



# FCC TEST REPORT

**REPORT NO.:** RF940628L07

**MODEL NO.:** 1052

**RECEIVED:** Jun. 29, 2005

**TESTED:** Jun. 29, 2005

**ISSUED:** Jul. 07, 2005

**APPLICANT :** Microsoft Corporation

**ADDRESS :** One Microsoft Way, Redmond, WA 98052-6399,  
U.S.A.

**ISSUED BY :** Advance Data Technology Corporation

**LAB ADDRESS :** No. 47, 14th Ling, Chia Pau Tsuen, Lin Kou Hsiang  
244, Taipei Hsien, Taiwan, R.O.C.

**TEST LOCATION :** No. 19, Hwa Ya 2nd Rd., Wen Hwa Tsuen, Kwei  
Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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## Table of Contents

1	CERTIFICATION .....	3
2	SUMMARY OF TEST RESULTS .....	4
2.1	MEASUREMENT UNCERTAINTY .....	4
3	GENERAL INFORMATION .....	5
3.1	GENERAL DESCRIPTION OF EUT .....	5
3.2	DESCRIPTION OF TEST MODES .....	7
3.2.1	CONFIGURATION OF SYSTEM UNDER TEST .....	7
3.2.2	TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL .....	8
3.3	GENERAL DESCRIPTION OF APPLIED STANDARDS .....	8
3.4	DESCRIPTION OF SUPPORT UNITS .....	8
4	TEST PROCEDURE AND RESULT .....	9
4.1	CONDUCTED EMISSION MEASUREMENT .....	9
4.2	RADIATED EMISSION MEASUREMENT .....	9
4.2.1	LIMITS OF RADIATED EMISSION MEASUREMENT .....	9
4.2.2	TEST INSTRUMENT .....	10
4.2.3	TEST PROCEDURE .....	11
4.2.4	TEST SETUP .....	12
4.2.5	EUT OPERATING CONDITION .....	12
4.2.6	TEST RESULTS .....	13
4	PHOTOGRAPHS OF THE TEST CONFIGURATION .....	22
5	INFORMATION ON THE TESTING LABORATORIES .....	23



## 1 CERTIFICATION

**PRODUCT :** Microsoft® Wireless Laser Mouse 6000  
**BRAND NAME :** Microsoft®  
**MODEL NO. :** 1052  
**APPLICANT :** Microsoft Corporation  
**TESTED :** Jun. 29, 2005  
**TEST SAMPLE :** ENGINEERING SAMPLE  
**STANDARDS :** FCC Part 15, Subpart C (Section 15.227)  
Canada RSS-210, 2001, Issued 5, Amend 1  
ANSI C63.4:2003

The above equipment has been tested by **Advance Data Technology Corporation**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**PREPARED BY :** Suntee Liu, **DATE :** Jul. 07, 2005  
( Suntee Liu )

**TECHNICAL**  
**ACCEPTANCE :** Gary Chang, **DATE :** Jul. 07, 2005  
Responsible for RF ( Gary Chang )

**APPROVED BY :** Cody Chang, **DATE :** Jul. 07, 2005  
( Cody Chang, Deputy Manager )

## 2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart C			
STANDARD PARAGRAPH	TEST TYPE	RESULT	REMARK
15.207	Conducted Emission Test	NA	Power supply is 1.5Vdc from batteries
15.227 15.209	Radiated Emission Test	PASS	Minimum passing margin is -8.40dB at 640.38MHz

### 2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4:

Measurement	Frequency	Uncertainty
Conducted emissions	9kHz~30MHz	2.44 dB
	30MHz ~ 200MHz	3.73 dB
Radiated emissions	200MHz ~1000MHz	3.74 dB
	1GHz ~ 18GHz	2.20 dB
	18GHz ~ 40GHz	1.88 dB

### 3 GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

<b>PRODUCT</b>	Microsoft® Wireless Laser Mouse 6000
<b>MODEL NO.</b>	1052
<b>POWER SUPPLY</b>	1.5Vdc from battery
<b>MODULATION TYPE</b>	FSK
<b>CARRIER FREQUENCY OF EACH CHANNEL</b>	27.045, 27.145 MHz
<b>NUMBER OF CHANNEL</b>	2
<b>ANTENNA TYPE</b>	Loop antenna
<b>DATA CABLE</b>	NA
<b>I/O PORTS</b>	NA

