
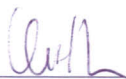





TEST REPORT No: (5213)168-0872

## TEST REPORT

To:	HOBBYENGINE MODEL LTD.	To:	-
Attn:	Joey / Wendy	Attn:	-
Address:	Room 619, 6/F., Peninsula Center, 67 Mody Road, Tsimshatsui East, Kowloon, HK	Address:	-
Fax:	852 31000183	Fax:	-
E-mail:	<a href="mailto:yuchangl@gb-ts.com">yuchangl@gb-ts.com</a> / <a href="mailto:info@hobbyengine.com.hk">info@hobbyengine.com.hk</a> / <a href="mailto:labtest@gb-ts.com">labtest@gb-ts.com</a> / <a href="mailto:joeysiu@hobbyengine.com.hk">joeysiu@hobbyengine.com.hk</a>	E-mail:	-
Folder No.:	---		
Factory name:	TAISHAN GOLDEN HARVEST PLASTIC & ELECTRONIC MFG LTD.		
Location:	NO.3 Industrial Zone of Sanba, Baisha Town, Taishan City, Guangdong Province, China		
Product:	2.4GHz Wireless Remote Control Toy		
		Sample No:	(5213)168-0872
		Test date:	June 25, 2013 to June 26, 2013
		Test Requested:	FCC Part 15 - 2011
		Test Method:	ANSI C63.4 - 2009
		FCC ID:	QW70701
The results given in this report are related to the tested specimen of the described electrical apparatus.			
CONCLUSION: The submitted sample was found to <b>COMPLY</b> with requirement of FCC Part 15 Subpart C.			
Authorized Signature:			
			
Reviewed by: Keith Yeung		Approved by: Steven Tsang	
Date: July 22, 2013		Date: July 22, 2013	

**BUREAU VERITAS HONG KONG LIMITED –**  
**Kowloon Bay Office**  
 1/F Pacific Trade Centre,  
 2 Kai Hing Road, Kowloon Bay,  
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This report is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. Our report is limited to the test samples identified herein. The results set forth in this report are not necessarily indicative or representative of the statistical quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof. You shall have thirty days from receipt of this report to request additional testing of the samples or to notify us of any errors or omissions relating to our report, provided, however, such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.



**TEST REPORT No: (5213)168-0872**

## **Test Result Summary**

<b>EMISSION TEST</b>			
<b>Test requirement: FCC Part 15 - 2011</b>			
Test Condition	Test Method	Test Result	
		Pass	Failed
Radiated Emission Test, 9kHz to 40GHz	ANSI C63.4	<input checked="" type="checkbox"/>	<input type="checkbox"/>

## **Report Revision & Sample Re-submit History:**

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## TEST REPORT No: (5213)168-0872

### Location of the test laboratory

Radiated and Conducted emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2009. 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	28-JAN-2014
LOOP ANTENNA	ETS-LINDGREN	6502	00102266	13-AUG-2013
BILOG ANTENNA	SCHAFFNER	CBL6112D	25229	12-SEP-2013
OPEN AREA TEST SITE	BVCPS	N/A	N/A	09-JUL-2013
ANECHOIC CHAMBER	ALBATROSS	M-CDC	80374004499B	05-FEB-2014
COAXIAL CABLE	SUHNER	N/A	N/A	24-SEP-2013

#### Remarks:-

N/A : Not Applicable or Not Available

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



## TEST REPORT No: (5213)168-0872

### Equipment Under Test [EUT]

#### Description of Sample:

Model Name: 2.4GHz Wireless Remote Control Toy

Model Number: 0703

Rating: 9Vd.c. ("AA" size battery x 6)

Additional Model Number: 0701, 0702, 0704, ,0704W, 0705, 0706, 0707, 0708, 0709, 0710, 0711, 0711W, 0712, 0713, 0714, 0715, 0716, 0717, 0718, 0719, 0720, 0721, 0722, 0723, 0724, 0725, 0726, 0727, 0728, 0729, 0730, 0731, 0732, 0733, 0734, 0735, 0736, 0737, 0738, 0739, 0740, 0741, 0742, 0743, 0744, 0745, 0746, 0747, 0748, 0749, 0750, 0751, 0752, 0753, 0754, 0755, 0756, 0757, 0758, 0759, 0760, 0761, 0762, 0763, 0764, 0765, 0766, 0767, 0768, 0769, 0770, 0771, 0772, 0773, 0774, 0775, 0776, 0777, 0778, 0779, 0780, 0781, 0782, 0783, 0784, 0785, 0786, 0787, 0788, 0789, 0790, 0791, 0792, 0793, 0794, 0795, 0796, 0797, 0798, 0799

Additional Model Information: Declare the Circuit, PCB layout and Electrical parts of the products are identical to the basic model, except the model number.

