

*July 9, 2003*

*Kiddesigns Inc.  
1299 Main Street,  
Rahway, NJ07065,  
U.S.A.*

*Dear Mr. Yigal Feiner:*

*Enclosed you will find your file copy of a Part 15 report (FCC ID: IAJBE826).*

*For your reference, TCB will normally take another 15-20 days for reviewing the report.  
Approval will then be granted when no query is sorted.*

*Please contact me if you have any questions regarding the enclosed material.*

*Sincerely,*

A handwritten signature in black ink, appearing to read 'Alfred Lo', written in a cursive style.

*Alfred Lo  
Senior Technical Supervisor*

*Enclosure*

*FCC ID: IAJBE826*

**Kiddesigns Inc.**

Application  
For  
Certification  
**(FCC ID: IAJBE826)**

Superheterodyne Receiver

WO# 0310035

LC/sa

July 9, 2003

FCC ID: IAJBE826

- The test results reported in this test 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
- For Terms And Conditions of the services, it can be provided upon request.
- The evaluation data of the report will be kept for 3 years from the date of issuance.

# INTERTEK TESTING SERVICES

---

## LIST OF EXHIBITS

### *INTRODUCTION*

<i>EXHIBIT 1:</i>	General Description
<i>EXHIBIT 2:</i>	System Test Configuration
<i>EXHIBIT 3:</i>	Emission Results
<i>EXHIBIT 4:</i>	Equipment Photographs
<i>EXHIBIT 5:</i>	Product Labelling
<i>EXHIBIT 6:</i>	Technical Specifications
<i>EXHIBIT 7:</i>	Instruction Manual
<i>EXHIBIT 8:</i>	Miscellaneous Information

# INTERTEK TESTING SERVICES

## MEASUREMENT/TECHNICAL REPORT

**Kiddesigns Inc. - MODEL: Barbie BE-826**  
**FCC ID: IAJBE826**

This report concerns (check one:)	Original Grant <input checked="" type="checkbox"/>	Class II Change <input type="checkbox"/>
Equipment Type: <u>Superheterodyne Receiver</u> (example: computer, printer, modem, etc.)		
_____		
Deferred grant requested per 47 CFR 0.457(d)(1)(ii)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
	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 <input type="checkbox"/>	No <input checked="" type="checkbox"/>
If no, assumed Part 15, Subpart B for unintentional radiator - the new 47 CFR [08-20-02 Edition] provision.		
_____		
Report prepared by:	Alfred Lo Intertek Testing Services Hong Kong Ltd. 2/F., Garment Centre, 576, Castle Peak Road, Kowloon, Hong Kong Phone: 852-2173-8545 Fax: 852-2371-0914	

---

# INTERTEK TESTING SERVICES

---

## Table of Contents

1.0 <b><u>General Description</u></b> .....	2
1.1 Product Description.....	2
1.2 Related Submittal(s) Grants .....	2
1.3 Test Methodology .....	3
1.4 Test Facility .....	3
2.0 <b><u>System Test Configuration</u></b> .....	5
2.1 Justification .....	5
2.2 EUT Exercising Software.....	5
2.3 Special Accessories .....	5
2.4 Equipment Modification.....	6
2.5 Support Equipment List and Description.....	6
2.6 Measurement Uncertainty .....	6
3.0 <b><u>Emission Results</u></b> .....	8
3.1 Field Strength Calculation.....	9
3.1 Field Strength Calculation (cont'd).....	10
3.2 Radiated Emission Configuration Photograph.....	11
3.3 Radiated Emission Data .....	12
3.4 Conducted emission Configuration Photograph.....	14
3.5 Conducted Emission Data .....	16
4.0 <b><u>Equipment Photographs</u></b> .....	18
5.0 <b><u>Product Labelling</u></b> .....	20
6.0 <b><u>Technical Specifications</u></b> .....	22
7.0 <b><u>Instruction Manual</u></b> .....	24
8.0 <b><u>Miscellaneous Information</u></b> .....	26
8.1 Measured stabilization waveform.....	27
8.2 Discussion of Pulse Desensitization .....	28
8.3 Calculation of Average Factor.....	29
8.4 Emissions Test Procedures .....	30
8.4 Emissions Test Procedures (cont'd) .....	31

