EMC Compliance Management Group
670 National Avenue
Mountain View, CA 94043
Tel. (650) 988-0900
Fax (650) 988-6647

Competent Body Approval #: 14082
NVLAP Lab code: 200068-0

EMC TEST CERTIFICATION REPORT

On Model: B-2203
Prepared for Boxer Toys Company Limited

According to FCC Part 15 Class B

FCC ID #:	*KT6B2203*
Prepared by:	*Arcelia Maldonado*
QC Manager:	*Michael J. Azar*

Table of Contents

Government Disclaimer Notice

When government drawing, specification, or other data are used for any purpose other than in connection with a definitely related government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawing, specifications, or other data, is not to be regarded by implication or otherwise in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell patented invention that may in any way be related thereto. This report must not be used to claim product endorsement by NVLAP or any agency of the U.S. Government.

Reproduction Clause

Any reproduction of this document must be done in full. No single part of this document may be reproduced without permission from EMC Compliance Management Group, 670 National Ave., Mountain View, CA 94043.

ADMINISTRATIVE DATA

Test Sample	*: Flash Walkie-Talkie*
Model Number	*: B-2203*
Part Number	*: N/A*
Applicant	*: Boxer Toys Company Limited* *Unit 10, 4th Floor, Sun Cheong Industrial Bldg.* *1 Cheung Shun St., Cheung Sha Wan,* *Kowloon, Hong Kong*
Manufacturer	*: Akamibara Electronics Factory*
Telephone	*: (852) 2397-2628*
Fax	*: (852) 2393-3246*

EUT Description

Boxer Toys Company Limited model B-2203 (referred to as the EUT in this report) is a flash walkie-talkie.

Test Summary

The Electromagnetic Compatibility requirements on Model B-2203 for this test are stated below. All results listed in this report relate exclusively to this above-mentioned model as the Equipment Under Test. This report confers no approval or endorsement upon any other component, host or subsystem used in the test set-up.

Emission Tests			
Specifications	***Description & Test Results***	***Test Point***	***Remark***
CFR 47 Part 15 Section 15.235	***FUNDAMENTAL FREQUENCY OF TX MODE*** *– Passed on Vertical Polarization by 20.2 dB at 49.862MHz.*	*Enclosure*	*Attachment 1*
CFR 47 Part 15 Section 15.209	***SPURIOUS EMISSIONS OF TX MODE –*** *Passed on Vertical Polarization by 20.8 dB at 398.8665MHz.* ***MORSE CODE MODE*** *– Passed on Vertical Polarization by 3.0 dB at 48.3975MHz.*	*Enclosure*	*Attachment 2*
CFR 47 Part 15 Section 15.109	***RX MODE –*** *Passed on Vertical Polarization by 4.5 dB at 48.47625MHz.*	*Enclosure*	*Attachment 3*

Test Location

EMC Compliance Management Group is located at 670 National Ave., Mountain View, CA 94043, USA.

Accreditation Bodies

EMC Compliance Management Group is a fully accredited Test Laboratory for ITE, ISM and Telecommunications Products.

Laboratory Assessment #: *14082, Approved by Assessment Services, A U. K. Competent Body, as meeting the requirements of EN45001and ISO Guide 25.*

In compliance with the site registration requirements of Section 2.948 of the FCC Rules to perform EMI measurements for the general public.

Accredited by the National Voluntary Laboratory Accreditation Program for the specific scope of accreditation under Lab Code # 200068-0.

Registered in accordance with Japanese VCCI Regulations.

Antenna Requirement 15.203

The transmitter uses a permanently connected antenna.

Product Labeling

BOXER TOYS COMPANY LIMITED

UNIT 10, 4/F., SUN CHEONG IND. BLDG., 1 CHEUNG SHUN ST., CHEUNG SHA WAN, KLN., HONGKONG

Tel : (852) 2397-2628 Fax : (852) 2393-3246 E-mail : tlboxer@asiansources.com

---

R21067

01 FEB 2000

Nov. 15, 1999.

Federal Communications Commission
Authorization & Evaluation Division
7435 Oakland Mills Road,
Columbia, MD 21046,
USA.

Re : Sample Label

FCC ID : KT6B2203

This device complies with Part 15 of the FCC Rules.
Operation is subject to the following two conditions :
(1) This device may not cause harmful interference , and
(2) This device must accept any interference received,
including interference that may cause undesired operation.

