

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

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

Report No.: SZCR231200421502

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TEST REPORT

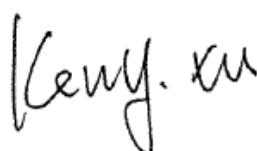
Application No.: SZCR2312004215ME
Applicant: Bioland Technology Ltd.
Address of Applicant: A6b7 (Block G), Shangrong Ind. Zone Baolong 5th Rd, Longgang District, Shenzhen Guangdong, 518116 China
Manufacturer: Bioland Technology Ltd.
Address of Manufacturer: No. A6B7 (Block G) Shangrong Industrial Zone No. 5 Baolong Road, Baolong Community Longgang District518116, Shenzhen, Guangdong, China.
Factory: Bioland Technology Ltd.
Address of factory: No. A6B7 (Block G) Shangrong Industrial Zone No. 5 Baolong Road, Baolong Community Longgang District518116, Shenzhen, Guangdong, China.

Equipment Under Test (EUT):

Product Name: Blood Glucose Meter
Model No.(EUT): G-777G
Trade Mark: Bioland
FCC ID: 2AHLEG-777G
Standard(s) : 47 CFR Part 2
47 CFR Part 22 subpart H
Date of Receipt: 2023-12-21
Date of Test: 2023-12-30 to 2024-02-02
Date of Issue: 2024-02-04

Test Result:	Pass*
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* 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		2024-02-04		Original

Authorized for issue by:			
		Edison Li/Project Engineer	
		Eric Fu/Reviewer	



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2 Test Summary

CatM1 Band 5

Test Item	FCC Rule No.	Requirements	Verdict
Effective (Isotropic) Radiated Power Output Data	§2.1046 §22.913	ERP≤7W	PASS
Peak-Average Ratio	§2.1046 §22.913	≤13dB	PASS
Bandwidth	§2.1049(h)	OBW: No limit EBW: No limit	PASS
Band Edge Compliance	§2.1051 §22.917	≤ -13dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block.	PASS
Spurious emissions at antenna terminals	§2.1051 §22.917	≤ -13 dBm/100 kHz, from 9 kHz to 10th harmonics but outside authorized operating frequency ranges.	PASS
Field strength of spurious radiation	§2.1053 §22.917	≤ -13dBm/100KHz	PASS
Frequency stability	§2.1055 §22.355	≤ ±2.5ppm	PASS



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4 General Information

4.1 Details of E.U.T.

Power supply:	Medical Adapter Model: LXCP6-050100D Input: AC 100-240V, 50/60Hz, 0.5A Max Output: DC 5.0V, 1.0A DC 3.7V, 600mAh rechargeable battery which charged by AC adapter
USB Type C cable	USB cable:50cm unshielded
Internal Source:	More than 108MHz
Sample Type:	Portable device
Operation Frequency Band:	CatM1 Band 5
Modulation Type:	QPSK, 16QAM
Antenna Type:	PIFA Antenna
Antenna Gain:	-3.68dBi
Extreme temp. Tolerance:	-30°C to +50°C
Extreme vol. Limits:	3.14VDC to 4.25VDC (nominal: 3.7VDC)

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 Test Frequency

Test Mode	Nominal Bandwidth (MHz)	RF Channel		
		Low (L)	Middle (M)	High (H)
		MHz	MHz	MHz
CatM1 Band 5	1.4	824.70	836.50	848.30
	3	825.50	836.50	847.50
	5	826.50	836.50	846.50
	10	829.00	836.50	844.00

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4.3 Test Environment

Environment Parameter	Selected Values During Tests	
Relative Humidity	52%	
Atmospheric Pressure:	1015Pa	
Temperature:	TL	-30°C
	TN	+20°C
	TH	+50°C
Voltage:	VL	3.14 V
	VN	3.7 V
	VH	4.25 V

NOTE: VL= lower extreme test voltage

VN= nominal voltage

VH= upper extreme test voltage

TL= lower extreme test temperature

TN= normal temperature

TH= upper extreme test temperature

4.4 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Wideband Radio Communication Tester	Rohde & Schwarz	CMW 500	SEM010-08
RF Cable	SGS	N/A(Cable loss:0.6dB)	N/A

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4.5 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	7.25×10^{-8}
2	Duty cycle	0.37%
3	Occupied Bandwidth	3%
4	RF conducted power	0.75dB
5	RF power density	2.84dB
6	Conducted Spurious emissions	0.75dB
7	RF Radiated power	5.14dB (below 1GHz)
		5.08dB (above 1GHz)
8	Radiated Spurious emission test	5.14dB (below 1GHz)
		5.08dB (above 1GHz)
9	Temperature test	1°C
10	Humidity test	3%
11	Supply voltages	1.5%
12	Time	3%



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4.6 Test Location

All tests were performed at:

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

No tests were sub-contracted.

