

APPLICATION FOR CERTIFICATION

On Behalf of
BYD Company Limited

Mouse
Model No.: F0

Prepared for : BYD Company Limited
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Report Number : 200810680F
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TEST REPORT CERTIFICATION

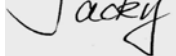
Applicant : BYD Company Limited
Manufacturer : BYD Company Limited
EUT : Mouse
(A) MODEL NO. : F0
(B) SERIAL NO. : N/A
(C) POWER SUPPLY: DC 5V via PC
(D) TRADE MARK: N/A


Measurement Procedure Used:


FCC Rules and Regulations Part 15 Subpart B 2007(15.107&15.109) & FCC / ANSI C63.4-2003

The device described above is tested by Anbotek Compliance Laboratory Limited To determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart B limits both radiated and conducted emissions. The measurement results are contained in this test report and Anbotek Compliance Laboratory Limited 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 Anbotek Compliance Laboratory Limited

Date of Test : Oct.21~27, 2008

Prepared by : 
(Engineer)

Reviewer : 
(Project Manager)

Approved & Authorized Signer : 
(Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	: Mouse
Model Number	: F0
Notebook PC	: Manufacturer: IBM M/N: 2662 S/N: 99-Y5753 02/02 CE , FCC: DOC
KeyBoard	: Gothink GO-2039
Monitor	: MITSUBISHI NL2501
Printer	: CANOLL LBP3200
Test Power Supply	: AC120V, 60Hz
Applicant	: BYD Company Limited
Address	: Floor 2 nd , Assembly Workshop, No.3001 HengPing Road, PingShan, LongGong, ShenZhen, China 518118
Manufacturer	: BYD Company Limited
Address	: Floor 2 nd , Assembly Workshop, No.3001 HengPing Road, PingShan, LongGong, ShenZhen, China 518118
Date of Sample received	: Oct.20, 2008
Date of Test	: Oct.21~27, 2008

1.2. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

VCCI-Registration No.: R-2197 and C-2383

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been registered and fully described in a report filed with the (VCCI) Voluntary Control Council for Interference by Information Technology Equipment. The acceptance letter from the VCCI is maintained in our files. Registration R-2197 and C-2383, September 29, 2005.

FCC-Registration No.: 556682

SGS-CSTC Standards Technical Services Co., Ltd., 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 our files. Registration 556682, August 04, 2005.

IC-Registration No.: 6002

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration 6002, August 25, 2005.

Test Location

All Emissions tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd. at No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China

1.3. Measurement Uncertainty

Radiation Uncertainty : $U_r = \pm 4.26\text{dB}$

Conduction Uncertainty : $U_c = \pm 2.66\text{dB}$

2. POWER LINE CONDUCTED MEASUREMENT

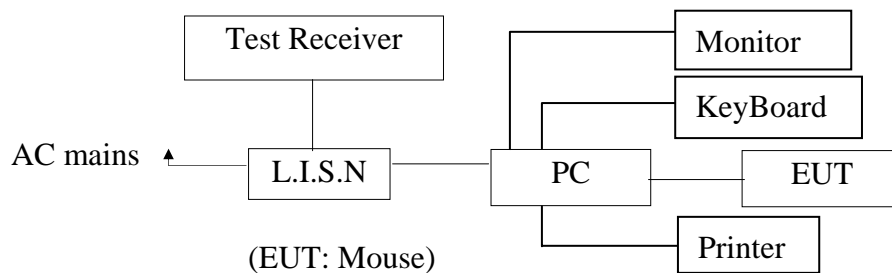
2.1. Test Equipment

The following test equipments are used during the power line conducted measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Test Receiver	Rohde & Schwarz	ESCS30	100038	Nov.12, 2007	1 Year
2.	Artificial Mains	Rohde & Schwarz	ESH2-Z5	100028	Nov.12, 2007	1 Year
3.	Pulse Limiter	Rohde & Schwarz	ESHSZ2	100044	Nov.12, 2007	1 Year
4.	CE Variac	GZ Debao Factory	TS/DGC ₂ -5	N/A	N/A	N/A
5.	Coaxial cable	SGS	N/A	N/A	Nov.05, 2007	1 Year
6.	EMI Test Software	Rohde & Schwarz	ESK1	N/A	N/A	N/A

2.2. Block Diagram of Test Setup

2.2.1. Block diagram of connection between the EUT and simulators



2.3. Power Line Conducted Emission Measurement Limits

FCC Part 15 Paragraph 15.107		
Frequency Range	Limits (dB μ V)	
	QP	AV
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

2.4. Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner which tends to maximize its emission characteristics in a normal application.

EUT	:	Mouse
Model Number	:	F0
Applicant	:	BYD Company Limited

2.5. Operating Condition of EUT

- 2.5.1. Setup the EUT and simulator as shown as Section 2.2.
- 2.5.2. Turn on the power of all equipment.
- 2.5.3. Let the EUT work in test mode (Connect to PC) and measure it.

2.6. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line 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 FCC 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.

The test result are reported on Section 2.7.

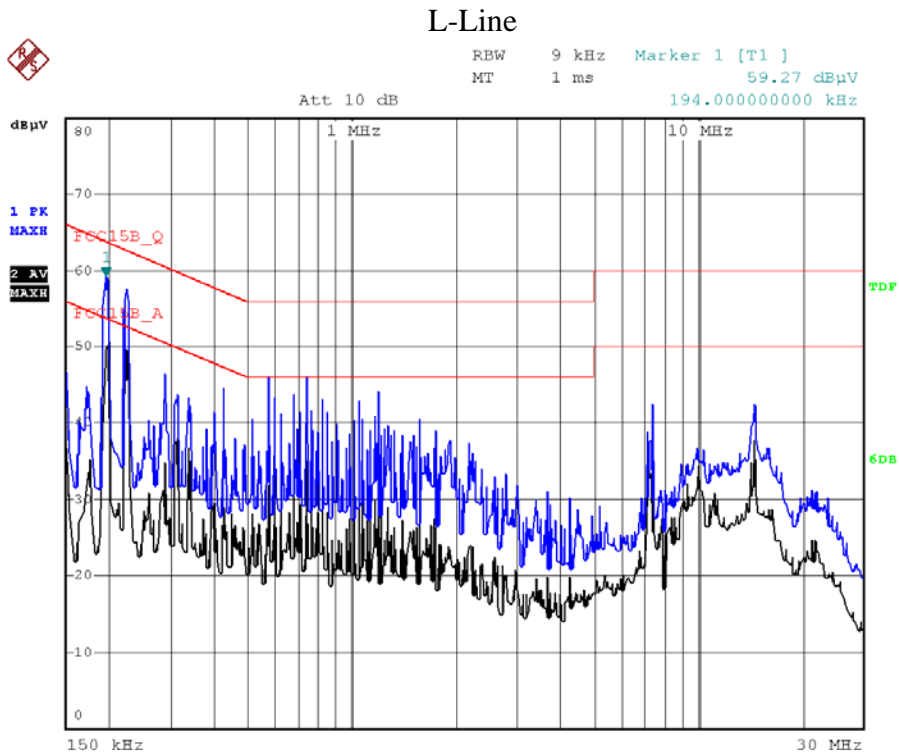
2.7. Power Line Conducted Emission Measurement Results

PASS.

The frequency range from 150KHz to 30 MHz is investigated.

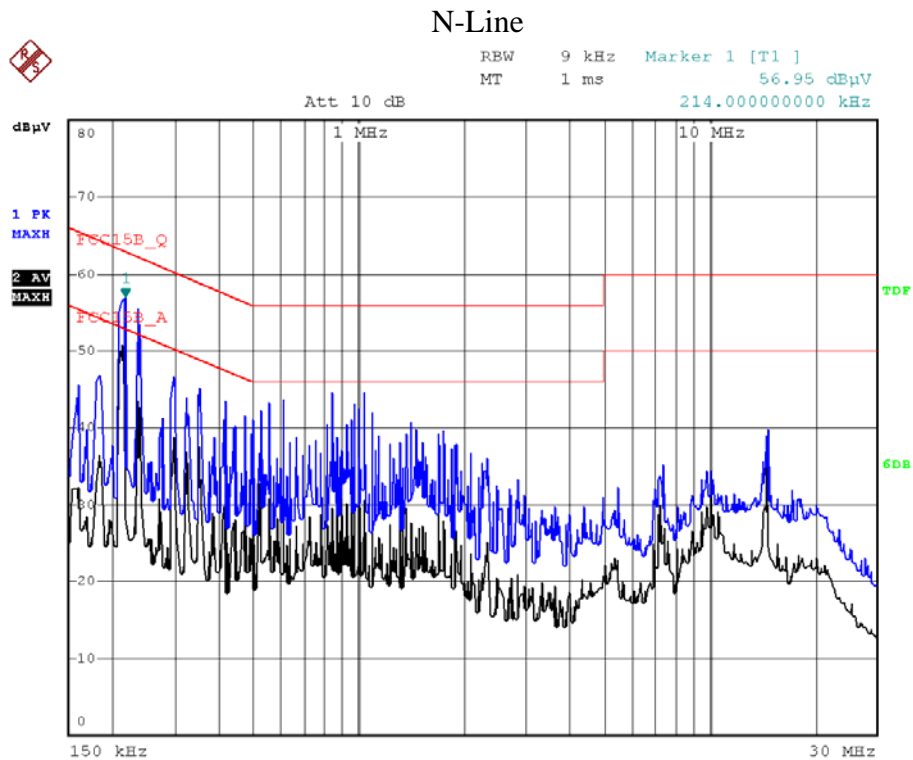
The test curves are shown in the follow page.

EUT: Mouse M/N: F0
Op Cond: Connected to the PC
Test Spec: L-Line
Comment: AC120V/60Hz
Data: 2008-10-24



Frequency(MHz)	Reading Level(dBμV)	Limit(dBμV)	Over limit(dB)	Detector
0.194	55.52	64	-8.48	QP
0.194	49.12	54	-4.88	AV
0.216	52.34	63	-10.66	QP
0.216	48.54	53	-4.46	AV

EUT: Mouse M/N: F0
Op Cond: Connected to the PC
Test Spec: N-Line
Comment: AC120V/60Hz
Data: 2008-10-24



Frequency(MHz)	Reading Level(dBμV)	Limit(dBμV)	Over limit(dB)	Detector
0.214	53.22	63	-9.78	QP
0.214	47.72	53	-5.28	AV
0.234	50.45	62	-11.55	QP
0.234	41.75	52	-10.25	AV

3. RADIATED EMISSION MEASUREMENT

3.1. Test Equipment

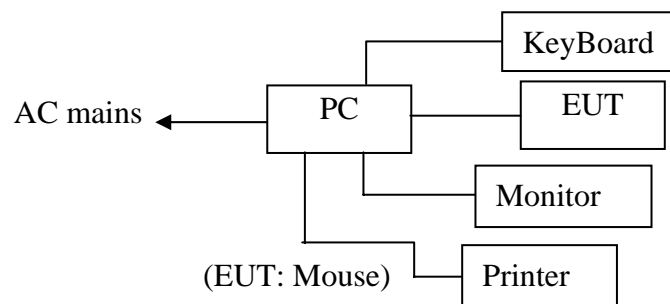
The following test equipments are used during the radiated emission measurement:

3.1.1. For Anechoic Chamber

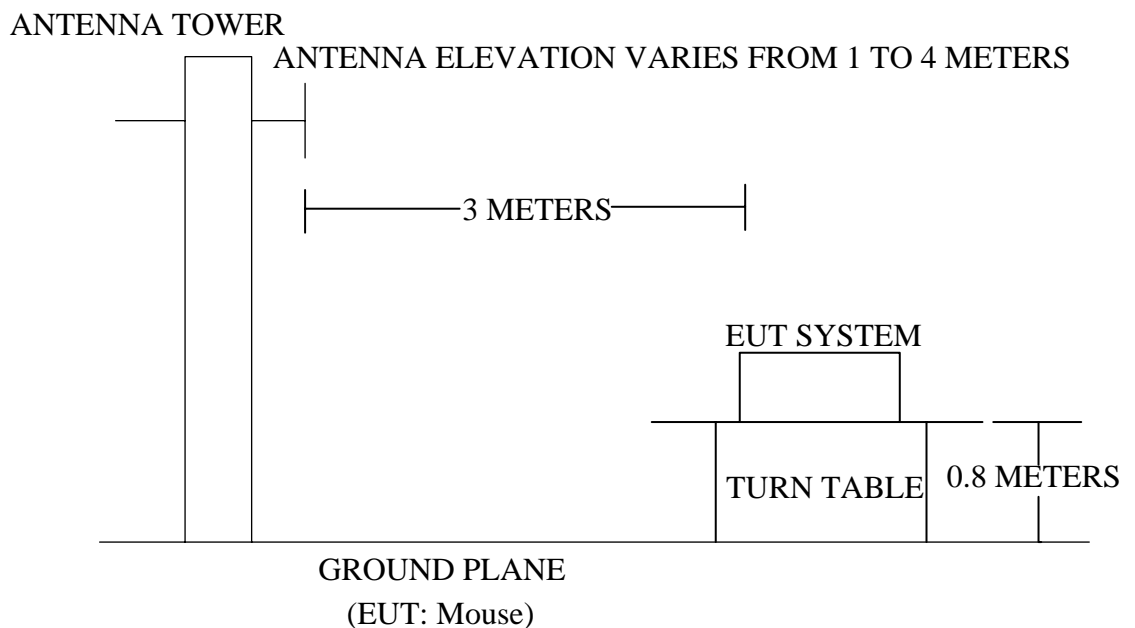
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Ultra-Broadband Antenna	Rohde & Schwarz	HL562	100015	Nov.12, 2007	1 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESI26	100009	Nov.12, 2007	1 Year
3.	EMI Test Software	Rohde & Schwarz	ESK1	N/A	N/A	N/A
4.	Bilog Antenna	Schwarzbeck	CBL6143	N/A	Nov.05, 2007	1 Year
5.	Coaxial cable	SGS	N/A	N/A	N/A	N/A
6.	PC	N/A	486DX2	N/A	N/A	N/A

3.2. Block Diagram of Test Setup

3.2.1. Block diagram of connection between the EUT and simulators



3.2.2. Anechoic Chamber Test Setup Diagram



3.3. Radiated Emission Limit (FCC Part 15 Paragraph 15.109)

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V/m}$	$\text{dB}(\mu\text{V})/\text{m}$
30~88	3	100	40.0
88~216	3	150	43.5
216~960	3	200	46.0
960~1000	3	500	54.0

- Remark :
- (1) Emission level $(\text{dB})\mu\text{V} = 20 \log \text{Emission level } \mu\text{V/m}$
 - (2) The smaller limit shall apply at the cross point between two frequency bands.
 - (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

3.4. EUT Configuration on Measurement

The following equipments 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.

EUT : Mouse
 Model Number : F0
 Applicant : BYD Company Limited

3.5. Operating Condition of EUT

3.5.1. Setup the EUT as shown in Section 3.2.

3.5.2. Let the EUT work in test mode (Connect to PC) and measure it.

3.6. Test Procedure

EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground. The turn table 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 a 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 polarization 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 ANSI C63.4-2003 on radiated emission measurement.

