



Test Report

No.: AJT241030031E-2

Applicant Name: NIKKO TOYS LIMITED
Applicant Address: UNIT 1220, 12TH FLOOR, PENINSULA CENTRE, 67 MODY ROAD, TSIM SHA TSUI EAST, KOWLOON, HONG KONG
Manufacturer: NIKKO TOYS LIMITED
Manufacturer Address: UNIT 1220, 12TH FLOOR, PENINSULA CENTRE, 67 MODY ROAD, TSIM SHA TSUI EAST, KOWLOON, HONG KONG

The following samples were submitted and identified by/on behalf of the client as:

Sample Description: Hydro Thunder,
Thunder Red
Model No.: 10270/10271
FCC ID: 2AS9M10270NIK-TX
Sample Received Date: 30 October, 2024
Testing Completed Date: 11 November, 2024

Tests conducted: For compliance with application, refer to attached page(s) for details.

Assess standard used:	Conclusion
CFR47 FCC Part 2: Section 2.1093 CFR47 FCC Part 1: Section 1.1310 FCC KDB Publication 447498 D01 v06	PASS

Tested by: Glory Reviewed by: Fly Liang Approved by: Glory Liang
Position: Technical Supervisor
Date: 2025-01-03



This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Disagreement against this test report, if any, should be filed with to our company in writing within 15 days of receiving the report. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission.

AJT TESTING SERVICES LIMITED

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1 General Information

1.1 General Description of E.U.T.

Product:	Hydro Thunder , Thunder Red
Model(s):	10270/10271
FCC ID:	2AS9M10270NIK-TX
Power Supply Voltage	Boat Unit: DC 4.5V(AAA*3)
Operation Frequency:	2405MHz~2475MHz
Max. RF output power:	95.10 dB μ V/m@3m
Type of Modulation:	GFSK
Antenna Type	Wire Antenna
Antenna Gain:	0 dBi
NOTE: 1.The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual. The laboratory is not responsible for the accuracy of the information provided by manufacturer. 2.Product models same are identical in the PCB layout, electrical circuit design and functions, The differences are appearance color, exterior structure, and model name for commercial purpose.	

2 Test Summary

Test Requirement	Result
CFR47 FCC Part 2: Section 2.1093 CFR47 FCC Part 1: Section 1.1310 FCC KDB Publication 447498 D01 v06	PASS

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3 FCC Radiofrequency Radiation Exposure Procedures

3.1 Requirements

According to §15.247(i) and §1.1307b(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See KDB 447498 D01 General RF Exposure Guidance v05, section 4.3.1.

- a. For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})]$$

$$[\sqrt{f_{\text{(GHz)}}}] \leq 3.0$$
 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- $f_{\text{(GHz)}}$ is the RF channel transmit frequency in GHz
 - Power and distance are rounded to the nearest mW and mm before calculation
 - The result is rounded to one decimal place for comparison
 - The values 3.0 and 7.5 are referred to as numeric thresholds in step b) below. The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm, and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.
- b. For 100 MHz to 6 GHz and test separation distances > 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:
- (1) $\{[\text{Power allowed at numeric threshold for 50 mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot (f_{\text{(MHz)}}/150)]\}$ mW, for 100 MHz to 1500 MHz;
 - (2) $\{[\text{Power allowed at numeric threshold for 50 mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot 10]\}$ mW, for > 1500 MHz and ≤ 6 GHz.
- c. For frequencies below 100 MHz, the following may be considered for SAR test exclusion
- (1) For test separation distances > 50 mm and < 200 mm, the power threshold at the corresponding test separation distance at 100 MHz in step b) is multiplied by $[1 + \log(100/f_{\text{(MHz)}})]$;
 - (2) For test separation distances ≤ 50 mm, the power threshold determined by the equation in c)1) for 50 mm and 100 MHz is multiplied by $\frac{1}{2}$;
 - (3) SAR measurement procedures are not established below 100 MHz. When SAR test exclusion cannot be applied, a KDB inquiry is required to determine SAR evaluation requirements for any SAR test results below 100 MHz to be acceptable.

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3.2 Method And Limit

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2 m normally can be maintained between the user and the device.

Table A-Limits for Occupational / Controlled Exposure

Frequency Range(MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6

Table B-Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz; *Plane-wave equivalent power density

$$S = \frac{P \times G}{4 \times \pi \times R^2}$$

S = power density (in appropriate units, e.g. mW/cm²)

P = output power to the antenna (in appropriate units, e.g., mW).

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

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3.3 Measurement and Calculation

Mode	Channel Frequency (MHz)	Field Strength (dB μ V/m@3m)	Max Output Power ^b (mW)	Calculation Value ^a	Threshold Value
SRD	2435	95.10	0.987	0.308	3.0

Note:

a. Calculation Value=[(max. power of channel, mW) / (min. test separation distance, mm)] [$\sqrt{f_{\text{GHz}}}$]
So Calculation Value=0.987/5* $\sqrt{2.435}$ =0.308

b. Max Output Power(dBm)=Field Strength+20log(Test distance)-104.7
 $P(\text{mW})=10^{(P(\text{dBm})/10)}$

According to KDB447498 D01 V06, threshold at which no SAR required is S3.0 for 1-g SAR, separation distance is 5mm, and no simultaneous SAR measurement is required.

END OF TEST REPORT

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