



FCC REPORT

Applicant:	Shenzhen Dianxuntong Electronics Co., Ltd.
Address of Applicant:	Building D, HuaFeng 1st Technology Industrial zone, ShanWei village, XiXiang Town, BaoAn District, S.Z City, China
Equipment Under Test (EUT)	
EUT Name:	Wireless 27M optical mouse
Model No.	DXT-RF609, DXT-RF611, DXT-RF631, DXT-RF603, DXT-RF608, DXT-RF606
Operation Frequency:	27.145MHz
FCC ID:	YBDXT-609RF
Standards:	FCC PART 15, SUBPART C Section 15.227 2009
Date of Receipt:	14 August 2010
Date of Test:	14 to 17 August 2010
Date of Issue:	17 August 2010
Test Result :	PASS *

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

Authorized Signature:

Robinson Lo
Laboratory 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. Any mention of GTS International Electrical Approvals or testing done by GTS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by GTS International Electrical Approvals in writing.

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 Contents

	Page
1 COVER PAGE.....	1
2 CONTENTS	2
3 TEST SUMMARY	3
4 GENERAL INFORMATION.....	4
4.1 CLIENT INFORMATION	4
4.2 GENERAL DESCRIPTION OF E.U.T.....	4
4.3 E.U.T. ENVIRONMENT AND TEST MODES	4
4.4 TEST LOCATION	5
4.5 OTHER INFORMATION REQUESTED BY THE CUSTOMER.....	5
4.6 TEST FACILITY.....	5
4.7 TEST INSTRUMENTS LIST	6
5 TEST RESULT & MEASUREMENT DATA.....	7
5.1 ANTENNA REQUIRMENT	7
5.2 RADIATED EMISSIONS.....	8
5.3 OCCUPIED BANDWIDTH	10

3 Test Summary

Test Item	Section in CFR 47	Result
Radiated Emission (25MHz to 1GHz)	Section 15.227	Passed
Occupied Bandwidth	Section 15.215	Passed

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

Failed: The EUT does not comply with the essential requirements in the standard.

4 General Information

4.1 Client Information

Applicant:	Shenzhen Dianxuntong Electronics Co., Ltd.
Address of Applicant:	Building D, HuaFeng 1 st Technology Industrial zone, ShanWei village, XiXiang Town, BaoAn District, S.Z City, China
Manufacturer:	Shenzhen Dianxuntong Electronics Co., Ltd.
Address of Manufacturer:	Building D, HuaFeng 1 st Technology Industrial zone, ShanWei village, XiXiang Town, BaoAn District, S.Z City, China

4.2 General Description of E.U.T.

Product Name:	Wireless 27M optical mouse
Model No.:	DXT-RF609, DXT-RF611, DXT-RF631, DXT-RF603, DXT-RF608, DXT-RF606
Operation Frequency:	27.145MHz
Power supply:	DC3.0V(2*1.5V"AA"Size Batteries)
Remark:	<p>DXT-RF609, DXT-RF611, DXT-RF631, DXT-RF603, DXT-RF608, DXT-RF606</p> <p>Only the model No. DXT-RF609 was tested, since the electrical circuit design, PCB layout, Electrical Parts and figure are identical to the basic model, except the outer decoration.</p>

4.3 E.U.T. Environment and test modes

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

4.4 Test Location

All tests were performed at:

Global United Technology Service Co., Ltd.

Address: 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China

Tel: 0755-27798480

Fax: 0755-27798960

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

- **FCC —Registration No.: 600491**

Global United Technology Service Co., Ltd., Shenzhen 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 out files. Registration 600491, July 20, 2010.

- **Industry Canada (IC)**

The 3m Semi-anechoic chamber of Global United Technology Service Co., Ltd. Has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-1.

