RF EXPOSURE REPORT



Report No.: 18070651-FCC-R
Supersede Report No.: N/A

Applicant	Mun Ah Plastic Electronic Toys Co., Ltd.			
Product Name	2.4GHz Transmitter			
Model No.	CTX-2000	CTX-2000		
Serial No.	N/A			
Test Standard	FCC Part 2	FCC Part 2.1093		
Test Date	June 28 to August 01, 2018			
Issue Date	August 01, 2018			
Test Result	Pass Fail			
Equipment complied with the specification				
Equipment did not comply with the specification				
Janon Liang		David Huang		
Aaron Liang Test Engineer		David Huang Checked By		

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Test result presented in this test report is applicable to the tested sample only

Issued by:

SIEMIC (SHENZHEN-CHINA) LABORATORIES

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Laboratories Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.



In addition to testing and certification, SIEMIC provides initial design reviews and compliance management throughout a project. Our extensive experience with China, Asia Pacific, North America, European, and International compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

Accreditations for Conformity Assessment

Country/Region	Scope
USA	EMC, RF/Wireless, SAR, Telecom
Canada	EMC, RF/Wireless, SAR, Telecom
Taiwan	EMC, RF, Telecom, SAR, Safety
Hong Kong	RF/Wireless, SAR, Telecom
Australia	EMC, RF, Telecom, SAR, Safety
Korea	EMI, EMS, RF, SAR, Telecom, Safety
Japan	EMI, RF/Wireless, SAR, Telecom
Singapore	EMC, RF, SAR, Telecom
Europe	EMC, RF, SAR, Telecom, Safety



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1. Report Revision History

Report No.	Report Version	Description	Issue Date
18070651-FCC-R	NONE	Original	August 01, 2018

2. Customer information

Applicant Name	Mun Ah Plastic Electronic Toys Co., Ltd.	
Applicant Add	Flat G & H, 21/F., Kingsway Ind Bldg. Phase 2, 173-175 Wo Yi Hop Rd., Kwai	
	Chung, NT, Hong Kong	
Manufacturer	Mun Ah Plastic Electronic Toys Co., Ltd.	
Manufacturer Add	Flat G & H, 21/F., Kingsway Ind Bldg. Phase 2, 173-175 Wo Yi Hop Rd., Kwai	
	Chung, NT, Hong Kong	

3. Test site information

Lab performing tests	SIEMIC (Shenzhen-China) LABORATORIES	
	Zone A, Floor 1, Building 2 Wan Ye Long Technology Park	
Lab Address	South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong China	
	518108	
FCC Test Site No.	535293	
IC Test Site No.	4842E-1	
Test Software	Radiated Emission Program-To Shenzhen v2.0	



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4. Equipment under Test (EUT) Information

Description of EUT:	2.4GHz Transmitter
Main Model:	CTX-2000
Serial Model:	N/A
Date EUT received:	June 27, 2018
Test Date(s):	June 28 to August 01, 2018
Antenna Gain:	2dBi
Antenna Type:	Internal antenna
Type of Modulation:	FHSS, GFSK, 250kbps data rate
RF Operating Frequency (ies):	2406-2420 MHz
Number of Channels:	15CH
Port:	Please refer to the user's manual
Input Power:	Spec: Battery 6V(1.5*4AA) Adapter: I/P:100 ~ 240Vac, 0.3 A; O/P: 5Vdc, 1.0A
Trade Name :	KD PROPO
FCC ID:	YDTCTX-2000



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5. FCC §2.1093 - Radiofrequency radiation exposure evaluation: portable devices.

5.1 RF Exposure

Standard Requirement:

According to §15.247 (i) and §1.1307(b)(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 level in excess of the Commission's guidelines.

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] $\cdot [\sqrt{f_{(GHz)}}] \le 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, 16 where

- f_(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation¹⁷
- The result is rounded to one decimal place for comparison

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.

Routine SAR evaluation refers to that specifically required by § 2.1093, using measurements or computer simulation. When routine SAR evaluation is not required, portable transmitters with output power greater than the applicable low threshold require SAR evaluation to qualify for TCB approval.

result = $P\sqrt{F}/D$

P= Maximum turn-up power in mW

F= Channel frequency in GHz

D= Minimum test separation distance in mm



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5.2 Test Result

Modulation	СН	Freq (MHz)	Conducted Power (dBm)	Tune Up Power (dBm)	Max Tune Up Power (dBm)	Max Tune Up Power (mW)	Result	Limit
GFSK	Low	2406	5.75	5±1	6	3.981	1.23	3
	Mid	2413	5.66	5±1	6	3.981	1.24	3
	High	2420	5.64	5±1	6	3.981	1.25	3

Result: Compliance

No SAR measurement is required.