FCC PART 15B

MEASUREMENT AND TEST REPORT

FOR

ITA Electronic (Shen Zhen) Co., Ltd.

5th Floor, Bolck C1, Yintian Industrial Zone, Yintian, Xixiang Town, Baoan District, Shenzhen, Guangdong, China

FCC ID: V5VSTM806

Report Concerns: Original Report	**Equipment Type:** Optical Mouse

Model: ST-M806

Report No.: STR08038040E-3

Test/Witness Engineer: Susan Su

Test Date: 2008-03-12 to 2008-03-14

Prepared By:

Shenzhen SEM.Test Compliance Service Co., Ltd.
3/F, Jinbao Commerce Building, Xin'an Fanshen Road,
Bao'an District, Shenzhen, P.R.C. (518101)

Approved & Authorized By: Jandy So

Jandy So / PSQ Manager

Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by SEM.Test Compliance Service Co., Ltd.

TABLE OF CONTENTS

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	ITA Electronic (Shen Zhen) Co., Ltd.
Address of applicant:	5th Floor, Block C1, Yintian Industrial Zone, Yintian, Xixiang Town, Baoan District, Shenzhen, Guangdong, China
Manufacturer:	ITA Electronic (Shen Zhen) Co., Ltd.
Address of manufacturer:	5th Floor, Block C1, Yintian Industrial Zone, Yintian, Xixiang Town, Baoan District, Shenzhen, Guangdong, China

General Description of E.U.T

Items	Description
EUT Description:	Optical Mouse
Trade Name:	/
Model No.:	ST-M806
Adjusted Models:	ST-M801 ST-M802 ST-M805 ST-M701 ST-M740
Rated Voltage:	DC 5V USB
Rated Current:	100 mA
Packaging Size:	7.8X3.7X2.3 cm
For more information refer to the circuit diagram form and the user's manual.	

The test data is gathered from a production sample, provided by the manufacturer. The other models listed in the report have different appearance only of ST-M806 without circuit and electronic construction changed, declared by the manufacturer.

1.2 Test Standards

The following report is prepared on behalf of ITA Electronic (Shen Zhen) Co., Ltd. in accordance with Part 2, Subpart J, and Part 15, Subparts A and B of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 15, Subpart B, and section 15.205, 15.107, and 15.109 rules.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which results in lowering the emission/immunity, should be checked to ensure compliance has been maintained.

1.3 Related Submittal(s)/Grant(s)

No Related Submittal(s).

1.4 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

The equipment under test (EUT) was configured to measure its highest possible susceptibility against the tested phenomena. The test modes were adapted accordingly in reference to the Operating Instructions.

1.5 Test Facility

The 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 files which the Registration No.: **759397**. Measurement required was performed at laboratory of Solid Industrial Co., Ltd. at 333 Bulong Highway Buji Longgang, Shenzhen, Guangdong, China.

1.6 EUT Exercise Software

The EUT exercise program used during radiated and conducted testing was designed to exercise the system components. The test software, provided by the customer, is started while the EUT is on to simulate the normal work.

1.7 Accessories Equipment List and Details

Manufacturer	Description	Model	Serial Number
IBM	Notebook	R51e	LV14893
TP-LINK	Modem	TM-EC5658V	KT99CTQC-508
Lenovo	Printer	3110	OD65133711480

1.8 EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
USB Cable	0.67	Shielded	Without Core

2. SUMMARY OF TEST RESULTS

Description of Test	Result
§15.107 (a) Conducted Emission	Compliant
§15.109(a) Radiated Emission	Compliant

3. §15.107 (a)- CONDUCTED EMISSION

3.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is ± 1.5 dB.

