MGA Entertainment (HK) Ltd.

Application
For
Certification
(FCC ID: LU9331223)

Transmitter

Sample Description : Baby Love and Glow (WS# 6378)
Model : 331223

We hereby certify that the sample of the above item is considered to comply with the requirements of FCC Part 15, Subpart C for Intentional Radiator, mention 47 CFR [4-5-2005]

0613116
AC/at
July 12, 2006

- The test results reported in this report shall refer only to the sample actually tested and shall not refer or be deemed to refer to bulk from which such a sample may be said to have been obtained.
- This report shall not be reproduced except in full without prior authorization from Intertek Testing Services Hong Kong Limited.
- The evaluation data of the report will be kept for 3 years from the date of issuance.

FCC ID : LU9331223

LIST OF EXHIBITS

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MEASUREMENT/TECHNICAL REPORT

MGA Entertainment (HK) Ltd. - MODEL: 331223
FCC ID: LU9331223

July 12, 2006

This report concerns (check one:) Original Grant__X__ Class II Change_____

Equipment Type: Low Power Transmitter (example: computer, printer, modem, etc.)

Deferred grant requested per 47 CFR 0.457(d)(1)(ii)? Yes___ No_X__

If yes, defer until: _____
date

Company Name agrees to notify the Commission by: _____
date

of the intended date of announcement of the product so that the grant can be issued on that date.

Transition Rules Request per 15.37? Yes_____ No_X___

If no, assumed Part 15, Subpart C for intentional radiator - the new 47 CFR [4-5-2005 Edition] provision.

Report prepared by:

Chan Kar Ming, Anthony
Intertek Testing Services
2/F., Garment Center,
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List of attached file

Exhibit type	File Description	filename
Test Report	Test Report	report.pdf
Operation Description	Technical Description	descri.pdf
Test Setup Photo	Radiated Emission	radiated photos.doc
Test Report	Bandwidth Plot	bw.pdf
External Photo	External Photo	external photos.doc
Internal Photo	Internal Photo	internal photos.doc
Block Diagram	Block Diagram	block.pdf
Schematics	Circuit Diagram	circuit.pdf
ID Label/Location	Label Artwork and Location	label.pdf
User Manual	User Manual	manual.pdf

EXHIBIT 1

GENERAL DESCRIPTION

1.0 General Description

1.1 Product Description

The equipment under test (EUT) is transmitter for an Inductive toy doll (RFID tag reader) operating at 13.56 MHz which is controlled by a crystal. The EUT is powered by four C size batteries. This toy consists of a toy doll (RFID tag reader) and nine passive type powered tags (a diaper, a baby bottle, a pacifier, a baby spoon, a sippy cup, two toddler spoons, a potty chair and blanket). The doll has a power/reset switch and a grow button on its back, a sensor button on the right hand, tummy, left and right feet respectively, a microphone on the chest, a relay on the head for sensing the hairbrush with a magnet inside, a light sensor on the eyes and three RFID tag sensors. They are located on the mouth, the left hand and the hip of the doll. After switched on the doll, the doll will instruct and interact with the user. Such as, the doll may request the user to talk and play with it. The doll can recognize some special words or phrases, sing songs and respond to the user. The doll may also request the user to feed it food, help it go to the potty, brushing its hair, help it to dress clothes …etc. The grow button is used to change the doll from a toddler to a baby and vice versa in playing.

The brief circuit description is saved with filename : descri.pdf

1.2 Related Submittal(s) Grants

The receiver for this transmitter is exempted form the Part 15 technical rules per 15.101(b).

1.3 Test Methodology

The radiated emission measurements were performed according to the procedures in ANSI C63.4 (2003). All measurements were performed in Open Area Test Sites. Preliminary scans were performed in the Open Area Test Sites only to determine worst case modes. All Radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "**Justification Section"** of this Application.

1.4 Test Facility

The open area test site and conducted measurement facility used to collect the emission data is located at Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong. This test facility and site measurement data have been fully placed on file with the FCC.

EXHIBIT 2

SYSTEM TEST CONFIGURATION

2.0 System Test Configuration

2.1 Justification

The system was configured for testing in a typical fashion (as a customer would normally use it), and in the confines as outlined in ANSI C63.4 (2003).

The EUT consists of a doll (RFID tag reader) and nine passive tags.

The doll (RFID tag reader) was powered by four new C size batteries and the tags received power by coupling the RF energy which radiated from the tag reader during test.

During the test, one of the nine tags was placed on the doll. The doll with the nine tags were tested one by one to determine the highest emission. The measurement results indicated the doll with the pacifier tag produced the highest emission.

For maximizing emission below 30 MHz, the EUT was rotated through 360°, the centre of the loop antenna was placed 1 meter above the ground, and the antenna polarization was changed. For maximizing emission at and above 30 MHz, the EUT was rotated through 360°, the antenna height was varied from 1 meter to 4 meters above the ground plane, and the antenna polarization was changed. This step by step procedure for maximizing emissions led to the data reported in Exhibit 3.0.

