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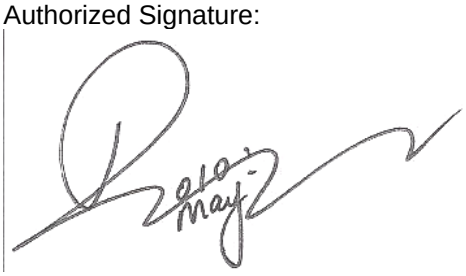
FCC REPORT

Application No:	GTSE100500036RF
Applicant:	Ergowerx International LLC
Equipment Under Test (EUT)	
Name:	Wireless Optical Mouse
Model No.	M3200
Operation Frequency:	27.042MHz
FCC ID:	YAE-M3200
Standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.227: 2008
Date of Receipt:	10 May 2010
Date of Test:	11 May to 14 May 2010
Date of Issue:	14 May 2010
Test Result :	**PASS ***

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Robinson Lo
Laboratory Manager

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3 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Passed
Field strength of the fundamental signal	15.227 (a)	Passed
Spurious emissions	15.227/15.209	Passed
20dB Bandwidth	15.227	Passed

Passed: The EUT complies with the essential requirements in the standard.

4 General Information

4.1 Client Information

Applicant:	Ergowerx International LLC
Address of Applicant:	39 Park Place Suite 201, Englewood, NJ 07631 USA
Manufacturer/Factory:	Dongguan Togran Electronic Technology Co. Ltd.
Address of Manufacturer/Factory:	No. 262 Shi Dan Road, Third Industrial Zone, Jiezhou, Shijie, Dongguan

4.2 General Description of E.U.T.

Product Name:	Wireless Optical Mouse
Trade Name:	Smartfish
Item No.:	M3200
Operation Frequency:	27.042MHz
Modulation type:	AM
Antenna Type:	Integral
Power supply:	2*1.5V("AA" size)=3.0V

4.3 E.U.T Operation mode

Operating Environment:	
Temperature:	24.0 °C
Humidity:	52 % RH
Atmospheric Pressure:	1008 mbar
Test mode:	
Transmitting mode:	Keep the EUT in transmitting with interior modulation.

4.4 Test Location

All tests were performed at:
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch E&E Lab No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China 518057 Telephone: +86 (0) 755 2601 2053 Fax: +86 (0) 755 2671 0594 No tests were sub-contracted.

4.5 Other Information Requested by the Customer

None.

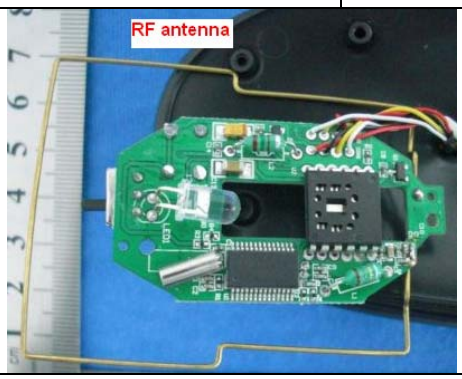
4.6 Test Instruments list

Radiated emissions						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (dd-mm-yy)**	**Cal.Due date (dd-mm-yy)**
1	3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEL0017	16-06-2009	15-06-2010
2	EMI Test Receiver	Rohde & Schwarz	ESIB26	SEL0023	12-12-2008	11-12-2009
3	EMI Test software	AUDIX	E3	SEL0050	N/A	N/A
4	Coaxial cable	SGS	N/A	SEL0028	18-06-2009	17-06-2010
5	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEL0014	12-08-2009	11-08-2010
6	Double-ridged horn (1-18GHz)	ETS-LINDGREN	3117	SEL0005	12-08-2009	11-08-2010
7	Horn Antenna (18-26GHz)	ETS-LINDGREN	3160	SEL0076	12-08-2009	11-08-2010
8	Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEL0053	18-06-2009	17-06-2010
9	Pre-amplifier (1-18GHz)	Rohde & Schwarz	AFS42-00101 800-25-S-42	SEL0081	18-06-2009	17-06-2010
10	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	SEL0080	18-06-2009	17-06-2010
11	Band filter	Amindeon	82346	SEL0094	18-06-2009	17-06-2010

RF conducted						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (dd-mm-yy)**	**Cal.Due date (dd-mm-yy)**
1	Spectrum Analyzer	Rohde & Schwarz	10336/030	EMC0040	16-06-2009	15-06-2010
2	Coaxial cable	SGS	N/A	SEL0029	18-06-2009	17-06-2010

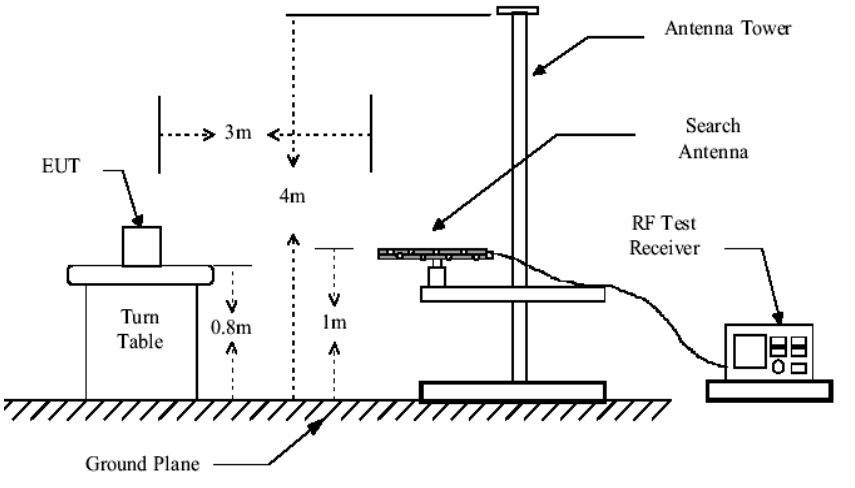
5 Test results and Measurement Data

5.1 Antenna requirement:

Standard requirement:	FCC Part15 C Section 15.203
15.203 requirement: *An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.*	
E.U.T Antenna:	
	

5.2 Radiated Emission

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.227 and 15.209</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.4: 2003</td></tr>
<tr><td>Test Frequency Range:</td><td>25MHz to 1000MHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m (Semi-Anechoic Chamber)</td></tr>
<tr><td>Receiver setup:</td><td>RBW=100KHz, VBW=300KHz</td></tr>
<tr><td>Limit:
(Field strength of the fundamental signal)</td><td>
<table>
<tr><th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></tr>
<tr><td rowspan="2">26.96MHz-27.28MHz</td><td>80.00</td><td>Average Value</td></tr>
<tr><td>100.00</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:
(Spurious Emissions)</td><td>
<table>
<tr><th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></tr>
<tr><td>30MHz-88MHz</td><td>40.0</td><td>Quasi-peak Value</td></tr>
<tr><td>88MHz-216MHz</td><td>43.5</td><td>Quasi-peak Value</td></tr>
<tr><td>216MHz-960MHz</td><td>46.0</td><td>Quasi-peak Value</td></tr>
<tr><td>960MHz-1GHz</td><td>54.0</td><td>Quasi-peak Value</td></tr>
</table>
</td></tr>
<tr><td>Test Procedure:</td><td>1>. The E.U.T and its simulators are placed on a turn table which is 0.8meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

2>. Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4:2003 on radiated measurement.</td></tr>
<tr><td>Test setup:</td><td>Below 1GHz
 
</td></tr>
<tr><td>Test Instruments:</td><td>Refer to section 4.7 for details</td></tr>
<tr><td>Test mode:</td><td>Transmitting mode</td></tr>
<tr><td>Test results:</td><td>Passed</td></tr>
</table>

Measurement Data

5.2.1 Field Strength Of The Fundamental Signal

Peak value:

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
27.042	0.78	8.47	28.11	96.47	77.61	100.00	-22.39	Horizontal
27.042	0.78	8.47	28.11	86.75	67.89	100.00	-32.11	Vertical

Average value:

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
27.042	0.78	8.47	28.11	86.59	67.73	80.00	-12.27	Horizontal
27.042	0.78	8.47	28.11	78.42	59.56	80.00	-20.44	Vertical

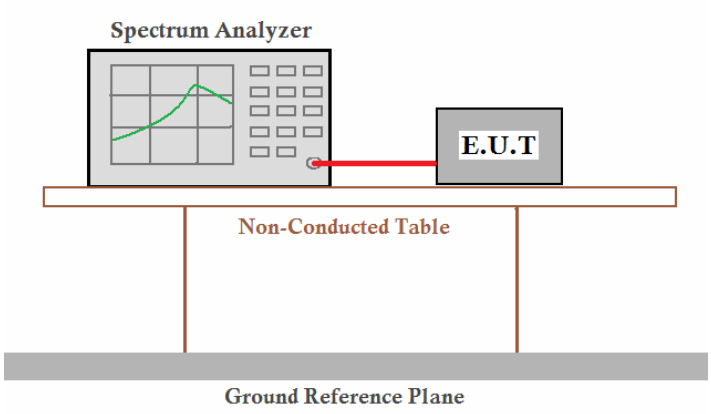
5.2.2 Spurious Emissions

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
98.87	1.19	9.06	27.89	48.52	30.88	43.50	-12.62	Horizontal
148.34	1.32	8.86	27.47	41.62	24.33	43.50	-19.17	Horizontal
198.78	1.40	10.19	27.16	38.70	23.13	43.50	-20.37	Horizontal
347.19	2.05	15.34	27.07	32.16	22.48	46.00	-23.52	Horizontal
397.63	2.20	16.27	27.39	33.35	24.43	46.00	-21.57	Horizontal
97.90	1.18	9.02	27.89	38.16	20.47	43.50	-23.03	Vertical
148.34	1.32	8.86	27.47	34.26	16.97	43.50	-26.53	Vertical
198.78	1.40	10.19	27.16	32.76	17.19	43.50	-26.31	Vertical
347.19	2.05	15.34	27.07	30.01	20.33	46.00	-25.67	Vertical
444.19	2.39	16.77	27.55	28.70	20.31	46.00	-25.69	Vertical

Note:
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

5.3 20dB Bandwidth

Test Requirement:	FCC Part15 C Section 15.227
Test Method:	ANSI C63.4:2003
Receiver setup:	RBW=10KHz, VBW=30KHz, detector: Peak
Limit:	26.96MHz~27.28MHz
Test Procedure:	1. According to the follow Test-setup, keep the relative position between the artificial antenna and the EUT. 2. Set the EUT to proper test channel. 3. Max hold the radiated emissions, mark the peak power frequency point and the -20dB upper and lower frequency points.
Test setup:	
Test Instruments:	Refer to section 4.7 for details
Test mode:	Transmitting mode
Test results:	Passed

Test plot as follows: