

Report No.: 18220WC00040602FCC ID: ZE9ST-TCWCDMPage 1 of 14

# FCC TEST REPORT

Client Name

Sariana LLC

Address

7365 Mission Gorge Road Suite G, San Diego, CA 92120 U.S.A.

Product Name : USB-C Wireless Charging Dock for AirPods

Date : May 07, 2020



### Shenzhen Anbotek Compliance Laboratory Limited

Address: 1/F., Building D, Sogood Science and Technology Park, Sanwei Community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China. Tel:(86) 755-26066440 Fax: (86) 755-26014772 Email: service@anbotek.com

## Code:AB-RF-05-a



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## TEST REPORT

Applicant Manufacturer

Anbotek

Product Safety

Sariana LLC

: Sariana LLC

S

Product Name

USB-C Wireless Charging Dock for AirPods ST-TCWCDM, ST-TCWCDS

∧ T E C H

Trade Mark

Rating(s)

Model No.

: Input: DC 5V, 2A Wireless Output: 5W

Test Standard(s) : FCC Part 1.1310, 1.1307(b) Test Method(s) : KDB680106 D01 RF Exposure Wireless Charging Apps v03

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC Part 1.1307 & KDB680106 D01 requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Receipt Date of Test Apr. 20, 2020 Apr. 20~27, 2020

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Prepared By

Reviewer

(Engineer / Dolly Mo)

Jold

this thank

(Supervisor / Bibo Zhang)

(Manager / Tom Chen)

Shenzhen Anbotek Compliance Laboratory Limited

Approved & Authorized Signer

Address: 1/F., Building D, Sogood Science and Technology Park, Sanwei Community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China. Tel:(86) 755-26066440 Fax: (86) 755-26014772 Email: service@anbotek.com Code:AB-RF-05-a



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## **1. General Information**

## 1.1. Client Information

		App. A. V. Vote Patrice Steele 100
Applicant	:	Sariana LLC
Address	:	7365 Mission Gorge Road Suite G, San Diego, CA 92120 U.S.A.
Manufacturer	••	Sariana LLC
Address	:	7365 Mission Gorge Road Suite G, San Diego, CA 92120 U.S.A.
Factory	:	Sariana LLC
Address	:	7365 Mission Gorge Road Suite G, San Diego, CA 92120 U.S.A.
	Address Manufacturer Address Factory	Address:Manufacturer:Address:Factory:

## 1.2. Description of Device (EUT)

Product Name	:	USB-C Wireless Charging	JSB-C Wireless Charging Dock for AirPods						
Model No.	:	Let about he	T-TCWCDM, ST-TCWCDS lote: All samples are the same except the model name, so we prepare ST-TCWCDM" for test only.)						
Trade Mark	:	S \land T E C	H I K Anborek Anborek Anborek Anborek						
Test Power Supply	:	AC 120V, 60Hz for AppleM	1acBook						
Test Sample No.	:	1-2-1(Normal Sample), 1-2	2-1(Engineering Sample)						
		Operation Frequency:	110.1-205KHz						
Product		Modulation Type:	FSK Anbole Anbole Anbole Anbole						
Description	•	Antenna Type:	Inductive loop coil Antenna						
		Antenna Gain(Peak):	0 dBi						

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## 1.3. Auxiliary Equipment Used During Test

		Product: AppleMacBook
		M/N: A1708
		CMIIT ID:2016AJ5746
Notebook	:	Input Rating: 20.3V/3A
		Adapter:
		Input: 100-240V, 50-60HZ, 1.5A
		Output: 20.3V/3A (USB PD) or 9V/3A(USB PD) or 5.2V/2.4A
Airpods	:	Manufacturer: Apple

## 1.4. Test Equipment List

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Magnetic field meter	NARDA	ELT-400	423623	Dec. 24, 2018	3 Year
2	E-Field Probe	Narda	EF0391	Q15221	Nov.17, 2017	3 Year
3	H-Field Probe	Narda	HF3061	Q15835	Nov.17, 2017	3 Year

## **1.5. Measurement Uncertainty**

Radiation Uncertainty	:	Ur = 3.9 dB (Horizontal)	Anborek Anborek	Anbore
		Ur = 3.8 dB (Vertical)	And hotek Anbote	k Aupo, tek
		tek unbotek Anbote	Ant botek Anb	otek Anbou
Conduction Uncertainty	:	Uc = 3.4 dB	hek sobotek A	inboten Anbo

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## 1.6. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

#### FCC-Registration No.: 184111

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registed and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No. 184111, September 27, 2019.

