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May 22, 2000

Chief, Equipment Authorization Branch,
Authorization and Evaluation Division,
Office of Engineering and Technology
FEDERAL COMMUNICATIONS COMMISSION
P.O. Box 358315
Pittsburgh, PA 15251-5315

Gentlemen:

The enclosed documents constitute a formal submittal and application for a Grant of Equipment Authorization pursuant to Subpart C of Part 15 of FCC Rules (CFR 47) regarding intentional radiators. Data within this report demonstrates that the equipment tested complies with the FCC limits for intentional radiators.

Elliott Laboratories, as duly authorized agent prepared this submittal. A copy of the letter of our appointment as agent is enclosed.

If there are any questions or if further information is needed, please contact Elliott Laboratories for assistance.

Sincerely,

David W. Bare
Principal Engineer

DWB/dmg
Enclosures: Agent Authorization Letter
Emissions Test Report with Exhibits

File: R37640

Elliott Laboratories Inc. 684 West Maude Avenue 408-245-7800 Phone
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# *Electromagnetic Emissions Test Report and Application for Grant of Equipment Authorization pursuant to FCC Part 15, Subpart C Specifications for an Intentional Radiator on the Toy Biz Inc. Model: Puppy Magic*

| | |
|---|---|
| FCC ID: | LXV 33540 |
| GRANTEE: | Toy Biz Inc.<br>685 Third Avenue<br>New York City, NY 10011 |
| TEST SITE: | Elliott Laboratories, Inc.<br>684 W. Maude Avenue<br>Sunnyvale, CA 94086 |
| REPORT DATE: | May 22, 2000 |
| FINAL TEST DATE: | May 17 and May 18, 2000 |
| AUTHORIZED SIGNATORY: | David W. Bare<br>Principal Engineer |

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## *TABLE OF CONTENTS*

## *SCOPE*

An electromagnetic emissions test has been performed on the Toy Biz Inc. model Puppy Magic pursuant to Subpart C of Part 15 of FCC Rules for intentional radiators. Conducted and radiated emissions data has been collected, reduced, and analyzed within this report in accordance with measurement guidelines set forth in ANSI C63.4-1992 as outlined in Elliott Laboratories test procedures.

The intentional radiator above has been tested in a simulated typical installation to demonstrate compliance with the relevant FCC performance and procedural standards.

Final system data was gathered in a mode that tended to maximize emissions by varying orientation of EUT, orientation of power and I/O cabling, antenna search height, and antenna polarization.

Every practical effort was made to perform an impartial test using appropriate test equipment of known calibration. All pertinent factors have been applied to reach the determination of compliance.

The test results recorded herein are based on a single type test of the Toy Biz Inc. model Puppy Magic and therefore apply only to the tested sample. The sample was selected and prepared by Kent Suzuki of Toy Biz Inc.

## *OBJECTIVE*

The primary objective of the manufacturer is compliance with Subpart C of Part 15 of FCC Rules for the radiated and conducted emissions of intentional radiators. Certification of these devices is required as a prerequisite to marketing as defined in Part 2 the FCC Rules.

Certification is a procedure where the manufacturer or a contracted laboratory makes measurements and submits the test data and technical information to the FCC. The FCC issues a grant of equipment authorization upon successful completion of their review of the submitted documents. Once the equipment authorization has been obtained, the label indicating compliance must be attached to all identical units that are subsequently manufactured.

## *STATEMENT OF COMPLIANCE*

The tested sample of Toy Biz Inc. model Puppy Magic complied with the requirements of Subpart C of Part 15 of the FCC Rules for low power intentional radiators.

Maintenance of FCC compliance is the responsibility of the manufacturer. Any modification of the product that may result in increased emissions should be checked to ensure compliance has been maintained (i.e., printed circuit board layout changes, different line filter, different power supply, harnessing or I/O cable changes, etc.).

## *EMISSION TEST RESULTS*

The following emissions tests were performed on the Toy Biz Inc. model Puppy Magic. The actual test results are contained in an exhibit of this report.

### *LIMITS OF CONDUCTED INTERFERENCE VOLTAGE*

Conducted testing was not performed, as the EUT is battery operated.

### *LIMITS OF RADIATED INTERFERENCE FIELD STRENGTH*

The EUT tested complied with the limits detailed in FCC Rules Part 15 Section 15.209.

The following measurement was extracted from the data recorded during the radiated electric field emissions scan and represents the highest amplitude emission relative to the specification limit. The actual test data and any correction factors are contained in an exhibit of this report.

