



Project No: TM-2303000568P
Report No.: TMWK2303000980KR

FCC ID: 2BALUHCM-ADP-01

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Rev.: 00

FCC 47 CFR PART 15 SUBPART C

TEST REPORT

For

Smart Breath-actuated Mesh Nebulizer

Model No.: HCM-ADP-01

Trade Name: AdheResp

Issued to

**HCmed Innovations Co., Ltd.
Rm. B, 10F., No. 319, Sec. 2, Dunhua S. Rd., Da'an Dist., Taipei City 106,
Taiwan**

Issued by

**Compliance Certification Services Inc.
Wugu Laboratory
No.11, Wugong 6th Rd., Wugu Dist.,
New Taipei City, Taiwan.
Issued Date: June 13, 2023**

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	June 13, 2023	Initial Issue	ALL	Doris Chu

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1. TEST RESULT CERTIFICATION

Applicant: HCmed Innovations Co., Ltd.
Rm. B, 10F., No. 319, Sec. 2, Dunhua S. Rd., Da'an Dist.,
Taipei City 106, Taiwan

Manufacturer: HCmed Innovations Co., Ltd.
Rm. B, 10F., No. 319, Sec. 2, Dunhua S. Rd., Da'an Dist.,
Taipei City 106, Taiwan

Equipment Under Test: Smart Breath-actuated Mesh Nebulizer

Trade Name: AdheResp

Model No.: HCM-ADP-01

Date of Test: April 7 ~ 14, 2023

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
FCC 47 CFR Part 15 Subpart C	Compliance
Statements of Conformity	
Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.	

We hereby certify that:

The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10: 2013 and the energy emitted by the sample tested as described in this report is in compliance with the requirements of FCC Rules Part 15.225.

The test results of this report relate only to the tested sample identified in this report.

Approved by:



Dally Hong
Sr. Engineer

2. EUT DESCRIPTION

Product	Smart Breath-actuated Mesh Nebulizer
Model No.	HCM-ADP-01
Model Discrepancy	N/A
Trade	AdheResp
Received Date	March 31, 2023
Power Supply	Power from Adapter. I/P: 100-240VAC, 50/60Hz, 0.16-0.12A O/P: 5.0VDC, 1.0A, 5.0W
Frequency Range	13.56MHz
Modulation Technique	ASK
Number of Channels	1 Channel
Antenna Requirement	Loop Antenna / Gain: 0 dBi
S.W Version	U5 / PN7362AUHN/C300E
H.W Version	1. Main board / ADP_Main_20221115 V1.0 2. Button board / ADP_01_Button_20221115 V1.0 3. Sensor board / ADP_Sensor_20221115 V1.0

Remark:

1. For more details, please refer to the User's manual of the EUT.
2. Disclaimer: Antenna information is provided by the applicant, test results of this report are applicable to the sample EUT received.
3. The antenna was permanently attached to the EUT, fulfill the requirement of this section 15.203, please refer to the EUT photos.

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3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10: 2013 and FCC CFR 47 Part 15.207, 15.209, 15.225.

3.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

3.2 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 -	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.52525	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	156.7 - 156.9	3260 - 3267	23.6 - 24.0
12.29 - 12.293	162.0125 - 167.17	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	167.72 - 173.2	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	240 - 285	3600 - 4400	(²)
13.36 - 13.41	322 - 335.4		

¹ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

² Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

3.3 DESCRIPTION OF TEST MODES

The EUT had been tested under engineering test mode condition and the EUT staying in continuous transmitting mode.

AC Power Line Conducted Emission	
Test Condition	AC Power line conducted emission for line and neutral
Power supply Mode	Mode 1: EUT power by Adapter
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4

Radiated Emission Measurement Below 1G	
Test Condition	Radiated Emission Below 1G
Power supply Mode	Mode 1: EUT power by Adapter
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4

Remark:

1. The worst mode was record in this test report.
2. EUT pre-scanned in three axis ,X,Y, Z and two polarity, for radiated measurement. The worst case(Z-Plane) were recorded in this report
3. AC power line conducted emission and for below 1G radiation emission were performed the EUT transmit at the highest output power channel as worse case.

4. TEST SUMMARY

FCC Standard Sec.	Chapter	Test Item	Result
15.203	2	Antenna Requirement	Pass
15.215	7.1	Occupied Bandwidth (99%) and 20dB Bandwidth	Pass
15.209 & 15.225	7.2	Radiated Emissions	Pass
15.225	7.3	Frequency Stability	Pass
15.207	7.4	AC Power-line Conducted Emission	Pass

5. INSTRUMENT CALIBRATION

5.1 MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

5.2 MEASUREMENT EQUIPMENT USED

Equipment Used for Emissions Measurement

RF Conducted Test Site					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Loop Probe	LANGER EMV-TECHNIK	RF-R 50-1	02-2644	2023-01-13	2024-01-12
EXA Signal Analyzer	KEYSIGHT	N9010B	MY60242460	2023-02-02	2024-02-01
Software	N/A				

3M 966 Chamber Test Site					
Equipment	Manufacturer	Model	S/N	Cal Date	Cal Due
PXA Signal Analyzer	Keysight Technologies	N9030B	MY62291089	2022-10-14	2023-10-13
Loop Antenna	SCHWARZBECK	FMZB 1513_60	1513_60_028	2022-12-27	2023-12-26
Preamplifier	EMEC	EM330	060609	2023-02-22	2024-02-21
Thermo-Hygro Meter	WISEWIND	1206	D07	2022-12-19	2023-12-18
Bi-Log Antenna	Sunol Sciences	JB3	A030105	2022-08-03	2023-08-02
Cable	Huber+Suhner	104PEA	20995+21000+182330	2023-02-22	2024-02-21
Turn Table	CCS	CC-T-1F	N/A	N.C.R	N.C.R
Controller	CCS	CC-C-1F	N/A	N.C.R	N.C.R
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R	N.C.R
Software	e3 6.11-20180419c				

AC Conducted Emissions Test Site					
Equipment	Manufacturer	Model	S/N	Cal Date	Cal Due
EMI Test Receiver	R&S	ESCI	100064	2022-06-17	2023-06-16
LISN	TESEQ	LN2-16N	22012	2023-03-08	2024-03-07
Cable	EMCI	CFD300-NL	CERF	2022-06-27	2023-06-26
Software	EZ-EMC(CCS-3A1-CE-WUGU)				

Remark:

1. Each piece of equipment is scheduled for calibration once a year.
2. N.C.R. = No Calibration Request.

5.3 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
AC Powerline Conducted Emission	± 2.1183
Channel Bandwidth	± 2.1863
Frequency Stability	± 2.0730
Radiated Emission_9kHz-30MHz	± 3.814
Radiated Emission_30MHz-200MHz	± 4.272
Radiated Emission_200MHz-1GHz	± 4.619

Remark: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

5.4 FACILITIES AND TEST LOCATION

All measurement facilities used to collect the measurement data are located at

☒ No.11, Wugong 6th Rd., Wugu Dist., New Taipei City, Taiwan.

