

FCC TEST REPORT

REPORT NO.: RF941004L18

MODEL NO.: 1058

RECEIVED: Oct. 04, 2005

TESTED: Oct. 07 ~ Oct. 11, 2005

ISSUED: Oct. 14, 2005

APPLICANT : Microsoft Corporation

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

ISSUED BY : Advance Data Technology Corporation

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TEST LOCATION : No. 19, Hwa Ya 2nd Rd., Wen Hwa Tsuen, Kwei
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1 CERTIFICATION

PRODUCT : Microsoft® Wireless Laser Mouse 5000
BRAND NAME : Microsoft®
MODEL NO. : 1058
APPLICANT : Microsoft Corporation
TESTED : Oct. 07 ~ Oct. 11, 2005
TEST SAMPLE : ENGINEERING SAMPLE
STANDARDS : FCC Part 15, Subpart C (Section 15.227)
Canada RSS-310, 2005, Issue 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 : Jessie Wang , **DATE :** Oct. 14, 2005
(Jessie Wang)

TECHNICAL
ACCEPTANCE : Gary Chang , **DATE :** Oct. 14, 2005
Responsible for RF (Gary Chang)

APPROVED BY : Cody Chang , **DATE :** Oct. 14, 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 -13.16dB at 319.64MHz

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
Radiated emissions	30MHz ~ 200MHz	3.63 dB
	200MHz ~1000MHz	3.65 dB
	1GHz ~ 18GHz	2.20 dB
	18GHz ~ 40GHz	1.88 dB

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Microsoft® Wireless Laser Mouse 5000
MODEL NO.	1058
POWER SUPPLY	1.5Vdc from battery
MODULATION TYPE	FSK
CARRIER FREQUENCY OF EACH CHANNEL	27.045, 27.145 MHz
NUMBER OF CHANNEL	2
ANTENNA TYPE	Loop antenna
DATA CABLE	NA
I/O PORTS	NA

NOTE:

1. The EUT is a wireless mouse.
2. Contender Configuration Information

Configuration #:		Comments: EV phase Mouse unit for formal report			
Manufacturer	Component type	Part no.	Revision no.	Description	BOM (if known)
Microsoft	Mouse			Model: 1058	
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	ULM850	NA	VCSEL (850nm)	10740114200
Microsoft	firmware			Contender_0_36_33_d73c_initial	
	PCB	10230508200	4	SPCB,Contender	10230508200
KYE	PCB Assy	20000738201	A	PCBA,CONTENDER,TX	20000738201
	Case tooling				
Merrich	TOP KEY	15130638201	T1	K/C,CONTENDER,TOP KEY,MANTHRACI,	15130638201
Merrich	Skirt	15102340201	T1	TOP,CONTENDER,SKIRT, ATRANSLUC	15102340201
Merrich	Bottom Case	15120534201	T1	BOTTOM,CONTENDER,A TRANSLUC	15120534201
Merrich	Side Buttons	15130639201 15130640201	T1	K/C,CONTENDER,SIDE KEY-R/L,PLATINUM,	15130639201 15130640201

Host System Used for EV Testing		Comments: EMI			
Manufacturer	Equipment Type	Part no.	Serial No.	Description	
LEO	PC	Persica 8620G	1A36I98A000205		
ADI	MONITOR	CM100	020058T10200179		
ACEEX	MODEM	1414	980020523		
EPSON	PRINTER	LQ-300+	DCGY017081		
BTC	PS/2 KEYBOARD	5200T	F24800341		

Host System Used for EV Testing		Comments: EMS			
Manufacturer	Equipment Type	Part no.	Serial No.	Description	
HP	PC	DTPC-16	SG21209321		
CTX	Monitor	S700	051-30200005		
BENQ	PS2/KEYBOARD	6511-VA	99P078174C52L20261 SA000		

Host System Used for EV Testing		Comments: RE			
Manufacturer	Equipment Type	Part no.	Serial No.	Description	
DELL	NB	D600	CN-0G5152-48643- 49C-8221		

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

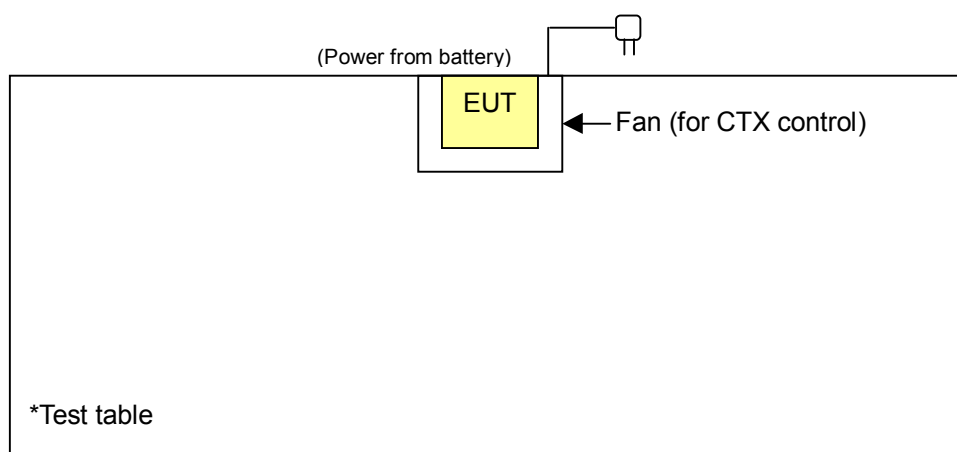
There are 2 channels provided to the EUT.

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
CTT-EV-136
CTT-EV-137 (for Malaysia)
CTT-EV-138 (for Malaysia)

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	CTT-EV-136, operating@27.045
2	Note	v	CTT-EV-136, operating@27.145
3	Note	v	CTT-EV-137, operating@27.045
4	Note	v	CTT-EV-137, operating@27.145
5	Note	v	CTT-EV-138, operating@27.045
6	Note	v	CTT-EV-138, 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 5000. 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	ESI7	838496/016	Jan. 07, 2006
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Nov. 29, 2006
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Jan. 22, 2006
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-404	Jan. 05, 2006
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA 9170242	Jan. 23, 2006
Preamplifier Agilent	8447D	2944A10631	Nov. 17, 2005
Preamplifier Agilent	8449B	3008A01960	Nov. 14, 2005
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	219272/4	Jan. 26, 2006
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	219275/4	Jan. 26, 2006
Software ADT.	ADT_Radiated_V5.14	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA
Antenna Tower Controller inn-co GmbH	CO2000	019303	NA
Turn Table ADT.	TT100.	TT93021704	NA
Turn Table Controller ADT.	SC100.	SC93021704	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 3.
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 IC4924-4.

4.2.3 TEST PROCEDURE

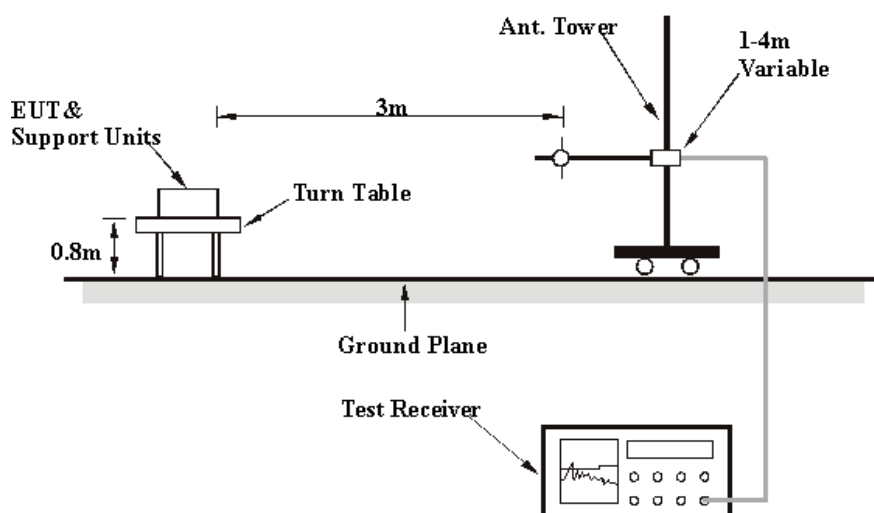
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on 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 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP



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

4.2.6 EUT OPERATING CONDITION

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

4.2.7 TEST RESULTS

EUT	Microsoft® Wireless Laser Mouse 5000	MODEL	1058
INPUT POWER	1.5Vdc	FREQUENCY RANGE	Below 1000 MHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 64% RH, 991 hPa	DETECTOR FUNCTION	Peak / Average
TEST MODE	1	TESTED BY	Brad Wu

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	48.41 PK	100.00	-51.59	2.26	4	34.87	13.54
2	*27.045	45.04 AV	80.00	-34.96	2.26	4	31.50	13.54

- 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.