## TEST REPORT No: (5213)168-0872

### Description of EUT Operation:

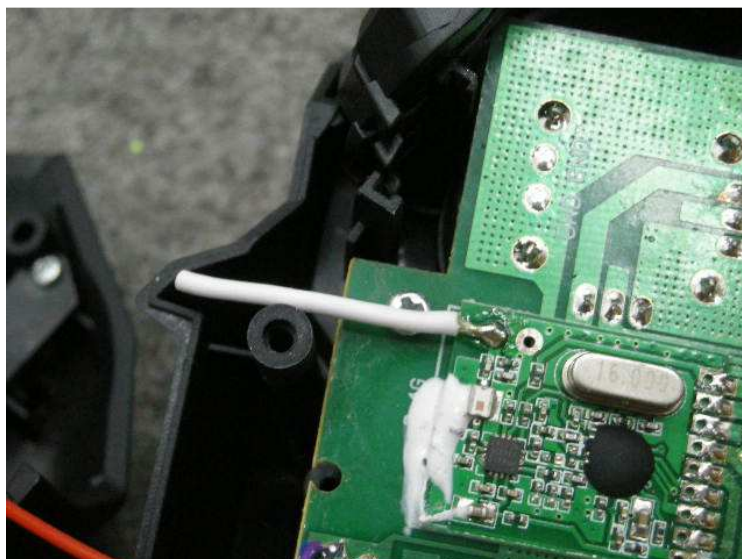
The Equipment Under Test (EUT) is a **HOBBYENGINE MODEL LTD** of Remote Control Transmitter. It is a 1 switch, 8 buttons and 2 sticks transceiver and operating at 2413MHz to 2479MHz. The lowest, middle and highest frequencies were tested and the results are shown in the report. The EUT transmit while buttons is being pressed or sticks are being pushed or pulled, Modulation by IC, and type is GFSK.

The transmitter has different control:

1. ON/OFF switch – ON/OFF control
2. Left stick – control left spin
3. Right stick – control right spin
4. L1 button – control working platform left turn
5. L2 button – control main arm tilt up
6. L3 button – control dipper arm move up
7. L4 button – control bucket move down
8. R1 button – control working platform right turn
9. R2 button – control main arm tilt down
10. R3 button – control dipper arm move down
11. R4 button – control bucket move up

### Antenna Requirement (Section 15.203)

The EUT is use of a permanently antenna. It is soldered on the PCB. The antenna is not replaceable or user serviceable. The requirements of S15.203 are met. There are no deviations or exceptions to the specifications.



**TEST REPORT No: (5213)168-0872**

## Test Results

### Radiated Emissions (Fundamental)

Test Requirement: FCC Part 15 Section 15.249  
Test Method: ANSI C63.4  
Test Date(s): 2013-06-26  
Temperature: 31.0 °C  
Humidity: 75.0 %  
Atmospheric Pressure: 100.2 kPa  
Mode of Operation: Transmission mode  
Tested Voltage: 9Vd.c. ("AA" size battery x 6)

