

Date:1998-08-31
No.: HM1299/504

TEST REPORT

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APPLICANT: (CODE : 017278)

QUITO TECHNOLOGY CO., LTD.
12FL, Workington Tower, 78 Bonham Strand East, Hong Kong.

DATE OF SAMPLES RECEIVED: 1998-08-25

DATE OF TESTING: 1998-08-28 & 1998-08-31

DESCRIPTION OF SAMPLE(S):

A sample of product said to be:

Product: Visible Mouse
Manufacturer: Quito Technology Co., Ltd.
Model Number: QM-8 SERIAL
Brand Name: Quito
Origin : China

INVESTIGATIONS REQUESTED:

Measurement to the relevant clauses of F.C.C. Rules and Regulations Part B - Unintentional Radiators.
The results obtained are to compare with the class B digital device limit.

REMARK : This product was tested as a system using the Ancillary Equipment listed & Photographs in Appendix B.

RESULTS: Please see attached sheet(s).

CONCLUSION:

From the measurement data obtained, the tested sample was considered to have COMPLIED with the requirement for the relevant clauses of Federal Communications Commission Rules for Class B digital device.

TEST EQUIPMENT AUDIT: Please see Appendix A

Law Man Kit
Testing Engineer

Kitty Choy
Verify by

Patrick Wong
Patrick Wong
for Managing Director

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TEST SUMMARY

(A) **Measurement of Radiated Emission**

Result -- Satisfactory

Data -- See the attached data

(B) **Measurement of Line-Conducted Voltage Test**

Result -- Satisfactory

Data -- See the attached data

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(A) Measurement of Radiated Interference

TEST REFERENCE: FCC Rules Part 15 Subpart B Section 15.109(a)
(Class B)

TEST CONDITION : Worst case Monitor Power supplied by computer & separately

TEST DATE : 1998-08-31

Emission Frequency MHz	Meter Reading dB(μ V)	Polarization (including antenna factor)	Field Strength (at 3m) μ V/m	FCC Limit μ V/m
85.006	20.0	H	10.0	100
197.072	19.4	V	9.3	150
235.600	14.9	V	5.6	200
272.217	18.8	H	8.7	200
310.020	26.6	H	21.4	200
400.900	27.8	H	24.5	200
633.300	34.3	V	51.9	200

- End -

===== SUMMARY ===== All data is within limits

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Broad-band Antennas were used and both polarizations of emissions were measured.
polarizations at highest reading indicated as:
H -- Horizontal V -- Vertical

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Quasi-peak measurements were performed if the maximised measurements
were less than 6dB below the quasi-peak limit line.

NOTES FOR THE RADIATION MEASUREMENT

(1) Test site facility:

Open field test site located at Taipo (Hong Kong) with a metal ground plane in compliance with the requirements of ANSI C63.4:1992.

(2) Test Equipment

HP 8572A EMI receiver was set to CISPR quasi-peak mode and the bandwidth of the receiver was set to 100KHz or 1MHz depending on the type of signal. A biconical log-periodic antenna was used for frequency range from 30MHz to 1000MHz.

(3) Test Set-Up:

The EUT and support equipment are placed in accordance with ANSI C63.4.

(4) Measuring Procedure:

An initial pre-scan measurement was performed in a semi-anechoic chamber using a 25dB gain pre-amplifier. The receive antenna in the chamber was 1.5m above the groundplane and 3m from the sample. The sample was placed 0.8m above the groundplane.

Measurements in both horizontal and vertical polarities were performed. All emissions recorded during the prescan were subsequently remeasured on the open field test site (described in 1 above) using the following procedure: The ambient noise scanning was made before powering on the EUT and support equipment to identify the emissions from the environment. During the test, each emission was maximized by: having the VISIBLE MOUSE continuously working by running a special test program (PCB.exe) supplied by the customer, arranging and manipulating interconnecting cables, rotating turntable and varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The frequency range tested is from 30MHz to 1000MHz and the worst-case emissions are shown in Test Results.

(5) Measuring Uncertainty:

The calculated uncertainty for measurement performed at 3M test distance are:-
30MHz to 200MHz = $\pm 3.7\text{dB}$, 200MHz to 1000MHz = $+ 3.0\text{dB}/-2.7\text{dB}$.

Remark : Purpose of this test is to provide the Applicant with the necessary test data of their device for the submission to FCC with application for Equipment Authorization under FCC's Equipment Authorization Program. This test itself is not an Approval Test.

