



Spot Check Evaluation

APPLICANT : Xiaomi Communications Co., Ltd.
EQUIPMENT : Mobile Phone
BRAND NAME : Redmi
MODEL NAME : 23030RAC7Y
FCC ID : 2AFZZRAC7Y
STANDARD : 47 CFR Part 2, 22(H), 27(M)
47 CFR Part 15 Subpart C §15.247
47 CFR Part 15 Subpart E §15.407

We, Sporton International Inc. (Kunshan), would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (Kunshan), the test report shall not be reproduced except in full.

Jason Jia

Approved by: Jason Jia



Sporton International Inc. (Kunshan)

**No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of China**



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APPENDIX A. SETUP PHOTOGRAPHS



1 General Description

1.1 Applicant

Xiaomi Communications Co., Ltd.

#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

1.2 Manufacturer

Xiaomi Communications Co., Ltd.

#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Phone
Brand Name	Redmi
Model Name	23030RAC7Y
FCC ID	2AFZZRAC7Y
IMEI Code	Conducted: 866658060018080/866658060018098 Radiation: 866658060010764/866658060010772
HW Version	P1
SW Version	MIUI14
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4 Modification of EUT

No modifications are made to the EUT during all test items.



1.5 Testing Site

Sporton International Inc. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	03CH04-KS TH01-KS	CN1257	314309

1.6 Test Software

Item	Site	Manufacturer	Name	Version
1.	03CH04-KS	AUDIX	E3	6.2009-8-24al



2 Re-use of Measured Data

2.1 Introduction Section

This application re-uses data collected on a similar device. The subject device of this application (Model: 23030RAC7Y, FCC ID: 2AFZZRAC7Y) is electrically identical to the reference device (Model: 2201117SY, FCC ID: 2AFZZ117SY) for the portions of the circuitry corresponding to the data being re-used. Based on their similarity, the FCC Part 15C (equipment class: DTS, DSS) and FCC Part 15E (equipment class: NII) and FCC Part 22, 27 (equipment class: PCE) reuse the original model's result and do spot-check, following the FCC KDB 484596 D01 v01.

The applicant takes full responsibility that the test data as referenced in this report represent compliance for this FCC ID: 2AFZZRAC7Y .

2.2 Model Difference Information

The **main** difference between FCC ID: 2AFZZ117SY and FCC ID: 2AFZZRAC7Y is as below:

- Remove GSM1900, WCDMA Band II/IV, LTE B2/4.
- Update the frequency range for LTE B41 (from 2535~2655MHz to 2496~2690MHz).
- Change the antenna size for NFC.

Other differences and all the details of similarity and difference can be found in the confidential documents (23030RAC7Y_Operational Description of Product Equality Declaration).



2.3 Reference detail Section:

Rule Part	Equipment Class	Frequency Band (MHz)	Reference FCC ID (Parent)	Type Grant/Permissive Change	Reference Title	FCC ID Filling (Variant)	Report Title/Section
15C	DSS (BR/EDR)	2400~2483.5	2AFZZ117SY	Original Grant	FR1N3028A	2AFZZRAC7Y	All sections applicable
	DTS (BLE)	2400~2483.5	2AFZZ117SY	Original Grant	FR1N3028B	2AFZZRAC7Y	All sections applicable
	DTS (WLAN)	2400~2483.5	2AFZZ117SY	Original Grant	FR1N3028C	2AFZZRAC7Y	All sections applicable
15E	U-NII-1	5180~5240	2AFZZ117SY	Original Grant	FR1N3028E	2AFZZRAC7Y	All sections applicable
	U-NII-2A	5260~5320	2AFZZ117SY	Original Grant	FR1N3028E	2AFZZRAC7Y	All sections applicable
	U-NII-2C	5500~5720	2AFZZ117SY	Original Grant	FR1N3028E	2AFZZRAC7Y	All sections applicable
	U-NII-3	5745~5825	2AFZZ117SY	Original Grant	FR1N3028F	2AFZZRAC7Y	All sections applicable
	DFS	5260~5320 5500~5720	2AFZZ117SY	Original Grant	FZ1N3028	2AFZZRAC7Y	All sections applicable
22, 27	TNE (GSM)	GSM 850	2AFZZ117SY	Original Grant	FG1N1601A	2AFZZRAC7Y	All sections applicable
	TNE (WCDMA)	Band V	2AFZZ117SY	Original Grant	FG1N1601A	2AFZZRAC7Y	All sections applicable
	TNE (LTE)	B5/7/7C	2AFZZ117SY	Original Grant	FG1N1601B	2AFZZRAC7Y	All sections applicable

2.4 Spot Check Verification Data Section

Conducted power test and radiated spurious emission test against the variant model based on the worst-case condition from the original model was performed in this filing to demonstrate the test data from original model remains representative for the variant model

Summary for power and RSE spot check for each rule entry and technology is listed as below:

Test Item	Mode	2AFZZ117SY Parent Worst Result	2AFZZRAC7Y Variant Check Result	Difference (dB)
Conducted Power (dBm)	BT BR/EDR	9.63	9.44	-0.19
	BLE 1M	-1.90	-2.92	-1.02
	BLE 2M	-1.80	-2.69	-0.89
	2.4G 11b	17.40	16.27	-1.13
	2.4G 11g	15.00	13.79	-1.21
	2.4G 11n20	13.60	12.21	-1.39
	5G 11a UNII-1	13.80	13.32	-0.48
	5G 11a UNII-2A	13.70	13.49	-0.21
	5G 11a UNII-2C	13.50	13.09	-0.41
	5G 11a UNII-3	13.70	13.15	-0.55
	5G 11n20 UNII-1	13.70	13.18	-0.52
	5G 11n20 UNII-2A	13.60	13.33	-0.27
	5G 11n20 UNII-2C	13.20	13.11	-0.09
	5G 11n20 UNII-3	13.50	13.32	-0.18



	5G 11n40 UNII-1	13.60	13.15	-0.45
	5G 11n40 UNII-2A	13.40	13.31	-0.09
	5G 11n40 UNII-2C	13.20	13.08	-0.12
	5G 11n40 UNII-3	13.50	13.30	-0.20
	5G 11AC20 UNII-1	13.60	13.18	-0.42
	5G 11AC20 UNII-2A	13.50	13.24	-0.26
	5G 11AC20 UNII-2C	13.10	13.02	-0.08
	5G 11AC20 UNII-3	13.40	13.00	-0.40
	5G 11AC40 UNII-1	13.50	13.02	-0.48
	5G 11AC40 UNII-2A	13.30	13.04	-0.26
	5G 11AC40 UNII-2C	13.10	13.02	-0.08
	5G 11AC40 UNII-3	13.40	13.26	-0.14
	5G 11AC80 UNII-1	11.90	11.81	-0.09
	5G 11AC80 UNII-2A	11.90	11.79	-0.11
	5G 11AC80 UNII-2C	13.30	12.96	-0.34
	5G 11AC80 UNII-3	13.60	12.92	-0.68
	GSM850	32.38	32.38	0.00
	WCDMA Band V	24.59	24.55	-0.04
	LTE B5	24.46	24.24	-0.22
	LTE B7	24.36	24.23	-0.13
	LTE B7C	24.14	23.98	-0.16

Test Item	Mode	2AFZZ117SY Parent Worst Result	2AFZZRAC7Y Variant Check Result	Difference (dB)
Radiated Spurious Emission (dBm)	EDGE 850	-20.76	-23.14	-2.38
	WCDMA Band V	-47.21	-44.90	2.31
	LTE Band 7	-25.54	-23.60	1.94

Conclusion:

Radiated spurious emission test against the variant model based on the worst-case condition from the original model was performed in this filing to demonstrate the test data from original model remains representative for the variant model.

Based on the spot check test result, the test data from the original model is representative for the variant model. The power level and RSE spot check are shown within expected level compliant to limit line.

We are using power and ERP/EIRP measurements from the original parent model reports to list on the grant.

The same DFS detection is used in the variant. Hence, there is no spot check data for DFS.

We confirm that the test data reuse policy of FCC KDB 484596 D01 Referencing Test Data v01 has been followed and the test data as referenced from the parent model report represents compliance with new FCC ID.



3 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 12, 2022	Feb. 20, 2023	Oct. 11, 2023	Conducted (TH01-KS)
Power divider	STI	STI08-0055	-	0.5~40GHz	NCR	Feb. 20, 2023	NCR	Conducted (TH01-KS)
Pulse Power Sensor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 05, 2023	Feb. 20, 2023	Jan. 04, 2024	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 05, 2023	Feb. 20, 2023	Jan. 04, 2024	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010B	MY57471079	10Hz-44G,MAX 30dB	Oct. 12, 2022	Feb. 09, 2023	Oct. 11, 2023	Radiation (03CH04-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 16, 2022	Feb. 09, 2023	Oct. 15, 2023	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz-1GHz	May 24, 2022	Feb. 09, 2023	May 23, 2023	Radiation (03CH04-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	1284	1GHz~18GHz	Oct. 16, 2022	Feb. 09, 2023	Oct. 15, 2023	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 08, 2023	Feb. 09, 2023	Jan. 07, 2024	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	187289	9KHz-1GHz	May 24, 2022	Feb. 09, 2023	May 23, 2023	Radiation (03CH04-KS)
Amplifier	MITEQ	EM18G40GG A	060728	18~40GHz	Jan. 05, 2023	Feb. 09, 2023	Jan. 04, 2024	Radiation (03CH04-KS)
high gain Amplifier	EM	EM01G18GA	060840	1Ghz-18Ghz	Oct. 12, 2022	Feb. 09, 2023	Oct. 11, 2023	Radiation (03CH04-KS)
Amplifier	Agilent	8449B	3008A02370	1Ghz-18Ghz	Oct. 12, 2022	Feb. 09, 2023	Oct. 11, 2023	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Feb. 09, 2023	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Feb. 09, 2023	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Feb. 09, 2023	NCR	Radiation (03CH04-KS)

NCR: No Calibration Required.



4 Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.26-2015. All the measurement uncertainty value were shown with a coverage K=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

Uncertainty of Conducted Measurement

Test Item	Uncertainty
Conducted Power	±0.46 dB

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.3dB
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.8dB
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Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.8dB
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-THE END-