

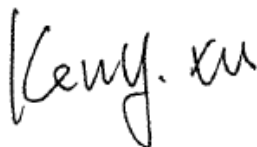
TEST REPORT

Application No.: SZCR2401000257AT
Applicant: Shantou City Youjie Technology Co., Ltd.
Address of Applicant: Shangxindong Road, Shangcun, Lianxia Town, Chenghai District, Shantou City
Manufacturer: Shantou City Youjie Technology Co., Ltd.
Address of Manufacturer: Shangxindong Road, Shangcun, Lianxia Town, Chenghai District, Shantou City
Equipment Under Test (EUT):
EUT Name: REMOTE CONTROL CAR SERIES
Model No.: UJ99-P220, UJ99-P221, UJ99-P222, UJ99-P223, UJ99-Y240, UJ99-Y241, UJ99-Y242, UJ99-Y243, UJ99-T200, UJ99-T201, UJ99-T202, UJ99-T203, UJ99-F160, UJ99-F161, UJ99-F162, UJ99-F163, UJ99-F120, UJ99-F121, UJ99-F122, UJ99-F123, UJ99-Y200, UJ99-Y201, UJ99-Y202, UJ99-Y203 ♣
♣ Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.
Standard(s) : EN 301 489-1 V2.2.3
EN 301 489-3 V2.1.1
Date of Receipt: 2023-04-23 (for original report SZCR230400117601)
Date of Test: 2023-04-25 to 2023-04-26 (for original report SZCR230400117601)
Date of Issue: 2023-05-08 (for original report SZCR230400117601)
2024-01-22 (for new report SZCR240100025701)

Test Result:

Pass*

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



Keny Xu
EMC Laboratory Manager



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SZEMC-TRF-01 Rev. A/0 Aug01,2022

Report No.: SZCR240100025701

Page: 2 of 20

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2024-01-22		Original

Authorized for issue by:			
		Martin Tang	
		Martin Tang/Project Engineer	
		Eric Fu	
		Eric Fu/Reviewer	



SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch (SZEMC) Laboratory

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2 Test Summary

Emission Part				
Item	Standard	Method	Requirement	Result
Radiated Emissions (30MHz-1GHz)	EN 301 489-1 V2.2.3 EN 301 489-3 V2.1.1	EN 55032: 2015+A11:2020 +A1:2020	Class B	Pass

Immunity Part				
Item	Standard	Method	Requirement	Result
Radiated Immunity (80MHz-6GHz)	EN 301 489-1 V2.2.3	EN IEC 61000-4-3: 2020	3V/m, 80%, 1kHz Amp. Mod.	Pass
Electrostatic Discharge	EN 301 489-3 V2.1.1	EN 61000-4-2:2009	4kV Contact Discharge 8kV Air Discharge	Pass

Declaration of EUT Family Grouping:

Original model No. in report SZCR230400117601: UJ99-P220, UJ99-P221, UJ99-P222, UJ99-P223, UJ99-Y240, UJ99-Y241, UJ99-Y242, UJ99-Y243, UJ99-T200, UJ99-T201, UJ99-T202, UJ99-T203, UJ99-F160, UJ99-F161, UJ99-F162, UJ99-F163, UJ99-F120, UJ99-F121, UJ99-F122, UJ99-F123

Only the model UJ99-P220 was tested in original report SZCR230400117601, since according to the declaration from the applicant, the electrical circuit design, PCB layout, components used and internal wiring and functions were identical for the above models, with only difference on color, appearance and package.

New model No. in report SZCR240100025701: UJ99-P220, UJ99-P221, UJ99-P222, UJ99-P223, UJ99-Y240, UJ99-Y241, UJ99-Y242, UJ99-Y243, UJ99-T200, UJ99-T201, UJ99-T202, UJ99-T203, UJ99-F160, UJ99-F161, UJ99-F162, UJ99-F163, UJ99-F120, UJ99-F121, UJ99-F122, UJ99-F123, UJ99-Y200, UJ99-Y201, UJ99-Y202, UJ99-Y203

This report was an additional report copied from the report SZCR230400117601, just added the model No. and photo. Since the electrical circuit design, layout, components used and internal wiring for the models in the original report SZCR230400117601 were exactly the same as the models in this report, only different on model No., color, appearance and package.

Therefore original data were kept in this report.



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3 Contents

	Page
1 Cover Page	1
2 Test Summary	3
3 Contents	4
4 General Information	5
4.1 Details of E.U.T.	5
4.2 Description of Support Units.....	5
4.3 Measurement Uncertainty	5
4.4 Test Location	6
4.5 Test Facility	6
4.6 Deviation from Standards.....	6
4.7 Abnormalities from Standard Conditions	6
4.8 EMS Monitor.....	6
5 Equipment List	7
6 Emission Test Results	8
6.1 Radiated Emissions (30MHz-1GHz).....	8
6.1.1 E.U.T. Operation	8
6.1.2 Test Mode Description	8
6.1.3 Test Setup Diagram	9
6.1.4 Measurement Procedure and Data.....	9
7 Immunity Test Results	12
7.1 Radiated Immunity (80MHz-6GHz)	14
7.1.1 Test Setup Diagram	14
7.1.2 E.U.T. Operation	14
7.1.3 Test Mode Description	14
7.1.4 Test Condition and Results:.....	15
7.2 Electrostatic Discharge.....	16
7.2.1 Test Setup Diagram	16
7.2.2 E.U.T. Operation	16
7.2.3 Test Mode Description	16
7.2.4 Test Condition and Results:.....	17
8 Test Setup Photo	18
9 EUT Constructional Details (EUT Photos)	20



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4 General Information

4.1 Details of E.U.T.

Power supply:	3V DC(1.5V x 2 "AA" Size Batteries) for TX 4.5V DC(1.5V x 3 "AA" Size Batteries) for RX
The highest working frequency (except RF modulator):	Less than 108MHz

Remark: The information in this section is provided by the applicant or manufacturer, SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
--	--	--	--

The EUT has been tested as an independent unit.

4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
Radiated Emissions (30MHz-1GHz)	± 5.5dB
Radiated Immunity (80MHz-6GHz)	± 2.1dB
Electrostatic Discharge	± 6%

Remark:

The U_{lab} (lab Uncertainty) is less than $U_{CISPR/ETSI}$ (CISPR/ETSI Uncertainty), so the test results

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.



4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China. 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

4.5 Test Facility

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

• A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• VCCI (Member No. 1937)

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen EMC laboratory have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• FCC –Designation Number: CN1336

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1336. Test Firm Registration Number: 787754.

• Innovation, Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

4.8 EMS Monitor

Visual: Monitored the light,movement and connection status of the EUT

Audio: None



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5 Equipment List

Radiated Emissions (30MHz-1GHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2020-07-19	2023-07-18
MXE EMI Receiver	Agilent Technologies	N9038A	SEM004-15	2022-10-20	2023-10-19
BiConiLog Antenna	ETS-LINDGREN	3142C	SEM003-01	2021-09-17	2023-09-16
Pre-Amplifier	Agilent Technologies	8447D	SEM005-01	2023-03-20	2024-03-19
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM025-01	2022-07-08	2023-07-07

Radiated Immunity (80MHz-6GHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Fully-Anechoic Chamber 2	Chang Zhou Zhong Shuo	854	SEM001-05	2020-07-19	2023-07-18
Power Sensor	Rohde & Schwarz	NRP-Z91	SEM009-09	2023-03-21	2024-03-20
Stacked Log.-Per.-Broadband Antenna	Schwarzbeck	STLP 9129	SEM003-25	N/A	N/A
Signal Generator	Rohde & Schwarz	SMB100A	SEM006-11	2023-03-21	2024-03-20
Broadband Amplifier	Rohde & Schwarz	BBA150-BC250	SEM005-12	2022-09-21	2023-09-20
Broadband Amplifier	Rohde & Schwarz	BBA150-D110	SEM005-13	2023-03-21	2024-03-20
Broadband Amplifier	Rohde & Schwarz	BBA150-E60	SEM005-16	2023-03-21	2024-03-20
Measurement Software	Rohde & Schwarz	EMC32 V9.25.00	N/A	N/A	N/A

Electrostatic Discharge					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
ESD Generator	TESEQ AG	NSG 437	SEM019-02	2023-03-22	2024-03-21

General used equipment					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Humidity/ Temperature Indicator	Mingle	N/A	SEM002-08	2022-09-04	2023-09-03
Humidity/ Temperature Indicator	Anymetre	TH101B	SEM002-09	2022-09-04	2023-09-03
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2023-03-23	2024-03-22



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6 Emission Test Results

6.1 Radiated Emissions (30MHz-1GHz)

Test Requirement: EN 301 489-1 V2.2.3
 EN 301 489-3 V2.1.1
 Test Method: EN 55032: 2015+A11:2020+A1:2020
 Measurement Distance: 3m

Limit:

FREQUENCY (MHz)	dBuV/m (At 10m)	dBuV/m (At 3m)
	Class B	Class B
30 ~ 230	30	40
230 ~ 1000	37	47
Detector: Peak for pre-scan (120kHz resolution bandwidth) 30MHz to 1000MHz		

6.1.1 E.U.T. Operation

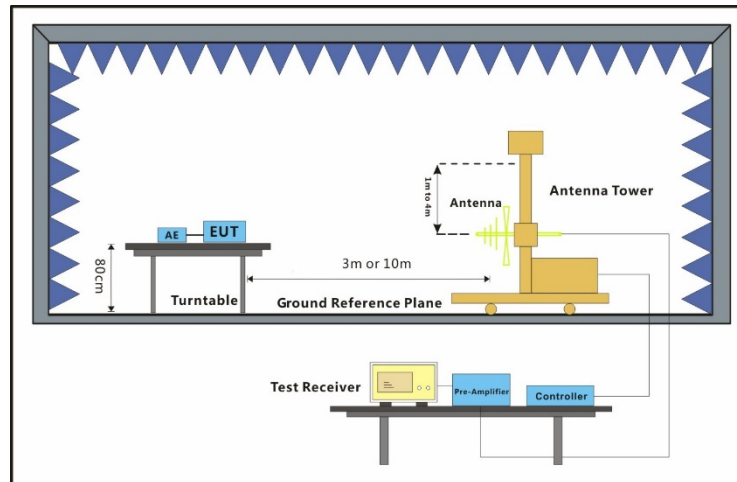
Operating Environment:
 Temperature: 23.6 °C Humidity: 52.5 % RH Atmospheric Pressure: 1015 mbar

6.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Wireless mode,Keep the EUT pairing and motor running.
Pre-scan	01	Idle:Keep the EUT standby.



6.1.3 Test Setup Diagram



6.1.4 Measurement Procedure and Data

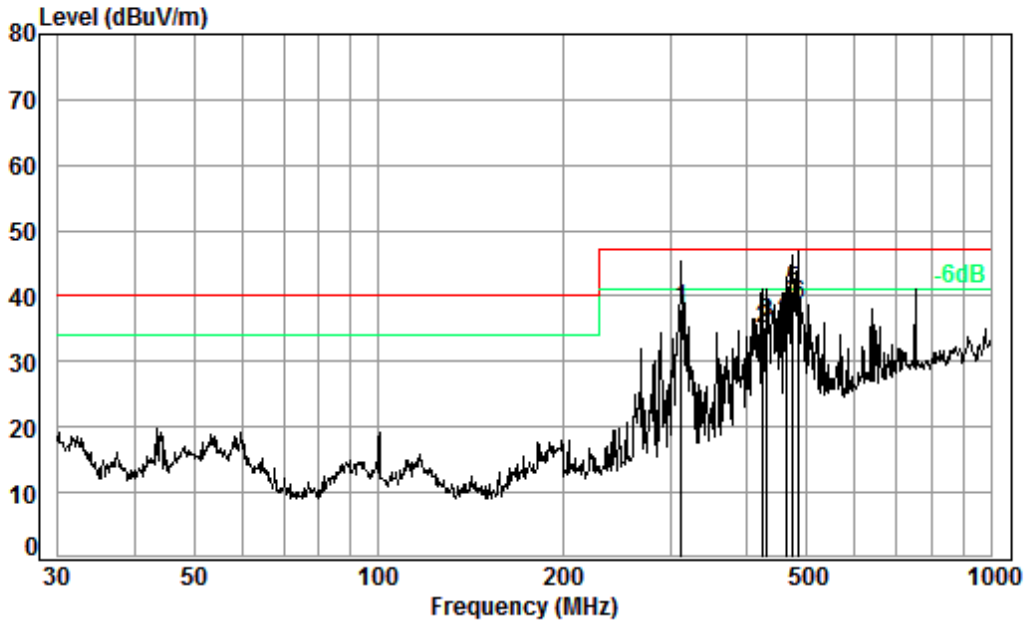
Frequency range: 30MHz-1GHz

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

The red line show in graphic is the limit in standard used in this section.

Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Test Mode: 00; Polarity: Horizontal



Condition: 3m HORIZONTAL

Job No. : 01176AT

Test Mode: 00

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	312.18	1.94	19.99	27.57	43.74	38.10	47.00	-8.90	QP
2	425.03	2.31	23.00	27.77	37.59	35.13	47.00	-11.87	QP
3	431.03	2.33	23.14	27.78	38.25	35.94	47.00	-11.06	QP
4	462.35	2.46	23.83	27.83	38.72	37.18	47.00	-9.82	QP
5 pp	475.50	2.51	24.10	27.85	42.11	40.87	47.00	-6.13	QP
6	485.61	2.55	24.31	27.86	39.73	38.73	47.00	-8.27	QP

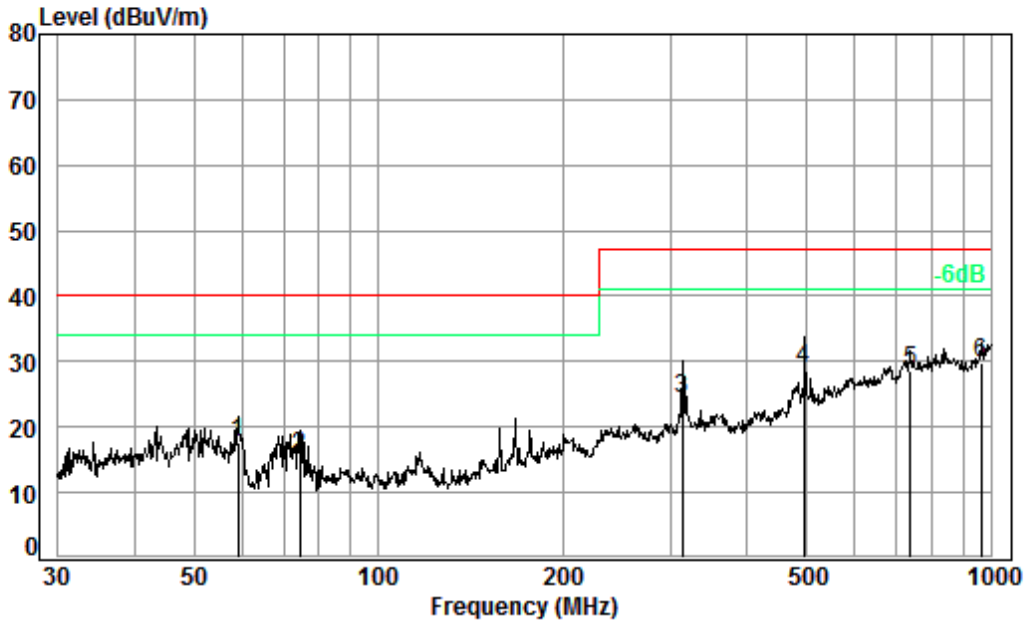


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Test Mode: 00; Polarity: Vertical



