



CMA Testing and Certification Laboratories

廠商會檢定中心

TEST REPORT

Report No. : AU0041576(1) Date : 14 Jul 2016

Application No. : LU024410(0)

Client : Kid Galaxy Inc
150 Dow Street, Tower 2, Unit 425B,
Manchester, New Hampshire 03101 U.S.

Sample Description : One(1) item of submitted sample stated to be :

Sample Description	Mode number
RC Soft & Squeezable Vehicle - Fire Truck	10909
RC Soft & Squeezable Vehicle-Dump Truck	10907
RC Soft & Squeezable Vehicle - Bull Dozer	10911

Sample registration no. : RU033545-001
Radio Frequency : 27.145MHz Transmitter
Rating : 2 x 1.5V AAA size batteries
No. of submitted sample : Three (3) piece (s)

Date Received : 04 Jul 2016.

Test Period : 07 Jul 2016 to 14 Jul 2016.

Test Requested : FCC Part 15 Certification.

Test Method : 47 CFR Part 15 (10-1-15 Edition)
ANSI C63.10 – 2013


Test Result : See attached sheet(s) from page 2 to 16.

Conclusion : The submitted sample was found to comply with requirement of FCC Part 15 Subpart C.

Remark : All three models are the same in circuitry and components; and therefore model 10909 was chosen to be the representative of the test sample. The difference between the tested model and the declared model(s) is/are the model number and sample description.

For and on behalf of
CMA Industrial Development Foundation Limited

Authorized Signature : _____


Mr. WONG Lap-pong, Andrew
Manager
Electrical Division

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FCC ID: QEARCGOGO27T



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1 General Information

1.1 General Description

The equipment under test (EUT) is a transmitter for RC Soft & Squeezable Vehicle - Fire Truck. It operates at 27.145MHz and the oscillation of radio control is generated by a crystal. The EUT is powered by 2 x 1.5V AAA size batteries. There are two buttons on the EUT. When the buttons are pressed, it will transmit radio control signal to receiver.

The antenna is permanently attached in EUT and the radio output power is unable to adjust.

The brief circuit description is listed as follows:

- S1, S2 and its associated circuit act as power circuit.
- R2, R3, R4, R5, R6, R7, D1, C3, C4 and its associated circuit act as encoding circuit
- R8, R9, Q3, C7, C6, X1, C5, L1, R10 and its associated circuit act as 27.145MHz high frequency oscillatory circuit
- R11, C8, C11, Q4, R12, L2, C10, C12, L3, C13, L4, ANT and its associated circuit act as modulator and amplifier circuit



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1.2 Location of the test site

FCC Registered Test Site Number: 416666

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.10 – 2013. A Semi-Anechoic Chamber Testing Site is set up for investigation and located at:

Ground Floor, Yan Hing Centre,
9 – 13 Wong Chuk Yeung Street,
Fo Tan, Shatin,
New Territories,
Hong Kong.

Conducted emissions measurements are investigated and also taken pursuant to the procedures of ANSI C63.10 – 2013. A shielded room is located at :

Ground Floor, Yan Hing Centre,
9 – 13 Wong Chuk Yeung Street,
Fo Tan, Shatin,
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1.3 List of measuring equipment

Equipment	Manufacturer	Model No.	Serial No.	Calibration Due Date	Calibration Period
EMI Test Receiver	R&S	ESCI	100152	27 Sep 2016	1 Year
Spectrum Analyzer	R&S	FSV40	100628	09 Feb 2017	1 Year
Broadband Antenna	Schaffner	CBL6112B	2718	15 Mar 2017	2 Years
Loop Antenna	EMCO	6502	00056620	08 May 2018	2 Years
Coaxial Cable	Schaffner	RG 213/U	N/A	16 May 2017	1 Year
Coaxial Cable	Schaffner	RG 214/U	N/A	16 May 2017	1 Year

1.4 Measurement Uncertainty

The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%.

Radiated emissions

Frequency	Uncertainty (U_{lab})
30MHz ~ 200MHz (Horizontal)	4.83dB
30MHz ~ 200MHz (Vertical)	4.84dB
200MHz ~ 1000MHz (Horizontal)	4.87dB
200MHz ~ 1000MHz (Vertical)	5.94dB
1GHz~6GHz	4.41dB
6GHz~18GHz	4.64 dB

Conducted emissions

Frequency	Uncertainty (U_{lab})
150kHz~30MHz	2.64



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2 Description of the radiated emission test

2.1 Test Procedure

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.3 – 2013.

