Spot Check Evaluation

APPLICANT	:	**Xiaomi Communications Co., Ltd.**
EQUIPMENT	:	**Mobile Phone**
BRAND NAME	:	**Xiaomi**
MODEL NAME	:	**A301XM**
FCC ID	:	**2AFZZND5R**
STANDARD	:	**47 CFR Part 2, 22(H), 24(E), 27(L), 27(F), 27(H), 27(O), 27(Q), 90(S)** **47 CFR Part 15 Subpart C §15.247** **47 CFR Part 15 Subpart E §15.407**

We, Sporton International Inc. (Shenzhen), 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. (Shenzhen), the test report shall not be reproduced except in full.

Jason Jia

Approved by: Jason Jia

ACCREDITED Cert #5145.01

Sporton International Inc. (ShenZhen)

1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055

People's Republic of China

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
351205-01	Rev. 01	Initial issue of report	Jul. 04, 2023

Conformity Assessment Condition:
1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account. 2. The measurement uncertainty please refer to each test result in the section “Measurement Uncertainty”
Disclaimer:
The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

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	Xiaomi
Model Name	A301XM
FCC ID	2AFZZND5R
IMEI Code	Conducted: 861585060041561/861585060041579 861585060056965/861585060056973 Radiation: 861585060042627/861585060042635
HW Version	P2.0
SW Version	MIUI 14
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. (ShenZhen) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Test Firm	Sporton International Inc. (ShenZhen)		
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	TH01-SZ	CN1256	421272

Test Firm	Sporton International Inc. (ShenZhen)		
Test Site Location	101, 1st Floor, Block B, Building 1, No. 2, Tengfeng 4th Road, Fenghuang Community, Fuyong Street, Baoan District, Shenzhen City Guangdong Province China 518103 TEL: +86-755-33202398		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	03CH01-SZ	CN1256	421272

1.6 Test Software

Item	Site	Manufacturer	Name	Version
1.	03CH01-SZ	AUDIX	E3	6.2009-8-24

1.7 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC KDB 484596 D01 Referencing Test Data v01
- 47 CFR Part 2, 22(H), 24(E), 27(L), 27(F), 27(H), 27(O), 27(Q), 90(S)
- 47 CFR Part 15 Subpart C §15.247
- 47 CFR Part 15 Subpart E §15.407
- ANSI C63.10-2013
- ANSI C63.26-2015

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: A301XM, FCC ID: 2AFZZND5R) is electrically identical to the reference device (Model: 23078PND5G, FCC ID: 2AFZZND5G) 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, 6XD) and FCC Part 22, 24, 27, 90 (equipment class: PCE) reuse the original model's result and do spot-check, following the FCC KDB 484596 D01 Referencing Test Data v01.

The applicant takes full responsibility that the test data as referenced in this report represent compliance for this FCC ID: 2AFZZND5R .

2.2 Model Difference Information

The **main** difference between FCC ID: 2AFZZND5G and FCC ID: 2AFZZND5R is as below:

- Remove LTE Band 25/48/66 and NR n5/n7/n38/n66.
- Disable LTE CA_7C/38C, add LTE CA 41C/42C.
- Disable 802.11be.
- NFC chipset different.
- 5G NR n41/n77/n78 support different channel bandwidth.

Other differences and all the details of similarity and difference can be found in the confidential documents (A301XM_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	2AFZZND5G	Original Grant	FR351205A	2AFZZND5R	All sections applicable
	DTS (BLE)	2400~2483.5	2AFZZND5G	Original Grant	FR351205B	2AFZZND5R	All sections applicable
	DTS (WLAN)	2400~2483.5	2AFZZND5G	Original Grant	FR351205C	2AFZZND5R	All sections applicable
15E	U-NII	5180~5240	2AFZZND5G	Original Grant	FR351205E	2AFZZND5R	All sections applicable
		5260~5320	2AFZZND5G	Original Grant	FR351205E FZ351205	2AFZZND5R	All sections applicable
		5500~5720	2AFZZND5G	Original Grant	FR351205E FZ351205	2AFZZND5R	All sections applicable
		5745~5825	2AFZZND5G	Original Grant	FR351205E	2AFZZND5R	All sections applicable
	6XD	5925~7125	2AFZZND5G	Original Grant	FR351205F	2AFZZND5R	All sections applicable, except CBP.
22, 24, 27, 90	PCE (GSM)	GSM 850/1900	2AFZZND5G	Original Grant	FG351205A	2AFZZND5R	All sections applicable
	PCE (WCDMA)	Band II/IV/V	2AFZZND5G	Original Grant	FG351205A	2AFZZND5R	All sections applicable
	PCE (LTE)	Band 5/12/13/17/ 26/38/41/42	2AFZZND5G	Original Grant	FG351205B FG351205C FG351205D FG351205E	2AFZZND5R	All sections applicable
	PCE (NR)	n41	2AFZZND5G	Original Grant	FG351205I	2AFZZND5R	All sections applicable, except 10M/15M/70M Bandwidth
	PCE (NR)	n77/n78	2AFZZND5G	Original Grant	FG351205J FG351205K	2AFZZND5R	All sections applicable, except 10M/15M/70M Bandwidth

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.

All test procedures follow the related section of parent report.

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

Test Item	Mode	2AFZZND5G Parent Worst Result	2AFZZND5R Variant Spot Check Result	Difference (dB)
2.4G + 5G Conducted Power (dBm)	Bluetooth BR/EDR DH5 ANT17	16.90	16.55	-0.35
	Bluetooth BR/EDR 2DH5 ANT17	16.30	16.14	-0.16
	Bluetooth BR/EDR 3DH5 ANT17	16.80	16.63	-0.17
	Bluetooth BR/EDR DH5 ANT6	16.50	16.29	-0.21
	Bluetooth BR/EDR 2DH5 ANT6	16.00	15.84	-0.16
	Bluetooth BR/EDR 3DH5 ANT6	16.40	16.27	-0.13
	BLE1M ANT17	7.46	7.34	-0.12
	BLE2M ANT17	7.49	7.33	-0.16
	BLE125K ANT17	7.53	7.32	-0.21
	BLE500K ANT17	7.47	7.16	-0.31
	BLE1M ANT6	8.32	8.18	-0.14
	BLE2M ANT6	8.35	8.13	-0.22
	BLE125K ANT6	8.41	8.31	-0.1
	BLE500K ANT6	8.31	8.16	-0.15
	11b	23.94	23.71	-0.23
	11g	28.94	28.70	-0.24
	11n HT20	28.44	28.18	-0.26
	11n HT40	28.32	28.02	-0.3
	11ax HE20	28.71	28.65	-0.06
	11ax HE40	28.57	28.53	-0.04
	11a_UNII1/2A/2C	20.50	20.41	-0.09
	11a_UNII3	13.41	13.22	-0.19
	11n HT20_UNII1/2A/2C	20.38	20.27	-0.11
	11n HT20_UNII3	13.38	13.24	-0.14
	11n HT40_UNII1/2A/2C	20.50	20.35	-0.15
	11n HT40 _UNII3	13.32	13.21	-0.11
	11ac VHT20 _UNII1/2A/2C	20.26	20.14	-0.12
	11ac VHT20 _UNII3	13.32	13.20	-0.12
	11ac VHT40 _UNII1/2A/2C	20.34	20.26	-0.08
	11ac VHT40 _UNII3	13.25	13.12	-0.13
	11ac VHT80 _UNII1/2A/2C	17.94	17.86	-0.08
	11ac VHT80 _UNII3	13.20	13.08	-0.12
	11ac VHT160 _UNII1/2A/2C	14.53	14.36	-0.17
	11ax HE20 _UNII1/2A/2C	20.64	20.51	-0.13
	11ax HE20 _UNII3	13.42	13.30	-0.12
	11ax HE40 _UNII1/2A/2C	20.61	20.53	-0.08
	11ax HE40 _UNII3	13.35	13.28	-0.07
	11ax HE80_UNII1/2A/2C	18.31	18.24	-0.07

	11ax HE80_UNII3	13.35	13.28	-0.07
	11ax HE160_UNII1/2A/2C	14.63	14.55	-0.08
WiFi 6E Conducted Power (dBm)	11ax HE20_UNII 5	6.44	6.36	-0.08
	11ax HE20_UNII 6	7.66	7.60	-0.06
	11ax HE20_UNII 7	7.91	7.76	-0.15
	11ax HE20_UNII 8	8.96	8.83	-0.13
	11ax HE40_UNII 5	9.65	9.56	-0.09
	11ax HE40_UNII 6	10.51	10.41	-0.10
	11ax HE40_UNII 7	10.90	10.78	-0.12
	11ax HE40_UNII 8	12.13	12.06	-0.07
	11ax HE80_UNII 5	12.01	11.95	-0.06
	11ax HE80_UNII 6	13.69	13.62	-0.07
	11ax HE80_UNII 7	13.93	13.87	-0.06
	11ax HE80_UNII 8	14.60	14.49	-0.11
	11ax HE160_UNII 5	12.89	12.76	-0.13
	11ax HE160_UNII 6	14.88	14.82	-0.06
	11ax HE160_UNII 7	14.29	14.25	-0.04
	11ax HE160_UNII 8	13.68	13.58	-0.10
WWAN Conducted Power (dBm)	GSM 850	33.13	33.13	0
	GSM 1900	30.01	30.01	0
	WCDMA Band II	23.61	23.61	0
	WCDMA Band IV	23.57	23.57	0
	WCDMA Band V	24.16	24.16	0
	LTE Band 5	24.56	24.56	0
	LTE Band 12	24.56	24.56	0
	LTE Band 13	24.64	24.64	0
	LTE Band 17	24.51	24.51	0
	LTE Band 26	24.58	24.58	0
	LTE Band 38	25.27	25.27	0
	LTE Band 41 (single band)	25.38	25.38	0
	LTE Band 42 (single band)	25.05	25.05	0
	5G NR n41	25.24	25.24	0
	5G NR Part 27O n77	25.51	24.82	-0.69
	5G NR Part 27O n78	26.64	24.6	-2.04
	5G NR Part 27Q n77	25.31	24.74	-0.57
	5G NR Part 27Q n78	26.36	24.91	-1.45

Test Item	Mode	2AFZZND5G Parent Worst Result	2AFZZND5R Variant Spot Check Result	Difference (dB)
Radiated Spurious Emission (dBm)	GSM 850	-23.41	-30.56	-7.15
	WCDMA Band IV	-41.41	-41.29	0.12
	LTE Band 13	-13.42	-22.77	-9.35
	5G NR n77	-37.28	-42.91	-5.63

Conclusion:
Conducted power 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.

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 mechanism/software is used in the variant. Hence, there is no spot check data for DFS EUD hand-shaking mechanism.

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	101078	10Hz~40GHz	Apr. 06, 2023	Jun. 16, 2023	Apr. 05, 2024	Conducted (TH01-SZ)
Pulse Power Senor	Anritsu	MA2411B	1339473	30MHz~40GHz	Dec. 27, 2022	Jun. 16, 2023	Dec. 26, 2023	Conducted (TH01-SZ)
Power Meter	Anritsu	ML2495A	1542004	50MHz Bandwidth	Dec. 27, 2022	Jun. 16, 2023	Dec. 26, 2023	Conducted (TH01-SZ)
EMI Test Receiver&SA	Agilent	N9038A	MY52260185	20Hz~26.5GHz	Dec. 26, 2022	Jun. 21, 2023	Dec. 25, 2023	Radiation (03CH01-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150213	10Hz~44GHz	Jul. 07, 2022	Jun. 21, 2023	Jul. 06, 2023	Radiation (03CH01-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	Jul. 28, 2022	Jun. 21, 2023	Jun. 27, 2024	Radiation (03CH01-SZ)
Bilog Antenna	TeseQ	CBL6112D	35407	30MHz-2GHz	Sep. 28, 2021	Jun. 21, 2023	Sep. 27, 2023	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00119436	1GHz~18GHz	Jul. 07, 2022	Jun. 21, 2023	Jul. 06, 2023	Radiation (03CH01-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz-40GHz	Apr. 08, 2023	Jun. 21, 2023	Apr. 07, 2024	Radiation (03CH01-SZ)
LF Amplifier	Burgeon	BPA-530	102209	0.01~3000Mhz	Apr. 04, 2023	Jun. 21, 2023	Apr. 03, 2024	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	AMF-7D-00101800-30-10P-R	1943528	1GHz~18GHz	Oct. 19, 2022	Jun. 21, 2023	Oct. 18, 2023	Radiation (03CH01-SZ)
HF Amplifier	KEYSIGHT	83017A	MY53270105	0.5GHz~26.5Ghz	Oct. 19, 2022	Jun. 21, 2023	Oct. 18, 2023	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Jul. 06, 2022	Jun. 21, 2023	Jul. 05, 2023	Radiation (03CH01-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	Nov. 10, 2022	Jun. 21, 2023	Nov. 09, 2023	Radiation (03CH01-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Jun. 21, 2023	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Jun. 21, 2023	NCR	Radiation (03CH01-SZ)

NCR: No Calibration Required.

4 Measurement Uncertainty

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	±1.34 dB

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.48dB

Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.53dB

Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	4.02dB

------ THE END ------