

FCC Part 15 EMI TEST REPORT

of



E.U.T. : EMERGENCY HELP DIALER
Model No. : HP-919
FCC ID : PM6HOMPETHP-919

for

APPLICANT : HOMPET ENTERPRISE CO., LTD.
ADDRESS : No.2, Lane. 80, Xing'an St., Zhongshan Dist.,
Taipei City 104109, Taiwan (R.O.C.)

Test Performed by

TAIWAN TESTING AND CERTIFICATION CENTER

NO. 34. LIN 5, DINGFU VIL., LINKOU DIST.,
NEW TAIPEI CITY, TAIWAN, 24442, R.O.C.

TEL : (02)26023052 FAX : (02)26010910

[http:// www.etc.org.tw](http://www.etc.org.tw) ; e-mail:emc@etc.org.tw

Report Number : 24-08-RBF-013-01

TEST REPORT CERTIFICATION

Applicant : HOMPET ENTERPRISE CO., LTD.

Manufacture : HOMPET ENTERPRISE CO., LTD.

Description of Device :

- a) Type of EUT : EMERGENCY HELP DIALER
- b) Trade Name : HOMPET
- c) Model No. : HP-919
- d) Power Supply : Adapter : Input:100-240V , 50/60Hz
Output:12V , 0.5A
or
DC 9V Battery
- e) Frequency Range : 433.610 MHz
- f) Antenna Gain/Type : 1.5 dBi / Fixed antenna
- g) Channel/Modulation : 1CH / FSK

Regulation Applied : FCC Rules and Regulations Part 15 Subpart C

I HEREBY CERTIFY THAT: The data shown in this report were made in accordance with the procedures given in ANSI C63.10-2013, and the energy emitted by the device was found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these data.

Note: 1. The result of the testing report relates only to the item tested.

2. The testing report shall not be reproduced except in full, without the written approval of ETC.

Summary of Tests

Test	Results
Radiated Emission	Pass
Bandwidth of Emission	Pass
Conducted Emission	N/A

Date Test Item Received : 2024/08/29

Date Test Campaign Completed : 2025/01/22

Date of Issue : 2025/01/23

Test Engineer

:

Vincent Chang
(Vincent Chang, Engineer)

Approve & Authorized

:

Kevin Lee

Kevin Lee, Section Manager
EMC Dept. II of TAIWAN TESTING
AND CERTIFICATION CENTER



<i>Table of Contents</i>	<i>Page</i>
1. GENERAL INFORMATION	6
1.1 Product Description.....	6
1.2 Characteristics of Device:	6
1.3 Test Methodology	6
1.4 Test Facility.....	6
2. DEFINITION AND LIMITS.....	7
2.1 Definition	7
2.2 Restricted Bands of Operation.....	7
2.3 Limitation.....	7
2.4 Labeling Requirement.....	9
2.5 User Information	9
2.6 Measurement Uncertainty	10
3 SYSTEM TEST CONFIGURATION.....	11
3.1 Justification	11
3.2 Devices for Tested System	11
3.3 Configuration of Tested System.....	12
4. RADIATED EMISSION MEASUREMENT	13
4.1 Applicable Standard.....	13
4.2 Measurement Procedure	13
4.3 Test Data	16
4.4 Field Strength Calculation.....	24
4.5 Activate Time.....	24
4.6 Calculation of Duty Factor.....	25
4.7 Radiated Test Equipment	26
4.8 Measuring Instrument Setup	26
4.9 Radiated Measurement Photos.....	27
5. BANDWIDTH OF EMISSION	27
5.1 Applicable Standard Plot Graphic of Bandwidth.....	27
5.2 Bandwidth Test Equipment.....	27
5.3 Plot Graphic of Bandwidth.....	27
6. CONDUCTED EMISSION MEASUREMENT	28
6.1 Standard Applicable	28
6.2 Measurement Procedure.....	28
6.3 Conducted Emission Data.....	29

6.4	Result Data Calculation.....	33
6.5	Conducted Measurement Equipment	33
7	ANTENNAREQUIREMENT	34
7.1	Standard Applicable	34
7.2	Antenna Construction.....	34

1. GENERAL INFORMATION

1.1 Product Description

- a) Type of EUT : EMERGENCY HELP DIALER
b) Trade Name : HOMPET
c) Model : HP-919
d) Test Series Model : ---
e) Series Model : ---
f) FCC ID : PM6HOMPETHP-919
g) Working Frequency : 433.610 MHz
Adapter : Input:100-240V , 50/60Hz
Output:12V , 0.5A
h) Power Supply :
or
DC 9V Battery

1.2 Characteristics of Device:

This device is a REMOTE wireless function. In case of emergency, the alarm can be activated immediately. The main unit will automatically dial the pre-set emergency contact numbers and send a voice message requesting assistance.

1.3 Test Methodology

Both conducted and radiated emissions were performed according to the procedures illustrated in ANSI C63.10-2013. Other required measurements were illustrated in separate sections of this test report for details.

Measurement Software

Software	Version	Note
e3	Version 6.100618f	Radiated Emission Test
e3	Version 6.100421	Conducted Emission Test

1.4 Test Facility

Location of the Test site: No.34, Lin 5, Dingfu Vil., Linkou Dist., New Taipei City, Taiwan 24442, R.O.C.

Designation Number: TW2628.

2. DEFINITION AND LIMITS

2.1 Definition

Intentional radiator:

A device that intentionally generates and emits radio frequency energy by radiation or induction.

2.2 Restricted Bands of Operation

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
0.495 - 0.505 **	16.69475 - 16.69525	608-614	5.35-5.46
2.1735 - 2.1905	16.80425 - 16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475 - 156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2655-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3360-4400	Above 38.6
13.36-13.41			

Remark “**”: Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

2.3 Limitation

(1) Conducted Emission Limits:

Except as shown in paragraphs (b) and (c) of this section, 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 150kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50μH/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 MHz	Quasi Peak dBμV	Average dBμV
0.15 - 0.5	66-56*	56-46*
0.5 - 5.0	56	46
5.0 - 30.0	60	50

- Decreases with the logarithm of the frequency

(2) Radiated Emission Limits :

According to 15.231(a), Periodic operation in the band 40.66-40.70 MHz and above 70 MHz, except as shown in paragraph 15.231(e), the field strength of emissions from intentional radiators operated under this section shall not exceed the following:

Frequency Band (MHz)	Field strength of Fundamental (uV/m)	Field strength of Spurious (uV/m)
40.66-40.70	2250	225
70-130	1250	125
130-174	*1,250 to 3,750	*125 to 375
174-260	3750	375
260-470	*3,750 to 12,500	*375 to 1250
Above 470	12500	1250

* Linear interpolations.

According to 15.231(e), Intentional radiators may operate at a periodic rate exceeding that specified in paragraph (a) and may be employed for any type of operation, including operation prohibited in paragraph (a), provided the intentional radiator complies with the provisions of paragraphs (b) through (d) of this Section, except the field strength table in paragraph (b) is replaced by the following:

Frequency Band (MHz)	Field strength of Fundamental (uV/m)	Field strength of Spurious (uV/m)
40.66-40.70	1,000	100
70-130	500	50
130-174	*500 to 1,500	*50 to 150
174-260	1,500	150
260-470	*1,500 to 5,000	*150 to 500
Above 470	5,000	500

* Linear interpolations

Field strength limits are at the distance of 3 meters, emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209,as following table:

Other Frequencies (MHz)	Field Strength of Fundamental		
	V/meter	dB	V/meter
30 - 88	100	40.0	
88 - 216	150	43.5	
216 - 960	200	46.0	
Above 960	500	54.0	

As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

(3) Limit of transmission time

According to 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.
- 2) A transmitter activated automatically shall cease transmission within 5 seconds after activation.
- 3) Periodic transmissions at regular predetermined intervals are not permitted. However, polling or supervision transmissions, including data, to determine system integrity of transmitters used in security or safety applications are allowed if the total duration of transmissions does not exceed more than two seconds per hour for each transmitter. There is no limit on the number of individual transmissions, provided the total transmission time does not exceed two seconds per hour.
- 4) Intentional radiators which are employed for radio control purposes during emergencies involving fire, security, and safety of life, when activated to signal an alarm, may operate during the pendency of the alarm condition.
- 5) Transmission of set-up information for security systems may exceed the transmission duration limits in paragraphs (a)(1) and (a)(2) of this section, provided such transmissions are under the control of a professional installer and do not exceed ten seconds after a manually operated switch is released or a transmitter is activated automatically. Such set-up information may include data.

According to 15.231(e), devices operated under the provisions of this paragraph shall be provided with a means for automatically limiting operation so that the duration of each transmission shall not be greater than one second and the silent period between transmissions shall be at least 30 times the duration of the transmission but in no case less than 10 seconds.

2.4 Labeling Requirement

The device shall bear the following statement in a conspicuous location on the device :

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

2.5 User Information

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

2.6 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Uncertainty
Conducted emissions	9kHz ~ 30MHz	±3.44dB (Mains)(LISN)
Radiated emissions	9kHz ~ 30MHz	±4.22dB
Radiated emissions	30MHz ~ 1GHz	±5.10dB (H) (with tilting) ±5.20dB (H) (without tilting) ±5.26dB (V) (with tilting) ±6.32dB (V) (without tilting)
	Above 1GHz	±5.18dB ($1\text{GHz} \leq f \leq 6\text{GHz}$) ±5.48dB (Above 6GHz)
Frequencies Tolerance	9kHz ~ 40GHz	±4.04×10 ⁻⁸
Occupied Bandwidth	9kHz ~ 40GHz	±5%
Time	9kHz ~ 40GHz	±0.04%

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

The test result(s) does not consider the uncertainty of measurement when the test standard(s) and/or test method which refer by the labs has the limit or judgments for the test result(s).

