



## STC Test Report

Date : 2009-03-25

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No. : HM163198

**Applicant (LET009):**

Education Insights  
18730 S. Wilmington Avenue Ste. 100, Rancho Dominguez,  
CA 90220 USA

**Manufacturer:**

Castlespring Ent. Ltd.  
1027 Ocean Centre, Canton Road TST Hong Kong

**Description of Samples:**

Product: Wireless Eggspert  
Brand Name: Eggspert  
Model Number: EI-7881  
FCC ID: MJO-EI-7881W  
Rating: 6Vd.c. ("AA" size battery x 4) with jack  
The AC/DC Adaptor used for the tests was a "SUPER"  
adaptor: Two pins (Live / Neutral) only adaptor, Model  
Number: GA-1235, Input: 110/220Va.c. 50/60Hz, Output: 3,  
4.5, 6, 9, 12, 15Vd.c.

**Date Samples Received:**

2009-03-09

**Date Tested:**

2009-03-19

**Investigation Requested:**

FCC Part 15 Subpart B

**Conclusions:**

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.

**Remarks:**

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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.**

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### **1.0 General Details**

#### **1.1 Test Laboratory**

The Hong Kong Standards and Testing Centre Ltd.  
EMC Laboratory  
10 Dai Wang Street, Taipo Industrial Estate  
New Territories, Hong Kong

Telephone: 852 2666 1888  
Fax: 852 2664 4353

#### **1.2 Applicant Details Applicant**

Education Insights  
18730 S. Wilmington Avenue Ste. 100, Rancho Dominguez, CA 90220 USA

##### **Manufacturer**

Castlespring Ent. Ltd.  
1027 Ocean Centre, Canton Road TST Hong Kong

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### **1.3 Equipment Under Test [EUT]**

#### **Description of Sample**

Product: Wireless Eggspert  
Manufacturer: Castlespring Ent. Ltd.  
Brand Name: Eggspert  
Model Number: EI-7881  
Rating: 6Vd.c. ("AA" size battery x 4) with jack

The AC/DC Adaptor used for the tests was a "SUPER" adaptor: Two pins (Live / Neutral) only adaptor, Model Number: GA-1235, Input: 110/220Va.c. 50/60Hz, Output: 3, 4.5, 6, 9, 12, 15Vd.c.

#### **1.3.1 Description of EUT Operation**

The Equipment Under Test (EUT) is Education Insights, Wireless Eggspert.

### **1.4 Date of Order**

2009-03-09

### **1.5 Submitted Sample(s):**

1 sample

### **1.6 Test Duration**

2009-03-19

### **1.7 Country of Origin**

China

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### **2.0 Technical Details**

#### **2.1 Investigations Requested**

Perform ElectroMagnetic Interference measurement in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15: 2008 and ANSI C63.4: 2003 for FCC Certification.

#### **2.2 Test Standards and Results Summary Tables**

| <b>EMISSION<br/>Results Summary</b>            |                  |                 |                     |                                     |                          |
|--|------------------|-----------------|---------------------|-------------------------------------|--------------------------|
| Test Condition                                 | Test Requirement | Test Method     | Class /<br>Severity | Test Result                         |                          |
|  |                  |                 |                     | Pass                                | Failed                   |
| Radiated Emissions                             | FCC 47CFR 15.109 | ANSI C63.4:2003 | Class B             | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Conducted Emissions on<br>AC, 0.15MHz to 30MHz | FCC 47CFR 15.107 | ANSI C63.4:2003 | Class B             | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Note: N/A - Not Applicable

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### **3.0 Test Results**

#### **3.1 Emission**

##### **3.1.1 Radiated Emissions**

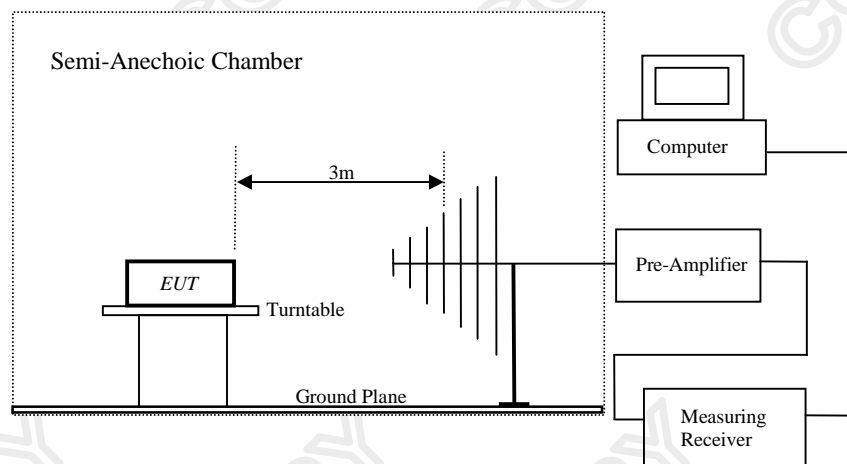
|                    |                  |
|--------------------|------------------|
| Test Requirement:  | FCC 47CFR 15.109 |
| Test Method:       | ANSI C63.4:2003  |
| Test Date:         | 2009-03-19       |
| Mode of Operation: | Rx on mode       |

#### **Test Method:**

The sample was placed 0.8m above the ground plane of Semi-Anechoic chamber\*. 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. The emissions worst-case are shown in Test Results of the following pages.

\*: 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.

#### **Test Setup:**



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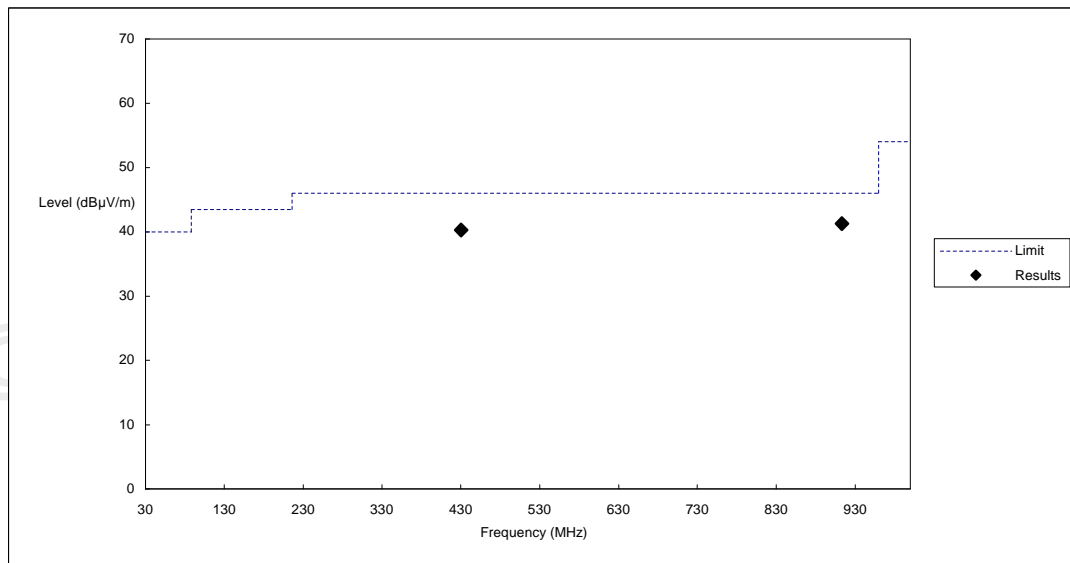
No. : HM163198

### Limits for Radiated Emissions [FCC 47 CFR 15.109 Class B]:

| Frequency Range<br>[MHz] | Quasi-Peak Limits<br>[ $\mu\text{V}/\text{m}$ ] |
|--------------------------|---|
| 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 on mode: PASS



| Radiated Emissions<br>Quasi-Peak |                     |   |   |  |  |
|----------------------------------|---------------------|---|---|--|--|
| Emission<br>Frequency<br>MHz     | E-Field<br>Polarity | Level<br>@3m<br>dB $\mu\text{V}/\text{m}$ | Limit<br>@3m<br>dB $\mu\text{V}/\text{m}$ | Level<br>@3m<br>$\mu\text{V}/\text{m}$ | Limit<br>@3m<br>$\mu\text{V}/\text{m}$ |
| 430.2                            | Horizontal          | 40.3                                      | 46.0                                      | 103.5                                  | 200                                    |
| 913.2                            | Horizontal          | 41.3                                      | 46.0                                      | 116.1                                  | 200                                    |

#### Remark:

Calculated measurement uncertainty: 30MHz to 1GHz 5.2dB

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### 3.1.2 Conducted Emissions (0.15MHz to 30MHz)

Test Requirement: FCC 47CFR 15.107

Test Method: ANSI C63.4:2003

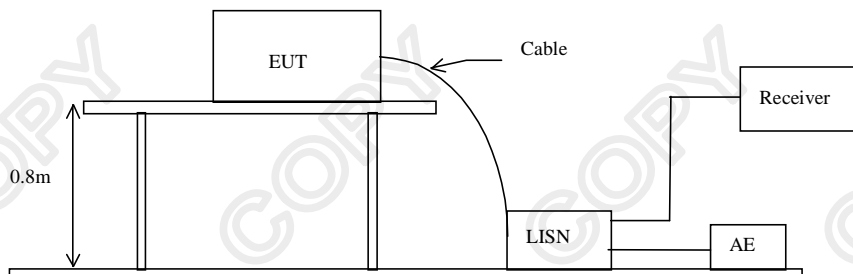
Test Date: 2009-03-18

Mode of Operation: Rx on mode

#### Test Method:

The test was performed in accordance with ANSI C63.4: 2003, with the following: an initial measurement was performed in peak and average detection mode on the live line, any emissions recorded within 30dB of the relevant limit line were re-measured using quasi-peak and average detection on the live and neutral lines with the worst case recorded in the table of results.

#### Test Setup:



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### Limit for Conducted Emissions (FCC 47 CFR 15.107):

| Frequency Range<br>[MHz] | Quasi-Peak Limits<br>[dB $\mu$ V] | Average<br>[dB $\mu$ V] |
|--------------------------|-----------------------------------|-------------------------|
| 0.15-0.5                 | 66 to 56*                         | 56 to 46*               |
| 0.5-5.0                  | 56                                | 46                      |
| 5.0-30.0                 | 60                                | 50                      |

\* Decreases with the logarithm of the frequency.

Limits for Conducted Emissions Test, please refer to limit lines (Quasi-Peak and Average) in the following diagram.

### Results of Rx on mode: PASS

| Conductor<br>Live or Neutral | Frequency<br>MHz | Quasi-peak          |                     | Average          |                  |
|------------------------------|------------------|---------------------|---------------------|------------------|------------------|
|                              |                  | Level<br>dB $\mu$ V | Limit<br>dB $\mu$ V | Level<br>$\mu$ V | Limit<br>$\mu$ V |
| Neutral                      | 24.000           | -*-                 | -*-                 | 28.5             | 50.0             |
| Neutral                      | 30.000           | 31.0                | 60.0                | 30.3             | 50.0             |

Remarks:

Calculated measurement uncertainty :  $\pm 3.97$ dB

-\*- Emission(s) that is far below the corresponding limit line.

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### 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<br>TURNABLE | EMCO            | 2088      | 00029144   | N/A        | N/A        |
| EM218   | ANECHOIC CHAMBER             | ETS-Linggren    | FACT-3    | --         | 2006/05/02 | 2009/05/02 |
| EM194   | BICONILOG ANTENNA            | EMCO            | 3142B     | 1795       | 2008/09/08 | 2010/09/08 |
| EM229   | EMI TEST RECEIVER            | ROHDE & SCHWARZ | ESIB40    | 100248     | 2008/09/08 | 2009/09/08 |
| EM022   | LOOP ANTENNA                 | EMCO            | 6502      | 1189-2424  | 2006/07/26 | 2009/07/26 |
| EM020   | HORN ANTENNA                 | EMCO            | 3115      | 4032       | 2006/07/11 | 2009/07/11 |

##### Line Conducted

| EQP NO. | DESCRIPTION       | MANUFACTURER                        | MODEL NO. | SERIAL NO.          | LAST CAL   | DUE CAL    |
|---------|-------------------|-------------------------------------|-----------|---------------------|------------|------------|
| EM197   | LISN              | EMCO                                | 4825/2    | 1193                | 2007/10/30 | 2009/10/30 |
| EM181   | EMI TEST RECEIVER | ROHDE & SCHWARZ                     | ESIB7     | 100072              | 2008/06/16 | 2009/06/16 |
| EM154   | SHIELDING ROOM    | SIEMENS<br>MATSUSHITA<br>COMPONENTS | N/A       | 803-740-057-<br>99A | 2009/01/23 | 2010/01/23 |

#### Remarks:-

CM Corrective Maintenance  
N/A Not Applicable or Not Available  
TBD To Be Determined

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### Appendix B

#### Photographs of EUT

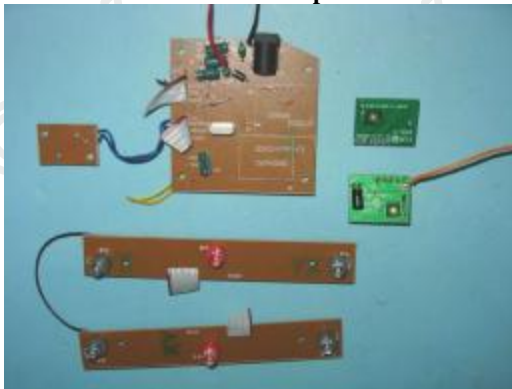
**Front View of the product**



**Rear View of the product**



**Inner Circuit Top View**



**Inner Circuit Bottom View**



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### Photographs of EUT

Measurement of Radiated Emission Test Set Up



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### Measurement of Conducted Emission Test Set Up



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

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