

APPLICATION FOR VERIFICATION
On Behalf of
China Industries Ltd. t/a Wow! Stuff
Stunt Buggy Xtreme
Model No.: TX-1013

FCC ID: YCR-TX-1013HA

Prepared for : China Industries Ltd. t/a Wow! Stuff
Address : Creative Industries Centre, Wolverhampton Science Park,
Wolverhampton, WV10 9TG UK
Prepared by : Accurate Technology Co., Ltd.
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Report No. : ATE20151785
Date of Test : Aug 12-20, 2015
Date of Report : Aug 21, 2015

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Test Report Declaration

Applicant& address : China Industries Ltd. t/a Wow! Stuff
Creative Industrial Centre, Wolverhampton Science Park,
Wolverhampton, WV10 9TG UK

Manufacturer& address : China Industries Ltd. t/a Wow! Stuff
Creative Industrial Centre, Wolverhampton Science Park,
Wolverhampton, WV10 9TG UK

Product : Stunt Buggy Xtreme

Model No. : TX-1013

Trade name : /

Measurement Procedure Used:


FCC Rules and Regulations Part 15 Subpart C 15.227 FCC/ANSI C63.10-2013

The device described above is tested by Accurate Technology Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C 15.205 15.227(a) (b) and FCC Part 15.209 limits. The measurement results are contained in this test report and Accurate Technology Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.


This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Accurate Technology Co., Ltd.

Date of Test : Aug 12-20, 2015

Date of Report : Aug 21, 2015

Prepared by : 

(Mark Chen, Engineer)

Approved & Authorized Signer : 

(Sean Liu, Manager)

1. TEST RESULTS SUMMARY

Test Items	Test Standard	Test Results
Antenna Requirement	Section 15.203	PASS
Restricted Band of Operation	Section 15.205	PASS
Conducted Emission	Section 15.207(a)	N/A
Radiated Spurious Emissions	Section 15.209	PASS
Field Strength	Section 15.227(a)	PASS
Out of Band Emissions	Section 15.227(b)	PASS

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

The submitted sample is a Stunt Buggy Xtreme. The sample is powered by DC 9V.

		Stunt Buggy Xtreme
Frequency	:	27.145MHz
Number of Channels	:	1
Modulation Type	:	GFSK
Type of Antenna	:	External Antenna
Max antenna gain	:	0dBi
Power Supply	:	DC 9V(Battery)

2.2. Special Accessory and Auxiliary Equipment

N/A

2.3. Description of Test Facility

EMC Lab : Accredited by TUV Rheinland Shenzhen, May 10, 2004

Listed by FCC
The Registration Number is 253065
Listed by FCC
The Registration Number is 752051

Listed by Industry Canada
The Registration Number is 5077A-1
Listed by Industry Canada
The Registration Number is 5077A-2

Accredited by China National Accreditation Committee for Laboratories
The Certificate Registration Number is L3193

Name of Firm : Accurate Technology Co., Ltd.
Site Location : F1, Bldg. A&D, Changyuan New Material Port, Keyuan Rd., Science & Industry Park, Nanshan District, Shenzhen 518057, P.R. China

2.4. Measurement Uncertainty

Conducted emission expanded uncertainty : U=2.23dB, k=2
Power disturbance expanded uncertainty : U=2.92dB, k=2
Radiated emission expanded uncertainty : U=3.08dB, k=2
(9kHz-30MHz)
Radiated emission expanded uncertainty : U=4.42dB, k=2
(30MHz-1000MHz)
Radiated emission expanded uncertainty : U=4.06dB, k=2
(Above 1GHz)

3. POWER LINE CONDUCTED MEASUREMENT

3.1. For Power Line Conducted Emission

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCS30	100307	Jan. 11, 2015	1 Year
2.	L.I.S.N.	Schwarzbeck	NLSK8126	8126431	Jan. 11, 2015	1 Year
3.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100815	Jan. 11, 2015	1 Year
4.	50Ω Coaxial Switch	Anritsu Corp	MP59B	620028393 3	Jan. 11, 2015	1 Year
Expanded Uncertainty: U= 2.23dB, k=2						

3.2. Power Line Conducted Emission Measurement Limits (Class B)

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15—0.50	66—56*	56—46*
0.50—5.00	56	46
5.00—30.0	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

3.3. Power Line Conducted Emission Measurement Results

There are not any AC ports. Therefore, the test is not applicable and skipped.

