SPOT CHECK EVALUATION

FCC ID	:	**A4RG4S1M**
Equipment	:	**Phone**
Model Name	:	**GR0M2, G4S1M**
Applicant	:	**Google LLC** **1600 Amphitheatre Parkway,** **Mountain View, California, 94043 USA**
Standard	:	**47 CFR Part 2, 22(H), 24(E), 27(D), 27(L) , 90(R), 90(S), 96** **47 CFR Part 15 Subpart C §15.225** **47 CFR Part 15 Subpart C §15.247** **47 CFR Part 15 Subpart E §15.407**

We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, 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. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Louis Wu

Approved by: Louis Wu

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History of this test report

Version	Description	Issued Date
01	Initial issue of report	Apr. 08, 2021

1. Introduction Section

FCC ID: A4RG1F8F (original model: G1F8F) and FCC ID: A4RG4S1M (variant model: GR0M2, G4S1M) are HW identical except components depopulated for FR1 n41. Besides, the LTE band 38 HPUE and 7C enabled by software are tested in PCE RF test report No: FG0O1508-01.
Other than these two items listed above, the RF and antenna design is the same.
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, 96 (equipment class: PCE, CBE) reuse the original model's result and do spot-check, following the FCC KDB 484596 D01 v01.

The applicant shall take full responsibility that the test data as referenced in this report represent compliance for this FCC ID: A4RG4S1M as described in KDB 484596 D01 v01.

2. Model Difference Information

The difference between FCC ID: A4RG1F8F and FCC ID: A4RG4S1M is as below:

- NR band n41 component is depopulated.
- NR band n2, n12, n25, n66, n71 are disabled by software.
- CDMA function is disabled by software
- LTE band 38 HPUE and band 7C is enabled by software.

Other than items listed above, all the RF and antenna design is the same.

The details of similarity and difference can be found in the confidential documents.

3. 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	A4RG1F8F Parent Worst Result	A4RG4S1M Variant Check Result	Difference (dB)
Conducted Power (dBm)	BT-3Mbps	20.84	20.72	0.12
	BLE5.1(2Mbps)	17.90	18.04	-0.14
	WLAN 2.4GHz (MIMO)	22.81	22.80	0.01
	WLAN 5GHz (MIMO)	20.47	20.48	-0.01
	WWAN GSM 850	32.63	32.47	0.16
	WWAN GSM 1900	29.78	29.97	-0.19
	WWAN WCDMA Band V	24.43	24.50	-0.07
	WWAN WCDMA Band II	25.00	24.84	0.16
	WWAN WCDMA Band IV	24.81	24.83	-0.02
	WWAN LTE Band 2	24.54	24.34	0.20
	WWAN LTE Band 4	24.75	24.88	-0.13
	WWAN LTE Band 5	24.37	24.36	0.01
	WWAN LTE Band 5B	25.26	25.41	-0.15
	WWAN LTE Band 7	24.84	24.73	0.11
	WWAN LTE Band 12	24.37	24.32	0.05
	WWAN LTE Band 13	23.81	23.69	0.12
	WWAN LTE Band 14	24.31	24.13	0.18
	WWAN LTE Band 17	24.40	24.38	0.02
	WWAN LTE Band 25	24.42	24.39	0.03
	WWAN LTE Band 26	24.35	24.51	-0.16
	WWAN LTE Band 30	23.74	23.71	0.03
	WWAN LTE Band 38	24.32	24.34	-0.02
	WWAN LTE Band 41	24.36	24.24	0.12
	WWAN LTE Band 41C	25.91	25.62	0.29
	WWAN LTE Band 48	24.60	24.68	-0.08
	WWAN LTE Band 66	24.65	24.63	0.02
	WWAN LTE Band 66B	25.50	25.54	-0.04
	WWAN LTE Band 66C	25.36	25.22	0.14
	WWAN LTE Band 71	24.38	24.47	-0.09
	WWAN NR n5	24.38	24.53	-0.15
	WWAN NR n77/n78 (HPUE)	26.13	26.15	-0.02

Test Item	Mode	A4RG1F8F Parent Worst Result	A4RG4S1M Variant Check Result	Difference (dB)
Field Strength (dBuV/m) @ 30m	NFC 13.56MHz	15.34	15.14	0.20
Radiated Spurious Emission (dBuV/m) @ 3m	BT-3Mbps	45.07	46.16	-1.09
	BLE5.1(2Mbps)	45.24	46.57	-1.33
	WLAN 2.4GHz (MIMO)	52.46	52.34	0.12
	WLAN 5GHz (MIMO)	52.36	50.86	1.50
	NFC 13.56MHz	35.94	36.10	-0.16
Radiated Spurious Emission (dBm)	WWAN GSM 850	-40.09	-36.58	-3.51
	WWAN GPRS 1900	-41.00	-40.32	-0.68
	WWAN WCDMA Band V	-50.20	-58.02	7.82
	WWAN WCDMA Band II	-48.42	-48.68	0.26
	WWAN WCDMA Band IV	-49.15	-49.35	0.20
	WWAN LTE Band 2	-47.94	-47.02	-0.92
	WWAN LTE Band 4	-45.45	-44.32	-1.13
	WWAN LTE Band 5	-57.61	-59.64	2.03
	WWAN LTE Band 5B	-47.18	-62.26	15.08
	WWAN LTE Band 7	-51.08	-51.02	-0.06
	WWAN LTE Band 12	-58.02	-58.22	0.20
	WWAN LTE Band 13	-51.67	-51.43	-0.24
	WWAN LTE Band 14	-51.69	-51.59	-0.10
	WWAN LTE Band 17	-47.38	-49.21	1.83
	WWAN LTE Band 25	-48.52	-47.36	-1.16
	WWAN LTE Band 26	-55.70	-56.75	1.05
	WWAN LTE Band 30	-46.95	-48.23	1.28
	WWAN LTE Band 41	-38.98	-39.34	0.36
	WWAN LTE Band 41C	-47.68	-49.26	1.58
	WWAN LTE Band 48	-50.34	-50.12	-0.22
	WWAN LTE Band 66	-49.13	-48.53	-0.60
	WWAN LTE Band 66B	-46.38	-47.26	0.88
	WWAN LTE Band 66C	-43.37	-43.16	-0.21
	WWAN LTE Band 71	-29.14	-58.70	29.56
	WWAN NR n5	-34.98	-36.86	1.88
	WWAN NR n77/n78 (HPUE)	-35.56	-36.63	1.07

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 and Part 96 EUD mechanism/software is used in the variant.
Hence, there is no spot check data for DFS and Part 96 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.

The SAR data reuse evaluation test data is provided in the SAR spot check test report No: FA0O1507-01.

4. Reference detail Section

Rule Part	Equipment Class	Wireless Technology	Frequency Band (MHz)	Reference FCC ID (Parent)	Type Grant/ Permissive Change	Reference Title	FCC ID Filling (Variant)
15C	DSS	Bluetooth	2400~2483.5	A4RG1F8F	Original Grant	FR093032-02A	A4RG4S1M
	DTS	BLE Wi-Fi	2400~2483.5	A4RG1F8F	Original Grant	FR093032-02B FR093032-02C	A4RG4S1M
	DXX	NFC	13.56	A4RG1F8F	Original Grant	FR093032-02D	A4RG4S1M
15E	NII	Wi-Fi	5150~5250 5250~5350 5470~5725 5725~5850	A4RG1F8F	Original Grant	FR093032-02E FR093032-02F FR093032-02G	A4RG4S1M
		DFS	5250~5350 5470~5725	A4RG1F8F	Original Grant	FZ093032-02	A4RG4S1M
22, 24, 27, 90, 96	PCE CBE	GSM	GSM 850/1900	A4RG1F8F	Original Grant	FG093032-02A	A4RG4S1M
		WCDMA	Band II, IV, V	A4RG1F8F	Original Grant	FG093032-02A	A4RG4S1M
		LTE	B2/4/5/7/12/13 /14/17/25/26/ 30/38/41/48/66 /71 ULCA 5B/7C/ 41C/48C/66B/ 66C	A4RG1F8F	Original Grant	FG093032-02B FG093032-02D FG093032-02E FG093032-02F FG093032-02H FG093032-02I FG093032-02J FG093032-02K	A4RG4S1M
		NR	n5/n78 HPUE	A4RG1F8F	Original Grant	FG093032-02C	A4RG4S1M

END of this report