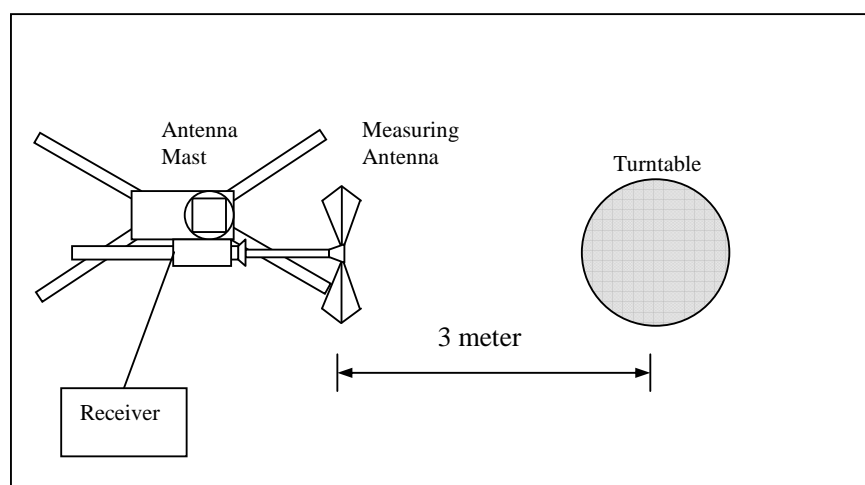
### Test Procedure:

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2009.

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 performed 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.

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

### Test Setup: Open Area Test Site





## TEST REPORT No: (5213)168-0872

### Limits for Field Strength of Fundamental Emissions [FCC 47CFR 15.249]:

Frequency Range of Fundamental [MHz]	Field Strength of Fundamental Emission (Average) [mV/m]	Field Strength of Harmonics Emission (Average) [μV/m]
2400-2483.5	50	500

### Measurement Data

#### Test Result of (Transmission mode, Lowest frequency): PASS

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBμV/m)	Limit at 3m – Peak (dBμV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBμV/m)	Limit at 3m – Average (dBμV/m)	Margin - Average (dB)
2413.05	H	-2.7	-20.0	81.5	114.0	-32.5	**61.5	94.0	-32.5
2413.05	V	-2.7	-20.0	88.9	114.0	-25.1	**68.9	94.0	-25.1

#### Test Result of (Transmission mode, Middle frequency): PASS

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBμV/m)	Limit at 3m – Peak (dBμV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBμV/m)	Limit at 3m – Average (dBμV/m)	Margin - Average (dB)
2441.05	H	-2.7	-20.0	108.2	114.0	-5.8	**88.2	94.0	-5.8
2441.05	V	-2.7	-20.0	112.3	114.0	-1.7	**92.3	94.0	-1.7

#### Test Result of (Transmission mode, Highest frequency): PASS

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBμV/m)	Limit at 3m – Peak (dBμV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBμV/m)	Limit at 3m – Average (dBμV/m)	Margin - Average (dB)
2479.05	H	-2.7	-20.0	107.7	114.0	-6.3	**87.7	94.0	-6.3
2479.05	H	-2.7	-20.0	111.9	114.0	-2.1	**91.9	94.0	-2.1

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

\*\*Duty Cycle Correction =  $20\log(0.046) = -26.7\text{dB}$ .

\*\*Therefore, -20dB is taken.

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz

VBW = 1MHz



## TEST REPORT No: (5213)168-0872

### Radiated Emissions (Spurious Emission)

Test Requirement: FCC Part 15 Section 15.249  
 Test Method: ANSI C63.4  
 Test Date(s): 2013-06-26  
 Temperature: 31.0 °C  
 Humidity: 75.0 %  
 Atmospheric Pressure: 100.2 kPa  
 Mode of Operation: Transmission mode  
 Tested Voltage: 9Vd.c. ("AA" size battery x 6)

### Measurement Data

#### Test Result of (Transmission mode, Lowest frequency): PASS

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBμV/m)	Limit at 3m – Peak (dBμV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBμV/m)	Limit at 3m – Average (dBμV/m)	Margin - Average (dB)
4826.10	H	6.3	-20.0	61.2	74.0	-12.8	**41.2	54.0	-12.8
7239.15	H	13.5	-20.0	61.2	74.0	-12.8	**41.2	54.0	-12.8
9652.20	H	13.2	-20.0	61.4	74.0	-12.6	**41.4	54.0	-12.6
12065.25	H	18.5	-20.0	61.1	74.0	-12.9	**41.1	54.0	-12.9
14478.30	H	19.2	-20.0	61.9	74.0	-12.1	**41.9	54.0	-12.1
16891.35	H	25.4	-20.0	61.4	74.0	-12.6	**41.4	54.0	-12.6
19034.40	H	27.3	-20.0	62.1	74.0	-11.9	**42.1	54.0	-11.9
21717.45	H	29.3	-20.0	62.2	74.0	-11.8	**42.2	54.0	-11.8
24130.50	H	32.1	-20.0	62.1	74.0	-11.9	**42.1	54.0	-11.9
26543.55	H	33.9	-20.0	63.1	74.0	-10.9	**43.1	54.0	-10.9

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

\*\*Duty Cycle Correction =  $20\log(0.046) = -26.7\text{dB}$ .