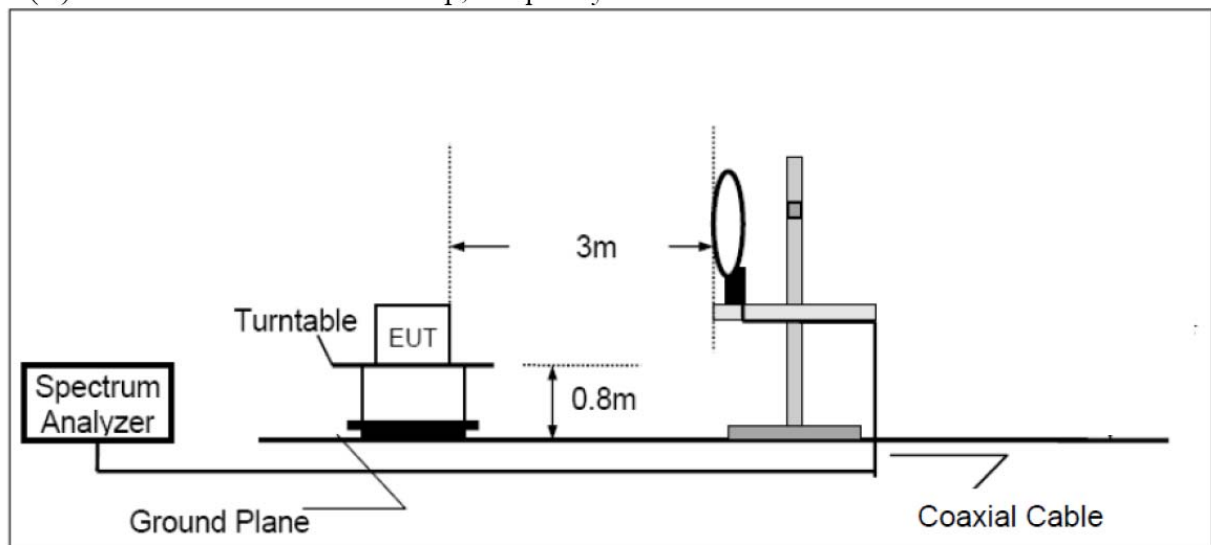
4. RADIATED EMISSION MEASUREMENT

4.1. For Radiated Emission Measurement

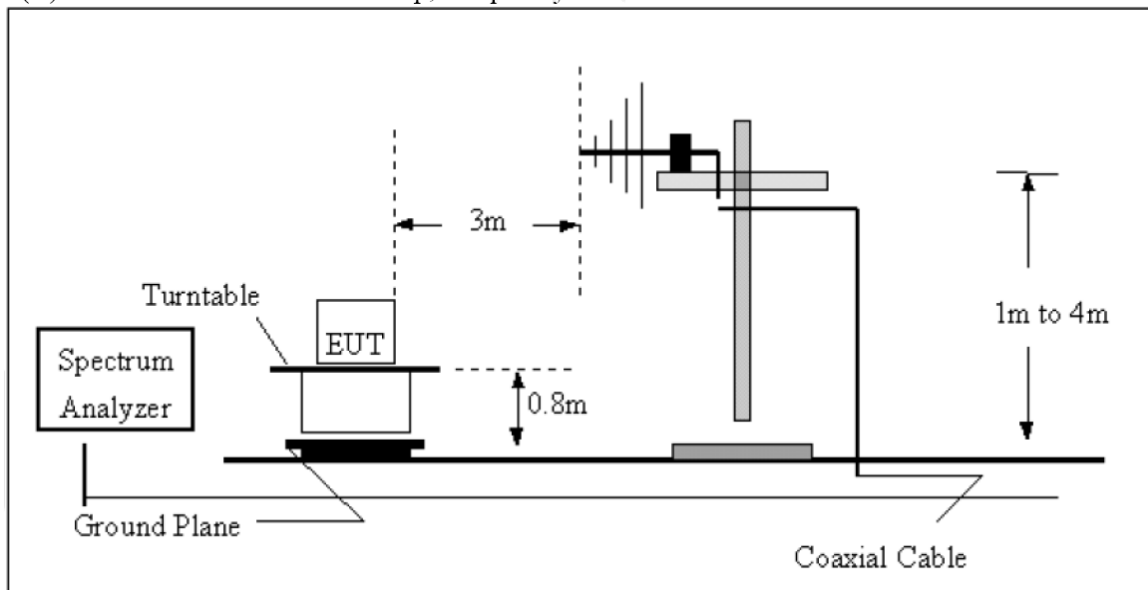
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 11, 2015	1 Year
2.	Test Receiver	Rohde & Schwarz	ESCS30	100307	Jan. 11, 2015	1 Year
3.	Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 15, 2015	1 Year
4.	Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 15, 2015	1 Year
5.	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 15, 2015	1 Year
6.	50 Coaxial Switch	Anritsu Corp	MP59B	6200506474	Jan. 11, 2015	1 Year
12.	Pre-Amplifier	Rohde & Schwarz	CBLU11835 40-01	3791	Jan. 11, 2015	1 Year
Expanded Uncertainty (9kHz-30MHz): U=3.08dB, k=2 Expanded Uncertainty (30MHz-1000MHz): U=4.42dB, k=2 Expanded Uncertainty (Above 1GHz): U=4.06dB, k=2						

4.2. Test Configuration

(A) Radiated Emission Test Set-Up, Frequency below 30MHz



(B) Radiated Emission Test Set-Up, Frequency 30-1000MHz



4.3. Block Diagram of Test Setup

4.3.1. Block diagram of connection between the EUT and simulators



4.4. Radiated Emission Limit

According to §15.227(a), The field strength of any emission within this band shall not exceed 10,000 microvolts/meter at 3 meters. The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply.

According to §15.227(b) The field strength of any emissions which appear outside of this band shall not exceed the general radiated emission limits in §15.209.

