



SPOT CHECK EVALUATION

FCC ID : 2AG7G-J2A
Equipment : Plume Adaptive Wi-Fi
Brand Name : Plume Design, Inc.
Model Name : J2A
Applicant : Plume Design, Inc.
325 Lytton Ave, Palo Alto , CA 94301, USA
Manufacturer : Plume Design, Inc.
325 Lytton Ave, Palo Alto , CA 94301, USA
Standard : FCC Part 15 Subpart C §15.247
FCC Part 15 Subpart E §15.407

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	Issue Date
01	Initial issue of report	Dec. 12, 2022
02	Add Testing Location, List of Measuring Equipment and Test Setup Photographs	Dec. 28, 2022



1. Introduction Section

FCC ID: 2AG7G-J1A (parent model) and FCC ID: 2AG7G-J2A (variant model) use the same identical internal printed circuit board layouts, while the variant model depopulates UWB related components, details are available in the operational description. Based on their similarity, the FCC Part 15C (equipment class: DSS) and FCC Part 15E (equipment class: NII) 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 (FCC ID: 2AG7G-J2A).



2. Model Difference Information

2AG7G-J1A and 2AG7G-J2A use the identical internal printed circuit board layout, and the major differences which may relate to RF are listed below:

- Removal of UWB related components.

2AG7G-J1A and 2AG7G-J2A use the same WLAN chipset, same WLAN firmware, and same DFS radar detection mechanism.

The detail of similarity and difference is illustrated in the operational description. Based on the information, spot check of conducted power and emission level was performed and presented in this report to justify the data referencing.



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 rule entry and technology is listed as below:

Test Item	Mode	2AG7G-J1A Parent Worst Result	2AG7G-J2A Variant Check Result	Difference (dB)
Average Conducted Power (dBm)	BLE	16.1	15.7	-0.4
	WLAN 2.4G	24.66	24.11	-0.55
	WLAN 5G (5150~5250)	21.42	21.36	-0.06
	WLAN 5G (5250~5350)	21.16	20.84	-0.32
	WLAN 5G (5470~5725)	23.58	23.35	-0.23
	WLAN 5G (5725~5850)	20.94	20.93	-0.01
Fundamental Maximum EIRP (dBm)	WLAN 6G	23.98	23.03	-0.95
Radiated Spurious Emission (Band Edge) (dBuV/m)	BLE	52.91	52.95	0.04
	WLAN 2.4G	52.87	52.92	0.05
	WLAN 5G	52.87	53.86	0.99
	WLAN 6G	65.64	66.83	1.19
Radiated Spurious Emission (Harmonic) (dBuV/m)	BLE	41.6	40.16	-1.44
	WLAN 2.4G	43.25	43.27	0.02
	WLAN 5G	52.92	52.14	-0.78
	WLAN 6G	44.78	46.61	1.83

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	DTS	BLE Wi-Fi	2400~2483.5	2AG7G-J1A	Original Grant	FR1O0638A FR1O0638B	2AG7G-J2A
15E	NII	Wi-Fi	5150~5250 5250~5350 5470~5725 5725~5850 5925~7125	2AG7G-J1A	Original Grant	FR1O0638C FR1O0638D FR1O0638E FR1O0638F	2AG7G-J2A

Note: For DFS is full test.



5. Testing Location

Test Site	Sporton International Inc. EMC & Wireless Communications Laboratory
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978
Test Site No.	Sporton Site No. 03CH07-HY (TAF Code: 1190)
Remark	The Radiated Spurious Emission for BLE, WLAN 2.4G, WLAN 5G B1 and WLAN 5G B4 test item subcontracted to Sporton International Inc. EMC & Wireless Communications Laboratory

Note: The test site complies with ANSI C63.4 2014 requirement.

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	Sporton Site No. TH05-HY, 03CH11-HY, 03CH15-HY, 03CH22-HY

Note: The test site complies with ANSI C63.4 2014 requirement.

FCC designation No.: TW3786



6. List of Measuring Equipment

<Radiated Spurious Emission for BLE, WLAN 2.4G, WLAN 5G B1 and WLAN 5G B4>

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Dec. 03, 2021	Oct. 27, 2022	Dec. 02, 2022	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	18GHz~40GHz	Nov. 30, 2021	Oct. 27, 2022	Nov. 29, 2022	Radiation (03CH07-HY)
Preamplifier	MITEQ	AMF-7D-00101 800-30-10P	1590075	1GHz~18GHz	Apr. 21, 2022	Oct. 27, 2022	Apr. 20, 2023	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~26.5GHz	Oct. 03, 2022	Oct. 27, 2022	Oct. 02, 2023	Radiation (03CH07-HY)
Preamplifier	EMEC	EM18G40G	0600789	18-40GHz	Jul. 21, 2022	Oct. 27, 2022	Jul. 20, 2023	Radiation (03CH07-HY)
Spectrum Analyzer	Agilent	N9030A	MY52350276	3Hz~44GHz	Jul. 22, 2022	Oct. 27, 2022	Jul. 21, 2023	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY15682/4	30MHz to 18GHz	Feb. 23, 2022	Oct. 27, 2022	Feb. 22, 2023	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY24971/4	9kHz to 18GHz	Feb. 23, 2022	Oct. 27, 2022	Feb. 22, 2023	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY28655/4	9kHz to 18GHz	Feb. 23, 2022	Oct. 27, 2022	Feb. 22, 2023	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126	532078/126E	30MHz~18GHz	Sep. 16, 2022	Oct. 27, 2022	Sep. 15, 2023	Radiation (03CH07-HY)
Antenna Mast	EMEC	AM-BS-4500E	N/A	Boresight mast 1M~4M	N/A	Oct. 27, 2022	N/A	Radiation (03CH07-HY)
Turn Table	ChainTek	Chaintek 3000	N/A	0~360 Degree	N/A	Oct. 27, 2022	N/A	Radiation (03CH07-HY)
Software	Audix	E3	N/A	N/A	N/A	Oct. 27, 2022	N/A	Radiation (03CH07-HY)
USB Data Logger	TECPEL	TR-32	HE17XB2495	N/A	Mar. 07, 2022	Oct. 27, 2022	Mar. 06, 2023	Radiation (03CH07-HY)



<Radiated Spurious Emission for WLAN 5G B2 and WLAN 5G B3>

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1212	1GHz ~ 18GHz	Mar. 10, 2022	Oct. 21, 2022~ Nov. 01, 2022	Mar. 09, 2023	Radiation (03CH11-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170576	18GHz~40GHz	May 14, 2022	Oct. 21, 2022~ Nov. 01, 2022	May 13, 2023	Radiation (03CH11-HY)
Preamplifier	Keysight	83017A	MY53270080	1GHz~26.5GHz	Nov. 10, 2021	Oct. 21, 2022~ Nov. 01, 2022	Nov. 09, 2022	Radiation (03CH11-HY)
Preamplifier	EMEC	EM18G40G	060801	18GHz~40GHz	Jun. 28, 2022	Oct. 21, 2022~ Nov. 01, 2022	Jun. 27, 2023	Radiation (03CH11-HY)
Preamplifier	Jet-Power	JPA0118-55-30 3	171000180005 5007	1GHz~18GHz	Jun. 15, 2022	Oct. 21, 2022~ Nov. 01, 2022	Jun. 14, 2023	Radiation (03CH11-HY)
Spectrum Analyzer	Keysight	N9010A	MY54200486	10Hz~44GHz	Oct. 07, 2022	Oct. 21, 2022~ Nov. 01, 2022	Oct. 06, 2023	Radiation (03CH11-HY)
EMI Test Receiver	Keysight	N9038A(MXE)	MY54130085	20MHz~8.4GHz	Oct. 18, 2022	Oct. 21, 2022~ Nov. 01, 2022	Oct. 17, 2023	Radiation (03CH11-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1~4m	N/A	Oct. 21, 2022~ Nov. 01, 2022	N/A	Radiation (03CH11-HY)
Turn Table	EMEC	TT 2000	N/A	0~360 Degree	N/A	Oct. 21, 2022~ Nov. 01, 2022	N/A	Radiation (03CH11-HY)
Software	Audix	E3 6.2009-8-24	RK-001053	N/A	N/A	Oct. 21, 2022~ Nov. 01, 2022	N/A	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY2859/2	30MHz-40GHz	Mar. 10, 2022	Oct. 21, 2022~ Nov. 01, 2022	Mar. 09, 2023	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY9837/4PE	9kHz-30MHz	Mar. 10, 2022	Oct. 21, 2022~ Nov. 01, 2022	Mar. 09, 2023	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY9837/4PE	30MHz-18GHz	Mar. 10, 2022	Oct. 21, 2022~ Nov. 01, 2022	Mar. 09, 2023	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	811852/4	30MHz-18GHz	Mar. 10, 2022	Oct. 21, 2022~ Nov. 01, 2022	Mar. 09, 2023	Radiation (03CH11-HY)
Filter	Wainwright	WHKX8-5872.5 -6750-18000-4 0SS	SN3	6.75GHz High Pass Filter	Sep. 12, 2022	Oct. 21, 2022~ Nov. 01, 2022	Sep. 11, 2023	Radiation (03CH11-HY)



<Radiated Spurious Emission for WLAN 6G>

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-02294	1GHz~18GHz	Jun. 23, 2022	Nov. 25, 2022~Dec. 02, 2022	Jun. 22, 2023	Radiation (03CH15-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	00993	18GHz~40GHz	Nov. 24, 2022	Nov. 25, 2022~Dec. 02, 2022	Nov. 23, 2023	Radiation (03CH15-HY)
Amplifier	EMEC	EM1G18G	060837	1GHz~18GHz	Sep. 01, 2022	Nov. 25, 2022~Dec. 02, 2022	Aug. 31, 2023	Radiation (03CH15-HY)
Amplifier	EMEC	EM1G18G	060838	1GHz~18GHz	Sep. 01, 2022	Nov. 25, 2022~Dec. 02, 2022	Aug. 31, 2023	Radiation (03CH15-HY)
Preamplifier	EM Electronics	EM01G18G	060803	1GHz-18GHz	Dec. 16, 2021	Nov. 25, 2022~Dec. 02, 2022	Dec. 15, 2022	Radiation (03CH15-HY)
Preamplifier	EMEC	EM18G40G	060802	18-40GHz	Mar. 08, 2022	Nov. 25, 2022~Dec. 02, 2022	Mar. 07, 2023	Radiation (03CH15-HY)
EMI Test Receiver	Keysight	N9038A(MXE)	MY54130085	20MHz~8.4GHz	Oct. 18, 2022	Nov. 25, 2022~Dec. 02, 2022	Oct. 17, 2023	Radiation (03CH15-HY)
Spectrum Analyzer	Keysight	N9010	MY54200485	10Hz~44GHz	May 07, 2022	Nov. 25, 2022~Dec. 02, 2022	May 06, 2023	Radiation (03CH15-HY)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Nov. 25, 2022~Dec. 02, 2022	N/A	Radiation (03CH15-HY)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Nov. 25, 2022~Dec. 02, 2022	N/A	Radiation (03CH15-HY)
Software	Audix	E3 6.2009-8-24(k5)	RK-000451	N/A	N/A	Nov. 25, 2022~Dec. 02, 2022	N/A	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104, 102E	MY582185/4,MY9838/4PE,519228/2	N/A	Jun. 21, 2022	Nov. 25, 2022~Dec. 02, 2022	Jun. 20, 2023	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	804011/2,804012/2	30MHz-40GHz	Jan. 04, 2022	Nov. 25, 2022~Dec. 02, 2022	Jan. 03, 2023	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY9837/4PE	9kHz~30MHz	Mar. 10, 2022	Nov. 25, 2022~Dec. 02, 2022	Mar. 09, 2023	Radiation (03CH15-HY)

**<Average Conducted Power for BLE, WLAN 2.4G, and WLAN 5G>**

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Power Sensor	DARE	RPR3006W	15100041SNO10 (NO:248)	10MHz~6GHz	Dec. 29, 2021	Oct. 07, 2022~Oct. 17, 2022	Dec. 28, 2022	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101905	10Hz - 40GHz(amp)	Aug. 03, 2022	Oct. 07, 2022~Oct. 17, 2022	Aug. 02, 2023	Conducted (TH05-HY)

<Fundamental Maximum EIRP for WLAN 6G>

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Double Ridged Guide Horn Antenna	RFSPIN	DRH18-E	LE2C05A18EN	1GHz~18GHz	Jul. 06, 2022	Dec. 07, 2022	Jul. 05, 2023	Radiation (03CH22-HY)
Amplifier	EMEC	EM01G18GA	060877	N/A	Sep. 29, 2022	Dec. 07, 2022	Sep. 28, 2023	Radiation (03CH22-HY)
Signal Analyzer	Keysight	N9010B	MY60241058	N/A	Jul. 07, 2022	Dec. 07, 2022	Jul. 06, 2023	Radiation (03CH22-HY)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Dec. 07, 2022	N/A	Radiation (03CH22-HY)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Dec. 07, 2022	N/A	Radiation (03CH22-HY)
Software	Audix	E3 6.09824_2019122	RK-002347	N/A	N/A	Dec. 07, 2022	N/A	Radiation (03CH22-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	804390/2,804611/2,804615/2	N/A	Oct. 25, 2022	Dec. 07, 2022	Oct. 24, 2023	Radiation (03CH22-HY)