

# **TEST REPORT**

To:	HEXXA (HK) CO. LTD.		To:	8	
Attn:	James Kwok		Attn:	=	
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Fax:	852-35831820		Fax:	-	
E-mail:	james@rollen7.com		E-mail:		
Folder No.:	BVC	K11J	J253MTHS-B	•	
Factory name:	CAIL	XIN F	PLASTIC TOYS		
Location:			22		
Product:	RC S		STUNCT CAR EL: 8260		
			Sample No:	(5211)167-0274	
			Test date:	June 23, 2011	
			Test Requested:	FCC Part 15 - 2010	
	ımı <mark>o</mark> nnı		Test Method:	ANSI C63.4 - 2003	
			FCC ID:	ZQIR7RC826027	
The results g	given in this report are related to the tes	ted sp	ecimen of the des	cribed electrical apparatus.	
CONCLUSION:	The submitted sample was found to <u>CC</u>	MPLY	with requirement	of FCC Part 15 Subpart C.	
Authorized Signature:					
Reviewed by: K			ved by: Steven Ts	Sang	
Date: August 17, 2011 Date: August 17, 2011					

BUREAU VERITAS HONG KONG LIMITED – Kowloon Bay Office 1/F Pacific Trade Centre, 2 Kai Hing Road, Kowloon Bay, Kowloon,HONG KONG Tel: +852 2331 0888 Fax: +852 2331 0889 www.cps.bureauveritas.com

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### Location of the test laboratory

Radiated and Conducted emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2003. An Open Area Test Site and Full Anechoic Chamber (FCC Listed Site, Registration No. 642151) are set up for investigation and located at:

#### **BUREAU VERITAS HONG KONG LIMITED, EMC CENTRE**

No. 2106-2107, 21/F., Westin Centre, 26 Hung To Road, Kwun Tong, Kowloon, Hong Kong

#### List of measuring equipment

#### **Radiated Emission**

EQUIPMENT	MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATION DUE
EMI TEST RECEIVER	R&S	ESCI	100379	06-SEP-2011
LOOP ANTENNA	ETS-LINDGREN	6502	00102266	12-MAY-2012
BILOG ANTENNA	SCHAFFNER	CBL6112D	25229	02-AUG-2011
OPEN AREA TEST SITE	BVCPS	N/A	N/A	05-JUL-2011
ANECHOIC CHAMBER	ALBATROSS	M-CDC	80374004499B	26-OCT-2011
COAXIAL CABLE	SUHNER	N/A	N/A	19-SEP-2011

#### Remarks:-

N/A: Not Applicable or Not Available

The measurement instrumentation uncertainty would be taking into consideration on each of the test result



Equipment Under Test [EUT] Description of Sample:

Model Name: RC SUPER STUNCT CAR

Model Number: 8260

Rating: 3Vd.c ("AAA" size battery x 2)

#### **Description of EUT Operation:**

The Equipment Under Test (EUT) is a HEXXA (HK) CO. LTD of Radio Control toy. It is 2 sticks, 1 button & 1 switch transmitter and operating at 27.145MHz. The EUT continues to transmit while buttons is being pressed, Modulation by IC, and type is pulse modulation.

The transmitter has different control:

- 1. Left stick Forward and Backward control
- 2. Right stick Leftward and Rightward control
- 3. Switch On and Off control
- 4. Button Arm for the vehicle control

#### **Antenna Requirement (Section 15.203)**

The EUT is use of a screw-on type antenna. The antenna consists of 26cm long metal antenna. The antenna connector is custom-made and not be able to found in the market. It also cannot be replaced with other antenna other then the one bundled inside the package. The requirements of S15.203 are met. There are no deviations or exceptions to the specifications.



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#### **Radiated Emissions (Fundamental)**

Test Requirement: FCC Part 15 Section 15.227

Test Method: ANSI C63.4

Test Date(s): 2011-06-23

Temperature: 28.0 °C

Humidity: 73.0 %

Mode of Operation: Transmission mode

Tested Voltage: 3Vd.c. ("AAA" size battery x 2)

100.5 kPa

#### **Test Procedure:**

Atmospheric Pressure:

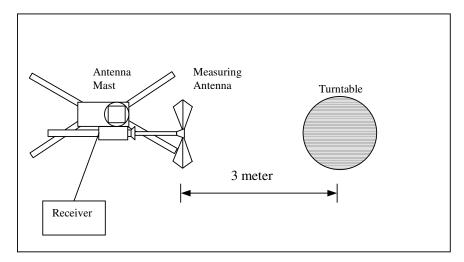
Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2003.

The equipment under test (EUT) was placed on a non-conductive turntable with dimensions of 1.5m x 1m and 0.8m high above the ground. 3m from the EUT, a broadband antenna mounting on the mast received the signal strength. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, For battery operated equipment, the equipment tests shall be perform using new battery. 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 place 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 1m above the ground.

Location: The Roof, Westin Centre, 26 Hung To Road, Kwun Tong, Kowloon, Hong Kong

#### **Test Setup: Open Area Test Site**



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Limits for Field Strength of Fundamental Emissions (FCC 47CFR 15.227):

-	The state of the s							
	Frequency Range of	Field Strength of	Field Strength of					
	Fundamental	Fundamental Emission	Fundamental Emission					
		[Peak]	[Average]					
	[MHz]	[μV/m]	[μV/m]					
ı	26.96 – 27.28	100,000 (100 dBμV/m)	10,000 (80 dBμV/m)					

#### **Measurement Data**

Test Result of (Transmission mode): PASS

**Detection mode: Peak** 

Frequency (MHz)	Polarity (H/V) and degree	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBμV/m)	Margin (dB)
27.145	V/0°	9.6	61.1	100	-38.9

#### **Detection mode: # Average**

Frequency (MHz)	Polarity (H/V) and degree	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBμV/m)	Margin (dB)
27.145	V/0°	9.6	**55.1	80	-24.9

# For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.

\*\*Duty Cycle Correction = 20Log(0.503) =-6.0dB

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 100KHz

VBW = 300KHz



#### Radiated Emissions (9kHz - 1GHz)

Test Requirement: FCC Part 15 Section 15.209

Test Method: **ANSI C63.4** Test Date(s): 2011-06-23 Temperature: 28.0 °C Humidity: 73.0 % Atmospheric Pressure: 100.5 kPa

Mode of Operation: Transmission mode

Tested Voltage: 3Vd.c. ("AAA" size battery x 2)

Limits for Radiated Emissions [FCC 47 CFR 15.209]:

Frequency Range	Quasi-Peak Limits
[MHz]	[μV/m]
1.705-30	300
30-88	100
88-216	150
216-960	200
Above960	500



**Measurement Data** 

Test Result of (Transmission mode): PASS

**Detection mode: Quasi-Peak** 

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
54.290	Н	6.7	37.8	40.0	-2.2
81.435	Н	7.1	22.6	40.0	-17.4
108.580	Н	12.0	21.7	43.5	-21.8
135.725	Н	12.2	22.4	43.5	-21.1
162.870	Н	10.6	20.5	43.5	-23.0
190.015	Н	9.6	20.6	43.5	-22.9
217.160	Н	9.9	21.9	46.0	-24.1
244.305	Н	13.2	23.0	46.0	-23.0
271.450	Н	13.2	24.1	46.0	-21.9
298.595	Н	14.4	25.8	46.0	-20.2

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
54.290	V	6.7	38.1	40.0	-1.9
81.435	V	7.1	22.4	40.0	-17.6
108.580	V	12.0	21.6	43.5	-21.9
135.725	V	12.2	22.8	43.5	-20.7
162.870	V	10.6	20.7	43.5	-22.8
190.015	V	9.6	20.7	43.5	-22.8
217.160	V	9.9	22.2	46.0	-23.8
244.305	V	13.2	23.4	46.0	-22.6
271.450	V	13.2	23.8	46.0	-22.2
298.595	V	14.4	25.3	46.0	-20.7

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 120KHz

VBW = 120KHz



#### 26dB Bandwidth of Fundamental Emission

Test Requirement: FCC 47 CFR 15.227

Test Method: ANSI C63.4:2003 (Section 13.1.7)

