Shenzhen Certification Technologh Service Co., Ltd
3F, Bldg27,Area A, Tanglang Industrial Zone, Xili Town, Nanshan District, ShenZhen, Guang dong, P.R. China.

TEST REPORT

FCC ID: WWLAMV200

Applicant : Atake Digital Technology ShenZhen Co.,Ltd

Address : 13th Building,The 4 th Industry park,Han Shui ko,kong Ming Town,ShenZhen City

Fundamental Frequency : 27.045MHz

Equipment under Test (EUT):

Name : 27MHZ Wireless Optical Mouse

Model : AMV200,AMU200,AMU300,AMV300

Standards : FCC PART 15, SUBPART C : 2008 (Section 15.227)

Report No. : STE081113554

Date of Test : November 15, 2008

Date of Issue : November 15, 2008

Test Result :	**PASS ***

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

Authorized Signature

(Mark Zhu)

General Manager

The manufacture should ensure that all the 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 ShenZhen Certification Technology Service Co., Ltd. Or test done by ShenZhen Certification Technology Service Co., Ltd. Approvals in connection with, distribution or use of the product described in this report must be approved by ShenZhen Certification Technology Service Co., Ltd. Approvals in writing.

TABLE OF CONTENT

1. General Information

1.1Description of Device (EUT)

Trade Name	:	N/A
EUT	:	27MHZ Wireless Optical Mouse
Model No.	:	AMV200,AMU200,AMV300,AMU300
Model difference		It have similar schematic and PCB layout except for appearance colors and shape.
Type of Antenna	:	Integral Antenna
Operation Frequency	:	27.045MHz
Modulation type		FSK
Power Supply	:	Battery operated DC 3V
Applicant	:	Atake Digital Technology ShenZhen Co.,Ltd
Address	:	13th Building,The 4 th Industry park,Han Shui Ko,Kong Ming Town,ShenZhen City
Manufacturer	:	Atake Digital Technology ShenZhen Co.,Ltd
Address	:	13th Building,The 4 th Industry park,Han Shui Ko,Kong Ming Town,ShenZhen City

1.2Description of Test Facility

Site Description

All tests were performed at:
SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory, No.198 Kezhu Road, Science Town Economic& Technology Development District Guangzhou, China 510663

2. Summary of Measurement

Test	Test Requirement	Stanadard Paragraph	Result
Radiated Emission	FCC PART 15 : 2008	Section 15.227	compliance
Bandwidth	FCC PART15:2008	Section 15.215	compliance
Antenna Requirement	FCC PART 15 : 2008	Section 15.203	compliance

3 E.U.T. Operation

Operating Environment:

Temperature: 24.0 °C

Humidity: 50 % RH

Atmospheric Pressure: 1010 mbar

EUT Operation:

Continuous transmitting in maximum power mode.

4 List of Test and Measurement Instruments

RE in Chamber						
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	16-06-2007	15-06-2009
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	18-06-2008	17-06-2009
5	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEL0014	12-08-2008	11-08-2009
6	Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEL0053	18-06-2008	17-06-2009
7	Double-ridged horn (1-18GHz)	ETS-LINDGREN	3117	SEL0005	12-08-2008	11-08-2009
8	Horn Antenna (18-26GHz)	ETS-LINDGREN	3160	SEL0076	12-08-2008	11-08-2009
9	Pre-amplifier (1-18GHz)	Rohde & Schwarz	AFS42-00101 800-25-S-42	SEL0081	18-06-2008	17-06-2009
10	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002650-30-8P-44	SEL0080	18-06-2008	17-06-2009
11	Band filter	Amindeon	82346	SEL0094	18-06-2008	17-06-2009
12	Active Loop Antenna	Beijing Daze	ZN30900A	SEL0097	15-06-2008	14-06-2009