**NOTE:**

1. The EUT is a wireless mouse.
2. Fusion Configuration Information:

Configuration #:		Comments: DV phase Mouse unit for formal report			
Manufacturer	Component type	Part no.	Revision no.	Description	BOM (if known)
Microsoft	Mouse			Model: 1052	
ST	Optical Sensor	11300398000	A	CHIP IC Aviator ASIC TQFP-32L	11300398000
ST	Microcontroller	11300398000	A	CHIP IC Aviator ASIC TQFP-32L	11300398000
ULM	Laser	VCSEL-001	NA	VCSEL (850nm)	10740114200
OSRAM	Laser	F 0497B - MS	NA	VCSEL (850nm)	10740114200
Microsoft	firmware			Fusion_0_35_31_2603_DV_56p.ram	
	PCB	10230454200	6	SPCB,FUSION TX,AVIATOR,S2L	10230454200
KYE	PCB Assy	20000691200	A	PCBA,FUSION HAND SOLDER,TX	20000691200
KYE	PCB Assy	20000623200	A	PCBA,FUSSION,TX	20000623200
	Case tooling				
Nypro	Top Case	25020928201		TOP ASM, FUSION TX	25020928201
Nypro	Side Panel	15140289201		PLAST COMP, FUSION TX, SIDE PANEL	15140289201
Nypro	Forward Key	15130550201		K/C,FUSION TX,FORWARD BUT	15130550201
Nypro	Back Key	15130551201		K/C,FUSION TX,BACK BUT	15130551201
Nypro	Bottom Case	15120466201		BOTTOM,FUSION TX, BOTTOMCASE	15120466201
Nypro	Battery Door	15140292201		PLAST COMP,FUSION TX, BAT DOOR,PLATINUM	15140292201
Nypro	Front Panel	15140288201		PLAST COMP,FUSION	15140288201



				TX, FRONT PANEL	
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Configuration #:		Comments: DV phase Receiver unit with EMC fixes for formal report			
Manufacturer	Component type	Part no.	Revision no.	Description	BOM (if known)
Microsoft	Receiver			Model: 1053	
Sunplus	Microcontroller	11300605200		CHIPIC,SPCP18A	11300605200
TI		11300607200		CHIPIC,TF7901-PW28,SSOP,28	11300607200
Microsoft	firmware		V7		
	PCB	10230458200	6	SPCB,FUSION RX,CP18A	10230458200
KYE	PCB Assy.	20000631200	A	PCBA,FUSSION,RX,MS	20000631200
YC	Cable 1	15160849201		Cable 1	15160849201
JH	Cable 2			Cable 2	
BIZ	Cable 3			Cable 3	
	Case tooling				
Toyo Plas	Top Case	15102046201		TOP,FUSION RX, TOP CASE	15102046201
Toyo Plas	Bottom Case	15130570201		K/C,FUSION RX,BUTTON	15130570201

3. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.



### 3.2 DESCRIPTION OF TEST MODES

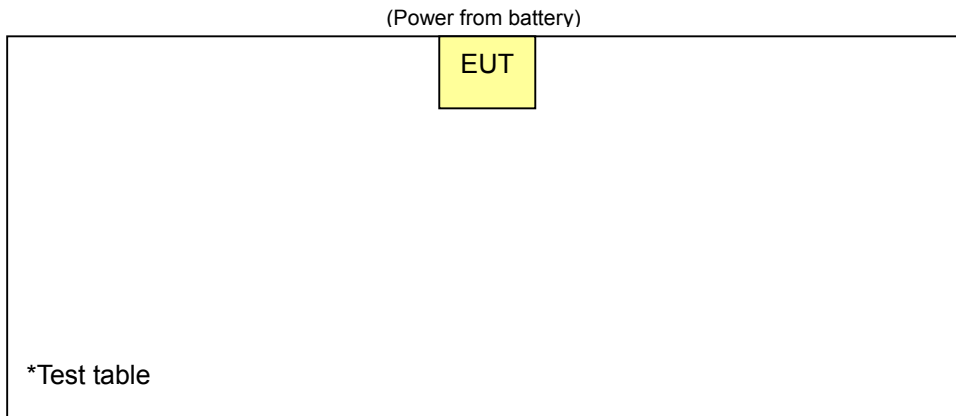
There are 2 channels provided to the EUT.