## INTERTEK TESTING SERVICES

---

### 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.pdf
Test Setup Photo	Conducted Emission	conducted.pdf
Test Report	Conducted Emission Test Result	conduct.pdf
External Photo	External Photo	ophoto.pdf
Internal Photo	Internal Photo	iphoto.pdf
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

# **INTERTEK TESTING SERVICES**

---

## **EXHIBIT 1**

### **GENERAL DESCRIPTION**

# INTERTEK TESTING SERVICES

---

## 1.0 **General Description**

### 1.1 Product Description

This Equipment Under Test (EUT) is 49MHz superheterodyne receiver for its associated RF transmitter (microphone). The primary function of this EUT is used to receive the modulated RF signal from its associated transmitter and then demodulate the audio signal. This is powered by AC/DC adaptor(120VAC to 6VDC, provided by Intertek Testing Services HK Ltd). The EUT contains camera, 49MHz RF receiver and the optional music player that made up by the sound IC and ROM (described in technical description and block diagram). Once the EUT has been switched on, the camera and the RF receiver will be activated automatically. In this submitted version, there is no optional music player and the correspondence circuit has been removed by the applicant before testing.

For controlling the audio performance of this EUT, the echo, mic vol, pitch and balance button are equipped. The power LED on front panel is use to show the “on” and “off” status of EUT. It also contains the AV output port, microphone port and DC jack port for audio/visual output, microphones input and DC power connection respectively. The RF signal is collected by 24cm stretchable rod antenna.

For electronic filing, the brief circuit description is saved with filename: descri.pdf

### 1.2 Related Submittal(s) Grants

The Certification procedure of transmitter for this receiver (with FCC ID IAJBE826MIC) is being processed as the same time of this application.



## INTERTEK TESTING SERVICES

---

### 1.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.4 (1992). Radiated measurement was performed in an Open Area Test Site and Conducted Emission measurement was performed in Shield Room. Preliminary scans were performed in the Open Area Test Site only to determine worst case modes. For each scan, the procedure for maximizing emissions in Appendices D and E were followed. 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 radiated data is located at Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong. This test facility and site measurement data have been placed on file with the FCC.

**INTERTEK TESTING SERVICES**

---

**EXHIBIT 2**

**SYSTEM TEST CONFIGURATION**

# INTERTEK TESTING SERVICES

---

## 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 (1992).

The EUT is powered by AC/DC adaptor (120VAC to 6VDC, provided by Intertek Testing Services (H.K.) Ltd.)

The unit was operated standalone and placed with those peripheral, placed flush with rear of tabletop.

For maximizing emissions, 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. The step by step procedure for maximizing emissions led to the data reported in Exhibit 3.0.

The EUT was placed on turntable, which enabled the engineer to maximize emissions through its placement in the three orthogonal axes.

For simplicity of testing, the unit was operated receiving continuously.

### 2.2 EUT Exercising Software

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

### 2.3 Special Accessories

For simulating the typical usage of the EUT, it was operated with:

- Microphone with three meters cable.
- Resistive terminators (75 $\Omega$  for video and 47k $\Omega$  for audio) with one meter cable for termination of the AV output.
- Terminated (47k $\Omega$ ) line-in cable with one meter length.
- AC/DC adaptor (AC 120V to DC 6V, 400mA) with model NA500S was used as power supply.

## INTERTEK TESTING SERVICES

---

### 2.4 Equipment Modification

Any modifications installed previous to testing by Kiddesigns Inc. will be incorporated in each production model sold/leased in the United States.

No modifications were installed by Intertek Testing Services.

### 2.5 Measurement Uncertainty

When determining of the test conclusion, the measurement uncertainty of test has been considered.

