

# FCC Test Report

Report No.: AGC15705230946FR01

FCC ID	:	2A3YK8882
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	R/C TOYS
BRAND NAME	:	N/A
MODEL NAME	:	See page 5
APPLICANT	:	Shantou Chenghai LeQiBao Toys Co., Ltd.
DATE OF ISSUE	:	Sep. 27, 2023
STANDARD(S)	:	FCC Part 15 Subpart § 15.227
<b>REPORT VERSION</b>	:	V 1.0







# **REPORT REVISE RECORD**

Report Version	Revise Time	Issued Date	Valid Version	Notes	
V1.0	/	Sep. 27, 2023	Valid	Initial Release	



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# **1. GENERAL INFORMATION**

Applicant	Shantou Chenghai LeQiBao Toys Co., Ltd.	
Address	XIAZHOU INDUSTRIAL AREA, DUTOU, SHANGHUA TOWN, CHENGHAI DISTRICT, SHANTOU CITY, GUANGDONG PROVINCE, CHINA	
Manufacturer	Shantou Chenghai LeQiBao Toys Co., Ltd.	
Address	XIAZHOU INDUSTRIAL AREA, DUTOU, SHANGHUA TOWN, CHENGHAI DISTRICT, SHANTOU CITY, GUANGDONG PROVINCE, CHINA	
Factory	Shantou Chenghai LeQiBao Toys Co., Ltd.	
Address	XIAZHOU INDUSTRIAL AREA, DUTOU, SHANGHUA TOWN, CHENGHAI DISTRICT, SHANTOU CITY, GUANGDONG PROVINCE, CHINA	
Product Designation	R/C TOYS	
Brand Name	N/A	
Test Model	8882	
Series Model	See page 6	
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	Sep. 21, 2023	
Date of test	Sep. 21, 2023 to Sep. 27, 2023	
Deviation from Standard	No any deviation from the test method	
Test Result	Pass	
Test Report Form No	AGCTR-ER-FCC-SRDV1.0	

Prepared By

Jack Gai

Jack Gui (Project Engineer)

Sep. 27, 2023

Reviewed By

alvin Lin

Calvin Liu (Reviewer)

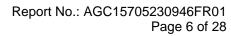
Sep. 27, 2023

Approved By

Max Iran

Max Zhang (Authorized Officer)

Sep. 27, 2023





# **2. PRODUCT INFORMATION**

#### 2.1 PRODUCT TECHNICAL DESCRIPTION

Operation Frequency	27.145MHz
Hardware Version	V01
Software Version	V01
Modulation Type	ASK
Number of channels	1 Channels
Field Strength of Fundamental	54.99dBuV/m
Antenna Designation	Wire Antenna
Antenna Gain	0dBi
Power Supply	DC 3V by battery

#### 2.2 TEST FREQUENCY LIST

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

	8880, 8881, 8883, 8884, 8885, 8886, 8887, 8888, 8889, 8880-1, 8881-1, 9361,
Series Model	9362, 9363, 9364, 9365, 9366, 9367, 9368, 9369, 9961, 9962, 9963, 9965, 9966, 9977, 9988, 9999, 8831, 8832, 8833, 8834, 8835, 8836, 8837, 8838, 8839, 9380, 9381, 9382, 9383, 9384, 9385, 9386, 9387, 9388, 9922, 9923,
	9925, 9920C, 9920L, 9920E, 9920F, 20A, 20B, 9950, 9950B, 9960, 9930A, 9930B, 9930L(A), 9930L(B), Q12, Q13, Q10, Q9, Q9A, Q9B, 9330, 9331, 9332,
	9333, 9334, 9335, 9336, 9337, 9338, 9339, 887, 888, AP888, AP888-1, AP888-2, 889, 889-1, 888-1, B661, B660, B662, 860009028234, 860009028241, 860009028258, 888-2



## 2.3 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: 2A3YK8882** 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 be in compliance with 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 be in compliance with 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	EXTREME CONDITIONS	
Temperature range (°C)	15 - 35	-20 - 50	
Relative humidty range	20 % - 75 %	20 % - 75 %	
Pressure range (kPa)	86 - 106	86 - 106	
Power supply			
Note: The Extreme Temperature and Extreme Voltages declared by the manufacturer.			

## **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 Conducted Emission for AC Port	$U_c = \pm 2.9 \text{ dB}$	
Uncertainty of Radiated Emission below 150kHz	$U_c = \pm 4.2 \text{ dB}$	
Uncertainty of Radiated Emission below 30MHz	$U_c = \pm 3.8 \text{ dB}$	
Uncertainty of Radiated Emission below 1GHz	$U_c = \pm 4.9 \text{ dB}$	
Uncertainty of total RF power, conducted	$U_c = \pm 0.8 \text{ dB}$	
Uncertainty of RF power density, conducted	$U_c = \pm 2.6 \text{ dB}$	
Uncertainty of spurious emissions, conducted	$U_{c} = \pm 2.7 \%$	
Uncertainty of Occupied Channel Bandwidth	$U_{c} = \pm 2.7 \%$	



#### **3.5 LIST OF EQUIPMENTS USED**

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
Test Receiver	R&S	ESPI	101206	Jun. 03, 2023	Jun. 02, 2024
Artificial power network	R&S	ESH2-Z5	100086	Jun. 03, 2023	Jun. 02, 2024
Test Software	FARA	EZ-EMC	Ver. AGC-CON03A1	N/A	N/A
Test Receiver	R&S	ESCI	10096	Feb. 18, 2023	Feb. 17, 2024
EXA Signal Analyzer	Agilent	N9010A	MY53470504	Jun. 01, 2023	May 31, 2024
Attenuator	ZHINAN	E-002	N/A	Aug. 04, 2022	Aug. 03, 2024
Active Loop Antenna (9K-30Mhz)	ZHINAN	ZN30900C	18051	Mar. 12, 2022	Mar. 11, 2024
Wideband Antenna	SCHWARZBEC K	VULB9168	VULB9168-494	May 11, 2023	May 10, 2025
Test Software	FARA	EZ-EMC	Ver.RA-03A	N/A	N/A
Test Software	Tonscend	JS32-RE	Ver.2.5	N/A	N/A



# **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**

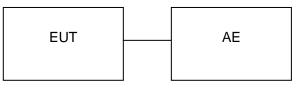
The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

# **4.3 CONFIGURATION OF TESTED SYSTEM**

Radiated Emission Configure:



Conducted Emission Configure:



## 4.4 EQUIPMENT USED IN TESTED SYSTEM

The Following Peripheral Devices And Interface Cables Were Connected During The Measurement:

Item	Equipment	Model No.	Identifier	Note
1				

☑ Test Accessories Come From The Manufacturer

ltem	Equipment	Model No.	Identifier	Note
1	R/C TOYS	8882	2A3YK8882	EUT



#### **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					
Test Item	Equipment Type / Modulation				
iest nem	Short Range Wireless Device/ ASK				
Radiated&Conducted Test Cases	Mode 1: TX_27.145 MHz				
AC Conducted Emission					
Note:					
<ol> <li>Only the result of the worst case was recorded in the report, if no other cases.</li> <li>The battery is full-charged during the test</li> </ol>					

The battery is full-charged during the test.

2. 3. 4. For Radiated Emission, 3axis were chosen for testing for each applicable mode.

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



# 6. FIELD STRENGTH OF FUNDAMENTAL

# **6.1 PROVISIONS APPLICABLE**

15.209 Limit in the below table has to be followed:

Frequency Distance Field S		Field Streng	gths Limit	
(MHz)	Meters	μ V/m	dB(µV)/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 43.5 46.0 54.0 V)/m (Peak)	
88 ~ 216	3	150	43.5	
216 ~ 960	3	200	46.0	
960 ~ 1000	3	500	54.0	
AL		74.0 dB(µV)/m (Peak)		
Above 1000	3	54.0 dB(μV)/m (Average)		
Remark: (1) Emission	mark: (1) Emission level dB $\mu$ V = 20 log Emission level $\mu$ V/m			
(2) The small	(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				

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

closest point of any part of the device or system.

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 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

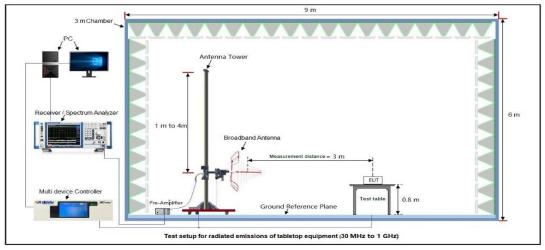
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#### 6.3 MEASUREMENT SETUP (BLOCK DIAGRAM OF CONFIGURATION)

RADIATED EMISSION TEST SETUP 9KHz-30MHz

## RADIATED EMISSION TEST SETUP 30MHz-1000MHz





FUT

#### **6.4 MEASUREMENT RESULTS**

FIELD STRENGTH OF FUNDAMENTAL						
R/C TOYS		Model Name	8882			

LOI	1001013		0002
Temperature	<b>24.3</b> ℃	Relative Humidity58.4%	
Pressure	985hPa	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	30.61	24.38	54.99	80	Face
27.145	26.11	24.38	50.49	80	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	23.54	24.38	47.92	80	Face
27.145	22.31	24.38	46.69	80	Side

#### **RESULT: PASS**

Note: 1.Corr. Factor= Antenna Factor (dB/m) + Cable Loss (dB).



	ELECTRIC FIE	ELD TEST IN	THE FREG	<b>NUENCY RA</b>	NGE 9KH	z-150KHz	
EUT	R/C TOYS			Model Nam	e	8882	
Temperature	<b>24.3</b> ℃			Relative Humidity		58.4%	
Pressure	985hPa			Test Voltage		Normal Voltage	
Test Mode	Mode 1			Antenna		Face	
140.0 dBuV/m							
						Limit: Margi	n:
		_					
						_	
80							
1							
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0.009			(MHz)				0.150
No. I	Mk. Freq.	Reading Level	Correct Factor	Measure ment	- Limit	Over	
	MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	0.0092	7.35	28.40	35.75	128.1	-92.37	peak
2	0.0177	5.85	27.77	33.62	122.4	-88.85	peak
3	0.0240	5.73	27.29	33.02	119.8	-86.82	peak
4	0.0355	6.97	26.44	33.41	116.4	-83.05	peak
5	0.0653	9.47	24.21	33.68	111.2	-77.52	peak
6	* 0.0830	9.13	22.89	32.02	109.1	-77.11	peak

# ELECTRIC FIELD TEST IN THE FREQUENCY RANGE 9KHz-150KHz

# **RESULT: PASS**

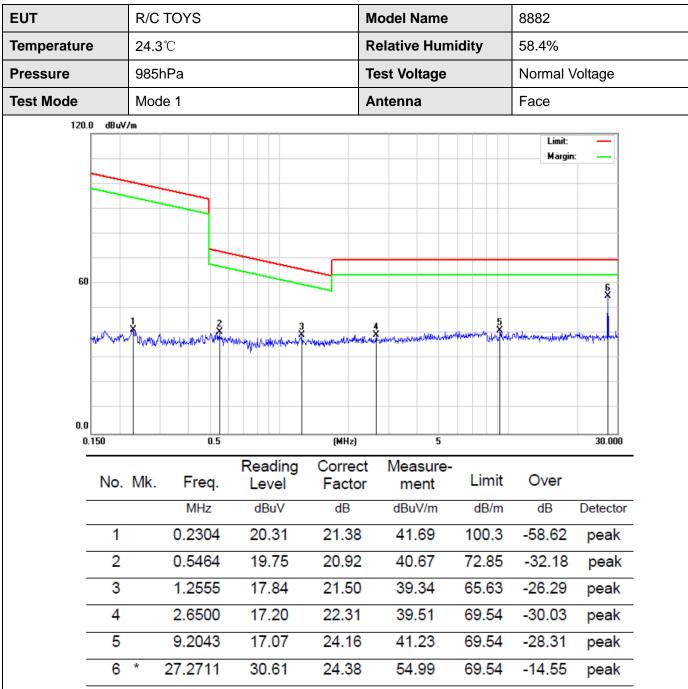


	ELECTRIC FIEL	D TEST IN	THE FREQ	UENCY RAN	GE 9KHZ	-150KHz	
EUT	R/C TOYS		I	Model Name		8882	
Temperature	<b>24.3</b> ℃		I	Relative Humidity		58.4%	
Pressure	985hPa		-	Fest Voltage		Normal Voltage	
Test Mode	Mode 1			Antenna		Side	
140.0 dBuV/m							
						Limit: Marg	
80							
× 3		3				F	
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0.009			(MHz)				0.150
No. I	Mk. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
	MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	0.0091	6.84	28.41	35.25	128.2	-92.96	peak
2	0.0111	4.86	28.26	33.12	126.5	-93.38	peak
3	0.0230	4.35	27.37	31.72	120.2	-88.49	peak
4	0.0531	4.89	25.12	30.01	112.9	-82.97	peak
5	0.0981	8.12	21.76	29.88	107.6	-77.80	peak
6	* 0.1408	8.03	21.54	29.57	104.5	-74.99	peak

#### ELECTRIC FIELD TEST IN THE FREQUENCY RANGE 9KHz-150KHz

## **RESULT: PASS**





#### **ELECTRIC FIELD TEST IN THE FREQUENCY RANGE 150KHz-30MHz**

## **RESULT: PASS**



EUT	R/C TOYS		Model Name	8882	
Temperature	24.3℃		Relative Humidity	58.4%	
· · · · · · · · · · · · · · · · · · ·					
Pressure	985hPa		Test Voltage	Normal	Voltage
Test Mode	Mode 1		Antenna	Side	
120.0 dBuV/n				Limit	
60 1/1//~//~^	www.tuminium.www.	างโรงให้ปารในการที่ไรงขัดหมุดเลือกรับกลื่อ	al al an	5 Kale water ware ware ware ware ware ware ware wa	6 martingging
₩ <sup>1</sup> ₩ <sup>1</sup> ₩ <sup>1</sup>				5 Alexandre and the second se	
	0.5	(MHz)	5		6 //
₩ <sup>1</sup> ₩ <sup>1</sup> ₩ <sup>1</sup>	0.5 Re		5 t Measure-		
0.0 0.150	0.5 Re /k. Freq. L	(MHz) eading Correc	5 t Measure-	it Over	
0.0 0.150	0.5 0.5 Ak. Freq. L MHz	(MHz) eading Correct evel Facto	s t Measure- r ment Lim dBuV/m dB/r	it Over m dB	30.000
0.0 0.150	0.5 0.5 Nk. Freq. L MHz 0.3003 1	(MHz) eading Correct evel Factor dBuV dB	s t Measure- r ment Lim dBuV/m dB/r 39.10 98.02	it Over m dB 2 -58.92	30.000 Detector
0.0 0.150 No. N	0.5 Mk. Freq. L MHz 0.3003 1 0.5463 1	(MHz) eading Correct evel Factor dBuV dB 17.85 21.25	5 t Measure- r ment Lim dBuV/m dB/r 39.10 98.02 39.67 72.83	it Over m dB 2 -58.92 5 -33.18	30.000 Detector peak peak
0.0 0.150 No. N 1 2	0.5 Nk. Freq. L MHz 0.3003 1 0.5463 1 1.2555 1	(MHz) eading Correct evel Factor dBuV dB 17.85 21.25 18.75 20.92	5 t Measure- r ment Lim dBuV/m dB/r 39.10 98.02 39.67 72.83 38.34 65.63	it Over m dB 2 -58.92 5 -33.18 3 -27.29	30.000 Detector peak peak
0.0 0.150 No. N 1 2 3	0.5 Nk. Freq. L 0.3003 1 0.5463 1 1.2555 1 3.6417 1	(MHz) eading Correct evel Factor dBuV dB 17.85 21.25 18.75 20.92 16.84 21.50	5 t Measure- r ment Lim dBuV/m dB/r 39.10 98.02 39.67 72.83 38.34 65.63 39.94 69.54	it Over m dB 2 -58.92 5 -33.18 3 -27.29 4 -29.60	30.000 Detector peak peak peak

#### **ELECTRIC FIELD TEST IN THE FREQUENCY RANGE 150KHz-30MHz**

# RESULT: PASS

# NOTES:

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

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 Attestation of Global Compliance(Shenzhen)Co., Ltd

 Attestation of Global Compliance(Shenzhen)Std & Tech Co., Ltd

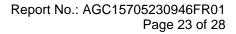
 Tel: +86-755 2523 4088
 E-mail: agc@agccert.com



EUTR/C TOYSModel Name8882Temperature24.3 °CRelative Humidity58.4 %Pressure985hPaTest VoltageNormalTest ModeMode 1AntennaHorizonTest ModeLimit	l Voltage ntal
Pressure     985hPa     Test Voltage     Normal       Test Mode     Mode 1     Antenna     Horizon	•
Test Mode     Mode 1     Antenna     Horizon       72.0     dBuV/m	•
72.0 dBuV/m	ntal
Limit:	
-8	
30.000 40 50 60 70 80 (MHz) 300 400 500 600 700	0 1000.000
	0 1000.000
30.000 40 50 60 70 80 (MHz) 300 400 500 600 700 Reading Correct Measure-	0 1000.000 Detector
30.000 40 50 60 70 80 (MHz) 300 400 500 600 700 Reading Correct Measure- No. Mk. Freq. Level Factor ment Limit Over	
30.000 40 50 60 70 80 (MHz) 300 400 500 600 700 Reading Correct Measure- No. Mk. Freq. Level Factor ment Limit Over MHz dBuV dB dBuV/m dB/m dB	Detector
30.000         40         50         60         70         80         (MHz)         300         400         500         600         700           Reading Correct Measure- No. Mk. Freq. Level Factor ment Limit Over           MHz         dBuV         dB         dBuV/m         dB/m         dB           1         42.3022         6.31         13.74         20.05         40.00         -19.95	Detector peak peak
30.000         40         50         60         70         80         (MHz)         300         400         500         600         700           Reading Correct Measure- No. Mk. Freq. Level Factor Measure- MHz         MHz         MHz         dBuV         dB         dBuV/m         dB/m         dB           1         42.3022         6.31         13.74         20.05         40.00         -19.95           2         122.8340         6.39         16.23         22.62         43.50         -20.88	Detector peak peak
30.000         40         50         60         70         80         (MHz)         300         400         500         600         700           No.<	Detector peak peak peak

#### RADIATED EMISSION FROM 30MHz ~1000MHz

## **RESULT: PASS**





EUT		R/C TO	R/C TOYS			ne	8882	
lemperatur	re	<b>24.3</b> ℃			Relative H	umidity	58.4%	,
Pressure		985hPa			Test Voltag	ge	Norma	al Voltage
Fest Mode		Mode 1			Antenna		Vertica	al
72.0 d	dBuV/m						Limit	
32						3	an constant of the second	
-8	det for all and the second of	italunin di una programi I	nt navezine vilvedy standiska standiska standiska standiska standiska standiska standiska standiska standiska s		Non-working Mary and an			
			80	(MHz)	300	400	500 600 7	00 1000.000
-8								00 1000.000
-8	0 40 50	60 70 5	80 Reading	(MHz) Correct	300 Measure-	400	500 600 7	00 1000.000
-8	0 40 50 No. Mk.	60 70 s	80 Reading Level	(MHz) Correct Factor	300 Measure- ment	400 Limit	500 600 70 Over	
-8	0 40 50 No. Mk.	60 70 Freq.	80 Reading Level dBuV	(MHz) Correct Factor dB	300 Measure- ment dBuV/m	400 Limit dB/m	500 600 70 Over dB	Detector
-8	0 40 50 No. Mk. 1 2 1	60 70 Freq. MHz 50.0566	80 Reading Level dBuV 6.79	(MHz) Correct Factor dB 17.00	300 Measure- ment dBuV/m 23.79	400 Limit dB/m 40.00	500 600 70 Over dB -16.21 -18.94	Detector peak
-8	0 40 50 No. Mk. 1 2 1 3 4	60 70 г Freq. MHz 50.0566 42.8243	Reading Level dBuV 6.79 6.36 5.51	(MHz) Correct Factor dB 17.00 18.20	300 Measure- ment dBuV/m 23.79 24.56	400 Limit dB/m 40.00 43.50	500 600 7 Over dB -16.21 -18.94 -14.68	Detector peak peak peak
-8	0 40 50 No. Mk. 1 2 1 3 4 4 6	60 70 г Freq. MHz 50.0566 42.8243 46.4141	Reading Level dBuV 6.79 6.36 5.51	(мн <sub>2</sub> ) Соггест Factor dB 17.00 18.20 25.81	300 Measure- ment dBuV/m 23.79 24.56 31.32	400 Limit dB/m 40.00 43.50 46.00	500 600 7 Over dB -16.21 -18.94 -14.68 -11.62	Detector peak peak peak peak

## **RESULT: PASS**

Note: 1. Factor=Antenna Factor + Cable loss, Over=Measurement-Limit.

2. All test modes had been pre-tested. The mode 1 is the worst case and recorded in the report.

3. The "Factor" value can be calculated automatically by software of measurement system.



# 7. 20 dB BANDWIDTH

#### 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)



Spectrum Analyzer



## 7.4 MEASUREMENT RESULTS

		Test Data of Bandwid	th Measurement		
Test Mode	Test Channel (MHz)	99% Occupied Bandwidth (MHz)	-20dB Bandwidth (MHz)	Limits (MHz)	Pass or Fail
ASK	27.145	0.016205	0.006849	N/A	Pass

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

Agilent Spectrum Analyzer - Occupied BW		SENSE:INT	ALIGNAUTO 05:15:05P	M Sep 26, 2023	
Center Freq 27.145000	MHz Ce	enter Freq: 27.145000 MHz	Radio Std		Frequency
		tten: 10 dB	Radio Dev	ice: BTS	
10 dB/div Ref 20.00 d	Bm				
10.0					Center Freq
0.00					27.145000 MHz
-10.0					
-30.0					
-40.0					
-50.0		Ť	$\sim$	$\sim$	
-60.0					
-70.0					
Center 27.15 MHz #Res BW 1 kHz		#VBW 3 kHz	Spa	an 60 kHz 74.07 ms	CF Step
			Sweep	74.07 ms	6.000 kHz Auto Man
Occupied Bandwi	dth	Total Power	-11.8 dBm		
	16.205 kHz				Freq Offset
Transmit Freq Error	3 Hz	OBW Power	99.00 %		0 Hz
x dB Bandwidth	6.849 kHz	x dB	-20.00 dB		
MSG			STATUS		



# 8. AC POWER LINE CONDUCTED EMISSION TEST

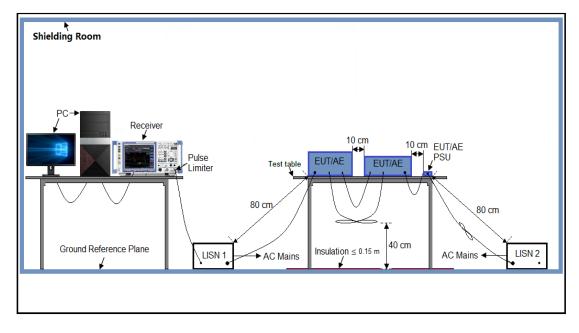
# 8.1 LIMITS OF LINE CONDUCTED EMISSION TEST

Frequency	Maximum RF Line Voltage				
Frequency	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

- 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 500hm 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 RESULTS**

#### 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.: AGC15705230946AP01

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

Refer to the Report No.: AGC15705230946AP02

-----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.