Spot Check Evaluation

APPLICANT	:	FCNT LLC.
EQUIPMENT	:	Mobile cellular phone
BRAND NAME	:	arrows We2
MODEL NAME	:	FCG02
FCC ID	:	2BEPUFMP196
STANDARD	:	47 CFR Part 2, 22(H), 27(M), 27(H), 27(Q) 47 CFR Part 15 Subpart C §15.225 47 CFR Part 15 Subpart C §15.247 47 CFR Part 15 Subpart E §15.407
TEST DATE(S)	:	Mar. 09, 2024 ~ Jun. 26, 2024

We, Sporton International Inc. (Kunshan), 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. (Kunshan), the test report shall not be reproduced except in full.

Jason Jia

Approved by: Jason Jia

ACCREDITED
Cert #5145.02

Sporton International Inc. (Kunshan)
No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China

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APPENDIX A. SETUP PHOTOGRAPHS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
3D0613-02	Rev. 01	Initial issue of report	May 22, 2024
3D0613-02	Rev. 02	Added test data for Co-location	Jun. 04, 2024
3D0613-02	Rev. 03	Update report based on ECR data reference inquiry	Jun. 27, 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

FCNT LLC.
Sanki Yamato Bldg. 3F, 7-10-1, Chuorinkan, Yamato-shi, Kanagawa, 242-0007, Japan

1.2 Manufacturer

FCNT LLC.
Sanki Yamato Bldg. 3F, 7-10-1, Chuorinkan, Yamato-shi, Kanagawa, 242-0007, Japan

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile cellular phone
Brand Name	arrows We2
Model Name	FCG02
FCC ID	2BEPUFMP196
IMEI Code	Conducted: 353726530010209/353726530010217 Conduction: 353726530033466/353726530033474 Radiation: 353726530035040/353726530035057 DFS: 353726530035206
HW Version	V4
SW Version	sys_miss_yamato-userdebug 14 UP1A.231005.007 258 release-keys
EUT Stage	Identical Prototype

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. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	03CH04-KS 03CH06-KS 03CH07-KS TH01-KS DFS01-KS CO01-KS	CN1257	314309

1.6 Test Software

Item	Site	Manufacturer	Name	Version
1.	TH01-KS	SPORTON	FCC 15C-15E Test Tools Ver10.0_210607	10.0
2.	03CH04-KS	AUDIX	E3	210616
3.	03CH06-KS	AUDIX	E3	210616
4.	03CH07-KS	AUDIX	E3	210616
5.	CO01-KS	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 v02r03
- 47 CFR Part 2, 22(H), 27(M), 27(H), 27(Q)
- 47 CFR Part 15 Subpart C §15.225
- 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: FCG02, FCC ID: 2BEPUFMP196) is electrically identical to the reference device (Model: F-52E, FCC ID: 2BEPUFMP195) for the portions of the circuitry corresponding to the data being re-used, , following the FCC KDB 484596 D01 Referencing Test Data v02r03.

ECR Data Referencing Inquiry has been approved by FCC, and the data referencing and spot check test plan includes RF/EMC, the details are presented in section 2.3 of this report, for SAR Reference detail, please refer to FCC SAR report FA3D0613-02.

The criteria set in section 3 of KDB 484596 D01 v02r03 is followed to determine whether the data referencing is justified. For SAR, the higher between the referenced value and the spot check value is used to determine compliance in both standalone and simultaneous transimission conditions

The applicant takes full responsibility that the test data as referenced in this report represent compliance for this FCC ID: 2BEPUFMP196 .

2.2 Model Difference Information

The **main** difference between FCC ID: 2BEPUFMP195 and FCC ID: 2BEPUFMP196 is as below:

- Remove LTE B39 and 5G NR n1/n79.
- Add WCDMA Band II/VIII, LTE B2/4/38 and 5G NR n41.

Other differences and all the details of similarity and difference can be found in the confidential documents (FCG02_Operational Description of Product Equality Declaration).

2.3 Reference detail Section:

Rule Part	Equipment Class	Frequency Band (MHz)	Reference FCC ID (Parent)	Reference on test	Reference Title	FCC ID Filling (Variant)	Test on the variant	Data Referencing (Y/N)
15C	DTS (WLAN)	2400~2483.5	2BEPUFMP195	Full test	FR3D0613-04C	2BEPUFMP196	Spot check	Y, All test items
	DXX (NFC)	13.56	2BEPUFMP195	Full test	FR3D0613-04D	2BEPUFMP196	Spot check	Y, All test items
15E	U-NII	5180~5240	2BEPUFMP195	Full test	FR3D0613-04E	2BEPUFMP196	Spot check	Y, All test items
		5260~5320	2BEPUFMP195	Full test	FR3D0613-04E	2BEPUFMP196	Spot check	Y, All test items
		5500~5720	2BEPUFMP195	Full test	FR3D0613-04E	2BEPUFMP196	Spot check	Y, All test items
		5745~5825	2BEPUFMP195	Full test	FR3D0613-04E	2BEPUFMP196	Spot check	Y, All test items
		5260~5320 5500~5720	2BEPUFMP195	Full test	FZ3D0613-04	2BEPUFMP196	Spot check	Y, All test items
22, 24, 27	PCE (GSM)	GSM 850/1900	2BEPUFMP195	Full test	FG3D0613-04A	2BEPUFMP196	Spot check	Y, All test items
	PCE (WCDMA)	Band V	2BEPUFMP195	Full test	FG3D0613-04A	2BEPUFMP196	Spot check	Y, All test items
	PCE (LTE)	B5/12/41/42	2BEPUFMP195	Full test	FG3D0613-04B FG3D0613-04C	2BEPUFMP196	Spot check	Y, All test items

