FCC RF Test Report

APPLICANT	:	Barking Labs Corp.
EQUIPMENT	:	Series 3 Base
BRAND NAME	:	Fi
MODEL NAME	:	FB3
FCC ID	:	2ARXN-FB3
STANDARD	:	FCC Part 15 Subpart C §15.209
CLASSIFICATION	:	(DCD) Part 15 Low Power Transmitter Below 1705 kHz
TEST DATE(S)	:	Oct. 19, 2022 ~ Oct. 23, 2022

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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History of this test report

Report No.	Version	Description	Issued Date
FR292012C	01	Initial issue of report	Oct. 28, 2022

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	2.1049	20dB Bandwidth	Reporting Only	-
3.1	2.1049	99% Occupied Bandwidth	Reporting Only	-
3.2	15.209	Radiated Emission	Pass	Under limit 6.93 dB at 48.430 MHz
3.3	15.207	AC Conducted Emission	Pass	Under limit 10.81 dB at 0.494 MHz
3.4	15.203	Antenna Requirements	Pass	-

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

1 General Description

1.1 Applicant

Barking Labs Corp.
419 Lafayette St., Floor 2, New York, NY 10003

1.2 Manufacturer

Barking Labs Corp.
419 Lafayette St., Floor 2, New York, NY 10003

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Series 3 Base
Brand Name	Fi
Model Name	FB3
FCC ID	2ARXN-FB3
HW Version	1
SW Version	3.0.36
WPT Frequency Range	110 ~205 kHz
WPT Type of Modulation	ASK
WPT Antenna Type	Loop Antenna
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 Test Location

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 FAX : +86-512-57900958		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	CO01-KS 03CH02-KS TH01-KS	CN1257	314309

1.6 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH02-KS	AUDIX	E3	6.2009-8-24a
2.	CO01-KS	AUDIX	E3	6.2009-8-24

1.7 Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart C §15.209, §15.207
- FCC KDB 414788 D01 Radiated Test Site v01r01.
- ANSI C63.10-2013

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

2 Test Configuration of Equipment Under Test

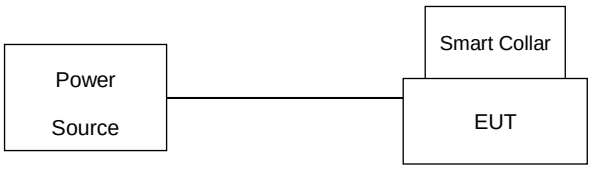
2.1 Test Mode

a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 1000 MHz).

b. AC power line Conducted Emission was tested under maximum output power.

Test Items	Function Type
AC Conducted Emission	Mode 1: WPC(Smart Collar Charging from EUT with Adapter)
RF Conducted / Radiated Emission	Mode 1: WPC(Smart Collar Charging from EUT with Adapter)
Remark: The tests were performed with Adapter and USB Cable.	

2.2 Connection Diagram of Test System



This example is connection diagram of EUT test configurations.

For detail, please refer to test mode configuration and setup photographs for each test item.

2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Series 3 Smart Collar	Fi	FC3	2ARXN-FC3	N/A	N/A

3 Test Result

3.1 20dB and 99% Occupied Bandwidth Measurement

3.1.1 Limit of 20dB and 99% Occupied Bandwidth

Reporting only

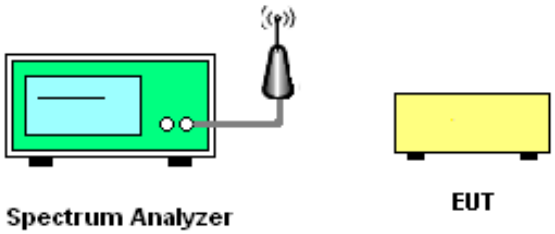
3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

3.1.3 Test Procedures

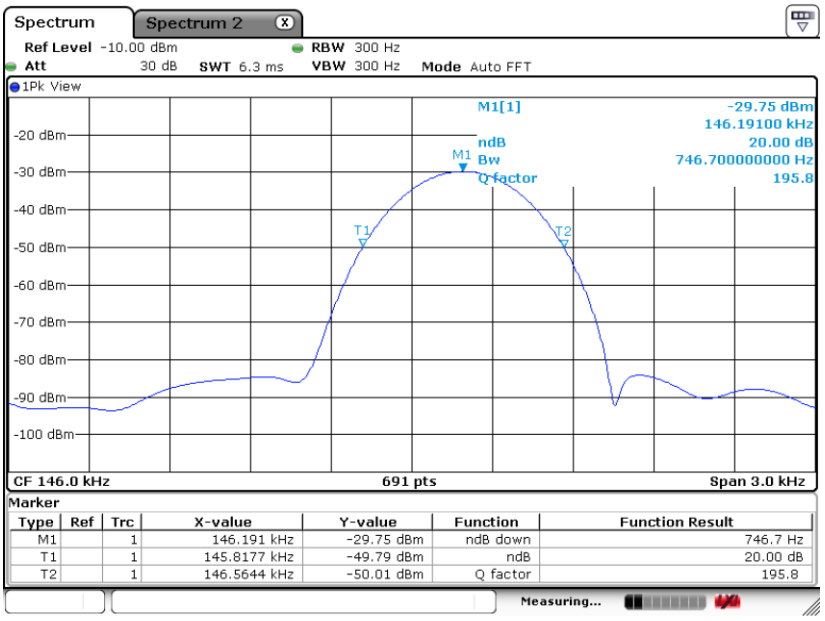
1. The 20dB bandwidth is measured with a spectrum analyzer connected via a receiver antenna placed near the EUT while wirelessly charging a charging board.
2. Use the following spectrum analyzer settings for 99 % Bandwidth measurement.
3. Measure and record the results in the test report.

