# STC Test Report

Date : 2012-07-12 

No. : MH186920

**Applicant (FAI001):** Lexibook America
C/O NATXIS PRAMEX INTERNATIONAL -NORTH AMERICA 1251 avenue of the Americas 34th floor

**Manufacturer:** Fairlandtoy International Limited
Flat B, 11/F., Kapok Ind. Bldg., 373 Tokwawan Rd.
Kowloon, HK

**Description of Sample(s):** Submitted samples(s) said to be

| | |
|---|---|
| Product: | Walkie Talkie |
| Brand Name: | N/A |
| Model Number: | TW06 |
| FCC ID: | UU8-TWO6 |

**Date Sample(s) Received:** 2012-07-05

**Date Tested:** 2012-07-05

**Investigation Requested:** Perform ElectroMagnetic Interference measurement in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15: 2011 and ANSI C63.4:2009 for FCC Certification.

**Conclusion(s):** The submitted product COMPLIED with the requirements of Federal Communications Commission [FCC] Rules and Regulations Part 15. The tests were performed in accordance with the standards described above and on Section 2.2 in this Test Report.

**Remark(s):** ----

Dr. LEE Kam Chuen,
Authorized Signatory
ElectroMagnetic Compatibility Department
For and on behalf of
The Hong Kong Standards and Testing Centre Ltd.

**The Hong Kong Standards and Testing Centre Ltd.**
10 Dai Wang Street, Taipo Industrial Estate, N.T., Hong Kong
Tel: (852) 2666 1888 Fax: (852) 2664 4353 Homepage: www.hkstc.org E-mail: hkstc@hkstc.org

**CONTENT:**

**Appendix A**



**Appendix C**





**The Hong Kong Standards and Testing Centre Ltd.**
10 Dai Wang Street, Taipo Industrial Estate, N.T., Hong Kong
Tel: (852) 2666 1888 Fax: (852) 2664 4353 Homepage: www.hkstc.org E-mail: hkstc@hkstc.org

## 1.0 General Details

### 1.1 Equipment Under Test [EUT]
**Description of Sample(s)**

| | |
|---|---|
| Product: | Walkie Talkie |
| Manufacturer: | Fairlandtoy International Limited |
| Brand Name: | N/A |
| Model Number: | TW06 |
| Rating: | 9Vd.c("6F22" size battery x 1) |

### 1.1.1 Description of EUT Operation

The Equipment Under Test (EUT) is a Lexibook Limited, Walkie Talkie. The EUT is a transmitter of radio control toy. The transmitter was operating with 1 button; the EUT continues to transmit while the button is pressed, It is pulse transmitter, Modulation by IC, and type is Amplitude modulation.

### 1.2 Date of Order

2012-07-05

### 1.3 Submitted Sample(s):

1 Sample

### 1.4 Test Duration

2012-07-05

### 1.5 Country of Origin

China

## 2.0 Technical Details

### 2.1 Investigations Requested

Perform ElectroMagnetic Interference measurement in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15: 2011 and ANSI C63.4:2009 for FCC Certification.

### 2.2 Test Standards and Results Summary Tables

**EMISSION**
**Results Summary**

| Test Condition | Test Requirement | Test Method | Class / Severity | Test Result | | |
|---|---|---|---|---|---|---|
| | | | | Pass | Failed | N/A |
| Field Strength of Fundamental Emissions & Spurious Emissions | FCC 47CFR 15.227 | ANSI C63.4:2009 | N/A | ☒ | ☐ | ☐ |
| Radiated Emissions | FCC 47CFR 15.209 | ANSI C63.4:2009 | N/A | ☒ | ☐ | ☐ |

Note: N/A - Not Applicable

## 3.0 Test Results

### 3.1 Emission

#### 3.1.1 Radiated Emissions

| | |
|---|---|
| Test Requirement: | FCC 47CFR 15.227 |
| Test Method: | ANSI C63.4:2009 |
| Test Date: | 2012-07-05 |
| Mode of Operation: | Tx mode / Rx mode |

**Test Method:**

The sample was placed 0.8m above the ground plane on a standard radiated emission test site. Measurements in both horizontal and vertical polarities were performed. 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, rotating turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. In the frequency range of 9kHz to 30MHz, The center of the loop antenna shall be 1 meter above the ground and rotated loop axis for maximum reading. The emissions worst-case are shown in Test Results of the following pages.

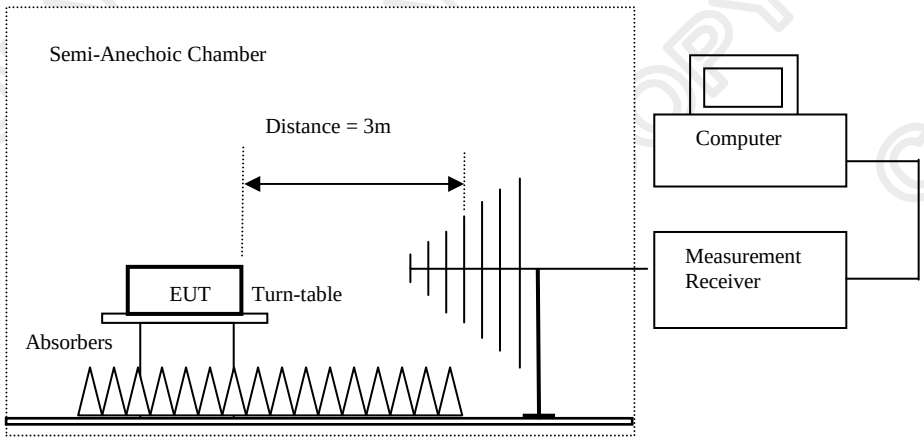
Remark: 3 orthogonal axis apply to hand-held device only.

*: Semi-anechoic chamber located on the G/F of The Hong Kong Standards and Testing Centre Ltd. with a metal ground plane filed with the FCC pursuant to section 2.948 of the FCC rules, with Registration Number: 607756.

**Spectrum Analyzer Setting:**

| | | |
|---|---|---|
| 9KHz – 30MHz (Pk & Av) | RBW: | 10kHz |
| | VBW: | 30kHz |
| | Sweep: | Auto |
| | Span: | Fully capture the emissions being measured |
| | Trace: | Max. hold |
| 30MHz – 1GHz (QP) | RBW: | 120kHz |
| | VBW: | 120kHz |
| | Sweep: | Auto |
| | Span: | Fully capture the emissions being measured |
| | Trace: | Max. hold |
| Above 1GHz (Pk & Av) | RBW: | 3MHz |
| | VBW: | 3MHz |
| | Sweep: | Auto |
| | Span: | Fully capture the emissions being measured |
| | Trace: | Max. hold |

**Test Setup:**




Ground Plane

Absorbers placed on top of the ground plane are for measurements above 1000MHz only.

**Limits for Field Strength of Fundamental Emissions [FCC 47CFR 15.227]:**

| Frequency Range of Fundamental [MHz] | Field Strength of Fundamental Emission [Peak] [µV/m] | Field Strength of Fundamental Emission [Average] [µV/m] |
|---|---|---|
| 26.96-27.28 | 100,000 | 10,000 |

**Results of Tx mode: PASS**

| Field Strength of Fundamental Emissions Peak Value | | | | | | |
|---|---|---|---|---|---|---|
| Frequency MHz | Measured Level @3m dBµV | Correction Factor dB/m | Field Strength dBµV/m | Field Strength µV/m | Limit @3m µV/m | E-Field Polarity |
| 27.145 | 47.60 | 19.2 | 66.8 | 2,187.8 | 100,000 | Vertical |

| Field Strength of Fundamental Emissions Average Value | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency MHz | Measured Level @3m dBµV | Adjusted by Duty Cycle dB | Correction Factor dB/m | Field Strength dBµV/m | Field Strength µV/m | Limit @3m µV/m | E-Field Polarity |
| 27.145 | 47.6 | 0.0 | 19.2 | 66.8 | 2,187.8 | 10,000 | Vertical |

According to FCC 47CFR15.35, the limit on the radio frequency emissions as measured using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit for the frequency being investigated unless a different peak emission limit is otherwise specified in the rules.

Remarks:

Correction Factor includes Antenna Factor and Cable Attenuation.
Calculated measurement uncertainty: 30MHz to 1GHz 5.1dB

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

| Frequency Range [MHz] | Quasi-Peak Limits [µV/m] |
|---|---|
| 30-88 | 100 |
| 88-216 | 150 |
| 216-960 | 200 |
| Above960 | 500 |

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

**Result of Tx mode (9 kHz to 30MHz): PASS**
Emissions detected are more than 20 dB below the limit line(s).

**Results of Tx mode(30 MHz-1000MHz): PASS**

| **Radiated Emissions Quasi-Peak** | | | | | | |
|---|---|---|---|---|---|---|
| Frequency MHz | Measured Level @3m dBµV | Correction Factor dB/m | Field Strength dBµV/m | Field Strength µV/m | Limit @3m µV/m | E-Field Polarity |
| 54.29 | 16.2 | 9.8 | 26.0 | 20.0 | 100 | Vertical |
| 81.44 | 12.9 | 9.1 | 22.0 | 12.6 | 100 | Vertical |
| 108.58 | 8.8 | 9.5 | 18.3 | 8.2 | 150 | Vertical |
| 135.73 | 8.9 | 8.4 | 17.3 | 7.3 | 150 | Vertical |
| 333.10 | 16.2 | 15.3 | 31.5 | 37.6 | 200 | Horizontal |

Remarks:
No further spurious emissions found between lowest internal frequency and 30MHz.
Correction Factor includes Antenna Factor and Cable Attenuation.
Calculated measurement uncertainty : 30MHz to 1GHz 5.1dB

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

| Frequency Range [MHz] | Quasi-Peak Limits [µV/m] |
|---|---|
| 30-88 | 100 |
| 88-216 | 150 |
| 216-960 | 200 |
| Above960 | 500 |

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

**Results of Rx mode: PASS**

| **Radiated Emissions Quasi-Peak** | | | | | | |
|---|---|---|---|---|---|---|
| Frequency MHz | Measured Level @3m dBµV | Correction Factor dB/m | Field Strength dBµV/m | Field Strength µV/m | Limit @3m µV/m | E-Field Polarity |
| 30.10 | 12.9 | 17.1 | 30.0 | 31.6 | 100 | Horizontal |
| 101.00 | 16.4 | 8.8 | 25.2 | 18.2 | 150 | Horizontal |
| 390.70 | 13.8 | 18.2 | 32.1 | 40.3 | 200 | Horizontal |
| 30.00 | 12.1 | 17.4 | 29.5 | 29.9 | 100 | Vertical |
| 40.30 | 15.9 | 14.3 | 30.2 | 32.4 | 100 | Vertical |
| 380.00 | 13.4 | 17.6 | 31.0 | 35.5 | 200 | Vertical |

Remarks:
No further spurious emissions found between lowest internal frequency and 30MHz.
Correction Factor includes Antenna Factor and Cable Attenuation.
Calculated measurement uncertainty : 30MHz to 1GHz 5.1dB

### 3.2 20dB Bandwidth of Fundamental Emission

| | |
|---|---|
| Test Requirement: | FCC 47 CFR 15.227 |
| Test Method: | ANSI C63.4:2009 (Section 13.1.7) |
| Test Date: | 2012-07-05 |
| Mode of Operation: | Tx mode |

**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.

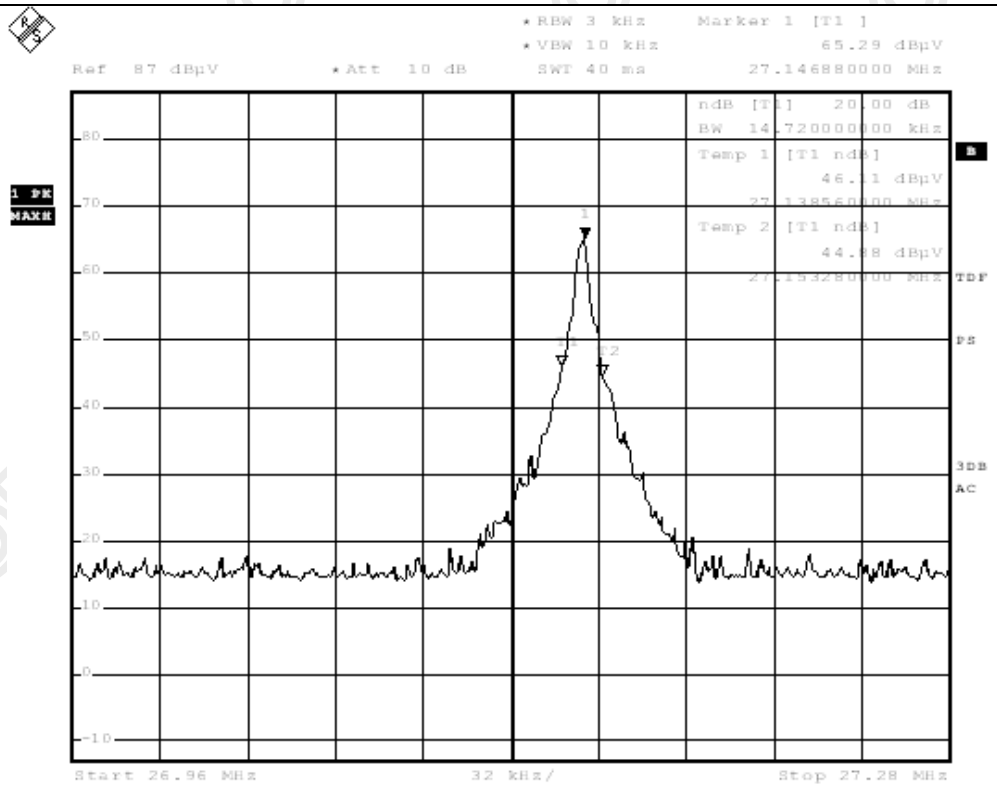
**Test Setup:**

As Test Setup of clause 3.1.1 in this test report.

**Limits for 20dB Bandwidth of Fundamental Emission:**

| Frequency Range [MHz] | 20dB Bandwidth [kHz] | FCC Limits [MHz] |
|---|---|---|
| 27.147 | 14.72 | within 26.96-27.28 |

**20dB Bandwidth of Fundamental Emission**



**Appendix A**

**List of Measurement Equipment**

**Radiated Emission**

| EQP NO. | DESCRIPTION | MANUFACTURER | MODEL NO. | SERIAL NO. | LAST CAL | DUE CAL |
|---|---|---|---|---|---|---|
| EM215 | MULTIDEVICE CONTROLLER | EMCO | 2090 | 00024676 | N/A | N/A |
| EM216 | MINI MAST SYSTEM | EMCO | 2075 | 00026842 | N/A | N/A |
| EM217 | ELECTRIC POWERED TURNTABLE | EMCO | 2088 | 00029144 | N/A | N/A |
| EM218 | ANECHOIC CHAMBER | ETS-Linggren | FACT-3 | -- | 2011/10/25 | 2012/10/25 |
| EM194 | BICONILOG ANTENNA | EMCO | 3142B | 1795 | 2010/10/06 | 2012/10/06 |
| EM229 | EMI Test Receiver | R&S | ESIB40 | 100248 | 2012/05/03 | 2013/05/03 |
| EM022 | LOOP ANTENNA | EMCO | 6502 | 1189-2424 | 2011/09/14 | 2013/09/14 |

**Remarks:-**
CM Corrective Maintenance
N/A Not Applicable or Not Available
TBD To Be Determined

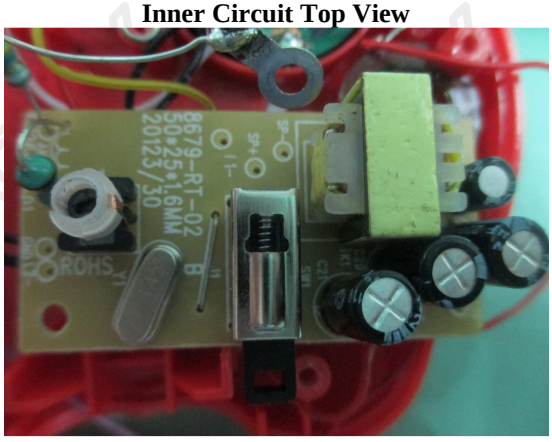
**Appendix B**

**Photographs of EUT**

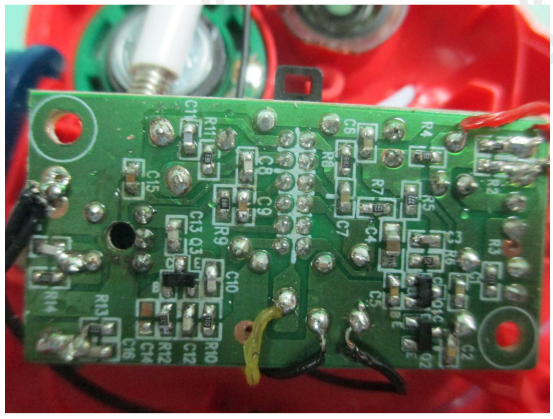
**Front View of the product**

**Rear View of the product**

**Inner Circuit Top View**

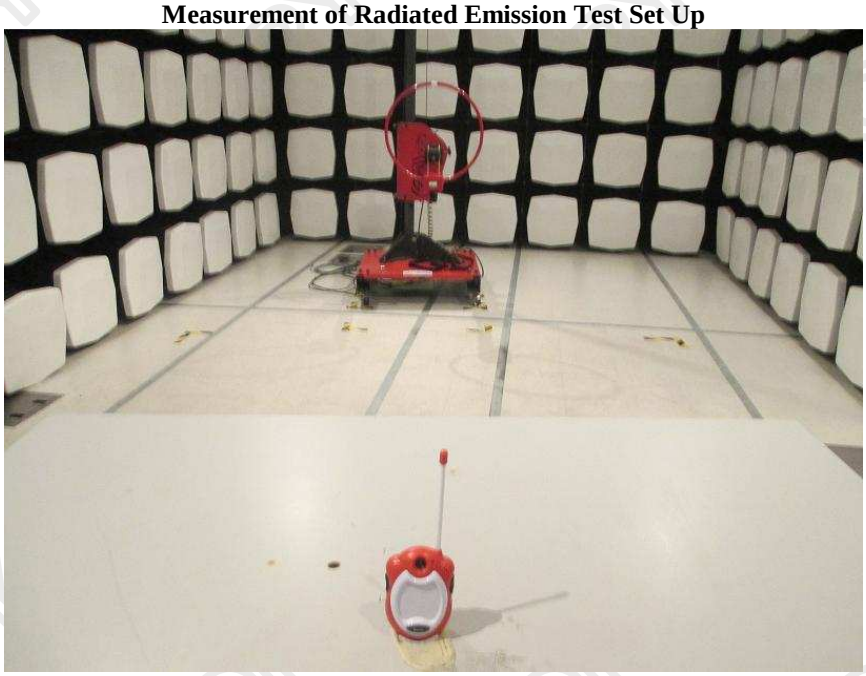


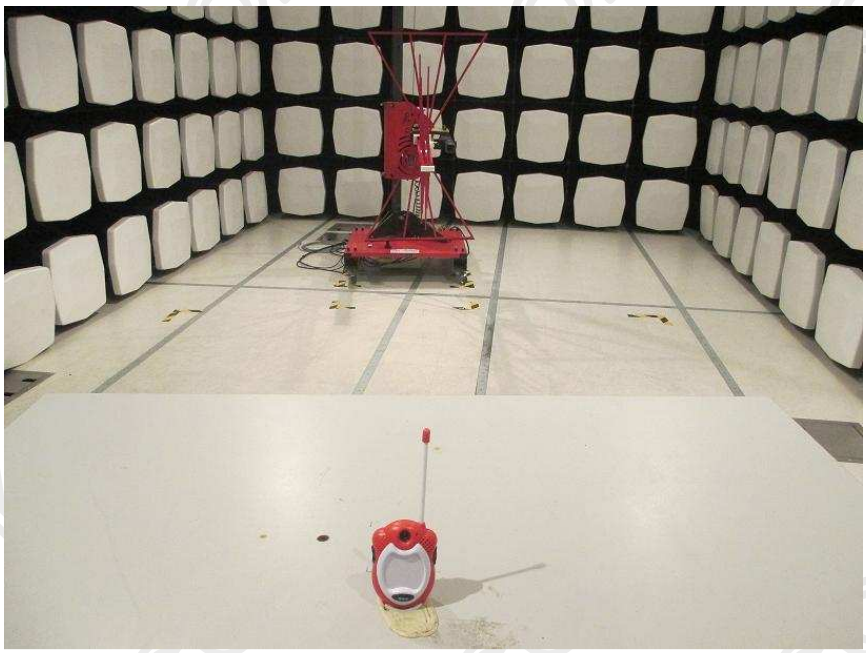
**Inner Circuit Bottom View**



**Photographs of EUT**

**Measurement of Radiated Emission Test Set Up**





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