☐ No. 12, Ln. 116, Wugong 3rd Rd., Wugu Dist., New Taipei City, Taiwan 24803

CAB identifier: TW1309

Test site	Test Engineer	Remark
AC Conduction Room	Tony Chao	-
Radiation	Ray Li	-
RF Conducted	David Li	-

Remark: 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. :444940, the FCC Designation No.:TW1309

6. SETUP OF EQUIPMENT UNDER TEST

6.1 SETUP CONFIGURATION OF EUT

See test photographs attached in Appendix A for the actual connections between EUT and support equipment.

6.2 SUPPORT EQUIPMENT

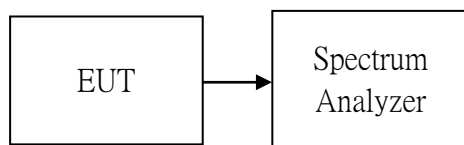
No.	Device Type	Brand	Model	Series No.	FCC ID
	N/A				

Remark:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

7. FCC PART 15.225 REQUIREMENTS

7.1 OCCUPIED BANDWIDTH(99%) AND 20 dB BANDWIDTH TEST CONFIGURATION



TEST PROCEDURE

1. Place the EUT on the table and set it in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW & VBW (RBW) shall be in the range of 1% to 5% of the actual occupied / x dB bandwidth (VBW) shall not be smaller than three times the RBW value.
4. For the RBW setting that is too low, it will affect the actual waveform characteristics, so it will be set to the lowest RBW of 1kHz.
5. Record the max. reading.

TEST RESULTS

compliance.

Temperature: 24°C

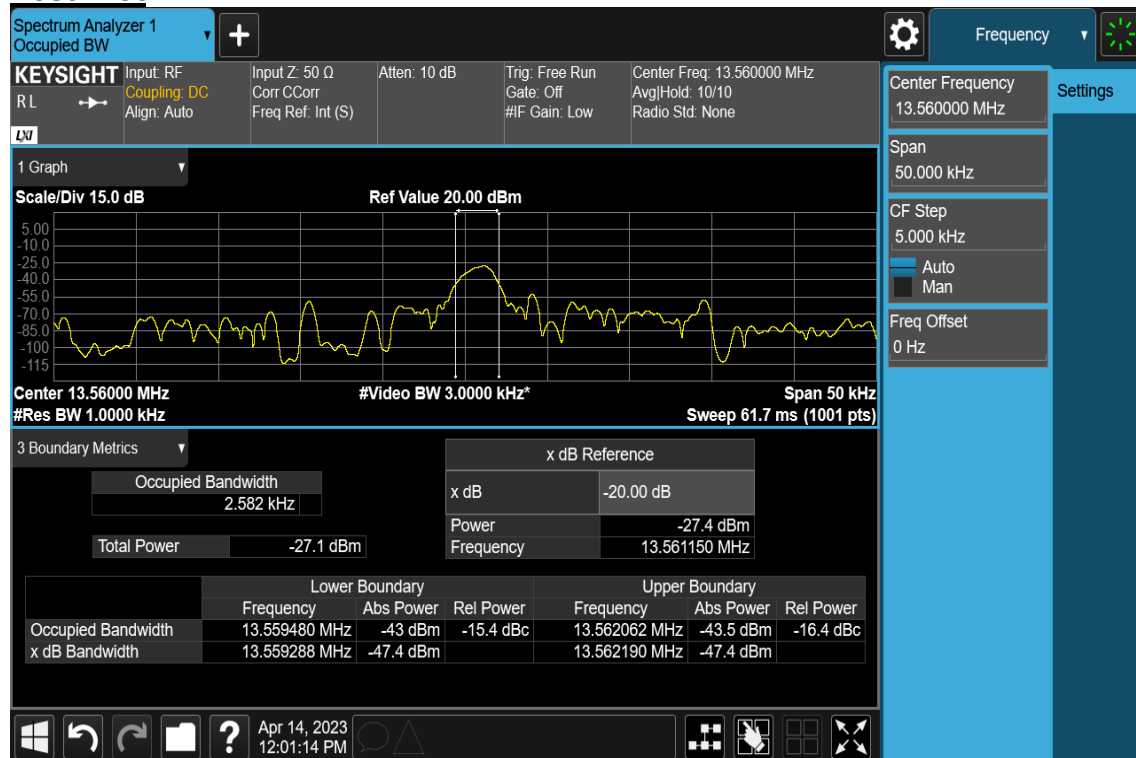
Humidity: 60% RH

Tested by: David Li

Test Date: April 14, 2023

Test Condition	Frequency(MHz)	Occupied Bandwidth 99% (kHz)	20 dB Bandwidth (kHz)
NFC	13.56	2.582	2.902

Test Plot



7.2 FUNDAMENTAL AND RADIATED EMISSIONS

LIMIT

According to §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 and shall not exceed the general radiated emission limits in §15.209.

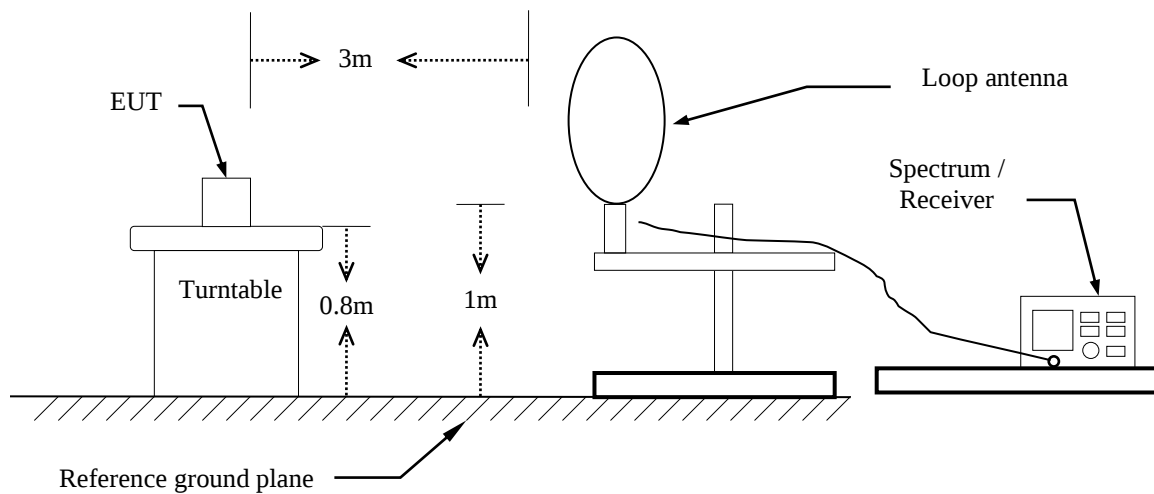
According to §15.225, except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (μ V/m at meter)	Measurement Distance (meter)
0.009 – 0.490	2400 / F (kHz)	300
0.490 – 1.705	24000 / F (kHz)	30
1.705 – 30.0	30	30
30 - 88	100**	3
88-216	150**	3
216-960	200**	3
Above 960	500	3

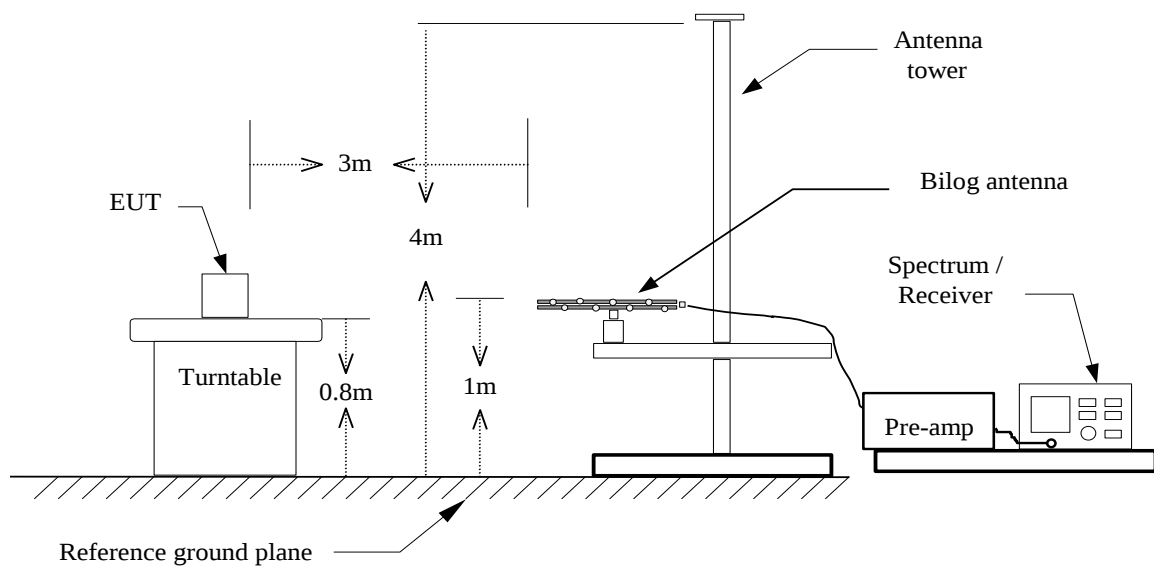
** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

Test Configuration

9kHz ~ 30MHz



30MHz ~ 1GHz



TEST PROCEDURE

For 9kHz ~ 30MHz

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, The center of the loop shall be 1 m above the ground then to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. Set the spectrum analyzer in the following setting as:
9KHz-490KHz : RBW=200Hz / VBW=1kHz / Sweep=AUTO
490KHz-30MHz : RBW=10kHz / VBW=30kHz / Sweep=AUTO
6. Repeat above procedures until the measurements for all frequencies are complete.

For 30MHz ~ 1GHz

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Set the spectrum analyzer in the following setting as:
RBW=100kHz / VBW=300kHz / Sweep=AUTO
7. Repeat above procedures until the measurements for all frequencies are complete.

Remark :

Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

Operation Mode: TX mode

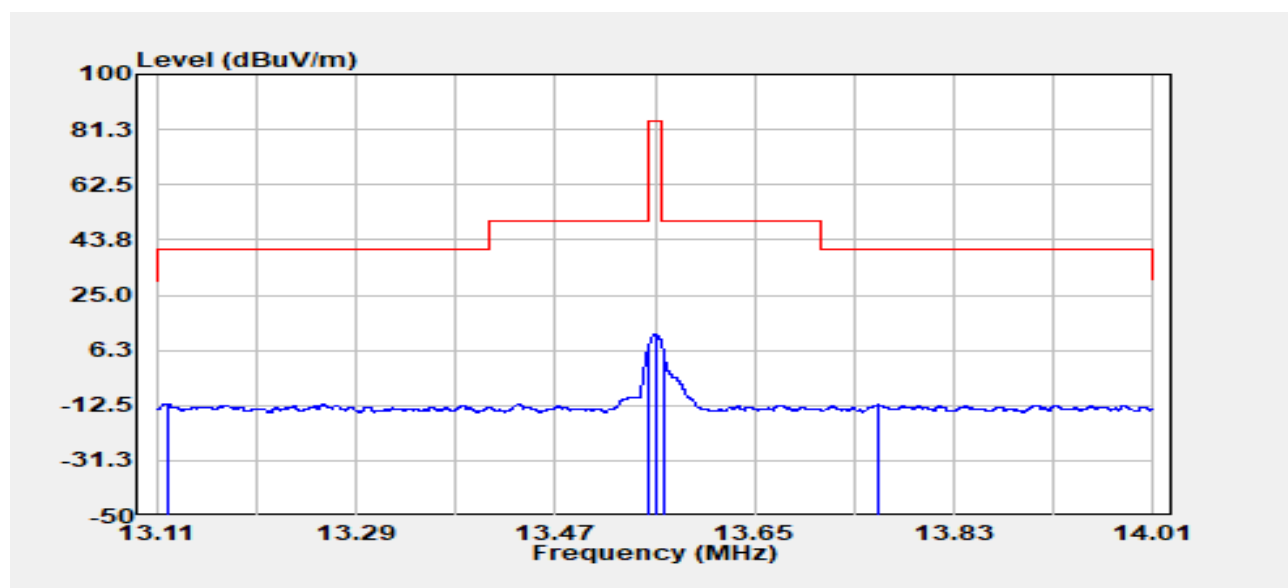
Test Date: April 13, 2023

Temperature: 24.5°C

Tested by: Ray Li

Humidity: 57 % RH

Polarity: Hor.



