



**INTERNATIONAL ELECTRICAL CERTIFICATION CENTRE LTD.**

**F C C -  
TEST REPORT**

REPORT NO.: 21609/0/400F

Units 602-605, 6/F., 31 Lok Yip Road, On Lok Tsuen, Fanling, N.T., Hong Kong  
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INTERNATIONAL ELECTRICAL  
CERTIFICATION CENTRE LTD.

## FCC – Test Report

No. 21609/0/400F

Date: 2000-02-22

Page 2 of 12

### FCC listed testlab acc. to Section 2.948 of the FCC - Rules

in compliance with the requirements of  
ANSI C63.4 - 1992

**Product** : Space Adventure  
**Model** : B2206  
**Applicant** : BOXER TOYS CO LTD  
**Manufacturer** : AKAMIBARA ELECTRONICS  
FACTORY

**TABLE OF CONTENTS**

1. Cover sheet
2. Introduction
3. Table of Contents
4. Laboratory Report
5. Summary of Testresults
6. Test Equipment List
7. Radiated Emission Testprocedure
8. Interference Radiation (Datasheet)
9. Interference Radiation (Datasheet)
10. Notes for Radiation Measurement (acc. to ANSI C63.4 - 1992)
11. Measurement of Emissions within Band Edges (Datasheet)
12. Notes for Measurement of Emissions within Band Edges



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## FCC – Test Report

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Page 4 of 12

# LABORATORY - REPORT

**APPLICANT:** BOXER TOYS CO LTD  
**ADDRESS:** Unit 10, 4/F., Sun Cheong Ind., Bldg.  
1 Cheung Shun Street  
Cheung Sha Wan, Kowloon  
HONG KONG

**DATE OF SAMPLE RECEIVED:** 2000-01-14

**DATE OF TESTING:** 2000-02-22

### DESCRIPTION OF SAMPLE:

Product: Space Adventure  
Manufacturer: AKAMIBARA ELECTRONICS FACTORY  
Model number: B2206  
Rating: DC 4.5V ('AA' Size Battery x 3)  
Country of Origin: P.R. CHINA

**INVESTIGATIONS REQUESTED:** Measurements to the relevant clauses of F.C.C. Rules and Regulations Part 15 Subpart B -- Unintentional Radiators and Subpart C -- Intentional Radiators

**RESULTS:** See the attached test sheets

**CONCLUSIONS** From the measurement data obtained, the tested sample was considered to have COMPLIED with the requirements for the relevant clauses of Federal Communications Commission Rules as specified above.

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Authorized Signature

**Remark:** Purpose of those tests in this report is to provide the applicant with the necessary test data of their device for the submission to FCC with application for Equipment Authorization under the FCC Equipment Authorization Program. The tests themselves are not Approval Tests

## Summary of Test Results

### RECEIVING

#### Interference Radiation:

Test result: O.K.  
Test data: See attached data sheet

#### Interference Voltage:

Test result: N.A.  
Test data: N.A.

### TRANSMITTING

#### Interference Radiation:

Test result: O.K.  
Test data: See attached data sheet

#### Interference Voltage:

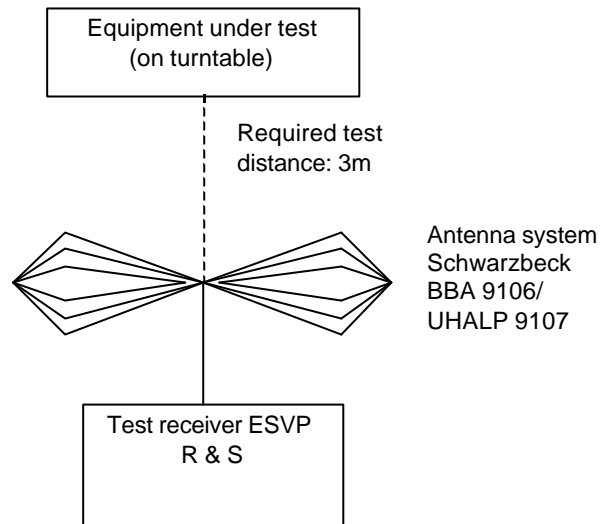
Test result: N.A.  
Test data: N.A.