4.5. EUT Configuration on Measurement

The equipment is installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

4.6. Operating Condition of EUT

4.6.1. Setup the EUT and simulator as shown as Section 4.2.

4.6.2. Turn on the power of all equipment.

4.6.3. Let the EUT work in test mode and measure it.

4.7. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.10: 2013 on radiated emission measurement.

From 9kHz to 30MHz at distance 3m The EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.

From 30MHz to 1000MHz at distance 3m The measuring antenna height varied between 1 and 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity. The measurements were performed for both vertical and horizontal antenna polarization.

The final measurement will be performed with an EMI Receiver set to Quasi Peak detector for the frequency bands 9kHz to 90kHz and 110 to 490 kHz where an average detector will be used according to Section 15.209(d)(2).

The final level, expressed in dBuV/m, is arrived at by taking the reading from the EMI receiver (Level dBuV) and adding the antenna correction factor and cable loss factor (Factor dB) to it. This result then has to be compared with the relevant FCC limit. The resolution bandwidth during the measurement is as follows:

9kHz – 150kHz: ResBW:200Hz

150kHz – 30MHz: ResBW:9kHz

The bandwidth of the EMI test receiver (R&S ESCS30) is set at 120kHz from 30MHz to 1000MHz.

4.8. Radiated Emission Noise Measurement Result

PASS.