Therefore, -20dB is taken.

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz  
VBW = 1MHz





## TEST REPORT No: (5213)168-0872

### Measurement Data

### Test Result of (Transmission mode, Lowest frequency): PASS

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBμV/m)	Limit at 3m – Peak (dBμV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBμV/m)	Limit at 3m – Average (dBμV/m)	Margin - Average (dB)
4826.10	V	6.3	-20.0	62.9	74.0	-11.1	**42.9	54.0	-11.1
7239.15	V	13.5	-20.0	61.7	74.0	-12.3	**41.7	54.0	-12.3
9652.20	V	13.2	-20.0	62.5	74.0	-11.5	**42.5	54.0	-11.5
12065.25	V	18.5	-20.0	61.1	74.0	-12.9	**41.1	54.0	-12.9
14478.30	V	19.2	-20.0	61.0	74.0	-13.0	**41.0	54.0	-13.0
16891.35	V	25.4	-20.0	61.8	74.0	-12.2	**41.8	54.0	-12.2
19034.40	V	27.3	-20.0	62.6	74.0	-11.4	**42.6	54.0	-11.4
21717.45	V	29.3	-20.0	63.4	74.0	-10.6	**43.4	54.0	-10.6
24130.50	V	32.1	-20.0	61.7	74.0	-12.3	**41.7	54.0	-12.3
26543.55	V	33.9	-20.0	62.1	74.0	-11.9	**42.1	54.0	-11.9

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

\*\*Duty Cycle Correction =  $20\log(0.046) = -26.7\text{dB}$ .

Therefore, -20dB is taken.

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz  
VBW = 1MHz

## TEST REPORT No: (5213)168-0872

### Measurement Data

### Test Result of (Transmission mode, Middle frequency): PASS

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBμV/m)	Limit at 3m – Peak (dBμV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBμV/m)	Limit at 3m – Average (dBμV/m)	Margin - Average (dB)
4882.10	H	6.3	-20.0	62.1	74.0	-11.9	**42.1	54.0	-11.9
7323.15	H	13.5	-20.0	60.9	74.0	-13.1	**40.9	54.0	-13.1
9764.20	H	13.2	-20.0	61.2	74.0	-12.8	**41.2	54.0	-12.8
12205.25	H	18.5	-20.0	61.5	74.0	-12.5	**41.5	54.0	-12.5
14646.30	H	19.2	-20.0	61.3	74.0	-12.7	**41.3	54.0	-12.7
17087.35	H	25.4	-20.0	61.3	74.0	-12.7	**41.3	54.0	-12.7
19528.40	H	27.3	-20.0	61.8	74.0	-12.2	**41.8	54.0	-12.2
21969.45	H	29.3	-20.0	62.4	74.0	-11.6	**42.4	54.0	-11.6
24410.50	H	32.1	-20.0	62.0	74.0	-12.0	**42.0	54.0	-12.0
26851.55	H	33.9	-20.0	62.2	74.0	-11.8	**42.2	54.0	-11.8

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBμV/m)	Limit at 3m – Peak (dBμV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBμV/m)	Limit at 3m – Average (dBμV/m)	Margin - Average (dB)
4882.10	V	6.3	-20.0	62.2	74.0	-11.8	**42.2	54.0	-11.8
7323.15	V	13.5	-20.0	61.9	74.0	-12.1	**41.9	54.0	-12.1
9764.20	V	13.2	-20.0	61.6	74.0	-12.4	**41.6	54.0	-12.4
12205.25	V	18.5	-20.0	61.1	74.0	-12.9	**41.1	54.0	-12.9
14646.30	V	19.2	-20.0	61.1	74.0	-12.9	**41.1	54.0	-12.9
17087.35	V	25.4	-20.0	62.4	74.0	-11.6	**42.4	54.0	-11.6
19528.40	V	27.3	-20.0	62.5	74.0	-11.5	**42.5	54.0	-11.5
21969.45	V	29.3	-20.0	62.4	74.0	-11.6	**42.4	54.0	-11.6
24410.50	V	32.1	-20.0	62.5	74.0	-11.5	**42.5	54.0	-11.5
26851.55	V	33.9	-20.0	62.7	74.0	-11.3	**42.7	54.0	-11.3