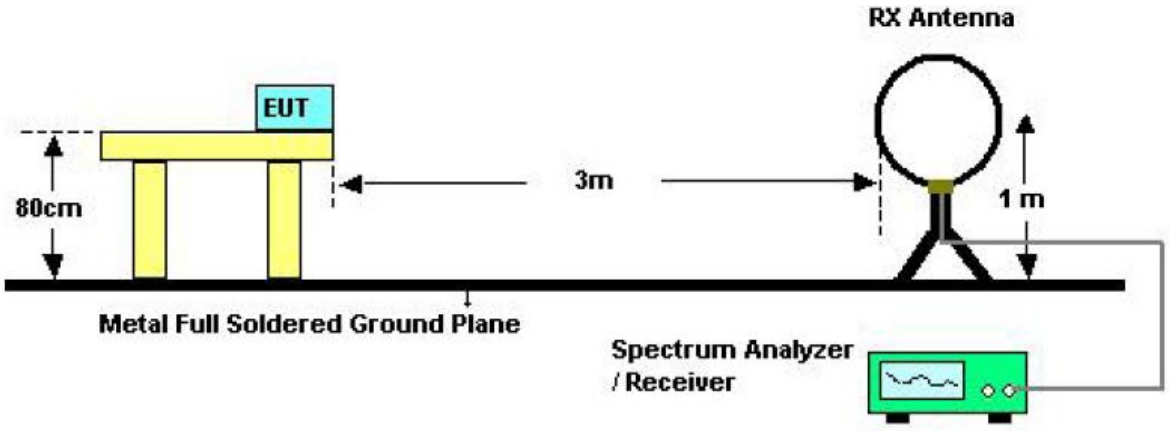
5 Radiation Emission Test

5.1 Test Limits

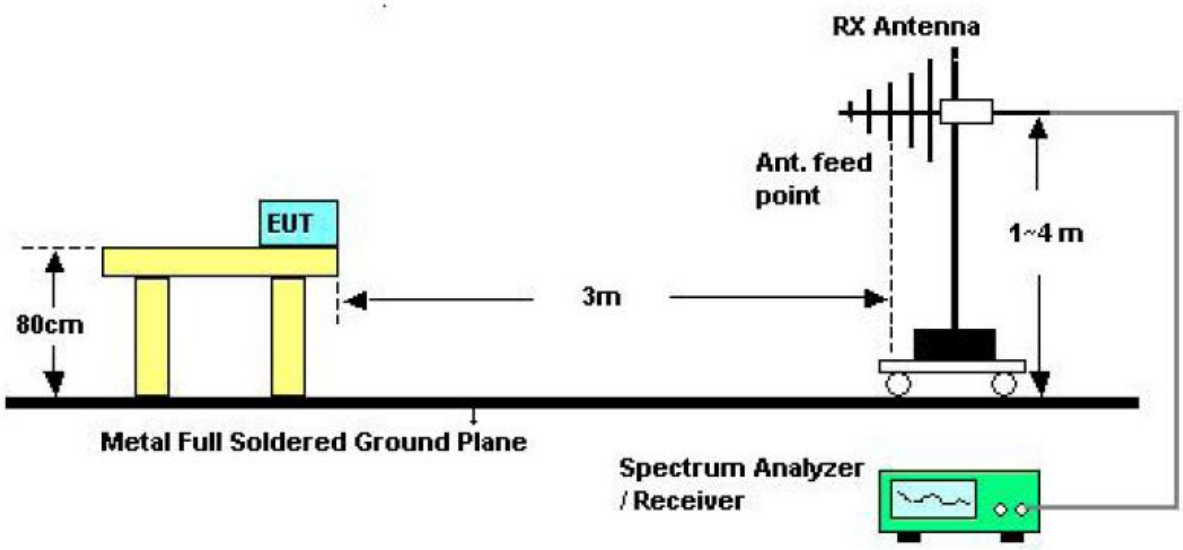
Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100 **	3
88 - 216	150 **	3
216 - 960	200 **	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

5.2 Test setup



Below 30MHZ Test setup



Above 30MHZ Test Setup

5.3 Test Procedure:

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.
8. The EUT is pre-scan from 30MHz to 10th harmonics

