Shenzhen EBO Technology Co., Ltd.

A112~114, Qinye Business Center, Xin'an Sixth Road, 82th District,
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Telephone: +86-755-29451282,
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FCC REPORT

Applicant:	WENYI TOYS CO,.LTD.
Address of Applicant:	Xiadaimei Industrial District, Xinan Town, Chenghai District, Shantou City, Guangdong Province, China.
Manufacturer:	WENYI TOYS CO,.LTD.
Address of Manufacturer:	Xiadaimei Industrial District, Xinan Town, Chenghai District, Shantou City, Guangdong Province, China.

Equipment Under Test (EUT)

Product Name:	REMOTE CONTROL CAR
Model No.:	Please refer to page 5.
FCC ID:	2ALOM- WY1001
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.227:2016
Date of sample receipt:	March 16, 2017
Date of Test:	March 16, 2017 to March 31, 2017
Date of report issued:	March 31, 2017
Test Result :	PASS *

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Kevin Yu
Laboratory Manager

2 Version

Version No.	Date	Description
00	*March 31, 2017*	*Original*

Prepared By:  ***Date:*** *March 31, 2017*

Project Engineer

Check By:  ***Date:*** *March 31, 2017*

Reviewer

3 Contents

4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	N/A
Field strength of the fundamental signal	15.227	Pass
Spurious emissions	15.209	Pass

Pass: The EUT complies with the essential requirements in the standard.

Remark: Test according to ANSI C63.10: 2013 and ANSI C63.4: 2014.

4.1 Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	9kHz ~ 30MHz	± 4.34dB	(1)
Radiated Emission	30MHz ~ 1000MHz	± 4.24dB	(1)
Radiated Emission	1GHz ~ 26.5GHz	± 4.68dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	± 3.45dB	(1)
Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.			

5 General Information

5.1 General Description of EUT

Product Name:	REMOTE CONTROL CAR
Model No.:	WY991, WY992, WY993, WY995, WY996, WY997, WY998, YW999, WY1000, WY1001, WY1002, WY1003, WY1005, WY1006, WY1007, WY1008, WY1510A, WY1510B, WY1510C, WY1510D, WY1520A, WY1520B, WY1520C, WY1530A, WY1530B, WY1530C, WY1550A, WY1550B, WY1550C, WY1070A Remark: All models are identical in the same PCB layout, interior structure and electrical circuits. The only differences are the model name and appearance color for commercial purpose.
Test Model:	WY1001
Operation Frequency:	27.145MHz
Channel numbers:	1
Modulation type:	AM
Antenna Type:	Integrated antenna
Antenna gain:	0dBi (declare by Applicant)
Power supply:	DC 3.0V (2*1.5V size AA battery)

5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode
Remark: New battery is used during all test	

Per-test mode.

We have verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:

Axis	X	Y	Z
Field Strength(dBuV/m)	77.38	80.26	78.42

5.3 Description of Support Units

None

5.4 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **FCC —Registration No.: 600491**

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fuly described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 600491, June 22, 2016.

● **Industry Canada (IC) —Registration No.: 9079A-2**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2, August 15, 2016

5.5 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: No. 301-309, 3/F., Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102

5.6 Other Information Requested by the Customer

None.

6 Test Instruments list

Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.0(L)*6.0(W)* 6.0(H)	GTS250	July. 03 2015	July 02 2020
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	ESU EMI Test Receiver	R&S	ESU26	GTS203	June. 29 2016	June 28 2017
4	Loop Antenna	Zhinan	ZN30900A	GTS534	June. 29 2016	June 28 2017
5	BiConiLog Antenna	SCHWARZBECK	VULB9163	GTS214	June. 29 2016	June 28 2017
6	Double-ridged horn antenna	SCHWARZBECK	9120D	GTS208	June. 29 2016	June 28 2017
7	Horn Antenna	ETS-LINDGREN	3160-09	GTS218	June. 29 2016	June 28 2017
8	RF Amplifier	HP	8347A	GTS204	June. 29 2016	June 28 2017
9	RF Amplifier	HP	8349B	GTS206	June. 29 2016	June 28 2017
10	Broadband Preamplifier	SCHWARZBECK	BBV9718	GTS535	June. 29 2016	June 28 2017
11	PSA Series Spectrum Analyzer	Agilent	E4440A	GTS536	June. 29 2016	June 28 2017
12	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
13	Coaxial Cable	GTS	N/A	GTS210	June. 29 2016	June 28 2017
14	Coaxial Cable	GTS	N/A	GTS211	June. 29 2016	June 28 2017
15	Coaxial Cable	GTS	N/A	GTS210	June. 29 2016	June 28 2017
16	Coaxial Cable	GTS	N/A	GTS212	June. 29 2016	June 28 2017
17	Thermo meter	N/A	N/A	GTS256	June. 29 2016	June 28 2017
18	D.C. Power Supply	Instek	PS-3030	GTS232	June. 29 2016	June 28 2017

