

# **F C C - TEST REPORT**

REPORT NO.: 23969B/0/400F

## **FCC – Test Report**

Date: 2000-09-16

**No. 23969B/0/400F**

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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** : BMX Trek -- 49 MHz Transmitter  
**Model** : 90333(49MHZ)  
**Applicant** : ECHO TOYS LTD  
**Manufacturer** : ECHO TOYS LTD

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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:** 2000-08-23**DATE OF TESTING:** 2000-09-16**DESCRIPTION OF SAMPLE:**

**Product:** BMX Trek -- 49 MHz Receiver  
**Manufacturer:** ECHO TOYS LTD  
**Model number:** 90333(49MHZ)  
**Rating:** DC 6V ('AA' Size Battery x 4)  
**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

**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

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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<br>10KHz-30MHz |
| Antenna System                  | Schwarzbeck     | BBA 9106 /<br>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<br>10KHz-30MHz |
| Antenna System                  | Schwarzbeck     | BBA 9106 /<br>UHALP 9107 | --                  | 30MHz – 1000MHz                   |
| Signal Generator                | Rohde & Schwarz | SWS 2                    | 879113/42           | 100KHz – 1040 MHz                 |
| Digital Multimeter              | Tektronix       | DM2510G                  | DM-<br>2510GTW10555 | 10KHz – 30MHz                     |
| Turntable with Controller       | Drehtisch       | DT312                    | --                  | φ120 cm                           |

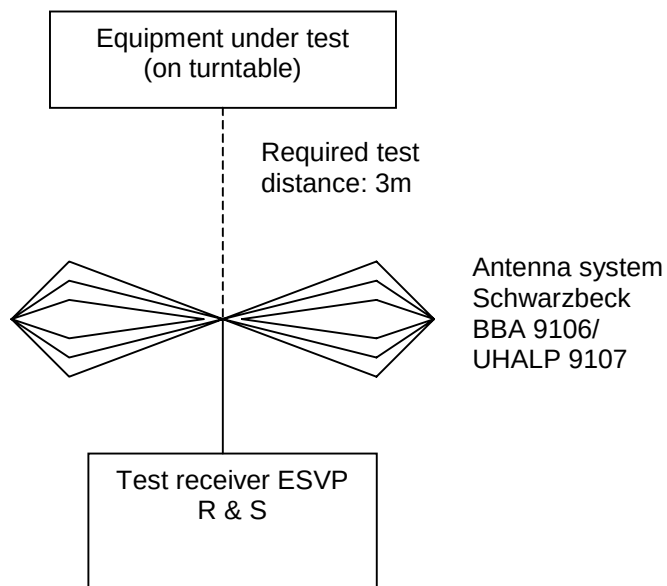
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## Radiated Emission Test Procedure





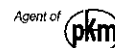
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## Unintentional Radiators



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## Measurement of Radiated Emissions (30MHz-1000MHz)

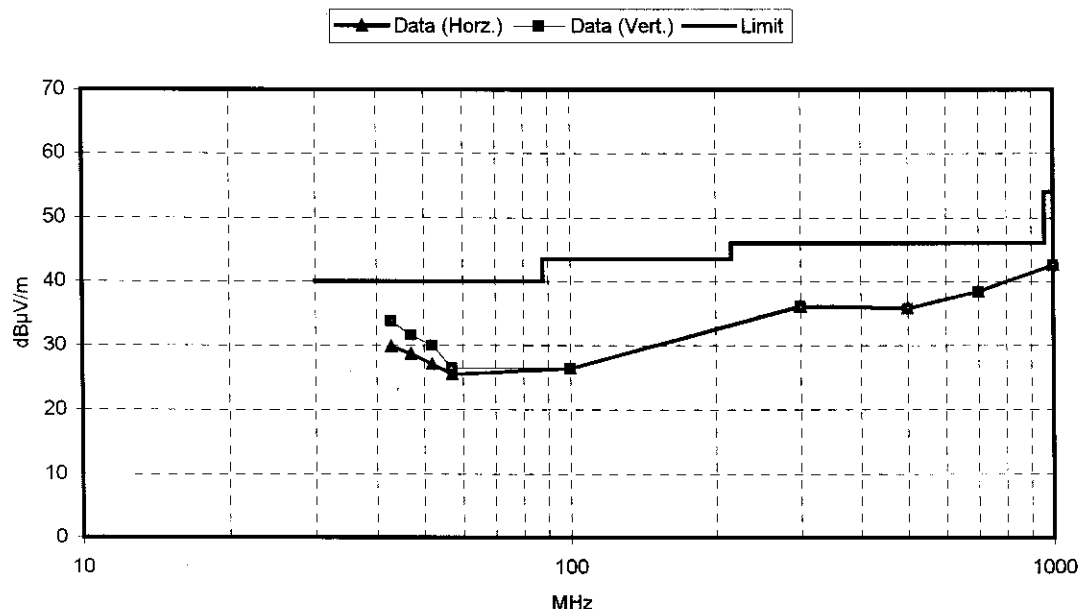
Acc: FCC Part 15 Subpart B

IECC Ref: 23969B/0/400F  
 Model: 90333(49MHZ)  
 Applicant: ECHO TOYS LTD  
 Ser.Nr.: 1  
 Set under test: BMX Trek  
 Connected sets: -  
 Operating mode: Standby

