Test Report

Report No.:	MTi231027001-75E2
Date of issue:	2024-04-19
Applicant:	Raycon Inc.
Product:	Raycon Magic Power Bank Slim
Model(s):	RAPBAN100, RAPBAN100 Pro, N10, N10 Pro, RAPBAN100-24E-BLA, RAPBAN100-24E-BLU, RAPBAN100-24E-ROS, RAPBAN100-24E-SIL, RAPBAN100-25E-BLA, RAPBAN100-25E-BLU, RAPBAN100-25E-ROS, RAPBAN100-25E-SIL
FCC ID:	2AZOV-RAPBAN100

Shenzhen Microtest Co., Ltd.

http:// Web: www.mtitest.cn

Instructions

1. This test report shall not be partially reproduced without the written consent of the laboratory.

2. The test results in this test report are only responsible for the samples submitted

3. This test report is invalid without the seal and signature of the laboratory.

4. This test report is invalid if transferred, altered, or tampered with in any form without authorization.

5. Any objection to this test report shall be submitted to the laboratory within 15 days from the date of receipt of the report.

Contents

Test Result Certification	
Applicant:	Raycon Inc.
Address:	1115 Broadway, Suite 12, New York, NY 10010
Manufacturer:	Raycon Inc.
Address:	1115 Broadway, Suite 12, New York, NY 10010
Product description	
Product name:	Raycon Magic Power Bank Slim
Trademark:	Raycon
Model name:	RAPBAN100
Series Model:	RAPBAN100 Pro, N10, N10 Pro, RAPBAN100-24E-BLA, RAPBAN100-24E-BLU, RAPBAN100-24E-ROS, RAPBAN100-24E-SIL, RAPBAN100-25E-BLA, RAPBAN100-25E-BLU, RAPBAN100-25E-ROS, RAPBAN100-25E-SIL
Standards:	FCC CFR 47 PART 1, § 1.1310
Test method:	KDB 680106 D01 Wireless Power Transfer v04
Date of Test	
Date of test:	2024-03-15 to 2024-04-12
Test result:	Pass

Test Engineer	:	James Qin
		(James Qin)
Reviewed By	:	David. Lee
		(David Lee)
Approved By	:	Leon chen
		(Leon Chen)

1 General Description

1.1 Description of the EUT

Product name:	Raycon Magic Power Bank Slim
Model name:	RAPBAN100
Series Model:	RAPBAN100 Pro, N10, N10 Pro, RAPBAN100-24E-BLA, RAPBAN100-24E-BLU, RAPBAN100-24E-ROS, RAPBAN100-24E-SIL, RAPBAN100-25E-BLA, RAPBAN100-25E-BLU, RAPBAN100-25E-ROS, RAPBAN100-25E-SIL
Model difference:	All the models are the same circuit and module, except the model name and color.
Electrical rating:	Input: DC 5V3A, 9V2.22A, 12V1.67A Output: DC 5V3A, 9V2.22A, 12V1.67A Wireless output: 15W Max Battery: 5000mAh DC3.85V 19.25Wh
Accessories:	Cable: USB-A to USB-C Cable 50cm
Hardware version:	YH_WPC_M2301
Software version:	231030 V1.0.2
Test sample(s) number:	MTi231027001-75S1001
RF specification:	
Operation frequency:	115-205kHz (5W,10W, 15W) 355-360kHz (7.5W)
Modulation type:	ASK
Antenna type:	Coil

1.2 Description of test modes

All the test modes were carried out with the EUT in normal operation, the final test mode of the EUT was the worst test mode for emission test, which was shown in this report and defined as:

No.	Emission test modes
Mode1	Charging+Wireless output(5W)
Mode2	Wireless output(5W)
Mode3	Wireless output(7.5W)
Mode4	Wireless output(10W)
Mode5	Wireless output(15W)
Mode6	Standby

1.3 Description of support units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Support equipment list			
Description	Model	Serial No.	Manufacturer
Mobile phone	Find X3	/	OPPO
Mobile Phone	IPhone 13	/	APPLE
HUAWEI QUICK CHARGE(65W)	HW-200200ZP1	JN67LSN7N03451	HUAWEI
Support cable list			
Description	Length (m)	From	To
/	/	/	/

2 Measurement uncertainty

Parameter	Expanded Uncertainty
Magnetic field measurement (3kHz~10MHz)	±14.8%
Electric field measurements (3kHz~10MHz)	±17.5%

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3 Test facilities and accreditations

3.1 Test laboratory

Test laboratory:	Shenzhen Microtest Co., Ltd.
Test site location:	101, No. 7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Telephone:	(86-755)88850135
Fax:	(86-755)88850136
CNAS Registration No.:	CNAS L5868
FCC Registration No.:	448573

4 List of test equipment

No.	Equipment	Manufacturer	Model	Serial No.	Cal. date	Cal. Due
MTI-E143	Near-field Electric and Magnetic Field Sensor System	Speag	MAGPy-8H3D +ED3 V2	3101	2024/3/12	2027/3/11

No.	Equipment	Manufacturer	Model	Software version:	Cal. date	Cal. Due
MTI-E016S	MPE test software	SPEAG	MAGPY 2.4	2.4.1	/	/

5 Test result

5.1.1 Requirement

§1.1310: 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), except in the case of portable devices which shall be evaluated according to the provisions of FCC part 2.1093 of this chapter.

Table 1 to §1.1310(e)(1) - Limits for Maximum Permissible Exposure (MPE)

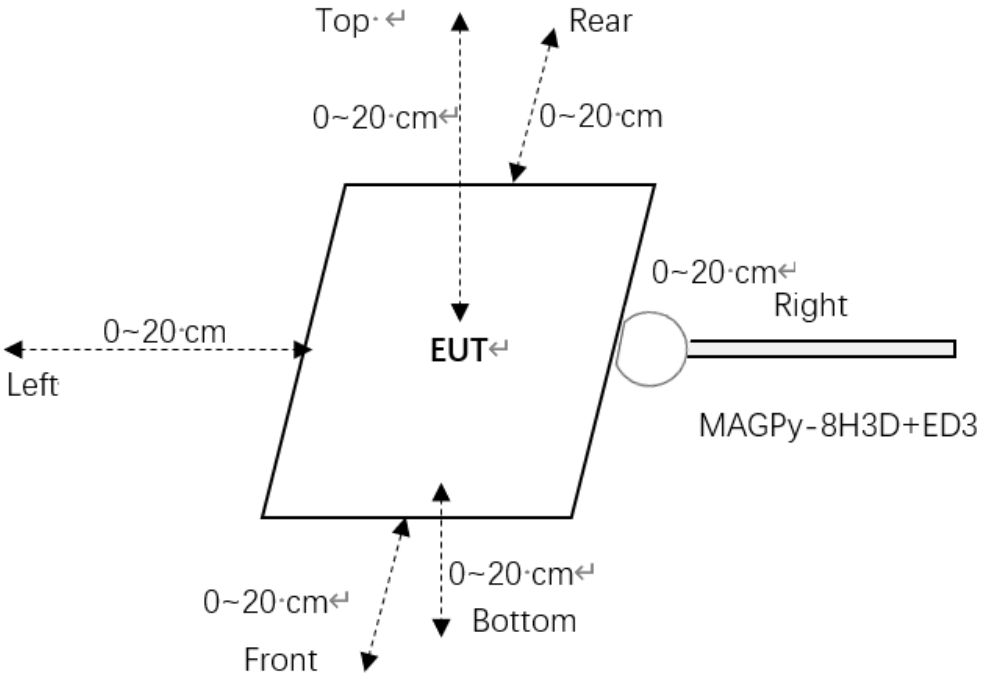
Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*(100)	≤6
3.0-30	1842/f	4.89/f	*($900/f^2$)	<6
30-300	61.4	0.163	1.0	<6
300-1500			f/300	<6
1500-100000			5	<6
(ii) 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
1500-100000			1.0	<30

f = frequency in MHz
* = Plane-wave equivalent power density

Note 1: 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.

Note 2: 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.

5.2 Test setup



Note: tips mode of the test probe is used for 0cm measurement.

5.3 Test Procedures

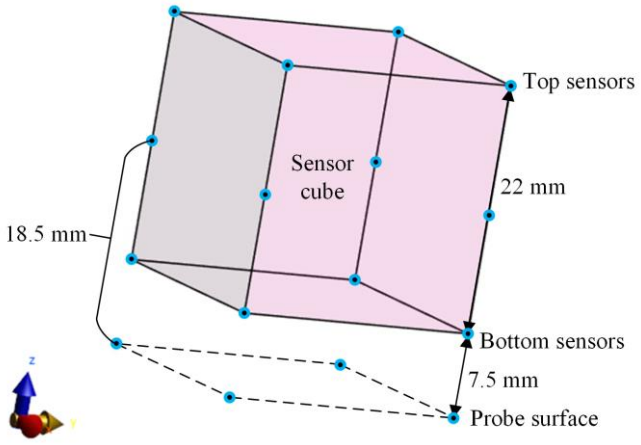
For portable exposure conditions:

a. H-field measurements should be taken 0 cm ~ 20 cm with 2 cm increments from the center of the probe.

The center of the probe to the tip surface of the probe is 18.5 mm, so the directly testing can be performed at the probe center from 2 cm to 20 cm.

To measure the 0 cm H-filed, the probe tip mode is used. The total H-field at the tip-surface $H_{tip-surface}$ can be extrapolated using the total H-field measured at the top and bottom sensors, H_{top} and H_{bottom}, as well as the normalized H-field gradient G_n. The field extrapolation formula is a polynomial function of G_n (Δd = 18.5 mm)

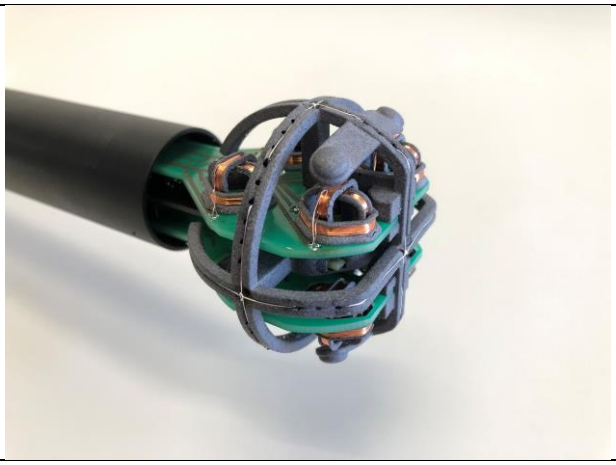
$$H_{tip-surface} = \frac{H_{bottom} + H_{top}}{2} \sum_{i=0}^{7} ci(G_n \Delta d)^i$$



Notes: The EUT was setted to transmit continuously with the duty cycle of 100%.

5.4 Information of test equipment

Test equipment: MAGPy-8H3D+ED3	
Diameter	60mm
8 isotropic H-field sensors	Concentric loops of 1cm^2 arranged at the corner of a cube of 22mm side length
1 isotropic E-field sensor	Orthogonal dipole/monopple(arm length:50mm)
Measurement center	18.5mm from the probe tip
Dimensions	110*635*35mm (MAGPy-8H3D+E3D V2 & MAGPy-DAS V2)



Test probe, without the casing

Item	Specification
Test frequency range:	3kHz ~ 10MHz
Probe sensitivity	E-filed: 0.08-2000 V/m H-filed: 0.1-3200 A/m
Probe level response	E-filed: ±1dB H-field: ±1dB
linearity error	E-filed: ±0.3dB H-field: ±0.3dB
Isotropy	E-filed: ±0.8dB H-field: ±0.6dB

5.5 Test results

Test condition 1: Mode 3 operating mode with client device (1 % battery status of client device)
- Test distance: 0cm

Estimated value for H-Filed Strength at 0 cm from the edges surrounding the EUT (A/m)

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	1.0718	1.63	73.11%
	Left	1.0845		
	Right	1.1917		
	Front	1.0473		
	Rear	0.9712		
	Bottom	0.8763		

Test condition 2: Mode 3 operating mode with client device (1 % battery status of client device)
- Test distance: 2cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.8502	1.63	52.16%
	Left	0.7254		
	Right	0.6378		
	Front	0.6211		
	Rear	0.3123		
	Bottom	0.2863		

Test condition 3: Mode 3 operating mode with client device (1 % battery status of client device) - Test distance 4cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.3134	1.63	19.23%
	Left	0.2471		
	Right	0.2543		
	Front	0.2393		
	Rear	0.1394		
	Bottom	0.1475		

Test condition 4: Mode 3 operating mode with client device (1 % battery status of client device) - Test distance 6cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.2325	1.63	14.26%
	Left	0.1019		
	Right	0.1050		
	Front	0.0828		
	Rear	0.0762		
	Bottom	0.0546		

Test condition 5: Mode 3 operating mode with client device (1 % battery status of client device) - Test distance 8cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.0985	1.63	6.04%
	Left	0.0587		
	Right	0.0485		
	Front	0.0541		
	Rear	0.0461		
	Bottom	0.0586		

Test condition 6: Mode 3 operating mode with client device (1 % battery status of client device) - Test distance 10cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.0691	1.63	4.24%
	Left	0.0397		
	Right	0.0464		
	Front	0.0612		
	Rear	0.0622		
	Bottom	0.056		

Test condition 7: Mode 3 operating mode with client device (1 % battery status of client device) - Test distance 12cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.0619	1.63	3.80%
	Left	0.0385		
	Right	0.042		
	Front	0.0487		
	Rear	0.0568		
	Bottom	0.0596		

Test condition 8: Mode 3 operating mode with client device (1 % battery status of client device) - Test distance 14cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.0596	1.63	3.66%
	Left	0.0344		
	Right	0.0455		
	Front	0.0499		
	Rear	0.0563		
	Bottom	0.0526		

Test condition 9: Mode 3 operating mode with client device (1 % battery status of client device) - Test distance 16cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.0613	1.63	3.76%
	Left	0.0344		
	Right	0.0414		
	Front	0.0481		
	Rear	0.0569		
	Bottom	0.0504		

Test condition 10: Mode 3 operating mode with client device (1 % battery status of client device) - Test distance 18cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.0618	1.63	4.00%
	Left	0.0513		
	Right	0.0408		
	Front	0.0585		
	Rear	0.0652		
	Bottom	0.0597		

Test condition 11: Mode 3 operating mode with client device (1 % battery status of client device) - Test distance 20cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.0605	1.63	3.71%
	Left	0.0371		
	Right	0.0448		
	Front	0.0518		
	Rear	0.0444		
	Bottom	0.0477		

Test condition 1: Mode 5 operating mode with client device (1 % battery status of client device)
- Test distance: 0cm

Estimated value for H-Filed Strength at 0 cm from the edges surrounding the EUT (A/m)

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	1.3743	1.63	84.31%
	Left	1.1752		
	Right	1.1969		
	Front	1.1516		
	Rear	1.0809		
	Bottom	0.9799		

Test condition 2: Mode 5 operating mode with client device (1 % battery status of client device)
- Test distance: 2cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.9569	1.63	58.71%
	Left	0.8326		
	Right	0.8364		
	Front	0.8188		
	Rear	0.6125		
	Bottom	0.5844		

Test condition 3: Mode 5 operating mode with client device (1 % battery status of client device) - Test distance 4cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.6119	1.63	37.54%
	Left	0.4529		
	Right	0.4586		
	Front	0.4437		
	Rear	0.3416		
	Bottom	0.2892		

Test condition 4: Mode 5 operating mode with client device (1 % battery status of client device) - Test distance 6cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.4247	1.63	26.06%
	Left	0.2079		
	Right	0.2107		
	Front	0.2783		
	Rear	0.2826		
	Bottom	0.1484		

Test condition 5: Mode 5 operating mode with client device (1 % battery status of client device) - Test distance 8cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.2013	1.63	12.35%
	Left	0.0659		
	Right	0.0399		
	Front	0.0524		
	Rear	0.0416		
	Bottom	0.0656		

Test condition 6: Mode 5 operating mode with client device (1 % battery status of client device) - Test distance 10cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.0622	1.63	3.82%
	Left	0.0406		
	Right	0.0392		
	Front	0.0561		
	Rear	0.0623		
	Bottom	0.0517		

Test condition 7: Mode 5 operating mode with client device (1 % battery status of client device) - Test distance 12cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.0657	1.63	4.03%
	Left	0.0351		
	Right	0.0447		
	Front	0.0587		
	Rear	0.0589		
	Bottom	0.0483		

Test condition 8: Mode 5 operating mode with client device (1 % battery status of client device) - Test distance 14cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.0613	1.63	3.87%
	Left	0.0493		
	Right	0.0456		
	Front	0.0544		
	Rear	0.0581		
	Bottom	0.0631		

Test condition 9: Mode 5 operating mode with client device (1 % battery status of client device) - Test distance 16cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.0631	1.63	3.87%
	Left	0.0325		
	Right	0.0434		
	Front	0.0515		
	Rear	0.0592		
	Bottom	0.0485		

Test condition 10: Mode 5 operating mode with client device (1 % battery status of client device) - Test distance 18cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.0655	1.63	4.02%
	Left	0.0327		
	Right	0.0461		
	Front	0.0603		
	Rear	0.0524		
	Bottom	0.0496		

Test condition 11: Mode 5 operating mode with client device (1 % battery status of client device) - Test distance 20cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.0633	1.63	3.88%
	Left	0.0372		
	Right	0.0389		
	Front	0.0585		
	Rear	0.0571		
	Bottom	0.0474		

Photographs of the Test Setup

See the Appendix - Test Setup Photos.

Photographs of the EUT

See the Appendix - EUT Photos.

----End of Report----