FCC CERTIFICATION On Behalf of Eastern Times Technology Co., Ltd.

Wireless Optical Mouse Model No.: DS-2200-A (MA6221+PAN301)

FCC ID: TUVDS2200A

Prepared for : Eastern Times Technology Co., Ltd.

Address : Building 5, Penghua Industry Park, Heping Rd.(W),

Longhua, Shenzhen, Guangdong, P.R. China

Prepared by : ACCURATE TECHNOLOGY CO. LTD

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Science & Industry Park, Nanshan, Shenzhen, Guangdong

P.R. China

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Report Number : ATE20062792
Date of Test : December 28, 2006
Date of Report : December 30, 2006

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Test Report Certification

Applicant : Eastern Times Technology Co., Ltd.Manufacturer : Eastern Times Technology Co., Ltd.

EUT Description : Wireless Optical Mouse

(A) MODEL NO.: DS-2200-A(MA6221+PAN301)

(B) SERIAL NO.: N/A

(C) POWER SUPPLY: 2.4V DC ("AAA" batteries 2×)

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart C Section 15.227, Section 15.107, Section 15.109: 2006

The device described above is tested by ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.227 Section 15.107, Section 15.109limits. The measurement results are contained in this test report and ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of ACCURATE TECHNOLOGY CO. LTD.

Date of Test:	December 28, 2006	
Prepared by :	sky Long	
	(Engineer)	
Reviewer:	Searle	
	(Quality Manager)	
Approved & Authorized Signer:	Martinh	
	(Manager)	

1. GENERAL INFORMATION

1.1.Description of Device (EUT)

EUT : Wireless Optical Mouse

Model Number : DS-2200-A(MA6221+PAN301)

Power Supply : 2.4V DC ("AAA" batteries $2\times$), Can use USB cable to

charge and operation.

Applicant : Eastern Times Technology Co., Ltd.

Address : Building 5, Penghua Industry Park, Heping Rd.(W),

Longhua, Shenzhen, Guangdong, P.R. China

Manufacturer : Eastern Times Technology Co., Ltd.

Address : Building 5, Penghua Industry Park, Heping Rd.(W),

Longhua, Shenzhen, Guangdong, P.R. China

Date of sample received: December 26, 2006

Date of Test: December 28, 2006

1.2.Description of Test Facility

EMC Lab : Accredited by FCC

The Certificate Registration Number is 274801

Accredited by Industry Canada

The Certificate Registration Number is IC4174

Accredited by China National Accreditation Committee

for Laboratories

The Certificate Registration Number is L0579

Name of Firm : Shenzhen Academy of Metrology& Quality Inspection

Site Location : Bldg. Metrology& Quality Inspection, Longzhu Road,

Nanshan, Shenzhen, Guangdong, P.R. China

1.3. Measurement Uncertainty

Conducted emission expanded uncertainty = 3.5dB, k=2

Radiated emission expanded uncertainty = 4.5 dB, k=2

2. MEASURING DEVICE AND TEST EQUIPMENT

Table 1: List of Test and Measurement Equipment

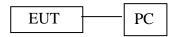
Kind of equipment	Manufacturer	Type	S/N	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	03.31.2007
EMI Test Receiver	Rohde&Schwarz	ESI26	838786/013	01.28.2007
Loop Antenna	Schwarzbeck	FMZB1516	113	01.28.2007
Bilog Antenna	Schwarzbeck	VULB9163	9163-194	03.31.2007
Bilog Antenna	Chase	CBL6112B	2591	01.28.2007
Horn Antenna	Rohde&Schwarz	HF906	100013	01.28.2007
Spectrum Analyzer	Anritsu	MS2651B	6200238856	03.31.2007
Pre-Amplifier	Agilent	8447D	2944A10619	03.31.2007
L.I.S.N.	Rohde&Schwarz	ESH3-Z5	100305	03.31.2007
L.I.S.N.	Rohde&Schwarz	ESH3-Z5	100310	03.31.2007

3. CONDUCTED EMISSION FOR FCC PART 15 SECTION

15.107(A)

