



INTERNATIONAL ELECTRICAL CERTIFICATION CENTRE LTD.

**F C C -
TEST REPORT**

REPORT NO.: 19092/9/400F

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. 19092/9/400F	Date: <u>1999-05-29</u> Page 2 of 11
---	---	---

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

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

Product : Remote Control Car -- 49 MHz
Transmitter

Model : 60-4224 (49MHz)

Applicant : ECHO TOYS LTD

Manufacturer : ECHO ELECTRONIC TOYS
FACTORY



INTERNATIONAL ELECTRICAL
CERTIFICATION CENTRE LTD.

FCC – Test Report

No. 19092/9/400F

Date: 1999-05-29

Page 3 of 11

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. Notes for Radiation Measurement (acc. to ANSI C63.4 - 1992)
10. Measurement of Emissions within Band Edges (Datasheet)
11. Notes for Measurement of Emissions within Band Edges

 INTERNATIONAL ELECTRICAL CERTIFICATION CENTRE LTD.	FCC – Test Report No. 19092/9/400F	Date: <u>1999-05-29</u> Page 4 of 11
---	---	---

LABORATORY - REPORT

APPLICANT: ECHO TOYS LTD
ADDRESS: 8 A&B, Block 1, Tai Ping Industrial Centre
57 Ting Kok Road
Taipo, NT
HONG KONG
DATE OF SAMPLE RECEIVED: 1999-04-09
DATE OF TESTING: 1999-05-29

DESCRIPTION OF SAMPLE:

Product: Remote Control Car -- 49 MHz Transmitter
Manufacturer: ECHO ELECTRONIC TOYS FACTORY
Model number: 60-4224 (49MHz)
Rating: DC 9V ('6F22' Size Battery x 1)
Country of Origin: P.R. CHINA

INVESTIGATIONS REQUESTED: Measurements to the relevant clauses of F.C.C. Rules and Regulations
Part 15 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.

Signed in the original copy _____
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

 INTERNATIONAL ELECTRICAL CERTIFICATION CENTRE LTD.	FCC – Test Report No. 19092/9/400F	Date: <u>1999-05-29</u> Page 5 of 11
---	---	---

Summary of Test Results

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



INTERNATIONAL ELECTRICAL
CERTIFICATION CENTRE LTD.

FCC – Test Report

No. 19092/9/400F

Date: 1999-05-29

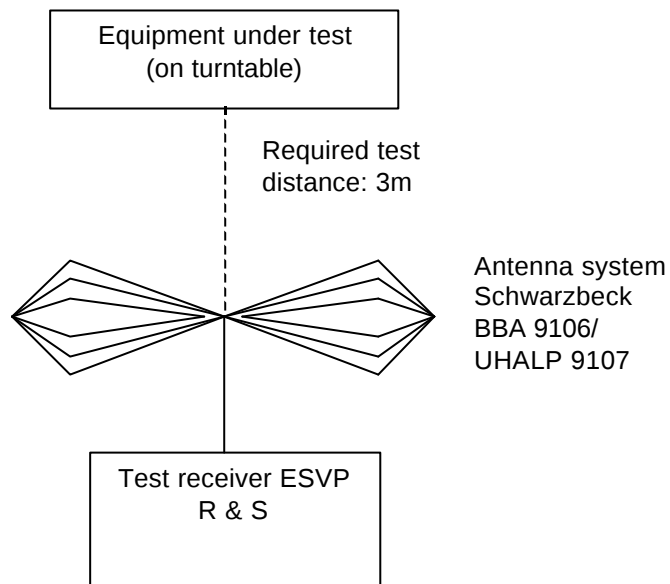
Page 6 of 11

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

 INTERNATIONAL ELECTRICAL CERTIFICATION CENTRE LTD.	FCC – Test Report No. 19092/9/400F	Date: <u>1999-05-29</u> Page 7 of 11
---	---	---

Radiated Emission Test Procedure

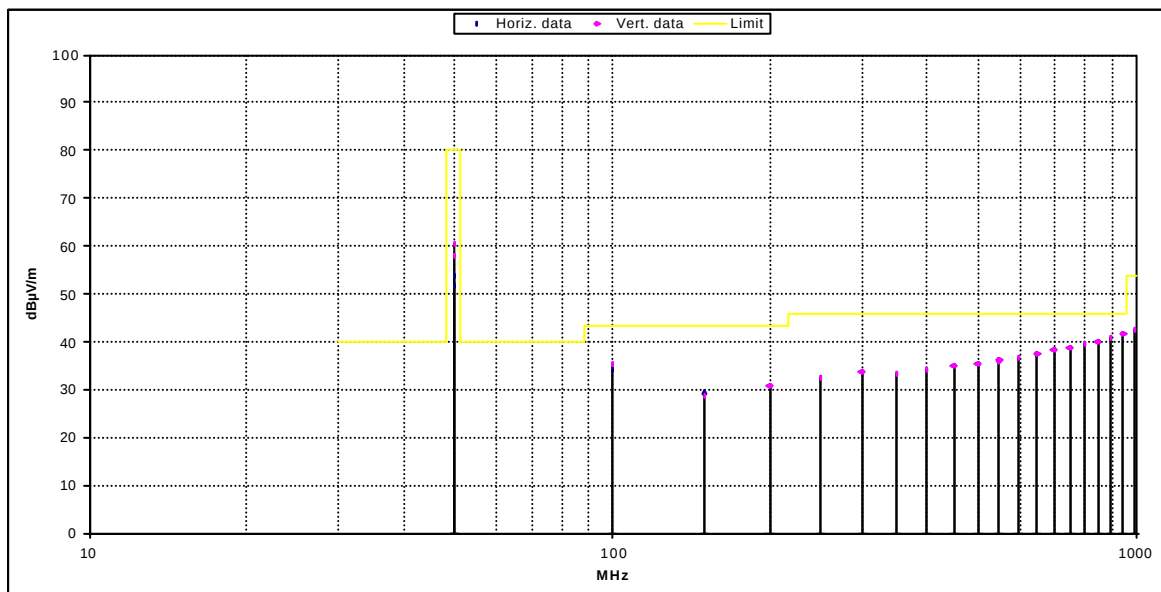


Radiation Measurement Data

Ref: '19092' Transmitter

Item#	Freq	Horiz.	Vert.	Factor	H. Result	V. Result	Limit
	MHz	dB(μV)	dB(μV)	dB	μV/m	μV/m	μV/m
Peak	49.86	47	53.5	7.0	501	1059	100000
Av	49.86	45	51	7.0	398	794	10000
harm. 2	99.7	26	27	8.5	53	60	150
harm. 3	149.6	16.5	<16	13.0	30	<28	150
harm. 4	199.4	<16	<16	15.1	<36	<36	150
harm. 5	249.3	<16	<16	16.7	<43	<43	200
harm. 6	299.2	<16	<16	18.0	<50	<50	200
harm. 7	349.0	<16	<16	17.4	<47	<47	200
harm. 8	398.9	<16	<16	18.3	<52	<52	200
harm. 9	448.7	<16	<16	19.0	<56	<56	200
harm. 10	498.6	<16	<16	19.7	<61	<61	200
harm. 11	548.5	<16	<16	20.2	<65	<65	200
harm. 12	598.3	<16	<16	20.9	<70	<70	200
harm. 13	648.2	<16	<16	21.6	<76	<76	200
harm. 14	698.0	<16	<16	22.4	<83	<83	200
harm. 15	747.9	<16	<16	23.0	<89	<89	200
harm. 16	797.8	<16	<16	23.7	<97	<97	200
harm. 17	847.6	<16	<16	24.3	<104	<104	200
harm. 18	897.5	<16	<16	25.0	<112	<112	200
harm. 19	947.3	<16	<16	25.7	<122	<122	200
harm. 20	997.2	<16	<16	26.5	<133	<133	500

Conclusion: All data were within limits



 INTERNATIONAL ELECTRICAL CERTIFICATION CENTRE LTD.	FCC – Test Report No. 19092/9/400F	Date: <u>1999-05-29</u> Page 9 of 11
---	---	---

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:

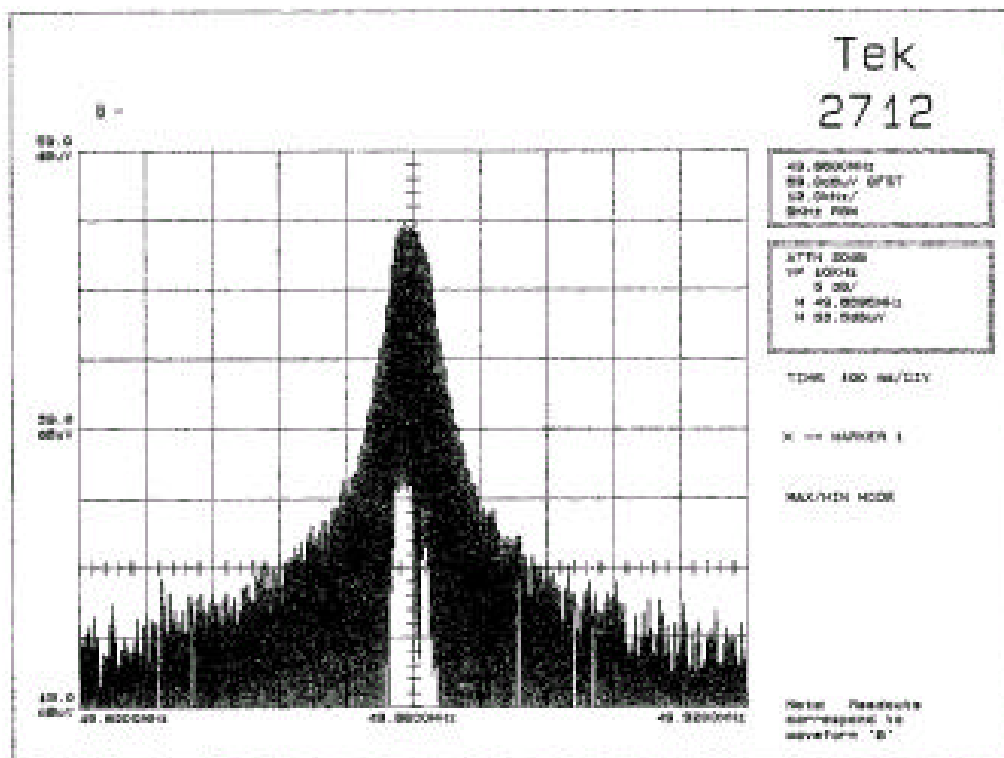
The frequency range 30 - 5000 MHz has been scanned. Readings of the highest emissions relating to the limit were reported as above.

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'.



 INTERNATIONAL ELECTRICAL CERTIFICATION CENTRE LTD.	FCC – Test Report No. 19092/9/400F	Date: <u>1999-05-29</u> Page 11 of 11
---	---	--

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'.