TEST REPORT

Application No.:	SZCR2410003740ET (SGS SZ NO.: T52410340024EM)
Applicant:	YONG PING TOYS FACTORY
Address of Applicant:	TUCHENG INDUSTRIAL ZONE LIANSHANG TOWN CHENGHAI DISTRICT, SHANTOU CITY, GUANGDONG PROVINCE, CHINA
Equipment Under Test (EUT):	
EUT Name:	Remote control car series
Item No.:	6146X, 6146-8, 6146-17, 6146-18, 6146-19, 6146-20, 6146-21, 6146-22, 6146-27, 6146-28, 6146-29, 6146-30, 6146-31, 6146-32, 6146-33, 6146-34, 6146-35, 6146-36, 6146-37, 6146-38, 6146-39, 6146-40, 6146-41, 6146-42, 6146-43, 6146-44, 6146-45, 6146-46, 6146-47, 6146-48, 6146-49, 6146-50, 6146R, 6146Q, 6146V, 6146U, 6146S, 6146W, 6146Y, 6146T, 6146H, 6181A, 6181B, 6168-7, 6168-8, 6168-9, 6168-10, 6168-11, 6168-12, 6178-17, 6178-21, 6178-22, 6178-27, 6178-29, 6178-28, 6178-30, 6178-31, 6178-32, 6178-33, 6178-34, 6178-35, 6178-36, 6182A, 6182B, 6182C, 6182D, 6182E, 6182F, 6182G, 6182H, 6182J, 6182L, 6182M, 6179A, 6179B, 6179C, 6179D, 6179E, 6179G, 6179H, 6179J, 6179K, SKY5390 ♣
♣	Please refer to section 2 of this report which indicates which item was actually tested and which were electrically identical.
Requested Age Grading:	3+
FCC ID:	2AMH66146X-49M
Standard(s) :	47 CFR Part 15, Subpart C 15.235
Date of Receipt:	2024-10-10
Date of Test:	2024-10-14 to 2024-12-11
Date of Issue:	2024-12-16
Test Result:	**Pass***

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

Keny Xu
EMC Laboratory Manager

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Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01		*2024-12-16*		*Original*

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

2 Test Summary

Radio Spectrum Technical Requirement				
Item	**Standard**	**Method**	**Requirement**	**Result**
Antenna Requirement	47 CFR Part 15, Subpart C 15.235	N/A	47 CFR Part 15, Subpart C 15.203	Pass

Radio Spectrum Matter Part				
Item	**Standard**	**Method**	**Requirement**	**Result**
20dB Bandwidth	47 CFR Part 15, Subpart C 15.235	ANSI C63.10 (2013) Section 6.9	47 CFR Part 15, Subpart C 15.215	Pass
Field Strength of the Fundamental Signal		ANSI C63.10 (2013) Section 6.4	47 CFR Part 15, Subpart C 15.235(a)	Pass
Radiated Emissions		ANSI C63.10 (2013) Section 6.4&6.5	47 CFR Part 15, Subpart C 15.235 (b) & 15.209	Pass

Declaration of EUT Family Grouping:

Item No.: 6146X, 6146-8, 6146-17, 6146-18, 6146-19, 6146-20, 6146-21, 6146-22, 6146-27, 6146-28, 6146-29, 6146-30, 6146-31, 6146-32, 6146-33, 6146-34, 6146-35, 6146-36, 6146-37, 6146-38, 6146-39, 6146-40, 6146-41, 6146-42, 6146-43, 6146-44, 6146-45, 6146-46, 6146-47, 6146-48, 6146-49, 6146-50, 6146R, 6146Q, 6146V, 6146U, 6146S, 6146W, 6146Y, 6146T, 6146H, 6181A, 6181B, 6168-7, 6168-8, 6168-9, 6168-10, 6168-11, 6168-12, 6178-17, 6178-21, 6178-22, 6178-27, 6178-29, 6178-28, 6178-30, 6178-31, 6178-32, 6178-33, 6178-34, 6178-35, 6178-36, 6182A, 6182B, 6182C, 6182D, 6182E, 6182F, 6182G, 6182H, 6182J, 6182L, 6182M, 6179A, 6179B, 6179C, 6179D, 6179E, 6179G, 6179H, 6179J, 6179K, SKY5390

Only the item 6146X was tested, since according to the declaration from the applicant, the electrical circuit design, layout, components used, internal wiring and functions were identical for the above items, with only difference on item No., color, decoration and packaging.

