FCC TEST REPORT

REPORT NO.: RF930420L01
MODEL NO.: M955C
RECEIVED: April 20, 2004
TESTED: May 28, 2004

APPLICANT: BEHAVIOR TECH COMPUTER CORP.

ADDRESS: 2F, 51, Tung Hsing Rd., Taipei, Taiwan, R.O.C.

ISSUED BY: Advance Data Technology Corporation

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

0528
ILAC MRA

Table of Contents

1 CERTIFICATION

PRODUCT NAME :	Wireless Optical Mouse
BRAND NAME:	BTC, EMPREX
MODEL NO. :	M955C
APPLICANT :	BEHAVIOR TECH COMPUTER CORP.
TEST ITEM :	PROTOTYPE
TESTED :	May 28, 2004
STANDARDS :	FCC Part 15, Subpart C(15.227) ANSI C63.4-2001

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: _____ , **DATE:** June 1, 2004
Wendy Liao

APPROVED BY: _____ , **DATE:** June 1, 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 3Vdc from batteries
15.227	Radiated Emission Test	PASS	Minimum passing margin is –10.85dB at 136.70MHz

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 Optical Mouse
MODEL NO.	M955C
POWER SUPPLY	3.0Vdc from AA batteries for Mouse
MODULATION TYPE	FSK
CARRIER FREQUENCY OF EACH CHANNEL	27.045MHz, 27.095MHz
BANDWIDTH OF EACH CHANNEL	±5kHz
NUMBER OF CHANNEL	2
ANTENNA TYPE	Printed antenna
DATA CABLE	NA
I/O PORTS	NA
ASSOCIATED DDVCES	NA

NOTE:

1. The EUT is the transmitter part of a wireless mouse.
2. The models as below are identical to each other expect for their brands due to marketing requirement.

Brand	Model	Remark
BTC	M955C	Only brand different
EMPREX	M955C	Only brand different

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

Two channels were provided in this EUT.

CHENNEL	FREQUENCY
1	27.045 MHz
2	27.095 MHz

Note: 1. Frequency of 27.045MHz, the worst case one, was chosen for the final test after pre-testing.

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is the transmitter part of a Wireless 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)

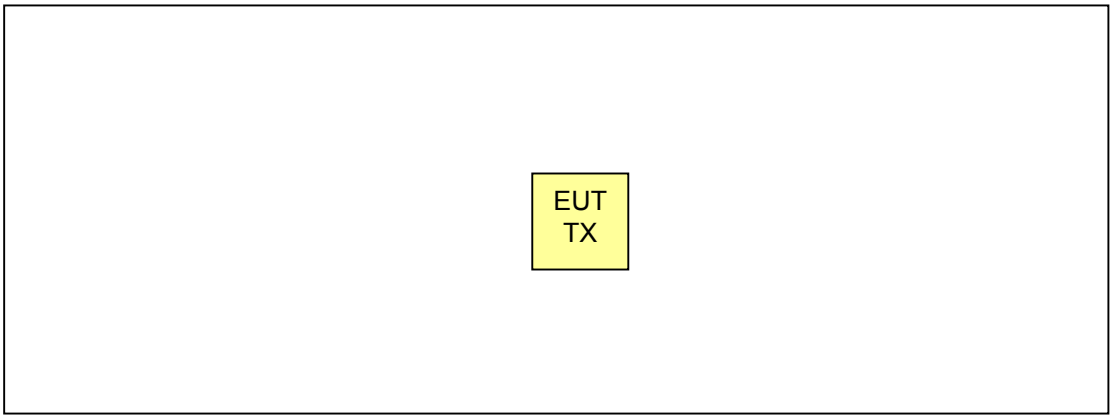
ANSI C63.4-2001

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	100033	May 28, 2005
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Dec. 15, 2004
BILOG Antenna SCHWARZBECK	VULB9168	9168-153	Feb. 03, 2005
HORN Antenna SCHWARZBECK	9120D	9120D-408	Feb. 03, 2005
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA 9170243	Feb. 23, 2005
Preamplifier Agilent	8447D	2944A10633	Jan. 15, 2005
Preamplifier Agilent	8449B	3008A01964	Jan. 27, 2005
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	218183/4	Mar. 05, 2005
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	218195/4	Mar. 05, 2005
Software ADT.	ADT_Radiated_V5.14	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA
Antenna Tower Controller inn-co GmbH	CO2000	017303	NA
Turn Table ADT.	TT100.	TT93021703	NA
Turn Table Controller ADT.	SC100.	SC93021703	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 IC4924-3.