Horizontal									
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
Fundamental	24.145	65.51	6.85	72.36	100.00	-35.64	305	100	Peak
Fundamental	27.145	60.25	6.85	67.10	80.00	-18.90	305	100	Ave

Vertical									
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
Fundamental	24.145	59.51	6.85	66.36	100.00	-35.64	305	100	Peak
Fundamental	27.145	56.25	6.85	63.10	80.00	-18.90	305	100	Ave



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Job No.: ricky2015 #87

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Stunt Buggy Xtreme

Mode: TX

Model: TX-1013

Manufacturer: Wow! Stuff

Polarization: Horizontal

Power Source: DC 9V

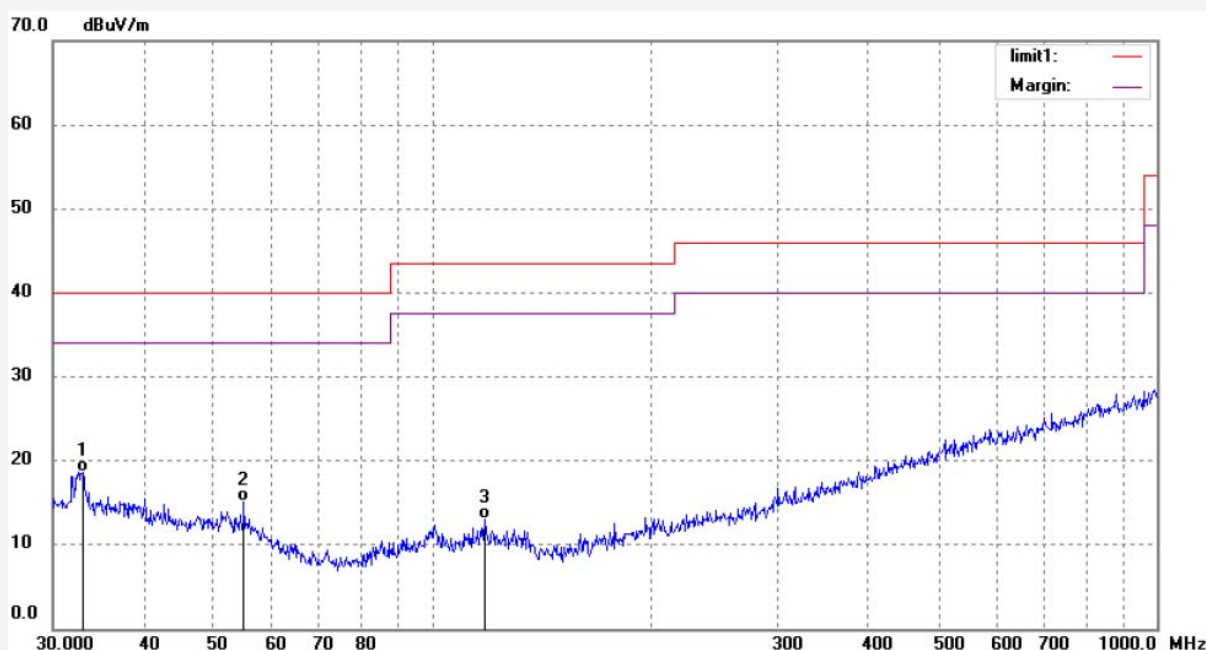
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Time: 11:07:00

Engineer Signature: PEI

Distance: 3m

Note: Report No.:ATE20151785



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	32.9791	28.95	-10.23	18.72	40.00	-21.28	QP			
2	55.0274	28.05	-12.98	15.07	40.00	-24.93	QP			
3	118.1862	27.18	-14.15	13.03	43.50	-30.47	QP			



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Job No.: ricky2015 #88

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Stunt Buggy Xtreme

Mode: TX

Model: TX-1013

Manufacturer: Wow! Stuff

Polarization: Vertical

Power Source: DC 9V

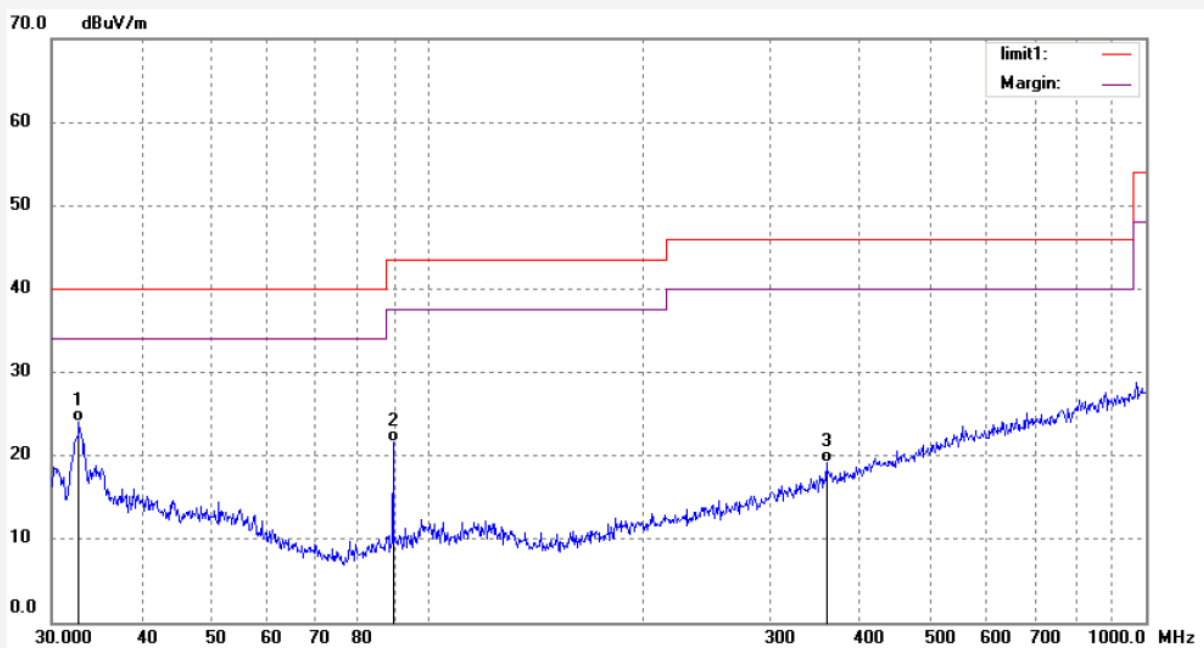
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Time: 11:08:32

Engineer Signature: PEI

Distance: 3m

Note: Report No.:ATE20151785



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	32.7486	33.73	-9.75	23.98	40.00	-16.02	QP			
2	89.5899	37.73	-16.10	21.63	43.50	-21.87	QP			
3	359.1860	27.71	-8.62	19.09	46.00	-26.91	QP			

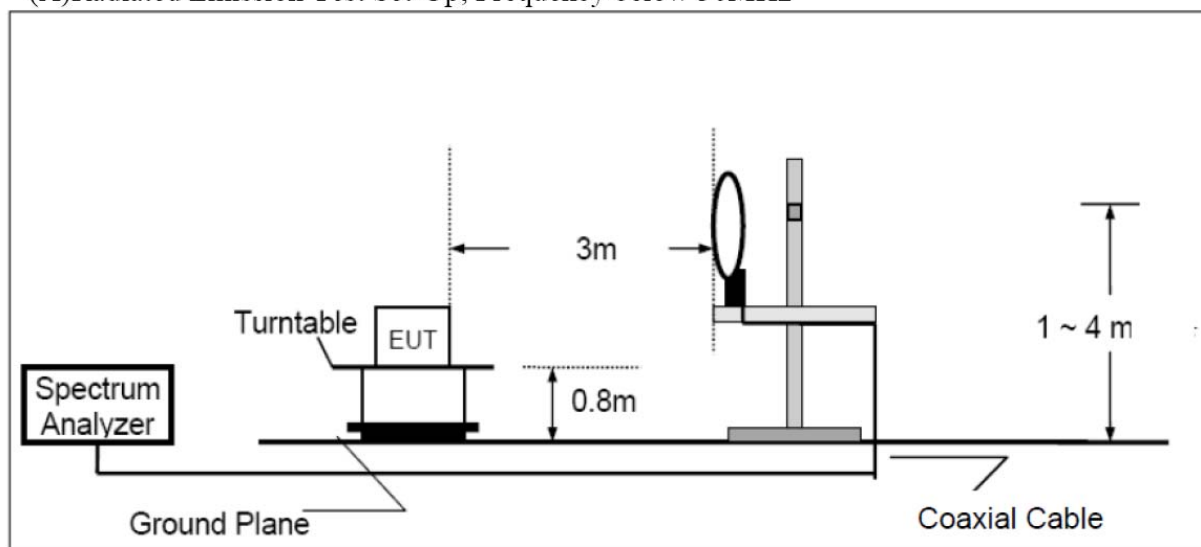
5. OUT OF BAND EMISSIONS

5.1. For Out of Band Emissions Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 11, 2015	1 Year
2.	Test Receiver	Rohde & Schwarz	ESCS30	100307	Jan. 11, 2015	1 Year
3.	Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 15, 2015	1 Year
4.	Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 15, 2015	1 Year
5.	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 15, 2015	1 Year
6.	50 Coaxial Switch	Anritsu Corp	MP59B	6200506474	Jan. 11, 2015	1 Year
12.	Pre-Amplifier	Rohde & Schwarz	CBLU11835 40-01	3791	Jan. 11, 2015	1 Year
Expanded Uncertainty (9kHz-30MHz): U=3.08dB, k=2 Expanded Uncertainty (30MHz-1000MHz): U=4.42dB, k=2 Expanded Uncertainty (Above 1GHz): U=4.06dB, k=2						

5.2. Test Configuration

(A) Radiated Emission Test Set-Up, Frequency below 30MHz



5.3. Block Diagram of Test Setup

5.3.1. Block diagram of connection between the EUT and simulators



5.4. Out of Band Emissions Limit

According to FCC 15.227 (b) The field strength of any emissions which appear outside of 26.96MHz to 27.28MHz shall not exceed the general radiated emission limits in §15.209

5.5. Test Procedure

As the radiation test, set the RBW=10kHz VBW=30kHz, observed the outside band of 26.96MHz to 27.28MHz, than mark the higher-level emission for comparing with the FCC rules.

5.6. Out of Band Emissions Measurement Result

PASS.



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Job No.: ricky2015 #92

Standard: FCC 27MHz-00001

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Stunt Buggy Xtreme

Mode: TX

Model: TX-1013

Manufacturer: Wow! Stuff

Polarization: Horizontal

Power Source: DC 9V

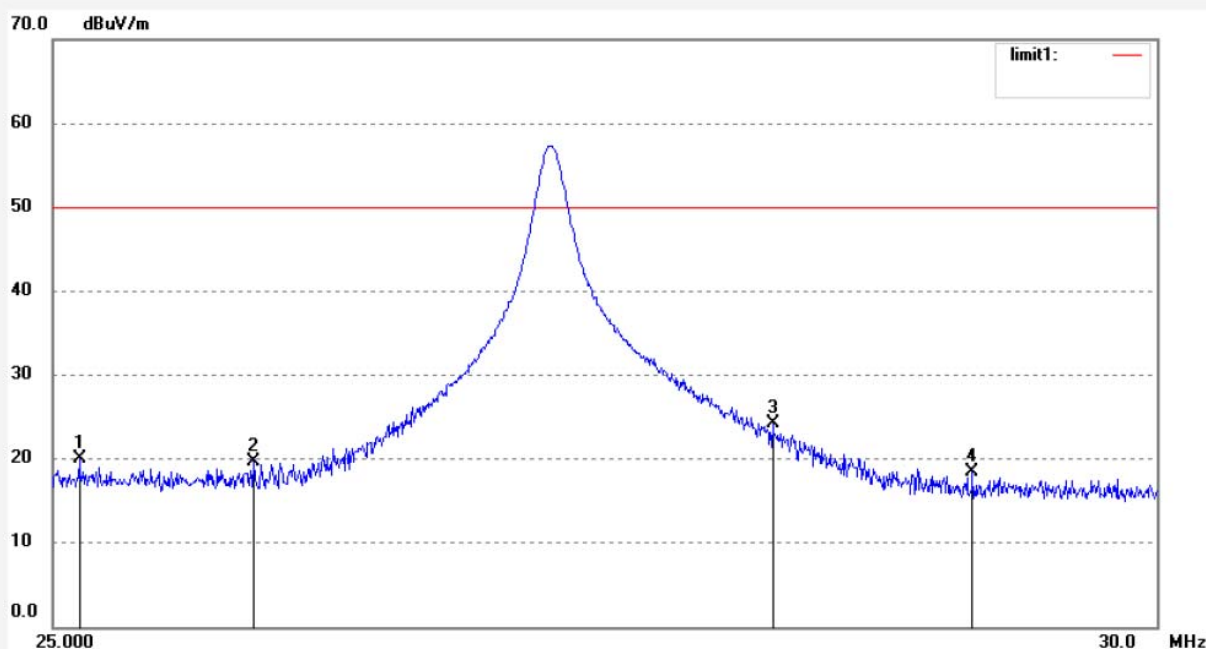
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Time: 10:25:18

Engineer Signature: PEI

Distance: 3m

Note: Report No.:ATE20151785



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	25.1099	28.32	-8.34	19.98	50.00	-30.02	peak			
2	25.8449	28.34	-8.58	19.76	50.00	-30.24	peak			
3	28.1600	33.55	-9.33	24.22	50.00	-25.78	peak			
4	29.1050	28.13	-9.64	18.49	50.00	-31.51	peak			



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Job No.: ricky2015 #91

Standard: FCC 27MHz-00001

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Stunt Buggy Xtreme

Mode: TX

Model: TX-1013

Manufacturer: Wow! Stuff

Polarization: Vertical

Power Source: DC 9V

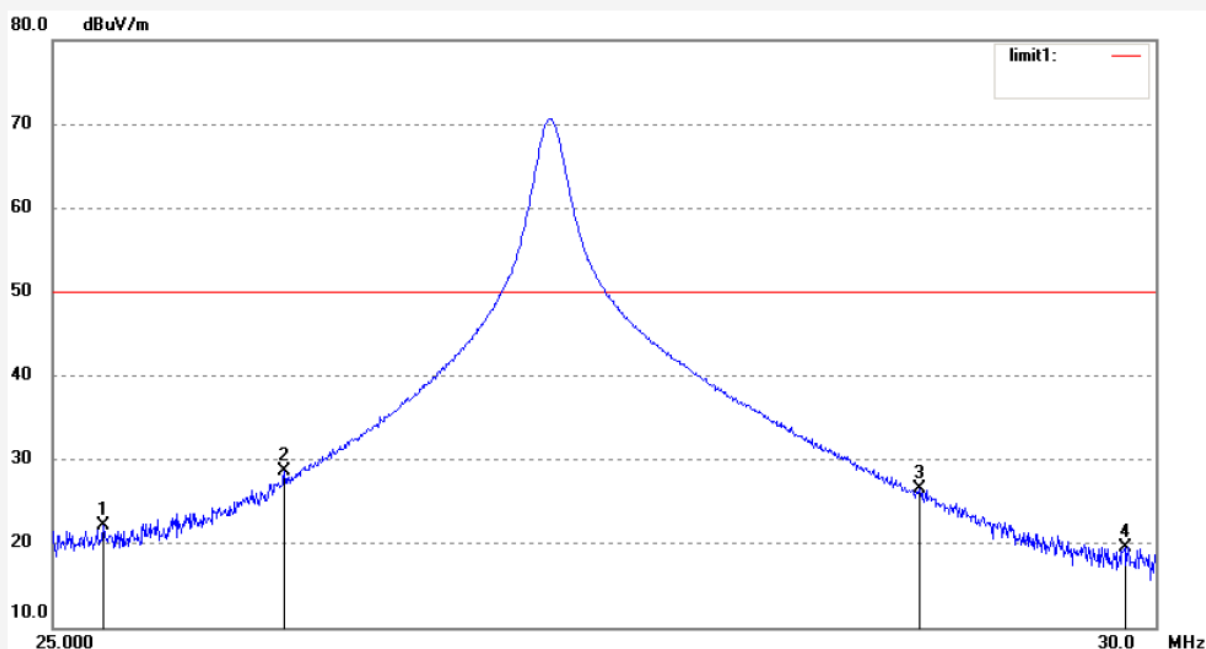
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Distance: 3m