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

\*\*Duty Cycle Correction =  $20\log(0.046) = -26.7\text{dB}$ .

Therefore, -20dB is taken.

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz

VBW = 1MHz

## TEST REPORT No: (5213)168-0872

### Measurement Data

### Test Result of (Transmission mode, Highest frequency): PASS

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBμV/m)	Limit at 3m – Peak (dBμV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBμV/m)	Limit at 3m – Average (dBμV/m)	Margin - Average (dB)
4958.10	H	6.3	-20.0	60.8	74.0	-13.2	**40.8	54.0	-13.2
7437.15	H	13.5	-20.0	60.8	74.0	-13.2	**40.8	54.0	-13.2
9916.20	H	13.2	-20.0	61.8	74.0	-12.2	**41.8	54.0	-12.2
12395.25	H	18.5	-20.0	61.4	74.0	-12.6	**41.4	54.0	-12.6
14874.30	H	19.2	-20.0	61.6	74.0	-12.4	**41.6	54.0	-12.4
17353.35	H	25.4	-20.0	62.0	74.0	-12.0	**42.0	54.0	-12.0
19832.40	H	27.3	-20.0	61.5	74.0	-12.5	**41.5	54.0	-12.5
22311.45	H	29.3	-20.0	61.9	74.0	-12.1	**41.9	54.0	-12.1
24790.50	H	32.1	-20.0	62.0	74.0	-12.0	**42.0	54.0	-12.0
27269.55	H	33.9	-20.0	62.2	74.0	-11.8	**42.2	54.0	-11.8

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBμV/m)	Limit at 3m – Peak (dBμV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBμV/m)	Limit at 3m – Average (dBμV/m)	Margin - Average (dB)
4958.10	V	6.3	-20.0	62.3	74.0	-11.7	**42.3	54.0	-11.7
7437.15	V	13.5	-20.0	61.7	74.0	-12.3	**41.7	54.0	-12.3
9916.20	V	13.2	-20.0	62.7	74.0	-11.3	**42.7	54.0	-11.3
12395.25	V	18.5	-20.0	61.9	74.0	-12.1	**41.9	54.0	-12.1
14874.30	V	19.2	-20.0	61.9	74.0	-12.1	**41.9	54.0	-12.1
17353.35	V	25.4	-20.0	62.2	74.0	-11.8	**42.2	54.0	-11.8
19832.40	V	27.3	-20.0	62.2	74.0	-11.8	**42.2	54.0	-11.8
22311.45	V	29.3	-20.0	62.2	74.0	-11.8	**42.2	54.0	-11.8
24790.50	V	32.1	-20.0	61.8	74.0	-12.2	**41.8	54.0	-12.2
27269.55	V	33.9	-20.0	62.4	74.0	-11.6	**42.4	54.0	-11.6

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

\*\*Duty Cycle Correction =  $20\log(0.046) = -26.7\text{dB}$ .

Therefore, -20dB is taken.

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz

VBW = 1MHz



## TEST REPORT No: (5213)168-0872

### Radiated Emissions (30MHz – 2.4GHz)

Test Requirement: FCC Part 15 Section 15.209  
Test Method: ANSI C63.4  
Test Date(s): 2013-06-26  
Temperature: 31.0 °C  
Humidity: 75.0 %  
Atmospheric Pressure: 100.2 kPa  
Mode of Operation: On mode / Charge mode  
Tested Voltage: 9Vd.c. ("AA" size battery x 6)