Condition: 3m VERTICAL

Job No. : 01176AT

Test Mode: 00

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	59.03	0.80	13.29	27.56	31.04	17.57	40.00	-22.43	QP
2	74.40	0.93	12.44	27.52	29.73	15.58	40.00	-24.42	QP
3	313.28	1.94	20.02	27.57	29.86	24.25	47.00	-22.75	QP
4	495.93	2.59	24.52	27.87	29.56	28.80	47.00	-18.20	QP
5	739.66	3.03	28.15	27.50	24.82	28.50	47.00	-18.50	QP
6 pp	965.54	3.67	30.13	26.87	22.95	29.88	47.00	-17.12	QP



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7 Immunity Test Results

Performance Criteria Description in EN 301 489-1 V2.2.3

<p>Performance criteria for continuous phenomena</p>	<p>During the test, the equipment shall:</p> <ul style="list-style-type: none"> • continue to operate as intended; • not unintentionally transmit; • not unintentionally change its operating state; • not unintentionally change critical stored data.
<p>Performance criteria for transient phenomena</p>	<p>For all ports and transient phenomena with the exception described below, the following applies:</p> <ul style="list-style-type: none"> • The application of the transient phenomena shall not result in a change of the mode of operation (e.g. unintended transmission) or the loss of critical stored data. • After application of the transient phenomena, the equipment shall operate as intended. <p>For surges applied to symmetrically operated wired network ports intended to be connected directly to outdoor lines the following criteria applies:</p> <ul style="list-style-type: none"> • For products with only one symmetrical port intended for connection to outdoor lines, loss of function is allowed, provided the function is self-recoverable, or can be otherwise restored. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost. • For products with more than one symmetrical port intended for connection to outdoor lines, loss of function on the port under test is allowed, provided the function is self-recoverable. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost.



Performance Criteria Description in EN 301 489-3 V2.1.1

Criteria	During Test	After Test
A	Operate as intended No loss of function No unintentional responses	Operate as intended No loss of function No degradation of performance No loss of stored data or user programmable functions
B	May show loss of function No unintentional responses	Operate as intended Lost function(s) shall be self-recoverable No degradation of performance No loss of stored data or user programmable functions

Performance criterion A applies for immunity tests with phenomena of a continuous nature;

Performance criterion B applies for immunity tests with phenomena of a transient nature.

Where "operate as intended" or "no loss of function" is specified, the EUT shall demonstrate correct functioning as described in EN 301 489-3 clause 5.

Where the EUT has more than one mode of operation, an unplanned transition from one mode to another is considered as an unintentional response. The EUT shall be tested in sufficient modes to confirm there are no such unintentional responses.

Special conditions for EMC immunity tests

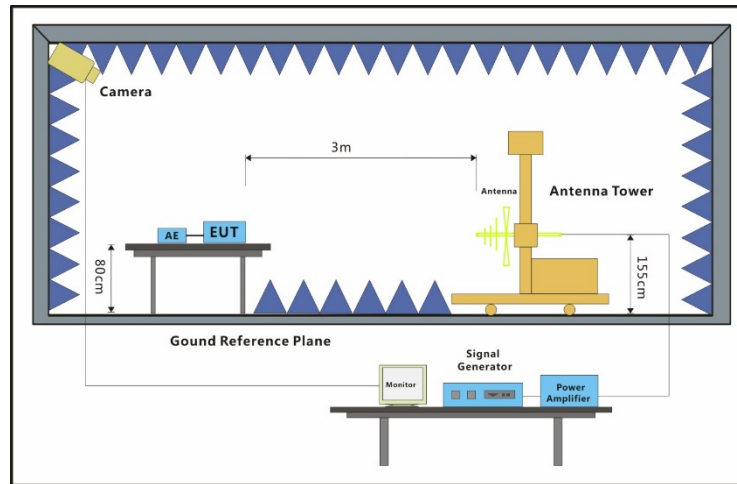
Reference to clauses in ETSI EN 301 489-1	Special product-related conditions, additional to or modifying the test conditions in ETSI EN 301 489-1, clause 9
Test method; Radio frequency electromagnetic field	The test shall be performed over the range 80 MHz to 2 700 MHz with the exception of the exclusion bands defined in clause 4.6. Where the EUT is subject to EMC Immunity testing under a Harmonised Standard of a Directive other than the Directive 2014/53/EU [i.3] then the modulating signal frequency specified in that Harmonised Standard may be used. If this alternative modulating frequency is used, then the applicable Directive, Harmonised Standard & modulating frequency shall be noted in the test report.
Test method; Radio frequency, common mode	Where the EUT is subject to EMC Immunity testing under a Harmonised Standard of a Directive other than the Directive 2014/53/EU [i.3] then the modulating signal frequency specified in that Harmonised Standard may be used. If this alternative modulating frequency is used, then the applicable Directive, Harmonised Standard & modulating frequency shall be noted in the test report.



7.1 Radiated Immunity (80MHz-6GHz)

Test Requirement: EN 301 489-1 V2.2.3
 EN 301 489-3 V2.1.1
 Test Method: EN IEC 61000-4-3: 2020

7.1.1 Test Setup Diagram



7.1.2 E.U.T. Operation

Operating Environment:
 Temperature: 23.5 °C Humidity: 50.3 % RH Atmospheric Pressure: 1015 mbar

7.1.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Wireless mode,Keep the EUT pairing and motor running.
Final test	01	Idle:Keep the EUT standby.



7.1.4 Test Condition and Results:

Performance Criterion: A
 Frequency Range: 80MHz to 6GHz
 Antenna Polarisation: Vertical and Horizontal
 Modulation: 1kHz,80% Amp. Mod,1% increment

Frequency	Level (V/m)	EUT Face	Dwell time	Result / Observations
80MHz-6GHz	3	Front	2s	A
80MHz-6GHz	3	Back	2s	A
80MHz-6GHz	3	Left	2s	A
80MHz-6GHz	3	Right	2s	A
80MHz-6GHz	3	Top	2s	A
80MHz-6GHz	3	Underside	2s	A

A: No degradation in the performance of the EUT was observed



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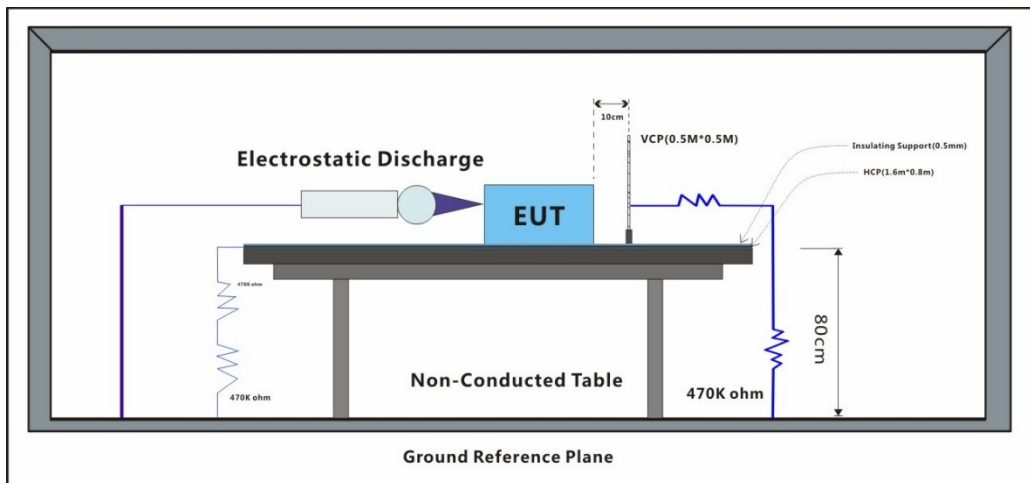
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7.2 Electrostatic Discharge

Test Requirement: EN 301 489-1 V2.2.3
 EN 301 489-3 V2.1.1
 Test Method: EN 61000-4-2:2009

7.2.1 Test Setup Diagram



7.2.2 E.U.T. Operation

Operating Environment:
 Temperature: 23.1 °C Humidity: 45.2 % RH Atmospheric Pressure: 1015 mbar

7.2.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Wireless mode,Keep the EUT pairing and motor running.
Final test	01	Idle:Keep the EUT standby.



7.2.4 Test Condition and Results:

Performance Criterion: B

Discharge Impedance: 330Ω/150pF

Number of Discharge: Minimum 10 times at each test point

Discharge Mode: Single Discharge

Discharge Period: 1 second minimum

Test Point: 1. All insulated enclosure and seams.

2. All accessible metal parts of the enclosure.

3. All side

Discharge type	Level (kV)	Polarity	Test Point	Result / Observations
Air Discharge	2,4,8	+	1	A
Air Discharge	2,4,8	-	1	A
Contact Discharge	4	+	2	A
Contact Discharge	4	-	2	A
Horizontal Coupling	4	+	3	A
Horizontal Coupling	4	-	3	A
Vertical Coupling	4	+	3	A
Vertical Coupling	4	-	3	A

A: No degradation in the performance of the EUT was observed

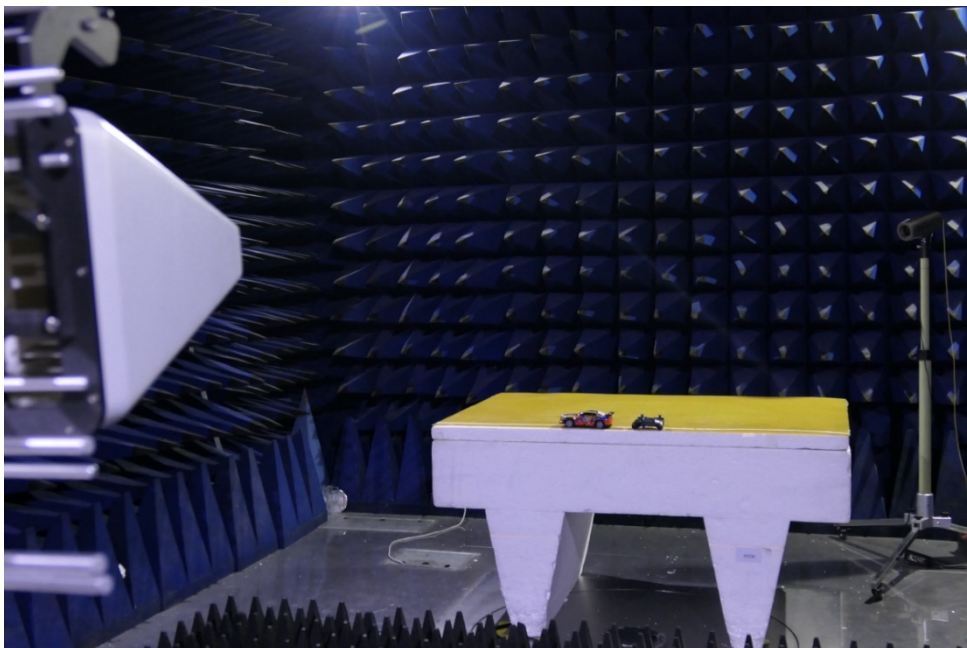


8 Test Setup Photo

Radiated Emissions (30MHz-1GHz)



Radiated Immunity (80MHz-6GHz)



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Electrostatic Discharge



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9 EUT Construnctional Details (EUT Photos)

Refer to Appendix - Photographs of EUT Construnctional Details for SZCR2401000257AT

- End of the Report -



SGS-CSTC Standards Technical Services Co., Ltd.
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