The bandwidth of the EMI test receiver (R&S ESI26) is set at 120KHz.

The frequency range from 30MHz to 1000MHz is checked.

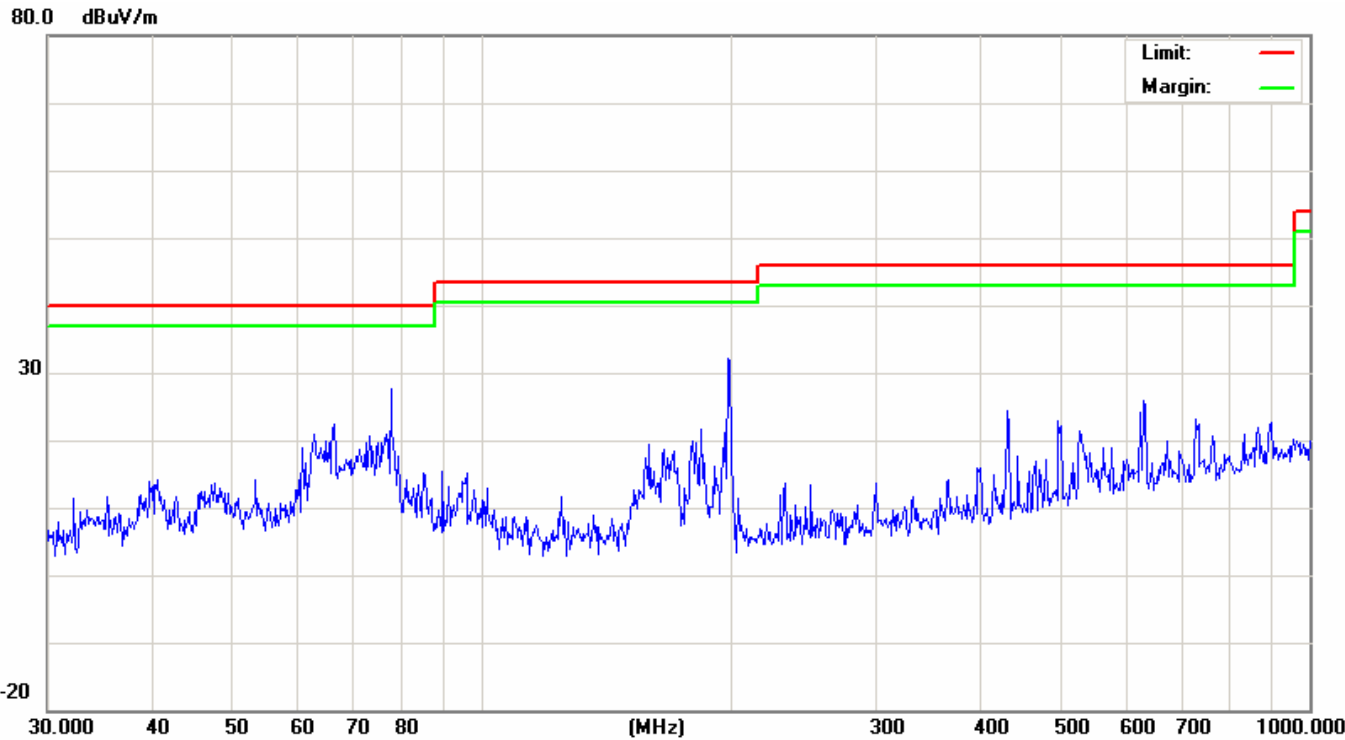
The test mode (Connect to PC and turn on) is tested in chamber and all the test results are listed in Section 3.7.

3.7. Radiated Emission Measurement Results

PASS.