The equipment under test (EUT) was placed on a styrene-made turntable with dimensions of 1.5m x 0.4m and 0.8m high above the ground. Distance between EUT and antenna is 3m, a broadband antenna mounting on the mast received the signal strength. The turntable was rotated to maximize the emission level. The antenna was then moving along the mast from 1m up to 4m until no more higher value was found. Both horizontal and vertical polarization of the antenna were placed and investigated.

For below 30MHz, a loop antenna with its vertical plane is placed 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1 m above the ground.

The device was rotated through three orthogonal axes to determine which attitude and configuration produce the highest emission during measurement for Radiated Emission measurement.

2.2 Test Result

“#” means emissions appearing within the restricted bands shall follow the requirement of section 15.205.

The frequencies from fundamental up to the tenth harmonics were investigated, and emissions more 20dB below limit were not reported. Thus, those highest emissions were presented in next page (section 2.3).

It was found that the EUT meet the FCC requirement.



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2.3 Radiated Emission Measurement Data

Radiated emission

pursuant to

the requirement of FCC Part 15 subpart C

Environmental conditions:

Parameter	Recorded value	
Ambient temperature:	28	°C
Relative humidity:	60	%

RBW: 9 kHz (for frequency 150 kHz – 30 MHz)

120 kHz (for frequency 30 M-1000 MHz)

1 MHz (for frequency above 1 GHz)

VBW \geq 3 x RBW

Frequency (MHz)	Polarity (H/V)	Reading at 3m (dB μ V)	Antenna Factor and Cable Loss (dB/m)	Average Factor (dB)	Field Strength at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)	Detector (PK/QP/AV)
27.145	V	23.9	22.2	-7.8	38.3	80.0	-41.7	PK
54.290	V	10.0	10.0	-	20.0	40.0	-20.0	QP
81.435	V	8.1	8.8	-	16.9	40.0	-23.1	QP
#108.580	V	9.1	12.6	-	21.7	43.5	-21.8	QP
#135.735	V	8.8	13.8	-	22.6	43.5	-20.9	QP
#162.870	V	8.0	12.1	-	20.1	43.5	-23.4	QP
190.015	V	9.0	11.3	-	20.3	43.5	-23.2	QP
217.160	V	8.6	11.6	-	20.2	46.0	-25.8	QP
#244.305	V	10.4	12.7	-	23.1	46.0	-22.9	QP
#271.450	V	9.1	15.1	-	24.2	46.0	-21.8	QP



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3 Description of the Line-conducted Test

3.1 Test Procedure

Conducted emissions measurements are investigated and also taken pursuant to the procedures of ANSI C63.10 – 2013. The EUT was setup as described in the procedures, and both lines were measured.

3.2 Test Result

No measurement is required as the EUT is a battery-operated product.

3.3 Graph and Table of Conducted Emission Measurement Data

Not Applicable



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4 Photograph

4.1 Photographs of the Test Setup for Radiated Emission and Conducted Emission

For electronic filing, the photos are saved with filename QEA-RCGOGO27T_TSup.pdf.

4.2 Photographs of the External and Internal Configurations of the EUT

For electronic filing, the photos are saved with filename QEA-RCGOGO27T_ExPho.pdf and QEA-RCGOGO27T_InPho.pdf.



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5 Supplementary document

The following document were submitted by applicant, and for electronic filing, the document are saved with the following filenames:

Document	Filename
ID Label/Location	QEA-RCGOGO27T_LabelSmp.pdf
Block Diagram	QEA-RCGOGO27T_Blkdia.pdf
Schematic Diagram	QEA-RCGOGO27T_Schem.pdf
Users Manual	QEA-RCGOGO27T_UserMan.pdf
Operational Description	QEA-RCGOGO27T_OpDes.pdf

5.1 Bandwidth

The plot on saved in Appendices A.3 shows the fundamental emission is confined in the specified band. It also shows that the band edge met the 15.209 requirement at 26.96 and 27.28 MHz.

