



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 & Informa



Network Partner

 Nemko
Qualified Independent Laboratory

Agent of

Approved Laboratory



INTERNATIONAL ELECTRICAL CERTIFICATION CENTRE LTD.

F C C - TEST REPORT

REPORT NO.: 22048A/0/400F

Units 602-606, 6/F., 31 Lok Yip Road, On Lok Tsuen, Fanling, N.T., Hong Kong
Tel: (852) 2905-2570 Fax: (852) 2756-4480



Network Partner



Nemko

Qualified Independent Laboratory

Agent of



Accredited Laboratory

FCC – Test Report

No. 22048A/0/400F

Date: 2000-03-15

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 : Flasher -- 49 MHz Transmitter
Model : 60-4250 (49MHz)
Applicant : ECHO TOYS LTD
Manufacturer : ECHO TOYS LTD



Network Partner

**Nemko**
Qualified Independent Laboratory

Agent of



Accredited Laboratory

FCC -- Test Report**No. 22048A/0/400F**Date: **2000-03-15**

Page 3 of 11

TABLE OF CONTENTS

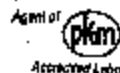
1. Cover sheet
2. Introduction
3. Table of Contents
4. Laboratory Report
5. Summary of Test results
6. Test Equipment List
7. Radiated Emission Test procedure
8. Interference Radiation (Datasheet)
9. Notes for Radiation Measurement (acc. to ANSI C63.4 - 1992)
10. Measurement of Emissions within Band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



Network Partner



Qualified Independent Laboratory



Accredited Laboratory

FCC - Test Report

No. 22048A/0/400F

Date: 2000-03-15

Page 4 of 11

LABORATORY - REPORT**APPLICANT:**

ECHO TOYS LTD

ADDRESS:8 A&B, Block 1, Tai Ping Industrial Centre
57 Ting Kok Road
Taiipo, NT
HONG KONG**DATE OF SAMPLE RECEIVED:** 2000-03-11**DATE OF TESTING:** 2000-03-15**DESCRIPTION OF SAMPLE:**

Product: Flasher - 49 MHz Transmitter
Manufacturer: ECHO TOYS LTD
Model number: 60-4250 (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

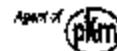
CONCLUSIONSFrom the measurement data obtained, the tested sample was considered
to have **COMPLIED** with the requirements for the relevant clauses of
Federal Communications Commission Rules as specified above.

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



Network Partner

**Nemko**
Qualified Independent Laboratory

Authorized Laboratory

FCC – Test ReportDate: **2000-03-15**No. **22048A/0/400F**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



Network Partner



Nemko
Qualified Independent Laboratory



Accredited Laboratory

FCC – Test Report

Date: 2000-03-15

No. 22048A/D/400F

Page 8 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 Main 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	892580/009	10KHz – 30MHz
Test Receiver	Rohde & Schwarz	ESVP	863512/012	25MHz – 1,300 MHz
Impulse Limiter	Rohde & Schwarz	ESH-3-Z2	--	
Artificial Main 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



Network Partner



Qualified Independent Laboratory

Agent of



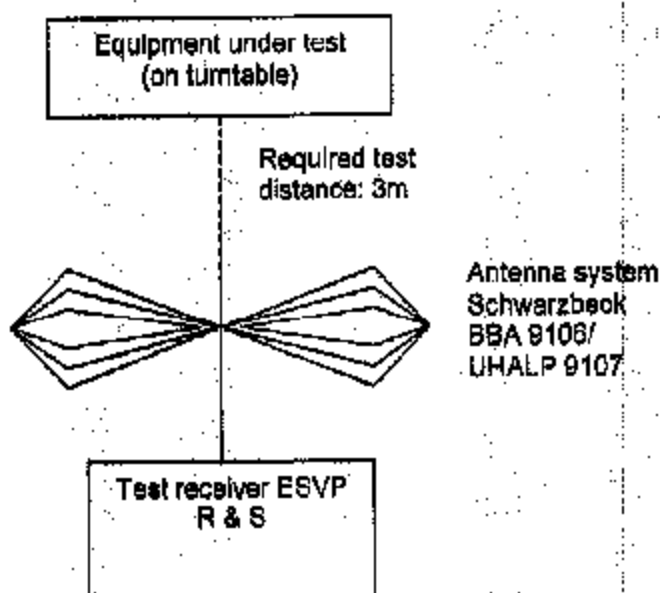
Approved Laboratory

FCC – Test Report

Date: 2000-03-15

No. 22048A/O/400F

Page 7 of 11

Radiated Emission Test Procedure



Network Partner



Qualified Independent Laboratory

Interference Radiation

Measurement of Radiated Emissions (30MHz-1000MHz)

Acc: FCC Part 15 Subpart C



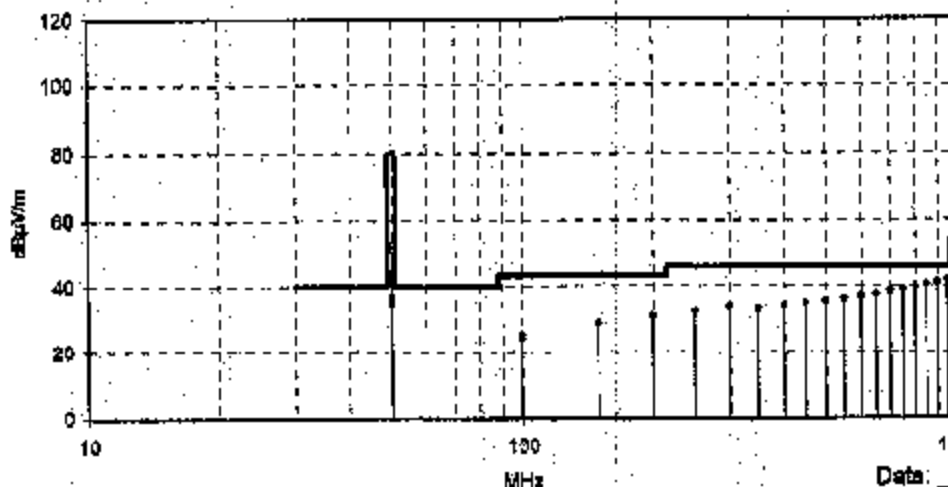
Approved Laboratory

IECC Ref: 22046A/0/400F
 Model: 80-4260 (49MHz)
 Applicant: ECHO TOYS LTD
 Ser.Nr.: 1
 Set under test: Flasher
 Connected sets: -
 Operating mode: Power "On"

Test Equipment
 Receiver: ESVP Rohde & Schwarz
 Antenna: Schwarzbeck BSA 9105
 and UHALP 9107

	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)
Peak	49.86	30	46	7.0	71	449	100,000
Av.	49.86	28	44.5	7.0	57	378	10000
Harm. 2	99.72	< 16	17	8.5	< 17	19	150
Harm. 3	149.58	< 16	16	13.0	< 28	28	150
Harm. 4	199.44	< 16	16	16.1	< 36	36	150
Harm. 5	249.3	< 16	16	18.7	< 43	43	200
Harm. 6	299.16	< 16	16	19.0	< 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	< 58	58	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

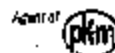
• Data (Horz.) • Data (Vert.) — Limit



Date: 15 MAR 21



Network Partner

Nemko
Closely Independent Laboratoryplm
Approved Laboratory**FCC – Test Report**

Date: 2000-03-15

No. 22048A/0/400F

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'.

IECC

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
One-Stop Independent Laboratory

Measurement of Emissions within band edges

Agent of



Approved Laboratory

Acc: FCC Part 15 Subpart C

IECC Ref:
Model:
Applicant:

22048A/0/400F
60-4250 (49MHz)
ECHO TOYS LTD

Ser.Nr.:

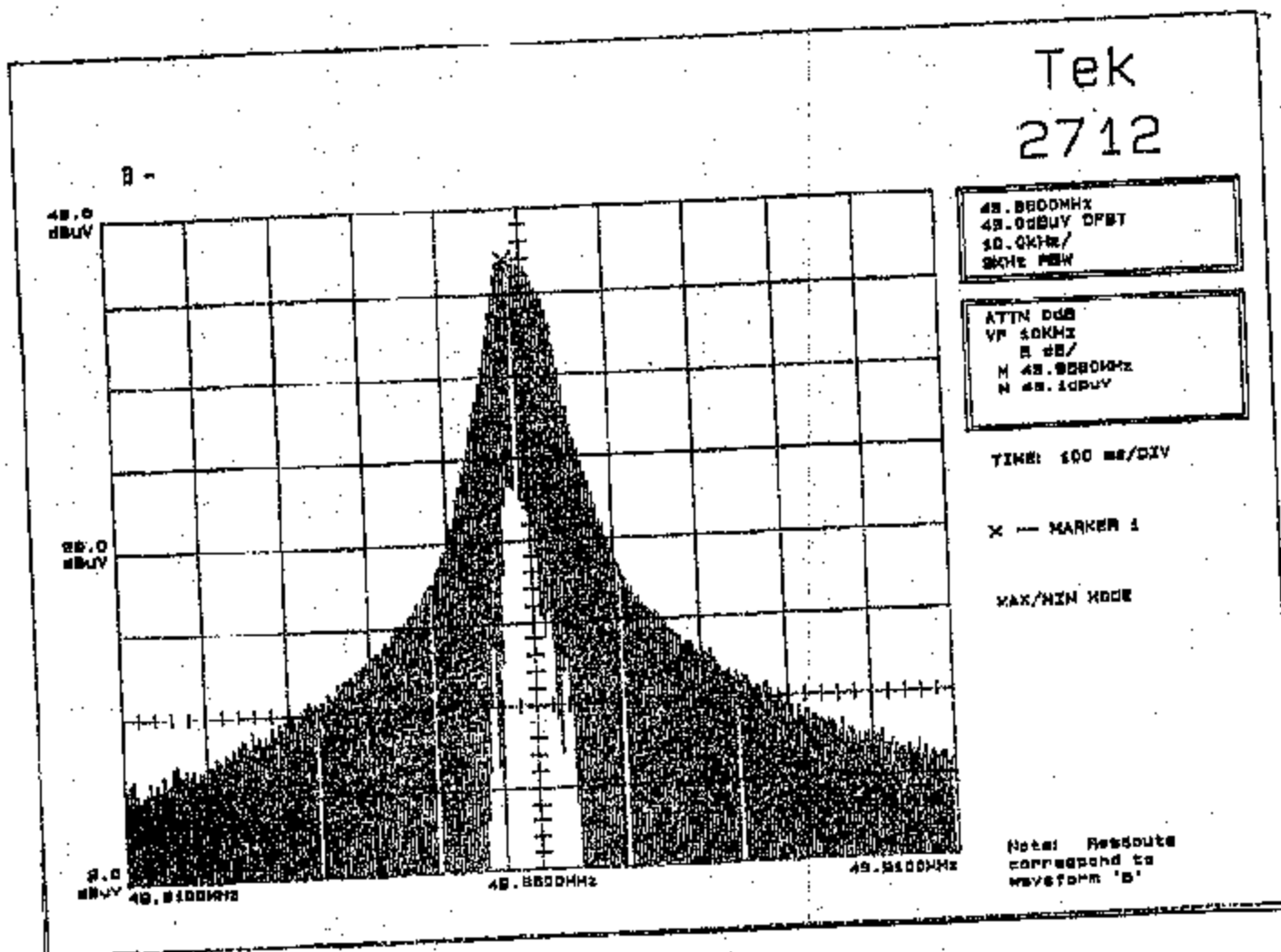
1

Set under test:
Connected sets:
Operating mode:

Flasher

Power "On"

Test Equipment
Spectrum Analyzer:
Tektronix 2712



15 MAR 200

Date:



Network Partner

**Namko**
Qualified Independent Laboratory

Agent of



Approved Laboratory

FCC -- Test ReportDate: 2000-03-15

No. 22048A/0/400F

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 2.94B of the FCC Rules.
2. **Measuring Instrumentation:**
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'.