General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Barometer	ChangChun	DYM3	GTS257	June. 29 2016	June 28 2017

7 Test results and Measurement Data

7.1 Antenna requirement

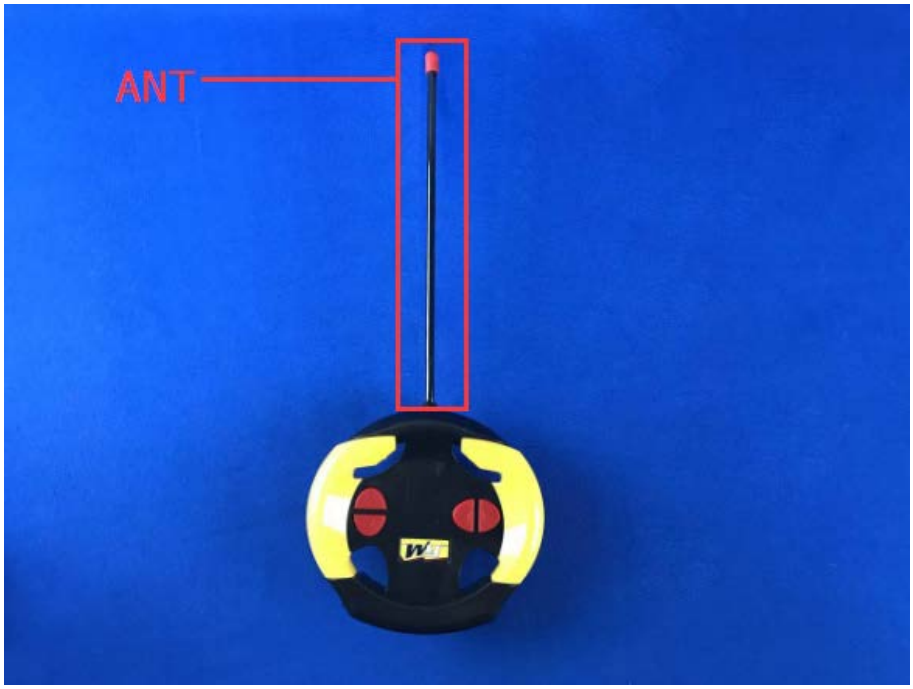
Standard requirement:	FCC Part15 C Section 15.203

15.203 requirement:

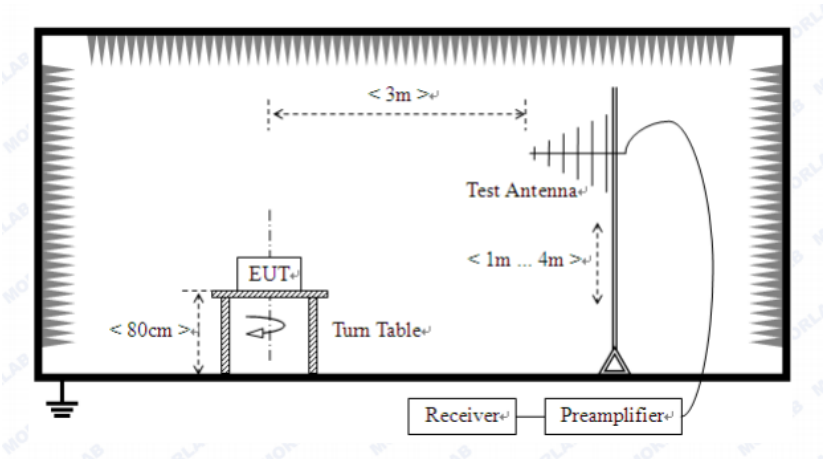
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

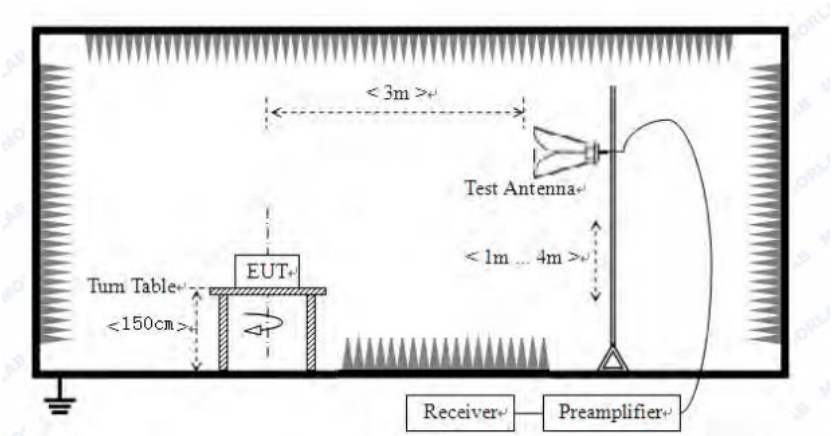
The antenna is chip antenna, the best case gain of the antenna is 0dBi



7.2 Radiated Emission Method

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013</td></tr>
<tr><td>Test Frequency Range:</td><td>9kHz to 1GHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Remark</th></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>120KHz</td><td>300KHz</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">9kHz-30MHz</td><td>Peak</td><td>9KHz</td><td>30KHz</td><td>Peak Value</td></tr>
<tr><td>AV</td><td>9KHz</td><td>30KHz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:
(Field strength of the fundamental signal)</td><td>
<table>
<tr><th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></tr>
<tr><td rowspan="2">26.96MHz-27.28MHz</td><td>80</td><td>Average Value</td></tr>
<tr><td>100</td><td>PK Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:
(Spurious Emissions)</td><td>
<table>
<tr><th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></tr>
<tr><td>30MHz-88MHz</td><td>40.00</td><td>Quasi-peak Value</td></tr>
<tr><td>88MHz-216MHz</td><td>43.50</td><td>Quasi-peak Value</td></tr>
<tr><td>216MHz-960MHz</td><td>46.00</td><td>Quasi-peak Value</td></tr>
<tr><td>960MHz-1GHz</td><td>54.00</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>54.00</td><td>Average Value</td></tr>
<tr><td>74.00</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:
(band edge)</td><td>Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.</td></tr>
<tr><td>Test setup:</td><td>Below 1GHz
 

Above 1GHz</td></tr>
</table>

	
Test Procedure:	1. The EUT was placed on the top of a rotating table (0.8m for below 1GHz and 1.5 meters for above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement data:

7.2.1 Field Strength of The Fundamental Signal

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
27.145	92.50	14.59	0.51	32.04	75.56	100.00	-24.44	Horizontal
27.145	97.20	14.59	0.51	32.04	80.26	100.00	-19.74	Vertical

Average value:

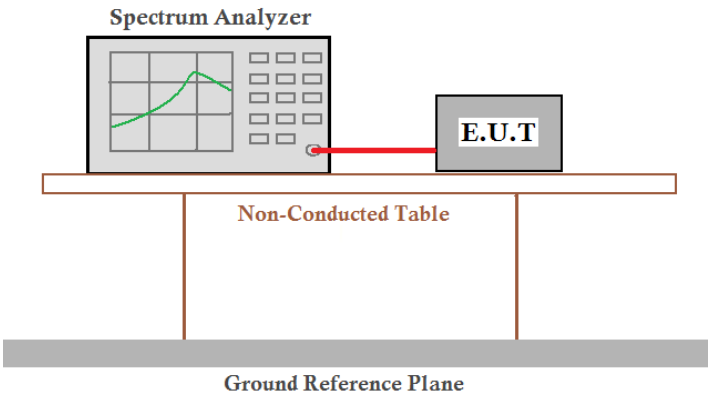
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
27.145	82.33	14.59	0.51	32.04	65.39	80.00	-14.61	Horizontal
27.145	87.26	14.59	0.51	32.04	70.32	80.00	-9.68	Vertical

7.2.2 Band edge

Quasi-peak Value：

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
26.96	49.80	14.60	0.51	32.04	32.87	69.50	-36.63	Horizontal
27.28	50.48	14.57	0.51	32.05	33.51	69.50	-35.99	Horizontal
26.96	49.78	14.60	0.51	32.04	32.85	69.50	-36.65	Vertical
27.28	48.33	14.57	0.51	32.05	31.36	69.50	-38.14	Vertical

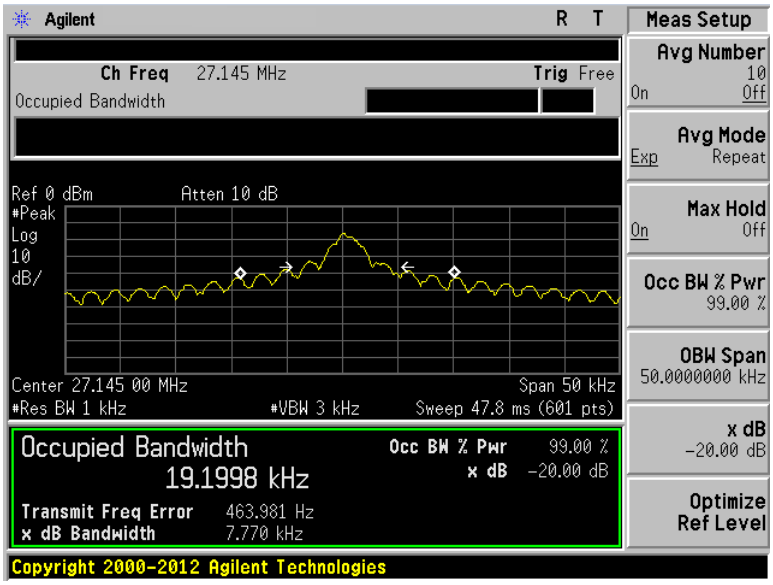
7.2.3 20dB Occupy bandwidth

Test Requirement:	FCC Part15 C Section 15.227/15.215
Test Method:	ANSI C63.10:2013
Limit:	Operation Frequency range 26.96MHz~27.28MHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

Test channel	20dB bandwidth(KHz)	Result
27.145	7.77	Pass

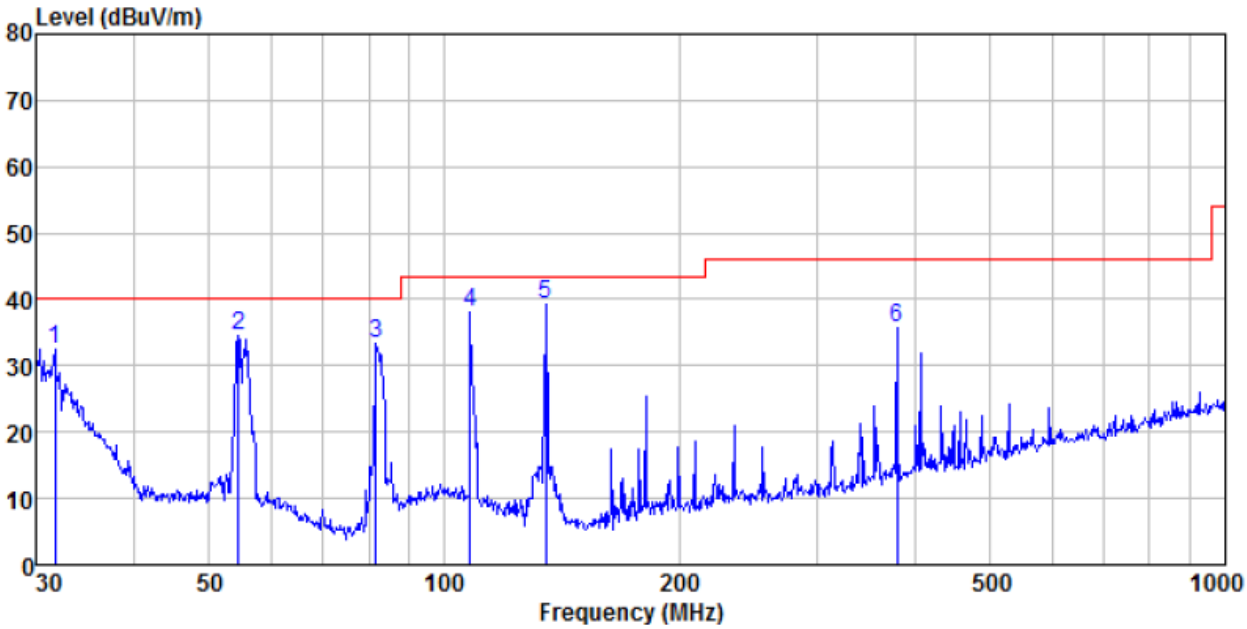
Test plot as follows:



7.2.4 Spurious emissions

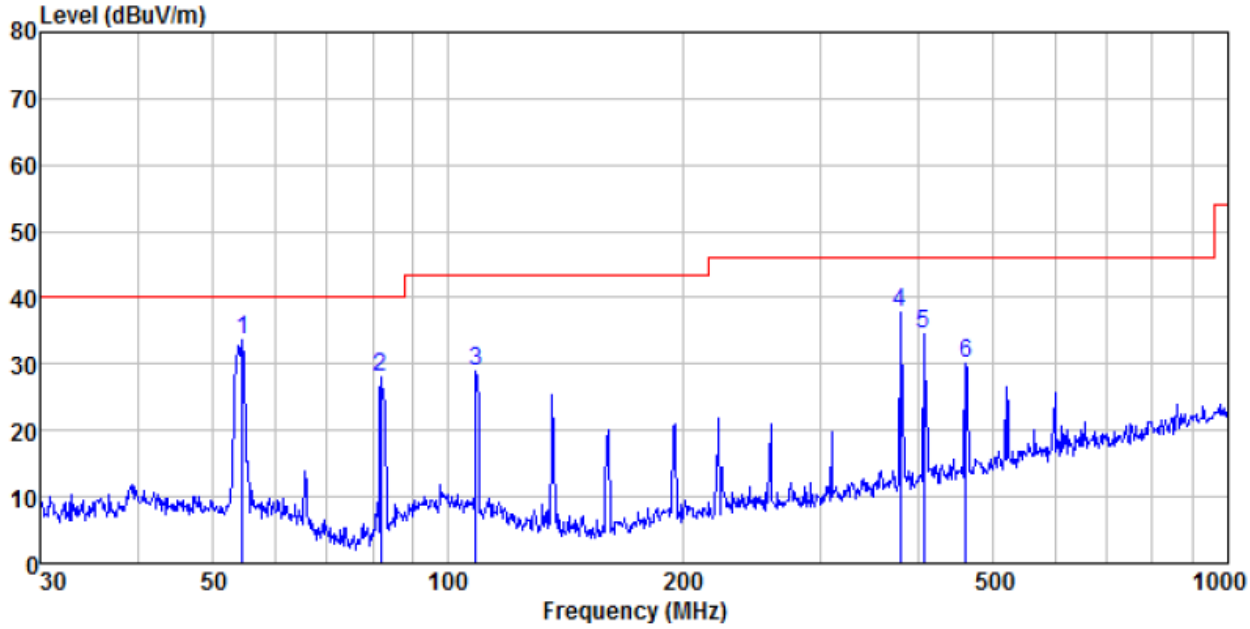
- Below 1GHz

Vertical:



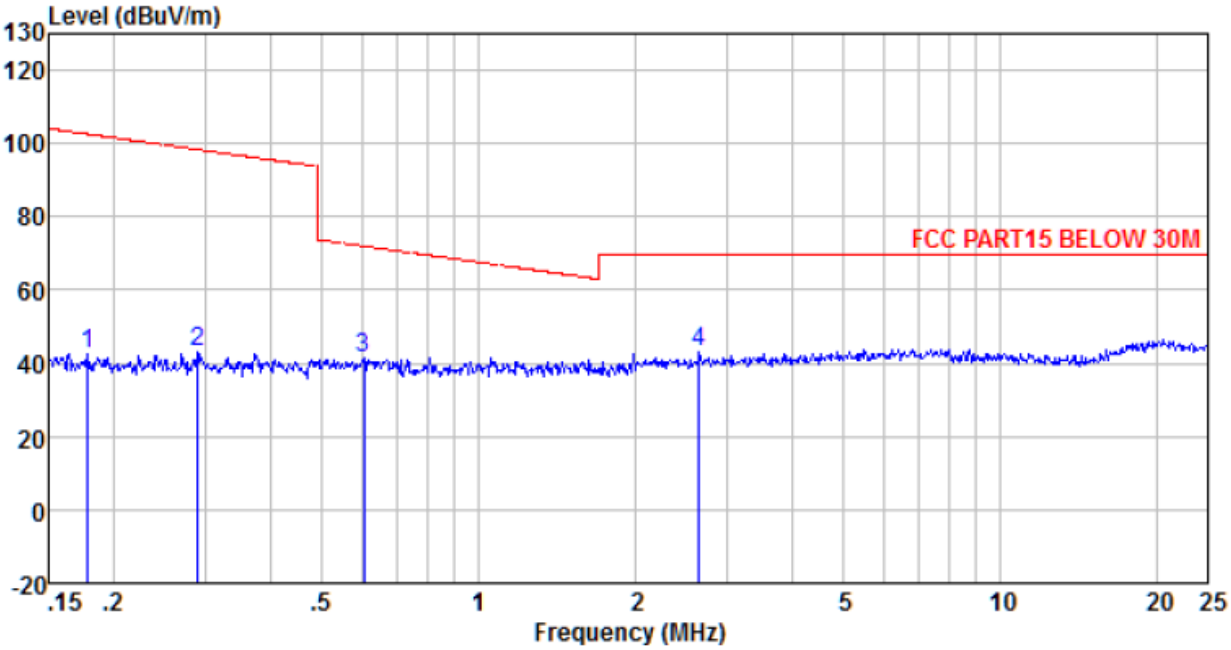
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
31.731	47.68	14.32	0.57	30.09	32.48	40.00	-7.52	QP
54.452	48.65	15.05	0.81	29.96	34.55	40.00	-5.45	QP
81.783	50.70	11.28	1.04	29.79	33.23	40.00	-6.77	QP
107.888	51.90	14.44	1.26	29.65	37.95	43.50	-5.55	QP
135.032	56.67	10.56	1.47	29.49	39.21	43.50	-4.29	QP
379.914	45.96	16.59	2.76	29.59	35.72	46.00	-10.28	QP

Horizontal:



Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
54.452	47.70	15.05	0.81	29.96	33.60	40.00	-6.40	QP
82.071	45.46	11.28	1.05	29.79	28.00	40.00	-12.00	QP
108.647	42.79	14.39	1.27	29.64	28.81	43.50	-14.69	QP
379.914	47.93	16.59	2.76	29.59	37.69	46.00	-8.31	QP
407.515	43.92	17.22	2.89	29.48	34.55	46.00	-11.45	QP
460.727	38.66	17.59	3.14	29.37	30.02	46.00	-15.98	QP

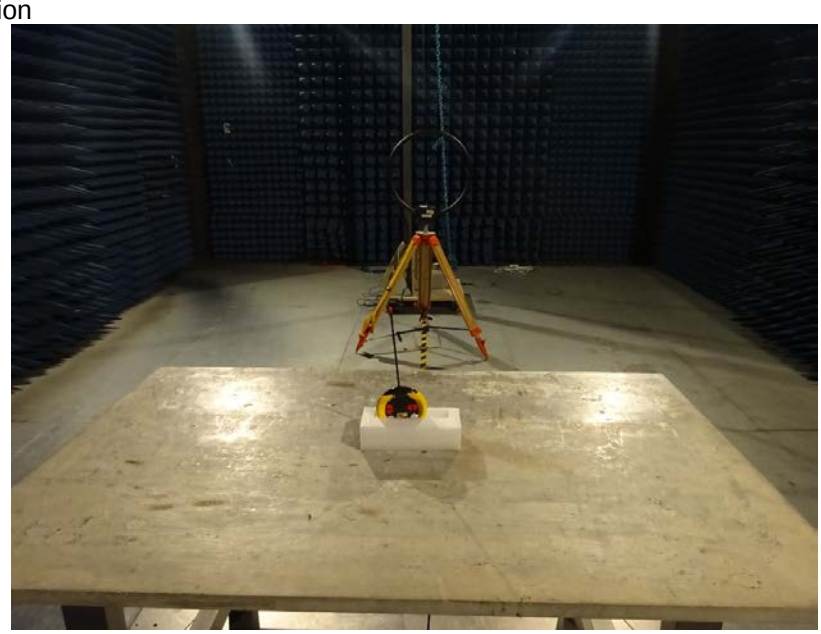
■ Below 25MHz:

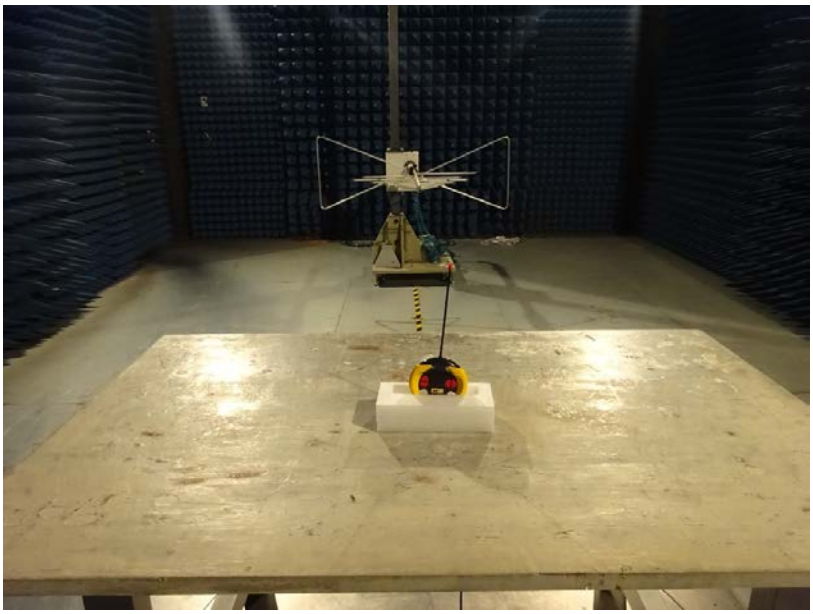


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
0.179	19.75	22.50	0.21	0.00	42.46	102.56	-60.10	Peak
0.289	21.56	21.49	0.24	0.00	43.29	98.38	-55.09	Peak
0.604	20.73	20.65	0.29	0.00	41.67	71.98	-30.31	Peak
2.650	21.91	21.05	0.39	0.00	43.35	69.54	-26.19	Peak

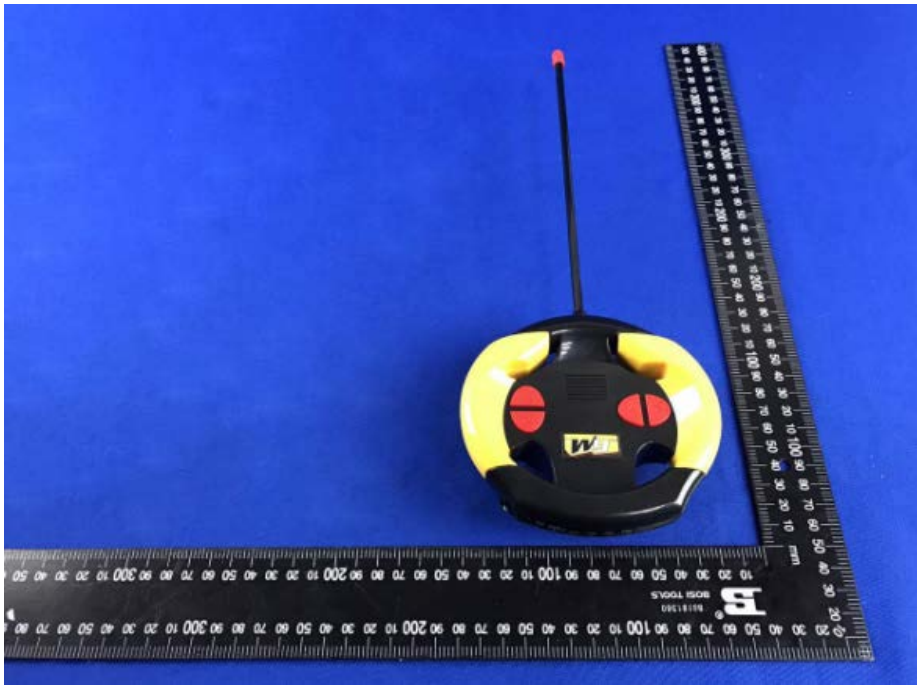
8 Test Setup Photo

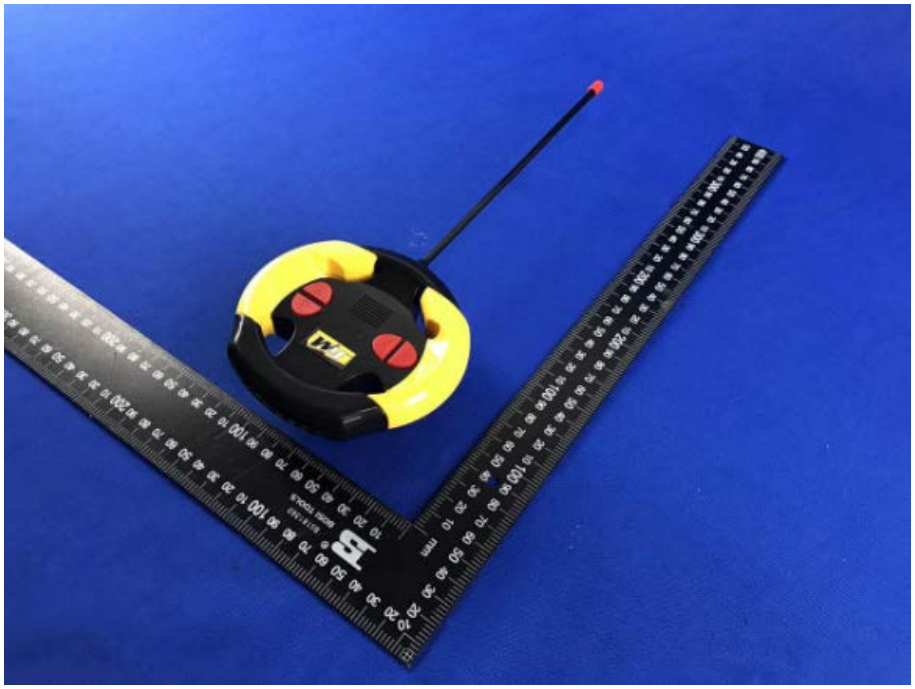
Radiated Emission

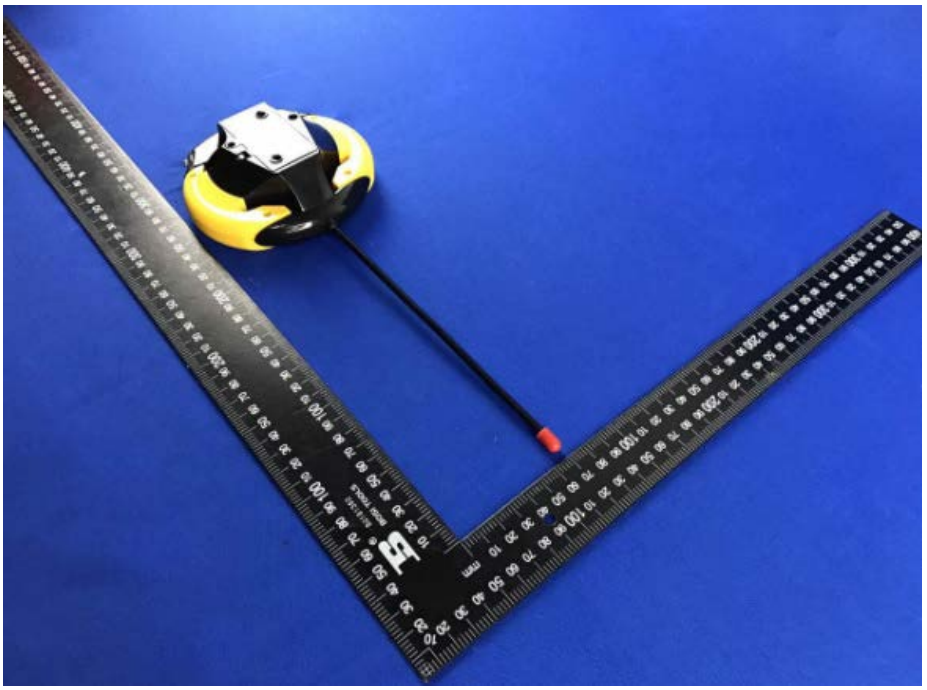


