



STC Test Report

Date : 2009-04-06

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No. : HM163197

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 Game System (Teacher Remote)
Brand Name: Eggspert
Model Number: EI-7881
FCC ID: MJO-EI-7881T

Date Samples Received: 2009-03-09

Date Tested: 2009-03-19

Investigation 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.

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: ----

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, Taiipo Industrial Estate, N.T., Hong Kong

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List of Measurement Equipment

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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

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

The Hong Kong Standards and Testing Centre Ltd.

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1.3 Equipment Under Test [EUT] Description of Sample

Product: Wireless Game System (Teacher Remote)
Manufacturer: Castlespring Ent. Ltd.
Brand Name: Eggspert
Model Number: EI-7881
Input Voltage: 4.5Vd.c. ("AAA" size battery x 3)

1.3.1 Description of EUT Operation

The Equipment Under Test (EUT) is an Education Insights., Wireless Game System (Teacher Remote). The transmission signal is operating at frequency 915.04MHz. The EUT is a six buttons transmitter, different transmission signals generated by all six buttons were measured, and the worst case is documented in the test report.

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 measurements in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15: 2008 Regulations and ANSI C63.4:2003 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	Fail
Field Strength of Fundamental & Harmonics Emissions	FCC 47CFR 15.249	ANSI C63.4:2003	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Radiated Emissions	FCC 47CFR 15.209	ANSI C63.4:2003	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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3.0 Test Results

3.1 Emission

3.1.1 Radiated Emissions

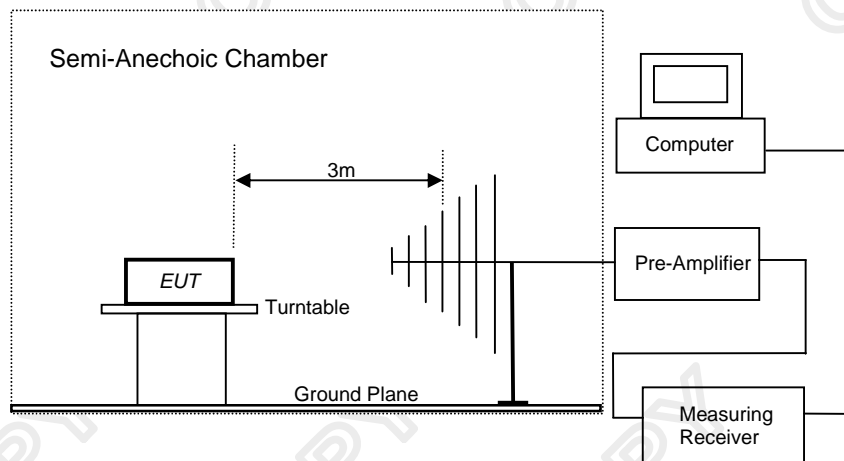
Test Requirement: FCC 47CFR 15.249
Test Method: ANSI C63.4:2003
Test Date: 2009-03-19
Mode of Operation: Tx mode

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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Limits for Field Strength of Fundamental & Harmonics Emissions [FCC 47CFR 15.249]:

Frequency Range of Fundamental [MHz]	Field Strength of Fundamental Emission [microvolts/meter]	Field Strength of Harmonics Emission [microvolts/meter]
902-928	50,000 [Average]	500 [Average]

Results of Tx mode: Pass

Field Strength of Fundamental Emissions Peak Value						
Frequency MHz	Measured Level @3m dB μ V/m	Correction Factor dB μ V/m	Field Strength dB μ V/m	Field Strength μ V/m	Limit @3m μ V/m	E-Field Polarity
915.0	54.9	26.4	81.3	11,614.5	500,000	Horizontal
1830.1	13.9	28.3	42.2	128.8	500	Horizontal
* 2745.1	No Emission Detected				500	Vertical
* 3660.2					500	Vertical
* 4575.2					500	Vertical
5490.2					500	Vertical
6405.3					500	Vertical
* 7320.3					500	Vertical
* 8235.4					500	Vertical
* 9150.4					500	Vertical

Remarks:

No additional spurious emissions found between lowest internal used/generated frequency and 30 MHz

*: Denotes restricted band of operation.

Measurements were made using a peak detector. Any emission less than 1000 MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 and the limits of FCC Rules Part 15 Section 15.209 were applied.

Calculated measurement uncertainty	:	30MHz to 1GHz	5.2dB
		1GHz to 18GHz	5.1dB

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Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:

Frequency Range [MHz]	Quasi-Peak Limits [$\mu\text{V}/\text{m}$]
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 Tx Mode: PASS

Radiated Emissions Quasi-Peak					
Emission Frequency MHz	E-Field Polarity	Level @3m $\text{dB}\mu\text{V}/\text{m}$	Limit @3m $\text{dB}\mu\text{V}/\text{m}$	Level @3m $\mu\text{V}/\text{m}$	Limit @3m $\mu\text{V}/\text{m}$
Emissions detected are more than 20 dB below the FCC Limits					

Remarks:

No additional spurious emissions found between lowest internal used/generated frequency and 30 MHz

Correction Factor included Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty	:	30MHz to 1GHz	5.2dB
		1GHz to 18GHz	5.1dB