3.1.4 Test Setup

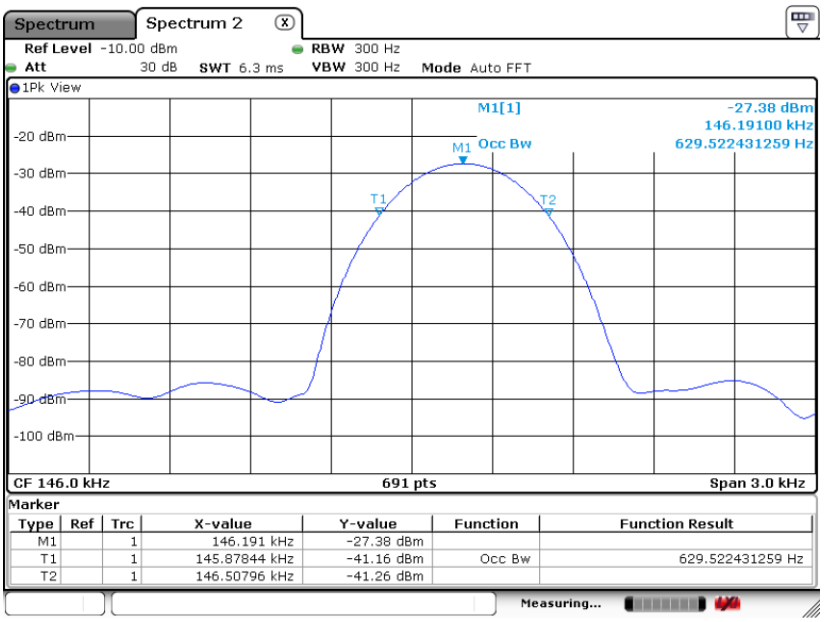


3.1.5 Test Result of 20dB and 99% Bandwidth

20 dB Bandwidth Plot



99% Occupied Bandwidth Plot



Remark: Because the measured signal is CW adjusting the RBW per C63.10 would not be practical since measured bandwidth will always follow the RBW and the result will be approximately twice the RBW.

3.2 Radiated Emission Measurement

3.2.1 Limit of Radiated Emission

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

Receiver Parameter	Setting
Frequency Range: 9kHz~150kHz	RBW 200Hz for QP
Frequency Range: 150kHz~30MHz	RBW 9kHz for QP
Frequency Range: 30MHz~1000MHz	RBW 120kHz for Peak

Note: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz. Radiated emission limits in these two bands are based on measurements employing an average detector.

For radiated emissions from 9kHz to 1GHz test distance is 3m

For 9kHz ~ 30MHz

1. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
2. Distance extrapolation factor = 40 log (specific distance / test distance) (dB);
3. specific line (dBμV/m) = 20 log Emission level (μV/m)
4. Limit line = specific limits (dBμV/m) + distance extrapolation factor.

3.2.2 Measuring Instruments

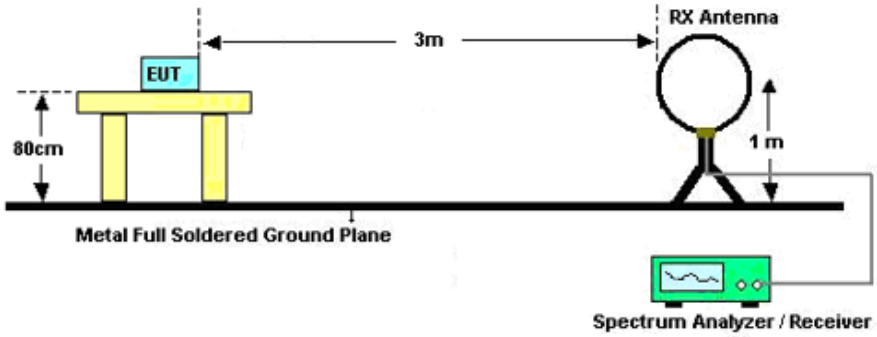
See list of measuring equipment of this test report.

3.2.3 Measuring Instrument Setting

Follow the guidelines in ANSI C63.10-2013 with respect to maximizing the emission by rotating the EUT, measuring the emission for three EUT orthogonal planes, and adjusting the measurement antenna height and polarization. A pre-amp and a high pass filter are used for this test in order to get the good signal level.

