FCC PART 15.227

MEASUREMENT AND TEST REPORT

For

Zeeva International Limited

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FCC ID: 2ADM5-TL-0019

Report Type:	Product Type:
Original Report	Convertible Boat (Remote Controller)

Report Number:	RSZ170302830-00
Report Date:	2017-03-09
Reviewed By:	Oscar Ye Engineer
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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Zeeva International Limited's* product, model number: *TL-0019 (FCC ID: 2ADM5-TL-0019, the UPC Number is #400028431266)* or the "EUT" in this report is *a Convertible Boat (Remote Controller)*, which measured approximately: 27.3 cm (L) x 8.4 cm (W) x 3.1 cm (H), rated input voltage: DC1.5 V * 2 AA batteries.

**All measurement and test data in this report was gathered from production sample serial number: 20170302 (Assigned by BACL, Kunshan). The EUT supplied by the applicant was received on 2017-03-03.*

Objective

This report is prepared on behalf of *Zeeva International Limited* in accordance with Part 2-Subpart J, and Part 15-Subparts A, B and C of the Federal Communication Commissions rules.

The objective is to determine the compliance of EUT with FCC rules, section15.203, 15.205, 15.209 and 15.227.

Related Submittal(s)/Grant(s)

No related submittal(s).

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Kunshan). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement Uncertainty

Item		Uncertainty
RF conducted test with spectrum		±0.9dB
Radiated emission	30MHz~1GHz	±5.91dB
	Above 1G	±4.92dB
Occupied Bandwidth		±0.5kHz
Temperature		±1.0℃
Humidity		±6%

Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Kunshan) to collect test data is located on the Chenghu Lake Road, Kunshan Development Zone No.248, Kunshan, Jiangsu, China

Test site at Bay Area Compliance Laboratories Corp. (Kunshan) 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 November 06, 2014. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.10-2013.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 815570. 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

Justification

The system was configured for testing in a typical mode.

EUT Exercise Software

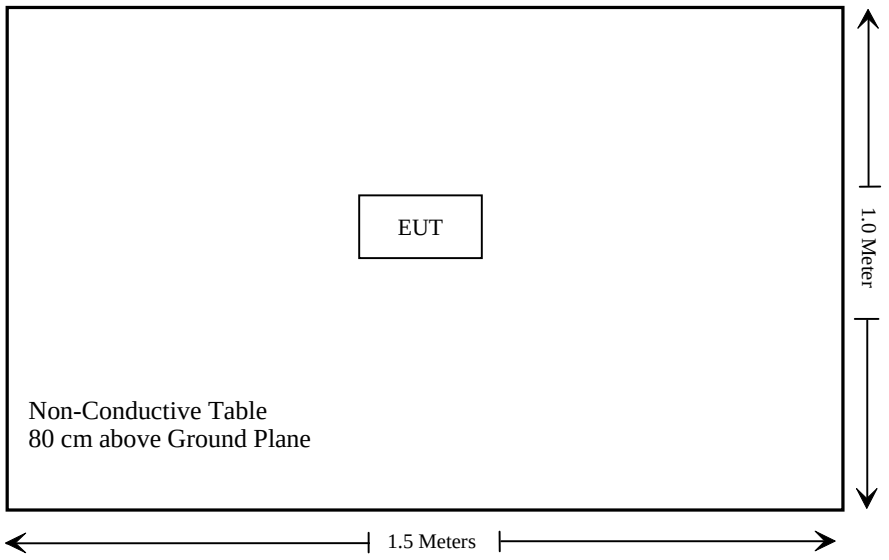
No exercise software was used.

Equipment Modifications

No modifications.

Block Diagram of Test Setup

For radiated emissions



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.203	Antenna requirement	Compliance
§15.207	Conducted Emissions	Not Applicable
§15.205, §15.209, §15.227(a), §15.227(b)	Field Strength and Restricted Band Emissions	Compliance
§15.215(c)	20dB Emission Bandwidth	Compliance

Not Applicable: The EUT is powered by battery only.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiation test					
Sonoma Instrunent	Amplifier	330	171377	2016-12-12	2017-12-12
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2016-11-25	2017-11-25
Sunol Sciences	Broadband Antenna	JB3	A090314-2	2016-01-09	2019-01-08
ETS	Passive Loop Antenna	6512	00108100	2016-01-09	2019-01-08
R&S	Auto test Software	EMC32	V 09.10.0	NCR	NCR
haojintech	Coaxial Cable	Cable-1	001	2016-12-12	2017-12-12
haojintech	Coaxial Cable	Cable-2	002	2016-12-12	2017-12-12
haojintech	Coaxial Cable	Cable-3	003	2016-12-12	2017-12-12

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

FCC§15.203 - ANTENNA REQUIREMENT

Applicable Standard

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

Antenna Connector Construction

The EUT has a monopole antenna, which the antenna gain is 0 dBi; fulfill the requirement of this section. Please refer to EUT photos.

Result: Compliant.