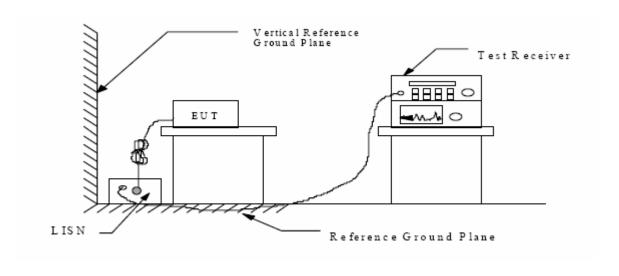
3.1.Block Diagram of Test Setup

3.1.1.Block diagram of connection between the EUT and simulators



(EUT: Wireless Optical Mouse)

3.1.2. Shielding Room Test Setup Diagram



(EUT: Wireless Optical Mouse)

3.2. The Emission Limit For Section 15.107(a)

3.2.1 Radiation Emission Measurement Limits According to Section 15.107(a)

Frequency	Conducted L	Limit (dBμV)
(MHz)	Quasi-peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 - 5	56	46
5 - 30	60	50

^{*} Decreases with the logarithm of the frequency.

3.3.EUT Configuration on Measurement

The following equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

3.3.1. Wireless Optical Mouse (EUT)

Model Number : DS-2200-A(MA6221+PAN301)

Serial Number : N/A

Manufacturer : Eastern Times Technology Co., Ltd.

3.4. Operating Condition of EUT

3.4.1. Setup the EUT and simulator as shown as Section 3.1.

3.4.2. Turn on the power of all equipment.

3.4.3. Let the EUT work in wired modes (use USB cable connect to PC) measure it.

3.5.Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 500hm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4: 2003 on Conducted Emission Measurement.

The bandwidth of test receiver (R & S ESCS30) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

All the scanning waveforms are attached in Appendix I.

3.6. Power Line Conducted Emission Measurement Results

PASS.

The frequency range from 150kHz to 30MHz is checked.

Date of Test: December 28, 2006

EUT: Wireless Optical Mouse

Temperature: 25°C

Humidity: 50%

DC 5V power by PC usb port

Model No.: DS-2200-A(MA6221+PAN301) Power Supply: PC power: AC120V/60Hz

Test Mode: Wired Connect to PC Test Engineer: Andy

Test Line	Frequency MHz	Emission L QP	evel(dBµV) AV	Limits(QP	(dBµV) AV	Margin QP	(dBµV) AV
Va	0.185	39.5	37.6	64.3	54.3	24.8	16.7
Va	0.370	30.6	30.3	58.5	48.5	27.9	18.2
Va	18.270	31.0	29.6	60.0	50.0	29.0	20.4
Vb	0.185	41.7	40.5	64.3	54.3	22.6	13.8
Vb	0.615	32.4	32.3	56.0	46.0	23.6	13.7
Vb	17.720	29.5	27.1	60.0	50.0	30.5	22.9

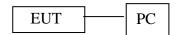
The spectral diagrams in appendix I display the measurement of un-weighted peak values.

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Reviewer.	Jew L	

4. RADIATED EMISSION FOR FCC PART 15 SECTION 15.109(A)

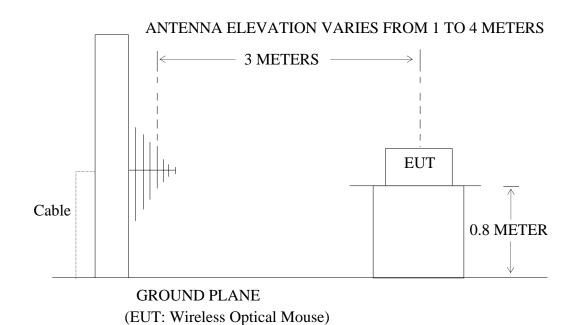
4.1.Block Diagram of Test Setup

4.1.1.Block diagram of connection between the EUT and simulators



(EUT: Wireless Optical Mouse)