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

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

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

5.4 Test Results

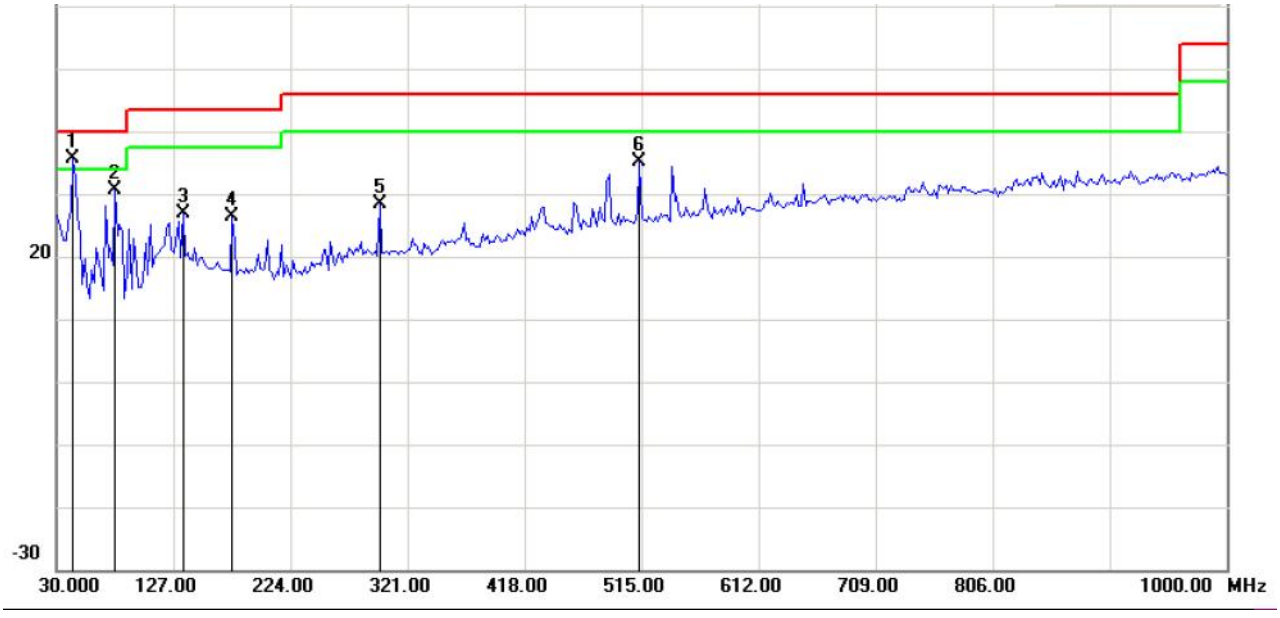
Frequency MHZ	Reading QP	Factor	Measurement data	Limit	Margin	Detector	Antenna Polarity
27.045	64.21	13.27	77.48	80	-2.52	AV	H
27.045	69.54	13.27	82.81	100	-17.19	Peak	H
30	5.81	21.8	27.61	40	-12.39	QP	H
132.8199	13.32	15.56	28.88	43.5	-14.62	QP	H
216.24	15.42	13.14	28.56	46	-17.44	QP	H
266.68	11.74	15.47	27.21	46	-18.79	QP	H
487.8399	7.91	21.74	29.65	46	-16.35	QP	H
776.8999	7.7	26.11	33.81	46	-12.19	QP	H
27.045	59	14.21	73.21	80	-6.79	AV	V
27.045	63.38	14.21	77.59	100	-22.41	Peak	V
43.58	23.2	12.51	35.71	40	-4.29	QP	V
78.5	21.44	9.47	30.91	40	-9.09	QP	V
134.76	11.43	15.46	26.89	43.5	-16.61	QP	V
175.5	12.4	13.93	26.33	43.5	-17.17	QP	V
297.72	12.04	16.3	28.34	46	-17.66	QP	V
513.06	13.56	21.56	35.12	46	-10.88	QP	V
***	***	***	***	***	***	***	***

Remark:

The test equipment RBW set 120KHZ,VBW 300KHZ
Fundamental frequency AV limit calculation:(section15.227)
limit=10000microvolts/meter=20log10000=80dBuV/m
Peak Limit=80+20=100 dBuV/m
Test distance at 3 meters from Antenna
*** means any other frequency at least have 20 dB Margin.
The new battery was used during test.