### 2.6 Support Equipment List and Description

N/A

All the items listed under section 2.0 of this report are confirmed by:

*Alfred Lo*  
*Senior Technical Supervisor - Home Entertainment Electronics*  
*Intertek Testing Services Hong Kong Ltd.*  
*Agent for Kiddesigns Inc.*



\_\_\_\_\_  
Signature

\_\_\_\_\_  
July 9, 2003 Date

**INTERTEK TESTING SERVICES**

---

**EXHIBIT 3**  
**EMISSION RESULTS**

## INTERTEK TESTING SERVICES

---

### 3.0 **Emission 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.

## INTERTEK TESTING SERVICES

---

### 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 dB $\mu$ V/m

RA = Receiver Amplitude (including preamplifier) in dB $\mu$ V

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:

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

## INTERTEK TESTING SERVICES

---

### 3.1 Field Strength Calculation (cont'd)

#### Example

Assume a receiver reading of 62.0 dB $\mu$ V 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 dB $\mu$ V/m. This value in dB $\mu$ V/m was converted to its corresponding level in  $\mu$ V/m.

$$RA = 62.0 \text{ dB}\mu\text{V}$$

$$AF = 7.4 \text{ dB}$$

$$CF = 1.6 \text{ dB}$$

$$AG = 29.0 \text{ dB}$$

$$PD = 0 \text{ dB}$$

$$AV = -10 \text{ dB}$$

$$FS = 62 + 7.4 + 1.6 - 29 + 0 + (-10) = 32 \text{ dB}\mu\text{V/m}$$

$$\text{Level in mV/m} = \text{Common Antilogarithm} [(32 \text{ dB}\mu\text{V/m})/20] = 39.8 \mu\text{V/m}$$



## INTERTEK TESTING SERVICES

---

### 3.2 Radiated Emission Configuration Photograph

Worst Case Radiated Emission  
at  
49.435 MHz

For electronic filing, the front view and back view of the test configuration photographs are saved with filename: radiated.pdf.

## INTERTEK TESTING SERVICES

---

### 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 5.8 dB margin

The radiated emissions test was observed up to 1000MHz.

**TEST PERSONNEL:**



---

*Signature*

Lawrence H. C. Chow, Compliance Engineer  
*Typed/Printed Name*

July 9, 2003  
Date

## INTERTEK TESTING SERVICES

---

Company: Kiddesigns Inc.  
Model: Barbie BE-826  
Worst case operating mode: Receiving

Date of Test: June 30, 2003

**Table 1**

**Radiated Emissions**

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Antenna Factor (dB)	Pre-Amp Gain (dB)	Net at 3m (dB $\mu$ V /m)	Limit at 3m (dB $\mu$ V /m)	Margin (dB)
V	42.954	36.1	11.7	16	31.8	40.0	-8.2
V	49.435	38.3	11.9	16	34.2	40.0	-5.8
V	66.831	40.0	8.5	16	32.5	40.0	-7.5
H	76.384	40.6	6.3	16	30.9	40.0	-9.1
H	85.924	38.6	8.0	16	30.6	40.0	-9.4
H	98.872	38.5	10.6	16	33.1	43.5	-10.4
H	105.024	35.0	12.2	16	31.2	43.5	-12.3
H	124.832	34.6	12.8	16	31.4	43.5	-12.1
H	148.306	37.6	11.6	16	33.2	43.5	-10.3
H	198.720	31.7	17.3	16	33.0	43.5	-10.5
H	247.185	37.2	11.4	16	32.6	46.0	-13.4
H	296.615	34.8	13.3	16	32.1	46.0	-13.9

- NOTES:
1. Peak Detector is used below 1000MHz unless otherwise stated.
  2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances 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 sign in the column shows value below limit.
  4. Horn antenna and average detector are used for the emission over 1000MHz.
  5. The corresponding limit as per 15.109 is based on Quasi peak detector data for frequencies below 1000 MHz and average detector data for frequencies over 1000 MHz.

Test Engineer: Lawrence H. C. Chow

## **INTERTEK TESTING SERVICES**

---

### 3.4 Conducted Emission Configuration Photograph

#### Worst Case Conducted Emission

For electronic filing, the front view, rear view and side view of the test configuration photographs are saved with filename: conducted.pdf.

