



BUREAU VERITAS

Test Report No.: FS2009WDG0146



Certificate # 2951.01

FCC TEST REPORT

Applicant	XQ Arts toys co., Ltd
Address	North of Xing Ye Road, Lai Mei Industrial District, Shan Tou, China

Manufacturer	GuangDong XinYu Technology Industrial Co.,Ltd
Address	Laimei Industrial zone,Chenghai District, Shantou, Guangdong
Product	RC TOYS
Brand Name	XQ
Model	XQRC24-7AA(30055)
Additional Model & Model Difference	3431(3727)(30057), 3812(30056)
Date of tests	Sep. 09 to Sep. 17, 2020

The submitted sample of the above equipment has been tested for according to the requirements of the following standards:

FCC Part 15, Subpart B, Class B

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Tested by Evans He Project Engineer/ EMC Department	Approved by David Huang Supervisor / EMC Department
<i>Evans He</i>	<i>David Huang</i>
	Date: Sep. 18, 2020

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FS2009WDG0146	Original release	Sep. 18, 2020



1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart B			
Standard Section	Test Item	Result	Remark
FCC Part 15, Subpart B, Class B	Radiated Emission Test (30MHz ~ 1GHz)	PASS	Meets limits minimum passing margin is -12.57 dB at 875.2470 MHz

NOTE: Test Lab Information:

Lab: Bureau Veritas Shenzhen Co., Ltd. Dongguan Branch

Test Lab Address: Zone A, Floor 1, Building 2 Wan Ye Long Technology Park South Side of Zhoushi Road, Bao'an District Shenzhen, Guangdong, 518108, People's Republic of China

1.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

MEASUREMENT	FREQUENCY	UNCERTAINTY
Radiated emissions	30MHz ~ 1GHz	±3.74dB



2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	RC TOYS
MODEL NO.	XQRC24-7AA(30055)
ADDITIONAL MODEL	3431(3727)(30057), 3812(30056)
FCC ID	W2MXQ3812RX49R
POWER SUPPLY	DC 4.5V (1.5V*AA*3) From Battery
CABLE SUPPLIED	N/A
THE HIGHEST OPERATING FREQUENCY	49.860MHz

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. For the test results, the EUT had been tested with all conditions, but only the worst case was shown in test report.
3. Please refer to the EUT photo document (Reference No.: 2009WDG0146) for detailed product photo.
4. Additional models (see about table) are identical with the test model XQRC24-7AA(30055) except the color of the appearance, trade name and model name for trading purpose.



2.2 DESCRIPTION OF TEST MODES

The EUT were tested under the following modes, the final worst mode was marked in boldface and recorded in this report.

Radiated Emission TEST (Below 1GHz):

Description of Test Mode	Test Voltage
Receiver	DC 4.5V from Battery

2.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit without any other necessary accessories or support units.



3 EMISSION TEST

3.1 RADIATED EMISSION MEASUREMENT

3.1.1 LIMITS OF RADIATED EMISSION MEASUREMENT

TEST STANDARD: FCC Part 15, Subpart B (Section: 15.109)

Emissions radiated outside of the specified bands, shall be according to the general radiated limits as following:

Radiated Emissions Limits at 10 meters (dBµV/m)				
Frequencies (MHz)	FCC 15B / ICES-003, Class A	FCC 15B / ICES-003, Class B	CISPR 22, Class A	CISPR 22, Class B
30-88	39	29.5	40	30
88-216	43.5	33.1		
216-230	46.4	35.6	47	37
230-960				
960-1000	49.5	43.5	Not defined	Not defined
1000-3000	Avg: 49.5	Avg: 43.5		
Above 3000	Peak: 69.5	Peak: 63.5	Not defined	Not defined

Radiated Emissions Limits at 3 meters (dBµV/m)				
Frequencies (MHz)	FCC 15B / ICES-003, Class A	FCC 15B / ICES-003, Class B	CISPR 22, Class A	CISPR 22, Class B
30-88	49.5	40	50.5	40.5
88-216	54	43.5		
216-230	56.9	46	57.5	47.5
230-960				
960-1000	60	54	Avg: 56 Peak: 76	Avg: 50 Peak: 70
1000-3000	Avg: 60	Avg: 54		
Above 3000	Peak: 80	Peak: 74	Avg: 60 Peak: 80	Avg: 54 Peak: 74



FREQUENCY RANGE OF RADIATED MEASUREMENT (For unintentional radiators)

Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz)	Range (MHz)
Below 1.705	30
1.705 – 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

- Note: (1) The lower limit shall apply at the transition frequencies.
(2) Emission level (dBuV/m) = 20 log Emission level (uV/m).
(3) All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.



3.1.2 TEST INSTRUMENTS

FREQUENCY RANGE BELOW 1GHz

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESL6	1300.5001K06-1 00262-eQ	Mar. 24, 20	Mar. 24, 21
Bilog Antenna	Sunol Sciences	JB6	A110712	Jul. 21, 20	Jul. 21, 21
Active Antenna	CMO-POWER	AL-130	121031	Jun. 30, 20	Jun. 30, 21
Signal Amplifier	HP	8447E	443008	Mar. 24, 20	Mar. 24, 21
3m Semi-anechoic Chamber	SAEMC	9m*6m*6m	N/A	Oct. 18, 18	Oct. 17, 21
Test Software	EZ-EMC	ICP-03A1	N/A	N/A	N/A

- NOTES:**
1. The test was performed in 966 Chamber (a 3m Semi-anechoic chamber).
 2. The calibration interval of the above test instruments is 12 months (Except 3m Semi-anechoic Chamber). And the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
 3. The FCC Site Registration No. is 749762.



3.1.3 TEST PROCEDURE

The basic test procedure was in accordance with ANSI C63.4:2014 (section 12).

<Frequency Range below 1GHz>

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from 1 meter to 4 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.
- d. 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 rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1GHz.

NOTE:

1. The resolution bandwidth is 1MHz and video bandwidth of test receiver/spectrum analyzer is 3MHz for Peak detection at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz for Average detection (AV) at frequency above 1GHz.
2. For measurement of frequency above 1000 MHz, the EUT was set 3 meters away from the receiver antenna.
3. Result level (dBuV/m) = Reading level(dBuV/m) + Correction Factor(dB/m)
4. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) (if the raw value not contains the amplifier)
5. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Amplifier Gain(dB) (if the raw value contains the amplifier).
6. Margin value = Result level – Limit value



<Frequency Range above 1GHz>

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna can be varied from one meter-to four meters, the height of adjustment depends on the EUT height and the antenna 3dB beamwidth both, to detect the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. The bore sight should be used during the test above 1GHz.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test receiver/spectrum was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.

NOTE:

1. The resolution bandwidth is 1MHz and video bandwidth of test receiver/spectrum analyzer is 3MHz for Peak detection at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz for Average detection (AV) at frequency above 1GHz.
2. For measurement of frequency above 1000 MHz, the EUT was set 3 meters away from the receiver antenna.
3. Result level (dBuV/m)= Reading level(dBuV/m) + Correction Factor(dB/m)
4. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) (if the raw value not contains the amplifier)
5. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Amplifier Gain(dB) (if the raw value contains the amplifier).
6. Margin value = Result level – Limit value

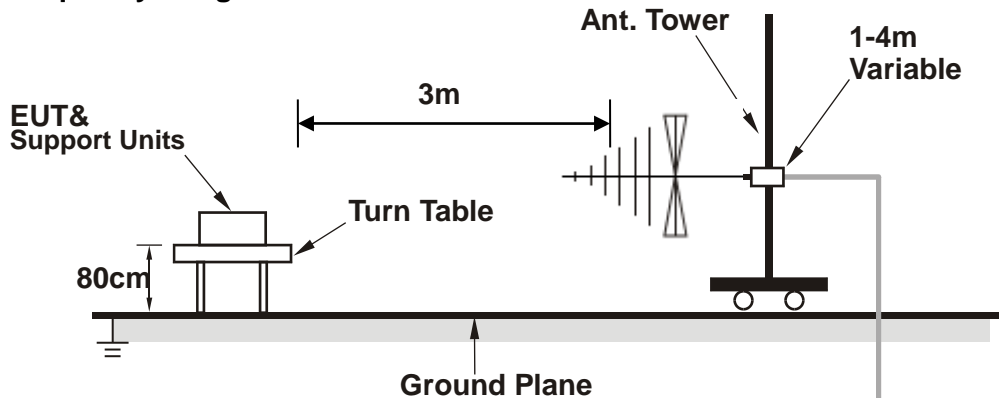
3.1.4 DEVIATION FROM TEST STANDARD

No deviation.

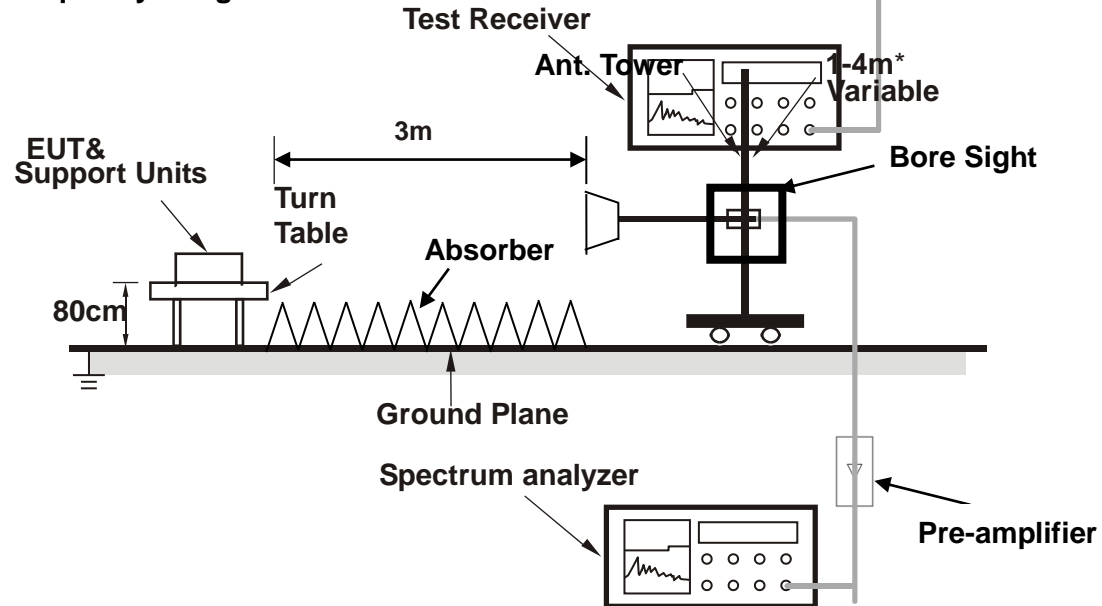


3.1.5 TEST SETUP

<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



* : depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

3.1.6 EUT OPERATING CONDITIONS

- Turn on the power supply of the EUT.
- EUT was operated according to the type description in manufacturer's specifications or the User's Manual.

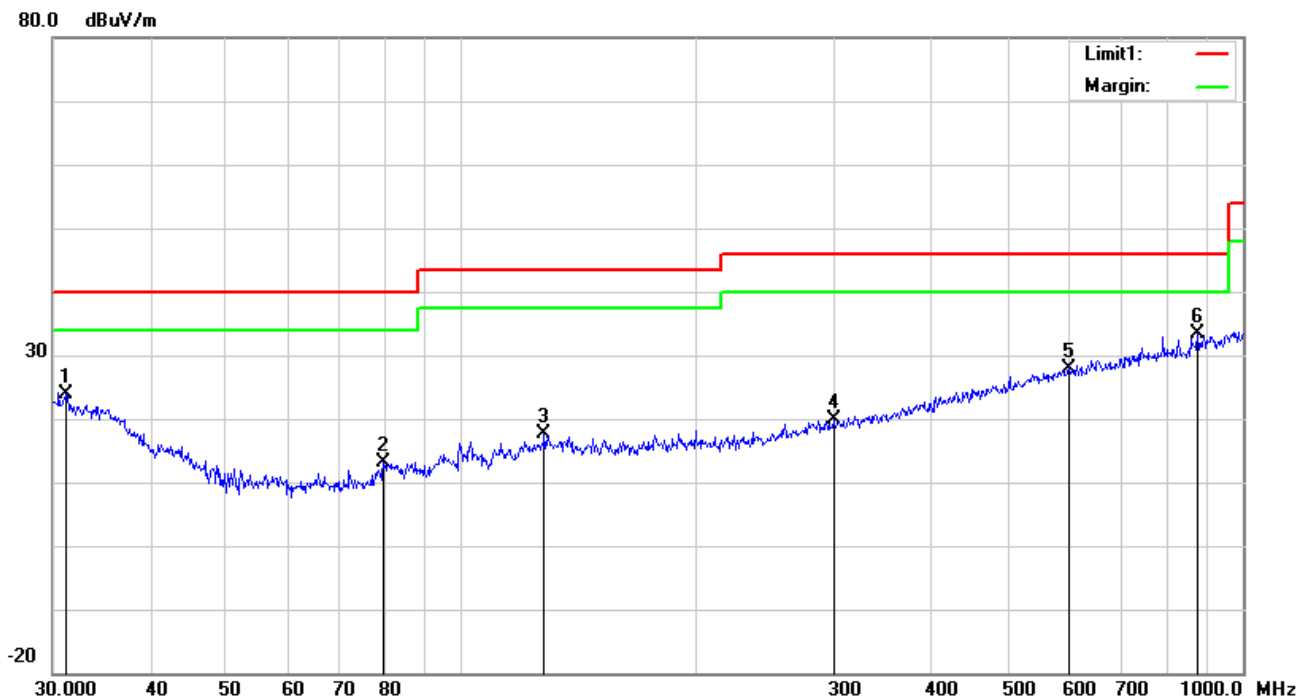


3.1.7 TEST RESULTS

TEST MODE	Receiver	FREQUENCY RANGE	30-1000MHz
TEST VOLTAGE	DC 4.5V from Battery	DETECTOR FUNCTION & RESOLUTION BANDWIDTH	Quasi-Peak, 120kHz
ENVIRONMENTAL CONDITIONS	24.6deg. C, 52% RH	TESTED BY: Evans He	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 m										
No.	Frequency (MHz)	Reading (dBuV/m)	Ant_F (dB/m)	PA_G (dB)	Cab_L (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)
1	31.1798	26.64	19.34	22.27	0.14	23.85	40.00	-16.15	100	176
2	79.5209	28.28	6.65	22.42	0.53	13.04	40.00	-26.96	100	292
3	127.6645	27.39	11.61	22.38	1.05	17.67	43.50	-25.83	100	105
4	299.3158	26.69	13.68	22.29	1.72	19.80	46.00	-26.20	100	35
5	599.3213	26.98	20.29	21.58	2.31	28.00	46.00	-18.00	100	24
6	875.2470	28.94	22.81	20.95	2.63	33.43	46.00	-12.57	100	32

- REMARKS:**
1. Peak detector quick scan is showed on the graph and final quasi-peak detector data is measured corresponding to relevant limit and recorded in the data table.
 2. Negative sign (-) in the margin column signify levels below the limit.
 3. Frequency range scanned: 30MHz to 1000MHz.
 4. Only emissions significantly above equipment noise floor are reported.

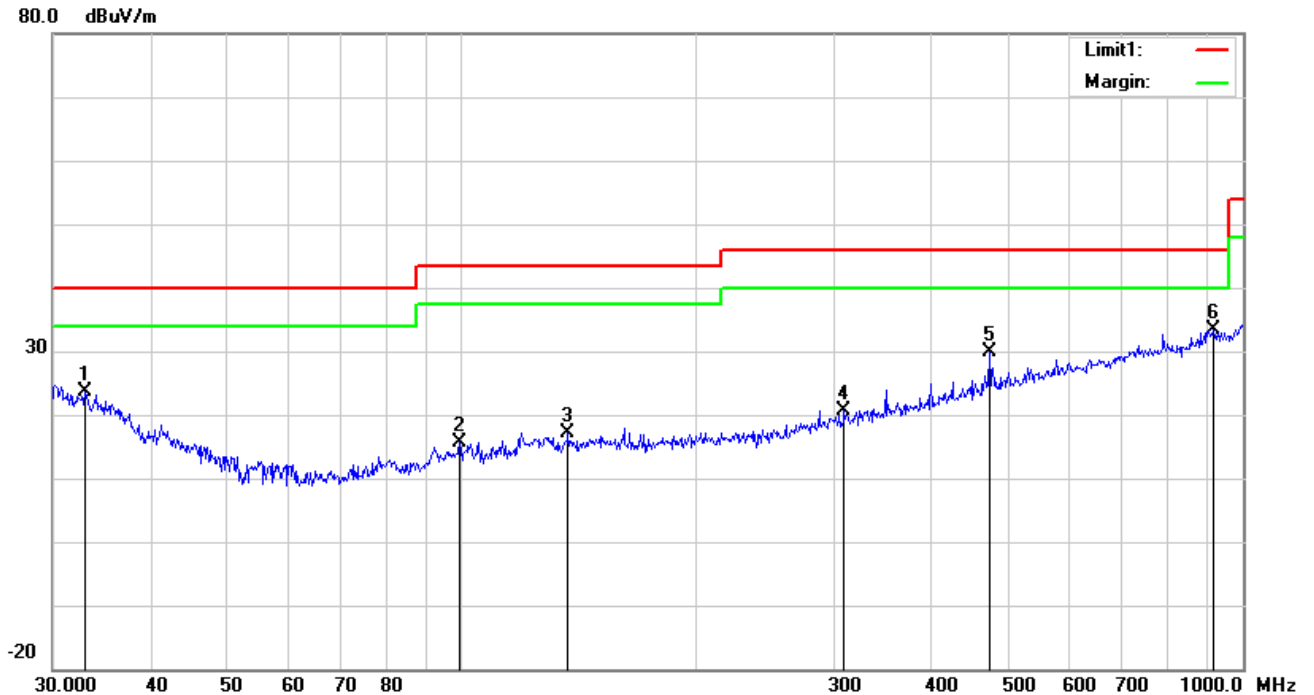




TEST MODE	Receiver	FREQUENCY RANGE	30-1000MHz
TEST VOLTAGE	DC 4.5V from Battery	DETECTOR FUNCTION & RESOLUTION BANDWIDTH	Quasi-Peak, 120kHz
ENVIRONMENTAL CONDITIONS	24.6deg. C, 52% RH	TESTED BY: Evans He	

ANTENNA POLARITY & TEST DISTANCE: VERTICAL at 3 m										
No.	Frequency (MHz)	Reading (dBuV/m)	Ant_F (dB/m)	PA_G (dB)	Cab_L (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)
1	32.9791	26.95	18.19	22.26	0.64	23.52	40.00	-16.48	100	30
2	99.5281	28.22	8.65	22.32	1.04	15.59	43.50	-27.91	100	95
3	136.9392	26.99	11.32	22.40	1.17	17.08	43.50	-26.42	100	194
4	308.9126	27.35	13.88	22.27	1.76	20.72	46.00	-25.28	100	118
5	473.8347	31.26	18.34	21.86	2.07	29.81	46.00	-16.19	100	74
6	916.0687	27.63	23.58	20.85	2.91	33.27	46.00	-12.73	100	158

- REMARKS:**
1. Peak detector quick scan is showed on the graph and final quasi-peak detector data is measured corresponding to relevant limit and recorded in the data table.
 2. Negative sign (-) in the margin column signify levels below the limit.
 3. Frequency range scanned: 30MHz to 1000MHz.
 4. Only emissions significantly above equipment noise floor are reported.





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4 PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).



5 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications were made to the EUT by the lab during the test.

---END---