3 Contents

4 General Information

4.1 Details of E.U.T.

Power supply:	3V DC (1.5V x 2 "AA" Size Batteries) for remote controller
Cable Loss (for RF conducted test):	0.5
Operation Frequency	49.860MHz
Modulation Type:	FSK
Antenna Type:	Spring Antenna
Antenna Gain:	5.15dBi

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.
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The EUT has been tested as an independent unit.			

4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
20dB Bandwidth	+/-3%
Field Strength of the Fundamental Signal	± 6.0dB for 3m; ± 5.0dB for 10m
Radiated Emissions	± 6.0dB for 3m; ± 5.0dB for 10m
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

5 Equipment List

20dB Bandwidth					
Equipment	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal Date**	**Cal Due Date**
DC Power Supply	Chroma	62012P-80-60	SEM011-11	2024-08-14	2025-08-13
MXA Signal Analyzer	KEYSIGHT	N9020A	SEM004-19	2024-03-14	2025-03-13
Measurement Software	TST PASS	TST PASS V2.0	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-01	2024-07-06	2025-07-05
Attenuator	Huber+Suhner	6620_SMA-50-1	SEM021-09	2024-03-27	2025-03-26
Programmable Temperature & Humidity Chamber	Votsch Industrietechnik GmbH	VT 4002	SEM002-15	2024-03-19	2025-03-18

Field Strength of the Fundamental Signal					
Equipment	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal Date**	**Cal Due Date**
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2023-06-19	2026-06-18
MXE EMI Receiver	Agilent Technologies	N9038A	SEM004-15	2024-08-14	2025-08-13
BiConiLog Antenna	ETS-LINDGREN	3142C	SEM003-01	2023-09-16	2025-09-15
Pre-Amplifier	Agilent Technologies	8447D	SEM005-01	2024-03-14	2025-03-13
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM025-01	2024-07-06	2025-07-05

Radiated Emissions					
Equipment	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal Date**	**Cal Due Date**
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2023-06-19	2026-06-18
MXE EMI Receiver	Agilent Technologies	N9038A	SEM004-15	2024-08-14	2025-08-13
Loop Antenna	ETS-Lindgren	6502	SEM003-08	2023-11-20	2025-11-19
BiConiLog Antenna	ETS-LINDGREN	3142C	SEM003-01	2023-09-16	2025-09-15
Pre-Amplifier	Agilent Technologies	8447D	SEM005-01	2024-03-14	2025-03-13
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM025-01	2024-07-06	2025-07-05

General used equipment					
Equipment	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal Date**	**Cal Due Date**
Humidity/ Temperature Indicator	deli	8838	SEM002-32	2024-07-24	2025-07-23
Humidity/ Temperature Indicator	deli	8838	SEM002-33	2024-07-24	2025-07-23
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2024-03-18	2025-03-17

6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203

6.1.2 Conclusion

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 antenna is a detachable spring antenna and no consideration of replacement.

Antenna location: Refer to Internal photos

7 Radio Spectrum Matter Test Results

7.1 20dB Bandwidth

Test Requirement 47 CFR Part 15, Subpart C 15.215
Test Method: ANSI C63.10 (2013) Section 6.9

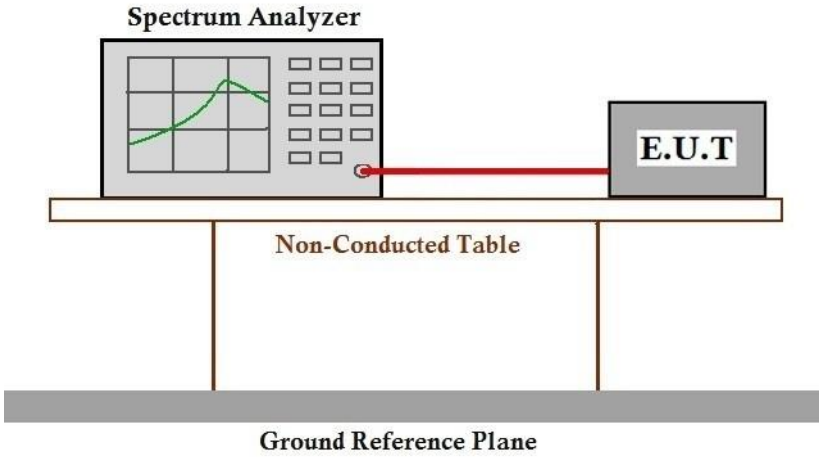
7.1.1 E.U.T. Operation

Operating Environment:
Temperature: 22.3 °C Humidity: 52.6 % RH Atmospheric Pressure: 1020 mbar

7.1.2 Test Mode Description

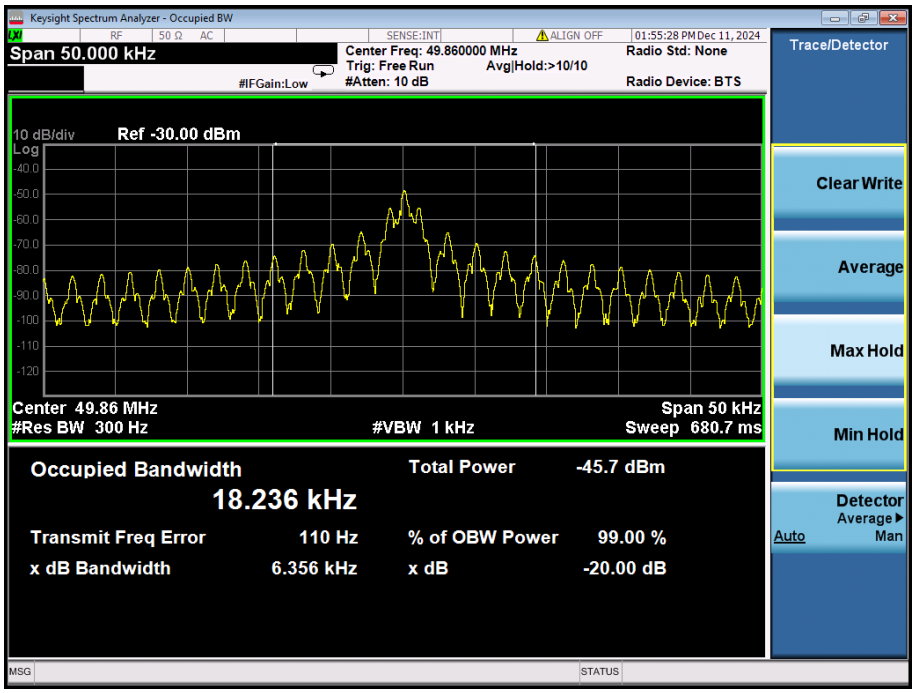
Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Keep the EUT in transmitting with modulation mode.

7.1.3 Test Setup Diagram



7.1.4 Measurement Procedure and Data

Test channel	20dB bandwidth (KHz)	Results
49.860MHz	6.356	Pass



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中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编:518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

7.2 Field Strength of the Fundamental Signal

Test Requirement 47 CFR Part 15, Subpart C 15.235(a)
Test Method: ANSI C63.10 (2013) Section 6.4
Measurement Distance: 3m

Limit:

Limit: ⩽ 10000 microvolts/meter at 3 meters, the emission limit is based on measurement instrumentation employing an average detector. The provisions in § 15.35 for limiting peak emissions apply.

7.2.1 E.U.T. Operation

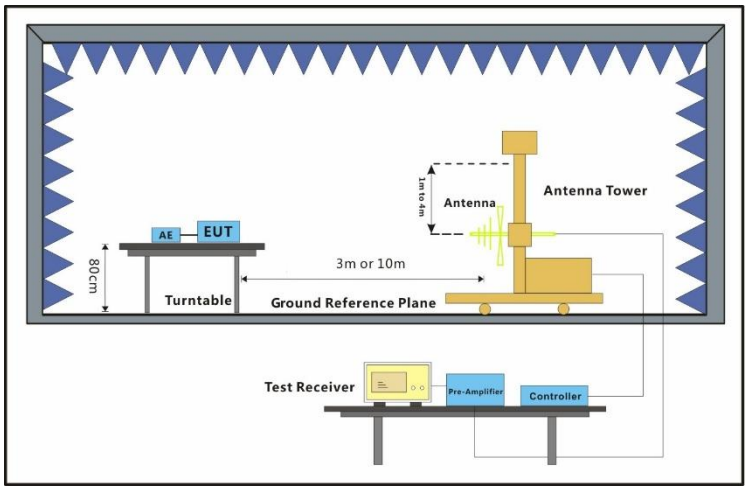
Operating Environment:

Temperature: 22.6 °C Humidity: 51.4 % RH Atmospheric Pressure: 1020 mbar

7.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Keep the EUT in transmitting with modulation mode.

7.2.3 Test Setup Diagram



7.2.4 Measurement Procedure and Data

a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

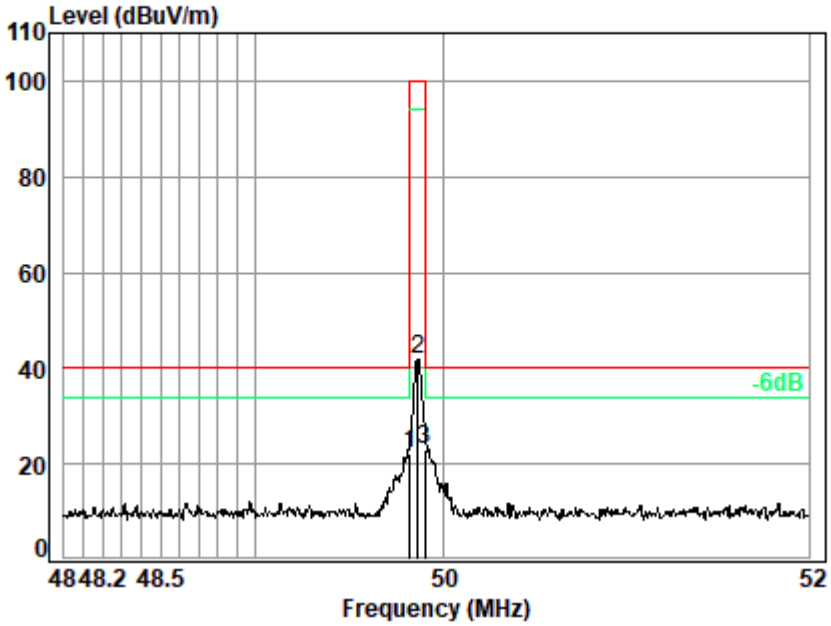
g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

h. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.

Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

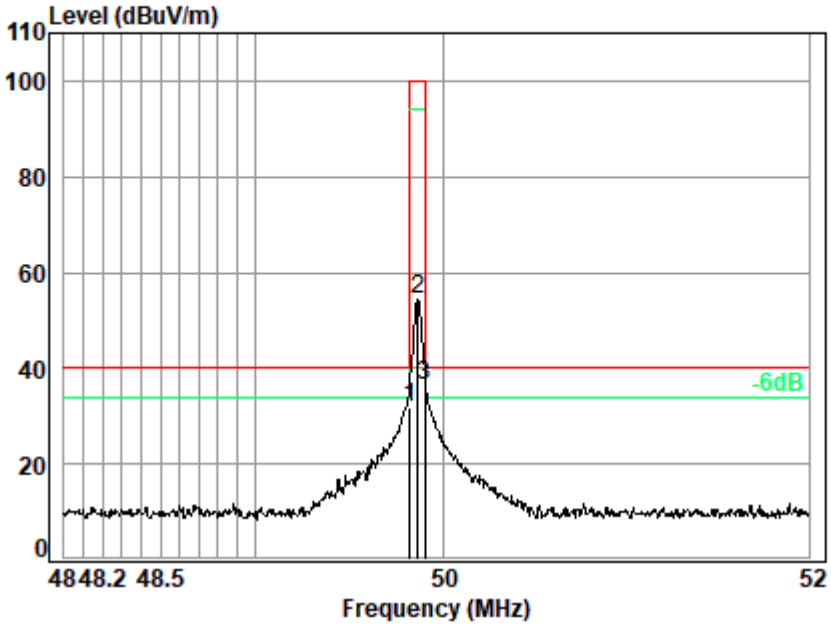
Test Mode: 00; Polarity: Horizontal



Site : chamber
Condition: 3m HORIZONTAL
Job No : 03740ET
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	49.82	0.16	17.56	25.86	30.41	22.27	40.00	-17.73	QP
2	49.86	0.16	17.56	25.86	50.03	41.89	100.00	-58.11	Peak
3	49.90	0.16	17.56	25.86	31.29	23.15	40.00	-16.85	QP

Test Mode: 00; Polarity: Vertical



Site : chamber
Condition: 3m VERTICAL
Job No : 03740ET
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	49.82	0.16	17.56	25.86	39.82	31.68	40.00	-8.32	QP
2	49.86	0.16	17.56	25.86	62.33	54.19	100.00	-45.81	Peak
3	49.90	0.16	17.56	25.86	44.61	36.47	40.00	-3.53	QP

7.3 Radiated Emissions

Test Requirement 47 CFR Part 15, Subpart C 15.235 (b) & 15.209
Test Method: ANSI C63.10 (2013) Section 6.4&6.5
Measurement Distance: 3m

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz and 110-490kHz. Radiated emission limits in these two bands are based on measurements employing an average detector.		
Frequency(MHz)	**Field strength(microvolts/meter)**	**Measurement distance(meters)**
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3
Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for above 1000MHz. Radiated emission limits above 1000MHz is based on measurements employing an average detector.		

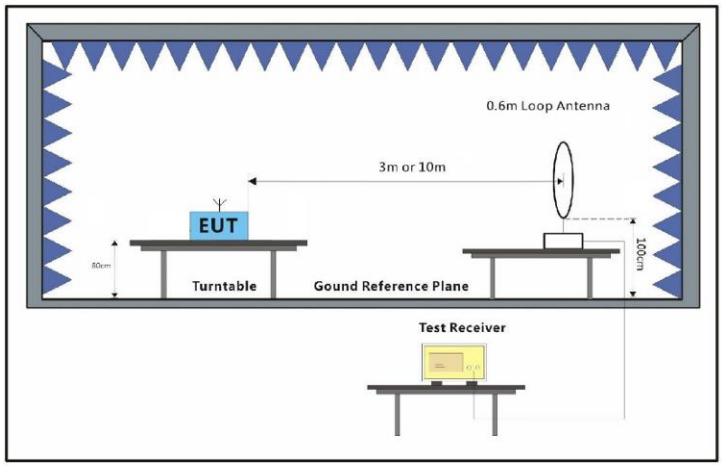
7.3.1 E.U.T. Operation

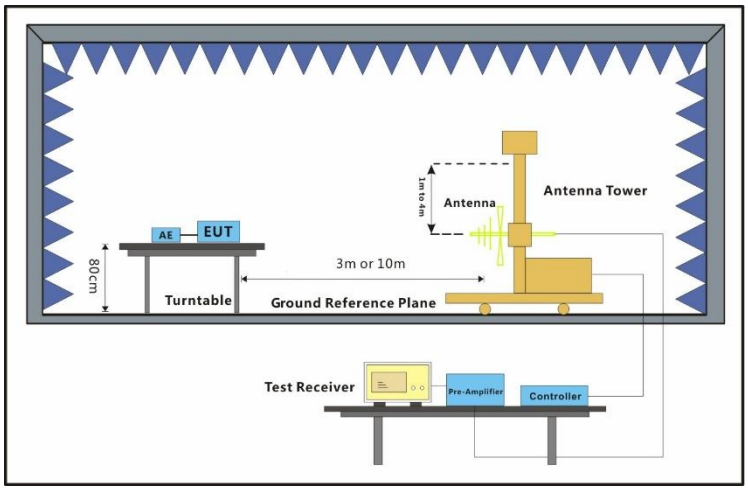
Operating Environment:
Temperature: 22.6 °C Humidity: 51.4 % RH Atmospheric Pressure: 1020 mbar

7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Keep the EUT in transmitting with modulation mode.

7.3.3 Test Setup Diagram





7.3.4 Measurement Procedure and Data

a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

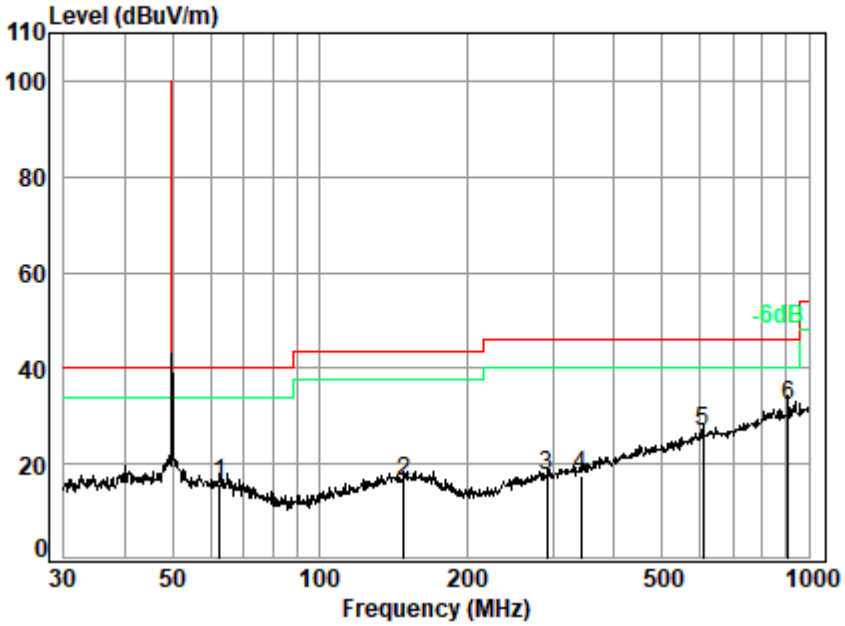
f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

g. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.

Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

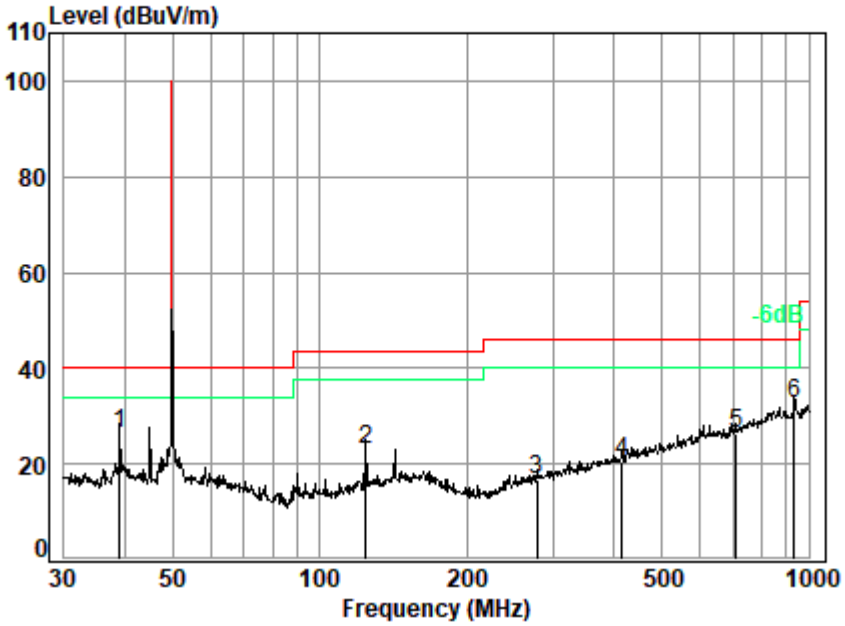
Test Mode: 00; Polarity: Horizontal



Site : chamber
Condition: 3m HORIZONTAL
Job No : 03740ET
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	62.43	0.25	16.94	25.84	24.73	16.08	40.00	-23.92	QP
2	148.96	0.91	17.39	25.58	23.54	16.26	43.50	-27.24	QP
3	292.06	1.00	17.38	25.21	24.23	17.40	46.00	-28.60	QP
4	341.98	1.44	18.45	25.46	23.26	17.69	46.00	-28.31	QP
5	607.79	2.26	24.56	26.59	26.41	26.64	46.00	-19.36	QP
6	906.48	2.33	27.55	25.90	28.12	32.10	46.00	-13.90	QP

Test Mode: 00; Polarity: Vertical



Site : chamber
Condition: 3m VERTICAL
Job No : 03740ET
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	39.02	0.20	17.91	25.88	34.21	26.44	40.00	-13.56	QP
2	124.13	0.99	15.53	25.68	32.26	23.10	43.50	-20.40	QP
3	278.07	0.96	17.06	25.24	24.06	16.84	46.00	-29.16	QP
4	414.72	1.60	19.99	25.85	24.74	20.48	46.00	-25.52	QP
5	711.67	1.79	25.52	26.48	25.49	26.32	46.00	-19.68	QP
6	935.55	2.24	27.64	25.77	28.37	32.48	46.00	-13.52	QP

8 Test Setup Photo

Refer to Appendix - Test Setup Photo for SZCR2410003740ET

9 EUT Constructional Details (EUT Photos)

Refer to Appendix_ External and Internal Photos for SZCR2410003740ET

- End of the Report -