

INTERNATIONAL ELECTRICAL CERTIFICATION CENTRE LTD.

F C C -

TEST REPORT

REPORT NO.: 21238/9/400F

Units 602-605, 6/F., 31 Lok Yip Road, On Lok Tsuen, Fanling, N.T., Hong Kong
Tel: [852] 2305-2570 Fax: [852] 2756-4480



INTERNATIONAL ELECTRICAL
CERTIFICATION CENTRE LTD.

FCC – Test Report

No. 21238/9/400F

Date: 2000-01-22

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

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

Product : Marine Walkie Talkie

Model : B-2092

Applicant : BOXER TOYS CO LTD

Manufacturer : AKAMIBARA ELECTRONICS
FACTORY



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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: 1999-12-03

DATE OF TESTING: 2000-01-22

DESCRIPTION OF SAMPLE:

Product: Marine Walkie Talkie
Manufacturer: AKAMIBARA ELECTRONICS FACTORY
Model number: B-2092
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.

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



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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:

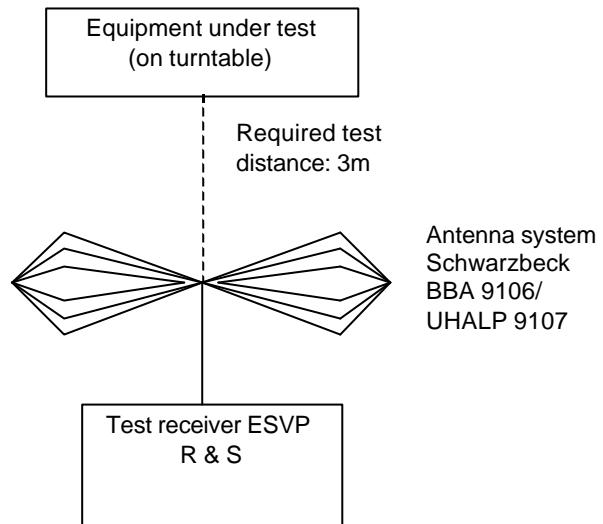
Test result: N.A.
Test data: N.A.

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	--	Ø120 cm

Radiated Emission Test Procedure

Interference Radiation

International Electrical Certification Centre Ltd.

Measurement of Radiated Emissions (30MHz-1000MHz)

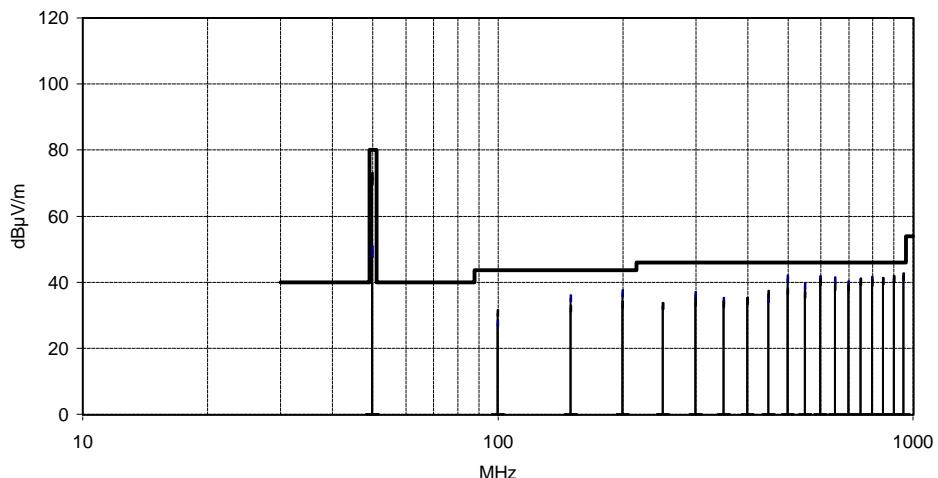
Acc: FCC Part 15 Subpart C

IECC Ref:	21238/9/400F
Model:	B-2092
Applicant:	BOXER TOYS CO LTD
Ser.Nr.:	1
Set under test:	Marine Walkie Talkie
Connected sets:	-
Operating mode:	Operate at Morse Code

