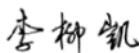


Industrial Internet Innovation Center (Shanghai) Co.,Ltd.

EMC TEST REPORT

PRODUCT	Scout WiFi v1
BRAND	FeatherSnap
MODEL	FSBF001
APPLICANT	Bird Management OpCo LLC.
FCC ID	2BEUB-FSSCOUT1
ISSUE DATE	April 10, 2024
STANDARD(S)	FCC Part 15, Subpart B, ANSI C63.4-2014.

Prepared by: *Li Liukai*



Reviewed by: *Qin Yabin*



Approved by: *Zhang Min*



CAUTION:

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1 Summary of Test Report

1.1 Test Standard (s)

No.	Test Standard(s)	Title
1	FCC Part 15, Subpart B	Radio frequency devices
2	ANSI C63.4	Method of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

NOTE: According to customer requirements, test and report using the latest version of the standard.

1.2 Summary of Test Results

No.	Item(s)	Standard(s)	Verdicts for Single Item	Detailed Results
1	Radiated Emission	15.109(a)	Pass	See section 6.1
2	AC Conducted Emission	15.107(a)	N/A (See Note 2)	See section 6.2

Note 1:

The FSBF001, manufactured by Bird Management OpCo LLC. is a new product for testing. Industrial Internet Innovation Center (Shanghai) Co., Ltd. only performed test cases which identified with Pass/Fail/Inc result in section 1.3.

Industrial Internet Innovation Center (Shanghai) Co., Ltd. has verified that the compliance of the tested device specified in section 4 of this test report is successfully evaluated according to the procedure and test methods as defined in type certification requirement listed in section 1 of this test report.

Note 2:

Because the EUT is battery powered or charged by solar energy, adapter-related tests cannot be performed. Therefore, Verdicts for Single Item is N/A.

2 General Information of The Laboratory

2.1 Testing Laboratory

Lab Name	Industrial Internet Innovation Center (Shanghai) Co.,Ltd.
Address	Building 4, No. 766, Jingang Road, Pudong, Shanghai, China
Telephone	021-68866880
FCC Registration No.	708870
FCC Designation No.	CN1364

2.2 Laboratory Environmental Requirements

Temperature	15°C~35°C
Relative Humidity	25%RH~75%RH
Atmospheric Pressure	86kPa~106kPa
Supply Voltage	N/A

2.3 Project Information

Project Manager	Xu Yuting
Test Date	February 26, 2024 to March 04, 2024

3 General Information of The Customer

3.1 Applicant

Company	Bird Management OpCo LLC.
Address	110 N. Sunset Blvd
Telephone	8122366730

3.2 Manufacturer

Company	Bird Management OpCo LLC.
Address	110 N. Sunset Blvd
Telephone	8122366730

3.3 Factory

Company	N/A
Address	N/A

4 General Information of The Product

4.1 Product Description for Equipment under Test (EUT)

Product	Scout WiFi v1
Model	FSBF001
Date of Receipt	February 21, 2024
EUT ID*	S07aa
SN/IMEI	N/A
Supported Radio Technology and Bands	2.4G WLAN 802.11b,g,n BLE
Hardware Version	P1
Software Version	1.0
NOTE1: EUT ID is the internal identification code of the laboratory. NOTE2: Photographs of EUT are shown in ANNEX A of this test report. NOTE3: Samples in the test report are provided by the customer. The test results are only applicable to the samples received by the laboratory.	

4.2 Description for Auxiliary Equipment (AE)

AE ID*	Description	Model	SN/Remark
BA04	Battery	N/A	N/A
CB01	Turntable Charger	COTO-0515DP	N/A
ED01	Turntable	NT200DFL15	N/A
UD01	Turntable Charger Cable	N/A	N/A
EA03	Bird cage	N/A	Solar panel
AE1	Notebook PC	Thinkpad X470P	N/A
AE2	Micro SD card	Kingston SDC4/4GB 77	N/A
AE3	Heat source	N/A	Hot water
NOTE: *AE ID is the internal identification code of the laboratory. *The AE is provided by the lab.			

5 Test Configuration Information

5.1 Laboratory Environmental Conditions

5.1.1 Permanent Facilities

Semi-anechoic chamber SAC3-1 (9 m*8m*6.2m) & SAC3-2 (9.8m*6.7m*6.7m)	
Shielding effectiveness	0.014MHz ~1MHz, >60dB; 1MHz~1000MHz, >90dB.
Electrical insulation	> 2MΩ
Ground system resistance	< 4Ω
Normalised site attenuation (NSA)	< ± 4 dB, 3m distance, from 30 to 1000 MHz
Site voltage standing-wave ratio (SVSWR)	Between 0 and 6 dB, from 1GHz to 18GHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 6000 MHz

Shielded room	
Shielding effectiveness	0.014MHz~1MHz, >60dB; 1MHz~1000MHz, >90dB.
Electrical insulation	> 2 MΩ
Ground system resistance	< 4Ω

5.2 Decision of final test mode

The EUT was tested in conjunction with the accessories in Section 4.2. We tested all of the following test modes and selected the worst mode from the test results and recorded them in the report.

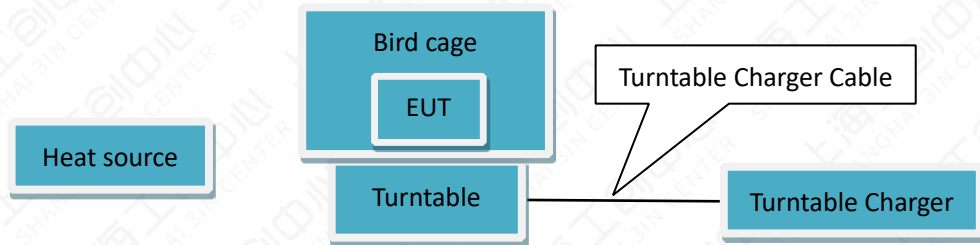
The test configuration modes are as the following:

Test Item	Test setup and operating modes
Radiated emission	30MHz-18GHz frequency range: Mode 1: Working mode+ BA04+ CB01+ ED01+ UD01+ EA03+ AE2+ AE3 Mode 2: WLAN mode+ BA04+ EA03+ AE1 Mode 3: BLE mode+ BA04+ EA03+ AE1
Note: The worst case of radiated emission for 30MHz-1GHz is Mode 1 and for 1GHz -18GHz is Mode 1.	

5.3 EUT System Operation

1. Connect the EUT with AE.
2. Setup the EUT according to the standard.
3. Start testing and monitoring the function.
4. WLAN/BLE mode: The EUT connects to a PC through a WLAN or BT. The software on the PC monitors the connection status of the EUT.
5. Working mode: A heat source is placed in front of the EUT, and the EUT rotates on the turntable. When the EUT sweeps the heat source, a photo is automatically taken and stored in the SD card to simulate the actual working state of the EUT.

5.4 EUT Connection Diagram of Test System



<Figure 5.5-1> Mode 1



<Figure 5.5-2> Mode 2,3

5.5 Test Equipment Utilized

No.	Name	Model	S/N	SW Version	HW Version	Manuf acturer	Cal. Date	Cal. Interval
1	Test Receiver	ESR7	10239 9	1.4	00	R&S	2023-06-23	1 year
2	Test Receiver	FSW43	10194 3	1.12	00	R&S	2023-08-31	1 year
3	Trilog Antenna	VULB9162	00426	N/A	N/A	Schwarzbeck	2023-07-18	1 year
4	Double Ridged Guide Antenna	ETS-3117	00135 885	N/A	N/A	ETS	2023-03-23	2 years
5	EMI Test Software	EMC32 V10.60.20	N/A	N/A	N/A	R&S	N/A	N/A
6	Antenna Tower	TPMDC-LF	N/A	N/A	N/A	Top Precision	N/A	N/A