4.1.2. Anechoic Chamber Test Setup Diagram



4.2. The Field Strength of Radiation Emission Measurement Limits

4.2.1. Radiation Emission Measurement Limits According to Section 15.109(a)

	Limit,			
Frequency (MHz)	Field Strength of Quasi-peak Value (microvolts/m)	Field Strength of Quasi-peak Value (dBµV/m)	The final measurement in band 9-90kHz, 110-490kHz and	
30 - 88	100	40	above 1000MHz is performed with	
88 - 216	150	43.5	Average detector. Except those frequency bands	
216 - 960	200	46	mention above, the	

4.3. Configuration of EUT on Measurement

The following equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

4.3.1. Wireless Optical Mouse (EUT)

Model Number : DS-2200-A(MA6221+PAN301)

Serial Number : N/A

Manufacturer : Eastern Times Technology Co., Ltd.

4.4. Operating Condition of EUT

4.4.1. Setup the EUT and simulator as shown as Section 3.1.

4.4.2. Turn on the power of all equipment.

4.4.3. Let the EUT work in Wired modes (use USB cable connect to PC) measure it.

4.5.Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to FCC Part 15 Subpart C on radiated emission measurement.

The bandwidth of test receiver (R&S ESCS30) is set at 120KHz in 30-1000MHz. The frequency range from 30MHz to 1000MHz is checked.

4.6. The Field Strength of Radiation Emission Measurement Results **PASS.**

The frequency range 30MHz to 1000MHz is investigated.

Date of Test: December 28, 2006

EUT: Wireless Optical Mouse

Model No.: DS-2200-A(MA6221+PAN301)

Temperature: 23°C

Humidity: 51%

5V DC power by PC usb port

Power Supply: PC power: AC120V/60Hz

Test Mode: Wired connect to PC Test Engineer: Andy

Polarization	Frequency (MHz)	Reading(dBμV/m) QP	Factor Corr.(dB)	Result(dBµV/m) QP	Limits(dBµV/m) QP	Margin(dBμV/m) QP
Horizontal	450.010	22.1	16.0	38.1	46	7.9
Horizontal	476.200	21.9	16.5	38.4	46	7.6
Horizontal	657.590	19.8	19.3	39.1	46	6.9
Vertical	42.610	14.6	15.4	30.0	40	10.0
Vertical	371.440	19.9	14.4	34.3	46	11.7
Vertical	476.200	19.4	17.1	36.5	46	9.5
Vertical	701.240	14.1	21.2	35.3	46	10.7

The spectral diagrams in appendix 1 display the measurement of un-weighted peak values.

The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Amplifier Gain

Reviewer:	Searle)	
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5. RADIATED EMISSION FOR FCC PART 15 SECTION 15.227(B)

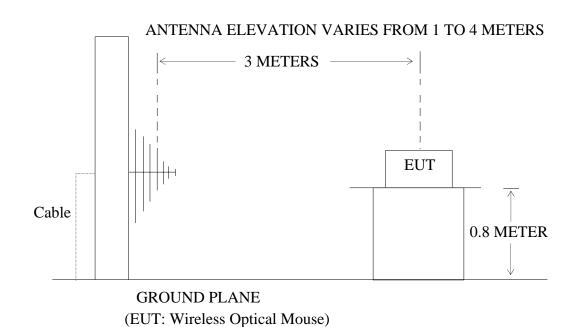
5.1.Block Diagram of Test Setup

5.1.1.Block diagram of connection between the EUT and simulators

EUT

(EUT: Wireless Optical Mouse)

5.1.2. Anechoic Chamber Test Setup Diagram



5.2. The Field Strength of Radiation Emission Measurement Limits

5.2.1. The field strength of any emissions which appear outside of this band shall not exceed the general radiated emission limits in section 15.209

Radiation Emission Measurement Limits According to Section 15.209(a)

	Limit,			
Frequency (MHz)	Field Strength of Quasi-peak Value (microvolts/m)	Field Strength of Quasi-peak Value (dBµV/m)	The final measurement in band 9-90kHz, 110-490kHz and	
30 - 88	100	40	above 1000MHz is performed with	
88 - 216	150	43.5	Average detector. Except those	

216 - 960	200	46	frequency bands mention above, the
Above 960	500	54	final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.

5.3. Configuration of EUT on Measurement

The following equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

5.3.1. Wireless Optical Mouse (EUT)

Model Number : DS-2200-A(MA6221+PAN301)

Serial Number : N/A

Manufacturer : Eastern Times Technology Co., Ltd.

5.4. Operating Condition of EUT

5.4.1. Setup the EUT and simulator as shown as Section 3.1.

5.4.2. Turn on the power of all equipment.

5.4.3. Let the EUT work in TX modes(on) measure it.

5.5.Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to FCC Part 15 Subpart C on radiated emission measurement.

The bandwidth of test receiver (R&S ESCS30) is set at 120KHz in 30-1000MHz. The frequency range from 30MHz to 1000MHz is checked.

The final measurement in band 9-90kHz, 110-490kHz and above 1000MHz is performed with Average detector. Except those frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.

5.6. The Field Strength of Radiation Emission Measurement Results **PASS.**

The frequency range 30MHz to 1000MHz is investigated.

Date of Test:December 28, 2006Temperature:23°CEUT:Wireless Optical MouseHumidity:51%Model No.:DS-2200-A(MA6221+PAN301)Power Supply:2.4V DC ("AAA" battery 2×)Test Mode:TXTest Engineer:Andy

Polarization	Frequency (MHz)	Reading(dBμV/m) QP	Factor Corr.(dB)	Result(dBμV/m) QP	Limits(dBµV/m) QP	Margin(dBμV/m) QP
Horizontal	385.020	22.7	14.6	37.3	46	8.7
Horizontal	411.210	21.1	15.2	36.3	46	9.7
Horizontal	626.550	18.8	18.9	37.7	46	8.3
Horizontal	950.530	15.2	22.6	37.8	46	8.2
Vertical	384.050	14.1	14.7	28.8	46	17.2
Vertical	410.240	12.7	15.5	28.2	46	17.8
Vertical	653.710	12.6	20.5	33.1	46	12.9

The spectral diagrams in appendix 1 display the measurement of un-weighted peak values.

1. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Amplifier Gain

Reviewer:	Sean	2

6. FUNDAMENTAL RADIATED EMISSION FOR FCC PART 15 SECTION 15.227(A)

6.1.Block Diagram of Test Setup

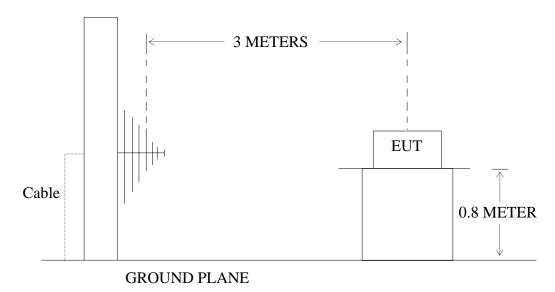
6.1.1.Block diagram of connection between the EUT and simulators

EUT

(EUT: Wireless Optical Mouse)

6.1.2. Anechoic Chamber Test Setup Diagram

ANTENNA ELEVATION VARIES FROM 1 TO 4 METERS



(EUT: Wireless Optical Mouse)

6.2. The Emission Limit For Section 15.227(a)

6.2.1 The field strength of any emission within this band shall not exceed 10,000microvolts/meter at 3 meters. The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in Section 15.35 for limiting peak emission apply.

6.3.EUT Configuration on Measurement

The following equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

6.3.1. Wireless Optical Mouse (EUT)

Model Number : DS-2200-A(MA6221+PAN301)

Serial Number : N/A

Manufacturer : Eastern Times Technology Co., Ltd.

6.4. Operating Condition of EUT

6.4.1. Setup the EUT and simulator as shown as Section 4.1.

6.4.2.Turn on the power of all equipment.

6.4.3.Let the EUT work in TX mode (On) measure it.

6.5. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. calibrated Loop antenna is used as receiving antenna. In order to find the maximum emission levels, all of the interface cables must be manipulated according to FCC Part 15 on radiated emission measurement.

The bandwidth of test receiver (R&S ESCS30) is set at 9KHz in 9kHz-30MHz

6.6. The Emission Measurement Result

PASS.

Date of Test:December 28, 2006Temperature:23°CEUT:Wireless Optical MouseHumidity:51%Model No.:DS-2200-A(MA6221+PAN301)Power Supply:2.4V DC ("AAA" battery 2×)Test Mode:TXTest Engineer:Andy

Fundamental Radiated Emissions

Test conditions		Fundamental Frequency		
		27.045MHz		
		Unit	$(dB\mu V/m)/(\mu V/m)$	$(dB\mu V/m)/(\mu V/m)$
$T_{\text{nom}}(23^{\circ}\text{C})$			PEAK	AV
			42.9/140	40.6/107
	limit		100/100,000	80/10,000
NT / N.		C 1 '.1 11.1	. 1 .1 .1	1 1

Note: Measurement was performed with modulated signal with average detector and peak detector.

The spectral diagrams in appendix 1.

Reviewer:	Sean	
110 / 10 / / 01 /		

7. BAND EDGES

7.1.The Requirement

7.1.1. The wanted emission within the band 26.96-27.28MHz.

7.2.EUT Configuration on Measurement

The following equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

7.2.1. Wireless Optical Mouse (EUT)

Model Number : DS-2200-A(MA6221+PAN301)

Serial Number : N/A

Manufacturer : Eastern Times Technology Co., Ltd.

7.3. Operating Condition of EUT

- 7.3.1. Setup the EUT and simulator as shown as Section 4.1.
- 7.3.2. Turn on the power of all equipment.
- 7.3.3.Let the EUT work in TX mode (On) measure it.

7.4.Test Procedure

The transmitter output was fed into the spectrum analyzer and photo was taken. The vertical scale is set to 10dB per division; the horizontal scale is set to 32kHz per division. Star frequency are 26.96MHz, stop frequency are 27.28MHz.

RBW are 3kHz, VBW are 3kHz, Sweep time are 200ms.

7.5. The Measurement Result

The EUT does meet the FCC requirement.

The spectral diagrams in appendix 1.

APPENDIX I (Test Curves)

CONDUCTION EMISSION STANDARD FCC PART15B 28, Dec 06 10:07

 EUT:
 Wireless Optical Mouse

 Manuf:
 Eastern Times

 Op Cond:
 CONNECT TO PC

 Operator:
 Andy.tan

 Test Spec:
 Va 120V/60Hz

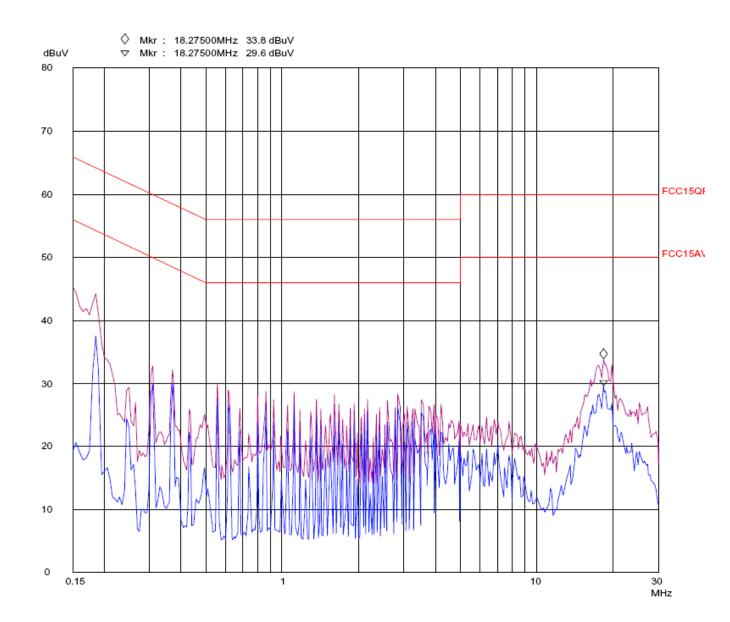
 Comment:
 Tem25°C Humi50%

Sample NO.:064514 m/n:DS-2200-A(MA6221+PAN301)

Scan Settings (3 Ranges)

|------ Frequencies ------| |------ Receiver Settings ------|
Start Stop Step IF BW Detector M-Time Atten Preamp
150k 2M 5k 9k PK+AV 10ms AUTO LN OFF
2M 10M 10k 9k PK+AV 1ms AUTO LN OFF
10M 30M 25k 9k PK+AV 1ms AUTO LN OFF

Final Measurement: x QP / + AV Transducer No. Start Stop Name
Meas Time: 1 s 1 9k 30M confac



CONDUCTION EMISSION STANDARD FCC PART15B 28, Dec 06 10:12

 EUT:
 Wireless Optical Mouse

 Manuf:
 Eastern Times

 Op Cond:
 CONNECT TO PC

 Operator:
 Andy.tan

 Test Spec:
 Vb 120V/60Hz

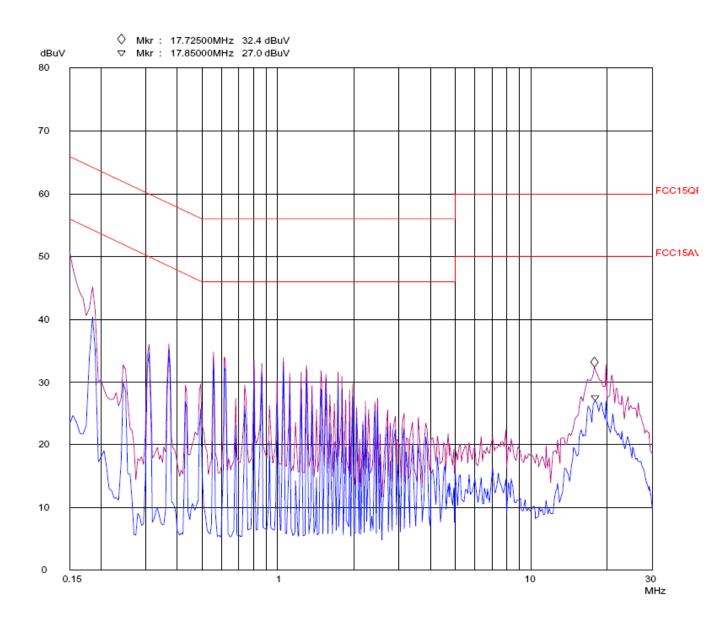
 Comment:
 Tem25°C Humi50%

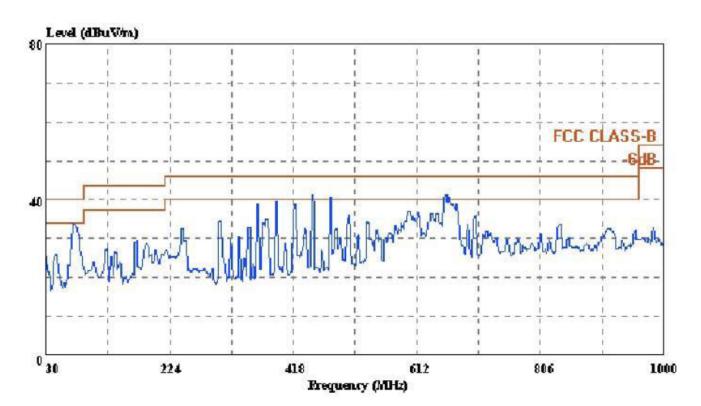
Sample NO.:064514 m/n:DS-2200-A(MA6221+PAN301)

Scan Settings (3 Ranges)

----||------ Receiver Settings ------| |----- Frequencies -----Start Stop Step IF BW Detector M-Time Atten Preamp 9k PK+AV 10ms AUTO LN OFF 9k PK+AV 1ms AUTO LN OFF 150k 5k 2M 10M 10k 9k PK+AV 1ms AUTO LN OFF 10M 30M 25k

Final Measurement: x QP / + AV Transducer No. Start Stop Name
Meas Time: 1 s 1 9k 30M confac





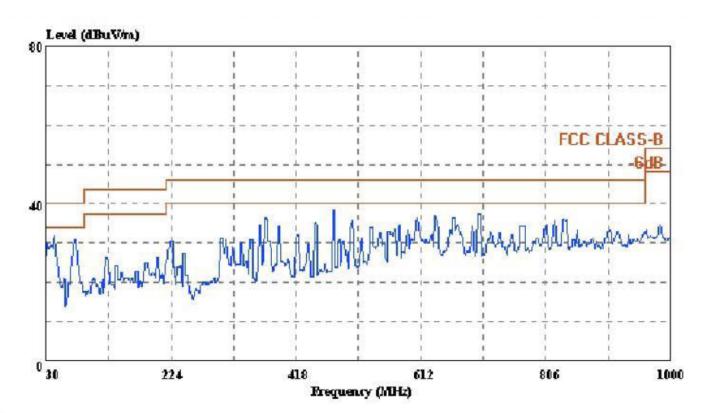
Condition: FCC CLASS-B 3m ATC VULB9163(NEW) HORIZONTAL

eut : Wireless Optical Mouse

power : USB 5.0V

memo : CONNECT TO PC manuf : Eastern Times

sample no.: 064514

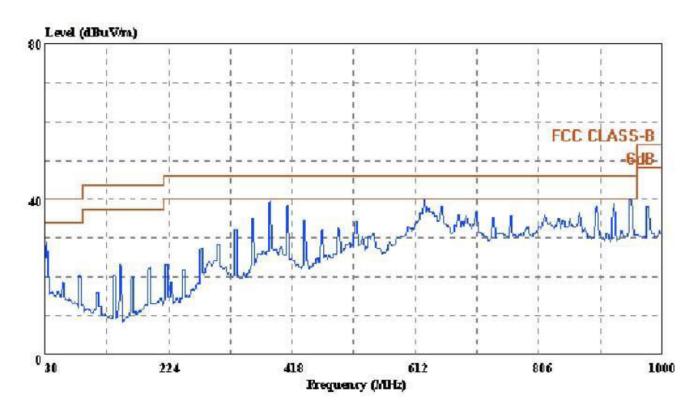


Condition: FCC CLASS-B 3m ATC VULB9163(NEW) VERTICAL

eut : Wireless Optical Mouse

power : USB 5.0V memo : CONNECT TO PC manuf : Eastern Times

sample no.: 064514



Condition: FCC CLASS-B 3m ATC VULB9163 (NEW) HORIZONTAL

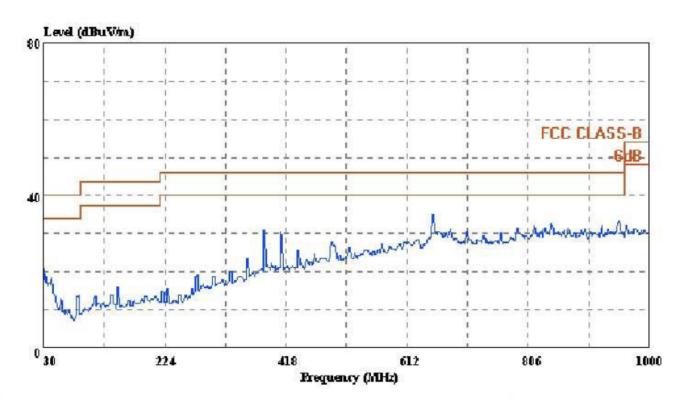
eut : Wireless Optical Mouse

power : DC 3.0V

memo : TX

manuf : Eastern Times

sample no.: 064514



Condition: FCC CLASS-B 3m ATC VULB9163 (NEW) VERTICAL

eut : Wireless Optical Mouse

power : DC 3.0V memo : TX

manuf : Eastern Times

sample no.: 064514