Test Equipment
 Receiver: ESDP 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	65	7.0	318	4001	100,000
Av.	49.86	41.5	63.5	7.0	267	3367	10000
Harm. 2	99.72	19	22	8.5	24	34	150
Harm. 3	149.58	22	19	13.0	56	40	150
Harm. 4	199.44	21.5	18	15.1	67	45	150
Harm. 5	249.3	< 16	< 16	16.7	< 43	< 43	200
Harm. 6	299.16	18	< 16	18.0	63	< 50	200
Harm. 7	349.02	17	< 16	17.4	52	< 47	200
Harm. 8	398.88	16	< 16	18.3	52	< 52	200
Harm. 9	448.74	16	17.5	19.0	56	67	200
Harm. 10	498.6	21.5	17.5	19.7	115	72	200
Harm. 11	548.46	18.5	16	20.2	86	64	200
Harm. 12	598.32	20	19	20.9	111	99	200
Harm. 13	648.18	19	17	21.6	107	85	200
Harm. 14	698.04	17	< 16	22.4	93	< 83	200
Harm. 15	747.9	17	17	23.0	101	101	200
Harm. 16	797.76	17	16	23.7	108	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

■ Data (Horz.) ■ Data (Vert.) — Limit



Test result:

O.K.
 Not O.K.

Date: _____

Operator: _____

International Electrical Certification Centre Ltd.

Measurement of Radiated Emissions (30MHz-1000MHz)
Acc: FCC Part 15 Subpart B

IECC Ref:

21238/9/400F

Test Equipment

Model:

B-2092

Receiver: ESDP Rohde & Schwarz

Applicant:

BOXER TOYS CO LTD

Antenna: Schwarzbeck BBA 9106

and UHALP 9107

Ser.Nr.:

1

Set under test:

Marine Walkie Talkie

Connected sets:

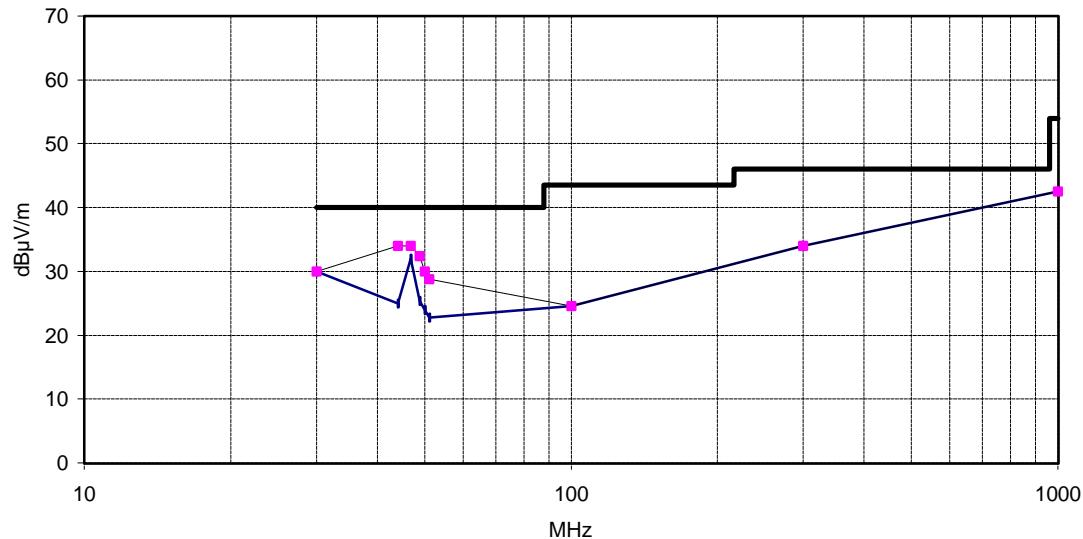
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Operating mode:

Operate at Morse Code

Frequency (MHz)	Horz. Reading dB(µV)	Vert. Reading dB(µV)	Antenna Factor (dB)	Horz. Test Result (µV/m)	Vert. Test Result (µV/m)	Limit (µV/m)
30	< 16	< 16	14.0	< 31.6	< 31.6	100.0
44.1	16	25	9.0	17.7	49.9	100.0
46.9	24	26	8.0	39.8	50.1	100.0
48.8	18	25	7.4	18.6	41.6	100.0
50	17	23	7.0	15.8	31.6	100.0
51.2	16	22	6.8	13.8	27.6	100.0
100	< 16	< 16	8.6	< 17.0	< 17.0	150.0
300	< 16	< 16	18.0	< 50.1	< 50.1	200.0
1000	< 16	< 16	26.5	< 133.4	< 133.4	500.0

— Data (Horz.) — Data (Vert.) — Limit



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'.



