CENTRE OF TESTING SERVICE INTERNATIONAL

OPERATE ACCORDING TO ISO/IEC 17025

FCC ID TEST REPORT

TEST REPORT NUMBER : CGZ3130328-00223-E

CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao,
Guangzhou, China.

TEST REPORT For FCC ID

47 CFR PART 15 OCT, 2012

Report Reference No.	CGZ3130328-00223-E
Date of issue	27 April 2013
**Testing Laboratory Name ..... **	**CENTRE OF TESTING SERVICE CO., LTD.**
Address	Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China.
Testing location/ procedure	Full application of Harmonised standards ■
	Partial application of Harmonised standards □
	Other standard testing method □
**Applicant's name ..... **	Mun Ah Plastic Electronic Toys CO., LTD.
Address	21/ Floor, Kingsway Industrial Building, Phase 2, 173- 175 Wo Yi Hop Road, Kwai Chung, N. T., Hong Kong
**Test specification ..... **	
Standard	**47 CFR PART 15 OCT, 2012**
Test Report Form No.	CTSEMC-1.0
TRF Originator	CENTRE OF TESTING SERVICE CO., LTD
Master TRF	Dated 2009-01

**Test item description..... **	CTX-1710
Trade Mark.....	Carisma
Manufacturer.....	Mun Ah Plastic Electronic Toys CO., LTD.
Model/Type reference.....	CTX-1710
Ratings.....	6.0V DC
Operating Frequency.....	2406MHz ~2477MHz/ FHSS
Result	**Positive**

Compiled by:	**Supervised by:**	**Approved by:**
Kate zhang / File administrators	Duke yang / Technique principal	Vincent yao / Manager

CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

FCC ID -- T E S T R E P O R T

Test Report No. : CGZ3130328-00223-E	27 April 2013 Date of issue

Type / Model.....	CTX-1710
EUT.....	CTX-1710
Applicant……	Mun Ah Plastic Electronic Toys CO., LTD.
Address.....	21/ Floor, Kingsway Industrial Building, Phase 2, 173- 175 Wo Yi Hop Road, Kwai Chung, N. T., Hong Kong
Telephone.....	+852-24275831
Fax.....	+852-24803087
Contact.....	Derek Cheung
Manufacturer……	Mun Ah Plastic Electronic Toys CO., LTD.
Address.....	21/ Floor, Kingsway Industrial Building, Phase 2, 173- 175 Wo Yi Hop Road, Kwai Chung, N. T., Hong Kong
Telephone.....	+852-24275831
Fax.....	+852-24803087
Contact.....	Derek Cheung
Test report holder……	Mun Ah Plastic Electronic Toys CO., LTD.
Address.....	21/ Floor, Kingsway Industrial Building, Phase 2, 173- 175 Wo Yi Hop Road, Kwai Chung, N. T., Hong Kong
Telephone.....	+852-24275831
Fax.....	+852-24803087
Contact.....	Derek Cheung

Test Result according to the standards on page 1: **PASSED**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

TABLE OF CONTENTS

Description **Page**

CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

1.TEST STANDARDS

The tests were performed according to following standards:

■ **47 CFR PART 15 OCT, 2012**
■ **ANSI C63.4-2009**

2.SUMMARY

2.1 GENERAL REMARKS

Date of receipt of test sample	28 March 2013
Testing commenced on	28 March ~ 03 April 2013
Testing concluded on	27 April 2013

2.2 FINAL ASSESSMENT

The FCC requirements pertaining to the technical standards and tested operation modes are

■ - fulfilled.
☐ - **not** fulfilled.

The equipment under test
■ - fulfils the FCC requirements cited on page 1.
☐ - **does not** fulfil the FCC requirements cited on page 1.

3.EQUIPMENT UNDER TEST

3.1 Power supply system utilised

Power supply voltage : ■ Battery 1.5V*4

3.2 Short description of the Equipment under Test (EUT)

Number of tested samples: **1**
Serial number: Prototype

3.3 EUT operation mode

The equipment under test was operated during the measurement under the following conditions:
☐ - Standby
☐ TX- Y position
☐ TX- Zposition
■ TX- X position

Operation mode 1:TX-X Position Low (2406MHz) , TX-X Position Middle (2444MHz),
TX-X Position High (2477MHz)
Note:Operation mode 1 TX -X position of EUT is the radiated test worst case; Operation mode 2 Charging is the conducted test worst case. so only these test results be recorded in the test report.

CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn See Reverse For Terms And Conditions of Service

3.4 EUT configuration

3.4.1. Description of configuration (EUT)

Description	:	CTX-1710
Model Number	:	CTX-1710
Operating frequency	:	2406~ 2477 MHz
Modulation Technology	:	FHSS modulation
Antenna	:	Permanent External Antenna, met requirement of FCC 15.203

3.4.2. Tested Supporting System Details

N/A

CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

4. TEST ENVIRONMENT

4.1 Address of the test laboratory

Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China

Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406

4.2 Test facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L3394

CENTRE OF TESTING SERVICE CO., LTD has been assessed and proved to be in compliance with CNAS-CL01: 2006 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

IC-Registration No.: 8374A

The 3m Alternate Test Site of CENTRE OF TESTING SERVICE CO., LTD has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 8374A on June 6, 2011.

FCC-Registration No.: 971995

CENTRE OF TESTING SERVICE CO., LTD, EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration No.791995, July 13,2012.

4.3 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15~35 ° C
Humidity:	25~75 %
Atmospheric pressure:	86~106 kPa

4.4 Definitions of symbols used in this test report

■ - The black square indicates that the listed condition, standard or equipment is applicable for this report.

□ - The empty square indicates that the listed condition, standard or equipment is **not** applicable for this report.

4.5 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the CTS quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

4.6 Measurement Uncertainty

Test Item	Frequency Range	Uncertainty	Note
Conduction disturbance	150kHz~30MHz	±1.22dB	(1)
Power disturbance	30MHz~300MHz	±1.38dB	(1)
Radiation emission (3m)	30MHz~300MHz	±3.14dB	(1)
	300MHz~1000MHz	±3.18dB	(1)
	1GHz~26.5GHz	±3.54dB	(1)

(1).This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

5.Summary of standards and results

5.1.Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION		
Description of Test Item	**Standard**	**Results**
Conducted Emission Test	FCC Part 15 : 15.207 ANSI C63.4-2009	N/A
Radiated Emission Test	FCC Part 15 C: 15.249 FCC Part 15 : 109 ANSI C63.4-2009	PASSED
20 dB Bandwidth test	FCC Part 15 C: 15.249 ANSI C63.4-2009	PASSED
Band Edge Compliance Test	FCC Part 15 C: 15.249 ANSI C63.4-2009	PASSED
N/A is an abbreviation for Not Applicable.		

CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

6.Power Line Conducted Emission Test

6.1.Test Equipment

Conducted Disturbance					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESHS10	842884/012	2012/11
2	Artificial Mains	ROHDE & SCHWARZ	ESH3-Z5	832479/025	2012/11
3	Artificial Mains	ROHDE & SCHWARZ	ESH3-Z5	832479/026	2012/11
4	Pulse Limiter	ROHDE & SCHWARZ	ESHSZ2	100301	2012/11
5	EMI Test Software	ROHDE & SCHWARZ	ESK1	N/A	2012/11

6.2. Block Diagram of Test Setup

(EUT: CTX-1710***)***

6.3. Power Line Conducted Emission Test Limits

Standard:RSS-Gen:7.2.4,FCC Part 15 : 15.207,ANSI C63.4-2009

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

Notes: 1. * Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

6.4.Test Procedure

The XBOX Power connected to the power mains through a line impedance stabilization network (L.I.S.N.#2). This provides a 50 ohm coupling impedance for the EUT. Please refer the block diagram of the test setup and photographs. The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N.#1). Power on the PC and let it work normally, we use a keyboard test soft ware, let EUT working in test mode, then test it. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC Part 15C on Conducted Emission Test.

6.5. Power Line Conducted Emission Test Results

N/A

The EUT power supply by battery, Not applicable.

