FCC Test Report

Report No.:	FCC_RF_SL20031301-KLA-003 Rev 4.0
FCC ID:	QTA-SCLC
Test Model(s):	SCLC300
Series Model No.:	SCLC200/SCLC300
Received Date:	03/10/2020
Test Date:	03/22/2020/-03/27/2020
Issued Date:	01/25/2023
Applicant:	KLA Corporation
Address:	1 Technology Dr, Milpitas, CA 95035
Manufacturer:	KLA Corporation
Address:	1 Technology Dr, Milpitas, CA 95035
Issued By:	Bureau Veritas Consumer Products Services, Inc.
Lab Address:	775 Montague Expressway, Milpitas, CA 95035
Test Location (1):	775 Montague Expressway, Milpitas, CA 95035
FCC Registration / Designation Number:	540430
ISED# / CAB identifier:	4842D

ACCREDITED
TESTING CERT # 2742-01

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Release Control Record

Issue No.	Description	Date Issued
FCC_RF_SL20031301-KLA-003	Initial Release	03/29/2020
FCC_RF_SL20031301-KLA-003 Rev 1.0	Updated model number	05/12/2020
FCC_RF_SL20031301-KLA-003 Rev 2.0	Updated model number	06/11/2020
FCC_RF_SL20031301-KLA-003 Rev 3.0	Updated model number	12/07/2022
FCC_RF_SL20031301-KLA-003 Rev 4.0	Updated product description and description of test modes	01/25/2023

1 Certificate of Conformity

Product:	RF Large Coil Storage Case
Brand:	KLA SensArray
Test Model(s):	SCLC300
Series Model No.:	SCLC200/SCLC300
Sample Status:	Product Validation
Applicant:	KLA Corporation
Test Date:	03/22/2020/-03/24/2020
Standards:	47 CFR FCC Part 15, Subpart C (Section 15.209) ANSI C63.10:2013

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:** 06/12/2020

Deon Dai / Test Engineer

Approved by : _____ , **Date:** 06/12/2020

Chen Ge / Engineer Reviewer

2 Summary of Test Results

FCC 15C			
FCC Clause	Test Item	Result	Remarks
15.207	AC line conducted emissions	N/A	The EUT is battery powered
15.209	Radiated spurious emissions	Pass	Meet the requirement of limit.

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Radiated Emissions up to 1 GHz	9KHz ~ 1GHz	3.73dB
Conducted Emissions at mains ports	150kHz ~ 30MHz	3.51dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	RF Large Coil Storage Case
Brand	KLA SensArray
Test Model	SCLC300
Serial Numberl	SA20223
Series Models	SCLC300 SCLC200
Status of EUT	Product Validation
Power Supply Rating	4.5Vdc
Modulation Type	OOK
Operating Frequency	1.5MHz
Antenna Type	Loop PCB Antenna
Antenna Connector	N/A
Product Description	The EUT communicates with the SA Wafer to determine the charge state of the SA Wafer batteries through an RF induction interface and charges the SA Wafer batteries through that same RF induction circuit so they remain at the optimum charge level.

3.2 Description of Test Modes

3.2.1 1 channel is provided to this EUT

Channel	Freq. (MHz)
1	1.5

Note: Prescans were performed on SCLC200 and SCLC300, the results of the prescans determined SCLC300 to be the worse case.

3.3 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.

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

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

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

3.4 General Description of Applied Standards

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

47 CFR FCC Part 15, Subpart C (Section 15.209)
ANSI C63.10:2013

All test items have been performed and recorded as per the above standards.

4 Test Types and Results

4.1 Radiated Emission Measurement

4.1.1 Limits of Radiated Emission Measurement

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

4.1.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
EMI Test Receiver ROHDE & SCHWARZ	ESW 44	100179	08/30/2019	08/30/2020
Passive Loop Antenna (9k-30MHz)	6512	49120	07/14/2019	07/14/2020
Hybrid Antenna SUNAR	JB6	A111717	03/09/2020	03/09/2021
Preamplifier RF-BAY	LPA-6-30	11170602	05/06/2019	05/06/2020
Preamplifier RF-BAY	LNA-150	12170607	02/16/2020	02/16/2021

4.1.3 Test Procedures

For Radiated emission below 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9 kHz at frequency below 30MHz.