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 meter 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.

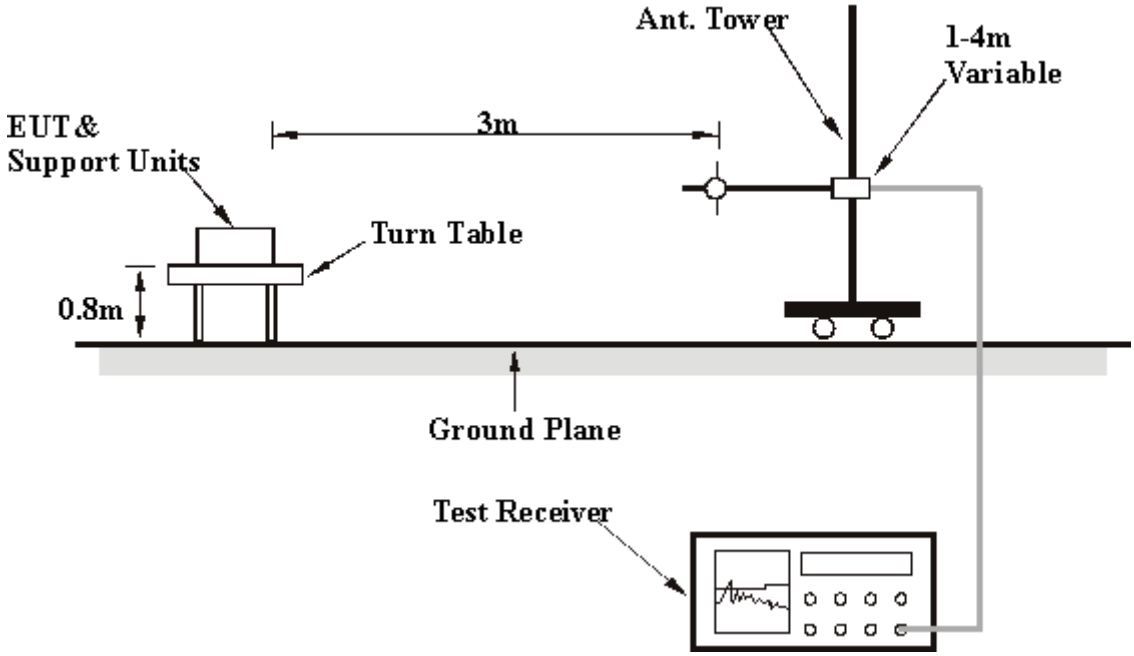
NOTE:

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 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 Optical Mouse	**MODEL**	M955C
FREQUENCY	27.045MHz	**FREQUENCY RANGE**	Below 1000MHz
INPUT POWER	3Vdc	**DETECTOR FUNCTION**	Peak / Quasi-Peak / Average
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 991hPa	**TESTED BY**: Long Chen	

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	*27.04	49.02 PK	100.00	-50.98	2.31 H	216	35.00	14.02
2	*27.05	47.91 AV	80.00	-32.09	2.31 H	216	33.89	14.02
3	62.33	27.55 QP	40.00	-12.45	3.00 H	106	13.84	13.71
4	**136.70**	**32.65 QP**	**43.50**	**-10.85**	**2.00 H**	**82**	**18.74**	**13.91**
5	189.51	26.30 QP	43.50	-17.20	1.50 H	190	14.04	12.26
6	299.44	30.11 QP	46.00	-15.89	1.00 H	286	15.31	14.80
7	894.38	29.14 QP	46.00	-16.86	4.00 H	256	4.01	25.13
8	946.11	29.43 QP	46.00	-16.57	4.00 H	202	3.66	25.77

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.

