TEST REPORT

Report Number: HK10040668-1

Application
for
Original Grant of 47 CFR Part 15 Certification
Category II Equipment of RSS-310 Issue 2

49MHz Transmitter - Baby Unit

FCC ID: CCTT4837-10

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GENERAL INFORMATION

Applicant Name:	Fisher-Price, Inc.
Applicant Address:	636 Girard Ave., East Aurora, New York, 14052, USA.
FCC Specification Standard:	FCC Part 15: 2008
FCC ID:	CCTT4837-10
FCC Model(s):	T4837, T4838
IC Specification Standard:	RSS-Gen Issue 2, June 2007 RSS-310 Issue 2, June 2007
IC Model(s):	T4837, T4838
Type of EUT:	Transmitter
Description of EUT:	49MHz Transmitter - Baby Unit
Serial Number:	N/A
Sample Receipt Date:	April 15, 2010
Date of Test:	April 22-23, 2010
Report Date:	May 10, 2010
Environmental Conditions:	Temperature: +10 to 40°C Humidity: 10 to 90%

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1.0 **Summary of Test Results**

Test Items	FCC Part 15 Section	RSS-210/ RSS-Gen#/ RSS-310^ Section	Results	Details see section
Antenna Requirement	15.203	7.1.4#	Pass	2.1
Radiated Emission Radiated Emission on the Bandedge	15.235(a) 15.235(b)	3.9^	Pass Pass	4.2 4.3
Radiated Emission in Restricted Bands	15.205	2.2	Pass	4.2
AC Power Line Conducted Emission	15.207	7.2.2#	Pass	4.4

Note: Pursuant to FCC Part 15 Section 15.215(c), the 20dB bandwidth of the emission was contained within the frequency band designated (mentioned as above) which the EUT operated. The effects, if any, from frequency sweeping, frequency hopping, other modulation techniques and frequency stability over expected variations in temperature and supply voltage were considered.

EXHIBIT 2
GENERAL DESCRIPTION

2.0 General Description

2.1 Product Description

The Equipment Under Test (EUT) is a 49MHz Transmitter – Baby Unit of Precious Planet Soothing Lights Monitor. It operates at 49.830MHz and 49.875MHz. The EUT is powered by a 120VAC to 6VDC 100mA AC adaptor.

The antenna used in baby unit is unique coupling, and the test sample is a prototype.

The Model(s): T4838 is the same as the Model: T4837 in electrical designs including software & firmware, PCB layout and construction design/physical design/enclosure. The only differences between these models are model number and number of parent units and package configuration to be sold for marketing purpose.

The circuit description is attached in the Appendix and saved with filename: descri.pdf.

2.2 Related Submittal Grants

This is an application of certification of the transmitter. The associated receiver was tested and approved following DoC procedure. Separate DoC test report was prepared.

2.3 Test Methodology

Both AC power line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.4 (2003). Preliminary radiated scans and all radiated measurements were performed in Open Area Test Sites. All Radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "**Justification Section**" of this Application.

2.4 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data and conducted data are located at Roof Top and 2nd Floor respectively of 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 and the Industry Canada.

EXHIBIT 3
SYSTEM TEST CONFIGURATION

3.0 **System Test Configuration**

3.1 Justification

For radiated emissions testing, the equipment under test (EUT) was setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, all cables (if any) were manipulated to produce worst case emissions.

The EUT was powered by a 120VAC to 6VDC 100mA adaptor.

For the measurements, the EUT was attached to a plastic stand if necessary and placed on the wooden turntable. If the EUT attaches to peripherals, they are connected and operational to simulate typical use.

The signal was maximized through rotation and placement in the three orthogonal axes. The antenna height and polarization were varied during the search for maximum signal level. The antenna height was varied from 1 to 4 meters. Radiated emissions were taken at three meters unless the signal level was too low for measurement at that distance. If necessary, a pre-amplifier was used and/or the test was conducted at a closer distance.

For any intentional radiator powered by AC power line, measurements of the radiated signal level of the fundamental frequency component of the emission was performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage.

For transmitter radiated measurement, the spectrum analyzer resolution bandwidth was 100 kHz for frequencies below 1000 MHz.

Radiated emission measurement for transmitter was performed 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 to 40 GHz, whichever is lower.

3.1 Justification - Cont'd

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. A detailed description for the calculation of the average factor can be found in Exhibit 4.2.3.

Pulse desensitization is not applicable for this device. Since the transmitter transmits the RF signal continuously.

For AC line conducted emission test, the EUT along with its peripherals were placed on a 1.0m(W)x1.5m(L) and 0.8m in height wooden table and the EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane. The EUT was connected to power mains through a line impedance stabilization network (LISN), which provided 50ohm coupling impedance for measuring instrument. The LISN housing, measuring instrument case, reference ground plane, and vertical ground plane were bounded together. The excess power cable between the EUT and the LISN was bundled.

All connecting cables of EUT and peripherals were manipulated to find the maximum emission.

All relevant operation modes have been tested, and the worst case data is included in this report.

3.2 EUT Exercising Software

There was no special software to exercise the device. Once the unit is powered up, it transmits the RF signal continuously.

3.3 Details of EUT and Description of Accessories

Details of EUT:

An AC adaptor (provided with the unit) was used to power the device. Their description are listed below.

