



FCC TEST REPORT

REPORT NO.: RF930428L11

MODEL NO.: 1023

RECEIVED: April 28, 2004

TESTED: April 29 ~ May 1, 2004

APPLICANT: Microsoft Corporation

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

ISSUED BY: Advance Data Technology Corporation

LAB LOCATION: No. 19, Hwa Ya 2nd Rd., Kueishan, Taoyuan, Taiwan, R.O.C.

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1 CERTIFICATION

PRODUCT NAME : Microsoft® Wireless Notebook Optical Mouse

BRAND NAME.: Microsoft®

MODEL NO. : 1023

APPLICANT : Microsoft Corporation

TESTED : April 29 ~ May 1, 2004

TEST ITEM : ENGINEERING SAMPLE

STANDARDS : FCC Part 15, Subpart C (15.227)
ANSI C63.4-2001
Canada RSS-210

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:** May 6, 2004
Suntee Liu

APPROVED BY: Cody Chang, **DATE:** May 6, 2004
Cody Chang /
Supervisor

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	PASS	Power supply is 1.5Vdc from one battery
15.227	Radiated Emission Test	PASS	Minimum passing margin is -14.78dB at 667.60MHz

NOTE: The receiver part to communicate with the EUT has been verified to comply with FCC Part 15, Subpart B, Class B (DoC). The test report can be provided upon request.

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Microsoft® Wireless Notebook Optical Mouse
MODEL NO.	1023
POWER SUPPLY	1.5Vdc from one battery for Mouse
MODULATION TYPE	FSK
CARRIER FREQUENCY OF EACH CHANNEL	27.145MHz
BANDWIDTH OF EACH CHANNEL	NA
NUMBER OF CHANNEL	1
ANTENNA TYPE	Loop antenna
DATA CABLE	NA
I/O PORTS	NA
ASSOCIATED DDVCS	NA

NOTE:

1. The EUT is the transmitter part of a wireless mouse.
2. Three identical samples were tested at Microsoft's request.

	Serial Number (TX)
A	1023 L-EV2-09/067
B	1023 L-EV2-13/101
C	1023 L-EV2-06/046

3. Configuration Information:

Configuration #:		Comments: EV2 phase unit with EMC fixes for formal report			
Manufacturer	Component type	Part no.	Revision no	Description	BOM (if known)
KYE	Mouse			Transmitter	25000159201
ST	Optical Sensor	Aviator	A	ASIC	11300398000
Microsoft	Firmware		EV2	Transmitter	
KYE	Receiver			USB Receiver	25000158201
Motorola	Micro-controller	MC68HC908JB8			11300008200
Microsoft	Firmware		V0.16	Receiver	
TCT, Express	TX PCB		6	Silver Through Hole	10230040200
Express	RX PCB		7	Double side	10230022200
KYE	PCB Assembly			Receiver	20000058201
KYE	PCB Assembly			Transmitter	20000041201
Mouse					
NYPRO	Skirt			ABS - 94HB	15110057201
HEI	Bottom Case			ABS - 94HB	15110060201
HEI	Wheel			PC - 94HB	15110064201
NYPRO	Top Cover			ABS - 94HB	15110058201
NYPRO	Key Top			ABS - 94HB	15110059201
NYPRO	Logo Knob			PC - 94HB	15110061201
NYPRO	Knob Support			PC - 94HB	15110062201
NYPRO	Detect Support			PC - 94HB	15110063201
NYPRO	Channel Button			ABS - 94HB	15110065201
NYPRO	Detect Head			PC - 94HB	15110066200
NYPRO	Detect Cover			PC - 94HB	15110067200
Receiver					

NYPRO	Main Top			ABS+PC - 94HB	15110052201
NYPRO	Main Bottom			ABS+PC - 94HB	15110053201
NYPRO	Plug Top			ABS+PC - 94HB	15110054201
NYPRO	Plug Bottom			ABS+PC - 94HB	15110055201
NYPRO	Key			PC - 94HB	15110056201

4. 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

One channel is provided in this EUT.

