

Date:1998-12-15
No.: HM1194/504

TEST REPORT

Page 1 of 6

APPLICANT:

WINBEL MANUFACTURING CORPORATION LIMITED
FLAT/RM 1108 HANG SHING BLDG.,
363 NATHAN RD., KOWLOON,
HONG KONG.

DATE OF SAMPLES RECEIVED: 1998-11-24

DATE OF TESTING: 1998-12-01

DESCRIPTION OF SAMPLE(S):

A sample of product said to be:

Product: Wireless Headphone
Manufacturer: Shenzhen JWL Electronics Corporation Limited
Model Number: WM-2000
Band Name: N/A
Rating: 3Vd.c. ("AAA" size battery × 2)
Origin: China

INVESTIGATIONS REQUESTED:

Measurement to the relevant clauses of F.C.C. Rules and Regulations Part 15 Subpart C - Intentional Radiator.

RESULT/REMARK: Please see attached sheet(s).

CONCLUSION:

From the measurement data obtained, the tested sample was considered to have COMPLIED after modification by customer with the clauses 15.239 of Federal Communications Commission Rules and Regulations Part 15.

TEST EQUIPMENT AUDIT: Please see Appendix A

Law Man Kit

Testing Engineer

Kitty Choy

Verify by

Patrick Wong

Patrick Wong
for Managing Director

Conditions in issuance of Test Report

1. This Report is issued in confidence to the client and it will be strictly treated as such by the Hong Kong Standards and Testing Centre Ltd. It may not be reproduced either in its entirety or in part and it may not be used for advertising. The client to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Hong Kong Standards and Testing Centre Ltd. to his customer, supplier or other persons directly concerned. The Hong Kong Standards and Testing Centre Ltd. will not, without the consent of the client, enter into any discussion or correspondence with any third party concerning the contents of the Report. 2. The report refers only to the sample tested and does not apply to the bulk, unless the sampling has been carried out by the Hong Kong Standards and Testing Centre Ltd. and is stated as such in the Report. 3. In the event of the improper use of the report, the Hong Kong Standards and Testing Centre Ltd. reserves the rights to withdraw it, and to adopt any other remedies which may be appropriate. 4. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Hong Kong Standards and Testing Centre Ltd. 5. The Hong Kong Standards and Testing Centre Ltd. will not be liable for or accept responsibility for any loss or damage howsoever arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations. 6. Applicants wishing to use the Report in court proceedings or arbitration shall inform the Hong Kong Standards and Testing Centre Ltd. to that effect prior to submitting the sample for testing.

Date:1998-12-15
No.: HM1194/504

TEST REPORT

Page 2 of 6

TEST SUMMARY

***** INTENTIONAL RADIATOR :*****

- (1) Measurement of Emission of RF energy on the carrier frequency.....Satisfactory
Measurement of the out-of band emissions including harmonics.....Satisfactory
- (2) Measurement of Emission Within Band Edges.....Satisfactory
- (3) Measurement of Line-Conducted Voltage onto AC Power Line.....Not applicable

TEST DATA

Please refer to the attached result sheets.

Date:1998-12-15
No.: HM1194/504

TEST REPORT

Page 3 of 6

*** INTENTIONAL RADIATOR ***

(1) Measurement of Radiated Interference

TEST REFERENCE: FCC Rules Part 15 Section 15.239 (88.00-108.00 MHz)

TEST CONDITION : Normal

TEST DATE : 1998.12.01

Emission of RF energy on the carrier frequency -- 99.406 MHz

(PEAK VALUE)

Emission Frequency	Meter Reading	Polarization	Antenna Factor	Field Strength (at 3m)	FCC Limit		
MHz	dB(µV)	H-V	dB	dB(µV/m)	µV/m	µV/m	
99.4	40.4	H	+	11.8	52.2	407.4	2500

Emission of RF energy on the carrier frequency -- 99.405 MHz

(AVERAGE VALUE)

Emission Frequency	Meter Reading	Polarization	Antenna Factor	Field Strength (at 3m)	FCC Limit		
MHz	dB(µV)	H-V	dB	dB(µV/m)	µV/m	µV/m	
99.4	30.5	H	+	11.8	42.3	130.3	250

... to be continued

Date:1998-12-15
No.: HM1194/504

TEST REPORT

Page 4 of 6

*** INTENTIONAL RADIATOR ***

(1) Measurement of Radiated Interference .. Continued ..

TEST REFERENCE: FCC Rules Part 15 Section 15.239 (88.00-108.00 MHz)

TEST CONDITION : Normal

TEST DATE : 1998.12.01

The out-of-band emissions, including harmonics (25-1000 MHz)

(CISPR VALUE)

Emission Frequency	Meter Reading	Polarization	Antenna Factor	Field Strength (at 3m)		FCC Limit
MHz	dB(µV)	H-V	dB	dB(µV/m)	µV/m	µV/m
198.8	< 1.0		+	11.2	< 12.2	< 4.1
298.2	< 1.0		+	15.6	< 16.6	< 6.8
397.6	< 1.0		+	18.3	< 19.3	< 9.2
497.0	< 1.0		+	20.5	< 21.5	< 11.9
596.4	< 1.0		+	23.0	< 24.0	< 15.8
695.8	< 1.0		+	24.3	< 25.3	< 18.4
795.2	< 1.0		+	26.9	< 27.9	< 24.8
894.6	< 1.0		+	27.3	< 28.3	< 26.0
994.0	< 1.0		+	28.1	< 28.9	< 27.9

-SUMMARY-

Broad-band Antennas were used both polarizations of emissions were measured.

polarizations at highest reading indicated as:

H -- Horizontal V -- Vertical

Date:1998-12-15
No.: HM1194/504

TEST REPORT

Page 5 of 6

*** INTENTIONAL RADIATOR ***

(2) Measurement of Emissions Within Band Edges.

TEST REFERENCE: FCC Rules Part 15 section 15.239(88.00-108.00 MHz)

TEST CONDITION: Normal

TEST DATE : 1998.12.01

Please see exhibit of report of bandwidth

RESULTS AND NOTES

The bandwidth of the emission shall be no wider than 200kHz of the center frequency for devices operating within 88MHz to108MHz . The bandwidth is determined at the points 26dB down from the modulated carrier.

The bandwidth at 26dB down is 74.6 kHz which is within the allowable limit of 200KHz at 88-108MHz.

L: FCC Lower Band Edge.....-> 88.000MHz
H: FCC Higher Band Edge.....->108.000MHz
C: Unmodulated carrier at frequency.....->99.406MHz
D: No. of dB from unmodulated carrier.....-> 30.90dB

SPECTRUM ANALYZER SETTINGS

Resolution bandwidth : 1.0KHz
Frequency span : 10.0KHz/div
No. of dB/div : 10.0dB/div

FCC Limit

Minimum No. of dB from unmodulated carrier required : 26.0dB

=====SUMMARY=====

All data is within limits

=====

NOTES FOR THE RADIATION MEASUREMENT

(1) Test site facility:

Open field test site located at Taipo (Hong Kong) with a metal ground plane on filed with the FCC pursuant to section 2.948 of the FCC Rules.

(2) Distance between the EUT and measuring antenna:

3 meters.

(3) Measuring instrumentations:

CISPR Quasi-peak type field strength meter (25 MHz - 1000 MHz). 6 dB bandwidth set at 120KHz. Also, peak level of the fundamental emissions was measured in order to determine compliance with the 20dB peak to average limit specified in Section 15.35(b) of the FCC new Rules.

(4) Measuring antenna:

Broad band antenna for the frequency range 25-1000 MHz, connected with 10 meters coaxial cable. Cable loss of the coaxial cable. included in the Antenna Factor for measurement data. The antenna are capable of measuring both horizontal and vertical polarizations.

(5) Frequency range scanned:

The frequency range from 25 MHz to 1000 MHz had been searched. Readings of the highest emissions relating to the limit were reported as above.

(6) Arrangement of EUT:

During the test, the sample was operated at rated supply voltage and arranged for maximum emissions.

(7) Measuring Procedure:

In accordance with the relevant clauses of the FCC Rules Part 15 section 15.239.

(8) Measuring Uncertainty:

The calculated uncertainty for measurement performed at 3M test distance are:-
30MHz to 300MHz = \pm 3.7dB, 300MHz to 1000MHz = + 3.0dB/-2.7dB.

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.

***** End of Document *****