Nemko Test Report:	10225628RUS1
Applicant:	Decatur Electronics, Inc. 3433 E. Wood St. Phoenix, AZ 85040 USA
Equipment Under Test: (E.U.T.)	SI-3L
	FCC ID.: HTRSI-3L
In Accordance With:	**FCC Part 15, Subpart C, 15.245 and Industry Canada RSS-310, Issue 2**
Tested By:	Nemko USA Inc. 802 N. Kealy Lewisville, Texas 75057-3136

TESTED BY: _____ **DATE:** 09 November, 2012

David Light, Senior Wireless Engineer

APPROVED BY: _____ **DATE:** 10 November, 2012

Mike Cantwell

Total Number of Pages: 13

Table Of Contents

Section 1. Summary Of Test Results

Manufacturer: Decatur Electronics, Inc.

Model No.: SI-3L

Serial No.: None

General: **All measurements are traceable to national standards.**

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC Part 15.245 and Industry Canada RSS-210, Issue 8. All tests were conducted using measurement procedure ANSI C63.4-2003. Radiated Emissions were made on an open area test site.

☒ New Submission ☒ Production Unit

☐ Class II Permissive Change ☐ Pre-Production Unit

THIS TEST REPORT RELATES ONLY TO THE ITEM(S) TESTED.

THE FOLLOWING DEVIATIONS FROM, ADDITIONS TO, OR EXCLUSIONS FROM THE TEST SPECIFICATIONS HAVE BEEN MADE.
See " Summary of Test Data".

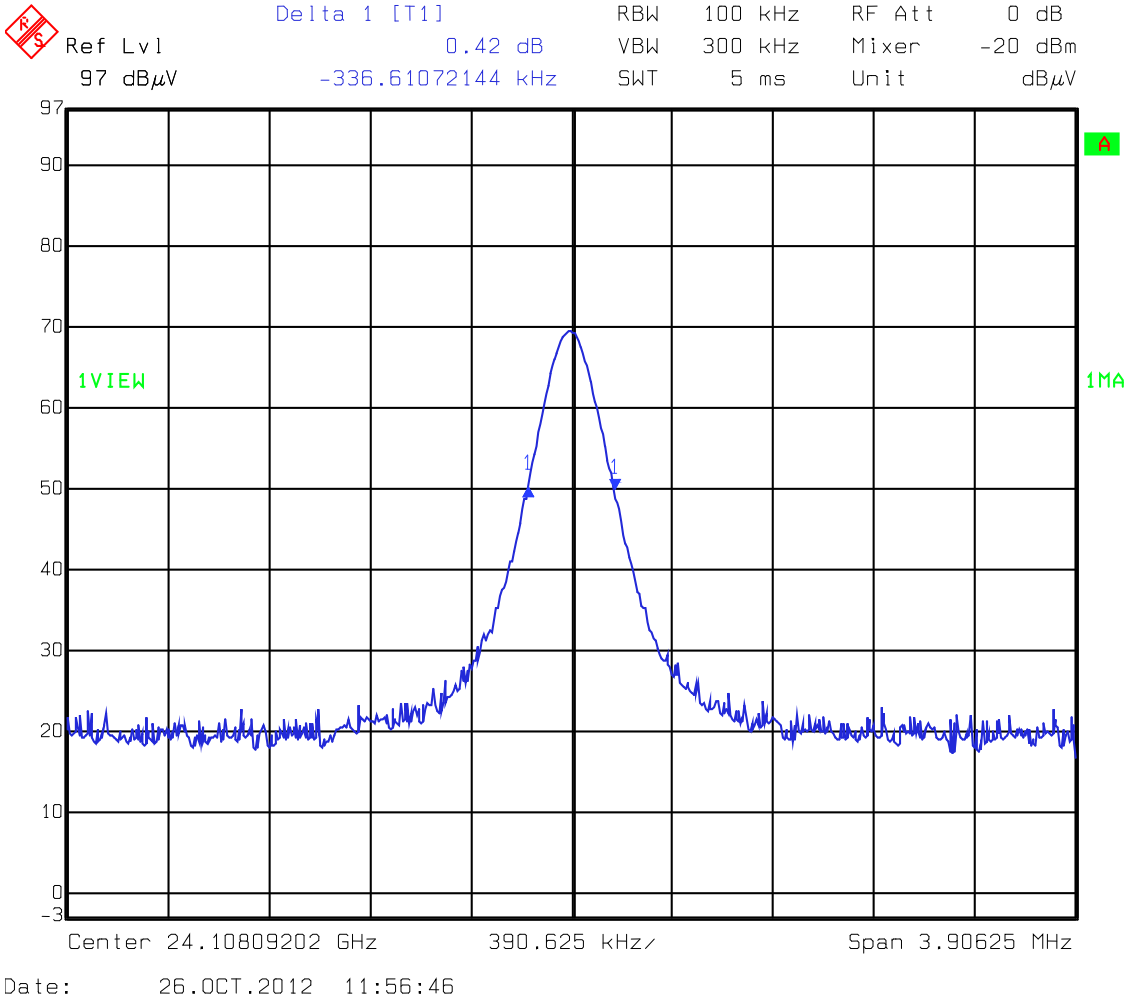
NVLAP Lab Code 100426-0

Summary Of Test Data

NAME OF TEST	PARA. NO.	RESULT
Conducted Emissions	15.207 / RSS-Gen 7.2.4	NA
Radiated Emissions	15.245 / RSS-310, clause 3.10	Complies

Footnotes For N/A's:

The EUT is battery powered.



Section 2. General Equipment Specification

Frequency Range:	24.075 to 24.175 GHz	Single
Operating Frequency(ies) of Sample:	24.108 GHz	
Tunable Bands:	None	
Number of Channels:	1	
Channel Spacing:	NA	
User Frequency Adjustment:	None	

	Yes	No
Integral Antenna	☒	☐

Description of EUT

The SI-3L™ is a low profile, advanced patch array radar designed for applications in which space is at a premium.

Section 3. Radiated Emissions

NAME OF TEST: Radiated Emissions	PARA. NO.: FCC 15.245 RSS-210 Annex 7
TESTED BY: David LightTom Tidwell / Debbie Jensen	DATE: 26 October 2012

Minimum Standard:

Para no. 15.245

(a) Operation under the provisions of this section is limited to intentional radiators used as field disturbance sensors, excluding perimeter protection systems.

(b) The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Carrier (MHz)	Field Strength (mV/m)	Field Strength (dBμV/m)	Harmonic (mV/m)	Harmonic (dBμV/m)
902-928	500	114	1.6	64
2435-2465	500	114	1.6	64
5785-5815	500	114	1.6	64
10500-10550	2500	128	25	88
24075-24175	2500	128	25	88

(1) Regardless of the limits shown in the above table, harmonic emissions in the restricted bands below 17.7 GHz, as specified in § 15.205, shall not exceed the field strength limits shown in § 15.209. Harmonic emissions in the restricted bands at and above 17.7 GHz shall not exceed the following field strength limits:

(i) For the second and third harmonics of field disturbance sensors operating in the 24075-24175 MHz band and for other field disturbance sensors designed for use only within a building or to open building doors, 25.0 mV/m.

(ii) For all other field disturbance sensors, 7.5 mV/m.

(iii) Field disturbance sensors designed to be used in motor vehicles or aircraft must include features to prevent continuous operation unless their emissions in the restricted bands, other than the second and third harmonics from devices operating in the 24075-24175 MHz band, fully comply with the limits given in § 15.209. Continuous operation of field disturbance sensors designed to be used in farm equipment, vehicles such as fork lifts that are intended primarily for use indoors or for very specialized operations, or railroad locomotives, railroad cars and other equipment which travels on fixed tracks is permitted. A field disturbance sensor will

be considered not to be operating in a continuous mode if its operation is limited to specific activities of limited duration (e.g., putting a vehicle into reverse gear, activating a turn signal, etc.).

(2) Field strength limits are specified at a distance of 3 meters.

(3) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation.

(4) The emission limits shown above are based on measurement instrumentation employing an average detector. The provisions in § 15.35 for limiting peak emissions apply.

RSS 310, Issue 2, clause 3.10
The field strength shall not exceed 250 millivolts/m measured at 3 metres with an averaging meter (equivalent to 19 mW e.i.r.p.).

The fundamental components of modulation shall lie within this band.

Emissions radiated outside of the specified frequency band, shall be attenuated by at least 50 dB below the level of the fundamental or to Table 2 limits, whichever is the less stringent.

The peak field strength of any emission shall not exceed the maximum permitted average limit specified above by more than 20 dB under any condition of modulation. The search for spurious emissions above 24.25 GHz is not required.

Test Results: Complies

Measurement Data: See attached table.

Test Conditions: 24°C

52% RH

Test Equipment Used: 1763-1783-1025-1016-1464-1629-986-987-988-989-990-991-992-993

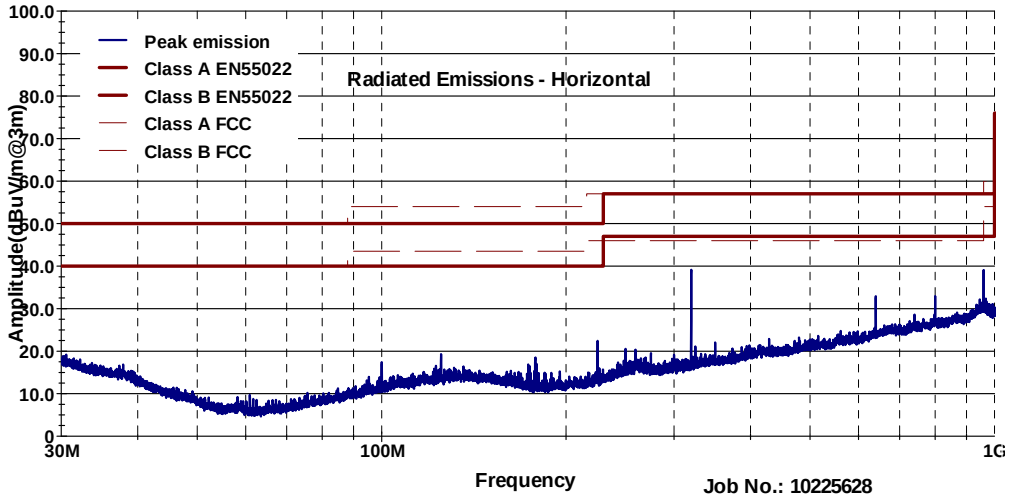
The spectrum was searched from 30 MHz to 100 GHz.

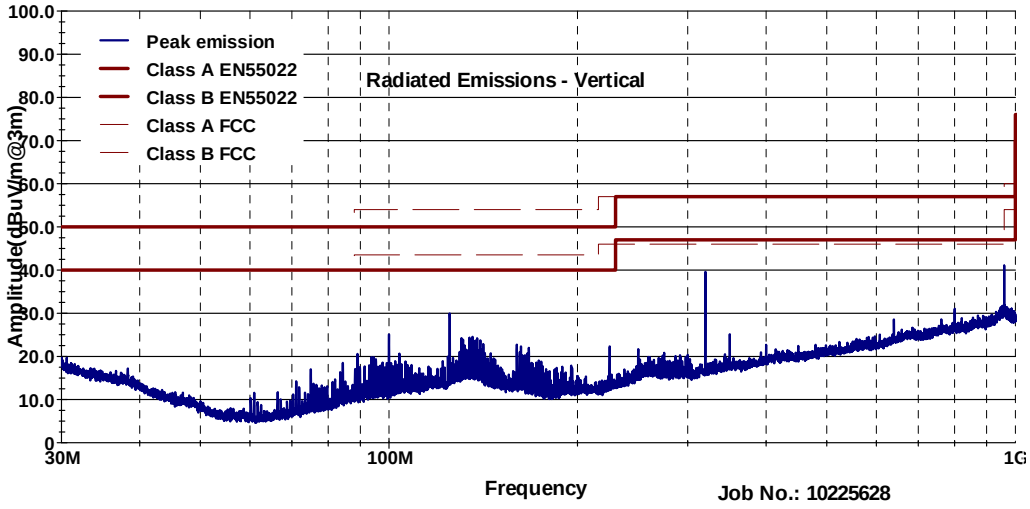
Analyzer Settings:

Frequency Range	RBW	VBW	Detector

(MHZ)			
0.009-0.150	300 Hz	300 Hz	Peak
0.150-30.0	10 kHz	10 kHz	Peak
30-1000	100 kHz	100 kHz	Peak
>1000	1 MHz	3 MHz	Peak

Test Data - Radiated Emissions





Meas. Freq. (GHz)	Ant. Pol. (H/V)	Atten. (dB)	Meter Reading (dBuV)	Antenna Factor (dB)	Path Loss (dB)	RF Gain (dB)	Corrected Reading (dBuV/m)	Spec. limit (dBuV/m)	CR/SL Diff. (dB)	Pass Fail Unc.	Comment	
24.108	H	0	52.5	40.4	3.1	0.0	96.0	128.0	-32.0	Pass	3m	Carrier
24.108	V	0	70.8	40.4	3.1	0.0	114.3	128.0	-13.7	Pass	3m	Carrier
48.216	H	0	42.1	40.5	0.0	0.0	82.6	111.5	-28.9	Pass	20 cm	
48.216	V	0	38.1	40.5	0.0	0.0	78.6	111.5	-32.9	Pass	20 cm	
72.324	H	0	41	43.7	0.0	0.0	84.7	111.5	-26.8	Pass	20 cm	Noise floor
72.324	V	0	41	43.7	0.0	0.0	84.7	111.5	-26.8	Pass	20 cm	Noise floor
96.432	H	0	43	46.3	0.0	0.0	89.3	111.5	-22.2	Pass	20 cm	Noise floor
96.432	V	0	43	46.3	0.0	0.0	89.3	111.5	-22.2	Pass	20 cm	Noise floor

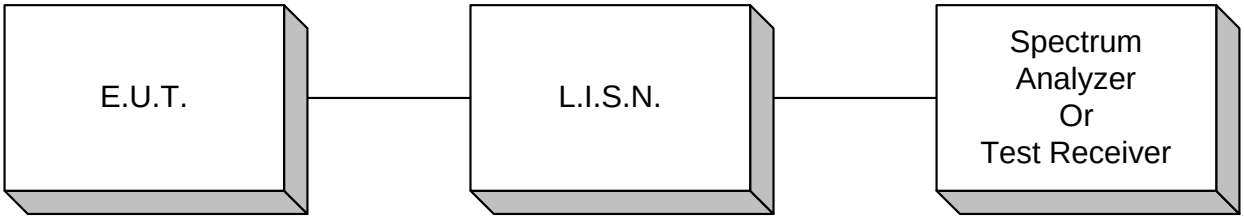
Section 5. Test Equipment List

Asset Tag	Description	Manufacturer	Model	Serial #
986	Harmonic Mixer	Hewlett Packard	11970V	2521A01222
987	Harmonic Mixer	Hewlett Packard	5356D	2521A00583
988	Harmonic Mixer	Hewlett Packard	11970A	2332A01929
989	Harmonic Mixer	Hewlett Packard	11970U	2332A00116
990	Antenna, Horn	Millitech		
991	Antenna, Horn	EMCO	3160-10	9704-1049
992	Antenna, Horn	EMCO	3160-09	9705-1079
993	Antenna, Horn	A.H. Systems	SAS-200/571	162
1016	Preamplifier	Hewlett Packard	8449A	2749A00159
1025	Preamplifier, 25dB	Nemko USA, Inc.	LNA25	399
1464	Spectrum Analyzer	Hewlett Packard	8563E	3551A04428
1629	Cable, 6 ft	Megaphase	10311 1GVT4	
1763	Antenna, Bilog	Schaffner	CBL 6111D	22926
1783	Cable Assy, 3m Chamber	Nemko	Chamber	

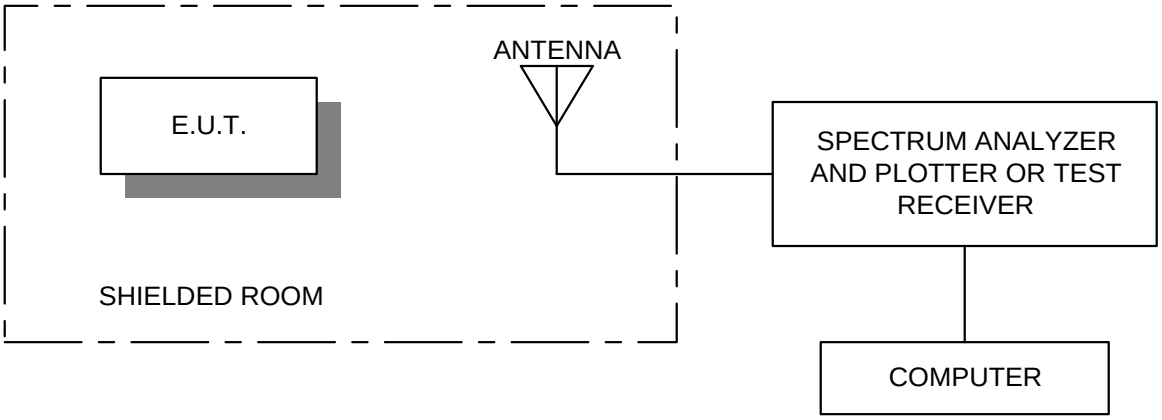
ANNEX A

TEST DIAGRAMS

Conducted Emissions



Radiated Prescan



Test Site For Radiated Emissions