

## RF Exposure Report

**Report No.:** MFBCKS-WTW-P22090987

**FCC ID:** 2A82RMARK3

**Test Model:** Mark 3

**Received Date:** Oct. 17, 2022

**Date of Evaluation:** Nov. 22, 2022

**Issued Date:** Dec. 12, 2022

**Applicant:** Arable Labs Inc.

**Address:** 51 Federal St., San Francisco, CA 94107, USA

**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 /** 788550 / TW0003  
**Designation Number:**



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### Release Control Record

Issue No.	Description	Date Issued
MFCKS-WTW-P22090987	Original Release	Dec. 12, 2022

## 1 Certificate of Conformity

**Product:** Arable Mark 3

**Brand:** Arable Labs

**Test Model:** Mark 3

**Sample Status:** Engineering Sample

**Applicant:** Arable Labs Inc.

**Date of Evaluation:** Nov. 22, 2022

**FCC Rule Part:** FCC Part 2 (Section 2.1091)

**Standards:** KDB 447498 D01 General RF Exposure Guidance v06

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 :**

*Vera Huang*

**Date:** Dec. 12, 2022

Vera Huang / Specialist

**Approved by :**

*Jeremy Lin*

**Date:** Dec. 12, 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 <sup>2</sup> )	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 <sup>2</sup> )*	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

$$P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$$

where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = 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 Conducted Power

Band	Max ERP Power (dBm)	Max EIRP Power (dBm)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
GPRS 850	31.17	33.32	20	0.427	0.55
GPRS 1900	-	32.12	20	0.324	1.00
eMTC					
LTE Band 2	-	26.42	20	0.087	1.00
LTE Band 4	-	25.79	20	0.075	1.00
LTE Band 5	22.13	24.28	20	0.053	0.55
LTE Band 12	22.23	24.38	20	0.055	0.46
LTE Band 13	22.13	24.28	20	0.053	0.52
LTE Band 25	-	25.97	20	0.079	1.00
LTE Band 26	22.39	24.54	20	0.057	0.54
LTE Band 66	-	25.88	20	0.077	1.00
LTE Band 85	22.42	24.57	20	0.057	0.46
NB-IoT					
NB-IoT Band 2	-	26.69	20	0.093	1.00
NB-IoT Band 4	-	26.05	20	0.080	1.00
NB-IoT Band 5	22.41	24.56	20	0.057	0.55
NB-IoT Band 12	22.93	25.08	20	0.064	0.46
NB-IoT Band 13	22.91	25.06	20	0.064	0.52
NB-IoT Band 25	-	26.95	20	0.099	1.00
NB-IoT Band 66	-	26.28	20	0.085	1.00
NB-IoT Band 71	23.13	25.28	20	0.067	0.44
NB-IoT Band 85	22.77	24.92	20	0.062	0.46

Band	Max AV Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
BT LE	14.49	2.40	20	0.0097	1

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2.  $EIRP = ERP + 2.15dB$
3. Detail antenna specification please refer to antenna datasheet or an antenna gain measurement report.

**Conclusion:**

The formula of calculated the MPE is:

$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$

CPD = Calculation power density

LPD = Limit of power density

The simultaneous operation mode was determined by client.

$WWAN + BT LE = 0.427/0.55 + 0.0097/1 = 0.786$

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

**---END---**