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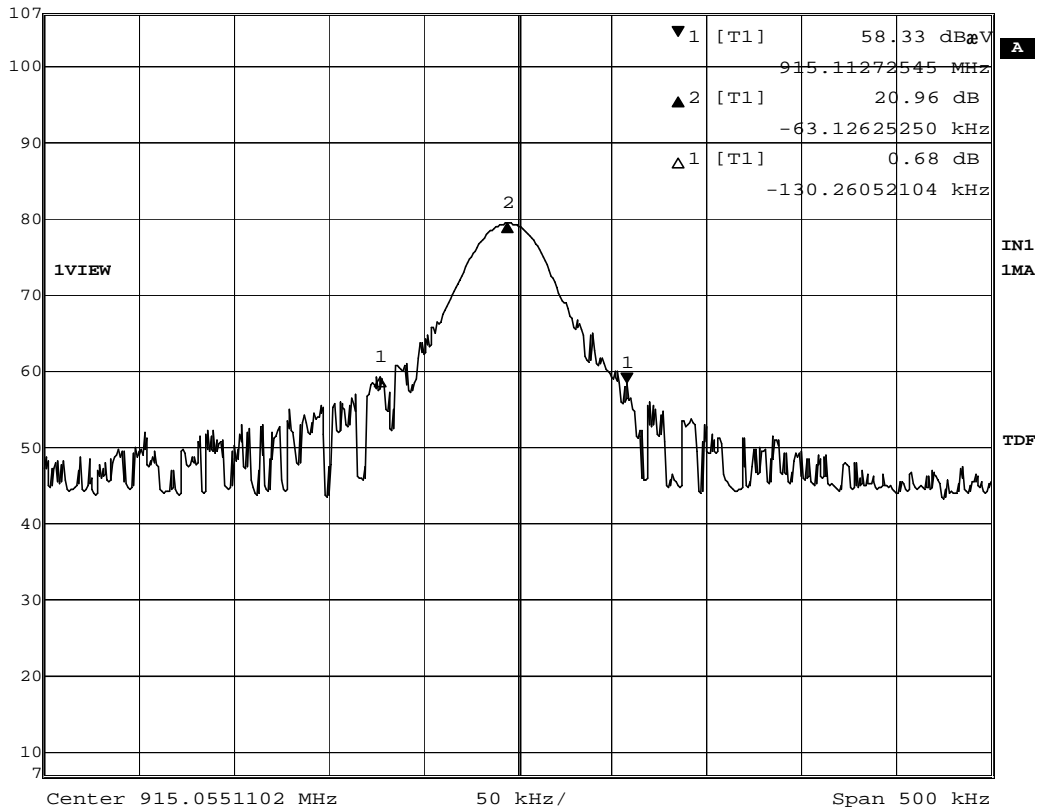
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Limits for 20dB Bandwidth of Fundamental Emission:

Frequency Range [MHz]	20dB Bandwidth [kHz]
915.05	63.1

20dB Bandwidth of Fundamental Emission

	Delta 2 [T1]	RBW	30 kHz	RF Att	10 dB
Ref Lvl	20.96 dB	VBW	30 kHz		
107 dB μ V	-63.12625250 kHz	SWT	5 ms	Unit	dB μ V



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Appendix A

List of Measurement Equipment

Radiated Emission

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL	DUE CAL
EM020	HORN ANTENNA	EMCO	3115	4032	2006/07/11	2009/07/11
EM215	MULTIDEVICE CONTROLER	EMCO	2090	00024676	N/A	N/A
EM216	MINI MAST SYSTEM	EMCO	2075	00026842	N/A	N/A
EM217	ELECTRIC POWERED TURNABLE	EMCO	2088	00029144	N/A	N/A
EM218	ANECHOIC CHAMBER	ETS-Linggren	FACT-3	--	2006/05/02	2009/05/02
EM174	BICONILOG ANTENNA	EMCO	3142B	00029071	2008/01/24	2010/01/24
EM181	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESIB7	100072	2008/06/16	2009/06/16
EM022	LOOP ANTENNA	EMCO	6502	1189-2424	2006/07/26	2009/07/26

Remarks:-

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

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Appendix B

Photographs of EUT

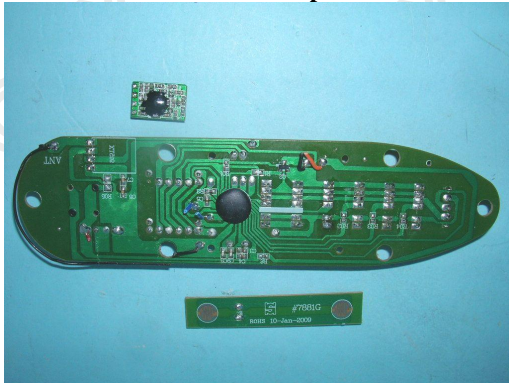
Front View of the product



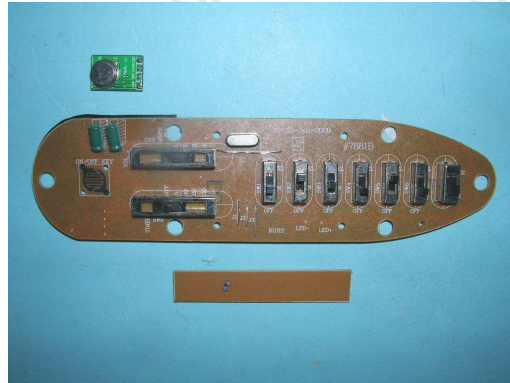
Rear View of the product



Inner Circuit Top View



Inner Circuit Bottom View



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Photographs of EUT

Measurement of Radiated Emission Test Set Up



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

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