3 SYSTEM TEST CONFIGURATION

3.1 Justification

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in

- ☒ lie-down position (X axis) /
☐ lie-down position (Y axis) /
☐ stand-up position (Z axis) /

and the worst case was recorded.

In order to find the worst case condition, Pre-tests are needed at the presence of different data rate. Preliminary tests have been done on all the configuration for confirming worst case. Data rate or Mode below means worst-case rate of each test item.

Worst-case data rates are shown as following table.

Mode
ADAPTER IN
DC 9V Battery IN

3.2 Devices for Tested System

EUT & accessories.

Device	Manufacture	Model	Description
* EMERGENCY HELP DIALER	HOMPET ENTERPRISE CO., LTD.	HP-919	---
ADAPTER	HSIN-CHAN INTERNATIONAL INC.	SW06-120U	1.5m Unshielded AC ADAPTER / Input:100-240V , 50/60Hz Output:12V , 0.5A

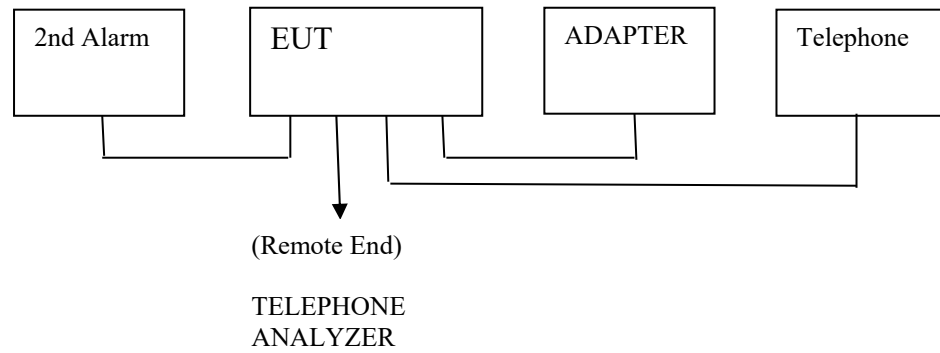
Remark “*” means equipment under test.

The EUT connected with the following peripheral devices.

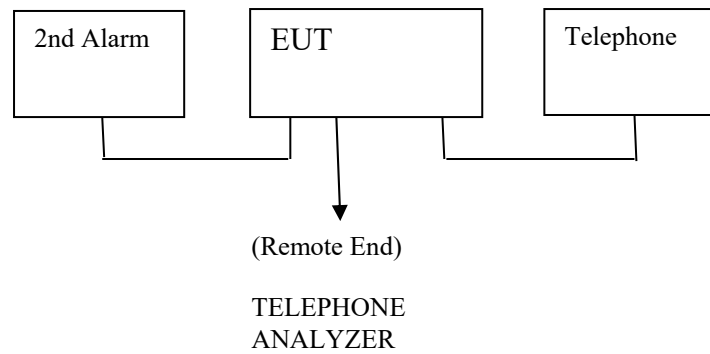
Device	Manufacture	Model	Description
2nd Alarm	LIGHTAK ELECTRONICS CORP.	AL-120	3.0m Unshielded EXT Cable
Telephone	SANLUX	TEL-839	0.8m Unshielded TEL Cable
TONE/PULSE SWITCHABLE TELEPHONE ANALYZER	---	1088-A	1.5m Unshielded AC Power Line 0.8m Unshielded TEL Cable
Wireless Pendant	HOMPET ENTERPRISE CO., LTD.	RE-350	---

3.3 Configuration of Tested System

Mode : ADAPTER IN



Mode : DC 9V Battery IN



4. RADIATED EMISSION MEASUREMENT

4.1 Applicable Standard

For periodic operation intentional radiator, the radiated emission shall comply with § 15.231(b).

4.2 Measurement Procedure

A. Preliminary Measurement For Portable Devices

For portable devices, the following procedure was performed to determine the maximum emission axis of EUT:

1. With the receiving antenna is H polarization, rotate the EUT in turns with three orthogonal axes to determine the axis of maximum emission.
2. With the receiving antenna is V polarization, rotate the EUT in turns with three orthogonal axes to determine the axis of maximum emission.
3. Compare the results derived from above two steps. So, the axis of maximum emission from EUT was determined and the configuration was used to perform the final measurement.

B. Final Measurement

1. Setup the configuration per figure 1 and 2 for frequencies measured below and above 1 GHz respectively. Turn on EUT and make sure that it is in normal function.
2. For emission frequencies measured below 1 GHz, a pre-scan is performed in a shielded chamber to determine the accurate frequencies of higher emissions will be checked on a open test site. As the same purpose, for emission frequencies measured above 1 GHz, a pre-scan also be performed with a 1 meter measuring distance before final test.
3. For emission frequencies measured below and above 1 GHz, set the spectrum analyzer on a 100 kHz and 1 MHz resolution bandwidth respectively for each frequency measured in step 2.
4. The search antenna is to be raised and lowered over a range from 1 to 4 meters in horizontally polarized orientation. Position the highness when the highest value is indicated on spectrum analyzer, then change the orientation of EUT on test table over a range from 0 ° to 360 ° with a speed as slow as possible, and keep the azimuth that highest emission is indicated on the spectrum analyzer. Vary the antenna position again and record the highest value as a final reading. A RF test receiver is also used to confirm emissions measured.

5. Repeat step 4 until all frequencies need to be measured were complete.
6. Repeat step 5 with search antenna in vertical polarized orientations.
7. Check the three frequencies of highest emission with varying the placement of cables (if any) associated with EUT to obtain the worse case and record the result.

Figure 1a : Frequencies measured below 30MHz configuration

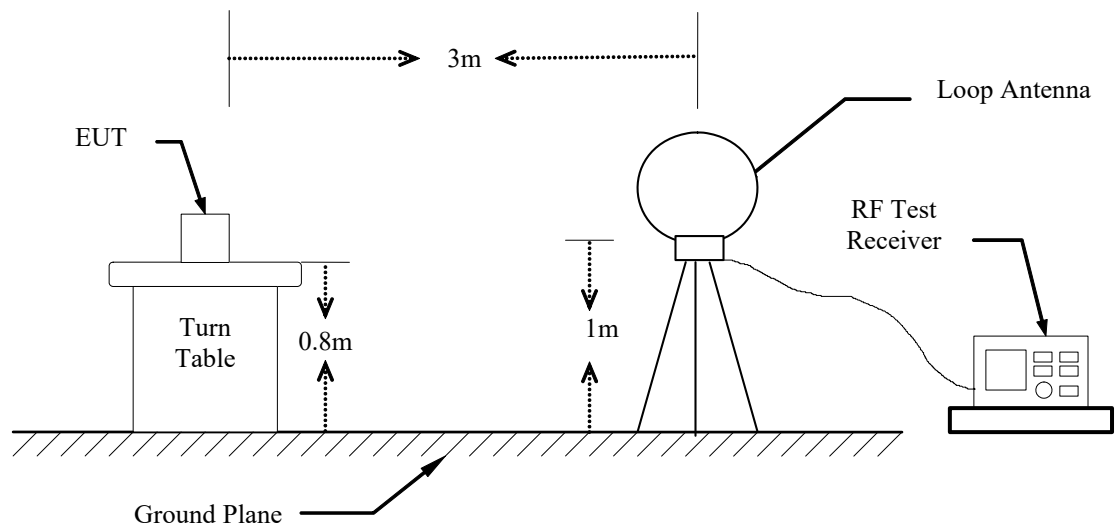


Figure 1b : Frequencies measured below 1 GHz configuration(above 30MHz)

