FCC Test Report

Report No.: AGC15705231016FR01

FCC ID	:	2BC57-2301
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	R/C CAR
BRAND NAME	:	N/A
MODEL NAME	:	See page 4
APPLICANT	:	YOU XIANG TOYS FACTORY
DATE OF ISSUE	:	Oct. 20, 2023
STANDARD(S)	:	FCC Part 15 Subpart C §15.227
REPORT VERSION	:	V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Oct. 20, 2023	Valid	Initial Release

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

Table of Contents

1. General Information 4
2. Product Information 5
2.1 Product Technical Description 5
2.2 Test Frequency List 5
2.3 Related Submittal(S) / Grant (S) 6
2.4 Test Methodology 6
2.5 Special Accessories 6
2.6 Equipment Modifications 6
2.7 Antenna Requirement 6
3. Test Environment 7
3.1 Address of The Test Laboratory 7
3.2 Test Facility 7
3.3 Environmental Conditions 8
3.4 Measurement Uncertainty 8
3.5 List of Equipment Used 9
4. System Test Configuration 10
4.1 EUT Configuration 10
4.2 EUT Exercise 10
4.3 Configuration of Tested System 10
4.4 Equipment Used in Tested System 10
4.5 Summary of Test Results 11
5. Description of Test Modes 12
6. Field Strength of Fundamental and Radiated Emission 13
6.1 Provisions Applicable 13
6.2 Measurement Procedure 13
6.3 Measurement Setup (Block Diagram Of Configuration) 15
6.4 Measurement Result 16
7. 20dB Bandwidth Measurement 23
7.1 Provisions Applicable 23
7.2 Measurement Procedure 23
7.3 Measurement Setup (Block Diagram of Configuration) 23
7.4 Measurement Result 24
8. AC Power Line Conducted Emission Test 25
8.1 Measurement Limit 25
8.2 Measurement Setup (Block Diagram of Configuration) 25
8.3 Preliminary Procedure of Line Conducted Emission Test 26
8.4 Final Procedure of Line Conducted Emission Test 26
8.5 Measurement Result 26
APPENDIX I: PHOTOGRAPHS OF Test SETUP 27
APPENDIX II: PHOTOGRAPHS OF TEST EUT 27

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

1. General Information

Applicant	YOU XIANG TOYS FACTORY
Address	No. 18, Lane 6 of Niu Lu Wei Liu Xiang, Zhulin Village, Lianshang Town, Chenghai District, Shantou City, Guangdong Province, China
Manufacturer	YOU XIANG TOYS FACTORY
Address	No. 18, Lane 6 of Niu Lu Wei Liu Xiang, Zhulin Village, Lianshang Town, Chenghai District, Shantou City, Guangdong Province, China
Factory	YOU XIANG TOYS FACTORY
Address	No. 18, Lane 6 of Niu Lu Wei Liu Xiang, Zhulin Village, Lianshang Town, Chenghai District, Shantou City, Guangdong Province, China
Product Designation	R/C CAR
Brand Name	N/A
Test Model	2301
Series Model(s)	See page 5
Difference Description	All the series models are the same as the test model except for the model names and the color of appearance.
Date of receipt of test item	Oct. 10, 2023
Date of Test	Oct. 10, 2023 to Oct. 18, 2023
Deviation from Standard	No any deviation from the test method
Condition of Test Sample	Normal
Test Result	Pass
Test Report Form No	AGCER-FCC-SRD27MHz-V1

Note: The test results of this report relate only to the tested sample identified in this report.

Prepared By	Sky Zhou (Project Engineer)	Oct. 20, 2023
Reviewed By	Calvin Liu (Reviewer)	Oct. 20, 2023
Approved By	Max Zhang (Authorized Officer)	Oct. 20, 2023

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

2. Product Information

2.1 Product Technical Description

Operation Frequency	27.145MHz
Hardware Version	Ver 1.0
Software Version	Ver 1.0
Modulation Type	FSK
Number of channels	1
Field Strength of Fundamental	57.03dBμV/m
Antenna Designation	Wire Antenna
Antenna Gain	0dBi
Power Supply	DC 3V by battery

2.2 Test Frequency List

Frequency Band	Channel Number	Test Frequency
26.96~27.28 MHz	01	27.145MHz

Series Model	2301-1, 2301-2, 2301-3, 2301-4, 2301-5, 2301-6, 2301-7, 2301-8, 2301-9, 2301-10, 2301-11, 2301-12, 2301-13, 2301-14, 2301-15, 2301-16, 2301-17, 2301-18, 2301-19, 2301-20, 2301-21, 2301-22, 2301-23, 2301-24, 2301-25, 2301-26, 2301-27, 2301-28, 2301-29, 2301-30, 2302, 2302-1, 2302-2, 2302-3, 2302-4, 2302-5, 2302-6, 2302-7, 2302-8, 2302-9, 2302-10, 2302-11, 2302-12, 2302-13, 2302-14, 2302-15, 2302-16, 2302-17, 2302-18, 2302-19, 2302-20, 2302-21, 2302-22, 2302-23, 2302-24, 2302-25, 2302-26, 2302-27, 2302-28, 2302-29, 2302-30, 2203, 2203-1, 2203-2, 2203-3, 2203-4, 2203-5, 2203-6, 2203-7, 2203-8, 2203-9, 2203-10, 2203-11, 2203-12, 2203-13, 2203-14, 2203-15, 2203-16, 2203-17, 2203-18, 2203-19, 2203-20, 2203-21, 2203-22, 2203-23, 2203-24, 2203-25, 2203-26, 2203-27, 2203-28, 2203-29, 2203-30, 77755, HST-23015, 0036-1, 0036-2, 0036-3, 0036-4, 0036-5, HST-0036, HST-00365, 368-1, 368-2, 368-3, HST-368-1, HST-368-2, HST-368-3, HST-19615, HST-61425, QF526, QF528, 57527-B, 57527-G, 57529A-G, 57529A-Y, 57529B-G, 57529B-Y, BZ001, BZ001-1, BZ001-2, BZ002, BZ003, BZ004, BZ005, BZ006, BZ007, BZ008, BZ009, BZ010, BZ011, BZ012, BZ013, BZ014, BZ015, BZ016, BZ017, BZ018, BZ019, BZ020, BZ021, BZ022, BZ023, BZ024, BZ025, BZ026, BZ027, BZ028, BZ029, BZ030, 57001, 57002, 57003, 57004, 57005, 57006, 57007, 57008, 57009, 57010, 57011, 57012, 57013, 57014, 57015, 57016, 57017, 57018, 57019, 57020, 57021, 57022, 57023, 57024, 57025, 57026

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

2.3 Related Submittal(S) / Grant (S)

This submittal(s) (test report) is intended for FCC ID: **2BC57-2301,** filing to comply with Part 2, Part 15 of the Federal Communication Commission rules.