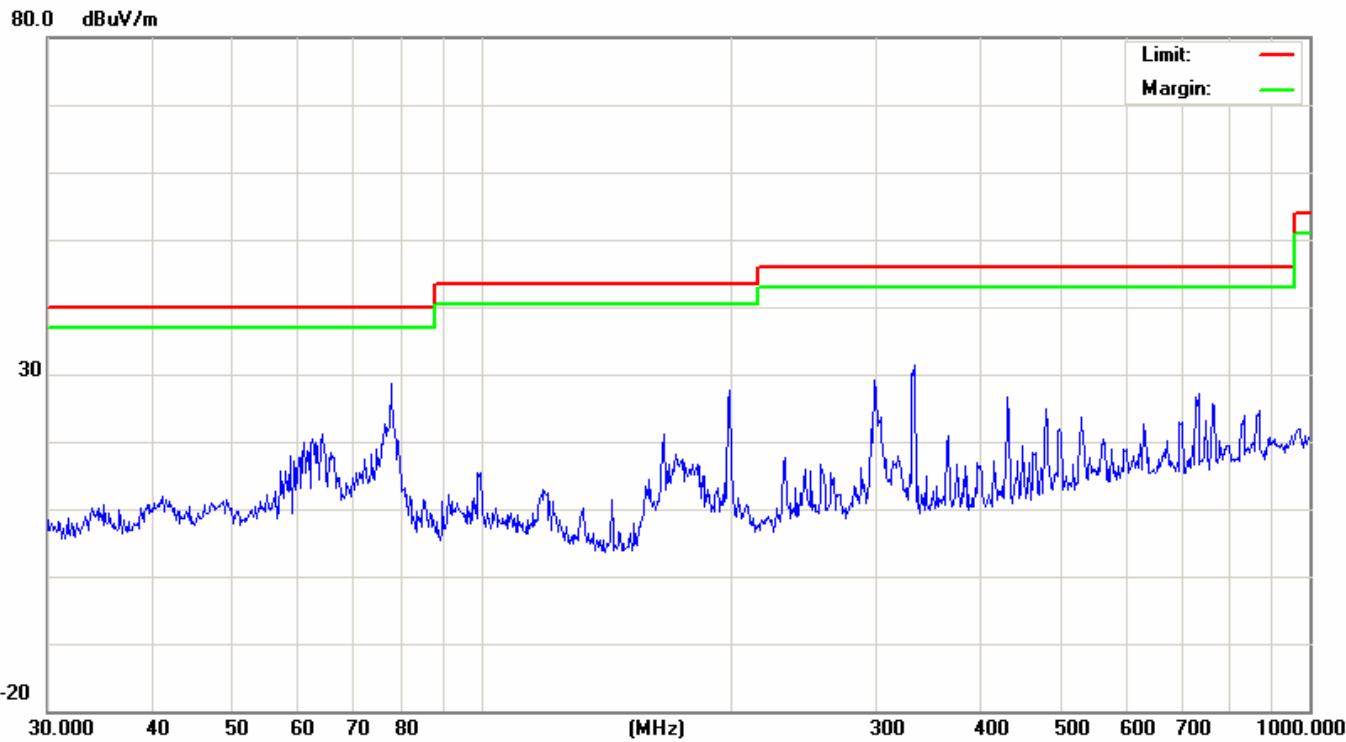
The test curves are shown in the follow pages.

Job No.:	AT0810620F	Polarziation:	Vertical
Standard:	FCC Subpart B 15.109	Power Source:	DC 5V Via PC
Test item:	Radiation Test	Date:	2008/10/22
Temp.(C)/Hum.(%RH):	24(C)/60%RH	Time:	14:16:42
EUT:	Mouse	Test By:	Jacky
Model:	F0	Distance:	3m
Note:			



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	

Job No.:	AT0810620F	Polarziation:	Horizontal
Standard:	FCC Subpart B 15.109	Power Source:	DC 5V Via PC
Test item:	Radiation Test	Date:	2008/10/22
Temp.(C)/Hum.(%RH):	24(C)/60%RH	Time:	14:19:00
EUT:	Mouse	Test By:	Jacky
Model:	F0	Distance:	3m
Note:			



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	