CHENNEL	FREQUENCY
1	27.145 MHz

Three test results were presented in the following sections. (Please refer to note 2 in section 3.1.)

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is the transmitter part of a Microsoft® Wireless Notebook Optical Mouse. 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 C63.4-2001

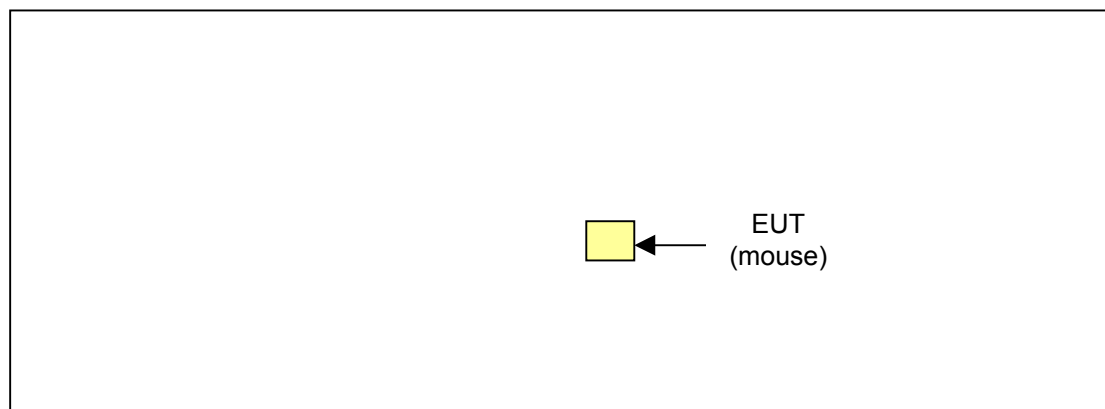
Canada RSS-210

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

3.4 DESCRIPTION OF SUPPORT UNITS

NA

3.5 CONFIGURATION OF SYSTEM UNDER TEST



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	Feb. 09, 2005
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Dec. 15, 2004
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Feb. 03, 2005
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-404	Feb. 03, 2005
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA 9170242	Feb. 23, 2005
Preamplifier Agilent	8447D	2944A10631	Jan. 15, 2005
Preamplifier Agilent	8449B	3008A01960	Jan. 22, 2005
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	219272/4	Mar. 04, 2005
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	219275/4	Mar. 04, 2005
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 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the Emissions that did not have 10 dB margin would be re-tested one by one using the quasi-peak method or average method as specified and then reported in Data sheet peak mode and QP mode.

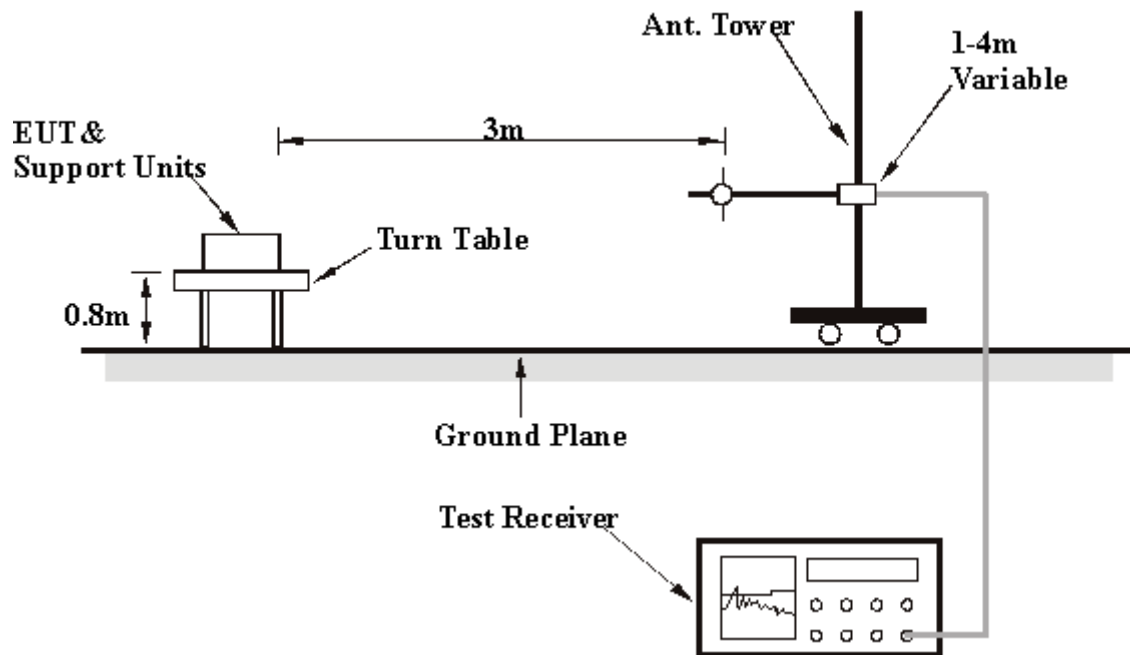
NOTE:

1. 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.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 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 (A)

EUT	Microsoft® Wireless Notebook Optical Mouse	MODEL	1023
FREQUENCY	27.145MHz	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	1.5Vdc	DETECTOR FUNCTION	Peak / Average
ENVIRONMENTAL CONDITIONS	26 deg. C, 65% RH, 991 hPa	TEST SAMPLE	L-EV2-09/067
TESTED BY	Leo Hung		

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	*27.14	46.48 PK	100.00	-53.52	1.96 H	112	32.81	13.67
2	*27.15	43.65 AV	80.00	-36.35	1.96 H	112	29.98	13.67

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	*27.14	40.23 PK	100.00	-59.77	1.05 V	62	26.56	13.67
2	*27.14	38.41 AV	80.00	-41.59	1.05 V	62	24.74	13.67

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
 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.

EUT	Microsoft® Wireless Notebook Optical Mouse	MODEL	1023
FREQUENCY	27.145MHz	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	1.5Vdc	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	26 deg. C, 65% RH, 991 hPa	TEST SAMPLE	L-EV2-09/067
TESTED BY	Leo Hung		

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	185.51	25.31 QP	43.50	-18.19	1.25 H	268	12.86	12.45
2	212.73	20.00 QP	43.50	-23.50	1.00 H	247	8.19	11.81
3	239.94	19.24 QP	46.00	-26.76	1.25 H	292	6.27	12.96
4	253.55	21.49 QP	46.00	-24.51	1.00 H	40	8.33	13.16
5	292.42	29.19 QP	46.00	-16.81	1.00 H	259	14.90	14.29
6	319.64	28.39 QP	46.00	-17.61	1.00 H	223	13.55	14.85
7	346.85	27.75 QP	46.00	-18.25	1.00 H	208	12.30	15.45
8	360.46	30.52 QP	46.00	-15.48	1.00 H	247	14.75	15.77
9	374.07	29.87 QP	46.00	-16.13	1.00 H	280	13.77	16.10
10	399.34	26.29 QP	46.00	-19.71	1.00 H	349	9.58	16.71
11	426.55	25.12 QP	46.00	-20.88	2.00 H	250	7.71	17.40

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	84.43	21.13 QP	40.00	-18.87	1.25 V	202	11.16	9.97
2	99.98	20.60 QP	43.50	-22.90	2.00 V	133	9.69	10.91
3	113.59	22.80 QP	43.50	-20.70	1.50 V	331	10.56	12.23
4	127.19	23.73 QP	43.50	-19.77	1.00 V	136	10.30	13.43
5	142.75	20.62 QP	43.50	-22.88	1.50 V	22	6.11	14.51
6	156.35	22.84 QP	43.50	-20.66	1.00 V	244	7.99	14.85
7	185.51	19.25 QP	43.50	-24.25	1.00 V	340	6.80	12.45
8	292.42	18.82 QP	46.00	-27.18	1.00 V	4	4.53	14.29
9	319.64	19.02 QP	46.00	-26.98	2.50 V	205	4.17	14.85
10	346.85	19.49 QP	46.00	-26.51	2.00 V	4	4.04	15.45
11	374.07	26.67 QP	46.00	-19.33	2.00 V	358	10.56	16.10
12	399.34	26.48 QP	46.00	-19.52	1.50 V	352	9.77	16.71
13	426.55	23.18 QP	46.00	-22.82	1.50 V	10	5.78	17.40

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
 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.

4.2.8 TEST RESULTS (B)

EUT	Microsoft® Wireless Notebook Optical Mouse	MODEL	1023
FREQUENCY	27.145MHz	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	1.5Vdc	DETECTOR FUNCTION	Peak / Average
ENVIRONMENTAL CONDITIONS	26 deg. C, 65% RH, 991 hPa	TEST SAMPLE	L-EV2-13/101
TESTED BY	Leo Hung		

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	*27.14	47.83 PK	100.00	-52.17	2.09 H	270	34.16	13.67
2	*27.14	45.78 AV	80.00	-34.22	2.09 H	270	32.11	13.67

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	*27.14	41.34 PK	100.00	-58.66	2.52 V	196	27.67	13.67
2	*27.15	37.82 AV	80.00	-42.18	2.52 V	196	24.15	13.67

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
 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.

EUT	Microsoft® Wireless Notebook Optical Mouse	MODEL	1023
FREQUENCY	27.145MHz	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	1.5Vdc	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	24 deg. C, 65% RH, 991 hPa	TEST SAMPLE	L-EV2-13/101
TESTED BY	Leo Hung		

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	158.30	17.48 QP	43.50	-26.02	1.75 H	223	2.63	14.85
2	185.51	26.65 QP	43.50	-16.85	1.25 H	133	14.12	12.53
3	212.73	20.86 QP	43.50	-22.64	1.00 H	52	8.93	11.93
4	239.94	21.65 QP	46.00	-24.35	1.25 H	157	8.57	13.08
5	265.21	23.74 QP	46.00	-22.26	1.00 H	85	10.16	13.58
6	292.42	29.07 QP	46.00	-16.93	1.00 H	82	14.69	14.38
7	319.64	28.83 QP	46.00	-17.17	1.00 H	100	13.88	14.95
8	346.85	30.54 QP	46.00	-15.46	1.00 H	88	14.96	15.58
9	372.12	30.11 QP	46.00	-15.89	1.00 H	100	13.97	16.14
10	399.34	28.06 QP	46.00	-17.94	1.00 H	118	11.32	16.74
11	560.68	27.98 QP	46.00	-18.02	1.50 H	271	8.01	19.97
12	634.55	28.71 QP	46.00	-17.29	1.25 H	91	7.23	21.47
13	667.60	31.22 QP	46.00	-14.78	1.25 H	52	9.33	21.90

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	99.98	17.07 QP	43.50	-26.43	1.75 V	199	6.09	10.98
2	142.75	17.65 QP	43.50	-25.85	1.00 V	160	3.16	14.48
3	185.51	15.19 QP	43.50	-28.31	1.25 V	265	2.66	12.53
4	292.42	17.96 QP	46.00	-28.04	2.50 V	124	3.58	14.38
5	319.64	17.45 QP	46.00	-28.55	2.50 V	133	2.50	14.95
6	346.85	22.42 QP	46.00	-23.58	2.00 V	145	6.84	15.58
7	374.07	25.30 QP	46.00	-20.70	1.50 V	304	9.12	16.18
8	399.34	27.77 QP	46.00	-18.23	1.50 V	31	11.04	16.74
9	426.55	22.15 QP	46.00	-23.85	1.25 V	328	4.70	17.45
10	453.77	22.10 QP	46.00	-23.90	1.50 V	28	3.98	18.12

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
 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.

4.2.9 TEST RESULTS (C)

EUT	Microsoft® Wireless Notebook Optical Mouse	MODEL	1023
FREQUENCY	27.145MHz	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	1.5Vdc	DETECTOR FUNCTION	Peak / Average
ENVIRONMENTAL CONDITIONS	26 deg. C, 65% RH, 991 hPa	TEST SAMPLE	L-EV2-06/046
TESTED BY	Leo Hung		

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	*27.15	44.59 PK	100.00	-55.41	2.12 H	20	30.92	13.67
2	*27.14	43.11 AV	80.00	-36.89	2.12 H	360	29.44	13.67

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	*27.14	42.69 PK	100.00	-57.31	2.52 V	196	29.02	13.67
2	*27.15	41.11 AV	80.00	-38.89	2.52 V	196	27.44	13.67

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
 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.

EUT	Microsoft® Wireless Notebook Optical Mouse	MODEL	1023
FREQUENCY	27.145MHz	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	1.5Vdc	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	24 deg. C, 64% RH, 991 hPa	TEST SAMPLE	L-EV2-06/046
TESTED BY	Steven Lu		

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	185.51	25.16 QP	43.50	-18.34	1.50 H	307	12.63	12.53
2	212.73	20.68 QP	43.50	-22.82	1.75 H	322	8.76	11.93
3	239.94	20.16 QP	46.00	-25.84	1.50 H	346	7.09	13.08
4	265.21	21.76 QP	46.00	-24.24	1.00 H	235	8.18	13.58
5	292.42	29.16 QP	46.00	-16.84	1.00 H	256	14.78	14.38
6	319.64	27.97 QP	46.00	-18.03	1.00 H	265	13.02	14.95
7	346.85	28.15 QP	46.00	-17.85	1.25 H	265	12.57	15.58
8	372.12	29.17 QP	46.00	-16.83	1.00 H	307	13.03	16.14
9	399.34	25.23 QP	46.00	-20.77	1.00 H	331	8.49	16.74
10	426.55	22.61 QP	46.00	-23.39	2.00 H	286	5.16	17.45
11	506.25	24.44 QP	46.00	-21.56	1.75 H	265	5.59	18.85
12	560.68	26.85 QP	46.00	-19.15	1.50 H	256	6.88	19.97
13	601.50	27.72 QP	46.00	-18.28	1.50 H	214	6.69	21.03
14	640.38	29.82 QP	46.00	-16.18	1.25 H	223	8.27	21.55
15	667.60	29.43 QP	46.00	-16.57	1.25 H	295	7.53	21.90

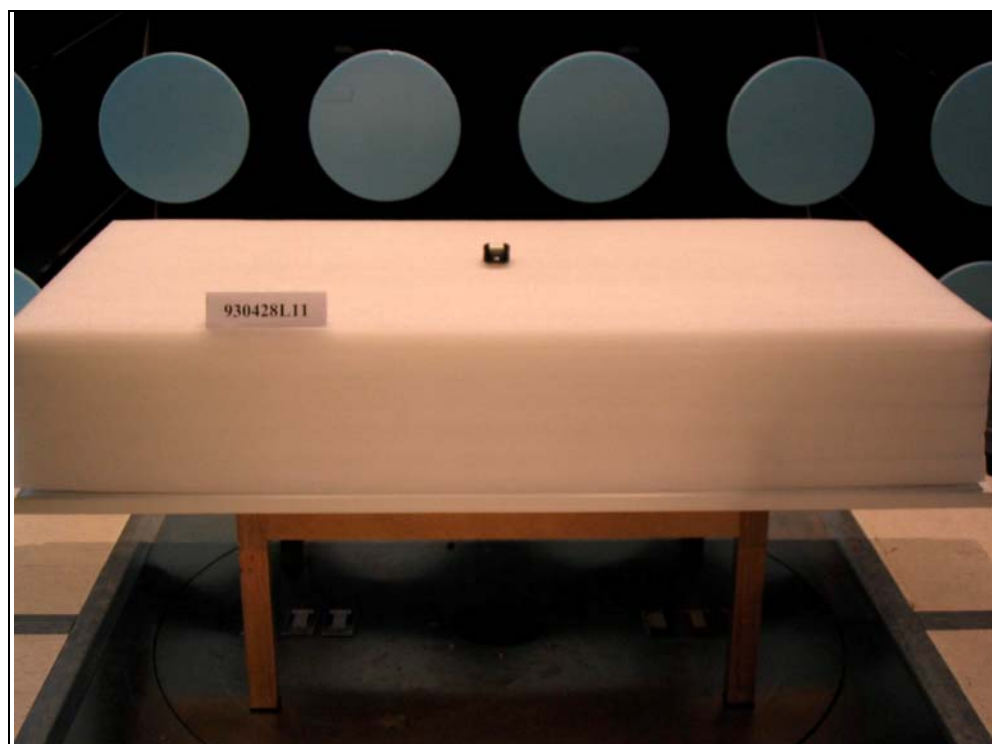
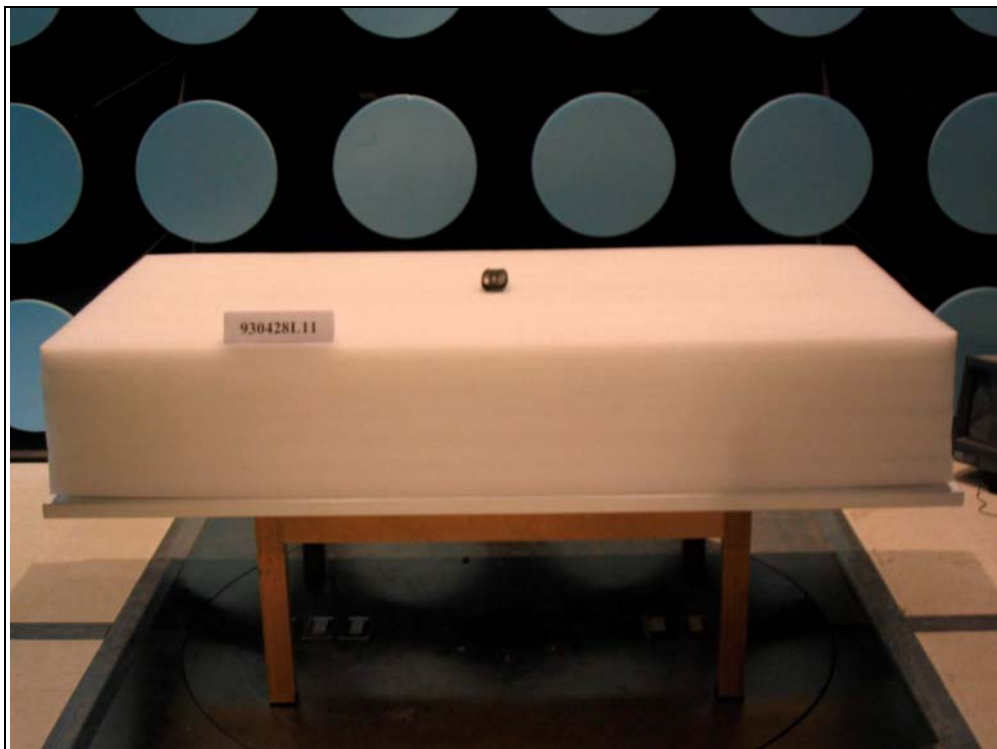
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

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	99.98	16.79 QP	43.50	-26.71	1.25 V	106	5.81	10.98
2	185.51	15.47 QP	43.50	-28.03	1.00 V	142	2.95	12.53
3	292.42	17.99 QP	46.00	-28.01	2.50 V	127	3.60	14.38
4	319.64	16.84 QP	46.00	-29.16	3.00 V	121	1.89	14.95
5	346.85	22.39 QP	46.00	-23.61	2.00 V	124	6.81	15.58
6	372.12	24.15 QP	46.00	-21.85	1.50 V	124	8.02	16.14
7	399.34	25.42 QP	46.00	-20.58	1.50 V	49	8.68	16.74
8	426.55	20.72 QP	46.00	-25.28	1.50 V	352	3.27	17.45
9	453.77	21.48 QP	46.00	-24.52	1.50 V	37	3.36	18.12

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
 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 PHOTOGRAPHS OF THE TEST CONFIGURATION

RADIATED EMISSION TEST



6 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, Guide 25 or EN 45001:

USA	FCC, NVLAP, UL
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.

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

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