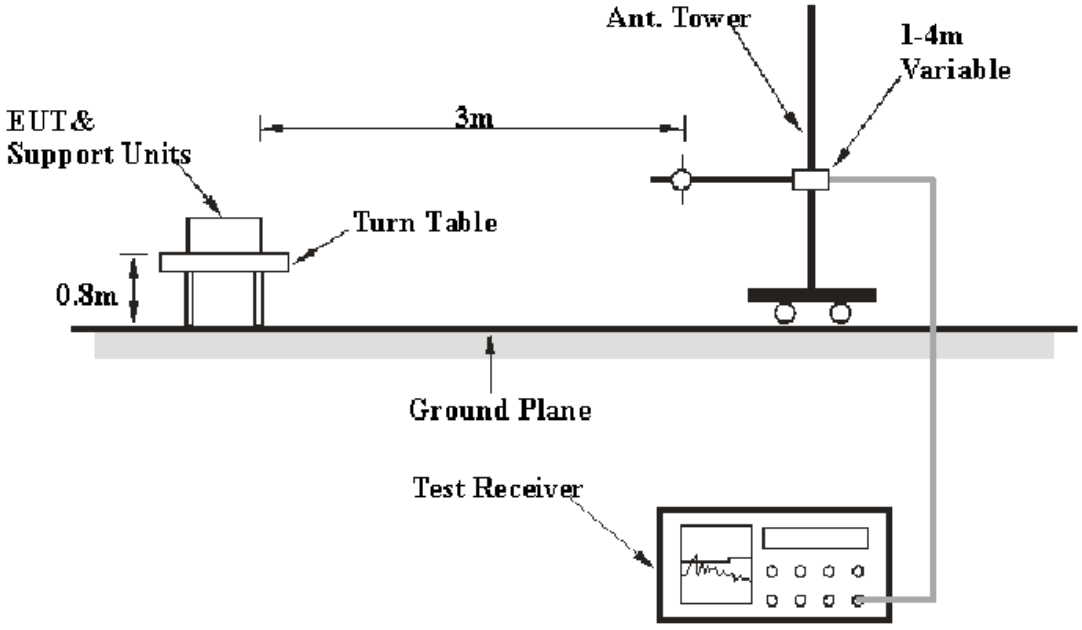
FCC§15.205, §15.209, §15.227(a), §15.227 (b) – FIELD STRENGTH AND RESTRICTED BAND EMISSIONS

Standard Applicable

According to FCC §15.227 (a), the field strength if any emission within this band shall not exceed 10,000 microvolts/meter at 3 meters.

(b) The field strength of any emissions which appear outside of this band shall not exceed the general radiated emission limits in §15.209.

EUT Setup



The radiated emission tests were performed in the 3 meters, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC Part 15.205 and 15.209 and 15.227 limits.

EMI Test Receiver Setup

The system was investigated from 9 kHz to 1000 MHz.

Corrected Amplitude & Margin Calculation

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

Corrected Amplitude = Meter Reading + Correction Factor
Correction Factor = Antenna Loss + Cable Loss - Amplifier Gain

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

Margin = Limit – Corrected Amplitude

Test Data

Environmental Conditions

Temperature:	23 ℃
Relative Humidity:	50 %
ATM Pressure:	100.1 kPa

The testing was performed by Echo Wu on 2017-03-05.

Test mode: Transmitting

Frequency	Receiver		Turntable	Rx Antenna		Corrected Factor (dB)	Corrected Amplitude (dBμV/m)	FCC Part 15.227&15.205&15.209	
(MHz)	Reading (dBμV)	Detector (PK/QP/Ave.)	Degree	Height (m)	Polar (H / V)			Limit (dBμV/m)	Margin (dB)
27.145	22.92	PK	138	1.3	/	31.00	53.92	100	46.08
27.145	13.63	Ave.	138	1.3	/	31.00	44.63	80	35.37
26.38	11.05	QP	292	1.8	/	31.00	42.05	69.54	27.49
78.50	37.65	QP	57	2.0	V	-12.88	24.77	40.0	15.23
359.80	39.81	QP	132	1.6	H	-3.39	36.42	46.0	9.58
379.20	37.97	QP	226	2.2	V	-3.20	34.77	46.0	11.23

Note:

Corrected Amplitude = Corrected Factor + Reading
Corrected Factor=Antenna factor（RX）+cable loss – amplifier factor
Margin = Limit- Corr. Amplitude
The other spurious emission which is 20dB to the limit was not recorded.

Result: Compliance

FCC§15.215(c) - 20dB EMISSION BANDWIDTH

Applicable Standard

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in § 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.

2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.

3. Measure the frequency difference of two frequencies that indicated 20dB bandwidth.

4. Repeat above procedures until all frequencies measured were complete.

Test Data

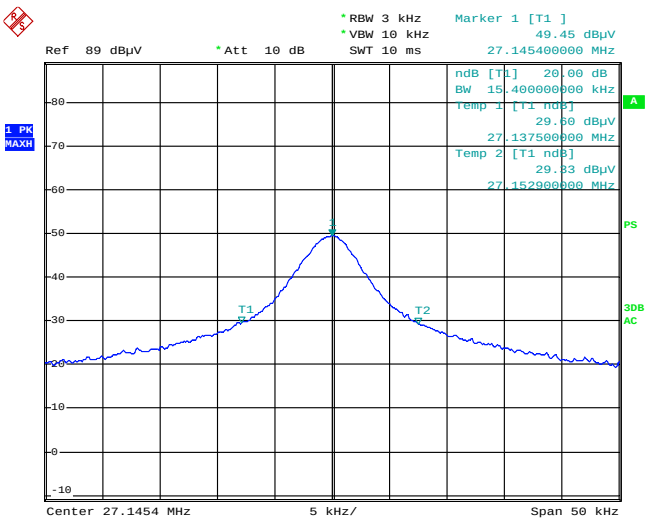
Environmental Conditions

Temperature:	23 ℃
Relative Humidity:	50 %
ATM Pressure:	100.1 kPa

The testing was performed by Echo Wu on 2017-03-09.

Test Mode: Transmitting

Please refer to the following table and plot.



EUT

Date: 9.MAR.2017 22:12:55

Fl(MHz)	Fh (MHz)	Permitted frequency range(MHz)	Result
27.1375000	27.1529000	26.96-27.28MHz	Compliant

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