**TEST REPORT No: (5214)244-0690**

# TEST REPORT

| | | | |
|---|---|---|---|
| To: | **CEPIA** | To: | - |
| Attn: | Matthew Mai | Attn: | - |
| Address: | Room 2103, 21 Floor, 3#building, Kerry Plaza, #1-1, ZhongXin 4 Road, FuTian District, ShenZhen, PR, China 518048 | Address: | - |
| Fax: | -- | Fax: | - |
| E-mail: | shollensbe@cepiallc.com<br>flora@cepiallc.com<br>azhou@cepiallc.com<br>matthew@cepiallc.com | E-mail: | - |
| Folder No.: | -- | | |

| | |
|---|---|
| Factory name: | **FOGANG COUNTY MILLION BEST ELECTRONICS AND PLASTIC & AMP CO., LTD** |
| Location: | -- |
| Product: | AMAZING ZHU MAGICIAN PETS<br>Model No.: 26200 |

| | |
|---|---|
| Sample No: | (5214)244-0690 |
| Test Date(s): | September 11, 2014 |
| Test Requested: | FCC Part 15 – 2012 |
| Test Method: | ANSI C63.4 – 2009 |
| FCC ID: | T4626200 |

**The results given in this report are related to the tested specimen of the described electrical apparatus.**

**CONCLUSION: The submitted sample was found to COMPLY with requirement of FCC Part 15 Subpart C.**

Authorized Signature:

| | |
|---|---|
| Reviewed by: Keith Yeung | Approved by: Steven Tsang |
| Date: September 12, 2014 | Date: September 12, 2014 |

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## TEST REPORT No: (5214)244-0690

# Test Result Summary

| EMISSION TEST | | | |
|---|---|---|---|
| **Test requirement: FCC Part 15 - 2012** | | | |
| Test Condition | Test Method | Test Result | |
| | | Pass | Failed |
| Radiated Emission Test, 9kHz to 1GHz | ANSI C63.4 | ☒ | ☐ |
| Frequency range of Fundamental Emission | ANSI C63.4 | ☒ | ☐ |
| 26dB Bandwidth of Fundamental Emission | ANSI C63.4 | ☒ | ☐ |
| Frequency Drift | ANSI C63.4 | ☒ | ☐ |

## Report Revision & Sample Re-submit History:

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## Location of the test laboratory

Radiated and Conducted emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2009. An Open Area Test Site and Full Anechoic Chamber (FCC Listed Site, Registration No. 642151) are set up for investigation and located at:

**BUREAU VERITAS HONG KONG LIMITED, EMC CENTRE**

No. 2106-2107, 21/F., Westin Centre,
26 Hung To Road,
Kwun Tong, Kowloon,
Hong Kong

## List of measuring equipment

**Radiated Emission**

| EQUIPMENT | MANUFACTURER | MODEL NO. | SERIAL NO. | CALIBRATION DUE |
|---|---|---|---|---|
| EMI TEST RECEIVER | R&S | ESCI | 100379 | 20-JAN-2015 |
| SIGNAL ANALYZER 40GHZ | R&S | FSV 40 | 100977 | 12-MAY-2015 |
| LOOP ANTENNA | ETS-LINDGREN | 6502 | 00102266 | 20-OCT-2014 |
| BILOG ANTENNA | SCHAFFNER | CBL6112D | 25229 | 02-JAN-2015 |
| OPEN AREA TEST SITE | BVCPS | N/A | N/A | 06-JUL-2015 |
| ANECHOIC CHAMBER | ALBATROSS | M-CDC | 80374004499B | 04-FEB-2015 |
| COAXIAL CABLE | SUHNER | N/A | N/A | 23-SEP-2014 |

**Frequency drift**

| EQUIPMENT | MANUFACTURER | MODEL NO. | SERIAL NO. | CALIBRATION DUE |
|---|---|---|---|---|
| EMI TEST RECEIVER | ROHDE & SCHWARZ | ESCI | 100379 | 20-JAN-2015 |
| SIGNAL ANALYZER 40GHZ | R&S | FSV 40 | 100977 | 12-MAY-2015 |
| CLIMATIC CHAMBER | EMV | TH-22P2S | N/A | 17-JUN-2015 |