#### Measurement of Emissions within Band Edges

Test result: O.K.  
Test data: See attached data sheet

## TEST EQUIPMENT LIST

Equipment	Manufacturer	Model	Serial No.	Remark
Test Receiver	Rohde & Schwarz	ESH 3	863497/015	10KHz – 30MHz
Test Receiver	Rohde & Schwarz	ESVP	860688/022	25MHz – 1,300 MHz
Artificial Mains Network (LISN)	Schwarzbeck	NSLK 8127	--	2 x 10A, 50Ω, 50μH 10KHz-30MHz
Antenna System	Schwarzbeck	BBA 9106 / UHALP 9107	--	30MHz – 1000MHz
Antenna Mast System	Schwarzbeck	AM9104	--	Max. 4 meters height
Spectrum Analyzer with Q. Peak	Tektronix	2712	B023006	9KHz – 1.8GHz
Interface for Spectrum 2712	Tektronix	TD3F14A	--	
Test Receiver	Rohde & Schwarz	ESH 3	892580/006	10KHz – 30MHz
Test Receiver	Rohde & Schwarz	ESVP	863512/012	25MHz – 1,300 MHz
Impulse Limiter	Rohde & Schwarz	ESH-3-Z2	--	
Artificial Mains Network (LISN)	Schwarzbeck	NSLK 8127	--	2 x 10A, 50Ω, 50μH 10KHz-30MHz
Antenna System	Schwarzbeck	BBA 9106 / UHALP 9107	--	30MHz – 1000MHz
Signal Generator	Rohde & Schwarz	SWS 2	879113/42	100KHz – 1040 MHz
Digital Multimeter	Tektronix	DM2510G	DM- 2510GTW10555	10KHz – 30MHz
Turntable with Controller	Drehtisch	DT312	--	φ120 cm

**Radiated Emission Test Procedure**



# Interference Radiation

Measurement of Radiated Emissions (30MHz-1000MHz)

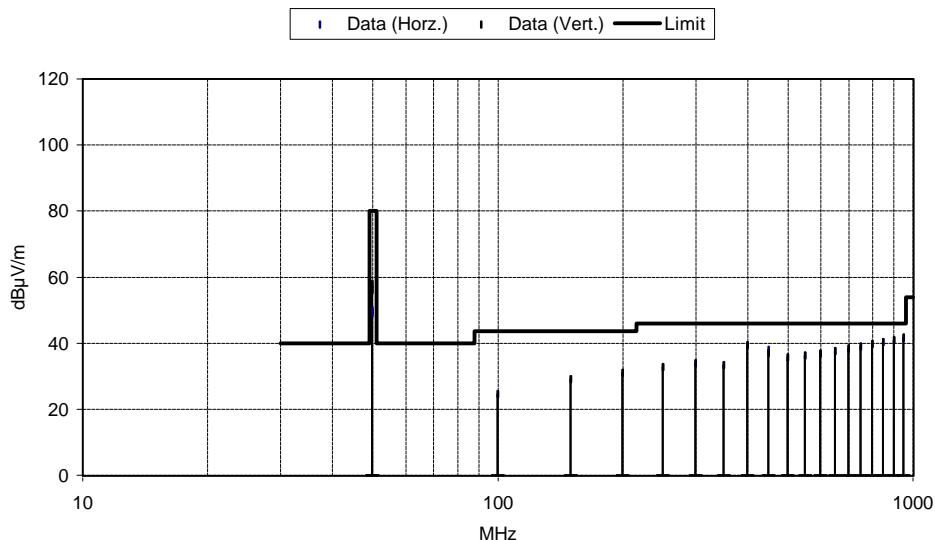
International Electrical Certification Centre Ltd.