4.7 Test Instruments List

Radiated Emission						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS201	30. 3 2010	Mar. 30 2011
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS202	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	10. 09 2009	Sep. 10 2010
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS204	26 2 2009	Sep. 10 2010
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS205	30 06 2010	June 30 2011
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Coaxial Cable	GTS	N/A	GTS400	01. 04 2010	01. 04 2011
8	Coaxial Cable	GTS	N/A	GTS401	01. 04 2010	01. 04 2011
9	Coaxial cable	GTS	N/A	GTS402	01. 04 2010	01. 04 2011
10	Coaxial Cable	GTS	N/A	GTS407	01. 04 2010	01. 04 2011
11	Coaxial Cable	GTS	N/A	GTS408	01. 04 2010	01. 04 2011
12	Amplifier(10KHz-5GHz)	Sonoma Instrument	305-1052	GTS210	01. 04 2010	01. 04 2011
13	Amplifier (2GHz-20GHz)	HP	8349B	GTS231	01. 04 2010	01. 04 2011
14	Turntable & Antenna Positioner Controller	C&C	CC-C-IF	GTS211	N/A	N/A
15	Printer	HP	LaserJet 1007	GTS212	N/A	N/A
16	Color monitor	SUNSPO	SP-14C	GTS213	N/A	N/A
17	Color monitor	SUNSPO	SP-14C	GTS214	N/A	N/A

5 Test Result & Measurement Data

5.1 Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203
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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:

The antenna is integrated on the main PCB and no consideration of replacement. The typical gain of the antenna is 2dBi.



5.2 Radiated Emissions	
Test Requirement:	FCC Part15 C Section 15.227
Test Method:	ANSI C63.4: 2003
Measurement Distance:	3m (Semi-Anechoic Chamber)
Requirements:	Carrier Power will not exceed 80dB _u V/m at 3m (Average).
	Out of band emissions shall not exceed:
	40.0 dB _u V/m between 30MHz & 88MHz
	43.5 dB _u V/m between 88MHz & 216MHz
	46.0 dB _u V/m between 216MHz & 960MHz
	54.0 dB _u V/m above 960MHz
Detector:	25MHz to 30MHz RBW=9KHz VBW=30KHz 30MHz to 1000MHz RBW=100KHz VBW=300KHz
Test Procedure:	<ol style="list-style-type: none"> 1. The EUT is placed on a turntable, which is 0.8m above ground plane. 2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level. 3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions. 4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance. 5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. 6. Repeat above procedures until the measurements for all frequencies are complete. 7. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.
Test Result:	The unit does meet the FCC Part 15 C Section 15.227 requirements.
Test Procedure: For testing performed with the loop antenna, testing was performed in accordance to ANSI C63.4: 2003, section 8.2.1. The center of the loop was positioned 1 m above the ground and positioned with its plane vertical at the specified distance from the EUT. During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane.	

Intentional emission

Test Frequency (MHz)	Peak (dB μ V/m)		Limits (dB μ V/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
27.145	70.74	63.12	100.00	29.26	36.88

Test Frequency (MHz)	Average (dB μ V/m)		Limits (dB μ V/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
27.145	66.72	59.07	80.00	13.28	20.93

Other emissions (QP)
Vertical

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dB μ V)	Level (dB μ V/m)	Limit Line (dB μ V/m)	Over Limit (dB)
81.096	0.96	12.14	25.68	48.81	36.23	40.00	-3.77
108.133	1.22	12.43	25.66	48.42	36.41	43.50	-7.09
135.420	1.42	9.75	25.64	54.89	40.42	43.50	-3.08
162.250	1.59	11.62	25.63	54.15	41.73	43.50	-1.77
189.440	1.72	13.69	25.62	50.53	40.32	43.50	-3.18
243.451	1.93	15.34	25.60	45.46	37.13	46.00	-8.87

Horizontal

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dB μ V)	Level (dB μ V/m)	Limit Line (dB μ V/m)	Over Limit (dB)
108.133	1.22	12.47	25.66	49.80	37.83	43.5	-5.67
134.922	1.42	10.71	25.64	54.96	41.45	43.5	-2.05
162.250	1.59	10.37	25.63	55.45	41.78	43.5	-1.72
189.440	1.72	11.15	25.62	55.13	42.38	43.5	-1.12
216.344	1.85	11.70	25.61	53.91	41.85	46.0	-4.15
243.451	1.93	12.39	25.60	55.68	44.4	46.0	-1.60

Remark:

According to 15.35 (b) When average radiated emission measurements are specified in the regulations, including emission measurements below 1000 MHz, there is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit for the frequency being investigated unless a different peak emission limit is otherwise specified in the rules, e.g., see Section 15.255.

5.3 Occupied Bandwidth

Test Requirement:	FCC Part 15 C Section 15.215 (C)
Test Method:	ANSI C63.4: 2003
Frequency range:	Operation within the band 26.960 – 27.280 MHz
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 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 34KHz per division.
Test Result:	The unit does meet the FCC Part 15 C Section 15.215 requirements.

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