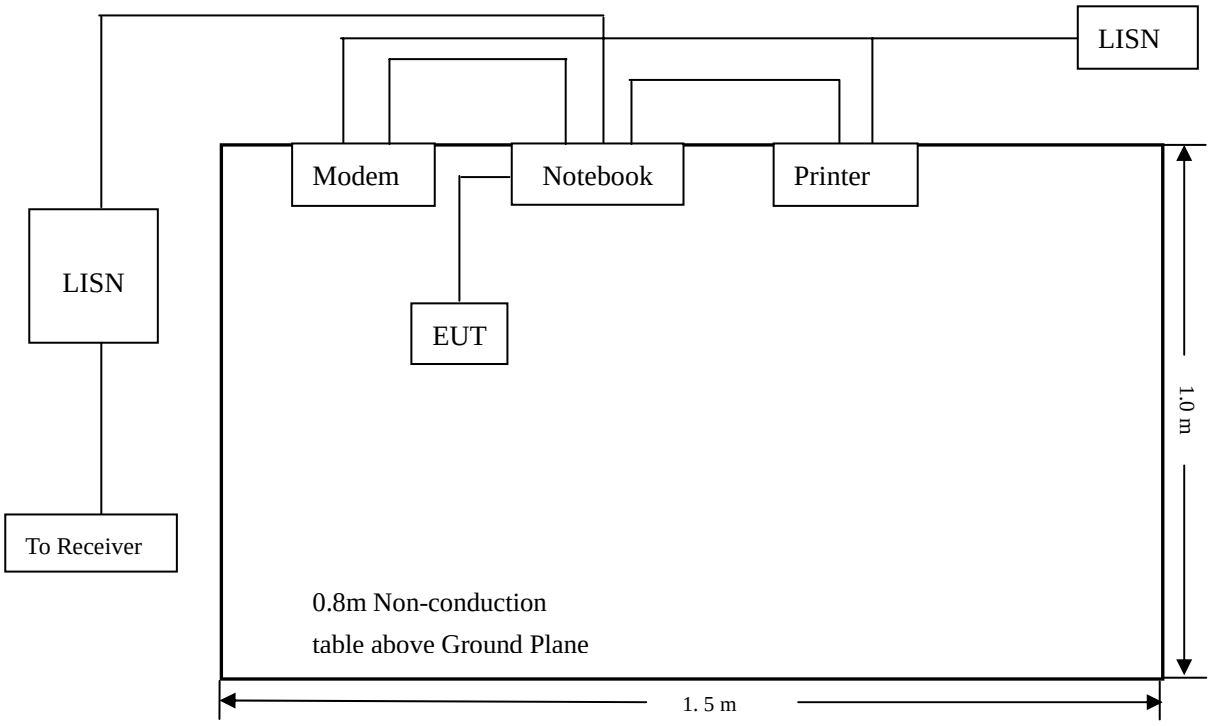
3.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESCS30	830245/009	2007-06-30	2008-06-29
AMN	Rohde & Schwarz	ESH2-Z5	100002	2007-06-30	2008-06-29
Limiter	Rohde & Schwarz	ESH3-Z2	357.8810.52	2007-06-30	2008-06-29
AMN	Rohde & Schwarz	ESH3-Z5	828304/014	2007-06-30	2008-06-29
Spectrum Analyzer	Aglient	E4402B-ESA	US41192821	2007-06-30	2008-06-29

3.3 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.107 Limit.
The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.
The spacing between the peripherals was 10 cm.

3.4 Basic Test Setup Block Diagram



3.5 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	52%
ATM Pressure:	1012 mbar

3.6 Test Receiver Setup

During the conducted emission test, the test receiver was set with the following configurations:

Start Frequency ..... 150 kHz
Stop Frequency..... 30 MHz
Sweep Speed ..... Auto
IF Bandwidth..... 10 kHz
Quasi-Peak Adapter Bandwidth ..... 9 kHz
Quasi-Peak Adapter Mode ..... Normal

3.7 Summary of Test Results/Plots

According to the data in section 3.8, the EUT complied with the FCC 15B Conducted margin for a Class B device, with the *worst* margin reading of:

-8.9 dBμV at 0.15 MHz in the **Line** mode**, 0.15-30MHz**

3.8 Conducted Emissions Test Data

LINE CONDUCTED EMISSIONS				FCC 15 CLASS B	
Frequency	Amplitude	Detector	Phase	Limit	Margin
MHz	dBμV	QP/Ave/Pk	Line/Neutral	dBμV	dB
0.15	47.11	PK	Line	56.00	-8.9
0.19	39.02	PK	Line	54.04	-15.0
0.17	38.01	PK	Neutral	54.96	-17.0
0.16	38.23	PK	Neutral	55.46	-17.2
0.21	35.19	PK	Neutral	53.21	-18.0
0.23	32.85	PK	Line	52.45	-19.6

Since the peak reading is below the AV limit, the AV reading can be omitted.