Channel	Frequency (MHz)
0	27.045
1	27.145

There are 3 sets of identical samples tested and presented in the report under Microsoft's request.

Mouse Serial Number
FUT-DV1-315
FUT-DV1-357
FUT-DV1-451

#### 3.2.1 CONFIGURATION OF SYSTEM UNDER TEST





**3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL**

EUT Configure Mode	Applicable to		Description
	PLC	RE<1G	
1	Note	v	FUT-DV1-315, operating@27.045
2	Note	v	FUT-DV1-315, operating@27.145
3	Note	v	FUT-DV1-357, operating@27.045
4	Note	v	FUT-DV1-357, operating@27.145
5	Note	v	FUT-DV1-451, operating@27.045
6	Note	v	FUT-DV1-451, operating@27.145

Where PLC: Power Line Conducted Emission RE<1G RE: Radiated Emission below 1GHz

Note: No need to concern of Conducted Emission due to the EUT is powered by battery.

**Radiated Emission Test (Below 1 GHz):**

Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Available Channel	Tested Channel	Modulation Type
1	0, 1	0	FSK
2	0, 1	1	FSK
3	0, 1	0	FSK
4	0, 1	1	FSK
5	0, 1	0	FSK
6	0, 1	1	FSK

**3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS**

The EUT is a Microsoft® Wireless Laser Mouse 6000. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

**FCC Part 15, Subpart C (15.227)  
ANSI C63.4:2003**

All test items have been performed and recorded as per the above standards.

**3.4 DESCRIPTION OF SUPPORT UNITS**

NA



## 4 TEST PROCEDURE AND RESULT

### 4.1 CONDUCTED EMISSION MEASUREMENT

NA

### 4.2 RADIATED EMISSION MEASUREMENT

#### 4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

According to 15.227 the field strength of Emissions from intentional radiators operated under these frequencies bands shall not exceed the following:

Fundamental Frequency (MHz)	Field Strength of Fundamental (dBuV/m)	
	Peak	Average
26.96-27.28	100	80

Field strength limits are at the distance of 3 meters, Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

Frequencies (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

As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

#### 4.2.2 TEST INSTRUMENT

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESIB7	100188	Dec. 19, 2005
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Nov. 21, 2005
BILOG Antenna SCHWARZBECK	VULB9168	9168-157	Jan. 22, 2006
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-407	Jan. 16, 2006
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA 9170241	Feb. 23, 2006
Preamplifier Agilent	8449B	3008A01961	Nov. 09, 2005
Preamplifier Agilent	8447D	2944A10629	Nov. 09, 2005
RF signal cable HUBER+SUHNER	SUCOFLEX 104	218182/4	Feb. 17, 2006
RF signal cable HUBER+SUHNER	SUCOFLEX 104	218194/4	Feb. 17, 2006
Loop Antenna	HFH2-Z2	100070	Nov. 14, 2005
Software ADT.	ADT_Radiated_V5.14	NA	NA
Antenna Tower ADT.	AT100	AT93021702	NA
Turn Table ADT.	TT100.	TT93021702	NA
Controller ADT.	SC100.	SC93021702	NA

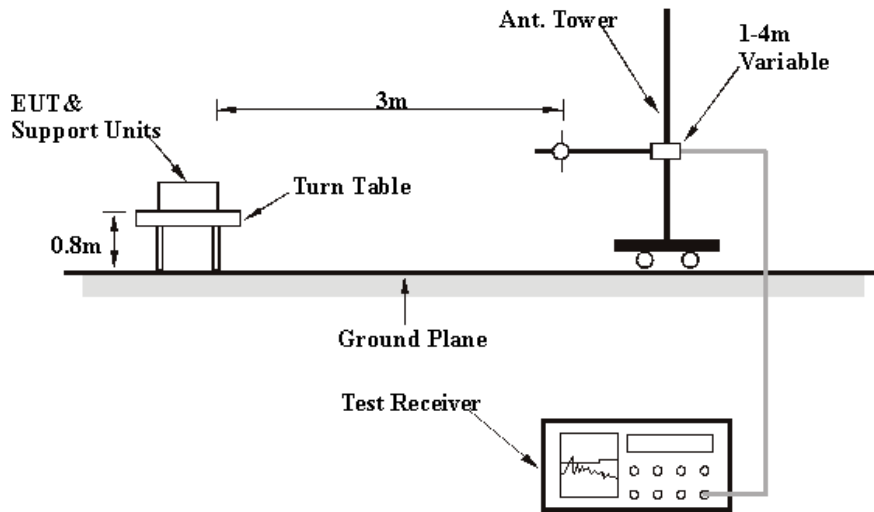
- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
  2. The test was performed in HwaYa Chamber 1.
  3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
  4. The IC Site Registration No. is IC4924-2.

### 4.2.3 TEST PROCEDURE

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak method or average method as specified and then reported in data sheet.

**NOTE:** The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.

#### 4.2.4 TEST SETUP



For the actual test configuration, please refer to the related item in this test report - Photographs of the Test Configuration.

#### 4.2.5 EUT OPERATING CONDITION

Set the transmitter part of EUT under transmission condition continuously at specific channel frequency.

#### 4.2.6 TEST RESULTS

<b>EUT</b>	Microsoft® Wireless Laser Mouse 6000	<b>MODEL</b>	1052
<b>INPUT POWER</b>	3Vdc	<b>FREQUENCY RANGE</b>	Below 1000 MHz
<b>ENVIRONMENTAL CONDITIONS</b>	26 deg. C, 64% RH, 991 hPa	<b>DETECTOR FUNCTION</b>	Peak / Average
<b>TEST MODE</b>	1	<b>TESTED BY</b>	Match Tsui

TEST DISTANCE: 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*27.045	41.73 PK	100.00	-38.27	2.16	1	28.23	13.50
2	*27.045	38.44 AV	80.00	-41.56	2.16	1	24.94	13.50

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
  2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. "\*" = Fundamental frequency.
  6. Loop Antenna was used for all frequency below 30MHz.



<b>EUT</b>	Microsoft® Wireless Laser Mouse 6000	<b>MODEL</b>	1052
<b>INPUT POWER</b>	3Vdc	<b>FREQUENCY RANGE</b>	Below 1000 MHz
<b>ENVIRONMENTAL CONDITIONS</b>	26 deg. C, 64% RH, 991 hPa	<b>DETECTOR FUNCTION</b>	Peak / Average
<b>TEST MODE</b>	2	<b>TESTED BY</b>	Match Tsui

<b>TEST DISTANCE: 3 M</b>								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*27.145	42.87 PK	100.00	-37.13	2.21	76	29.37	13.50
2	*27.145	39.74 AV	80.00	-40.26	2.21	76	26.24	13.50

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
  2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. "\*" = Fundamental frequency.
  6. Loop Antenna was used for all frequency below 30MHz.



<b>EUT</b>	Microsoft® Wireless Laser Mouse 6000	<b>MODEL</b>	1052
<b>INPUT POWER</b>	3Vdc	<b>FREQUENCY RANGE</b>	Below 1000 MHz
<b>ENVIRONMENTAL CONDITIONS</b>	26 deg. C, 64% RH, 991 hPa	<b>DETECTOR FUNCTION</b>	Quasi-Peak
<b>TEST MODE</b>	1	<b>TESTED BY</b>	Match Tsui

<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	374.07	30.94 QP	46.00	-15.06	1.00 H	169	14.91	16.03
2	560.68	34.42 QP	46.00	-11.58	1.50 H	73	14.54	19.88
3	593.73	30.51 QP	46.00	-15.49	1.50 H	85	9.78	20.73
4	640.38	37.18 QP	46.00	-8.82	1.25 H	187	15.73	21.45
5	694.81	34.87 QP	46.00	-11.13	1.25 H	181	12.70	22.18
6	747.29	30.11 QP	46.00	-15.89	1.00 H	178	6.75	23.35

<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	35.83	18.77 QP	40.00	-21.23	1.00 V	250	4.45	14.32
2	560.68	26.50 QP	46.00	-19.50	1.75 V	10	6.62	19.88
3	615.11	29.99 QP	46.00	-16.01	1.00 V	148	8.89	21.10
4	667.60	31.01 QP	46.00	-14.99	1.00 V	106	9.19	21.82
5	910.58	31.53 QP	46.00	-14.47	1.00 V	292	6.31	25.21
6	959.18	25.78 QP	46.00	-20.22	1.50 V	340	0.16	25.62

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
  2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.