Test Date(s): 2011-06-23
Temperature: 28.0 °C
Humidity: 73.0 %
Atmospheric Pressure: 100.5 kPa

Mode of Operation: Transmission mode

Tested Voltage: 3Vd.c. ("AAA" size battery x 2)

#### Test Method:

The bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

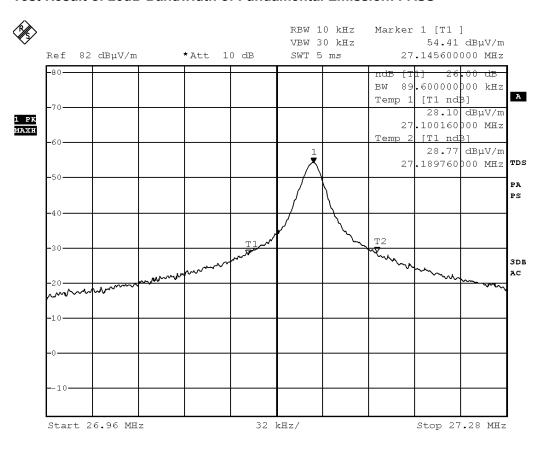
#### Limits for 26dB Bandwidth of Fundamental Emission:

Frequency	26dB Bandwidth	Limits
[MHz]	[KHz]	[MHz]
27.1456	89.6	within 26.96 - 27.28



**Measurement Data:** 

#### Test Result of 26dB Bandwidth of Fundamental Emission: PASS



Date: 23.JUN.2011 15:26:38



#### **Duty Cycle Correction During 100msec:**

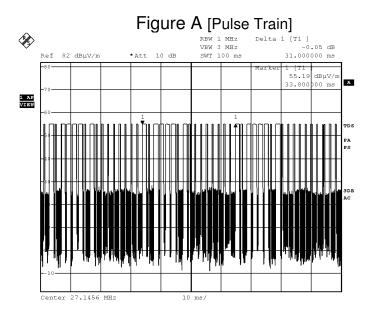
Each function key sends a different series of characters, but each packet period (31.0msec) never exceeds a series of 6 long (1.6msec) and 10 short (0.6msec) pulses. Assuming any combination of short or long pulses may be obtained due to encoding the worst case transmit duty cycle would be considered (6x1.6msec) + (10x0.6msec) per 31.0msec=50.3% duty cycle. Figure A through C show the characteristics of the pulse train for one of these functions.

Remarks:

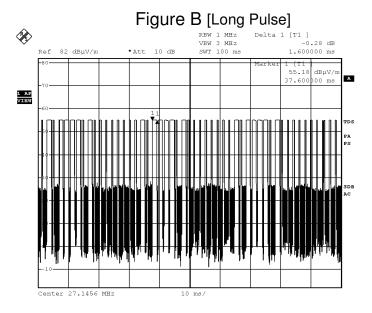
Duty Cycle Correction = 20Log(0.503) =-6.0dB

The following figures [Figure A to Figure C] show the characteristics of the pulse train for one of these functions.





Date: 23.JUN.2011 15:43:12



Date: 23.JUN.2011 15:43:39

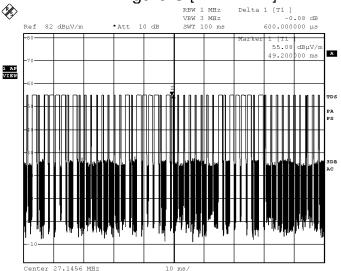
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# Figure C [Short Pulse]



Date: 23.JUN.2011 15:43:55



### **Photographs of EUT**

Front View of the product



Rear View of the product



**Battery compartment** 



**Battery Cover** 





### Front View of the product (Internal)



Rear View of the product (Internal)



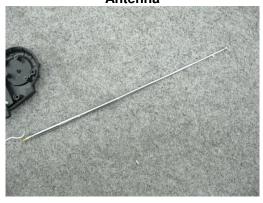
**Inner Circuit Top View** 



**Inner Circuit Bottom View** 



**Antenna** 





Measurement of Radiated Emission Test Set Up



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