EUT	Microsoft® Wireless Laser Mouse 5000	MODEL	1058
INPUT POWER	1.5Vdc	FREQUENCY RANGE	Below 1000 MHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 64% RH, 991 hPa	DETECTOR FUNCTION	Peak / Average
TEST MODE	2	TESTED BY	Brad Wu

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	*27.145	48.52 PK	100.00	-51.48	2.10	3	35.01	13.51
2	*27.145	45.14 AV	80.00	-34.86	2.10	3	31.63	13.51

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.

EUT	Microsoft® Wireless Laser Mouse 5000	MODEL	1058
INPUT POWER	1.5Vdc	FREQUENCY RANGE	Below 1000 MHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 64% RH, 991 hPa	DETECTOR FUNCTION	Quasi-Peak
TEST MODE	1	TESTED BY	Brad Wu

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	136.91	23.46 QP	43.50	-20.04	2.00 H	292	9.26	14.20
2	265.21	26.51 QP	46.00	-19.49	1.00 H	247	13.04	13.47
3	319.64	31.73 QP	46.00	-14.27	1.00 H	76	16.88	14.85
4	640.38	25.85 QP	46.00	-20.15	1.00 H	175	4.50	21.35
5	722.02	25.92 QP	46.00	-20.08	1.00 H	280	3.37	22.55
6	768.68	25.35 QP	46.00	-20.65	1.00 H	319	2.03	23.32

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	53.33	25.36 QP	40.00	-14.64	1.00 V	154	11.09	14.27
2	319.64	30.26 QP	46.00	-15.74	1.00 V	217	15.42	14.85
3	533.47	24.01 QP	46.00	-21.99	1.00 V	136	4.85	19.17
4	599.56	25.51 QP	46.00	-20.49	1.00 V	28	4.69	20.82
5	895.03	24.71 QP	46.00	-21.29	3.00 V	298	-0.01	24.72
6	955.29	25.14 QP	46.00	-20.86	3.00 V	7	-0.20	25.35

- 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.

EUT	Microsoft® Wireless Laser Mouse 5000	MODEL	1058
INPUT POWER	1.5Vdc	FREQUENCY RANGE	Below 1000 MHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 64% RH, 991 hPa	DETECTOR FUNCTION	Peak / Average
TEST MODE	3	TESTED BY	Brad Wu

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	50.61 PK	100.00	-49.39	2.72	203	37.07	13.54
2	*27.045	47.47 AV	80.00	-32.53	2.73	204	33.93	13.54

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.

EUT	Microsoft® Wireless Laser Mouse 5000	MODEL	1058
INPUT POWER	1.5Vdc	FREQUENCY RANGE	Below 1000 MHz
ENVIRONMENTAL CONDITIONS	26 deg. C, 64% RH, 991 hPa	DETECTOR FUNCTION	Peak / Average
TEST MODE	4	TESTED BY	Brad Wu

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	*27.145	46.81 PK	100.00	-53.19	2.43	346	33.30	13.51
2	*27.145	49.84 AV	80.00	-30.16	2.43	345	36.33	13.51

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.

EUT	Microsoft® Wireless Laser Mouse 5000	MODEL	1058
INPUT POWER	1.5Vdc	FREQUENCY RANGE	Below 1000 MHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 64% RH, 991 hPa	DETECTOR FUNCTION	Quasi-Peak
TEST MODE	3	TESTED BY	Brad Wu

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	142.75	23.01 QP	43.50	-20.49	2.00 H	283	8.50	14.51
2	267.15	25.93 QP	46.00	-20.07	1.00 H	256	12.38	13.55
3	319.64	32.84 QP	46.00	-13.16	1.00 H	274	17.99	14.85
4	661.76	26.60 QP	46.00	-19.40	1.00 H	181	5.00	21.60
5	900.86	30.35 QP	46.00	-15.65	1.00 H	118	5.53	24.82
6	935.85	26.00 QP	46.00	-20.00	4.00 H	13	0.82	25.18

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	53.33	25.84 QP	40.00	-14.16	1.00 V	349	11.57	14.27
2	319.64	28.29 QP	46.00	-17.71	1.00 V	220	13.44	14.85
3	506.25	25.65 QP	46.00	-20.35	1.00 V	49	6.97	18.68
4	850.32	24.35 QP	46.00	-21.65	1.00 V	1	0.44	23.92
5	881.42	24.32 QP	46.00	-21.68	1.00 V	82	-0.15	24.48
6	935.85	24.84 QP	46.00	-21.16	1.00 V	319	-0.35	25.18

- 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.

EUT	Microsoft® Wireless Laser Mouse 5000	MODEL	1058
INPUT POWER	1.5Vdc	FREQUENCY RANGE	Below 1000 MHz
ENVIRONMENTAL CONDITIONS	26 deg. C, 64% RH, 991 hPa	DETECTOR FUNCTION	Peak / Average
TEST MODE	5	TESTED BY	Brad Wu

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	49.88 PK	100.00	-50.12	2.58	2	36.34	13.54
2	*27.045	46.62 AV	80.00	-33.38	2.58	2	33.08	13.54

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.

EUT	Microsoft® Wireless Laser Mouse 5000	MODEL	1058
INPUT POWER	1.5Vdc	FREQUENCY RANGE	Below 1000 MHz
ENVIRONMENTAL CONDITIONS	26 deg. C, 64% RH, 991 hPa	DETECTOR FUNCTION	Peak / Average
TEST MODE	6	TESTED BY	Brad Wu

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	*27.145	49.67 PK	100.00	-50.33	3.24	7	36.16	13.51
2	*27.145	46.51 AV	80.00	-33.49	3.24	7	33.00	13.51

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.

EUT	Microsoft® Wireless Laser Mouse 5000	MODEL	1058
INPUT POWER	1.5Vdc	FREQUENCY RANGE	Below 1000 MHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 64% RH, 991 hPa	DETECTOR FUNCTION	Quasi-Peak
TEST MODE	6	TESTED BY	Brad Wu

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	292.42	30.87 QP	46.00	-15.13	1.00 H	346	16.58	14.29
2	506.25	27.75 QP	46.00	-18.25	1.50 H	193	9.07	18.68
3	560.68	26.67 QP	46.00	-19.33	1.50 H	184	6.92	19.75
4	613.17	29.67 QP	46.00	-16.33	1.25 H	34	8.67	21.00
5	667.60	29.23 QP	46.00	-16.77	1.25 H	1	7.57	21.66
6	895.03	28.51 QP	46.00	-17.49	1.00 H	172	3.79	24.72

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	53.33	26.20 QP	40.00	-13.80	1.00 V	331	11.93	14.27
2	84.43	21.66 QP	40.00	-18.34	1.00 V	37	11.70	9.97
3	142.75	22.98 QP	43.50	-20.52	1.00 V	196	8.47	14.51
4	319.64	25.50 QP	46.00	-20.50	1.25 V	205	10.65	14.85
5	896.97	25.19 QP	46.00	-20.81	1.25 V	250	0.43	24.76
6	951.40	26.07 QP	46.00	-19.93	1.50 V	133	0.74	25.33

- 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 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:

USA	FCC, NVLAP, UL, A2LA
Germany	TUV Rheinland
Japan	VCCI
Norway	NEMKO
Canada	INDUSTRY CANADA , CSA
R.O.C.	CNLA, BSMI, DGT
Netherlands	Telefication
Singapore	PSB , GOST-ASIA(MOU)
Russia	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. If you have any comments, please feel free to contact us at the following:

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Fax: 886-2-26052943

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Email: service@adt.com.tw**Web Site:** www.adt.com.tw

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

APPENDIX-A

MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.