4.7 Test Facility

- **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.

4.8 Deviation from Standards

None

4.9 Abnormalities from Standard Conditions

None

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5 Equipment List

RF conducted test					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date	Cal. Due date
Programmable DC Source	Chroma	62024P-80-60	SEM011-09	2023/07/11	2024/07/10
Programmable Temperature & Humidity Chamber	Votsch Industrietechnik GmbH	VT 4002	SEM002-15	2023/03/21	2024/03/20
Spectrum Analyzer	Rohde & Schwarz	FSU43	SEM004-08	2023/07/11	2024/07/10
Measurement Software	TST	TST PASS V2.0	N/A	N/A	N/A
Attenuator	Huber+Suhner	6620_SMA-50-1	SEM021-09	2023/07/11	2024/07/10
Universal Radio Communication Tester	Rohde & Schwarz	CMW 500	SEM010-03	2023/03/28	2024/03/27
Power Sensor	KEYSIGHT	U2021XA	SEM009-15	2023/03/21	2024/03/20

RE in Chamber					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date	Cal. Due date
Trilog-Broadband Antenna	Schwarzbeck	VULB9168	SEM003-33	2021/9/25	2024/9/24
MXE EMI receiver	Agilent	N9038A	SEM004-05	2023/07/11	2024/07/10
Pre-amplifier	HP	8447D	SEM005-02	2023/07/11	2024/07/10
Spectrum Analyzer	Rohde & Schwarz	101288	SEM004-08	2023/07/11	2024/07/10
Low Noise Amplifier	CLAVIIO	BDLNA-0118-352810	SEM005-05	2023/07/11	2024/07/10
Substitution Antenna	Schwarzbeck	VULB9168	SEM003-18	2022/08/07	2025/08/06
Signal Generator(9kHz-40GHz)	N5173B	MY53270267	Agilent	2023/07/11	2024/07/10
Pre-amplifier	HP	8447D	SEM005-02	2023/07/11	2024/07/10
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	SEM003-15	2021/7/11	2024/7/10
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9120D	SEM003-32	2021/9/26	2024/9/25
Double-ridged waveguide horn	ETS-LINDGREN	3117	SEM003-34	2021/9/25	2024/9/24
Spectrum Analyzer	Rohde & Schwarz	101288	SEM004-08	2023/07/11	2024/07/10
Low Noise Amplifier	CLAVIIO	BDLNA-0118-352810	SEM005-05	2023/07/11	2024/07/10



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Pre-amplifier	Compliance Directions Systems Inc.	PAP-2640-50	SEM005-08	2023/07/11	2024/07/10
Pre-amplifier	Rohde & Schwarz	CH14-H052	SEM005-17	2023/07/11	2024/07/10
Substitution Antenna	ETS-Lindgren	3142C	SEM003-01	2023/06/25	2026/06/24
Universal Radio Communication Tester	Rohde & Schwarz	CMW 500	SEM010-03	2023/03/28	2024/03/27

General used equipment

Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Humidity/ Temperature Indicator	deli	8838	SEM002-32	2023-07-28	2024-07-27
Humidity/ Temperature Indicator	deli	8838	SEM002-33	2023-07-28	2024-07-27
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2023-03-23	2024-03-22

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6 Radio Spectrum Matter Test Results

6.1 Effective (Isotropic) Radiated Power Output Data

Test Requirement: Reference test summary
Test Method: ANSI C63.26-2015, KDB 971168 D01 v03r01
Limit: Reference test summary

