RF Exposure Report

FCC ID:2A3DE-PLAF103S1

Report No.	:	SSP24090246-4E
Applicant	:	Shenzhen Libro Technology Co., Ltd.
Product Name	:	Granary Automatic Pet Feeder-WiFi Control
Model Name	:	PLAF103N
Test Standard	:	FCC CFR 47 PART 1.1307(b)
Date of Issue	:	2024-10-19

Shenzhen CCUT Quality Technology Co., Ltd.
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Test Report Basic Information

Applicant:	Shenzhen Libro Technology Co., Ltd.
Address of Applicant:	12/F,Tower B,GALAXY WORLD,Yabao Road, Longgang District, Shenzhen, China
Manufacturer:	Shenzhen Libro Technology Co., Ltd.
Address of Manufacturer:	12/F,Tower B,GALAXY WORLD,Yabao Road, Longgang District, Shenzhen, China
Product Name:	Granary Automatic Pet Feeder-WiFi Control
Brand Name:	PETLIBRO
Main Model:	PLAF103N
Series Models:	-
Test Standard:	FCC CFR 47 PART 1.1307(b) KDB 447498 D01 v06
Date of Test:	2024-09-22 to 2024-10-19
Test Result:	PASS

Tested By: Coke Huang (Coke Huang)

Reviewed By: Lieber Ouyang (Lieber Ouyang)

Authorized Signatory: Lahm Peng (Lahm Peng)

Shenzhen CCUT Quality Technology Co., Ltd. APPROVED

Note : This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen CCUT Quality Technology Co., Ltd.. All test data presented in this test report is only applicable to presented test sample.

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Revision History

Revision	Issue Date	Description	Revised By
V1.0	2024-10-19	Initial Release	Lahm Peng

1. General Information

1.1 Product Information

Product Name:	Granary Automatic Pet Feeder-WiFi Control
Trade Name:	PETLIBRO
Main Model:	PLAF103N
Series Models:	-
Rated Voltage:	DC 5V by adapter or DC4.5V by LR20 battery
Power Adapter:	Model: TPA-46B050100UU, Input: 100-240V~50/60Hz 0.2A, Output: 5V⎓1000mA
Hardware Version:	V1.0
Software Version:	V1.0
Note 1: The test data is gathered from a production sample, provided by the manufacturer.	

Wireless Specification	
Wireless Standard:	Bluetooth BLE, 802.11b/g/n/a
Operating Frequency:	BLE: 2402MHz ~2480MHz, 2.4GWiFi: 2412 MHz ~2462 MHz 5.2GWiFi: 5180MHz ~5240MHz, 5.8GWiFi: 5745MHz ~5825MHz
RF Output Power:	BLE: 0.96dBm, 2.4GWiFi: 8.11dBm, 5.2GWiFi: 8.67dBm, 5.8GWiFi: 10.31dBm
Antenna Gain:	BLE:3.23dBi, 2.4GWiFi:3.23dBi, 5.2GWiFi:3.04dBi, 5.8GWiFi:3.04dBi
Type of Antenna:	FPCB Antenna
Type of Device:	☐ Portable Device ☒ Mobile Device ☐ Modular Device

1.2 Test Facilities

Laboratory Name:	**Shenzhen CCUT Quality Technology Co., Ltd.** 1F, Building 35, Changxing Technology Industrial Park, Yutang Street, Guangming District, Shenzhen, Guangdong, China
CNAS Laboratory No.:	L18863
A2LA Certificate No.:	6893.01
FCC Registration No:	583813
ISED Registration No.:	CN0164
All measurement facilities used to collect the measurement data are located at 1F, Building 35, Changxing Technology Industrial Park, Yutang Street, Guangming District, Shenzhen, Guangdong, China.	

2. RF Exposure

2.1 Standard and Limit

The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f2)	6
30–300	61.4	0.163	1.0	6
300–1500			f/300	6
1500–100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f2)	30
30–300	27.5	0.073	0.2	30
300–1500			f/1500	30
1500–100,000			1.0	30

f = frequency in MHz

Friis transmission formula: Pd = (Pout*G)/(4*pi*r2)

Where

Pd = power density in mW/cm2, Pout = output power to antenna in mW;

G = gain of antenna in linear scale, Pi = 3.1416;

R = distance between observation point and center of the radiator in cm

Pd id the limit of MPE, 1 mW/cm2. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

2.2 Test Data and Results

For BLE

Mode	Output power to antenna (dBm)	Tune-up Power(dBm)	Max Tune-up Power(dBm)	Output power to antenna (mW)	Power Density at R=20cm (mW/cm2)	Limit (mW/cm2)	Result
GFSK	0.96	0(±1)	1	1.259	0.0005	1.0	PASS

For 2.4GWiFi

Mode	Output power to antenna (dBm)	Tune-up Power(dBm)	Max Tune-up Power(dBm)	Output power to antenna (mW)	Power Density at R=20cm (mW/cm2)	Limit (mW/cm2)	Result
802.11g	8.11	8(±1)	9	7.943	0.0033	1.0	PASS

For 5.2GWiFi

Mode	Output power to antenna (dBm)	Tune-up Power(dBm)	Max Tune-up Power(dBm)	Output power to antenna (mW)	Power Density at R=20cm (mW/cm2)	Limit (mW/cm2)	Result
802.11a	8.67	8(±1)	9	7.943	0.0032	1.0	PASS

For 5.8GWiFi

Mode	Output power to antenna (dBm)	Tune-up Power(dBm)	Max Tune-up Power(dBm)	Output power to antenna (mW)	Power Density at R=20cm (mW/cm2)	Limit (mW/cm2)	Result
802.11a	10.18	10(±1)	11	12.589	0.0050	1.0	PASS

Remark: antenna gain= BLE:3.23dBi, 2.4GWiFi:3.23dBi, 5.2GWiFi:3.04dBi, 5.8GWiFi:3.04dBi

The device cannot transmit with 2.4G WI-FI and 5.2, 5.8G WI-FI simultaneously, can transmit with 2.4G WI-FI ,5.2, 5.8G WI-FI and BLE simultaneously.

Calculations for simultaneously transmit

Mode	Ratios	Result	Limit	Result
BLE	0.0005	0.0038	1	PASS
2.4G Wi-Fi	0.0033			

Mode	Ratios	Result	Limit	Result
BLE	0.0005	0.0037	1	PASS
5.2G Wi-Fi	0.0032			

Mode	Ratios	Result	Limit	Result
BLE	0.0005	0.0055	1	PASS
5.8G Wi-Fi	0.0050			

Ratios = Power Density / Power density Limit

So a SAR test is not required