2.4 Test Methodology

The tests were performed according to following standards:

No.	Identity	Document Title
1	FCC 47 CFR Part 2	Frequency allocations and radio treaty matters; general rules and regulations
2	FCC 47 CFR Part 15	Radio Frequency Devices
3	ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices

2.5 Special Accessories

Not available for this EUT intended for grant.

2.6 Equipment Modifications

Not available for this EUT intended for grant.

2.7 Antenna Requirement

Standard Requirement
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 non-detachable antenna inside the device cannot be replaced by the user at will. The gain of the antenna is 0dBi.

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

3. Test Environment

3.1 Address of The Test Laboratory

Laboratory: Attestation of Global Compliance (Shenzhen) Co., Ltd.

Address: 1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

3.2 Test Facility

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

CNAS-Lab Code: L5488

Attestation of Global Compliance (Shenzhen) Co., Ltd. has been assessed and proved to follow CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories.)

A2LA-Lab Cert. No.: 5054.02

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to follow ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 975832

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files with Registration 975832.

IC-Registration No.: 24842(CAB identifier: CN0063)

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the Certification and Engineering Bureau of Industry Canada. The acceptance letter from the IC is maintained in our files with Registration 24842.

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

3.3 Environmental Conditions

	Normal Conditions
Temperature range (℃)	15 - 35
Relative humidty range	20 % - 75 %
Pressure range (kPa)	86 - 106
Power supply	3V

3.4 Measurement Uncertainty

The reported uncertainty of measurement y ±U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

Item	Measurement Uncertainty
Uncertainty of Radiated Emission below 150kHz	U_c = ±3.9 dB
Uncertainty of Radiated Emission below 30MHz	U_c = ±4.9 dB
Uncertainty of Radiated Emission below 1GHz	U_c = ±3.9 dB
Uncertainty of Occupied Channel Bandwidth	U_c = ±2 %

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

3.5 List of Equipment Used

● RF Conducted Test System							
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
☒	AGC-ER-E036	Spectrum Analyzer	Agilent	N9020A	MY49100060	2023-06-01	2024-05-31
☐	AGC-ER-E062	Power Sensor	Agilent	U2021XA	MY54110007	2023-03-03	2024-03-02
☐	AGC-ER-E063	Power Sensor	Agilent	U2021XA	MY54110009	2023-03-03	2024-03-02
☐	AGC-EM-A152	6dB Attenuator	Eeatsheep	LM-XX-6-5W	N/A	2023-06-09	2024-06-08
☐	N/A	RF Connection Cable	N/A	1#	N/A	Each time	N/A
☐	N/A	RF Connection Cable	N/A	2#	N/A	Each time	N/A

● Radiated Spurious Emission							
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
☐	AGC-EM-E046	EMI Test Receiver	R&S	ESCI	10096	2023-02-18	2024-02-17
☒	AGC-EM-E116	EMI Test Receiver	R&S	ESCI	100034	2023-06-03	2024-06-02
☐	AGC-EM-E061	Spectrum Analyzer	Agilent	N9010A	MY53470504	2023-06-01	2024-05-31
☒	AGC-EM-E086	Loop Antenna	ZHINAN	ZN30900C	18051	2022-03-12	2024-03-11
☒	AGC-EM-E001	Wideband Antenna	SCHWARZBECK	VULB9168	D69250	2023-05-11	2025-05-10
☐	AGC-EM-E029	Broadband Ridged Horn Antenna	ETS	3117	00034609	2023-03-23	2024-03-22
☐	AGC-EM-E082	Horn Antenna	SCHWARZBECK	BBHA 9170	#768	2021-10-31	2023-10-30
☐	AGC-EM-E146	Pre-amplifier	ETS	3117-PA	00246148	2022-08-04	2024-08-03
☐	AGC-EM-A119	2.4G Filter	SongYi	N/A	N/A	2023-06-01	2024-05-31
☐	AGC-EM-A138	6dB Attenuator	Eeatsheep	LM-XX-6-5W	N/A	2023-06-09	2024-06-08
☐	AGC-EM-A139	6dB Attenuator	Eeatsheep	LM-XX-6-5W	N/A	2023-06-09	2024-06-08

● AC Power Line Conducted Emission							
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
☐	AGC-EM-E045	EMI Test Receiver	R&S	ESPI	101206	2023/06/03	2024/06/02
☐	AGC-EM-E023	AMN	R&S	100086	ESH2-Z5	2023/06/03	2024/06/02

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

4. System Test Configuration

4.1 EUT Configuration

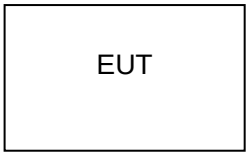
The EUT configuration for testing is installed on RF field strength measurement to meet the Commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

4.2 EUT Exercise

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

4.3 Configuration of Tested System

Radiated Emission Configure:



4.4 Equipment Used in Tested System

The following peripheral devices and interface cables were connected during the measurement:

☐ Test Accessories Come From The Laboratory

No.	Equipment	Model No.	Manufacturer	Specification Information	Cable
1	--	--	--	--	--

☐ Test Accessories Come From The Manufacturer

No.	Equipment	Model No.	Manufacturer	Specification Information	Cable
1	--	--	--	--	--

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

4.5 Summary of Test Results

Item	FCC Rules	Description Of Test	Result
1	§15.203	Antenna Equipment	Pass
2	15.227(a)	Field Strength of Fundamental	Pass
3	§15.209	Radiated Emission	Pass
4	§15.215(c)	20dB Bandwidth	Pass
5	§15.205(a)	Restricted Bands of Operation	Pass
6	§15.207	AC Power Line Conducted Emission	N/A

Note: 1.N/A means not applicable

Note: 2. The device under test is battery-powered and does not require evaluation of AC Power Line Conducted Emission.

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

5. Description of Test Modes

Summary table of Test Cases	
Test Item	Equipment Type / Modulation
	Short Range Wireless Device/ FSK
Radiated & Conducted Test Cases	Mode 1: TX _27.145 MHz
AC Conducted Emission	--

Note:
1. Only the result of the worst case was recorded in the report, if no other cases.
2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.
3. For Conducted Test method, a temporary antenna connector is provided by the manufacture.

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

6. Field Strength of Fundamental and Radiated Emission

6.1 Provisions Applicable

15.209 Limit in the below table has to be followed:

Frequency (MHz)	Distance Meters	Field Strengths Limit	
		μV/m	dBμV/m
0.009 ~ 0.490	300	2400/F(kHz)	---
0.490 ~ 1.705	30	24000/F(kHz)	---
1.705 ~ 30	30	30	---
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

Remark:
1) Emission level dBμV = 20 log Emission level μV/m
2) The smaller limit shall apply at the cross point between two frequency bands.
3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

Note: All modes were tested for restricted band radiated emission, the test records reported below are the worst result compared to other modes.

15.227(a) Limit in the below table has to be followed:

Fundamental Frequency	Field Strength of Fundamental (microvolts/meter)
26.96-27.28MHz	10000

6.2 Measurement Procedure

1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emission, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz RBW and 3MHz VBW for peak reading. Place the measurement

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.

7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High - Low scan is not required in this case.

The following table is the setting of spectrum analyzer and receiver.

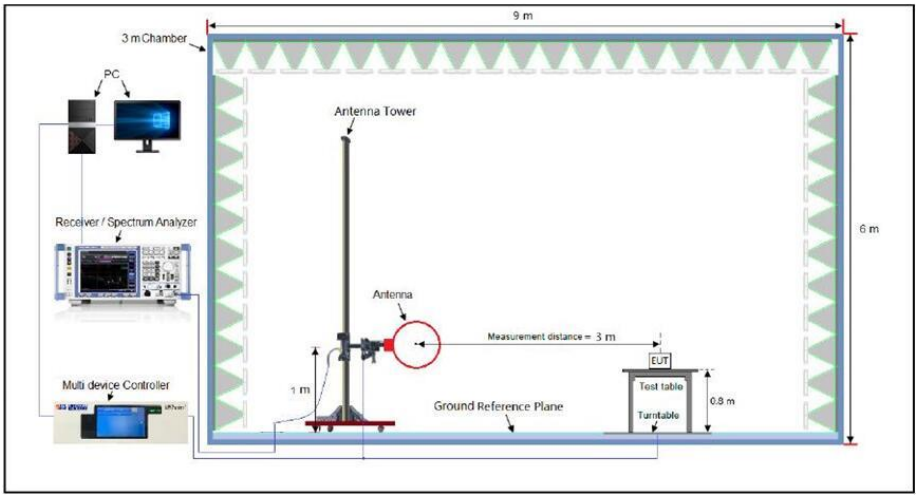
Spectrum Parameter	Setting
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP
Start ~Stop Frequency	1GHz~26.5GHz 1MHz/3MHz for Peak, 1MHz/3MHz for Average

Receiver Parameter	Setting
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP

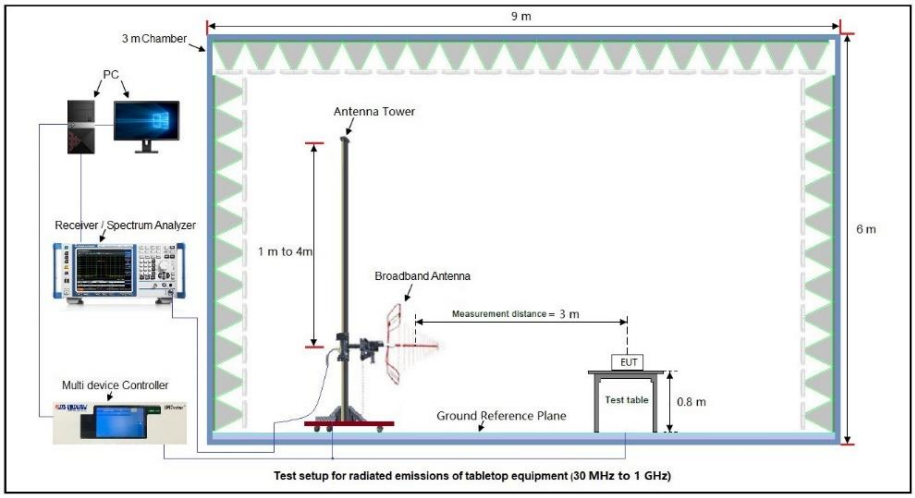
Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

6.3 Measurement Setup (Block Diagram Of Configuration)

RADIATED EMISSION TEST SETUP 9KHz-30MHz



RADIATED EMISSION TEST SETUP 30MHz-1000MHz



Test setup for radiated emissions of tabletop equipment (30 MHz to 1 GHz)

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

6.4 Measurement Result

Field Strength of Fundamental

EUT Name	R/C CAR	**Model Name**	2301
Temperature	23.4°C	**Relative Humidity**	62.5%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	Mode 1	**Antenna**	Face/Side

Peak Value					
Frequency (MHz)	Measured Level @3m(dBuV/m)	Correction Factor dB/m	Field Strength (dBuV/m)	Limit @3m (dBuV/m)	E-Field Polarity
27.145	29.86	24.38	54.24	100	Face
27.145	32.65	24.38	57.03	100	Side

Average Value					
Frequency (MHz)	Measured Level @3m(dBuV/m)	Correction Factor dB/m	Field Strength (dBuV/m)	Limit @3m (dBuV/m)	E-Field Polarity
27.145	25.23	24.38	49.61	80	Face
27.145	27.19	24.38	51.57	80	Side

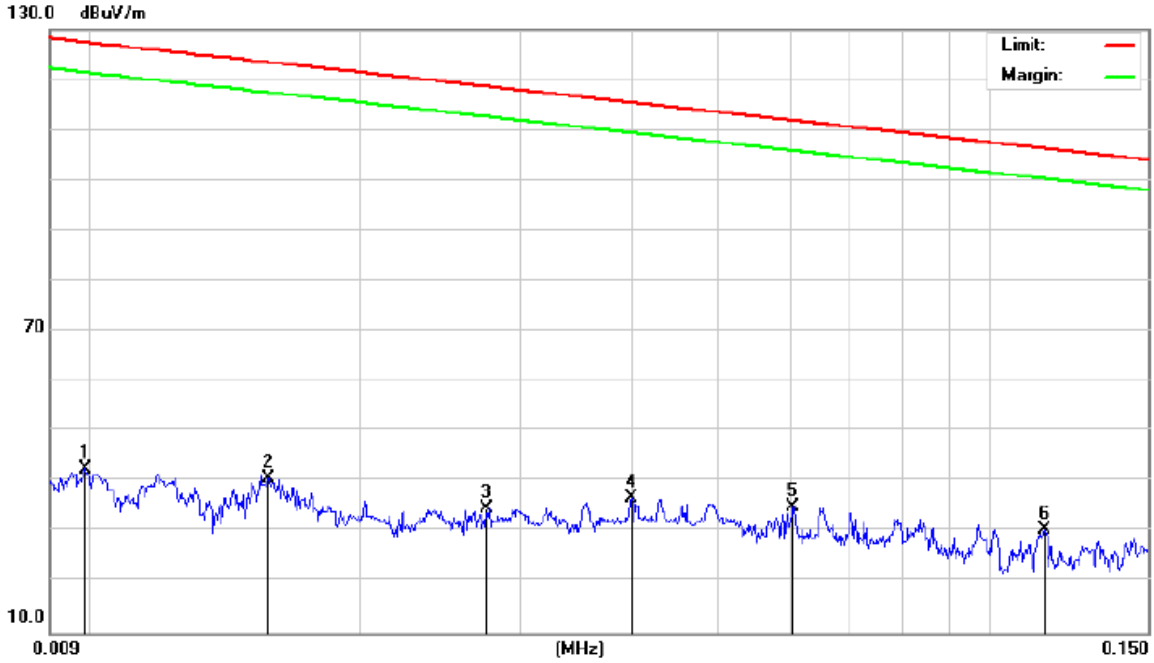
RESULT: Pass

Note: Corr. Factor= Antenna Factor (dB/m) + Cable Loss (dB)

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

Electric Field Test in The Frequency Range 9kHz-150kHz

EUT Name	R/C CAR	**Model Name**	2301
Temperature	23.4°C	**Relative Humidity**	62.5%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	Mode 1	**Antenna**	Face



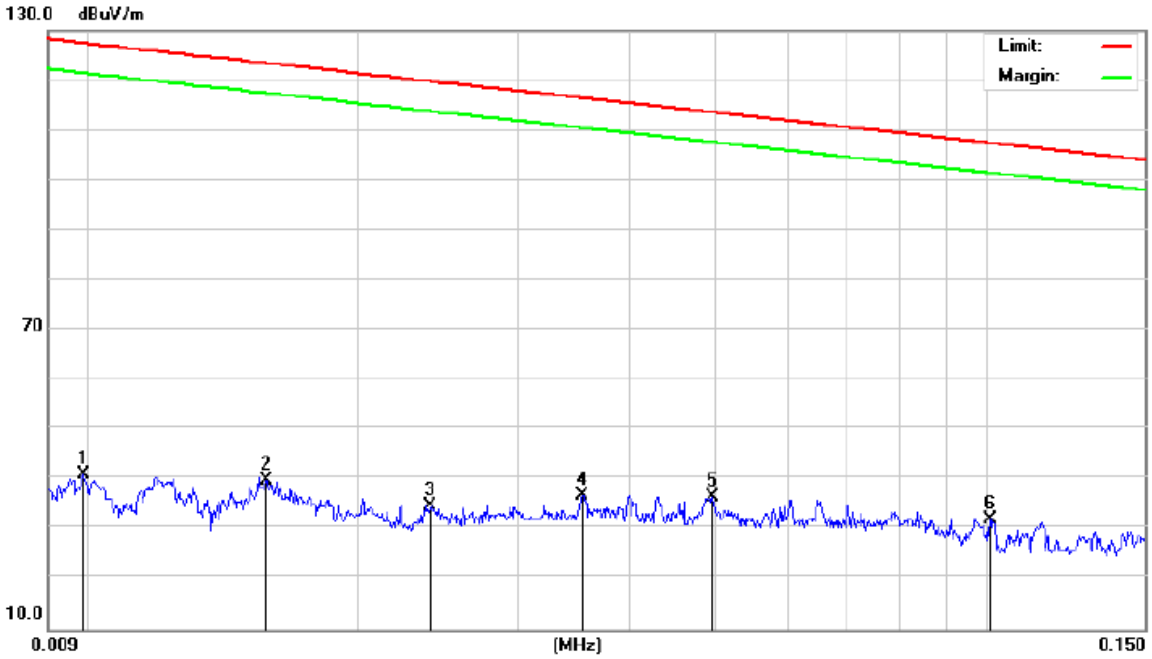
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		0.0099	14.29	28.35	42.64	127.4	-84.84	peak
2		0.0158	12.92	27.91	40.83	123.4	-82.62	peak
3		0.0276	7.67	27.03	34.70	118.6	-83.93	peak
4		0.0400	10.61	26.10	36.71	115.4	-78.72	peak
5		0.0604	10.41	24.58	34.99	111.8	-76.88	peak
6	*	0.1150	8.84	21.59	30.43	106.3	-75.88	peak

RESULT: PASS

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

Electric Field Test in The Frequency Range 9kHz-150kHz

EUT Name	R/C CAR	**Model Name**	2301
Temperature	23.4°C	**Relative Humidity**	62.5%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	Mode 1	**Antenna**	Side



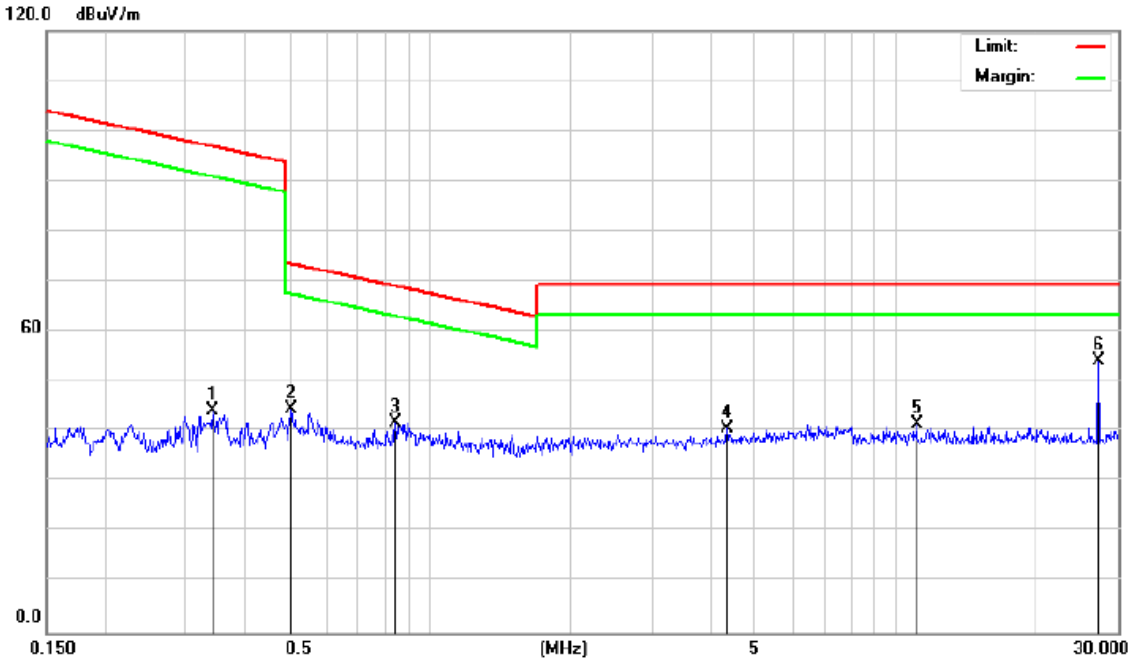
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		0.0099	12.79	28.35	41.14	127.4	-86.34	peak
2		0.0158	11.92	27.91	39.83	123.4	-83.62	peak
3		0.0240	7.59	27.29	34.88	119.8	-84.96	peak
4		0.0354	10.40	26.44	36.84	116.4	-79.64	peak
5		0.0495	11.08	25.39	36.47	113.5	-77.12	peak
6	*	0.1008	10.50	21.62	32.12	107.4	-75.33	peak

RESULT: Pass

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

Electric Field Test in The Frequency Range 150kHz-30MHz

EUT Name	R/C CAR	**Model Name**	2301
Temperature	23.4°C	**Relative Humidity**	62.5%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	Mode 1	**Antenna**	Face



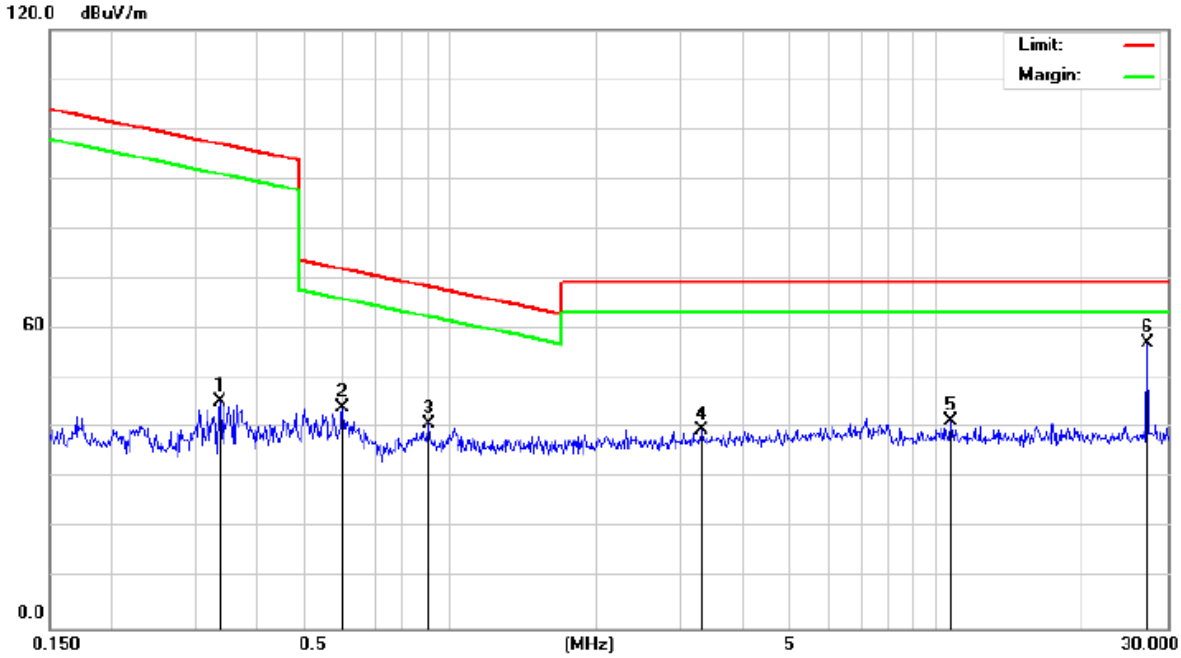
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		0.3410	22.95	21.17	44.12	96.93	-52.81	peak
2		0.5047	23.77	20.88	44.65	73.54	-28.89	peak
3		0.8437	20.80	21.16	41.96	69.08	-27.12	peak
4		4.3376	17.72	22.82	40.54	69.54	-29.00	peak
5		11.0797	17.02	24.46	41.48	69.54	-28.06	peak
6	*	27.1480	29.86	24.38	54.24	69.54	-15.30	peak

RESULT: Pass

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

Electric Field Test in The Frequency Range 150kHz-30MHz

EUT Name	R/C CAR	**Model Name**	2301
Temperature	23.4°C	**Relative Humidity**	62.5%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	Mode 1	**Antenna**	Side



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		0.3356	24.34	21.18	45.52	97.07	-51.55	peak
2		0.6010	23.16	20.96	44.12	72.02	-27.90	peak
3		0.9039	19.82	21.21	41.03	68.48	-27.45	peak
4		3.2930	17.34	22.50	39.84	69.54	-29.70	peak
5		10.7330	17.02	24.43	41.45	69.54	-28.09	peak
6	*	27.1480	32.65	24.38	57.03	69.54	-12.51	peak

RESULT: Pass

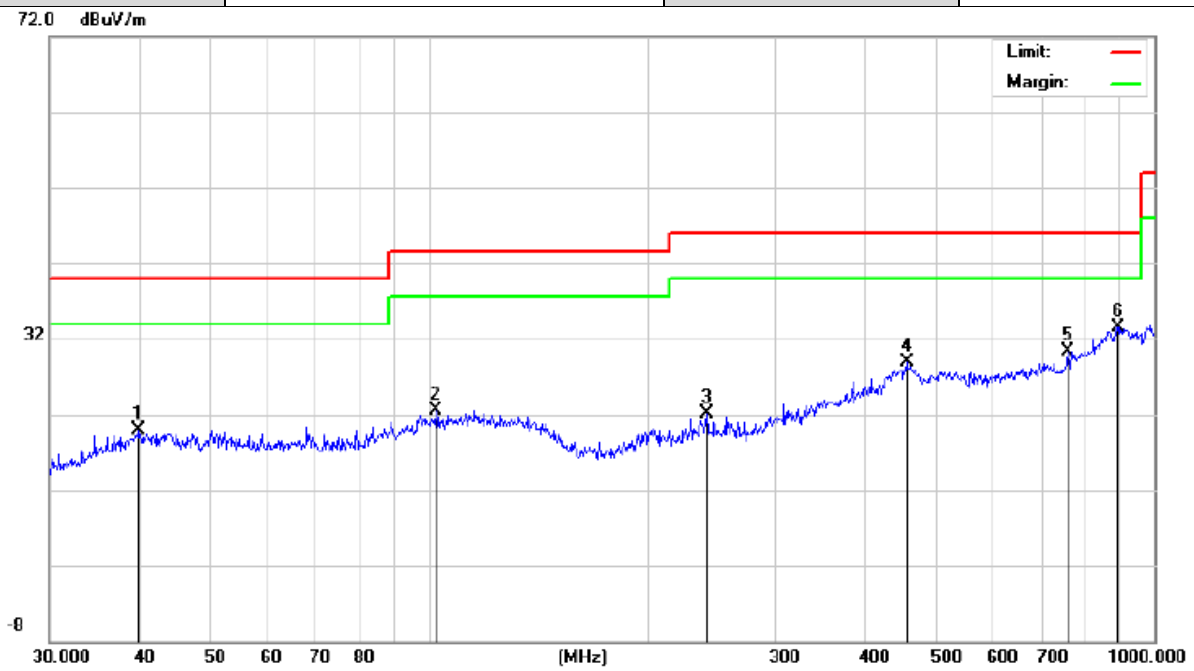
Note:

1. Negative value in the margin column shows emission below limit.
2. All measurements were made with 0.6m loop antenna at 3m distance. All emissions are below the QP limit.
3. Corr. Factor= Antenna Factor (dB/m) + Cable Loss (dB)
4. Loop antenna is used for the emission under 30MHz.

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

Radiated Emission from 30MHz ~1000MHz

EUT Name	R/C CAR	**Model Name**	2301
Temperature	22.8°C	**Relative Humidity**	56.5%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	Mode 1	**Antenna**	Horizontal



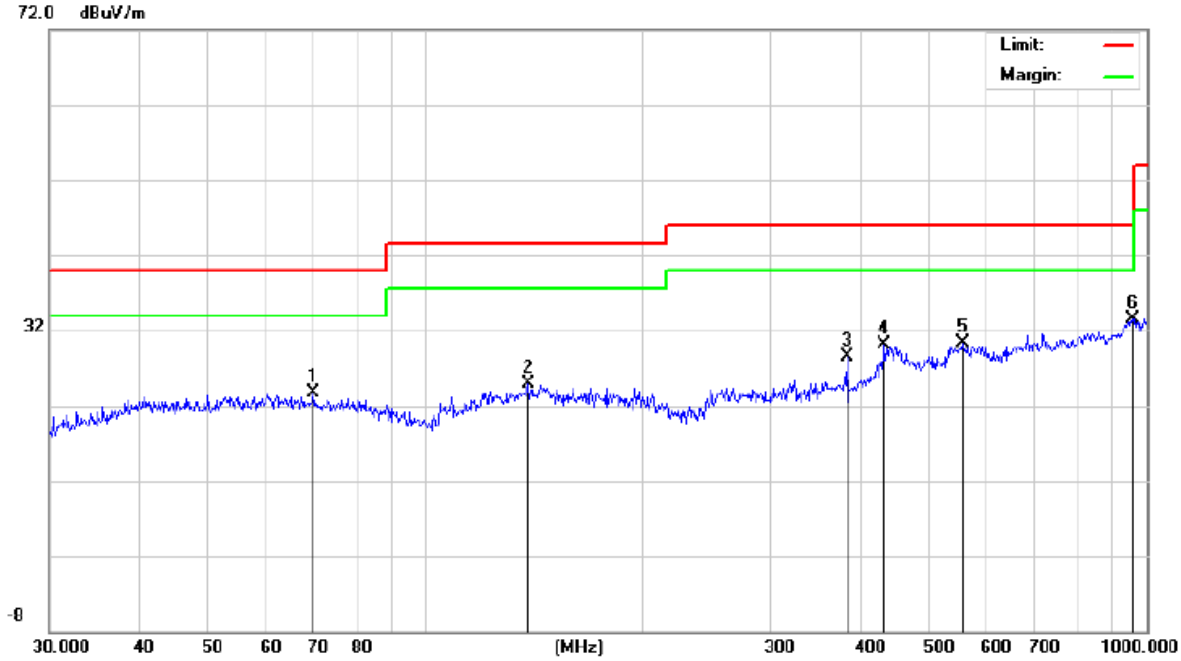
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		39.8541	5.98	13.84	19.82	40.00	-20.18	peak
2		102.3597	6.25	16.22	22.47	43.50	-21.03	peak
3		241.6760	6.76	15.35	22.11	46.00	-23.89	peak
4		455.9057	4.28	24.54	28.82	46.00	-17.18	peak
5		760.7036	5.19	25.21	30.40	46.00	-15.60	peak
6	*	890.7278	2.88	30.64	33.52	46.00	-12.48	peak

RESULT: Pass

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

Radiated Emission from 30MHz ~1000MHz

EUT Name	R/C CAR	**Model Name**	2301
Temperature	22.8°C	**Relative Humidity**	56.5%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	Mode 1	**Antenna**	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		69.6003	6.62	17.00	23.62	40.00	-16.38	peak
2		138.3873	6.78	18.16	24.94	43.50	-18.56	peak
3		383.9318	6.99	21.56	28.55	46.00	-17.45	peak
4		432.5457	5.10	24.91	30.01	46.00	-15.99	peak
5		554.8251	5.58	24.63	30.21	46.00	-15.79	peak
6	*	955.4379	3.20	30.38	33.58	46.00	-12.42	peak

RESULT: Pass

Note:

1. Factor=Antenna Factor + Cable loss, Over=Measurement-Limit.
2. The “Factor” value can be calculated automatically by software of measurement system.

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the “Dedicated Testing/Inspection Stamp” is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

7. 20dB Bandwidth Measurement

7.1 Provisions Applicable

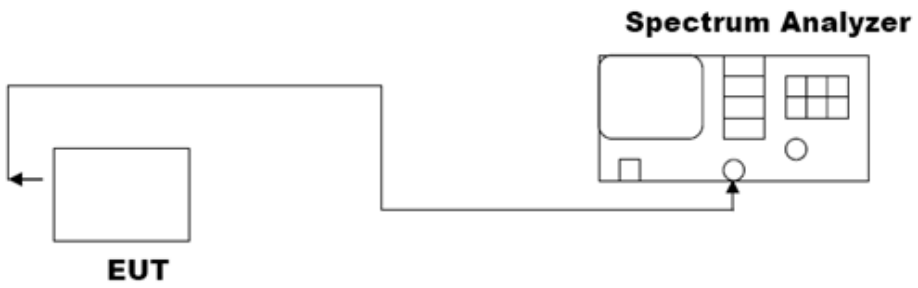
Intentional radiators must be designed to ensure that the 20dB and 99% emission bandwidth in the specific band 26.96~27.28MHz.

7.2 Measurement Procedure

Set the parameters of SPA as below:

1. The spectrum analyzer connected via a receive antenna placed near the EUT in peak Max hold mode.
2. Centre frequency = Operation Frequency
3. The resolution bandwidth of 1 kHz and the video bandwidth of 3 kHz were used.
4. Span: 60kHz, Sweep time: Auto
5. Set the EUT to continue transmitting mode. Allow the trace to stabilize. Use the “N dB down” function of SPA to define the bandwidth.
6. Measured the spectrum width with power higher than 20dB below carrier.
7. Measured the 99% OBW.
8. Record the plots and Reported.