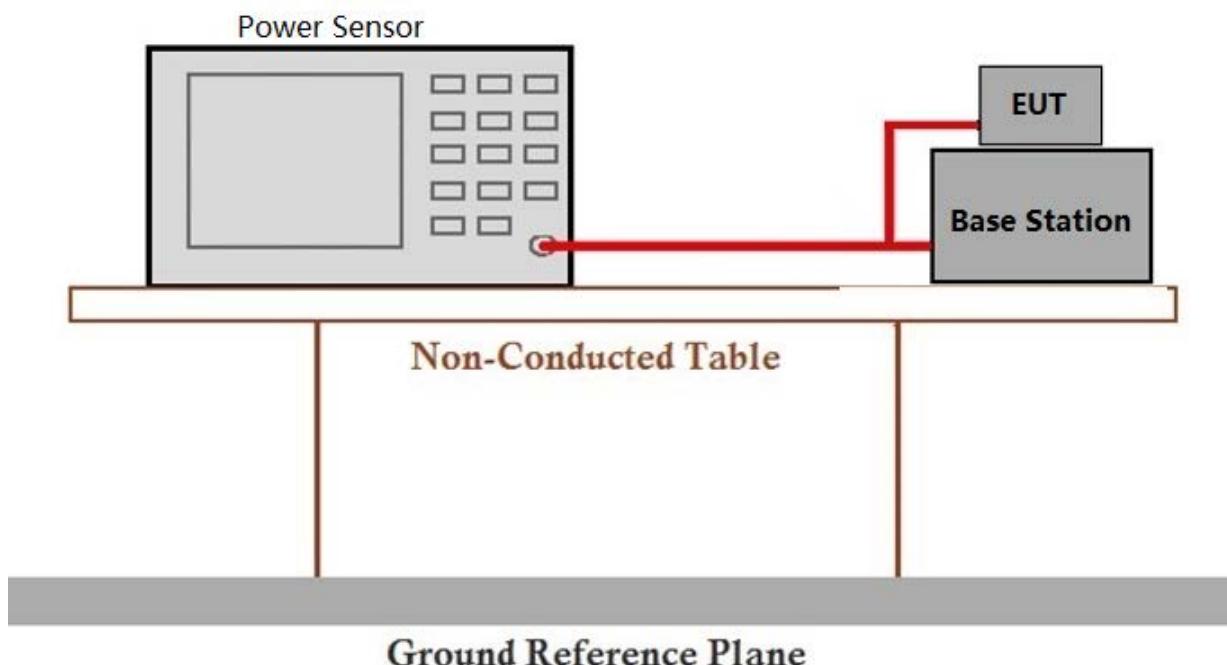
6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 22.6 °C Humidity: 55.3 % RH Atmospheric Pressure: 1020 mbar

Test mode: 02: Tx mode, Keep the EUT in transmitting mode.

6.1.2 Test Setup Diagram



6.1.3 Measurement Data

Please refer to Appendix_FCC_CatM_4G_RF power



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6.2 Peak-Average Ratio

Test Requirement: Reference test summary

Test Method: ANSI C63.26-2015, KDB 971168 D01 v03r01

Limit: ≤13dB

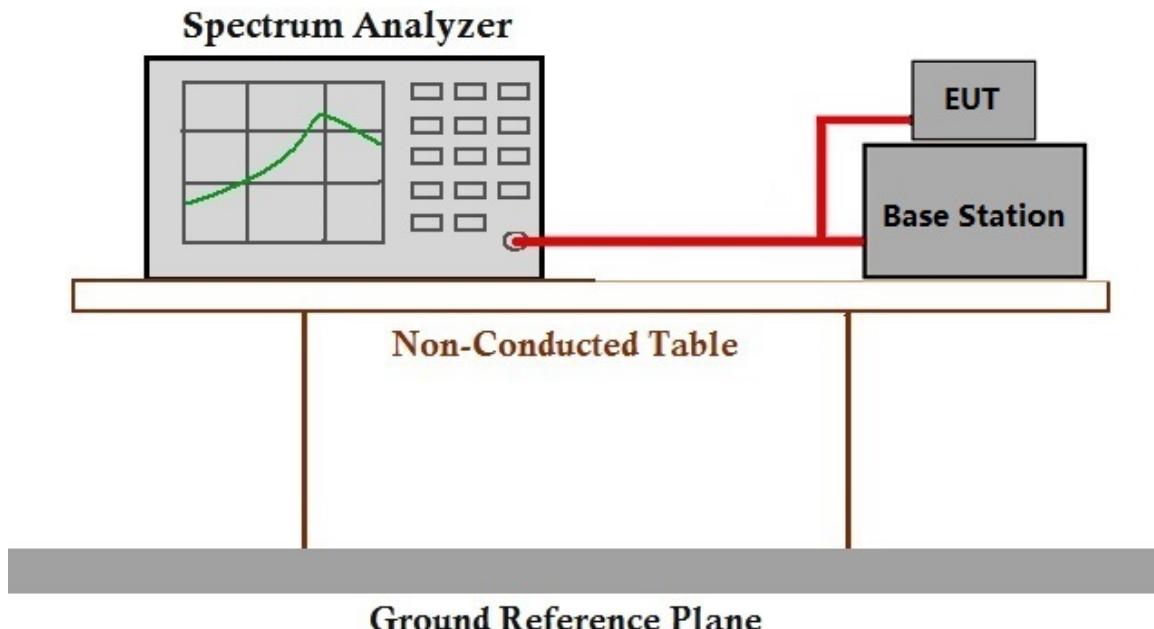
6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 22.6 °C Humidity: 55.3 % RH Atmospheric Pressure: 1020 mbar

Test mode: 02: Tx mode, Keep the EUT in transmitting mode.

6.2.2 Test Setup Diagram



6.2.3 Measurement Data

Please refer to Appendix_FCC_CatM_4G_PAR

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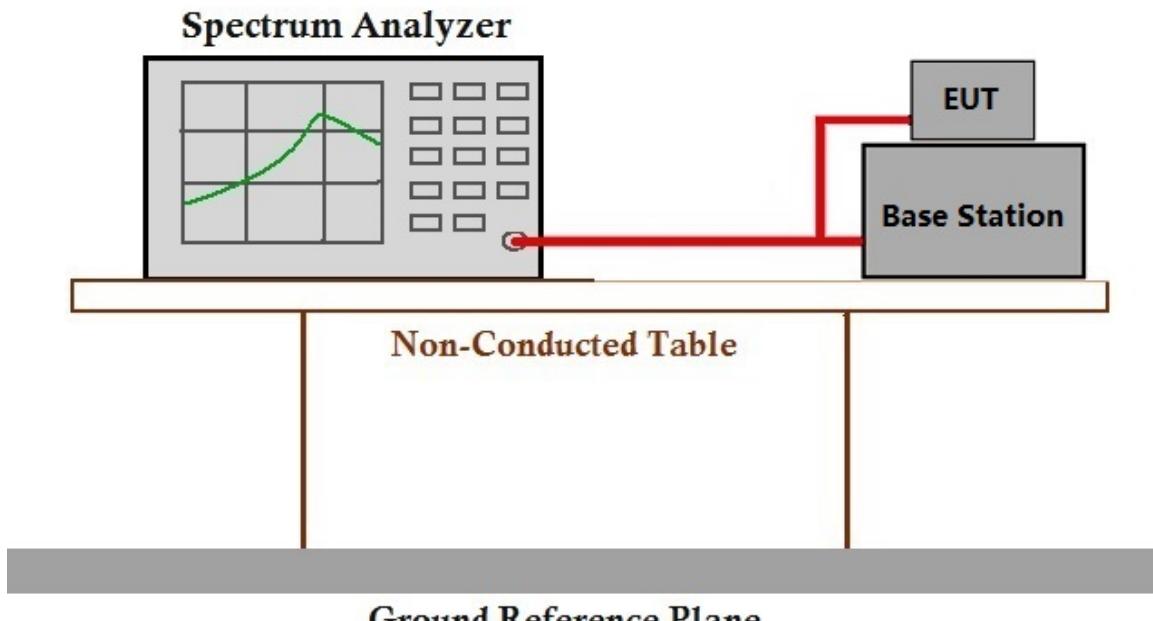
6.3 Bandwidth

Test Requirement: Reference test summary
Test Method: ANSI C63.26-2015, KDB 971168 D01 v03r01
Limit: OBW: No limit
EBW: No limit

6.3.1 E.U.T. Operation

Operating Environment:
Temperature: 22.6 °C Humidity: 55.3 % RH Atmospheric Pressure: 1020 mbar
Test mode: 02: Tx mode, Keep the EUT in transmitting mode.

6.3.2 Test Setup Diagram



6.3.3 Measurement Data

Please refer to Appendix_FCC_CatM_4G_Bandwidth

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6.4 Band Edge Compliance

Test Requirement: Reference test summary

Test Method: ANSI C63.26-2015, KDB 971168 D01 v03r01

Limit: Reference test summary

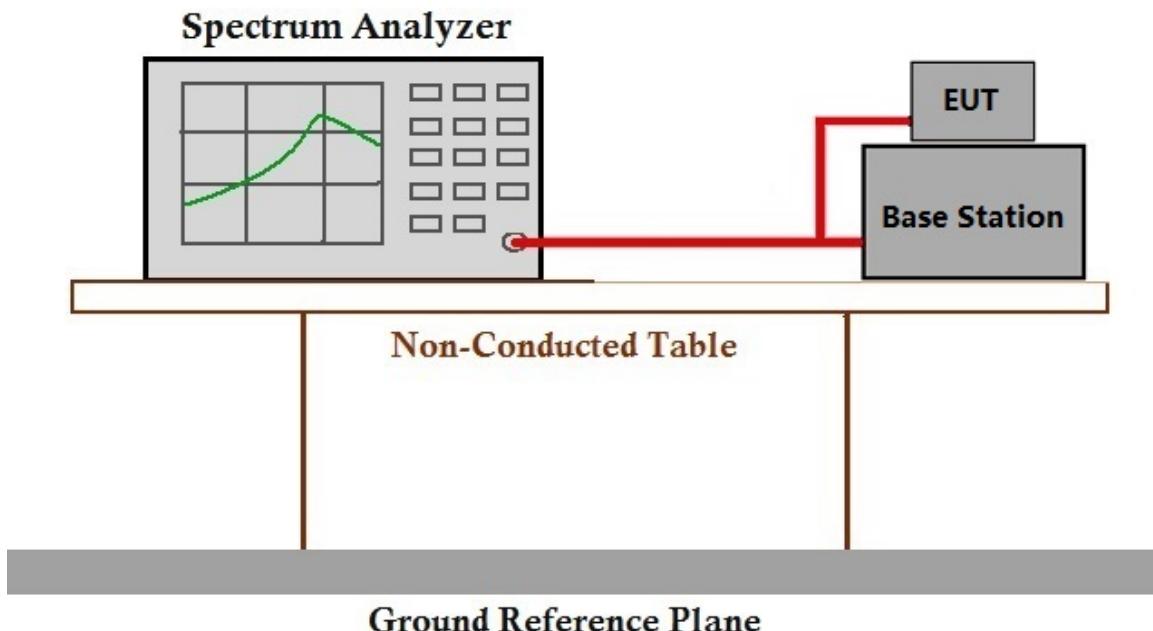
6.4.1 E.U.T. Operation

Operating Environment:

Temperature: 22.6 °C Humidity: 55.3 % RH Atmospheric Pressure: 1020 mbar

Test mode: 02: Tx mode, Keep the EUT in transmitting mode.

6.4.2 Test Setup Diagram



6.4.3 Measurement Data

Please refer to Appendix_FCC_CatM_4G_Bandedge

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6.5 Spurious emissions at antenna terminals

Test Requirement: Reference test summary

Test Method: ANSI C63.26-2015, KDB 971168 D01 v03r01

Limit: Reference test summary

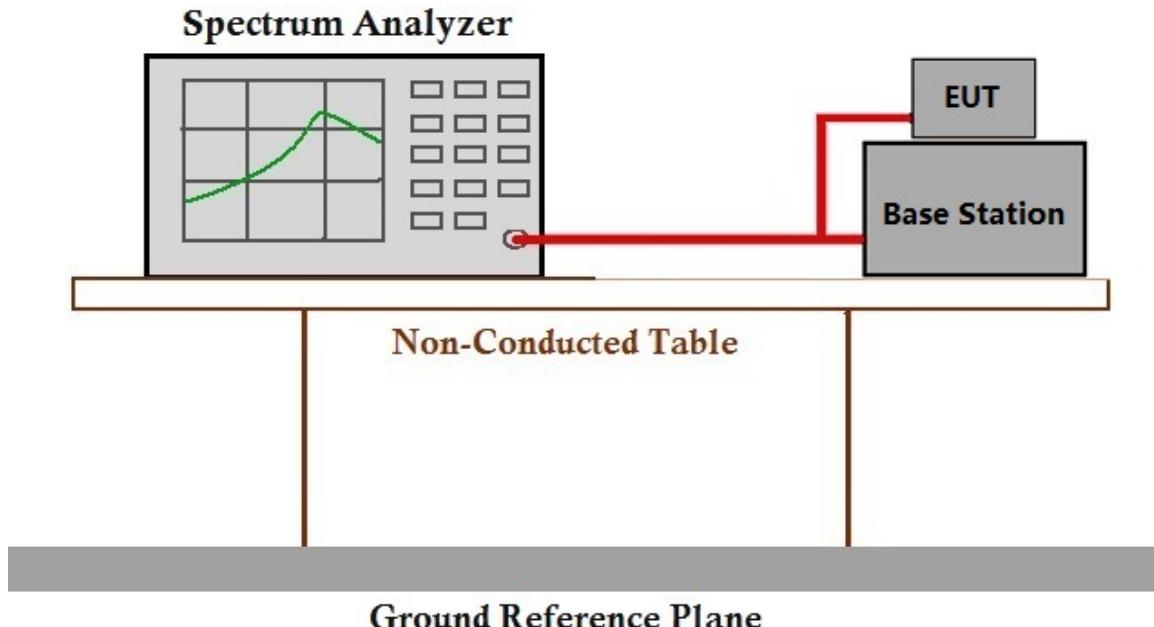
6.5.1 E.U.T. Operation

Operating Environment:

Temperature: 22.6 °C Humidity: 55.3 % RH Atmospheric Pressure: 1020 mbar

Test mode: 02: Tx mode, Keep the EUT in transmitting mode.

6.5.2 Test Setup Diagram



6.5.3 Measurement Data

Please refer to Appendix_FCC_CatM_4G_Spurious emission



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6.6 Field strength of spurious radiation

Test Requirement: Reference test summary

Test Method: ANSI C63.26-2015, KDB 971168 D01 v03r01

Limit: Reference test summary

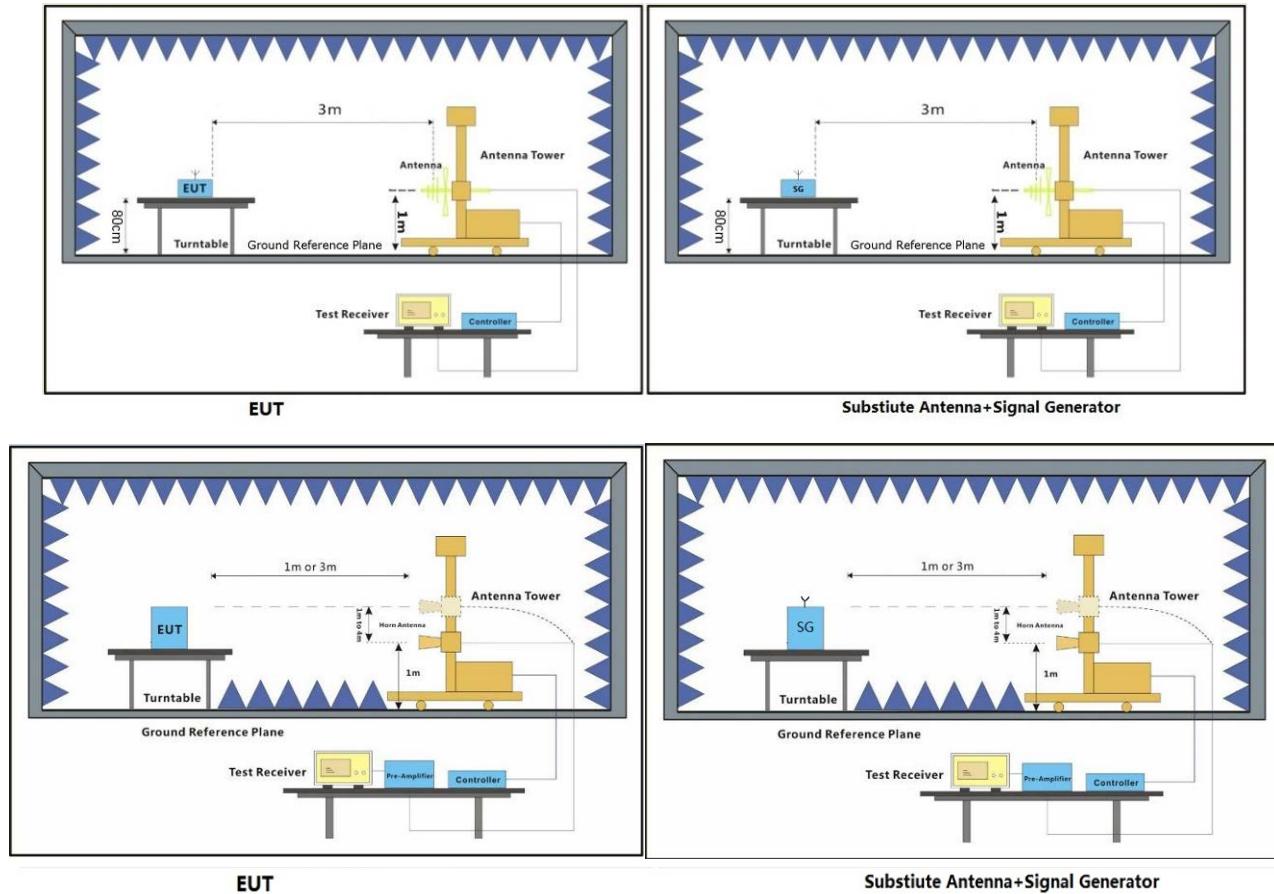
6.6.1 E.U.T. Operation

Operating Environment:

Temperature: 22.6 °C Humidity: 55.3 % RH Atmospheric Pressure: 1020 mbar

Test mode: 02: Tx mode, Keep the EUT in transmitting mode.

6.6.2 Test Setup Diagram



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6.6.3 Measurement Procedure and Data

Test Procedure:

- (1)On a test site, the EUT shall be placed on a turntable and in the position closest to the normal use as declared by the user.
- (2)The test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the transmitter.
- (3)The output of the antenna shall be connected to the measuring receiver and either a peak or quasi-peak detector was used for the measurement as indicated on the report. The detector selection is based on how close the emission level was approaching the limit.
- (4)The transmitter shall be switched on; if possible, without the modulation and the measurement receiver shall be tuned to the frequency of the transmitter under test.
- (5)The test antenna shall be raised and lowered through the specified range of height until the measuring receiver detects a maximum signal level.
- (6)The transmitter shall then be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
- (7)The test antenna shall be raised and lowered again through the specified range of height until the measuring receiver detects a maximum signal level.
- (8)The maximum signal level detected by the measuring receiver shall be noted.
- (9)The measurement shall be repeated with the test antenna set to horizontal polarization.
- (10) Replace the antenna with a proper Antenna (substitution antenna).
- (11)The substitution antenna shall be oriented for vertical polarization and, if necessary, the length of the substitution antenna shall be adjusted to correspond to the frequency of transmitting.
- (12)The substitution antenna shall be connected to a calibrated signal generator.
- (13)If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
- (14)The test antenna shall be raised and lowered through the specified range of the height to ensure that the maximum signal is received.
- (15)The input signal to substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuation setting of the measuring receiver.
- (16)The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.
- (17)The measurement shall be repeated with the test antenna and the substitution antenna oriented for horizontal polarization.



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CatM Band 5-10MHz Low channel, Modulation: QPSK, 1 RB								
Frequency (MHz)	EIRP (dBm)	Limit(dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
1648.14	-47.14	-13.00	-34.14	-51.02	2.00	5.88	Horizontal	Pass
2472.21	-43.57	-13.00	-30.57	-45.84	2.35	4.62	Horizontal	Pass
3296.28	-50.38	-13.00	-37.38	-54.34	2.96	6.92	Horizontal	Pass
1648.14	-44.52	-13.00	-31.52	-48.40	2.00	5.88	Vertical	Pass
2472.21	-44.84	-13.00	-31.84	-47.11	2.35	4.62	Vertical	Pass
3296.28	-49.95	-13.00	-36.95	-53.91	2.96	6.92	Vertical	Pass

CatM Band 5-10MHz Middle channel, Modulation: QPSK, 1 RB								
Frequency (MHz)	EIRP (dBm)	Limit(dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
1671.74	-48.14	-13.00	-35.14	-52.02	2.00	5.88	Horizontal	Pass
2507.61	-45.14	-13.00	-32.14	-48.30	2.66	5.82	Horizontal	Pass
3343.48	-49.32	-13.00	-36.32	-53.28	2.96	6.92	Horizontal	Pass
1671.74	-46.35	-13.00	-33.35	-50.23	2.00	5.88	Vertical	Pass
2507.61	-45.82	-13.00	-32.82	-48.98	2.66	5.82	Vertical	Pass
3343.48	-49.13	-13.00	-36.13	-53.09	2.96	6.92	Vertical	Pass

CatM Band 5-10MHz High channel, Modulation: QPSK, 1 RB								
Frequency (MHz)	EIRP (dBm)	Limit(dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
1695.34	-48.22	-13.00	-35.22	-52.10	2.00	5.88	Horizontal	Pass
2543.01	-42.78	-13.00	-29.78	-45.94	2.66	5.82	Horizontal	Pass
3390.68	-49.44	-13.00	-36.44	-53.40	2.96	6.92	Horizontal	Pass
1695.34	-45.54	-13.00	-32.54	-49.42	2.00	5.88	Vertical	Pass
2543.01	-43.27	-13.00	-30.27	-46.43	2.66	5.82	Vertical	Pass
3390.68	-49.07	-13.00	-36.07	-53.03	2.96	6.92	Vertical	Pass

Note: All modes have been tested and we found QPSK test mode has the worst test result. Only record the worst test result.

EIRP= S.G. Power- Cable loss+ Antenna Gain



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6.7 Frequency stability

Test Requirement: Reference test summary

Test Method: ANSI C63.26-2015, KDB 971168 D01 v03r01

Limit: Reference test summary

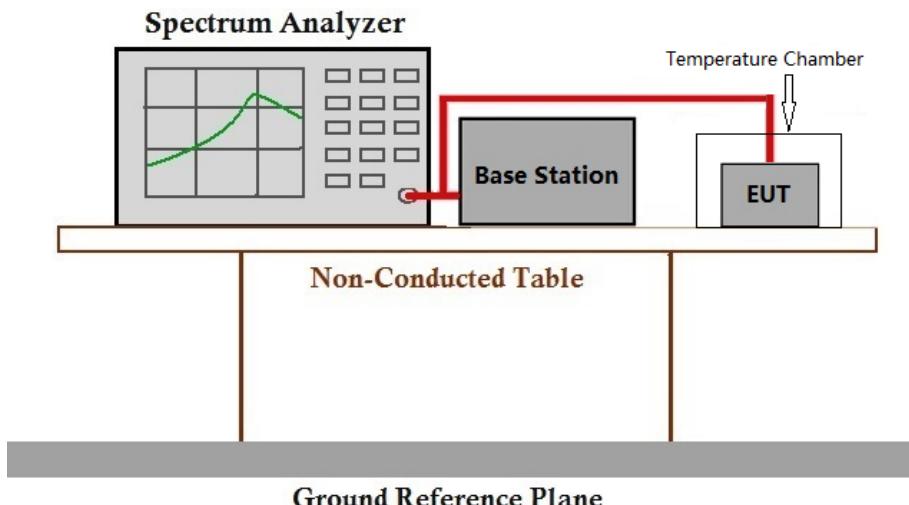
6.7.1 E.U.T. Operation

Operating Environment:

Temperature: 22.6 °C Humidity: 55.3 % RH Atmospheric Pressure: 1020 mbar

Test mode: 02: Tx mode, Keep the EUT in transmitting mode.

6.7.2 Test Setup Diagram



6.7.3 Measurement Data

Please refer to Appendix_FCC_CatM_4G_Frequency stability

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7 Test Setup Photo

Refer to Appendix – Test Setup Photos for SZCR2312004215ME

8 EUT Constructional Details (EUT Photos)

Refer to Appendix - External and Internal Photos for SZCR2312004215ME

- End of the Report -



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