GRAPHS OF RADIATION TEST DATA

HORIZONTAL OF ANTENNA



VERTICAL OF ANTENNA

6 20dB Bandwidth Test

6.1 Test requirement

Please see the section 15.215

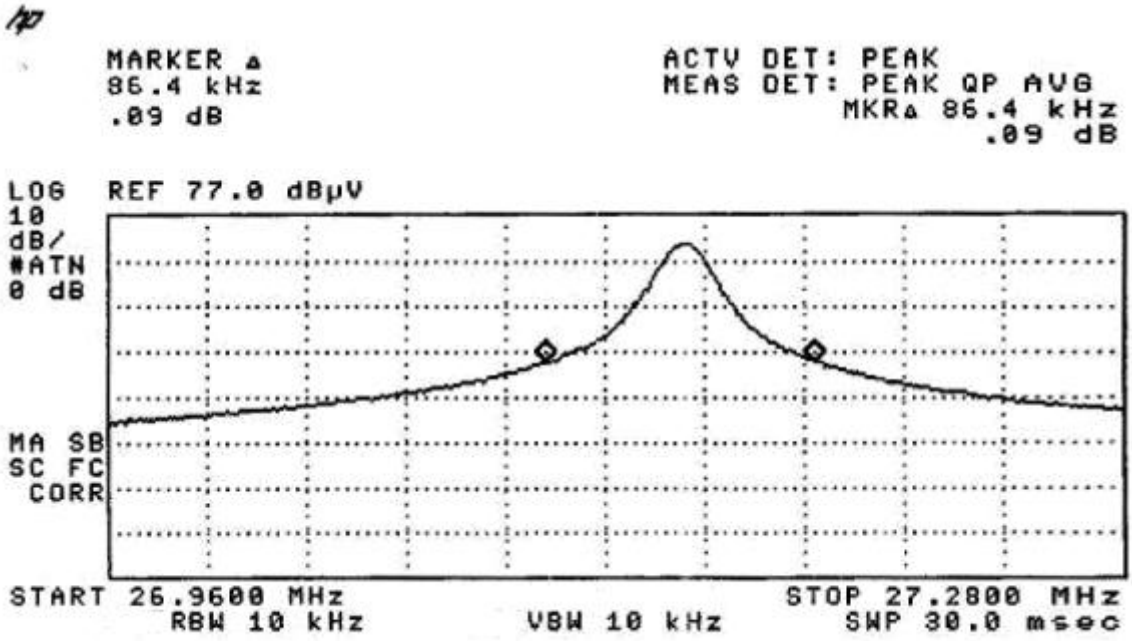
6.2 Test method

The bandwidth is measured at an amplitude level reduced 20dB from the reference level. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

6.3 Test Setup

Same as 5.2

6.4 Test result



Remark: The test equipment RBW set 10kHZ,VBW 10KHZ

7 Antenna Requirement

7.1 Standard 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 shall be considered sufficient to comply with the provisions of this Section. 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.

7.2 Result

The EUT antenna is integral Antenna.It comply with the standard requirement.

8 Photographs of Test Setup

Photographs-Radiated Emission Test Setup in Chamber

9 Photographs of EUT

Figure 1

Photo of EUT

Front View [ ]

Rear View [ ]

Top View [√]

Bottom View[ ]

Left View [ ]

Right View [ ]

Inside View [ ]

Figure 2

Photo of EUT

Front View [ ]

Rear View [ ]

Top View [ ]

Bottom View[√]

Left View [ ]

Right View [ ]

Inside View [ ]

Figure 3

Photo of EUT

Front View [ ]

Rear View [ ]

Top View [√]

Bottom View[ ]

Left View [ ]

Right View [ ]

Inside View [ ]

Figure 4

Photo of EUT

Front View [ ]

Rear View [ ]

Top View [ ]

Bottom View[√]

Left View [ ]

Right View [ ]

Inside View [ ]

Figure 5

Photo of EUT

Front View [ ]

Rear View [ ]

Top View [√]

Bottom View[ ]

Left View [ ]

Right View [ ]

Inside View [ ]

Figure 6

Photo of EUT

Front View [ ]

Rear View [ ]

Top View [ ]

Bottom View[√]

Left View [ ]

Right View [ ]

Inside View [ ]

Figure 7

Photo of EUT

Front View [ ]