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBμV	Factor dB	Actual FS dBμV/m	Limit dBμV/m	Margin dB
13.12	Peak	-43.22	31.27	-11.94	40.51	-52.45
13.55	Peak	-60.87	66.56	5.69	50.47	-44.78
13.56	Peak	-66.76	78.34	11.58	84.00	-72.42
13.57	Peak	-61.92	68.67	6.75	50.47	-43.72
13.76	Peak	-42.83	30.48	-12.35	40.51	-52.86

Remark:

1. Radiated emissions measured were made with an instrument using peak/quasi-peak/average detector mode.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Margin (dB) = Result (dBUV/m) – Limit (dBUV/m).
4. The measurement distance is 3m, the distance of Actual FS is convert to 30m.

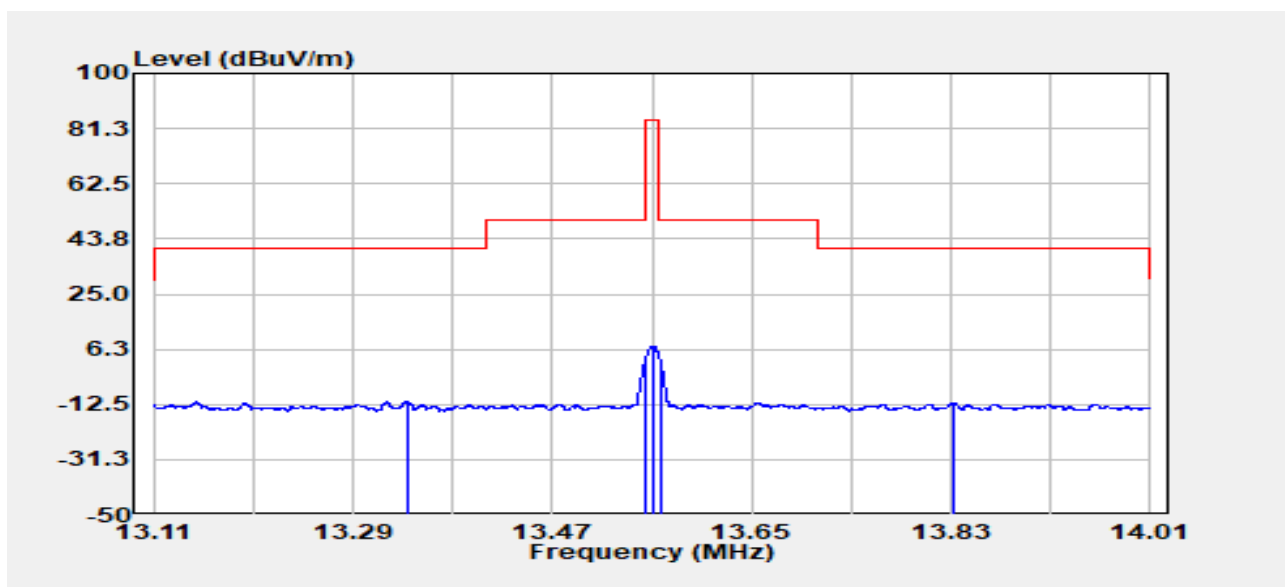
Operation Mode: TX mode

Test Date: April 13, 2023

Temperature: 24.5°C

Tested by: Ray Li

Humidity: 57 % RH

Polarity: Ver.


Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBμV	Factor dB	Actual FS dBμV/m	Limit dBμV/m	Margin dB
13.34	Peak	-43.60	32.04	-11.57	40.51	-52.07
13.55	Peak	-56.39	57.60	1.21	50.47	-49.26
13.56	Peak	-62.44	69.70	7.26	84.00	-76.74
13.57	Peak	-57.83	60.47	2.65	50.47	-47.82
13.83	Peak	-43.35	31.51	-11.84	40.51	-52.34

Remark:

1. Radiated emissions measured were made with an instrument using peak/quasi-peak/average detector mode.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Margin (dB) = Result (dBUV/m) – Limit (dBUV/m).
4. The measurement distance is 3m, the distance of Actual FS is convert to 30m.

