

RF TEST REPORT


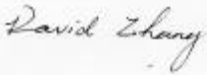


Report No.: **SL130802201-JAD-001-RFID**

Supersede Report No.: **NONE**

Applicant	:	JADAK, LLC
Product Name	:	RFID Module
Model No.	:	JDK-1901
Test Standard	:	FCC 15.225 (2012) FCC 15.207 (2012) RSS 210 (2010)
Test Method	:	FCC 15.225 (2012)(2012) ANSI C63.4 2009 RSS Gen 4.6, RSS Gen 4.7 & RSS Gen 4.9
FCC ID	:	2AAVI-JDK1901
IC ID	:	11355A-JDK1901
Dates of test	:	September 6th-12th, 2013
Issue Date	:	10/25/2013
Test Result	:	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail
Equipment complied with the specification [X]		
Equipment did not comply with the specification []		

This Test Report is Issued Under the Authority of:

	
Nima Molaei	David Zhang
Test Engineer	Engineer Reviewer

Issued By:

SIEMIC Laboratories

775 Montague Expressway, Milpitas, 95035 CA



TESTING CERT # 2742-01

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Laboratory Introduction

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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/RRR, NIST	EMI, EMS, RF , Telecom, Safety
Japan	VCCI, JATE, TELEC, RFT	EMI, RF/Wireless, Telecom
Mexico	NOM, COFETEL, Caniety	Safety, EMC , RF/Wireless, Telecom
Europe	A2LA, 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
HongKong	OFTA (US002)	RF , Telecom

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1 Report Revision History

Report No.	Report Version	Description	Issue Date
SL130802201-JAD-001-RFID	Original	-	10/25/2013

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2 Executive Summary

The purpose of this test program was to demonstrate compliance of the JADAK, LLC, RFID Module, and model: JDK-1901 against the current Stipulated Standards. The JDK-1901 has demonstrated compliance with the Stipulated Standard listed on 1st page.

3 Customer information

Applicant Name	:	JADAK, LLC
Applicant Address	:	7279 William Barry Blvd, North Syracuse, NY 13212-3349
Manufacturer Name	:	JADAK, LLC
Manufacturer Address	:	7279 William Barry Blvd, North Syracuse, NY 13212-3349

4 Test site information

Lab performing tests	:	SIEMIC Laboratories
Lab Address	:	775 Montague Expressway, Milpitas, CA 95035
FCC Test Site No.	:	881796
IC Test Site No.	:	4842D-2
VCCI Test Site No.	:	A0133

5 Modification

Index	Item	Description	Note
-	-	-	-

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6 EUT Information

6.1 EUT Description

Product Name	:	RFID Module
Model No.	:	JDK-1901
Trade Name	:	JADAK
Serial No.	:	130619-032
Input Power	:	5VDC
Date of EUT received	:	September 3th, 2013
Equipment Class/ Category	:	DXX
Clock Frequencies	:	N/A
Port/Connectors	:	USB

6.2 Radio Description

Spec for Radio -

Radio Type	RFID
Operating Frequency	13.56MHz
Modulation	ASK
Antenna Type	PCB Inductive Loop
Antenna Gain	0 dBi

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6.3 EUT test modes/configuration Description

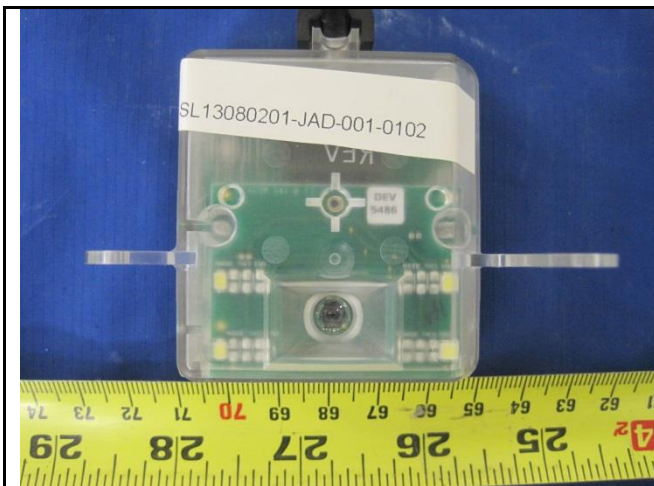
Mode	Note
RF test	EUT continuous transmit itself when power on
Note :None	

Test Item	Operating mode	Tested antenna port	Test frequencies
Antenna Requirement	N/A	-	13.56MHz
Conducted Emissions Voltage	Continues Transmit	-	
Limit in the band of 13.553 – 13.567 MHz	Continues Transmit	-	
Limit in the band of 13.410 – 13.553 MHz and 13.567 – 13.710 MHz	Continues Transmit	-	
Limit in the band of 13.110 – 13.410 MHz and 13.710 – 14.010 MHz	Continues Transmit	-	
Limit outside the band of 13.110 – 14.010 MHz	Continues Transmit	-	
Frequency Stability	Continues Transmit	-	
Occupied Bandwidth	Continues Transmit	-	

Note: EUT using a PCB trace Antenna and attached to the PCB board. Only using radiated measurement during the test.

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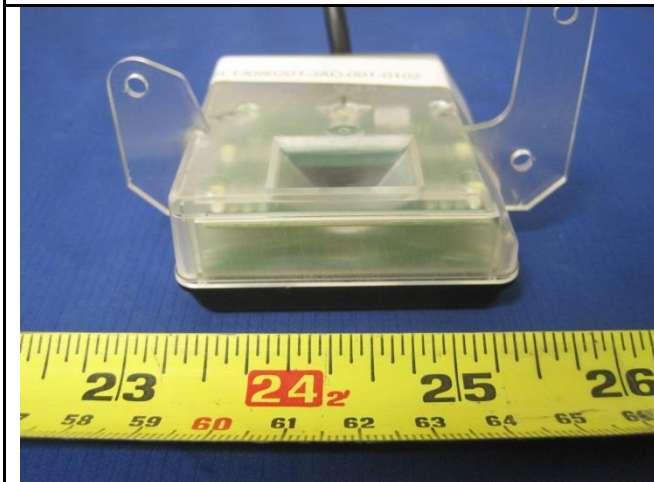
6.4 EUT Photos – External



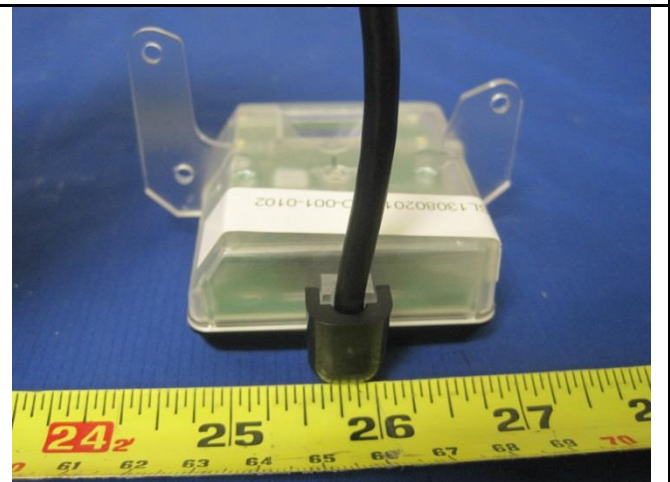
Top



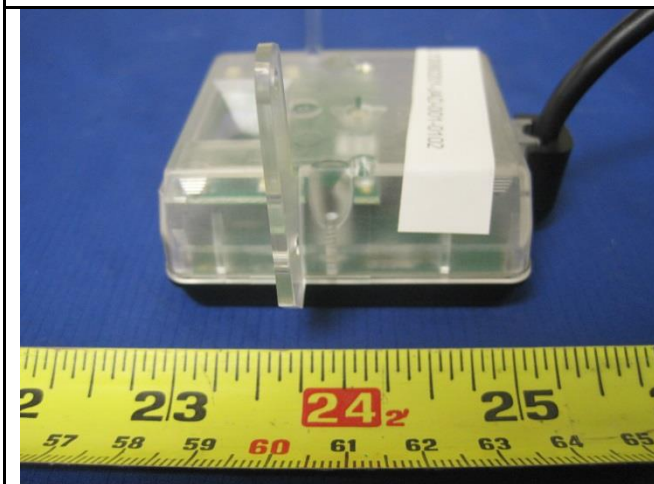
Bottom



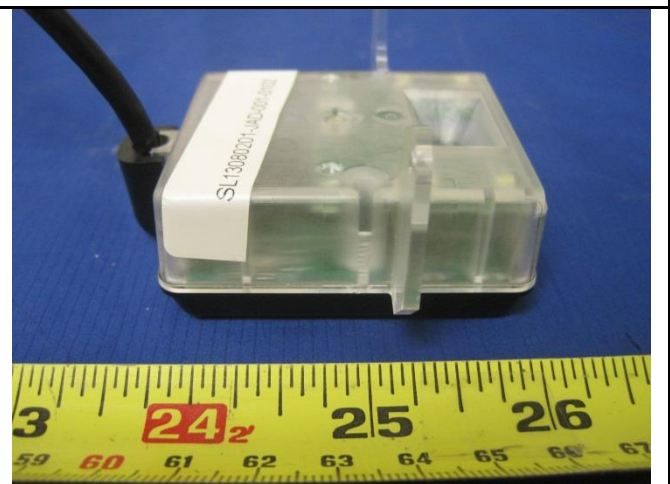
Front



Rear



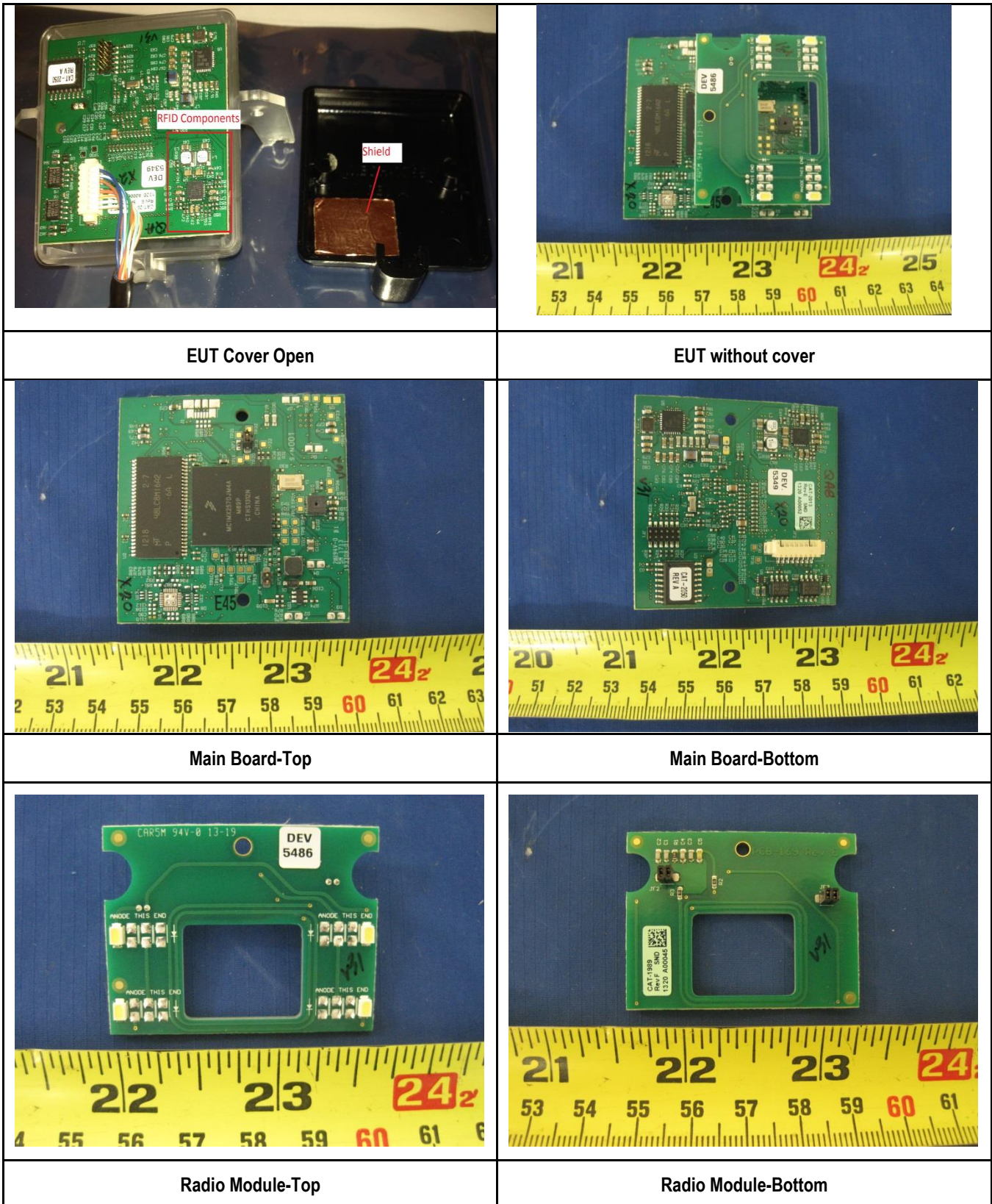
Left Side



Right Side

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6.5 EUT Photos – Internal



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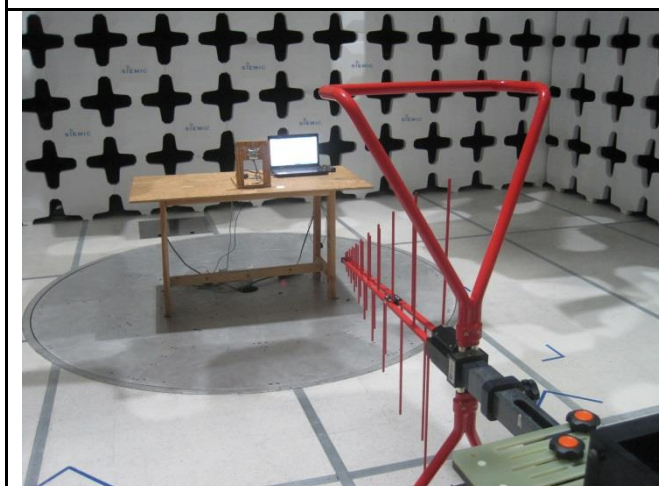
6.6 EUT Test Setup Photos



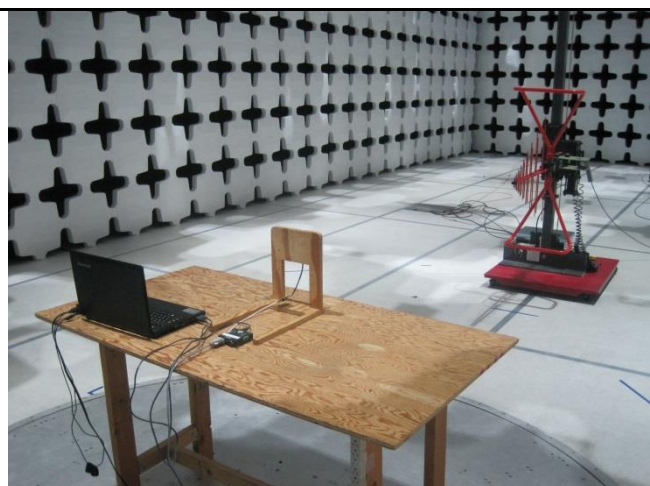
Conducted Emission - Front



Conducted Emission - Rear



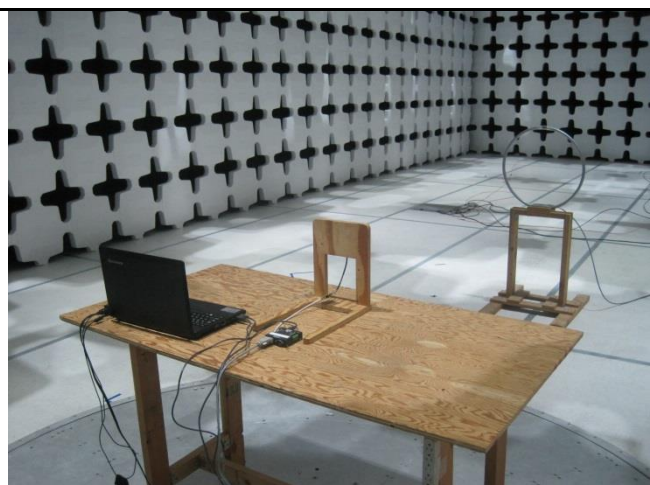
Radiated Emission Test setup (<1GHz) - Front



Radiated Emission Test setup (<1GHz) - Rear



Radiated Emission Test setup (<30MHz) - Front



Radiated Emission Test setup (<30MHz) - Rear

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7 Supporting Equipment/Software and cabling Description

7.1 Supporting Equipment

Index	Supporting Equipment Description	Model	Serial No.	Manu	Note
1	Laptop	T60	6371E5U	Lenovo	-
2	Laptop adapter	92P1109	N/A	Lenovo	-

7.2 Cabling Description

Name	Connection Start		Connection Stop		Length / shielding Info		Note
	From	I/O Port	To	I/O Port	Length (m)	Shielding	
Cable	EUT	USB	Laptop	USB	1	Unshielded	-

7.3 Test Software Description

Test Item	Software	Description
Conducted and Radiated Measurement	J-Pro	Put EUT on RFID on and off

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8 Test Summary

Test Item	Test standard		Test Method/Procedure		Pass / Fail
Antenna Requirement	FCC	15.203	FCC	-	<input checked="" type="checkbox"/> Pass
	IC		IC	-	<input type="checkbox"/> N/A
AC Conducted Emissions Voltage	FCC	15.207(a)	FCC	ANSI C63.4 2009	<input checked="" type="checkbox"/> Pass
	IC	RSS Gen (7.2.2)	IC	-	<input type="checkbox"/> N/A

Test Item	Test standard		Test Method/Procedure		Pass / Fail
Limit in the band of 13.553 – 13.567 MHz	FCC	15.225(a)	FCC	ANSI C63.4 2009	<input checked="" type="checkbox"/> Pass
	IC	RSS210(A2.6)	IC	RSS Gen 4.9	<input type="checkbox"/> N/A
Limit in the band of 13.410 – 13.553 MHz and 13.567 – 13.710 MHz	FCC	15.225(b)	FCC	ANSI C63.4 2009	<input checked="" type="checkbox"/> Pass
	IC	RSS210(A2.6)	IC	RSS Gen 4.9	<input type="checkbox"/> N/A
Limit in the band of 13.110 – 13.410 MHz and 13.710 – 14.010 MHz	FCC	15.225(c)	FCC	ANSI C63.4 2009	<input checked="" type="checkbox"/> Pass
	IC	RSS210(A2.6)	IC	RSS Gen 4.9	<input type="checkbox"/> N/A
Limit outside the band of 13.110 – 14.010 MHz	FCC	15.225(d), 15.209	FCC	ANSI C63.4 2009	<input checked="" type="checkbox"/> Pass
	IC	RSS210(A2.6)	IC	RSS Gen 4.9	<input type="checkbox"/> N/A
Frequency Stability	FCC	15.225(e)	FCC	-	<input checked="" type="checkbox"/> Pass
	IC	RSS210(A2.6)	IC	RSS Gen 4.7	<input type="checkbox"/> N/A
Occupied Bandwidth	FCC	-	FCC	-	<input checked="" type="checkbox"/> Pass
	IC	RSS-210(5.9.1)	IC	RSS Gen 4.6	<input type="checkbox"/> N/A
Remark	<ol style="list-style-type: none"> All measurement uncertainties are not taken into consideration for all presented test result. 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. Test Method: ANSI C63.4: 2009 / RSS – Gen Issue 3: 2010 				

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9 Measurement Uncertainty

Test Item	Frequency Range	Description	Uncertainty
AC Conducted Emissions Voltage	150KHz – 30MHz	The confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2	±3.5dB
Limit in the band of 13.553 – 13.567 MHz	13.553 – 13.567 MHz	The confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2 (for EUTs < 0.5m X 0.5m X 0.5m)	+5.6dB/-4.5dB
Limit in the band of 13.410 – 13.553 MHz and 13.567 – 13.710 MHz	13.410 – 13.553 MHz and 13.567 – 13.710 MHz		+5.6dB/-4.5dB
Limit in the band of 13.110 – 13.410 MHz and 13.710 – 14.010 MHz	13.110 – 13.410 MHz and 13.710 – 14.010 MHz		+5.6dB/-4.5dB
Limit outside the band of 13.110 – 14.010 MHz	9KHz – 30MHz		+5.6dB/-4.5dB
Radiated Spurious Emissions	30MHz – 1GHz		+5.6dB/-4.5dB

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10 Measurements, examination and derived results

10.1 Antenna Requirement

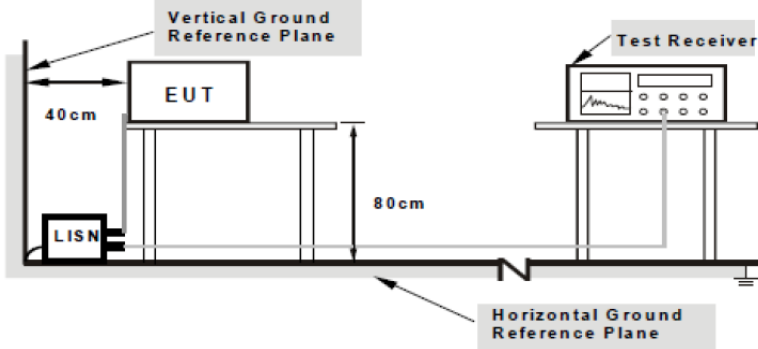
Spec	Item	Requirement	Applicable
§15.203	-	<p>An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.</p> <p>Antenna requirement must meet at least one of the following:</p> <p>a) Antenna must be permanently attached to the device. b) Antenna must use a unique type of connector to attach to the device. c) Device must be professionally installed. Installer shall be responsible for ensuring that the correct antenna is employed with the device.</p>	<input checked="" type="checkbox"/>
Remark	The RFID antenna is integral to the PCB board permanently to the device which meets the requirement (See Internal Photographs submitted as another Exhibit).		
Result	<input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL		

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10.2 Conducted Emission Test Result

Conducted Emission Limit

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

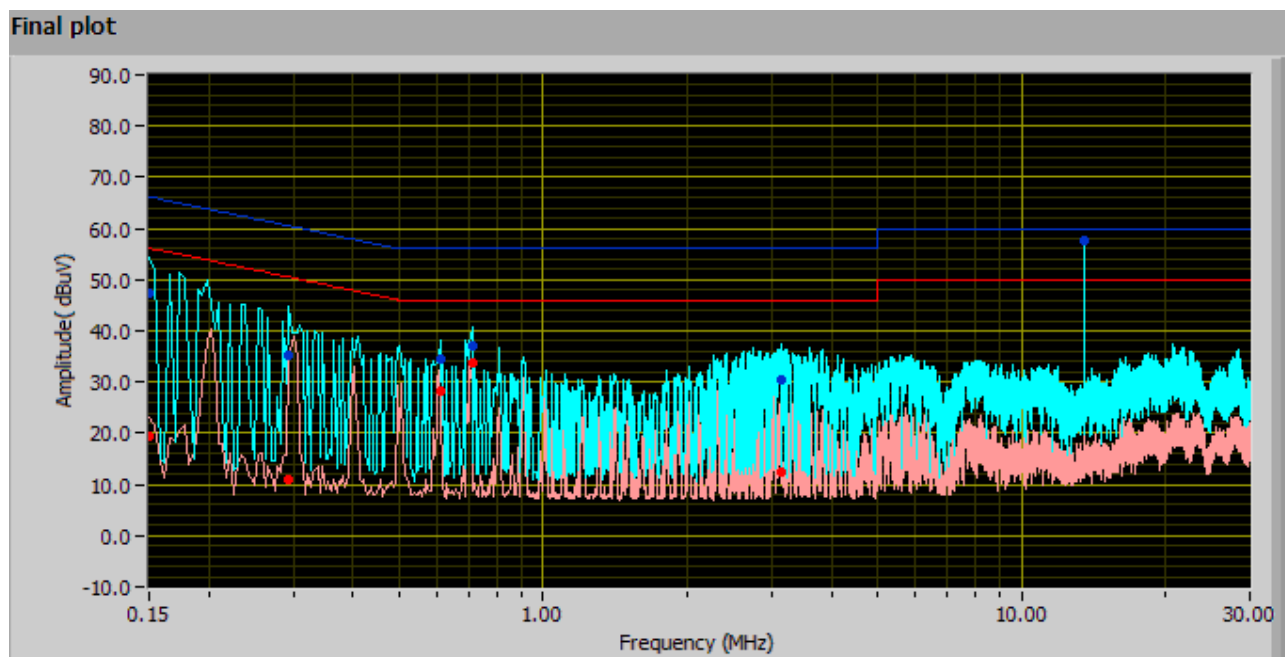
Spec	Item	Requirement	Applicable
§ 15.207, RSS210(A8.1)	a)	For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits set in § 15.207, as measured using a 50 µH/50 ohms line impedance stabilization network (LISN). AC Line conducted emission within the band 150KHz to 30MHz	<input checked="" type="checkbox"/>
Test Setup	 <p>Note: 1. Support units were connected to second LISN. 2. Both of LISNs (AMN) are 80cm from EUT and at least 80cm from other units and other metal planes support units.</p>		
Procedure	<ul style="list-style-type: none"> - The EUT and supporting equipment was 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 equipments were powered separately from another main supply. 		
Test Date	09/10/2013	Environmental condition	Temperature 24°C Relative Humidity 47% Atmospheric Pressure 1019mbar
Remark	-		
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail		

Test Data ☒ Yes ☐ N/A

Test Plot ☒ Yes ☐ N/A

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Graph



Quasi-Peak Limit

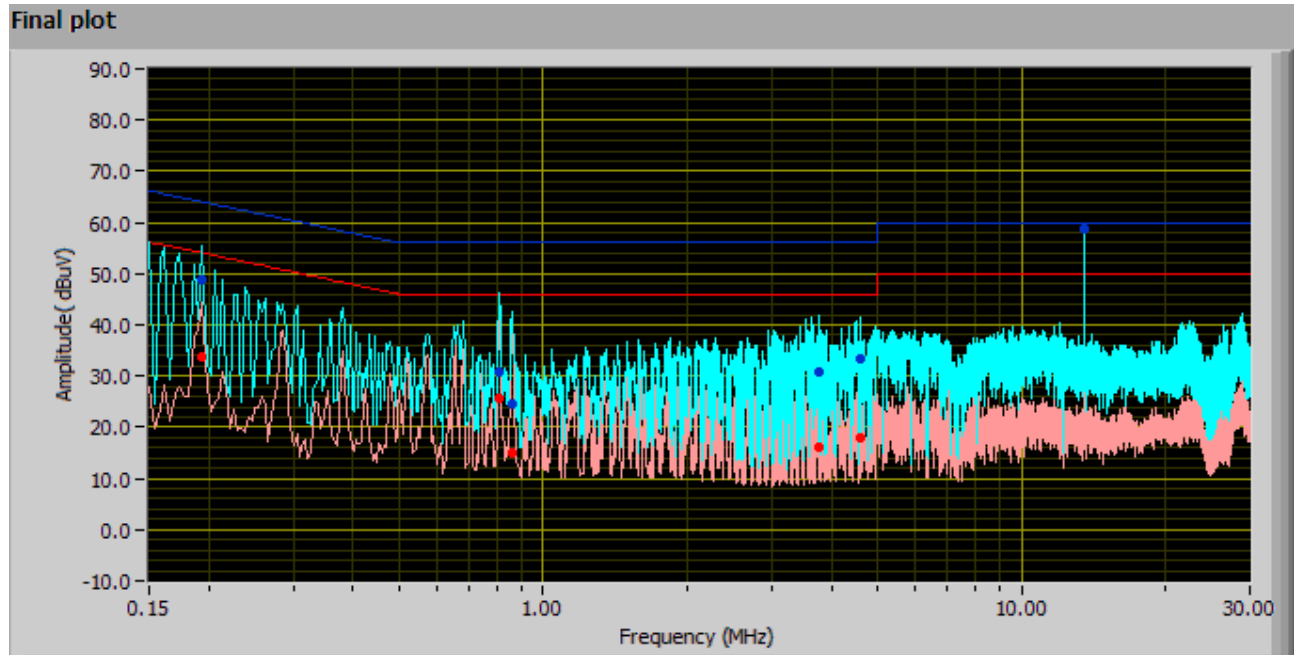
Average Limit

Neutral Line Plot at 120Vac, 60Hz

Frequency (MHz)	QP Value (dB μ V)	Class B Limit (dB)	Margin (dB)	Avg Value (dB μ V)	Class B Limit (dB)	Margin (dB)	Line
13.56	57.66	60.00	-2.34	37.64	50.00	-12.36	Neutral
0.15	47.36	66.19	-18.83	19.55	56.19	-36.64	Neutral
0.71	37.07	56.00	-18.93	33.90	46.00	-12.10	Neutral
0.29	35.07	60.49	-25.42	10.78	50.49	-39.71	Neutral
0.61	34.33	56.00	-21.67	28.10	46.00	-17.90	Neutral
3.14	30.57	56.00	-25.43	12.55	46.00	-33.45	Neutral

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Graph



Quasi-Peak Limit

Average Limit

Phase Line Plot at 120Vac, 60Hz

Frequency (MHz)	QP Value (dBμV)	Class B Limit (dB)	Margin (dB)	Avg Value (dBμV)	Class B Limit (dB)	Margin (dB)	Line
13.56	58.62	60.00	-1.38	38.67	50.00	-11.33	Phase
0.19	48.78	64.01	-15.23	33.57	54.01	-20.44	Phase
0.81	30.67	56.00	-25.33	25.67	46.00	-20.33	Phase
0.86	24.71	56.00	-31.29	15.00	46.00	-31.00	Phase
3.76	30.87	56.00	-25.13	16.09	46.00	-29.91	Phase
4.62	33.54	56.00	-22.46	18.10	46.00	-27.90	Phase

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10.2 Radiated Measurement

Receiver/Spectrum analyser setting

TEST	Detector	RBW	VBW	Test Distance		NOTES
Radiated Emission < 1GHz (30MHz – 1GHz)	PK/QP	100KHz	300KHz	3m	-	-
Radiated Emission < 30MHz	PK/QP	10KHz	30KHz	3m	-	-
Radiated Emission > 1GHz (1GHz – 18GHz)	PK/AV	1MHz	3MHz	3m	-	-

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10.2.1 Radiated Measurement below 1GHz

Requirement(s):

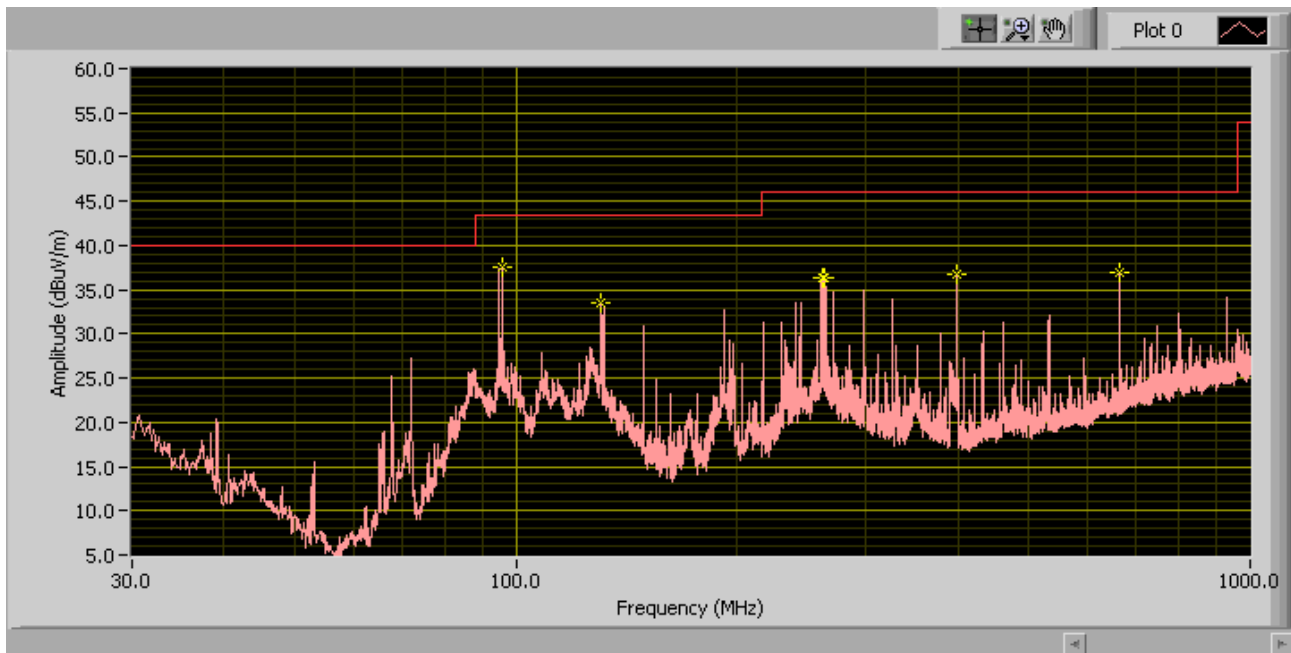
Spec	Requirement	Applicable																								
§ 15.209 ,RSS210 (A8.5)	<p>Except higher limit as specified elsewhere in other section, the emissions from the low-power radio-frequency devices shall not exceed the field strength levels specified in the following table and the level of any unwanted emissions shall not exceed the level of the fundamental emission. The tighter limit applies at the band edges</p> <table border="1"> <thead> <tr> <th>Frequency range (MHz)</th><th>Field Strength (uV/m)</th><th>Measurements Distance (meters)</th></tr> </thead> <tbody> <tr> <td>0.009-0.490</td><td>2400/F(kHz)</td><td>300</td></tr> <tr> <td>0.490-1.705</td><td>24000/F(kHz)</td><td>30</td></tr> <tr> <td>1.705-30.0</td><td>30</td><td>30</td></tr> <tr> <td>30 – 88</td><td>100</td><td>3</td></tr> <tr> <td>88 – 216</td><td>150</td><td>3</td></tr> <tr> <td>216 960</td><td>200</td><td>3</td></tr> <tr> <td>Above 960</td><td>500</td><td>3</td></tr> </tbody> </table>	Frequency range (MHz)	Field Strength (uV/m)	Measurements 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	☒
Frequency range (MHz)	Field Strength (uV/m)	Measurements 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	<ol style="list-style-type: none"> The EUT was switched on and allowed to warm up to its normal operating condition. 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: <ol style="list-style-type: none"> Vertical or horizontal polarisation (whichever gave the higher emission level over a full rotation of the EUT) was chosen. The EUT was then rotated to the direction that gave the maximum emission. Finally, the antenna height was adjusted to the height that gave the maximum emission. A Quasi-peak measurement was then made for that frequency point. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured. 																									
Test Date	09/10/2013	<table> <tr> <td>Environmental condition</td> <td>Temperature</td> <td>24oC</td> </tr> <tr> <td></td> <td>Relative Humidity</td> <td>47%</td> </tr> <tr> <td></td> <td>Atmospheric Pressure</td> <td>1019mbar</td> </tr> </table>	Environmental condition	Temperature	24oC		Relative Humidity	47%		Atmospheric Pressure	1019mbar															
Environmental condition	Temperature	24oC																								
	Relative Humidity	47%																								
	Atmospheric Pressure	1019mbar																								
Remark	-																									
Result	☒ Pass ☐ Fail																									

Test Data ☒ Yes (See below) ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

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Results & Graph:



Test Data

Frequency (MHz)	Reading (dBuV)	Azimuth (degree)	Polarity	Height (cm)	Antenna Factor (dB)	Cable Loss (dB)	Amplifier (dB)	Corrected (dBuV/m)	Limit (dBuV/m)	Margin (dB)
96.02	53.511	220	H	373	9.1	1.4	31.9	32.11	43.52	-11.41
664.96	41.85	157	V	256	18.8	4.6	31.5	33.75	46	-12.25
398.95	49.18	171	H	206	15.3	3.2	31.7	35.98	46	-10.02
261.14	48.02	1	H	100	12.2	2.6	31.8	31.02	46	-14.98
262.82	35.94	292	V	326	12.4	2.6	31.8	19.14	46	-26.86
130.62	34.95	294	H	232	14	1.7	31.9	18.75	43.52	-24.77

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10.2.2 Radiated Measurement below 30MHz

Requirement(s):

Spec	Requirement	Applicable
47 CFR §15.225 RSS-210 (A2.6)	<p>Operation within the band 13.110–14.010 MHz.</p> <p>(a) The field strength of any emissions within the band 13.553–13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.</p> <p>(b) Within the bands 13.410–13.553 MHz and 13.567–13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.</p> <p>(c) Within the bands 13.110–13.410 MHz and 13.710–14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.</p> <p>(d) The field strength of any emissions appearing outside of the 13.110–14.010 MHz band shall not exceed the general radiated emission limits in §15.209.</p>	<input checked="" type="checkbox"/>
Test Setup	<p>1. The EUT and supporting equipment was set up in accordance with the requirements of the standard on top of a 1.5m X 1.0m X 0.8m high, non-metallic table.</p> <p>2. The filtered power supply for the EUT and supporting equipment were tapped from the appropriate power sockets located on the turntable.</p> <p>3. The relevant loop antenna was set at the required test distance away from the EUT and supporting equipment boundary.</p>	
Procedure	<p>For < 30MHz, Radiated emissions were measured according to ANSI C63.4. The EUT was set to transmit at the highest output power.</p> <p>The EUT was set 3 meters 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.</p> <p>The limit is converted from microvolt/meter to decibel microvolt/meter.</p>	
Test Date	09/10/2013	<p>Environmental condition</p> <p>Temperature 24oC Relative Humidity 47% Atmospheric Pressure 1019mbar</p>
Remark	-	
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	

Test Data ☒ Yes (See below) ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

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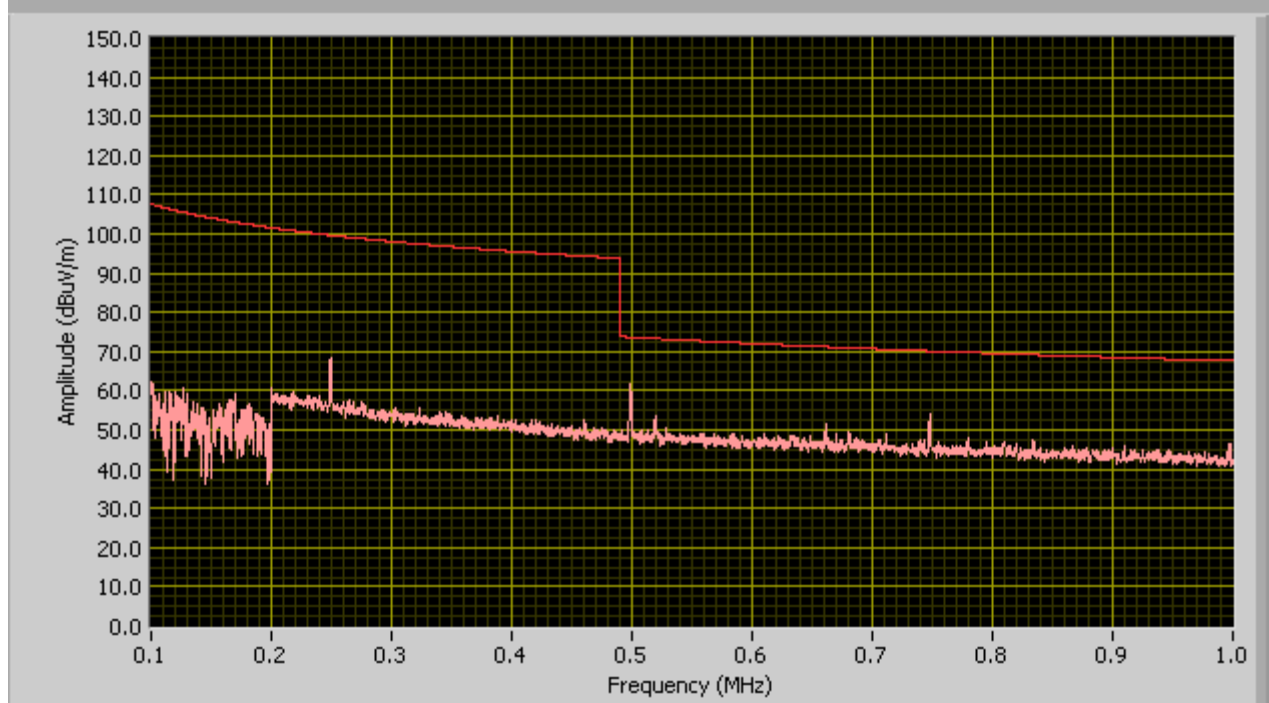
Results & Graph:

100 kHz ~ 1 MHz

Loop Antenna at 0 degree

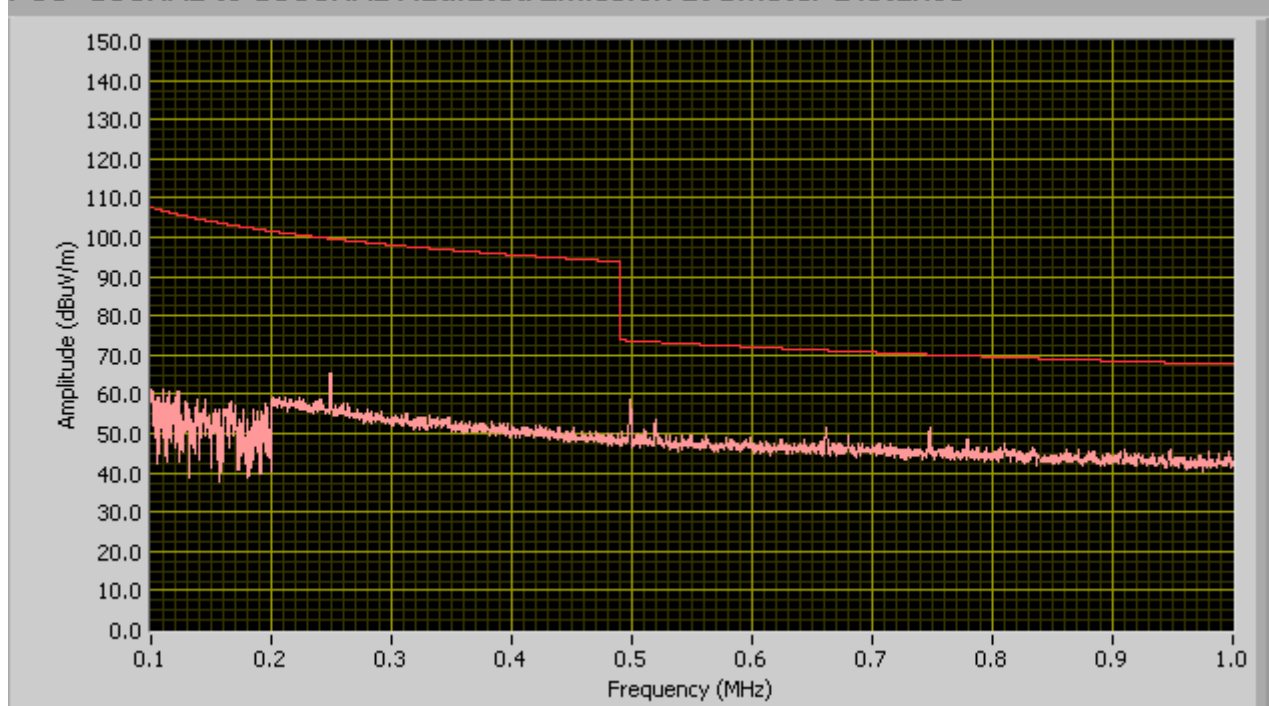
General Emission Limit @ 3 Meter

FCC- 100KHz to 1000KHz Radiated Emission at 3meter Distance



Loop Antenna at 90 degree

FCC- 100KHz to 1000KHz Radiated Emission at 3meter Distance



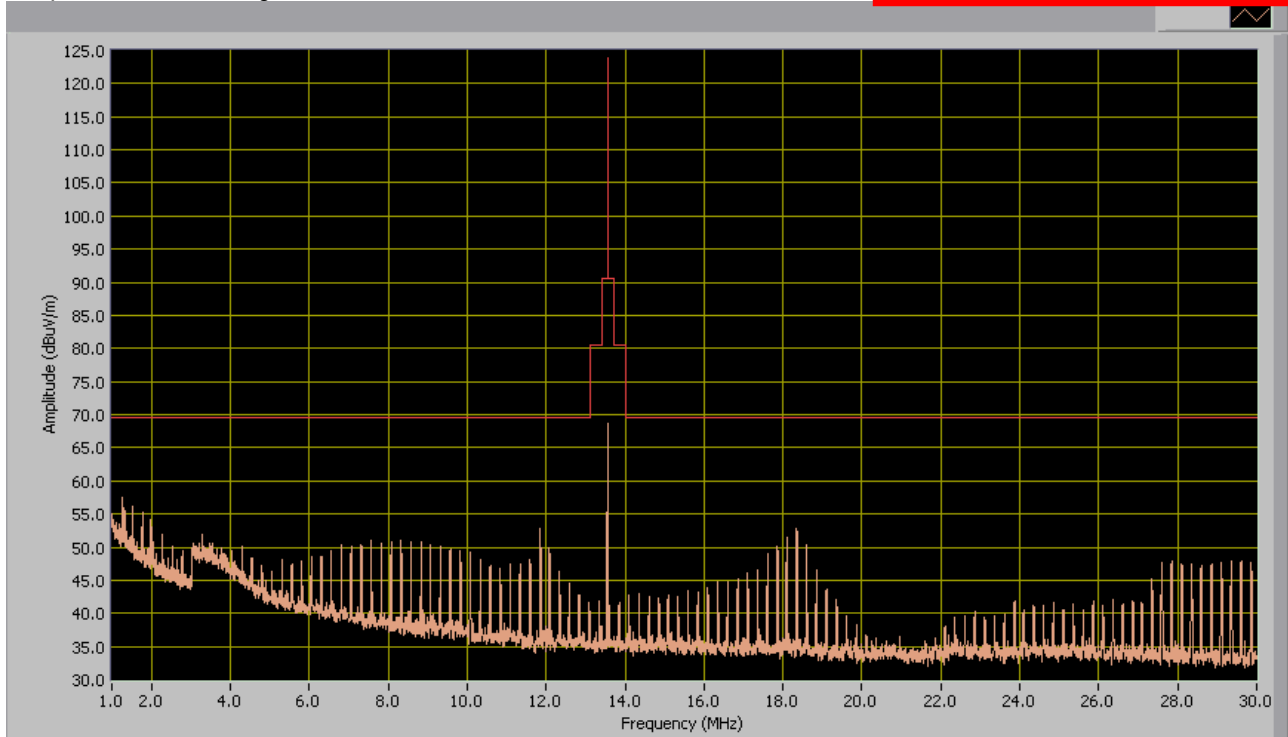
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Results & Graph:

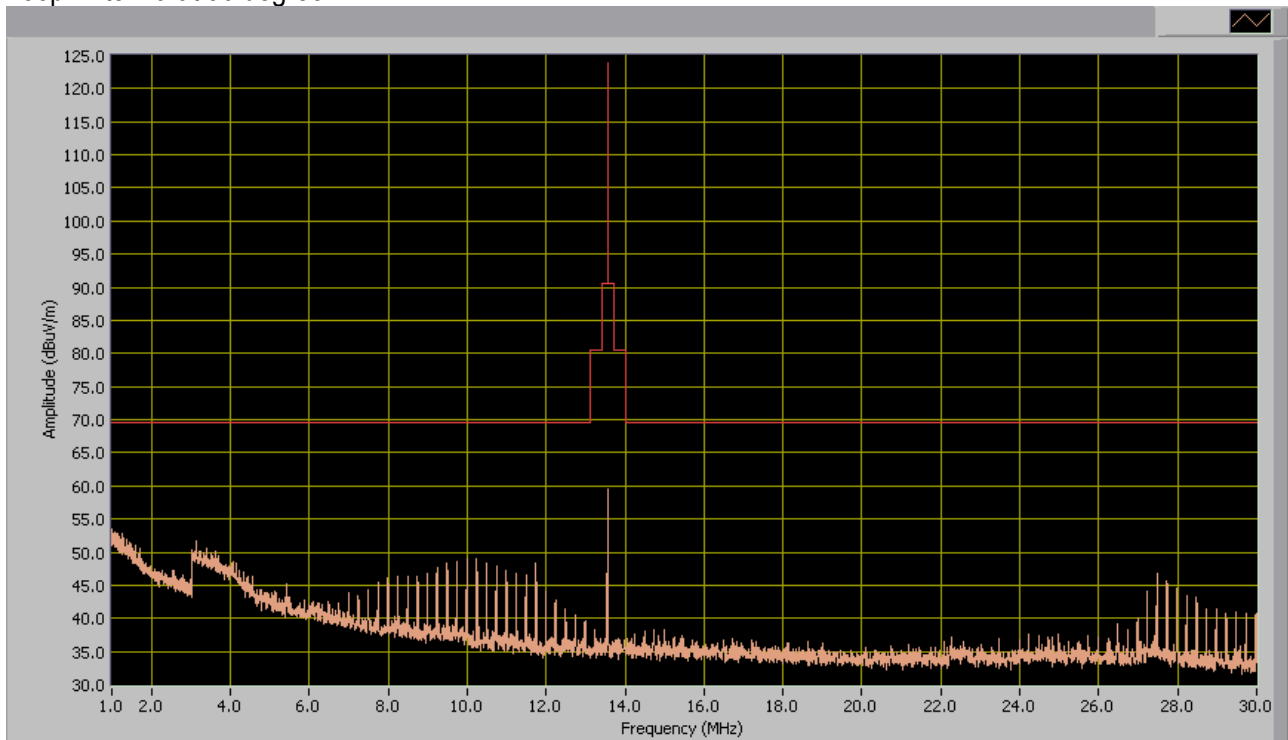
1MHz ~ 30MHz

Loop Antenna at 0 degree

General Emission Limit @ 3 meter



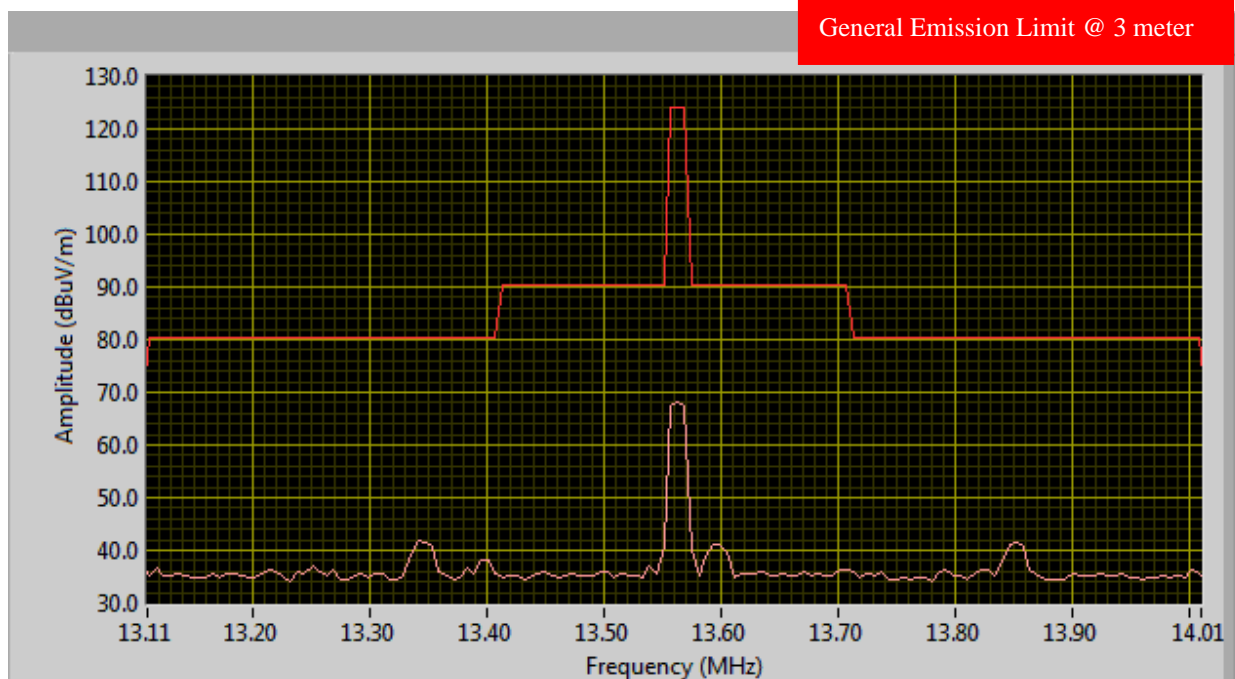
Loop Antenna at 90 degree



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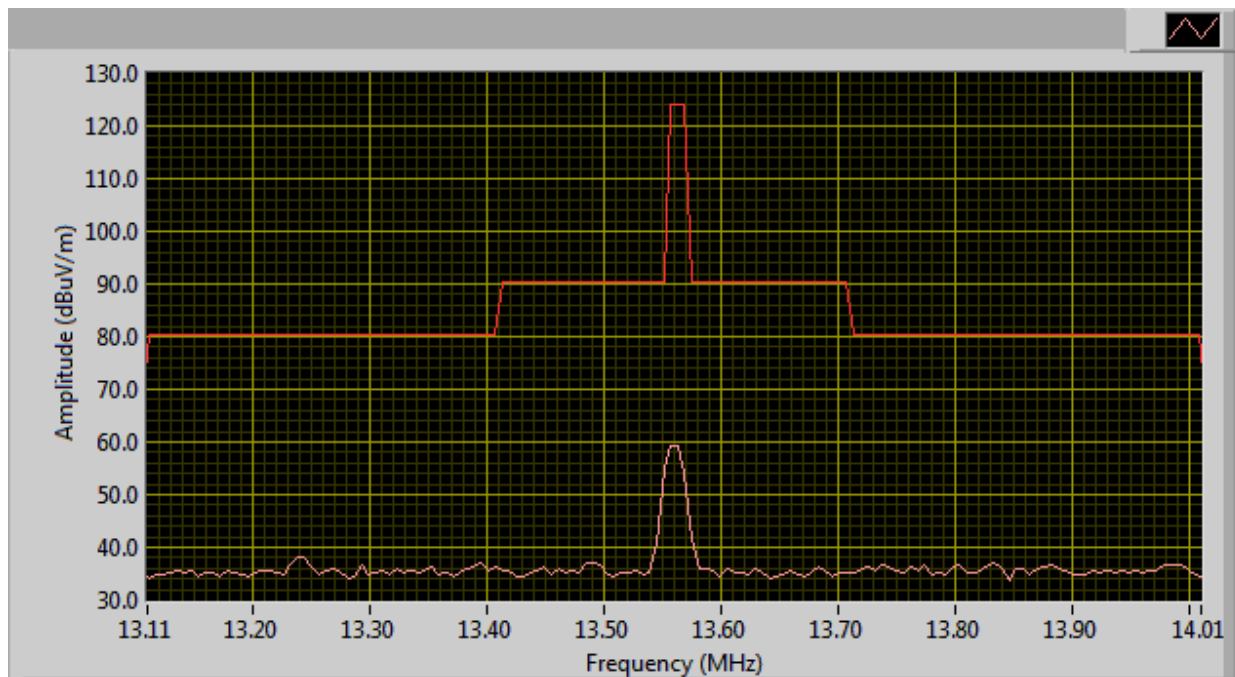
Results & Graph:

Loop Antenna at 0 degree



Frequency(MHz)	Amplitude(dBuV/m)
13.563	68.17

Loop Antenna at 90 degree



Frequency(MHz)	Amplitude(dBuV/m)
13.563	59.28

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10.2.3 Frequency Stability

Requirement(s):

Spec	Requirement		Applicable
47 CFR §15.225 (e) RSS-210 (A2.6)	Limit: $\pm 0.01\%$ of 13.56 MHz = 1356 Hz		<input checked="" type="checkbox"/>
Test Setup	1. The EUT was set up inside an environmental chamber. 2. The EUT was placed in the center of the environmental.		
Procedure	Frequency Stability was measured according to 47 CFR §2.1055. A measurement was taken with a spectrum analyzer. The spectrum analyzer bandwidth and span was set to read in hertz. A voltmeter was used to monitor when varying the voltage.		
Test Date	09/10/2013	Environmental condition	Temperature 24oC Relative Humidity 47% Atmospheric Pressure 1019mbar
Remark	-		
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail		

Test Data ☒ Yes (See below) ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

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Test Result

Frequency Stability versus Temperature: The Frequency tolerance of the carrier signal shall be maintained within $\pm 0.01\%$ of the operating frequency over a temperature variation of -20°C to $+50^{\circ}\text{C}$ at normal supply voltage.

Reference Frequency: 13.560082 MHz at -20°C and $+50^{\circ}\text{C}$

Temperature ($^{\circ}\text{C}$)	Measured Freq. (MHz)	Freq. Drift (Hz)	Freq. Deviation (Limit: 0.01%)	Pass/Fail
50	13.560103	21	<0.01	Pass
40	13.560095	13	<0.01	Pass
30	13.560089	7	<0.01	Pass
20	Reference (13.560082 MHz)			
10	13.560076	6	<0.01	Pass
0	13.560068	14	<0.01	Pass
-10	13.560064	18	<0.01	Pass
-20	13.560063	19	<0.01	Pass

Frequency Stability versus Input Voltage: The Frequency tolerance of the carrier signal shall be maintained within $\pm 0.01\%$, the frequency of the transmitter was measured at 85% and at 115% of the rated power supply voltage at 20°C environmental temperature.

Carrier Frequency: 13.560082 MHz at 20°C at 5VDC

Measured Voltage $\pm 15\%$ of nominal (DC)	Measured Freq. (MHz)	Freq. Drift (Hz)	Freq. Deviation (Limit: 0.01%)	Pass/Fail
4.25	13.560078	4	<0.01	Pass
5.75	13.560086	4	<0.01	Pass

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10.2.4 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.	<input checked="" type="checkbox"/>
Test Setup	-	
Procedure	<ol style="list-style-type: none"> 1. The EUT was switched on and allowed to warm up to its normal operating condition. 2. To measure conducted, an 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 records. 	
Test Date	09/10/2013	Environmental condition Temperature 23oC Relative Humidity 45% Atmospheric Pressure 1019mbar
Remark	-	
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	

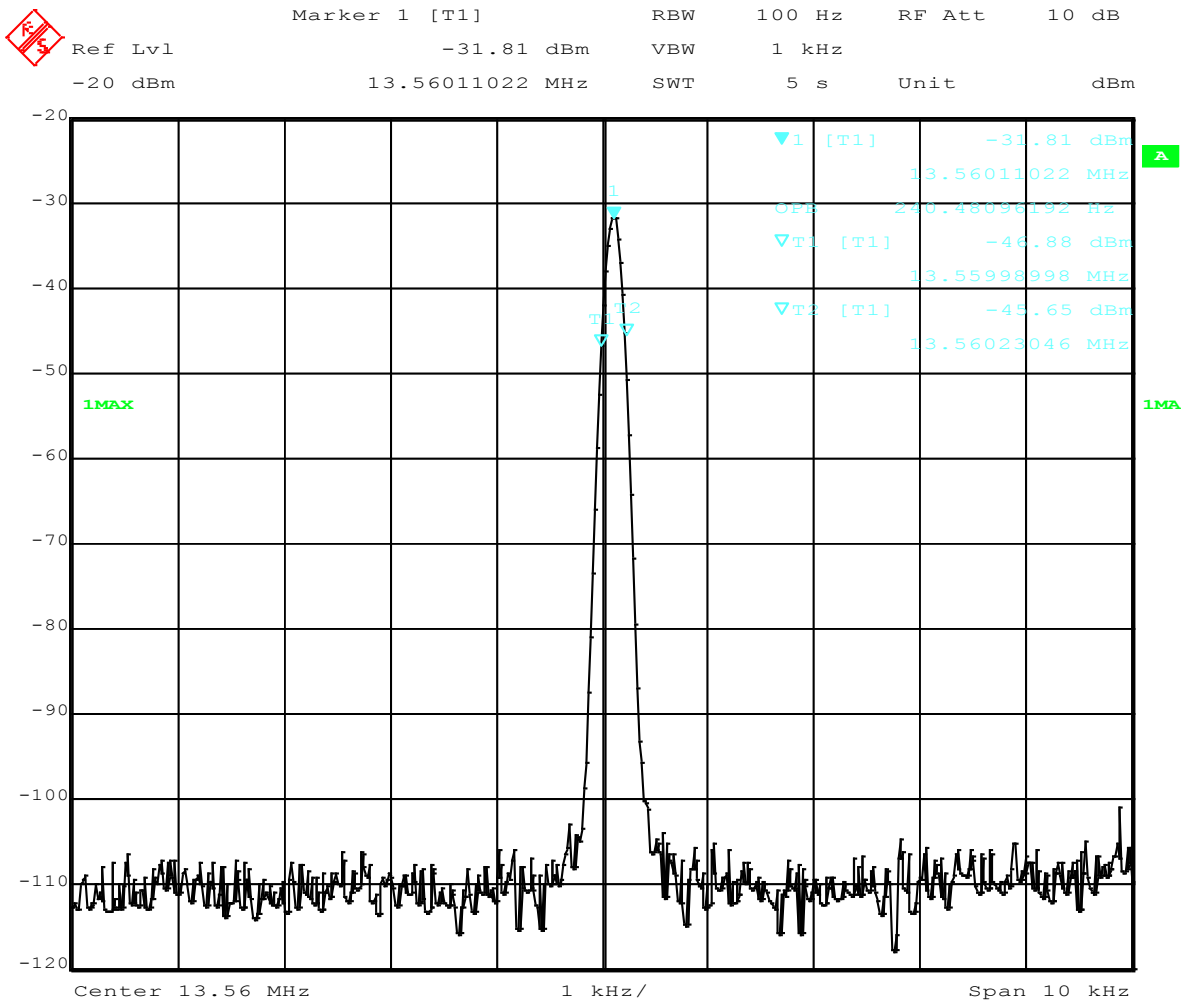
Test Data ☒ Yes (See below) ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

Test Results:

Radio	Channel Frequency (MHz)	99% Occupied BW (KHz)	Limit
13.56MHz Radio	13.56	0.24048	N/A

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Annex A. TEST INSTRUMENT

Instrument	Model	Serial #	Cal Date	Cal Cycle	Cal Due	In use
Conducted Emissions						
R & S Receiver	ESIB 40	100179	04/20/2013	1 Year	04/20/2014	<input checked="" type="checkbox"/>
R&S LISN	ESH2-Z5	861741/013	05/18/2013	1 Year	05/18/2014	<input checked="" type="checkbox"/>
CHASE LISN	MN2050B	1018	07/24/2013	1 Year	07/24/2014	<input type="checkbox"/>
Sekonic Hygro Hermograph	ST-50	HE01-000092	05/25/2013	1 Year	05/25/2014	<input checked="" type="checkbox"/>
Radiated Emissions						
R & S Receiver	ESL6	100178	03/01/2013	1 Year	03/01/2014	<input checked="" type="checkbox"/>
R & S Receiver	ESIB 40	100179	04/20/2013	1 Year	04/20/2014	<input type="checkbox"/>
Passive Loop Antenna (10k-30MHz)	6512	49120	5/22/2013	1 Year	5/22/2014	<input checked="" type="checkbox"/>
Bi-Log antenna (30MHz~2GHz)	JB1	A030702	02/09/2013	1 Year	02/09/2014	<input checked="" type="checkbox"/>
Horn Antenna (1-26.5GHz)	3115	10SL0059	04/26/2013	1 Year	04/26/2014	<input type="checkbox"/>
Microwave Preamplifier (18-40 GHz)	PA-840	181251	05/30/2013	1 Year	05/30/2014	<input type="checkbox"/>
3 Meters SAC	3M	N/A	10/13/2012	1 Year	10/13/2013	<input type="checkbox"/>
10 Meters SAC	10M	N/A	06/05/2013	1 Year	06/05/2014	<input checked="" type="checkbox"/>
Sekonic Hygro Hermograph	ST-50	HE01-000092	05/25/2013	1 Year	05/25/2014	<input checked="" type="checkbox"/>
Frequency tolerance						
Spectrum Analyzer	8564E	3738A00962	5/20/2013	1 Year	05/20/2014	<input checked="" type="checkbox"/>
Test Equity Environment Chamber	1007H	61201	07/05/2013	1 Year	07/05/2014	<input checked="" type="checkbox"/>
















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Annex B. USER MANUAL, BLOCK & CIRCUIT DIAGRAM

Please see attachment

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Annex C. 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
HongKong 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

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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 Measuremet
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 Radiocommunications : 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

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