

# FCC Test Report

Report No.: AGC15705231244FR01

FCC ID	:	2BB3TY241
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	R/C CAR
BRAND NAME	:	N/A
MODEL NAME	:	See page 4
APPLICANT	:	Shantou City Youjie Technology Co., Ltd.
DATE OF ISSUE	:	Jan. 02, 2024
STANDARD(S)	:	FCC Part 15 Subpart C §15.227
REPORT VERSION	:	V1.0







# **Report Revise Record**

Report Version	Revise Time	Issued Date	Valid Version	Notes	
V1.0	/	Jan. 02, 2024	Valid	Initial Release	



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# 1. General Information

Applicant	Shantou City Youjie Technology Co., Ltd.
Address	Shangxindong Road, Shangcun, Lianxia Town, Chenghai Distrct, Shantou City, China.
Manufacturer	Shantou City Youjie Technology Co., Ltd.
Address	Shangxindong Road, Shangcun, Lianxia Town, Chenghai Distrct, Shantou City, China.
Factory	Shantou City Youjie Technology Co., Ltd.
Address	Shangxindong Road, Shangcun, Lianxia Town, Chenghai Distrct, Shantou City, China.
Product Designation	R/C CAR
Brand Name	N/A
Test Model	UJ99-Y241
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	Dec. 21, 2023
Date of Test	Dec. 21, 2023 to Jan. 02, 2024
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.

an Duan Prepared By Alan Duan Jan. 02, 2024 (Project Engineer) **Reviewed By** Calvin Liu Jan. 02, 2024 (Reviewer) Approved By Max Zhang

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# 2. Product Information

#### 2.1 Product Technical Description

Operation Frequency	27.15
Hardware Version	JG-373T V1.0
Software Version	TX-2A V1.0
Modulation Type	AM
Number of channels	1
Field Strength of Fundamental	56.68dBµV/m
Antenna Designation	Wire Antenna
Antenna Gain	0dBi
Power Supply	DC 3V by battery
Series Model(s)	UJ99-Y242, UJ99-Y243, UJ99-Y240, UJ99-P220, UJ99-P221, UJ99-P222, UJ99-P223, UJ99-Y200, UJ99-Y201, UJ99-Y202, UJ99-Y203, 10353

#### 2.2 Test Frequency List

Frequency Band	Channel Number	Test Frequency
26.96~27.28 MHz	01	27.15MHz



#### 2.3 Related Submittal(S) / Grant (S)

This submittal(s) (test report) is intended for FCC ID: **2BB3TY241**, 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.



# 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.



#### **3.3 Environmental Conditions**

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

#### 3.4 Measurement Uncertainty

The reported uncertainty of measurement y  $\pm U$ , 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	$U_c = \pm 3.9 \text{ dB}$
Uncertainty of Radiated Emission below 30MHz	$U_c = \pm 4.9 \text{ dB}$
Uncertainty of Radiated Emission below 1GHz	$U_c = \pm 3.9 \text{ dB}$
Uncertainty of Occupied Channel Bandwidth	U <sub>c</sub> = ±2 %



#### 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)	
$\boxtimes$	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	

• F	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		
$\boxtimes$	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		
$\boxtimes$	AGC-EM-E086	Loop Antenna	ZHINAN	ZN30900C	18051	2022-03-12	2024-03-11		
$\boxtimes$	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	2023-09-24	2025-09-23		
	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		

• A	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	



Test Software								
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Version Information			
$\boxtimes$	AGC-EM-S003	RE Test System	FARA	EZ-EMC	V.RA-03A			
	AGC-EM-S011	RSE Test System	Tonscend	TS⁺ Ver2.1(JS36-RSE)	4.0.0.0			
	AGC-EM-S001	CE Test System	R&S	ES-K1	V1.71			
	AGC-ER-S009	BT/WIFI Test System	Tonscend	JS1120-3	2.6.77.0518			



# 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									
$\Box$	Test Accessories Come From The Manufacturer								

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



#### 4.5 Summary of Test Results

ltem	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.



# 5. Description of Test Modes

Summary table of Test Cases						
	Equipment Type / Modulation					
Test Item	Short Range Wireless Device/ AM					
Radiated & Conducted Test Cases	Mode 1: TX _27.15 MHz					
AC Conducted Emission						
Note:						
1. Only the result of the worst case was recorded in the report, if no other cases.						

For Radiated Emission, 3axis were chosen for testing for each applicable mode.

2. 3. For Conducted Test method, a temporary antenna connector is provided by the manufacture.