7.3 Measurement Setup (Block Diagram of Configuration)

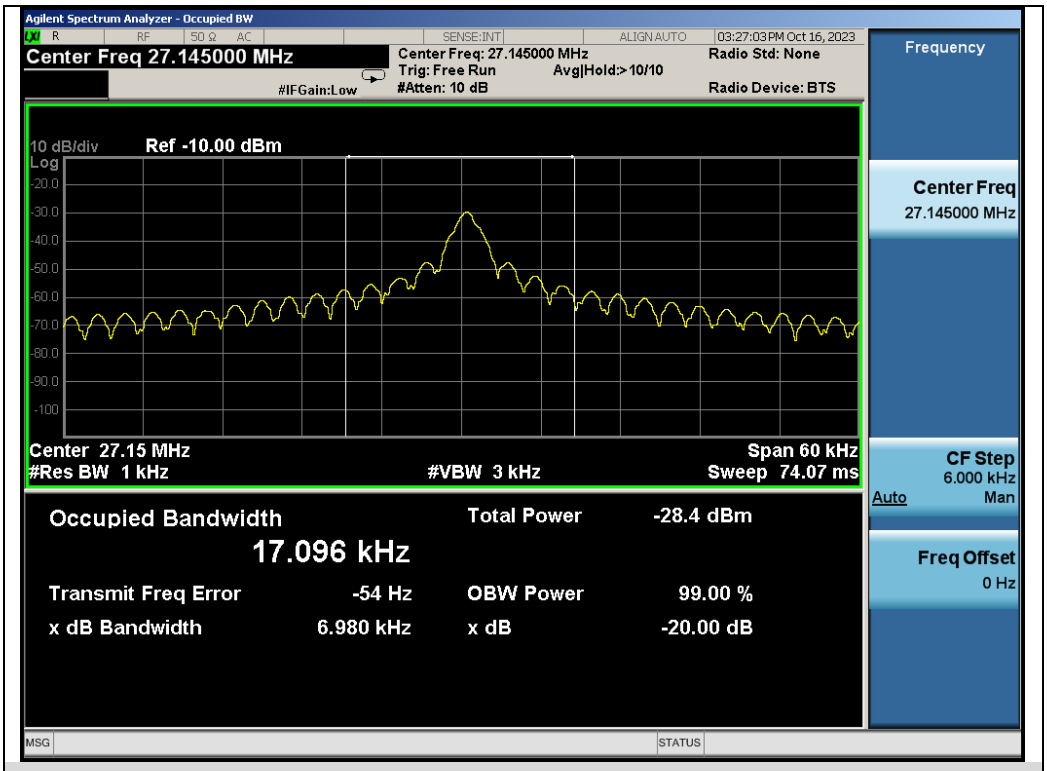


Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the “Dedicated Testing/Inspection Stamp” is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

7.4 Measurement Result

Test Data of Bandwidth Measurement					
Test Mode	Test Channel (MHz)	99% Occupied Bandwidth (MHz)	-20dB Bandwidth (MHz)	Limits (MHz)	Pass or Fail
FSK	27.145	0.017096	0.006980	N/A	Pass

Test Graphs of Occupied Bandwidth and -20dB Bandwidth



Test_Graph_FSK_ANT1_27.145MHz_OBW

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

8. AC Power Line Conducted Emission Test

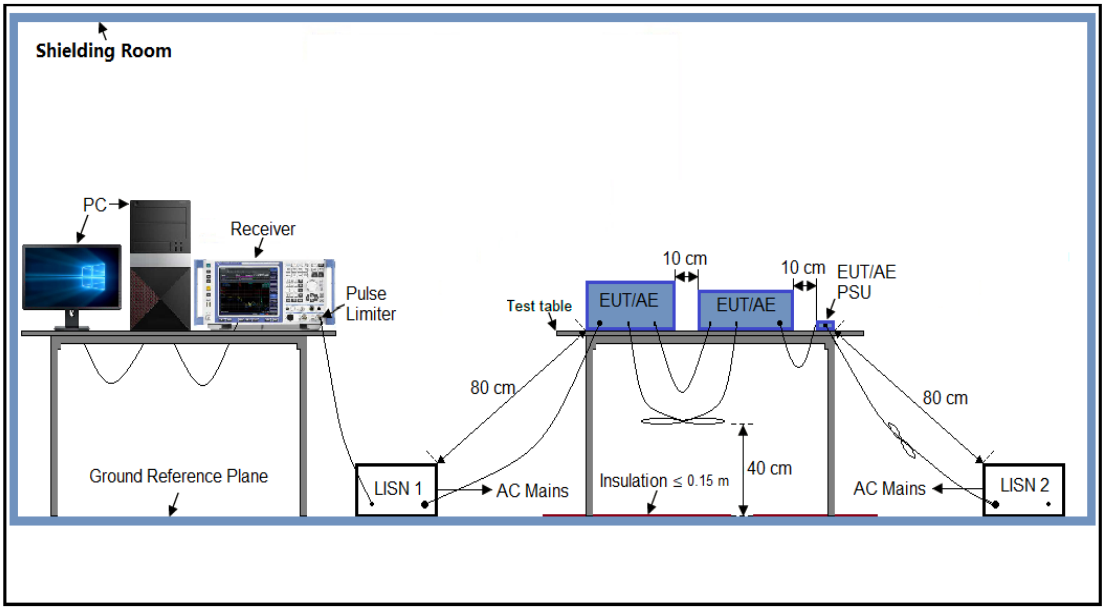
8.1 Measurement Limit

Frequency Range	Maximum RF Line Voltage	
	Q.P. (dBμV)	Average (dBμV)
150kHz~500kHz	66-56	56-46
500kHz~5MHz	56	46
5MHz~30MHz	60	50

Note:

1. The lower limit shall apply at the transition frequency.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

8.2 Measurement Setup (Block Diagram of Configuration)



Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

8.3 Preliminary Procedure of Line Conducted Emission Test

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
2. Support equipment, if needed, was placed as per ANSI C63.10.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
4. All support equipment received AC120V/60Hz power from a LISN, if any.
5. The EUT received DC 5V power from adapter which received AC120V/60Hz power from a LISN.
6. The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.
9. The test mode(s) were scanned during the preliminary test.

Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

8.4 Final Procedure of Line Conducted Emission Test

1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
2. A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less –2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
3. The test data of the worst case condition(s) was reported on the Summary Data page.

8.5 Measurement Result

Not Applicable
Note: This device is battery powered, there is no AC power supply

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

APPENDIX I: PHOTOGRAPHS OF TEST SETUP

Refer to the Report No.: AGC15705231016AP01

APPENDIX II: PHOTOGRAPHS OF TEST EUT

Refer to the Report No.: AGC15705231016AP02

-----End of Report-----

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

Conditions of Issuance of Test Reports

1. All samples and goods are accepted by the Attestation of Global Compliance (Shenzhen) Co., Ltd (the "Company") solely for testing and reporting in accordance with the following terms and conditions. The company provides its services on the basis that such terms and conditions constitute express agreement between the company and any person, firm or company requesting its services (the "Clients").

2. Any report issued by Company as a result of this application for testing services (the "Report") shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to its customer, supplier or other persons directly concerned. The Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders.

3.The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.

4. In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.

5. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.

6. The Company will not be liable for or accept responsibility for any loss or damage however arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.

7.Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.

8. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.

9. Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of six years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.