



國際電器認證中心有限公司 International Electrical Certification Centre Ltd.

提供電器產品測試國際認證及諮詢服務 Technical Service in Electrical Product Testing, International Certification & Information



Network Partner

 **Nemko**
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F C C - TEST REPORT

REPORT NO.: 22468A/0/400F

Head Office: Unit 602-605, 6/F., 31 Lok Yip Rd., On Lok Tsuen, Fanling, N.T., Hong Kong. Tel: (852) 2305 2570 Fax: (852) 2756-4480 Home page: <http://www.iecc.com.hk> E-mail: info@iecc.com.hk
香港新界粉嶺安樂村樂業徑31號6樓602-605室 電話: (852) 2305 2570 傳真: (852) 2756 4480 網頁: <http://www.iecc.com.hk> 電子郵件: info@iecc.com.hk

Guangzhou Office: Unit 1916, 18/F., South Tower, Guangzhou World Trade Centre Complex, 371-375 Huan Shi Dong Rd., Guangzhou, P.R. China. Tel: +86-20-8776 4838 Fax: +86-20-8776 3918
廣州市環市東路371-375號世界貿易中心南塔19樓1916室 電話: (020) 8776 4838 傳真: (020) 8776 3918



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FCC – Test ReportDate: 2000-04-27

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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 : Commander -- 49 MHz Transmitter
Model : 60-4247 (49MHz)
Applicant : ECHO TOYS LTD
Manufacturer : ECHO TOYS LTD

Head Office:Unit 602-605, 6/F., 31 Lok Yip Rd., On Lok Tsuen, Fanling, N.T., Hong Kong. Tel: (852) 2305 2570 Fax: (852) 2756-4480 Home page: <http://www.iecc.com.hk> E-mail: info@iecc.com.hk
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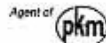


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LABORATORY - REPORT

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: 2000-04-18

DATE OF TESTING: 2000-04-27

DESCRIPTION OF SAMPLE:

Product: Commander -- 49 MHz Transmitter
Manufacturer: ECHO TOYS LTD
Model number: 60-4247 (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.



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**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

PHOTOGRAPH OF THE SAMPLE



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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

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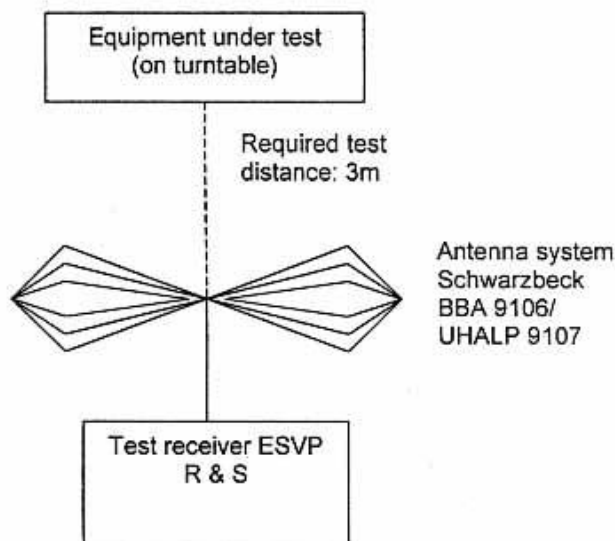
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Date: 2000-04-27

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Radiated Emission Test Procedure

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Interference Radiation



Measurement of Radiated Emissions (30MHz-1000MHz)

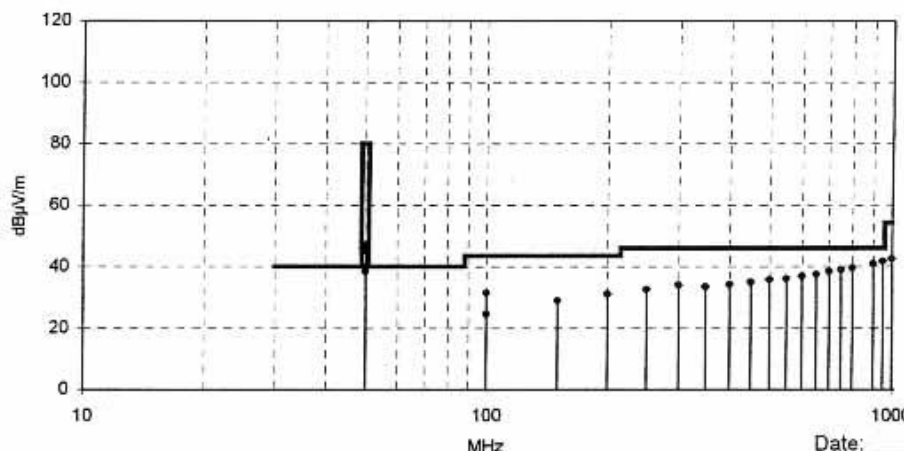
Acc: FCC Part 15 Subpart C

IECC Ref: 22468A/0/400F
 Model: 60-4247 (49MHz)
 Applicant: ECHO TOYS LTD
 Ser.Nr.: 1
 Set under test: Commander
 Connected sets: -
 Operating mode: Power "On" (Tx)

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	33	40	7.0	101	225	100,000
Av.	49.86	31.5	38.5	7.0	85	189	10000
Harm. 2	99.72	< 16	23	8.5	< 17	38	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	< 16	< 16	18.3	< 52	< 52	200
Harm. 9	448.74	< 16	< 16	19.0	< 56	< 56	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	897.48	< 16	< 16	25.0	< 112	< 112	200
Harm. 18	947.34	< 16	< 16	25.7	< 122	< 122	200
Harm. 19	997.2	< 16	< 16	26.5	< 133	< 133	500

• Data (Horz.) • Data (Vert.) — Limit



Test result:

☒ O.K.
☐ Not O.K.

Date:

27 APR 2000

Operator:

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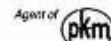
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Notes for Radiation Measurement**1. Measurement facility:**

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'.



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Interference Radiation

Measurement of Radiated Emissions (30MHz-1000MHz)

Acc: FCC Part 15 Subpart C

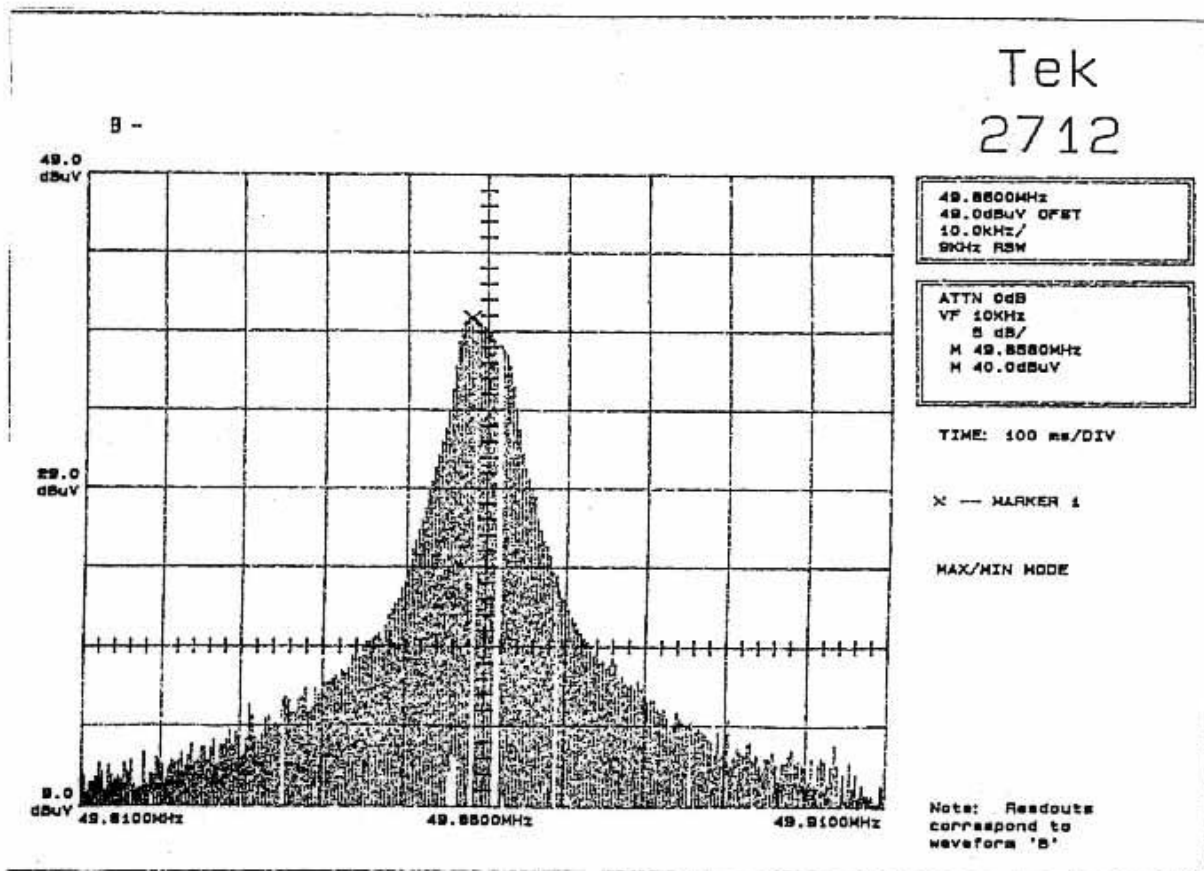
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IECC Ref: 22468A/0/400F
Model: 60-4247 (49MHz)
Applicant: ECHO TOYS LTD
Ser.Nr.: 1
Set under test: Commander
Connected sets: -
Operating mode: Power "On"(Tx)

Test Equipment
Spectrum Analyzer:
Tektronix 2712



Test result:

☒ O.K.
☐ Not O.K.

Date: 27 APR 2000

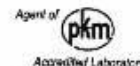
Operator:



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FCC – Test ReportDate: 2000-04-27

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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'.

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