



SPOT CHECK EVALUATION

FCC ID : A4RGKV4X
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 §15.225

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.

Louis Wu

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.)



TABLE OF CONTENTS

History of this test report.....	3
1. Introduction Section	4
2. Model Difference Information	5
3. Spot Check Verification Data Section	6
4. Reference detail Section	8
5. List of Measuring Equipment.....	10
Appendix A. Setup Photographs	



History of this test report

Version	Description	Issue Date
01	Initial issue of report	Dec. 12, 2023
02	Revised according to data reference KDB.	Dec. 21, 2023



1. Introduction Section

FCC ID: A4RG8HHN (parent model) and FCC ID: A4RGKV4X (variant model) use the same identical internal printed circuit board layouts, while the variant model mmWave radio and antenna module are depopulated, details are available in the operational description. Based on their similarity, the FCC Part 15C (equipment class: DXX), and FCC Part 22, 24, 27, 90, 96 (equipment class: PCE, CBE) reuse the original model's result and do spot-check. 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: A4RGKV4X.

2. Model Difference Information

A4RG8HHN and A4RGKV4X use the identical internal printed circuit board layout, and the difference in the components population:

- A4RGKV4X: 5GNR FR2 mmWave related components are depopulated.

The supported GSM/WCDMA/LTE bands are all identical between A4RG8HHN and A4RGKV4X.

The supported NR FR1 band comparison table is listed as following

NR Band	A4RG8HHN	A4RGKV4X
Same	n2, n5, n7, n48, n66, n77 PC2, n78 PC2	n2, n5, n7, n48, n66, n71, n77 PC2, n78 PC2
Diff.	-	n12, n25, n26, n30, n38, n41 PC2, n70

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.

Based on the RF parameter is still identical so the EBW 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	A4RG8HHN Parent Worst Result	A4RGKV4X Variant Check Result	Difference (dB)
Conducted Power (dBm)	WWAN GPRS 850 Class 8 CH251	32.28	32.15	0.13
	WWAN GPRS 1900 Class 8 CH661	29.59	29.29	0.30
	WWAN WCDMA Band V RMC 12.2K CH4132	24.21	24.07	0.14
	WWAN WCDMA Band II RMC 12.2K CH9538	25.13	24.84	0.29
	WWAN WCDMA Band IV RMC 12.2K CH1513	24.38	24.28	0.10
	WWAN LTE Band 2 20MHz 1RB0 QPSK Mid	24.76	24.47	0.29
	WWAN LTE Band 5 10MHz 1RB0 QPSK Mid	24.21	24.18	0.03
	WWAN LTE Band 7 20MHz 1RB0 QPSK Mid	24.93	24.72	0.21
	WWAN LTE Band 12 10MHz 1RB0 QPSK Mid	24.20	24.17	0.03
	WWAN LTE Band 14 10MHz 1RB0 QPSK Mid	24.14	24.00	0.14
	WWAN LTE Band 41 HPUE 20MHz 1RB0 QPSK Low	26.50	26.21	0.29
	WWAN LTE Band 48 20MHz 1RB0 QPSK High	24.29	24.00	0.29
	WWAN NR n2 5MHz 1RB23 BPSK High	24.75	24.65	0.10
	WWAN NR n5 10MHz 1RB50 BPSK Mid	24.83	24.64	0.19
	WWAN NR n7 50MHz 1RB1 QPSK Mid	24.88	24.75	0.13
	WWAN NR n48 20MHz 1RB1 QPSK Mid	24.52	24.25	0.27
	WWAN NR n66 30MHz 80RB40 BPSK High	24.96	24.76	0.20
	WWAN NR n71 5MHz 1RB23 BPSK Low	24.96	24.74	0.22
	WWAN NR n77 HPUE 50MHz 1RB1 BPSK High	26.77	26.56	0.21



Test Item	Mode	ANT	A4RG8HHN Parent Worst Result	A4RGKV4X Variant Check Result	Difference (dB)
Field Strength (dBuV/m)	NFC 13.56MHz	-	19.87	18.59	1.28
Radiated Spurious Emission (dBuV/m)	NFC 13.56MHz	-	30.15	28.10	2.05
Radiated Spurious Emission (dBm)	WWAN GSM 850 CH128	0	-34.63	-34.75	0.12
	WWAN GSM 850 CH251	1	-40.05	-41.57	1.52
	WWAN GSM 1900 CH512	2	-54.93	-55.22	0.29
	WWAN WCDMA Band V CH4233	0	-45.07	-46.91	1.84
	WWAN WCDMA Band II CH9262	2	-54.01	-54.65	0.64
	WWAN WCDMA Band IV CH1413	2	-54.10	-53.24	-0.86
	WWAN LTE Band 2 10MHz 1RB0 QPSK Low	2	-46.47	-47.14	0.67
	WWAN LTE Band 5 10MHz 1RB0 QPSK Low	0	-34.27	-35.26	0.99
	WWAN LTE Band 7 10MHz 1RB0 QPSK Mid	0	-43.85	-46.36	2.51
	WWAN LTE Band 66 10MHz 1RB0 QPSK Low	2	-50.20	-50.33	0.13
	WWAN LTE Band 12 10MHz 1RB0 QPSK Low	1	-50.56	-52.77	2.21
	WWAN LTE Band 14 10MHz 1RB0 QPSK Mid	0	-37.19	-37.96	0.77
	WWAN LTE Band 41 HPUE 10MHz 1RB0 QPSK High	0	-35.72	-37.06	1.34
	WWAN LTE Band 48 20MHz 1RB0 QPSK High	6	-53.59	-54.61	1.02
	WWAN NR n2 20MHz 1RB1 BPSK Low	2	-44.19	-45.63	1.44
	WWAN NR n5 20MHz 1RB1 BPSK High	1	-53.65	-56.19	2.54
	WWAN NR n7 20MHz 1RB1 BPSK High	2	-39.96	-42.26	2.30
	WWAN NR n48 20MHz 1RB1 BPSK High	2	-43.16	-43.62	0.46
	WWAN NR n66 20MHz 1RB1 BPSK Low	2	-42.77	-43.79	1.02
	WWAN NR n71 20MHz 1RB1 BPSK High	0	-21.91	-22.81	0.90
	WWAN NR n77 (27O) 20MHz 1RB1 BPSK Low	1	-33.37	-36.36	2.99
		5	-33.55	-34.76	1.21

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	Rule Part & Frequency Band	Reference FCC ID (Parent)	Type Grant/ Permissive Change	Reference Exhibit	Full report referenced	FCC ID Filling (Variant)
15C	DXX	NFC	§15.255 13.56MHz	A4RG8HHN	Original Grant	G8HHN_FCC Part 15C NFC	Y	A4RGKV4X
22, 24, 27, 90, 96	PCE	GSM	Part 22/24 850/1900	A4RG8HHN	Original Grant	G8HHN_FCC Part 22.24.27 GSM, WCDMA	Y	A4RGKV4X
		WCDMA	Part 22/24/27 Band II, IV, V	A4RG8HHN	Original Grant	G8HHN_FCC Part 22.24.27 GSM, WCDMA	Y	A4RGKV4X
		LTE	Part 22/24/27 Part 90/96 2/4/5/7/12/13 /14/17/25/26 /30/38/41 /48/66/71 ULCA 5B/ 41C/66B/66C	A4RG8HHN	Original Grant	G8HHN_FCC Part 22.24.27.90 LTE G8HHN_FCC Part96 LTE G8HHN_FCC Part96.47 LTE	Y	A4RGKV4X
		NR	Part 22/24/27 Part 96 n2/n5/n7/ n48/n66/n71/ n77	A4RG8HHN	Original Grant	G8HHN_FCC Part 22.24.27 5G NR G8HHN_FCC Part 27O 5G NR G8HHN_FCC Part 27Q 5G NR G8HHN_FCC Part96 5G NR G8HHN_FCC Part96.47 5G NR	Y*	A4RGKV4X

* Only references the bands listed in Rule Part & Frequency Band column

**Cross Reference Table for RF (No data referencing)**

BT/WLAN 2.4GHz/5GHz/6GHz NR n12, n25, n26, n30, n38, n41 PC2, n70			
Rule Part	Test Item	Data Referencing	Comments
Part 15.247	BT/WLAN 2.4GHz All test cases	N	Pointer to Full test exhibit GKV4X_FCC Part 15C BT GKV4X_FCC Part 15C BLE GKV4X_FCC Part 15C BLE channel sounding FHSS GKV4X_FCC Part 15C BLE channel sounding DTS GKV4X_FCC Part 15C WLAN2.4G
Part 15.407	WLAN U-NII bands All test cases	N	Pointer to Full test exhibit GKV4X_FCC Part 15E WLAN UNII-1-3 GKV4X_FCC Part 15E General DFS GKV4X_FCC Part 15E P2P DFS GKV4X_FCC Part 15E UNII-4 GKV4X_FCC Part 15E_WLAN B5-8 Indoor Client GKV4X_FCC Part 15E_WLAN B5-8 Standard Client GKV4X_FCC Part 15E Co-location
Part 24/27	NR bands All test cases	N	Pointer to Full test exhibit GKV4X_FCC Part22.24.27.90 5G NR

5. List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	TECEP	DTM-303A	TP201996	N/A	Nov. 07, 2023	Dec. 06, 2023	Nov. 06, 2024	Conducted (TH05-HY)
Power Sensor	DARE	RPR3006W	16I00054SNO 12 (NO:113)	10MHz~6GHz	Dec. 13, 2022	Dec. 06, 2023	Dec. 12, 2023	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101905	10Hz - 40GHz(amp)	Jul. 14, 2023	Dec. 06, 2023	Jul. 13, 2024	Conducted (TH05-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Feb. 28, 2023	Dec. 06, 2023~ Dec. 09, 2023	Feb. 27, 2024	Radiation (03CH12-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N -06	37059 & 01	30MHz~1GHz	Nov. 03, 2023	Dec. 06, 2023~ Dec. 09, 2023	Nov. 02, 2024	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120 D	9120D-1241	1GHz~18GHz	Jul. 31, 2023	Dec. 06, 2023~ Dec. 09, 2023	Jul. 30, 2024	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA9170	1224	18GHz~40GHz	Jul. 10, 2023	Dec. 06, 2023~ Dec. 09, 2023	Jul. 09, 2024	Radiation (03CH12-HY)
Preamplifier	COM-POWER	PAM-103	161075	10MHz~1GHz	Mar. 21, 2023	Dec. 06, 2023~ Dec. 09, 2023	Mar. 20, 2024	Radiation (03CH12-HY)
Preamplifier	Agilent	8449B	3008A02375	1GHz~26.5GHz	May 23, 2023	Dec. 06, 2023~ Dec. 09, 2023	May 22, 2024	Radiation (03CH12-HY)
Preamplifier	EMEC	EM18G40G	060801	18GHz~40GHz	Jun. 27, 2023	Dec. 06, 2023~ Dec. 09, 2023	Jun. 26, 2024	Radiation (03CH12-HY)
Spectrum Analyzer	Agilent	N9010A	MY53470118	10Hz~44GHz	Jan. 10, 2023	Dec. 06, 2023~ Dec. 09, 2023	Jan. 09, 2024	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	803951/2	9kHz~30MHz	Mar. 07, 2023	Dec. 06, 2023~ Dec. 09, 2023	Mar. 06, 2024	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126E	0058/126E	30MHz~18GHz	Dec. 20, 2022	Dec. 06, 2023~ Dec. 09, 2023	Dec. 19, 2023	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30MHz~40GHz	Dec. 20, 2022	Dec. 06, 2023~ Dec. 09, 2023	Dec. 19, 2023	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	803953/2	30MHz~40GHz	Dec. 20, 2022	Dec. 06, 2023~ Dec. 09, 2023	Dec. 19, 2023	Radiation (03CH12-HY)
Hygrometer	TECEP	DTM-303B	TP161250	N/A	Jul. 26, 2023	Dec. 06, 2023~ Dec. 09, 2023	Jul. 25, 2024	Radiation (03CH12-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	Dec. 06, 2023~ Dec. 09, 2023	N/A	Radiation (03CH12-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Dec. 06, 2023~ Dec. 09, 2023	N/A	Radiation (03CH12-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Dec. 06, 2023~ Dec. 09, 2023	N/A	Radiation (03CH12-HY)
Software	Audix	E3 6.2009-8- 24	RK-000989	N/A	N/A	Dec. 06, 2023~ Dec. 09, 2023	N/A	Radiation (03CH12-HY)

—————THE END—————