

Date: 2001-03-31

TEST REPORT

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No.: HM104129

APPLICANT: (CODE: MGE001)

MGA ENTERTAINMENT (HK) LTD.

Room 1001 Empire Centre, 68 Mody Road, T.S.T. East, Kowloon, Hong Kong.

DATE OF SAMPLE(S) RECEIVED: 2001-02-17

SUBMITTED SAMPLE(S): 1 sample

DATE OF TESTING: 2001-03-21

DESCRIPTION OF SAMPLE(S):

A sample of product said to be:

Product: ONE MAN JAM - DJ MIXER
Manufacturer: MILLION INDUSTRIAL LTD.
Model Number: 243632
Brand Name: N/A
Rating: 6V d.c. ("C" size battery × 4)
Origin: CHINA

INVESTIGATIONS REQUESTED:

Measurement to the relevant clauses of F.C.C. Rules and Regulations 15.203 an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of Part 15C. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of section 15.211, 15.213, 15.217, 15.219 or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators, which, in accordance with section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

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

CONCLUSION:

From the measurement data obtained, the tested sample (sample 1 of 1) was considered to have COMPLIED with the clause 15.219 of Federal Communications Commission Rules and Regulations Part 15.

TEST EQUIPMENT AUDIT: Please see Appendix A

Law Man Kit
Testing Engineer

Steven Tsang
Verify by

Patrick Wong
Patrick Wong
for Managing Director

TEST SUMMARY

*** INTENTIONAL RADIATOR ***

- (1) Measurement of emission of RF energy on the carrier frequency.....Satisfactory
- (2) Antenna Length.....Satisfactory
- (3) Measurement of product emission.....Satisfactory
- (4) Measurement of line-conducted voltage onto AC power lineNot applicable

*** UNINTENTIONAL RADIATOR ***

- (1) Measurement of product emission
The spectrum was checked from 30MHz (lowest frequency for which a radiated emission limit is specified) to 1000MHz. All emissions were too low to be measurable and they were all more than 20dB below the permitted limit.
- (2) Measurement of line-conducted voltage onto AC power lineNot applicable

TEST DATA

Please refer to the attached result sheets.

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*** INTENTIONAL RADIATOR ***

(1) Measurement of Radiated Interference

TEST REFERENCE : FCC CFR47, Part 15 Subpart C Section 15.219(510-1705KHz)

TEST CONDITION : Normal

TEST DATE : 2001-03-21

Section 15.219 operation in the band 510-1705KHz

The total input power to final radio frequency stage (exclusive of filament or heater power) shall not exceed 100 milliwatts.

Test Procedures

The EUT was modified to measure both the current and voltage delivered to the final radio frequency stage.

Test Result

Measured final radio frequency stage voltage = 3.32 volts

Measured final radio frequency stage current = 6.28 milliamps

Calculated final radio frequency stage power = 20.85 milliwatts.

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*** INTENTIONAL RADIATOR ***

(2) Antenna Length

TEST REFERENCE : FCC CFR47, Part 15 Subpart C Section 15.219(510-1705KHz)

TEST CONDITION : Normal

TEST DATE : 2001-03-21

Section 15.219 operation in the band 510-1705KHz

The total length of the transmission line antenna and ground lead (if used) shall not exceed 3 meters.

Result

The antenna is 2 meters and the there is a ground lead is 0.9 meter.

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*** INTENTIONAL RADIATOR ***

TEST REFERENCE : FCC CFR47, Part 15 Subpart C Section 15.219(510-1705KHz)

TEST CONDITION : Normal

TEST DATE : 2001-03-21

(3) PRODUCT EMISSIONS

Emission Frequency	Meter Reading	FCC Limit	Delta to Limit
MHz	dB(mV/m)	dB(mV/m)	dB
3.22	33.1	35.4	-2.3
4.83	16.6	35.4	-18.8
19.32	34.2	35.4	-1.2

Calculation of the limit

The maximized fundamental emission from the EUT at 1610KHz was measured to be 55.4dB μ V/m, therefore the limit for all spurious emissions is 35.4.

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 antenna:
All emissions below 510KHz or above 1705 shall be attenuated at least 20dB below the level of the unmodulated carrier. Determination of compliance with the 20dB attenuation specification may be based on measurements at the intentional radiator's antenna output terminal unless the intentional radiator uses a permanently attached antenna, which case compliance shall be demonstrated by measuring the radiated emissions.
- (4) Frequency range scanned:
The frequency range from 510KHz to 1705KHz had been searched. Readings of the highest emissions relating to the limit were reported as above.
- (5) Arrangement of EUT:
During the test, the sample was operated at rated supply voltage and arranged for maximum emissions.
- (6) Measuring Procedure:
The procedure used was based on ANSI STANDARD C63.4-1992. The spectrum was scanned from 510KHz to 1705KHz. When an emission was found, the table was rotated to produce the maximum signal strength. The antenna was placed in both the horizontal and vertical plane and the worse case emissions were reported. The EUT was tested in vertical and cylindrical dimension, thus the orthogonal plane in X, Y and Z axis were covered and in accordance with the relevant clauses of the FCC Rules Part 15 section 15.219.

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 ***

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TEST EQUIPMENT AUDIT

Radiated Emission

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL.
EM007	SPECTRUM ANALYZER	HEWLETT PACKARD	HP85660B	3144A21192	18/07/00
EM008	SPECTRUM ANALYZER DISPLAY	HEWLETT PACKARD	HP85662A	3144A20514	18/07/00
EM009	QUASI PEAK ADAPTOR	HEWLETT PACKARD	HP85650A	3303A01702	18/07/00
EM010	RF PRESELECTOR	HEWLETT PACKARD	HP85685A	3221A01410	18/07/00
EM011	ATTENUATOR/SWITCH	HEWLETT PACKARD	HP11713A	2508A10595	18/07/00
EM012	PRE-AMPLIFIER	HEWLETT PACKARD	HP8449B	3008A00262	18/07/00
EM013	CONTROLLER (COMPUTER), COLOR MONITOR, KEYBOARD & MOUSE FLOPPY DRIVE	HEWLETT PACKARD HEWLETT PACKARD HEWLETT PACKARD	HP9000 HP A1097C HP9133L	6226A60314 3151J39517 2623A02468	CM
EM131	PORTABLE SPECTRUM ANALYSER	HEWLETT PACKARD	8595EM	3710A00155	10/07/00
EM017	ANTENNA	ARA INC.	LPB-2513/A	1069	17/02/00
EM020	HORN ANTENNA	EMCO	3115	4032	09/08/00
EM072	SIGNAL GENERATOR	HEWLETT PACKARD	8640B	1948A11892	30/03/98
EM083	HKSTC OPEN AREA TEST SITE	HKSTC	N/A	N/A	15/02/01
EM145	EMI TEST RECEIVER	R & S	ESCS 30	830245/021	31/05/00

Remarks:-

CM Corrective Maintenance
N/A Not Applicable or Not Available
TBD To Be Determined