Emission at 26.96MHz = 15.58 dBuV/m

Emission at 27.28MHz = 15.78 dBuV/m

5.2 Duty cycle

The duty cycle is simply the on-time divided by the period:

The duration of one cycle = 860 us

Duration of pulse = 350 us

Number of pulse = 1

Effective period of the cycle = 350 us x 1
= 350 us

Duty Cycle = 350 us / 860 us
= 0.407

Therefore, the average factor is found by $20 \log_{10} 0.407 = -7.8\text{dB}$



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5.3 Transmission time

Not Applicable



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A3.	Bandwidth Plot	1	page
A4.	Average Factor	1	page



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A1. Photos of External Configurations



External Configuration 1



External Configuration 2

Tested by: *Stanley*
Mr. Yau Kwok Pun, Stanley

Reviewed by: *PR.*
Mr. WONG Lap-pong, Andrew



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A2. ID Label / Location



Label location



ID Label 1

Tested by: *Stanley*
Mr. Yau Kwok Pun, Stanley

Reviewed by: *PR.*
Mr. WONG Lap-pong, Andrew

FCC ID: QEARCGOGO27T



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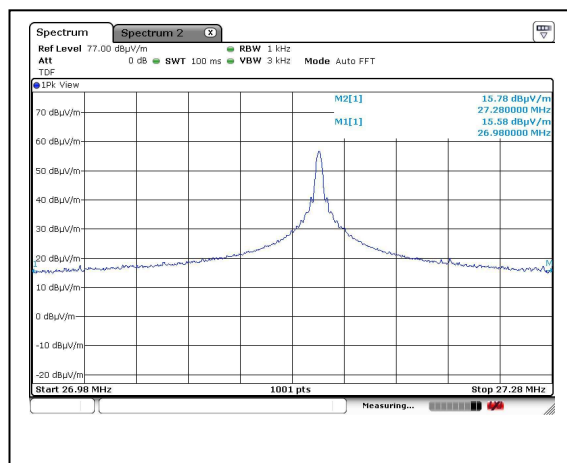
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A3. Bandwidth Plot



Bandwidth 1

Tested by: *Stanley*
Mr. Yau Kwok Pun, Stanley

Reviewed by: *PR.*
Mr. WONG Lap-pong, Andrew



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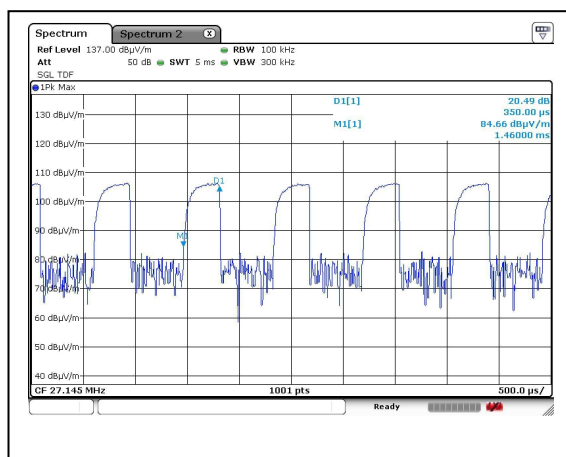
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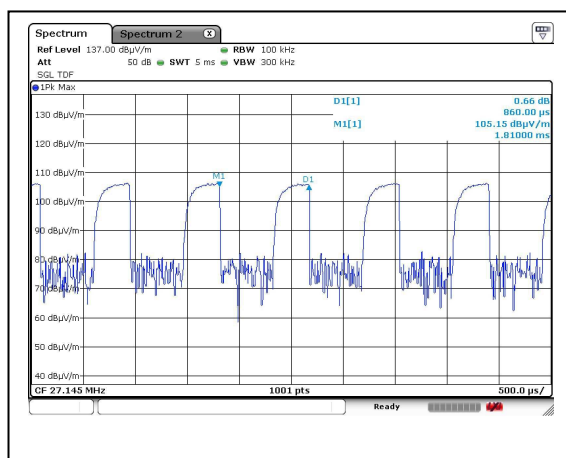
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A4. Duty Cycle



Duty Cycle 1



Duty Cycle 2

***** End of Report *****

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Mr. Yau Kwok Pun, Stanley

Reviewed by: *PR.*
Mr. WONG Lap-pong, Andrew