.214 MHz fundamental unit upright

| Frequency MHz | Level dBuV/m | Pol v/h | FCC B Limit | FCC B Margin | Detector Pk/QP/Avg | Azimuth degrees | Height meters | Comments |
|---|---|---|---|---|---|---|---|---|
| 0.214 | 56.6 | F | 61.0 | -4.4 | Avg | 170 | 1.0 | |

### *MEASUREMENT UNCERTAINTIES*

ISO Guide 25 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level and were calculated in accordance with NAMAS document NIS 81.

| Measurement Type | Frequency Range (MHz) | Calculated Uncertainty (dB) |
|---|---|---|
| Conducted Emissions | 0.15 to 30 | ± 2.4 |
| Radiated Emissions | 30 to 1000 | ± 3.2 |

## *EQUIPMENT UNDER TEST (EUT) DETAILS*

### *GENERAL*

The Toy Biz Inc. model Puppy Magic is a toy, which recognizes remote objects via RF. The product consists of one 'mommy' dog, three puppies, and a dog dish. The electrical rating of the EUT power supply is 4 x AA batteries. Normally, the EUT would be installed in the puppy.. The EUT was placed a table during testing to simulate the end user environment.

The sample was received on May 17, 2000 and tested on May 17 and May 18, 2000. The EUT consisted of the following component(s):

| Manufacturer | Model | Description | Serial Number | FCC ID |
|---|---|---|---|---|
| Toy Biz | Puppy Magic | Plush Toy | - | LXV33540 |

### *ENCLOSURE*

The EUT enclosure is primarily constructed of unshielded plastic. It measures approximately 12 cm wide by 7 cm deep by 5 cm high. Note that the EUT would normally be installed in the puppy.

### *MODIFICATIONS*

The EUT did not require modifications during testing in order to comply with the emission specifications

### *SUPPORT EQUIPMENT*

No support equipment was used during emissions testing.

***EUT INTERFACE PORTS***

The I/O cabling configuration during emissions testing was as follows:

| Cable Description | Length (m) | From Unit/Port | To Unit/Port |
|---|---|---|---|
| None | - | - | - |

***EUT OPERATION***

The unit has a jumper installed (JP1) that puts the unit into test mode. In this mode, the unit will not auto-power-off, and will be continuously transmitting at 214kHz (normally, it transmits at 214kHz, 231kHz, 375kHz, and 428kHz). A new set of batteries was installed in the EUT prior to testing.

## *TEST SITE*

### *GENERAL INFORMATION*

Final test measurements were taken on May 17 and May 18, 2000 at the Elliott Laboratories Open Area Test Site #1 located at 684 West Maude Avenue, Sunnyvale, California. The test site contains separate areas for radiated and conducted emissions testing. Pursuant to section 2.948 of the Rules, construction, calibration, and equipment data has been filed with the Commission.

The FCC recommends that ambient noise at the test site be at least 6 dB below the allowable limits. Ambient levels are below this requirement with the exception of predictable local TV, radio, and mobile communications traffic. The test site contains separate areas for radiated and conducted emissions testing. Considerable engineering effort has been expended to ensure that the facilities conform to all pertinent FCC requirements.

### *RADIATED EMISSIONS CONSIDERATIONS*

The FCC has determined that radiation measurements made in a shielded enclosure are not suitable for determining levels of radiated emissions. Radiated measurements are performed in an open field environment. The test site is maintained free of conductive objects within the CISPR defined elliptical area incorporated in ANSI C63.4 guidelines.

## *MEASUREMENT INSTRUMENTATION*

### *RECEIVER SYSTEM*

An EMI receiver as specified in CISPR 16-1 is used for emissions measurements. The receivers used can measure over the frequency range of 9 kHz up to 2000 MHz. These receivers allow both ease of measurement and high accuracy to be achieved. The receivers have Peak, Average, and CISPR (Quasi-peak) detectors built into their design so no external adapters are necessary. The receiver automatically sets the required bandwidth for the CISPR detector used during measurements.

For measurements above the frequency range of the receivers, a spectrum analyzer is utilized because it provides visibility of the entire spectrum along with the precision and versatility required to support engineering analysis. Average measurements above 1000MHz are performed on the spectrum analyzer using the linear-average method with a resolution bandwidth of 1 MHz and a video bandwidth of 10 Hz.

### *INSTRUMENT CONTROL COMPUTER*

The receivers utilize either a Rohde and Schwarz EZM Spectrum Monitor/Controller or contain an internal Spectrum Monitor/Controller to view and convert the receiver measurements to the field strength at an antenna or voltage developed at the LISN measurement port, which is then compared directly with the appropriate specification limit. This provides faster, more accurate readings by performing the conversions described under Sample Calculations within the Test Procedures section of this report. Results are printed in a graphic and/or tabular format, as appropriate. A personal computer is used to record all measurements made with the receivers.

