FCC MPE Evaluation Report

Report No: WD-RF-R-230101-D0

Product Name	**:**	Furbo Mini
Model Name	**:**	Furbo Mini 2
FCC ID	**:**	2AIBV-MINICAM2
Applicant	**:**	Tomofun Co., Ltd.
Received Date	**:**	Dec. 07, 2022
Tested Date	**:**	Apr. 11, 2023 ~ May 10, 2023
Applicable Standard	**:**	47 CFR FCC Part 2.1091 47 CFR FCC Part 1.1310 KDB 447498 D01 OET Bulletin 65 Supplement C

Wendell Industrial Co., Ltd
Wendell EMC & RF Laboratory

Test Report

Issued Date: May 11, 2023

Project No.: 22Q120702

Product Name	Furbo Mini
Trade Name	Furbo
Model Name	Furbo Mini 2
FCC ID	2AIBV-MINICAM2
Applicant	Tomofun Co., Ltd.
Manufacturer 1	Primax Electronics Ltd.
Manufacturer 2	Primax Electronics (Thailand) Co., Ltd.
EUT Rated Voltage	DC 4.75V ~ 5.25V
EUT Test Voltage	AC 120V / 60Hz
EUT Supports Radios Application	WLAN 802.11b/g WLAN 802.11n (HT20/HT40) Bluetooth LE
Applicable Standard	47 CFR FCC Part 2.1091 47 CFR FCC Part 1.1310 KDB 447498 D01 OET Bulletin 65 Supplement C
RF Evaluation	0.07069 mW/cm^2
Test Result	Complied

Documented : Emma Lu

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Approved : Gary Wu

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Document Revision History

Report No.	Issue date	Description
WD-RF-R-230101-D0	May 11, 2023	Initial report

Reference Testing Standard

Standard	Description	Version
47 CFR FCC Part 2.1091	Radiofrequency radiation exposure evaluation: mobile devices.	--
47 CFR FCC Part 1.1310	Radiofrequency radiation exposure limits.	--
KDB 447498 D01	RF Exposure procedures and equipment authorization policies for mobile and portable devices.	V06
OET Bulletin 65 Supplement C	Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields.	Edition 01-01

1 Generation Information

1.1 Applicant

Tomofun Co., Ltd.
4F., No.178, Sec. 3 , Minquan E,Rd.,Songshan Dist Taipei City 105, Taiwan (R.O.C.)

1.2 Manufacturer

Primax Electronics Ltd.
No.669, Ruey Kuang Road, Neihu, Taipei, Taiwan, R.O.C.

Primax Electronics (Thailand) Co., Ltd.
888/8 Moo.7, Klongkiew Sub-district, Banbueng District, Chonburi, Thailand

1.3 Description of Equipment under Test

Product Name	Furbo Mini
Model No.	Furbo Mini 2
FCC ID	2AIBV-MINICAM2
Frequency Range	802.11b/g/n-20MHz: 2412~2462MHz 802.11n-40MHz: 2422~2452MHz Bluetooth: 2402 ~ 2480 MHz
Antenna Information	Refer to the table “Antenna List”

The above equipment was tested by Wendell EMC & RF Laboratory For compliance with the requirements set forth in 47 CFR § 2.1091 / 47 CFR § 1.1310. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties

Antenna List

No.	Manufacturer	Model No.	Antenna Type	Peak Gain
1	INPAQ TECHNOLOGY CO., LTD	RFFPA271506IMLB301	FPCB Antenna	2.16 dBi for 2.4GHz

1.4 Test Facility

Items	Required (IEC 60068-1)
Temperature (°C)	15-35
Humidity (% RH)	25-75
Barometric pressure (mbar)	860-1060

Description: Accredited by TAF
Accredited Number: 2965

Issued by: Wendell Industrial Co., Ltd

Lab Address: 6F/6F-1, No.188, Baoqiao Rd., Xindian Dist.,
New Taipei City 23145, Taiwan (R.O.C)

Test Lab: Wendell EMC & RF Laboratory

Test Location: 1F., No. 119, Wugong 3rd Rd., Wugu Dist.,
New Taipei City 248, Taiwan (R.O.C.)

Designation Number: TW0025

Test Firm Registration Number: 665221

2 Mobile device Assessment Procedure

In 47 CFR § 2.1091, a mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons. In this context, the term “fixed location” means that the device is physically secured at one location and is not able to be easily moved to another location.

3 RF Exposure Assessment

Estimation of the expected exposure in power density can be made with the following equation:

$$S = \frac{P \times G}{4\pi \times R^2} = \frac{EIRP}{4\pi \times R^2}$$

S: power density

P: power input to the antenna

G: power gain of the antenna in the direction of interest relative to an isotropic radiator.

R: distance to the center of radiation of the antenna.

EIRP: Effective Isotropic Radiated Power

4 Limit Requirement

In 47 CFR § 1.1310, use of the device as based upon the user's awareness and ability to exercise control over human exposure. The two categories defined are Occupational/Controlled Exposure and General Population/Uncontrolled. These two categories are defined as follow:

Occupational/Controlled Exposure:

Occupational/controlled exposure limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure.

General Population/Uncontrolled:

General population/uncontrolled exposure limits apply in situations in which the general public may be exposed, or in which persons who are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Limits for Occupational / Controlled Exposure				
Frequency Range (MHz)	**Electric Field Strength (E) (V/m)**	**Magnetic Field Strength (H) (A/m)**	**Power Density (S) (mW/ cm²)**	**Averaging Time|E|²,|H|² or S (minutes)**
0.3-3.0	614	1.63	(100)*	6
3.0-30	1,842 / f	4.89 / f	(900 / f²)*	6
30-300	61.4	0.163	1.0	6
300-1,500	--	--	f / 300	6
1,500-100,000	--	--	5	6

Note：

(1) f = frequency in MHz

(2) * = Plane-wave equivalent power density

Limits for General Population / Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (E) (V/m)**	**Magnetic Field Strength (H) (A/m)**	**Power Density (S) (mW/ cm²)**	**Averaging Time|E|²,|H|² or S (minutes)**
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 / 1,500	30
1,500-100,000	--	--	1.0	30

Note：

(1) f = frequency in MHz

(2) * = Plane-wave equivalent power density

5 Test Results

Mode	Max. Power (E.I.R.P)		Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)	Result
	dBm	mW				
LE	12.36	17.22	20	0.00343	1	Pass
WLAN 2.4G	25.29	338.06	20	0.06726	1	Pass

Note:

∗ Each Function of the max power which perform MPE of any configurations.

∗ The total power of LE and WLAN 2.4G transmission at the same time is the largest.

∗ The frequency (range) used by the radio frequency function is 1.5GHz~100GHz, the RF field strength limits is e.i.r.p. less than or equal to 1mW/cm^2.

∗ The limit is equal to the minimum value.

∗ The Max total MPE = LE + WLAN 2.4G = 0.07069 (mW/cm^2)

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