Spot Check Evaluation

APPLICANT	:	Realme Chongqing Mobile Telecommunications Corp., Ltd.
EQUIPMENT	:	Mobile Phone
BRAND NAME	:	realme
MODEL NAME	:	RMX3997
FCC ID	:	2AUYFRMX3997
STANDARD	:	47 CFR Part 2, 22(H), 24(E), 27(L), 27(F), 27(M), 27(H), 90(S) 47 CFR Part 15 Subpart C §15.225 47 CFR Part 15 Subpart C §15.247 47 CFR Part 15 Subpart E §15.407
TEST DATE(S)	:	Jan. 15, 2024 ~ Jan. 23, 2024

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

Sporton International Inc. (ShenZhen)
1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055
People's Republic of China

TABLE OF CONTENTS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
3D1301-01	Rev. 01	Initial issue of report	Feb. 02, 2024

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

Realme Chongqing Mobile Telecommunications Corp., Ltd.
No.178 Yulong Avenue,Yufengshan,Yubei District,Chongqing,China

1.2 Manufacturer

Realme Chongqing Mobile Telecommunications Corp., Ltd.
No.178 Yulong Avenue,Yufengshan,Yubei District,Chongqing,China

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Phone
Brand Name	realme
Model Name	RMX3997
FCC ID	2AUYFRMX3997
IMEI Code	Conducted: 860211070020476/860211070020468 Radiation: 860211070023132/860211070023124
HW Version	11
SW Version	realme UI 5.0
EUT Stage	Production Unit

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 518103 People's Republic of China TEL: +86-755-86066985		
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 v02r02
- 47 CFR Part 2, 22(H), 24(E), 27(L), 27(F), 27(M), 27(H), 90(S)
- 47 CFR Part 15 Subpart C §15.225
- 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: RMX3997, FCC ID: 2AUYFRMX3997) is electrically identical to the reference device (Model: RMX3999, FCC ID: 2AUYFRMX3999) 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, DXX) and FCC Part 15E (equipment class: NII) 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 v02r02.

The applicant takes full responsibility that the test data as referenced in this report represent compliance for this FCC ID: 2AUYFRMX3997 .

2.2 Model Difference Information

The **main** difference between FCC ID: 2AUYFRMX3999 and FCC ID: 2AUYFRMX3997 are Back Camera / Charging rate / Screen Size / Gyro / PCBA / Dimensions / Speaker, the detailed difference can be found in the confidential documents (RMX3997_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	2AUYFRMX3999	Original Grant	FR3D1301A	2AUYFRMX3997	All sections applicable
	DTS (BLE)	2400~2483.5	2AUYFRMX3999	Original Grant	FR3D1301B	2AUYFRMX3997	All sections applicable
	DTS (WLAN)	2400~2483.5	2AUYFRMX3999	Original Grant	FR3D1301C	2AUYFRMX3997	All sections applicable
	DXX (NFC)	13.56	2AUYFRMX3999	Original Grant	FR3D1301D	2AUYFRMX3997	All sections applicable
15E	U-NII	5180~5240	2AUYFRMX3999	Original Grant	FR3D1301E	2AUYFRMX3997	All sections applicable
		5260~5320	2AUYFRMX3999	Original Grant	FR3D1301E	2AUYFRMX3997	All sections applicable
		5500~5700	2AUYFRMX3999	Original Grant	FR3D1301E	2AUYFRMX3997	All sections applicable
		5745~5825	2AUYFRMX3999	Original Grant	FR3D1301E	2AUYFRMX3997	All sections applicable
		5260~5320 5500~5700	2AUYFRMX3999	Original Grant	FZ3D1301	2AUYFRMX3997	All sections applicable
22, 24, 27, 90	PCE (GSM)	GSM 850/1900	2AUYFRMX3999	Original Grant	FG3D1301A	2AUYFRMX3997	All sections applicable
	PCE (WCDMA)	Band II, IV, V	2AUYFRMX3999	Original Grant	FG3D1301A	2AUYFRMX3997	All sections applicable
	PCE (LTE)	B2/4/5/12/13/17/26/66	2AUYFRMX3999	Original Grant	FG3D1301B	2AUYFRMX3997	All sections applicable
	PCE (LTE)	B7/7C/38/38C/41/41C	2AUYFRMX3999	Original Grant	FG3D1301C	2AUYFRMX3997	All sections applicable
	PCE (LTE)	B26 (90S)	2AUYFRMX3999	Original Grant	FW3D1301	2AUYFRMX3997	All sections applicable
	PCE (NR)	n5/n7/n38/n41/n66	2AUYFRMX3999	Original Grant	FG3D1301D	2AUYFRMX3997	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.
All test procedures follow the related section of parent report.

Spot-check measurements, while being always compliant with the applicable rule part(s) for the test under consideration, show a deviation d_{dB} from the reference data no larger than 3 dB:

$$d_{dB} = | V_{dB} – R_{dB} | \leq 3 \text{ dB} \quad (1)$$

V_{dB}, the variant spot-check level
R_{dB}, the corresponding measurement level for the reference model

An alternative to the limit of eq. (1) is available, and is based on considering how far the reference data R_{dB} is from the compliance threshold C_{dB} (also expressed in dB), for the particular test under consideration. In this case, if $M_{dB} = |C_{dB} – R_{dB}|$ is the margin in dB from the compliance limit, a spot check may be considered acceptable when the deviation ddB from the reference data satisfies the following condition:

$$d_{dB} = | V_{dB} – R_{dB} | \leq (3 + M_{dB}/20) \text{ dB , for } 0 \leq M_{dB} \leq 60 \text{ dB} \quad (2)$$

where "| |" is the absolute value of the measured quantity.
When using the option in eq. (2), d_{dB} increases linearly from 3 dB to 6 dB.

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

Test Item	Mode	2AUYFRMX3999 Parent Worst mode Test Result	2AUYFRMX3997 Variant Check Test Result	Deviation (dB)	Limit (dB)
Conducted Power (dBm)	BT BR/EDR	13.5	13.4	-0.1	3
	BLE 1Mbps	5.9	5.83	-0.07	3
	BLE 2Mbps	7.03	5.89	-1.14	3
	11b, 2.4GHz	21.86	19.76	-2.1	3
	11g, 2.4GHz	25.99	24.32	-1.67	3
	11n HT20, 2.4GHz	26.13	24.48	-1.65	3
	11n HT40, 2.4GHz	26.05	25.12	-0.93	3
	11a, 5.5GHz	17.95	17.89	-0.06	3
	11n HT20, 5.5GHz	17.99	17.91	-0.08	3
	11n HT40, 5.5GHz	17.84	17.79	-0.05	3
	11ac VHT80, 5.8GHz	17.58	17.51	-0.07	3
	GSM850	32.28	32.05	0.23	3
	GSM1900	29.89	29.78	0.11	3
	WCDMA II	23.74	23.73	0.01	3
	WCDMA IV	23.68	23.67	0.01	3
	WCDMA V	23.68	23.34	0.34	3
	LTE Band 2	22.89	22.85	0.04	3
	LTE Band 4	22.88	22.87	0.01	3
	LTE Band 5	23.75	22.99	0.76	3
	LTE Band 7	22.84	22.52	0.32	3
	LTE Band 12	23.62	22.96	0.66	3
	LTE Band 17	23.62	23.02	0.6	3

Test Item	Mode	2AUYFRMX3999 Parent Worst mode Test Result	2AUYFRMX3997 Variant Check Test Result	Deviation (dB)	Limit (dB)
Conducted Power (dBm)	LTE Band 13	23.54	22.83	0.71	3
	LTE Band 26	23.39	22.62	0.77	3
	LTE Band 66	23.29	23.24	0.05	3
	LTE Band 38	23.39	23.38	0.01	3
	LTE Band 41	23.91	23.74	0.17	3
	LTE Band 7C	22.60	22.53	0.07	3
	LTE Band 38C	22.52	22.31	0.21	3
	LTE Band 41C	23.15	23.00	0.15	3
	n5	23.38	22.91	0.47	3
	n7	23.65	22.84	0.81	3
	DC_2A_n38A	24.13	24.11	0.02	3
	DC_2A_n41A	24.14	24.03	0.11	3
	DC_2A_n66A	24.14	24.11	0.03	3

Test Item	Mode	2AUYFRMX3999 Parent Worst Result	2AUYFRMX3997 Variant Check Result	Deviation (dB)	Limit (dB)
Radiated Spurious Emission (dBuV/m)	BT BR/EDR	49.38	48.97	0.41	3
	BLE	40.26	39.77	0.49	3
	11n HT40, 2.4GHz	48.36	47.69	0.67	3
	11ac VHT40, 5.5GHz	63.18	63.16	0.02	3
	11ac VHT80, 5.8GHz	61.59	63.17	1.58	3
Radiated Spurious Emission (dBm)	EDGE 1900	-55.32	-54.67	0.65	3
	WCDMA Band4	-54.27	-54.37	0.10	3
	LTE Band13	-64.61	-63.96	0.65	3
	LTE Band 26 (90S)	-56.1	-56.35	0.25	3
	5G NR n7	-50.46	-51.18	0.72	3

Test Item	Mode	2AUYFRMX3999 Parent Worst Result	2AUYFRMX3997 Variant Check Result	Deviation (dB)	Limit (dB)
Field Strength (dBuV/m) @ 30m	NFC 13.56MHz	59.51	60.59	1.08	3

Conclusion:

Conducted power & 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 hand-shaking mechanism.

We confirm that the test data reuse policy of FCC KDB 484596 D01 Referencing Test Data v02r02 has been followed and the test data as referenced from the parent model report represents compliance with the variant model.

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	Jan. 15, 2024~ Jan. 23, 2024	Apr. 05, 2024	Conducted (TH01-SZ)
Power Divider	TOJOIN	PS-2SM-04265	60.06.020.0077	0.4GHz~26.5GHz	Dec. 24, 2023	Jan. 15, 2024~ Jan. 23, 2024	Dec. 23, 2024	Conducted (TH01-SZ)
Pulse Power Senor	Anritsu	MA2411B	1339473	30MHz~40GHz	Dec. 29, 2023	Jan. 15, 2024~ Jan. 23, 2024	Dec. 28, 2024	Conducted (TH01-SZ)
Power Meter	Anritsu	ML2495A	1542004	50MHz Bandwidth	Dec. 26, 2023	Jan. 15, 2024~ Jan. 23, 2024	Dec. 25, 2024	Conducted (TH01-SZ)
EMI Test Receiver&SA	Agilent	N9038A	MY52260185	20Hz~26.5GHz	Dec. 25, 2023	Jan. 19, 2024	Dec. 24, 2024	Radiation (03CH01-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150213	10Hz~44GHz	Jul. 07, 2023	Jan. 19, 2024	Jul. 06, 2024	Radiation (03CH01-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	Jul. 28, 2022	Jan. 19, 2024	Jul. 27, 2024	Radiation (03CH01-SZ)
Bilog Antenna	TeseQ	CBL6112D	35407	30MHz-2GHz	Oct. 24, 2023	Jan. 19, 2024	Oct. 23, 2025	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00119436	1GHz~18GHz	Jul. 08, 2023	Jan. 19, 2024	Jul. 07, 2024	Radiation (03CH01-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz-40GHz	Apr. 08, 2023	Jan. 19, 2024	Apr. 07,2024	Radiation (03CH01-SZ)
LF Amplifier	Burgeon	BPA-530	102209	0.01~3000Mhz	Apr. 04, 2023	Jan. 19, 2024	Apr. 03, 2024	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	AMF-7D-00101800-30-10P-R	1943528	1GHz~18GHz	Oct. 18, 2023	Jan. 19, 2024	Oct. 17, 2024	Radiation (03CH01-SZ)
HF Amplifier	KEYSIGHT	83017A	MY53270105	0.5GHz~26.5GHz	Oct. 18, 2023	Jan. 19, 2024	Oct. 17, 2024	Radiation (03CH01-SZ
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Jul. 07, 2023	Jan. 19, 2024	Jul. 06, 2024	Radiation (03CH01-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	Oct. 18, 2023	Jan. 19, 2024	Oct. 17, 2024	Radiation (03CH01-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Jan. 19, 2024	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Jan. 19, 2024	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----------