



RF Exposure Report

Applicant : Sariana LLC
Address : 7365 Mission Gorge Road, Suite G, San Diego , CA 92120, USA
Equipment : 2-in-1 Foldable Qi2 Wireless Charging Stand
Model No. : ST-Q21FM
Trade Name : S A T E C H I
FCC ID. : ZE9-ST-Q21FM
Standard : FCC CFR 47 part1, 1.1310
KDB680106 D01v04

I HEREBY CERTIFY THAT :

The sample was received on Jan. 25, 2024 and the test items were conducted Feb. 08, 2024 at CerpPASS Technology Corp. The test result refers exclusively to the test presented test model / sample. Without written approval of CerpPASS Technology Corp., the test report shall not be reproduced except in full.

Approved by:

Leevin Li / Supervisor



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1. Test Configuration of Equipment under Test

1.1. Feature of Equipment under Test

Product	2-in-1 Foldable Qi2 Wireless Charging Stand
Test Model	ST-Q21FM
Model Discrepancy	N/A
Frequency Range	Output Wireless 1: MPP: 360KHz, BPP: 120~148.5KHz Output Wireless 2: 110KHz~148KHz
Antenna Type	Coil Antenna
Modulation Type	Output Wireless 1: ASK Output Wireless 2: ASK
Power Rating	Input: 9V 3A/12V 2.5A/15V 2A,30W(Max) Output Wireless 1: 15W(Max)/Qi MPP; 5W (Max)/Qi BPP Output Wireless 2: 5W(Max)/Qi BPP
Temperature	Operating Temp: 0°C~+40°C Storage Temp: -20°C~+55°C

Note: For more details, please refer to the User's manual of the EUT.

1.2. Test Mode and Test Software

Test Mode	Operating Description
Mode 1	Wireless Charging for Wireless 1(Standby mode) +Wireless 2(Standby mode)
Mode 2	Wireless Charging for Wireless 1(15W/7.5W for Wireless Load, Operating @ MPP 360KHz) +Wireless 2(5W for AirPods)
Mode 3	Wireless Charging for Wireless 1(5W/2.5W for Wireless Load, Operating @ BPP: 120~148.5KHz) +Wireless 2(5W for AirPods)

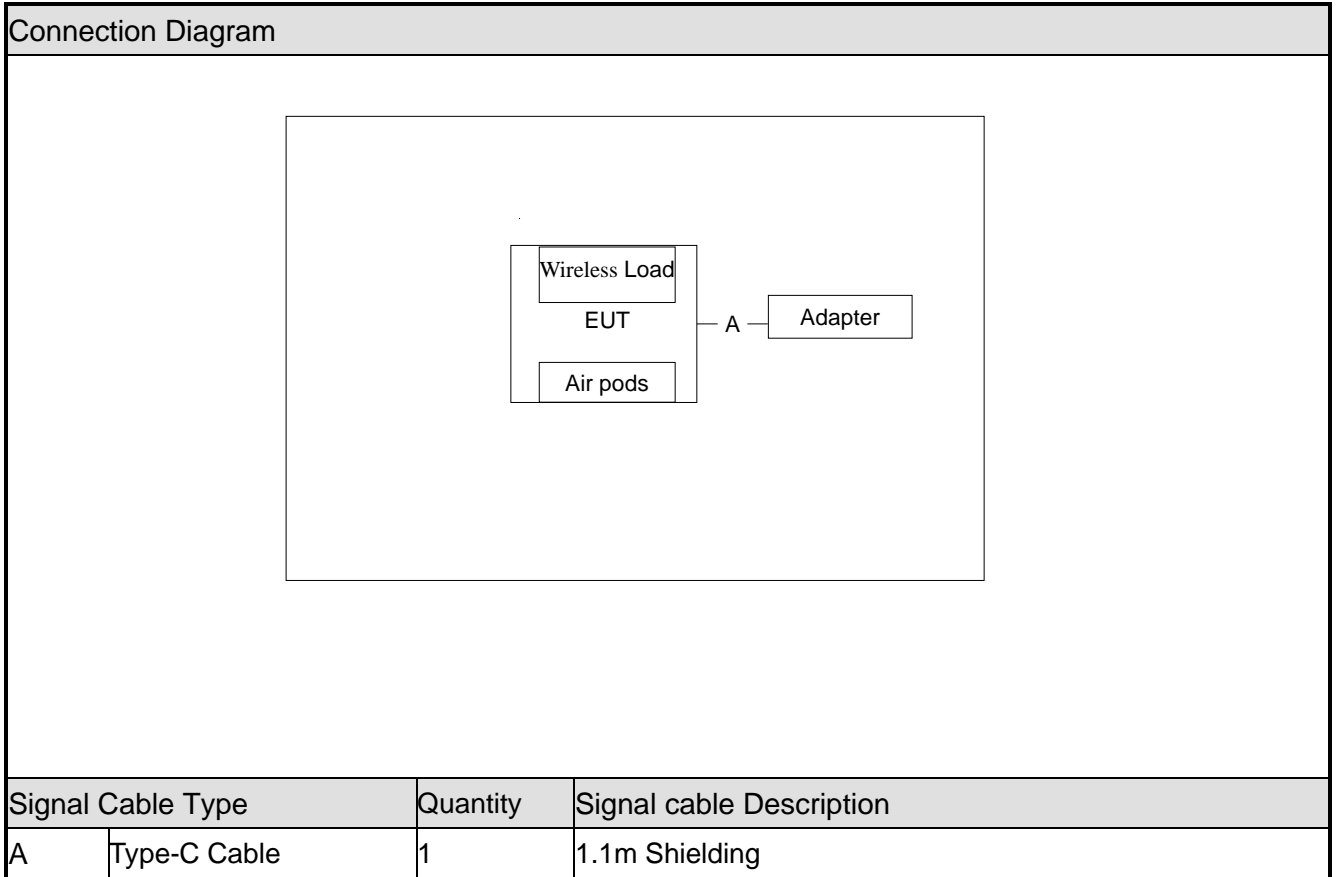
Note: The EUT Have two coils, the specific location is shown below:





1.3. Description of Test System

Product	Manufacturer	Model No.	Power Cord
1 Adapter	Apple	A2164	N/A
2 Wireless Load	N/A	N/A	N/A
3 Air pods	Apple	A2190	N/A





1.4. General Information of Test

Test Site	Cerpass Technology Corporation(Cerpass Laboratory) Address: Room 102, No. 5, Xing'an Road, Chang'an Town, Dongguan City, Guangdong Province Tel: +86-769-8547-1212 Fax: +86-769-8547-1912
FCC Designation No.:	CN1288

Test Item	Test Site	Test period	Environmental Conditions	Tested By
RF Exposure	3M01-DG	2024/02/08	24°C / 54%	Amos Zhang

1.5. Measurement Uncertainty

Measurement Item	Uncertainty
Magnetic Field measurements	±1.60
Electric Field measurements	±1.60



2. Summary Of Standards And Results

2.1. Measuring Standard

The EUT have been tested according to the applicable standards as referenced below:

Test Item	Normative References	Remarks
RF Exposure	FCC CFR 47 part1, 1.1310 KDB680106 D01v04	PASS

2.2. Requirements

According to the item 5 of KDB 680106 D01v04:

Requirements of KDB 680106 D01 v03r01 section 5b	Yes/No	Description
Power transfer frequency is less than 1 MHz	Yes	The maximum operating frequency is 360KHz
Output power from each primary coil is less than or equal to 15 watts	Yes	The maximum output power for each primary coil is $15W \leq 15W$
A client device providing the maximum permitted load is placed in physical contact with the transmitter	Yes	A client device providing the maximum permitted load is placed in physical contact with the transmitter
Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion)	Yes	Mobile exposure conditions only
The E-field and H-field strengths, at and beyond 20 cm surrounding the device surface, are demonstrated to be less than 50% of the applicable MPE limit	Yes	The E-field and H-field strengths, at and beyond 20 cm surrounding the device surface, are demonstrated to be less than 50% of the applicable MPE limit
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 transfer system includes two separated individual coils and allows for capable wireless power transfer at the same time.



2.3. Duty cycle

Limits

None; for reporting purposes only.

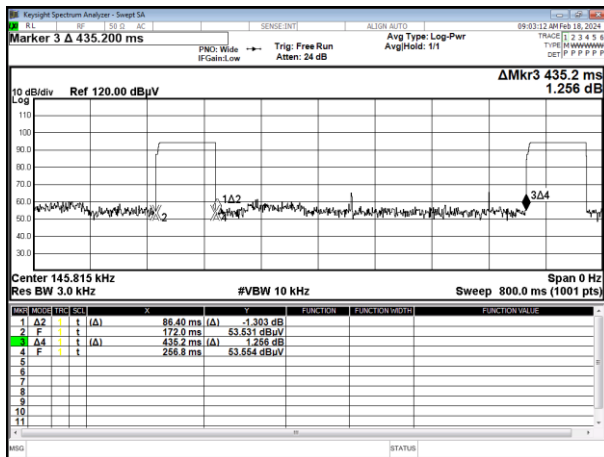
Procedure

Duty cycle zero-span mode Method

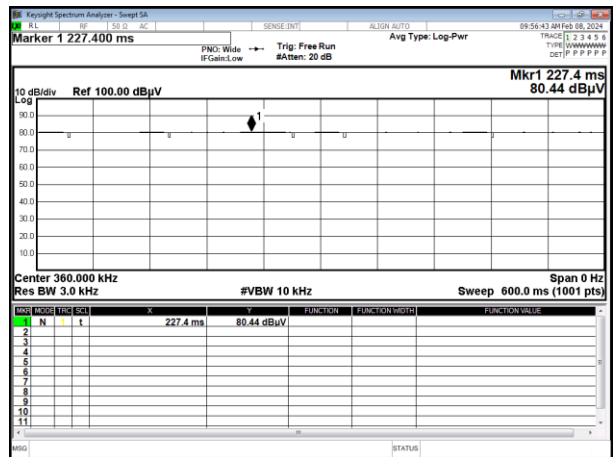
Result

Mode	On Time (msec)	Period Time (msec)	Duty Cycle (%)
Mode 1: Wireless2, Standby @110KHz~148KHz	86.40	521.6	16.56%
Mode 2: Wireless 1, Operating @ MPP 360KHz	100.00	100.00	100.00%
Mode 3: Wireless 1, Operating @ BPP: 120~148.5KHz	100.00	100.00	100.00%
Mode 2,3: Wireless2-Operating @ 110KHz~148KHz	100.00	100.00	100.00%

Mode 1: Wireless2, Standby @110KHz~148KHz

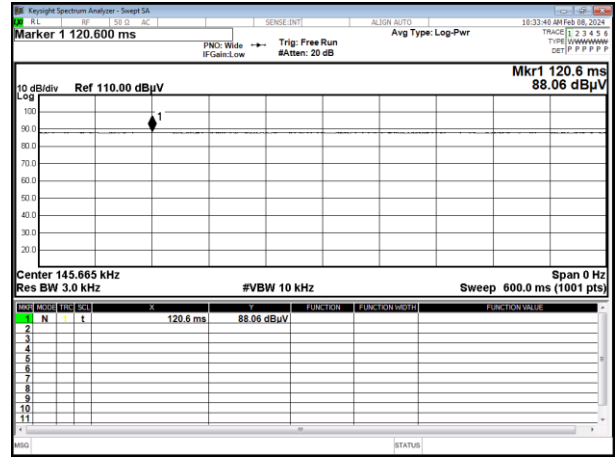
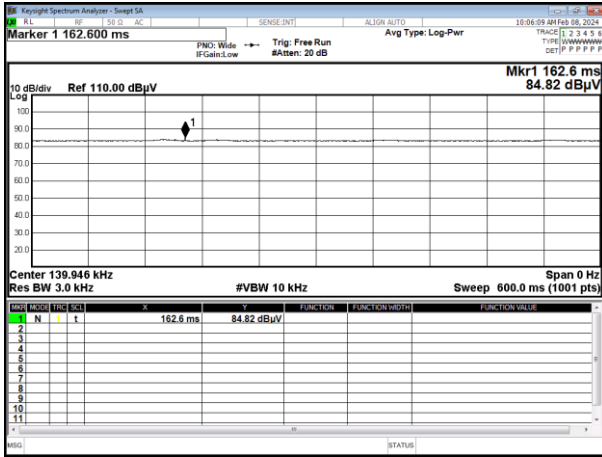


Mode 2: Wireless 1, Operating @ MPP 360KHz



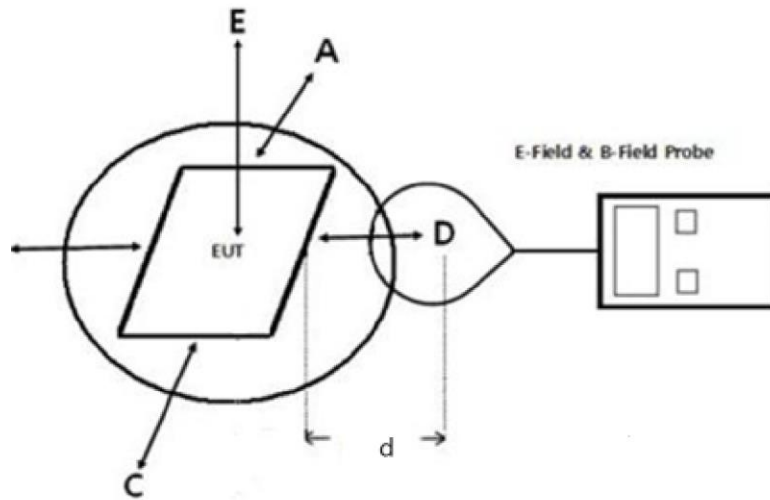
Mode3: Wireless 1, Operating @ BPP: 120~148.5KHz