Acc: FCC Part 15 Subpart C

IECC Ref: 21609/0/400F  
Model: B2206  
Applicant: BOXER TOYS CO LTD  
Ser.Nr.: 1  
Set under test: Space Adventure  
Connected sets: -  
Operating mode: Operate with morse code

Test Equipment  
Receiver: ESVP Rohde & Schwarz  
Antenna: Schwarzbeck BBA 9106  
and UHALP 9107

	Frequency (MHz)	Horz. Reading dB(µV)	Vert. Reading dB(µV)	Antenna Factor (dB)	Horiz. Test Result (µV/m)	Vert. Test Result (µV/m)	Limit (µV/m)
Peak	49.86	43	51	7.0	318	798	100,000
Av.	49.86	42	49	7.0	283	634	10000
Harm. 2	99.72	< 16	< 16	8.5	< 17	< 17	150
Harm. 3	149.58	< 16	< 16	13.0	< 28	< 28	150
Harm. 4	199.44	< 16	< 16	15.1	< 36	< 36	150
Harm. 5	249.3	< 16	< 16	16.7	< 43	< 43	200
Harm. 6	299.16	< 16	< 16	18.0	< 50	< 50	200
Harm. 7	349.02	< 16	< 16	17.4	< 47	< 47	200
Harm. 8	398.88	< 21	< 21	18.3	< 92	< 92	200
Harm. 9	448.74	< 19	< 18	19.0	< 79	< 71	200
Harm. 10	498.6	< 16	< 16	19.7	< 61	< 61	200
Harm. 11	548.46	< 16	< 16	20.2	< 64	< 64	200
Harm. 12	598.32	< 16	< 16	20.9	< 70	< 70	200
Harm. 13	648.18	< 16	< 16	21.6	< 76	< 76	200
Harm. 14	698.04	< 16	< 16	22.4	< 83	< 83	200
Harm. 15	747.9	< 16	< 16	23.0	< 90	< 90	200
Harm. 16	797.76	< 16	< 16	23.7	< 96	< 96	200
Harm. 17	847.62	< 16	< 16	24.3	< 104	< 104	200
Harm. 18	897.48	< 16	< 16	25.0	< 112	< 112	200
Harm. 19	947.34	< 16	< 16	25.7	< 122	< 122	200



Test result:

☒ O.K.  
☐ Not O.K.

Date: \_\_\_\_\_

Operator: \_\_\_\_\_





International Electrical Certification Centre Ltd.

# Unintentional Radiators

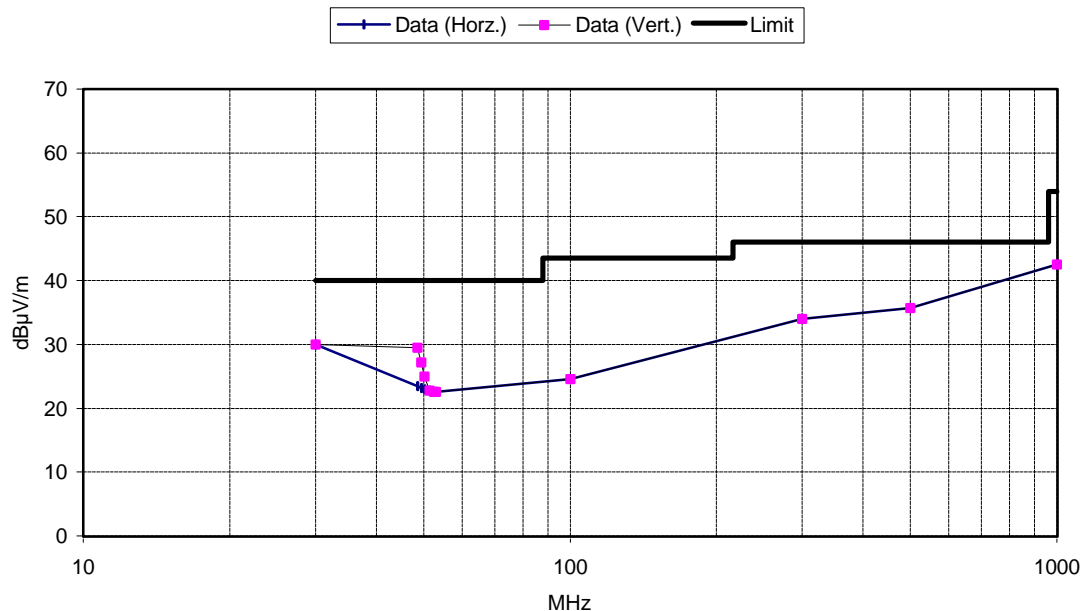
Measurement of Radiated Emissions (30MHz-1000MHz)