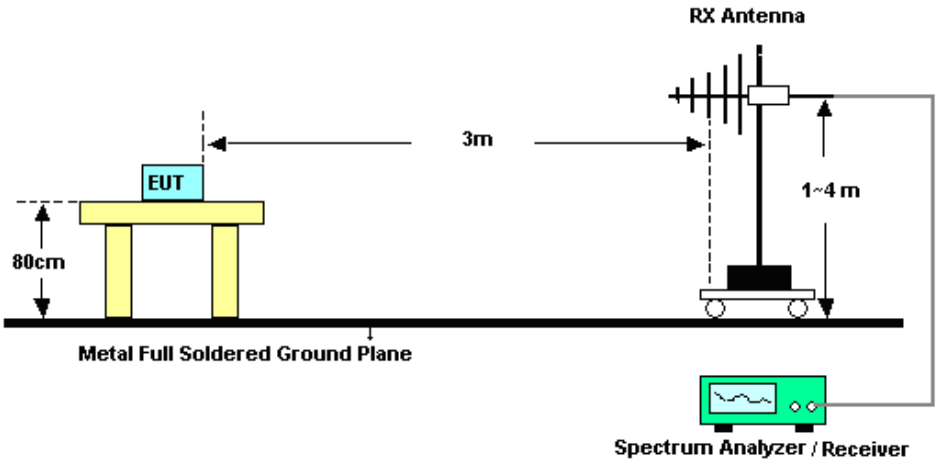
3.2.4 Test Setup of Radiated Emission

For radiated emissions below 30MHz



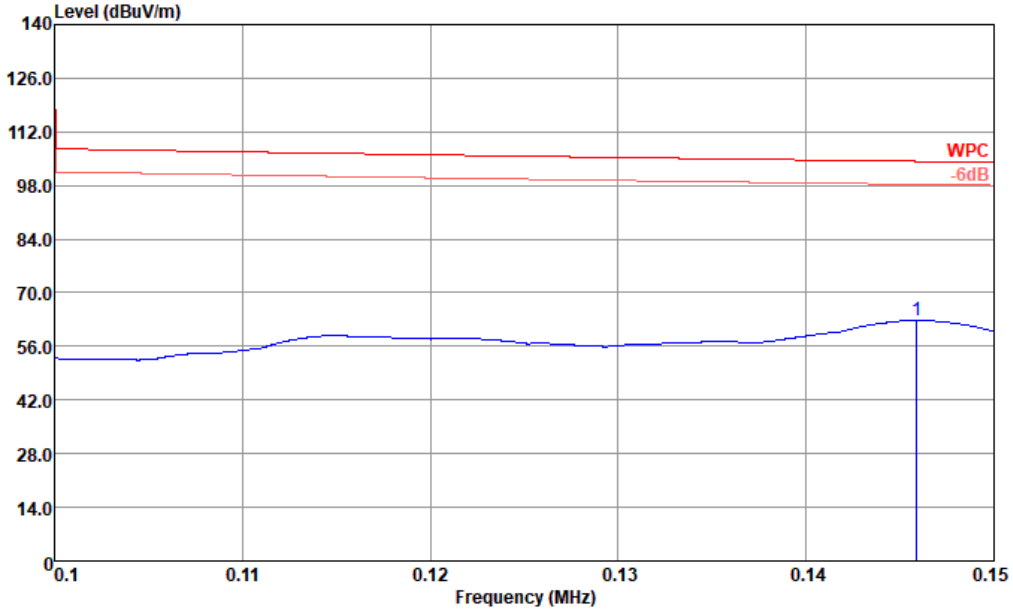
Note: There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.

For radiated emissions above 30MHz



3.2.5 Test Result of Radiated Emission

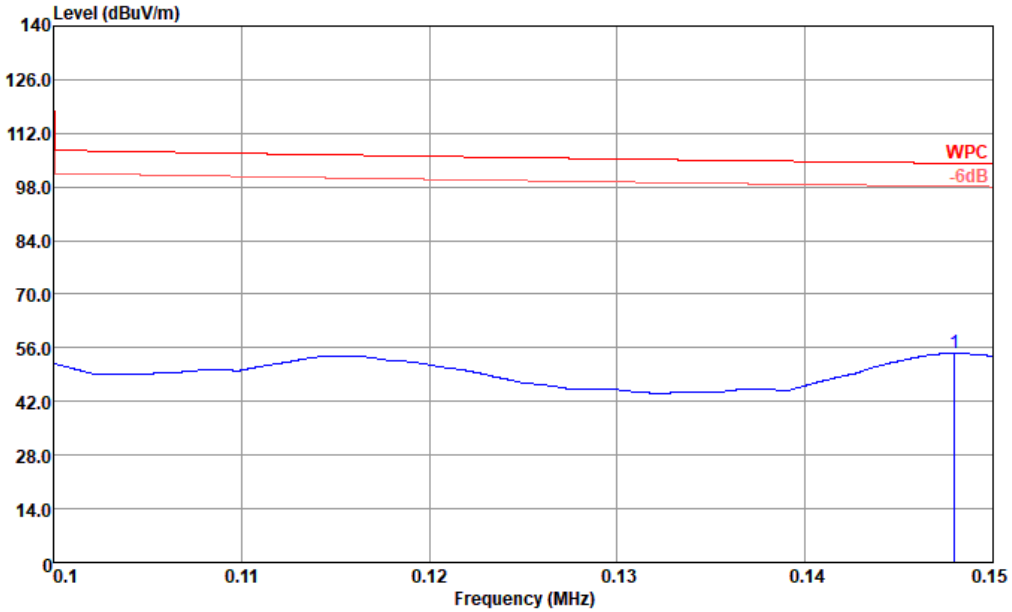
Fundamental Emission			
Test Engineer :	Feng Wang	**Temperature :**	21~22°C
Polarization :	Horizontal	**Relative Humidity :**	41~42%