## **INTERTEK TESTING SERVICES**

---

Company: Kiddesigns Inc.  
Model: Barbie BE-826

Date of Test: June 30, 2003

### **Conducted Emissions Section 15.107 Requirements**

For Electronic filing, the conducted emission test result is saved with filename: conduct.pdf

## INTERTEK TESTING SERVICES

---

### 3.5 Conducted Emission Data

For electronic filing, the graph and data table of conducted emission are saved with filename: conduct.pdf. The data table lists the significant emission frequencies, the limit and the margin of compliance. Numbers with a minus sign are below the limit.

Judgement: Passed by at least 20 dB margin

#### **TEST PERSONNEL:**



---

*Signature*

Lawrence H. C. Chow, Compliance Engineer

*Typed/Printed Name*

July 9, 2003

Date

**INTERTEK TESTING SERVICES**

---

**EXHIBIT 4**

**EQUIPMENT PHOTOGRAPHS**

## INTERTEK TESTING SERVICES

---

### 4.0 **Equipment Photographs**

For electronic filing, photographs of the tested EUT are saved with filename: ophoto.pdf for external photo, and iphoto.pdf for internal photo.



**INTERTEK TESTING SERVICES**

---

**EXHIBIT 5**

**PRODUCT LABELLING**

## INTERTEK TESTING SERVICES

---

### 5.0 **Product Labelling**

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

**INTERTEK TESTING SERVICES**

---

**EXHIBIT 6**

**TECHNICAL SPECIFICATIONS**

### 6.0 **Technical Specifications**

For electronic filing, the block diagram and schematic of the tested EUT are saved with filename: block.pdf and circuit.pdf respectively.

**INTERTEK TESTING SERVICES**

---

**EXHIBIT 7**

**INSTRUCTION MANUAL**

## INTERTEK TESTING SERVICES

---

### 7.0 **Instruction Manual**

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

This manual will be provided to the end-user with each unit sold/leased in the United States.

**INTERTEK TESTING SERVICES**

---

**EXHIBIT 8**

**MISCELLANEOUS INFORMATION**

## INTERTEK TESTING SERVICES

---

### 8.0 **Miscellaneous Information**

The miscellaneous information includes details of the test procedure and calculation of factor such as pulse desensitization and averaging factor (calculation and timing diagram).



## INTERTEK TESTING SERVICES

---

### 8.1 Discussion of Pulse Desensitization

No desensitization of the measurement equipment is required as this device is a superheterodyne receiver.

## INTERTEK TESTING SERVICES

---

### 8.2 Calculation of Average Factor

This device is a superheterodyne receiver. It is not necessary to apply average factor to the measurement results.

## INTERTEK TESTING SERVICES

---

### 8.3 Emissions Test Procedures

The following is a description of the test procedure used by Intertek Testing Services Hong Kong Ltd. in the measurements of Superheterodyne Receivers operating under the Part 15, Subpart B rules.

The test set-up and procedures described below are designed to meet the requirements of ANSI C63.4 - 1992.

The 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 EUT is adjusted through all three orthogonal axis to obtain maximum emission levels. The antenna height and polarization are also varied during the testing to search for maximum signal levels. The height of the antenna is varied from one to four meters.

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 8.2.

The frequency range scanned is from the lowest radio frequency signal generated in the device which is greater than 9 kHz to 1GHz. For line conducted emissions, the range scanned is 0.15MHz to 30MHz.

## INTERTEK TESTING SERVICES

---

### 8.3 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 were made as described in ANSI C63.4 - 1992.

The IF bandwidth used for measurement of radiated signal strength was 100 kHz or greater when frequency is below 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 8.1). Above 1000 MHz, a resolution bandwidth of 1 MHz is used.

Measurements are normally conducted at a measurement distance of three meters. All measurements are extrapolated to three meters using inverse scaling, unless otherwise reported. Measurements taken at a closer distance are so marked.