FCC TEST REPORT

REPORT NO.: RF930407L04
MODEL NO.: K376R
RECEIVED: Apr. 7, 2004
TESTED: Apr. 20 ~ Apr. 24, 2004

APPLICANT: MONTEREY INTERNATIONAL CORP.

ADDRESS: 1FL, No. 40, Deh Hwei Street, Taipei, Taiwan, R.O.C.

ISSUED BY: Advance Data Technology Corporation

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

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1 CERTIFICATION

PRODUCT NAME :	Wireless Keyboard
MODEL NO. :	K376R
BRAND NO:	MONTEREY (refer to page 5 for other brand names)
APPLICANT :	MONTEREY INTERNATIONAL CORP.
TESTED:	Apr. 20 ~ Apr. 24, 2004
TEST ITEM :	Engineering Sample
STANDARDS :	FCC Part 15, Subpart C (15.227) ANSI C63.4-2001

The above equipment have 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: Windy Chou , **DATE:** Apr. 27, 2004

Windy Chou

APPROVED BY: Cody Chang , **DATE:** Apr. 27, 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	N/A	Power supply is 3Vdc from batteries
15.227	Radiated Emission Test	PASS	Minimum passing margin is –2.79dB at 162.18MHz

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	Wireless Keyboard
MODEL NO.	K376R
POWER SUPPLY	3.0Vdc from AA Battery x 2
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 DDVCES	NA

NOTE:

1. The EUT is the transmitter part of a wireless keyboard.
2. This EUT has other different brand names that listed below and due to marketing requirement.

Brand	Remark
MONTEREY	For this EUT
T.C.STAR	OEM brand
Mtek	OEM brand
Key Tronic	OEM brand
Aopen	OEM brand
ViewSonic	OEM brand
EDM	OEM brand
CONCORDIA	OEM brand

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

One channel was provided in this EUT.

CHENNEL	FREQUENCY
1	27.145MHz

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is the transmitter part of a Wireless Keyboard. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C (15.227)

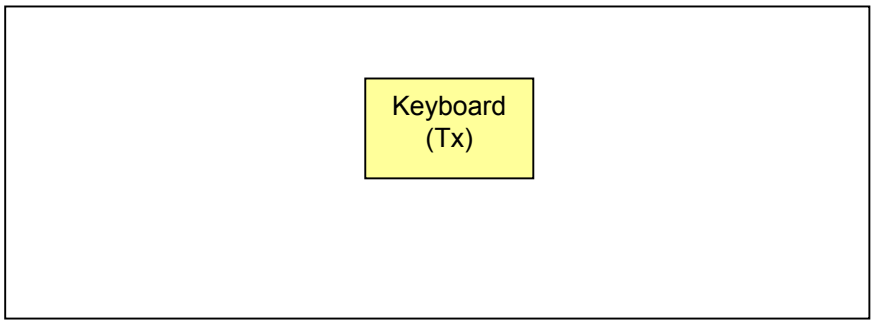
ANSI C63.4-2001

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	ESIB7	100188	Jan. 13, 2005
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Dec. 15, 2004
BILOG Antenna SCHWARZBECK	VULB9168	9168-157	Feb. 03, 2005
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-407	Feb. 03, 2005
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA 9170241	Feb. 23, 2005
Preamplifier Agilent	8449B	3008A01961	Jan. 22, 2005
Preamplifier Agilent	8447D	2944A10629	Jan. 14, 2005
RF signal cable HUBER+SUHNER	SUCOFLEX 104	218182/4	Mar. 04, 2005
RF signal cable HUBER+SUHNER	SUCOFLEX 104	218194/4	Mar. 04, 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 2.

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 10 meter open area test site. 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.

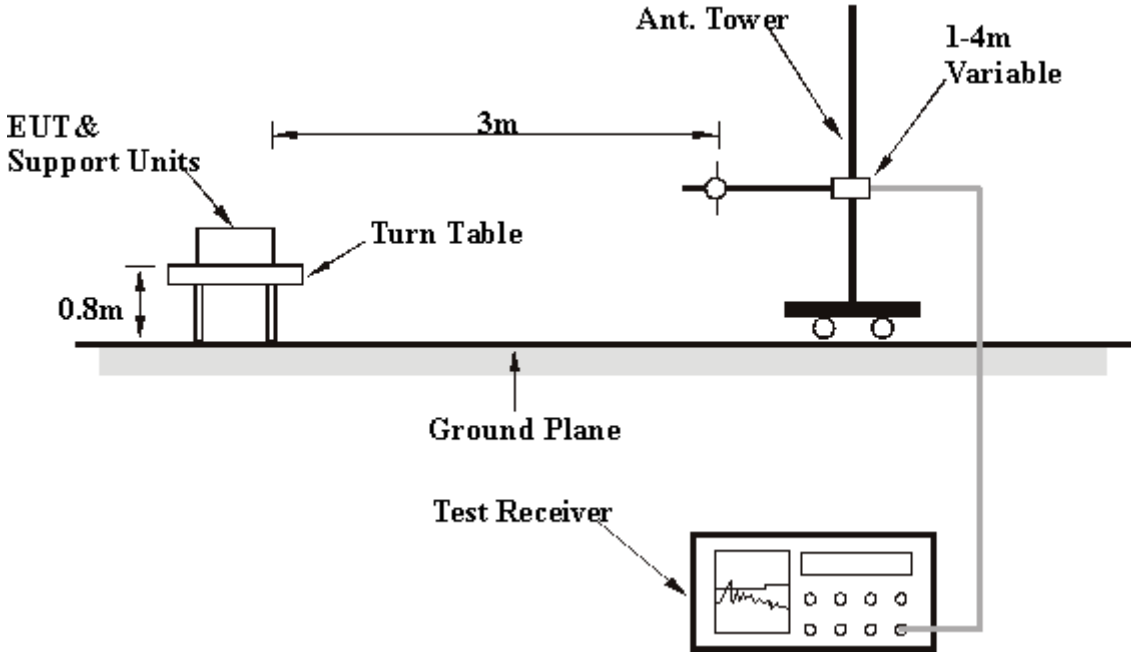
NOTE:

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 DEVATION 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	Wireless Keyboard	**MODEL**	K376R
FREQUENCY	27.145MHz	**FREQUENCY RANGE**	Below 1000MHz
INPUT POWER	3Vdc	**DETECTOR FUNCTION**	Peak / Quasi-Peak / Average
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH, 991hPa	**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	*27.13	60.82 PK	100.00	-39.18	1.86 H	350	47.22	13.60
2	*27.13	59.04 AV	80.00	-20.96	1.86 H	350	45.44	13.60
3	80.54	33.65 QP	40.00	-6.35	2.00 H	148	23.67	9.98
4	107.76	21.07 QP	43.50	-22.43	1.50 H	67	9.29	11.77
5	134.97	26.86 QP	43.50	-16.64	1.75 H	220	12.78	14.07
6	**162.18**	**40.71 QP**	**43.50**	**-2.79**	**1.75 H**	**49**	**26.03**	**14.68**
7	189.40	38.75 QP	43.50	-4.75	1.25 H	7	26.52	12.22
8	243.83	41.18 QP	46.00	-4.82	1.25 H	166	28.04	13.13
9	271.04	37.82 QP	46.00	-8.18	1.00 H	352	24.00	13.81
10	298.26	36.94 QP	46.00	-9.06	1.00 H	25	22.46	14.47
11	352.69	32.85 QP	46.00	-13.15	3.00 H	340	17.14	15.71
12	379.90	37.71 QP	46.00	-8.29	1.00 H	283	21.41	16.31
13	407.11	33.91 QP	46.00	-12.09	1.00 H	319	16.97	16.94
14	461.54	36.33 QP	46.00	-9.67	1.75 H	232	18.11	18.22
15	488.76	39.07 QP	46.00	-6.93	1.50 H	268	20.49	18.58
16	515.97	34.56 QP	46.00	-11.44	1.50 H	265	15.52	19.04
17	543.19	33.43 QP	46.00	-12.57	1.50 H	10	13.87	19.56
18	570.40	34.63 QP	46.00	-11.37	1.75 H	52	14.41	20.23

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.

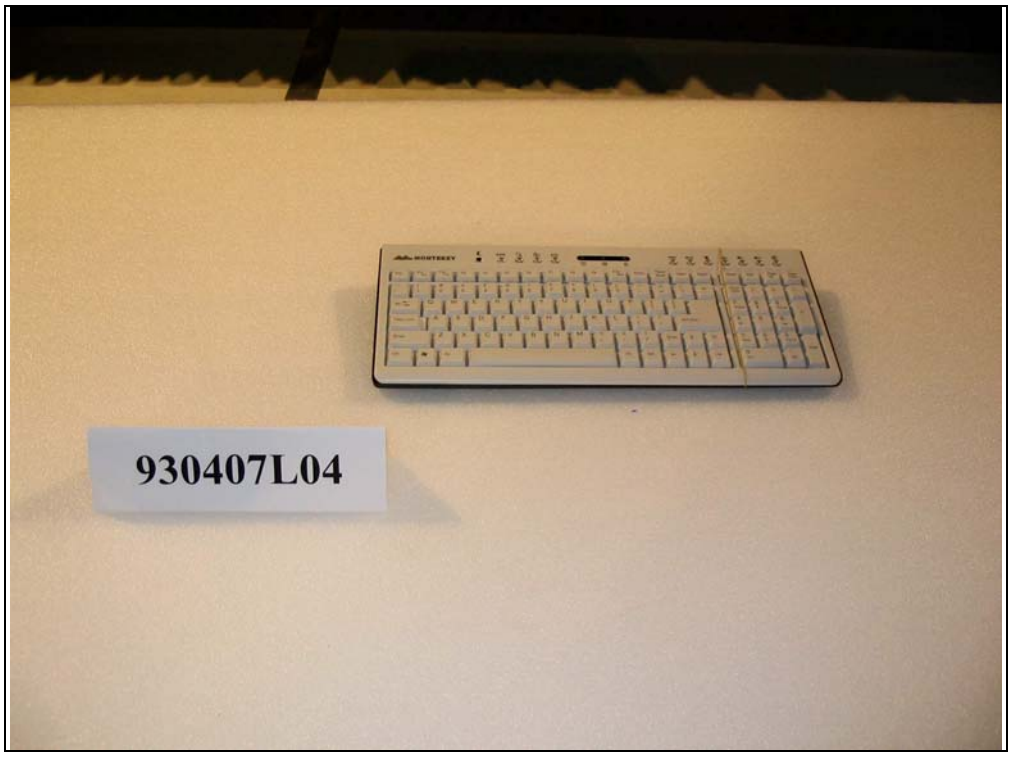
EUT	Wireless Keyboard	**MODEL**	K376R
FREQUENCY	27.145MHz	**FREQUENCY RANGE**	Below 1000MHz
INPUT POWER	3Vdc	**DETECTOR FUNCTION**	Peak / Quasi-Peak / Average
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH, 991hPa	**TESTED BY**: Steven Lu	

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	*27.13	56.24 PK	100.00	-43.76	1.05 V	229	42.64	13.60
2	*27.13	55.10 AV	80.00	-24.90	1.05 V	229	41.50	13.60
3	53.33	28.79 QP	40.00	-11.21	1.00 V	145	14.42	14.37
4	80.54	27.63 QP	40.00	-12.37	1.00 V	211	17.65	9.98
5	107.76	21.32 QP	43.50	-22.18	1.25 V	169	9.54	11.77
6	134.97	22.65 QP	43.50	-20.85	1.00 V	322	8.58	14.07
7	162.18	32.06 QP	43.50	-11.44	1.50 V	316	17.38	14.68
8	189.40	30.84 QP	43.50	-12.66	1.75 V	133	18.62	12.22
9	216.61	21.29 QP	46.00	-24.71	1.25 V	184	9.20	12.09
10	243.83	31.09 QP	46.00	-14.91	1.50 V	226	17.96	13.13
11	271.04	27.80 QP	46.00	-18.20	1.50 V	94	13.99	13.81
12	298.26	28.06 QP	46.00	-17.94	1.25 V	169	13.58	14.47
13	379.90	32.12 QP	46.00	-13.88	2.50 V	205	15.81	16.31
14	407.11	26.14 QP	46.00	-19.86	2.50 V	148	9.20	16.94
15	434.33	23.41 QP	46.00	-22.59	2.00 V	214	5.75	17.66
16	461.54	35.77 QP	46.00	-10.23	1.25 V	313	17.55	18.22
17	488.76	33.51 QP	46.00	-12.49	1.75 V	130	14.92	18.58
18	515.97	28.54 QP	46.00	-17.46	1.50 V	226	9.51	19.04
19	543.19	27.44 QP	46.00	-18.56	1.00 V	61	7.88	19.56
20	570.40	29.12 QP	46.00	-16.88	1.75 V	64	8.89	20.23
21	597.62	26.39 QP	46.00	-19.61	1.50 V	61	5.44	20.95

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.

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.
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.

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