

TEST REPORT

Application No.: SZCR2106021590AT(AR/2021/50004)
Applicant: Xiaomi Communications Co., Ltd.
Address of Applicant: #019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085
Manufacturer: Xiaomi Communications Co., Ltd.
Address of Manufacturer: #019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085
Equipment Under Test (EUT):
EUT Name: Mobile Phone
Model No.: 21081111RG
Trade Mark: XIAOMI
FCC ID: 2AFZZ11RG
Standard(s) : 47 CFR Part 90 subpart S
Date of Receipt: 2021-06-16
Date of Test: 2021-06-21 to 2021-06-29
Date of Issue: 2021-07-05

Test Result:	Pass*
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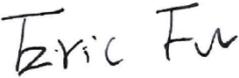
* In the configuration tested, the EUT complied with the standards specified above.

Keny Xu
EMC Laboratory Manager



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2021-07-05		Original

Authorized for issue by:			
			
		<hr/>	
		Leo Lai/Project Engineer	
			
		<hr/>	
		Eric Fu/Reviewer	



2 Test Summary

Radio Spectrum Matter Part				
Item	Standard	Method	Requirement	Result
Field strength of spurious radiation	47 CFR Part 90	ANSI C63.26, KDB 971168 D01 v03	§ 90.691	Pass



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4 General Information

4.1 Details of E.U.T.

Power supply:	DC 3.87V from internal rechargeable battery which can be charge by AC/DC adapter
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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
Field strength of spurious radiation	4.5dB below 1GHz; 4.8dB above 1GHz

Remark:

The U_{lab} (lab Uncertainty) is less than U_{CISPR} (CISPR 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, 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: CN1178**

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

Designation Number: CN1178. Test Firm Registration Number: 406779.

• **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

Field strength of spurious radiation					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
3m Semi-Anechoic Chamber	AUDIX	N/A	SEM001-02	2021-03-26	2024-03-25
EXA Signal Analyzer (10Hz-44GHz)	Agilent Technologies Inc	N9010A	SEM004-12	2021-02-01	2022-01-31
Horn Antenna (800MHz-18GHz)	Rohde & Schwarz	HF907	SEM003-07	2021-04-14	2024-04-13
Horn Antenna (15-40GHz)	Schwarzbeck	BBHA 9170	SEM003-15	2020-11-14	2023-11-13
Pre-Amplifier (0.1-26.5GHz)	Compliance Directions Systems Inc.	PAP-0126	SEM004-11	2020-09-23	2021-09-22
Pre-amplifier (26-40GHz)	Compliance Directions Systems Inc.	PAP-2640-50	SEM005-08	2021-03-24	2022-03-23
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM026-01	2020-07-10	2021-07-09
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2020-07-19	2023-07-18
MXE EMI Receiver	Agilent Technologies	N9038A	SEM004-15	2020-11-02	2021-11-01
BiConiLog Antenna	ETS-LINDGREN	3142C	SEM003-02	2019-05-24	2022-05-23
Pre-Amplifier	Agilent Technologies	8447D	SEM005-01	2021-03-24	2022-03-23
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM025-01	2020-07-10	2021-07-09

General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-04	2020-09-15	2021-09-14
Humidity/ Temperature Indicator	Mingle	N/A	SEM002-08	2020-09-15	2021-09-14
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2021-03-30	2022-03-29



6 Radio Spectrum Matter Test Results

6.1 Field strength of spurious radiation

Test Requirement §90.691
 Test Method: ANSI C63.26, KDB 971168 D01 v03

Limit:

For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 Log₁₀(f/6.1) decibels or 50 + 10 Log₁₀(P) decibels or 80 decibels, whichever is the lesser attenuation; frequency greater than 37.5KHz, ≤ -13dBm(LTE band 26a)

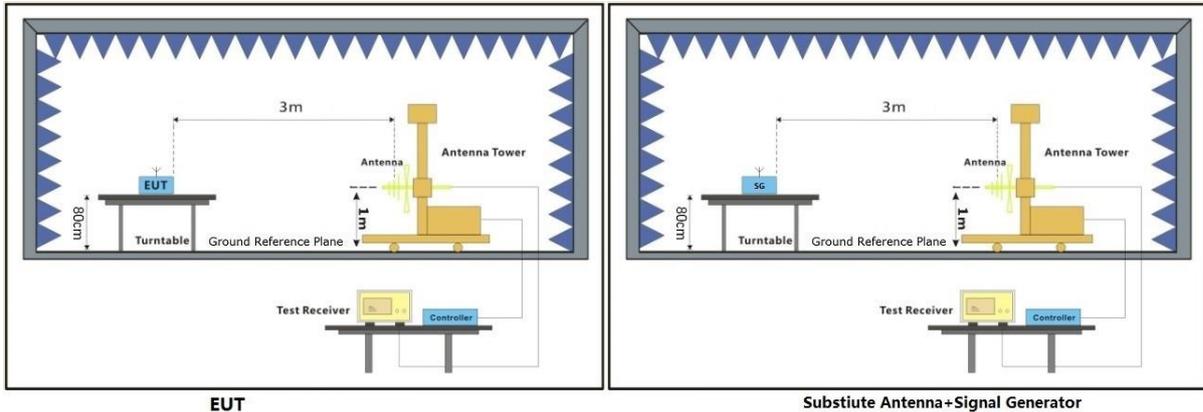
6.1.1 E.U.T. Operation

Operating Environment:
 Temperature: 23.6 °C Humidity: 49.3 % RH Atmospheric Pressure: 1050 mbar

6.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	02	TX mode_Keep the EUT in transmitting mode

6.1.3 Test Setup Diagram



6.1.4 Measurement Procedure and Data



Remark: The ANT1 and ANT3 have been all tested, Found the ANT1 is the worst case and only the worst case data displayed in this report.

LTE Band 26 (814 to 824MHz), 1.4M

Low

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
1628.14	-58.59	-13	-45.59	-61.92	0.52	6	Horizontal	Pass
2442.21	-58.37	-13	-45.37	-61.49	0.53	5.8	Horizontal	Pass
3256.28	-53.67	-13	-40.67	-57.07	0.65	6.2	Horizontal	Pass
1628.14	-62.13	-13	-49.13	-65.46	0.52	6	Vertical	Pass
2442.21	-59.01	-13	-46.01	-62.13	0.53	5.8	Vertical	Pass
3256.28	-52.96	-13	-39.96	-56.36	0.65	6.2	Vertical	Pass

Mid

Frequency (MHz)	ERP(d Bm)	Limit(d Bm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
1636.74	-55.3	-13	-42.3	-58.63	0.52	6	Horizontal	Pass
2455.11	-58.27	-13	-45.27	-61.39	0.53	5.8	Horizontal	Pass
3273.48	-53.44	-13	-40.44	-56.84	0.65	6.2	Horizontal	Pass
1636.74	-59.52	-13	-46.52	-62.85	0.52	6	Vertical	Pass
2455.11	-58.59	-13	-45.59	-61.71	0.53	5.8	Vertical	Pass
3273.48	-54.21	-13	-41.21	-57.61	0.65	6.2	Vertical	Pass

High

Frequency (MHz)	ERP(d Bm)	Limit(d Bm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
1645.34	-55.91	-13	-42.91	-59.24	0.52	6	Horizontal	Pass
2468.01	-57.75	-13	-44.75	-60.87	0.53	5.8	Horizontal	Pass
3290.68	-53.17	-13	-40.17	-56.57	0.65	6.2	Horizontal	Pass
1645.34	-60.31	-13	-47.31	-63.64	0.52	6	Vertical	Pass
2468.01	-58.13	-13	-45.13	-61.25	0.53	5.8	Vertical	Pass
3290.68	-53.99	-13	-40.99	-57.39	0.65	6.2	Vertical	Pass



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LTE Band 26 (814 to 824MHz), 3M

Low

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
1628.3	-58.68	-13	-45.68	-62.01	0.52	6	Horizontal	Pass
2442.45	-58.59	-13	-45.59	-61.71	0.53	5.8	Horizontal	Pass
3256.6	-53.44	-13	-40.44	-56.84	0.65	6.2	Horizontal	Pass
1628.3	-59.96	-13	-46.96	-63.29	0.52	6	Vertical	Pass
2442.45	-60.06	-13	-47.06	-63.18	0.53	5.8	Vertical	Pass
3256.6	-53.96	-13	-40.96	-57.36	0.65	6.2	Vertical	Pass

Mid

Frequency (MHz)	ERP(dBm)	Limit(dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
1635.3	-57.37	-13	-44.37	-60.7	0.52	6	Horizontal	Pass
2452.95	-58.6	-13	-45.6	-61.72	0.53	5.8	Horizontal	Pass
3270.6	-53.93	-13	-40.93	-57.33	0.65	6.2	Horizontal	Pass
1635.3	-61.95	-13	-48.95	-65.28	0.52	6	Vertical	Pass
2452.95	-58.48	-13	-45.48	-61.6	0.53	5.8	Vertical	Pass
3270.6	-54.06	-13	-41.06	-57.46	0.65	6.2	Vertical	Pass

High

Frequency (MHz)	ERP(dBm)	Limit(dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
1642.3	-62.85	-13	-49.85	-66.18	0.52	6	Horizontal	Pass
2463.45	-59.28	-13	-46.28	-62.4	0.53	5.8	Horizontal	Pass
3284.6	-54.74	-13	-41.74	-58.14	0.65	6.2	Horizontal	Pass
1642.3	-61.96	-13	-48.96	-65.29	0.52	6	Vertical	Pass
2463.45	-59.16	-13	-46.16	-62.28	0.53	5.8	Vertical	Pass
3284.6	-53.49	-13	-40.49	-56.89	0.65	6.2	Vertical	Pass



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LTE Band 26 (814 to 824MHz), 5M

Low

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
1628.5	-61.8	-13	-48.8	-65.13	0.52	6	Horizontal	Pass
2442.75	-59.04	-13	-46.04	-62.16	0.53	5.8	Horizontal	Pass
3257	-53.92	-13	-40.92	-57.32	0.65	6.2	Horizontal	Pass
1628.5	-61.53	-13	-48.53	-64.86	0.52	6	Vertical	Pass
2442.75	-60.56	-13	-47.56	-63.68	0.53	5.8	Vertical	Pass
3257	-55.11	-13	-42.11	-58.51	0.65	6.2	Vertical	Pass

Mid

Frequency (MHz)	ERP(d Bm)	Limit(dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
1633.5	-61.59	-13	-48.59	-64.92	0.52	6	Horizontal	Pass
2450.25	-60.11	-13	-47.11	-63.23	0.53	5.8	Horizontal	Pass
3267	-55	-13	-42	-58.4	0.65	6.2	Horizontal	Pass
1633.5	-61.71	-13	-48.71	-65.04	0.52	6	Vertical	Pass
2450.25	-59.72	-13	-46.72	-62.84	0.53	5.8	Vertical	Pass
3267	-53.59	-13	-40.59	-56.99	0.65	6.2	Vertical	Pass

High

Frequency (MHz)	ERP(d Bm)	Limit(dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
1638.5	-61.18	-13	-48.18	-64.51	0.52	6	Horizontal	Pass
2457.75	-58.39	-13	-45.39	-61.51	0.53	5.8	Horizontal	Pass
3277	-52.89	-13	-39.89	-56.29	0.65	6.2	Horizontal	Pass
1638.5	-63.13	-13	-50.13	-66.46	0.52	6	Vertical	Pass
2457.75	-59.23	-13	-46.23	-62.35	0.53	5.8	Vertical	Pass
3277	-53.97	-13	-40.97	-57.37	0.65	6.2	Vertical	Pass



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LTE Band 26 (814 to 824MHz), 10M
 Mid

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
1629	-62.14	-13	-49.14	-65.47	0.52	6	Horizontal	Pass
2443.5	-60.27	-13	-47.27	-63.39	0.53	5.8	Horizontal	Pass
3258	-54.88	-13	-41.88	-58.28	0.65	6.2	Horizontal	Pass
1629	-63.16	-13	-50.16	-66.49	0.52	6	Horizontal	Pass
2443.5	-59.78	-13	-46.78	-62.9	0.53	5.8	Vertical	Pass
3258	-54.33	-13	-41.33	-57.73	0.65	6.2	Vertical	Pass
1629	-62.14	-13	-49.14	-65.47	0.52	6	Vertical	Pass



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7 Test Setup Photo

Please refer to setup photos.

8 EUT Constructional Details (EUT Photos)

Refer to external and internal photos.

- End of the Report -