(1) Baby Unit: An AC adaptor (120VAC to 6VDC 100mA, Model: PA-0610-DVA) (Supplied by Client)

Description of Accessories:

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

3.4 Measurement Uncertainty

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

3.5 Equipment Modification

Any modifications installed previous to testing by Fisher-Price, Inc. will be incorporated in each production model sold/leased in the United States and Canada.

No modifications were installed by Commercial & Electrical Division, Intertek Testing Services Hong Kong Ltd.

EXHIBIT 4
TEST RESULTS

4.0 **Test Results**

Data is included of the 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.

4.1 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CF - AG

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

In the following table(s), the reading shown on the data table reflects the preamplifier gain. An example for the calculations in the following table is as follows:-

FS = RR + LF

where FS = Field Strength in dBμV/m
RR = RA - AG in dBμV
LF = CF + AF in dB

Assume a receiver reading of 52.0 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, giving a field strength of 32 dBμV/m. This value in dBμV/m was converted to its corresponding level in μV/m.

RA = 52.0 dBμV
AF = 7.4 dB
CF = 1.6 dB
AG = 29.0 dB
FS = RR + LF
FS = 23 + 9 = 32 dBμV/m

RR = 23.0 dBμV
LF = 9.0 dB

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

4.2 Radiated Emissions

4.2.1 Radiated Emission Configuration Photograph

Worst Case Radiated Emission
at

49.830 MHz

The worst case radiated emission configuration photographs are attached in the Appendix and saved with filename: config photos.pdf

4.2.2 Radiated Emission Data

The data in tables 1 list the significant emission frequencies, the limit and the margin of compliance.

Judgement -

Passed by 4.9 dB margin

4.2.3 Transmitter Duty Cycle Calculation

The average factor is not applicable for this device as the transmitted signal is a continuously signal.

Mode: TX with Light OFF-Channel A

Table 1

Radiated Emission Data

Polari-zation	Frequency (MHz)	Reading (dBµV)	Pre-Amp (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
V	49.830	80.1	16	11.0	75.1	80.0	-4.9
V	99.660	40.1	16	12.0	36.1	43.5	-7.4
V	149.490	37.1	16	14.0	35.1	43.5	-8.4
H	199.320	34.9	16	16.0	34.9	43.5	-8.6
H	***249.150***	***30.2***	***16***	***20.0***	***34.2***	***46.0***	***-11.8***
H	298.980	28.4	16	22.0	34.4	46.0	-11.6
H	348.810	25.9	16	24.0	33.9	46.0	-12.1
H	398.640	25.4	16	25.0	34.4	46.0	-11.6
H	448.470	24.7	16	26.0	34.7	46.0	-11.3
H	498.300	23.9	16	26.0	33.9	46.0	-12.1

NOTES: 1. Peak detector is used for the emission measurement.

2. All measurements were made at 3 meters. Radiated 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 radiated 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. Emission (the row indicated by ***bold italic***) within the restricted band meets the requirement of FCC Part 15 Section 15.205 / RSS-210 Section 2.2.

4.3 Radiated Emission on the Bandedge

For electronic filing, the plot shows the fundamental emission when modulated with 1kHz and 100 dBSPL, 10cm from the Microphone of EUT and unmodulated are saved with filename: be.pdf. From the plot, the field strength of any emissions appearing between the band edges and up to 10kHz above and below and band edges are attenuated at least 26dB below the level of the unmodulated carrier. It fulfils the requirement of FCC Part 15 Section 15.235(b) / RSS-310 Section 3.9.

4.4 AC Power Line Conducted Emission

[ ] Not applicable – EUT is only powered by battery for operation.

[×] EUT connects to AC power line. Emission Data is listed in following pages.

[ ] Base Unit connects to AC power line and has transmission. Handset connects to AC power line but has no transmission. Emission Data of Base Unit is listed in following pages.

4.4.1 AC Power Line Conducted Emission Configuration Photograph

Worst Case Line-Conducted Configuration
at

16.611 MHz

The worst case line conducted configuration photographs are attached in the Appendix and saved with filename: config photos.pdf

4.4.2 AC Power Line Conducted Emission Data

The conducted emission test result is attached in the Appendix and saved with filename: conduct.pdf

Judgement -

Passed by 14.0 dB margin compare with average limit

5.0 **Equipment List**

1) Radiated Emissions Test

Equipment	EMI Test Receiver	Biconical Antenna
Registration No.	EW-0014	EW-2512
Manufacturer	R&S	EMCO
Model No.	ESVS30	3104C
Calibration Date	Jun. 01, 2009	Oct. 31, 2008
Calibration Due Date	Jun. 01, 2010	Apr. 30, 2010

Equipment	Log Periodic Antenna	Spectrum Analyzer
Registration No.	EW-0447	EW-2188
Manufacturer	EMCO	AGILENTTECH
Model No.	3146	E4407B
Calibration Date	Nov. 12, 2008	Dec. 25, 2009
Calibration Due Date	May. 12, 2010	Dec. 31, 2010

2) Conducted Emissions Test

Equipment	EMI Test Receiver	Artificial Mains	Pulse Limiter
Registration No.	EW-2251	EW-0192	EW-0699
Manufacturer	R&S	R&S	R&S
Model No.	ESCI	ESH3-Z5	ESH3-Z2
Calibration Date	Oct. 22, 2009	Nov. 23, 2009	Dec. 24, 2009
Calibration Due Date	Oct. 22, 2010	Nov. 23, 2010	Jun. 24, 2011

END OF TEST REPORT

APPENDIX
EXHIBITS OF APPLICATION FOR CERTIFICATION