Note: Report No.:ATE20151785



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	25.2149	30.43	-8.25	22.18	50.00	-27.82	peak			
2	25.9800	36.96	-8.35	28.61	50.00	-21.39	peak			
3	28.8550	35.33	-8.76	26.57	50.00	-23.43	peak			
4	29.8500	28.45	-8.91	19.54	50.00	-30.46	peak			

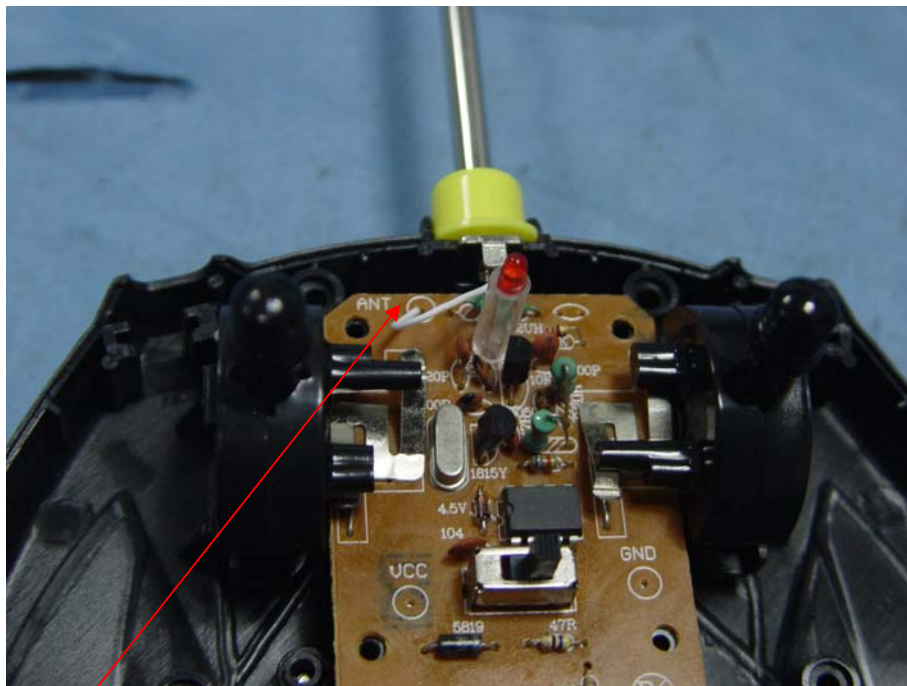
6. ANTENNA REQUIREMENT

6.1.The Requirement

According to Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

6.2.Antenna Construction

Device is equipped with permanent attached antenna, which isn't displaced by other antenna. The Antenna gain of EUT is 0dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.



Antenna