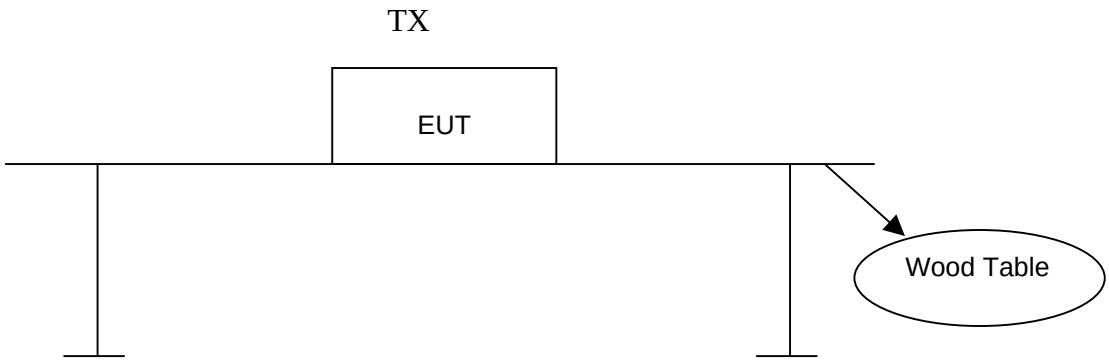
7. Radiated disturbance (electric field)

7.1.Test Equipment

Radiated disturbance (electric field)					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	100868	2012/11
2	Biconical Antenna	ROHDE & SCHWARZ	HK116	100221	2012/11
3	Log per Antenna	ROHDE & SCHWARZ	HL223	100226	2012/11
4	Log per Antenna	ROHDE & SCHWARZ	HL050	100186	2012/11
5	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2012/11
6	Loop Antenna	A.R.A	PLA-1030/B	1030	2012/11

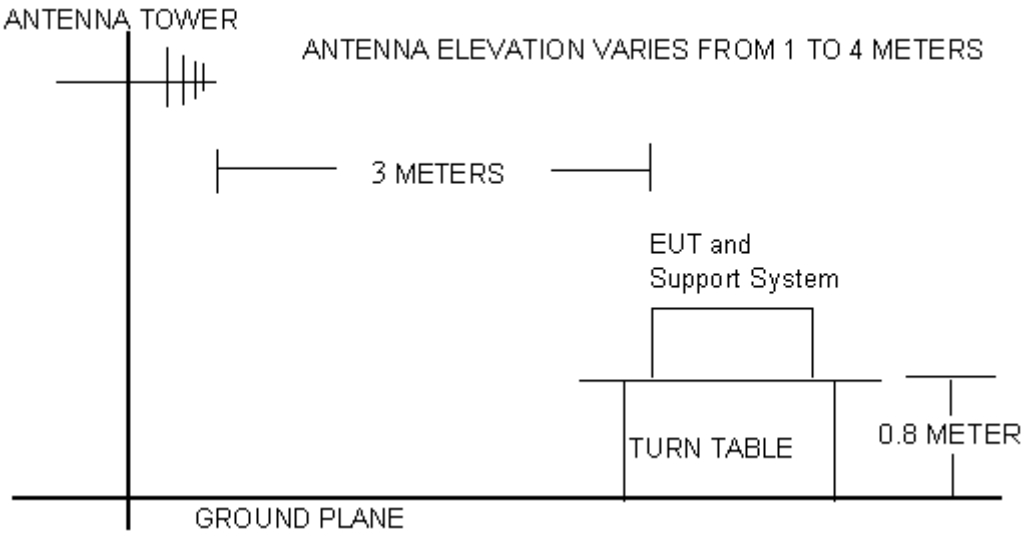
7.2.Block Diagram of Test Setup

7.2.1 Block Diagram of connection between EUT and simulators



(EUT: CTX-1710***)***

7.2.2 Anechoic Chamber Setup Diagram



7.3.Radiated Emission Limit :

Standard:FCC 15.249 , FCC 15.209.

Except as provided in paragraph (a) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental Frequency (MHz)	Field Strength of Fundamental (mV/m)	Field Strength of Harmonics (μV/m)
902-928	50	500
2400-2483.5	50	500
5725-5875	50	500
24000-24250	250	2500

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/m
0.009 ~ 0.490	300	2400/F(kHz)	---
0.490 ~ 1.705	30	24000/F(kHz)	---
1.705 ~ 30	30	30	---
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	Other:74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

Remark: (1) Emission level dBμV = 20 log Emission level μV/m

(2) The smaller limit shall apply at the cross point between two frequency bands.

(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

7.4.Test Procedure

The EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on Test. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4-2009on radiated emission Test.

The frequency range from 30MHz to 1000MHz and above 1GHz. is investigated. Please see the following pages.

All measurements for radiated emissions within the restricted bands were performed using a Quasi-Peak detector with 120kHz RBW below 1GHz and a Peak and Average detector with 2MHz RBW above 1GHz,

All measurements for radiated emissions within the restricted bands were performed using a Quasi-Peak detector with 300kHz VBW below 1GHz and a Peak detector with 1MHz VBW above 1GHz, A average detector with 500Hz(The pulse width is 0.02s, take the reciprocal and use this value in Hz. Thus a pulse of 0.02 sec becomes VBW 500Hz) VBW above 1GHz, and use RSM detector for average test.

Pretest x, y, z position of EUT, final, select the worst case x position test and record the test results in the report.

The test modes (TX Mode) is tested in Anechoic Chamber and all the scanning waveforms are reported on section 7.5

7.5.Radiated Emission Test Results

PASSED.

The frequency range from 9KHz~30MHz,30MHz to 230MHz, 230MHz to 1000MHz and above 1GHz. is investigated. Please see the following pages.

CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Test Mode:	TX –X Position Mode	Result:	■ - passed □ - not passed
Frequency range:	9KHz~30MHz		

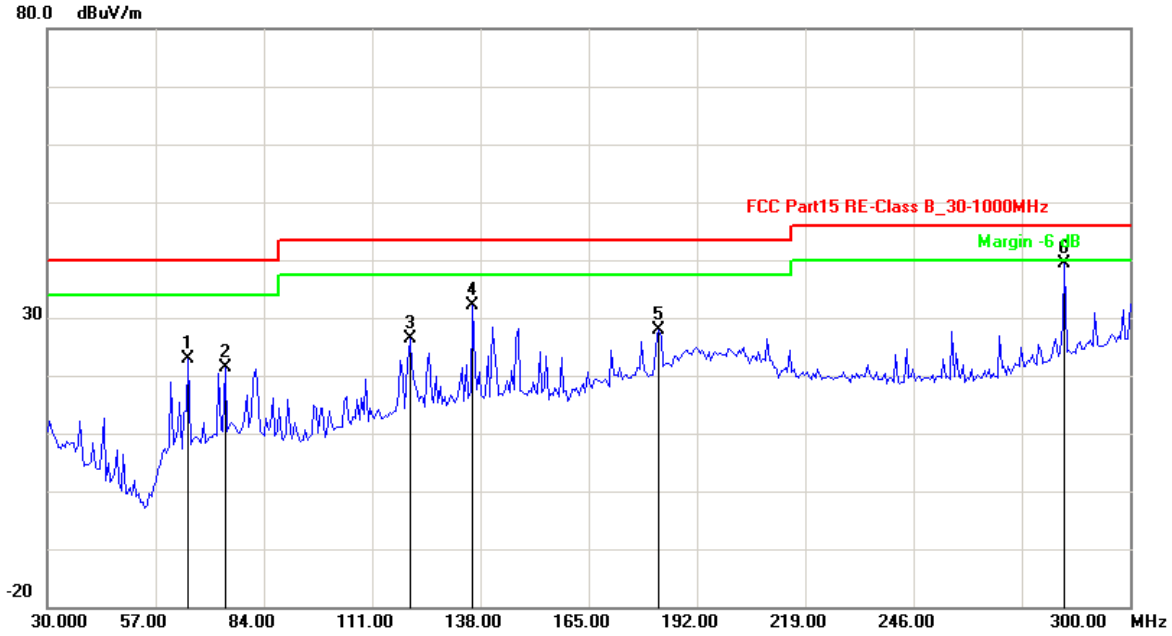
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
Remark: The test result reading value is to low, margin all > 10dB of the limit.							

CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Channel: Test point: Frequency range:	TX –X Position Mode Low 2406MHz Horizontal 30MHz-26.5GHz	Result:	■ - passed ☐ - not passed

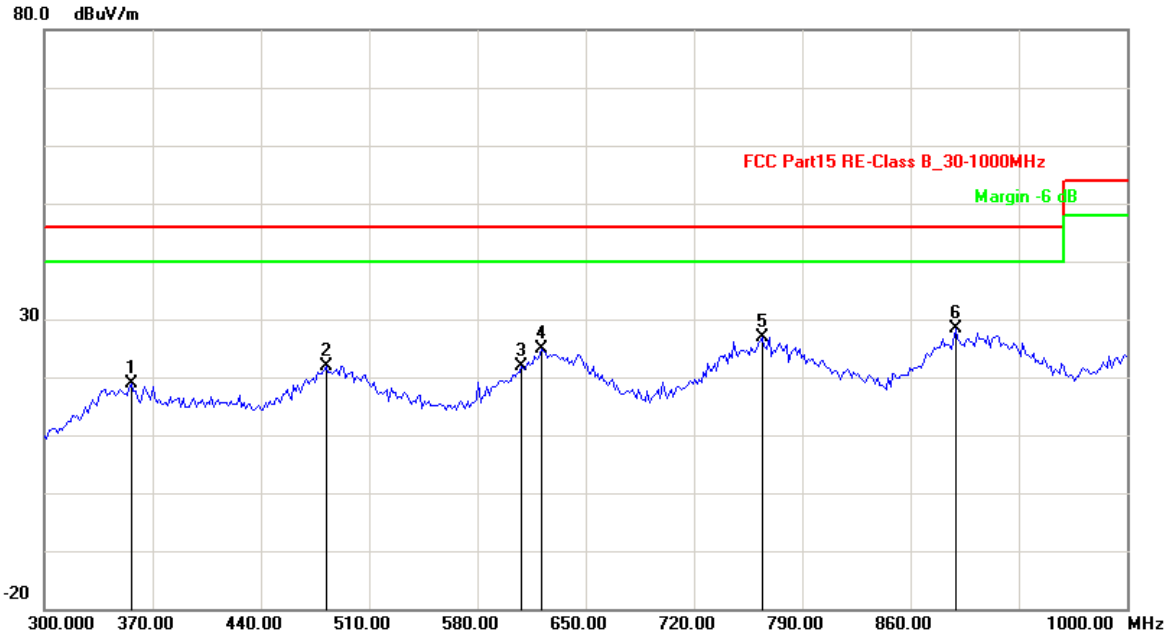
EUT	CTX-1710
Firm Name	Mun Ah Plastic Electronic Toys CO., LTD.
Operating Condition	Battery 1.5V*4
Test Condition	Ambient Temperature: 25°C Humidity: 56%
Test distance	3 Meter
Test Date:	28 March~03 April 2013
Operator	**Duke**
MODEL NO	CTX-1710

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2406.00	2.87	86.33	89.20	114	-24.80	Peak
2	2406.00	2.87	80.62	83.49	94	-10.51	AVG



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	65.1703	-23.81	46.68	22.87	40.00	-17.13	QP
2	74.3687	-21.66	43.11	21.45	40.00	-18.55	QP
3	120.3607	-18.09	44.36	26.27	43.50	-17.23	QP
4	136.0521	-16.65	48.80	32.15	43.50	-11.35	QP
5	182.5852	-14.63	42.51	27.88	43.50	-15.62	QP
6	283.7675	-8.49	47.77	39.28	46.00	-6.72	QP
Remark: Other frequency mini margin all >10 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	356.1122	-13.74	32.53	18.79	46.00	-27.21	QP
2	482.3647	-9.75	31.70	21.95	46.00	-24.05	QP
3	608.6172	-9.30	31.16	21.86	46.00	-24.14	QP
4	621.2425	-7.10	31.91	24.81	46.00	-21.19	QP
5	764.3287	-5.59	32.43	26.84	46.00	-19.16	QP
6	889.1784	-4.47	32.79	28.32	46.00	-17.68	QP
Remark: Other frequency mini margin all >10 dB of Limit							

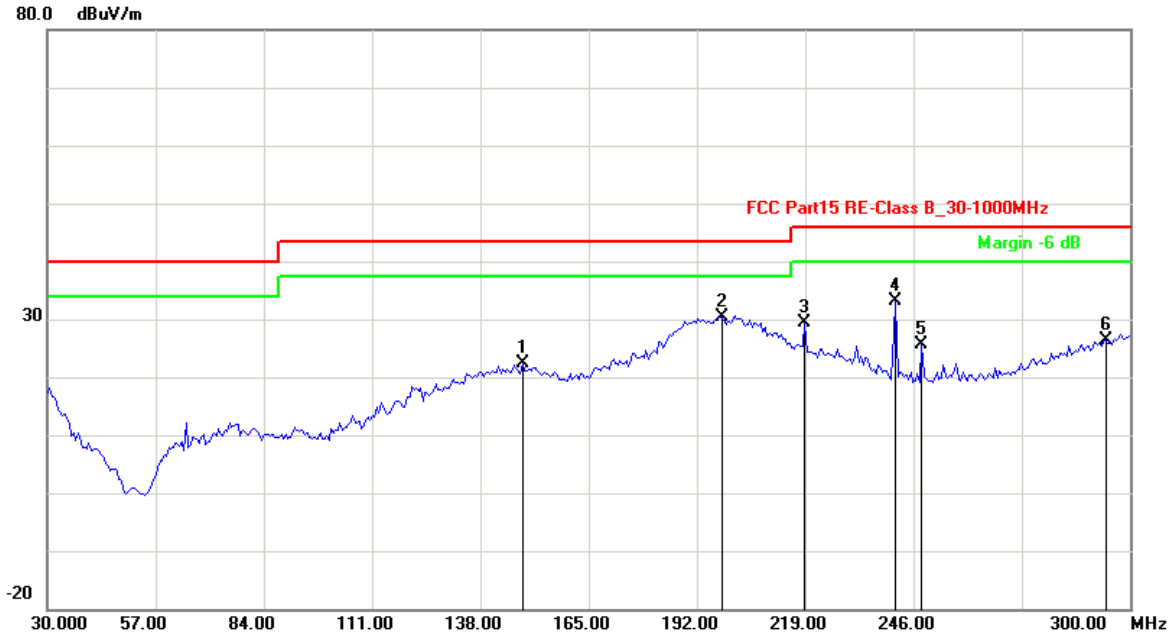
Above 1GHz

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1683.367	-1.30	43.21	41.91	74.00	-32.09	peak
2	1683.367	-1.30	27.65	26.35	54.00	-27.65	AVG
3	2873.747	5.89	44.18	50.07	74.00	-23.93	peak
4	2873.747	5.89	28.98	34.87	54.00	-19.13	AVG
5	3402.806	7.89	41.86	49.75	74.00	-24.25	peak
6	3402.806	7.89	26.80	34.69	54.00	-19.31	AVG
7	4350.701	10.63	39.52	50.15	74.00	-23.85	peak
8	4350.701	10.63	24.79	35.42	54.00	-18.58	AVG
9	5893.788	15.04	41.32	56.36	74.00	-17.64	peak
10	5893.788	15.04	25.08	40.12	54.00	-13.88	AVG
11	7613.226	18.65	38.74	57.39	74.00	-16.61	peak
12	7613.226	18.65	24.00	42.65	54.00	-11.35	AVG
Remark: Other frequency mini margin all >10 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

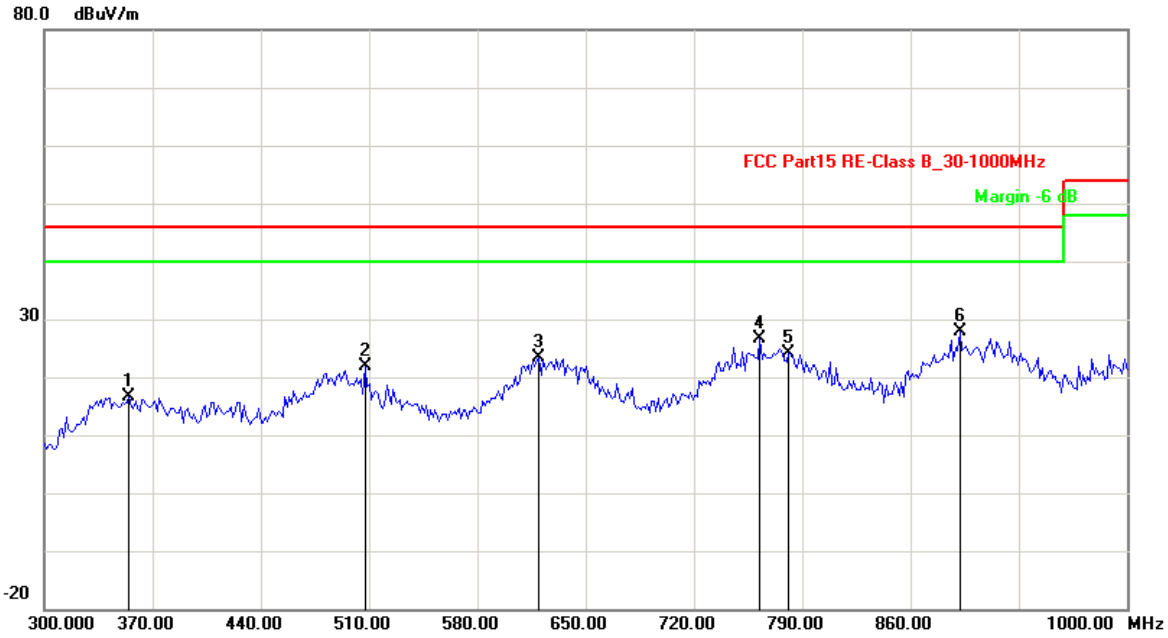
Channel:	TX –X Position Mode Low 2406MHz	Result:	■ - passed □ - not passed
Test point:	Vertical		
Frequency range:	30MHzHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2406.00	2.87	92.59	95.46	114	-18.54	Peak
2	2406.00	2.87	85.47	88.34	94	-5.66	AVG



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	148.4970	-17.20	39.47	22.27	43.50	-21.23	QP
2	198.2766	-12.55	42.93	30.38	43.50	-13.12	QP
3	218.8377	-12.39	41.70	29.31	46.00	-16.69	QP
4	241.5631	-13.07	46.14	33.07	46.00	-12.93	QP
5	248.0561	-12.84	38.44	25.60	46.00	-20.40	QP
6	294.0481	-6.46	32.75	26.29	46.00	-19.71	QP
Remark: Other frequency mini margin all >10 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	354.7094	-13.68	30.24	16.56	46.00	-29.44	QP
2	507.6152	-11.31	33.22	21.91	46.00	-24.09	QP
3	619.8397	-7.10	30.39	23.29	46.00	-22.71	QP
4	762.9259	-5.56	32.25	26.69	46.00	-19.31	QP
5	781.1623	-6.10	30.27	24.17	46.00	-21.83	QP
6	891.9840	-4.33	32.29	27.96	46.00	-18.04	QP
Remark: Other frequency mini margin all >10 dB of Limit							

Above 1GHz

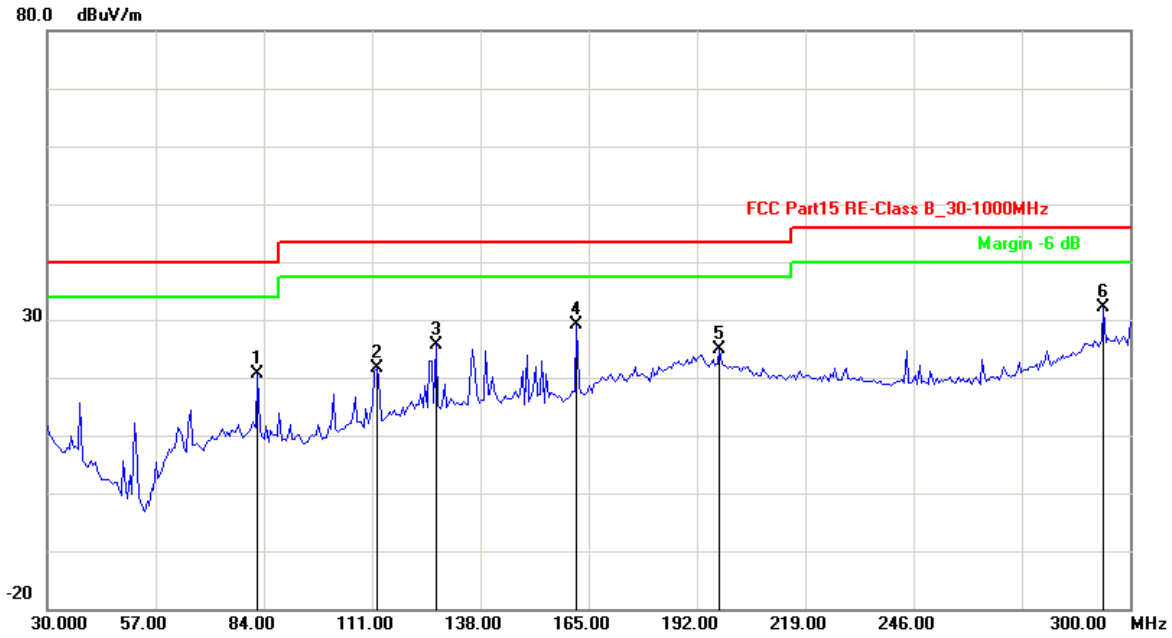
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1198.397	-4.02	44.89	40.87	74.00	-33.13	peak
2	1198.397	-4.02	29.14	25.12	54.00	-28.88	AVG
3	1683.367	-1.30	42.71	41.41	74.00	-32.59	peak
4	1683.367	-1.30	27.61	26.31	54.00	-27.69	AVG
5	3160.321	7.11	43.48	50.59	74.00	-23.41	peak
6	3160.321	7.11	28.73	35.84	54.00	-18.16	AVG
7	6070.140	15.55	41.02	56.57	74.00	-17.43	peak
8	6070.140	15.55	26.55	42.10	54.00	-11.90	AVG
9	7569.138	18.59	38.18	56.77	74.00	-17.23	peak
10	7569.138	18.59	22.99	41.58	54.00	-12.42	AVG
11	8737.475	21.27	38.54	59.81	74.00	-14.19	peak
12	8737.475	21.27	22.42	43.69	54.00	-10.31	AVG
Remark: Other frequency mini margin all >10 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Channel: Test point: Frequency range:	TX –X Position Mode Middle 2444MHz Horizontal 30MHz-26.5GHz	Result:	■ - passed ☐ - not passed

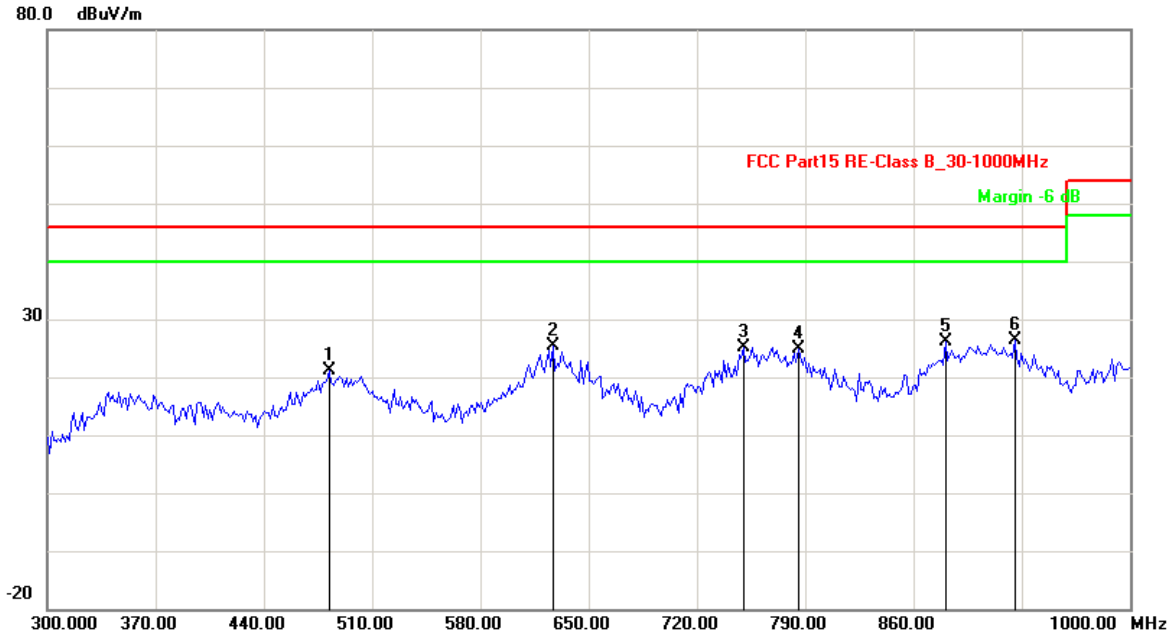
EUT	CTX-1710
Firm Name	Mun Ah Plastic Electronic Toys CO., LTD.
Operating Condition	Battery 1.5V*4
Test Condition	Ambient Temperature: 25°C Humidity: 56%
Test distance	3 Meter
Test Date:	28 March~03 April 2013
Operator	**Duke**
MODEL NO	CTX-1710

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2444	3.19	86.24	89.43	114	-24.57	peak
2	2444	3.19	80.09	83.28	94	-10.72	AVG



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	82.4850	-21.96	42.61	20.65	40.00	-19.35	QP
2	112.2445	-20.01	41.66	21.65	43.50	-21.85	QP
3	126.8537	-17.40	42.92	25.52	43.50	-17.98	QP
4	162.0240	-18.46	47.69	29.23	43.50	-14.27	QP
5	197.7355	-12.51	37.27	24.76	43.50	-18.74	QP
6	293.5070	-6.54	38.66	32.12	46.00	-13.88	QP
Remark: Other frequency mini margin all >10 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn See Reverse For Terms And Conditions of Service



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	482.3647	-9.75	30.94	21.19	46.00	-24.81	QP
2	626.8537	-7.26	32.63	25.37	46.00	-20.63	QP
3	750.3006	-6.30	31.53	25.23	46.00	-20.77	QP
4	785.3707	-6.63	31.45	24.82	46.00	-21.18	QP
5	880.7615	-4.91	31.06	26.15	46.00	-19.85	QP
6	925.6513	-5.22	31.66	26.44	46.00	-19.56	QP
Remark: Other frequency mini margin all >10 dB of Limit							

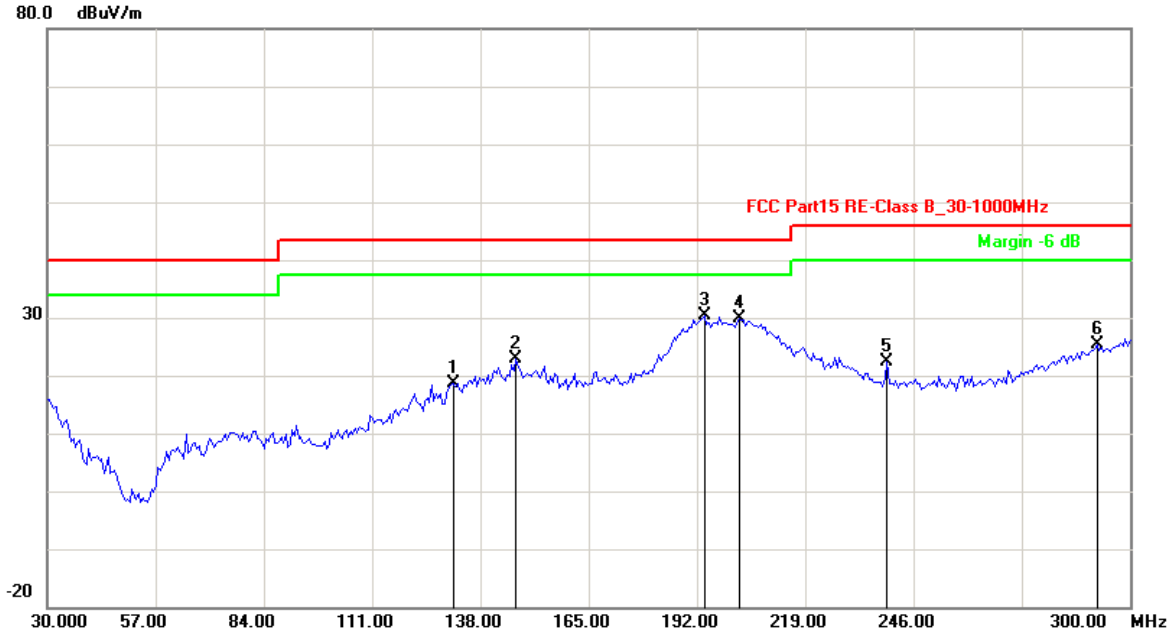
Above 1GHz

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1683.367	-1.30	43.16	41.86	74.00	-32.14	peak
2	1683.367	-1.30	28.72	27.42	54.00	-26.58	AVG
3	2873.747	5.89	43.86	49.75	74.00	-24.25	peak
4	2873.747	5.89	28.23	34.12	54.00	-19.88	AVG
5	3336.673	7.68	42.15	49.83	74.00	-24.17	peak
6	3336.673	7.68	26.28	33.96	54.00	-20.04	AVG
7	4438.878	10.84	39.22	50.06	74.00	-23.94	peak
8	4438.878	10.84	24.34	35.18	54.00	-18.82	AVG
9	6158.317	15.76	40.99	56.75	74.00	-17.25	peak
10	6158.317	15.76	25.53	41.29	54.00	-12.71	AVG
11	7613.226	18.65	38.78	57.43	74.00	-16.57	peak
12	7613.226	18.65	24.68	43.33	54.00	-10.67	AVG
Remark: Other frequency mini margin all >10 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

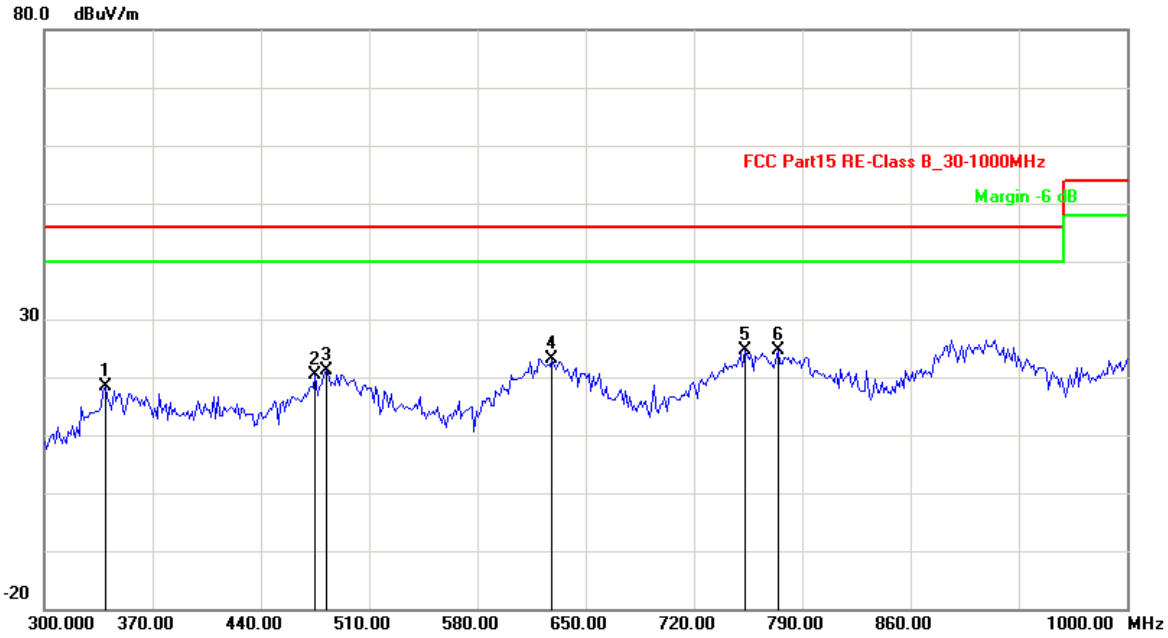
Channel:	TX –X Position Mode Middle 2444MHz	Result:	■ - passed □ - not passed
Test point:	Vertical		
Frequency range:	30MHzHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2444	3.19	92.05	95.24	114	-18.76	peak
2	2444	3.19	84.96	88.15	94	-5.85	AVG



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	131.1824	-16.98	35.61	18.63	43.50	-24.87	QP
2	146.8737	-17.04	39.87	22.83	43.50	-20.67	QP
3	193.9479	-12.27	42.62	30.35	43.50	-13.15	QP
4	202.6052	-12.50	42.29	29.79	43.50	-13.71	QP
5	239.3988	-13.08	35.51	22.43	46.00	-23.57	QP
6	291.8838	-6.78	32.06	25.28	46.00	-20.72	QP
Remark: Other frequency mini margin all >10 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn See Reverse For Terms And Conditions of Service



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	339.2786	-13.29	31.59	18.30	46.00	-27.70	QP
2	475.3507	-10.54	31.02	20.48	46.00	-25.52	QP
3	482.3647	-9.75	30.81	21.06	46.00	-24.94	QP
4	628.2565	-7.29	30.44	23.15	46.00	-22.85	QP
5	753.1062	-6.07	30.62	24.55	46.00	-21.45	QP
6	774.1483	-5.82	30.36	24.54	46.00	-21.46	QP
Remark: Other frequency mini margin all >10 dB of Limit							

Above 1GHz

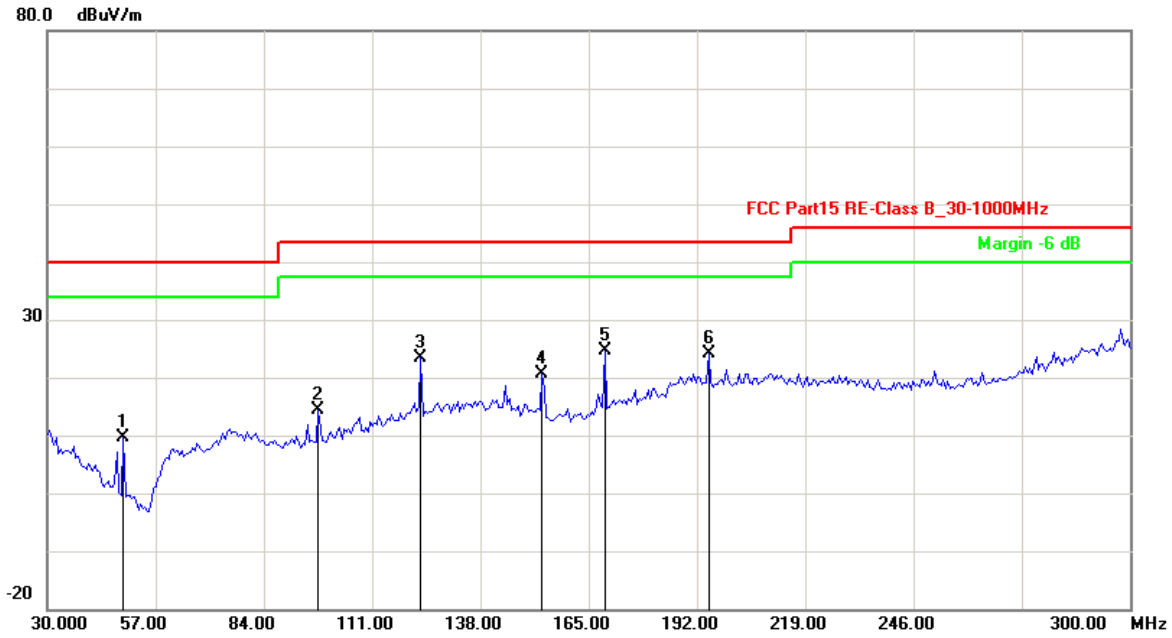
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	3380.762	7.82	42.47	50.29	74.00	-23.71	peak
2	3380.762	7.82	28.43	36.25	54.00	-17.75	AVG
3	3931.864	9.59	40.64	50.23	74.00	-23.77	peak
4	3931.864	9.59	26.27	35.86	54.00	-18.14	AVG
5	5122.244	12.55	38.50	51.05	74.00	-22.95	peak
6	5122.244	12.55	24.86	37.41	54.00	-16.59	AVG
7	6004.008	15.39	40.44	55.83	74.00	-18.17	peak
8	6004.008	15.39	24.73	40.12	54.00	-13.88	AVG
9	7591.182	18.62	39.28	57.90	74.00	-16.10	peak
10	7591.182	18.62	25.07	43.69	54.00	-10.31	AVG
11	8561.122	20.77	37.99	58.76	74.00	-15.24	peak
12	8561.122	20.77	22.51	43.28	54.00	-10.72	AVG
Remark: Other frequency mini margin all >10 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn See Reverse For Terms And Conditions of Service

Channel: Test point: Frequency range:	TX –X Position Mode High 2477MHz Horizontal 30MHz-26.5GHz	Result:	■ - passed ☐ - not passed

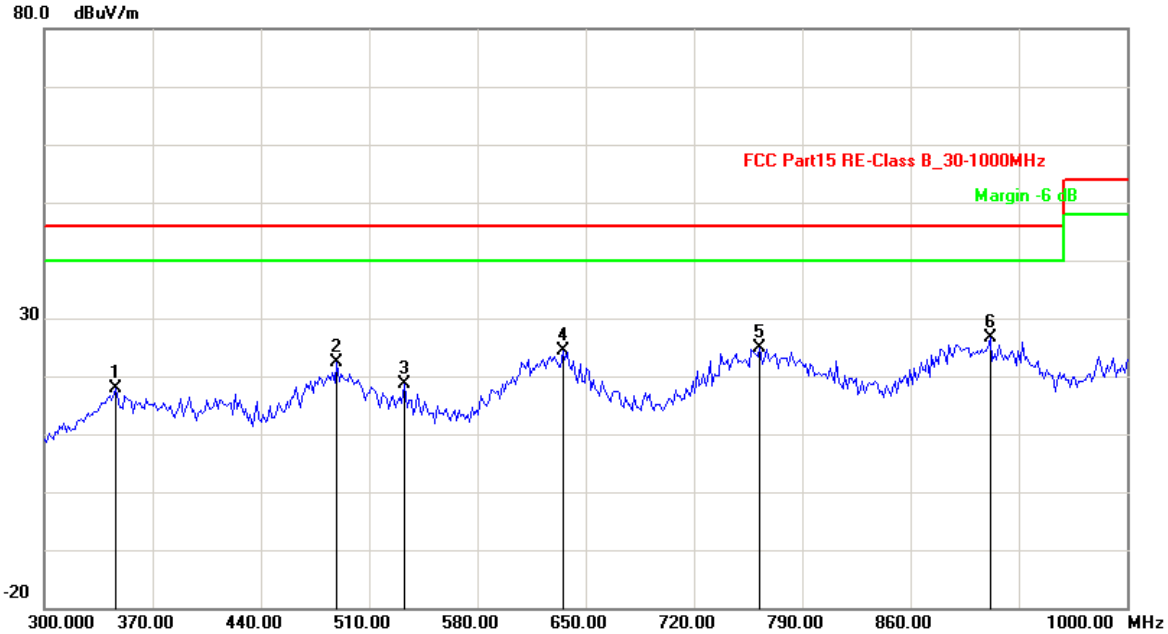
EUT	CTX-1710
Firm Name	Mun Ah Plastic Electronic Toys CO., LTD.
Operating Condition	Battery 1.5V*4
Test Condition	Ambient Temperature: 25°C Humidity: 56%
Test distance	3 Meter
Test Date:	28 March~03 April 2013
Operator	**Duke**
MODEL NO	CTX-1710

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2477	3.5	86.25	89.75	114	-24.25	peak
2	2477	3.5	79.96	83.46	94	-10.54	AVG



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	48.9379	-30.95	40.64	9.69	40.00	-30.31	QP
2	97.6353	-23.20	37.60	14.40	43.50	-29.10	QP
3	123.0661	-17.80	41.10	23.30	43.50	-20.20	QP
4	153.3667	-17.88	38.46	20.58	43.50	-22.92	QP
5	169.0581	-16.85	41.44	24.59	43.50	-18.91	QP
6	195.0301	-12.34	36.35	24.01	43.50	-19.49	QP
Remark: Other frequency mini margin all >10 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn See Reverse For Terms And Conditions of Service



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	346.2926	-13.36	31.31	17.95	46.00	-28.05	QP
2	489.3788	-9.92	32.23	22.31	46.00	-23.69	QP
3	532.8657	-14.03	32.68	18.65	46.00	-27.35	QP
4	635.2705	-7.48	31.89	24.41	46.00	-21.59	QP
5	762.9259	-5.56	30.32	24.76	46.00	-21.24	QP
6	911.6232	-4.26	30.87	26.61	46.00	-19.39	QP
Remark: Other frequency mini margin all >10 dB of Limit							

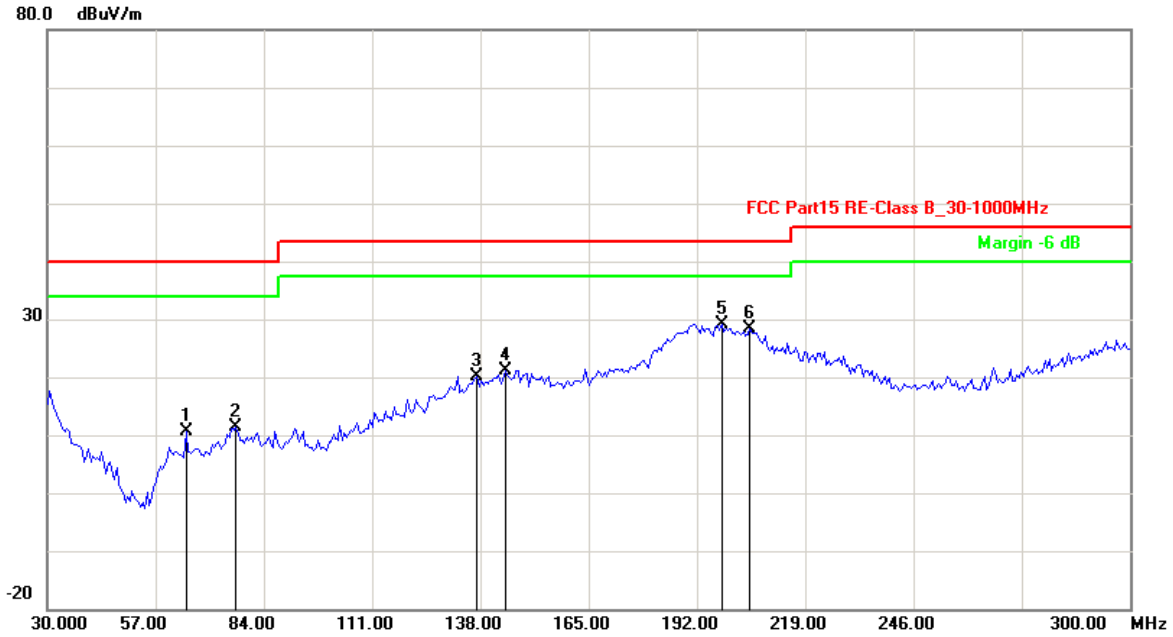
Above 1GHz

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1969.940	-1.16	43.67	42.51	74.00	-31.49	peak
2	1969.940	-1.16	29.16	28.00	54.00	-26.00	AVG
3	3028.056	6.69	43.71	50.40	74.00	-23.60	peak
4	3028.056	6.69	28.57	35.26	54.00	-18.74	AVG
5	4482.966	10.94	39.84	50.78	74.00	-23.22	peak
6	4482.966	10.94	24.48	35.42	54.00	-18.58	AVG
7	5452.906	13.62	39.26	52.88	74.00	-21.12	peak
8	5452.906	13.62	23.86	37.48	54.00	-16.52	AVG
9	7503.006	18.50	38.67	57.17	74.00	-16.83	peak
10	7503.006	18.50	25.16	43.66	54.00	-10.34	AVG
11	8164.329	19.65	39.06	58.71	74.00	-15.29	peak
12	8164.329	19.65	23.63	43.28	54.00	-10.72	AVG
Remark: Other frequency mini margin all >10 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

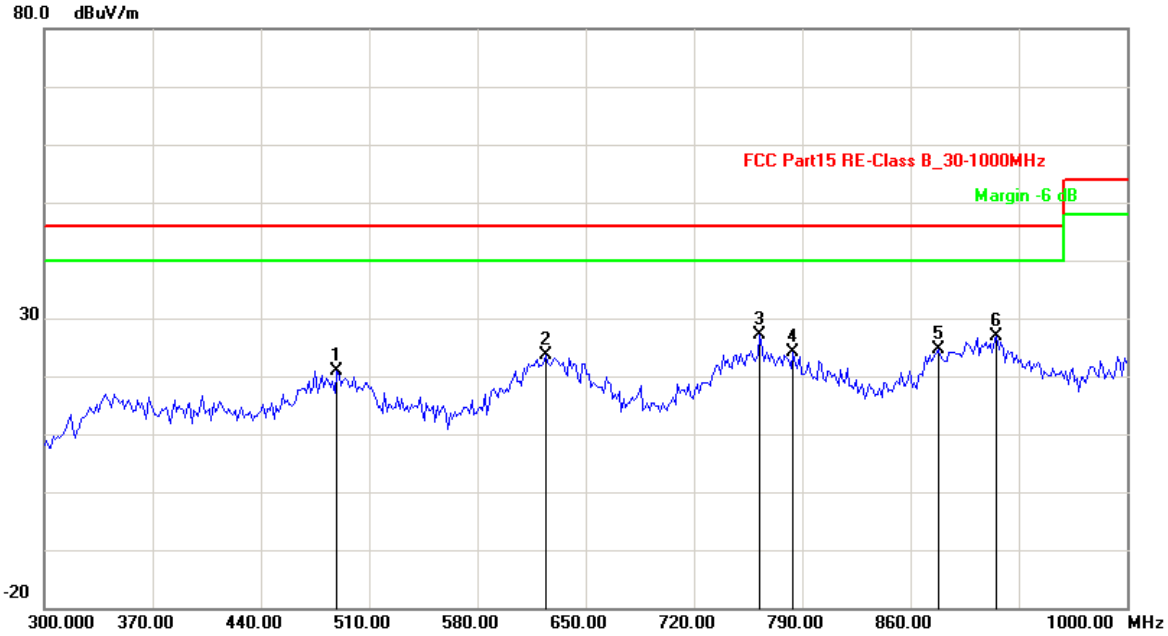
Channel:	TX –X Position Mode High 2477MHz	Result:	■ - passed □ - not passed
Test point:	Vertical		
Frequency range:	30MHzHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2477	3.5	92.22	95.72	114	-18.28	peak
2	2477	3.5	84.76	88.26	94	-5.74	AVG



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	64.6293	-23.85	34.47	10.62	40.00	-29.38	QP
2	77.0741	-21.43	32.85	11.42	40.00	-28.58	QP
3	137.1343	-16.57	36.71	20.14	43.50	-23.36	QP
4	144.1683	-16.78	37.99	21.21	43.50	-22.29	QP
5	198.2766	-12.55	41.78	29.23	43.50	-14.27	QP
6	205.3106	-12.34	40.63	28.29	43.50	-15.21	QP
Remark: Other frequency mini margin all >10 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn See Reverse For Terms And Conditions of Service



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	489.3788	-9.92	30.87	20.95	46.00	-25.05	QP
2	624.0481	-7.18	30.91	23.73	46.00	-22.27	QP
3	762.9259	-5.56	32.76	27.20	46.00	-18.80	QP
4	783.9679	-6.46	30.52	24.06	46.00	-21.94	QP
5	877.9559	-5.40	30.15	24.75	46.00	-21.25	QP
6	915.8317	-4.39	31.35	26.96	46.00	-19.04	QP
Remark: Other frequency mini margin all >10 dB of Limit							

Above 1GHz

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1705.411	-1.29	42.72	41.43	74.00	-32.57	peak
2	1705.411	-1.29	27.67	26.38	54.00	-27.62	AVG
3	3050.100	6.76	43.39	50.15	74.00	-23.85	peak
4	3050.100	6.76	28.50	35.26	54.00	-18.74	AVG
5	4306.613	10.53	39.37	49.90	74.00	-24.10	peak
6	4306.613	10.53	23.62	34.15	54.00	-19.85	AVG
7	5430.862	13.55	39.56	53.11	74.00	-20.89	peak
8	5430.862	13.55	26.29	39.84	54.00	-14.16	AVG
9	6246.493	15.98	40.30	56.28	74.00	-17.72	peak
10	6246.493	15.98	25.25	41.23	54.00	-12.77	AVG
11	8142.285	19.59	39.59	59.18	74.00	-14.82	peak
12	8142.285	19.59	25.51	45.10	54.00	-8.90	AVG
Remark: Other frequency mini margin all >10 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

9.Band Edge Compliance test

9.1. Test Equipment

Band Edge Compliance test					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	10868	2012/11
2	Log per Antenna	ROHDE & SCHWARZ	HL050	100186	2012/11
3	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2012/11

9.2. Test Information

EUT	CTX-1710
Firm Name	Mun Ah Plastic Electronic Toys CO., LTD.
Operating Condition	Battery 1.5V*4
Test Condition	Ambient Temperature: 25°C Humidity: 56%
Test distance	3 Meter
Test Date:	28 March~03 April 2013
Operator	**Duke**
MODEL NO	CTX-1710

9.3. Test procedure

1、 The EUT operates at hopping-off test mode. The lowest or highest channels are tested to verify the largest transmission and spurious emissions power at the continuous transmission mode.

2、 Max hold the trace of the setp 1,and the EUT operates at hopping-on test mode to verify the largest spurious emissions power.

9.4. Test Results

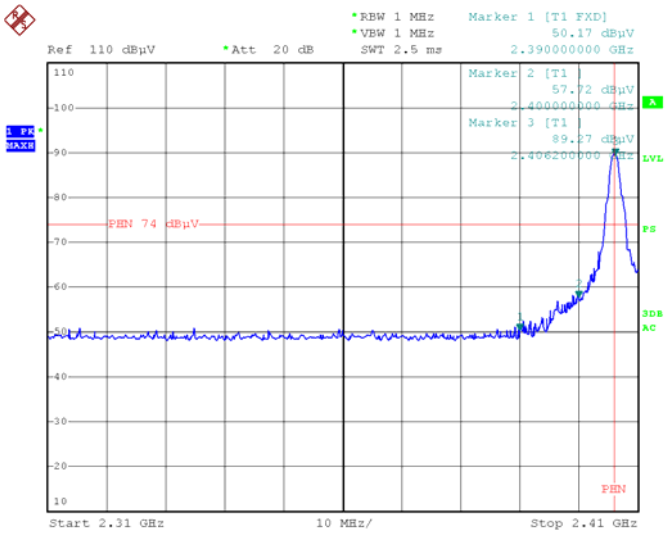
PASSED.

The EUT operates at hopping-off test mode. The lowest and highest channels are tested to verify the band edge emissions.

Test Mode	Channel Marked Frequency	Test Result Highest Emission (dBuv/m)			
		Horizontal		Vertical	
		Peak	Average	Peak	Average
Low Channel	2390MHz	50.17	38.09	58.19	38.23
	2400MHz	57.72	38.33	66.16	38.67
High Channel	2483.5MHz	58.19	38.27	65.12	38.37
	2500MHz	50.55	38.07	53.36	36.12

CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

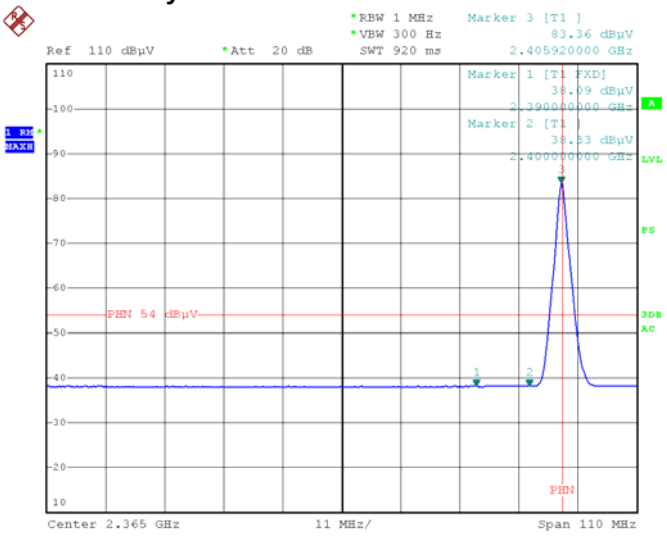
Band Edges(CH Low)
Detector mode:Peak **Polarity:Horizontal**



Date: 27.APR.2013 14:01:00

Band Edges(CH Low)
Detector mode: Average

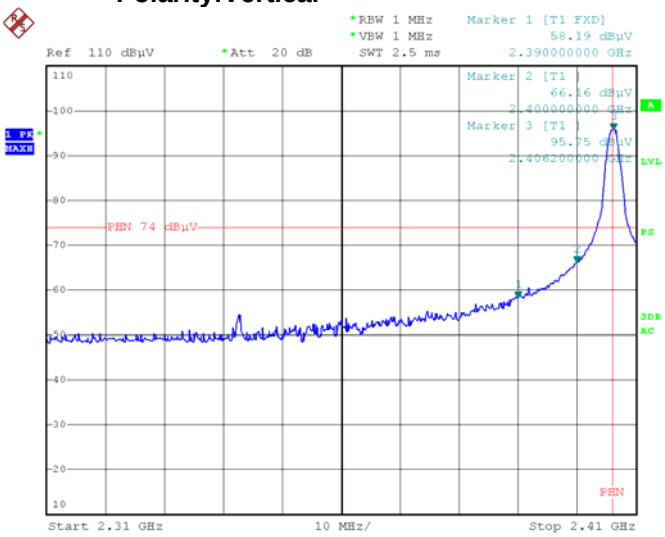
Polarity: Horizontal



Date: 27.APR.2013 13:14:49

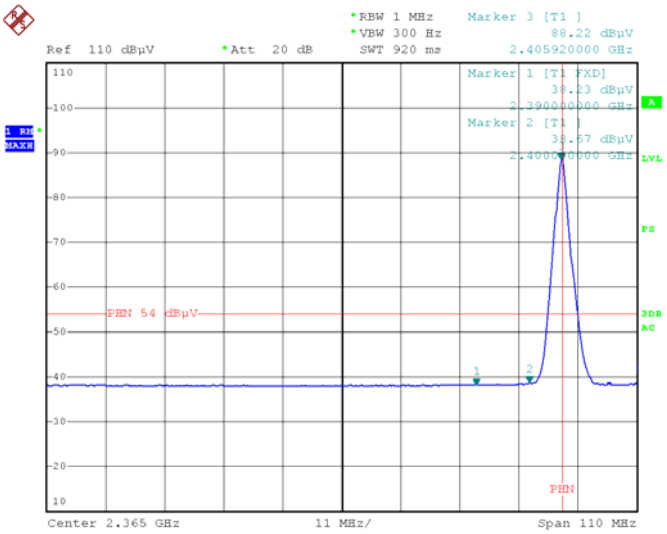
CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn See Reverse For Terms And Conditions of Service

Band Edges(CH Low)
Detector mode:Peak **Polarity:Vertical**



Date: 27.APR.2013 14:00:08

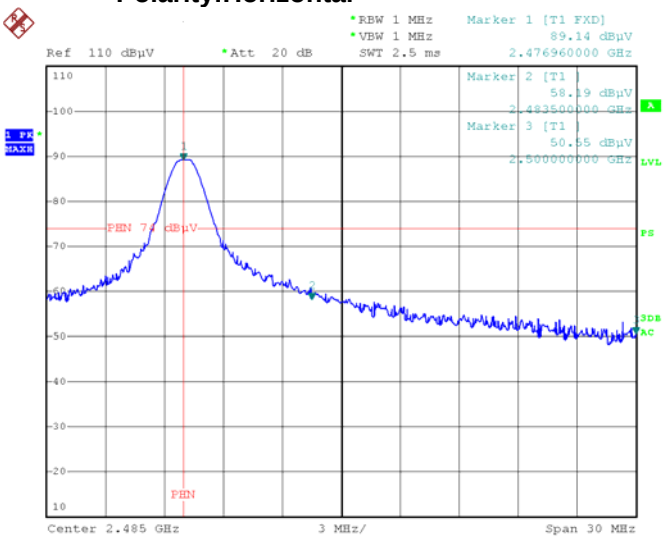
Band Edges(CH Low)
Detector mode:Average **Polarity:Vertical**



Date: 27.APR.2013 13:13:49

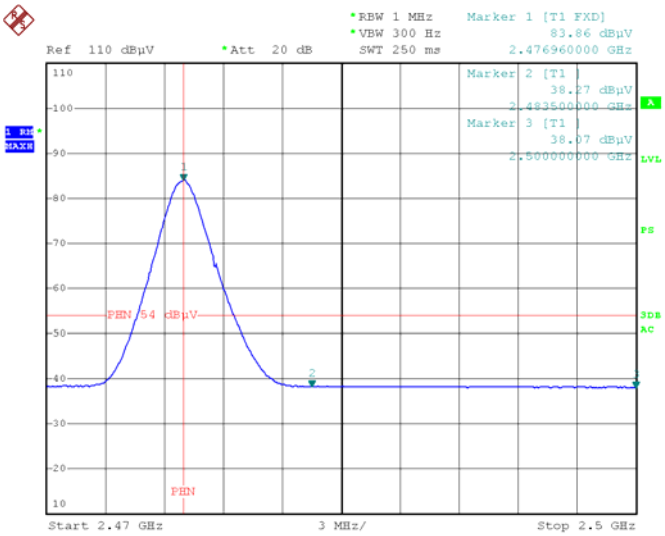
CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn See Reverse For Terms And Conditions of Service

Band Edges(CH High)
Detector mode:Peak **Polarity:Horizontal**



Date: 27.APR.2013 13:57:28

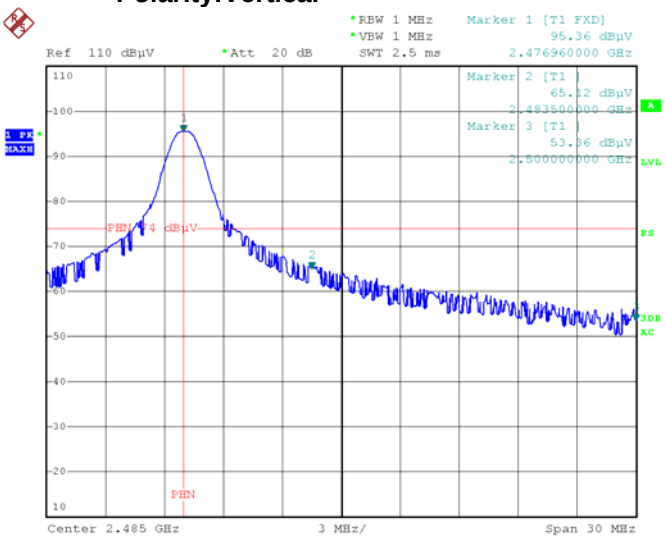
Band Edges(CH High)
Detector mode:Average **Polarity:Horizontal**



Date: 27.APR.2013 13:39:41

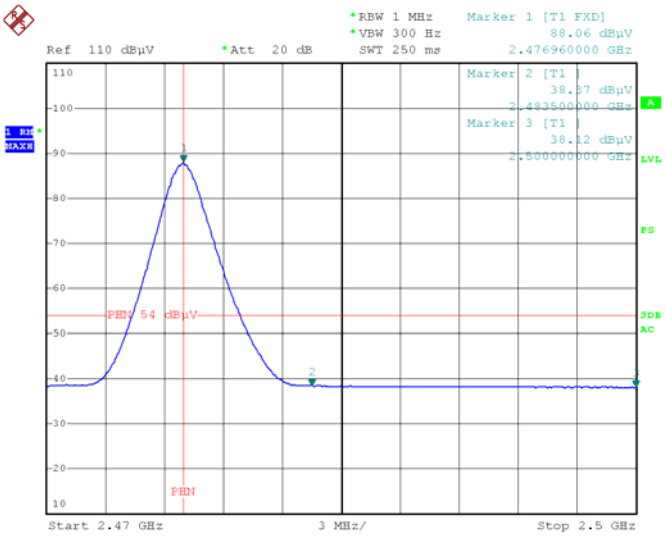
CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Band Edges(CH High)
Detector mode:Peak **Polarity:Vertical**



Date: 27.APR.2013 13:56:28

Band Edges(CH High)
Detector mode:Average **Polarity:Vertical**



Date: 27.APR.2013 13:39:16

CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

10. 20 dB Bandwidth test

10.1. Test Equipment

20 dB Bandwidth test					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	10868	2012/11
2	Log per Antenna	ROHDE & SCHWARZ	HL050	100186	2012/11
3	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2012/11

10.2. Test Information

EUT	CTX-1710
Firm Name	Mun Ah Plastic Electronic Toys CO., LTD.
Operating Condition	Battery 1.5V*4
Test Condition	Ambient Temperature: 25°C Humidity: 56%
Test distance	3 Meter
Test Date:	28 March~03 April 2013
Operator	**Duke**
MODEL NO	CTX-1710

10.3. Test Results

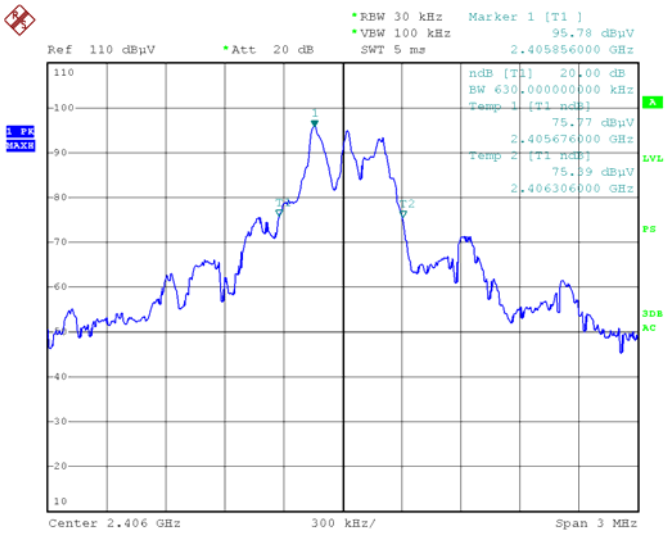
PASSED.

The testing data was attached in the next pages.

Channel	Frequency (MHz)	20dB Bandwidth (MHz)
Low	2406	0.630
Middle	2444	0.540
High	2477	0.540

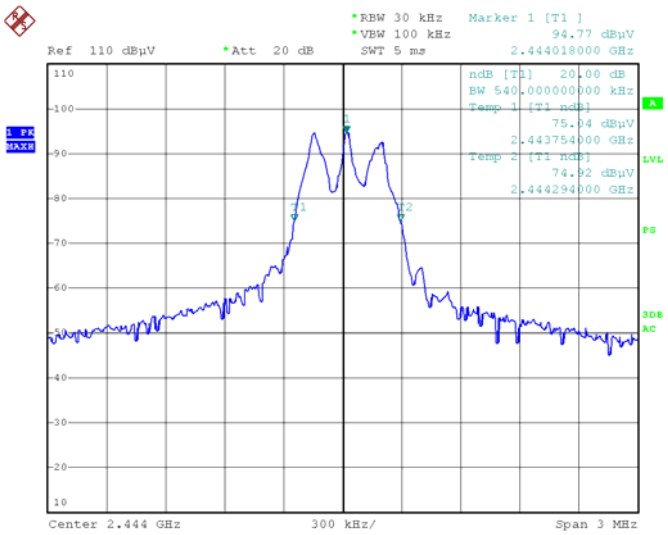
CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

20 dB Bandwidth (2406 MHz)



Date: 2.APR.2013 21:04:44

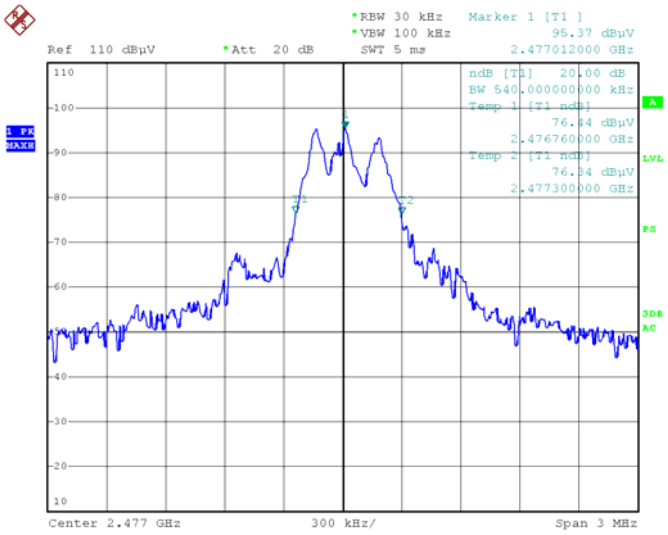
20 dB Bandwidth (2444MHz)



Date: 2.APR.2013 21:02:06

CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

20 dB Bandwidth (2477MHz)



Date: 2.APR.2013 21:01:03

CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

11. Deviation to test specifications

The following identical model(s):

N/A

Belong to the tested device:

Product description: **CTX-1710**
Model name: **CTX-1710**

CENTRE OF TESTING SERVICE CO., LTD.
Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn