RF Exposure Report

Report No.:	FCC_RF_SL18121801-KLA-021_WPT RF Exposure Rev_1.0
FCC ID:	QTA-AF120
Test Model:	AF120
Received Date:	02/09/2020
Test Date:	03/25/2020
Issued Date:	04/07/2020
Applicant:	KLA-Tencor Corporation
Address:	One Technology Drive, Milpitas, CA 95035
Issued By:	Bureau Veritas Consumer Products Services, Inc.
Lab Address:	775 Montague Expressway Milpitas, CA, 95035, USA
FCC Registration / Designation Number:	540430

TESTING CERT # 2742-01

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Release Control Record

Issue No.	Description	Date Issued
FCC_RF_SL18121801-KLA-021_RF Exposure	Orignal Release	03/25/2020
FCC_RF_SL18121801-KLA-021_RF Exposure Rev_1.0	Update Per Review	04/07/2020

1 Certificate of Conformity

Product:	SensArray®Automation FOUP
Brand:	KLA-Tencor
Test Model:	AF120
Sample Status:	Engineering sample
Applicant:	KLA-Tencor Corporation
Test Date:	03/23/2020
Standards:	FCC Part 1 (Section 1.1307(b), 1.1310) FCC Part 2 (Section 2.1091)

The above equipment has been tested by **Bureau Veritas Consumer Products Services, Inc., Milpitas Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by : _____ , **Date:** 04/07/2020

Deon Dai / Test Engineer

Approved by : _____ , **Date:** 04/07/2020

Chen Ge / Engineer Reviewer

2 General Information

2.1 General Description of EUT

Product	SensArray®Automation FOUP
Brand	KLA-Tencor
Test Model	AF120
Status of EUT	Engineering sample
Operating Frequency	1.528 MHz

3 Nerve Stimulation Exposure

3.1 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.

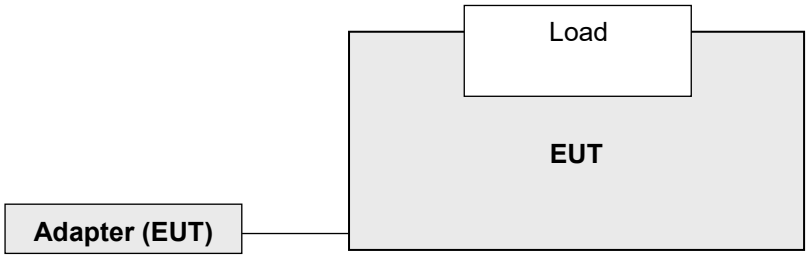
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.						

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	-	-	-	-	-	-

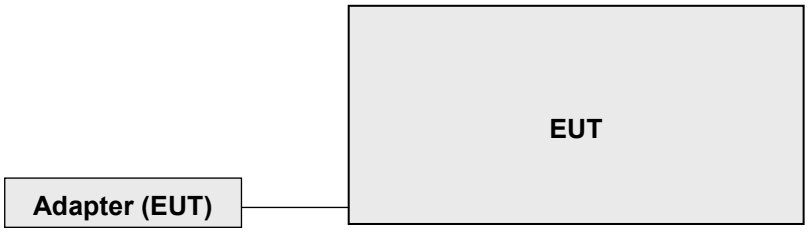
Note: The core(s) is(are) originally attached to the cable(s).

3.2 Configuration of System under Test

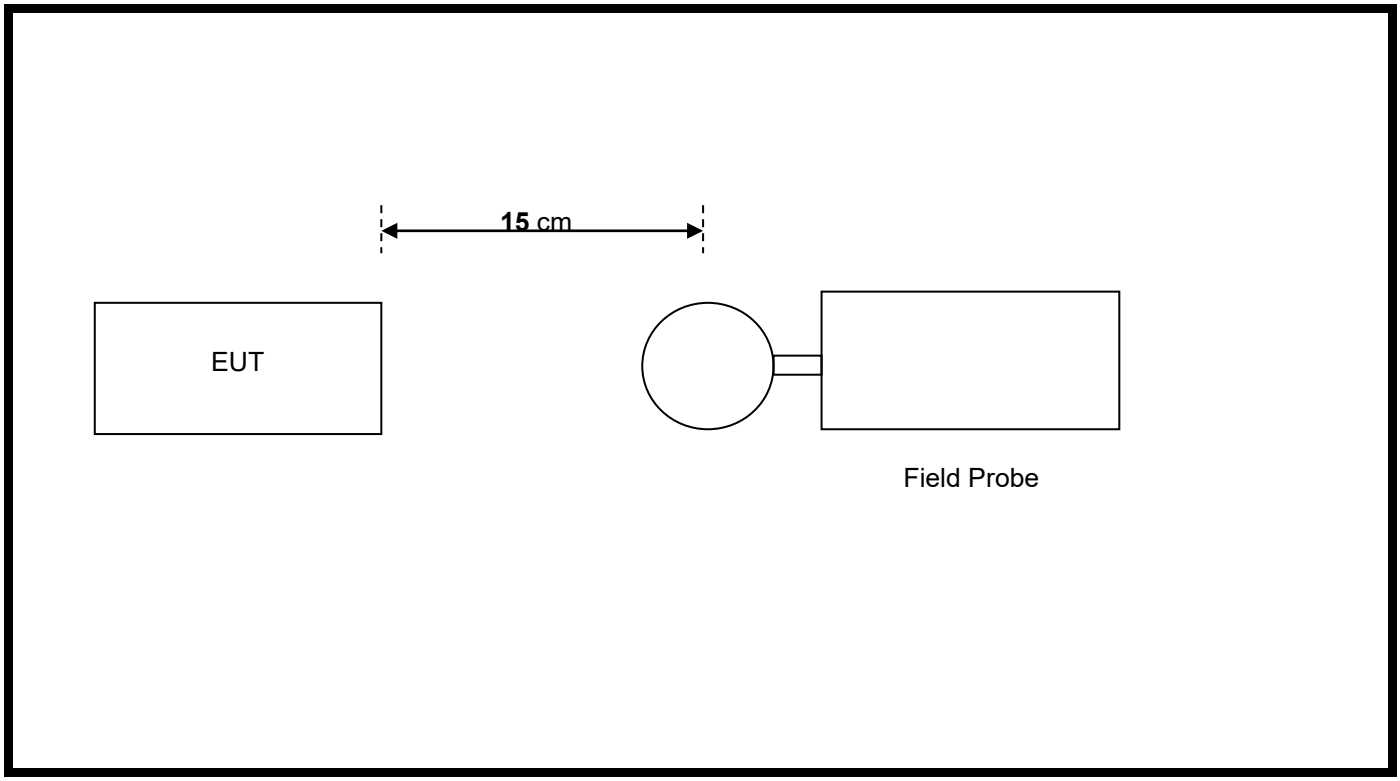
Charging Mode:



Standby Mode:



3.3 Test Setup



3.4 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Field strength meter WAVECONTROL	SMP2	19SN0981	Jan. 02, 2020	Jan. 02, 2021
WP400 Field Probe WAVECONTROL	WP400	19WP100500	Jan. 02, 2020	Jan. 02, 2021
WPH60 Field Probe WAVECONTROL	WPH60	19WP100400	Jan. 02, 2020	Jan. 02, 2021
Electric Field Probe ETS-Lindgren	HI-6005	156327	Feb. 11, 2020	Feb. 11, 2021

4 Limit for Maximum Pecrmissible Exposure (MPE)

Frequency Range(MHz)	Electric field strength(V/m)	Magnetic field strength(A/m)	Power density(mW/cm2)	Averaging time(minutes)
(A) Limits for occupation/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	1.06	6
300-1500			f/300	6
1500-100000			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
300-1500			f/1500	30
1500-100000			1	30
f = frequency in MHz * = Plane-wave equivalent power density				

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.

KDB 680106 D01 RF Exposure Wireless Charging App v03:

(1) Power transfer frequency is less than 1MHz
-------No, Power transfer frequency is 1.528MHz

(2) Output power from each primary coil is less than or equal to 15 watts
------Yes, power is 2W

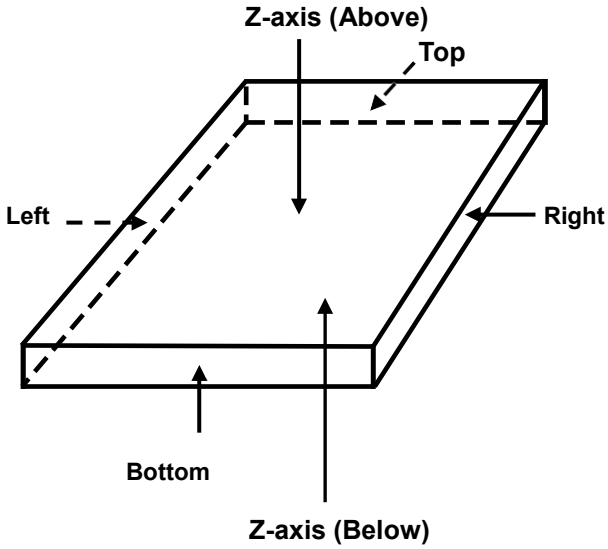
(3) The transfer system includes only single primary and secondary coils. This includes charging systems that may have multiple primary coils and clients that are able to detect and allow coupling only between individual pairs of coils.
------Yes, Transmitter and receiver have only one coil each

(4) Client device is placed directly in contact with the transmitter.
------No, Distance between charger and receiver is 11mm max.

(5) Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).
------Yes, Mobile exposure condition only, product is used >20cm from user.

(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.
------Yes, 0.06 A/m < 0.72 A/m (50% of limit 0.72 A/m)

5 Test Point Description



6 Test Result

Charging Mode

E-Field Measurement (15cm)						E-Field Measurement (15cm)	E-Field Measurement (20cm)	E-Field Measurement (15cm)
Frequency (MHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)	Z-axis (Above)	Z-axis (Below)
1.528	Max E-field (V/m)	1.29	1.19	1.17	1.26	1.19	1.13	1.22
1.528	Limit (V/m)	614	614	614	614	614	614	614
1.528	Margin (V/m)	-612.71	-612.81	-612.83	-612.74	-612.81	-612.87	-612.78
1.528	50 % Limit (V/m)	307	307	307	307	307	307	307
1.528	50 % Margin (V/m)	-305.71	-305.81	-305.83	-305.74	-305.81	-305.87	-305.78

H-Field Measurement (15cm)						H-Field Measurement (15cm)	H-Field Measurement (20cm)	H-Field Measurement (15cm)
Frequency (MHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)	Z-axis (Above)	Z-axis (Below)
1.528	Max H-field (A/m)	0.06	0.06	0.06	0.06	0.06	0.06	0.06
1.528	Limit (A/m)	1.63	1.63	1.63	1.63	1.63	1.63	1.63
1.528	Margin (A/m)	-1.57	-1.57	-1.57	-1.57	-1.57	-1.57	-1.57
1.528	50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815	0.815	0.815
1.528	50 % Margin (A/m)	-0.755	-0.755	-0.755	-0.755	-0.755	-0.755	-0.755

Measurements were made from all sides and the top of the primary/client pair, with the 15/20cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

Standby Mode

E-Field Measurement (15cm)						E-Field Measurement (15cm)	E-Field Measurement (20cm)	E-Field Measurement (15cm)
Frequency (MHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)	Z-axis (Above)	Z-axis (Below)
1.528	Max E-field (V/m)	0.97	0.92	1.14	1.07	1.1	1.01	1.15
1.528	Limit (V/m)	614	614	614	614	614	614	614
1.528	Margin (V/m)	-613.03	-613.08	-612.86	-612.93	-612.9	-612.99	-612.85
1.528	50 % Limit (V/m)	307	307	307	307	307	307	307
1.528	50 % Margin (V/m)	-306.03	-306.08	-305.86	-305.93	-305.9	-305.99	-305.85

H-Field Measurement (15cm)						H-Field Measurement (15cm)	H-Field Measurement (20cm)	H-Field Measurement (15cm)
Frequency (MHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)	Z-axis (Above)	Z-axis (Below)
1.528	Max H-field (A/m)	0.06	0.06	0.06	0.06	0.06	0.06	0.06
1.528	Limit (A/m)	1.63	1.63	1.63	1.63	1.63	1.63	1.63
1.528	Margin (A/m)	-1.57	-1.57	-1.57	-1.57	-1.57	-1.57	-1.57
1.528	50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815	0.815	0.815
1.528	50 % Margin (A/m)	-0.755	-0.755	-0.755	-0.755	-0.755	-0.755	-0.755

Measurements were made from all sides and the top of the primary/client pair, with the 15/20cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

7 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

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