Spot Check Evaluation

APPLICANT	:	**Guangdong OPPO Mobile Telecommunications Corp., Ltd.**
EQUIPMENT	:	**Mobile Phone**
BRAND NAME	:	**OPPO**
MODEL NAME	:	**CPH2603, A401OP**
FCC ID	:	**R9C-OP23243**
STANDARD	:	**47 CFR Part 2, 22(H), 24(E), 27(L), 27(M), 27(H), 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

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
3O3018-02	Rev. 01	Initial issue of report	Jan. 17, 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

Guangdong OPPO Mobile Telecommunications Corp., Ltd.
NO.18 Haibin Road, Wusha Village, Chang'an Town, Dongguan City, Guangdong, China

1.2 Manufacturer

Guangdong OPPO Mobile Telecommunications Corp., Ltd.
NO.18 Haibin Road, Wusha Village, Chang'an Town, Dongguan City, Guangdong, China

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Phone
Brand Name	OPPO
Model Name	CPH2603, A401OP
FCC ID	R9C-OP23243
IMEI Code	Conducted: 866845070020699 Radiation: 866845070027116/866845070027108
HW Version	11
SW Version	ColorOS 14.0
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(M), 27(H), 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: CPH2603, A401OP, FCC ID: R9C-OP23243) is electrically identical to the reference device (Model: CPH2603, FCC ID: R9C-OP23051) 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, 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: R9C-OP23243 .

2.2 Model Difference Information

The **main** difference between FCC ID: R9C-OP23051 and FCC ID: R9C-OP23243 is as below:

- Remove WCDMA VI, LTE B13/66/7C/38C and 5G NR.

Other differences and all the details of similarity and difference can be found in the confidential documents (CPH2603, A401OP_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	R9C-OP23051	Original Grant	FR3O3018A	R9C-OP23243	All sections applicable
	DTS (BLE)	2400~2483.5	R9C-OP23051	Original Grant	FR3O3018B	R9C-OP23243	All sections applicable
	DTS (WLAN)	2400~2483.5	R9C-OP23051	Original Grant	FR3O3018C	R9C-OP23243	All sections applicable
15E	U-NII	5180~5240	R9C-OP23051	Original Grant	FR3O3018E	R9C-OP23243	All sections applicable
		5260~5320	R9C-OP23051	Original Grant	FR3O3018E	R9C-OP23243	All sections applicable
		5500~5700	R9C-OP23051	Original Grant	FR3O3018E	R9C-OP23243	All sections applicable
		5745~5825	R9C-OP23051	Original Grant	FR3O3018E	R9C-OP23243	All sections applicable
		5260~5320 5500~5700	R9C-OP23051	Original Grant	FZ3O3018	R9C-OP23243	All sections applicable
22, 24, 27, 90	PCE (GSM)	GSM 850/1900	R9C-OP23051	Original Grant	FG3O3018A	R9C-OP23243	All sections applicable
	PCE (WCDMA)	Band II, IV, V	R9C-OP23051	Original Grant	FG3O3018A	R9C-OP23243	All sections applicable
	PCE (LTE)	B2/5/7/12/17/26/38/41/ 41C	R9C-OP23051	Original Grant	FG3O3018B FG3O3018C	R9C-OP23243	All sections applicable
	PCE (LTE)	B26 (90S)	R9C-OP23051	Original Grant	FW3O3018A	R9C-OP23243	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	R9C-OP23051 Parent Worst mode Test Result	R9C-OP23243 Variant Check Test Result	Deviation (dB)	Limit (dB)
Conducted Power (dBm)	BT BR/EDR	14.8	14.74	0.06	3
	BLE 1Mbps	9.32	9.27	0.05	3
	BLE 2Mbps	9.28	9.25	0.03	3
	11b, 2.4GHz	19.57	19.42	0.15	3
	11g, 2.4GHz	27.8	27.61	0.19	3
	11ax HE20, 2.4GHz	28.3	28.07	0.23	3
	11ax HE40, 2.4GHz	28.14	27.92	0.22	3
	11a, 5.2GHz	17.85	17.63	0.22	3
	11ax HE20, 5.3GHz	18.24	17.98	0.26	3
	11ax HE40, 5.2GHz	18.44	18.21	0.23	3
	11ax HE80, 5.5GHz	16.93	16.74	0.19	3
	GSM850 Ant1	32.9	32.89	0.01	3
	GSM850 Ant0	32.22	32.15	0.07	3
	GSM1900 Ant3	29.54	29.51	0.03	3
	GSM1900 Ant0	29.07	29.05	0.02	3
	WCDMA B2 Ant3	23.29	23.27	0.02	3
	WCDMA B2 Ant0	23.04	22.98	0.06	3
	WCDMA B4 Ant3	24.12	24.1	0.02	3
	WCDMA B4 Ant0	23.95	23.71	0.24	3
	WCDMA B5 Ant1	24.24	24.11	0.13	3
	WCDMA B5 Ant0	22.93	22.85	0.08	3
	LTE B2 Ant3	22.29	22.25	0.04	3
	LTE B2 Ant0	22.11	22.05	0.06	3

	LTE B5 Ant1	24.29	24.25	0.04	3
	LTE B5 Ant0	23.26	23.24	0.02	3
	LTE B7 Ant3	23.3	23.29	0.01	3
	LTE B7 Ant0	23.9	23.85	0.05	3
	LTE B7 Ant4	23.28	23.25	0.03	3
	LTE B12 Ant1	24.42	24.35	0.07	3
	LTE B12 Ant0	23.42	23.39	0.03	3
	LTE B17 Ant1	24.39	24.33	0.06	3
	LTE B17 Ant0	23.41	23.38	0.03	3
	LTE B26 Ant1	24.3	24.25	0.05	3
	LTE B26 Ant0	23.27	23.24	0.03	3
	LTE B38 Ant3	23.25	23.24	0.01	3
	LTE B38 Ant0	24.08	24.05	0.03	3
	LTE B38 Ant4	23.21	22.99	0.22	3
	LTE B41 Ant3	21.97	21.75	0.22	3
	LTE B41 Ant0	22.62	22.58	0.04	3
	LTE B41 Ant4	21.97	21.55	0.42	3
	LTE B41C Ant3	21.36	21.28	0.08	3
	LTE B41C Ant0	21.37	21.16	0.21	3
	LTE B41C Ant4	21.03	20.98	0.05	3
	LTE B41 HPUE Ant3	24.71	24.68	0.03	3
	LTE B41 HPUE Ant0	25.63	25.55	0.08	3
	LTE B41 HPUE Ant4	24.79	24.35	0.44	3

Test Item	Mode	R9C-OP23051 Parent Worst Result	R9C-OP23243 Variant Check Result	Deviation (dB)	Limit (dB)
Radiated Spurious Emission (dBuV/m)	BT BR/EDR	56.47	54.44	2.03	3
	BLE	39.66	41.66	2.00	3
	11ax HE40, 2.4GHz	48.68	46.74	1.94	3
	11ax HE40, 5.2GHz	48.87	46.22	2.65	3
	11a, 5.8GHz	47.88	45.18	2.7	3
Radiated Spurious Emission (dBm)	GSM 850	-49.17	-47.11	2.06	3
	WCDMA B2	-53.67	-54.50	0.83	3
	LTE Band 41	-48.92	-47.16	1.76	3
	Part 90S LTE Band 26	-55.79	-56.90	1.11	3

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 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 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	Dec. 26, 2023	Apr. 05, 2024	Conducted (TH01-SZ)
Power Divider	TOJOIN	PS-2SM-04265	60.06.020.0077	0.4GHz~26.5GHz	Dec. 24, 2023	Dec. 26, 2023	Dec. 23, 2024	Conducted (TH01-SZ)
Pulse Power Senor	Anritsu	MA2411B	1339473	30MHz~40GHz	Dec. 27, 2022	Dec. 26, 2023	Dec. 26, 2023	Conducted (TH01-SZ)
Power Meter	Anritsu	ML2495A	1542004	50MHz Bandwidth	Dec. 27, 2022	Dec. 26, 2023	Dec. 26, 2023	Conducted (TH01-SZ)
EMI Test Receiver&SA	Agilent	N9038A	MY52260185	20Hz~26.5GHz	Dec. 26, 2022	Dec. 21, 2023	Dec. 25, 2023	Radiation (03CH01-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	Jul. 28, 2022	Dec. 21, 2023	Jul. 27, 2024	Radiation (03CH01-SZ)
HF Amplifier	KEYSIGHT	83017A	MY53270105	0.5GHz~26.5Ghz	Oct. 18, 2023	Dec. 21, 2023	Oct. 17, 2024	Radiation (03CH01-SZ
Bilog Antenna	TeseQ	CBL6112D	35407	30MHz-2GHz	Oct. 24, 2023	Dec. 21, 2023	Oct. 23, 2025	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00119436	1GHz~18GHz	Jul. 08, 2023	Dec. 21, 2023	Jul. 07, 2024	Radiation (03CH01-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz-40GHz	Apr. 08, 2023	Dec. 21, 2023	Apr. 07,2024	Radiation (03CH01-SZ)
LF Amplifier	Burgeon	BPA-530	102209	0.01~3000Mhz	Apr. 04, 2023	Dec. 21, 2023	Apr. 03, 2024	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	AMF-7D-00101800-30-10P-R	1943528	1GHz~18GHz	Oct. 18, 2023	Dec. 21, 2023	Oct. 17, 2024	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Jul. 07, 2023	Dec. 21, 2023	Jul. 06, 2024	Radiation (03CH01-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	Oct. 18, 2023	Dec. 21, 2023	Oct. 17, 2024	Radiation (03CH01-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Dec. 21, 2023	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Dec. 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-