The Spectrum Monitor provides a visual display of the signal being measured. In addition, the controller or a personal computer runs automated data collection programs that control the receivers. This provides added accuracy since all site correction factors, such as cable loss and antenna factors are added automatically.

### *LINE IMPEDANCE STABILIZATION NETWORK (LISN)*

Line conducted measurements utilize a fifty microhenry Line Impedance Stabilization Network as the monitoring point. The LISN used also contains a 250 uH CISPR adapter. This network provides for calibrated radio frequency noise measurements by the design of the internal low pass and high pass filters on the EUT and measurement ports, respectively.

***FILTERS/ATTENUATORS***

External filters and precision attenuators are often connected between the receiving antenna or LISN and the receiver. This eliminates saturation effects and non-linear operation due to high amplitude transient events.

***ANTENNAS***

A loop antenna is used to cover the range from 10 kHz to 30 MHz, a biconical antenna is used to cover the range from 30 MHz to 300 MHz, and a log periodic antenna is utilized from 300 MHz to 1000 MHz. Narrowband tuned dipole antennas are used over the entire 30 to 1000 MHz range for precision measurements of field strength. Above 1000 MHz, a horn antenna is used. The antenna calibration factors are included in site factors programmed into the test receivers.

***ANTENNA MAST AND EQUIPMENT TURNTABLE***

The antennas used to measure the radiated electric field strength are mounted on a non-conductive antenna mast equipped with a motor-drive to vary the antenna height. For the radiated magnetic field, the antenna is fixed with the center 1 meter above the ground plane.

ANSI C63.4 specifies that the test height above ground for table mounted devices shall be 80 centimeters. Floor mounted equipment shall be placed on the ground plane if the device is normally used on a conductive floor or separated from the ground plane by insulating material from 3 to 12 mm if the device is normally used on a non-conductive floor. During radiated measurements, the EUT is positioned on a motorized turntable in conformance with this requirement.

***INSTRUMENT CALIBRATION***

All test equipment is regularly checked to ensure that performance is maintained in accordance with the manufacturer's specifications. All antennas are calibrated at regular intervals with respect to tuned half-wave dipoles. An exhibit of this report contains the list of test equipment used and calibration information.

## *TEST PROCEDURES*

### *EUT AND CABLE PLACEMENT*

The FCC requires that interconnecting cables be connected to the available ports of the unit and that the placement of the unit and the attached cables simulate the worst case orientation that can be expected from a typical installation, so far as practicable. To this end, the position of the unit and associated cabling is varied within the guidelines of ANSI C63.4, and the worst case orientation is used for final measurements.

### *RADIATED EMISSIONS*

Radiated emissions measurements are performed in two phases as well. A preliminary scan of emissions is conducted in which all significant EUT frequencies are identified with the system in a nominal configuration. At least two scans are performed from 10 kHz or the lowest frequency generated in the device up to the frequency required by the regulation specified on page 1. One or more of the scans are performed with the antenna polarized vertically while the one or more of these are with the antenna polarized horizontally. If a loop antenna is used, the loop is rotated around its axis to determine the maximum emission amplitude. During the preliminary scans, the EUT is rotated through 360º, the antenna height is varied and cable positions are varied to determine the highest emission relative to the limit.

A speaker is provided in the receiver to aid in discriminating between EUT and ambient emissions. Other methods used during the preliminary scan for EUT emissions involve scanning with near field magnetic loops, monitoring I/O cables with RF current clamps, and cycling power to the EUT.

Final maximization is a phase in which the highest amplitude emissions identified in the spectral search are viewed while the EUT azimuth angle is varied from 0 to 360 degrees relative to the receiving antenna. The azimuth that results in the highest emission is then maintained while varying the antenna height from one to four meters or the loop is rotated around its axis. The result is the identification of the highest amplitude for each of the highest peaks. Each recorded level is corrected in the receiver using appropriate factors for cables, connectors, antennas, and preamplifier gain. Emissions that have values close to the specification limit may also be measured with a tuned dipole antenna to determine compliance.

## *SPECIFICATION LIMITS AND SAMPLE CALCULATIONS*

The limits for conducted emissions are given in units of microvolts, and the limits for radiated emissions are given in units of microvolts per meter at a specified test distance. Data is measured in the logarithmic form of decibels relative to one microvolt, or dB microvolts (dBuV). For radiated emissions, the measured data is converted to the field strength at the antenna in dB microvolts per meter (dBuV/m). The results are then converted to the linear forms of uV and uV/m for comparison to published specifications.