#### Limits for Radiated Emissions [FCC 47 CFR 15.209]:

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



**TEST REPORT No: (5213)168-0872**

**Measurement Data**

**Test Result of (On mode, battery operated): PASS**

**Detection mode: Quasi-Peak**

Frequency (MHz)	Polarity (H/V)	Field Strength at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
190.20	H	37.6	43.5	-5.9
218.28	H	38.4	46.0	-7.6
223.84	H	39.2	46.0	-6.8
221.16	H	32.1	46.0	-13.9
358.00	H	33.5	46.0	-12.5
749.92	H	36.7	46.0	-9.3

Frequency (MHz)	Polarity (H/V)	Field Strength at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
190.20	V	30.6	43.5	-12.9
218.28	V	31.2	46.0	-14.8
223.84	V	32.3	46.0	-13.7
221.16	V	36.9	46.0	-9.1
358.00	V	36.1	46.0	-9.9
749.92	V	39.7	46.0	-6.3

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 120KHz  
VBW = 120KHz



## TEST REPORT No: (5213)168-0872

### Frequency range of Fundamental Emission

Test Requirement: FCC 47 CFR 15.249  
Test Method: ANSI C63.4:2009 (Section 13.1.7)  
Test Date(s): 2013-06-26  
Temperature: 31.0 °C  
Humidity: 75.0 %  
Atmospheric Pressure: 100.2 kPa  
Mode of Operation: On mode  
Tested Voltage: 9Vd.c. ("AA" size battery x 6)

#### 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 Frequency range of Fundamental Emission:

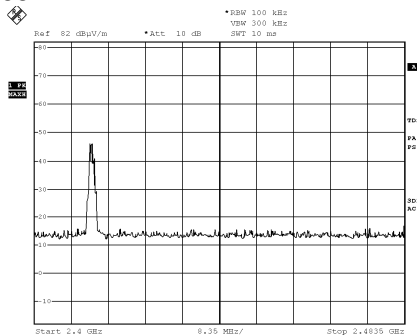
Frequency [MHz]	FCC Limits [MHz]
2413.05 – 2479.05	2400 – 2483.5



**TEST REPORT No: (5213)168-0872**

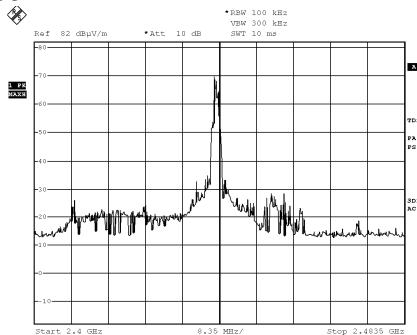
**Measurement Data :**

**Test Result of Frequency Range of Fundamental Emission: PASS**  
**Lowest Frequency – 2413.05MHz**



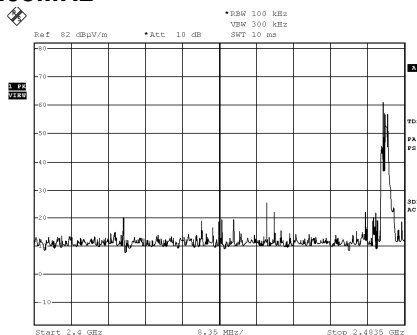
Date: 26.JUN.2013 13:46:56

**Middle Frequency – 2441.05MHz**



Date: 26.JUN.2013 13:53:23

**Highest Frequency – 2479.05MHz**



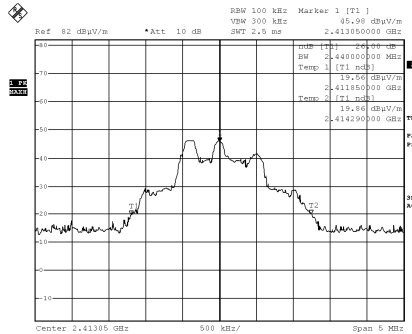
Date: 26.JUN.2013 13:57:38

## TEST REPORT No: (5213)168-0872

### Measurement Data :

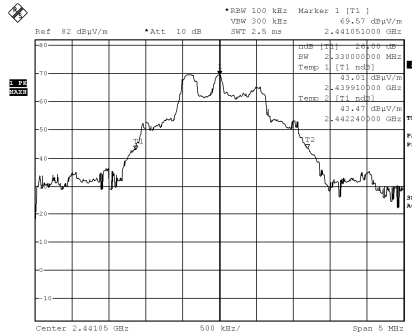
### Test Result of 26dB Bandwidth of Fundamental Emission: PASS

