EMC TEST REPORT

Report: EMC_SL17032201-SEV-019_FCC_ISED
Supersedes: None

Applicant Name:	Trek Bicycle Corporation
Product Description:	Bicycle Electronics System (Smart Kit 3.0)
Model:	Bcycle
Test Standard:	FCC 15 Subpart B (Class B) ICES 003 Issue 6:2017
Test Method:	ANSI C63.4: 2014
Date of Test:	11/15/2017
Report Issue Date:	12/21/2017

Test Result: ☒ Pass ☐ Fail

Equipment complied with the specifications: ☒

Equipment did not comply with the specifications: ☐

This test report is issued under the authority of:

Full Name:	Anish Kumar	Full Name:	Gary Chou
Title:	EMC Test Engineer	Title:	Engineering 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 USA

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	ISED, 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	Safety, EMC, RF/Wireless, Telecom
Europe	A2LA, NIST	EMC, RF, Telecom, Safety
Israel	MOC, NIST	EMC, RF, Telecom, Safety

Accreditations for conformity assessment

Country/Region	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

Table of Contents

1. Report revision history

Report No.	Version	Description	Issue Date
EMC_ SL17032201-SEV-019_FCC_IC	Original	N/A	12/21/2017

2. Executive summary

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

Company: Trek Bicycle Corporation
Product: Bicycle Electronics System (Smart Kit 3.0)
Model: Bcycle

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

5. Modification

Index	Item	Description	Note
1.	N/A	N/A	-

6. Test software version

Test Item	Vendor	Software	Version
Radiated Emission	EMISoft	EMISoft Vasona	V6.013
Conducted Emission	EMISoft	EMISoft Vasona	V5.095

7. EUT Information

7.1. EUT Description

Product Description:	Bicycle Electronics System (Smart Kit 3.0)
Model No.:	BCycle
Trade Name:	BCycle
Serial No.:	T00FN
Input Power:	12 Vdc
Date of EUT received:	11/15/2017
Equipment Class:	Class B
Product Hardware version	10
Product Software version	1.30.0
Highest frequency generated or used in the device or on which the device operates or tunes:	2480 MHz
Port/Connectors:	N/A
Remark:	N/A

7.2. EUT Test modes / Configuration description

7.2.1. EUT Test modes: Pre-test mode

Pre-scan Test Mode	Notes
Mode 1	Normal Operation
Remark:	EUT was simulated the normal operation.

7.2.2. EUT Test modes: Final test mode

Final Test Mode	Notes
Mode 1	Normal Operation
Remark:	EUT was simulated the normal operation.

7.3. EUT Photos | External

Top View

Bottom View

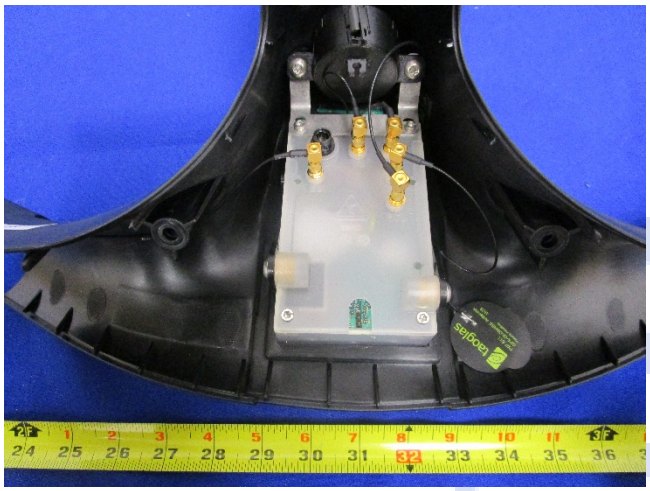
Front Side

Rear Side

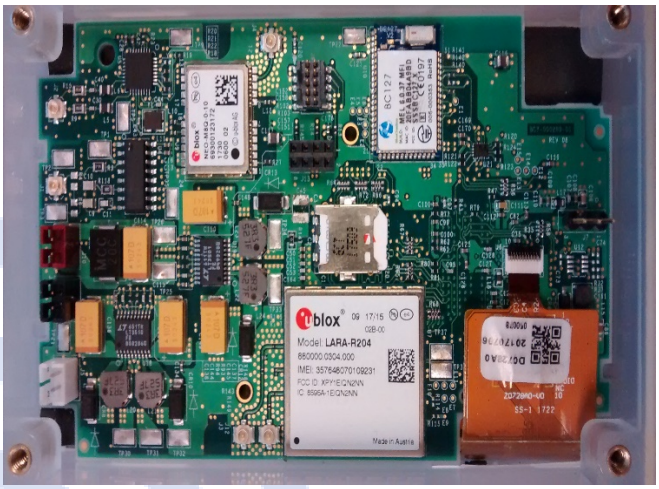
Left Side

Right Side

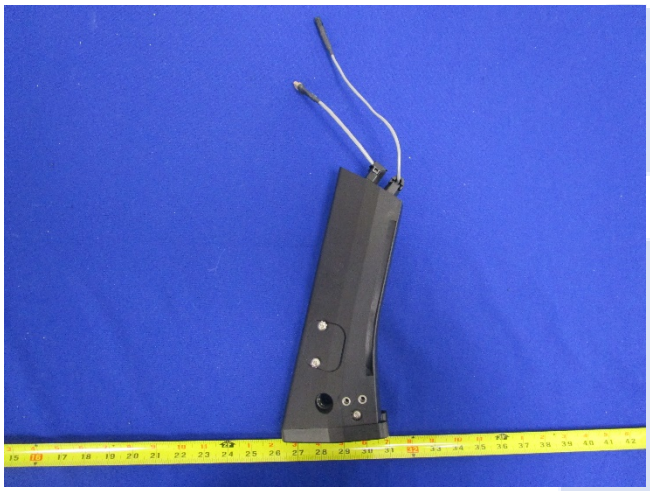
7.4. EUT Photos -Internal



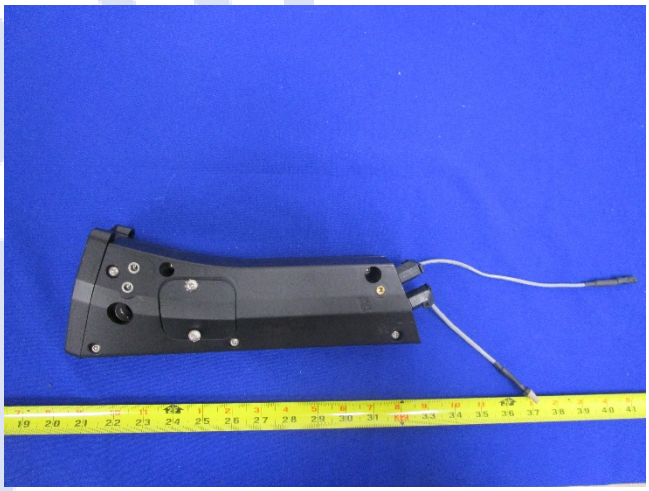
PCB View with Cover



Cover off PCB View

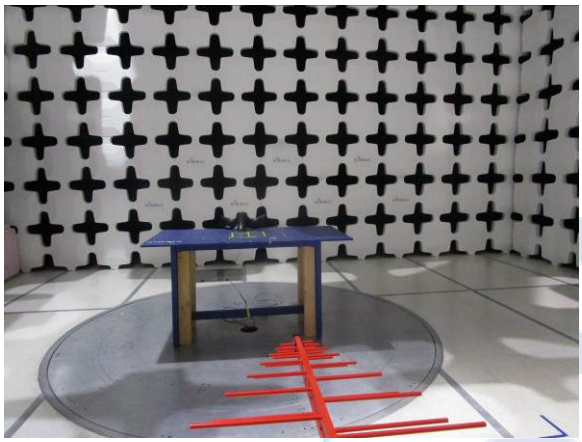


Battery Top View

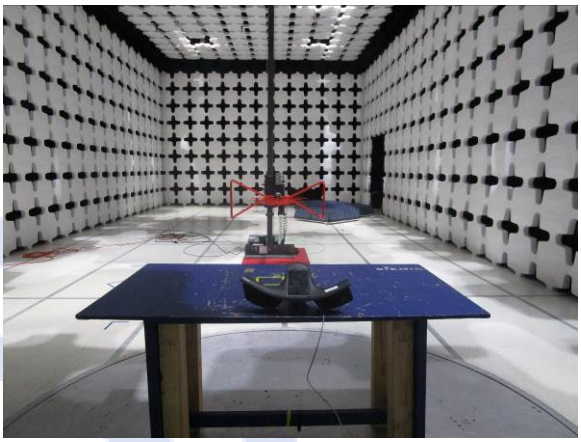


Battery Side View

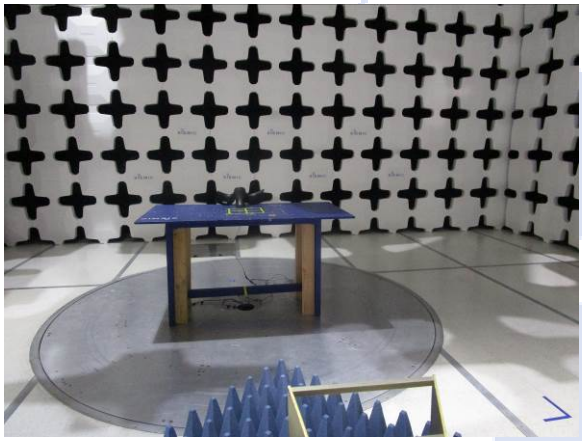
7.5. EUT Photos | Test setup



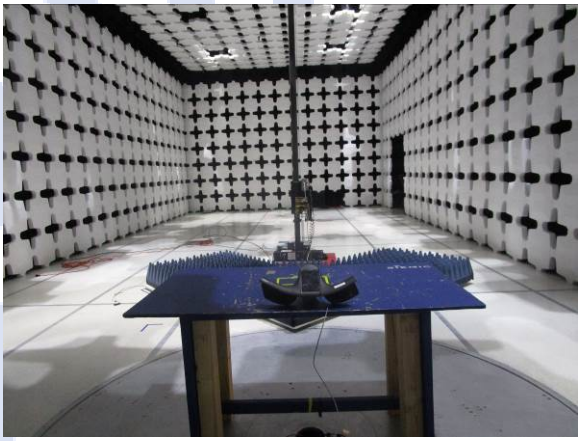
Radiated Emissions 30-1000MHz - Front View



Radiated Emissions 30-1000MHz- Rear View



Radiated Emissions 1-13GHz - Front View



Radiated Emissions 1-13GHz - Rear View

8. Supporting equipment / Software / Cabling information

8.1. Support equipment

Item	Support Equipment Description	Model	Serial Number	Manufacturer	Notes
N/A	N/A	N/A	N/A	N/A	N/A

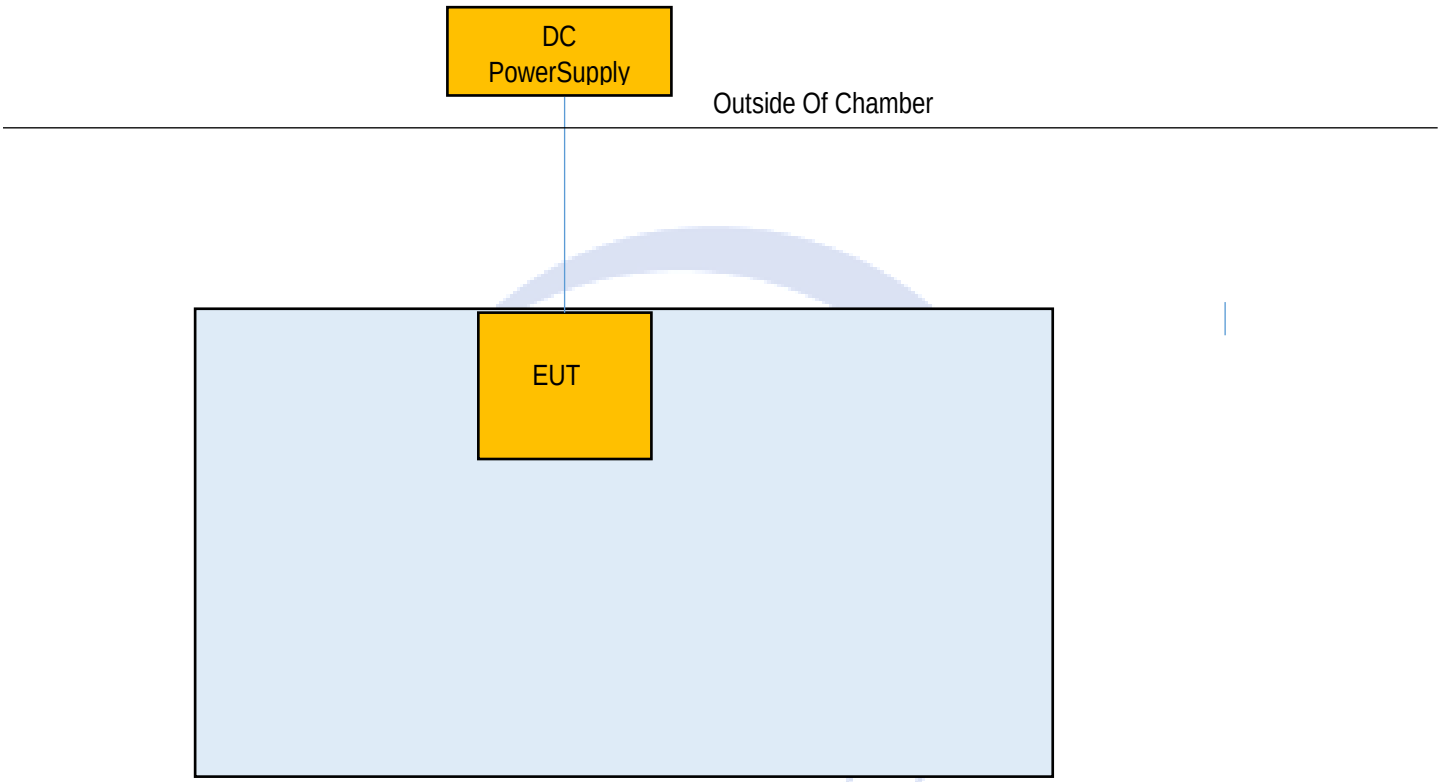
8.2. I/O Ports

Item	Connection Start		Connection Stop		Length / shielding Info		Note
	From	I/O Port	To	I/O Port	Length (m)	Shielding	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

8.3. Test software description

Test Item	Software	Description
-	-	-

8.4. System setup block diagram



9. Test summary

Emissions			
Test Item	Test Standard	Test Method / Procedure	Pass / Fail
AC Conducted Emissions	FCC 15 Subpart B (Class B) ICES 003 Issue 6:2017	ANSI C63.4:2014	Pass Fail X N/A
Radiated Spurious Emissions Below 1GHz	FCC 15 Subpart B (Class B) ICES 003 Issue 6:2017	ANSI C63.4:2014	X Pass Fail N/A
Radiated Spurious Emissions Above 1GHz	FCC 15 Subpart B (Class B) ICES 003 Issue 6:2017	ANSI C63.4:2014	X Pass Fail N/A
Remark	EUT is dc product so AC conducted emissions dose not applicable.		

10. Measurement uncertainty

Emissions			
Test Item	Frequency Range	Description	Uncertainty
AC Conducted Emissions	150KHz – 30MHz	Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2	±3.5dB
Radiated Spurious Emissions	30MHz – 1GHz	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
Radiated Spurious Emissions	>1GHz	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)	+4.3dB/-4.1dB

11. Frequency Range of Radiated Measurements

For unintentional radiators:

(1) Except as otherwise indicated in paragraphs (b)(2) or (b)(3) of this section, for an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

(2) A unintentional radiator, excluding a digital device, in which the highest frequency generated in the device, the highest frequency used in the device and the highest frequency on which the device operates or tunes are less than 30 MHz and which, in accordance with §15.109, is required to comply with standards on the level of radiated emissions within the frequency range 9 kHz to 30 MHz, such as a CB receiver or a device designed to conduct its radio frequency emissions via connecting wires or cables, e.g., a carrier current system not intended to radiate, shall be investigated from the lowest radio frequency generated or used in the device, without going below 9 kHz (25 MHz for CB receivers), up to the frequency shown in the following table. If the unintentional radiator contains a digital device, the upper frequency to be investigated shall be that shown in the table below or in the table in paragraph (b)(1) of this section, as based on both the highest frequency generated and the highest frequency used in the digital device, whichever range is higher.

highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30.
1.705-108	1000.
108-500	2000.
500-1000	5000.
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower.

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705-10	400
10-30	500

(3) Except for a CB receiver, a receiver employing super heterodyne techniques shall be investigated from 30 MHz up to at least the second harmonic of the highest local oscillator frequency generated in the device. If such receiver is controlled by a digital device, the frequency range shall be investigated up to the higher of the second harmonic of the highest local oscillator frequency generated in the device or the upper frequency of the measurement range specified for the digital device in paragraph (b)(1) of this section.

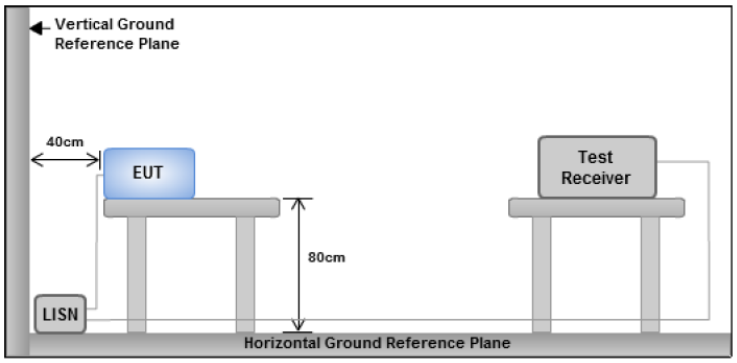
Example:

If the EUT has a transceiver operating or tunes at 2.4GHz, then both the Receiver, and the Transmitter needs to be tested separately to the Fifth Harmonic (e.g. Upper Frequency range would be 12GHz). A Transceiver consists of both a transmitter and a receiver, the receiver portion of which is always subject to the part 15 Subpart B Unintentional Radiator rules.

12. Guideline for interference allowed

12.1. Conducted emissions

<table>
<tr><th>Spec</th><th>Item</th><th>Requirement</th><th>Applicable</th></tr>
<tr><td>§ 15.109

ICES-003 Issue 6:2017</td><td>a)</td><td>Except for Class A digital device, for equipment 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 § 15.107 (a), as measured using a 50 μH/50 ohms line impedance stabilization network (LISN).
Limits for Conducted Emissions at the Mains Ports
<table>
<tr><th rowspan="2">Section</th><th rowspan="2">Frequency ranges (MHz)</th><th colspan="2">Limit (dBuV)</th></tr>
<tr><th>QP</th><th>Average</th></tr>
<tr><td rowspan="3">Class B devices</td><td>0.15 ~ 0.5</td><td>66 – 56</td><td>56 – 46</td></tr>
<tr><td>0.5 ~ 5</td><td>56</td><td>46</td></tr>
<tr><td>5 ~ 30</td><td>60</td><td>50</td></tr>
<tr><td colspan="4">NOTE 1 The lower limit shall apply at the transition frequencies.</td></tr>
</table></td><td>NO</td></tr>
<tr><td>Test Setup</td><td colspan="3"> 

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</td></tr>
<tr><td>Procedure</td><td colspan="3">1. 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.
2. The power supply for the EUT was fed through a 50Ω/50μH EUT LISN, connected to filtered mains.
3. The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss coaxial cable.
4. All other supporting equipment was powered separately from another main supply.
5. The EUT was switched on and allowed to warm up to its normal operating condition.
6. A scan was made on the Neutral/Phase line (for AC mains) or Earth line over the required frequency range using an EMI test receiver.
7. High peaks, relative to the limit line, were then selected.
8. The EMI test receiver was then tuned to the selected frequencies and the necessary measurements made with a receiver bandwidth setting of 10 kHz. For FCC tests, only Quasi-peak measurements were made; while for CISPR/EN tests, both Quasi-peak and Average measurements were made
9. All possible modes of operation were investigated. Only the 6 worst case emissions were measured and reported. All other emissions were relatively insignificant.</td></tr>
</table>

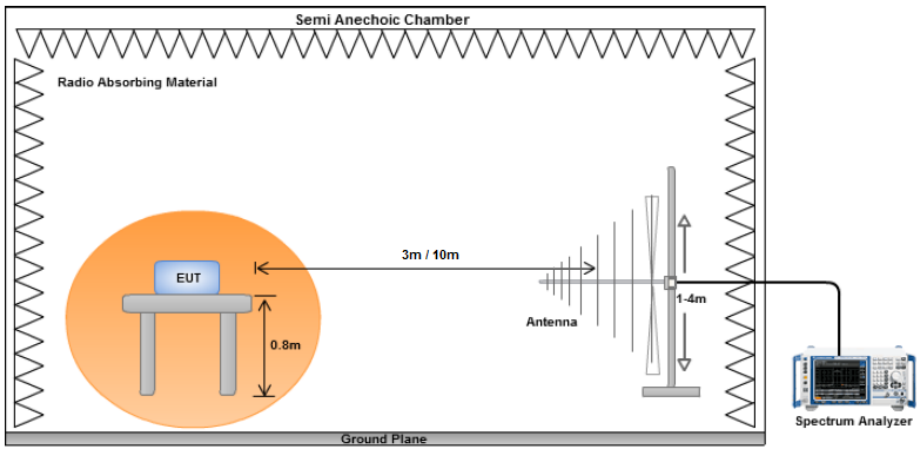
Description of the Conducted Emission Program	This EMC Measurement software, EMI Soft Vasona offers a common user interface for electromagnetic interference (EMI) measurements. This software is a modern and powerful tool for controlling and monitoring EMI test receivers and EMC test systems. It guarantees reliable collection, evaluation, and documentation of measurement results. Basically, this program will run a pre-scan measurement before it proceeds with the final measurement. The pre-scan routine will run the common scan range from 15 kHz to 30 MHz; the program will first start a peak and average scan on selectable measurement time and step size. After the program complete the pre-scan, this program will perform the Quasi Peak and Average measurement, based on the pre-scan peak data reduction result.
Sample Calculation Example	At 20 MHz limit = 250 μV = 47.96 dBμV Transducer factor of LISN, pulse limiter & cable loss at 20 MHz = 11.20 dB Q-P reading obtained directly from EMI Receiver = 40.00 dBμV (Calibrated for system losses) Therefore, Q-P margin = 47.96 – 40.00 = 7.96 i.e. 7.96 dB below limit
Remark	N/A

Test Data: Yes X N/A

Test Plot: Yes X N/A

Radiated Spurious Emissions Below 1GHz (Class B)

Requirement(s):

<table>
<tr><th>Spec</th><th>Item</th><th>Requirement</th><th>Applicable</th></tr>
<tr><td>§ 15.109
ICES-003 Issue 6:2017</td><td>a)</td><td>Except for Class A digital device, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:
<table>
<tr><th>Frequency range (MHz)</th><th>Field Strength (uV/m)</th></tr>
<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>
</table></td><td>Yes</td></tr>
<tr><td>Test Setup</td><td colspan="3"> 
</td></tr>
<tr><td>Procedure</td><td colspan="3">1. The EUT and supporting equipment were 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
2. The EUT was switched on and allowed to warm up to its normal operating condition.
3. 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.
4. A Quasi-peak measurement was then made for that frequency point.
5. Steps 3 and 4 were repeated for the next frequency point, until all selected frequency points were measured.
6. The frequency range covered was from 30MHz to 1GHz using the broadband antenna.</td></tr>
<tr><td>Description of the Radiated Emissions Program</td><td colspan="3">This EMC Measurement software, EMI Soft Vasona offers a common user interface for electromagnetic interference (EMI) measurements. This software is a modern and powerful tool for controlling and monitoring EMI test receivers and EMC test systems. It guarantees reliable collection, evaluation, and documentation of measurement results. Basically, this program will run a pre-scan measurement before it proceeds with the final measurement. The pre-scan routine will run the scan on four different antenna heights, 2 antenna polarity, and 360 degrees table rotation. For example, the program was set to run 30 MHz to 1 GHz scan; the program will first start from a meter antenna height and divide the 30 MHz to 1 GHz into 10 separate parts of maximum hold sweeps. Each parts of maximum hold sweep, the program will collect the data from 0 degree to 360 degrees table rotation. After the program complete the 1m scan, the antenna continues to rise to 2m and continue the scan. The step will repeated for all specified antenna height and polarity. This program will perform the Quasi Peak measurement after the signal maximization process and pre-scan routine. The final measurement will be based on the pre-scan data reduction result.</td></tr>
<tr><td>Sample Calculation Example</td><td colspan="3">At 300 MHz limit = 200 µV/m = 46.00 dBµV/m
Log-periodic antenna factor & cable loss at 300 MHz = 18.50 dB
Q-P reading obtained directly from EMI Receiver = 40.00 dBµV/m
(Calibrated level including antenna factors & cable losses</td></tr>
</table>

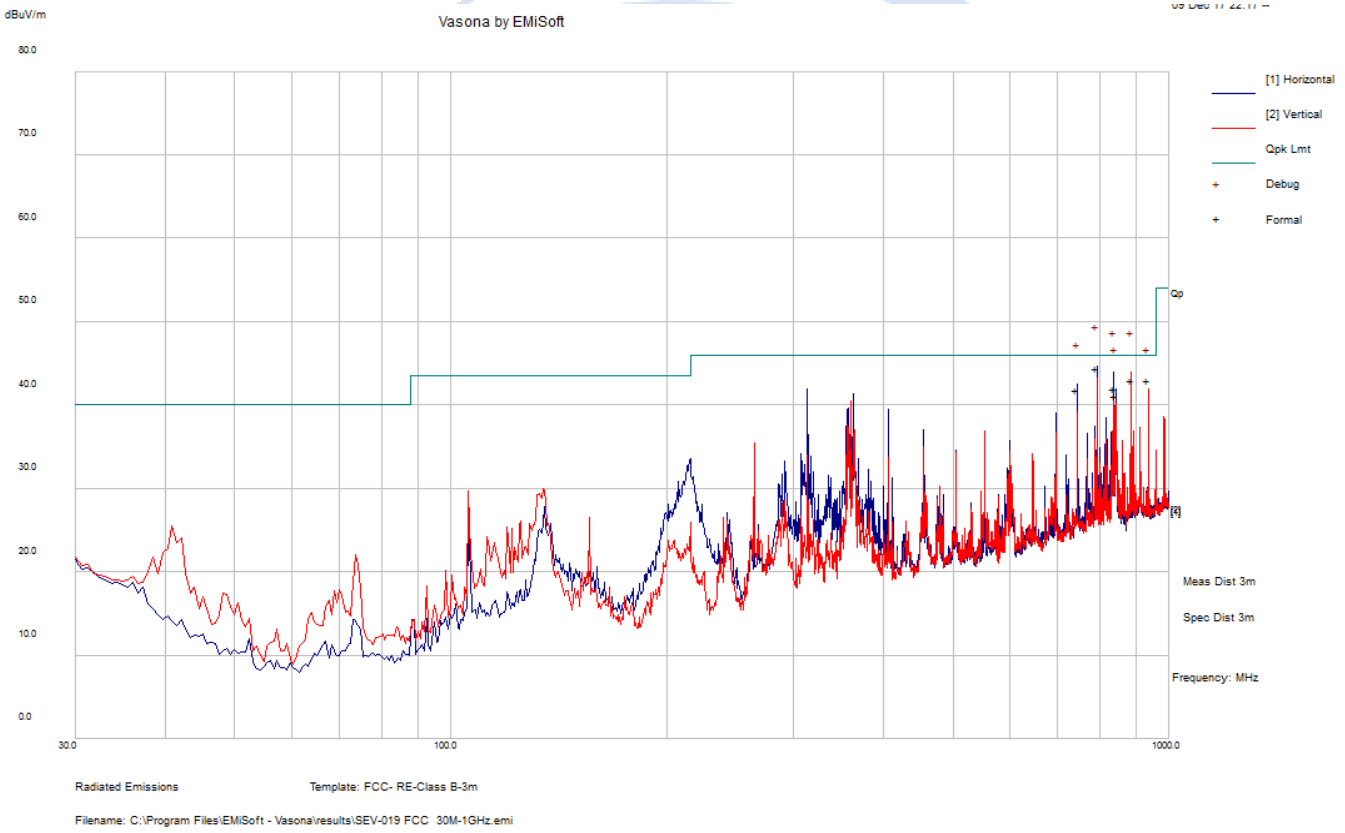
	Therefore, Q-P margin = 46.00 – 40.00 = 6.00	i.e. 6 dB below limit

Test Data: X Yes (See below) N/A

Test Data: X Yes (See below) N/A

Radiated Emission Test Results (Below 1GHz, Class B)

Test specification:	Radiated Emissions (Below 1GHz)			
Environmental Conditions:	Temp(°C):	24.1	Result:	
	Humidity (%):	42.1		X Pass
	Atmospheric(mbar):	1012.7		
Input Power:	12 Vdc			
Tested by:	Anish Kumar			Fail
Test Date:	12/09/2017			
Remarks:	Mode 1			

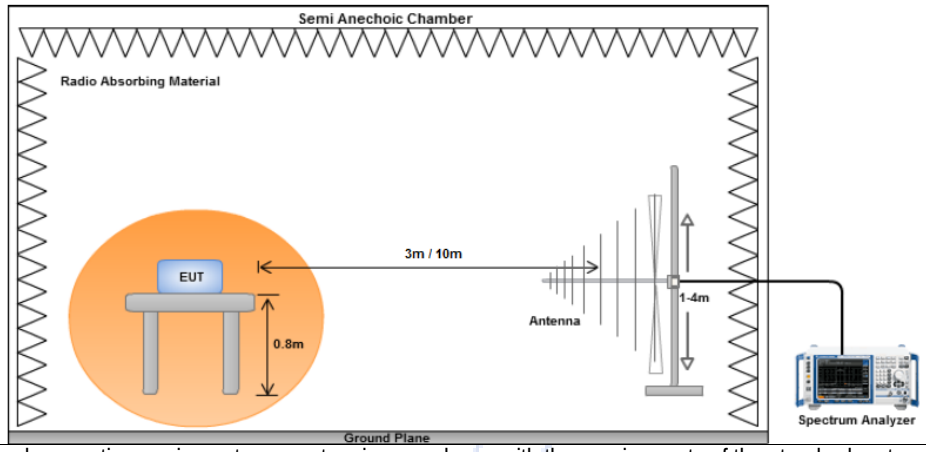


Frequency (MHz)	Raw (dBuV)	Cable Loss (dB)	AF (dB)	Level (dBuV/m)	Measurement Type	Pol	Hgt (cm)	Azt (Deg)	Limit (dBuV/m)	Margin (dB)	Pass /Fail
793.700313	43.45	16.08	-15.04	44.49	Quasi Max	H	100	251	46	-1.51	Pass
837.075	39.93	16.33	-14.22	42.04	Quasi Max	H	145	213	46	-3.96	Pass
886.201563	40.48	16.58	-14.14	42.92	Quasi Max	V	108	278	46	-3.08	Pass
744.537813	41.69	15.8	-15.66	41.83	Quasi Max	H	104	130	46	-4.17	Pass
935.374375	39.68	16.68	-13.43	42.92	Quasi Max	V	101	130	46	-3.08	Pass
842.843125	38.99	16.32	-14.21	41.1	Quasi Max	H	151	242	46	-4.9	Pass

Radiated Spurious Emissions Above 1GHz (Class B)

Requirement(s):

<table>
<tr><th>Spec</th><th>Item</th><th>Requirement</th><th>Applicable</th></tr>
<tr><td>§ 15.109

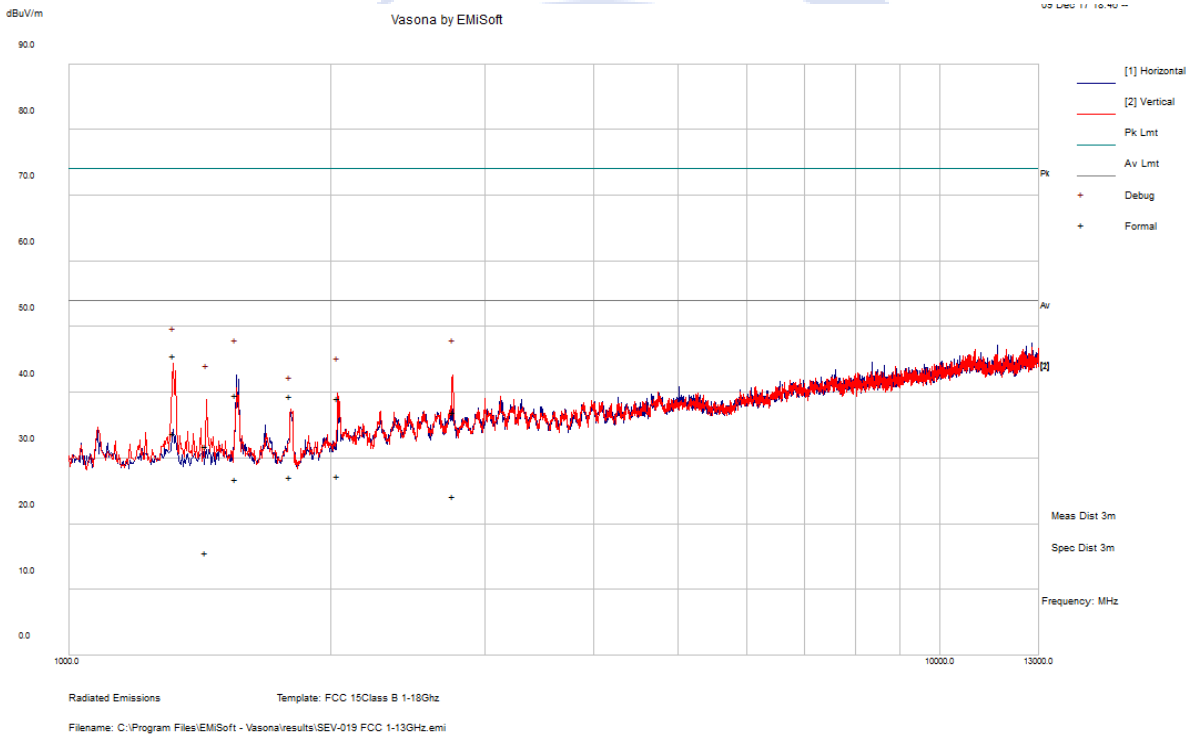
ICES-003 Issue 6:2017</td><td>a)</td><td>Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:
<table>
<tr><th>Frequency range (GHz)</th><th>Average limit dB(uV/m)</th><th>Peak limit dB(uV/m)</th></tr>
<tr><td>Above 1</td><td>54</td><td>74</td></tr>
</table></td><td>Yes</td></tr>
<tr><td>Test Setup</td><td colspan="3"> 
</td></tr>
<tr><td>Procedure</td><td colspan="3">1. The EUT and supporting equipment were 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
2. The EUT was switched on and allowed to warm up to its normal operating condition.
3. 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.
4. A Peak and Average measurement was then made for that frequency point.
5. Steps 3 and 4 were repeated for the next frequency point, until all selected frequency points were measured.
6. The frequency range covered was from 1GHz to 6GHz (for FCC tests, until the 5th harmonic for operating frequencies ≥ 1000MHz) using a horn antenna.</td></tr>
<tr><td>Remarks</td><td colspan="3">N/A</td></tr>
</table>

Test Data: X Yes (See below) N/A

Test Data: X Yes (See below) N/A

Radiated Emission Test Results (Above 1GHz, Class B)

Test specification:	Radiated Emissions (Above 1GHz) – 1GHz to 13GHz			
Environmental Conditions:	Temp(°C):	22.4	Result:	
	Humidity (%):	44.8		X Pass
	Atmospheric(mbar):	1014.3		
Input Power:	12 Vdc			
Tested by:	Anish Kumar			Fail
Test Date:	12/09/2017			
Remarks:	Mode 1			



Frequency (MHz)	Raw (dBuV)	Cable Loss (dB)	AF (dB)	Level (dBuV/m)	Measurement Type	Pol	Hgt (cm)	Azt (Deg)	Limit (dBuV/m)	Margin (dB)	Pass /Fail
1319.86	66.68	2.17	-23.23	45.62	Peak Max	V	106	149	74	-28.38	Pass
1555.036	60.13	2.4	-22.94	39.59	Peak Max	H	160	329	74	-34.41	Pass
2758.1955	51.14	3.15	-17.32	36.98	Peak Max	H	231	22	74	-37.02	Pass
2035.219	56.49	2.76	-20.1	39.15	Peak Max	H	107	85	74	-34.85	Pass
1436.9935	52.93	2.28	-23.46	31.76	Peak Max	H	181	317	74	-42.24	Pass
1795.655	59.49	2.61	-22.65	39.46	Peak Max	H	156	310	74	-34.54	Pass
1319.86	54.77	2.17	-23.23	33.72	Average Max	V	106	149	54	-20.28	Pass
1555.036	47.33	2.4	-22.94	26.78	Average Max	H	160	329	54	-27.22	Pass
2758.1955	38.32	3.15	-17.32	24.16	Average Max	H	231	22	54	-29.84	Pass
2035.219	44.69	2.76	-20.1	27.35	Average Max	H	107	85	54	-26.65	Pass
1436.9935	36.75	2.28	-23.46	15.57	Average Max	H	181	317	54	-38.43	Pass
1795.655	47.19	2.61	-22.65	27.15	Average Max	H	156	310	54	-26.85	Pass

13. Annex A | Test instruments and method

Instrument	Model	Serial #	Cal Cycle	Cal Due	In use
Radiated Emissions					
Keysight EXA 44 GHz Spectrum Analyzer	N9010A	MY51440112	1 Year	11/16/2018	YES
Broadband Hybrid Antenna (30MHz - 6GHz)	JB6	A031315-1	1 Year	7/31/2018	YES
Double Ridged Waveguide Horn Antenna (1 - 18 GHz)	3115	10SL0059	1 Year	8/11/2018	YES
RF Pre-Amplifier (9kHz - 6.5GHz)	LPA-6-30	11140711	1 Year	2/10/2018	YES
2.4 GHz Notch Filter	BRM50702	G242	1 Year	4/14/2018	YES
Pre-Amplifier (1 - 40GHz)	SAS-574	579	1 Year	5/4/2018	YES
10 Meters SAC	10M	N/A	1 Year	7/6/2018	YES
Radiated Emissions					
EMI Test Receiver (9kHz - 6GHz)	ESL6	100178	1 Year	8/17/2018	YES
Transient Limiter (9kHz - 100MHz)	EM-7600	287	1 Year	5/26/2018	YES
LISN (9kHz - 30MHz)	MN2050B	1018	1 Year	8/16/2018	YES
*Note:	Equipment Calibration are extended by 3(three) months past due date.				

14. 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 EM, 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
		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