Plot of Conducted Emissions Test Data

Conducted Disturbance

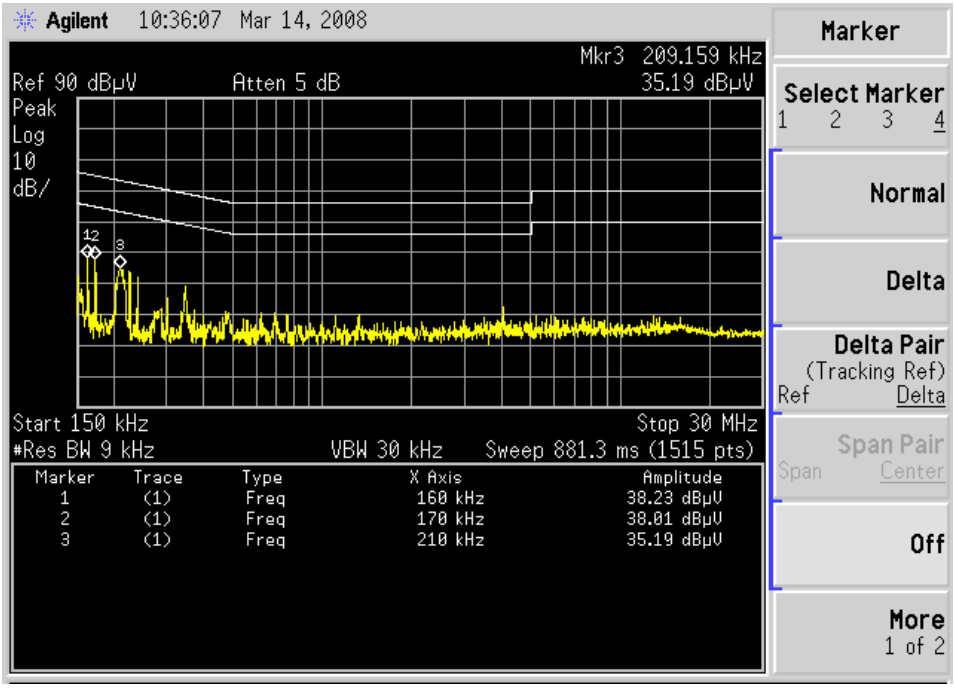
EUT: Optical Mouse

M/N: ST-M806

Operating Condition: Running

Test Specification: N

Comment: AC120V/60Hz; USB 5V Connect to PC



Plot of Conducted Emissions Test Data

Conducted Disturbance

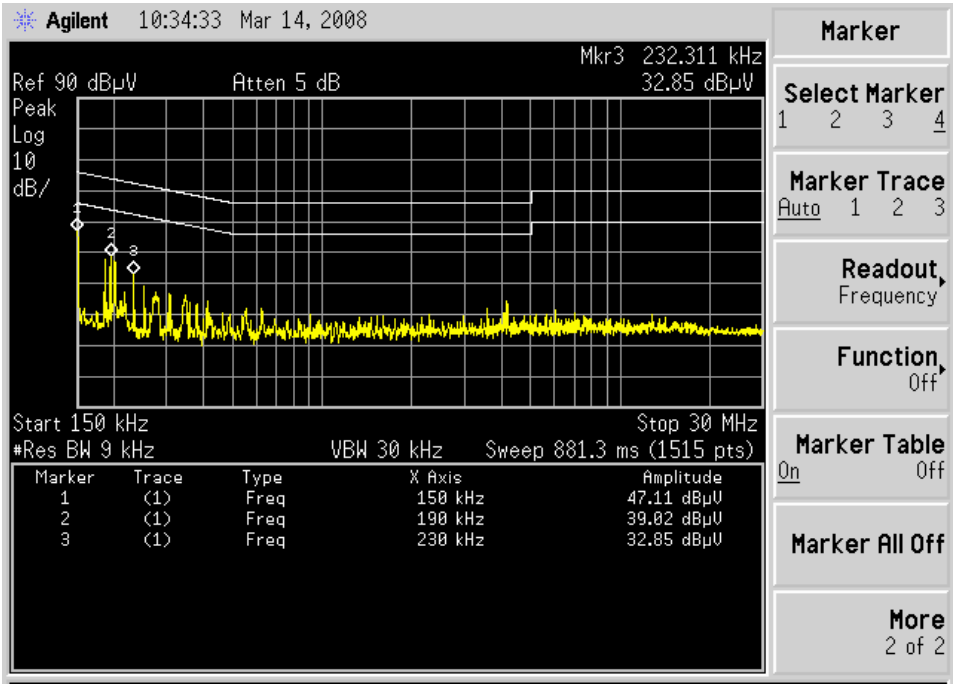
EUT: Optical Mouse

M/N: ST-M806

Operating Condition: Running

Test Specification: L

Comment: AC120V/60Hz; USB 5V Connect to PC



4. §15.205& §15.109(a)- RADIATED EMISSION

4.1 Measurement Uncertainty

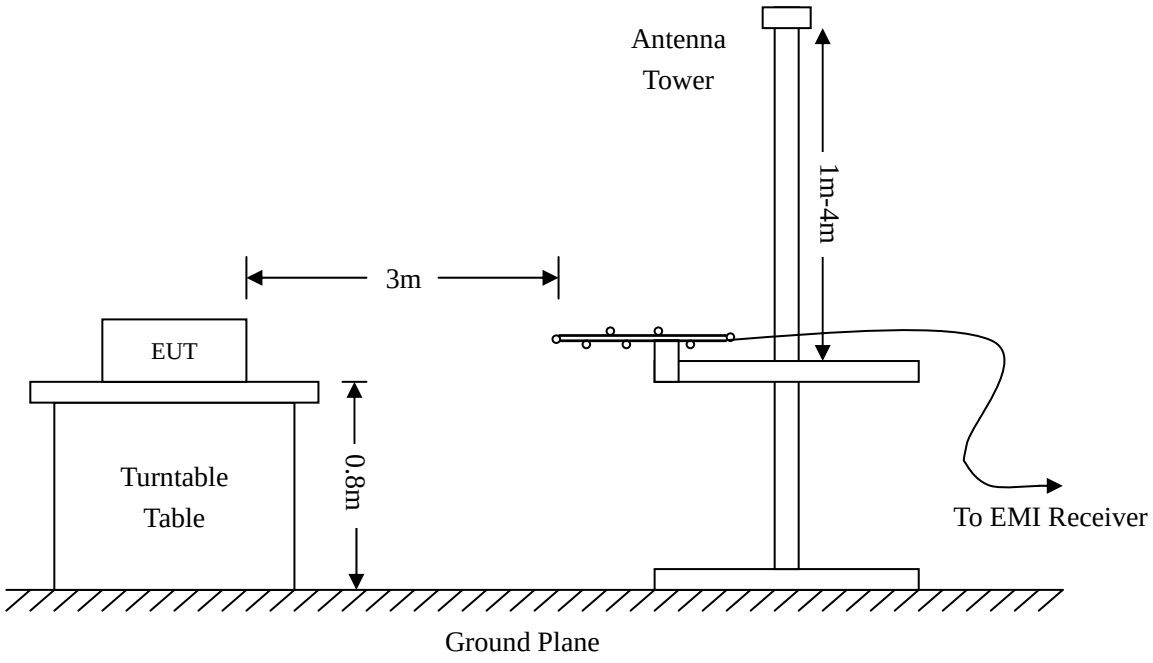
Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement is ± 3.0 dB.

4.2 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESCS30	830245/009	2007-06-30	2008-06-29
Multi_Device Controller	ETS	2090	57230	2007-06-30	2008-06-29
Receiver Antenna	ETS	2175	57337	2007-06-30	2008-06-29
50 ohm Coaxial Cable	ETS	SUCOFLEX 104	25498514	2007-06-30	2008-06-29

4.3 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.205 and FCC Part 15.109 Limit.
The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.
The spacing between the peripherals was 10 cm.



4.4 Test Receiver Setup

During the conducted emission test, the test receiver was set with the following configurations:

Start Frequency ..... 30 MHz
Stop Frequency..... 1000 MHz
Sweep Speed ..... Auto
IF Bandwidth..... 10 kHz
Quasi-Peak Adapter Bandwidth ..... 120 kHz
Quasi-Peak Adapter Mode ..... Normal

4.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

Corr. Ampl. = Indicated Reading – Corr. Factor

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dBμV means the emission is 6dBμV below the maximum limit for Class B. The equation for margin calculation is as follows:

Margin = Corr. Ampl. – FCC Part 15B Limit

4.6 Environmental Conditions

Temperature:	18 °C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

4.7 Summary of Test Results/Plots

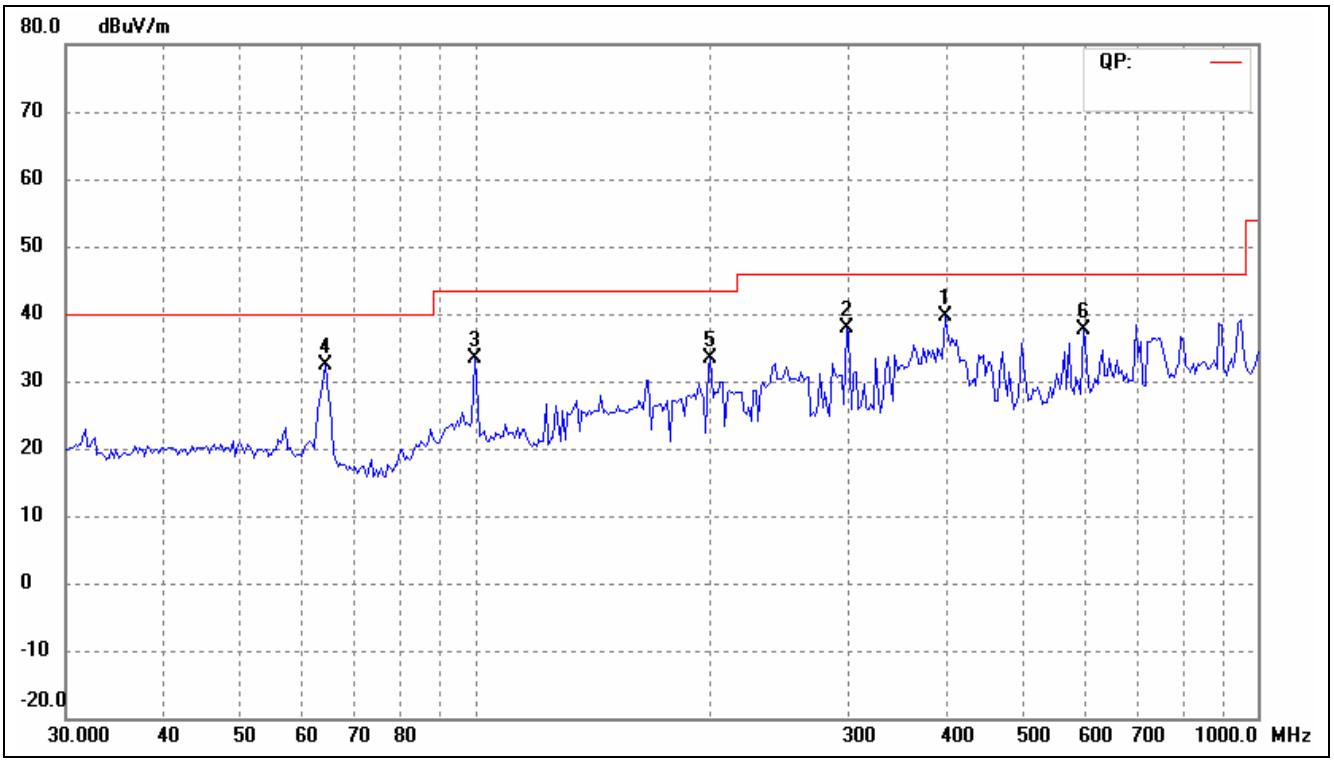
According to the data, the EUT complied with the FCC 15B Class B standards, and had the worst margin of:

-3.53 dBμV at **698.8035 MHz** in the **Vertical** polarization, **30 MHz to 1 GHz, 3Meters**

Plot of Radiation Emissions Test Data

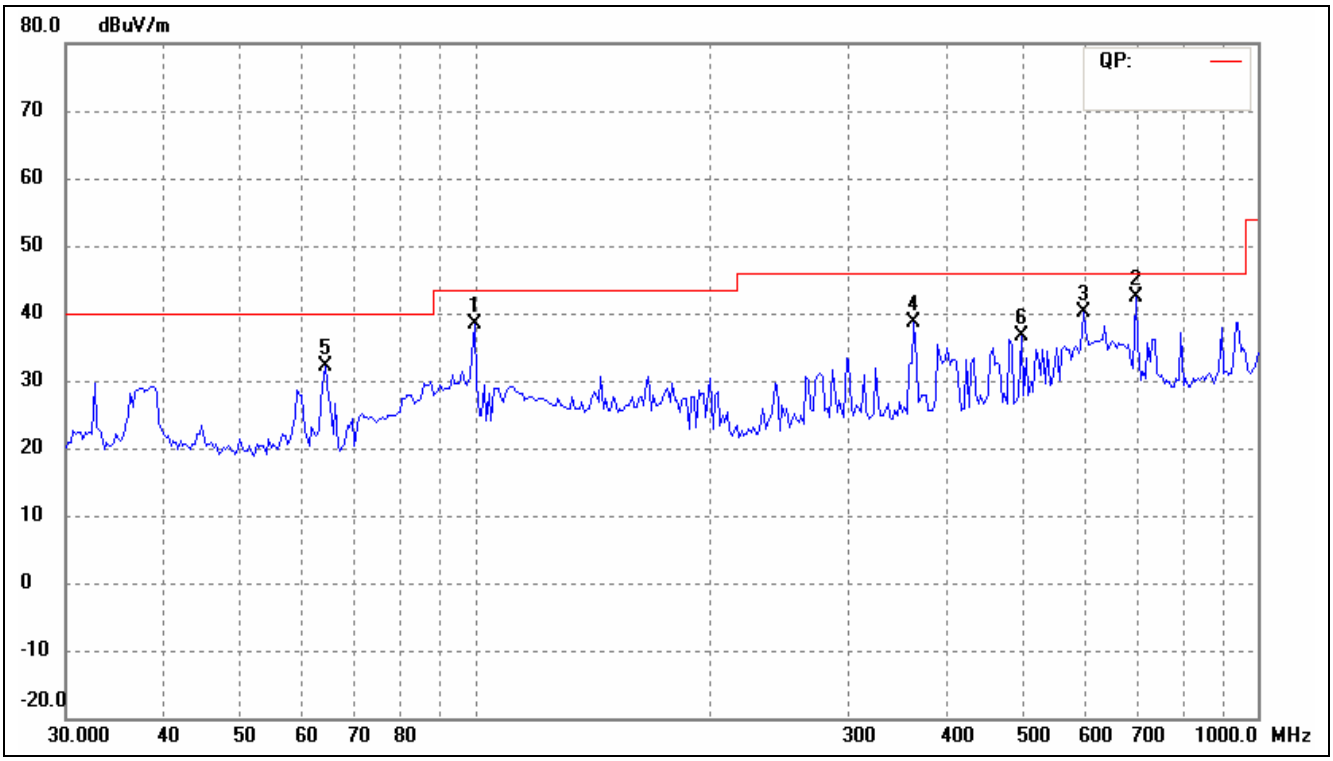
Radiated Disturbance
EUT: Optical Mouse
M/N: ST-M806
Operating Condition: Running
Test Specification: Horizontal & Vertical
Comment: AC 120V/60Hz; USB 5V

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(m)	
1	398.2962	28.25	11.40	39.65	46.00	-6.35	0	1.0	QP
2	298.5932	28.06	9.75	37.81	46.00	-8.19	30	1.5	QP
3	99.7676	24.88	8.41	33.29	43.50	-10.21	30	1.0	PK
4	64.5319	26.60	5.77	32.37	40.00	-7.63	270	1.0	QP
5	200.0432	26.75	6.58	33.33	43.50	-10.17	60	1.0	PK
6	598.7067	23.49	14.15	37.64	46.00	-8.36	360	1.2	QP

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(m)	
1	99.7676	30.07	8.41	38.48	43.50	-5.02	60	1.2	QP
2	698.8035	27.97	14.50	42.47	46.00	-3.53	45	1.0	QP
3	598.7067	25.99	14.15	40.14	46.00	-5.86	60	1.0	QP
4	363.5231	27.62	10.95	38.57	46.00	-7.43	27	1.5	QP
5	64.5319	26.45	5.77	32.22	40.00	-7.78	0	1.0	QP
6	498.7303	24.39	12.35	36.74	46.00	-9.26	180	1.0	QP

EXHIBIT 1- PRODUCT LABELING

Proposed FCC Label Format

FCC ID: V5VSTM806

Specifications: Text is Black in color and is justified. Labels are printed in indelible ink on permanent adhesive backing or silk-screened onto the EUT or shall be affixed at a conspicuous location on the EUT, also it need to mark in the user manual if the EUT is small exactly.

Proposed Label Location on EUT

FCC Label Location

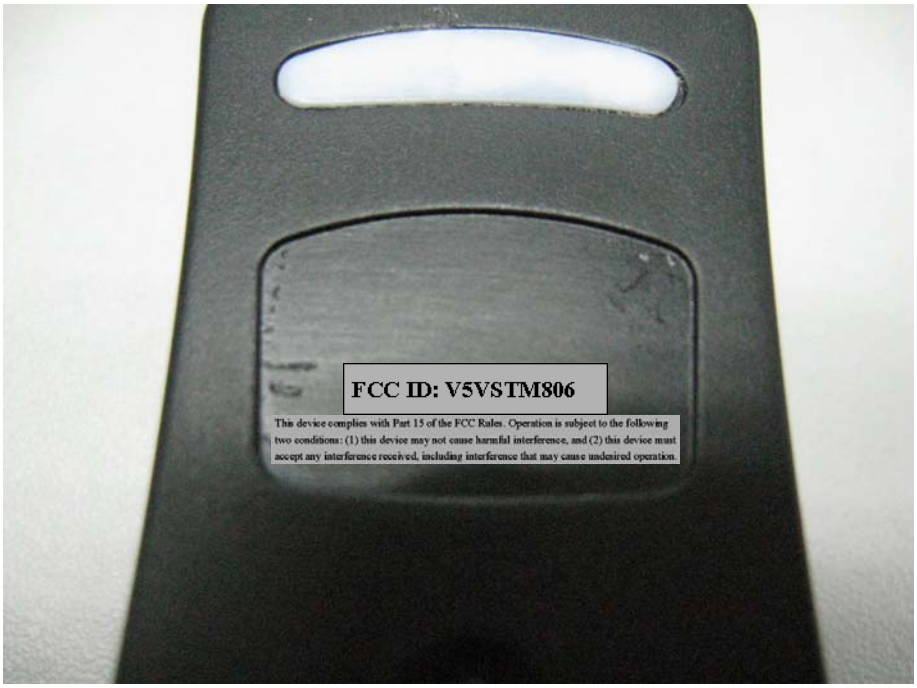
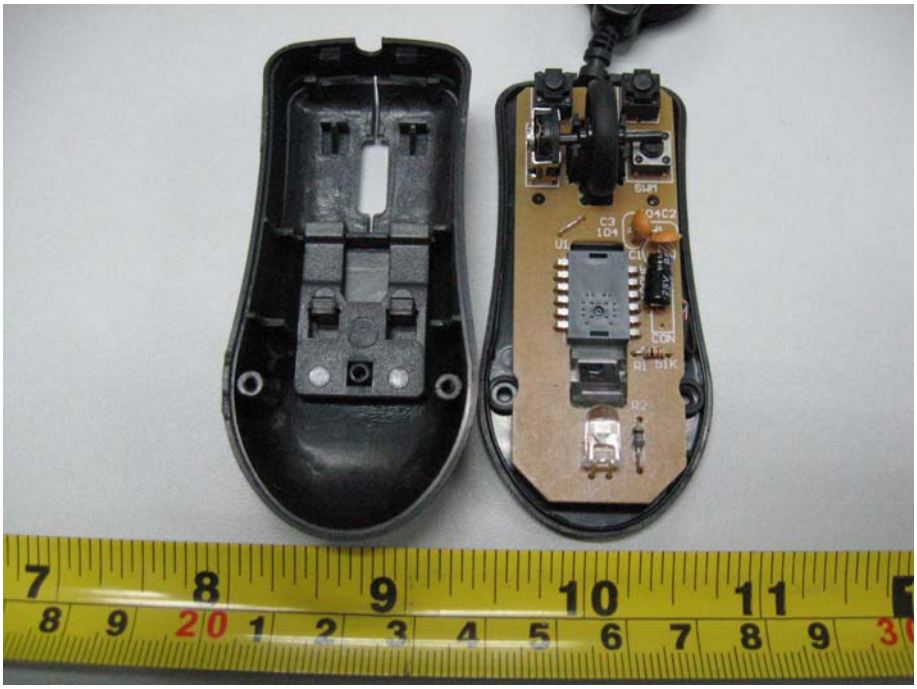


EXHIBIT 2 - EUT PHOTOGRAPHS

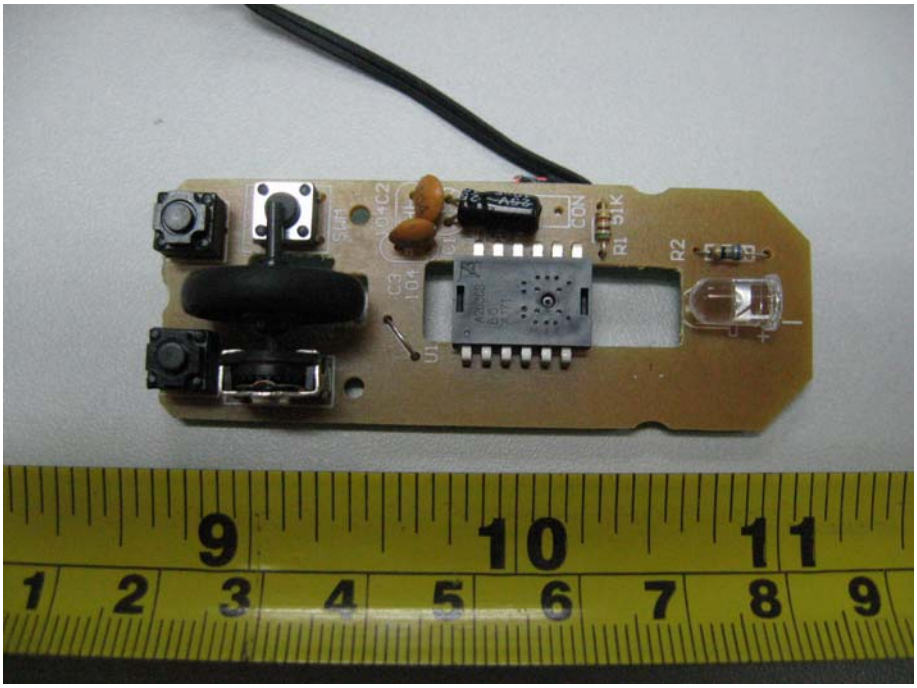
EUT View 1

EUT View 2

EUT Housing and Board View



Solder Board-Component View 1



Solder Board-Component View 2

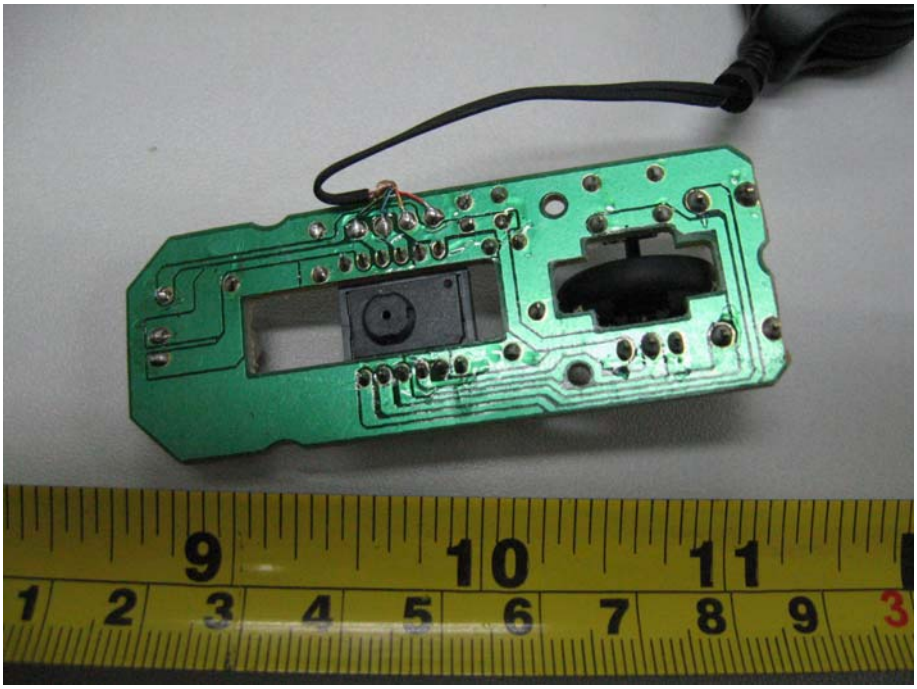
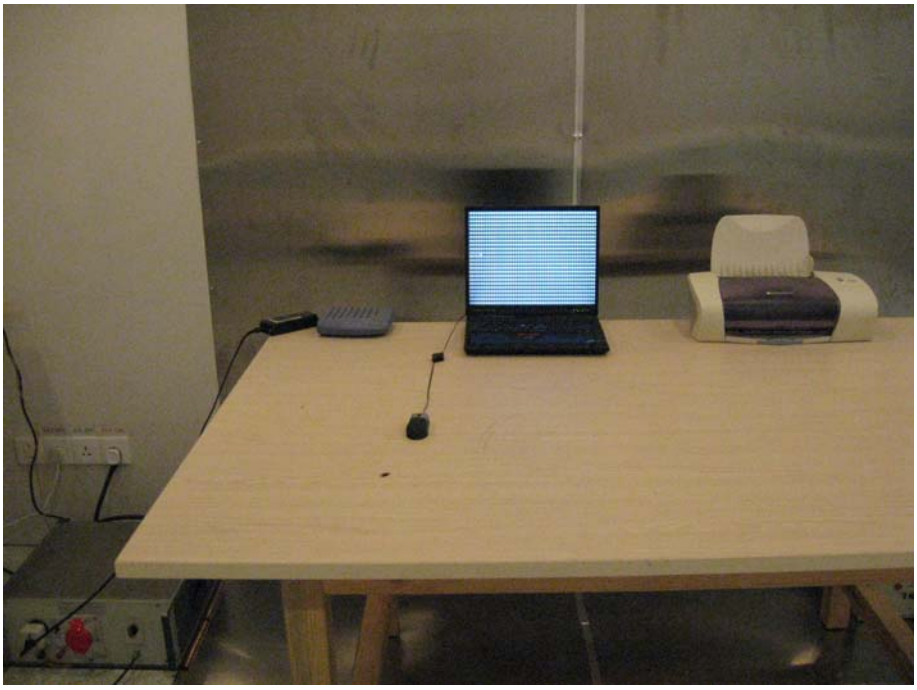


EXHIBIT 3 - TEST SETUP PHOTOGRAPHS

Conducted Emission Test Setup



Radiated Emission Test Setup

EXHIBIT 4 –SCHEMATICS

EXHIBIT 5 –USERS MANUAL