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Report On

Limited FCC Testing of the
TreeGreen Limited EG-SA
In accordance with FCC CFR 47 Part 15B

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FCC ID: O5CEG-SA

Document 75915772 Report 04 Issue 1

May 2012



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COMMERCIAL-IN-CONFIDENCE

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TreeGreen Limited EG-SA
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PREPARED FOR

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PREPARED BY

Natalie Bennett
Senior Administrator (Technical)

APPROVED BY

Mark Jenkins
Authorised Signatory

DATED

23 May 2012

ENGINEERING STATEMENT

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC CFR 47 Part 15B. The sample tested was found to comply with the requirements defined in the applied rules.

Test Engineer(s);

G Lawler



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SECTION 1

REPORT SUMMARY

Limited FCC Testing of the
TreeGreen Limited EG-SA
In accordance with FCC CFR 47 Part 15B



1.1 INTRODUCTION

The information contained in this report is intended to show verification of the Limited FCC Testing of the TreeGreen Limited EG-SA to the requirements of FCC CFR 47 Part 15B.

Objective	To perform Limited FCC Testing to determine the Equipment Under Test's (EUT's) compliance with the Test Specification, for the series of tests carried out.
Manufacturer	TreeGreen Limited
Model Number(s)	EG-SA01G01-01
Serial Number(s)	Not Serialised (TSR0015)
Number of Samples Tested	1
Test Specification/Issue/Date	FCC CFR 47 Part 15B (2010)
Incoming Release Date	Application Form 6 March 2012
Disposal Reference Number Date	Held Pending Disposal Not Applicable Not Applicable
Order Number Date	Not Applicable Not Applicable
Start of Test	31 March 2012
Finish of Test	31 March 2012
Name of Engineer(s)	G Lawler



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1.2 BRIEF SUMMARY OF RESULTS

A brief summary of the tests carried out in accordance with FCC CFR 47 Part 15B is shown below.

Section	Spec Clause	Test Description	Result	Comments/Base Standard
Idle - Wire Antenna				
2.1	15.109	Radiated Emissions	Pass	



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1.3 APPLICATION FORM

APPLICANT'S DETAILS	
COMPANY NAME :Treegreen Limited.....
ADDRESS :15 Park Way, Kildrum, Cumbernauld, G67 2BT.....
NAME FOR CONTACT PURPOSES :Brian O'Reilly.....
TELEPHONE NO:	FAX NO:
	E-MAIL: 07879 486787.....

EQUIPMENT INFORMATION	
Model name/number	EG-SA.....
Hardware Version	3.4.....
Manufacturer	Semecs.....
FCC ID	O5CEG-SA.....
Identification/Part number	
EG-SA.....	
Software Version	
1.8.....	
Country of Origin	
Slovakia.....	
Industry Canada ID	
N/A.....	
Technical description (a brief description of the intended use and operation)	
energy saving device designed to switch off appliances when user exits the room or presses the button.....	
<u>Supply Voltage:</u>	
<input type="checkbox"/> AC mains	State AC voltage V and AC frequency Hz
<input type="checkbox"/> DC (external)	State DC voltage V and DC current A
<input checked="" type="checkbox"/> DC (internal)	State DC voltage9... V and Battery type ...Alkaline.....
<u>Frequency characteristics:</u>	
Transmitter Frequency range433.92..... MHz to ...433.92..... MHz Channel spacing	
(if channelized)	
Receiver Frequency range MHz to MHz Channel spacing	
(if different) (if channelized)	
Designated test frequencies:	
Bottom:433.92..... MHz Middle: MHz Top: MHz	
Intermediate Frequencies : MHz	
Highest Internally Generated Frequency :433.92..... MHz	
<u>Power characteristics:</u>	
Maximum transmitter power1mW..... W Minimum transmitter power W	
(if variable)	
<input type="checkbox"/> Continuous transmission	State duty cycle
<input checked="" type="checkbox"/> Intermittent transmission	If intermittent, can transmitter be set to continuous transmit test mode? Yes
<u>Antenna characteristics:</u>	
<input type="checkbox"/> Antenna connector	State impedance ohm
<input type="checkbox"/> Temporary antenna connector	State impedance ohm
<input checked="" type="checkbox"/> Integral antenna	State gain dBi
<u>Modulation characteristics:</u>	
<input checked="" type="checkbox"/> Amplitude	[] Other
<input type="checkbox"/> Frequency	Details:
<input type="checkbox"/> Phase	(GMSK, QSPK etc)
Can the transmitter operate un-modulated? No	
ITU Class of emission:??.....	
<u>Battery/Power Supply</u>	
Model name/number	Identification/Part number
Manufacturer	Country of Origin
<u>Ancillaries (if applicable)</u>	
Model name/number	Identification/Part number
Manufacturer	Country of Origin
<u>Extreme conditions:</u>	
Maximum temperature °C	Minimum temperature °C
Maximum supply voltage V	Minimum supply voltage V



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I hereby declare that I am entitled to sign on behalf of the applicant and that the information supplied is correct and complete.

Signature : Held on file

Position held :

Managing Director

Name : Brian O'Reilly

Date :

06/03/2012



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1.4 PRODUCT INFORMATION

1.4.1 Technical Description

The Equipment Under Test (EUT) was a TreeGreen Limited EG-SA. A full technical description can be found in the manufacturer's documentation.

1.5 TEST CONDITIONS

For all tests the EUT was set up in accordance with the relevant test standard and to represent typical operating conditions. Tests were applied with the EUT situated in a shielded enclosure.

The EUT was powered from a 9 V DC supply.

FCC Accreditation
90987 Octagon House, Fareham Test Laboratory

1.6 DEVIATIONS FROM THE STANDARD

No deviations from the applicable test standard or test plan were made during testing.

1.7 MODIFICATION RECORD

Modification 0 - No modifications were made to the test sample during testing.



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SECTION 2

TEST DETAILS

Limited FCC Testing of the
TreeGreen Limited EG-SA
In accordance with FCC CFR 47 Part 15B



2.1 RADIATED EMISSIONS

2.1.1 Specification Reference

FCC CFR 47 Part 15B, Clause 15.109

2.1.2 Equipment Under Test and Modification State

EG-SA01G01-01 S/N: Not Serialised (TSR0015) - Modification State 0

2.1.3 Date of Test

31 March 2012

2.1.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.1.5 Test Procedure

A preliminary profile of the Spurious Radiated Emissions is obtained up to the 5th harmonic of the EUT's highest internally generated fundamental frequency. For frequencies from 30MHz to 18GHz the EUT is placed on a test table 800mm above the ground plane. For frequencies above 18GHz, the EUT height is increased by 200mm to a height of 1000mm. This is to ensure the beam width of the measuring antenna gives sufficient vertical coverage of the EUT.

During characterisation the turntable azimuth is adjusted from 0 to 360 degrees with the measuring antenna in one polarity. It is then repeated for the other polarity. Any frequencies of interest are noted for formal measuring later. The distance from the measuring antenna to the boundary of the EUT is 3m. Above 18GHz this distance may be reduced to 1m.

During formal measurement the spectrum analyser is tuned to the frequency of the emission. The turntable azimuth is adjusted from 0 to 360 degrees to determine the point at which the maximum emission level occurs. Then the height of the measuring antenna is adjusted from a height of 1m to 4m to determine the height at which the maximum emission level occurs. Once the point of maximum emission has been determined the emission is measured. Emissions in the 30MHz to 1GHz range are measured using a CISPR Quasi – Peak detector function in a 120kHz bandwidth. Emissions in the range 1GHz to 40GHz require Peak and Average measurements. The Peak measurements are made using a peak detector with 1MHz Resolution and Video bandwidths. The average measurements employ a peak detector with a Resolution bandwidth of 1MHz and a Video bandwidth of 10Hz. If measurements are made at a 1m measuring distance, then 10dB is added to the specification limit.

