



SPOT CHECK EVALUATION

FCC ID : A4RGP4BC
Equipment : Phone
Applicant : Google LLC
1600 Amphitheatre Parkway,
Mountain View, California, 94043 USA
Standard : 47 CFR Part 2, 22(H), 24(E), 27, 90(R), 90(S), 96
FCC Part 15 Subpart C §15.209
FCC Part 15 Subpart C §15.225
FCC Part 15 Subpart C §15.247
FCC Part 15 Subpart E §15.407
FCC Part 15 Subpart F §15.519

We, Sporton International Inc. Wensan 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. Wensan Laboratory, the test report shall not be reproduced except in full.

Approved by: Louis Wu

Sporton International Inc. Wensan Laboratory

No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)



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History of this test report

Version	Description	Issued Date
01	Initial issue of report	Aug. 04, 2022



1. Introduction Section

FCC ID: A4RGE2AE (parent model) and FCC ID: A4RGP4BC (variant model) use the same identical internal printed circuit board layouts, while the variant model depopulates mmWave related components, details are available in the operational description. Based on their similarity, the FCC Part 15C (equipment class: DCD, DTS, DSS, DXX) and FCC Part 15E (equipment class: NII, 6XD) and FCC Part 15F (equipment class: UWB) 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 spot check data in this report is used to justify the data reuse

The applicant should take full responsibility that the test data as referenced in this report represent compliance for this FCC ID: A4RGP4BC.



2. Model Difference Information

A4RGE2AE and A4RGP4BC use the identical internal printed circuit board layout, and the difference in the components population:

- A4RGP4BC: 5GNR FR2 mmWave related components are depopulated.

The detail of similarity and difference is illustrated in the operational description, and based on the information spot check on conducted power and emission was performed for ensure compliance



3. Spot Check Verification Data Section

Conducted power test and radiated spurious emission test configurations were selected from the worst cases identified in the parent model and tested to demonstrate the test data from original model remains representative for the variant model.

Summary for power and RSE spot check for each FCC rule part is listed as below:

Test Item	Mode	A4RGE2AE Parent Worst Result	A4RGP4BC Variant Check Result	Difference (dB)
Conducted Power (dBm)	BT	20.95	20.63	0.32
	BLE	19.95	19.55	0.40
	WLAN 2.4GHz	25.56	25.38	0.18
	WLAN 5GHz	23.99	23.57	0.42
	WLAN 6GHz	18.92	18.72	0.20
	WWAN GPRS 850	32.99	32.90	0.09
	WWAN GPRS 1900	30.24	29.71	0.53
	WWAN WCDMA Band V	24.58	24.50	0.08
	WWAN WCDMA Band II	24.93	24.57	0.36
	WWAN LTE Band 5	24.68	24.14	0.54
	WWAN LTE Band 7	24.81	24.28	0.53
	WWAN LTE Band 25	24.43	24.10	0.33
	WWAN LTE Band 30	22.86	22.58	0.28
	WWAN LTE Band 48	24.57	24.16	0.41
	WWAN NR n5	24.94	24.88	0.06
	WWAN NR n7	24.93	24.46	0.47
WWAN NR n25	25.09	24.57	0.52	
WWAN NR n48	24.69	24.65	0.04	



Test Item	Mode	ANT	A4RGE2AE Parent Worst Result	A4RGP4BC Variant Check Result	Difference (dB)
Field Strength (dBuV/m)	NFC 13.56MHz	-	28.19	27.48	0.71
	WPT 148kHz	-	-12.63	-16.66	4.03
	UWB	3	53.78	52.50	1.28
Radiated Spurious Emission (dBuV/m)	BT	4+3	36.17	31.72	4.45
	BLE	4+3	45.55	42.75	2.80
	WLAN 2.4GHz	4+3	52.38	49.79	2.59
	WLAN 5GHz	4+8	52.45	49.02	3.43
	WLAN 6GHz	4+8	42.82	37.98	4.84
	NFC 13.56MHz	-	36.17	35.22	0.95
	WPT 148.5kHz	-	33.08	31.19	1.89
	UWB	3	35.97	34.96	1.01
Radiated Spurious Emission (dBm)	WWAN GPRS 850	0	-37.68	-37.96	0.28
	WWAN GPRS 850	1	-47.06	-50.56	3.50
	WWAN GPRS 1900	0	-51.90	-53.75	1.85
	WWAN WCDMA Band V	0	-56.45	-58.39	1.94
	WWAN WCDMA Band II	2	-51.69	-53.18	1.49
	WWAN LTE Band 5	0	-55.48	-59.83	4.35
	WWAN LTE Band 7	2	-40.63	-42.47	1.84
	WWAN LTE Band 25	2	-39.80	-43.67	3.87
	WWAN LTE Band 30	2	-44.51	-47.57	3.06
	WWAN LTE Band 48	6	-47.65	-50.63	2.98
	WWAN LTE Band 48	7	-46.77	-48.05	1.28
	WWAN NR n5	1	-46.79	-51.76	4.97
	WWAN NR n7	0	-44.00	-48.46	4.46
	WWAN NR n25	2	-52.84	-55.50	2.66
	WWAN NR n48 MIMO	7+5	-48.31	-51.14	2.83

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.

The spot check emission level is not degraded more than 3dB, and the margin to the limit is greater than 1.5dB, data referencing is justified according to the guidance in the KDB inquiry



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	A4RGE2AE	Original Grant	FR1O2919-05A	A4RGP4BC
	DTS	BLE Wi-Fi	2400~2483.5	A4RGE2AE	Original Grant	FR1O2919-05B FR1O2919-05C	A4RGP4BC
	DXX	NFC	13.56	A4RGE2AE	Original Grant	FR1O2919-05D	A4RGP4BC
	DCD	WPT	0.11~0.148	A4RGE2AE	Original Grant	FR1O2919-05H	A4RGP4BC
15E	NII	Wi-Fi	5150~5250 5250~5350 5470~5725 5725~5895	A4RGE2AE	Original Grant	FR1O2919-05E FR1O2919-05F FR1O2919-05G FR1O2919-05K	A4RGP4BC
		DFS	5250~5350 5470~5725	A4RGE2AE	Original Grant	FZ1O2919-05	A4RGP4BC
	6XD	WiFi	5925~7125	A4RGE2AE	Original Grant	FR1O2919-05J	A4RGP4BC
15F	UWB	UWB	CH5: 6489.6 CH9: 7987.2	A4RGE2AE	Original Grant	FR1O2919-05I	A4RGP4BC
22, 24, 27, 90, 96	PCE CBE	GSM	GSM 850/1900	A4RGE2AE	Original Grant	FG1O2919-05A	A4RGP4BC
		WCDMA	Band II, IV, V	A4RGE2AE	Original Grant	FG1O2919-05A	A4RGP4BC
		LTE	2/4/5/7/12/13 /14/17/25/26 /30/38/41 /48/66/71 ULCA 5B/7C/ 41C/66B/66C	A4RGE2AE	Original Grant	FG1O2919-05B FG1O2919-05D FG1O2919-05E FG1O2919-05G FG1O2919-05H FG1O2919-05K FG1O2919-05L	A4RGP4BC
		NR	n2/n5/n7/ n12/n14 n25/n30/ n41/n48/ n66/n71/n77	A4RGE2AE	Original Grant	FG1O2919-05C FG1O2919-05F FG1O2919-05I FG1O2919-05J FG1O2919-05N FG1O2919-05O	A4RGP4BC



5. List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	TECEPEL	DTM-303A	TP201996	N/A	Nov. 16, 2021	May 20, 2022~ May 30, 2022	Nov. 15, 2022	Conducted (TH05-HY)
Power Sensor	DARE	RPR3006W	16I00054SNO 12 (NO:113)	10MHz~6GHz	Dec. 16, 2021	May 20, 2022~ May 30, 2022	Dec. 15, 2022	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101566	10Hz~40GHz	Aug. 30, 2021	May 20, 2022~ May 30, 2022	Aug. 29, 2022	Conducted (TH05-HY)
Switch Control Mainframe	E-IUSTRUMENT	ETF-1405-0	EC1900067 (BOX7)	N/A	Aug. 12, 2021	May 20, 2022~ May 30, 2022	Aug. 11, 2022	Conducted (TH05-HY)
EMI Test Receiver	Keysight	N9010B	MY60241055	10Hz~44GHz	Jul. 12, 2021	May 20, 2022~ May 30, 2022	Jul. 11, 2022	Radiation (03CH20-HY)
Preamplifier	COM-POWER	PAM-103	18020201	1MHz-1000MHz	Jan. 03, 2022	May 20, 2022~ May 30, 2022	Jan. 02, 2023	Radiation (03CH20-HY)
Amplifier	EMCI	EMC118A45S E	980792	N/A	Nov. 15, 2021	May 20, 2022~ May 30, 2022	Nov. 14, 2022	Radiation (03CH20-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz~40GHz	Dec. 24, 2021	May 20, 2022~ May 30, 2022	Dec. 23, 2022	Radiation (03CH20-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Jan. 07, 2022	May 20, 2022~ May 30, 2022	Jan. 06, 2023	Radiation (03CH20-HY)
Bilog Antenna	TESEQ	CBL 6111D&00802 N1D01N-06	55606 & 08	30MHz~1GHz	Oct. 17, 2021	May 20, 2022~ May 30, 2022	Oct. 16, 2022	Radiation (03CH20-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120D	9120D-02294	1GHz~18GHz	Jun. 23, 2021	May 20, 2022~ May 30, 2022	Jun. 22, 2022	Radiation (03CH20-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA9170	00993	18GHz-40GHz	Nov. 30, 2021	May 20, 2022~ May 30, 2022	Nov. 29, 2022	Radiation (03CH20-HY)
Hygrometer	TECEPEL	DTM-303B	TP200728	N/A	Mar. 22, 2022	May 20, 2022~ May 30, 2022	Mar. 21, 2023	Radiation (03CH20-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	519229/2,804 015/2,804027 /2	N/A	Jan. 19, 2022	May 20, 2022~ May 30, 2022	Jan. 18, 2023	Radiation (03CH20-HY)
Software	Audix	E3 6.2009-8- 24	RK-002156	N/A	N/A	May 20, 2022~ May 30, 2022	N/A	Radiation (03CH20-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	May 20, 2022~ May 30, 2022	N/A	Radiation (03CH20-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	May 20, 2022~ May 30, 2022	N/A	Radiation (03CH20-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	May 20, 2022~ May 30, 2022	N/A	Radiation (03CH20-HY)

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