Site : 03CH02-KS
Condition : WPC 3m NFC-ANTENNA HORIZONTAL

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1	0.1459	62.83	-41.48	104.31	42.40	20.34	0.09	---	---	Peak

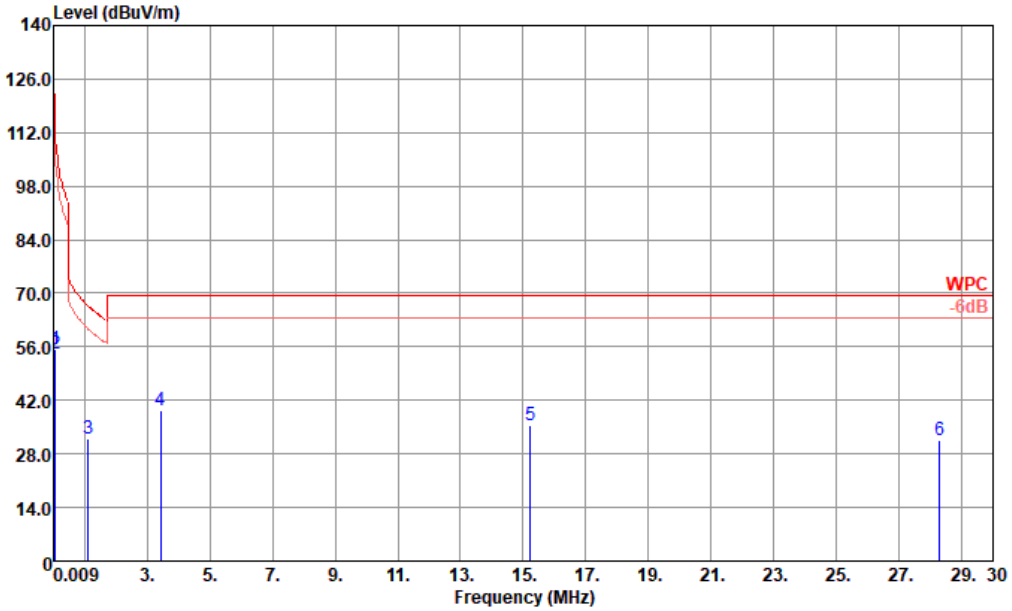
Fundamental Emission			
Test Engineer :	Feng Wang	**Temperature :**	21~22°C
Polarization :	Vertical	**Relative Humidity :**	41~42%



Site : 03CH02-KS
Condition : WPC 3m NFC-ANTENNA VERTICAL

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1	0.1480	54.57	-49.62	104.19	34.14	20.34	0.09	---	---	Peak

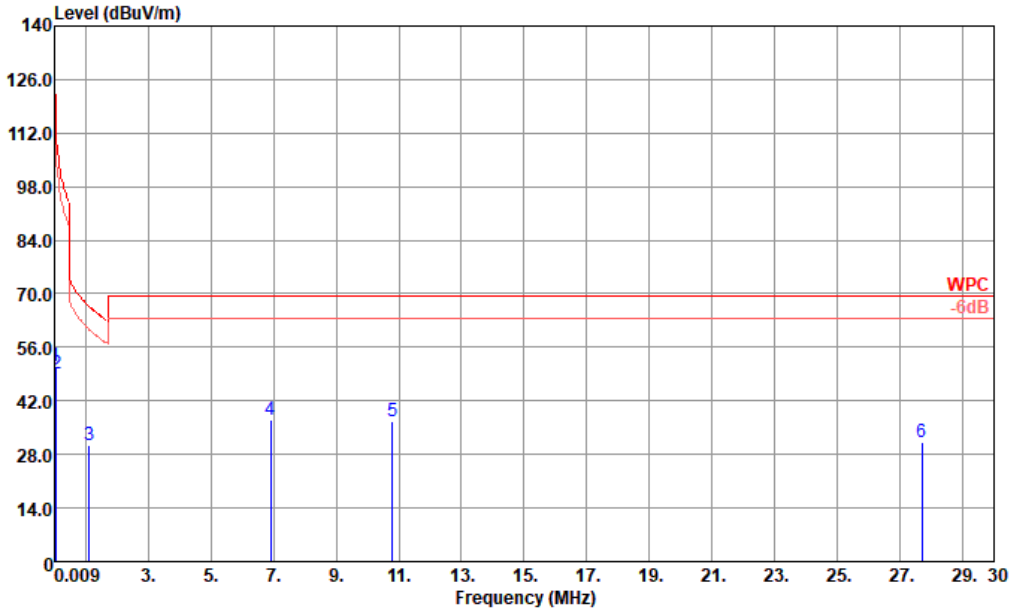
9kHz ~ 30MHz			
Test Engineer :	Feng Wang	**Temperature :**	21~22°C
Polarization :	Horizontal	**Relative Humidity :**	41~42%



Site : 03CH02-KS
Condition : WPC 3m NFC-ANTENNA HORIZONTAL

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1	0.0584	55.23	-57.04	112.27	34.54	20.60	0.09	---	---	Average
2	0.0779	54.36	-55.40	109.76	33.67	20.60	0.09	---	---	Average
3	1.1102	32.12	-34.56	66.68	11.21	20.81	0.10	---	---	QP
4	3.4400	39.52	-30.02	69.54	18.86	20.54	0.12	---	---	QP
5	15.2420	35.33	-34.21	69.54	15.35	19.68	0.30	---	---	QP
6	28.2900	31.62	-37.92	69.54	11.60	19.50	0.52	---	---	QP

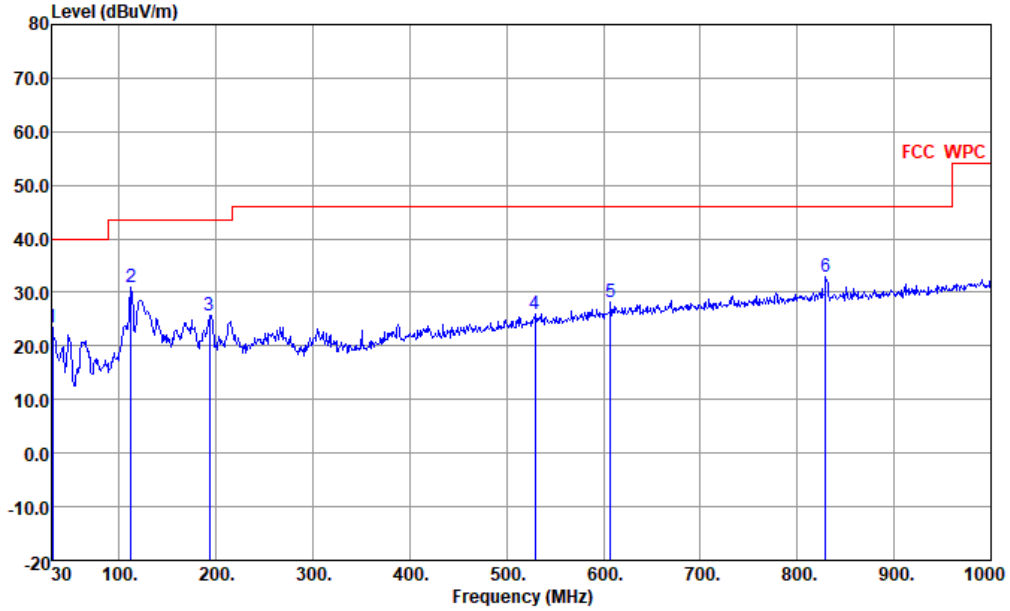
9kHz ~ 30MHz			
Test Engineer :	Feng Wang	**Temperature :**	21~22°C
Polarization :	Vertical	**Relative Humidity :**	41~42%



Site : 03CH02-KS
Condition : WPC 3m NFC-ANTENNA VERTICAL

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1	0.0475	50.98	-63.08	114.06	29.89	21.00	0.09	---	---	Average
2	0.0779	49.13	-60.63	109.76	28.44	20.60	0.09	---	---	Average
3	1.1102	30.39	-36.29	66.68	9.48	20.81	0.10	---	---	QP
4	6.9140	36.95	-32.59	69.54	16.67	20.10	0.18	---	---	QP
5	10.7880	36.65	-32.89	69.54	16.14	20.26	0.25	---	---	QP
6	27.7050	31.21	-38.33	69.54	11.27	19.42	0.52	---	---	QP

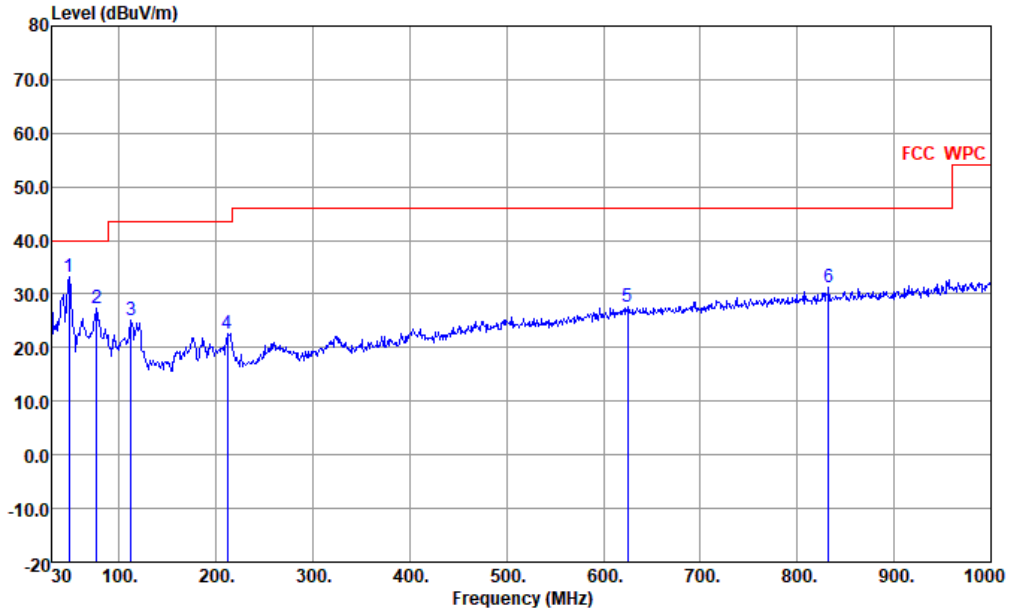
30MHz ~ 1GHz			
Test Engineer :	Feng Wang	**Temperature :**	21~22°C
Polarization :	Horizontal	**Relative Humidity :**	41~42%



Site : 03CH02-KS
Condition : FCC WPC 3m LF 49921 HORIZONTAL

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	30.97	23.37	-16.63	40.00	29.92	25.09	0.76	32.40	---	---	Peak
2	112.45	31.02	-12.48	43.50	44.88	16.97	1.57	32.40	---	---	Peak
3	192.96	25.70	-17.80	43.50	41.03	15.03	2.04	32.40	---	---	Peak
4	529.55	26.02	-19.98	46.00	30.58	24.67	3.17	32.40	---	---	Peak
5	607.15	28.19	-17.81	46.00	30.71	26.23	3.65	32.40	---	---	Peak
6	829.28	32.79	-13.21	46.00	32.06	28.46	4.25	31.98	---	---	Peak

30MHz ~ 1GHz			
Test Engineer :	Feng Wang	**Temperature :**	21~22°C
Polarization :	Vertical	**Relative Humidity :**	41~42%



Site : 03CH02-KS
Condition : FCC WPC 3m LF 49921 VERTICAL

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	48.43	33.07	-6.93	40.00	49.04	15.45	0.98	32.40	---	---	Peak
2	76.56	27.33	-12.67	40.00	44.20	14.30	1.23	32.40	---	---	Peak
3	112.45	25.14	-18.36	43.50	39.00	16.97	1.57	32.40	---	---	Peak
4	211.39	22.62	-20.88	43.50	37.72	15.21	2.09	32.40	---	---	Peak
5	624.61	27.52	-18.48	46.00	29.92	26.32	3.68	32.40	---	---	Peak
6	832.19	31.22	-14.78	46.00	30.45	28.49	4.25	31.97	---	---	Peak

3.3 AC Conducted Emission Measurement

3.3.1 Limits of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of Emission (MHz)	Conducted Limit (dBμV)	
	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.

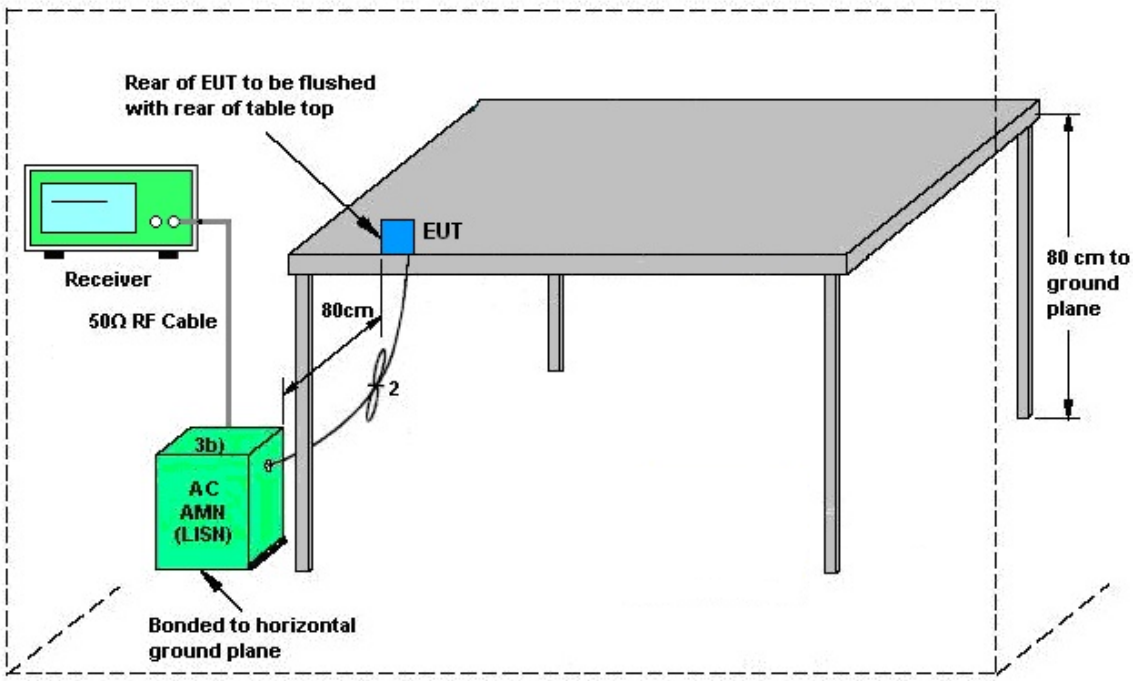
3.3.2 Measuring Instruments

See list of measuring equipment of this test report.

3.3.3 Test Procedure

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

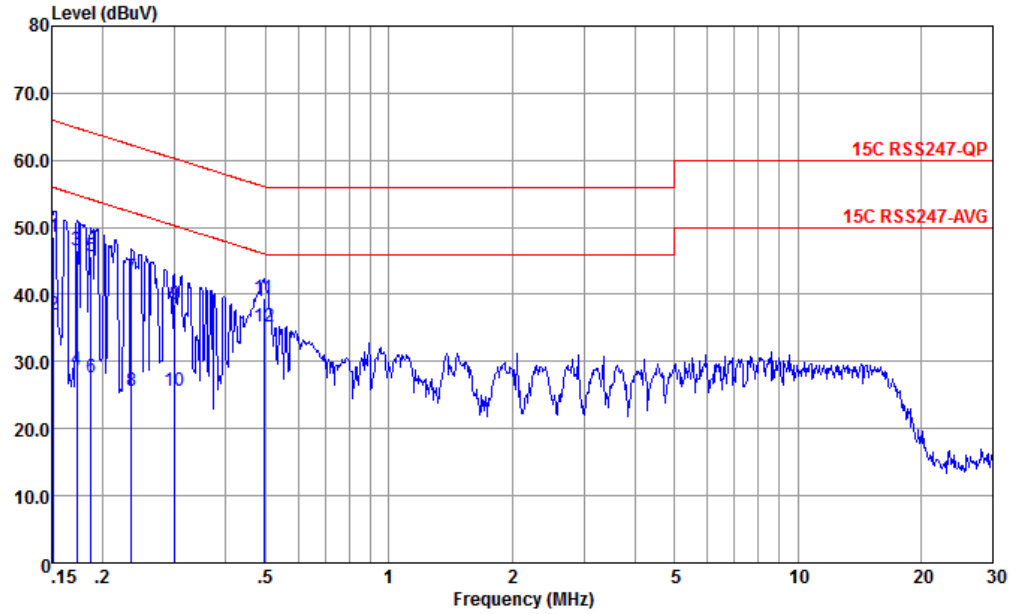
3.3.4 Test Setup



AMN = Artificial mains network (LISN)
AE = Associated equipment
EUT = Equipment under test
ISN = Impedance stabilization network

3.3.5 Test Result of AC Conducted Emission

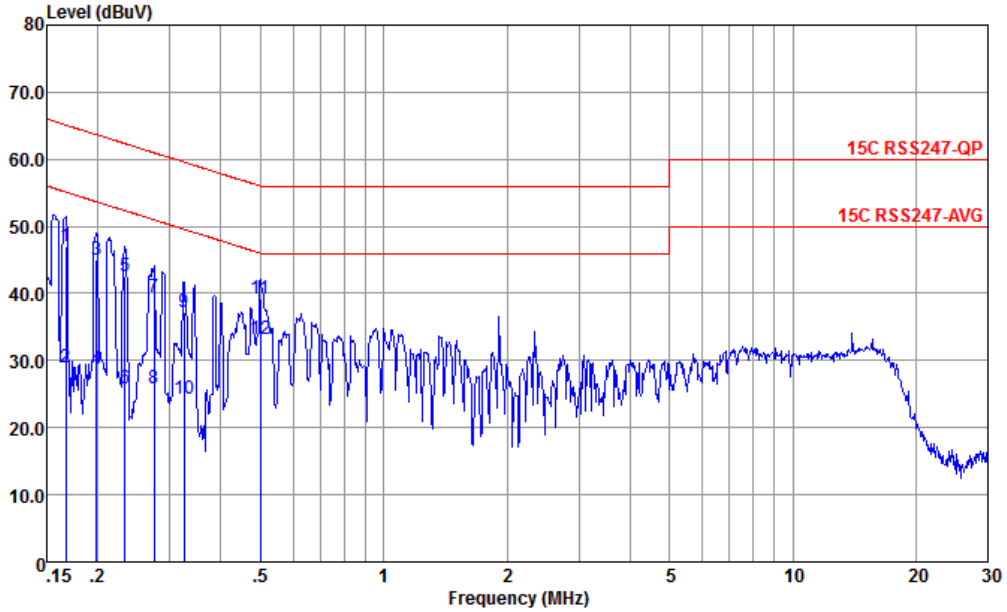
Test Engineer :	Amos Zhang	**Temperature :**	25.3~26.2℃
		Relative Humidity :	38~40%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : CO01-KS
Condition : 15C RSS247-QP LISN-060105-LINE LINE

		Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
		MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1		0.152	48.60	-17.31	65.91	38.10	0.07	10.43	QP
2		0.152	37.10	-18.81	55.91	26.60	0.07	10.43	Average
3		0.173	46.67	-18.14	64.81	36.19	0.05	10.43	QP
4		0.173	28.67	-26.14	54.81	18.19	0.05	10.43	Average
5		0.187	45.65	-18.50	64.15	35.20	0.03	10.42	QP
6		0.187	27.65	-26.50	54.15	17.20	0.03	10.42	Average
7		0.235	42.63	-19.63	62.26	32.20	0.04	10.39	QP
8		0.235	25.63	-26.63	52.26	15.20	0.04	10.39	Average
9		0.300	38.61	-21.63	60.24	28.20	0.06	10.35	QP
10		0.300	25.71	-24.53	50.24	15.30	0.06	10.35	Average
11		0.494	39.39	-16.71	56.10	29.21	-0.03	10.21	QP
12	*	0.494	35.29	-10.81	46.10	25.11	-0.03	10.21	Average

Test Engineer :	Amos Zhang	**Temperature :**	25.3~26.2℃
		Relative Humidity :	38~40%
Test Voltage :	120Vac / 60Hz	**Phase :**	Neutral
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : CO01-KS
Condition : 15C RSS247-QP LISN-060105-NEUTRAL NEUTRAL

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.167	47.06	-18.06	65.12	36.59	0.04	10.43	QP
2	0.167	29.06	-26.06	55.12	18.59	0.04	10.43	Average
3	0.199	45.07	-18.60	63.67	34.60	0.05	10.42	QP
4	0.199	28.77	-24.90	53.67	18.30	0.05	10.42	Average
5	0.233	42.61	-19.74	62.35	32.21	0.01	10.39	QP
6	0.233	25.91	-26.44	52.35	15.51	0.01	10.39	Average
7	0.274	39.54	-21.44	60.98	29.20	-0.03	10.37	QP
8	0.274	25.84	-25.14	50.98	15.50	-0.03	10.37	Average
9	0.325	37.18	-22.39	59.57	26.89	-0.05	10.34	QP
10	0.325	24.38	-25.19	49.57	14.09	-0.05	10.34	Average
11	0.499	39.33	-16.68	56.01	29.20	-0.08	10.21	QP
12 *	0.499	33.23	-12.78	46.01	23.10	-0.08	10.21	Average

Note:

1. Level(dBμV) = Read Level(dBμV) + LISN Factor(dB) + Cable Loss(dB)
2. Over Limit(dB) = Level(dBμV) – Limit Line(dBμV)

3.4 Antenna Requirements

3.4.1 Standard Applicable

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited.

The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the rule.

3.4.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV30	101338	10Hz~30GHz	Apr. 12, 2022	Oct. 19, 2022	Apr. 11, 2023	Conducted (TH01-KS)
EMI Test Receiver	R&S	ESR7	101403	9kHz~7GHz;Max 30dBm	Oct. 12, 2022	Oct. 23, 2022	Oct. 11, 2023	Radiation (03CH02-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 16, 2022	Oct. 23, 2022	Oct. 15, 2023	Radiation (03CH02-KS)
Bilog Antenna	TeseQ	CBL6111D	44483	30MHz-1GHz	Dec. 22, 2021	Oct. 23, 2022	Dec. 21, 2022	Radiation (03CH02-KS)
Amplifier	SONOMA	310N	413741	9KHz-1GHz	Jan. 05, 2022	Oct. 23, 2022	Jan. 04, 2023	Radiation (03CH02-KS)
AC Power Source	Chroma	61601	616010002473	N/A	NCR	Oct. 23, 2022	NCR	Radiation (03CH02-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	Oct. 23, 2022	NCR	Radiation (03CH02-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	Oct. 23, 2022	NCR	Radiation (03CH02-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz;	May 24, 2022	Oct. 22, 2022	May 23, 2023	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060103	9kHz~30MHz	Oct. 13, 2022	Oct. 22, 2022	Oct. 12, 2023	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060105	9kHz~30MHz	May 24, 2022	Oct. 22, 2022	May 23, 2023	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Oct. 13, 2022	Oct. 22, 2022	Oct. 12, 2023	Conduction (CO01-KS)

NCR: No Calibration Required

5 Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.78dB**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.0dB**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.0dB**

---------- THE END ----------