For reference, converting the specification limits from linear to decibel form is accomplished by taking the base ten logarithm, then multiplying by 20. These limits in both linear and logarithmic form are as follows:

***RADIATED EMISSIONS SPECIFICATION LIMITS, SECTION 15.209***

| Frequency Range (MHz) | Limit (uV/m @ 3m) | Limit (dBuV/m @ 3m) |
|---|---|---|
| 0.009-0.490 | $2400/F_{KHz}$ @ 300m | $67.6-20*\log_{10}(F_{KHz})$ @ 300m |
| 0.490-1.705 | $24000/F_{KHz}$ @ 30m | $87.6-20*\log_{10}(F_{KHz})$ @ 30m |
| 1.705 to 30 | 30 @ 30m | 29.5 @ 30m |
| 30 to 88 | 100 | 40 |
| 88 to 216 | 150 | 43.5 |
| 216 to 960 | 200 | 46.0 |
| Above 960 | 500 | 54.0 |

***SAMPLE CALCULATIONS - RADIATED EMISSIONS***

Receiver readings are compared directly to the specification limit (decibel form). The receiver internally corrects for cable loss, preamplifier gain, and antenna factor. The calculations are in the reverse direction of the actual signal flow, thus cable loss is added and the amplifier gain is subtracted. The Antenna Factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements. A distance factor, when used for electric field measurements, is calculated by using the following formula:

$$F_d = 20*LOG_{10} (D_m/D_s)$$

where:

$F_d$ = Distance Factor in dB

$D_m$ = Measurement Distance in meters

$D_s$ = Specification Distance in meters

Measurement Distance is the distance at which the measurements were taken and Specification Distance is the distance at which the specification limits are based. The antenna factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements.

The margin of a given emission peak relative to the limit is calculated as follows:

$$R_c = R_r + F_d$$

and

$$M = R_c - L_s$$

where:

$R_r$ = Receiver Reading in dBuV/m

$F_d$ = Distance Factor in dB

$R_c$ = Corrected Reading in dBuV/m

$L_s$ = Specification Limit in dBuV/m

$M$ = Margin in dB Relative to Spec

# *EXHIBIT 1:Test Equipment Calibration Data*

# Test Equipment List - SVOATS#1

**May 16, 2000**

| | Manufacturer/Description | | Model | Asset # | Interval | Last Cal | Cal Due |
|---|---|---|---|---|---|---|---|
| ☐ | Elliott Laboratories | 2 x (Solar 8028 LISN + 6512 Caps) | LISN-5, Support | 379 | 12 | 6/10/1999 | 6/10/2000 |
| ☐ | EMCO | Active Monopole Antenna, | 3301B | | 12 | 1/20/2000 | 1/20/2001 |
| ☑ | EMCO | Biconical Antenna, 30-300 MHz | 3110B | 363 | 12 | 5/3/2000 | 5/3/2001 |
| ☐ | EMCO | D. Ridge Horn Antenna, 1-18GHz | 3115 | 487 | 12 | 3/24/2000 | 3/24/2001 |
| ☐ | EMCO | D. Ridge Horn Antenna, 1-18GHz | 3115 | 786 | 12 | 1/8/2000 | 1/8/2001 |
| ☐ | EMCO | D. Ridge Horn Antenna, 1-18GHz | 3115 | 868 | 12 | 9/25/1999 | 9/25/2000 |
| ☑ | EMCO | Log Periodic Antenna, 0.3-1 GHz | 3146A | 364 | 12 | 6/25/1999 | 6/25/2000 |
| ☑ | EMCO | Magnetic Loop Antenna, | 6502 | 296 | 12 | 11/29/1999 | 11/29/2000 |
| ☐ | Filtek | High Pass Filter | HP12/1000-5BA | 955 | 12 | 3/27/2000 | 3/27/2001 |
| ☐ | Filtek | High Pass Filter | HP12/1000-5BA | 956 | 12 | 3/29/2000 | 3/29/2001 |
| ☐ | Filtek | High Pass Filter | HP12/1000-5BA | 957 | 12 | 4/15/2000 | 4/15/2001 |
| ☐ | Fischer | RF Current Probe | F-16M | 374 | 12 | 7/1/1999 | 7/1/2000 |
| ☐ | Fischer Custom | LISN, Freq. 0.9 -30 MHz,16 Amp | FCC-LISN-50/2 | 1079 | 12 | 6/11/1999 | 6/11/2000 |
| ☐ | Hewlett Packard | EMC Receiver /Analyzer | 8595EM | 780 | 12 | 1/3/2000 | 1/3/2001 |
| ☐ | Hewlett Packard | EMC Recever /Analyzer | 8595EM | 787 | 12 | 12/3/1999 | 12/3/2000 |
| ☐ | Hewlett Packard | EMC Spectrum Analyzer, Opt. 026 | 8593EM | 1141 | 12 | 12/22/1999 | 12/22/2000 |
| ☐ | Hewlett Packard | Microwave Preamplifier, 1-26.5GHz | 8449B | 263, (F303) | 12 | 8/3/1999 | 8/3/2000 |
| ☐ | Hewlett Packard | Microwave Preamplifier, 1-26.5GHz | 8449B | 785 | 12 | 12/2/1999 | 12/2/2000 |
| ☐ | Hewlett Packard | Microwave Preamplifier, 1-26.5GHz | 8449B | 870 | 12 | 11/15/1999 | 11/15/2000 |
| ☐ | Hewlett Packard | Power Meter | 432A | 259, (F304) | 12 | 2/17/2000 | 2/17/2001 |
| ☐ | Hewlett Packard | Thermistor Mount | 478A | 652 | 12 | 2/17/2000 | 2/17/2001 |
| ☐ | Inmet Corporation | 20 dB Pad, DC-18 GHz, 50W | 18N-20 | 859 | 12 | 8/25/1999 | 8/25/2000 |
| ☐ | Narda West | EMI Filter 1.9 GHz, High Pass | HPF-161 | 248 | 12 | 3/27/2000 | 3/27/2001 |
| ☐ | Narda West | EMI Filter 5.6 GHz, High Pass | 60583 HXF370 | 247 | 12 | 3/27/2000 | 3/27/2001 |
| ☐ | Narda West | High Pass Filter | HPF 180 | 821 | 12 | 8/10/1999 | 8/10/2000 |
| ☐ | Rohde and Schwarz | Biconnical Antenna | HK116 | A513 | | 10/20/1999 | 10/20/2000 |
| ☐ | Rohde& Schwarz | Pulse Limiter | ESH3 Z2 | 811 | 12 | 7/10/1999 | 7/10/2000 |
| ☑ | Rohde & Schwarz | Test Receiver, 0.009-30 MHz | ESH3 | 274 | 12 | 5/27/1999 | 5/27/2000 |
| ☑ | Rohde &Schwarz | Test Receiver, 20-1300MHz | ESVP | 213, (F196) | 12 | 5/27/1999 | 5/27/2000 |

File Number: T37582

Date: 5/18/00

Engr: J. DICKINSON
V. NARAYAN

All calibration of equipment is traceable to a national standard of measurement such as NIST.

# *EXHIBIT 2:Test Data Log Sheets*

***ELECTROMAGNETIC EMISSIONS***

***TEST LOG SHEETS***

***AND***

***MEASUREMENT DATA***

T37582 8 Pages

Elliott

# EMC Test Data

| | | | |
|---|---|---|---|
| Client: | Toy Biz | Job Number: | J35951 |
| Model: | Puppy Magic | T-Log Number: | T37582 |
| | | Proj Eng: | David Bare |
| Contact: | Kent Suzuki | | |
| Emissions Spec: | FCC 15.209(a) and EN55022B | Class: | B |
| Immunity Spec: | | Environment: | |

# EMC Test Data

For The

## Toy Biz

Model

**Puppy Magic**

Elliott

# EMC Test Data

| | | | |
|---|---|---|---|
| Client: | Toy Biz | Job Number: | J35951 |
| Model: | Puppy Magic | T-Log Number: | T37582 |
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| Contact: | Kent Suzuki | | |
| Emissions Spec: | FCC 15.209(a) and EN55022B | Class: | B |
| Immunity Spec: | | Environment: | |

## TEST SUMMARY

| Date | Test Performed | Level | Results | Margin |
|---|---|---|---|---|
| 05/18/2000 | RE, EUT flat | FCC 15.209(a) | Pass | -13.5dB @ .214MHz |
| 05/18/2000 | RE, EUT on side | FCC 15.209(a) | Pass | -7.8dB @ .214MHz |
| 05/18/2000 | RE, EUT upright | FCC 15.209(a) | Pass | -4.4dB @ .214MHz |
| 05/18/2000 | RE, 30 - 1000MHz - Maximized Emissions | EN55022 B | Pass | -12.9dB @ 168MHz |

Abbreviations Used: RE - Radiated Emissions, CE- Conducted Emissions, RI - Radiated Immunity, CI - Conducted Immunity, ESD - Electrostatic Discharge, EFT - Electrical Fast Transients, VDI - Voltage Dips and Interrupts

| | | | |
|---|---|---|---|
| Client: | Toy Biz | Job Number: | J35951 |
| Model: | Puppy Magic | T-Log Number: | T37582 |
| | | Proj Eng: | David Bare |
| Contact: | Kent Suzuki | | |
| Emissions Spec: | FCC 15.209(a) and EN55022B | Class: | B |
| Immunity Spec: | | Environment: | |

# EUT INFORMATION

## General Description

The EUT is a toy which recognizes remote objects via RF. The product consists of one 'mommy' dog, three puppies, and a dog dish. The electrical rating of the EUT power supply is 4 x AA batteries. Normally, the EUT would be placed on a table top during operation. The EUT was, therefore, placed in this position during testing to simulate the end user environment.

## Equipment Under Test

| Manufacturer | Model | Description | Serial Number | FCC ID |
|---|---|---|---|---|
| Toy Biz | Puppy Magic | Plush Toy | - | LXV33540 |

## Other EUT Details

## EUT Enclosure

The EUT enclosure is primarily constructed of unshielded plastic. It measures approximately 12 cm wide by 7 cm deep by 5 cm high.

## Modification History

| Mod. # | Test | Date | Modificaiton |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |

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# EMC Test Data

| | | | |
|---|---|---|---|
| Client: | Toy Biz | Job Number: | J35951 |
| Model: | Puppy Magic | T-Log Number: | T37582 |
| | | Proj Eng: | David Bare |
| Contact: | Kent Suzuki | | |
| Emissions Spec: | FCC 15.209(a) and EN55022B | Class: | B |
| Immunity Spec: | | Environment: | |

## Test Configuration Information (1)

### Local Support Equipment

| Manufacturer | Model | Description | Serial Number | FCC ID |
|---|---|---|---|---|
| None | - | - | - | - |

### Remote Support Equipment

| Manufacturer | Model | Description | Serial Number | FCC ID |
|---|---|---|---|---|
| None | - | - | - | - |

### EUT Interface Ports

| | | Cable(s) | | |
|---|---|---|---|---|
| EUT Port | Connected To | Description | Shielded or Unshielded | Length(m) |
| None | - | - | - | - |

### EUT Operation During Emissions

The unit has a jumper installed (JP1) that has put the unit into test mode. In this mode, the unit will not auto-power-off, and will be transmitting RF at 214kHz the entire time (normally, it transmits at 214kHz, 231kHz, 375kHz, and 428kHz). The test engineer can simply turn the unit to 'ON'. To test to see if the batteries are still good, one of the three pink switches can be pressed to make sure the unit plays a 'suckling' sound.

Elliott

# EMC Test Data

| | | | |
|---|---|---|---|
| Client: | Toy Biz | Job Number: | J35951 |
| Model: | Puppy Magic | T-Log Number: | T37582 |
| | | Proj Eng: | David Bare |
| Contact: | Kent Suzuki | | |
| Spec: | FCC 15.209(a) and EN55022B | Class: | B |

## Radiated Emissions

### Test Specifics

Objective: The objective of this test session is to perform final qualification testing the EUT relative to the specification(s) defined above.

Date of Test: 05/18/2000 Config. Used: 1

Test Engineer: Vishal Narayan Config Change: None

Test Location: SVOATS #1 EUT Voltage: Batteries

### General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated emissions testing.

For radiated emissions testing between 30 and 1000 MHz, the measurement antenna was located at 3 meters distance from the EUT.

### Ambient Conditions:

Temperature: 27.2°C

Rel. Humidity: 39%

### Summary of Results

| Run # | Test Performed | Limit | Result | Margin |
|---|---|---|---|---|
| 1 | RE, 30 - 1000MHz - Maximized Emissions | EN55022 B | Pass | -12.9dB @ 168MHz |

**Modifications Made During Testing:** None

Elliott

# EMC Test Data

| | | | |
|---|---|---|---|
| Client: | Toy Biz | Job Number: | J35951 |
| Model: | Puppy Magic | T-Log Number: | T37582 |
| | | Proj Eng: | David Bare |
| Contact: | Kent Suzuki | | |
| Spec: | FCC 15.209(a) and EN55022B | Class: | B |

**Run #1: Maximized radiated emissions, 6MHz Steps 30-1000MHz**
**unit upright position (Worse case)**
**Measured at 3 meters and used -10.5 dB factor**

| Frequency | Level | Pol | EN55022B | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBµV/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters | |
| 168.000 | 17.1 | H | 30.0 | -12.9 | QP | 360 | 2.1 | |
| 180.000 | 12.1 | H | 30.0 | -17.9 | QP | 360 | 1.9 | |
| 174.000 | 10.6 | H | 30.0 | -19.4 | QP | 360 | 2.1 | |
| 168.000 | 10.3 | V | 30.0 | -19.7 | QP | 120 | 1.6 | |
| 204.000 | 10.1 | H | 30.0 | -19.9 | QP | 0 | 1.6 | |
| 162.000 | 9.1 | H | 30.0 | -20.9 | QP | 360 | 2.2 | |
| 156.000 | 7.6 | H | 30.0 | -22.4 | QP | 0 | 2.1 | |
| 300.044 | 11.2 | V | 37.0 | -25.8 | QP | 210 | 2.0 | |
| 300.044 | 11.1 | H | 37.0 | -25.9 | QP | 230 | 1.0 | |
| 306.044 | 9.1 | H | 37.0 | -27.9 | QP | 250 | 1.0 | |
| 306.044 | 7.0 | V | 37.0 | -30.0 | QP | 200 | 1.4 | |

Elliott

# EMC Test Data

| | | | |
|---|---|---|---|
| Client: | Toy Biz | Job Number: | J35951 |
| Model: | Puppy Magic | T-Log Number: | T37582 |
| | | Proj Eng: | David Bare |
| Contact: | Kent Suzuki | | |
| Spec: | FCC 15.209(a) and EN55022B | Class: | B |

## Radiated Emissions

### Test Specifics

Objective: The objective of this test session is to perform final qualification testing the EUT relative to the specification(s) defined above.

Date of Test: 05/18/2000 Config. Used: 1

Test Engineer: Vishal Narayan Config Change: None

Test Location: SVOATS #1 EUT Voltage: Batteries

### General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated emissions testing.

For radiated emissions testing between 30 and 1000 MHz, the measurement antenna was located at 3 meters distance from the EUT.

### Ambient Conditions:

Temperature: 27.2°C

Rel. Humidity: 39%

### Summary of Results

| Run # | Test Performed | Limit | Result | Margin |
|---|---|---|---|---|
| 1 | RE, EUT flat | FCC 15.209(a) | Pass | -13.5dB @ .214MHz |
| 2 | RE, EUT on side | FCC 15.209(a) | Pass | -7.8dB @ .214MHz |
| 3 | RE, EUT upright | FCC 15.209(a) | Pass | -4.4dB @ .214MHz |

### Modifications Made During Testing: None

**Run #1: Preliminary radiated emissions, .214 MHz fundamental unit flat**

| Frequency | Level | Pol | FCC 15.209(a) | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBµV/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters | Note 1 |
| 0.214 | 47.5 | F | 61.0 | -13.5 | Avg | 60 | 1.0 | |
| 0.214 | 37.2 | P | 61.0 | -23.8 | Avg | 360 | 1.0 | |
| 0.214 | 56.3 | F | 81.0 | -24.7 | PK | 60 | 1.0 | |
| 0.214 | 47.5 | P | 81.0 | -33.5 | PK | 360 | 1.0 | |

Elliott

# EMC Test Data

| | | | |
|---|---|---|---|
| Client: | Toy Biz | Job Number: | J35951 |
| Model: | Puppy Magic | T-Log Number: | T37582 |
| | | Proj Eng: | David Bare |
| Contact: | Kent Suzuki | | |
| Spec: | FCC 15.209(a) and EN55022B | Class: | B |

**Run #2: Preliminary radiated emissions, .214 MHz fundamental**
**unit side**

| Frequency | Level | Pol | FCC 15.209(a) | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBµV/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters | Note 1 |
| 0.214 | 53.2 | P | 61.0 | -7.8 | Avg | 200 | 1.0 | |
| 0.214 | 47.5 | F | 61.0 | -13.5 | Avg | 110 | 1.0 | |
| 0.214 | 61.7 | P | 81.0 | -19.3 | PK | 200 | 1.0 | |
| 0.214 | 56.7 | F | 81.0 | -24.3 | PK | 110 | 1.0 | |