# 6. Field Strength of Fundamental and Radiated Emission

# 6.1 Provisions Applicable

15.209 Limit in the below table has to be followed:

Frequency	Distance	Field Streng	gths Limit
(MHz)	Meters	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) 54.0 dB(μV)/n	

Remark:

1) Emission level  $dB\mu V = 20 \log Emission level \mu V/m$ 

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		
r undamentar requency	(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



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.

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		

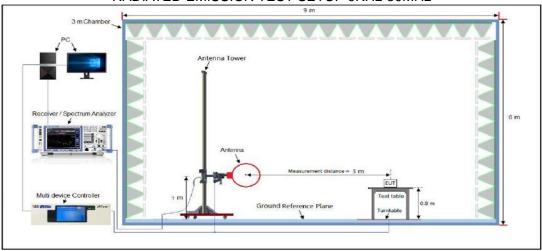
The following table is the setting of spectrum analyzer and receiver.

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		

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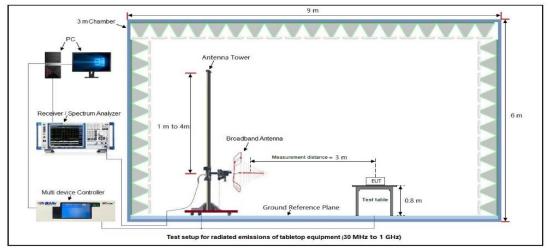


#### 6.3 Measurement Setup (Block Diagram Of Configuration)



# RADIATED EMISSION TEST SETUP 9KHz-30MHz

#### RADIATED EMISSION TEST SETUP 30MHz-1000MHz





#### **6.4 Measurement Result**

<b>Field Strength</b>	of Fundamental
-----------------------	----------------

EUT Name		R/C CAR		I	Model Name		UJ99-Y241	
Temperature		23.5°C			Relative Humidity		55.2%	
Pressure		960hPa		-	Test Voltage		Normal Voltage	
Test Mode Mode 1				Antenna		Face/Side		
			Peal	k Va	alue			-
Frequency (MHz)	y Measured Level@3m (dBµV/m) Factor dB/m		F	Field Strength (dBµV/m)	Limit @3m (dBµV/m)		E-Field Polarity	
27.15 31.36		24.40		55.76	100		Face	
27.15 32.28		24.40		56.68		100	Side	

	Average Value									
Frequency (MHz)										
27.15	27.24	24.40	51.64	80	Face					
27.15	28.17	24.40	52.57	80	Side					

### **RESULT: Pass**

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



EUT Name	R/C CAR			Model Name	)	UJ99-Y241		
Temperature	<b>23.5</b> ℃			Relative Hu	nidity	55.2%		
Pressure	960hPa			Test Voltage	,	Norma	I Voltage	
Test Mode	Mode 1			Antenna		Face		
132.0 dBuV								
72	milit mon in the		mantantanta		14.14.14.14.14.14.14.14.14.14.14.14.14.1			
12.0					do de de	www.	"Marsa Uni Mara	
0.009			(MHz)		· · · · ·		0.150	
No.	Mk. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector	
1	0.0123	6.56	28.17	34.73	125.6	-90.88	peak	
2	0.0165	6.18	27.85	34.03	123.0	-89.04	peak	
3	0.0269	7.12	27.08	34.20	118.8	-84.65	peak	
4	0.0480	8.37	25.50	33.87	113.8	-79.98	peak	
5	0.0719	7.09	23.72	30.81	110.3	-79.56	peak	
6	* 0.1259	5.93	21.57	27.50	105.5	-78.03	peak	

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

### **RESULT: PASS**



EUT Name		R/C (	CAR			Model N	lame		UJ99	UJ99-Y241		
Temperature		23.5°	C			Relative	Humi	idity	55.2%	55.2%		
Pressure		960h	Pa			Test Vol	tage		Norm	al Voltage		
Test Mode		Mode	ə 1			Antenna	3		Side			
132.0	dBuV	/m										
										mit: <u> </u>		
								_				
72												
	w.m	and		when we have		m and m	4		5 X	6		
				an a alow many head and	wy traffed for the theory	where he is no	Annan	which monthly	Malan	-dww.hudh		
12.0												
0.009	1				(MHz)					0.150		
				Deading	Correct	Maga						
N	lo.	Mk.	Freq.	Reading Level	Correct Factor			Limit	Over			
			MHz	dBuV	dB	dBuV/	/m	dB/m	dB	Detector		
	1		0.0140	8.01	28.04	36.0	5	124.4	-88.44	peak		
	2		0.0182	8.08	27.73	35.8	1	122.2	-86.42	peak		
	3		0.0483	10.21	25.48	35.6	9	113.8	-78.11	peak		
	4		0.0623	8.35	24.44	32.7	9	111.6	-78.81	peak		
	5	*	0.0989	13.08	21.70	34.7	8	107.6	-72.83	peak		
	6		0.1262	9.35	21.57	30.9	2	105.5	-74.59	peak		

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

### **RESULT: Pass**



EUT Name   R/C CAR   Model Name   UJ99-Y241     Temperature   23.5°C   Relative Humidity   55.2%     Pressure   960hPa   Test Voltage   Normal Voltage     Test Mode   Model 1   Antenna   Face     12:0   @sv/m   Imit   Margin   Imit     2:0				ia lest in l	ne Freque	ncy Range	150KHZ-30	JIVIHZ			
Pressure   960hPa   Test Voltage   Normal Voltage     Test Mode   Mode 1   Antenna   Face     1220   46x/m	EUT Name	R/C	R/C CAR			Model Name	•	UJ99-\	UJ99-Y241		
Test Mode   Mode 1   Antenna   Face     122.0   48.4/m   Imit:   Imit:	Temperature	23.5	5°C			Relative Hur	midity	55.2%			
1220   dBuV/m   Limit   Margin     62   4	Pressure	960	hPa			Test Voltage	•	Norma	l Voltage		
No. Mk.   Freq.   Reading Level   Correct Factor   Measure- ment   Limit   Over     MHz   dBuV   dB   dBuV/m   dB/m   dB   Detector     1   0.1768   21.45   21.48   42.93   102.6   -59.67   peak     3   0.8573   14.20   21.17   35.37   68.94   -33.57   peak	Test Mode	Moc	le 1			Antenna		Face			
No. Mk.   Freq.   Level   Factor   ment   Limit   Over     MHz   dBuV   dB   dBuV/m   dB/m   dB   Detector     1   0.1768   21.45   21.48   42.93   102.6   -59.67   peak     2   0.5020   19.65   20.88   40.53   73.59   -33.06   peak     3   0.8573   14.20   21.17   35.37   68.94   -33.57   peak	122.0 62 2.0			3				Limit: Margin:	5×		
5 7.4465 14.09 23.69 37.78 69.54 -31.76 peak   6 * 27.1269 31.36 24.40 55.76 69.54 -13.78 peak	N 	1 2 3 4 5	MHz 0.1768 0.5020 0.8573 2.0768 7.4465	Level dBuV 21.45 19.65 14.20 12.71 14.09	Factor dB 21.48 20.88 21.17 22.13 23.69	ment dBuV/m 42.93 40.53 35.37 34.84 37.78	Limit dB/m 102.6 73.59 68.94 69.54 69.54	dB -59.67 -33.06 -33.57 -34.70 -31.76	peak peak peak peak peak		

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

### **RESULT: Pass**



		eld lest in l	ne Freque	ncy kange	JUNITZ-30		
EUT Nmae	R/C CAR			Model Name	•	UJ99-	Y241
Temperature	<b>23.5</b> ℃		I	Relative Hur	nidity	55.2%	)
Pressure	960hPa		-	Test Voltage	9	Norma	al Voltage
Test Mode	Mode 1			Antenna		Face	
122.0 dBuV. 62 2.0 0.150	1 m		(MHz)	5		Limit: Margi	6 <u>×</u>
No.	Mk. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
	MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	0.1740	22.35	21.48	43.83	102.7	-58.93	peak
2	0.5047	19.64	20.88	40.52	73.54	-33.02	peak
3	1.2555	12.69	21.50	34.19	65.63	-31.44	peak
4	2.3710	12.80	22.22	35.02	69.54	-34.52	peak
5	18.8205	11.70	25.02	36.72		-32.82 -12.86	peak
6	* 27.1269	32.28	24.40	56.68			peak

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

### **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.



			Ra	diated Emis	sion from				
EUT Name			R/C CAR	R/C CAR			ame	UJ98	9-Y241
Temperature			23.6°C			Relative	Humidity	56.8	%
Pressure			960hPa			Test Volta	age	Norn	nal Voltage
Test Mode			Mode 1			Antenna		Horiz	zontal
72	.0 dBu\	//m			ì			Limit:	
-8				n lun min	the second se			Margin:	
3	30.000	40	50 60 70		(MHz)	300	400 500	600 700	1000.000
	No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
-			MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
_	1	1	10.1816	6.88	16.07	22.95	43.50	-20.55	peak
-	2	1	62.6106	10.08	12.24	22.32	43.50	-21.18	peak
-	3	1	89.7385	11.94	12.50	24.44	43.50	-19.06	peak
-	4	4	60.7271	6.46	27.23	33.69	46.00	-12.31	peak
-	5	7	21.7259	6.06	26.46	32.52	46.00	-13.48	peak
-	6	* 9	00.1474	5.96	31.78	37.74	46.00	-8.26	peak
-									

#### Radiated Emission from 30MHz ~1000MHz

#### **RESULT: Pass**



			Model Name	
EUT	R/C CAR			UJ99-Y241
Temperature	23.6°C		Relative Humidity	56.8%
Pressure	960hPa		Test Voltage	Normal Voltage
Test Mode	Mode 1		Antenna	Horizontal
72.0 dBuV/m				Limit: —
-8				Margin:
30.000 40 5	0 60 70 80	(MHz)	300 400 500	600 700 1000.000
No. Mk.	Reading Freq. Level	Factor	Measure- ment Limit	Over
	MHz dBuV	dB	dBuV/m dB/m	dB Detector
1	55.2207 7.00	17.05	24.05 40.00	-15.95 peak
2 1	87.7530 6.89	18.27	25.16 43.50	-18.34 peak
3 4	47.9822 6.49	25.74	32.23 46.00	-13.77 peak
4 5	6.43 6.43	26.08	32.51 46.00	-13.49 peak
5 * 7	19.1995 7.37	28.77	36.14 46.00	-9.86 peak
6 9	29.0082 5.85	29.52	35.37 46.00	-10.63 peak

# Radiated Emission from 30MHz ~1000MHz

### **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.



# 7. 20dB Bandwidth Measurement

#### 7.1 Provisions Applicable

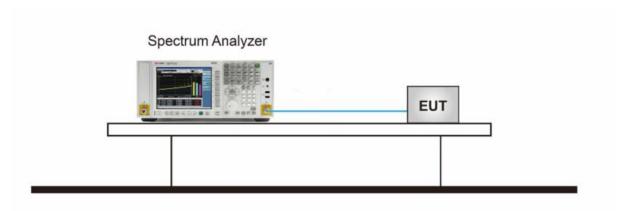
Intentional radiators must be designed to ensure that the 20dB and 99% emission bandwidth in the specific band 26.98~27.28MHz.

#### 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)





#### 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					
AM	27.15	0.018388	0.008222	N/A	Pass					

#### Test Graphs of Occupied Bandwidth and -20dB Bandwidth

Agilent Spectrum / M R Center Fre	RF 50 Ω	AC CORREC	Trig: f	SENSE:INT r Freq: 27.1450 Free Run h: 30 dB	000 MHz Avg Hol	ALIGN AUTO d:>10/10	Radio Std: No Radio Device:		Frequency
10 dB/div	Ref 10.00	dBm				Mkr1	27.14522 -13.130		
Log 0.00 -10.0 -20.0				1					Center Freq 27.145000 MHz
-30.0									
-50.0 <b></b> -60.0 <b></b>									
-70.0									
Center 27. #Res BW 1			#	VBW 3 kHz	Z		Span ( #Sweep	20 ms	CF Step 6.000 kHz
Occupi	ed Bandv		8 kHz	Total P	ower	-9.79	dBm	Aut	<u>o</u> Man Freq Offset
Transmi	it Freq Erro	or	251 Hz	OBW P	ower	99	.00 %		0 Hz
x dB Ba	ndwidth	8	.222 kHz	x dB		-20.0	00 d <b>B</b>		
MSG		Toot	Croph A		4 07				
		iest_	Graph_A		1_27.				



# 8. AC Power Line Conducted Emission Test

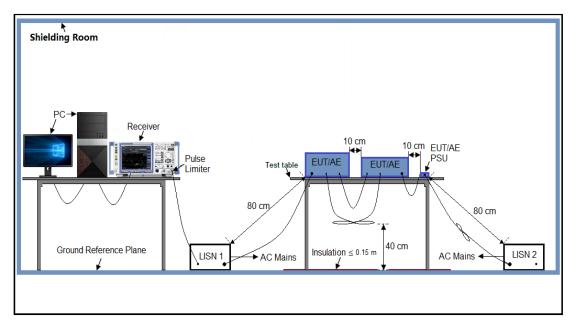
#### 8.1 Measurement Limit

	Maximum RF	Line Voltage
Frequency Range	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)





# 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.
- 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



# **APPENDIX I: PHOTOGRAPHS OF TEST SETUP**

Refer to the Report No.: AGC15705231244AP01

# **APPENDIX II: PHOTOGRAPHS OF TEST EUT**

Refer to the Report No.: AGC15705231244AP02

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



# 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.