#### **ISED-Registration No.: 8058A**

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (ISED) Innovation, Science and Economic Development Canada. The acceptance letter from the ISED is maintained in our files. Registration 8058A, March 07, 2019.

#### Test Location

Shenzhen Anbotek Compliance Laboratory Limited. 1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China. 518102

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## 2. Measurement and Result

## 2.1. Requirements

According to the item 5.b) 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 that 1 MHz

2) Output power from each primary coil is less than or equal to 15 watts.

3) 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

4) Client device is inserted in or 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 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.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)							
	(A) Limits for Occ	upational/Controlled Ex	posures								
0.3-3.0	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	1	/	f/300	6							
1500-100,000	1	1	5	6							
	(B) Limits for Genera	l Population/Uncontrolle	d 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	1	1	f/1500	30							
1500-100,000	1	/	1.0	30							

Limits For Maximum Permissible Exposure (MPE)

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).

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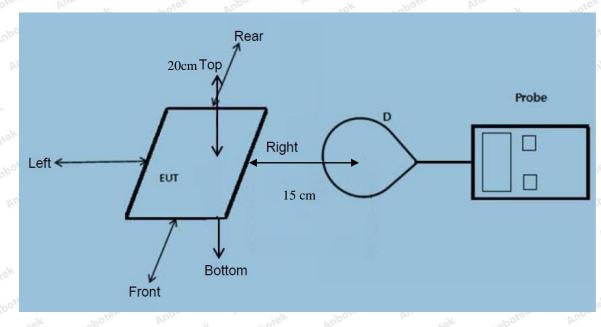
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## 2.2. Test Setup



Note: Measurements should be made at 15 cm surrounding the EUT and 20cm above the top surface of the EUT.

## 2.3. Test Procedure

1) The RF exposure test was performed in anechoic chamber.

2) The measurement probe was placed at required test distance which is between the edge of the charger and the geometric center of probe.

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.(A is the right, B is the back, C is the left, D is the front, and E is the top.)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

## 2.4. Test Result

2.4.1. Equipment Approval Considerations item 5.b of KDB 680106 D01 v03.

- 1) Power transfer frequency is less that 1 MHz
  - The device operate in the frequency range 110.1~205KHz
- 2) Output power from each primary coil is less than 15 watts
- The maximum output power of the primary coil is 5W.

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3) 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 including a charging system with only single primary coils is to detect and allow only between individual pairs of coils.

- 4) Client device is inserted in or placed directly in contact with the transmitter
- Client device is placed directly in contact with the transmitter.

5) Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion) - The EUT is a Mobile Power Pack with Wireless Charger

6) 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.
Conducted the measurement with the required distance and the test results please refer to the section 2.4.2

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2.4.2. Environmental evaluation and exposure limit according to FCC CFR 47 part 1, 1.1307(b), 1.1310

Temperature:	23.8°C	Relative Humidity:	54%
Pressure:	1012 hPa	Test Voltage:	AC 120V, 60Hz for AppleMacBook

E-Field Strength at 15 cm surrounding the EUT and 20cm above the top surface of the EUT

340		1 A A A A A A A A A A A A A A A A A A A	0.0	100 m		100		
Anbois	Frequency	Test	Test	Test	Test	Test	Reference	Limits
Battery	Range	Position	Position	Position	Position	Position	Limit	Test
power	(KHz)	A A	ote <sup>lk</sup> B pr	С	D	ATE OTEN	(V/m)	(V/m)
Hek Anb	Sten Anbo	otek p	nbotek	Anbon	puttotek	Anbore	Ano NO	lek Ar
1%	110.1~205	0.37	0.32	0.24	0.46	0.91	307	614
abotek	Anboten	Anubotek	Anbotek	Anbo	sek ho	potek	inbote. Ar	hotek
h. nbotek	Anbote	Anshotel	Anbot	er Anb	dek h	Anbotek	Anbore	Ansbotek
50%	110.1~205	1.32	1.37	1.20	1.44	1.52	307	614
ek nobc	rek Anbor	And	hotek	Anbotek	Anbo	h. npote	Anbore.	And
stek h	botek Ant	pore P	hotek	Anbotek	Anbo	ek nob	ptek Anbor	PU PU
99%	110.1~205	2.48	2.22	2.18	2.40	2.07	307	614
Anbor	An	Anboten	And	k Anbo	rek Ant	yor p	abotek	Anboter
Anboutek	An nbotek	Anboten	Ano	otek Al	tootek	Aupon	publick	Anboron
Stand-by	110.1~205	0.45	0.34	0.71	0.46	0.54	307	614
ek Aupo	stek ob	otek Ar	pote.	un hotek	Anbotek	Anboi	tek nbote	K Ant

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Battery power	Frequency Range (KHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Reference Limit (A/m)	Limits Test (A/m)
ek Ant	otek Anbe	otek	nbotek	Anboro	Ansobotek	Anbote	Anbo	lek h
1%	110.1~205	0.042	0.056	0.041	0.048	0.064	0.815	1.63
Anbotek	Anbo	n nbotek	Anbore	An-	otek A	iboten P	nbo tek	Aspotek
Anbotek		put	K Anbo	ie. Ant	. otek	Anbotek	Anbo	Probot
50%	110.1~205	0.25	0.51	0.34	0.43	0.47	0.815	1.63
K Anb	ster Anu	potek p	nbotek	Anbo.	Anborek	Anbote	rek anbot	6/4
99%	110.1~205	0.42	0.58	0.57	0.36	0.51	0.815	1.63
Inbotek k		Anbotek	Anbore	ek nob	stek Ar	potek Al	loo hotek	Anbotek
Anbore	Ann hotek	Anbotel	Aupo	-telt	obotek	Anboto	Ann hotek	Anbote
Stand-by	110.1~205	0.25	0.33	0.18	0.30	0.35	0.815	1.63
anbo		494	botek	Anbor	P. Lotek	Anboten	Anu	N-

## H-Field Strength at 15 cm surrounding the EUT and 20cm above the top surface of the EUT

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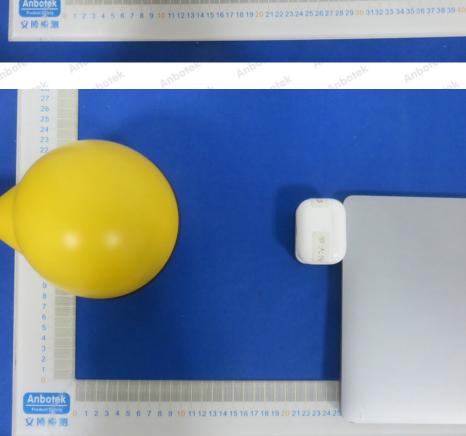
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Hotline 400-003-0500 www.anbotek.com



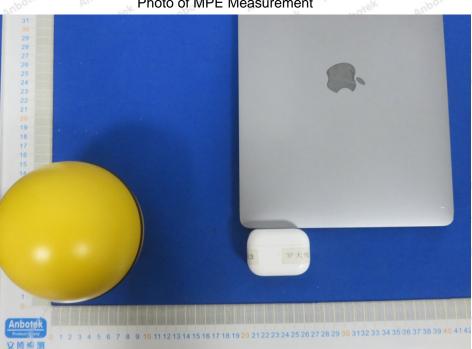


Photo of MPE Measurement

## **APPENDIX I -- TEST SETUP PHOTOGRAPH**

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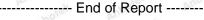
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