



## FCC PART 15B, CLASS B

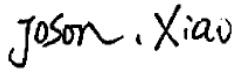
### TEST REPORT

For

### JM Manufacturing Limited

Justen Centre, 1-3/F, 46-52 Wai Ching Street, Jordan Road, Kowloon, H.K.

**FCC ID: 2AHGJJMS-YZ21419491**

<b>Report Type:</b> Original Report	<b>Product Type:</b> R/C JET SKI
<b>Test Engineer:</b> <u>Joson Xiao</u> 	
<b>Report Number:</b> <u>RSZ160202832-00</u>	
<b>Report Date:</b> <u>2016-02-16</u>	
<b>Reviewed By:</b> <u>EMC Manager</u> 	
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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.

## **TABLE OF CONTENTS**

<b>GENERAL INFORMATION.....</b>	<b>3</b>
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT).....	3
OBJECTIVE .....	3
RELATED SUBMITTAL(S)/GRANT(S).....	3
TEST FACILITY.....	3
<b>SYSTEM TEST CONFIGURATION.....</b>	<b>4</b>
DESCRIPTION OF TEST CONFIGURATION .....	4
EUT EXERCISE SOFTWARE .....	4
SPECIAL ACCESSORIES.....	4
EQUIPMENT MODIFICATIONS .....	4
SUPPORT EQUIPMENT LIST AND DETAILS .....	4
EXTERNAL I/O CABLE.....	4
BLOCK DIAGRAM OF TEST SETUP .....	5
<b>SUMMARY OF TEST RESULTS .....</b>	<b>6</b>
<b>FCC §15.109 - RADIATED SPURIOUS EMISSIONS .....</b>	<b>7</b>
APPLICABLE STANDARD .....	7
MEASUREMENT UNCERTAINTY.....	7
EUT SETUP .....	7
TEST PROCEDURE .....	8
TEST EQUIPMENT LIST AND DETAILS.....	8
CORRECTED AMPLITUDE & MARGIN CALCULATION .....	8
TEST RESULTS SUMMARY .....	8
TEST DATA .....	9

## GENERAL INFORMATION

### Product Description for Equipment under Test (EUT)

The *JM Manufacturing Limited*'s product, model number: *JMS-YZ21419 (FCC ID: 2AHGJJMS-YZ21419491)* or the "EUT" in this report was a *R/C JET SKI*, which was measured approximately: 22.2 cm (L) \* 11.3 cm (W) \* 7.4 cm (H), rated with input voltage: DC 4×1.5 V AAA battery. The highest operating frequency is 49 MHz.

*\* All measurement and test data in this report was gathered from production sample serial number: 160202 (Assigned by BACL, Shenzhen). The EUT supplied by the applicant was received on 2016-02-02.*

### Objective

This test report is prepared on behalf of *JM Manufacturing 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: 2AHGJJMS-YZ2141949.

### 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: Running

### EUT Exercise Software

No exercise software was used.

### Special Accessories

No special accessory.

### Equipment Modifications

No modification was made to the EUT tested.

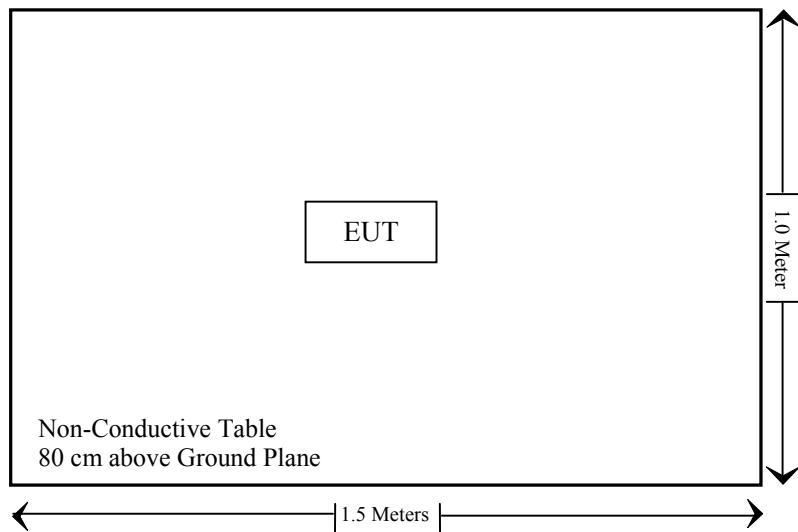
### Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Nanfu	Battery	N/A	N/A