Rear View [ ]

Top View [√]

Bottom View[ ]

Left View [ ]

Right View [ ]

Inside View [ ]

Figure 8

Photo of EUT

Front View [ ]

Rear View [ ]

Top View [ ]

Bottom View[√]

Left View [ ]

Right View [ ]

Inside View [ ]

Figure 9

Photo of EUT

Front View [ ]

Rear View [ ]

Top View [ ]

Bottom View[ ]

Left View [ ]

Right View [ ]

Inside View [√]

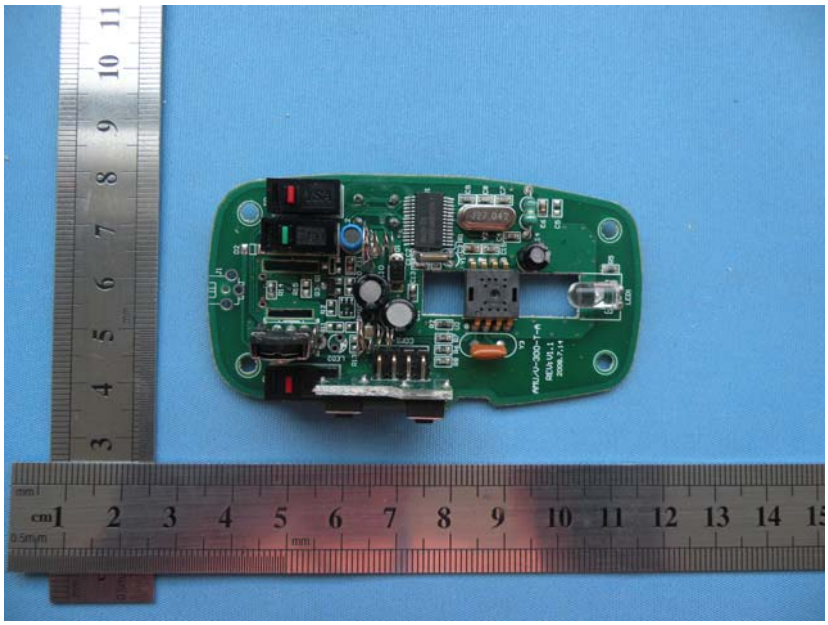


Figure 10

Photo of EUT

Front View [ ]

Rear View [ ]

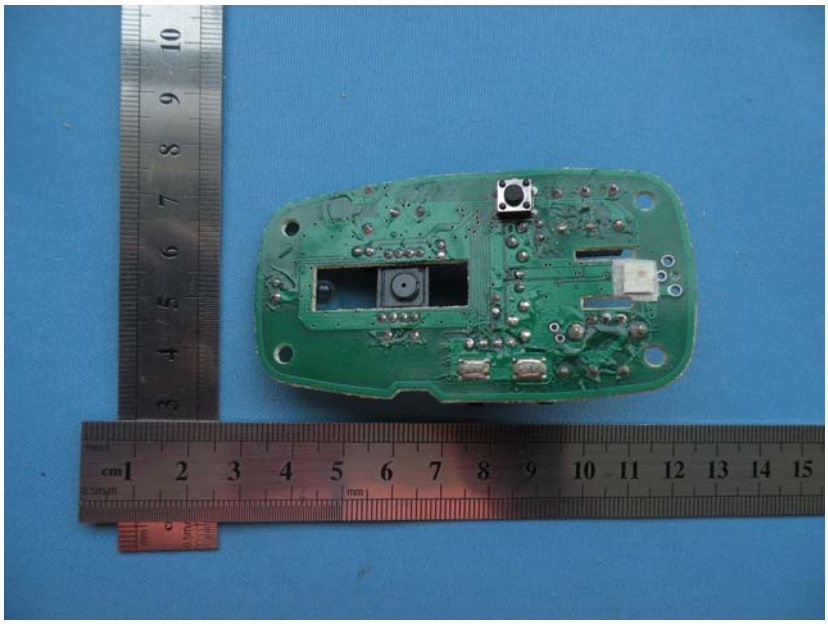
Top View [ ]

Bottom View[ ]

Left View [ ]

Right View [ ]

Inside View [√]



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