

# RF Exposure Evaluation

## FCC ID: 2A7X8-BM121

### 1. Client Information

Applicant	:	BATTERYMONS LIMITED
Address	:	Room 1205, 12/F, Tai Sang Bank Building, 130-132 Des Voeux Road, Central, Hong Kong
Manufacturer	:	BATTERYMONS LIMITED
Address	:	Room 1205, 12/F, Tai Sang Bank Building, 130-132 Des Voeux Road, Central, Hong Kong

### 2. General Description of EUT

EUT Name	:	Portable Energy Storage Power Supply	
Model(s)	:	BM121	
Sample ID	:	202206-0337_01-01	
Product Description	:	Operation Frequency:	110-205KHz
		Modulation Type:	ASK
		Antenna:	Coil Antenna
Power Supply	:	AC Input: 110-220V~ 4.54A Solar Input: 12-30V(max 500W) AC Output*2: 110-220V~ 5.45A 50/60Hz Car Charge Output: 12V==8.3A USB-A output: 5V==2.4A QC output: 5V/9V/12V 18W Wireless charging output:15W USB-C output: 5V==2.4A DC 3.2V by 328300mAh Rechargeable Li-ion battery	
Software Version	:	----	
Hardware Version	:	----	
Connecting I/O Port(S)	:	Please refer to the User's Manual	
Accessories	:	HUAWEI Mate 40 Pro	

**Note:** More test information about the EUT please refer the RF Test Report.

*TB-RF-074-1.0*



## RF Exposure Considerations

### 1. Measuring Standard

KDB 680106 D01 RF Exposure Wireless Charging App v03.

### 2. Requirements

According to the item 5.2 of KDB 680106 D01v03:

Inductive wireless power transfer applications that meet all of the following requirements are excluded from submitting an RF exposure evaluation:

- (1) Power transfer frequency is less than 1 MHz.
- (2) Output power from each primary coil is less than or equal to 15 watts.
- (3) The system may consist of more than one source primary coils, charging one or more clients. If more than one primary coil is present, the coil pairs may be powered on at the same time.
- (4) Client device is placed directly in contact with the transmitter.
- (5) Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).
- (6) The aggregate H-field strengths anywhere at or beyond 15 cm surrounding the device, and 20 cm away from the surface from all coils that by design can simultaneously transmit, and while those coils are simultaneously energized, are demonstrated to be less than 50% of the applicable MPE limit.

#### 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> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposures</b>				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	f/300	6
1500-100,000	/	/	5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
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

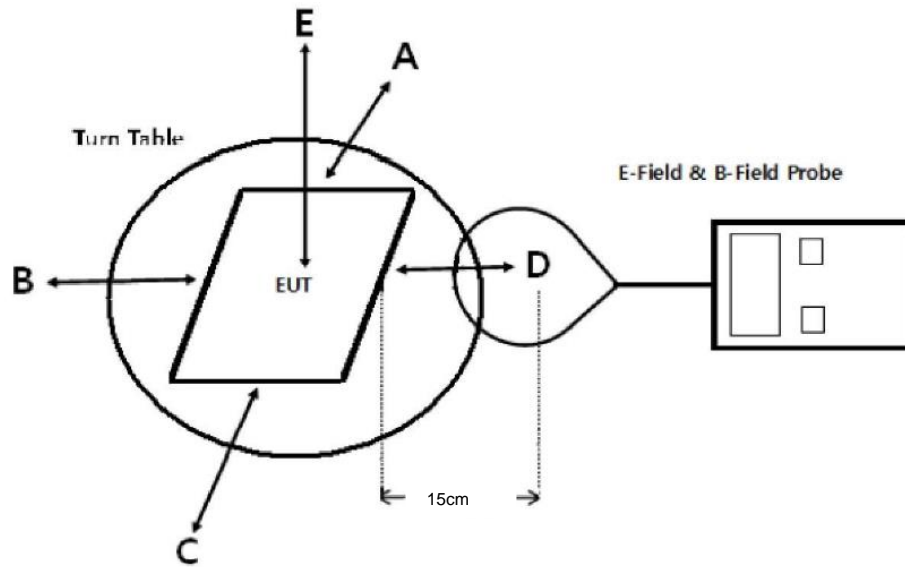
F=frequency in MHz

\*=Plane-wave equivalent power density

RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).



### 3. Test Setup



**Note:** The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface.

### 4. Test Procedure

- 1) The RF exposure test was performed in anechoic chamber.
- 2) The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface.
- 3) The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E) were completed.
- 4) The EUT was measured according to the dictates of KDB 680106 D01 v03.

**Remark:**

The EUT's test position A, B, C, D and E is valid for the E and H field measurements.

### 5. Test Equipment List

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Magnetic field meter	NARDA	ELT-400	EE030	Sep. 10, 2021	Sep. 09, 2022
Magnetic field probe	NARDA	EP 601	811ZX01000	Jun. 04, 2022	Jun. 03, 2023

### 6. Deviation From Test Standard

No deviation

### 7. Mode of operation during the test / Test peripherals used

Test Modes:		
TM1	Power Supply + EUT + Mobile Phone (Battery Status: <1%)	record
TM2	Power Supply + EUT + Mobile Phone (Battery Status: <50%)	record
TM3	Power Supply + EUT + Mobile Phone (Battery Status: <99%)	record



## 8. Test Result

E-Filed Strength at 15 cm from the edges surrounding the EUT and 15 cm above the top surface

Charging Battery Level	Frequency Range (MHz)	Measured E-Field Strength Values (V/m)					E-Field Strength 50% Limits (V/m)	E-Field Strength Limits (V/m)
		Test Position						
		A	B	C	D	E		
99%	143.3	42.601	49.387	56.927	42.978	49.387	307.0	614.0
50%	143.3	49.764	42.978	49.387	45.994	43.355	307.0	614.0
1%	143.3	60.697	50.141	43.732	35.061	42.601	307.0	614.0

Note: V/m= A/m \*377

H-Filed Strength at 15 cm from the edges surrounding the EUT and 15 cm above the top surface

Charging Battery Level	unit	Frequency Range (MHz)	Measured H-Field Strength Values (A/m)					H-Field Strength 50% Limits (A/m)	H-Field Strength Limits (A/m)
			Test Position						
			A	B	C	D	E		
99%	uT	143.3	0.141	0.164	0.189	0.143	0.164	--	--
99%	A/m	143.3	0.113	0.131	0.151	0.114	0.131	0.815	1.63
50%	uT	143.3	0.165	0.143	0.164	0.153	0.144	--	--
50%	A/m	143.3	0.132	0.114	0.131	0.122	0.115	0.815	1.63
1%	uT	143.3	0.201	0.166	0.145	0.116	0.141	--	--
1%	A/m	143.3	0.161	0.133	0.116	0.093	0.113	0.815	1.63

H-Field Strength at 20cm from the top surface of the EUT

Charging Battery Level	Unit	Frequency Range (MHz)	Measured H-Field Strength Values (A/m)	FCC H-Field Strength 50% Limits (A/m)	FCC H-Field Strength Limits (A/m)
			Test Position E		
99%	uT	143.3	0.176	--	--
99%	A/m	143.3	0.141	0.815	1.63
50%	uT	143.3	0.128	--	--
50%	A/m	143.3	0.102	0.815	1.63
1%	uT	143.3	0.096	--	--
1%	A/m	143.3	0.077	0.815	1.63

Note: A/m=uT/1.25



## 9. Test Set-up Photo

Test Set-up Photo



-----END OF REPORT-----