FCC RF Exposure Report

Report No.:	SABEKK-WTW-P20080111A
FCC ID:	2AARN-DLWPH-8M
Test Model:	DLWPH-8M-RW
Series Model:	DLWPH-8M
Received Date:	Dec. 22, 2021
Date of Evaluation:	Mar. 18, 2022
Issued Date:	Mar. 24, 2022
Applicant:	PHIHONG TECHNOLOGY CO. LTD.
Address:	No.568, Fu Xing 3rd Rd., Guishan, Tao Yuan Hsien, 333 Taiwan
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, Taiwan
FCC Registration / Designation Number:	788550 / TW0003

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Release Control Record

Issue No.	Description	Date Issued
SABEKK-WTW-P20080111A	Original Release	Mar. 24, 2022

1 Certificate of Conformity

Product:	EV charging system module 4G with WI-FI
Brand:	Phihong Technology Co., Ltd.
Test Model:	DLWPH-8M-RW
Series Model:	DLWPH-8M
Sample Status:	Engineering Sample
Applicant:	PHIHONG TECHNOLOGY CO. LTD.
Date of Evaluation:	Mar. 18, 2022
Standards:	FCC Part 2 (Section 2.1091)
References Test Guidance:	KDB 447498 D01 General RF Exposure Guidance v06 IEEE C95.3 -2002

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

Prepared by : Lena Wang , **Date:** Mar. 24, 2022

Lena Wang / Specialist

Approved by : Jeremy Lin , **Date:** Mar. 24, 2022

Jeremy Lin / Project Engineer

2 RF Exposure

2.1 Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	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; *Plane-wave equivalent power density

2.2 MPE Calculation Formula

$Pd = (Pout*G) / (4*pi*r^2)$

where

Pd = power density in mW/cm^2

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

2.3 Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

3 Calculation Result of Maximum Density Power

Function	Frequency Band (MHz)	EIRP (dBm)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
WCDMA Band 2	1850.7~1909.3	23.95	20	0.049	1
WCDMA Band 4	1712.4~1752.6	24.61	20	0.058	1
WCDMA Band 5	826.4~846.6	22.51	20	0.035	0.551
LTE Band 2	1850.0~1910.0	24.65	20	0.058	1
LTE Band 4	1710.0~1755.0	24.83	20	0.060	1
LTE Band 5	824.0~849.0	22.97	20	0.039	0.550
LTE Band 12	699.0~716.0	22.6	20	0.036	0.466
LTE Band 13	777.0~787.0	20.38	20	0.022	0.520
LTE Band 14	788.0~798.0	20.18	20	0.021	0.527
LTE Band 66	1710.0~1780.0	24.91	20	0.062	1
LTE Band 71	663.0~698.0	20.87	20	0.024	0.444
WLAN	2412~2462	20.64	20	0.023	1

Note:

1. This report is prepared for FCC class II permissive change. This report is issued as a supplementary report to BV CPS report no. SABEKK-WTW-P20080111. The difference compared with original report is changing the motherboard design and adding external antenna, therefore therefore the EUT is re-calculated MPE value in this report.
2. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
3. All models are listed as below.

Brand	Model	Difference of WLAN Antenna type
Phihong Technology Co., Ltd.	DLWPH-8M	internal antenna
	DLWPH-8M-RW	external antenna

Conclusion:
The formula of calculated the MPE is:
CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1
CPD = Calculation power density
LPD = Limit of power density

WLAN 2.4GHz + WWAN = 0.023 / 1 + 0.036 / 0.47 = 0.1

Therefore the maximum calculations of above situations are less than the "1" limit.

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