

FCC and Industry Canada Testing of the
DEB IP Ltd
DebSafe Dispenser, Model: 1135-400
In accordance with FCC 47 CFR Part 15C,
Industry Canada RSS-247 and
Industry Canada RSS-GEN

Prepared for: DEB IP Ltd
Denby Hall Way
Denby
DE5 8JZ
United Kingdom



FCC ID: YPHDEB1135-400
IC: 10648A-1135400

COMMERCIAL-IN-CONFIDENCE

Date: August 2017
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RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Project Management	Steven White	15 August 2017	
Authorised Signatory	Simon Bennett	15 August 2017	

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD Product Service document control rules.

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 47 CFR Part 15C, Industry Canada RSS-247 and Industry Canada RSS-GEN. The sample tested was found to comply with the requirements defined in the applied rules.

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Testing	Mehadi Choudhury	15 August 2017	
Testing	Graeme Lawler	15 August 2017	

FCC Accreditation
90987 Octagon House, Fareham Test Laboratory

Industry Canada Accreditation
IC2932B-1 Octagon House, Fareham Test Laboratory

EXECUTIVE SUMMARY

A sample of this product was tested and found to be in compliance with FCC 47 CFR Part 15C :2016, Industry Canada RSS-247 Issue 2 (02-2017) and Industry Canada RSS-GEN Issue 4 (11-2014) for the tests detailed in section 1.3.

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1 Report Summary

1.1 Report Modification Record

Alterations and additions to this report will be issued to the holders of each copy in the form of a complete document.

Issue	Description of Change	Date of Issue
1	First Issue	15 August 2017

Table 1

1.2 Introduction

Applicant	DEB IP Ltd
Manufacturer	DEB IP Ltd
Model Number(s)	1135-400
Serial Number(s)	AUSAFE1720B00AF and NASAFE1720B003A
Hardware Version(s)	1.0
Software Version(s)	3.0
Number of Samples Tested	2
Test Specification/Issue/Date	FCC 47 CFR Part 15C: 2016 Industry Canada RSS-247: Issue 2 (02-2017) Industry Canada RSS-GEN: Issue 4 (11-2014)
Order Number	DIP-103093
Date	30-January-2017
Date of Receipt of EUT	31-May-2017 and 26-June-2017
Start of Test	31-May-2017
Finish of Test	05-July-2017
Name of Engineer(s)	Mehadi Choudhury and Graeme Lawler
Related Document(s)	ANSI C63.10 (2013)



1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 15C, Industry Canada RSS-247 and Industry Canada RSS-GEN is shown below.

Section	Specification Clause			Test Description	Result	Comments/Base Standard
	Part 15C	RSS-247	RSS-GEN			
Configuration: 905 MHz Transceiver						
2.1	15.247 (b)(3)	5.4	6.12	Maximum Conducted Output Power	Pass	ANSI C63.10
2.2	15.247 (a)(2)	5.2	6.6	Emission Bandwidth	Pass	ANSI C63.10
2.3	15.247 (e)	5.2	6.12	Power Spectral Density	Pass	ANSI C63.10
2.4	15.247 (d)	5.5	6.13	Spurious Radiated Emissions	Pass	ANSI C63.10
2.5	15.205	-	8.10	Restricted Band Edges	Pass	ANSI C63.10
2.6	15.247 (d)	5.5	-	Authorised Band Edges	Pass	ANSI C63.10

Table 2



1.4 Application Form

EQUIPMENT DESCRIPTION	
Model Name/Number	DebSafe Dispenser
Part Number	1135-400
Hardware Version	1.0
Software Version	3.0
FCC ID (if applicable)	YPHDEB1135-400
Industry Canada ID (if applicable)	10648A-1135400
Technical Description (Please provide a brief description of the intended use of the equipment)	Device that monitors the button pushes on a manual soap dispenser and transmits that information via radio for the purposes of monitoring usage.

INTENTIONAL RADIATORS									
Technology	Frequency Band (MHz)	Conducted Declared Output Power (dBm)	Antenna Gain (dBi)	Supported Bandwidth (s) (MHz)	Modulation Scheme(s)	ITU Emission Designator	Test Channels (MHz)		
							Bottom	Middle	Top
802.15.4	905MHz	+20	0	1.2	OQ-PSK	G2B			

UN-INTENTIONAL RADIATOR	
Highest frequency generated or used in the device or on which the device operates or tunes	905.6MHz

Power Source			
AC	Single Phase	Three Phase	Nominal Voltage
External DC	Nominal Voltage		Maximum Current
Battery	Nominal Voltage		Battery Operating End Point Voltage
	3.6		2.7
Can EUT transmit whilst being charged?		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

EXTREME CONDITIONS					
Maximum temperature	40	°C	Minimum temperature	0	°C



Ancillaries

Please list all ancillaries which will be used with the device.

ANTENNA CHARACTERISTICS

<input type="checkbox"/> Antenna connector		State impedance	Ohm
<input type="checkbox"/> Temporary antenna connector		State impedance	Ohm
<input checked="" type="checkbox"/> Integral antenna	Type	PCB Trace	
<input type="checkbox"/> External antenna	Type		

I hereby declare that the information supplied is correct and complete.

Name: Paul Dodds

Position held: Electronics Development Manager Date: 03/02/2017

1.5 Product Information

1.5.1 Technical Description

Device that monitors the button pushes on a manual soap dispenser and transmits that information via radio for the purposes of monitoring usage.

1.6 Deviations from the Standard

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

1.7 EUT Modification Record

The table below details modifications made to the EUT during the test programme.
The modifications incorporated during each test are recorded on the appropriate test pages.

Modification State	Description of Modification still fitted to EUT	Modification Fitted By	Date Modification Fitted
Serial Number: AUSAFE1720B00AF			
0	As supplied by the customer	Not Applicable	Not Applicable
Serial Number: NASAFE1720B003A			
0	As supplied by the customer	Not Applicable	Not Applicable

Table 3

1.8 Test Location

TÜV SÜD Product Service conducted the following tests at our Fareham Test Laboratory.

Test Name	Name of Engineer(s)	Accreditation
Configuration: 905 MHz Transceiver		
Maximum Conducted Output Power	Mehadi Choudhury	UKAS
Emission Bandwidth	Mehadi Choudhury	UKAS
Power Spectral Density	Mehadi Choudhury	UKAS
Spurious Radiated Emissions	Graeme Lawler	UKAS
Restricted Band Edges	Graeme Lawler	UKAS
Authorised Band Edges	Graeme Lawler	UKAS

Table 4

Office Address:

Octagon House
Concorde Way
Segensworth North
Fareham
Hampshire
PO15 5RL
United Kingdom

2 Test Details

2.1 Maximum Conducted Output Power

2.1.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (b)(3)
Industry Canada RSS-247, Clause 5.4
Industry Canada RSS-GEN, Clause 6.12

2.1.2 Equipment Under Test and Modification State

1135-400, S/N: NASAFE1720B003A - Modification State 0

2.1.3 Date of Test

05-July-2017

2.1.4 Test Method

This test was performed in accordance with ANSI C63.10, clause 11.9.1.1.

2.1.5 Environmental Conditions

Ambient Temperature 22.6 °C
Relative Humidity 51.8 %

2.1.6 Test Results

905 MHz Transceiver

Frequency (MHz)	Output Power	
	dBm	mW
905	5.07	3.21

Table 5

FCC 47 CFR Part 15, Limit Clause 15.247 (b)(3)

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt.

Industry Canada RSS-247, Limit Clause 5.4 (d)

For DTSs employing digital modulation techniques operating in the bands 902-928 MHz and 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1W. Except as provided in Section 5.4(5), the e.i.r.p. shall not exceed 4 W.

2.1.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 1.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
20dB SMA Attenuator dc - 18GHz	Sealectro	60-674-1020-89	345	12	30-Jun-2018
Hygrometer	Rotronic	I-1000	3220	12	23-Aug-2017
Signal Analyser	Rohde & Schwarz	FSQ 26	3545	12	09-Sep-2017
Network Analyser	Rohde & Schwarz	ZVA 40	3548	12	15-Sep-2017
Calibration Unit	Rohde & Schwarz	ZV-Z54	4368	12	08-Sep-2017
Frequency Standard	Spectracom	Secure Sync 1200-0408-0601	4393	6	09-Sep-2017

Table 6



2.2 Emission Bandwidth

2.2.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (a)(2)
Industry Canada RSS-247, Clause 5.2
Industry Canada RSS-GEN, Clause 6.6

2.2.2 Equipment Under Test and Modification State

1135-400, S/N: NASAFE1720B003A - Modification State 0

2.2.3 Date of Test

05-July-2017

2.2.4 Test Method

The 6 dB bandwidth was performed in accordance with ANSI C63.10, clause 11.8.1 and the 99% Occupied Bandwidth was performed in accordance with ANSI C63.10, clause 11.8.2.

2.2.5 Environmental Conditions

Ambient Temperature 22.6 °C
Relative Humidity 51.8 %

2.2.6 Test Results

905 MHz Transceiver

Frequency (MHz)	6 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
905	0.81	1.30

Table 7

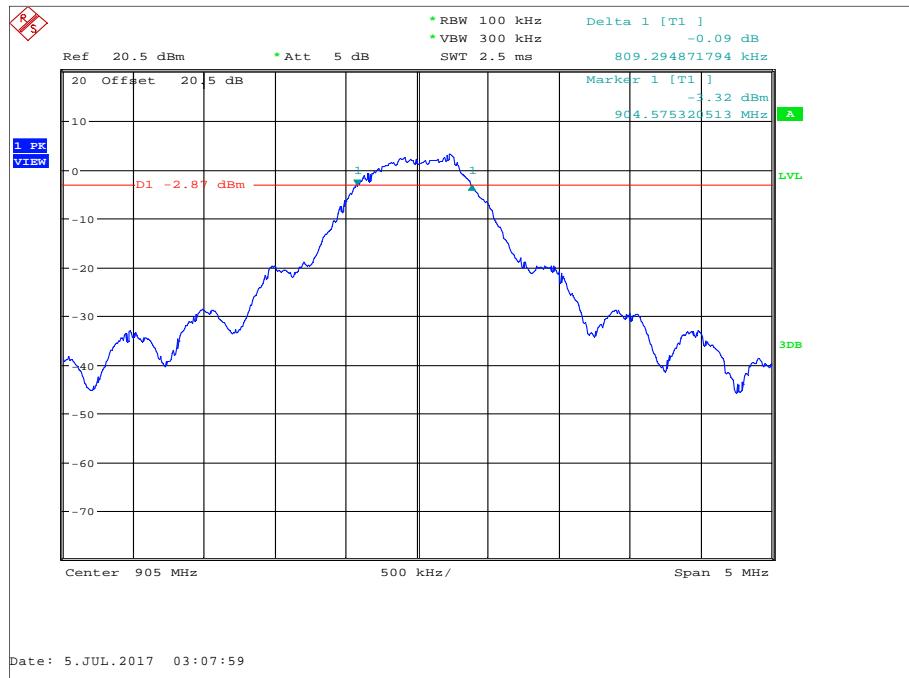


Figure 1 - 905 MHz - 6 dB Bandwidth

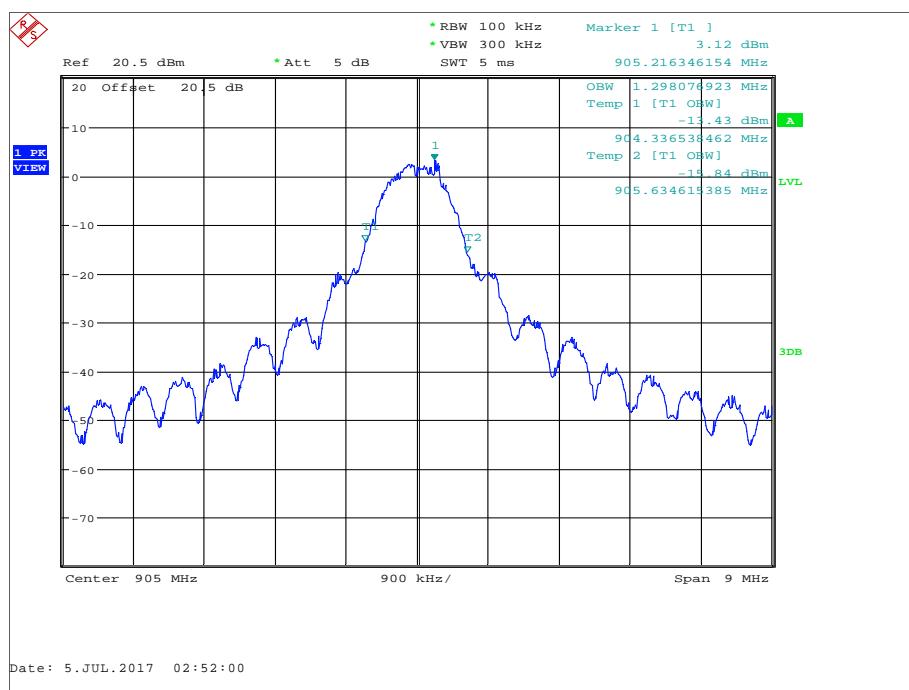


Figure 2 - 905 MHz - 99% Occupied Bandwidth

FCC 47 CFR Part 15, Limit Clause 15.247(a)(2)

The minimum 6 dB Bandwidth shall be at least 500 kHz.

Industry Canada RSS-247, Clause 5.2(a)

The minimum 6 dB Bandwidth shall be at least 500 kHz.

2.2.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 1.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
20dB SMA Attenuator dc - 18GHz	Sealectro	60-674-1020-89	345	12	30-Jun-2018
Hygrometer	Rotronic	I-1000	3220	12	23-Aug-2017
Signal Analyser	Rohde & Schwarz	FSQ 26	3545	12	09-Sep-2017
Network Analyser	Rohde & Schwarz	ZVA 40	3548	12	15-Sep-2017
Calibration Unit	Rohde & Schwarz	ZV-Z54	4368	12	08-Sep-2017
Frequency Standard	Spectracom	Secure Sync 1200-0408-0601	4393	6	09-Sep-2017

Table 8



2.3 Power Spectral Density

2.3.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (e)
Industry Canada RSS-247, Clause 5.2
Industry Canada RSS-GEN, Clause 6.12

2.3.2 Equipment Under Test and Modification State

DCP195-054-001, S/N: NASAFE1720B003A - Modification State 0

2.3.3 Date of Test

05-July-2017

2.3.4 Test Method

This test was performed in accordance with ANSI C63.10, clause 11.10.2.

2.3.5 Environmental Conditions

Ambient Temperature 22.6 °C
Relative Humidity 51.8 %

2.3.6 Test Results

905 MHz Transceiver

Frequency (MHz)	Power Spectral Density (dBm)
905	3.15

Table 9

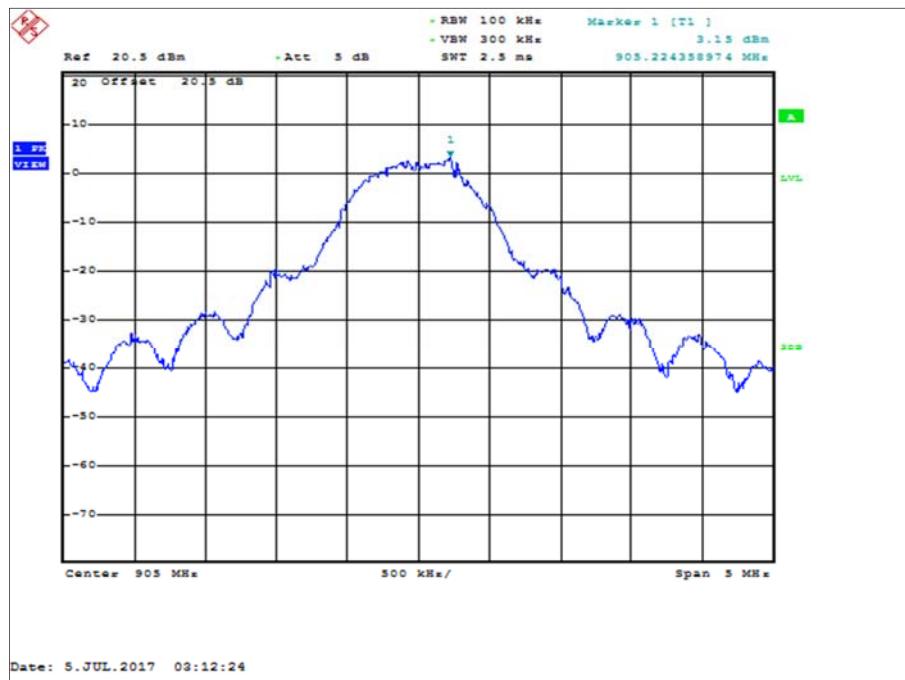


Figure 3 - 905 MHz

FCC 47 CFR Part 15, Limit Clause 15.247 (e)

The power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

Industry Canada RSS-247, Limit Clause 5.2(b)

The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

2.3.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 1.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
20dB SMA Attenuator dc - 18GHz	Sealectro	60-674-1020-89	345	12	30-Jun-2018
Hygrometer	Rotronic	I-1000	3220	12	23-Aug-2017
Signal Analyser	Rohde & Schwarz	FSQ 26	3545	12	09-Sep-2017
Network Analyser	Rohde & Schwarz	ZVA 40	3548	12	15-Sep-2017
Calibration Unit	Rohde & Schwarz	ZV-Z54	4368	12	08-Sep-2017
Frequency Standard	Spectracom	Secure Sync 1200-0408-0601	4393	6	09-Sep-2017

Table 10

2.4 Spurious Radiated Emissions

2.4.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (d) and 15.205
Industry Canada RSS-247, Clause 5.5
Industry Canada RSS-GEN, Clause 6.13

2.4.2 Equipment Under Test and Modification State

1135-400, S/N: AUSAFE1720B00AF - Modification State 0

2.4.3 Date of Test

31-May-2017

2.4.4 Test Method

Testing was performed in accordance with ANSI C63.10, clause 6.3, 6.5 and 6.6

Plots for average measurements were taken in accordance with ANSI C63.10, clause 4.1.4.2.3 to characterize the EUT. Where emissions were detected, final average measurements were taken in accordance with ANSI C63.10-2013 clause 4.1.4.2.2.

The plots shown are the characterization of the EUT. The limits on the plots represent the most stringent case for restricted bands, (54/74 dB_uV/m) when compared to 20 dB_c outside restricted bands. The limits shown have been used as a threshold to determine where further measurements are necessary. Where results are within 10 dB of the limits shown on the plots, further investigation was carried out and reported in results tables.

The following conversion can be applied to convert from dB_uV/m to μ V/m:
 $10^{\alpha}(\text{Field Strength in dB}_{\mu}\text{V/m}/20)$.

2.4.5 Environmental Conditions

Ambient Temperature 20.7 °C
Relative Humidity 55.0 %

2.4.6 Test Results

905 MHz Transceiver

Frequency (MHz)	QP Level (dB _u V/m)	QP Limit (dB _u V/m)	QP Margin (dB _u V/m)	Angle(Deg)	Height(m)	Polarity
37.500	27.4	40.0	-12.6	360	1.00	Vertical
73.000	15.5	40.0	-24.5	0	1.00	Vertical
108.000	20.4	43.5	-23.1	291	1.00	Horizontal
608.000	31.0	46.0	-15.0	80	1.00	Vertical
857.288	35.3	46.0	-10.7	169	1.00	Vertical
960.000	34.2	46.0	-11.8	268	1.00	Vertical

Table 11 - 905 MHz - 30 MHz to 1 GHz

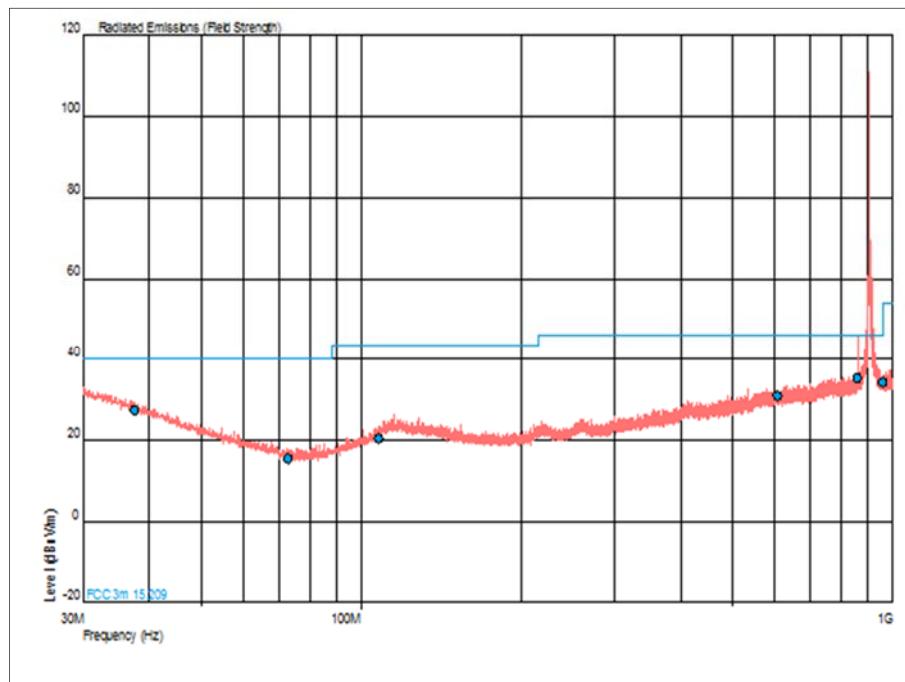


Figure 4 - 905 MHz - 30 MHz to 1 GHz - Horizontal and Vertical

Frequency (MHz)	Result (dB μ V/m)		Limit (dB μ V/m)		Margin (dB μ V/m)	
	Peak	Average	Peak	Average	Peak	Average
*						

Table 12 - 905 MHz - 1 GHz to 10 GHz

*No emissions were detected within 10 dB of the limit.

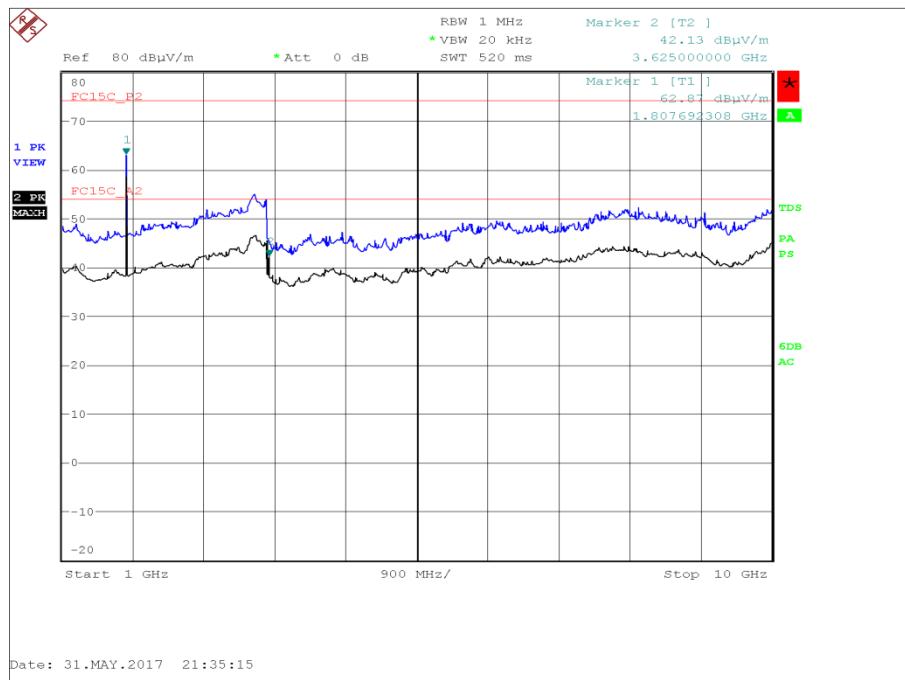


Figure 5 - 905 MHz - 1 GHz to 10 GHz - Horizontal and Vertical

*The emission indicated at 1807.69 MHz which exceeds the 54 dB μ V/m limit line on the above plot does not fall in to the restricted band and therefore the limit of 91.76 dB μ V/m applies. No further measurements were performed as there is more than 20 dB of margin.

FCC 47 CFR Part 15, Limit Clause 15.247 (d)

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 below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

Attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in 15.209(a)

Industry Canada RSS-247, Limit Clause 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

2.4.7 Test Location and Test Equipment Used

This test was carried out in EMC Chamber 5.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Antenna (Bilog)	Schaffner	CBL6143	287	24	18-Apr-2017
Screened Room (5)	Rainford	Rainford	1545	36	20-Dec-2017
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Hygrometer	Rotronic	A1	2138	12	02-Feb-2018
Comb Generator	Schaffner	RSG1000	3034	-	TU
Cable (N-N, 8m)	Rhophase	NPS-2302-8000-NPS	3248	12	02-May-2018
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	12-Nov-2017
Tilt Antenna Mast	maturo GmbH	TAM 4.0-P	3916	-	TU
Mast Controller	maturo GmbH	NCD	3917	-	TU
Cable (Rx, Km-Km 2m)	Scott Cables	KPS-1501-2000-KPS	4526	6	23-Jul-2017
Double Ridge Broadband Horn Antenna	Schwarzbeck	BBHA 9120 B	4848	12	17-Feb-2018

Table 13

TU - Traceability Unscheduled



2.5 Restricted Band Edges

2.5.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.205
Industry Canada RSS-GEN, Clause 8.10

2.5.2 Equipment Under Test and Modification State

1135-400, S/N: AUSAFE1720B00AF - Modification State 0

2.5.3 Date of Test

31-May-2017

2.5.4 Test Method

This test was performed in accordance with ANSI C63.10, clause 6.10.5.

Plots for average measurements were taken in accordance with ANSI C63.10 clause 4.1.4.2.3. These are shown for information purposes and were used to determine the worst case measurement point. Final average measurements were then taken in accordance with ANSI C63.10 clause 4.1.4.2.2. to obtain the measurement result recorded in the test results tables.

The following conversion can be applied to convert from dB μ V/m to μ V/m:
 $10^{\text{Field Strength in dB}\mu\text{V/m}/20}$.

2.5.5 Environmental Conditions

Ambient Temperature 20.7 °C
Relative Humidity 55.0 %

2.5.6 Test Results

905 MHz Transceiver

Frequency (MHz)	Measured Frequency (MHz)	Peak Level (dB μ V/m)
905	614	35.58
905	960	40.69

Table 14

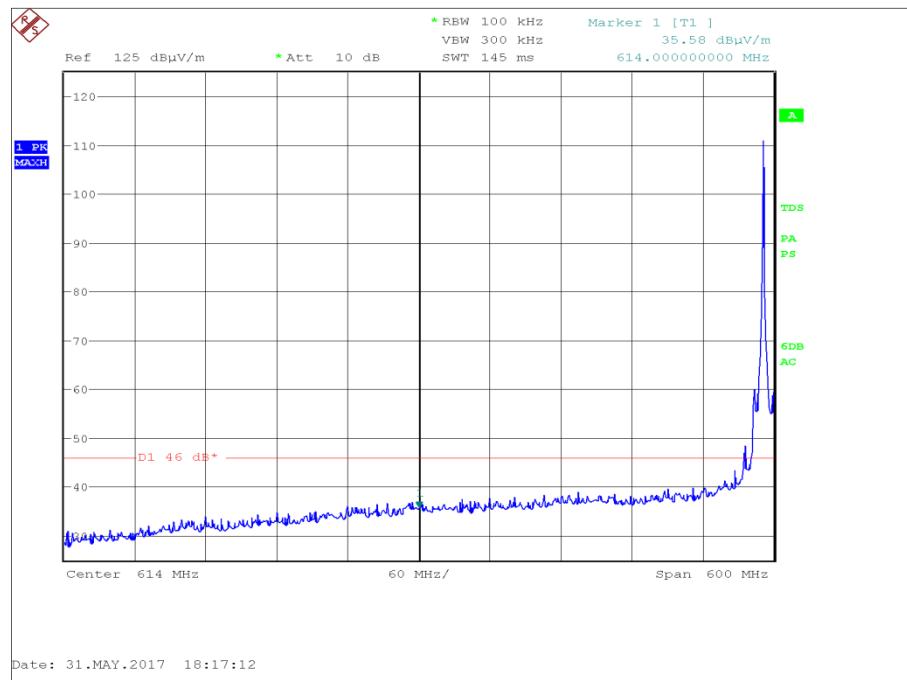


Figure 6 - 905 MHz, Measured Frequency 614 MHz, Peak

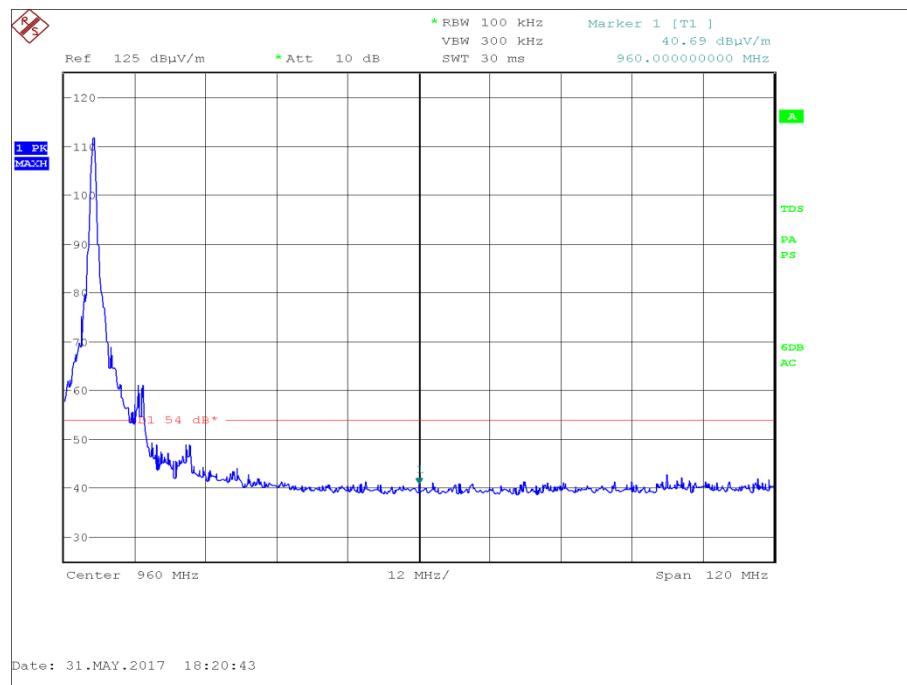


Figure 7 - 905 MHz, Measured Frequency 960 MHz, Peak

FCC 47 CFR Part 15, Limit Clause 15.205

	Peak (dB μ V/m)	Average (dB μ V/m)
Restricted Bands of Operation	74	54

Table 15

Industry Canada RSS-GEN, Limit Clause 8.9

Frequency (MHz)	Field Strength (μ V/m at 3 metres)
30-88	100
88-216	150
216-960	200
Above 960*	500

Table 16

*Unless otherwise specified, for all frequencies greater than 1 GHz, the radiated emission limits for licence-exempt radio apparatus stated in applicable RSSs (including RSS-Gen) are based on measurements using a linear average detector function having a minimum resolution bandwidth of 1 MHz. If an average limit is specified for the EUT, then the peak emission shall also be measured with instrumentation properly adjusted for such factors as pulse desensitization to ensure the peak emission is less than 20 dB above the average limit.

2.5.7 Test Location and Test Equipment Used

This test was carried out in EMC Chamber 5.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Antenna (Bilog)	Schaffner	CBL6143	287	24	18-Apr-2017
Screened Room (5)	Rainford	Rainford	1545	36	20-Dec-2017
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Hygrometer	Rotronic	A1	2138	12	02-Feb-2018
Comb Generator	Schaffner	RSG1000	3034	-	TU
Cable (N-N, 8m)	Rhophase	NPS-2302-8000-NPS	3248	12	02-May-2018
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	12-Nov-2017
Tilt Antenna Mast	maturo Gmbh	TAM 4.0-P	3916	-	TU
Mast Controller	maturo Gmbh	NCD	3917	-	TU
Cable (Rx, Km-Km 2m)	Scott Cables	KPS-1501-2000-KPS	4526	6	23-Jul-2017

Table 17

TU - Traceability Unscheduled

2.6 Authorised Band Edges

2.6.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (d)
Industry Canada RSS-247, Clause 5.5

2.6.2 Equipment Under Test and Modification State

1135-400, S/N: AUSAFE1720B00AF - Modification State 0

2.6.3 Date of Test

31-May-2017

2.6.4 Test Method

The test was performed in accordance with ANSI C63.10, clause 6.10.4.

2.6.5 Environmental Conditions

Ambient Temperature 20.7 °C
Relative Humidity 55.0 %

2.6.6 Test Results

905 MHz Transceiver

Frequency (MHz)	Measured Frequency (MHz)	Peak Level (dB μ V/m)
905	928	66.21
905	960	40.45

