

FCC TEST REPORT

For

Num'axes

INDOOR PET CONTROL

Test Model No.: PFBORREP002

Prepared for : Num'axes
Address : 745 rue de la bergeresse - ZAC des Aulnaies 45160 OLIVET -
France

Prepared by : Shenzhen LCS Compliance Testing Laboratory Ltd.
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Date of receipt of test sample : February 03, 2015

Number of tested samples : 1

Serial number : Prototype

Date of Test : February 03, 2015 – March 18, 2015

Date of Report : March 18, 2015

FCC TEST REPORT
FCC CFR 47 PART 15C(15.231): 2014

Report Reference No. : **LCS1502030066E**

Date of Issue : **March 18, 2015**

Testing Laboratory Name : **Shenzhen LCS Compliance Testing Laboratory Ltd.**

Address : **1/F., Xingyuan Industrial Park, Tongda Road, Bao'an Avenue, Bao'an District, Shenzhen, Guangdong, China**

Testing Location/ Procedure..... : **Full application of Harmonised standards**
Partial application of Harmonised standards
Other standard testing method

Applicant's Name..... : **Num'axes**

Address : **745 rue de la bergeresse - ZAC des Aulnaies 45160 OLIVET - France**

Test Specification

Standard : **FCC CFR 47 PART 15 Subpart C: 2014**

Test Report Form No...... : **LCSEMC-1.0**

TRF Originator : **Shenzhen LCS Compliance Testing Laboratory Ltd.**

Master TRF..... : **Dated 2011-03**

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Test Item Description. : **INDOOR PET CONTROL**

Trade Mark : **EYENIMAL**

Test Model..... : **PFBORREP002**

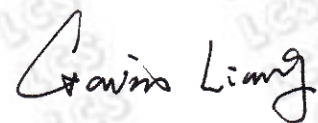
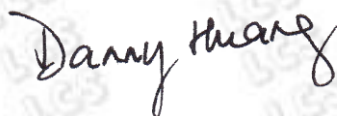
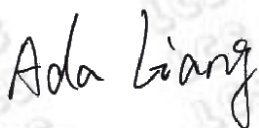
Ratings : **DC 3.0V**

Result : **Positive**

Compiled by:

Supervised by:

Approved by:



Ada Liang/ File administrators

Danny Huang/ Technique principal

Gavin Liang/ Manager

FCC TEST REPORT

| | |
|---|--|
| Test Report No. : LCS1502030066E | <u>March 18, 2015</u> Date of issue |
|---|--|

| | |
|--------------------------|--|
| Test Model..... | : PFBORREP002 |
| EUT..... | : INDOOR PET CONTROL |
| Applicant..... | : Num'axes |
| Address..... | : 745 rue de la bergeresse - ZAC des Aulnaies 45160 OLIVET - France |
| Telephone..... | : / |
| Fax..... | : / |
| Manufacturer..... | : Num'axes |
| Address..... | : 745 rue de la bergeresse - ZAC des Aulnaies 45160 OLIVET - France |
| Telephone..... | : / |
| Fax..... | : / |
| Factory..... | : Num'axes |
| Address..... | : 745 rue de la bergeresse - ZAC des Aulnaies 45160 OLIVET - France |
| Telephone..... | : / |
| Fax..... | : / |

| | |
|--------------------|-----------------|
| Test Result | Positive |
|--------------------|-----------------|

The test report merely corresponds to the test sample.
 It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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1. GENERAL INFORMATION

1.1. Description of Device (EUT)

| | | |
|---------------------|---|--------------------|
| EUT | : | INDOOR PET CONTROL |
| Test Model | : | PFBORREP002 |
| Power Supply | : | DC 3.0V |
| Transmit Frequency | : | 433.8MHz |
| Number of Channels | : | 1 |
| Modulation Type | : | OOK |
| Antenna Description | : | PCB Antenna |

1.2. Objective

The primary objective of the manufacturer is compliance with Subpart C of Part 15 of FCC Rules for the radiated and conducted emissions of intentional radiators and Industry Canada RSS-210 for Low Power, License-Exempt Radio Communication Devices. Certification of these devices is required as a prerequisite to marketing as defined in Part 2 the FCC Rules and Industry Canada Radio Standards Procedure RSP-100.

Certification is a procedure where the manufacturer or a contracted laboratory makes measurements and submits the test data and technical information to the FCC. The FCC issues a grant of equipment authorization upon successful completion of their review of the submitted documents. Once the equipment authorization has been obtained, the label indicating compliance must be attached to all identical units, which are subsequently manufactured.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product which may result in increased emissions should be checked to ensure compliance has been maintained (i.e., printed circuit board layout changes, different line filter, different power supply, harnessing or I/O cable changes, etc.).