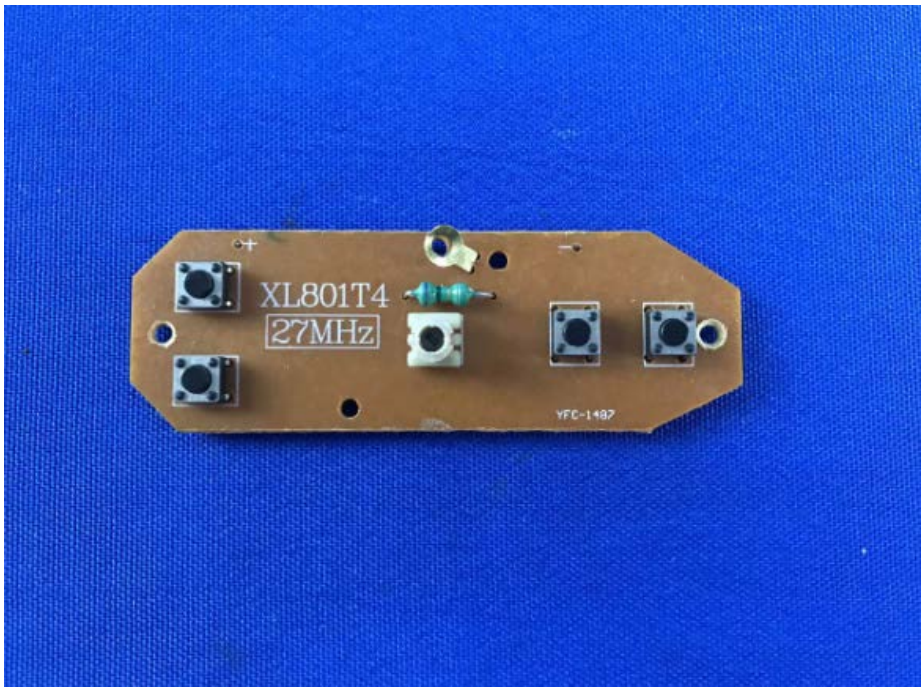


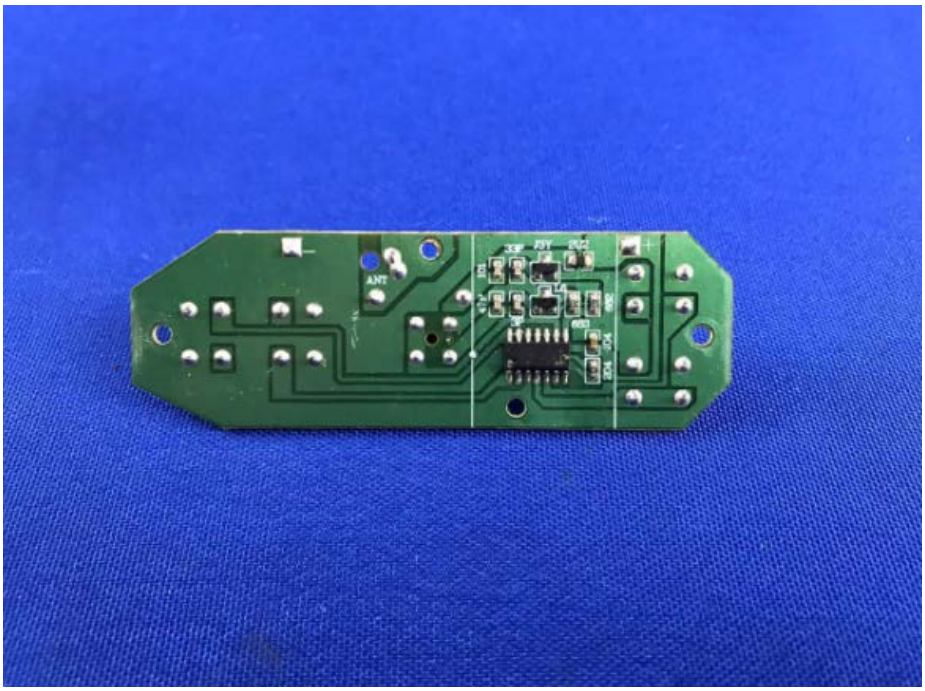
9 EUT Constructional Details











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