**Remarks:-**
N/A : Not Applicable or Not Available

The measurement instrumentation uncertainty would be taking into consideration on each of the test result

## TEST REPORT No: (5214)244-0690

### Equipment Under Test [EUT]
### Description of Sample:

| | |
|---|---|
| Product: | AMAZING ZHU MAGICIAN PETS |
| Model No.: | 26200 |
| Additional Model name: | -- |
| Additional Model number: | -- |
| Additional Model Information: | -- |
| Power Supply: | Mouse: 3Vd.c. (“AAA” size battery x 2) |

### Description of EUT Operation:

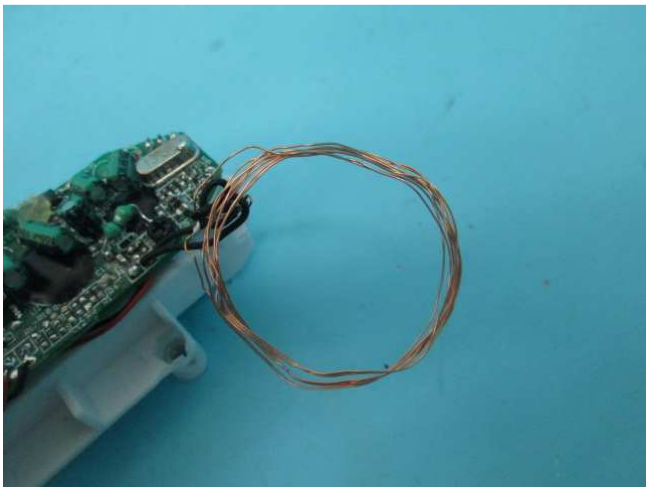
The Equipment Under Test (EUT) is a **CEPIA** of RFID toy. The transceiver with 1 Tag is operating at 13.564MHz. The transceiver continues to transmit when buttons is turn to ON and the Passive Tags provoked the signal transmission when the transceiver track on them. Modulation by IC, and type is amplitude modulation.
The transceiver has different control:

1. Nurture button – Turn to nurture mode (RFID)
2. Explore button – Turn to explore mode (IR)
3. Nose button – Turn to try me mode

### Antenna Requirement (Section 15.203)

The EUT is use of a permanently antenna. The antenna consists of 80cm metal wire. It is soldered on the PCB. The antenna is not replaceable or user serviceable. The requirements of S15.203 are met. There are no deviations or exceptions to the specifications.

**Photo of Antenna**



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**TEST REPORT No: (5214)244-0690**

# Test Results

## Radiated Emissions (Fundamental)

| | |
|---|---|
| Test Requirement: | FCC Part 15 Section 15.225 |
| Test Method: | ANSI C63.4 |
| Test Date(s): | 2014-09-10 |
| Temperature: | 30.0 °C |
| Humidity: | 75.0 % |
| Atmospheric Pressure: | 100.3 kPa |
| Mode of Operation: | Transmission mode |
| Tested Voltage: | Mouse: 3Vd.c. (“AAA” size battery x 2) |

## Test Procedure:

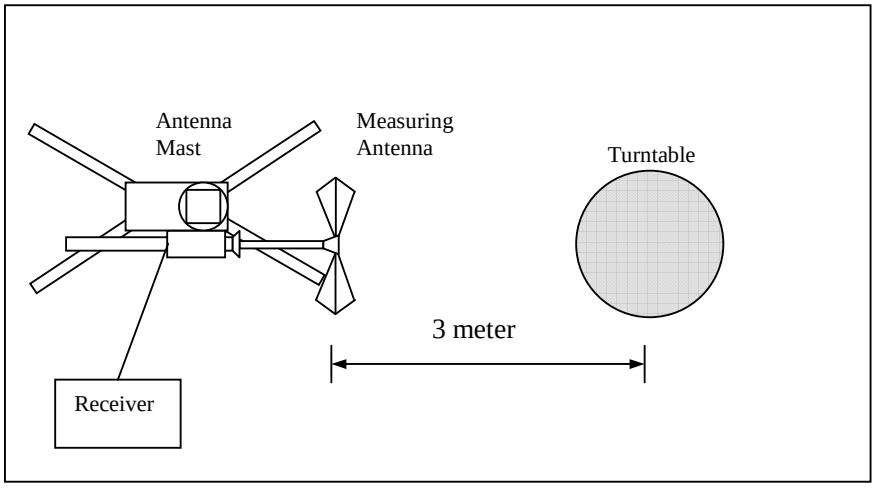
Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2009.

The equipment under test (EUT) was placed on a non-conductive turntable with dimensions of 1.5m x 1m and 0.8m high above the ground. 3m from the EUT, a broadband antenna mounting on the mast received the signal strength. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, For battery operated equipment, the equipment tests shall be perform using new battery. The turntable was rotated to maximize the emission level. The antenna was then moving along the mast from 1m up to 4m until no more higher value was found. Both horizontal and vertical polarization of the antenna were placed and investigated.

For below 30MHz, a loop antenna with its vertical plane is place 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1m above the ground.

Location: The Roof, Westin Centre, 26 Hung To Road, Kwun Tong, Kowloon, Hong Kong

## Test Setup: Open Area Test Site

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## TEST REPORT No: (5214)244-0690

**Limits for Field Strength of Fundamental Emissions [FCC 47CFR 15.225]:**

| Frequency Range of Fundamental [MHz] | Field Strength of Fundamental Emission at 3m |
|---|---|
| 13.553-13.567 | 124 dBμV/m |

## Measurement Data

## Test Result of (Transmission mode): PASS

## Detection mode: Quasi-Peak

| Frequency (MHz) | Polarity (H/V) and degree | Antenna Factor and Cable Loss (dB/m) | Field Strength at 3m (dBμV/m) | Limit at 3m (dBμV/m) | Margin (dB) |
|---|---|---|---|---|---|
| 13.564 | V/0° | 13.5 | 54.7 | 124.0 | -69.3 |

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 100KHz
VBW = 300KHz

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## TEST REPORT No: (5214)244-0690

### Radiated Emissions (9kHz – 1GHz)

| | |
|---|---|
| Test Requirement: | FCC Part 15 Section 15.209 |
| Test Method: | ANSI C63.4 |
| Test Date(s): | 2014-09-10 |
| Temperature: | 30.0 °C |
| Humidity: | 75.0 % |
| Atmospheric Pressure: | 100.3 kPa |
| Mode of Operation: | Transmission mode |
| Tested Voltage: | Mouse: 3Vd.c. (“AAA” size battery x 2) |

**Limits for Radiated Emissions [FCC 47 CFR 15.209]:**

| Frequency Range [MHz] | Quasi-Peak Limits [μV/m] | Measurement Distance m |
|---|---|---|
| 0.009-0.490 | 2400/F(kHz) | 300 |
| 0.490-1.705 | 24000/F(kHz) | 30 |
| 1.705-30 | 30 | 30 |
| 30-88 | 100 | 3 |
| 88-216 | 150 | 3 |
| 216-960 | 200 | 3 |
| Above960 | 500 | 3 |

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## TEST REPORT No: (5214)244-0690

## Measurement Data

## Test Result of (Transmission mode): PASS

## Detection mode: Quasi-Peak

| Frequency (MHz) | Polarity (H/V) | Antenna Factor and Cable Loss (dB/m) | Field Strength at 3m (dBµV/m) | Limit at 3m (dBµV/m) | Margin (dB) |
|---|---|---|---|---|---|
| 40.692 | H | 14.6 | 28.2 | 40.0 | -11.8 |
| 54.256 | H | 8.2 | 34.8 | 40.0 | -5.2 |
| 67.820 | H | 7.5 | 29.0 | 40.0 | -11.0 |
| 81.384 | H | 8.1 | 26.7 | 40.0 | -13.3 |
| 94.948 | H | 11.5 | 24.8 | 43.5 | -18.7 |
| 108.512 | H | 13.2 | 29.2 | 43.5 | -14.3 |
| 122.076 | H | 14.7 | 25.3 | 43.5 | -18.2 |
| 135.640 | H | 13.3 | 28.7 | 43.5 | -14.8 |
| 149.204 | H | 12.0 | 29.1 | 43.5 | -14.4 |
| 339.100 | H | 15.7 | 32.3 | 46.0 | -13.7 |
| 352.664 | H | 17.7 | 32.7 | 46.0 | -13.3 |

| Frequency (MHz) | Polarity (H/V) | Antenna Factor and Cable Loss (dB/m) | Field Strength at 3m (dBµV/m) | Limit at 3m (dBµV/m) | Margin (dB) |
|---|---|---|---|---|---|
| 27.128 | V | 11.1 | 29.7 | 69.5 | -14.6 |
| 40.692 | V | 14.6 | 28.1 | 40.0 | -14.6 |
| 54.256 | V | 8.2 | 30.6 | 40.0 | -8.2 |
| 67.820 | V | 7.5 | 25.4 | 40.0 | -7.5 |
| 81.384 | V | 8.1 | 23.7 | 40.0 | -8.1 |
| 94.948 | V | 11.5 | 23.5 | 43.5 | -12.0 |
| 108.512 | V | 13.2 | 28.6 | 43.5 | -13.2 |
| 122.076 | V | 14.7 | 24.7 | 43.5 | -14.7 |
| 135.640 | V | 13.3 | 25.5 | 43.5 | -13.3 |
| 149.204 | V | 12.0 | 24.6 | 43.5 | -12 |
| 339.100 | V | 15.7 | 27.8 | 46.0 | -15.7 |
| 352.664 | V | 17.7 | 28.0 | 46.0 | -17.7 |

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 120KHz
VBW = 120KHz

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## TEST REPORT No: (5214)244-0690

26dB Bandwidth of Fundamental Emission

| | |
|---|---|
| Test Requirement: | FCC 47 CFR 15.225 |
| Test Method: | ANSI C63.4 |
| Test Date(s): | 2014-09-11 |
| Temperature: | 25.0 °C |
| Humidity: | 56.0 % |
| Atmospheric Pressure: | 100.2 kPa |
| Mode of Operation: | Transmission mode |
| Tested Voltage: | Mouse: 3Vd.c. (“AAA” size battery x 2) |

Test Method:

The bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

**Limits for 26dB Bandwidth of Fundamental Emission:**

| Frequency [MHz] | 26dB Bandwidth [Hz] | Limits [MHz] |
|---|---|---|
| 13.564 | 952.00 | within 13.553 – 13.567 |

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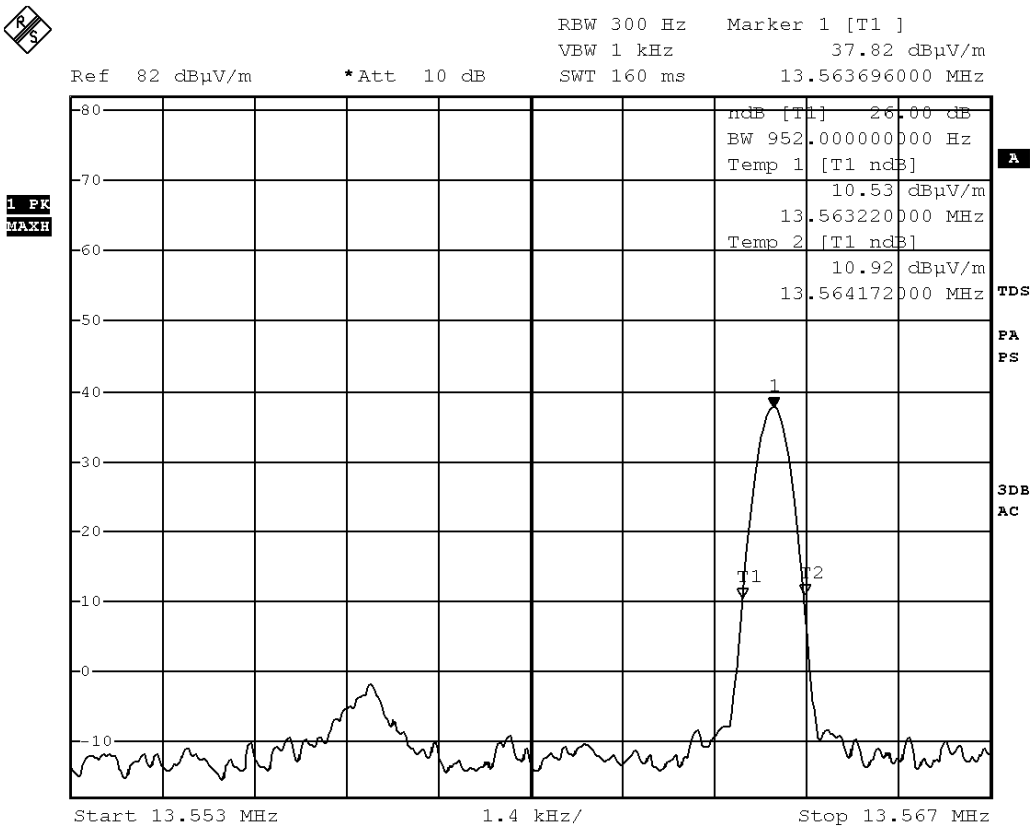
## TEST REPORT No: (5214)244-0690