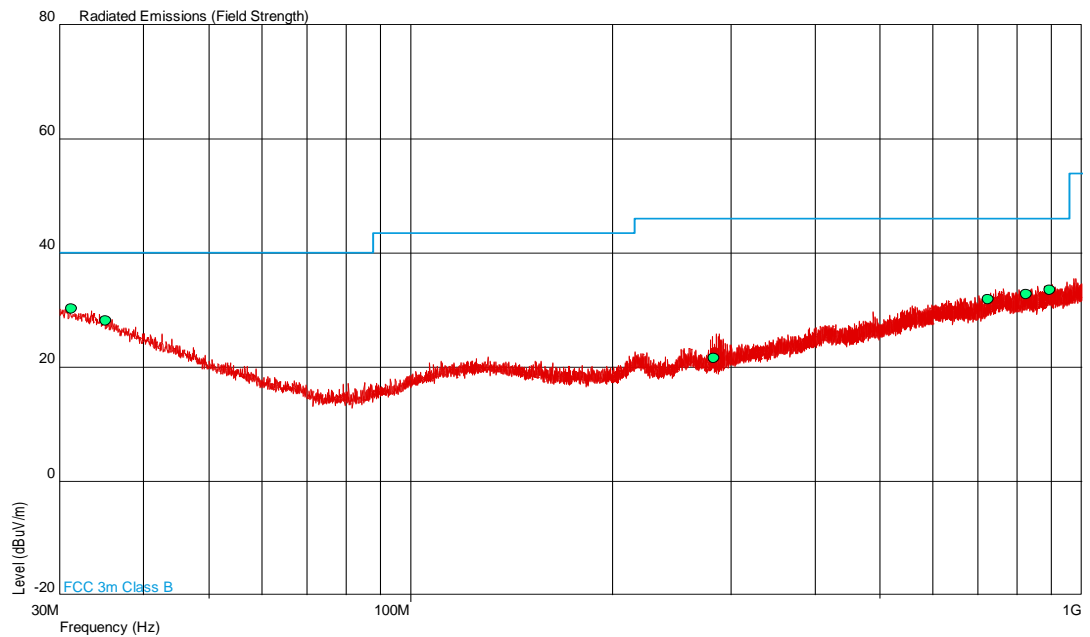
2.1.6 Environmental Conditions

Ambient Temperature	19.5°C
Relative Humidity	32.0%



2.1.7 Test Results

30 MHz to 1 GHz

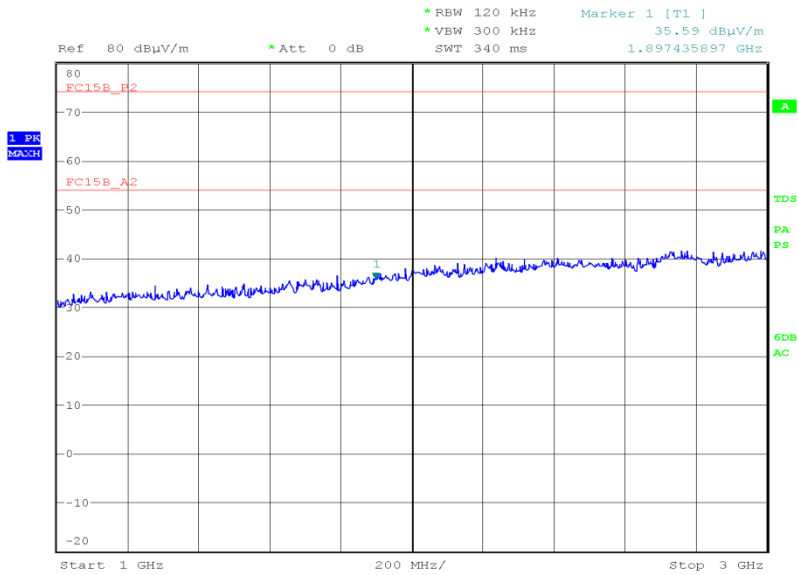


Frequency (MHz)	QP Level (dBμV/m)	QP Level (μV/m)	QP Limit (dBμV/m)	QP Limit (μV/m)	QP Margin (dBμV/m)	QP Margin (μV/m)	Angle (Deg)	Height (m)	Polarity
31.310	30.3	32.7	40.0	100	-9.7	67.3	180	1.00	Vertical
35.238	28.1	25.4	40.0	100	-11.9	74.6	90	1.00	Horizontal
283.752	21.6	12.0	46.0	200	-24.4	188.0	90	1.00	Horizontal
725.296	31.9	39.4	46.0	200	-14.1	160.6	225	1.00	Horizontal
828.019	32.8	43.7	46.0	200	-13.2	156.3	45	1.00	Horizontal
897.423	33.6	47.9	46.0	200	-12.4	152.1	90	1.00	Vertical



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1 GHz to 3 GHz



Date: 31.MAR.2012 14:59:00



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SECTION 3

TEST EQUIPMENT USED



3.1 TEST EQUIPMENT USED

List of absolute measuring and other principal items of test equipment.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Due
Section 2.1 - Radiated Emissions					
Screened Room (5)	Rainford	Rainford	1545	36	3-Feb-2014
Mast Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Antenna (Bilog)	Chase	CBL6143	2904	24	12-May-2013
Comb Generator	Schaffner	RSG1000	3034	-	TU
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	29-Sep-2012
9m RF Cable (N Type)	Rhophase	NPS-2303-9000-NPS	3791	12	26-Aug-2012
Tilt Antenna Mast	maturo GmbH	TAM 4.0-P	3916	-	TU
Mast Controller	maturo GmbH	NCD	3917	-	TU

TU – Traceability Unscheduled



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3.2 MEASUREMENT UNCERTAINTY

For a 95% confidence level, the measurement uncertainties for defined systems are:-

Test Discipline	MU
Radiated Emissions	30MHz to 1GHz: ± 5.1 dB 1GHz to 40GHz: ± 6.3 dB



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SECTION 4

ACCREDITATION, DISCLAIMERS AND COPYRIGHT



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4.1 ACCREDITATION, DISCLAIMERS AND COPYRIGHT



This report relates only to the actual item/items tested.

Our UKAS Accreditation does not cover opinions and interpretations and any expressed are outside the scope of our UKAS Accreditation.

Results of tests not covered by our UKAS Accreditation Schedule are marked NUA
(Not UKAS Accredited).

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