

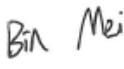
FCC PART 15B, CLASS B TEST REPORT

For

PLAY TEK LIMITED

FLAT D 26/F FORD GLORY PLAZA NO. 37-39 WING HONG STREET CHEUNG
SHA WAN KOWLOON HONG KONG

FCC ID: 2AI5408202120160718

Report Type: Original Report	Product Type: R/C CAR
Test Engineer: Bin Mei 	
Report Number: RSZ160715832-00	
Report Date: 2016-07-20	
Sunny Sun 	
Reviewed By: EMC Manager	
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Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp.

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *PLAY TEK LIMITED*'s product, model number: 0820 (FCC ID: 2AI5408202120160718) or the "EUT" in this report was a receiver of R/C CAR, which was measured approximately: 150 mm (L) x 80 mm (W) x 70 mm (H), rated with input voltage: DC 1.5V*3 AA battery. The highest operating frequency is 49.86 MHz.

Note: For the product, series model 0821, 0822, 0823, 0824, 0825 and 0820 are identical schematics, the difference among them are the model and pattern color, model 0820 was selected for fully testing, the detailed differences between them were explained and stated in the product similarity declaration letter by the applicant.

** All measurement and test data in this report was gathered from production sample serial number: 20160715. (Assigned by BACL, Shenzhen). The EUT supplied by the applicant was received on 2016-07-15.*

Objective

This test report is prepared on behalf of *PLAY TEK LIMITED* in accordance with Part 2-Subpart J, Part 15-Subparts A and B of the Federal Communication Commissions rules.

The objective of the manufacturer is to determine the compliance of the EUT with FCC Part 15 B.

Related Submittal(s)/Grant(s)

FCC PART 15.235 DXX submissions with FCC ID: 2AI5408202120160719.

Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China.

Test site at Bay Area Compliance Laboratories Corp. (Shenzhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on October 31, 2013. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2014.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in a manufacturer testing fashion.

EUT operation mode: Receiving&Running

EUT Exercise Software

No exercise software was used.

Special Accessories

No special accessory.

Equipment Modifications

No modification was made to the EUT tested.

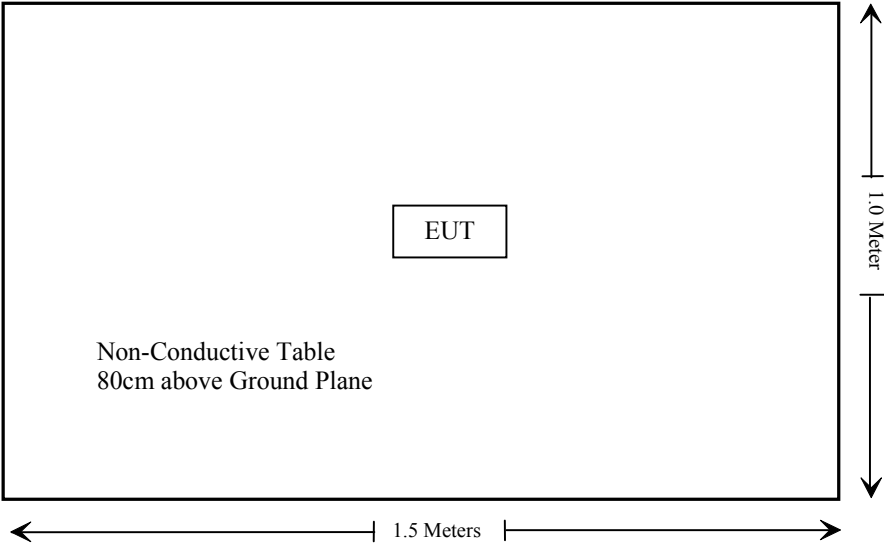
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
/	/	/	/

External I/O Cable

Cable Description	Length (m)	From/Port	To
/	/	/	/

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Results
§15.107	AC Line Conducted Emissions	Not Applicable*
§15.109	Radiated Spurious Emissions	Compliance

*Note: The EUT is powered by batteries only.

