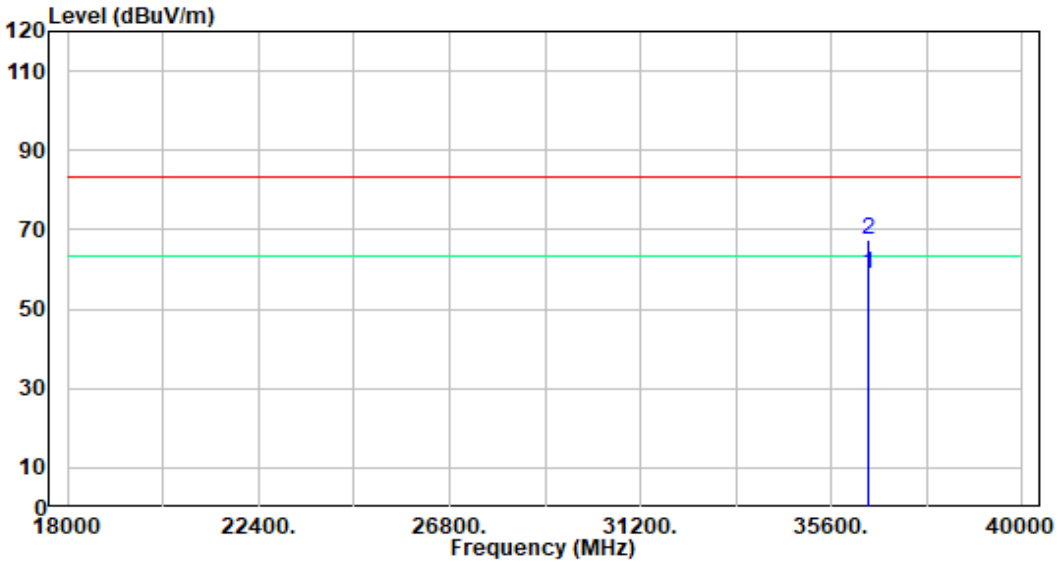


Vertical

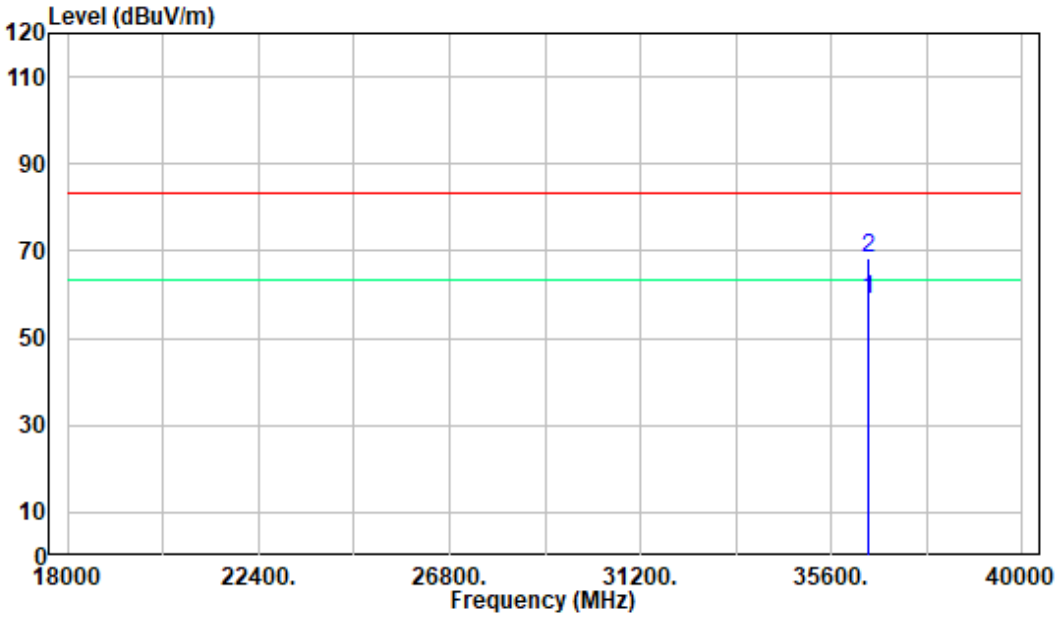


18-40GHz:

Horizontal



Vertical



FCC§15.215(c) - 20dB EMISSION BANDWIDTH

Applicable Standard

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.

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.

2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.