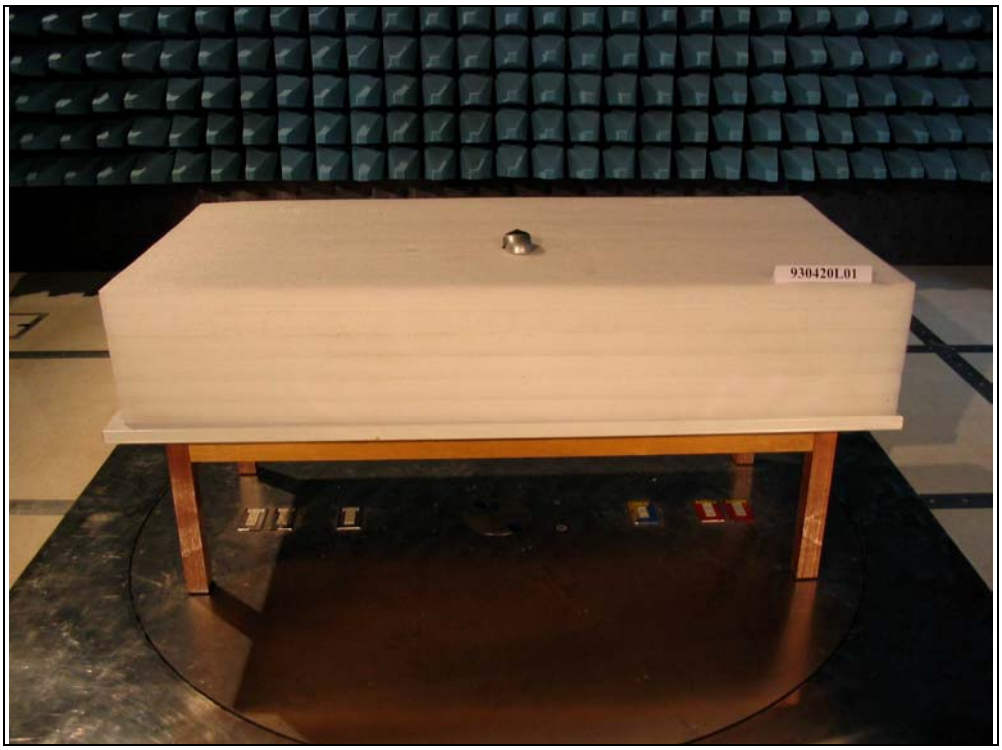
EUT	Wireless Optical Mouse	**MODEL**	M955C
FREQUENCY	27.045MHz	**FREQUENCY RANGE**	Below 1000MHz
INPUT POWER	3Vdc	**DETECTOR FUNCTION**	Peak / Quasi-Peak / Average
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 991hPa	**TESTED BY**: Long Chen	

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	*27.04	33.80 PK	100.00	-66.20	1.00 V	113	19.50	14.02
2	*27.03	33.52 AV	80.00	-46.48	1.00 V	113	19.78	14.02
3	63.41	27.50 QP	40.00	-12.50	1.00 V	106	13.89	13.61
4	136.70	27.52 QP	43.50	-15.98	1.00 V	250	13.61	13.91
5	744.57	27.69 QP	46.00	-18.31	2.00 V	262	4.14	23.55
6	870.67	28.01 QP	46.00	-17.99	2.50 V	136	3.35	24.66
7	908.39	28.03 QP	46.00	-17.97	1.00 V	88	2.69	25.34
8	956.89	28.01 QP	46.00	-17.99	2.00 V	238	2.16	25.85

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:

Linko EMC/RF Lab:
Tel: 886-2-26052180
Fax: 886-2-26052943

Hsin Chu EMC/RF Lab:
Tel: 886-3-5935343
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety/Telecom Lab:
Tel: 886-3-3183232
Fax: 886-3-3185050

Linko RF Lab.
Tel: 886-3-3270910
Fax: 886-3-3270892

Email: service@mail.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.

Report Format Version 1.0