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(B) Measurement of Line-Conducted Voltage onto AC Power Line

TEST REFERENCE : FCC Rules Part 15 Subpart B Section 15.107(a)
(Class B)

TEST CONDITION : Normal

TEST DATE : 1998-08-28

(1) Between "Live" and "Ground"

Frequency Range of Emission			Maximum Measured Radio Noise		FCC Limit (Class B)
MHz			dB(μV)	μV	μV
0.45	-	0.8	32.60	42.66	250.00
0.8	-	1.6	37.58	75.68	250.00
1.6	-	3.0	41.82	123.31	250.00
3.0	-	5.0	35.15	57.21	250.00
5.0	-	7.0	31.11	35.93	250.00
7.0	-	9.0	29.32	29.24	250.00
9.0	-	11.0	32.29	41.16	250.00
11.0	-	13.0	37.58	75.68	250.00
13.0	-	15.0	31.50	37.58	250.00
15.0	-	17.0	32.89	44.11	250.00
17.0	-	19.0	0.00	1.00	250.00
19.0	-	21.0	< 16.17	6.43	250.00
21.0	-	23.0	16.88	6.98	250.00
23.0	-	25.0	0.00	1.00	250.00
25.0	-	27.0	23.86	15.60	250.00
27.0	-	30.0	0.00	1.00	250.00

- End -

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----- SUMMARY -----

All data is within limits

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(B) Measurement of Line-Conducted Voltage onto AC Power Line

TEST REFERENCE : FCC Rules Part 15 Subpart B Section 15.107(a)

(Class B)

TEST CONDITION : Normal

TEST DATE : 1998-08-28

(1) Between "Neutral" and "Ground"

Frequency Range of Emission			Maximum Measured Radio Noise		FCC Limit (Class B)
MHz			dB(μV)	μV	μV
0.45	-	0.8	30.28	32.66	250.00
0.8	-	1.6	35.34	58.48	250.00
1.6	-	3.0	41.00	112.20	250.00
3.0	-	5.0	34.71	54.39	250.00
5.0	-	7.0	27.48	23.66	250.00
7.0	-	9.0	28.93	27.96	250.00
9.0	-	11.0	32.67	43.00	250.00
11.0	-	13.0	38.14	80.72	250.00
13.0	-	15.0	31.86	39.17	250.00
15.0	-	17.0	34.14	50.93	250.00
17.0	-	19.0	0.00	1.00	250.00
19.0	-	21.0	16.17	6.43	250.00
21.0	-	23.0	< 16.88	6.98	250.00
23.0	-	25.0	0.00	1.00	250.00
25.0	-	27.0	24.74	17.26	250.00
27.0	-	30.0	0.00	1.00	250.00

- End -

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----- SUMMARY -----

All data is within limits

NOTES FOR THE CONDUCTED POWER-LINE MEASUREMENT

(1)Test Facility :

The line conducted facility is located at a shielded enclosure. The 1m x 1.5m wooden table and the Line Impedance stabilization Networks (LISNs) are placed in compliance with the requirement of ANSI C63.4 - 1992.

(2)Test Equipment:

The test receiver (R&S ESHS10) was set to CISPR quasi-peak mode. The bandwidth of the receiver was set to 10KHz.

(3)Test Set-Up :

The EUT and the support equipment are placed in accordance with ANSI C63.4-1992 (See appendixA). The computer with the add-on EUT is powered from R & S ESH3-Z5 LISN and the support equipment is powered from EMCO 3825-2 LISN. All interconnecting cables more than 1m were shortened by non-inductive bundling to 1m length.

(4)Measurement procedure :

An initial peak measurement was performed between Live & Ground. Any peak emissions within 20dB of the limit line were subsequently remeasured using quasi-peak detection. This procedure was followed for measurements between live and ground, neutral and ground, monitor powered through computer and monitor powered separately. The worse case quasi-peak data for each frequency was then recorded in section B of this report. The product was exercised as follows :- Power on the computer and all the support equipment. The VISIBLE MOUSE was exercised continuously working by running special program (PCB.exe) supplied by the customer. The frequency range tested is from 450KHz to 30MHz and the worst-case emissions are shown in Test Result.

(5)Measuring Uncertainty:

The calculated uncertainty for conducted power-line measurement is = $\pm 2.3\text{dB}$.

Remark :

Purpose of this test is to provide the Applicant with the necessary test data of their device for the submission to FCC with application for Equipment Authorization under the FCC's Equipment Authorization Program. This test itself is not an Approval Test.