Acc: FCC Part 15 Subpart B

IECC Ref: 21609/0/400F  
Model: B2206  
Applicant: BOXER TOYS CO LTD  
Ser.Nr.: 1  
Set under test: Space Adventure  
Connected sets: -  
Operating mode: Power "On" (Rx)

Test Equipment  
Receiver: ESVP Rohde & Schwarz  
Antenna: Schwarzbeck BBA 9106  
and UHALP 9107

Frequency (MHz)	Horz. Reading dB(μV)	Vert. Reading dB(μV)	Antenna Factor (dB)	Horiz. Test Result (μV/m)	Vert. Test Result (μV/m)	Limit (μV/m)
30	< 16	< 16	14.0	< 31.6	< 31.6	100.0
48.6	< 16	22	7.4	< 14.9	29.7	100.0
49.4	< 16	20	7.2	< 14.4	22.9	100.0
50.2	< 16	18	7.0	< 14.1	17.7	100.0
51.5	< 16	< 16	6.8	< 13.7	< 13.7	100.0
52.5	< 16	< 16	6.6	< 13.5	< 13.5	100.0
53	< 16	< 16	6.5	< 13.4	< 13.4	100.0
100	< 16	< 16	8.6	< 17.0	< 17.0	150.0
300	< 16	< 16	18.0	< 50.1	< 50.1	200.0
500	< 16	< 16	19.7	< 61.0	< 61.0	200.0
1000	< 16	< 16	26.5	< 133.4	< 133.4	500.0



Test result:

☒ O.K.  
☐ Not O.K.

Date: \_\_\_\_\_

Operator: \_\_\_\_\_

## Notes for Radiation Measurement

**1. Measurement facility:**

Measurement facility located at Fanling (Hong Kong), placed on file with the FCC Pursuant to Section 2.948 of the FCC Rules.

**2. Distance between the EUT and measuring antenna:**

3 meters.

**3. Measuring instrumentations:**

Rohde & Schwarz ESVP Test Receiver ( 20 - 1300 MHz ) with a CISPR weighting QP detector, 6 dB bandwidth set at 120 KHz.

In the frequency range above 1000 MHz Spectrum Analyzer FMSM26 and Analyzer Display Unit FSA-D are used, bandwidth set at 100 kHz.

**4. Measuring antenna:**

Broad-band antenna for the frequency range 30 - 300 MHz and frequency range 300 - 1000 MHz, connected with 10 meters coaxial cable. Cable loss of the coaxial cable included in the Antenna Factor for measurement data. The antennas are capable of measuring both horizontal and vertical polarizations.

In the frequency range above 1 GHz horn-antenna RGA 50/60 is used.

**5. Frequency range scanned:**

The frequency range 30 - 5000 MHz has been scanned. Readings of the highest emissions relating to the limit were reported as above.

**6. Arrangement of EUT:**

During the test, the sample was operated at rated supply voltage and arranged for maximum emissions.

**7. Measuring Procedure:**

In accordance with the relevant sections of the American National Standards Institute (ANSI) C63.4-1992 'Methods of Measurement of Radio Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9KHz to 40GHz'.



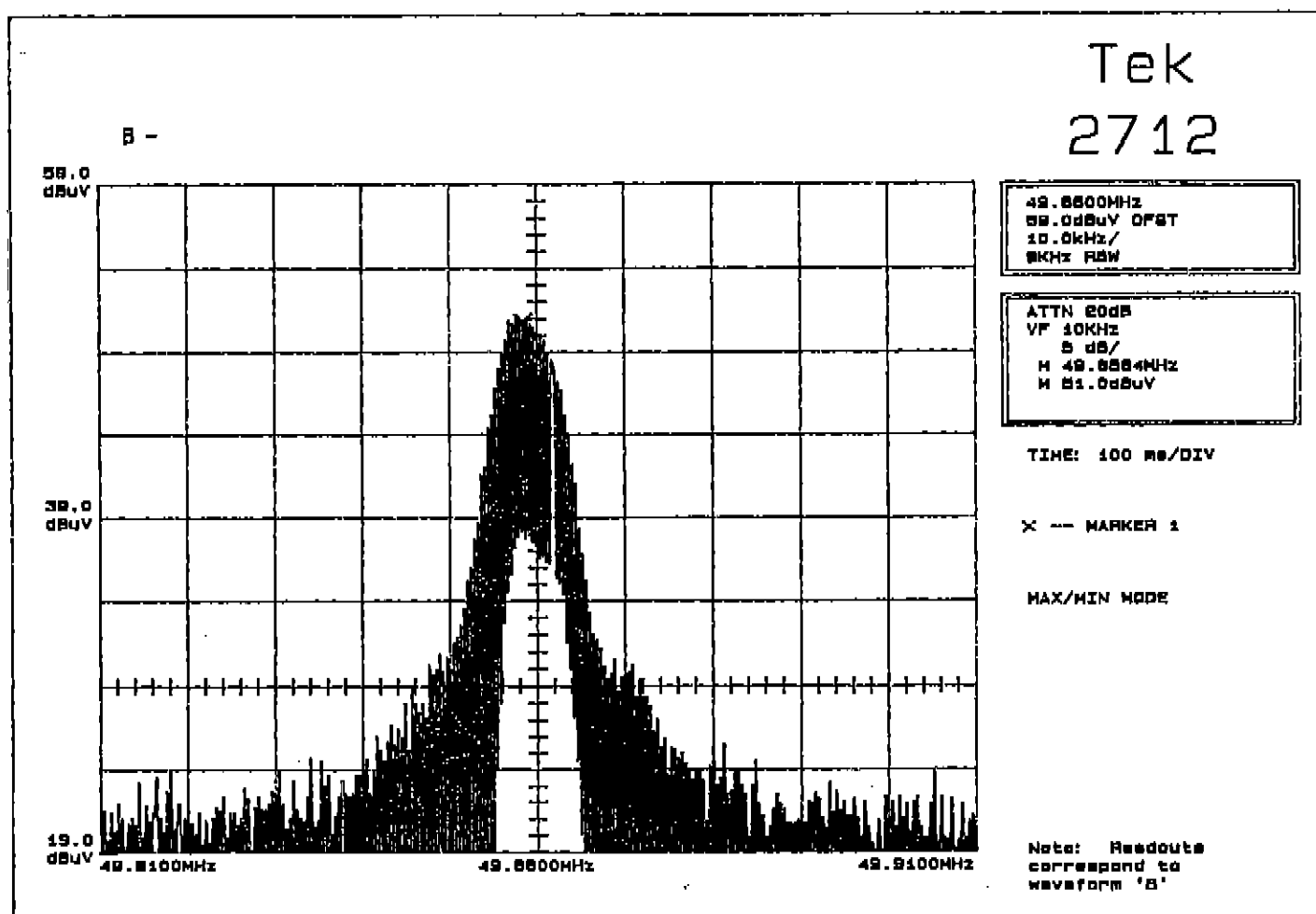
# Measurement of Emissions within band edges

International Electrical Certification Centre Ltd.

Acc: FCC Part 15 Subpart C

IECC Ref: 21609/0/400F  
 Model: B2206  
 Applicant: BOXER TOYS CO LTD  
 Ser.Nr.: 1  
 Set under test: Space Adventure  
 Connected sets: -  
 Operating mode: "Power On"

Test Equipment  
 Spectrum Analyzer;  
 Tektronix 2712



Test result:

☒ O.K.  
☐ Not O.K.

Date: 22 FEB 2000

Operator: U

## Notes for Measurement of Emissions within Band Edges

1. **Measurement facility:**

Measurement facility located at Fanling (Hong Kong) placed on file with the FCC Pursuant to Section 2.948 of the FCC Rules.

2. **Measuring instrumentations:**

Spectrum Analyzer: Tektronix 2712

3. **Frequency range scanned:**

The frequency range acc. to FCC rules and regulations part 15 subpart C - Intentional Radiators.

4. **Arrangement of EUT:**

During the test, the sample was operated.

5. **Measuring Procedure:**

In accordance with the relevant sections of American National Standards Institute (ANSI) C63.4 - 1992 'Methods of Measurement of Radio Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz'.