This is to certify that the label shown above will be the production label to be used on production units of model B2203 . FCC ID number : KT6B2203

Best Rgds.

c.c. Mr. K. K. Chan
Engineer

System Test Justification

Handset units were tested both horizontal and vertical to give maximized reading.

Equipment Modification

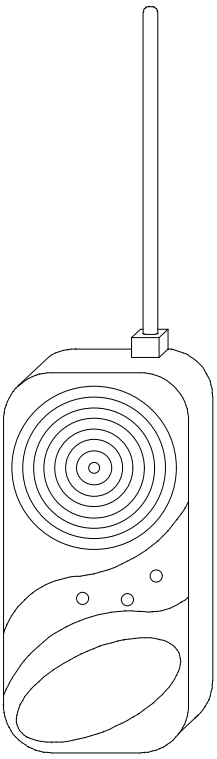
Any modifications installed previous to testing by Boxer Toys Company Limited will be incorporated in each production model sold or leased in United States.

There were no modifications installed by EMC Compliance Management Group.

Test System Details

EUT	
Model Number:	*B-2203*
Description:	*Flash Walkie-Talkie*
Manufacturer:	*Akamibara Electronics Factory*
Support Equipment	
None	

Configuration of Tested System



EUT

ATTACHMENT 1 - RADIATED EMISSION TEST RESULTS (204-R-01)

CLIENT:	Boxer Toys Company Limited	**TEST REFERENCE:**	CFR 47 Part 15 Section 15.235
EUT MODEL:	B-2203	**PRODUCT:**	Flash Walkie-Talkie
SERIAL NO.:	Engineering Sample	**EUT DESIGNATION:**	Home Use
TEMPERATURE:	19° C	**HUMIDITY:**	48%
ATM PRESSURE:	1017 Mbar	**GROUNDING:**	N/A
TESTED BY:	Robert Li	**DATE OF TEST:**	2000 Feb 26

SETUP METHOD:	ANSI C63.4:1992
TEST PROCEDURE:	The EUT is set up according to the guidelines of ANSI C63.4:1992 for radiated emissions. An EMI receiver peak scan is made at the frequency measurement range (pre-scan) in an Anechoic chamber. Signal discrimination is then performed and the significant peaks marked. These peaks are then quasi-peaked from 30 MHz to 1GHz at OATs. The following data lists the significant emission frequencies, measured levels, correction factors (including cable and antenna correction factors), and the corrected readings against the limits. Explanation of the Correction Factor is given as follows: FS= RA + AF + CF - AG Where: FS = Field Strength RA = Receiver Amplitude AF = Antenna Factor CF = Cable Attenuation Factor AG = Amplifier Gain
TESTED RANGE:	30MHz to 1,000MHz on Quasi-peak
TEST VOLTAGE:	4.5VDC
RESULTS:	• **FUNDAMENTAL FREQUENCY OF TX MODE -** The EUT meets the requirements of test reference for Radiated Emissions on vertical polarization by 20.2 dB at 49.862MHz. The test results relate only to the equipment under test provided by client.
CHANGES OR MODIFICATIONS:	There is no modification installed by EMC Compliance Management Group test personnel.
M. UNCERTAINTY:	Freq. $\pm$ 2x10^{-7} x Center Freq., Amp $\pm$ 2.6 dB

TX MODE: FUNDAMENTAL FREQUENCY						
Frequency [MHz]	**Antenna Polarization [V/H]**	**EUT Position [V/H]**	**Corrected Reading [dBµV/m]**	**Delta, QP [dB]**	**3 Meters Limits [dBµV/m]**	**Correction Factors [dB/m]**
Set-up/Configuration: ANSI C63.4:1992						
49.85875	H	H	52.0	-28.0	80.0	10.3
49.85975	V	H	48.2	-31.8	80.0	10.3
49.85840	H	V	40.0	-40.0	80.0	10.3
49.86200	V	V	59.8	-20.2	80.0	10.3
Comments: None						
Note: All readings are quasi-peak unless stated otherwise, using a QPA bandwidth of 120kHz, with a 30 ms sweep time. A video filter was not used.						

Test Equipment	Manufacturer/ Model	Serial No.	Last Cal.	Cal. Due Date
EMI Receiver	HP 85462A	3650A00363	05/21/99	05/21/00
RF Filter	HP 85460A	3704A00349	05/21/99	05/21/00
Antenna	CHASE CBL6112A	2274	11/15/99	11/15/00
Note: All testing were performed using internationally recognized standards. All test instruments were calibrated and traceable to the National Institute of Standards and Technology (NIST).				

SIGNED: _____ **REVIEWED:** _____

ATTACHMENT 2 - RADIATED EMISSION TEST RESULTS (204-R-01)

CLIENT:	Boxer Toys Company Limited	**TEST REFERENCE:**	CFR 47 Part 15 Section 15.209
EUT MODEL:	B-2203	**PRODUCT:**	Flash Walkie-Talkie
SERIAL NO.:	Engineering Sample	**EUT DESIGNATION:**	Home Use
TEMPERATURE:	19° C	**HUMIDITY:**	48%
ATM PRESSURE:	1017 Mbar	**GROUNDING:**	N/A
TESTED BY:	Robert Li	**DATE OF TEST:**	2000 Feb 26

SETUP METHOD:	ANSI C63.4:1992
TEST PROCEDURE:	The EUT is set up according to the guidelines of ANSI C63.4:1992 for radiated emissions. An EMI receiver peak scan is made at the frequency measurement range (pre-scan) in an Anechoic chamber. Signal discrimination is then performed and the significant peaks marked. These peaks are then quasi-peaked from 30 MHz to 1GHz at OATs. The following data lists the significant emission frequencies, measured levels, correction factors (including cable and antenna correction factors), and the corrected readings against the limits. Explanation of the Correction Factor is given as follows: FS= RA + AF + CF - AG Where: FS = Field Strength RA = Receiver Amplitude AF = Antenna Factor CF = Cable Attenuation Factor AG = Amplifier Gain
TESTED RANGE:	30MHz to 1,000MHz on Quasi-peak
TEST VOLTAGE:	4.5VDC
RESULTS:	• **SPURIOUS EMISSIONS OF TX MODE -** The EUT meets the requirements of test reference for Radiated Emissions on vertical polarization by 20.8 dB at 398.8665MHz. • **MORSE CODE MODE -** The EUT meets the requirements of test reference for Radiated Emissions on vertical polarization by 3.0 dB at 48.3975MHz. The test results relate only to the equipment under test provided by client.
CHANGES OR MODIFICATIONS:	There is no modification installed by EMC Compliance Management Group test personnel.
M. UNCERTAINTY:	Freq. $\pm$ 2x10^{-7} x Center Freq., Amp $\pm$ 2.6 dB

SPURIOUS EMISSIONS OF TX MODE						
Frequency [MHz]	**Antenna Polarization [V/H]**	**EUT Position [V/H]**	**Corrected Reading [dBµV/m]**	**Delta, QP [dB]**	**3 Meters Limits [dBµV/m]**	**Correction Factors [dB/m]**
Set-up/Configuration: ANSI C63.4:1992						
548.45875	H	H	32.2	-21.8	54.0	22.7
398.87875	H	H	30.9	-23.1	54.0	19.9
498.59875	H	H	30.5	-23.5	54.0	21.7
598.31875	H	H	29.1	-24.9	54.0	23.7
598.30225	V	H	26.3	-27.7	54.0	23.7
398.86225	V	H	26.0	-28.0	54.0	19.9
398.87840	H	V	26.5	-27.5	54.0	19.9
398.86650	V	V	33.2	-20.8	54.0	19.9
548.44650	V	V	31.5	-22.5	54.0	22.7
897.46650	V	V	30.3	-23.7	54.0	27.9
498.58650	V	V	29.7	-24.3	54.0	21.7
598.30650	V	V	27.7	-26.3	54.0	23.7
Comments: None						
Note: All readings are quasi-peak unless stated otherwise, using a QPA bandwidth of 120kHz, with a 30 ms sweep time. A video filter was not used.						

MORSE CODE MODE						
Frequency [MHz]	**Antenna Polarization [V/H]**	**EUT Position [V/H]**	**Corrected Reading [dBµV/m]**	**Delta, QP [dB]**	**3 Meters Limits [dBµV/m]**	**Correction Factors [dB/m]**
Set-up/Configuration: ANSI C63.4:1992						
48.43750	H	H	29.2	-10.8	40.0	10.9
49.84000	H	H	26.0	-14.0	40.0	10.3
49.99250	V	H	28.2	-11.8	40.0	10.2
48.46291	V	H	27.4	-12.6	40.0	10.9
48.39750	V	V	37.0	-3.0	40.0	10.9
49.89000	V	V	33.6	-6.4	40.0	10.3
50.94625	V	V	28.3	-11.7	40.0	10.0
Comments: None						
Note: All readings are quasi-peak unless stated otherwise, using a QPA bandwidth of 120kHz, with a 30 ms sweep time. A video filter was not used.						

Test Equipment	Manufacturer/ Model	Serial No.	Last Cal.	Cal. Due Date
EMI Receiver	HP 85462A	3650A00363	05/21/99	05/21/00
RF Filter	HP 85460A	3704A00349	05/21/99	05/21/00
Antenna	CHASE CBL6112A	2274	11/15/99	11/15/00
Note: All testing were performed using internationally recognized standards. All test instruments were calibrated and traceable to the National Institute of Standards and Technology (NIST).				

SIGNED: _____ **REVIEWED:** _____

ATTACHMENT 3 - RADIATED EMISSION TEST RESULTS (204-R-01)

CLIENT:	Boxer Toys Company Limited	**TEST REFERENCE:**	CFR 47 Part 15 Section 15.109
EUT MODEL:	B-2203	**PRODUCT:**	Flash Walkie-Talkie
SERIAL NO.:	Engineering Sample	**EUT DESIGNATION:**	Home Use
TEMPERATURE:	19° C	**HUMIDITY:**	48%
ATM PRESSURE:	1017 Mbar	**GROUNDING:**	N/A
TESTED BY:	Robert Li	**DATE OF TEST:**	2000 Feb 26

SETUP METHOD:	ANSI C63.4:1992
TEST PROCEDURE:	The EUT is set up according to the guidelines of ANSI C63.4:1992 for radiated emissions. An EMI receiver peak scan is made at the frequency measurement range (pre-scan) in an Anechoic chamber. Signal discrimination is then performed and the significant peaks marked. These peaks are then quasi-peaked from 30 MHz to 1GHz at OATs. The following data lists the significant emission frequencies, measured levels, correction factors (including cable and antenna correction factors), and the corrected readings against the limits. Explanation of the Correction Factor is given as follows: FS= RA + AF + CF - AG Where: FS = Field Strength RA = Receiver Amplitude AF = Antenna Factor CF = Cable Attenuation Factor AG = Amplifier Gain
TESTED RANGE:	30MHz to 1,000MHz on Quasi-peak
TEST VOLTAGE:	4.5VDC
RESULTS:	• **RX MODE -** The EUT meets the requirements of test reference for Radiated Emissions on vertical polarization by 4.5 dB at 48.47625MHz. The test results relate only to the equipment under test provided by client.
CHANGES OR MODIFICATIONS:	There is no modification installed by EMC Compliance Management Group test personnel.
M. UNCERTAINTY:	Freq. $\pm$ 2x10^{-7} x Center Freq., Amp $\pm$ 2.6 dB

RX MODE						
Frequency [MHz]	**Antenna Polarization [V/H]**	**EUT Position [V/H]**	**Corrected Reading [dBµV/m]**	**Delta, QP [dB]**	**3 Meters Limits [dBµV/m]**	**Correction Factors [dB/m]**
Set-up/Configuration: ANSI C63.4:1992						
48.41200	H	H	29.4	-10.6	40.0	10.9
49.79850	H	H	27.1	-12.9	40.0	10.3
49.86250	V	H	27.9	-12.1	40.0	10.3
48.41875	V	H	27.7	-12.3	40.0	10.9
48.47625	V	V	35.5	-4.5	40.0	10.9
49.94375	V	V	32.8	-7.2	40.0	10.2
50.95625	V	V	27.5	-12.5	40.0	10.0
Comments: None						
Note: All readings are quasi-peak unless stated otherwise, using a QPA bandwidth of 120kHz, with a 30 ms sweep time. A video filter was not used.						

Test Equipment	Manufacturer/ Model	Serial No.	Last Cal.	Cal. Due Date
EMI Receiver	HP 85462A	3650A00363	05/21/99	05/21/00
RF Filter	HP 85460A	3704A00349	05/21/99	05/21/00
Antenna	CHASE CBL6112A	2274	11/15/99	11/15/00
Note: All testing were performed using internationally recognized standards. All test instruments were calibrated and traceable to the National Institute of Standards and Technology (NIST).				

SIGNED: _____ **REVIEWED:** _____