<b>EUT</b>	Microsoft® Wireless Laser Mouse 6000	<b>MODEL</b>	1052
<b>INPUT POWER</b>	3Vdc	<b>FREQUENCY RANGE</b>	Below 1000 MHz
<b>ENVIRONMENTAL CONDITIONS</b>	26 deg. C, 64% RH, 991 hPa	<b>DETECTOR FUNCTION</b>	Peak / Average
<b>TEST MODE</b>	3	<b>TESTED BY</b>	Match Tsui

<b>TEST DISTANCE: 3 M</b>								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*27.045	45.99 PK	100.00	-34.01	2.24	136	32.49	13.50
2	*27.045	42.87 AV	80.00	-37.13	2.24	136	29.37	13.50

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
  2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. "\*" = Fundamental frequency.
  6. Loop Antenna was used for all frequency below 30MHz.



<b>EUT</b>	Microsoft® Wireless Laser Mouse 6000	<b>MODEL</b>	1052
<b>INPUT POWER</b>	3Vdc	<b>FREQUENCY RANGE</b>	Below 1000 MHz
<b>ENVIRONMENTAL CONDITIONS</b>	26 deg. C, 64% RH, 991 hPa	<b>DETECTOR FUNCTION</b>	Peak / Average
<b>TEST MODE</b>	4	<b>TESTED BY</b>	Match Tsui

<b>TEST DISTANCE: 3 M</b>								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*27.145	46.50 PK	100.00	-33.50	2.13	95	33.00	13.50
2	*27.145	43.18 AV	80.00	-36.82	2.13	95	29.68	13.50

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
  2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. "\*" = Fundamental frequency.
  6. Loop Antenna was used for all frequency below 30MHz.



<b>EUT</b>	Microsoft® Wireless Laser Mouse 6000	<b>MODEL</b>	1052
<b>INPUT POWER</b>	3Vdc	<b>FREQUENCY RANGE</b>	Below 1000 MHz
<b>ENVIRONMENTAL CONDITIONS</b>	26 deg. C, 64% RH, 991 hPa	<b>DETECTOR FUNCTION</b>	Quasi-Peak
<b>TEST MODE</b>	4	<b>TESTED BY</b>	Match Tsui

<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	401.28	30.15 QP	46.00	-15.85	1.00 H	307	13.48	16.67
2	547.07	29.58 QP	46.00	-16.42	1.50 H	289	10.03	19.55
3	628.72	34.48 QP	46.00	-11.52	1.25 H	193	13.19	21.29
4	667.60	35.11 QP	46.00	-10.89	1.25 H	16	13.29	21.82
5	706.47	31.20 QP	46.00	-14.80	1.00 H	43	8.80	22.40
6	768.68	29.28 QP	46.00	-16.72	1.00 H	28	5.76	23.52

<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	35.83	19.16 QP	40.00	-20.84	1.00 V	205	4.84	14.32
2	634.55	27.44 QP	46.00	-18.56	1.25 V	313	6.07	21.37
3	667.60	28.36 QP	46.00	-17.64	1.00 V	280	6.55	21.82
4	867.82	24.90 QP	46.00	-21.10	1.25 V	16	0.42	24.47
5	900.86	25.98 QP	46.00	-20.02	1.75 V	184	0.86	25.11
6	949.46	26.43 QP	46.00	-19.57	1.75 V	49	0.82	25.61

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
  2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.



<b>EUT</b>	Microsoft® Wireless Laser Mouse 6000	<b>MODEL</b>	1052
<b>INPUT POWER</b>	3Vdc	<b>FREQUENCY RANGE</b>	Below 1000 MHz
<b>ENVIRONMENTAL CONDITIONS</b>	26 deg. C, 64% RH, 991 hPa	<b>DETECTOR FUNCTION</b>	Peak / Average
<b>TEST MODE</b>	5	<b>TESTED BY</b>	Match Tsui

<b>TEST DISTANCE: 3 M</b>								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*27.045	44.88 PK	100.00	-35.12	2.09	117	31.38	13.50
2	*27.045	39.39 AV	80.00	-40.61	2.09	117	25.89	13.50

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
  2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. "\*" = Fundamental frequency.
  6. Loop Antenna was used for all frequency below 30MHz.



<b>EUT</b>	Microsoft® Wireless Laser Mouse 6000	<b>MODEL</b>	1052
<b>INPUT POWER</b>	3Vdc	<b>FREQUENCY RANGE</b>	Below 1000 MHz
<b>ENVIRONMENTAL CONDITIONS</b>	26 deg. C, 64% RH, 991 hPa	<b>DETECTOR FUNCTION</b>	Peak / Average
<b>TEST MODE</b>	6	<b>TESTED BY</b>	Match Tsui

<b>TEST DISTANCE: 3 M</b>								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*27.145	45.11 PK	100.00	-34.89	2.01	125	31.61	13.50
2	*27.145	41.80 AV	80.00	-38.20	2.0	125	28.30	13.50

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
  2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.
  5. "\*" = Fundamental frequency.
  6. Loop Antenna was used for all frequency below 30MHz.

<b>EUT</b>	Microsoft® Wireless Laser Mouse 6000	<b>MODEL</b>	1052
<b>INPUT POWER</b>	3Vdc	<b>FREQUENCY RANGE</b>	Below 1000 MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23 deg. C, 68% RH, 991 hPa	<b>DETECTOR FUNCTION</b>	Quasi-Peak
<b>TEST MODE</b>	5	<b>TESTED BY</b>	Match Tsui

#### ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	374.07	32.31 QP	46.00	-13.69	1.00 H	277	16.28	16.03
2	587.90	31.76 QP	46.00	-14.24	1.50 H	151	11.17	20.58
<b>3</b>	<b>640.38</b>	<b>37.60 QP</b>	<b>46.00</b>	<b>-8.40</b>	<b>1.25 H</b>	<b>142</b>	<b>16.15</b>	<b>21.45</b>
4	688.98	35.21 QP	46.00	-10.79	1.25 H	322	13.11	22.10
5	722.02	30.20 QP	46.00	-15.80	1.25 H	346	7.44	22.76
6	768.68	31.55 QP	46.00	-14.45	1.00 H	334	8.03	23.52

#### ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	587.90	25.38 QP	46.00	-20.62	1.75 V	154	4.80	20.58
2	640.38	29.65 QP	46.00	-16.35	1.25 V	193	8.20	21.45
3	688.98	28.96 QP	46.00	-17.04	1.00 V	187	6.86	22.10
4	768.68	25.49 QP	46.00	-20.51	1.75 V	52	1.97	23.52
5	906.69	29.95 QP	46.00	-16.05	1.00 V	82	4.77	25.17
6	951.40	25.42 QP	46.00	-20.58	1.75 V	142	-0.19	25.61

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
  2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
  3. The other emission levels were very low against the limit.
  4. Margin value = Emission level – Limit value.

#### 4 PHOTOGRAPHS OF THE TEST CONFIGURATION

Radiated Emission Test





## 5 INFORMATION ON THE TESTING LABORATORIES

We, ADT Corp., were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025:

<b>USA</b>	FCC, NVLAP, UL, A2LA
<b>Germany</b>	TUV Rheinland
<b>Japan</b>	VCCI
<b>Norway</b>	NEMKO
<b>Canada</b>	INDUSTRY CANADA , CSA
<b>R.O.C.</b>	CNLA, BSMI, DGT
<b>Netherlands</b>	Telefication
<b>Singapore</b>	PSB , GOST-ASIA(MOU)
<b>Russia</b>	CERTIS(MOU)

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site: [www.adt.com.tw/index.5/phtml](http://www.adt.com.tw/index.5/phtml). If you have any comments, please feel free to contact us at the following:

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The address and road map of all our labs can be found in our web site also.