1.3. Environmental Conditions

During the measurement the environmental conditions were within the listed ranges:

- Temperature: 15-35 °C
- Humidity: 30-60 %
- Atmospheric pressure: 86-106kPa

1.4. Host System Configuration List and Details

| Manufacturer | Description | Model | Serial Number | Certificate |
|--------------|-------------|-------|---------------|-------------|
| -- | -- | -- | -- | -- |

1.5. External I/O Port

| I/O Port Description | Quantity | Cable |
|----------------------|----------|-------|
| -- | -- | -- |

1.6. Description of Test Facility

Site Description

EMC Lab. : CNAS Registration Number. is L4595.
 FCC Registration Number. is 899208.
 Industry Canada Registration Number. is 9642A-1.
 VCCI Registration Number. is C-4260 and R-3804.
 ESMD Registration Number. is ARCB0108.
 UL Registration Number. is 100571-492.
 TUV SUD Registration Number. is SCN1081.
 TUV RH Registration Number. is UA 50296516-001

1.7. Statement of The Measurement Uncertainty

ISO Guide 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level and were calculated in accordance with NAMAS document NIS 81.

| Test Item | Frequency Range | Uncertainty | Note |
|--------------------------|-----------------|-------------|------|
| Radiation Uncertainty : | 9KHz~30MHz | 3.10dB | (1) |
| | 30MHz~200MHz | 2.96dB | (1) |
| | 200MHz~1000MHz | 3.10dB | (1) |
| | 1GHz~26.5GHz | 4.20dB | (1) |
| Conduction Uncertainty : | 150kHz~30MHz | 1.63dB | (1) |
| Power disturbance : | 30MHz~300MHz | 1.60dB | (1) |

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

2. TEST METHODOLOGY

All measurements contained in this report were conducted with ANSI C63.10-2009, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

The radiated testing was performed at an antenna-to-EUT distance of 3 meters. All radiated and conducted emissions measurement was performed at Shenzhen LCS Compliance Testing Laboratory Ltd..

2.1. 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.

2.2. EUT Exercise

The EUT was operated in the normal operating mode. The TX frequency that was fixed which was for the purpose of the measurements.

According to its specifications, the EUT must comply with the requirements of the Section 15.203, 15.205, 15.207, 15.209 and 15.231 under the FCC Rules Part 15 Subpart C and RSS-210.

2.3. General Test Procedures

2.3.1 Conducted Emissions(N/A)

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using Quasi-peak and average detector modes.

2.3.2 Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4

2.4. Instrument Calibration

All test equipment is regularly checked to ensure that performance is maintained in accordance with the manufacturer's specifications. All antennas are calibrated at regular intervals with respect to tuned half-wave dipoles. An exhibit of this report contains the list of test equipment used and calibration information.

2.5. Test Mode

The EUT has been tested under engineering mode. The field strength of radiation emission was measured in the following position: EUT stand-up position (Y axis), lie-down position (X, Z axis).

The worst case of X axis was reported.

A new battery supplied DC 3V power to the EUT for testing.

The EUT will transmit while the operator press the button.

3. SYSTEM TEST CONFIGURATION

3.1. Justification

The system was configured for testing in a continuous transmit condition.

3.2. EUT Exercise Software

N/A

3.3. Special Accessories

N/A

3.4. Block Diagram/Schematics

Please refer to the related document

3.5. Equipment Modifications

Shenzhen LCS Compliance Testing Laboratory Ltd. has not done any modification on the EUT.

3.6. Test Setup

Please refer to the test setup photo.

4. SUMMARY OF TEST RESULTS

| Applied Standard: FCC Part 15 Subpart C & RSS-210 | | | |
|---|----------|---|-----------|
| FCC Rules | IC Rules | Description of Test | Result |
| §15.203 | RSS-Gen | Antenna Requirement | Compliant |
| §15.205 | RSS-Gen | Restricted Bands Of Operation | Compliant |
| §15.209 | RSS-Gen | Radiated Emission Limits, General Requirements. | Compliant |
| §15.231 (b) | A1.1 | Field Strength Of Fundamental And Harmonics | Compliant |
| §15.231 (c) | A1.1 | 20dB Bandwidth | Compliant |
| §15.231 (a)(1) | A1.1 | Transmission Cease Time | Compliant |
| §15.207 | RSS-Gen | Conducted Emissions | N/A |

5. TEST ITEMS AND RESULTS

5.1. Transmission Cease Time

FCC 15.231 (a) & RSS-210 A1.1.1(a)