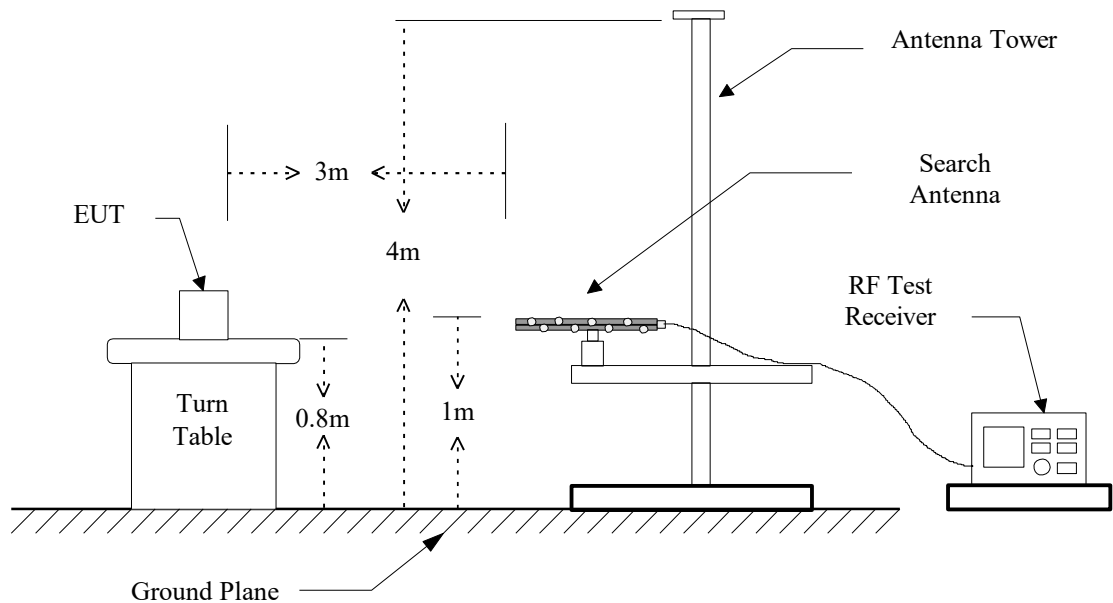
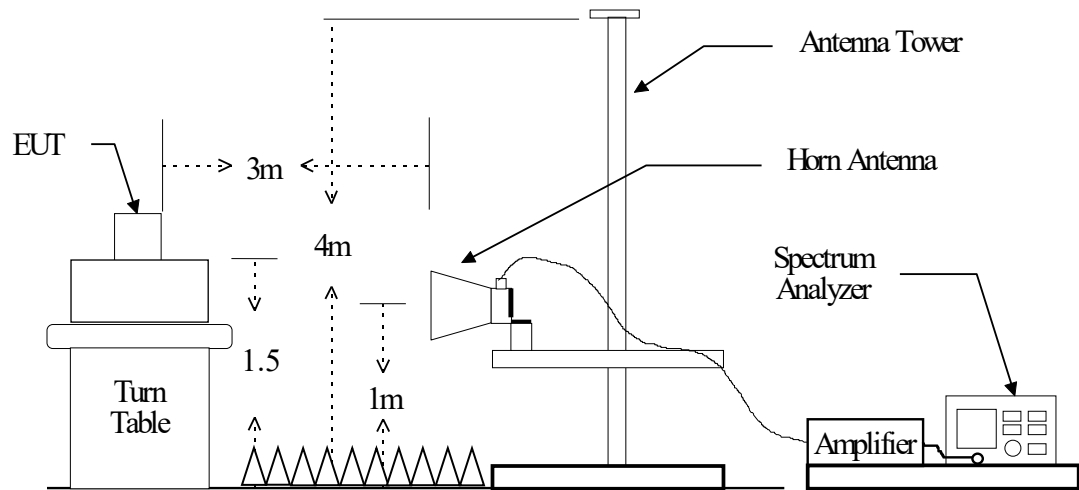
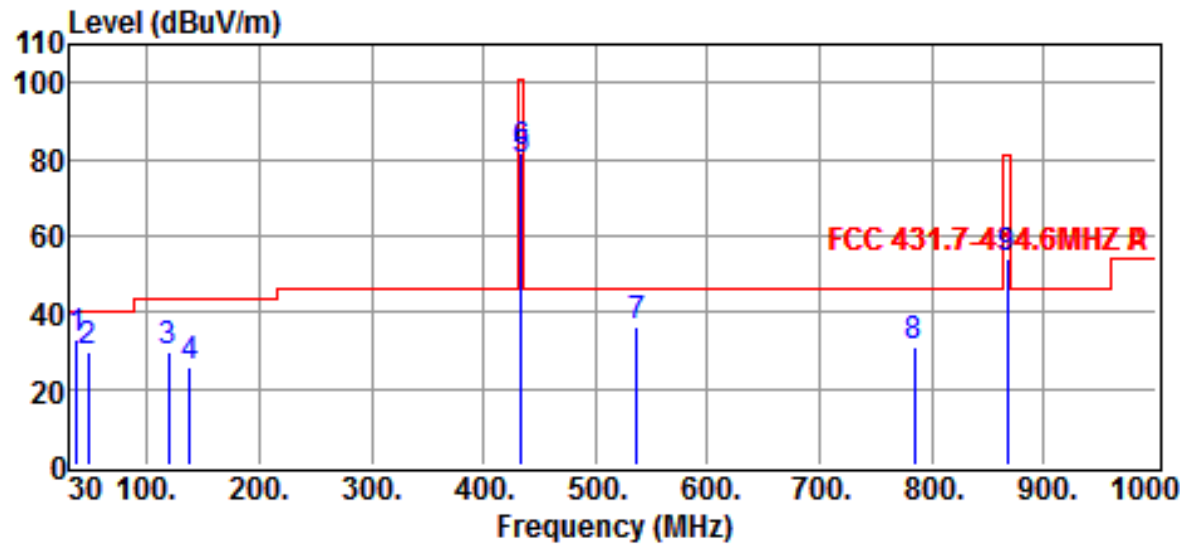


Figure 2 : Frequencies measured above 1 GHz configuration



4.3 Test Data

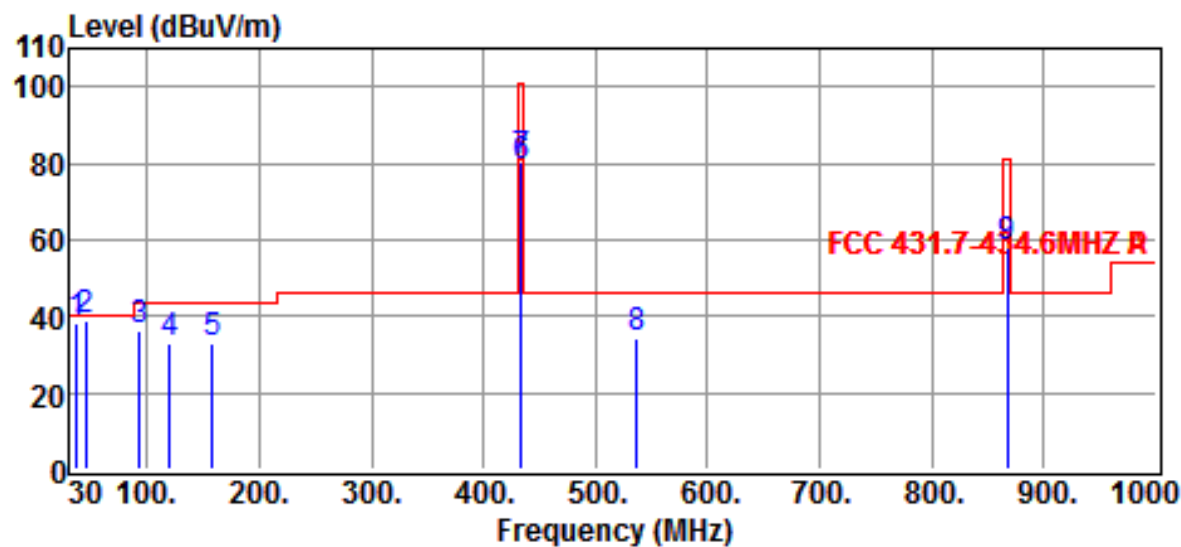
A. ADAPTER IN
30MHz ~ 1GHz



Site	:Chamber#2	Date	:2024-09-02
Limit	:FCC 431.7-434.6MHZ P	Ant. Pol.	:HORIZONTAL
EUT	:EMERGENCY HELP DIALER	Model	:HP-919
Power Rating	:120V / 60Hz	Temp.	:22°C
Engineer	:Vincent	Humi.	:62 %
Test Mode	:TX Mode		

	Freq MHz	Reading dBuV	Correction Factor dB/m	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
	36.7900	39.09	-6.00	33.09	40.00	-6.91	QP
	47.4600	42.10	-12.23	29.87	40.00	-10.13	QP
	119.2400	40.54	-10.85	29.69	43.50	-13.81	QP
	138.6400	35.71	-10.14	25.57	43.50	-17.93	QP
*	433.6100	-	-	79.78	80.80	-1.02	Average
	433.6100	86.06	-4.68	81.38	100.80	-19.42	Peak
	536.3400	39.89	-3.54	36.35	46.00	-9.65	QP
	784.6600	30.78	-0.11	30.67	46.00	-15.33	QP
	867.2200	52.40	1.65	54.05	80.80	-26.75	Peak

- Note :
1. Result = Reading + Correction Factor
 2. Average Result = Peak Result + Duty Factor (-1.6)
 3. Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
 4. The margin value=Limit - Result
 5. Above 1Ghz : Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.
 6. ” * ” mean this data is the worst emission level.

