RF TEST REPORT

SIEMIC
A Bureau Veritas Group Company

Report No.: FCC_IC_SL18121801-KLA-021-AF120-209_Rev2.0
Supersede Report No.: FCC_IC_SL18121801-KLA-021-AF120-209 Rev1.0

Applicant	:	KLA Corporation
Product Name	:	SensArray®Automation FOUP
Model No.	:	AF120
Test Standard	:	FCC 15.209 RSS-210 Issue 8: 2010
Test Method	:	FCC 15.209 ANSI C63.10 2013 RSS Gen Issue 4 2014
FCC ID	:	QTA-AF120
IC	:	10516A-AF120
Dates of test	:	03/01/2019 – 03/10/2019
Issue Date	:	03/30/2020
Test Result	:	☒ Pass ☐ Fail
Equipment complied with the specification		**[X]**
Equipment did not comply with the specification		**[ ]**

Cipher	**Chen Ge**
Test Engineer	Engineer Reviewer

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Test result presented in this test report is applicable to the tested sample only

Issued By:
SIEMIC Laboratories
775 Montague Expressway, Milpitas, CA 95035

ilac-MRA
A2LA ACCREDITED
TESTING CERT # 2742-01

Laboratory Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.

In addition to testing and certification, SIEMIC provides initial design reviews and compliance management throughout a project. Our extensive experience with China, Asia Pacific, North America, European, and International compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

Accreditations for Conformity Assessment

Country/Region	Accreditation Body	Scope
USA	FCC, A2LA	EMC, RF/Wireless, Telecom
Canada	IC, A2LA, NIST	EMC, RF/Wireless, Telecom
Taiwan	BSMI, NCC, NIST	EMC, RF, Telecom, Safety
Hong Kong	OFTA, NIST	RF/Wireless, Telecom
Australia	NATA, NIST	EMC, RF, Telecom, Safety
Korea	KCC/RRA, NIST	EMI, EMS, RF, Telecom, Safety
Japan	VCCI, JATE, TELEC, RFT	EMI, RF/Wireless, Telecom
Mexico	NOM, COFETEL, Caniety	EMC, RF/Wireless, Telecom, Safety
Europe	A2LA, NIST	EMC, RF, Telecom, Safety
Israel	MOC, NIST	EMC, RF, Telecom, Safety

Accreditations for Product Certifications

Country	Accreditation Body	Scope
USA	FCC TCB, NIST	EMC, RF, Telecom
Canada	IC FCB, NIST	EMC, RF, Telecom
Singapore	iDA, NIST	EMC, RF, Telecom
EU	NB	EMC & R&TTE Directive
Japan	MIC (RCB 208)	RF, Telecom
Hong Kong	OFTA (US002)	RF, Telecom

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1 Report Revision History

Report No.	Report	Description	Issue Date
FCC_IC_SL18121801-KLA-021-AF120-209	-	Original	03/28/2019
FCC_IC_SL18121801-KLA-021-AF120-209_Rev1.0	Rev1.0	Add Fcc ID and Change the product name	04/18/2019
FCC_IC_SL18121801-KLA-021-AF120-209_Rev2.0	Rev2.0	Add Conducted Emission section and 99% BW Plot	03/30/2020

2 Executive Summary

The purpose of this test program was to demonstrate compliance of following product

Company: KLA Corporation
Product: SensArray®Automation FOUP
Model: AF120

against the current Stipulated Standards. The specified model product stated above has demonstrated compliance with the Stipulated Standard listed on 1st page.

3 Customer information

Applicant Name	:	KLA Corporation
Applicant Address	:	One Technology Drive, Milpitas, CA 95035
Manufacturer Name	:	KLA Corporation
Manufacturer Address	:	One Technology Drive, Milpitas, CA 95035

4 Test site information

Lab performing tests	:	SIEMIC Laboratories
Lab Address	:	775 Montague Expressway, Milpitas, CA 95035
FCC Test Site No.	:	540430
IC Test Site No.	:	4842D
VCCI Test Site No.	:	A0133

5 Modification

Index	Item	Description	Note
-	-	-	-

6 EUT Information

6.1 EUT Description

Product Name	SensArray® Automation FOUP
Serial No.	N/A
Model No.	AF120
Trade Name	KLA
Input Power	100-240 Vac
Date of EUT received	03/18/2019
Equipment Class/ Category	ITE
Working Frequencies	1.528MHz
Port/Connectors	I/O

6.2 Radio Description

Specifications for Radio:

Radio Type	
Operating Frequency	1.528MHz
Modulation	OOK
Number of Channels	None
Antenna Type	Loop antenna
Antenna Gain	0dBi
Antenna Connector Type	N/A

Channel List:

Mode	Channel No.	Frequency	Available (Y/N)
1.528MHz	1	1.528MHz	Y

6.3 EUT test modes/configuration Description

Mode	Note
RF test	EUT is set to continuously transmit at 1.528MHz
Note: None	

7 Supporting Equipment/Software and cabling Description

7.1 Supporting Equipment

Index	Supporting Equipment Description	Model	Serial No	Manu	Note
-	-	-	-	-	-

7.2 Cabling Description

Name	Connection Start		Connection Stop		Length / shielding Info		Note
	From	I/O Port	To	I/O Port	Length (m)	Shielding	
-	-	-	-	-	-	-	-

7.3 Test Software Description

Test Item	Software	Description
RF Testing	-	Automatic transmission continuously at 125KHz/1.5MHz

8 Test Summary

Test Item	Test standard		Test Method/Procedure		Pass / Fail
AC Conducted Emissions	FCC	15.207(a)	FCC	ANSI C63.10:2013	☒ Pass ☐ N/A
	IC	RSS Gen 8.8	IC	RSS Gen Issue 5: 2018	
Spurious Emissions	FCC	15.209	FCC	ANSI C63.10 2013	☒ Pass ☐ N/A
	IC	RSS210(A2.6)	IC	RSS Gen 6.13	
Remark	1. All measurement uncertainties are not taken into consideration for all presented test result. 2. The applicant shall ensure frequency stability by showing that an emission is maintained within the band of operation under all normal operating conditions as specified in the user's manual.				

9 Measurement Uncertainty

9.1 Conducted Emissions

The test is to measure the conducted emissions to the mains port of the EUT.
Some error sources that can contribute to the total uncertainty:

- Uncertainty of the receiver
- Uncertainty of the LISN
- Uncertainty of cables
- Uncertainty due to the mismatches
- Etc, see the below table for details

Source of Uncertainty	Value (dB)	Probability Distribution	Division	Sensitivity Coefficient	Expanded Uncertainty
Receiver Reading	0.12	Rectangular	1.732	1	0.069284
Cable Insertion Loss	0.21	Normal	2	1	0.105
Filter Insertion Loss	0.25	Normal	2	1	0.125
LISN Insertion Loss	0.40	Normal	2	1	0.20
Receiver CW accuracy	0.5	Rectangular	1.732	1	0.2886836
Pulse Amplitude Response	1.5	Rectangular	1.732	1	0.86605081
PRF Response	1.5	Rectangular	1.732	1	0.86605081
Mismatch LISN - Receiver	0.25	U-Shape	1.414	1	0.1768033
LISN Impedance	2.5	Triangular	2.449	1	1.0208248
Combined Standard Uncertainty					1.928133
Expanded Uncertainty (K=2)					**3.856266**

The total derived measurement uncertainty is +/- 3.86 dB.

9.2 Radiated Emissions (30MHz to 1GHz)

The test is to measure the radiated emissions of the EUT.
Some error sources that can contribute to the total uncertainty:

- Uncertainty of the receiver
- Uncertainty of the antenna
- Uncertainty of cables
- Uncertainty due to the mismatches
- NSA Calibration
- Etc., details see the below table

Source of Uncertainty	Value (dB)	Probability Distribution	Division	Sensitivity Coefficient	Expanded Uncertainty
Receiver Reading	0.12	Rectangular	1.732	1	0.069284
Cable Insertion Loss	0.21	Normal	2	1	0.105
Filter Insertion Loss	0.25	Normal	2	1	0.125
Antenna Factor	0.65	Normal	2	1	0.325
Receiver CW accuracy	0.5	Rectangular	1.732	1	0.2886836
Pulse Amplitude Response	1.5	Rectangular	1.732	1	0.86605081
PRF Response	1.5	Rectangular	1.732	1	0.86605081
Mismatch Filter - Receiver	0.25	U-Shape	1.414	1	0.1768033
NSA Calibration	4.0	U-Shape	1.414	1	2.8288543
Combined Standard Uncertainty					3.0059131
Expanded Uncertainty (K=2)					**6.0118262**

The total derived measurement uncertainty is +/- 6.00 dB.

9.3 Radiated Emissions (1GHz to 40GHz)

The test is to measure the radiated emissions of the EUT.

Some error sources that can contribute to the total uncertainty:
- Uncertainty of the receiver
- Uncertainty of the antenna
- Uncertainty of cables
- Uncertainty due to the mismatches
- VSWR Calibration
- Etc., details see the below table

Source of Uncertainty	Value (dB)	Probability Distribution	Division	Sensitivity Coefficient	Expanded Uncertainty
Receiver Reading	0.12	Rectangular	1.732	1	0.0692840
Cable Insertion Loss	0.21	Normal	2	1	0.1050000
Filter Insertion Loss	0.25	Normal	2	1	0.1250000
Antenna Factor	0.65	Normal	2	1	0.3250000
Receiver CW accuracy	0.5	Rectangular	1.732	1	0.2886836
Pulse Amplitude Response	1.5	Rectangular	1.732	1	0.8660508
PRF Response	1.5	Rectangular	1.732	1	0.8660508
Mismatch Filter - Receiver	0.25	U-Shape	1.414	1	0.1768033
VSWR Calibration	2.0	U-Shape	1.414	1	1.4144272
Combined Standard Uncertainty					4.2363
Expanded Uncertainty (K=2)					**8.4726**

The total derived measurement uncertainty is +/- 8.47 dB.

9.4 RF conducted measurement

The test is to measure the RF output power from the EUT.

Some error sources that can contribute to the total uncertainty:

- Uncertainty of the Reference Level Uncertainty
- Uncertainty of variable attenuators
- Uncertainty of cables
- Uncertainty due to the mismatches

Source of Uncertainty	Value (dB)	Probability Distribution	Division	Sensitivity Coefficient	Expanded Uncertainty
Reference Level	0.12	Rectangular	1.732	1	0.069284
Cable Insertion Loss	0.21	Normal	2	1	0.105
Attenuator	0.25	Normal	2	1	0.125
Mismatch	0.25	U-Shape	1.414	1	0.1768033
Combined Standard Uncertainty					0.476087
Expanded Uncertainty (K=2)					**0.952174**

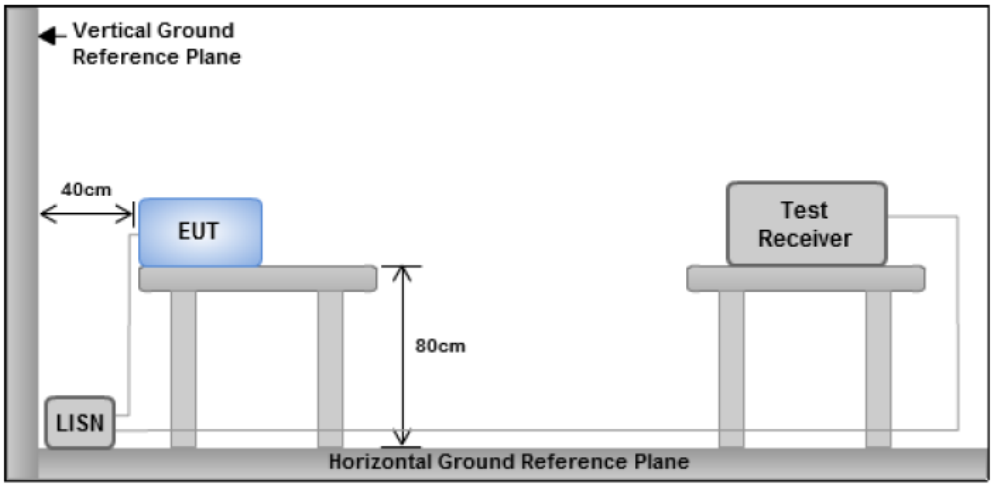
The total derived measurement uncertainty is +/- 0.95 dB.

10 Measurements, examination and derived results

10.1 Conducted Emissions

Conducted Emission Limit

Frequency ranges (MHz)	Limit (dBuV)	
	QP	Average
0.15 ~ 0.5	66 – 56	56 – 46
0.5 ~ 5	56	46
5 ~ 30	60	50

Spec	Item	Requirement	Applicable
47CFR§ 15.207	a)	For Low-power radio-frequency devices that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 µH/50 ohms line impedance stabilization network (LISN). The lower limit applies at the boundary between the frequency ranges.	☒
Test Setup	 Note: 1. Support units were connected to second LISN. 2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes		
Procedure	- The EUT and supporting equipment were set up in accordance with the requirements of the standard on top of a 1.5m x 1m x 0.8m high, non-metallic table, as shown in Annex B. - The power supply for the EUT was fed through a 50Ω/50µH EUT LISN, connected to filtered mains. - The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss coaxial cable. - All other supporting equipment was powered separately from another main supply.		
Remark	EUT was tested at 120VAC, 60Hz		
Result	☒ Pass ☐ Fail		

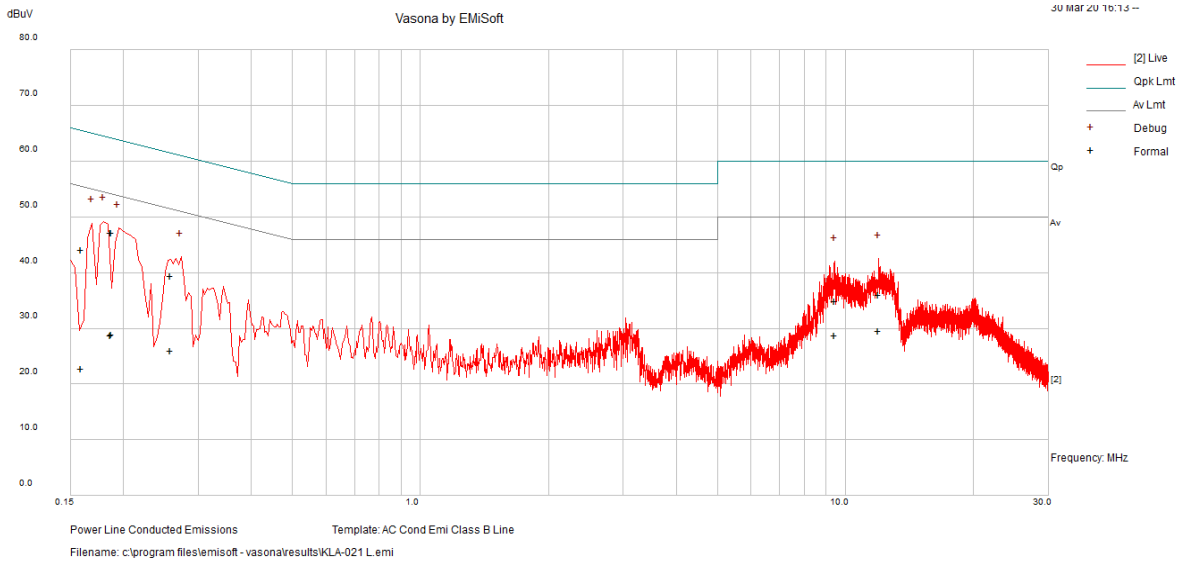
Test Data ☒ Yes ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

Test was done by George Hsu at Conducted Emission test site.

Conducted Emission Test Results

Test specification:	Conducted Emissions			
Environmental Conditions:	Temp(°C):	21	Result:	☒ Pass ☐ Fail
	Humidity (%):	42		
	Atmospheric(mbar):	1021		
Mains Power:	120Vac, 60Hz			
Tested by:	George Hsu			
Test Date:	3/13/19			
Remarks	Live			

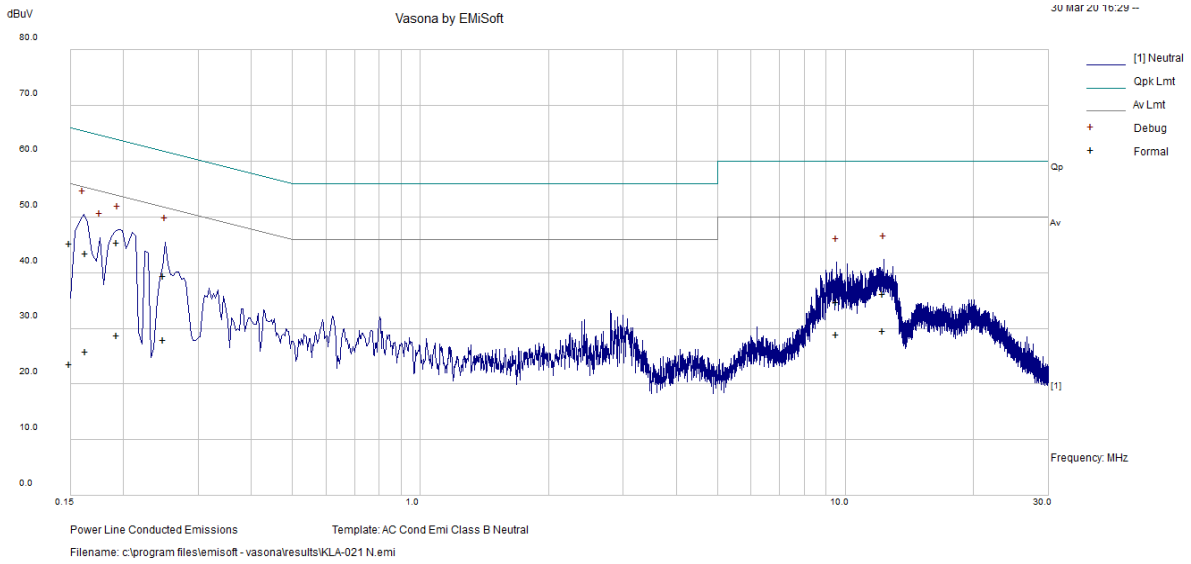


Live Plot at 120Vac, 60Hz

Frequency (MHz)	Raw (dBuV)	Cable Loss (dB)	Factors (dB)	Level (dBuV)	Measurement Type	Line/ Neutral	Limit (dBuV)	Margin (dB)	Pass /Fail
0.187599	37.84	9.35	0.04	47.24	Quasi Peak	Live	64.14	-16.9	Pass
0.186686	37.86	9.35	0.04	47.26	Quasi Peak	Live	64.18	-16.93	Pass
0.159426	34.77	9.31	0.04	44.12	Quasi Peak	Live	65.49	-21.38	Pass
11.97671	26.06	9.67	0.27	36	Quasi Peak	Live	60	-24	Pass
9.448872	25	9.63	0.23	34.86	Quasi Peak	Live	60	-25.14	Pass
0.259155	29.94	9.43	0.04	39.41	Quasi Peak	Live	61.46	-22.05	Pass
0.187599	19.54	9.35	0.04	28.94	Average	Live	54.14	-25.2	Pass
0.186686	19.45	9.35	0.04	28.84	Average	Live	54.18	-25.34	Pass
0.159426	13.42	9.31	0.04	22.77	Average	Live	55.49	-32.72	Pass
11.97671	19.59	9.67	0.27	29.54	Average	Live	50	-20.46	Pass
9.448872	18.98	9.63	0.23	28.84	Average	Live	50	-21.16	Pass
0.259155	16.6	9.43	0.04	26.08	Average	Live	51.46	-25.38	Pass

Conducted Emission Test Results

Test specification:	Conducted Emissions			
Environmental Conditions:	Temp(°C):	21	Result:	☒ Pass ☐ Fail
	Humidity (%):	42		
	Atmospheric(mbar):	1021		
Mains Power:	120Vac, 60Hz			
Tested by:	George Hsu			
Test Date:	3/13/19			
Remarks	Neutral			



Neutral Plot at 120Vac, 60Hz

Frequency (MHz)	Raw (dBuV)	Cable Loss (dB)	Factors (dB)	Level (dBuV)	Measurement Type	Line/ Neutral	Limit (dBuV)	Margin (dB)	Pass /Fail
0.15	36.04	9.29	0.03	45.36	Quasi Peak	Neutral	66	-20.64	Pass
0.193323	36.07	9.36	0.03	45.47	Quasi Peak	Neutral	63.89	-18.43	Pass
0.248766	29.98	9.43	0.03	39.44	Quasi Peak	Neutral	61.8	-22.36	Pass
12.32357	26.35	9.66	0.29	36.3	Quasi Peak	Neutral	60	-23.7	Pass
9.567904	24.87	9.63	0.23	34.73	Quasi Peak	Neutral	60	-25.27	Pass
0.163587	34.09	9.32	0.03	43.43	Quasi Peak	Neutral	65.28	-21.85	Pass
0.15	14.24	9.29	0.03	23.56	Average	Neutral	56	-32.44	Pass
0.193323	19.4	9.36	0.03	28.79	Average	Neutral	53.89	-25.1	Pass
0.248766	18.5	9.43	0.03	27.96	Average	Neutral	51.8	-23.84	Pass
12.32357	19.56	9.66	0.29	29.51	Average	Neutral	50	-20.49	Pass
9.567904	19.08	9.63	0.23	28.94	Average	Neutral	50	-21.06	Pass
0.163587	16.54	9.32	0.03	25.88	Average	Neutral	55.28	-29.4	Pass

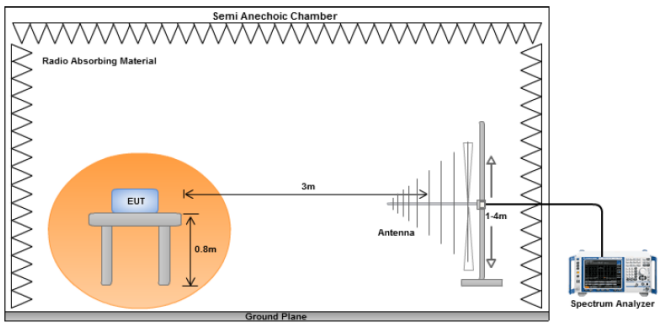
10.2 Radiated Measurements 30MHz to 1GHz

Requirement(s):

Spec	Requirement	Applicable
47 CFR §15.209 RSS-210 (A2.6)	See table below	☒

Frequency (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

Test Setup



Procedure

1. The EUT was switched on and allowed to warm up to its normal operating condition.
2. The test was carried out at the selected frequency points obtained from the EUT characterisation. Maximization of the emissions, was carried out by rotating the EUT, changing the antenna polarization, and adjusting the antenna height in the following manner:
   a. Vertical or horizontal polarisation (whichever gave the higher emission level over a full rotation of the EUT) was chosen.
   b. The EUT was then rotated to the direction that gave the maximum emission.
   c. Finally, the antenna height was adjusted to the height that gave the maximum emission.
3. A Quasi-peak measurement was then made for that frequency point.
4. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured.

Test Date	03/01/2019 – 03/10/2019	Environmental conditions	Temperature 20.1°C Relative Humidity 36% Atmospheric Pressure 1026mbar
Remark	-		
Result	☒ Pass ☐ Fail		

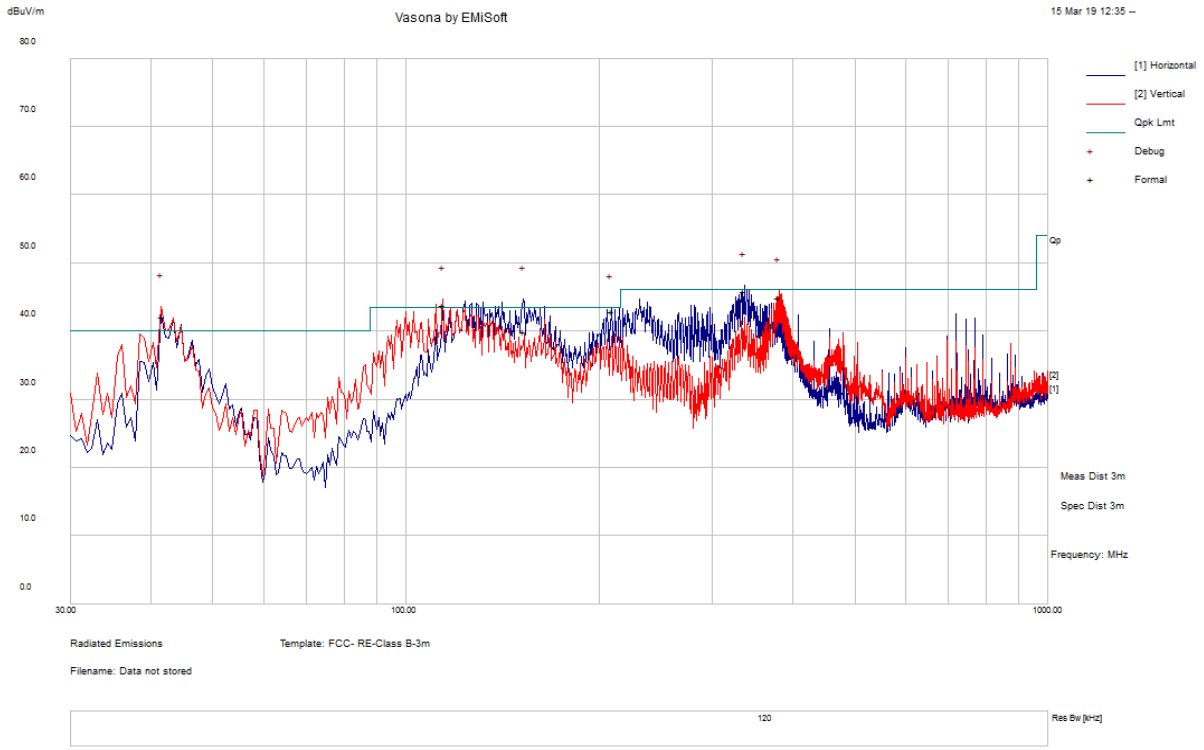
Test Data ☒ Yes (See below) ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

Test was done by Cipher at 10 meter chamber.

Test specification:	Radiated Emissions			
Mains Power:	120VAC, 60Hz		Result:	☒ Pass ☐ Fail
Tested by:	Cipher			
Test Date:	03/01/2019 – 03/10/2019			
Remarks:	N/A			

f=30MHz – 1000MHz plot and 3 meter distance



f=30MHz – 1000MHz Measurements

Frequency MHz	Raw dBµV/m	Cable Loss	AF dB	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
48.21	49.06	11.43	-25.54	34.96	Quasi Max	V	113	106	40	-5.04	Pass
797.99	35.19	15.47	-14.28	36.38	Quasi Max	H	171	107	46	-9.62	Pass
931.02	34.76	15.89	-12.69	37.95	Quasi Max	H	101	61	46	-8.05	Pass
203.75	44.03	12.66	-24.25	32.44	Quasi Max	H	133	149	43.5	-11.06	Pass
233.23	43.8	12.87	-24.52	32.15	Quasi Max	H	150	105	46	-13.86	Pass
917.37	24.21	15.86	-12.32	27.75	Quasi Max	H	125	237	46	-18.25	Pass

10.2.1 Radiated Measurements below 30MHz

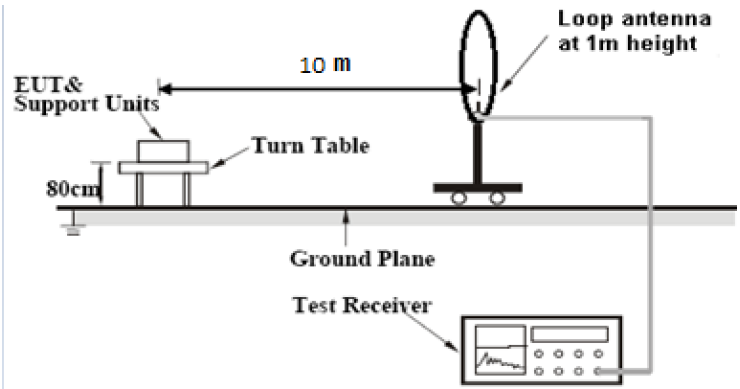
Requirement(s):

Spec	Requirement	Applicable

Frequency (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

47 CFR §15.209 RSS-210 (A2.6) — ☒

Test Setup



Procedure	For < 30MHz, Radiated emissions were measured according to ANSI C63.10. The EUT was set to transmit at the highest output power. The EUT was set 3 meter away from the measuring antenna. The loop antenna was positioned 1 meter above the ground from the center of the loop. The measuring bandwidth was set to 10 kHz. The limit is converted from microvolt/meter to decibel microvolt/meter.		
Test Date	03/01/2019 – 03/10/2019	Environmental conditions	Temperature 22°C Relative Humidity 40% Atmospheric Pressure 1026mbar
Remark	-		
Result	☒ Pass ☐ Fail		

Test Data ☒ Yes (See below) ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

Test was done by Cipher at 10 meter chamber.

***f*= 9kHz – 30MHz plot, and loop antenna at 0 degree**

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (0/90)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
1.45	-33.53	0.48	42.87	9.82	Quasi Max	H	100	7	33.36	-23.54	Pass
3.01	-28.25	0.54	37.98	10.27	Quasi Max	H	100	4	39.08	-28.81	Pass
3.37	-27.28	0.55	37.27	10.54	Quasi Max	H	100	7	39.08	-28.54	Pass
1.32	-34.45	0.47	44.07	10.09	Quasi Max	H	100	4	34.73	-24.64	Pass
2.82	-28.87	0.54	38.44	10.11	Quasi Max	H	100	7	39.08	-28.97	Pass
3.23	-28.75	0.55	37.53	9.33	Quasi Max	H	100	4	39.08	-29.75	Pass

***f*= 9kHz – 30MHz plot, and loop antenna at 90 degree**

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (0/90)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
1.49	-33.41	0.48	43.15	10.22	Quasi Max	H	100	6	33.68	-23.46	Pass
3.28	-27.63	0.55	37.43	10.35	Quasi Max	H	100	4	39.08	-28.73	Pass
2.85	-28.76	0.54	38.37	10.15	Quasi Max	H	100	8	39.08	-28.93	Pass
2.91	-28.56	0.54	38.22	10.2	Quasi Max	H	100	4	39.08	-28.88	Pass
3.74	-27.91	0.56	36.62	9.27	Quasi Max	H	100	7	39.08	-29.81	Pass
3.00	-28.34	0.54	37.99	10.19	Quasi Max	H	100	4	39.08	-28.89	Pass

Loop antenna at 0 degree

Frequency	Amplitude (dBµV)
1.528MHz	32.46

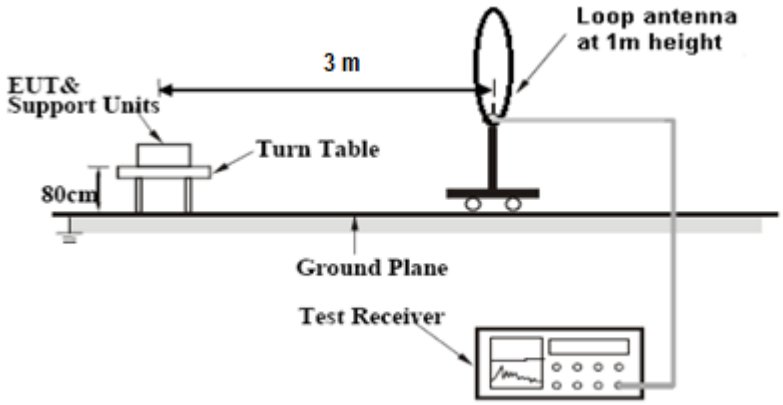
Loop antenna at 90 degree

Frequency	Amplitude (dBµV)
1.528MHz	18.77

10.2.2 Occupied bandwidth

Requirement(s):

Spec	Requirement	Applicable
RSS-Gen 4.6.1	The transmitter shall be operated at its maximum carrier power measured under normal test conditions. The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts. The resolution bandwidth shall be set to as close to 1% of the selected span as is possible without being below 1%. The video bandwidth shall be set to 3 times the resolution bandwidth. Video averaging is not permitted. Where practical, a sampling detector shall be used given that a peak or peak hold may produce a wider bandwidth than actual. The trace data points are recovered and directly summed in linear terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached and that frequency recorded. The process is repeated for the highest frequency data points. This frequency is recorded. The span between the two recorded frequencies is the occupied bandwidth.	☒

Test Setup	
Procedure	1. The EUT was switched on and allowed to warm up to its normal operating condition. 2. To measure conducted, a SMA cable was used to replace the EUT antenna. To measure radiated, an external antenna was used to detect EUT transmission signal. 3. Measurement of the 99% Occupied Bandwidth of EUT transmission signal and make record.

Test Date	03/01/2019 – 03/10/2019	Environmental conditions	Temperature 22°C Relative Humidity 39% Atmospheric Pressure 1025mbar
Remark	-		
Result	☒ Pass ☐ Fail		

Test Data ☒ Yes (See below) ☐ N/A

Test Plot ☐ Yes (See below) ☒ N/A

Test was done by Shuo at RF chamber.

Test Result

Frequency	Occupied Bandwidth
1.528MHz	212.35KHZ

Annex A. TEST INSTRUMENT

Instrument	Model	Serial #	Cal Date	Cal Cycle	Cal Due	In use
Conducted Emissions						
EMI Test Receiver	ESIB 40	100179	08/28/2018	1 Year	08/28/2019	☑
LISN	3816/2NM	214372	01/10/2019	1 Year	01/10/2020	☑
Radiated Emissions						
R & S Receiver	ESL6	100178	05/27/2018	1 Year	05/27/2019	☑
Preamplifier (100KHz-7GHz)	LPA-6-30	11140711	02/10/2019	1 Year	02/10/2020	☑
ETS-Lingren Loop Antenna	6512	00049120	08/20/2018	1 Year	08/20/2019	☑
Bi-Log antenna (30MHz~2GHz)	JB1	A030702	08/15/2018	1 Year	08/15/2019	☑

Annex B. SIEMIC Accreditation

Accreditations	Document	Scope / Remark
ISO 17025 (A2LA)		Please see the documents for the detailed scope
ISO Guide 65 (A2LA)		Please see the documents for the detailed scope
TCB Designation		A1, A2, A3, A4, B1, B2, B3, B4, C
FCC DoC Accreditation		FCC Declaration of Conformity Accreditation
FCC Site Registration		3 meter site
FCC Site Registration		10 meter site
IC Site Registration		3 meter site
IC Site Registration		10 meter site
EU NB		**Radio & Telecommunications Terminal Equipment:** EN45001 – EN ISO/IEC 17025
		Electromagnetic Compatibility: EN45001 – EN ISO/IEC 17025
Singapore iDA CB(Certification Body)		Phase I, Phase II
Vietnam MIC CAB Accreditation		Please see the document for the detailed scope
Hong Kong OFCA		**(Phase II)** OFCA Foreign Certification Body for Radio and Telecom
		(Phase I) Conformity Assessment Body for Radio and Telecom
Industry Canada CAB		**Radio:** Scope A – All Radio Standard Specification in Category I
		Telecom: CS-03 Part I, II, V, VI, VII, VIII

Japan Recognized Certification Body Designation		**Radio**: A1. Terminal equipment for purpose of calling **Telecom**: B1. Specified radio equipment specified in Article 38-2, Paragraph 1, Item 1 of the Radio Law
Korea CAB Accreditation		**EMI:** KCC Notice 2008-39, RRL Notice 2008-3: CA Procedures for EMI KN22: Test Method for EMI **EMS:** KCC Notice 2008-38, RRL Notice 2008-4: CA Procedures for EMS KN24, KN61000-4-2, -4-3, -4-4, -4-5, -4-6, -4-8, -4-11: Test Method for EMS
		Radio: RRL Notice 2008-26, RRL Notice 2008-2, RRL Notice 2008-10, RRL Notice 2007-49, RRL Notice 2007-20, RRL Notice 2007-21, RRL Notice 2007-80, RRL Notice 2004-68
		Telecom: President Notice 20664, RRL Notice 2007-30, RRL Notice 2008-7 with attachments 1, 3, 5, 6; President Notice 20664, RRL Notice 2008-7 with attachment 4
Taiwan NCC CAB Recognition		LP0002, PSTN01, ADSL01, ID0002, IS6100, CNS14336, PLMN07, PLMN01, PLMN08
Taiwan BSMI CAB Recognition		CNS 13438
Japan VCCI		R-3083: Radiation 3 meter site C-3421: Main Ports Conducted Interference Measurement T-1597: Telecommunication Ports Conducted Interference Measurements
Australia CAB Recognition		**EMC:** AS/NZS CISPR 11, AS/NZS CISPR 14.1, AS/NZS CISPR22, AS/NZS 61000.6.3, AS/NZS 61000.6.4
		Radio communications: AS/NZS 4281, AS/NZS 4268, AS/NZS 4280.1, AS/NZS 4280.2, AS/NZS 4295, AS/NZS 4582, AS/NZS 4583, AS/NZS 4769.1, AS/NZS 4769.2, AS/NZS 4770, AS/NZS 4771
		Telecommunications: AS/ACIF S002:05, AS/ACIF S003:06, AS/ACIF S004:06 AS/ACIF S006:01, AS/ACIF S016:01, AS/ACIF S031:01, AS/ACIF S038:01, AS/ACIF S040:01, AS/ACIF S041:05, AS/ACIF S043.2:06, AS/ACIF S60950.1
Australia NATA Recognition		AS/ACIF S002, AS/ACIF S003, AS/ACIF S004, AS/ACIF S006, AS/ACIF S016,AS/ACIF S031, AS/ACIF S038, AS/ACIF S040, AS/ACIF S041, AS/ACIF S043.2