## 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) |
|-----------------|----------------------|----------------------|---------------------|---------------------------|--------------------------|--------------|
| 42.8            | < 16                 | 20                   | 13.8                | < 30.9                    | 48.9                     | 100.0        |
| 47              | < 16                 | 19                   | 12.5                | < 26.7                    | 37.7                     | 100.0        |
| 52              | < 16                 | 19                   | 11.0                | < 22.4                    | 31.6                     | 100.0        |
| 57              | < 16                 | 17                   | 9.3                 | < 18.5                    | 20.7                     | 100.0        |
| 100             | < 16                 | < 16                 | 10.3                | < 20.7                    | < 20.7                   | 150.0        |
| 300             | < 16                 | < 16                 | 20.0                | < 63.1                    | < 63.1                   | 200.0        |
| 500             | < 16                 | < 16                 | 19.7                | < 61.0                    | < 61.0                   | 200.0        |
| 700             | < 16                 | < 16                 | 22.4                | < 83.2                    | < 83.2                   | 200.0        |
| 1000            | < 16                 | < 16                 | 26.5                | < 133.4                   | < 133.4                  | 500.0        |



Test result:

☒ O.K.  
☐ Not O.K.

Date: 16 SEP 2000  
 Operator: C

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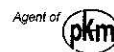




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## Unintentional Radiators



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Measurement of Radiated Emissions (30MHz-1000MHz)

Acc: FCC Part 15 Subpart B

IECC Ref: 23969B/0/400F  
 Model: 90333(49MHZ)  
 Applicant: ECHO TOYS LTD

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

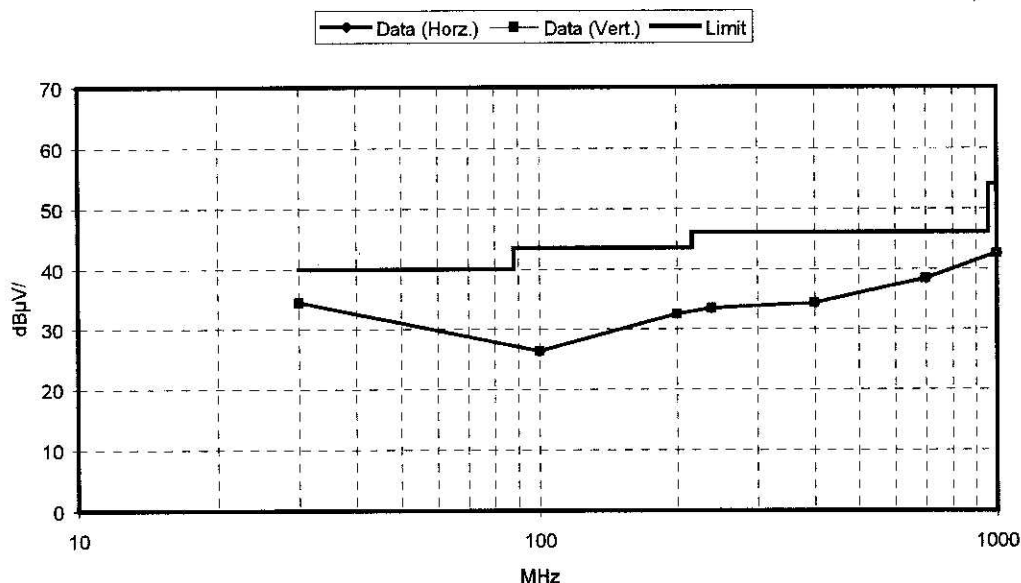
Ser.Nr.: 1

Set under test: BMX Trek

Connected sets: -

Operating mode: Operation mode (motor noise measurement)

| 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                 | 18.4                | < 52.5                    | < 52.5                   | 100.0        |
| 100             | < 16                 | < 16                 | 10.3                | < 20.7                    | < 20.7                   | 150.0        |
| 200             | < 16                 | < 16                 | 16.5                | < 42.2                    | < 42.2                   | 150.0        |
| 238             | < 16                 | < 16                 | 17.5                | < 47.1                    | < 47.1                   | 200.0        |
| 400             | < 16                 | < 16                 | 18.3                | < 51.9                    | < 51.9                   | 200.0        |
| 700             | < 16                 | < 16                 | 22.4                | < 83.2                    | < 83.2                   | 200.0        |
| 1000            | < 16                 | < 16                 | 26.5                | < 133.4                   | < 133.4                  | 500.0        |



Note: A retest was performed with the signal generator set at -60dBm at the fundamental frequency to cohere the emissions as specified in section 12.1.1.1 of ANSI C63.4-1992. All emissions observed complies with the FCC limits.

16 SEP 2000

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

Test result:

☒ O.K.  
☐ Not O.K.

Operator: C

## 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'.