For Radiated emission above 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

f. The test-receiver system was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

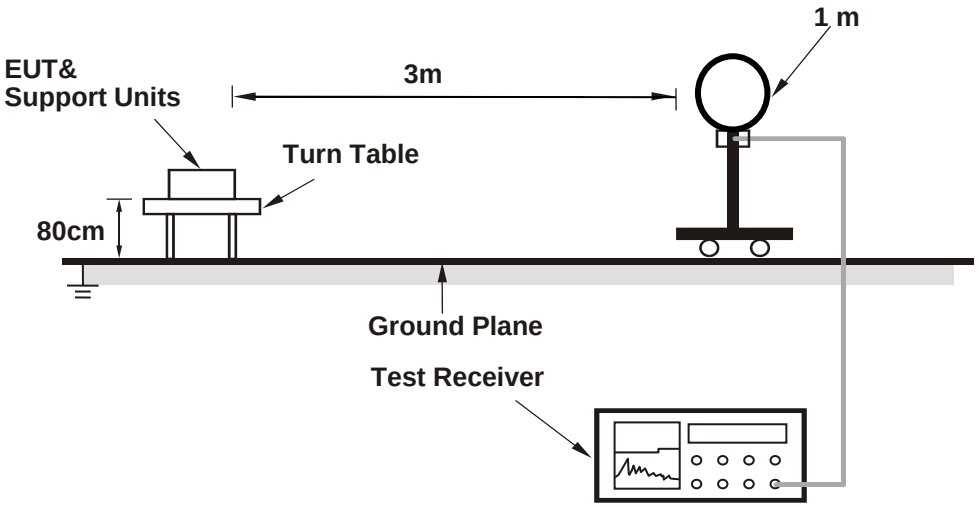
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

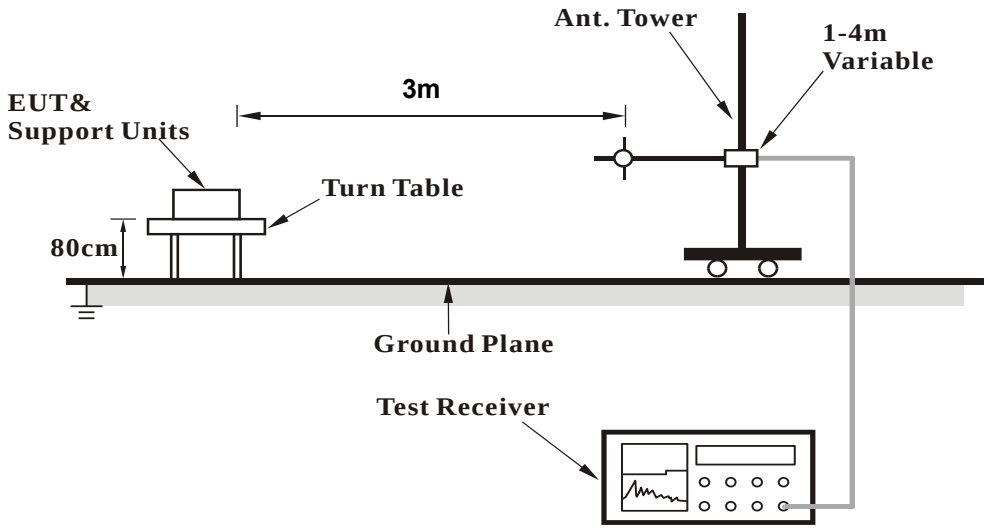
No deviation.

4.1.5 Test Setup

For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



4.1.6 EUT Operating Conditions

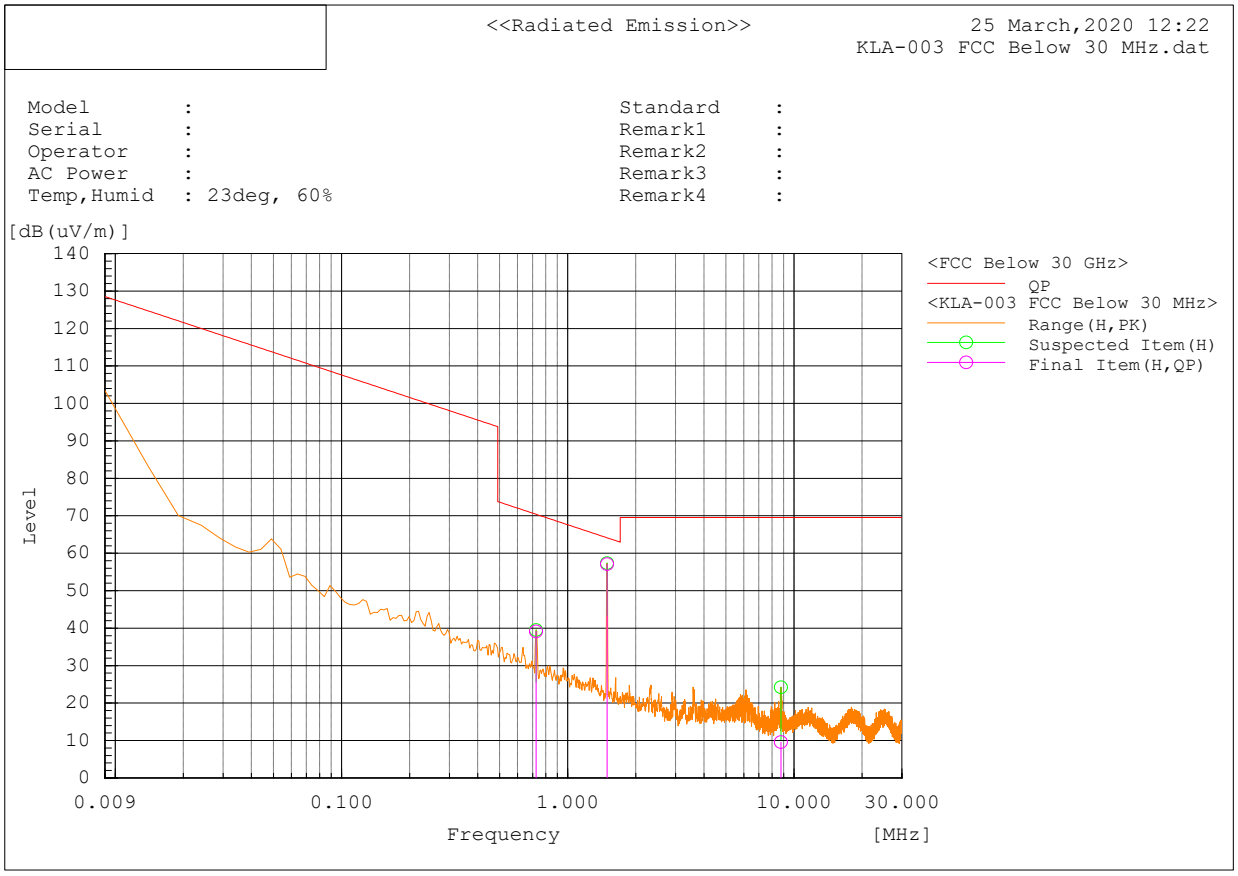
a. Connected the EUT directly to ETLT.
b. Controlling software has been activated to set the EUT on specific status.

4.1.7 Test Results

Radiated Emissions Measurement

EUT Test Condition		Measurement Detail	
Channel	Channel 1	Frequency Range	9KHz – 30MHz
Input Power	3.7VDC	Detector Function	Quasi-Peak
Environmental Conditions	25 deg. C, 70% RH	Tested By	Deon Dai
State	Operating		

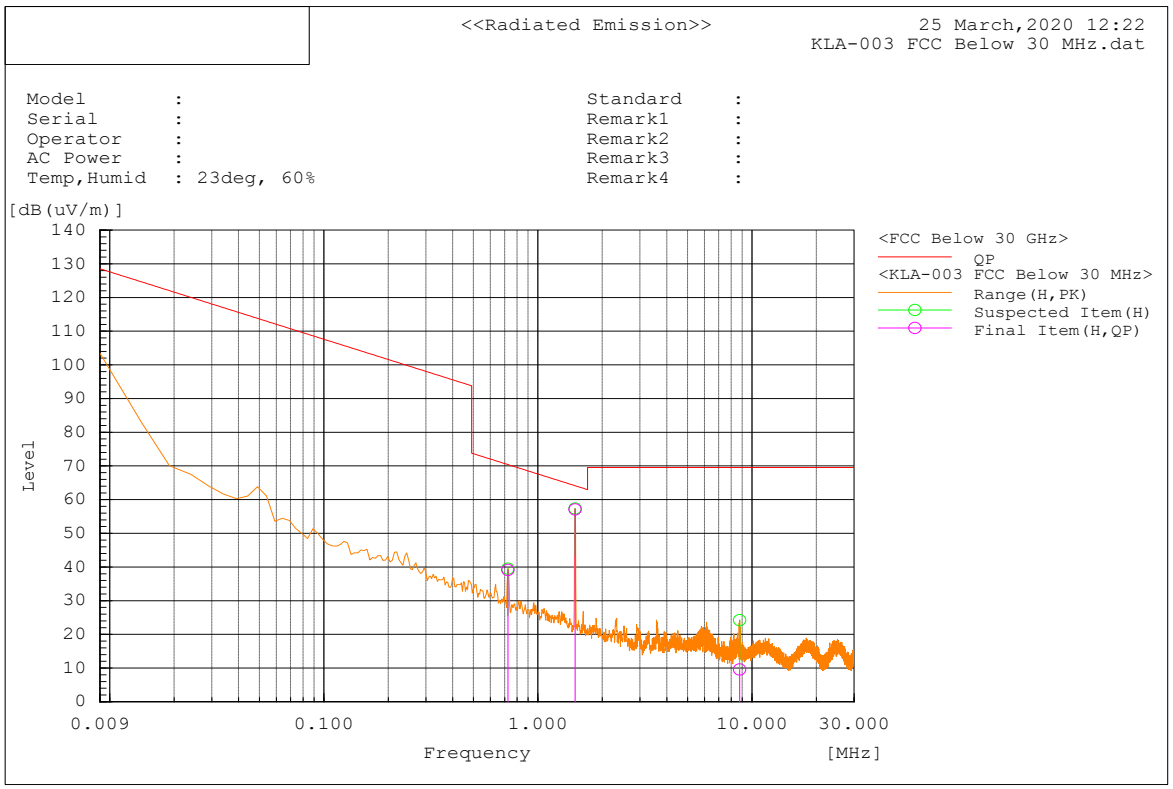
Antenna Polarity & Test Distance: Loop Antenna 0 degree At 3m



Antenna Polarity & Test Distance: Loop Antenna 0 degree At 3m

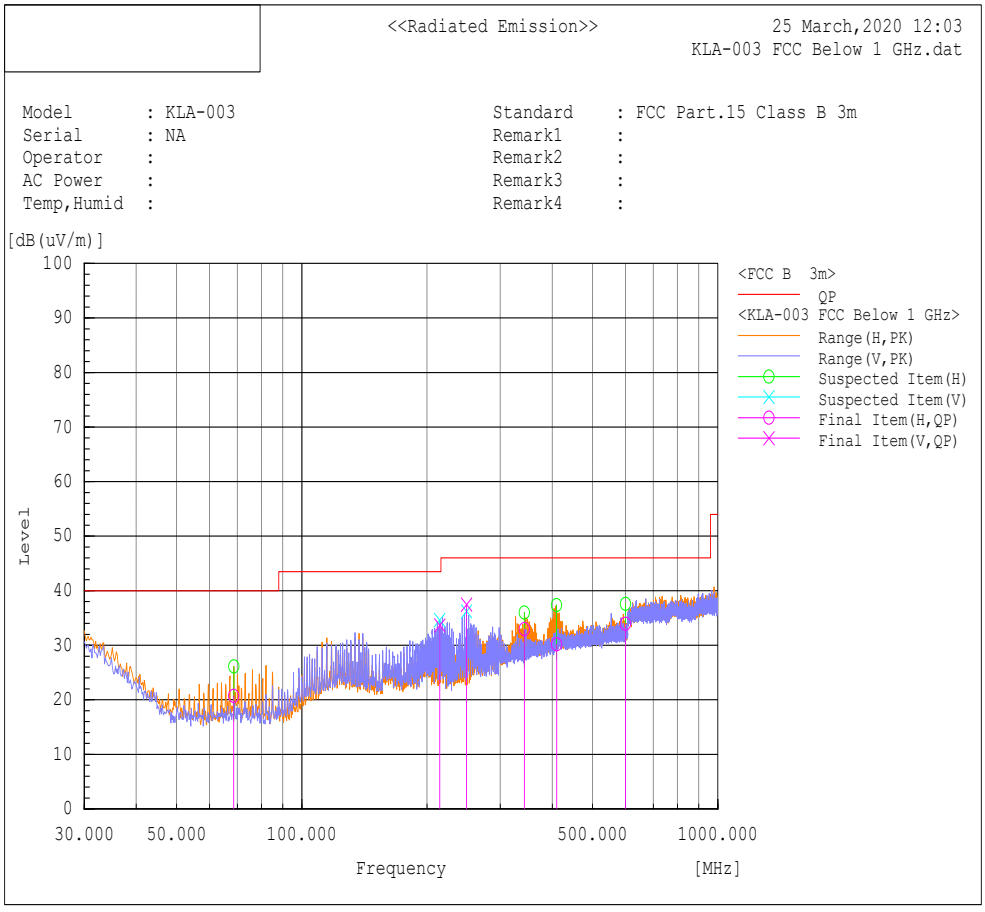
No.	Frequency (MHz)	Polarization	Reading QP [dB(uV)]	Factor [dB(1/m)]	Level QP [dB(uV/m)]	Limit\QP dB(uV/m)	Margin QP [dB]	Height (cm)	Angle (Deg)	Pass/ Fail
1	0.724	0	24	15.5	39.5	70.4	-30.9	100	2.1	Pass
2	1.494	0	47.4	10	57.4	64.1	-6.7	100	209.5	Pass
3	8.756	0	21.8	2.4	24.2	69.5	-45.3	100	326.7	Pass

Antenna Polarity & Test Distance: Loop Antenna 90 degree At 3m



Antenna Polarity & Test Distance: Loop Antenna 90 degree At 3m										
No.	Frequency (MHz)	Polarization	Reading QP [dB(uV)]	Factor [dB(1/m)]	Level QP [dB(uV/m)]	Limit\QP dB(uV/m)	Margin QP [dB]	Height (cm)	Angle (Deg)	Pass/ Fail
1	0.724	90	23.6	15.5	39.1	70.4	31.3	100	1.1	Pass
2	1.494	90	47.1	10	57.1	64.1	7	100	234	Pass
3	8.756	90	7.2	2.4	9.6	69.5	59.9	100	325	Pass

EUT Test Condition		Measurement Detail	
Channel	Channel 1	Frequency Range	30Mz – 1GHz
Input Power	3.7VDC	Detector Function	Quasi-Peak
Environmental Conditions	25 deg. C, 70% RH	Tested By	Deon Dai
State	Operating		



Antenna Polarity & Test Distance: Loop Antenna 0 degree At 3m										
No.	Frequency (MHz)	Polarization	Reading QP [dB(uV)]	Factor [dB(1/m)]	Level QP [dB(uV/m)]	Limit\QP dB(uV/m)	Margin QP [dB]	Height (cm)	Angle (Deg)	Pass/ Fail
1	68.60	H	7.2	13.5	20.7	40	19.3	291	325	Pass
2	214.53	V	16.5	17.2	33.7	43.5	9.8	138	342.1	Pass
3	248.81	V	19.1	18.4	37.5	46	8.5	100	331.2	Pass
4	342.78	H	11.7	21.2	32.9	46	13.1	171	0	Pass
5	409.91	H	7.1	23.1	30.2	46	15.8	308	284.7	Pass
6	600.02	H	7.7	26.2	33.9	46	12.1	233	28	Pass

Appendix A: Information on the Testing Laboratories

Bureau Veritas is a global leader in testing, inspection and certification (TIC) services. We help businesses improve safety, sustainability and productivity; and our clients include the majority of leading brands in retail, manufacturing and other industries. With a presence in every major country around the world, our quality assurance and compliance solutions are vital in helping our customers enhance product quality and concept-to-consumer journeys. We also assist with increasing speed to market, profitability and brand equity throughout the supply chain. Bureau Veritas is a leading wireless/IoT testing, inspection, audit and certification provider, with a global network of test laboratories to support the IoT industry in areas of connectivity, security, interoperability as well as quality, health & safety, and environmental/chemical requirements.

If you have any comments, please feel free to contact us at the following:

Milpitas EMC/RF/Safety/Telecom Lab
775 Montague Expressway, Milpitas, CA 95035
Tel: +1 408 526 1188

Sunnyvale OTA/Bluetooth Lab
1293 Anvilwood Avenue, Sunnyvale, CA 94089
Tel: +1 669 600 5293

Littleton EMC/RF/Safety/Environmental Lab
1 Distribution Center Cir #1, Littleton, MA 01460
Tel: +1 978 486 8880

Email: sales.eaw@us.bureauveritas.com
Web Site: www.cpsusa-bureauveritas.com

The address and road map of all our labs can be found in our web site also.

Appendix B – Declaration of Model Differences Letter

KLA Corporation ■ One Technology Drive ■ Milpitas, CA 95035 ■ www.kla.com

Declaration of Model Differences Letter

Applicant: KLA SensArray
Product name: RF Large Coil Storage Case
Brand: KLA SensArray
Model:

Model Name	Model Number
STORAGE CASE LC 300	SCLC300
STORAGE CASE LC 200	SCLC200

Please refer to model difference as below.
Circuit board layout, component models are exactly the same.

#	Product Characteristics:	Products are:	
		Same	Different
1	Radio Frequency Operating Range(s)	X	
2	RF Power / Field Strength	X	
3	Radio Frequency Circuitry	X	
4	Antenna Characteristics	X	
5	Associated Digital Circuitry	X	
6	Functional Capabilities	X	
7	Cosmetic/Dimension Differences		X
8	Case Design/Materials		X

For any differences, a description is provided in the table below.

#	Description of differences:
1	STORAGE CASE LC 300 is based on 300mm diameter plastic case, STORAGE CASE LC 200 is based on 300mm diameter plastic case with plastic adaptor.
2	STORAGE CASE LC 200 is a modified design based on STORAGE CASE LC 300 with adaptor design, the material is still plastic.

The difference between them impose no deviation in their RF aspect, and hence, there applies no change to RF test results

KLA Corporation ■ One Technology Drive ■ Milpitas, CA 95035 ■ www.kla.com

Name and position: Lei Mei, Senior Electrical Design Engineer and Compliance Owner
Name of Applicant: KLA SensArray
Address: 7 Technology Drive. Milpitas, CA 95035

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