#### Lowest Frequency – 2413.05MHz



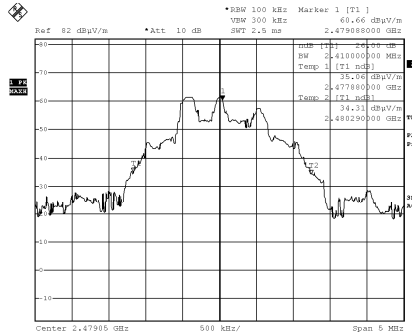
Date: 26.JUN.2013 13:49:34

#### Middle Frequency – 2441.05MHz



Date: 26.JUN.2013 13:54:09

#### Highest Frequency – 2479.05MHz



Date: 26.JUN.2013 13:58:19



## TEST REPORT No: (5213)168-0872

### Duty Cycle Correction During 100msec:

Each function key sends a different series of characters, but each packet period (100msec) never exceeds a series of 23 pulses (0.2msec). Assuming any combination of short and long pulses maybe obtained due to encoding the worst case transmit duty cycle would be considered  $(23 \times 0.2)$  per 100msec = 4.6% duty cycle.

Remarks:

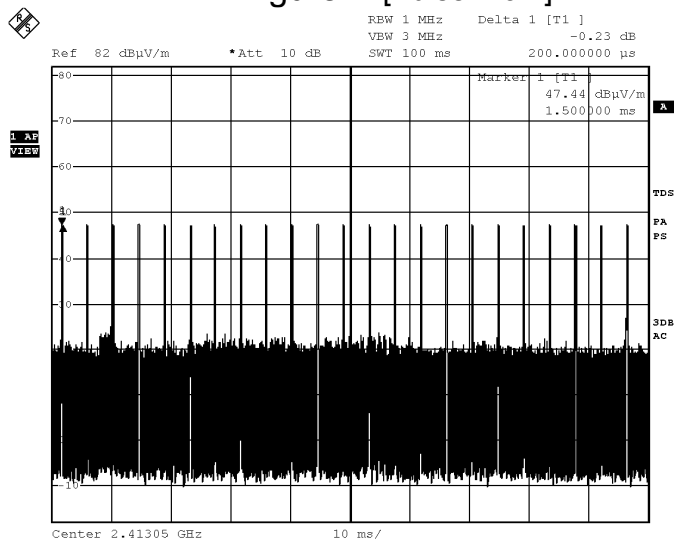
Duty Cycle Correction =  $20\text{Log}(0.046) = -26.7\text{dB}$   
Therefore, -20dB is taken.

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

**TEST REPORT No: (5213)168-0872**

**Measurement Data :**

**Figure A [Pulse Train]**



Date: 26.JUN.2013 14:04:22

## TEST REPORT No: (5213)168-0872

### Photographs of EUT

**Front View of the product**



**Front View of the product**



**Battery Compartment**



**Battery Cover**



**TEST REPORT No: (5213)168-0872**

**Photographs of EUT**

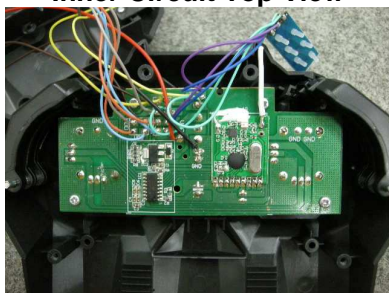
**Inner Circuit Top View**



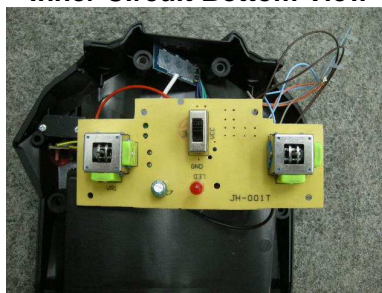
**Inner Circuit Bottom View**



**Inner Circuit Top View**



**Inner Circuit Bottom View**





**TEST REPORT No: (5213)168-0872**

**Measurement of Radiated Emission Test Set Up**



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