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**FEDERAL COMMUNICATIONS COMMISSION**

Registration number: 282399

Report No.: GLEMO080702401RFT

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FCC ID:RS4-44694B

# TEST REPORT

**Application No. :** GLEMO080702401RF  
**Applicant:** HASBRO FAR EAST., LTD.  
**FCC ID:** RS4-44694B  
**Fundamental  
Frequency :** 13.564MHz  
**Equipment Under Test (EUT):**  
Name: HYPERSLIDE  
Model No.: 446941  
**Standards:** FCC PART 15, SUBPART C : 2007  
Section 15.225  
**Date of Receipt:** July 29, 2008  
**Date of Test:** July 31, 2008 to Aug 05, 2008  
**Date of Issue:** Aug 12, 2008

<b>Test Result :</b>	<b>PASS *</b>
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\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Stephen Guo  
Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

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## 2 Test Summary

Test	Test Requirement	Standard Paragraph	Result
Radiated Emission (9kHz to 1000MHz)	FCC PART 15 :2007	Section 15.225	PASS
Occupied Bandwidth	FCC PART 15 :2007	Section 15.225	PASS
Frequency Stability	FCC PART 15 :2007	Section 15.225	PASS



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## **4 General Information**

### **4.1 Client Information**

Applicant Name: HASBRO FAR EAST.,LTD.  
Applicant Address: 1308 World Commerce Centre, Harbour City, 11 Canton Road, Tsim Sha Tsui, Kowloon, Hong Kong

### **4.2 Details of E.U.T.**

Name: HYPERSLIDE  
Model No.: 446941  
Power Supply: 4.5V DC (3 x1.5 'AA' Size Battery)  
Power Cord: N/A-

### **4.3 Description of Support Units**

The EUT was tested as an independent unit: a 13.564MHz radio transmitter.

### **4.4 Test Location**

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory,  
198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District,  
Guangzhou, Guangdong, China 510663  
Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.

### **4.5 Other Information Requested by the Customer**

None.



#### **4.6 Test Facility**

The test facility is recognized, certified, or accredited by the following organizations:

- **NVLAP – Lab Code: 200611-0**

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is recognized under the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

- **FCC – Registration No.: 282399**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 282399, May 31, 2002. With the above and NVLAP's accreditation, SGS-CSTC is an authorized test laboratory for the DoC process.



## 5 Test Results

### 5.1 Test Instruments

RE in Chamber						
No:	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
EMC0525	Compact Semi-Anechoic Chamber	ChangZhou ZhongYu	N/A	N/A	N/A	N/A
EMC0522	EMI Test Receiver	Rohde & Schwarz	ESIB26	100249	28-01-2008	28-01-2009
N/A	EMI Test Software	Audix	E3	N/A	N/A	N/A
EMC0514	Coaxial cable	SGS	N/A	N/A	04-12-2007	04-12-2008
EMC0524	Bi-log Type Antenna	Schaffner -Chase	CBL6112B	2966	12-08-2008	12-08-2009
EMC0519	Bilog Type Antenna	Schaffner -Chase	CBL6143	5070	12-08-2008	12-08-2009
EMC0517	Horn Antenna	Rohde & Schwarz	HF906	100095	12-08-2008	12-08-2009
EMC0040	Spectrum Analyzer	Rohde & Schwarz	FSP30	100324	05-12-2007	05-12-2008
EMC0520	0.1-1300 MHz Pre-Amplifier	HP	8447D OPT 010	2944A06252	11-03-2008	11-03-2009
EMC0521	1-26.5 GHz Pre-Amplifier	Agilent	8449B	3008A01649	11-03-2008	11-03-2009
EMC0075	310N Amplifier	Sonama	310N	272683	10-09-2007	10-09-2008
EMC0523	Active Loop Antenna	EMCO	6502	00042963	09-08-2008	09-08-2010
EMC0530	10m Semi- Anechoic Chamber	ETS	N/A	N/A	10-08-2008	10-08-2009

General used equipment						
No:	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
EMC0006	DMM	Fluke	73	70681569	27-09-2007	27-09-2008
EMC0007	DMM	Fluke	73	70671122	27-09-2007	27-09-2008



## 5.2 E.U.T. Operation

Input voltage:	4.5V DC (3x1.5 'AA' Size new Batteries)
Operating Environment:	
Temperature:	25.0 °C
Humidity:	52% RH
Atmospheric Pressure:	1008 mbar
EUT Operation:	Test the EUT in transmitting mode.

## 5.3 Test Procedure & Measurement Data

### 5.3.1 Radiated Emissions

<b>Test Requirement:</b>	FCC Part15 C Section 15.225(a),(b),(c),(d)
<b>Test Method:</b>	ANSI C63.4 section 8 & 13
<b>Test Date:</b>	July 31, 2008
<b>Measurement Distance:</b>	3m (Semi-Anechoic Chamber and OATS)
<b>Requirements:</b>	(a) The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 123.9 dB $\mu$ V/m. (b) Within the bands 13.410-13.553 MHz and 13.567-13.710 MHz, the field strength of any emissions shall not exceed 90.5 dB $\mu$ V/m. (c) Within the bands 13.110-13.410 MHz and 13.710-14.010 MHz the field strength of any emissions shall not exceed 80.5 dB $\mu$ V/m. Out of band emissions shall not exceed: 69.5 dB $\mu$ V/m between 1.705MHz& 30MHz 40.0 dB $\mu$ V/m between 30MHz & 88MHz 43.5 dB $\mu$ V/m between 88MHz & 216MHz 46.0 dB $\mu$ V/m between 216MHz & 960MHz 54.0 dB $\mu$ V/m above 960MHz
<b>Detector:</b>	Peak for pre-scan Quasi-Peak: 9kHz-150kHz:200Hz resolution bandwidth 150kHz-30MHz: 9kHz resolution bandwidth 30-1000MHz:120kHz resolution bandwidth

Test Procedure: The procedure used was ANSI Standard C63.4-2003. The receive was scanned from 30MHz to 1000MHz. When an emission was found, the table was rotated to produce the maximum signal strength. An initial pre-scan was performed for in peak detection mode using the receiver. The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes. The worst case emissions were reported.

An initial pre-scan was performed in the 3m chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by Active loop antenna and Bilog antenna with 2 orthogonal polarities



The following measurements were performed on the EUT on Aug 05, 2008.  
Test the EUT in transmitting mode.

### 5.3.1.1 Intentional Emission and Spectrum Mask

Pre-test the EUT in loop antenna at Vertical and Horizontal, the worst case is at Vertical.

Vertical:

Test Frequency (MHz)	Quasi-Peak (dB $\mu$ V/m)			Limits (dB $\mu$ V/m)	Margin (dB)		
	X	Y	Z		X	Y	Z
13.110	13.4	13.8	13.2	69.5	56.1	55.7	56.3
13.410	16.4	16.9	16.1	80.5	64.1	63.6	64.4
13.553	24.8	23.4	23.0	90.5	65.7	67.1	67.5
13.564	43.2	39.4	38.4	123.9	80.7	84.5	85.5
13.567	25.6	26.7	24.5	90.5	64.9	63.8	66.0
13.710	17.9	17.2	17.2	80.5	62.6	63.3	63.3
14.010	14.8	15.1	14.9	69.5	54.7	54.4	54.6

### 5.3.1.2 Spurious Emission: below 30MHz

Test Frequency (MHz)	Quasi-Peak (dB $\mu$ V/m)			Limits (dB $\mu$ V/m)	Margin (dB)		
	X	Y	Z		X	Y	Z
26.320	26.7	25.8	25.1	69.5	42.8	43.7	44.4

Y: EUT as Radiated Emission test setup photograph in section 6 of this report.

X: rotate EUT by 90° clockwise.

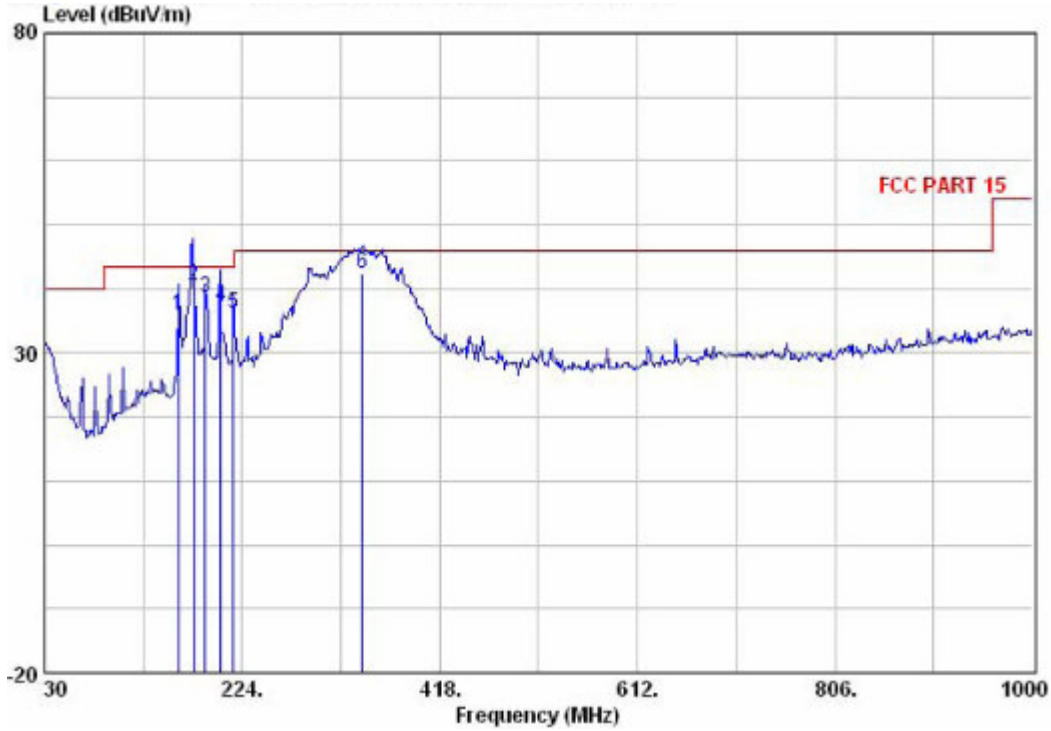
Z: rotate EUT by 90° vertically.