Table 18

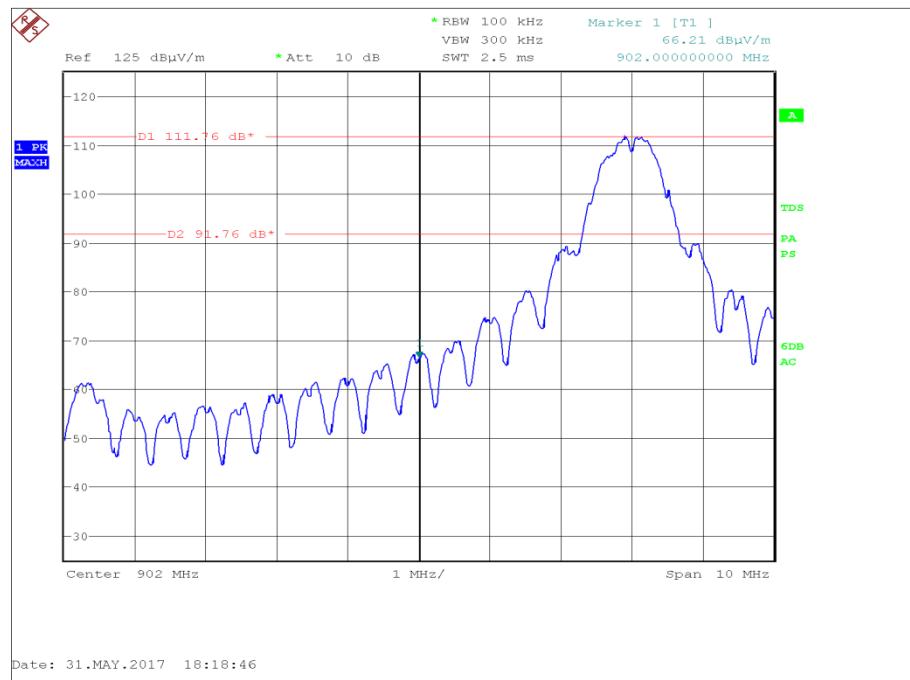


Figure 8 - 905 MHz, Measured Frequency 928 MHz

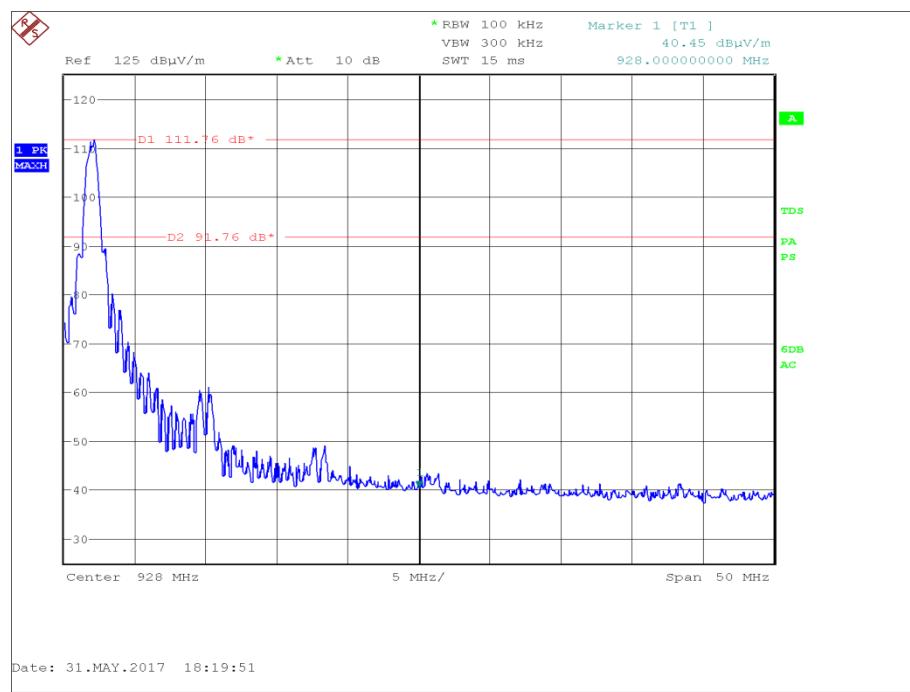


Figure 9 - 905 MHz, Measured Frequency 960 MHz

FCC 47 CFR Part 15, Limit Clause 15.247 (d)

20 dB below the fundamental measured in a 100 kHz bandwidth using a peak detector. If the transmitter complies with the conducted power limits, based on the use of RMS averaging over a time interval, the attenuation required shall be 30 dB below the fundamental instead of 20 dB.

Industry Canada RSS-247, Limit Clause 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

2.6.7 Test Location and Test Equipment Used

This test was carried out in EMC Chamber 5.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Antenna (Bilog)	Schaffner	CBL6143	287	24	18-Apr-2017
Screened Room (5)	Rainford	Rainford	1545	36	20-Dec-2017
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Hygrometer	Rotronic	A1	2138	12	02-Feb-2018
Comb Generator	Schaffner	RSG1000	3034	-	TU
Cable (N-N, 8m)	Rhophase	NPS-2302-8000-NPS	3248	12	02-May-2018
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	12-Nov-2017
Tilt Antenna Mast	maturo GmbH	TAM 4.0-P	3916	-	TU
Mast Controller	maturo GmbH	NCD	3917	-	TU
Cable (Rx, Km-Km 2m)	Scott Cables	KPS-1501-2000-KPS	4526	6	23-Jul-2017

Table 19

TU - Traceability Unscheduled

3 Measurement Uncertainty

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

Test Name	Measurement Uncertainty
Maximum Conducted Output Power	± 0.70 dB
Emission Bandwidth	± 212.114 kHz
Power Spectral Density	± 3.0 dB
Spurious Radiated Emissions	Radiated: 30 MHz to 1 GHz: ± 5.1 dB Radiated: 1 GHz to 40 GHz: ± 6.3 dB
Restricted Band Edges	Radiated: 30 MHz to 1 GHz: ± 5.1 dB Radiated: 1 GHz to 40 GHz: ± 6.3 dB
Authorised Band Edges	Radiated: 30 MHz to 1 GHz: ± 5.1 dB Radiated: 1 GHz to 40 GHz: ± 6.3 dB

Table 20