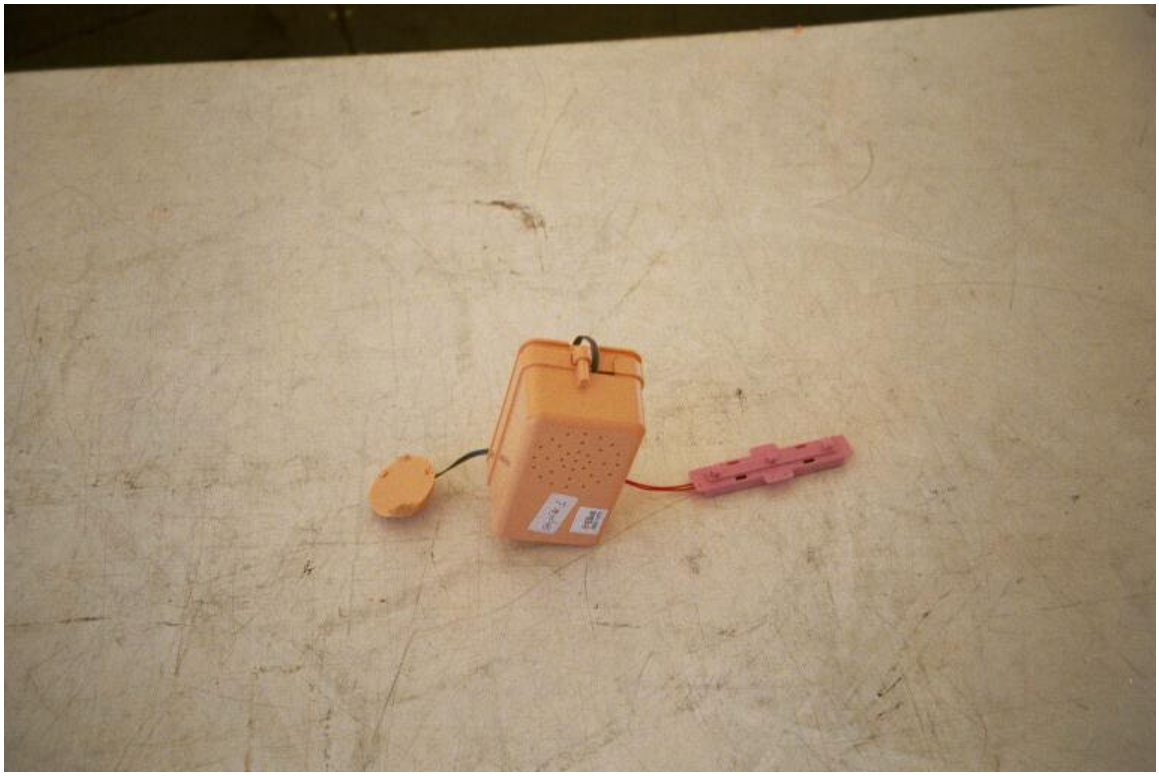
**Run #3: Preliminary radiated emissions, .214 MHz fundamental**
**unit upright**

| Frequency | Level | Pol | FCC 15.209(a) | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBµV/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters | Note 1 |
| 0.214 | 56.6 | F | 61.0 | -4.4 | Avg | 170 | 1.0 | |
| 0.214 | 53.1 | P | 61.0 | -7.9 | Avg | 260 | 1.0 | |
| 0.428 | 41.2 | F | 61.0 | -19.8 | Avg | 0 | 1.0 | Ambient |
| 0.428 | 39.3 | F | 61.0 | -21.7 | Avg | 0 | 1.0 | Ambient |
| 0.642 | 48.5 | P | 61.0 | -12.5 | Avg | 0 | 1.0 | Ambient |
| 0.642 | 36.5 | F | 61.0 | -24.5 | Avg | 0 | 1.0 | Ambient |
| 1.712 | 26.7 | P | 61.0 | -34.3 | Avg | 0 | 1.0 | Ambient |
| 1.712 | 28.4 | F | 61.0 | -32.6 | Avg | 0 | 1.0 | Ambient |
| 1.070 | 36.4 | P | 61.0 | -24.6 | Avg | 0 | 1.0 | Ambient |
| 1.070 | 37.1 | F | 61.0 | -23.9 | Avg | 0 | 1.0 | Ambient |
| 1.284 | 47.1 | P | 61.0 | -13.9 | Avg | 0 | 1.0 | Ambient |
| 1.284 | 49.5 | F | 61.0 | -11.5 | Avg | 0 | 1.0 | Ambient |
| 0.214 | 65.2 | F | 81.0 | -15.8 | PK | 170 | 1.0 | |
| 0.214 | 61.7 | P | 81.0 | -19.3 | PK | 260 | 1.0 | |

| | |
|---|---|
| Note 1: | Loop antenna was F=facing, P=perpendicular to axis of test site |

# *EXHIBIT 3: Radiated Emissions Test Configuration Photographs*

# *APPENDIX 3: Radiated Emissions Test Configuration Photographs*



# *EXHIBIT 4: Proposed FCC ID Label & Label Location*

## *EXHIBIT 5: Detailed Photographs of Toy Biz Inc. Model Puppy Magic Construction*

1 Pages

## *EXHIBIT 6: Operator's Manual for Toy Biz Inc. Model Puppy Magic*

1 Page

## *EXHIBIT 7: Block Diagram of Toy Biz Inc. Model Puppy Magic*

1 Page

## *EXHIBIT 8: Schematic Diagrams for Toy Biz Inc. Model Puppy Magic*

1 Page

# *EXHIBIT 9: Theory of Operation for Toy Biz Inc. Model Puppy Magic*

1 Page