5.1.1. Limit

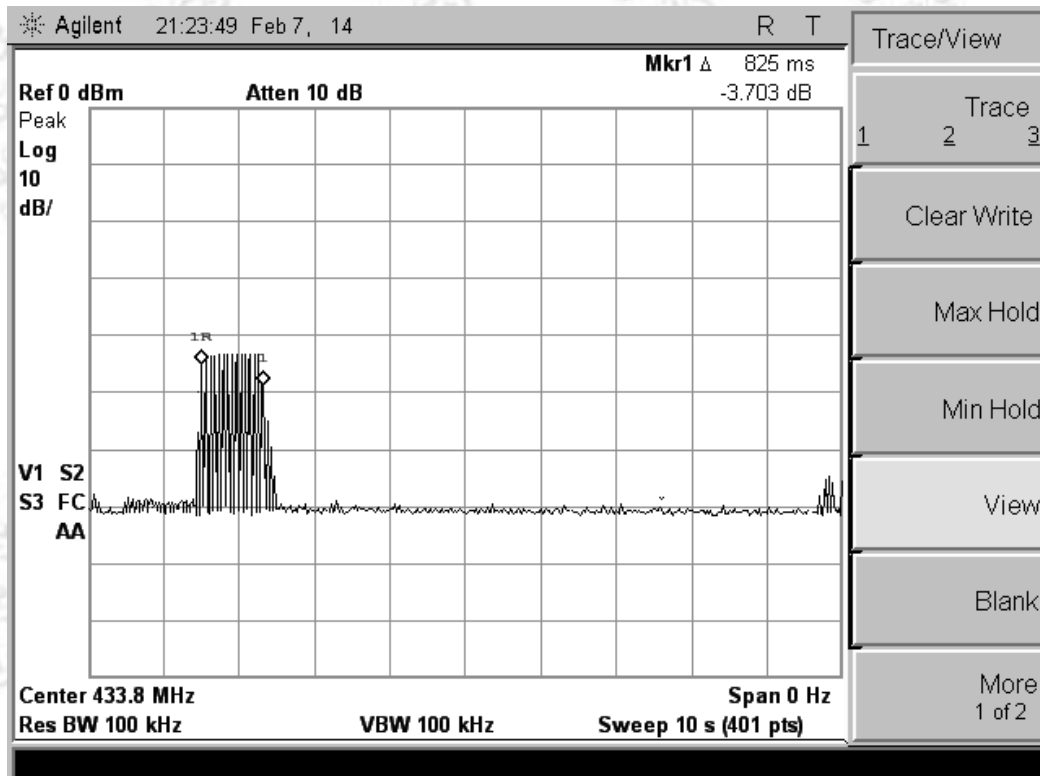
A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

5.1.2. Test Procedure

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

5.1.3. Test Results

| Frequency (MHz) | Activation Time (s) | Limit: not more than 5 seconds of being released (s) | Conclusion |
|-----------------|---------------------|--|------------|
| 433.8 | 0.825 | 5 | PASS |



5.2. Transmitter Field Strength of Emissions

5.2.1. Limit

FCC §15.231 (b) & RSS-210 A1.1.2(1)

In addition to the provisions of § 15.205, the field strength of emissions from Intentional radiators operated under this section shall not exceed the following:

| Fundamental frequency (MHz) | Field Strength of Fundamental (microvolt/meter) | Field Strength of spurious emissions (microvolt/meter) |
|-----------------------------|---|--|
| 40.66-40.70 | 2,250 | 225 |
| 70-130 | 1,250 | 125 |
| 130-174 | 1,250 to 3,370 | 125 to 375 |
| 174-260 | 3,750 | 375 |
| 260-470 | 3,750 to 12,500 | 375 to 1,250 |
| Above 470 | 12,500 | 1,250 |

[Where F is the frequency in MHz, the formulas for calculating the maximum permitted fundamental field strengths are as follows: for the band 130-174 MHz, $\mu\text{V/m}$ at 3 meters = $56.81818(F) - 6136.3636$; for the band 260-470 MHz, $\mu\text{V/m}$ at 3 meters = $41.6667(F) - 7083.3333$. The maximum permitted unwanted emission level is 20 dB below the maximum permitted fundamental level.]

§15.205 (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

§15.205 (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.

§15.209 (a) 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 (microvolts/meter) | Measurement distance (meters) |
|-----------------|-----------------------------------|-------------------------------|
| 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.

§15.209 (b) In the emission table above, the tighter limit applies at the band edges.

5.2.2. Measuring Instruments and Setting

Please refer to section 6 of equipments list in this report. The following table is the setting of spectrum analyzer and receiver.

| Spectrum Parameter | Setting |
|---|--|
| Attenuation | Auto |
| Start Frequency | 1000 MHz |
| Stop Frequency | 10th carrier harmonic |
| RB / VB (Emission in restricted band) | 1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average |
| RB / VB (Emission in non-restricted band) | 1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average |

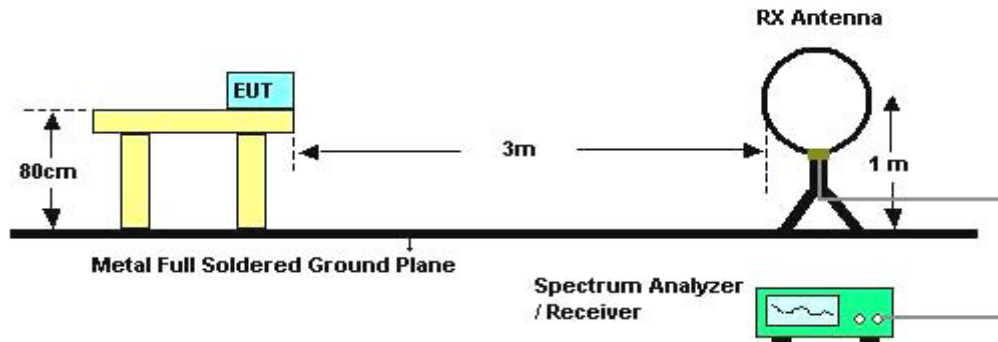
| Spectrum Parameter | Setting |
|------------------------|----------------------------------|
| Attenuation | Auto |
| Start ~ Stop Frequency | 9kHz~150kHz / RB 200Hz for QP |
| Start ~ Stop Frequency | 150kHz~30MHz / RB 9kHz for QP |
| Start ~ Stop Frequency | 30MHz~1000MHz / RB 120kHz for QP |

5.2.3. Test Procedures

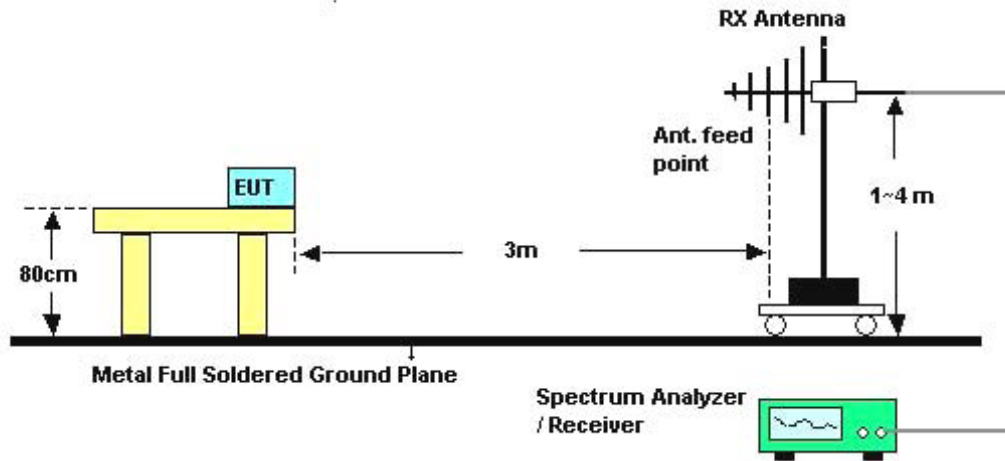
1. Configure the EUT according to ANSI C63.10-2009 and CISPR 16-1-4:2010. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 m to 4 m) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High – Low scan is not required in this case.

5.2.4. Test Setup Layout

For radiated emissions below 30MHz



For radiated emissions above 30MHz



5.2.5. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

5.2.6. Results of Radiated Emissions (9kHz~30MHz)

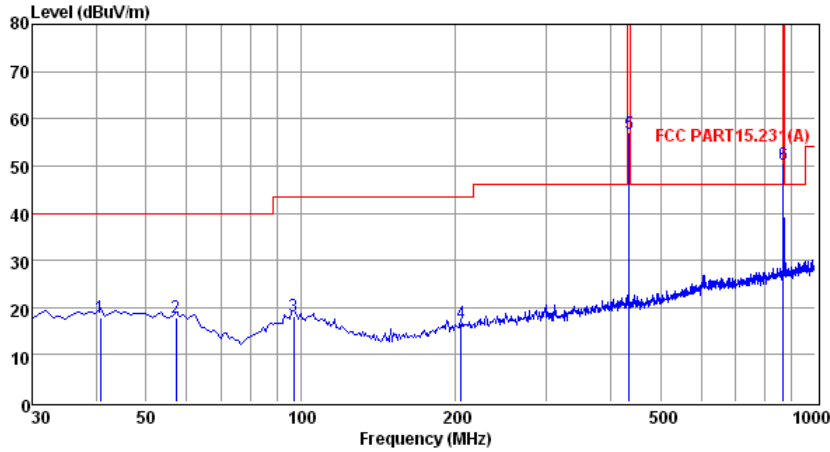
The low frequency, which started from 9KHz to 30MHz, was pre-scan and the result was 20dB lower than the limit line per 15.31(o) was not reported.

Note: Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor.

5.2.7. Results of Radiated Emissions (30MHz~1GHz)

| | | | |
|---------------|-------|----------------|--------------------|
| Temperature | 25°C | Humidity | 60% |
| Test Engineer | Kevin | Configurations | Radiated Emissions |

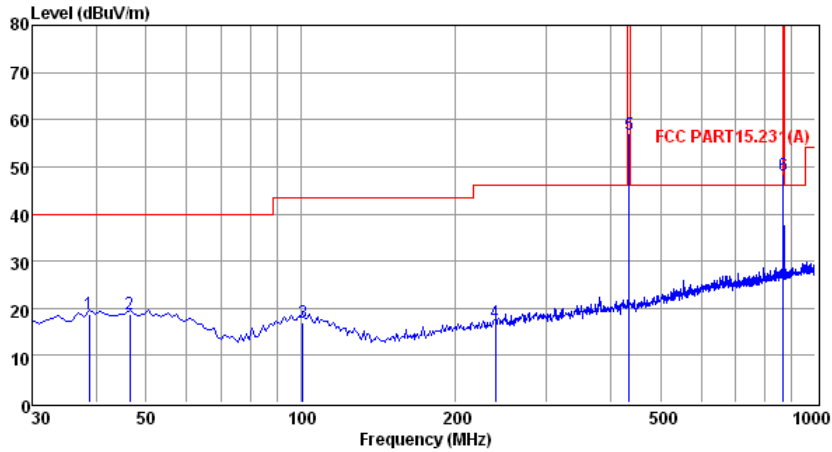


Env./Ins: 24°C / 56%
 EUT: INDOOR PET CONTROL
 M/N: PFBORREP002
 Power Rating: DC 3V
 Test Mode: TX
 Operator: KEVIN
 Memo:
 pol: HORIZONTAL

| | Freq | Reading | CabLos | Antfac | Measured | Limit | Over | Remark |
|---|--------|---------|--------|--------|----------|--------|--------|--------|
| | MHz | dBuV | dB | dB/m | dBuV/m | dBuV/m | dB | |
| 1 | 40.67 | 3.82 | 0.50 | 13.58 | 17.90 | 40.00 | -22.10 | QP |
| 2 | 57.16 | 4.59 | 0.47 | 12.88 | 17.94 | 40.00 | -22.06 | QP |
| 3 | 96.93 | 4.69 | 0.61 | 12.96 | 18.26 | 43.50 | -25.24 | QP |
| 4 | 204.60 | 4.87 | 0.99 | 10.71 | 16.57 | 43.50 | -26.93 | QP |
| 5 | 434.49 | 40.03 | 1.18 | 15.54 | 56.75 | 100.82 | -44.07 | Peak |
| 6 | 868.08 | 27.57 | 1.87 | 20.76 | 50.20 | 80.82 | -30.62 | Peak |

Note: 1. All readings are Quasi-peak values.
 2. Measured= Reading + Antenna Factor + Cable Loss
 3. The emission that are 20db below the official limit are not reported

| Fundamental and Harmonics QP Result | | | | | |
|-------------------------------------|---------------------|-------------------------------------|-------------------|--------------------|------------|
| Frequency (MHz) | Peak Level (dBμV/m) | DC Factor(dBμV/m) (see Section 5.4) | QP Level (dBμV/m) | Limit(dBμV/m) (QP) | Conclusion |
| 433.8 | 56.75 | -18.79 | 37.96 | 80.8 | PASS |
| 867.6 | 50.20 | -18.79 | 31.41 | 60.8 | PASS |



Env./Ins: 24°C/56%
 EUT: INDOOR PET CONTROL
 M/N: PFBORREP002
 Power Rating: DC 3V
 Test Mode: TX
 Operator: KEVIN
 Memo:
 pol: VERTICAL

| | Freq | Reading | CabLos | Antfac | Measured | Limit | Over | Remark |
|---|--------|---------|--------|--------|----------|--------|--------|--------|
| | MHz | dBuV | dB | dB/m | dBuV/m | dBuV/m | dB | |
| 1 | 38.73 | 5.08 | 0.38 | 13.25 | 18.71 | 40.00 | -21.29 | QP |
| 2 | 46.49 | 4.81 | 0.35 | 13.46 | 18.62 | 40.00 | -21.38 | QP |
| 3 | 100.81 | 3.26 | 0.60 | 13.09 | 16.95 | 43.50 | -26.55 | QP |
| 4 | 238.55 | 3.91 | 0.96 | 12.03 | 16.90 | 46.00 | -29.10 | QP |
| 5 | 434.49 | 40.22 | 1.18 | 15.54 | 56.94 | 100.82 | -43.88 | Peak |
| 6 | 868.08 | 25.56 | 1.87 | 20.76 | 48.19 | 80.82 | -32.63 | Peak |

Note: 1. All readings are Quasi-peak values.
 2. Measured= Reading + Antenna Factor + Cable Loss
 3. The emission that at 20db below the official limit are not reported

| Fundamental and Harmonics QP Result | | | | | |
|-------------------------------------|---------------------|-------------------------------------|-------------------|--------------------|------------|
| Frequency (MHz) | Peak Level (dBμV/m) | DC Factor(dBμV/m) (see Section 5.4) | QP Level (dBμV/m) | Limit(dBμV/m) (QP) | Conclusion |
| 433.8 | 56.94 | -18.79 | 38.15 | 80.8 | PASS |
| 867.6 | 48.19 | -18.79 | 29.40 | 60.8 | PASS |

5.2.8. Results of Radiated Emissions (Above1GHz)

| | | | |
|---------------|-------|----------------|---|
| Temperature | 25°C | Humidity | 55% |
| Test Engineer | Kevin | Configurations | Harmonics Emissions/ Spurious Emission |

| Peak Value: | | | | |
|--------------------|----------------|---------------------|-----------------|--------------|
| Frequency (MHz) | Level (dBuV/m) | Limit Line (dBuV/m) | Over limit (dB) | Polarization |
| 1301.34 | 49.16 | 74 | -24.84 | Horizontal |
| 1734.25 | 48.70 | 74 | -25.30 | Horizontal |
| 2168.54 | 47.51 | 74 | -26.49 | Horizontal |
| 1301.34 | 51.69 | 74 | -22.31 | Vertical |
| 1734.25 | 50.66 | 74 | -23.34 | Vertical |
| 2168.54 | 48.14 | 74 | -25.86 | Vertical |

| Average Value: | | | | | | |
|-----------------------|----------------|-------------------|------------------------|---------------------|-----------------|--------------|
| Frequency (MHz) | Level (dBuV/m) | Duty cycle factor | Average value (dBuV/m) | Limit Line (dBuV/m) | Over limit (dB) | Polarization |
| 1301.34 | 49.16 | -18.79 | 30.37 | 54 | -23.63 | Horizontal |
| 1734.25 | 48.70 | -18.79 | 29.91 | 54 | -24.09 | Horizontal |
| 2168.54 | 47.51 | -18.79 | 28.72 | 54 | -25.28 | Horizontal |
| 1301.34 | 51.69 | -18.79 | 32.90 | 54 | -21.10 | Vertical |
| 1734.25 | 50.66 | -18.79 | 31.87 | 54 | -22.13 | Vertical |
| 2168.54 | 48.14 | -18.79 | 29.35 | 54 | -24.65 | Vertical |

1. Measuring frequencies from 9k~10th harmonic (ex. 5GHz), No emission found between lowest internal used/generated frequency to 30MHz.
2. Radiated emissions measured in frequency range from 9k~10th harmonic (ex. 5GHz) were made with an instrument using Peak detector mode.
3. Data of measurement within this frequency range shown “ --- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

5.3. 20dB Bandwidth Emissions

FCC 15.231 (c) & RSS-210 A1.1.3

5.3.1. Limit

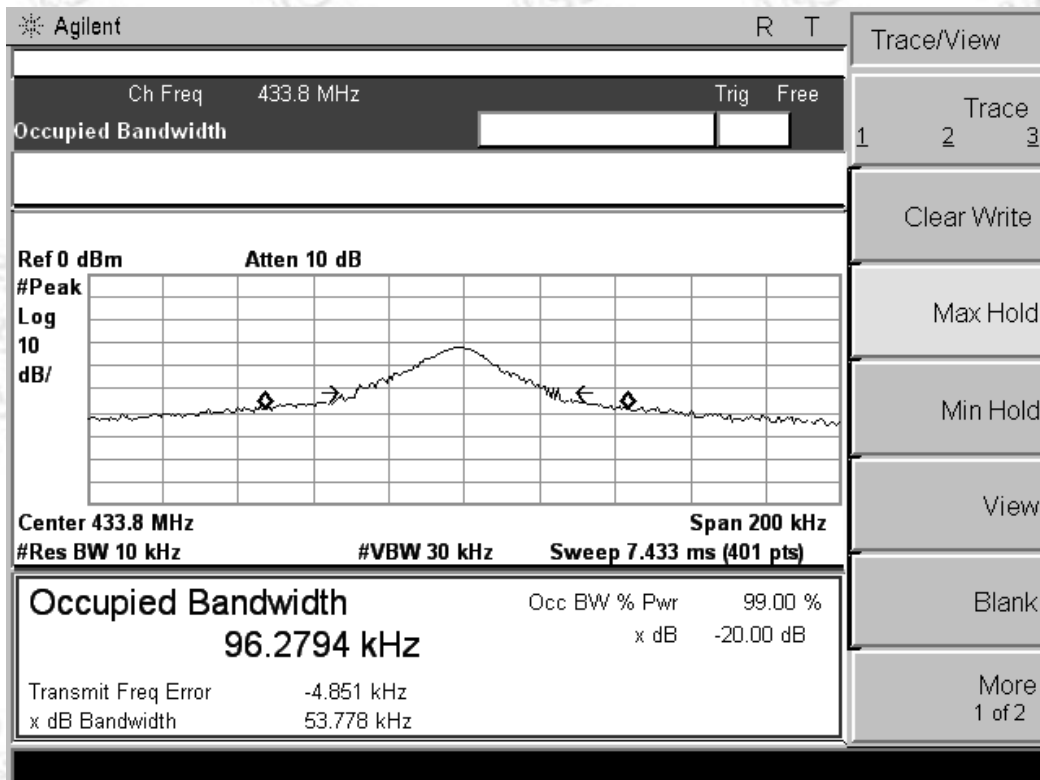
The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. Bandwidth is determined at the points 20 dB down from the modulated carrier.