3. Measure the frequency difference of two frequencies that indicated 20dBbandwidth.

4. Repeat above procedures until all frequencies measured were complete.

Test Data

Environmental Conditions

Temperature:	26 ℃
Relative Humidity:	56 %
ATM Pressure:	101.0 kPa

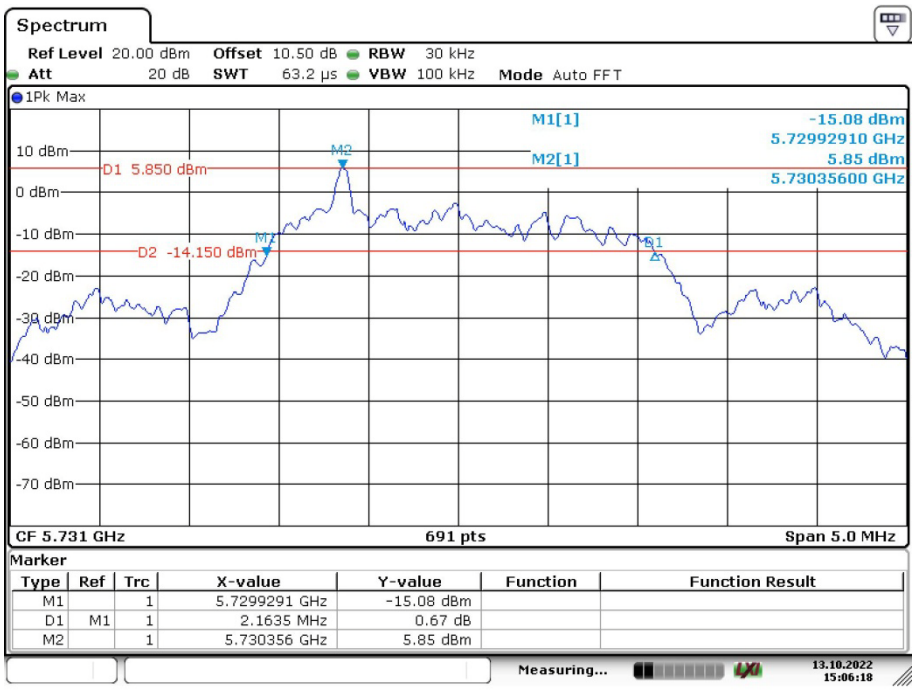
The testing was performed by Roger Ling on 2022-10-13.

Test Mode: Transmitting

Please refer to the following table and plots.

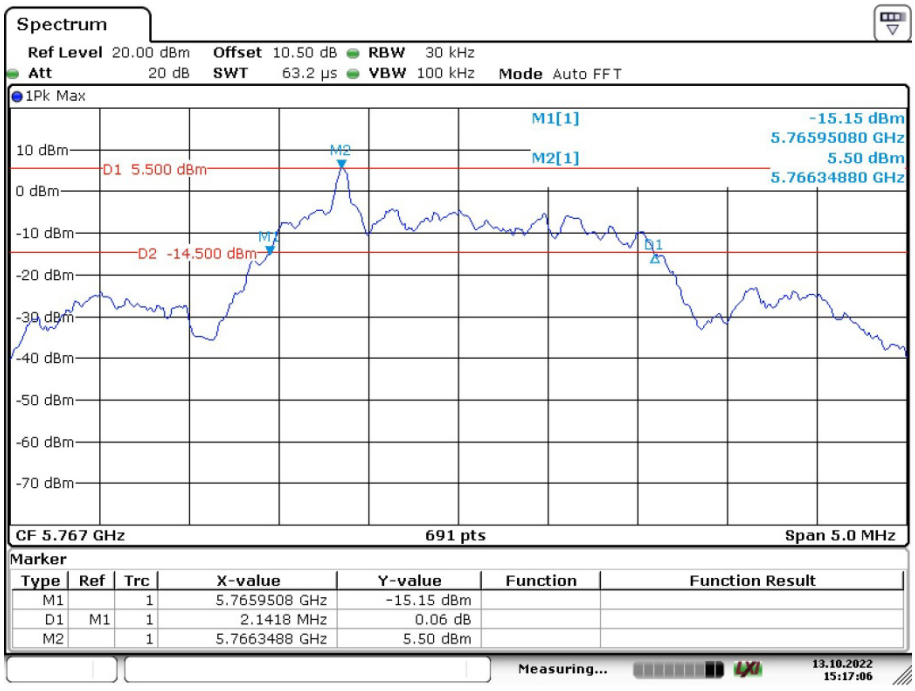
Channel	Frequency (MHz)	20dB Bandwidth (MHz)
Low	5731	2.16
Middle	5767	2.14
High	5795	2.13

Low Channel



Date: 13.OCT.2022 15:06:18

Middle Channel



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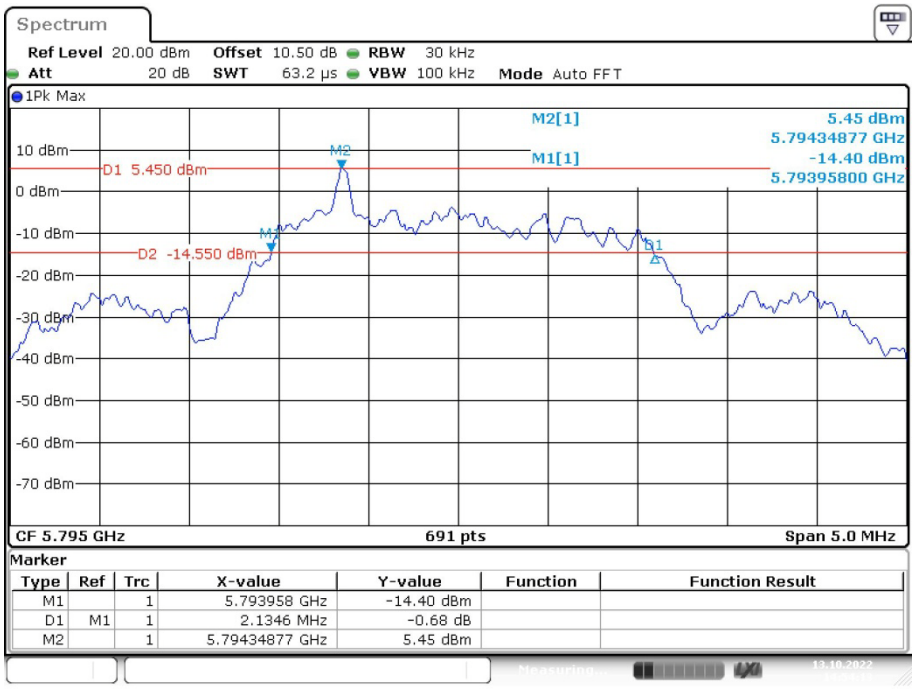
High Channel



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