FCC TEST REPORT

FCC ID: 2ACWB-JPACXR

On Behalf of

mophie LLC

mophie juice pack™

Model No.: JPAC-IPXR

Prepared for	:	mophie LLC
Address	:	6244 Technology Ave. Kalamazoo, MI 49009 U.S.A.

Prepared By	:	Shenzhen Alpha Product Testing Co., Ltd.
Address	:	Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103, Shenzhen, Guangdong, China

Report Number	:	T1890143 02
Date of Receipt	:	January 22, 2019
Date of Test	:	January 22, 2019-February 26, 2019
Date of Report	:	February 26, 2019
Version Number	:	REV0

TABLE OF CONTENTS

TEST REPORT DECLARATION

Applicant	:	mophie LLC
Address	:	6244 Technology Ave. Kalamazoo, MI 49009 U.S.A.
Manufacturer	:	mophie LLC
Address	:	6244 Technology Ave. Kalamazoo, MI 49009 U.S.A.
EUT Description	:	mophie juice pack™
		(A) Model No. : JPAC-IPXR
		(B) Trademark : mophie

Measurement Standard Used:

FCC KDB 680106 D01 RF Exposure Wireless Charging Apps v03

The device described above is tested by Shenzhen Alpha Product Testing Co., Ltd. to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The test results are contained in this test report and Shenzhen Alpha Product Testing Co., Ltd. is assumed full responsibility for the accuracy and completeness test. Also, this report shows that the EUT is technically compliant with the KDB 680106 D01 requirements.

This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Shenzhen Alpha Product Testing Co., Ltd.

Tested by (name + signature).....…..:	Reak Yang Project Engineer	Reak Yang ……
Approved by (name + signature)…....:	Simple Guan Project Manager	 ……
Date of issue…… ……..:	February 26, 2019	

Revision History

Revision	Issue Date	Revisions	Revised By
00	February 26, 2019	Initial released Issue	Simple Guan

1. Test Result Summary

Requirement	CFR 47 Section	Result
RF EXPOSURE	§1.1307(b)(1) & KDB680106	PASS

Note:

1. PASS: Test item meets the requirement.

2. Fail: Test item does not meet the requirement.

3. N/A: Test case does not apply to the test object.

4. The test result judgment is decided by the limit of test standard.

2. EUT Description

2.1. Description of Device (EUT)

EUT Name	:	mophie juice pack™
Model No.	:	JPAC-IPXR
DIFF.	:	N/A
Trademark	:	mophie
Power supply	:	Input (Qi): 7.5W MAX Input (USB-C): DC 5V/2A Output (Qi): 5W Battery Capacity: DC 3.8V, 2000mAh, 7.6Wh
Operation frequency	:	127KHz
Modulation	:	ASK
Antenna Type	:	ANT1: Coil Antenna (TX&RX) ANT2: FPC Antenna (RX only)
Software version	:	V1.0
Hardware version	:	V1.2

Conditions requirement	Answers
Power transfer frequency is less than 1 MHz.	After measuring the product the transfer frequency is 127KHz
Output power from each primary coil is less than or equal to 15 watts.	After measuring the product the each primary coil power is 5 watts
The transfer system includes only single primary and secondary coils. This includes charging systems that may have multiple primary coils and clients that are able to detect and allow coupling only between individual pairs of coils.	The transfer system includes only single primary.
Client device is placed directly in contact with the transmitter.	Client device is placed directly in contact with the transmitter.
Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).	Mobile exposure conditions only.
The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.	After measuring the product the Max H-field Strength is 0.38A/m Far less than 50% of the MPE limit.

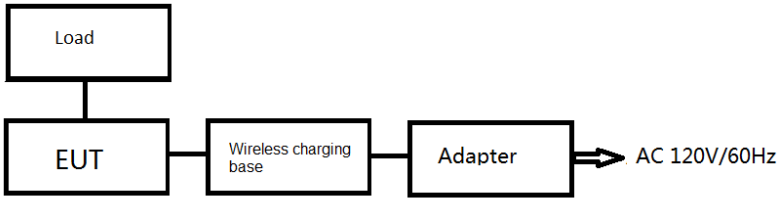
2.2. Accessories of Device (EUT)

Accessories1 : /
Manufacturer : /
Model : /
Ratings : /

2.3. Tested Supporting System Details

No.	Description	Manufacturer	Model	Serial Number	Certification or DOC
1	Wireless charging base 10W	Mophie inc	WRLS-CHGBASE-10W	--	--
2	Power Adapter	Mophie inc	A138A-120150U-US2	--	--
3	Load	--	--	--	--

2.4. Block Diagram of connection between EUT and simulators



2.5. Description of Test Modes

Channel	Frequency (KHz)
1	127

2.6. Test Conditions

Items	Required	Actual
Temperature range:	15-35℃	27℃
Humidity range:	25-75%	56%
Pressure range:	86-106kPa	980kPa

2.7. Test Facility

Shenzhen Alpha Product Testing Co., Ltd
Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103, Shenzhen, Guangdong, China

June 21, 2018 File on Federal Communication Commission
Registration Number: 293961

July 25, 2017 Certificated by IC
Registration Number: 12135A

2.8. Measurement Uncertainty

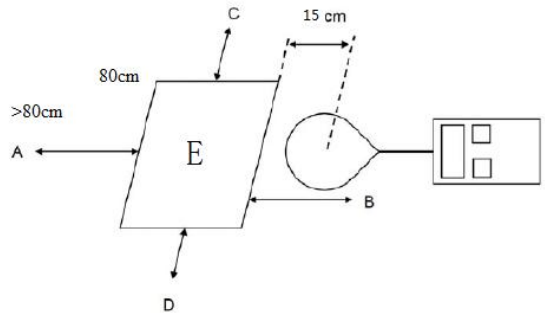
(95% confidence levels, k=2)

Item	Uncertainty
Uncertainty for Conducted Emission Test	2.74dB
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	3.77dB
	3.80dB
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz)	4.16dB
	4.13dB
	2.56dB(Polarize: V)
Uncertainty for radio frequency	5.4×10^{-8}
Uncertainty for conducted RF Power	0.37dB
Uncertainty for temperature	0.2℃
Uncertainty for humidity	1%
Uncertainty for DC and low frequency voltages	0.06%

3. Test Results and Measurement Data

3.1. RF EXPOSURE TEST

3.1.1. Test Specification

Test Requirement:	**FCC Rules and Regulations KDB680106**
Test Method:	§1.1307(b)(1) & KDB680106
Limits:	According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines. According to §1.1310 and §2.1093 RF exposure is calculated. According KDB680106 D01v03: RF Exposure Wireless Charging.
Test Setup:	 E to position is 20cm.
Test Mode:	Charging + Transmitting Mode
Test Procedure:	1. The RF exposure test was performed on 360 degree turn table in anechoic chamber. 2. The measurement probe was placed at test distance (10cm) which is between the edge of the charger and the geometric centre of probe. 3. The turn table was rotated 360d degree to search of highest strength. 4. The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E) were completed. 5. The EUT were measured according to the dictates of KDB 680106D01v03.
Test Result:	PASS

3.1.2. Test Instruments

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Van der Hoofden	MPB	MS-210	0019	2018.09.21	1 Year

3.1.3. Test data

For Full load mode:
E-Filed Strength at 15 cm for position A,B,C,D 20cm for position E from the edges surrounding the EUT (V/m)

Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Limit (50%) (V/m)	Limits Test (V/m)
0.127	1.20	1.22	1.19	1.21	1.20	307	614

H-Filed Strength at 15 cm for position A,B,C,D 20cm for position E from the edges surrounding the EUT (A/m)

Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Limit (50%) (A/m)	Limits Test (A/m)
0.127	**0.38**	0.35	0.37	0.35	0.37	0.815	1.63

For half load mode:
E-Filed Strength at 15 cm for position A,B,C,D 20cm for position E from the edges surrounding the EUT (V/m)

Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Limit (50%) (V/m)	Limits Test (V/m)
0.127	1.04	1.06	1.03	1.06	1.05	307	614

H-Filed Strength at 15 cm for position A,B,C,D 20cm for position E from the edges surrounding the EUT (A/m)

Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Limit (50%) (A/m)	Limits Test (A/m)
0.127	0.27	0.25	0.24	0.28	0.27	0.815	1.63

For No load mode:
E-Filed Strength at 15 cm for position A,B,C,D 20cm for position E from the edges surrounding the EUT (V/m)

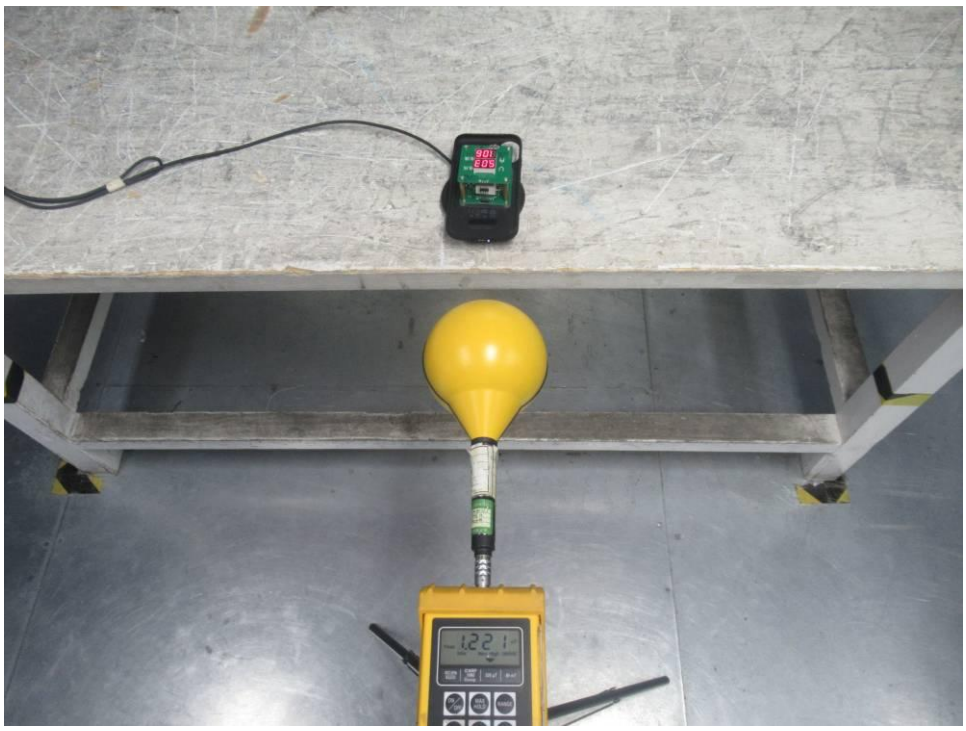
Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Limit (50%) (V/m)	Limits Test (V/m)
0.127	0.69	0.71	0.67	0.68	0.70	307	614

H-Filed Strength at 15 cm for position A,B,C,D 20cm for position E from the edges surrounding the EUT (A/m)

Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Limit (50%) (A/m)	Limits Test (A/m)
0.127	0.18	0.18	0.17	0.19	0.18	0.815	1.63

4. Photos of test setup

For Full load mode



For No load mode

5. Photographs of EUT

Refer to test report T1890143 01.

------End------