5.3.2. Test Procedure

With the EUT's antenna attached, the EUT's 20dB Bandwidth power was received by the test antenna which was connected to the spectrum analyzer with the START and STOP frequencies set to the EUT's operation band.

5.3.3. Test Data

| Transmit Frequency (MHz) | Limit (kHz) | 20dB Bandwidth (kHz) | Result |
|-----------------------------------|--|----------------------|--------|
| 433.8 | 1084.5 | 53.778 | PASS |
| Maximum allowed bandwidth: | <input checked="" type="checkbox"/> 0.25% of the centre operating frequency <input type="checkbox"/> 0.5% of the centre operating frequency | | |
| RBW: | <input checked="" type="checkbox"/> 10kHz <input type="checkbox"/> 100kHz <input type="checkbox"/> other kHz | | |
| VBW: | <input checked="" type="checkbox"/> 30kHz <input type="checkbox"/> 300kHz <input type="checkbox"/> other kHz | | |



5.4. Duty cycle

5.4.1. Limit

No dedicated limit specified in the Rules.

5.4.2. Test Procedure

5.4.2.1. Place the EUT on the table and set it in transmitting mode.

5.4.2.2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

5.4.2.3. Set centre frequency of spectrum analyzer=operating frequency.

5.4.2.4. Set the spectrum analyzer as RBW=100kHz, VBW=100KHz, Span=0Hz, Adjust Sweep=100ms.

5.4.2.5. Repeat above procedures until all frequency measured was complete.

5.4.3. Test Data

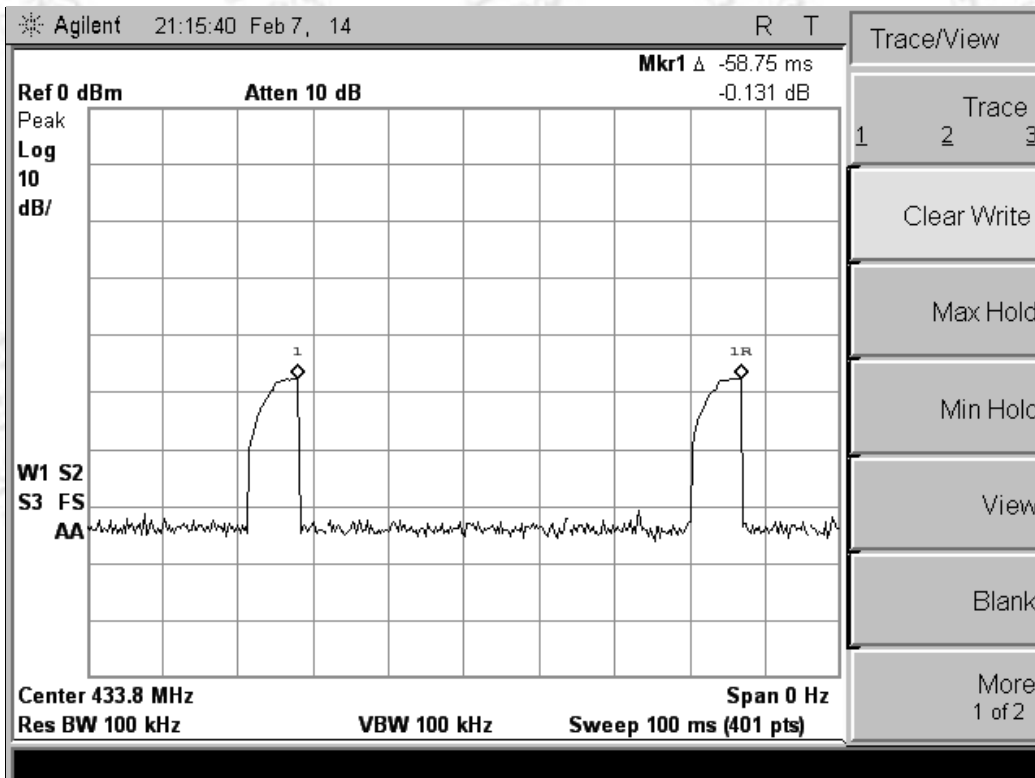
Ton = 6.75ms

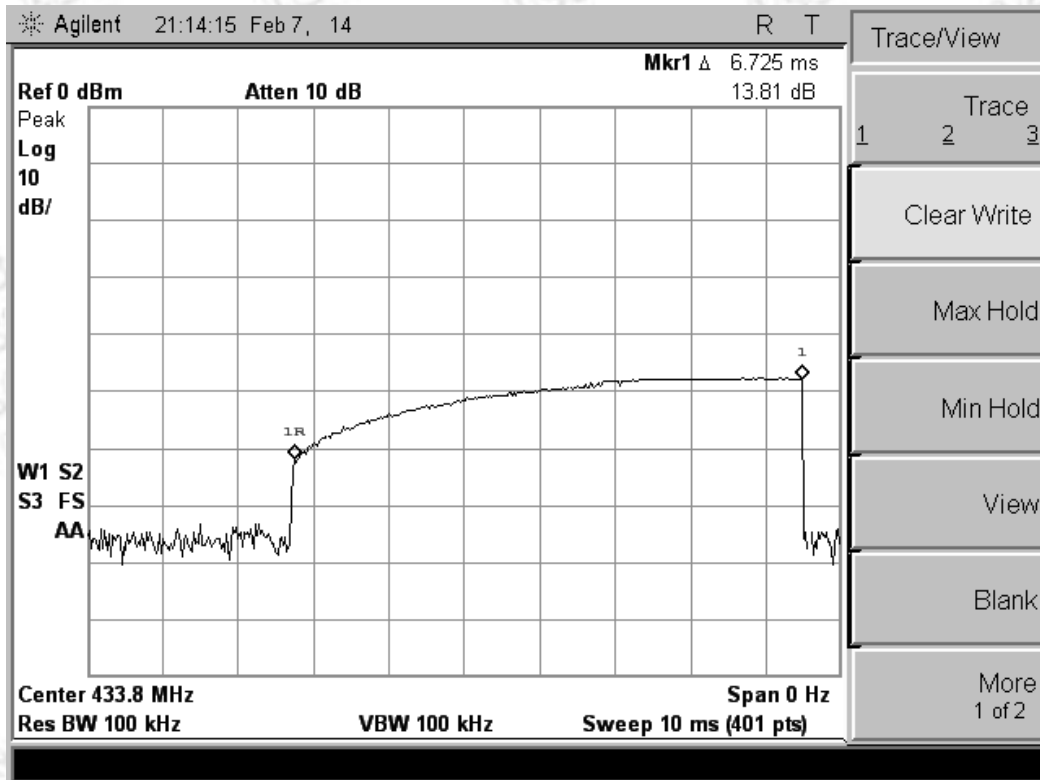
Tp = 58.75(ms)

The duty cycle= 6.75/58.75= 11.49%

DC Correction Factor = $20\log(Ton/Tp) = 20\log(6.75/58.75) = -18.79\text{dB}$

Note: The signal bandwidth was measured and less then 100kHz RBW so PDCF factor is not required to correct the fundamental signal peak result.





5.5. Antenna Requirement

FCC 15.203 & RSS-Gen

5.5.1. Standard Applicable