## Measurement Data :

### Test Result of 26dB Bandwidth of Fundamental Emission: PASS

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## TEST REPORT No: (5214)244-0690

### Frequency Drift

| | |
|---|---|
| Test Requirement: | FCC Part 15 Section 15.225 |
| Test Method: | ANSI C63.4 |
| Test Date(s): | 2014-09-11 |
| Temperature: | 25.0 °C |
| Humidity: | 56.0 % |
| Atmospheric Pressure: | 100.2 kPa |
| Mode of Operation: | Transmission mode |
| Tested Voltage: | Mouse: 3Vd.c. (“AAA” size battery x 2) |

Test Setup:
The EUT was placed at a site with temperature control and supplied with power for extreme voltage testing. Antenna with suitable frequency range was used during the test.

The test was performed in accordance with ANSI C63.4.

Location: Anechoic Chamber, No. 2106-2107, 21/F., Westin Centre, 26 Hung To Road, Kwun Tong, Kowloon, Hong Kong

**Limit for Frequency Tolerance:**

**Maintained within +/- 0.01% of the operating frequency**

**Test Result of (Transmission mode): PASS**

| Test Condition | | Nominal Transmit Frequency: 13.564MHz | | | | |
|---|---|---|---|---|---|---|
| | | Time | | | | |
| | | Start up | Two minutes after | Five minutes after | Ten minutes after | Frequency tolerance (%) |
| $T_{nom}$: 20℃ | $V_{nom}$: 3.00V | 13.56429 | 13.56448 | 13.56448 | 13.56448 | N/A |
| $T_{min}$: -20℃ | $V_{nom}$: 3.00V | 13.56448 | 13.56448 | 13.56448 | 13.56448 | 0.00140 |
| $T_{max}$: 50℃ | $V_{nom}$: 3.00V | 13.56429 | 13.56448 | 13.56448 | 13.56448 | 0.00140 |

**Remarks:-**
N/A: Not Applicable or Not Available

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### Photographs of EUT

**Front View of the product**

**Rear View of the product**

**Top View of the product**

**Bottom View of the product**

**Side View of the product**

**Side View of the product**

**Battery compartment**

**Battery Cover**

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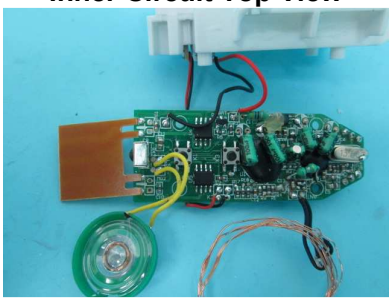
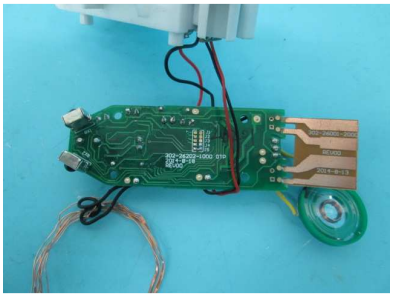
### Photographs of EUT

**Inner Circuit Top View**



**Inner Circuit Bottom View**



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## Measurement of Radiated Emission Test Set Up

******* End of Report *******

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