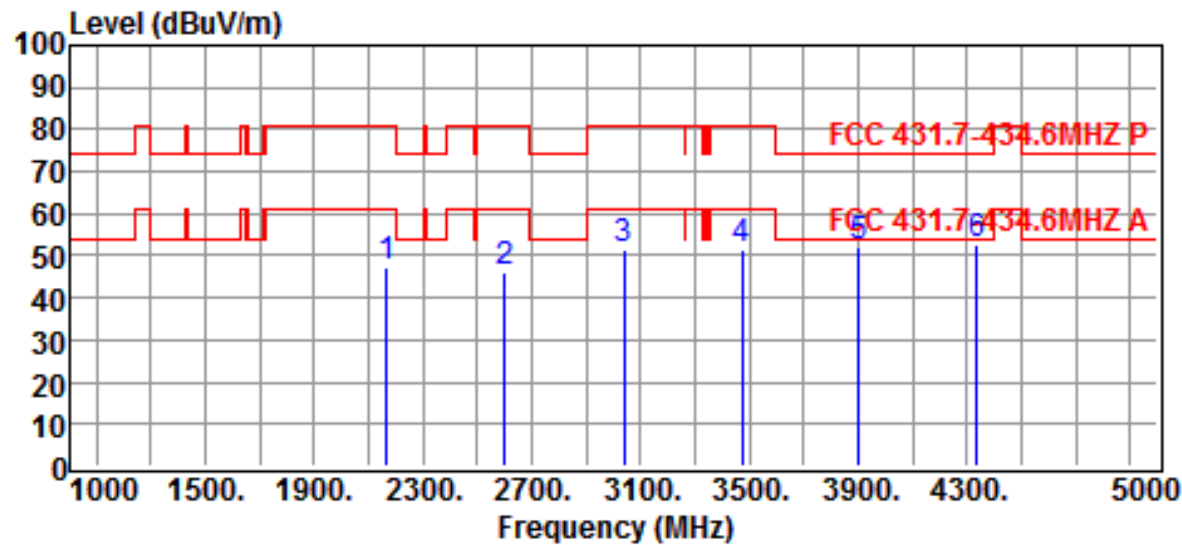


Site	:Chamber#2	Date	:2024-09-02
Limit	:FCC 431.7-434.6MHz P	Ant. Pol.	:VERTICAL
EUT	:EMERGENCY HELP DIALER	Model	:HP-919
Power Rating	:120V / 60Hz	Temp.	:22°C
Engineer	:Vincent	Humi.	:62 %
Test Mode	:TX Mode		

	Freq MHz	Reading dBuV	Correction Factor dB/m	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
	37.7600	44.56	-6.52	38.04	40.00	-1.96	QP
*	45.5200	49.68	-10.90	38.78	40.00	-1.22	QP
	93.0500	49.22	-13.10	36.12	43.50	-7.38	QP
	120.2100	43.51	-10.68	32.83	43.50	-10.67	QP
	158.0400	43.22	-10.38	32.84	43.50	-10.66	QP
	433.6100	-	-	79.00	80.80	-1.80	Average
	433.6100	85.28	-4.68	80.60	100.80	-20.20	Peak
	536.3400	37.77	-3.54	34.23	46.00	-11.77	QP
	867.2200	56.34	1.65	57.99	80.80	-22.81	Peak

- Note :
- 1. Result = Reading + Correction Factor
 - 2. Average Result = Peak Result + Duty Factor (-1.6)
 - 3. Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
 - 4. The margin value=Limit - Result
 - 5. Above 1Ghz : Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.
 - 6. " * " mean this data is the worst emission level.

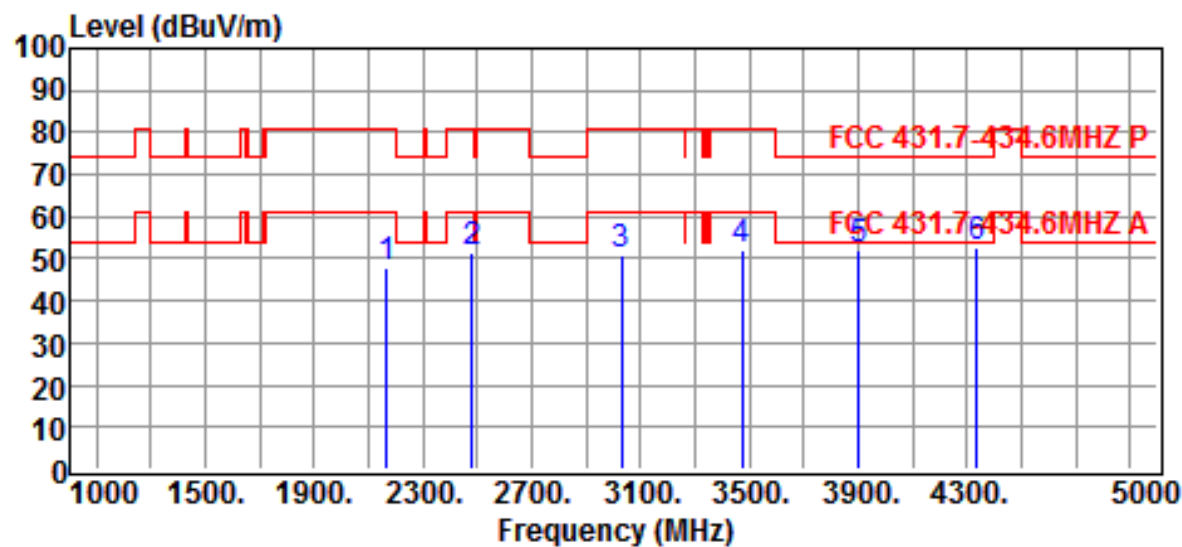
Above 1GHz



Site	:Chamber#2	Date	:2024-09-02
Limit	:FCC 431.7-434.6MHz P	Ant. Pol.	:HORIZONTAL
EUT	:EMERGENCY HELP DIALER	Model	:HP-919
Power Rating	:120V / 60Hz	Temp.	:22°C
Engineer	:Vincent	Humi.	:62 %
Test Mode	:TX Mode		

	Freq MHz	Reading dBuV	Correction Factor dB/m	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
	2168.0000	48.49	-1.36	47.13	80.80	-33.67	Peak
	2600.0000	46.93	-0.68	46.25	80.80	-34.55	Peak
	3040.0000	51.11	0.27	51.38	80.80	-29.42	Peak
	3472.0000	50.98	0.78	51.76	80.80	-29.04	Peak
	3904.0000	49.99	2.12	52.11	74.00	-21.89	Peak
*	4336.0000	49.90	2.72	52.62	74.00	-21.38	Peak

- Note :
- 1. Result = Reading + Correction Factor
 - 2. Average Result = Peak Result + Duty Factor (-1.6)
 - 3. Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
 - 4. The margin value=Limit - Result
 - 5. Above 1Ghz : Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.
 - 6. ” * ” mean this data is the worst emission level.

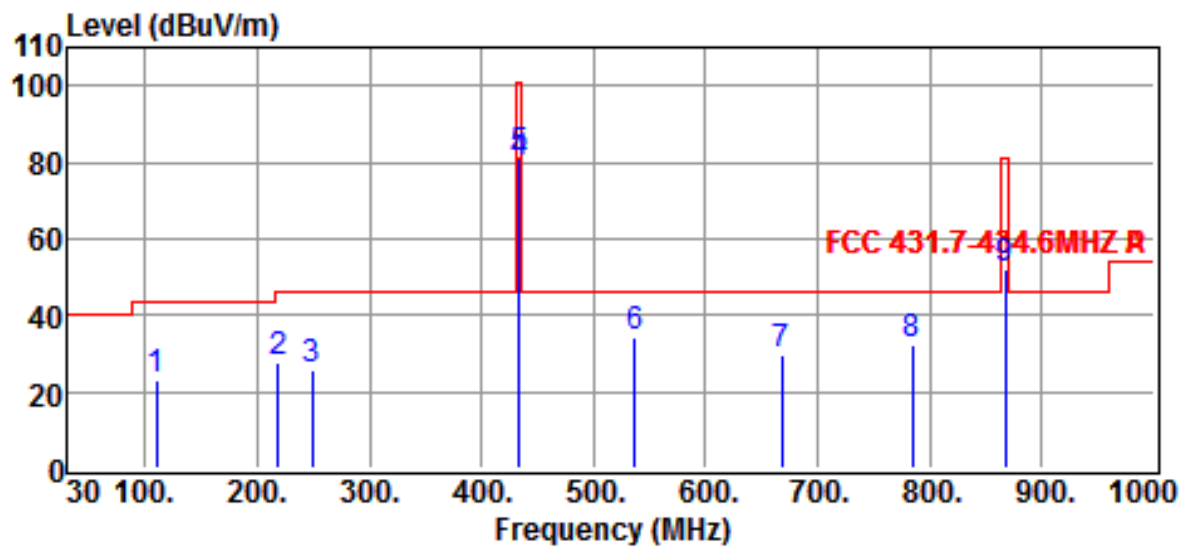


Site	:Chamber#2	Date	:2024-09-02
Limit	:FCC 431.7-434.6MHz P	Ant. Pol.	:VERTICAL
EUT	:EMERGENCY HELP DIALER	Model	:HP-919
Power Rating	:120V / 60Hz	Temp.	:22°C
Engineer	:Vincent	Humi.	:62 %
Test Mode	:TX Mode		

	Freq MHz	Reading dBuV	Correction Factor dB/m	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
	2168.0000	49.37	-1.36	48.01	80.80	-32.79	Peak
	2480.0000	52.47	-0.75	51.72	80.80	-29.08	Peak
	3032.0000	50.52	0.29	50.81	80.80	-29.99	Peak
	3472.0000	51.13	0.78	51.91	80.80	-28.89	Peak
	3904.0000	50.05	2.12	52.17	74.00	-21.83	Peak
*	4336.0000	49.71	2.72	52.43	74.00	-21.57	Peak

- Note :
1. Result = Reading + Correction Factor
 2. Average Result = Peak Result + Duty Factor (-1.6)
 3. Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
 4. The margin value=Limit - Result
 5. Above 1Ghz : Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.
 6. ” * ” mean this data is the worst emission level.

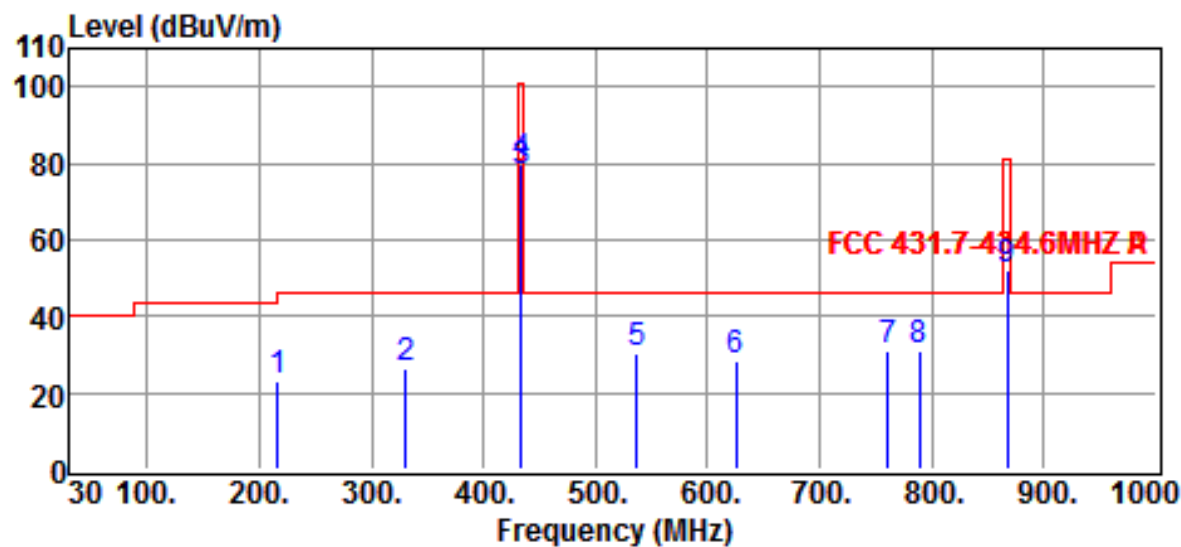
B. DC 9V Battery IN
30MHz ~ 1GHz



Site	:Chamber#2	Date	:2024-09-02
Limit	:FCC 431.7-434.6MHz P	Ant. Pol.	:HORIZONTAL
EUT	:EMERGENCY HELP DIALER	Model	:HP-919
Power Rating	:DC 9V Battery	Temp.	:22°C
Engineer	:Vincent	Humi.	:62 %
Test Mode	:TX Mode		

	Freq MHz	Reading dBuV	Correction Factor dB/m	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
	109.5400	34.38	-11.24	23.14	43.50	-20.36	QP
	218.1800	38.17	-10.26	27.91	46.00	-18.09	QP
	249.2200	33.73	-8.00	25.73	46.00	-20.27	QP
*	433.6100	-	-	79.70	80.80	-1.10	Average
	433.6100	85.98	-4.68	81.30	100.80	-19.50	Peak
	536.3400	38.09	-3.54	34.55	46.00	-11.45	QP
	668.2600	30.31	-0.75	29.56	46.00	-16.44	QP
	784.6600	32.24	-0.11	32.13	46.00	-13.87	QP
	867.2200	50.65	1.65	52.30	80.80	-28.50	Peak

- Note :
- 1. Result = Reading + Correction Factor
 - 2. Average Result = Peak Result + Duty Factor (-1.6)
 - 3. Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
 - 4. The margin value=Limit - Result
 - 5. Above 1Ghz : Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.
 - 6. ” * ” mean this data is the worst emission level.

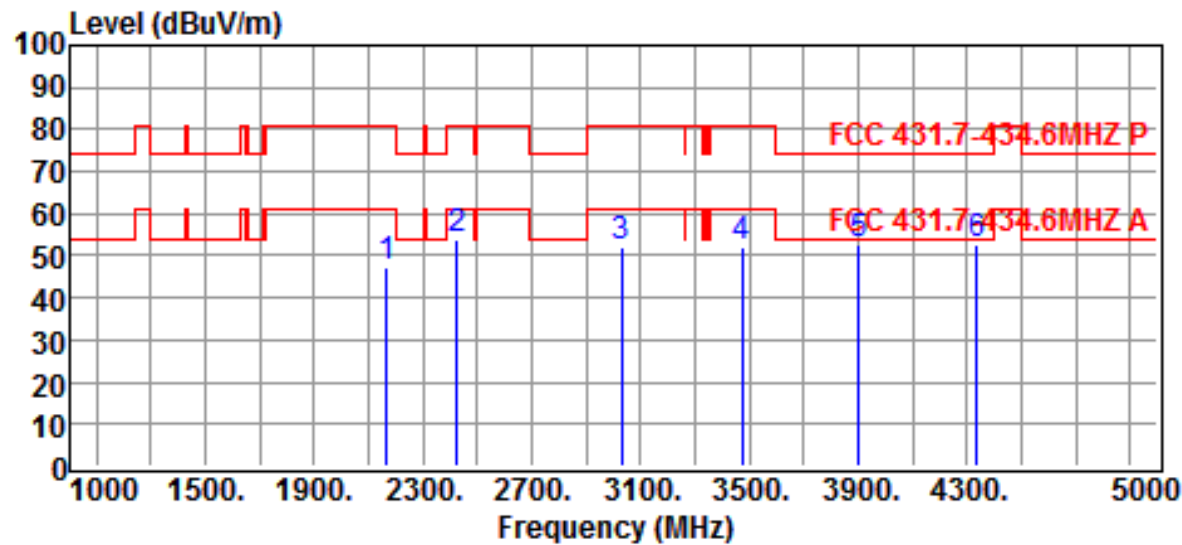


Site	:Chamber#2	Date	:2024-09-02
Limit	:FCC 431.7-434.6MHz P	Ant. Pol.	:VERTICAL
EUT	:EMERGENCY HELP DIALER	Model	:HP-919
Power Rating	:DC 9V Battery	Temp.	:22°C
Engineer	:Vincent	Humi.	:62 %
Test Mode	:TX Mode		

	Freq MHz	Reading dBuV	Correction Factor dB/m	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
	216.2400	33.16	-10.18	22.98	46.00	-23.02	QP
	330.7000	32.74	-6.10	26.64	46.00	-19.36	QP
*	433.6100	-	-	78.00	80.80	-2.80	Average
	433.6100	84.28	-4.68	79.60	100.80	-21.20	Peak
	536.3400	33.97	-3.54	30.43	46.00	-15.57	QP
	625.5800	30.55	-2.31	28.24	46.00	-17.76	QP
	761.3800	31.07	-0.09	30.98	46.00	-15.02	QP
	788.5400	31.04	-0.02	31.02	46.00	-14.98	QP
	867.2200	50.45	1.65	52.10	80.80	-28.70	Peak

- Note :
- 1. Result = Reading + Correction Factor
 - 2. Average Result = Peak Result + Duty Factor (-1.6)
 - 3. Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
 - 4. The margin value=Limit - Result
 - 5. Above 1Ghz : Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.
 - 6. ” * ” mean this data is the worst emission level.

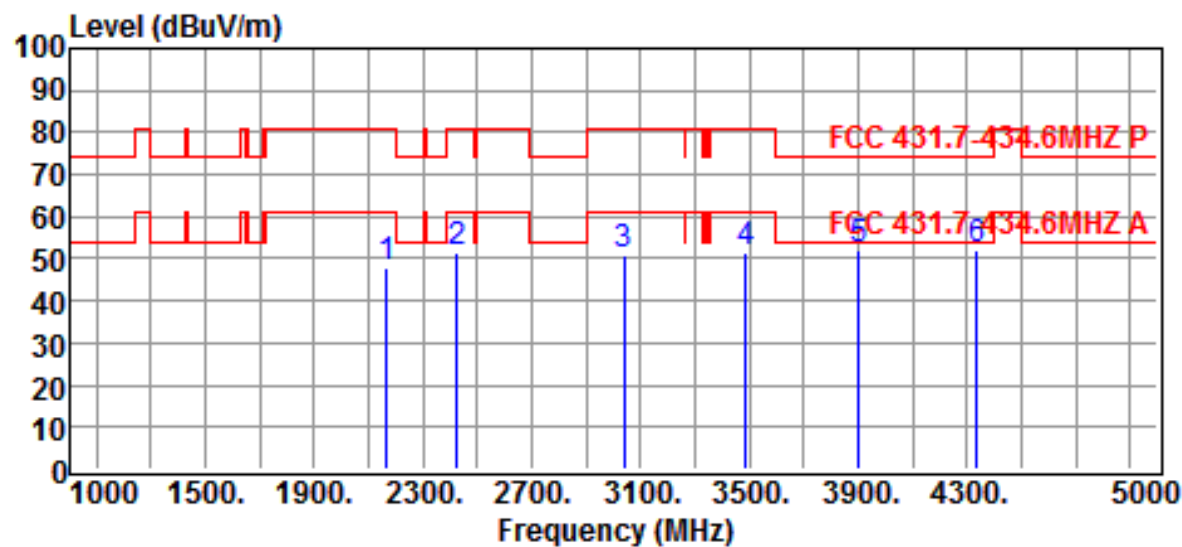
Above 1GHz



Site	:Chamber#2	Date	:2024-09-02
Limit	:FCC 431.7-434.6MHz P	Ant. Pol.	:HORIZONTAL
EUT	:EMERGENCY HELP DIALER	Model	:HP-919
Power Rating	:DC 9V Battery	Temp.	:22°C
Engineer	:Vincent	Humi.	:62 %
Test Mode	:TX Mode		

	Freq MHz	Reading dBuV	Correction Factor dB/m	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
	2168.0000	48.82	-1.36	47.46	80.80	-33.34	Peak
	2424.0000	54.34	-0.71	53.63	80.80	-27.17	Peak
	3032.0000	51.89	0.29	52.18	80.80	-28.62	Peak
	3472.0000	51.49	0.78	52.27	80.80	-28.53	Peak
	3904.0000	50.45	2.12	52.57	74.00	-21.43	Peak
*	4336.0000	50.24	2.72	52.96	74.00	-21.04	Peak

- Note :
- 1. Result = Reading + Correction Factor
 - 2. Average Result = Peak Result + Duty Factor (-1.6)
 - 3. Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
 - 4. The margin value=Limit - Result
 - 5. Above 1Ghz : Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.
 - 6. ” * ” mean this data is the worst emission level.



Site	:Chamber#2	Date	:2024-09-02
Limit	:FCC 431.7-434.6MHz P	Ant. Pol.	:VERTICAL
EUT	:EMERGENCY HELP DIALER	Model	:HP-919
Power Rating	:DC 9V Battery	Temp.	:22°C
Engineer	:Vincent	Humi.	:62 %
Test Mode	:TX Mode		

	Freq MHz	Reading dBuV	Correction Factor dB/m	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
	2168.0000	49.22	-1.36	47.86	80.80	-32.94	Peak
	2424.0000	52.12	-0.71	51.41	80.80	-29.39	Peak
	3040.0000	50.76	0.27	51.03	80.80	-29.77	Peak
	3488.0000	50.97	0.77	51.74	80.80	-29.06	Peak
	3904.0000	49.93	2.12	52.05	74.00	-21.95	Peak
*	4336.0000	49.47	2.72	52.19	74.00	-21.81	Peak

- Note :
- 1. Result = Reading + Correction Factor
 - 2. Average Result = Peak Result + Duty Factor (-1.6)
 - 3. Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
 - 4. The margin value=Limit - Result
 - 5. Above 1Ghz : Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.
 - 6. ” * ” mean this data is the worst emission level.

C. Emission frequencies below 30MHz (9kHz - 30MHz)

According to exploratory test no any obvious emission were detected from 9kHz to 30MHz.

4.4 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. For the limit is employed average value, therefore the peak value can be transferred to average value by subtracting the duty factor. The basic equation with a sample calculation is as follows:

$$\text{Peak} = \text{Reading} + \text{Corrected Factor}$$

where

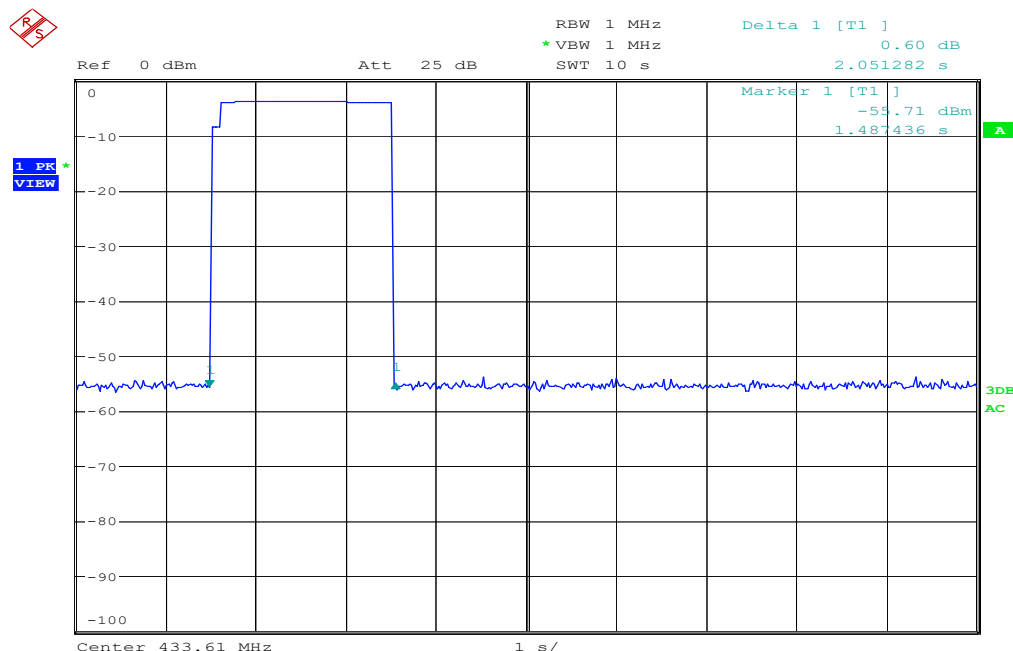
Corr. Factor = Antenna Factor + Cable Factor - Amplifier Gain (if any) And the average value is

$$\text{Average} = \text{Peak Value} + \text{Duty Factor}$$

Note : If the measured frequencies are fall in the restricted frequency band, the limit employed must be quasi peak value when frequencies are below or equal to 1 GHz. And the measuring instrument is set to quasi peak detector function.

4.5 Activate Time

This EUT is operated by manually, and Activate Time is less than 5 second after being released.



Date: 2.SEP.2024 11:09:11

4.6 Calculation of Duty Factor

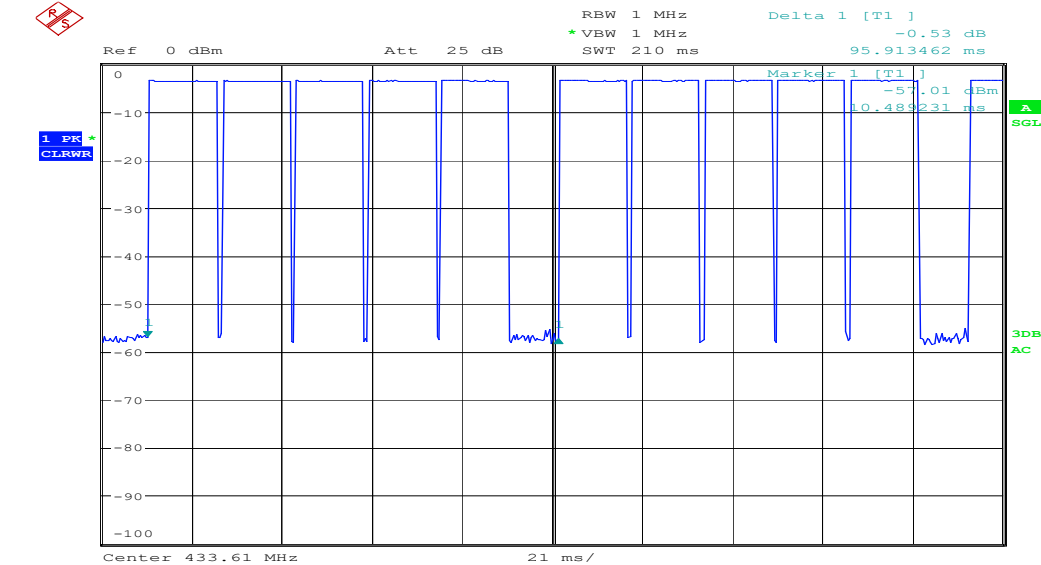
The duty factor is calculated with following formula :

$$20\log\frac{Total\ Duty}{Period\ of\ Pulse\ Train}$$

Test Data: 2024/9/2 Temp: 22 °C Hum: 62 %

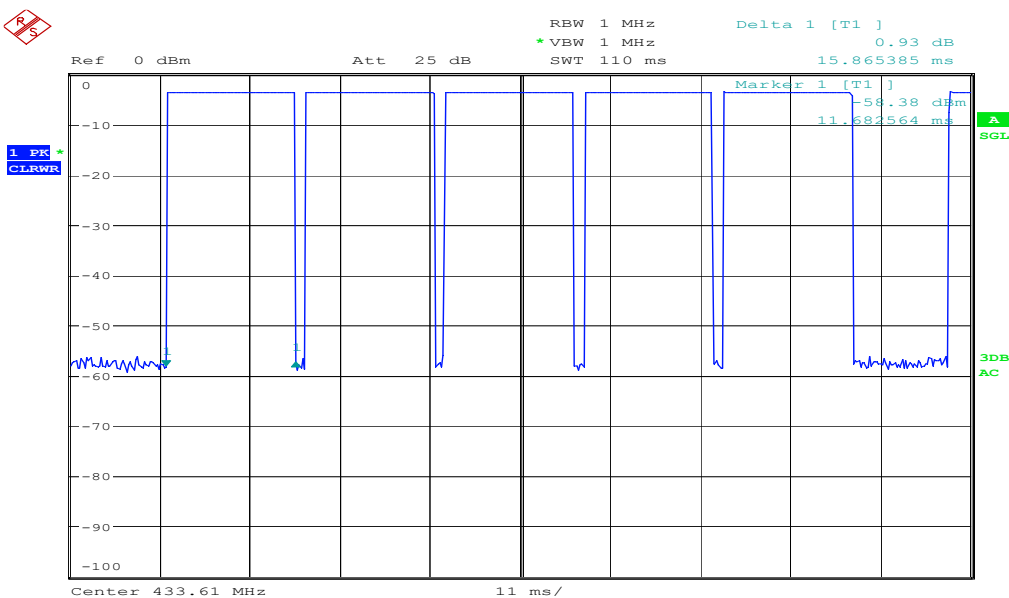
Duty Factor= 20log $\frac{15.8653\text{ms} * 5}{95.9134\text{ ms}}$ = -1.6

Period of Pulse Train



Date: 2.SEP.2024 11:06:48

Detail of a single pulse train



Date: 2.SEP.2024 11:08:03

4.7 Radiated Test Equipment

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
EMI Test Receiver	Rohde & Schwarz	ESU40 (13054416-001)	2024/03/04	2025/03/03
Bi-Log Antenna with 5dB Pad (3m)	ETC & JYE BAO	MCTD 2786 & FATS-NM5NF5S3G2W5(13057618-002 & RF-002)	2023/09/13	2024/09/12
Horn Antenna	EMCO	3117	2023/03/23	2024/03/22
Amplifier	HP	8447D (13054402-001)	2024/09/11	2024/09/10
Amplifier	HP	8449B (13052901-001)	2023/10/17	2024/10/16

4.8 Measuring Instrument Setup

Explanation of measuring instrument setup in frequency band measured is as following :

Frequency Band (MHz)	Instrument	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	RF Test Receiver	Quasi-Peak	120 kHz	N/A
	Spectrum Analyzer	Peak	100 kHz	100 kHz
Above 1000	Spectrum Analyzer	Peak	1 MHz	1 MHz
	Spectrum Analyzer	Average	1 MHz	10 Hz

5. BANDWIDTH OF EMISSION

5.1 Applicable Standard Plot Graphic of Bandwidth

Per FCC rule §15.231(c), the permitted emission bandwidth is no wider than 0.25%of the center frequency for devices operating above 70 MHz and below 900 MHz.

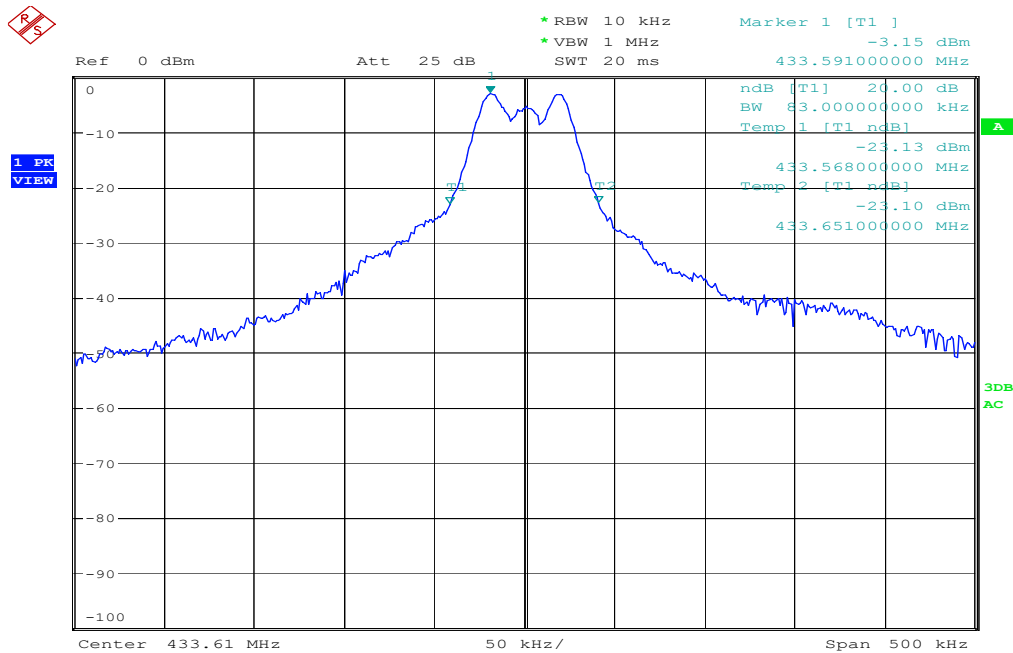
5.2 Bandwidth Test Equipment

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
Spectrum Analyzer	R&S	FSP40	2024/06/21	2025/06/20

5.3 Plot Graphic of Bandwidth

Test Data: 2024/9/2 Temp: 22 °C Hum: 62 %

The emission bandwidth limit is:
433.610 MHz x 0.25%= 1084.025 kHz
20 dB bandwidth = 83 kHz
Test Result: 83 kHz < 1084.025 kHz



Date: 2.SEP.2024 11:00:58

6. CONDUCTED EMISSION MEASUREMENT

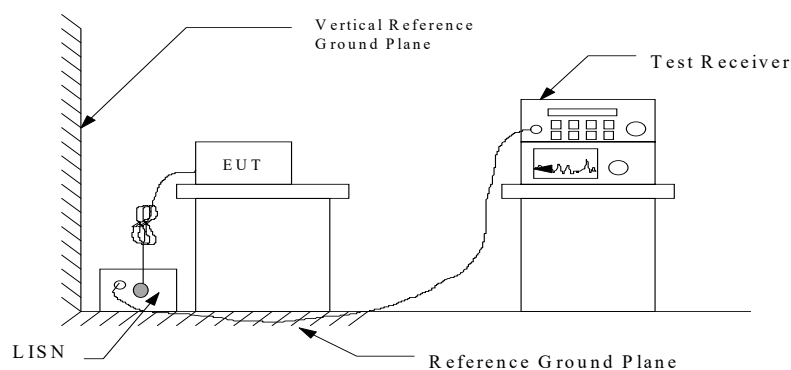
6.1 Standard Applicable

For unintentional and intentional device, Line Conducted Emission Limits are in accordance to §15.107(a) and §15.207(a) respectively. Both Limits are identical specification.

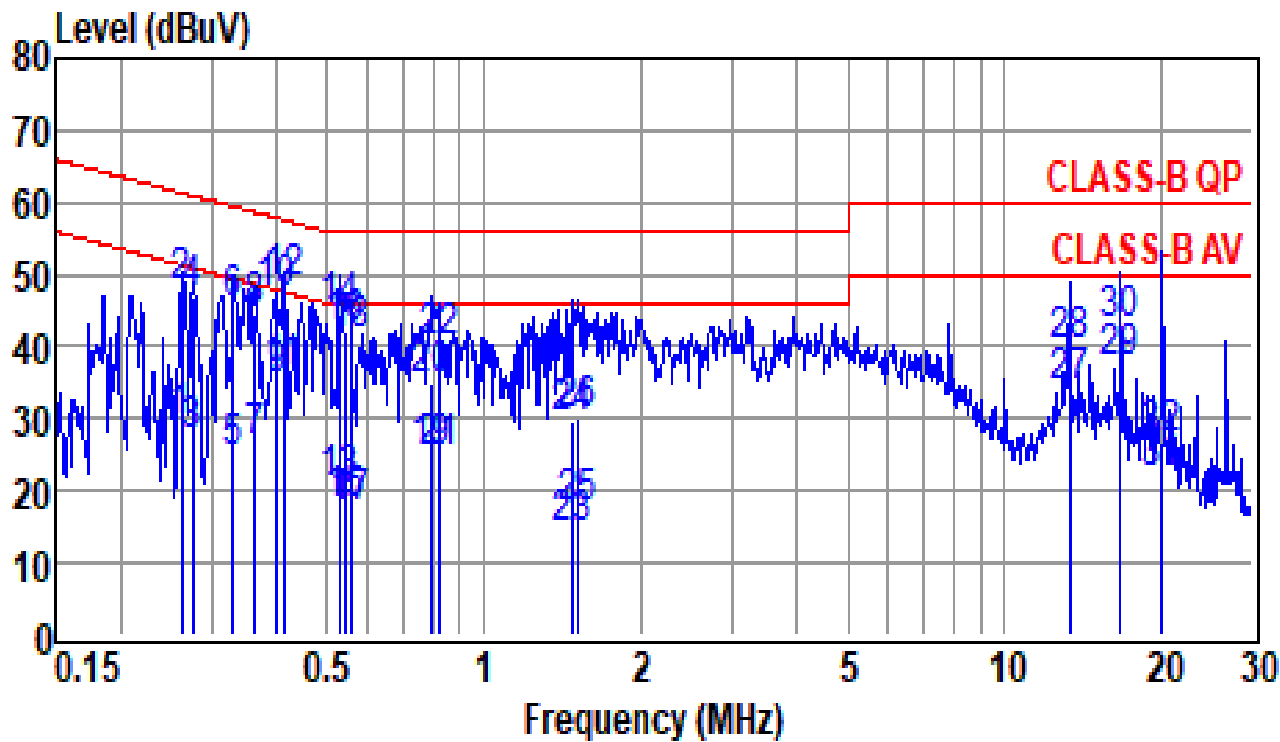
6.2 Measurement Procedure

1. Setup the configuration per figure 3.
2. A preliminary scan with a spectrum monitor is performed to identify the frequency of emission that has the highest amplitude relative to the limit by operating the EUT in selected modes of operation, typical cable positions, and with a typical system configuration.
3. Record the 6 or 8 highest emissions relative to the limit.
4. Measure each frequency obtained from step 3 by a test Wireless Microphone Receiver set on quasi peak detector function, and then record the accuracy frequency and emission level. If all emissions measured in the specified band are attenuated more than 20 dB from the limit, this step would be ignored, and the peak detector function would be used.
5. Confirm the highest three emissions with variation of the EUT cable configuration and record the final data.
6. Repeat all above procedures on measuring each operation mode of EUT.

Figure 3 : Conducted emissions measurement configuration



6.3 Conducted Emission Data



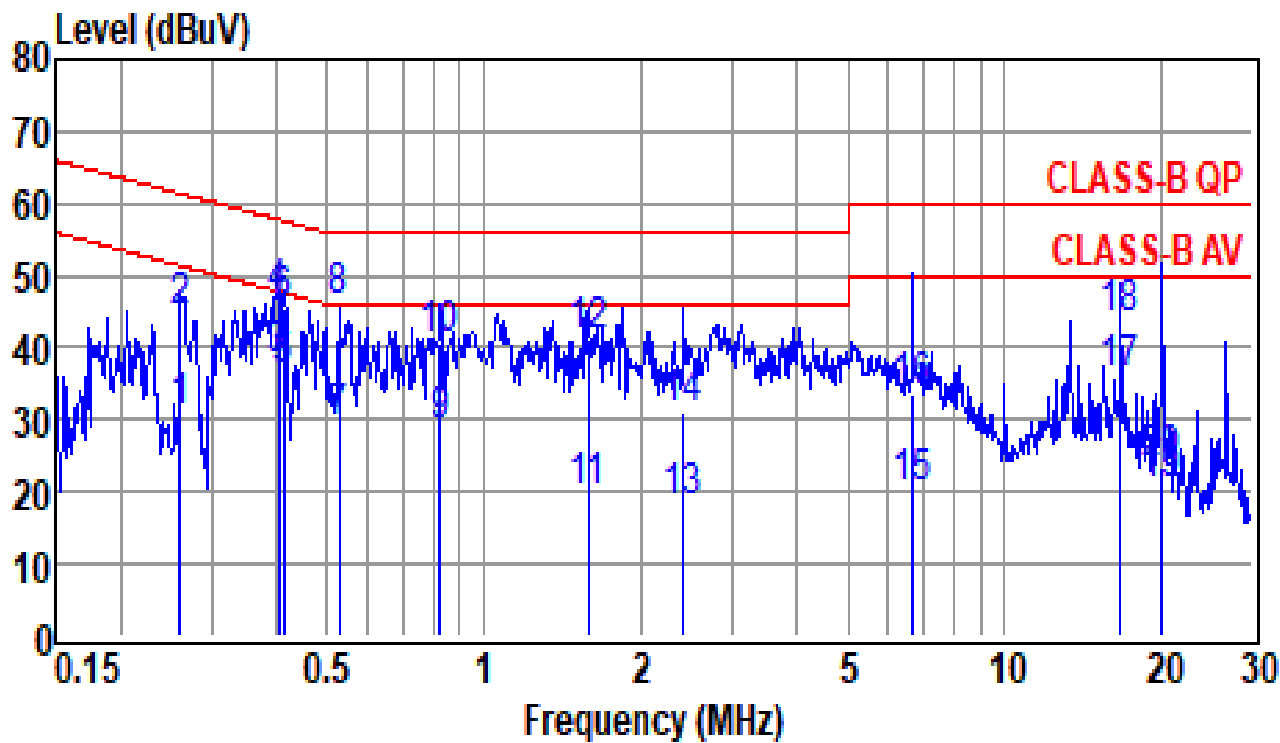
Site	: conducted #1	Date	: 2024-09-13
Condition	: CLASS-B QP	LISN	: LINE
Tem / Hum	: 22 °C / 58%	Test Mode	: TX Mode
EUT	: EMERGENCY HELP DIALER	Power Rating	: 120V / 60Hz
Model	: HP-919	Engineer	: Vincent

	Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
	0.2630	19.66	9.66	29.32	51.34	-22.02	Average
	0.2630	38.14	9.66	47.80	61.34	-13.54	QP
	0.2759	17.47	9.66	27.13	50.94	-23.81	Average
	0.2759	37.49	9.66	47.15	60.94	-13.79	QP
	0.3286	15.11	9.67	24.78	49.49	-24.71	Average
	0.3286	35.65	9.67	45.32	59.49	-14.17	QP
	0.3634	16.46	9.67	26.13	48.65	-22.52	Average
	0.3634	34.85	9.67	44.52	58.65	-14.13	QP
	0.3997	25.42	9.67	35.09	47.86	-12.77	Average
	0.3997	37.23	9.67	46.90	57.86	-10.96	QP
	0.4127	26.18	9.67	35.85	47.59	-11.74	Average
*	0.4127	38.67	9.67	48.34	57.59	-9.25	QP
	0.5265	10.84	9.67	20.51	46.00	-25.49	Average
	0.5265	34.84	9.67	44.51	56.00	-11.49	QP
	0.5436	7.98	9.67	17.65	46.00	-28.35	Average
	0.5436	32.36	9.67	42.03	56.00	-13.97	QP

	0.5523	7.66	9.67	17.33	46.00	-28.67	Average
	0.5523	31.65	9.67	41.32	56.00	-14.68	QP
	0.7960	15.01	9.68	24.69	46.00	-21.31	Average
	0.7960	25.25	9.68	34.93	56.00	-21.07	QP
	0.8174	15.10	9.68	24.78	46.00	-21.22	Average
	0.8174	30.38	9.68	40.06	56.00	-15.94	QP
	1.4720	4.45	9.72	14.17	46.00	-31.83	Average
	1.4720	20.01	9.72	29.73	56.00	-26.27	QP
	1.5190	7.70	9.72	17.42	46.00	-28.58	Average
	1.5190	20.34	9.72	30.06	56.00	-25.94	QP
	13.3370	24.31	9.89	34.20	50.00	-15.80	Average
	13.3370	29.89	9.89	39.78	60.00	-20.22	QP
	16.6610	27.59	9.90	37.49	50.00	-12.51	Average
	16.6610	32.87	9.90	42.77	60.00	-17.23	QP
	20.0560	11.95	9.90	21.85	50.00	-28.15	Average
	20.0560	16.88	9.90	26.78	60.00	-33.22	QP

Note :

1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss
3. " * " mean this data is the worst emission level



Site	: conducted #1	Date	: 2024-09-13
Condition	: CLASS-B QP	LISN	: NEUTRAL
Tem / Hum	: 22 °C / 58%	Test Mode	: TX Mode
EUT	: EMERGENCY HELP DIALER	Power Rating	: 120V / 60Hz
Model	: HP-919	Engineer	: Vincent

	Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
	0.2616	21.17	9.67	30.84	51.38	-20.54	Average
	0.2616	34.89	9.67	44.56	61.38	-16.82	QP
	0.4040	28.15	9.67	37.82	47.77	-9.95	Average
	0.4040	36.66	9.67	46.33	57.77	-11.44	QP
	0.4127	26.63	9.67	36.30	47.59	-11.29	Average
	0.4127	35.82	9.67	45.49	57.59	-12.10	QP
	0.5265	19.55	9.67	29.22	46.00	-16.78	Average
*	0.5265	36.39	9.67	46.06	56.00	-9.94	QP
	0.8261	18.97	9.68	28.65	46.00	-17.35	Average
	0.8261	30.90	9.68	40.58	56.00	-15.42	QP
	1.5850	9.89	9.72	19.61	46.00	-26.39	Average
	1.5850	31.32	9.72	41.04	56.00	-14.96	QP
	2.4220	8.31	9.74	18.05	46.00	-27.95	Average
	2.4220	21.51	9.74	31.25	56.00	-24.75	QP
	6.6620	10.41	9.83	20.24	50.00	-29.76	Average
	6.6620	23.81	9.83	33.64	60.00	-26.36	QP
	16.6610	25.91	9.95	35.86	50.00	-14.14	Average

	16.6610	33.80	9.95	43.75	60.00	-16.25	QP
	20.0560	10.47	9.96	20.43	50.00	-29.57	Average
	20.0560	13.29	9.96	23.25	60.00	-36.75	QP

Note :

1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss
3. " * " mean this data is the worst emission level

6.4 Result Data Calculation

The result data is calculated by adding the LISN Factor to the measured reading. The basic equation with a sample calculation is as follows:

RESULT = READING + LISN FACTOR

Assume a receiver reading of 22.5 dBμV is obtained, and LISN Factor is 0.1 dB, then the total of disturbance voltage is 22.6 dBμV.

RESULT = 22.5 + 0.1 = 22.6 dBμV
Level in μV = Common Antilogarithm[(22.6 dBμV)/20]
= 13.48 μV

6.5 Conducted Measurement Equipment

The following test equipment are used during the conducted test .

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
EMI Test Receiver	Rohde & Schwarz	ESCI	2023/11/06	2024/11/04
Two-Line V- Network	Rohde & Schwarz	ENV 216 (13057719-003)	2024/04/17	2025/04/16
LISN	Shibasoku	563 (13044902-001)	2024/02/23	2025/02/22

7 ANTENNA REQUIREMENT

7.1 Standard Applicable

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.

7.2 Antenna Construction

The antenna is permanently integrated on RF Board, no consideration of replacement. Please see photos submitted in Exhibit B.