5.3.1.3 Spurious Emission: above 30MHz

Horizontal:

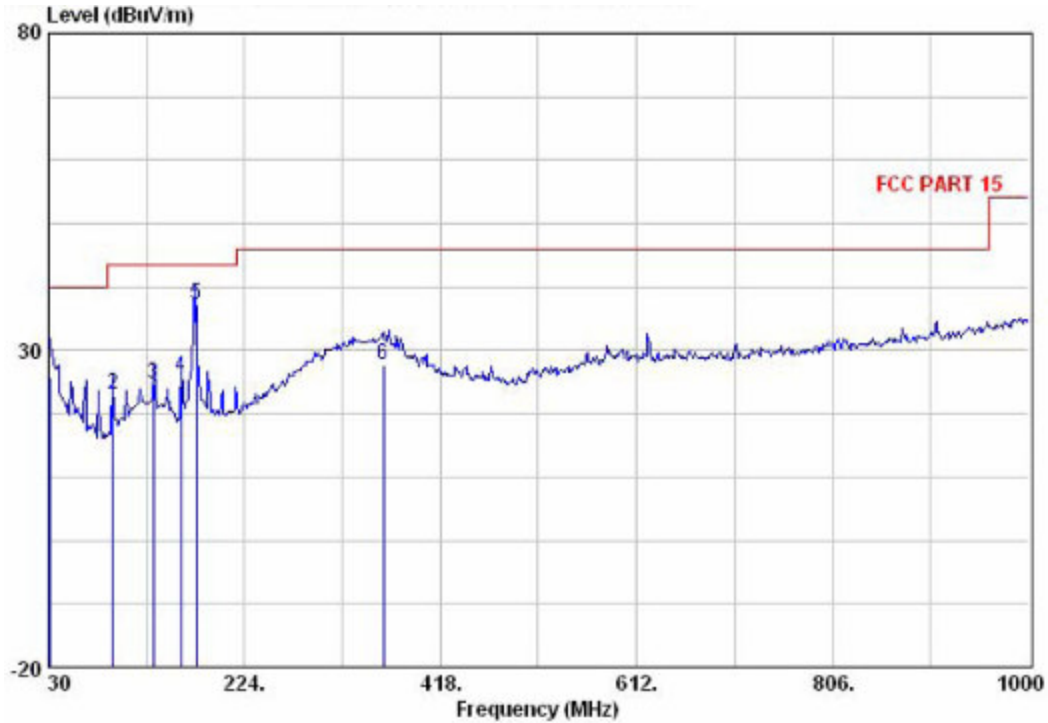


QP measure result:

Freq	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
160.950	47.66	11.71	1.40	24.89	35.87	43.50	-7.63	QP
176.350	52.13	11.69	1.60	24.80	40.62	43.50	-2.88	QP
188.110	49.98	11.65	1.60	24.71	38.51	43.50	-4.99	QP
202.940	47.78	12.22	1.70	24.59	37.12	43.50	-6.38	QP
215.270	45.74	13.10	1.70	24.53	36.01	43.50	-7.49	QP
341.370	47.61	17.21	2.30	24.66	42.45	46.00	-3.55	QP



Vertical:



QP measure result:

Freq	ReadAntenna	Cable	Preamp	Limit	Over	Remark		
MHz	Level	Factor	Loss	Factor	Line	Limit		
	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
30.970	27.43	23.31	0.62	25.46	25.90	40.00	-14.10	QP
94.020	37.59	9.34	1.20	25.16	22.97	43.50	-20.53	QP
133.790	35.21	13.33	1.30	25.10	24.74	43.50	-18.76	QP
160.950	38.67	10.74	1.40	24.89	25.91	43.50	-17.59	QP
176.350	48.18	12.33	1.60	24.80	37.31	43.50	-6.19	QP
361.740	34.18	16.04	2.32	24.79	27.75	46.00	-18.25	QP

Remark: : 1. All readings are Quasi-peak values.  
 : 2. Level = Read Level + Antenna Factor +  
 : Cable Loss - Preamp Factor

**Test Results: The unit does meet the FCC requirements.**



### 5.3.2 Occupied Bandwidth

Test Requirement: FCC Part 15 C Section 15.215 (C)

Test Method: ANSI C63.4 section 13 & FCC Part 2.1049

Operation within the band 13.110 –14.010MHz

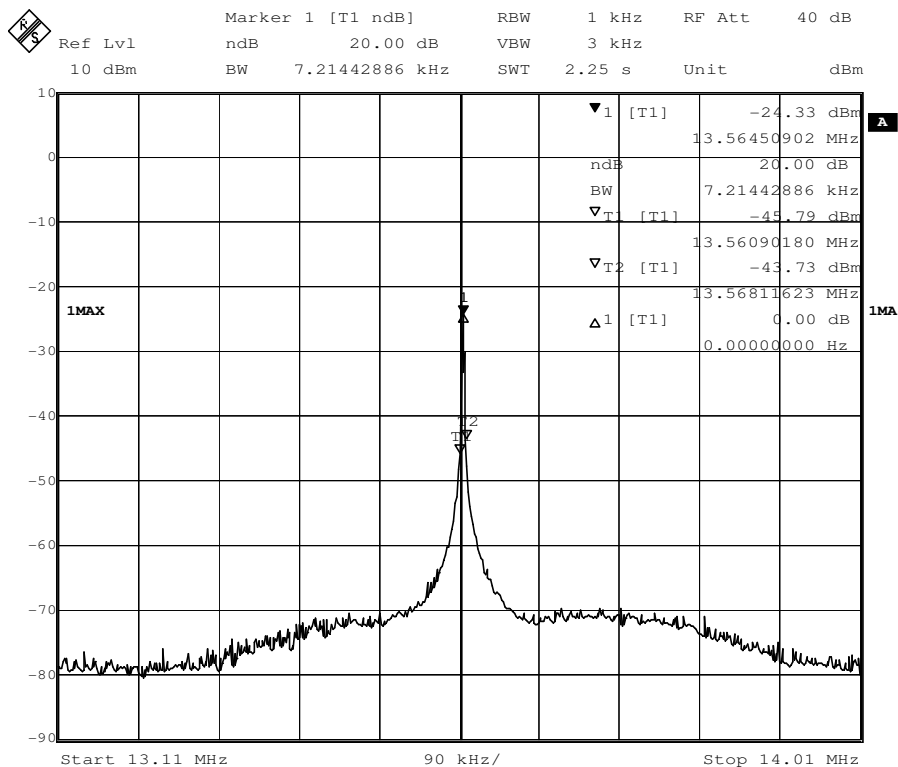
Test Date: Aug 05, 2008

Requirements: Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the 20 dB bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

Method of measurement: The useful radiated emission from the EUT was detected by the spectrum analyser with peak detector. The vertical Scale is set to 10dB per division. The horizontal scale is set to 5KHz per division.

20dB Bandwidth: 7.2KHz (13.5609MHz to 13.5681MHz)

The graph as below, represents the emissions take for this device.



The results: The unit does meet the FCC requirements.



**5.3.3 Frequency Stability**

Test Requirement: FCC Part 15 C Section 15.225(e)  
Test Method: ANSI C63.4 section 13  
Test Date: Aug 05, 2008  
Requirements: The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% of the operating frequency over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

**Test Result:**

Operating Frequency: 13.564MHz,  
Limit: total emission within +/- 1.3564KHz of the operating frequency.

Frequency stability vs. temperature		
Environment Temperature (°C)	Measured Frequency (MHz)	Frequency Measure with Time Elapsed Total emission within KHz
50	13.56440153	0.40153
40	13.56442433	0.42433
30	13.56440241	0.40241
20	13.56430862	0.30862
10	13.56432443	0.32443
0	13.56431474	0.31474
-10	13.56442476	0.42476
-20	13.56442415	0.42415

**The results: The unit does meet the FCC Part 15 C Section 15.225 requirements.**

**--End of the report--**