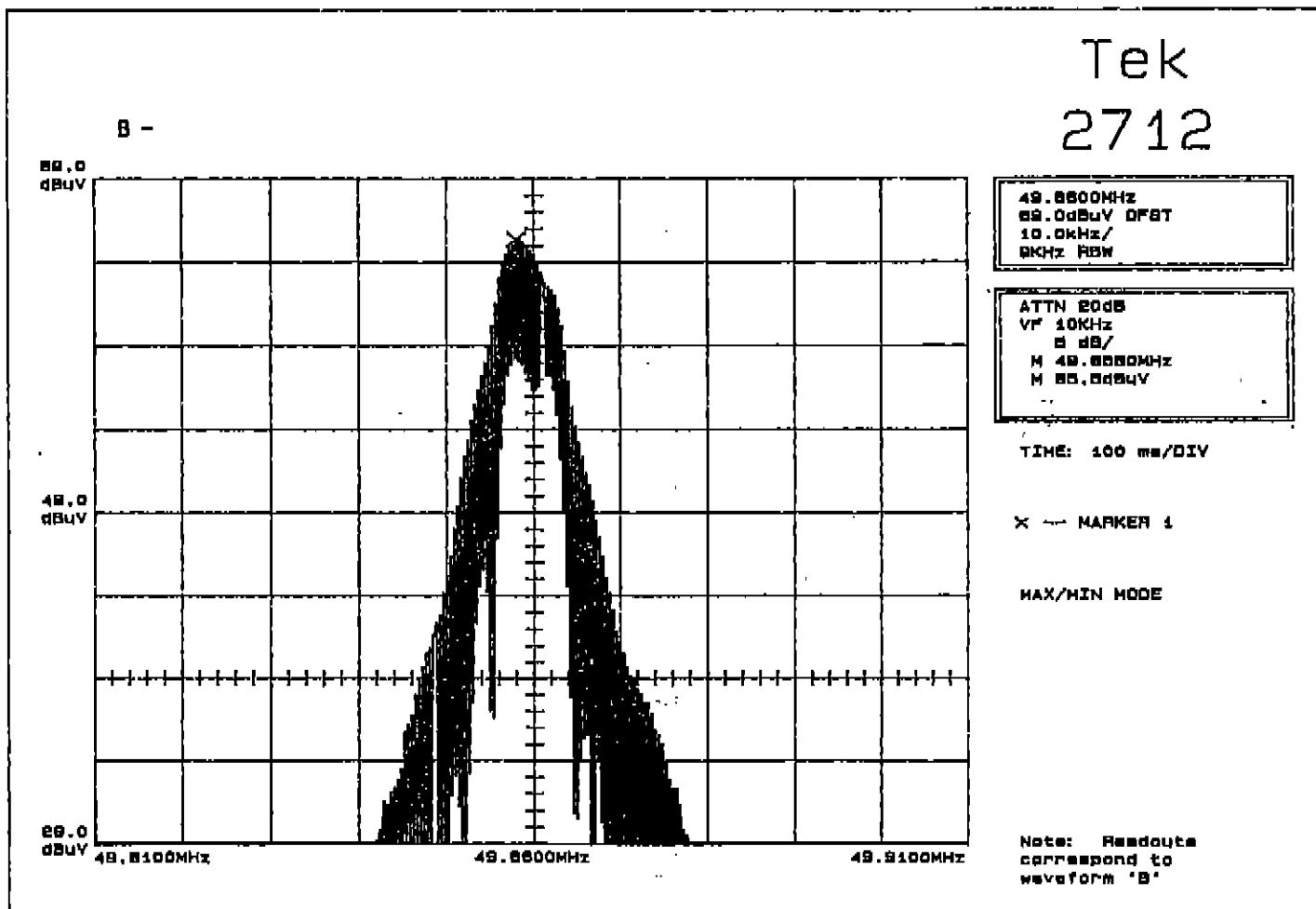
Measurement of Emissions within band edges

International Electrical Certification Centre Ltd.

Acc: FCC Part 15 Subpart C

IECC Ref:	21238/9/400F
Model:	<u>B-2092</u>
Applicant:	BOXER TOYS CO LTD
Ser.Nr.:	1
Set under test:	Marine Walkie Talkie
Connected sets:	-
Operating mode:	Power "On"

Test Equipment
Spectrum Analyzer:
Tektronix 2712



Test result:

O.K.
 Not O.K.

Date: 22 JAN 2000Operator: U



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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'.