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Operation Mode: TX mode

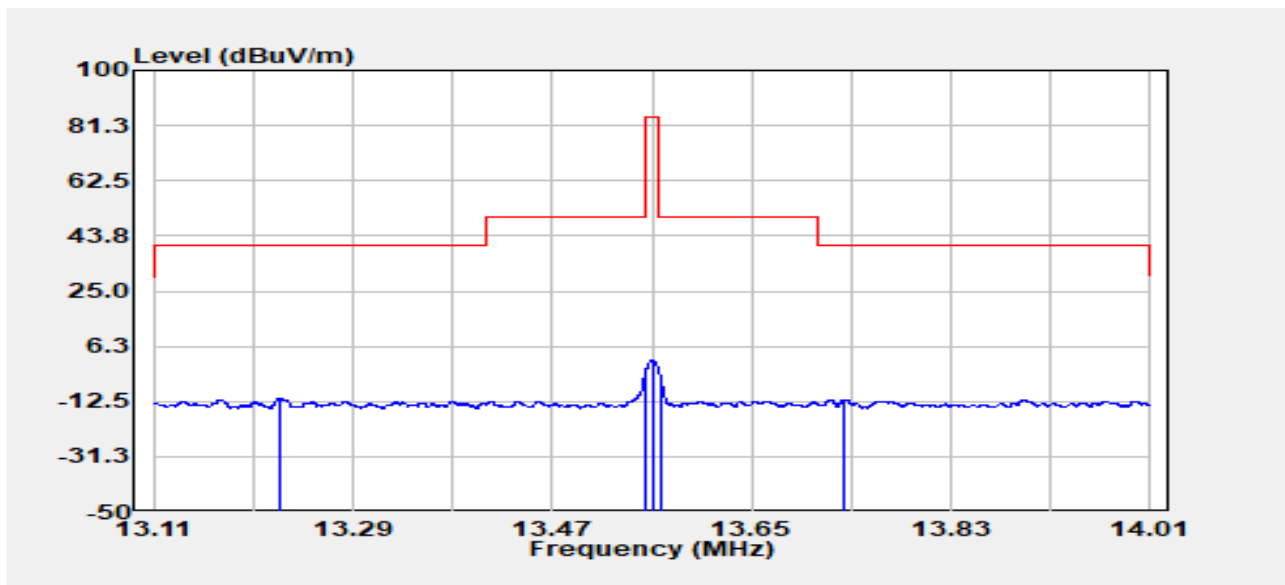
Test Date: April 13, 2023

Temperature: 24.5°C

Tested by: Ray Li

Humidity: 57 % RH

Polarity: Ground



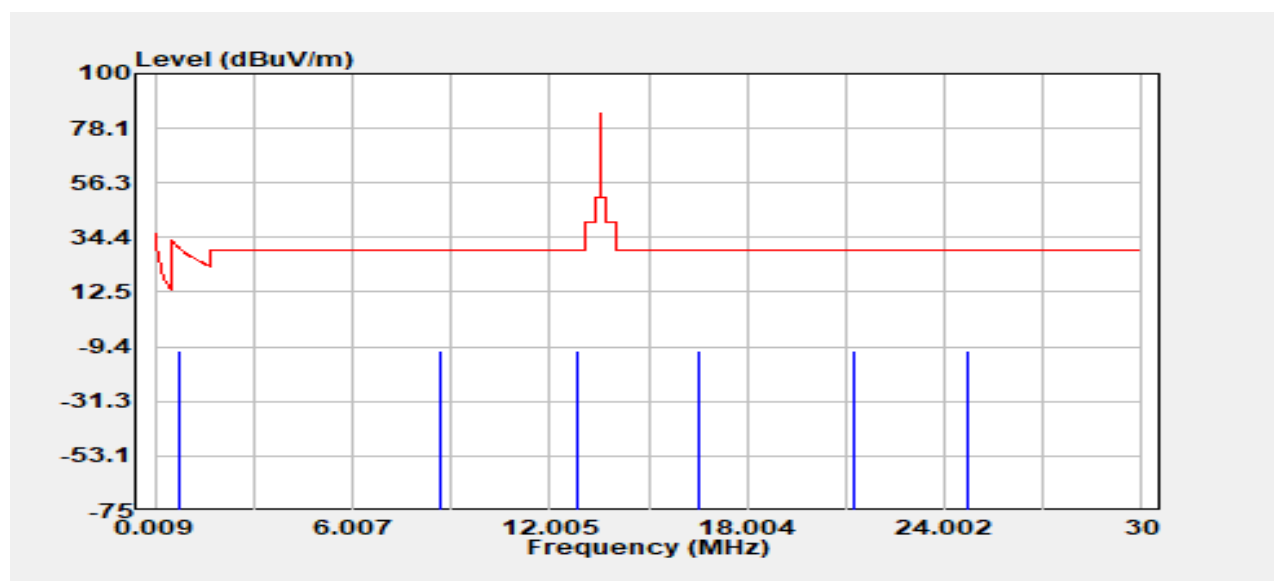
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBμV	Factor dB	Actual FS dBμV/m	Limit dBμV/m	Margin dB
13.22	Peak	-43.64	32.11	-11.53	40.51	-52.03
13.55	Peak	-50.80	46.42	-4.38	50.47	-54.85
13.56	Peak	-56.71	58.24	1.53	84.00	-82.47
13.57	Peak	-51.75	48.33	-3.42	50.47	-53.89
13.73	Peak	-43.37	31.56	-11.81	40.51	-52.32

Remark:

1. Radiated emissions measured were made with an instrument using peak/quasi-peak/average detector mode.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Margin (dB) = Result (dBUV/m) – Limit (dBUV/m).
4. The measurement distance is 3m, the distance of Actual FS is convert to 30m.

9kHz ~ 30MHz

Operation Mode: TX mode **Test Date:** April 13, 2023
Temperature: 24.5°C **Tested by:** Ray Li
Humidity: 57 % RH **Polarity:** Horizontal



Freq. MHz	Detector Mode	Spectrum Read Level @3m dBμV	Factor @3m dB	Actual FS @3m dBμV/m	Factor @30m&300m dB	Actual FS @30m&300m dBμV/m	Limit dBμV/m	Margin dB
0.78	Peak	15.53	13.58	29.12	-40.00	-10.88	29.73	-40.62
8.66	Peak	14.44	14.84	29.28	-40.00	-10.72	29.54	-40.26
12.82	Peak	13.65	15.16	28.81	-40.00	-11.19	29.54	-40.73
16.54	Peak	13.63	15.25	28.88	-40.00	-11.12	29.54	-40.66
21.24	Peak	14.22	15.11	29.34	-40.00	-10.66	29.54	-40.20
24.74	Peak	14.85	14.50	29.35	-40.00	-10.65	29.54	-40.19

Remark:

1. the measurement distance is 3m, the distance of Actual FS is convert to 30m or 300m.

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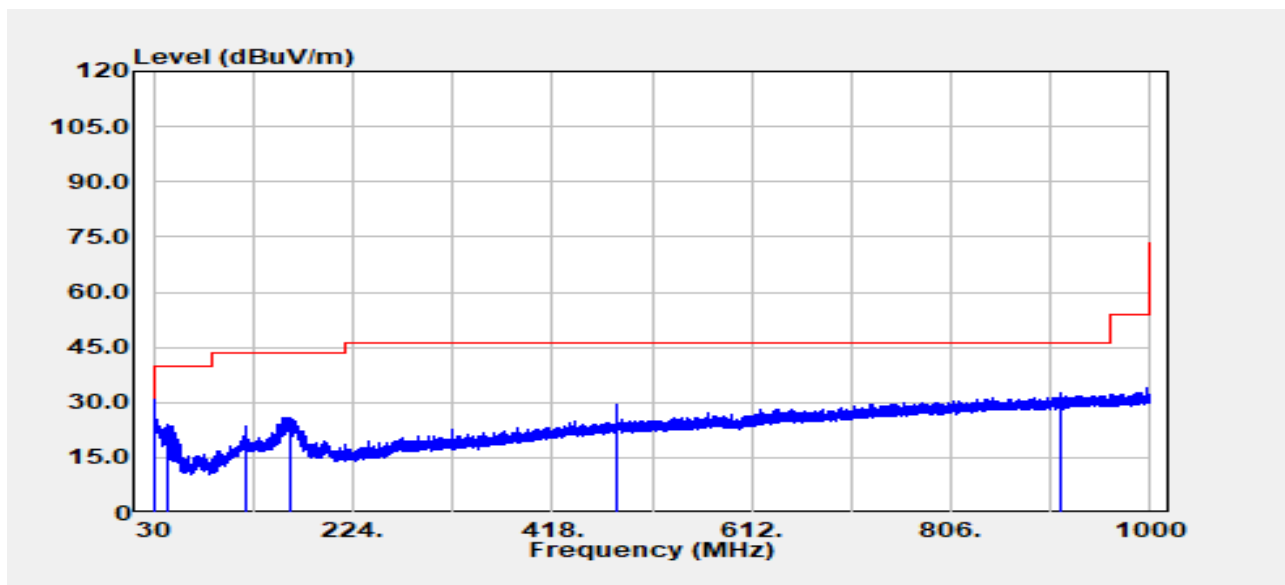
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30MHz ~ 1GHz