The doll and the tags were operated together and placed in the center of the turntable.

The equipment under test (EUT) was configured for testing in a typical fashion (as a customer would normally use it). The EUT was placed on the turntanle and rotate through 360°, which enabled the engineer to maximize emissions through its placement in the three orthogonal axes.

2.2 EUT Exercising Software

There was no special software to exercise the device.

2.3 Special Accessories

There are no special accessories necessary for compliance of this product.

2.4 Equipment Modification

Any modifications installed previous to testing by MGA Entertainment (HK) Ltd. will be incorporated in each production model sold/leased in the United States.

No modifications were installed by Intertek Testing Services.

2.5 Support Equipment List and Description

This product was tested in a standalone configuration.

All the items listed under section 2.0 of this report are

Confirmed by:

Chan Kar Ming, Anthony
Supervisor
Intertek Testing Services
Agent for MGA Entertainment (HK) Ltd.

_____Signature

July 12, 2006 _____Date

EXHIBIT 3

EMISSION RESULTS

3.0 Emission Results

Data is included worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included.

3.1 Field Strength Calculation

The field strength is calculated by adding the reading on the Spectrum Analyzer to the factors associated with preamplifiers (if any), antennas, cables, pulse desensitization and average factors (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below.

FS = RA + AF + CF - AG + PD + AV

where FS = Field Strength in dBμV/m
RA = Receiver Amplitude (including preamplifier) in dBμV
CF = Cable Attenuation Factor in dB
AF = Antenna Factor in dB
AG = Amplifier Gain in dB
PD = Pulse Desensitization in dB
AV = Average Factor in -dB

In the radiated emission table which follows, the reading shown on the data table may reflect the preamplifier gain. An example of the calculations, where the reading does not reflect the preamplifier gain, follows:

FS = RA + AF + CF - AG + PD + AV

3.1 Field Strength Calculation (cont'd)

Example

Assume a receiver reading of 62.0 dBμV is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted. The pulse desensitization factor of the spectrum analyzer was 0 dB, and the resultant average factor was -10 dB. The net field strength for comparison to the appropriate emission limit is 32 dBμV/m. This value in dBμV/m was converted to its corresponding level in μV/m.

RA = 62.0 dBμV
AF = 7.4 dB
CF = 1.6 dB
AG = 29.0 dB
PD = 0 dB

AV = -10 dB

FS = 62 + 7.4 + 1.6 - 29 + 0 + (-10) = 32 dBμV/m

Level in μV/m = Common Antilogarithm [(32 dBμV/m)/20] = 39.8 μV/m

3.2 Radiated Emission Configuration Photograph

Worst Case Radiated Emission

122.067 MHz

For electronic filing, the worst case radiated emission configuration photograph is saved with filename: radiated photos.doc

3.3 Radiated Emission Data

The data on the following page lists the significant emission frequencies, the limit and the margin of compliance. Numbers with a minus sign are below the limit.

Judgement: Passed by 3.6 dB

TEST PERSONNEL:

Signature

Gary M. K. Li, Compliance Engineer
Typed/Printed Name

July 12, 2006
Date

Company: MGA Entertainment (HK) Ltd. Date of Test: June 21, 2006
Model: 331223
Mode: TX
Sample: 2/10

Table 1
Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Antenna Factor (dB)	Pre-Amp Gain (dB)	Net at 3m (dBµV/m)	Distance Factor (-dB)	Calculated at 30m (dBµV/m)	Limit at 30m (dBµV/m)	Margin (dB)
V	13.563	43.0	10.7	0.0	53.7	40.0	13.7	84.0	-70.3
V	27.126	24.7	9.2	0.0	33.9	40.0	-6.1	29.5	-35.6

Table 2
Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Antenna Factor (dB)	Pre-Amp Gain (-dB)	Net at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
V	40.689	36.2	10	16.0	30.2	40.0	-9.8
V	54.252	35.4	11	16.0	30.4	40.0	-9.6
H	67.815	38.0	8	16.0	30.0	40.0	-10.0
H	81.378	38.7	7	16.0	29.7	40.0	-10.3
H	94.941	36.7	10	16.0	30.7	43.5	-12.8
H	108.504	32.9	13	16.0	29.9	43.5	-13.6
V	122.067	42.9	13	16.0	39.9	43.5	-3.6
V	135.631	37.1	13	16.0	34.1	43.5	-9.4
V	149.193	36.7	13	16.0	33.7	43.5	-9.8

Notes:
1. Peak Detector Data unless otherwise stated.
2. All measurements were made at 3 meter. Harmonic emissions not detected at the 3 meter distance were measured at 0.3 meter and an inverse proportional extrapolation was performed to compare the signal level to the 3 meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3 meter.
3. Negative value in the margin column shows emission below limit.
4. Loop antenna is used for emissions below 30 MHz.
5. Worst case emissions were measured.

*Emission within the restricted band meets the requirement of part 15.205. The corresponding limit as per 15.209 is based on Quasi peak detector data for frequencies below 1000 MHz and peak detector data with average factor for frequencies over 1000 MHz.

Test Engineer: Gary M. K. Li

Company: MGA Entertainment (HK) Ltd. Date of Test: June 21, 2006
Model: 331223
Mode: Operating (Digital Portion of the device)
Sample: 2/10

Table 2

Radiated Scan
Pursuant To FCC Part 15 Section 15.109 Emissions Requirements

Polarization	Frequency (MHz)	Net at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
V	36.707	27.9	40.0	-12.1
V	42.489	28.4	40.0	-11.6
V	48.124	28.5	40.0	-11.5
V	54.411	27.9	40.0	-12.1
V	60.703	27.7	40.0	-12.3
V	66.729	26.9	40.0	-13.1

Notes: Negative signs (-) in the margin column signify levels below the limit.

3.4 Frequency Tolerance

FCC Part 15 Section 15.225(e)

Data Table
Frequency tolerance of Transmitter
(Temperature Variation : -20°C to +50°C)

Operating frequency			13.562927 MHz	
Test Voltage (V)	Temperature (°C)	Measured frequency (MHz)	Frequency shift (%)	Limit (%)
6	+50	13.562790	-0.00101	±0.01
6	+40	13.562829	-0.00072	±0.01
6	+30	13.562893	-0.00025	±0.01
6	+20	13.562927	0	±0.01
6	+10	13.562968	+0.00030	±0.01
6	0	13.562976	+0.00036	±0.01
6	-10	13.562983	+0.00041	±0.01
6	-20	13.562999	+0.00053	±0.01

We found that the EUT met the requirement of FCC Part 15 Section 15.225(e).

Test Engineer: Gary M. K. Li

EXHIBIT 4

EQUIPMENT PHOTOGRAPHS

4.0 Equipment Photographs

For electronic filing, the photographs are saved with filename:
external photos.doc and internal photos.doc

EXHIBIT 5

PRODUCT LABELLING

5.0 Product Labelling

For electronic filing, the FCC ID label artwork and the label location are saved with filename: label.pdf

EXHIBIT 6

TECHNICAL SPECIFICATIONS

6.0 Technical Specifications

For electronic filing, the block diagram and schematics are saved with filename: block.pdf and circuit.pdf

EXHIBIT 7

INSTRUCTION MANUAL

7.0 Instruction Manual

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: manual.pdf

EXHIBIT 8

MISCELLANEOUS INFORMATION

8.0 Miscellaneous Information

This miscellaneous information includes details of the measured bandwidth and the test procedure.

8.1 Measured Bandwidth

The plot saved in bw.pdf which shows the fundamental emission is confined in the specified band. The fundamental emission is 13.7 dBµV/m at 30 m. It meets the requirement of Section 15.225(b), (c), & (d).

Figure 8.1 Bandwidth

8.2 Emissions Test Procedures

The following is a description of the test procedure used by Intertek Testing Services in the measurements of transmitters operating under Part 15, Subpart C rules.

The test set-up and procedures described below are designed to meet the requirements of ANSI C63.4 - 2003.

The transmitting equipment under test (EUT) is placed on a wooden turntable which is four feet in diameter and approximately one meter in height above the ground plane. During the radiated emissions test, the turntable is rotated and any cables leaving the EUT are manipulated to find the configuration resulting in maximum emissions. The antenna height and polarization are varied during the testing to search for maximum signal levels.

Detector function for radiated emissions is in peak mode. Average readings, when required, are taken by measuring the duty cycle of the equipment under test and subtracting the corresponding amount in dB from the measured peak readings.

The frequency range scanned is from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or 40 GHz, whichever is lower. For line conducted emissions, the range scanned is 150 kHz to 30 MHz.

8.2 Emissions Test Procedures (cont'd)

The EUT is warmed up for 15 minutes prior to the test.

AC power to the unit is varied from 85% to 115% nominal and variation in the fundamental emission field strength is recorded. If battery powered, a new, fully charged battery is used.

Conducted measurements are made as described in ANSI C63.4 - 2003.

The IF bandwidth used for measurement of radiated signal strength was 10 kHz for emission below 30 MHz and 120 kHz for emission from 30 MHz to 1000 MHz. Where pulsed transmissions of short enough pulse duration warrant, a greater bandwidth is selected according to the recommendations of Hewlett Packard Application Note 150-2. A discussion of whether pulse desensitivity is applicable to this unit is included in this report (See Exhibit 8.2). Above 1000 MHz, a resolution bandwidth of 1 MHz is used.

Transmitter measurements are normally conducted at a measurement distance of three meters. However, to assure low enough noise floor in the restricted bands and above 1 GHz, signals are acquired at a distance of one meter or less. All measurements are extrapolated to three meters using inverse scaling, but those measurements taken at a closer distance are so marked.

1. When determining the test result, the Measurement Uncertainty of the test has been considered.

2. This test report is issued to the Company indicated based on the request of the Applicant of the product mentioned in this report.