Mode 2,3: Wireless2-Operating @ 110KHz~148KHz





2.4. Typical test Setup



Note: Position A: Front of EUT; Position B: Left of EUT; Position C: back of EUT; Position D: Right of EUT; Position E: Top of EUT(20 cm measure distance);

2.5. Specification Limits

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) 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)
(A) 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
300-1,500			f/300	6
1,500-100,000			5	6
(B) 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
300-1,500			f/1500	30
1,500-100,000			1.0	30

Note 1: f = frequency in MHz ; *Plane-wave equivalent power density
 Note 2: For the applicable limit, see FCC 1.1310



2.6. Test Equipment List and Details

Instrument	Manufacturer	Model No	Serial No	Calibration Date	Valid Date
Electric and Magnetic field probe-analyzer	Narda	EHP-200AC	180ZX00632	2023/08/03	2024/08/02
MXA Signal Analyzer	KEYSIGHT	N9020A	US46220290	2023/05/06	2024/05/05

2.7. Test Result

Mode 1: Wireless Charging for Wireless 1(Standby mode) +Wireless 2(Standby mode)

Wireless2, Standby @110KHz~148KHz

a) Electric Field Strength Measurement

Measured Side	Distance (cm)	Measured Value (V/m)			50% of Limit (V/m)	Limit (V/m)
		Peak	Duty Cycle %	AVG		
A	20	0.51	16.56	0.21	307.00	614.00
B	20	0.31	16.56	0.13	307.00	614.00
C	20	0.29	16.56	0.12	307.00	614.00
D	20	0.42	16.56	0.17	307.00	614.00
E	20	0.31	16.56	0.13	307.00	614.00
F	20	0.86	16.56	0.35	307.00	614.00

b) Magnetic Field Strength Measurement

Measured Side	Distance (cm)	Measured Value (A/m)			50% of Limit (A/m)	Limit (A/m)
		Peak	Duty Cycle %	AVG		
A	20	0.019	16.56	0.008	0.815	1.63
B	20	0.022	16.56	0.009	0.815	1.63
C	20	0.024	16.56	0.010	0.815	1.63
D	20	0.017	16.56	0.007	0.815	1.63
E	20	0.013	16.56	0.005	0.815	1.63
F	20	0.032	16.56	0.013	0.815	1.63

Note: 1: Peak measurements were performed. RMS values were calculated from the peak measurement.

Please refer to the formula for calculating the RMS values: [Filed Strength*√Duty cycle]

2: These measurements shall be taken along the principal axes of the device, with one axis oriented along the direction of the estimated maximum field strength, and for three points per axis. Test results for the worst position (20cm) are reported.



Mode 2: Wireless Charging for Wireless 1(15W/7.5W for Wireless Load, Operating @ MPP 360KHz) +Wireless 2(5W for AirPods)

Mode 3: Wireless Charging for Wireless 1(5W/2.5W for Wireless Load, Operating @ BPP: 120~148.5KHz) +Wireless 2(5W for AirPods)

Wireless2-Operating @ 110KHz~148KHz

a) Electric Field Strength Measurement

Power <10% Charging						
Measured Side	Distance (cm)	Measured Value (V/m)			50% of Limit (V/m)	Limit (V/m)
		Peak	Duty Cycle %	AVG		
A	20	0.65	100	0.65	307	614.00
B	20	0.53	100	0.53	307	614.00
C	20	0.51	100	0.51	307	614.00
D	20	0.49	100	0.49	307	614.00
E	20	0.57	100	0.57	307	614.00
Power 20%~60% Charging						
Measured Side	Distance (cm)	Measured Value (V/m)			50% of Limit (V/m)	Limit (V/m)
		Peak	Duty Cycle %	AVG		
A	20	0.63	100	0.63	307.00	614.00
B	20	0.51	100	0.51	307.00	614.00
C	20	0.49	100	0.49	307.00	614.00
D	20	0.46	100	0.46	307.00	614.00
E	20	0.55	100	0.55	307.00	614.00
Power >75% Charging						
Measured Side	Distance (cm)	Measured Value (V/m)			50% of Limit (V/m)	Limit (V/m)
		Peak	Duty Cycle %	AVG		
A	20	0.6	100	0.6	307.00	614.00
B	20	0.49	100	0.49	307.00	614.00
C	20	0.46	100	0.46	307.00	614.00
D	20	0.42	100	0.42	307.00	614.00
E	20	0.52	100	0.52	307.00	614.00

1: Peak measurements were performed. RMS values were calculated from the peak measurement.

