Test Report

Report No.:	MTi230810013-01E2
Date of issue:	2023-08-22
Applicant:	Raycon Inc.
Product:	3-in-1 Wireless Charging Pad
Model(s):	RAPWIR300, RAPWIR300 Pro, R30, R30 Pro
FCC ID:	2AZOV-RAPWIR300

Shenzhen Microtest Co., Ltd.

http://www.mtitest.com

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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:	3-in-1 Wireless Charging Pad
Trademark:	Raycon
Model name:	RAPWIR300
Series Model:	RAPWIR300 Pro, R30, R30 Pro
Standards:	FCC CFR 47 PART 1, § 1.1310
Test method:	KDB 680106 v03r01
Date of Test	
Date of test:	2023-08-15 to 2023-08-22
Test result:	Pass

Test Engineer : David. Lee

(David Lee)

Reviewed By: : Leon chen

(Leon Chen)

Approved By: : Tom Xue

(Tom Xue)

1 General Description

1.1 Description of the EUT

Product name:	3-in-1 Wireless Charging Pad
Model name:	RAPWIR300
Series Model:	RAPWIR300 Pro, R30, R30 Pro
Model difference:	All the models are the same circuit and module, except the model name.
Electrical rating:	Input: DC 9V2A Output(Phone): 5W, 7.5W, 10W, 15W(Max) Output(Watch): 2.5W(Max) Output(Earbuds): 3.0W(Max)
Accessories:	Cable: USB-A to USB-C Cable 100cm
Hardware version:	Z12-V1.3, Z12-BLD-V1.3, Z12-GF5100_V1.3
Software version:	ZLGD-Z12_D9612_9610_D9018_GUI_Bin0x0040F5AD_ Gui0x00052747_In0x0057DB97_0x0057DB97_20221024110656
Test sample(s) number:	MTi230810013-09S1001
RF specification:	
Operation frequency:	Transmitter 1(Phone): 115-205Khz Transmitter 2(Earbuds): 115-205Khz Transmitter 3(Watch): 325Khz
Modulation type:	ASK
Antenna type:	Coil Antenna

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	Wireless output for watch(2.5W)
Mode2	Wireless output for earbuds(3W)
Mode3	Wireless output(5W)
Mode4	Wireless output(7.5W)
Mode5	Wireless output(10W)
Mode6	Wireless output(15W)
Mode7	Wireless output(2.5W+3W)
Mode8	Wireless output(5W+3W)
Mode9	Wireless output(7.5W+3W)
Mode10	Wireless output(10W+3W)
Mode11	Wireless output(15W+3W)
Mode12	Wireless output(5W+2.5W)
Mode13	Wireless output(7.5W+2.5W)
Mode14	Wireless output(10W+2.5W)
Mode15	Wireless output(15W+2.5W)
Mode16	Wireless output(5W+2.5W+3W)
Mode17	Wireless output(7.5W+2.5W+3W)
Mode18	Wireless output(10W+2.5W+3W)
Mode19	Wireless output(15W+2.5W+3W)
Mode20	stand by
The test data only show worst test mode: Mode 19	

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
Adapter	HW-090200CH0	/	Huizhou BYD Electronics Co., Ltd.
Mobile phone	Find X3	bf6e6b3b	OPPO
Air Pods	A2190	H6LDLEZ70C6L	Apple Inc.
iWatch	iWatch S8	M0JVGQG1VP	Apple Inc.
Support cable list			
Description	Length (m)	From	To
/	/	/	/

2 Measurement uncertainty

Parameter	Expanded Uncertainty
Magnetic field measurement (9kHz~30MHz)	±18.6%
Electric field measurements (9kHz~30MHz)	±18.6%

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-E115	Electric and Magnetic Field Probe – Analyzer	Narda	EHP-200A	101166	2023/08/14	2024/08/13

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)