### External I/O Cable

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

### 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

## FCC §15.109 - RADIATED SPURIOUS EMISSIONS

### Applicable Standard

FCC §15.109

### Measurement Uncertainty

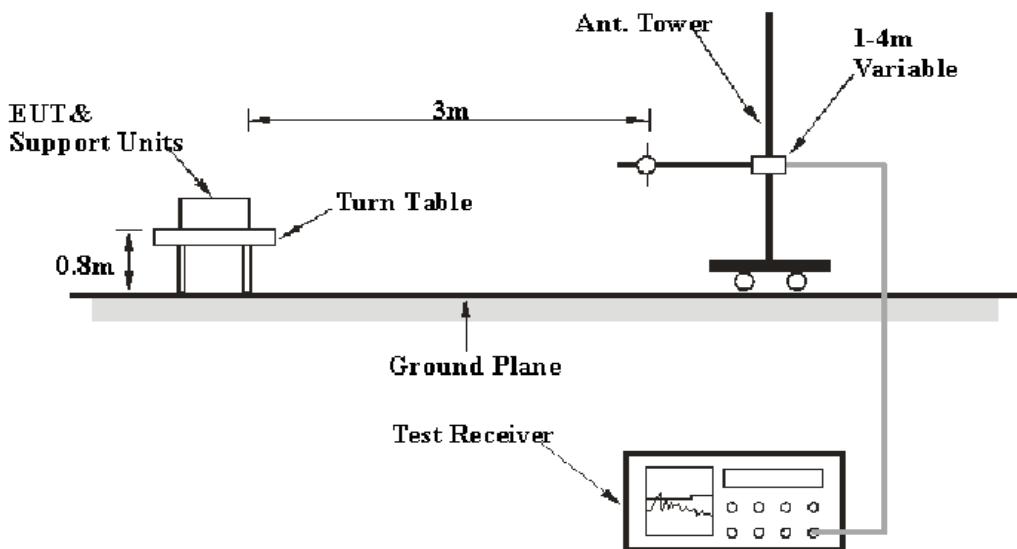
All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency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

Based on CISPR 16-4-2:2011, the expended combined standard uncertainty of radiation emissions at Bay Area Compliance Laboratories Corp. (Shenzhen) is shown in below table. And the uncertainty will not be taken into consideration for the test data recorded in the report

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

### EUT Setup

Below 1GHz:



## 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
HP	Amplifier	HP8447E	1937A01046	2015-05-06	2016-05-06
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2015-11-03	2016-11-03
Sunol Sciences	Bi-log Antenna	JB1	A040904-2	2014-12-07	2017-12-06
TDK	Chamber	Chamber A	2#	2013-10-15	2016-10-15
R&S	Auto test Software	EMC32	V9.10	NCR	NCR

\* **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:

**6.12 dB at 547.593750 MHz in the Horizontal polarization**

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

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

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

## Test Data

### Environmental Conditions

<b>Temperature:</b>	24 °C
<b>Relative Humidity:</b>	46 %
<b>ATM Pressure:</b>	101.0 kPa

The testing was performed by Joson Xiao on 2016-02-15.

EUT Operation Mode: Running

### 30 MHz – 1 GHz:

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB $\mu$ V/m)	FCC Part 15B	
	Reading (dB $\mu$ V)	Detector (PK/QP/Ave.)		Height (m)	Polar (H/V)			Limit (dB $\mu$ V/m)	Margin (dB)
97.856125	28.42	QP	181.0	2.46	H	-2.6	25.82	46.00	20.18
492.162750	41.90	QP	169.0	1.76	H	-2.8	39.10	46.00	6.90
500.832625	41.95	QP	352.0	1.92	H	-2.6	39.35	46.00	6.65
526.195250	40.61	QP	194.0	1.82	H	-2.5	38.11	46.00	7.89
547.593750	41.88	QP	192.0	1.90	H	-2.0	39.88	46.00	<b>6.12</b>
567.074000	40.30	QP	182.0	1.61	H	-1.8	38.50	46.00	7.50

#### 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 \*\*\*\*\*