

RF TEST REPORT



Report No.: FCC_IC_RF_SL17032201-SEV-019_Co-Location
Supersede Report No.: NONE

Applicant	:	Trek Bicycle Corporation
Host Product Name	:	Bcycle
Module Model No.	:	MFRFID1, BC127, 1EIQN2NN
Test Standard	:	FCC 15.225, 15.209, 15.247, Part 27 RSS-210 Issue 9: 2016, RSS247 Issue 2, RSS 130 Issue 1, RSS 139 Issue 3
Test Method	:	FCC 15.225, 15.209, 15.247, Part 27 ANSI C63.10 2013 RSS Gen Issue 4 2014
FCC ID	:	RFID: 2AHXDMFRFID1, BT: 2AHXDBC127-X, LTE: 2AHXD1EIQN2NN
IC ID	:	RFID: 21334-MFRFID1, BT: 21334-BC127, LTE: 21334-1EIQN2NN
Dates of test	:	12/08/2017-12/27/2017
Issue Date	:	12/27/2017
Test Result	:	☒ Pass ☐ Fail
Equipment complied with the specification		[X]
Equipment did not comply with the specification		[]

This Test Report is Issued Under the Authority of:	
	
Vijay Chaudhary	Chen Ge
RF Test Engineer	Engineer Reviewer
This test report may be reproduced in full only Test result presented in this test report is applicable to the tested sample only	

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



775 Montague Expressway, Milpitas, CA 95035, USA • Phone: (+1) 408 526 1188 • Facsimile (+1) 408 526 1088

Visit us at: www.siemmic.com; Follow us at:



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/RRR, 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 & RED Directive
Japan	MIC (RCB 208)	RF, Telecom
Hong Kong	OFTA (US002)	RF, Telecom

CONTENTS

1	REPORT REVISION HISTORY	4
2	EXECUTIVE SUMMARY	5
3	CUSTOMER INFORMATION	5
4	TEST SITE INFORMATION	5
5	MODIFICATION	5
6	EUT INFORMATION	6
6.1	EUT Description	6
6.2	Radio Description	6
6.3	EUT test modes/configuration Description.....	7
6.4	EUT Photos – External	8
6.5	EUT Photos – Internal.....	9
6.6	EUT Test Setup Photos	10
7	SUPPORTING EQUIPMENT/SOFTWARE AND CABLING DESCRIPTION.....	11
7.1	Supporting Equipment	11
7.2	Cabling Description	11
7.3	Test Software Description	11
8	TEST SUMMARY.....	12
9	MEASUREMENT UNCERTAINTY	13
10	MEASUREMENTS, EXAMINATION AND DERIVED RESULTS	14
10.1	Antenna Requirement.....	14
10.2	Radiated Measurements.....	15
10.2.1	Radiated Measurements below 30MHz.....	15
10.2.2	Radiated Measurements 30MHz to 1GHz	18
10.2.3	Radiated Spurious Emissions between 1GHz-25GHz.....	20
ANNEX A. TEST INSTRUMENT		22
ANNEX A. SIEMIC ACCREDITATION		23

1 Report Revision History

Report No.	Report Version	Description	Issue Date
FCC_IC_RF_SL17032201-SEV-019	None	Original	12/27/2017

2 Executive Summary

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

Company: Trek Bicycle Corporation
Host Product: Bcycle
Module
Model: MFRFID1, BC127, 1EIQN2NN

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	:	Trek Bicycle Corporation
Applicant Address	:	801 W Madison st, Waterloo, WI-53594
Manufacturer Name	:	Plexus
Manufacturer Address	:	2444 Schultz Drive, Neenah, WI-54956

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
-	-	-	-
-	-	-	-

6 EUT Information

6.1 EUT Description

Host Product Name	:	Bcycle
Module Model No.	:	MFRFID, BC127, 1EIQN2NN
Trade Name	:	BCycle
Serial No.	:	T00FN
Input Power	:	3.5 Watts
Product Hardware version	:	10
Product Software version	:	1.30.0
Radio Hardware version	:	10
Radio Software version	:	1.30.0
Test SW Version	:	1.30.0
Date of EUT received	:	11/15/2017
Working Frequencies	:	125 kHz, 13.56MHz, BT, LTE

6.2 Radio Description

Specifications for Radio:

Radio Type	RFID
Operating Frequency	125KHz, 13.56MHz
Modulation	ASK (125KHz), ASK (13.56MHz)
Channel Spacing	None
Antenna Type	Patch Antenna
Antenna Gain(dB)	125KHz: -28.73, 13.56MHz: -42.32
Antenna Connector Type	SMC Connector

Specs for Bluetooth

Radio Type	Bluetooth (EDR)
Operating Frequency	2402MHz-2480MHz
Modulation	FHSS
Channel Spacing	1MHz
Antenna Type	Patch Antenna
Antenna Gain	0 dBi
Antenna Connector Type	SMC connector

Item	LTE	LTE
Operating Band /Radio Type	LTE Band 4	LTE Band 13
Bandwidth	5MHz, 10MHz, 15MHz, 20MHz	5MHz, 10MHz, 15MHz, 20MHz
Modulation	QPSK/16QAM/64QAM	QPSK/16QAM/64QAM
Antenna Type	Patch Antenna	Patch Antenna
Antenna Gain	3.5 dBi	1 dBi
Frequency TX(MHz)	TX: 1710 MHz to 1755 MHz RX: 2110 MHz to 2155 MHz	TX: 777 MHz to 787 MHz RX: 746 MHz to 756 MHz

6.3 EUT test modes/configuration Description

Mode	Note
RF test	EUT is set to continuously transmit at 13.56MHz and 125kHz
Note: None	

Test Item	Operating mode	Tested antenna port
Antenna Requirement	N/A	-
Conducted Emissions Voltage	N/A	-
Radiated Spurious Emission	Continuous Transmit	-
Frequency Stability	N/A	-
Occupied Bandwidth	N/A	-
Note: -		

6.4 EUT Photos – External



Top View



Bottom View



Front Side



Rear Side

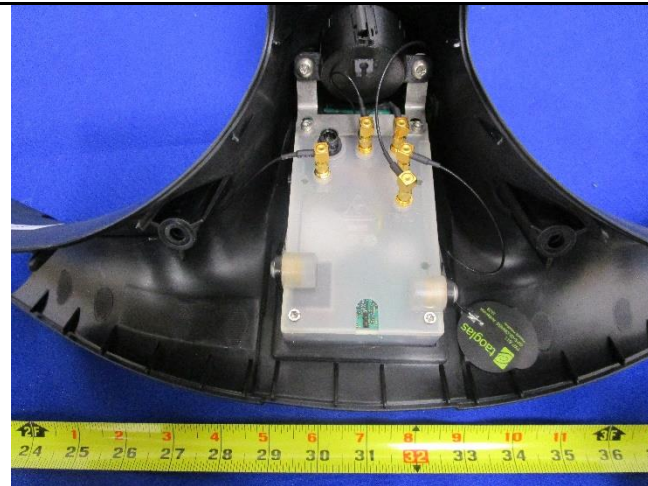


Left Side

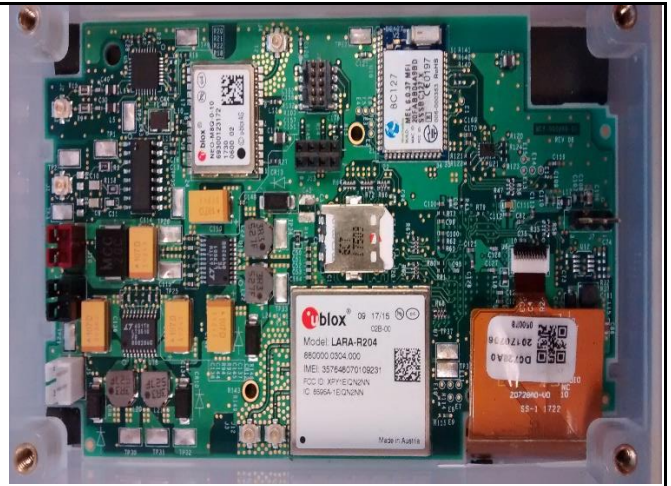


Right Side

6.5 EUT Photos – Internal



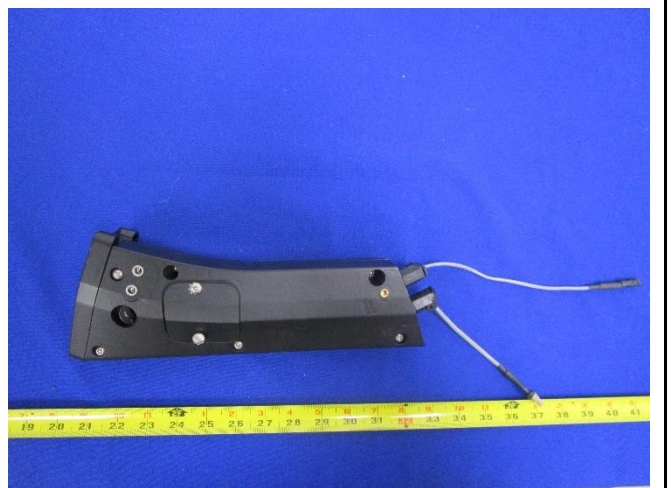
PCB View with Cover



Cover off PCB View

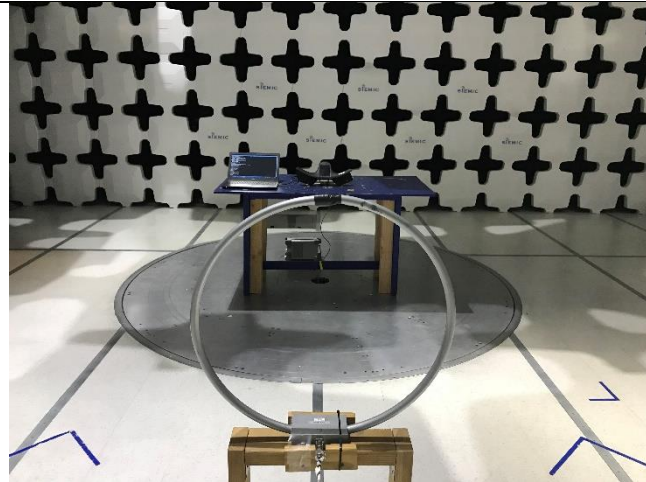


Battery Top View



Battery Side View

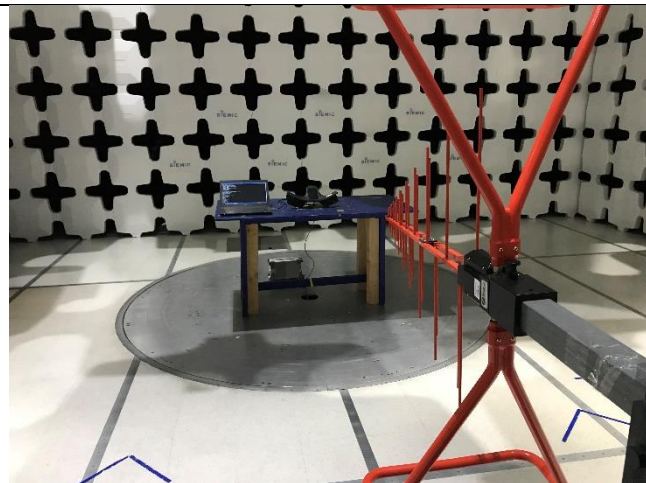
6.6 EUT Test Setup Photos



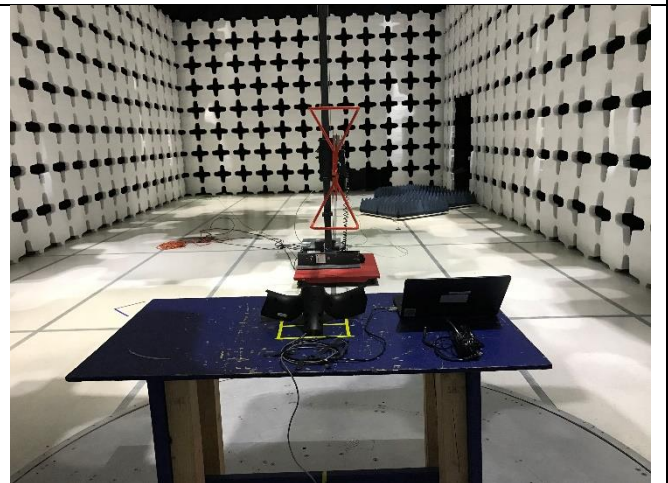
Radiated Emissions (<30MHz) – Front View



Radiated Emissions (<30MHz) – Rear View



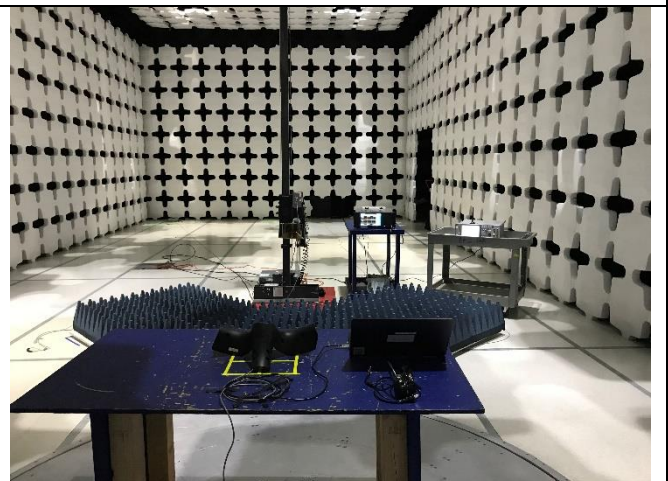
Radiated Emissions (<1GHz) – Front View



Radiated Emissions (<1GHz) – Rear View



Radiated Emissions (>1GHz) – Front View



Radiated Emissions (>1GHz) – Rear View

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	
1	EUT	Connector	Computer	USB	5	-	-

7.3 Test Software Description

Test Item	Software	Description
RF Testing	Tera Term	Set the EUT to transmit continuously in 125KHz and 13.56MHz test mode
-	-	-

8 Test Summary

Test Item	Test standard		Test Method/Procedure	Pass / Fail
Antenna Requirement	FCC	15.203	ANSI C63.10 – 2013 558074 D01 DTS Meas. Guidance v03r02	☐ Pass
	IC	-		☒ N/A
AC Conducted Emissions Voltage	FCC	15.225(a)	ANSI C63.10 2013 RSS Gen. 8.8	☐ Pass
	IC	RSS Gen (7.2.2)		☒ N/A
Remark	1. Device is battery operated. Conducted Emission test is not required			

Test Item	Test standard		Test Method/Procedure		Pass / Fail
Radiated Spurious Emission	FCC	-	FCC	RSS Gen 7.1	☒ Pass
	IC		IC		☐ N/A
Frequency Stability	FCC	-	FCC	-	☐ Pass
	IC	-	IC	-	☒ N/A
Occupied Bandwidth	FCC	-	FCC	-	☐ Pass
	IC	-	IC	-	☒ N/A
Remark	2. All measurement uncertainties are not taken into consideration for all presented test result. 3. 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. 4. Only Radiated Spurious Emission for colocation has been tested for this report				

9 Measurement Uncertainty

Test Item	Description	Uncertainty
AC Conducted Emissions Voltage	Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2	$\pm 3.5\text{dB}$
Limit in the band of 13.553 – 13.567 MHz	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		+5.6dB/-4.5dB
Limit in the band of 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		+5.6dB/-4.5dB
Radiated Spurious Emissions		+5.6dB/-4.5dB

10 Measurements, examination and derived results

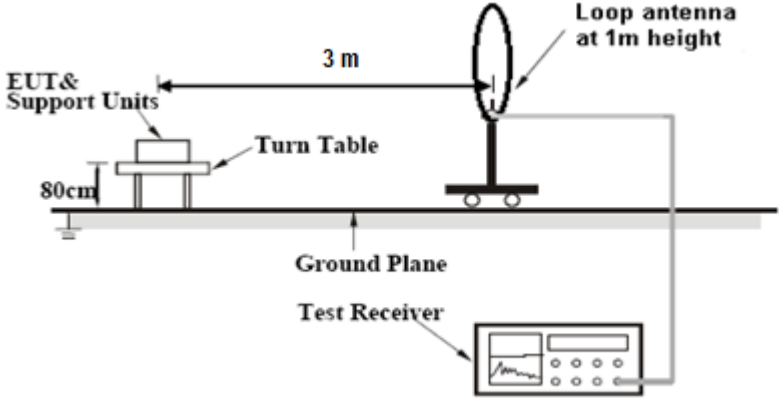
10.1 Antenna Requirement

Spec	Requirement	Applicable
§15.203	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. Antenna requirement must meet at least one of the following: a) Antenna must be permanently attached to the device. b) The antenna must use a unique type of connector to attach to the device. c) Device must be professionally installed. The installer shall be responsible for ensuring that the correct antenna is employed by the device.	☒
Remark	All Radio use special SMC connector for antenna connection.	
Result	☒ PASS ☐ FAIL	

10.2 Radiated Measurements

10.2.1 Radiated Measurements below 30MHz

Requirement(s):

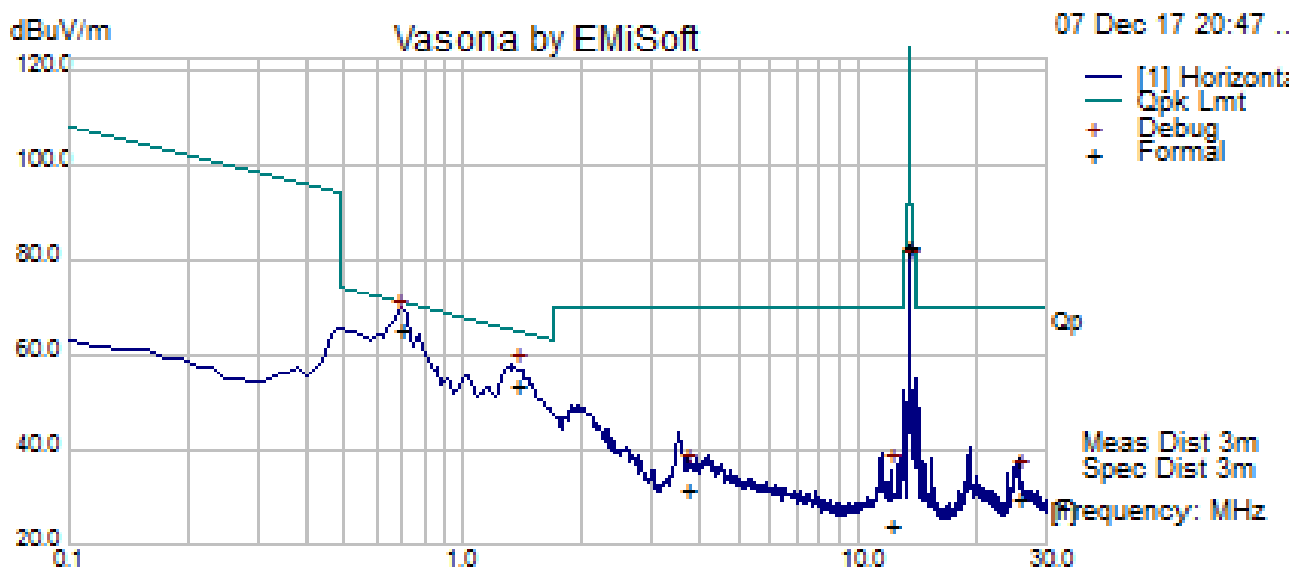
Spec	Requirement	Applicable
47 CFR §15.225 RSS-210 (B.6)	Operation within the band 13.110–14.010 MHz (a) The field strength of any emissions within the band 13.553–13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters. (b) Within the bands 13.410–13.553 MHz and 13.567–13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters. (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. (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.	☒
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	12/08/2017-12/12/2017	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 Vijay Chaudhary at 10-meter chamber.

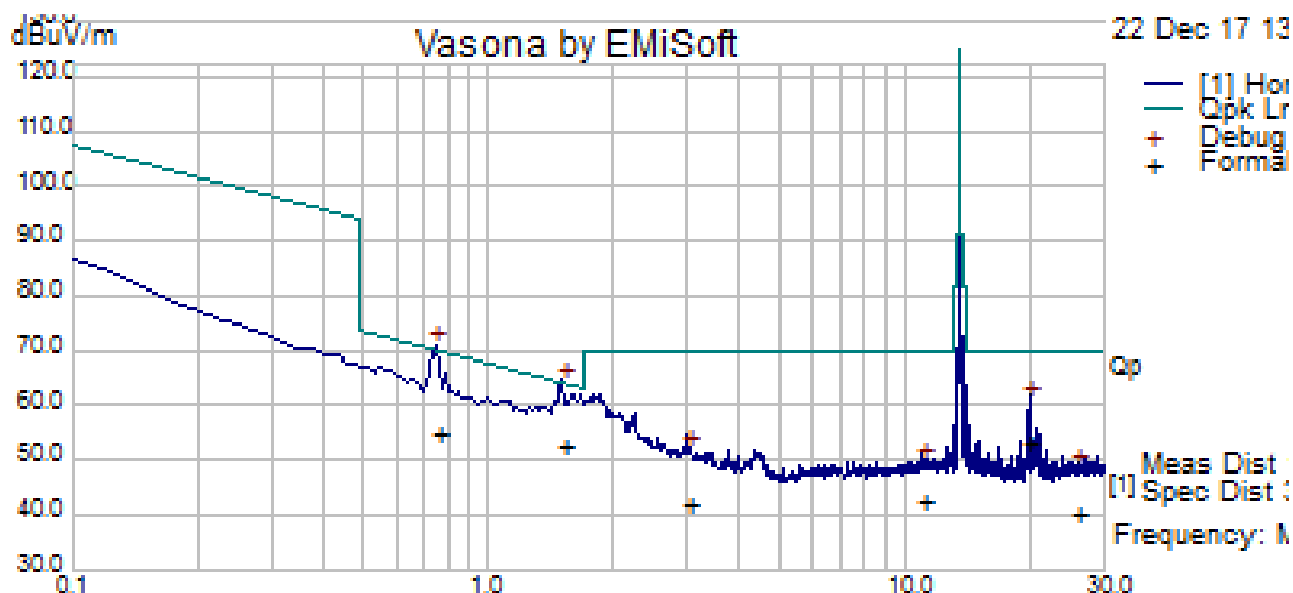
Test specification:	Radiated Spurious Emissions			
Mains Power:	10V DC		Result:	☒ Pass ☐ Fail
Tested by:	Vijay Chaudhary			
Test Date:	12/07/2017			
Remarks:	Co-Location $f = 100\text{kHz} - 30\text{MHz}$ plot, and loop antenna 0 Degree			



Quasi Max Measurement

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
0.69	38.86	10.19	15.71	64.77	Quasi Max	0	99	5	70.73	-5.96	Pass
1.35	32.52	10.23	10.48	53.23	Quasi Max	0	99	356	65	-11.76	Pass
13.56	70.25	10.62	1.67	82.54	Quasi Max	0	99	176	124.92	-42.38	Pass
3.66	17.66	10.31	3.34	31.31	Quasi Max	0	99	322	69.54	-38.23	Pass
12.06	11.63	10.57	1.6	23.8	Quasi Max	0	99	262	69.54	-45.75	Pass
25.44	16.68	10.82	1.62	29.12	Quasi Max	0	99	70	69.54	-40.42	Pass

Test specification:	Radiated Spurious Emissions			
Mains Power:	10V DC		Result:	☒ Pass ☐ Fail
Tested by:	Vijay Chaudhary			
Test Date:	12/22/2017			
Remarks:	Co-Location $f=$ 100kHz – 30MHz plot, and loop antenna 90 Degrees			

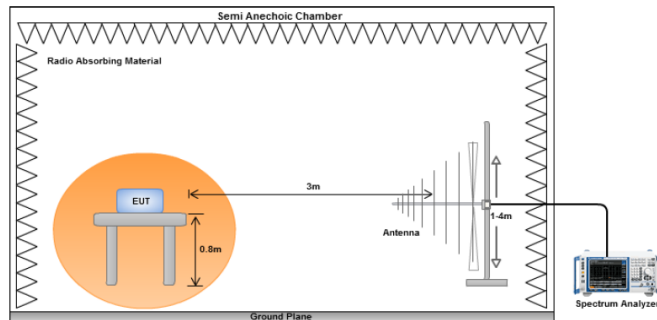


Quasi Max Measurement

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
0.75	9.04	0.25	45.46	54.74	Quasi Max	90	99	8	69.99	-15.25	Pass
1.50	12.03	0.28	40.1	52.41	Quasi Max	90	99	84	64.03	-11.63	Pass
19.89	20.68	0.82	31.4	52.91	Quasi Max	90	99	173	69.54	-16.64	Pass
3.03	6.66	0.34	34.98	41.98	Quasi Max	90	99	34	69.54	-27.56	Pass
11.07	9.54	0.62	32.06	42.23	Quasi Max	90	99	75	69.54	-27.32	Pass
26.07	7.43	0.86	31.87	40.17	Quasi Max	90	99	112	69.54	-29.37	Pass

10.2.2 Radiated Measurements 30MHz to 1GHz

Requirement(s):

Spec	Requirement	Applicable										
47 CFR §15.225 RSS-210 (B.6)	Operation within the band 13.110–14.010 MHz: (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. (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. (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. (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. <table><thead><tr><th>Frequency range (MHz)</th><th>Field Strength (uV/m)</th></tr></thead><tbody><tr><td>30 – 88</td><td>100</td></tr><tr><td>88 – 216</td><td>150</td></tr><tr><td>216 960</td><td>200</td></tr><tr><td>Above 960</td><td>500</td></tr></tbody></table>	Frequency range (MHz)	Field Strength (uV/m)	30 – 88	100	88 – 216	150	216 960	200	Above 960	500	
Frequency range (MHz)	Field Strength (uV/m)											
30 – 88	100											
88 – 216	150											
216 960	200											
Above 960	500											
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	12/0/8/2017-12/12/2017	Environmental conditions Temperature20.1°C Relative Humidity36% Atmospheric Pressure1026mbar										
Remark	-											
Result	☒ Pass ☐ Fail											

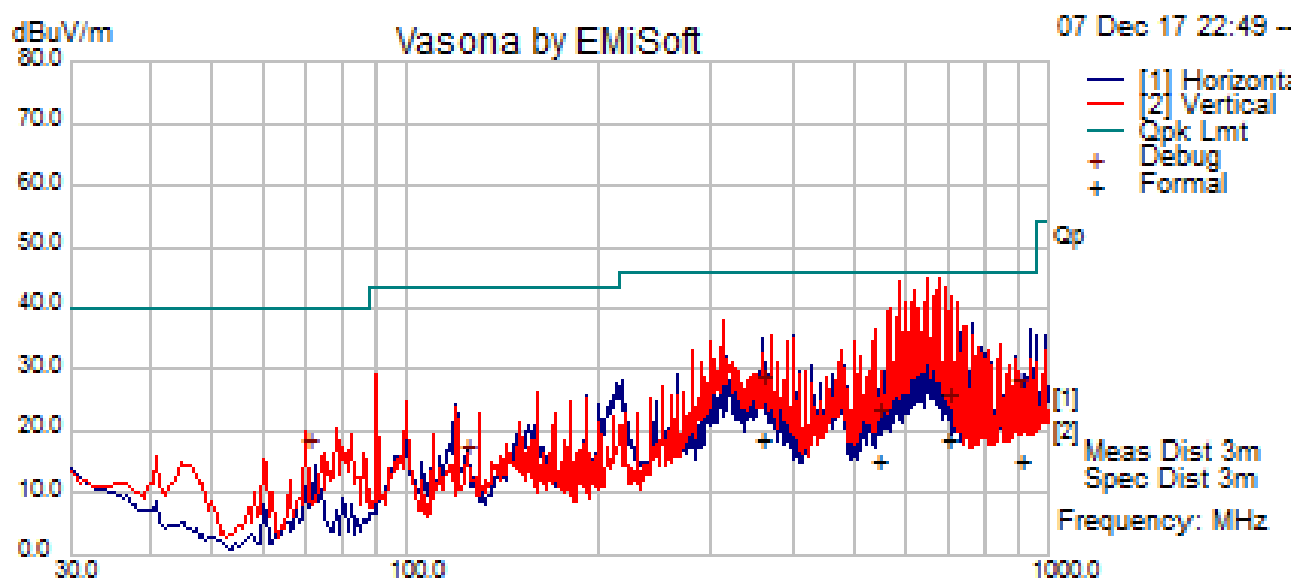
Test Data ☒ Yes (See below) ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

Test was done by Vijay Chaudhary at 10-meter chamber.

Test specification:	Radiated Emissions			
Mains Power:	10V DC		Result:	☒ Pass ☐ Fail
Tested by:	Vijay Chaudhary			
Test Date:	12/07/2017			
Remarks:	Co-Location Testing			

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

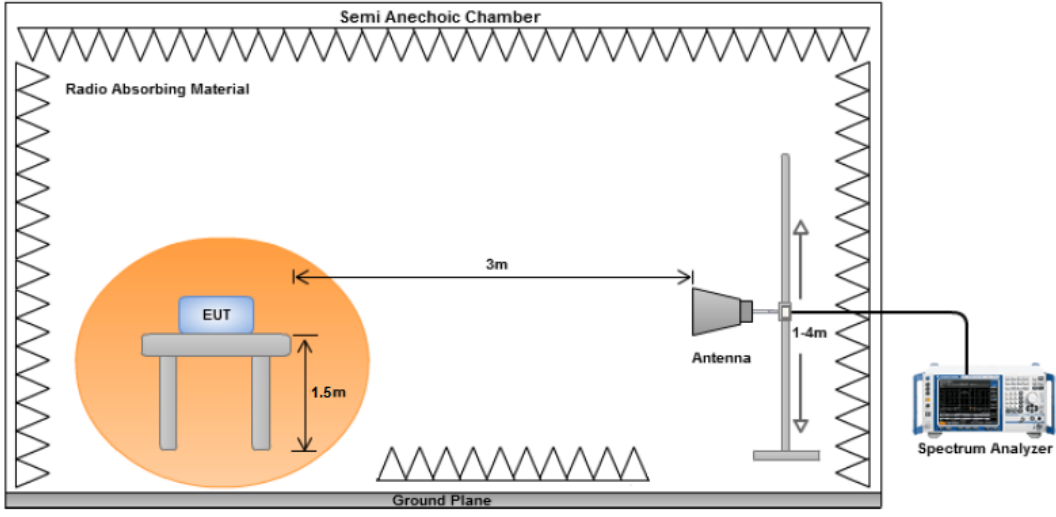


f=30MHz – 1000MHz Measurements

Frequency MHz	Raw dBuV/m	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
357.67	29.75	13.87	-21.91	21.71	Quasi Max	H	102	205	46	-24.29	Pass
900.26	33.31	16.68	-13.6	36.39	Quasi Max	V	336	112	46	-9.61	Pass
699.48	44.12	15.66	-16.05	43.73	Quasi Max	H	187	142	46	-2.27	Pass
70.00	19.38	11.7	-28.22	2.86	Quasi Max	H	266	4	40	-37.14	Pass
540.62	37.77	14.86	-18.64	33.99	Quasi Max	V	121	255	46	-12.01	Pass
123.37	18.90	12.27	-22.8	8.37	Quasi Max	V	130	93	43.5	-35.13	Pass

10.2.3 Radiated Spurious Emissions between 1GHz-25GHz

Requirement(s):

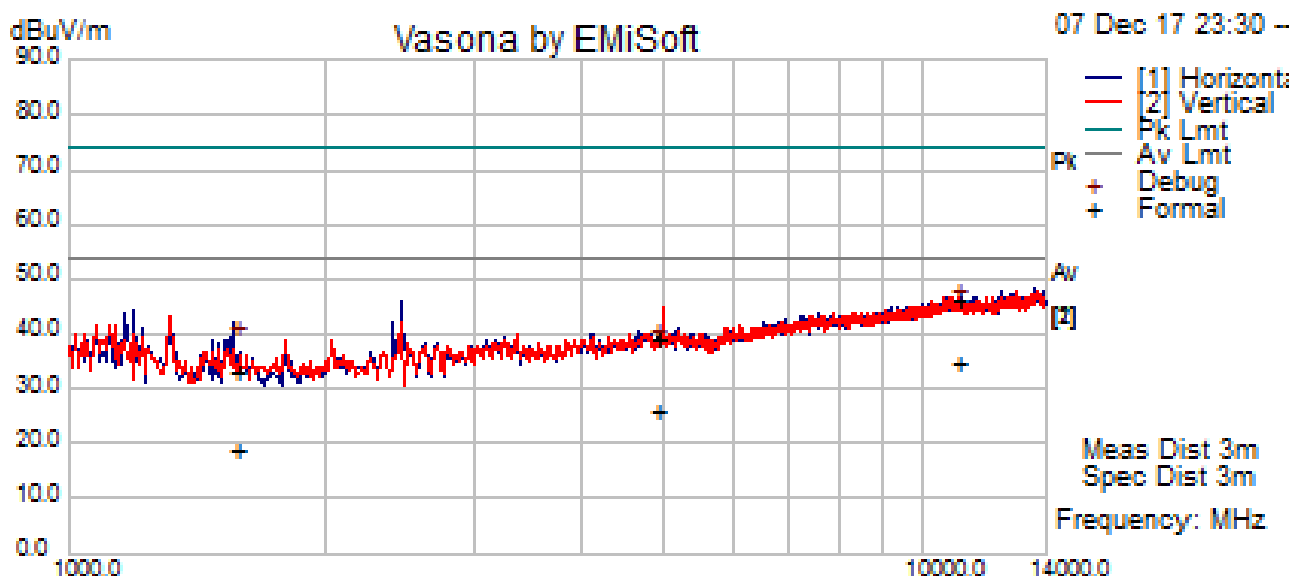
Spec	Item	Requirement	Applicable
47CFR§15.247(d), RSS210(A8.5)	a)	For non-restricted band, In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB or 30dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, determined by the measurement method on output power to be used. Attenuation below the general limits specified in § 15.209(a) is not required ☐ 20 dB down ☒ 30 dB down	☒
	b)	or restricted band, emission must also comply with the radiated emission limits specified in 15.209	☐
Test Setup			
Procedure	- 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: - 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. - An average 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.		
Remark	The EUT was scanned up to 40GHz. Both horizontal and vertical polarities were investigated. The results show only the worst case.		
Result	☒ Pass		

Test Data ☒ Yes (See below) ☐ N/A

Test Plot ☐ Yes (See below) ☒ N/A

Test was done by Vijay Chaudhary at 10-meter chamber.

Test specification:	Radiated Emissions			
Mains Power:	10V DC		Result:	☒ Pass ☐ Fail
Tested by:	Vijay Chaudhary			
Test Date:	12/07/2017			
Remarks:	Co-Location Testing			



Frequency MHz	Raw dBuV/m	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
10982.53	41.32	6.13	-1.22	46.23	Peak Max	V	276	163	74	-27.77	Pass
1569.76	53.66	2.41	-22.88	33.19	Peak Max	V	170	251	74	-40.81	Pass
4879.00	47.25	4.18	-12.19	39.23	Peak Max	V	134	268	74	-34.77	Pass
10982.53	29.60	6.13	-1.22	34.51	Average Max	V	276	163	54	-19.50	Pass
1569.76	39.36	2.41	-22.88	18.9	Average Max	V	170	251	54	-35.11	Pass
4879.00	33.98	4.18	-12.19	25.96	Average Max	V	134	268	54	-28.04	Pass

Annex A. TEST INSTRUMENT

Instrument	Model	Serial #	Cal Date	Cal Cycle	Cal Due	In use
Radiated Emissions						
Spectrum Analyzer	N9030B	10SL0289	09/06/2017	1 Year	09/06/2018	☒
ETS-Lingren Loop Antenna	6512	00049120	07/14/2016	1 Year	07/14/2019	☒
Bi-Log antenna (30MHz~2GHz)	JB1	A030702	01/13/2017	1 Year	01/13/2018	☒
Horn Antenna (1-26.5GHz)	3115	10SL0059	11/09/017	1 Year	11/09/2018	☒
RF Conducted Measurement						
Spectrum Analyzer	N9030B	10SL0289	09/06/2017	1 Year	09/06/2018	☒

Annex A. 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 Equipment: EN45011: EN ISO/IEC 17065
		Electromagnetic Compatibility: EN45011 – EN ISO/IEC 17065
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 Measurement
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