Please refer to the formula for calculating the RMS values: [Filed Strength*√Duty cycle]

2: These measurements shall be taken along the principal axes of the device, with one axis oriented along the direction of the estimated maximum field strength, and for three points per axis. Test



results for the worst position (20cm) are reported.

b) Magnetic Field Strength Measurement

Power <10% Charging						
Measured Side	Distance (cm)	Measured Value (A/m)			50% of Limit (A/m)	Limit (A/m)
		Peak	Duty Cycle %	AVG		
A	20	0.03	100	0.03	0.815	1.63
B	20	0.024	100	0.024	0.815	1.63
C	20	0.023	100	0.023	0.815	1.63
D	20	0.02	100	0.02	0.815	1.63
E	20	0.015	100	0.015	0.815	1.63
Power 20%~60% Charging						
Measured Side	Distance (cm)	Measured Value (A/m)			50% of Limit (A/m)	Limit (A/m)
		Peak	Duty Cycle %	AVG		
A	20	0.029	100	0.029	0.815	1.63
B	20	0.021	100	0.021	0.815	1.63
C	20	0.02	100	0.02	0.815	1.63
D	20	0.018	100	0.018	0.815	1.63
E	20	0.013	100	0.013	0.815	1.63
Power >75% Charging						
Measured Side	Distance (cm)	Measured Value (A/m)			50% of Limit (A/m)	Limit (A/m)
		Peak	Duty Cycle %	AVG		
A	20	0.027	100	0.027	0.815	1.63
B	20	0.019	100	0.019	0.815	1.63
C	20	0.018	100	0.018	0.815	1.63
D	20	0.016	100	0.016	0.815	1.63
E	20	0.012	100	0.012	0.815	1.63

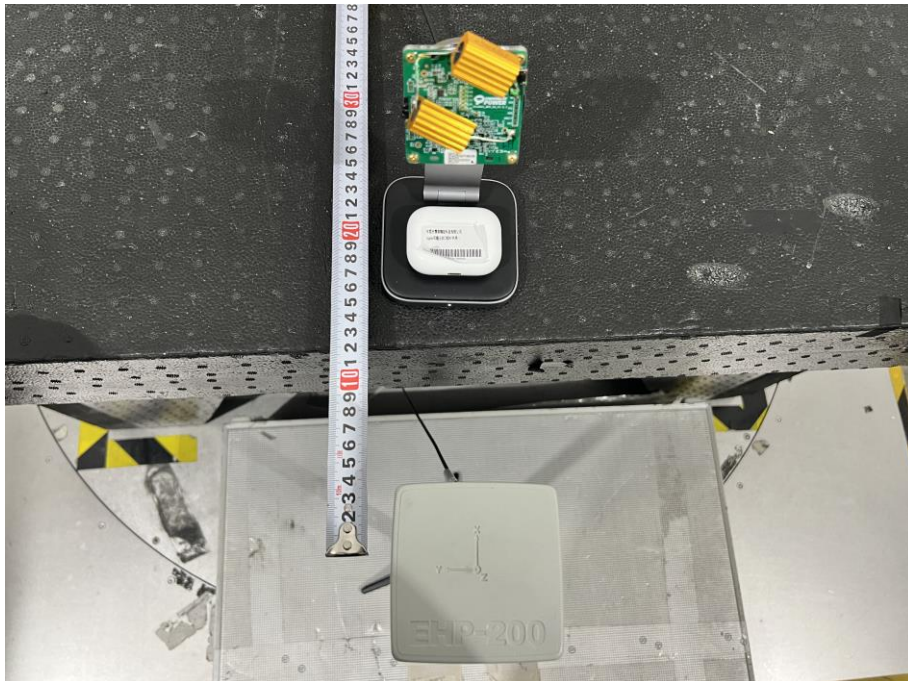
1: Peak measurements were performed. RMS values were calculated from the peak measurement.

Please refer to the formula for calculating the RMS values: $[Filed\ Strength \cdot \sqrt{Duty\ cycle}]$

2: These measurements shall be taken along the principal axes of the device, with one axis oriented along the direction of the estimated maximum field strength, and for three points per axis. Test results for the worst position (20cm) are reported.



2.8. Photographs of test setup



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