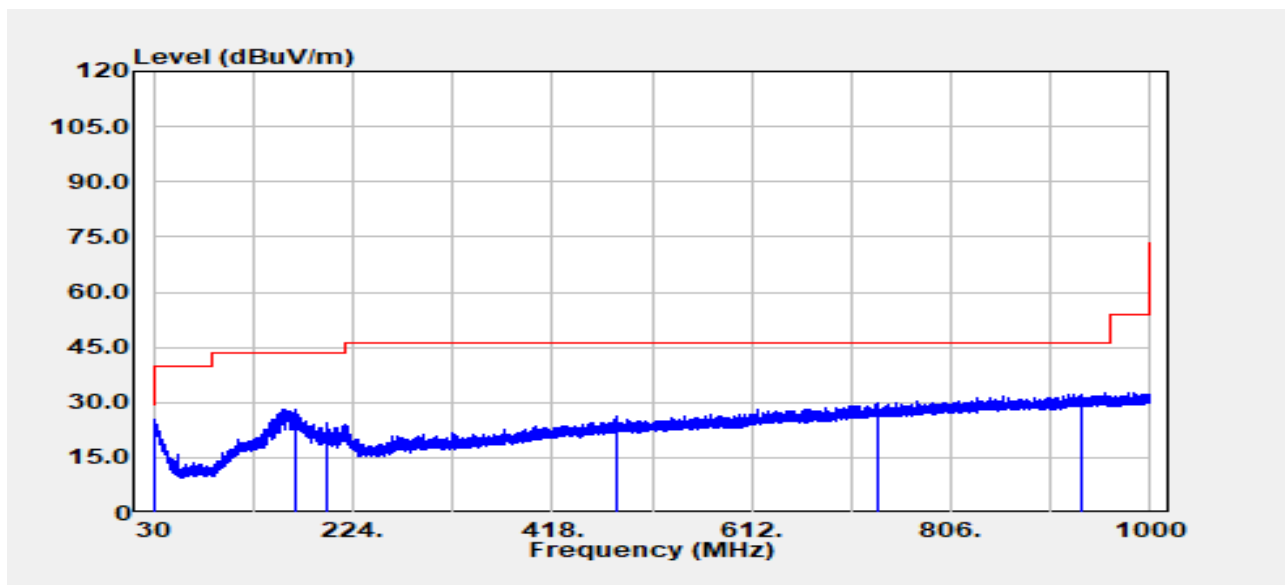
Operation Mode: TX mode **Test Date:** April 13, 2023
Temperature: 24.5°C **Tested by:** Ray Li
Humidity: 57 % RH **Polarity:** Ver. / Hor.

Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB	Polarity
30.04	Peak	33.91	-3.12	30.79	40.00	-9.21	V
44.55	Peak	37.28	-13.06	24.22	40.00	-15.78	V
119.99	Peak	32.93	-9.20	23.73	43.50	-19.77	V
162.23	Peak	36.70	-10.72	25.98	43.50	-17.52	V
479.99	Peak	33.15	-3.59	29.56	46.00	-16.44	V
913.05	Peak	29.51	2.95	32.46	46.00	-13.54	V
30.71	Peak	29.11	-3.58	25.53	40.00	-14.47	H
169.11	Peak	39.10	-11.09	28.00	43.50	-15.50	H
199.84	Peak	33.98	-9.74	24.24	43.50	-19.26	H
480.04	Peak	29.67	-3.59	26.08	46.00	-19.92	H
735.10	Peak	29.40	0.62	30.02	46.00	-15.98	H
932.89	Peak	28.88	3.48	32.37	46.00	-13.63	H

Vertical



Horizontal



7.3 FREQUENCY STABILITY

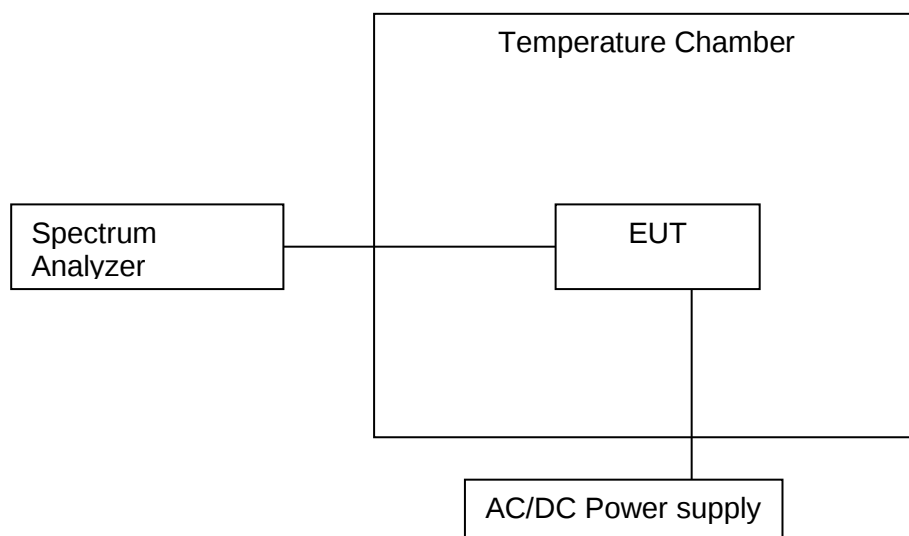
LIMIT

According to §15.225(e),

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 Configuration

Temperature and Voltage Measurement (under normal and extreme test conditions)



TEST PROCEDURE

1. Turn the EUT off, and place it inside the environmental temperature chamber.
2. 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.
3. Set the spectrum analyzer as RBW=1kHz, VBW = RBW, Span = 200kHz, Sweep = auto.
4. Turn the EUT on and record the operating frequency at startup and two, five, and ten minutes after the EUT is energized.
5. Switch off the EUT and Lower the chamber temperature by not more than 10 °C and allow the temperature inside the chamber to stabilize.
6. Mark the peak frequency and measure the frequency tolerance using frequency counter function.
7. Repeat step 4 through step 6 down to the lowest specified temperature.

TEST RESULTS

No non-compliance noted.

Temperature: 24°C

Humidity: 60% RH

Tested by: David Li

Test Date: April 14, 2023

TEST DATA

Startup				
A. Temperature Variation				
Power Supply	Environment	Frequency	Delta (kHz)	Limit (kHz)
Vdc	Temperature (°C)	(MHz)		
5	-20	13.560584	584.00	+/- 1356
5	-10	13.560648	648.00	+/- 1356
5	0	13.560758	758.00	+/- 1356
5	10	13.560244	244.00	+/- 1356
5	20	13.560854	854.00	+/- 1356
5	30	13.560124	124.00	+/- 1356
5	40	13.5602127	212.70	+/- 1356
5	50	13.5607645	764.50	+/- 1356
B. Supply Voltage Variation				
Power Supply	Environment	Frequency	Delta (kHz)	Limit (kHz)
Vdc	Temperature (°C)	(MHz)		
5.25	20	13.560321	321.00	+/- 1356
5	20	13.560854	854.00	+/- 1356
4.75	20	13.560247	247.00	+/- 1356

2 minutes				
A. Temperature Variation				
Power Supply	Environment	Frequency	Delta (kHz)	Limit (kHz)
Vdc	Temperature (°C)	(MHz)		
5	-20	13.560924	924.00	+/- 1356
5	-10	13.560684	684.00	+/- 1356
5	0	13.560728	728.00	+/- 1356
5	10	13.560631	631.00	+/- 1356
5	20	13.560615	615.00	+/- 1356
5	30	13.560254	254.00	+/- 1356
5	40	13.5606284	628.40	+/- 1356
5	50	13.560749	749.00	+/- 1356
B. Supply Voltage Variation				
Power Supply	Environment	Frequency	Delta (kHz)	Limit (kHz)
Vdc	Temperature (°C)	(MHz)		
5.25	20	13.560654	654.00	+/- 1356
5	20	13.560854	854.00	+/- 1356
4.75	20	13.560884	884.00	+/- 1356

5 minutes				
A. Temperature Variation				
Power Supply	Environment	Frequency	Delta (kHz)	Limit (kHz)
Vdc	Temperature (°C)	(MHz)		
5	-20	13.560724	724.00	+/- 1356
5	-10	13.560842	842.00	+/- 1356
5	0	13.560824	824.00	+/- 1356
5	10	13.560311	311.00	+/- 1356
5	20	13.560162	162.00	+/- 1356
5	30	13.560175	175.00	+/- 1356
5	40	13.560724	724.00	+/- 1356
5	50	13.56043	430.00	+/- 1356
B. Supply Voltage Variation				
Power Supply	Environment	Frequency	Delta (kHz)	Limit (kHz)
Vdc	Temperature (°C)	(MHz)		
5.25	20	13.560783	783.00	+/- 1356
5	20	13.560854	854.00	+/- 1356
4.75	20	13.560623	623.00	+/- 1356

10 minutes				
A. Temperature Variation				
Power Supply	Environment	Frequency	Delta (kHz)	Limit (kHz)
Vdc	Temperature (°C)	(MHz)		
5	-20	13.560835	835.00	+/- 1356
5	-10	13.560356	356.00	+/- 1356
5	0	13.560802	802.00	+/- 1356
5	10	13.560807	807.00	+/- 1356
5	20	13.560741	741.00	+/- 1356
5	30	13.560869	869.00	+/- 1356
5	40	13.560757	757.00	+/- 1356
5	50	13.560462	462.00	+/- 1356
B. Supply Voltage Variation				
Power Supply	Environment	Frequency	Delta (kHz)	Limit (kHz)
Vdc	Temperature (°C)	(MHz)		
5.25	20	13.560871	871.00	+/- 1356
5	20	13.560854	854.00	+/- 1356
4.75	20	13.560786	786.00	+/- 1356

7.4 POWERLINE CONDUCTED EMISSIONS

LIMIT

According to §15.207(a), for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency Range (MHz)	Limits (dB μ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

* Decreases with the logarithm of the frequency.

TEST PROCEDURE

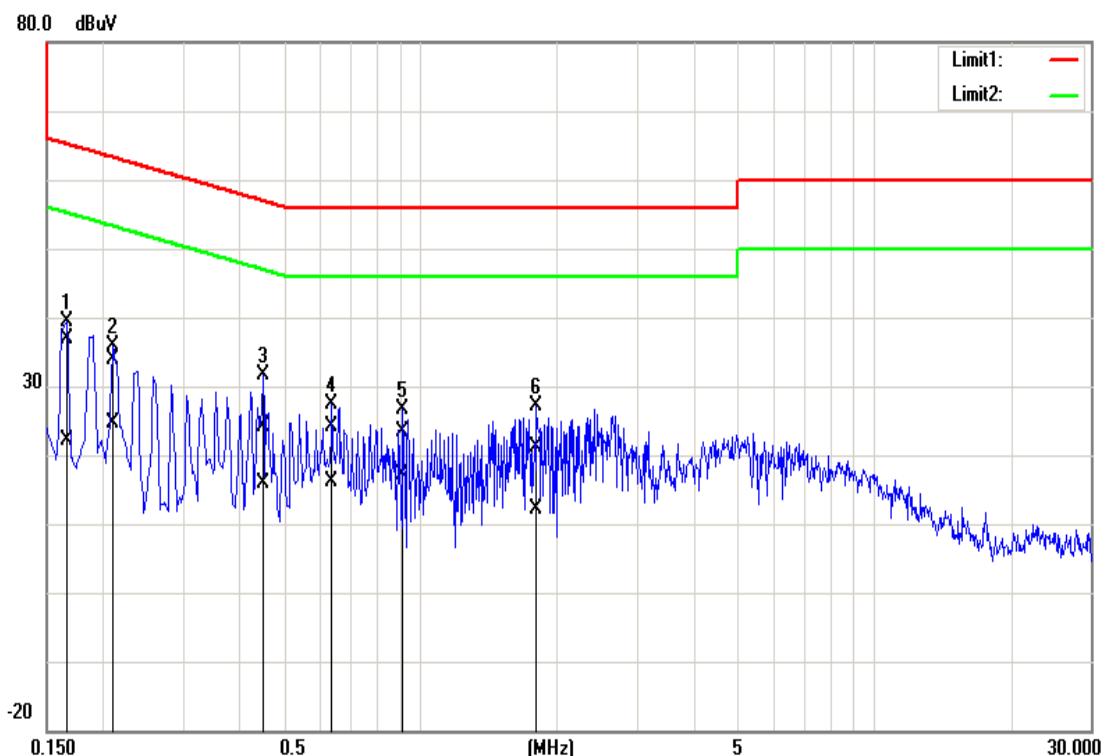
1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

TEST RESULTS

PASS

Test Data

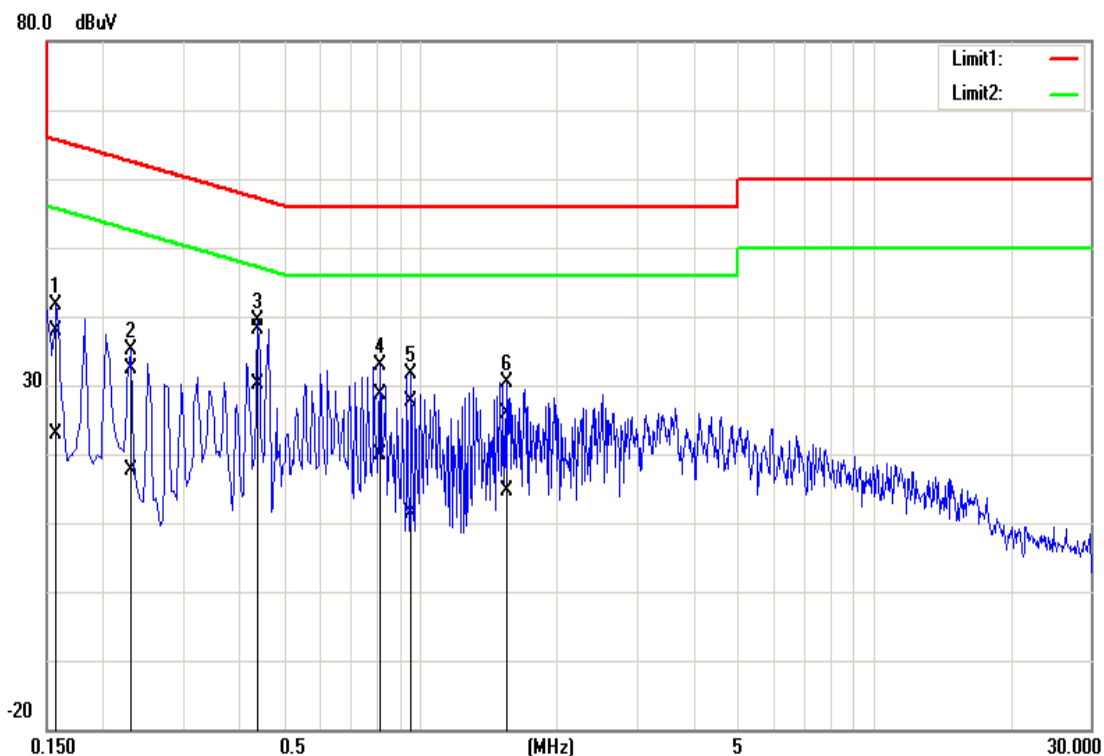
Test Mode:	Mode 1	Temp/Hum	22.7(°C)/ 54%RH
Phase:	Line	Test Date	April 7, 2023
		Test Engineer	Tony Chao



Frequency (MHz)	Quasi Peak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	Quasi Peak result (dBuV)	Average result (dBuV)	Quasi Peak limit (dBuV)	Average limit (dBuV)	Quasi Peak margin (dB)	Average margin (dB)	Remark
0.1660	36.78	21.96	0.15	36.93	22.11	65.16	55.16	-28.23	-33.05	Pass
0.2100	33.76	24.49	0.15	33.91	24.64	63.21	53.21	-29.30	-28.57	Pass
0.4500	23.88	15.76	0.15	24.03	15.91	56.88	46.88	-32.85	-30.97	Pass
0.6380	23.97	16.04	0.15	24.12	16.19	56.00	46.00	-31.88	-29.81	Pass
0.9180	23.16	16.93	0.16	23.32	17.09	56.00	46.00	-32.68	-28.91	Pass
1.8060	20.89	11.85	0.20	21.09	12.05	56.00	46.00	-34.91	-33.95	Pass

Note: Correction factor = LISN loss + Cable loss.

Test Mode:	Mode 1	Temp/Hum	22.7(°C)/ 54%RH
Phase:	Neutral	Test Date	April 7, 2023
		Test Engineer	Tony Chao



Frequency (MHz)	Quasi Peak reading (dBuV)	Average reading (dBuV)	Correctio n factor (dB)	Quasi Peak result (dBuV)	Average result (dBuV)	Quasi Peak limit (dBuV)	Average limit (dBuV)	Quasi Peak margin (dB)	Average margin (dB)	Remark
0.1580	37.57	22.60	0.20	37.77	22.80	65.57	55.57	-27.80	-32.77	Pass
0.2300	32.21	17.33	0.19	32.40	17.52	62.45	52.45	-30.05	-34.93	Pass
0.4380	37.88	29.84	0.19	38.07	30.03	57.10	47.10	-19.03	-17.07	Pass
0.8140	28.50	19.69	0.21	28.71	19.90	56.00	46.00	-27.29	-26.10	Pass
0.9540	27.35	11.24	0.21	27.56	11.45	56.00	46.00	-28.44	-34.55	Pass
1.5460	25.64	14.36	0.24	25.88	14.60	56.00	46.00	-30.12	-31.40	Pass

Note: Correction factor = LISN loss + Cable loss.

- End of Test Report -