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 antenna used for transmitting is permanently attached and no consideration of replacement. Please see EUT photo for details.

5.5.2. Result

Compliant.

6. LIST OF MEASURING EQUIPMENTS

| Instrument | Manufacturer | Model No. | Serial No. | Characteristics | Cal. Date | Due Date |
|----------------------------|----------------|-----------------|------------|-----------------|-----------------|-----------------|
| 3m Semi Anechoic Chamber | SIDT FRANKONIA | SAC-3M | 03CH03-HY | 30M-1GHz 3m | June 18, 2014 | June 17, 2015 |
| Amplifier | SCHAFFNER | COA9231A | 18667 | 9kHz-2GHz | July 15, 2014 | July 14, 2015 |
| Amplifier | Agilent | 8449B | 3008A02120 | 1GHz-26.5GHz | July 15, 2014 | July 14, 2015 |
| Spectrum Analyzer | Agilent | E4407B | MY41440292 | 9k-26.5GHz | June 18, 2014 | June 17, 2015 |
| MAX Signal analyzer | Agilent | N9020A | MY50510140 | 20Hz-26.5GHz | October 27,2014 | October 26,2015 |
| Loop Antenna | R&S | HFH2-Z2 | 860004/001 | 9k-30MHz | June 18, 2014 | June 17, 2015 |
| By-log Antenna | SCHAFFNER | CBL 6112D | 22237 | 30MHz-1GHz | June 18, 2014 | June 17, 2015 |
| Horn Antenna | EMCO | 3115 | 6741 | 1GHz-18GHz | June 18, 2014 | June 17, 2015 |
| RF Cable-R03m | Jye Bao | RG142 | CB021 | 30MHz-1GHz | June 18, 2014 | June 17, 2015 |
| RF Cable-HIGH | SUHNER | SUCOFLEX 106 | 03CH03-HY | 1GHz-40GHz | June 18, 2014 | June 17, 2015 |
| Spectrum Meter | R&S | FSP 30 | 100023 | 9kHz-30GHz | July 15, 2014 | July 14, 2015 |
| Power Sensor | R&S | NRV-Z32 | 10057 | 30MHz-6GHz | July 15, 2014 | July 14, 2015 |
| Temp. and Humidigy Chamber | Giant Force | GTH-225-20-S | MAB0103-00 | N/A | June 18, 2014 | June 17, 2015 |
| RF CABLE-1m | JYE Bao | RG142 | CB034-1m | 20MHz-7GHz | June 18, 2014 | June 17, 2015 |
| RF CABLE-2m | JYE Bao | RG142 | CB)35-2m | 20MHz-1GHz | June 18, 2014 | June 17, 2015 |

-----THE END OF REPORT-----