FCC §15.109 - RADIATED SPURIOUS EMISSIONS

Applicable Standard

FCC §15.109

Measurement Uncertainty

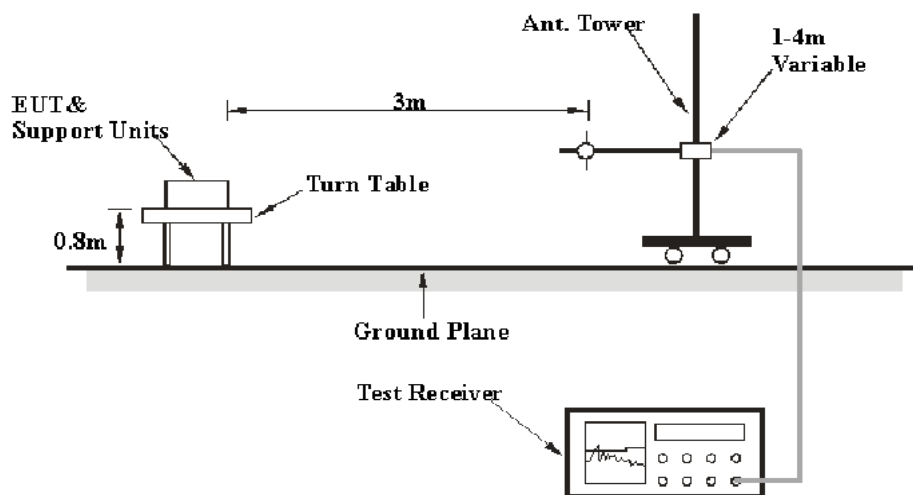
All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on CISPR 16-4-2:2011, the expanded combined standard uncertainty of radiation emissions at Bay Area Compliance Laboratories Corp. (Shenzhen) is 5.81 dB for 30MHz-1GHz and 4.88 dB for above 1GHz, 1.95dB for conducted measurement at antenna port. And the uncertainty will not be taken into consideration for the test data recorded in the report

Frequency	Polarity	Measurement uncertainty
30 MHz~200 MHz	Horizontal	4.04 dB (k=2, 95% level of confidence)
	Vertical	4.52 dB (k=2, 95% level of confidence)
200 MHz~1 GHz	Horizontal	4.72 dB (k=2, 95% level of confidence)
	Vertical	5.81 dB (k=2, 95% level of confidence)

EUT Setup

Below 1GHz:



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.4-2014. The specification used was the FCC Part 15.109 Class B limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

EMI Test Receiver Setup

The system was investigated from 30 MHz to 1 GHz.

During the radiated emission test, the EMI test receiver was set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Detector
30 MHz – 1000 MHz	100 kHz	300 kHz	120 kHz	QP

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in the Quasi-peak detector mode from 30 MHz to 1 GHz.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2015-12-15	2016-12-14
Sunol Sciences	Bi-log Antenna	JB1	A040904-2	2014-12-07	2017-12-06
HP	Amplifier	HP8447E	1937A01046	2016-05-06	2017-05-06
TDK	Chamber	Chamber A	2#	2015-10-15	2018-10-15
R&S	Auto test Software	EMC32	V9.10	NCR	NCR
Ducommun technologies	RF Cable	UFA210A-1-4724-30050U	MFR64369 223410-001	2015-10-22	2016-10-22
Ducommun technologies	RF Cable	104PEA	218124002	2015-10-22	2016-10-22
Ducommun technologies	RF Cable	RG-214	1	2016-05-06	2017-05-06
Ducommun technologies	RF Cable	RG-214	2	2016-05-06	2017-05-06

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7 dB means the emission is 7 dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Results Summary

According to the data in the following table, the EUT complied with the FCC §15.109 Class B, the worst margin reading as below:

10.81 dB at 514.843250 MHz in the Vertical polarization mode.

Refer to CISPR16-4-2:2011 and CISPR 16-4-1:2009, the measured level is in compliance with the limit if

$$L_m + U_{(Lm)} \leq L_{lim} + U_{cispr}$$

In BACL, $U_{(Lm)}$ is less than U_{cispr} , if L_m is less than L_{lim} , it implies that the EUT complies with the limit.

Test Data

Environmental Conditions

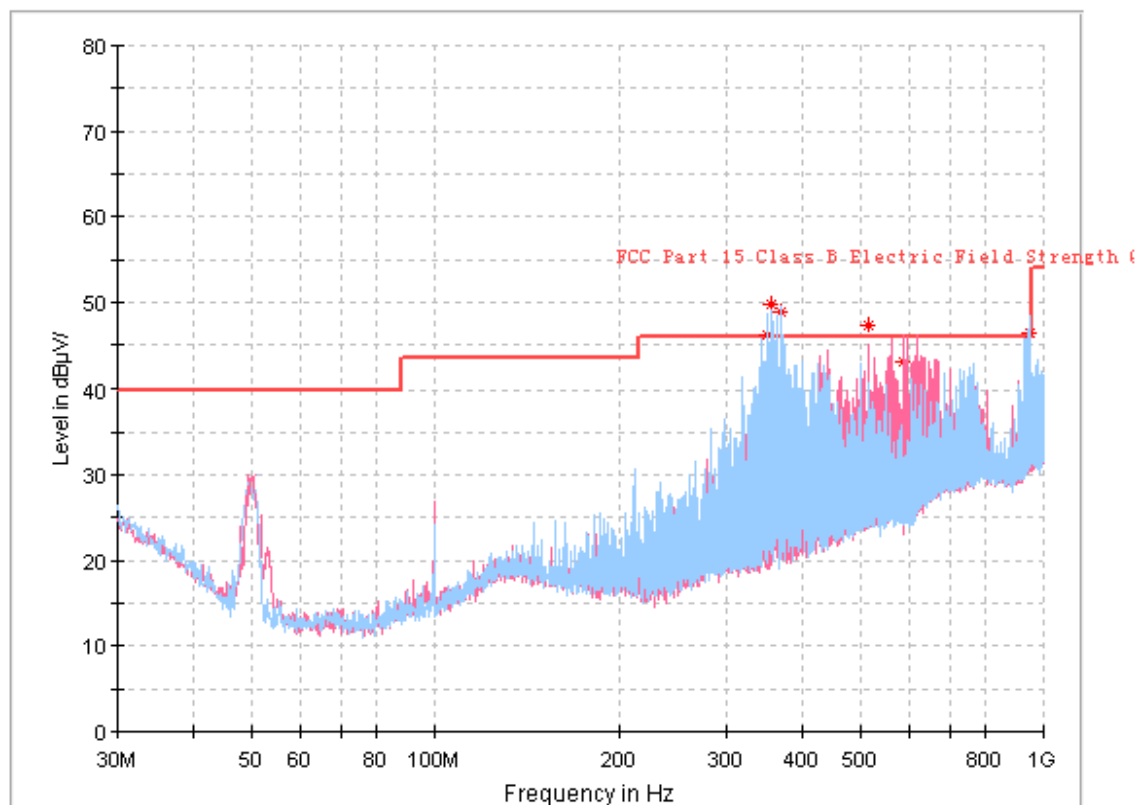
Temperature:	27 °C
Relative Humidity:	49 %
ATM Pressure:	101.0 kPa

The testing was performed by Bin Mei on 2016-07-18.

EUT Operation Mode: Receiving&Running

30 MHz – 1GHz:

Full Spectrum



Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15B	
	Reading (dBμV)	Detector (PK/QP/Ave.)		Height (cm)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
350.241500	26.51	QP	184.0	107.0	H	-5.5	21.01	46.00	19.49
355.356375	29.95	QP	0.0	100.0	H	-5.4	24.55	46.00	16.05
368.405000	33.29	QP	176.0	110.0	H	-5.0	28.29	46.00	12.71
514.843250	35.19	QP	0.0	113.0	V	-1.2	33.99	46.00	10.81
588.729375	33.72	QP	0.0	105.0	V	-0.6	33.12	46.00	12.28
946.912375	32.00	QP	0.0	220.0	H	6.2	38.2	46.00	14.00

Note:

- 1) Correction Factor=Antenna factor (RX) + cable loss – amplifier factor
- 2) Corrected Amplitude = Correction Factor + Reading
- 3) Margin = Limit - Corrected Amplitude

***** END OF REPORT *****