Y: Pointer to spot-check exhibit; N: Pointer to full test exhibit

2.4 Spot Check Verification Data Section

All test items 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:

$$d_{dB} = | V_{dB} – R_{dB} | \leq (3 + M_{dB} /20) \text{ dB} , \text{ for } 0 \leq M_{dB} \leq 60 \text{ dB}$$

$$d_{dB} = | V_{dB} – R_{dB} | = 6 \text{ dB} \quad , \text{ for } M_{dB} > 60 \text{ dB} \quad (2)$$

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 spot check for each rule entry and technology is listed as below:

Mode	Test Item	2BEPUFMP195 Parent Worst mode Test Result	2BEPUFMP196 Variant Check Test Result	Deviation	Deviation Limit
WIFI 2.4G (802.11g CH1)	6dB Bandwidth(MHz)	15.08	15.02	0.06	3
	99% Bandwidth(MHz)	17.582	17.442	0.14	3
	Power Spectral Density (dBm/3KHz)	-12.26	-13.21	0.95	3
	Conducted Band Edges(dBm)	-18.48	-19.21	0.73	3
	Conducted Spurious Emission (dBm)	-48.72	-48.90	0.18	3
WIFI 2.4G (802.11n40 CH09)	Radiated Band Edges and Spurious Emission (dBuV/m)	70.97	69.81	1.16	3
WIFI 2.4G	AC Conducted Emission (dBuV)	43.54	45.78	2.24	3
WIFI 5G (802.11a CH44)	26dB Bandwidth(MHz)	19.70	19.56	0.14	3
	99% Bandwidth(MHz)	17.263	17.240	0.02	3
	Power Spectral Density (dBm/MHz)	0.25	0.15	0.10	3
WIFI 5G (802.11ac VHT80 CH58)	Unwanted Emissions (dBuV/m)	46.16	45.76	0.4	3
WIFI 5G (802.11ac VHT80 CH106)	DFS(s)	0.858829	0.90123	0.042401	3

Mode	Test Item	2BEPUFMP195 Parent Worst mode Test Result	2BEPUFMP196 Variant Check Test Result	Deviation	Deviation Limit
WIFI 5G	AC Conducted Emission (dBuV)	40.44	42.53	2.09	3
Part 22/24/27 2/3/4G (LTE Band41)	Equivalent Isotropic Radiated Power (dBm)	18.3	18.22	0.08	3
	Peak-to-Average Ratio (dB)	5.88	5.51	0.37	3
	Occupied Bandwidth(MHz)	4.49	4.49	0.00	3
	Conducted Band Edge (dBm)	-14.75	-14.75	0.00	3
	Conducted Spurious Emission (dBm)	-40.45	-41.65	1.20	3
	Frequency Stability(ppm)	0.0057	0.0028	0.0029	3
	Radiated Spurious Emission (dBm)	-41.5	-42.78	1.28	3
Part 15C NFC	20dB Spectrum Bandwidth (MHz)	2.49	2.48	0.01	3
	99% OBW Bandwidth (MHz)	2.11	2.08	0.03	3
	Frequency Stability(MHz)	13.560836	13.560810	0.000026	3
	Field Strength of Fundamental Emissions(dBuV/m)	52.3	52.28	0.02	3
	Radiated Spurious Emissions (dBuV/m)	30.01	29.71	0.3	3
	AC Power Line(dBuV)	38.28	38.52	0.24	3

Test Item	Mode	2BEPUFMP195 Parent Worst mode Test Result	2BEPUFMP196 Variant Check Test Result	Deviation	Limit
Conducted Power (dBm)	11b, 2.4GHz CH01	14.04	14.02	0.02	3
	11g, 2.4GHz CH06	21.03	20.98	0.05	3
	11n HT20, 2.4GHz CH06	22.42	22.33	0.09	3
	11n HT40, 2.4GHz CH06	22.36	22.25	0.11	3
	11a, 5.2GHz CH48	10.73	10.62	0.11	3
	11a, 5.3GHz CH60	10.74	10.58	0.16	3
	11a, 5.5GHz CH140	10.78	10.54	0.24	3
	11a, 5.8GHz CH149	10.67	10.58	0.09	3
	11n HT20, 5.2GHz CH44	10.54	10.44	0.10	3
	11n HT20, 5.3GHz CH52	10.57	10.52	0.05	3
	11n HT20, 5.5GHz CH140	10.60	10.49	0.11	3
	11n HT20, 5.8GHz CH149	10.58	10.43	0.15	3
	11n HT40, 5.2GHz CH46	10.71	10.68	0.03	3
	11n HT40, 5.3GHz CH54	10.73	10.62	0.11	3
	11n HT40, 5.5GHz CH134	10.84	10.77	0.07	3
	11n HT40, 5.8GHz CH151	10.74	10.63	0.11	3
	11ac VHT20, 5.2GHz CH44	10.60	10.54	0.06	3
	11ac VHT20, 5.3GHz CH52	10.64	10.58	0.06	3
	11ac VHT20, 5.5GHz CH140	10.69	10.63	0.06	3

	11ac VHT20, 5.8GHz CH149	10.63	10.58	0.05	3
	11ac VHT40, 5.2GHz CH46	10.74	10.66	0.08	3
	11ac VHT40, 5.3GHz CH54	10.75	10.62	0.13	3
	11ac VHT40, 5.5GHz CH134	10.86	10.74	0.12	3
	11ac VHT40, 5.8GHz CH151	10.78	10.71	0.07	3
	11ac VHT80, 5.2GHz CH42	10.28	10.22	0.06	3
	11ac VHT80, 5.3GHz CH58	10.31	10.21	0.10	3
	11ac VHT80, 5.5GHz CH138	10.35	10.28	0.07	3
	11ac VHT80, 5.8GHz CH155	10.22	10.16	0.06	3
	GSM850	28.87	28.84	0.03	3
	GSM1900	26.31	26.21	0.10	3
	WCDMA B5	23.34	23.24	0.10	3
	LTE B5	23.26	23.22	0.04	3
	LTE B12	23.17	23.09	0.08	3
	LTE B41	18.30	18.22	0.08	3
	LTE B42	15.92	15.86	0.06	3

Conclusion:

All test items 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. All spot check test data 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 detection mechanism/software/antenna gain is used in the variant of DFS. Hence, all test cases refer to parent report.

We confirm that the test data referencing policy of FCC KDB 484596 D01 Referencing Test Data v02r03 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

For WIFI 2.4G/5G:

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 11, 2023	Jun. 14, 2024	Oct. 10, 2024	Conducted (TH01-KS)
Pulse Power Senor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 02, 2024	Jun. 14, 2024	Jan. 01, 2025	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 02, 2024	Jun. 14, 2024	Jan. 01, 2025	Conducted (TH01-KS)
EMI Test Receiver	Keysight	N9038A	MY56400004	3Hz~8.5GHz;Max 30dBm	Oct. 10, 2023	Apr. 02, 2024~ Jun. 04, 2024	Oct. 09, 2024	Radiation (03CH06-KS)
EXA Spectrum Analyzer	Keysight	N9010B	MY60242126	10Hz-44GHz	Oct. 10, 2023	Apr. 02, 2024~ Jun. 04, 2024	Oct. 09, 2024	Radiation (03CH06-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 10, 2023	Apr. 02, 2024~ Jun. 04, 2024	Oct. 09, 2024	Radiation (03CH06-KS)
Bilog Antenna	TeseQ	CBL6111D	59913	30MHz-1GHz	Aug. 19, 2023	Apr. 02, 2024~ Jun. 04, 2024	Aug. 18, 2024	Radiation (03CH06-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00240132	1GHz~18GHz	Jul. 12, 2023	Apr. 02, 2024~ Jun. 04, 2024	Jul. 11, 2024	Radiation (03CH06-KS)
SHF-EHF Horn	Com-power	AH-840	101093	18GHz~40GHz	Jan. 05, 2024	Apr. 02, 2024~ Jun. 04, 2024	Jan. 04, 2025	Radiation (03CH06-KS)
Amplifier	SONOMA	310N	380827	9KHz ~1GHZ	Jul. 06, 2023	Apr. 02, 2024~ Jun. 04, 2024	Jul. 05, 2024	Radiation (03CH06-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 04, 2024	Apr. 02, 2024~ Jun. 04, 2024	Jan. 03, 2025	Radiation (03CH06-KS)
high gain Amplifier	MITEQ	AMF-7D-00101800-30-10P	2082395	1Ghz-18Ghz	Jan. 04, 2024	Apr. 02, 2024~ Jun. 04, 2024	Jan. 03, 2025	Radiation (03CH06-KS)
Amplifier	Keysight	83017A	MY53270319	500MHz~26.5GHz	Oct. 10, 2023	Apr. 02, 2024~ Jun. 04, 2024	Oct. 09, 2024	Radiation (03CH06-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Apr. 02, 2024~ Jun. 04, 2024	NCR	Radiation (03CH06-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Apr. 02, 2024~ Jun. 04, 2024	NCR	Radiation (03CH06-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Apr. 02, 2024~ Jun. 04, 2024	NCR	Radiation (03CH06-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz;	May 16, 2023	Apr. 06, 2024	May 15, 2024	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060103	9kHz~30MHz	Oct. 11, 2023	Apr. 06, 2024	Oct. 10, 2024	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060105	9kHz~30MHz	May 16, 2023	Apr. 06, 2024	May 15, 2024	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Oct. 11, 2023	Apr. 06, 2024	Oct. 10, 2024	Conduction (CO01-KS)
Signal Analyzer	R&S	FSV7	101472	10Hz~7GHz	Jan. 02, 2024	Mar. 09, 2024	Jan. 01, 2025	DFS (DFS01-KS)
Vector Signal Generator	R&S	SMJ100A	101908	100kHz~6GHz	Jan. 02, 2024	Mar. 09, 2024	Jan. 01, 2025	DFS (DFS01-KS)
Combiner	MTJ Cooperation	MTJ7114-M	N/A	0.5GHz~18GHz	NCR	Mar. 09, 2024	NCR	DFS (DFS01-KS)

NCR: No Calibration Required.

For NFC:

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 11, 2023	Jun. 14, 2024	Oct. 10, 2024	Conducted (TH01-KS)
EMI Test Receiver	R&S	ESR7	101403	9kHz~7GHz;Max 30dBm	Oct. 11, 2023	Jun. 26, 2024	Oct. 10, 2024	Radiation (03CH07-KS)
Loop Antenna	R&S	HFH2-Z2E	101125	9kHz~30MHz	Sep. 11, 2023	Jun. 26, 2024	Sep. 10, 2024	Radiation (03CH07-KS)
Bilog Antenna	TeseQ	CBL6111D	59913	30MHz-1GHz	Aug. 19, 2023	Jun. 26, 2024	Aug. 18, 2024	Radiation (03CH07-KS)
Amplifier	SONOMA	310N	413740	9KHz-1GHz	Jan. 04, 2024	Jun. 26, 2024	Jan. 03, 2025	Radiation (03CH07-KS)
AC Power Source	Chroma	61601	616010002473	N/A	NCR	Jun. 26, 2024	NCR	Radiation (03CH07-KS)
Turn Table	EM	EM 1000-T	N/A	0~360 degree	NCR	Jun. 26, 2024	NCR	Radiation (03CH07-KS)
Antenna Mast	EM	EM 1000-A	N/A	1 m~4 m	NCR	Jun. 26, 2024	NCR	Radiation (03CH07-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz;	May 16, 2023	Apr. 06, 2024	May 15, 2024	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060103	9kHz~30MHz	Oct. 11, 2023	Apr. 06, 2024	Oct. 10, 2024	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060105	9kHz~30MHz	May 16, 2023	Apr. 06, 2024	May 15, 2024	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Oct. 11, 2023	Apr. 06, 2024	Oct. 10, 2024	Conduction (CO01-KS)

NCR: No Calibration Required.

For WWAN Bands:

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 11, 2023	Mar. 15, 2024~ Jun. 14, 2024	Oct. 10, 2024	Conducted (TH01-KS)
Power divider	STI	STI08-0055	-	0.5~40GHz	NCR	Mar. 15, 2024~ Jun. 14, 2024	NCR	Conducted (TH01-KS)
Temperature &humidity chamber	Hongzhan	LP-150U	H2014011440	-40~+150°C 20%~95%RH	Jul. 06, 2023	Mar. 15, 2024~ Jun. 14, 2024	Jul. 05, 2024	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010B	MY57471079	10Hz-44G,MAX 30dB	Oct. 10, 2023	Apr. 09, 2024	Oct. 09, 2024	Radiation (03CH04-KS)
Loop Antenna	R&S	HFH2-Z2E	101125	9kHz~30MHz	Sep. 11, 2023	Apr. 09, 2024	Sep. 10, 2024	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz-1GHz	Apr. 09, 2024	Apr. 09, 2024	Apr. 08, 2025	Radiation (03CH04-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00251694	1GHz~18GHz	Jul. 12, 2023	Apr. 09, 2024	Jul. 11, 2024	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 05, 2024	Apr. 09, 2024	Jan. 04, 2025	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	380827	9KHz-1GHz	Jul. 06, 2023	Apr. 09, 2024	Jul. 05, 2024	Radiation (03CH04-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 05, 2024	Apr. 09, 2024	Jan. 04, 2025	Radiation (03CH04-KS)
high gain Amplifier	EM	EM01G18GA	060840	1Ghz-18Ghz	Oct. 10, 2023	Apr. 09, 2024	Oct. 09, 2024	Radiation (03CH04-KS)
Amplifier	Agilent	8449B	3008A02370	1Ghz-18Ghz	Oct. 10, 2023	Apr. 09, 2024	Oct. 09, 2024	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Apr. 09, 2024	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Apr. 09, 2024	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Apr. 09, 2024	NCR	Radiation (03CH04-KS)

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(WIFI 2.4G/5G)

Test Item	Uncertainty
Conducted Spurious Emission & Bandedge	±2.22 dB
Occupied Channel Bandwidth	±0.1%
Conducted Power	±0.50 dB
Conducted Power Spectral Density	±0.90 dB
Frequency	±0.04 ppm

Uncertainty of Conducted Measurement (NFC)

Test Item	Uncertainty
Occupied Channel Bandwidth	±0.1%
Frequency	±0.04 ppm

Uncertainty of Conducted Measurement (WWAN Bands)

Test Item	Uncertainty
Conducted Spurious Emission & Bandedge	±2.22 dB
Occupied Channel Bandwidth	±0.1%
Conducted Power	±0.50 dB
Peak to Average Ratio	±0.46 dB
Frequency Stability	±0.4 Hz

Uncertainty of Conducted Measurement (DFS)

Test Item	Uncertainty
Conducted Generated signal Levels	±0.56 dB
Conducted Time	0.38%

Uncertainty of AC Conducted Emission Measurement (0.15 MHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.84 dB

03CH06-KS (WIFI 2.4G/5G):

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	6.06dB

Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.18dB

Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.38dB

03CH07-KS (NFC):

Uncertainty of Radiated Emission Measurement (9KHz ~ 30MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.30dB

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	6.06dB

03CH04-KS (WWAN):

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.83dB

Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.83dB

Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.82dB

-THE END-

Appendix A. Radiated Spurious Emission Test Data

Test Engineer :	Henry Li	Relative Humidity :	22~23℃
		Temperature :	41~42%

Radiated Spurious Emission Test Modes

Co-location

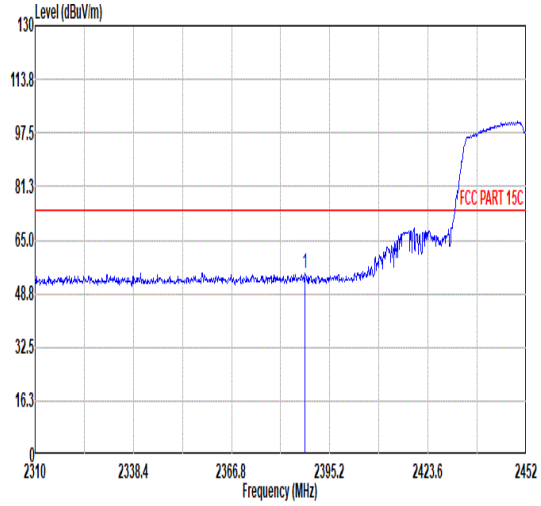
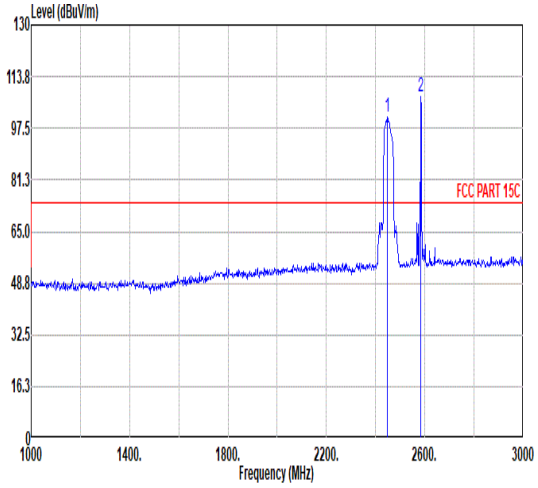
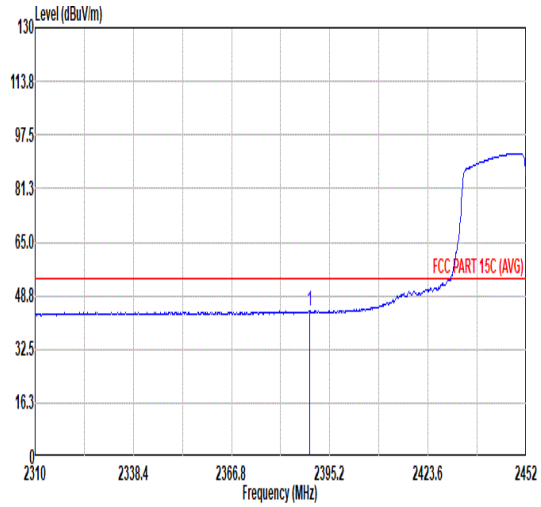
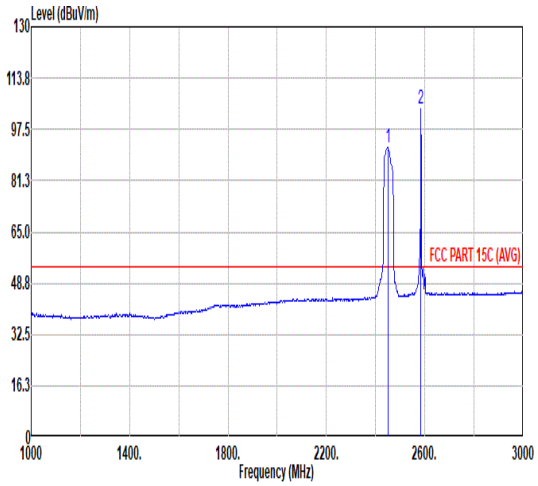
Mode	Band (MHz)	Antenna	Modulation	Channel	Frequency	Data Rate	RU	Setting
Mode 1	2400-2483.5	6	802.11n HT40	9	2452	MCS0	-	12
	BT Tx/NFC on							
	5G N41 Link							

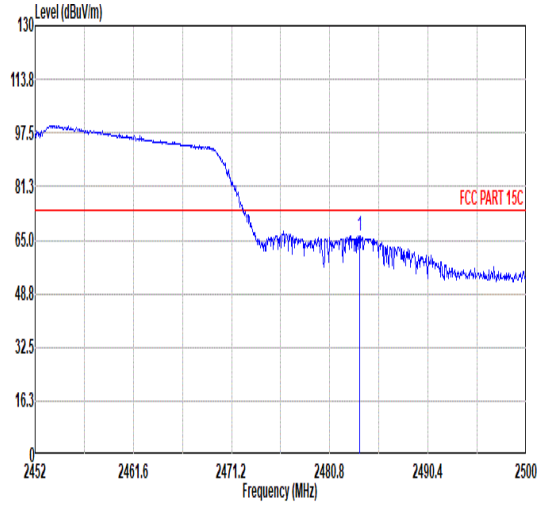
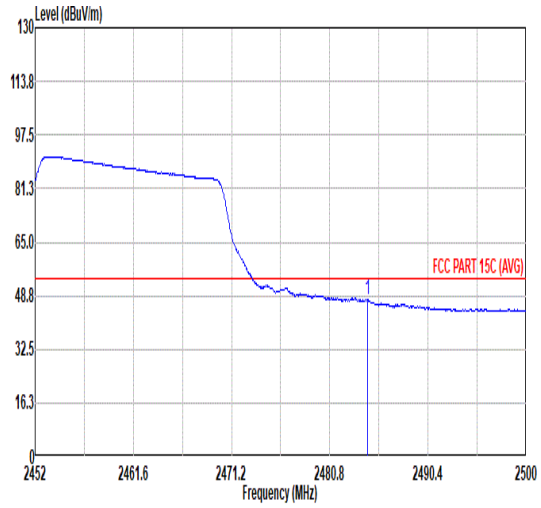
Remark: Only the worst-case test data is shown in the report.

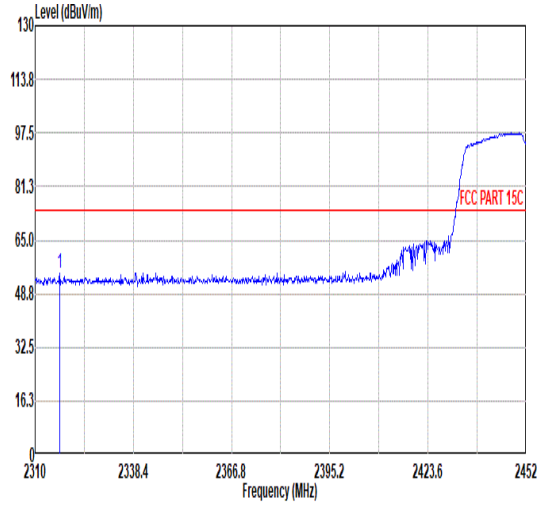
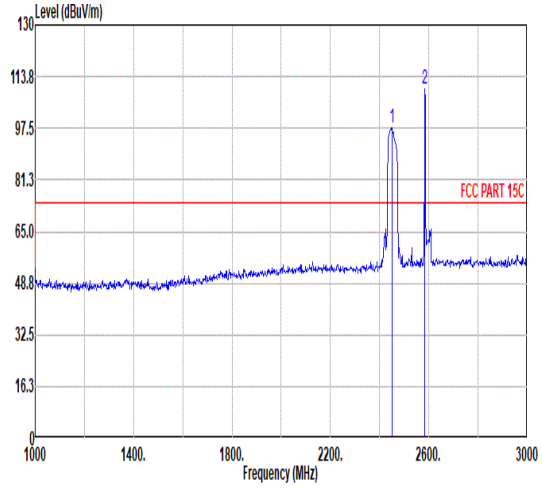
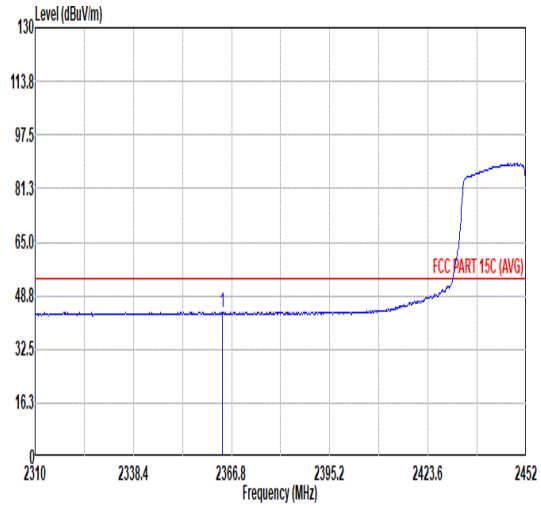
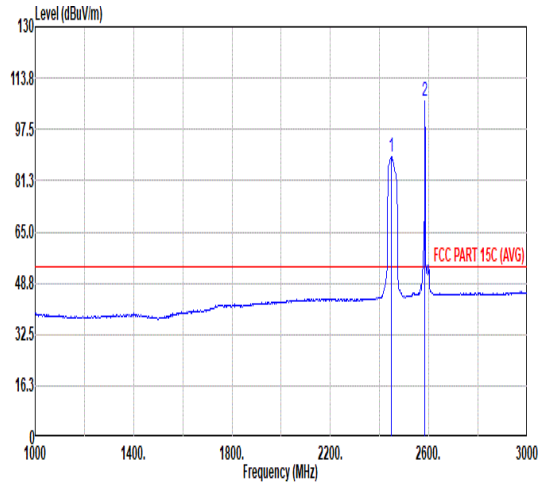
Summary of each worse mode

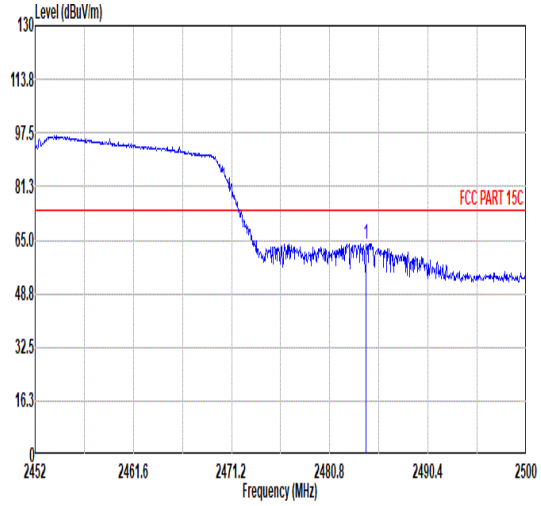
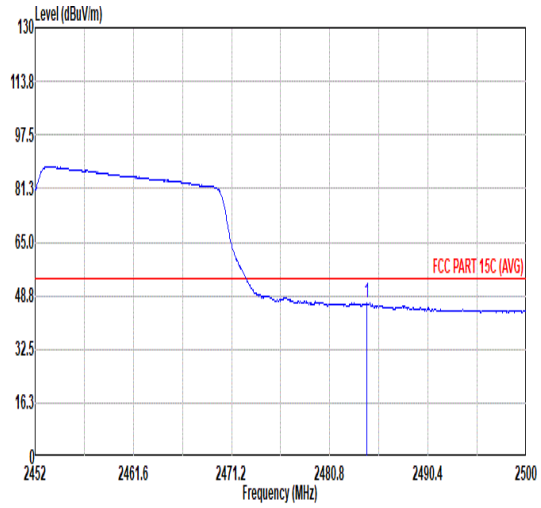
Mode	Modulation	Ch.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Pol.	Peak Avg.	Result	Remark
1	802.11n HT40	9	2484.50	47.83	54.00	-6.17	H	AVERAGE	Pass	Band Edge
	802.11n HT40	9	7356	44.65	74	-29.35	H	Peak	Pass	Harmonic

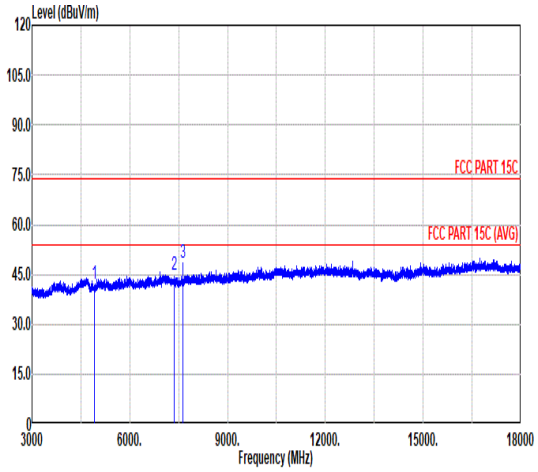
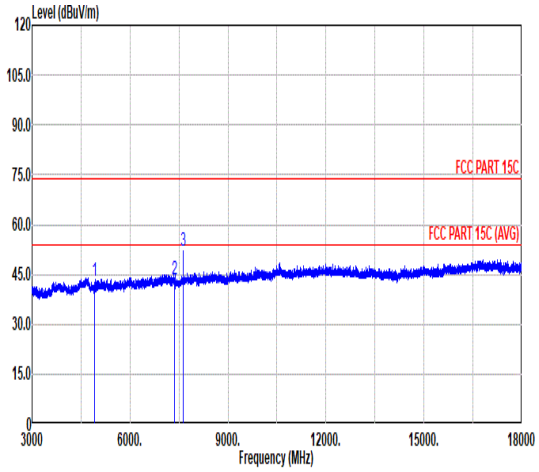
Mode	Modulation	Ch.	Freq. (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Pol.	Result	Remark
1	5G N41 Link DFT-s Max BW=100M,QPSK,1RB1	Middle 518598	7633.5	-42.92	-25	-17.92	V	Pass	Harmonic

Mode	1	
	Band Edge - L	
	2400-2483.5_802.11n HT40_CH9_2452MHz	
ANT	6	
Pol.	Horizontal	Fundamental
Peak	 Freq Level Limit Line Over Limit Read Level Ant Factor Cable Loss Preamp Factor Aux Factor APos TPos Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg 1 2388.10 54.75 74.00 -19.25 42.55 31.78 6.60 32.18 6.00 103 267 PEAK	 Freq Level Limit Line Over Limit Read Level Ant Factor Cable Loss Preamp Factor Aux Factor APos TPos Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg 1 2448.00 100.87 ------ ------ 88.50 31.90 6.68 32.21 6.00 103 267 Peak 2 2584.00 107.49 ------ ------ 94.13 32.73 6.87 32.24 6.00 103 267 Peak
Avg	 Freq Level Limit Line Over Limit Read Level Ant Factor Cable Loss Preamp Factor Aux Factor APos TPos Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg 1 2389.38 44.09 54.00 -9.91 31.89 31.78 6.60 32.18 6.00 103 267 AVERAGE	 Freq Level Limit Line Over Limit Read Level Ant Factor Cable Loss Preamp Factor Aux Factor APos TPos Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg 1 2450.00 91.78 ------ ------ 79.40 31.90 6.69 32.21 6.00 103 267 Average 2 2584.00 104.04 ------ ------ 90.68 32.73 6.87 32.24 6.00 103 267 Average

Mode	1	
	Band Edge - R	
	2400-2483.5_802.11n HT40_CH9_2452MHz	
ANT	6	
Pol.	Horizontal	Fundamental
Peak	 Freq Level Limit Line Over Limit Read Level Ant Factor Cable Loss Preamp Factor Aux Factor APos TPos Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg 1 2483.73 66.31 74.00 -7.69 53.84 31.97 6.73 32.23 6.00 103 267 PEAK	Blank
Avg	 Freq Level Limit Line Over Limit Read Level Ant Factor Cable Loss Preamp Factor Aux Factor APos TPos Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg 1 2484.50 47.83 54.00 -6.17 35.36 31.97 6.73 32.23 6.00 103 267 AVERAGE	Blank

Mode	1	
	Band Edge - L	
	2400-2483.5_802.11n HT40_CH9_2452MHz	
ANT	6	
Pol.	Vertical	Fundamental
Peak	 Freq Level Limit Line Over Limit Read Level Ant Factor Cable Loss Preamp Factor Aux Factor APos TPos Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg 1 2317.10 55.18 74.00 -18.82 43.33 31.57 6.49 32.21 6.00 333 121 PEAK	 Freq Level Limit Line Over Limit Read Level Ant Factor Cable Loss Preamp Factor Aux Factor APos TPos Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg 1 2450.00 97.70 ------ ------ 85.32 31.90 6.69 32.21 6.00 333 121 Peak 2 2584.00 109.71 ------ ------ 96.35 32.73 6.87 32.24 6.00 333 121 Peak
Avg	 Freq Level Limit Line Over Limit Read Level Ant Factor Cable Loss Preamp Factor Aux Factor APos TPos Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg 1 2364.10 43.69 54.00 -10.31 31.59 31.73 6.56 32.19 6.00 333 121 AVERAGE	 Freq Level Limit Line Over Limit Read Level Ant Factor Cable Loss Preamp Factor Aux Factor APos TPos Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg 1 2448.00 88.82 ------ ------ 76.45 31.90 6.68 32.21 6.00 333 121 Average 2 2584.00 106.49 ------ ------ 93.13 32.73 6.87 32.24 6.00 333 121 Average

Mode	1	
	Band Edge - R	
	2400-2483.5_802.11n HT40_CH9_2452MHz	
ANT	6	
Pol.	Vertical	Fundamental
Peak	 Freq Level Limit Line Over Limit Read Level Ant Factor Cable Loss Preamp Factor Aux Factor APos TPos Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg 1 2484.35 63.96 74.00 -10.04 51.49 31.97 6.73 32.23 6.00 333 121 PEAK	Blank
Avg	 Freq Level Limit Line Over Limit Read Level Ant Factor Cable Loss Preamp Factor Aux Factor APos TPos Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg 1 2484.40 46.47 54.00 -7.53 34.00 31.97 6.73 32.23 6.00 333 121 AVERAGE	Blank

Mode	1	
	Harmonic	
	2400-2483.5_802.11n HT40_CH9_2452MHz	
ANT	6	
Pol.	Horizontal	Vertical
Peak Avg	 Freq Level Limit Line Over Limit Read Level Ant Factor Cable Loss Preamp Factor Aux Factor APos TPos Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg 1 4904.00 42.24 74.00 -31.76 59.60 34.29 9.55 61.20 0.00 --- --- PEAK 2 7356.00 44.65 74.00 -29.35 57.98 35.79 11.71 60.83 0.00 --- --- PEAK 3 7633.50 48.67 70.20 -21.53 61.74 35.83 11.99 60.89 0.00 --- --- Peak	 Freq Level Limit Line Over Limit Read Level Ant Factor Cable Loss Preamp Factor Aux Factor APos TPos Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg 1 4904.00 42.86 74.00 -31.14 60.22 34.29 9.55 61.20 0.00 --- --- PEAK 2 7356.00 43.67 74.00 -30.33 57.00 35.79 11.71 60.83 0.00 --- --- PEAK 3 7633.50 52.28 70.20 -17.92 65.35 35.83 11.99 60.89 0.00 --- --- Peak