No.	Name	Model	S/N	SW Version	HW Version	Manufacturer	Cal. Date	Cal. Interval
7	Antenna Tower	TPMDC-HF	N/A	N/A	N/A	Top Precision	N/A	N/A

5.6 Measurement Uncertainty

Item (s)	Uncertainty
Radiated Emission 30MHz-1000MHz	4.86 dB
Radiated Emission 1000MHz-18000MHz	5.58 dB
Conducted Emission	3.30 dB

Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

6 Test Results

6.1 Radiated Emission

6.1.1 Method of Measurement

a. For 30MHz -1000MHz, the EUT was placed on the top of a rotating 0.8m table above the ground at a semi-anechoic chamber. The distance between the EUT and the received antenna was 3 meters. The table was rotated 360 degree and the received antenna mounted on a variable-height antenna tower was varied from 1m to 4m to find the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna were set during the measurement.

b. For 1000MHz -18000MHz, the EUT was placed on the top of a 0.8m table above the ground at a 3m fully anechoic chamber. The maximal emission value was acquired by adjusting the antenna height, The table was rotated 360 degrees to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna were set during the measurement

6.1.2 EUT Connection Diagram of Test System

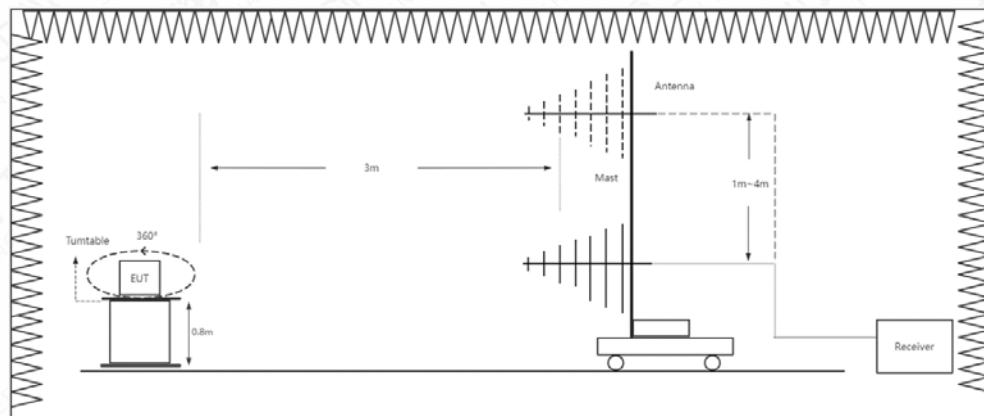


Figure 6.1.2-1 RE 30MHz-1GHz Connection Diagram

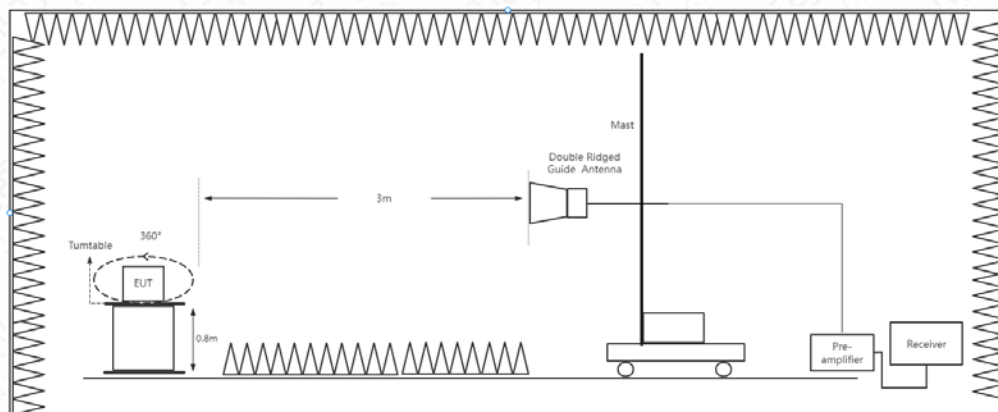


Figure 6.1.2-2 RE Above 1GHz Connection Diagram

6.1.3 Test Condition

Frequency Range (MHz)	RBW/VBW	Sweep Time (s)
30-1000	120kHz/300kHz	AUTO
1000-18000	1MHz/3MHz	AUTO

6.1.4 Limit/Criterion

Frequency Range (MHz)	Quasi-Peak (dB μ V/m)	Peak (dB μ V/m)	Average (dB μ V/m)
30-88	40	N/A	N/A
88-216	43.5	N/A	N/A
216-960	46	N/A	N/A
Above 960	54	N/A	N/A
Above 1000	N/A	74	54

6.1.5 Test environmental conditions

Temperature	16.9°C
Relative Humidity	40.5%RH
Atmospheric Pressure	102.9kPa

6.1.6 Test Results

Mode	Frequency (MHz)	Test Results	Verdicts
Mode 1: Working mode+ BA04+ CB01+ ED01+ UD01+ EA03+ AE2+ AE3	30-1000	See Annex A.1-1	Pass
Mode 1: Working mode+ BA04+ CB01+ ED01+ UD01+ EA03+ AE2+ AE3	1000-18000	See Annex A.1-2 & A.1-3	Pass

NOTE Abbreviations used in this clause: Pass—P; Fail—F; Not applicable—N/A

6.2 Conducted Emission

6.2.1 Method of Measurement

The EUT was placed on a 0.8m height table with EUT being connected to the power mains through a line impedance stabilization network (LISN). Both lines of the power mains connected to the EUT were checked for maximum conducted interference. The frequency range from 150 kHz to 30 MHz was searched.

6.2.2 EUT Connection Diagram of Test System

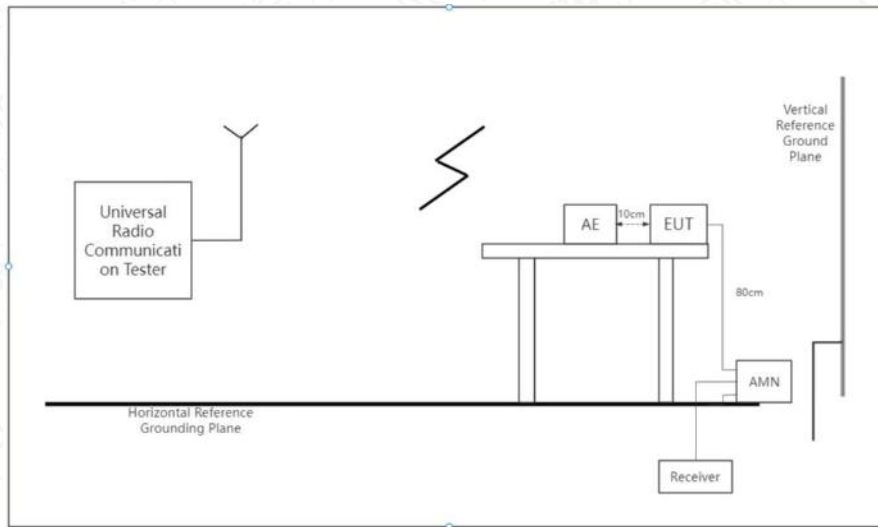


Figure 6.2.2-1 CE Connection Diagram

6.2.3 Test Condition

Test Condition in Charging Mode

Voltage (V)	Frequency (Hz)	RBW	Sweep Time (s)
120	60	9 kHz	AUTO

6.2.4 Limit

Frequency Range (MHz)	Conducted Limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency

6.2.5 Testing environmental conditions

Temperature	N/A
Relative Humidity	N/A
Atmospheric Pressure	N/A

6.2.6 Test Results

Because the EUT is battery powered or charged by solar energy, adapter-related tests cannot be performed.

Therefore, this test item is not applicable.

Annex A: Measurement Data

A.1 Radiated Emission

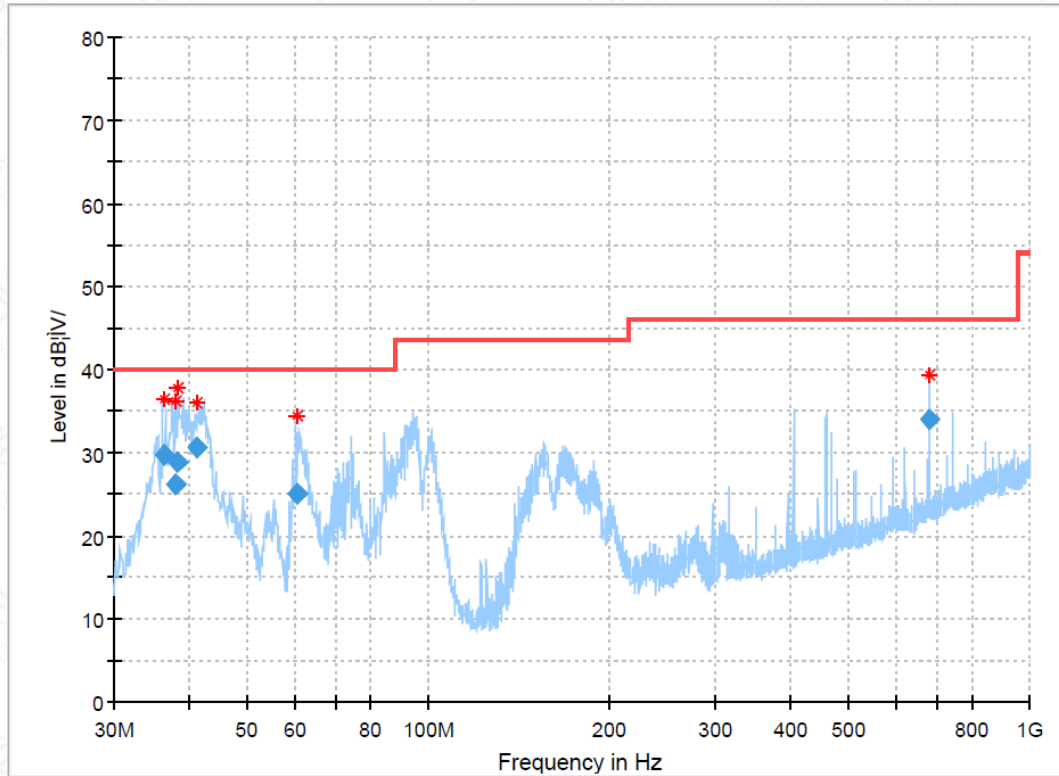


Figure A.1-1 Mode 1 (30M-1GHz)

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
36.445800	29.71	40.00	10.29	100.0	V	253.0	-14.6
38.087520	26.23	40.00	13.77	200.0	V	0.0	-13.9
38.245720	28.83	40.00	11.17	100.0	V	10.0	-13.8
41.330720	30.62	40.00	9.38	100.0	V	115.0	-12.6
60.308120	24.97	40.00	15.03	100.0	V	106.0	-12.8
678.854520	33.88	46.00	12.12	100.0	H	98.0	-1.6

Note:

1. Horizontal and vertical polarity is all have been tested, the result of them is synthesized in the above data diagram.

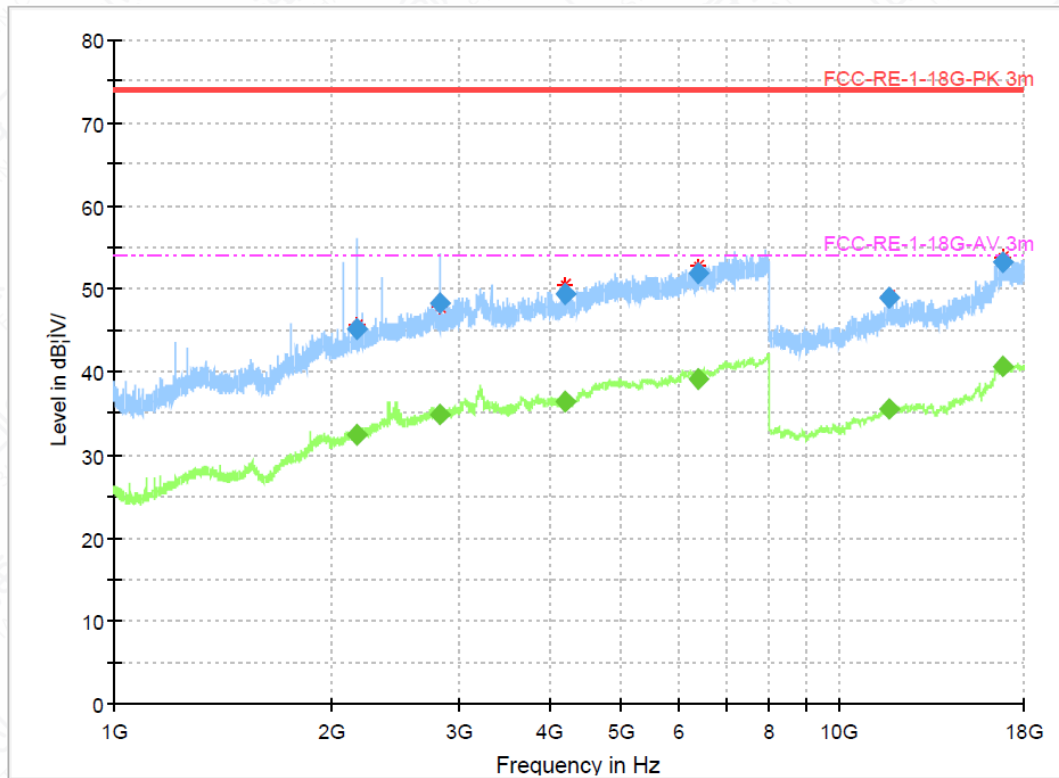


Figure A.1-2 Mode 1 (1GHz-18GHz)-H

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2158.081250	---	32.35	54.00	21.65	115.0	H	0.0	7.2
2158.081250	45.21	---	74.00	28.79	115.0	H	0.0	7.2
2822.190000	---	34.91	54.00	19.09	115.0	H	0.0	10.5
2822.190000	48.35	---	74.00	25.65	115.0	H	0.0	10.5
4195.106250	---	36.46	54.00	17.54	115.0	H	110.0	13.5
4195.106250	49.30	---	74.00	24.70	115.0	H	110.0	13.5
6375.278750	---	39.21	54.00	14.79	215.0	H	1.0	18.1
6375.278750	51.84	---	74.00	22.16	215.0	H	1.0	18.1
11732.452500	---	35.62	54.00	18.38	187.0	H	300.0	13.5
11732.452500	48.85	---	74.00	25.15	187.0	H	300.0	13.5
16842.170000	---	40.59	54.00	13.41	206.0	H	359.0	21.9
16842.170000	53.12	---	74.00	20.88	206.0	H	359.0	21.9

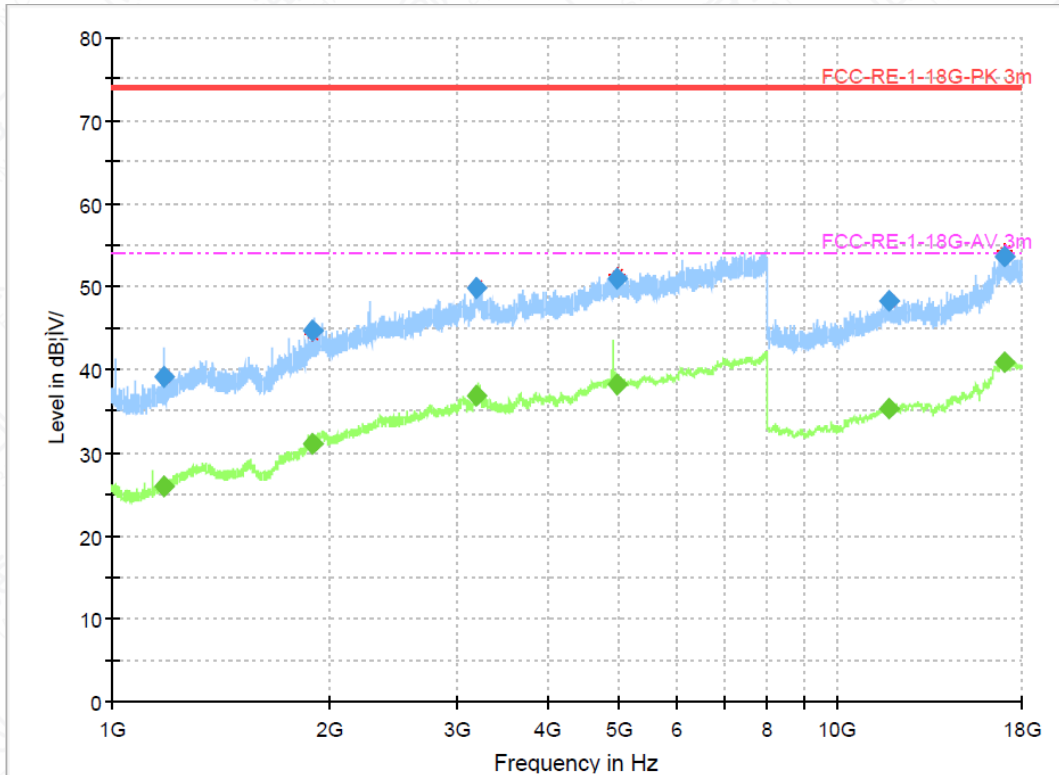


Figure A.1-3 Mode 1 (1GHz-18GHz)-V

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1181.145000	---	26.01	54.00	27.99	115.0	V	25.0	0.3
1181.145000	39.06	---	74.00	34.94	115.0	V	25.0	0.3
1893.450000	---	31.09	54.00	22.91	215.0	V	3.0	6.4
1893.450000	44.65	---	74.00	29.35	215.0	V	3.0	6.4
3181.891250	---	36.83	54.00	17.17	115.0	V	40.0	13.6
3181.891250	49.93	---	74.00	24.07	115.0	V	40.0	13.6
4964.268750	---	38.24	54.00	15.76	215.0	V	42.0	15.7
4964.268750	51.05	---	74.00	22.95	215.0	V	42.0	15.7
11793.760000	---	35.32	54.00	18.68	111.0	V	276.0	13.5
11793.760000	48.31	---	74.00	25.69	111.0	V	276.0	13.5
17000.781250	---	40.82	54.00	13.18	115.0	V	298.0	21.9
17000.781250	53.64	---	74.00	20.36	115.0	V	298.0	21.9

Annex B: Revised History

Version	Revised Content
030	Initial
V1	Update section 1.2 & 5.5 & 6.2.

Annex C: Accreditation Certificate



The certificate features a decorative orange and blue wavy vertical bar on the left side. At the top center, it displays the logos for ILAC-MRA and A2LA. Below the logos, the text reads "Accredited Laboratory" in a large, bold, blue font. Underneath, it states "A2LA has accredited" in a smaller font, followed by "INDUSTRIAL INTERNET INNOVATION CENTER (SHANGHAI) CO., LTD." in a large, bold, blue font. Below the company name, it says "Shanghai, People's Republic of China" in a smaller font. Further down, it specifies "for technical competence in the field of Electrical Testing" in a bold, blue font. A paragraph of text explains that the laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. To the left of this paragraph is a gold seal with the text "CORPORATE SEAL 1978" and "A2LA". To the right of the paragraph is a signature and the text "Presented this 20th day of September 2023." Below the signature, it identifies "Mr. Trace McInturff, Vice President, Accreditation Services" and provides the "Certificate Number 3682.01" and "Valid to February 28, 2025". At the bottom of the certificate, a note states "For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation."