

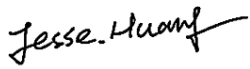
# FCC PART 15B, CLASS B TEST REPORT

For

**JM Manufacturing Limited**

Justen Centre, 1-3/F, 46-52 Wai Ching Street, Jordan Road, Kowloon, Hong Kong

**FCC ID: 2AHGJJMS9803-T49**

<b>Report Type:</b> Original Report	<b>Product Type:</b> MINI CAN R/C CAR
<b>Report Number:</b> RSZ161212832-00	
<b>Report Date:</b> 2016-12-19	
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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 *JM Manufacturing Limited's* product, model number: *JMS-YZ9803-T (FCC ID: 2AHGJJMS9803-T49)* or the "EUT" in this report was a *MINI CAN R/C CAR*, which was measured approximately: 7.1 cm (L) × 3.1 cm (W) × 2.3 cm (H), rated with input voltage: DC 1.2V lithium battery. The highest operational frequency is 49 MHz.

*\*All measurement and test data in this report was gathered from production sample serial number: 161212. (Assigned by BACL, Kunshan). The EUT supplied by the applicant was received on 2016-12-12.*

### Objective

This test report is prepared on behalf of *JM Manufacturing Limited* in accordance with Part 2-Subpart J, Part 15-Subparts A, 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: 2AHGJJMS9803-T491.

### Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

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
AC Power Lines Conducted Emissions		±3.26 dB
Radiated emission	30MHz~1GHz	±5.91dB
	Above 1G	±4.92dB

## **Test Facility**

The test site used by Bay Area Compliance Laboratories Corp. (Kunshan) to collect test data is located on the No.248 Chenghu Road, Kunshan, Jiangsu province, 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 C63.4-2014.

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

### 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

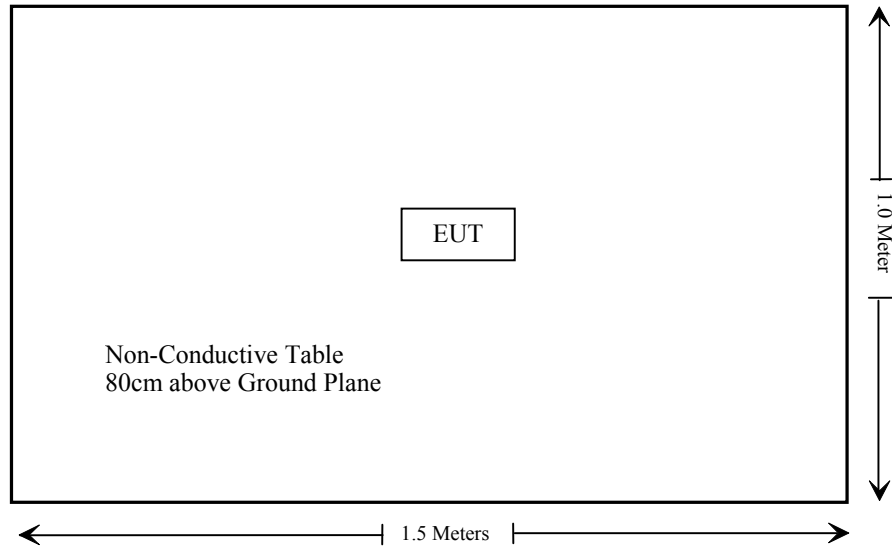
Manufacturer	Description	Model	Serial Number
Nanfu	battery	AA	/

### External I/O Cable

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

## Block Diagram of Test Setup

For radiated emissions



**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 the batteries.

**TEST EQUIPMENT LIST**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
<b>Radiated Emission Test</b>					
Sonoma Instrument	Amplifier	330	171377	2016-10-21	2017-10-21
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2015-11-25	2016-11-25
Sunol Sciences	Broadband Antenna	JB3	A090314-2	2016-01-09	2019-01-08
R&S	Auto test Software	EMC32	V 09.10.0	NCR	NCR
haojintech	Coaxial Cable	Cable-1	001	2016-09-08	2017-09-07
haojintech	Coaxial Cable	Cable-2	002	2016-09-08	2017-09-07
haojintech	Coaxial Cable	Cable-3	003	2016-09-08	2017-09-07

\* **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)



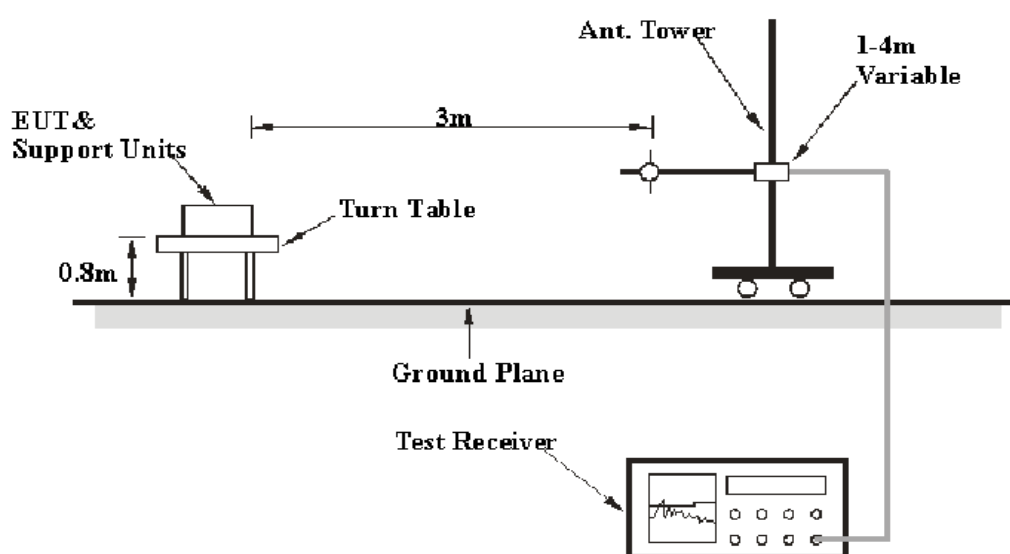
## FCC §15.109 - RADIATED SPURIOUS EMISSIONS

### Applicable Standard

FCC §15.109

### 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.

The spacing between the peripherals was 10 cm.

### 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.

## 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,

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

<b>Temperature:</b>	25 °C
<b>Relative Humidity:</b>	55 %
<b>ATM Pressure:</b>	101.0 kPa

*The testing was performed by Layne Li on 2016-12-15.*

*EUT Operation Mode:* Receiving & Running

**30 MHz – 1GHz:**

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB)	Corrected Amplitude (dBμV/m)	FCC Part 15.109	
	Reading (dBμV)	Detector (PK/QP/Ave.)		Height (m)	Polar (H / V)			Limit (dBμV/m)	Margin (dB)
30.06	25.84	QP	109	1.5	V	-4.98	20.86	40	19.14
473.83	29.38	QP	45	1.8	H	-7.21	22.17	46	23.83
542.18	29.86	QP	103	1.5	V	-5.36	24.50	46	21.50
700.38	29.79	QP	60	1.5	H	-2.45	27.34	46	18.66
836.06	34.18	QP	298	1.9	H	-1.59	32.59	46	13.41
849.25	35.26	QP	144	2.9	V	-1.59	33.67	46	12.33

**Note:**

Corrected Amplitude = Corrected Factor + Reading

Corrected Factor=Antenna factor(RX)+cable loss - amplifier factor

Margin = Limit- Corr. Amplitude

All signals exceeding 20 microvolts/meter at 3 meters have been recorded.

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