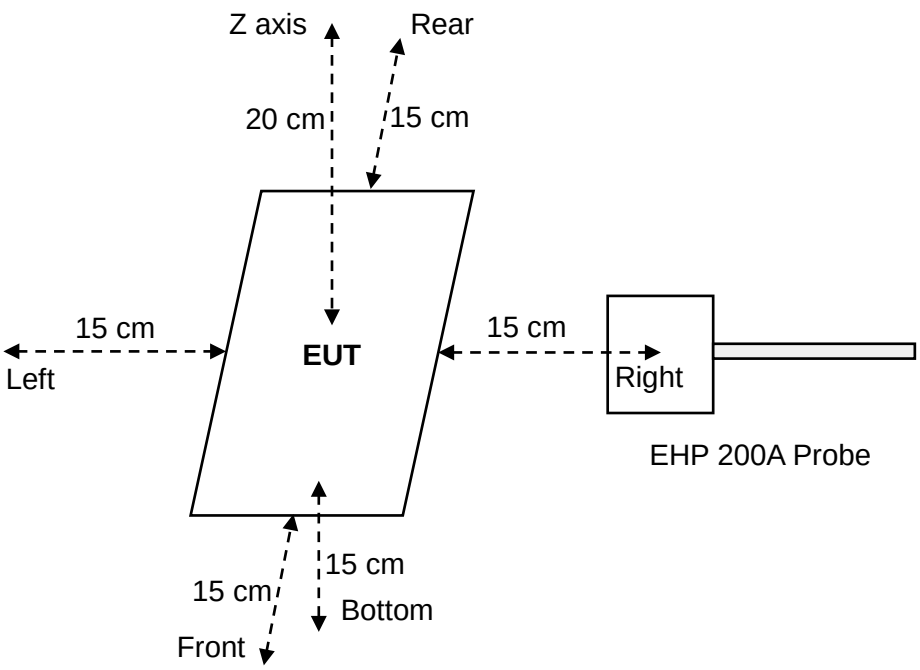
Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*(100)	≤6
3.0-30	1842/f	4.89/f	*($900/f^2$)	<6
30-300	61.4	0.163	1.0	<6
300-1500			f/300	<6
1500-100000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



5.3 Test Procedures

a. The RF exposure test was performed in anechoic chamber.

b. E and H-field measurements should be made with the center of the probe at a distance of 15 cm surrounding the device and 20 cm above the top surface of the primary/client pair.

c. The highest emission level was recorded and compared with limit.

d. The EUT was measured according to the dictates of KDB 680106 v03r01.

5.4 Equipment Approval Considerations item 5 b) of KDB 680106 D01 v03r01

Requirement	Device
1. Power transfer frequency is less than 1 MHz.	Yes. The operating frequencies are: Transmitter 1(Phone): 115-205Khz Transmitter 2(Earbuds): 115-205Khz Transmitter 3(Watch): 325Khz
2. Output power from each primary coil is less than or equal to 15 watts	Yes. The maximum output power is: 15W
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.	Yes. The EUT has three source primary coils.
4. Client device is placed directly in contact with the transmitter.	Yes. The client device is placed directly in contact with the transmitter.
5. Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).	Yes. Mobile exposure conditions only.
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.	Yes. See the test result in item 5.5.

5.5 Test results

Test condition 1: Mode 19 operating mode with client device (1 % battery status of client device)

Antenna	Probe Position	E –field (V/m)			H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)	Measurement	Limit	Max. Percentage (%)
1	Z axis	1.4253	614	0.31%	0.1198	1.63	11.02%
	Left	1.8931			0.1797		
	Right	1.4488			0.0993		
	Front	1.4467			0.0963		
	Rear	1.4533			0.1054		
	Bottom	1.5219			0.1222		

Test condition 2: Mode 19 operating mode with client device (50 % battery status of client device)

Antenna	Probe Position	E –field (V/m)			H–field (A/m)		
		Measurement	Limit	Percentage (%)	Measurement	Limit	Percentage (%)
1	Z axis	1.4427	614	0.31%	0.1172	1.63	10.69%
	Left	1.9033			0.1743		
	Right	1.4522			0.1085		
	Front	1.4322			0.1044		
	Rear	1.4376			0.1107		
	bottom	1.5373			0.1231		

Test condition 3: Mode 19 operating mode with client device (99 % battery status of client device)

Antenna	Probe Position	E –field (V/m)			H–field (A/m)		
		Measurement	Limit	Percentage (%)	Measurement	Limit	Percentage (%)
1	Z axis	1.4141	614	0.31%	0.1109	1.63	10.97%
	Left	1.8899			0.1788		
	Right	1.4345			0.0927		
	Front	1.4462			0.094		
	Rear	1.4392			0.1048		
	bottom	1.5165			0.1182		

Photographs of the Test Setup

See the Appendix - Test Setup Photos.

Photographs of the EUT

See the Appendix - EUT Photos.

----End of Report----