



TEST REPORT

Test Report No. : UL-RPT-RP87708JD02A V3.0

Manufacturer : Icnita S.L.
Model No. : AC-50
FCC ID : ONXGC364001
IC Certification No. : 10451A-000001
Test Standard(s) : FCC Parts 15.209 & 15.215(c) and Industry Canada RSS-Gen 4.6.1, 4.8, 4.9 & 7.2.5

1. This test report shall not be reproduced in full or partial, without the written approval of UL VS LTD.
2. The results in this report apply only to the sample(s) tested.
3. The sample tested is in compliance with the above standard(s).
4. The test results in this report are traceable to the national or international standards.
5. Version 3.0 supersedes all previous versions

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pp

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This laboratory is accredited by UKAS.
The tests reported herein have been
performed in accordance with its' terms
of accreditation.

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1. Customer Information

Company Name:	Incita S.L.
Address:	c/Onyar 61 ES-17457 Riudellots de la Selva, SPAIN

2. Summary of Testing

2.1. General Information

Specification Reference:	47CFR15.209 and 47CFR15.215
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications) 2011: Part 15 Subpart C (Intentional Radiators) - Sections 15.209 and 15.215
Specification Reference:	RSS-Gen Issue 3 December 2010
Specification Title:	General Requirements and Information for the Certification of Radio Apparatus
Specification Reference:	RSS-210 Issue 8 December 2010
Specification Title:	Licence-exempt Radio Apparatus (All Frequency Bands): Category I Equipment.
Site Registration:	FCC: 209735; Industry Canada: 3245B-2
Location of Testing:	UL VS LTD, Unit 3 Horizon, Wade Road, Kingsland Business Park, Basingstoke, Hampshire, RG24 8AH, United Kingdom
Test Dates:	09 July 2012 to 20 July 2012

Note: This report has been up-issued to support Industry Canada approval. The customer has confirmed that there has been no change to the EUT build since the original testing was performed.

2.2. Summary of Test Results

FCC Reference (47CFR)	IC Reference	Measurement	Result
Part 15.209	RSS-Gen 4.9/7.2.5	Transmitter Radiated Emissions (Fundamental)	
N/A	RSS-Gen 4.8/7.2.5	Transmitter Output Power	
Part 15.209	RSS-Gen 4.9/7.2.5	Transmitter Radiated Emissions	
Part 15.215(c)	N/A	Transmitter 20 dB Bandwidth	
N/A	RSS-Gen 4.6.1	Transmitter 99% Emission Bandwidth	
Key to Results  = Complied  = Did not comply			

2.3. Methods and Procedures

Reference:	ANSI C63.4 (2009)
Title:	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
Reference:	ANSI C63.10 (2009)
Title:	American National Standard for Testing Unlicensed Wireless Devices

2.4. Deviations from the Test Specification

For the measurements contained within this test report, there were no deviations from, additions to, or exclusions from the test specification identified above.

3. Equipment Under Test (EUT)

3.1. Identification of Equipment Under Test (EUT)

Brand Name:	Incita
Model Name or Number:	AC-50
Serial Number:	01-17-00-02-00-00-01-43
Hardware Version Number:	PN09500
Software Version Number:	Act_txt_10 + Act_pic_03
FCC ID:	ONXGC364001
Industry Canada Certification Number:	10451A-000001

3.2. Description of EUT

The equipment under test was an Activator for a fork truck safety system.

3.3. Modifications Incorporated in the EUT

No modifications were applied to the EUT during testing.

3.4. Additional Information Related to Testing

Tested Technology:	RFID	
Power Supply Requirement:	Nominal	24 VDC
Type of Unit:	Transceiver	
Transmit Frequency	21.7 kHz	

3.5. Support Equipment

The following support equipment was used to exercise the EUT during testing:

Description:	TAG
Brand Name:	Incita
Model Name or Number:	T-10
Serial Number:	01-17-00-01-00-00-05-E5

Description:	Car Battery
Brand Name:	Optima Batteries
Model Name or Number:	8012-254
Serial Number:	Not stated

4. Operation and Monitoring of the EUT during Testing

4.1. Operating Modes

The EUT was tested in the following operating mode(s):

- The EUT operates in a transceiver mode and is constantly transmitting and receiving. The EUT has no dedicated receive/idle mode.

4.2. Configuration and Peripherals

The EUT was tested in the following configuration(s):

- The EUT was powered up and then activated using a signal from a tag. When the signal had been received the EUT started to transmit.
- The EUT was powered by two 12 volts car batteries.
- The EUT was fitted with its two dedicated LF antennas for all measurements.

5. Measurements, Examinations and Derived Results

5.1. General Comments

Measurement uncertainties are evaluated in accordance with current best practice. Our reported expanded uncertainties are based on standard uncertainties, which are multiplied by an appropriate coverage factor to provide a statistical confidence level of approximately 95%. Please refer to Section 6 Measurement Uncertainty for details.

5.2. Test Results

5.2.1. Transmitter Radiated Emissions (Fundamental)

Test Summary:

Test Engineer:	Andrew Edwards	Test Date:	09 July 2012
Test Sample Serial No.:	01-17-00-02-00-00-01-43		

FCC Part:	15.209
Industry Canada Reference:	RSS-Gen 4.9
Test Method Used:	ANSI C63.10 Section 6.4

Environmental Conditions:

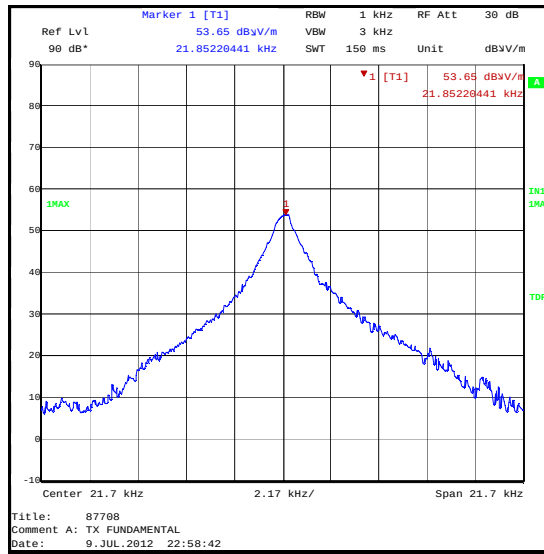
Temperature (°C):	27
Relative Humidity (%):	42

Results: Quasi Peak

Frequency (kHz)	Antenna Polarity	Level (dBμV/m)	Limit at 300 m (dBμV/m)	Margin (dB)	Result
21.7	90° to EUT	-2.9	40.9	43.8	Complied

Note(s):

1. The limit is specified at a test distance of 300 metres. However, as specified by FCC Section 15.31 (f)(2), measurements may be performed at a closer distance and the measured level corrected to the specified measurement distance by using the square of an inverse linear distance extrapolation factor (40dB/decade).
2. A transducer factor on the measuring instrument was used to extrapolate the results at 3 metres to a distance of 30 metres. The transducer factor has a 40 dB extrapolation at a distance of 30 metres (1 decade). Measurements below 490 kHz should be performed at a distance of 300 metres (2 decades) therefore another 40 dB was subtracted from the measured value. The quasi peak level, using a bandwidth of 200 Hz, was measured as $37.1 \text{ dB}\mu\text{V/m} - 40 = -2.9 \text{ dB}\mu\text{V/m}$.

Transmitter Radiated Emissions (Fundamental) (continued)

5.2.2. Transmitter Output Power**Test Summary:**

Test Engineer:	Andrew Edwards	Test Date:	09 July 2012
Test Sample Serial No.:	01-17-00-02-00-00-01-43		

Industry Canada Reference:	RSS-Gen 4.8
Test Method Used:	RSS-Gen clause 7.2.5 table 6

Environmental Conditions:

Temperature (°C):	27
Relative Humidity (%):	42

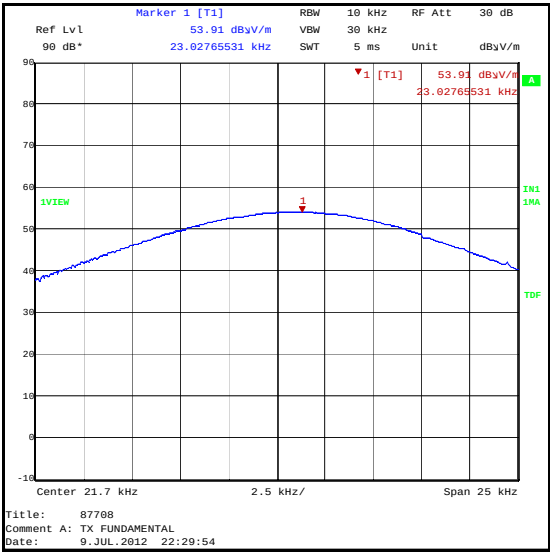
Results: Average

Frequency (kHz)	Antenna Polarity	Level (dBµV/m)	Limit at 300 m (dBµV/m)	Margin (dB)	Result
21.7	90°to EUT	-7.9	40.9	48.8	Complied

Note(s):

1. The limit is specified at a test distance of 300 metres. However, as specified by RSS Gen Section 7.2.7(b), measurements may be performed at a closer distance and the measured level corrected to the specified measurement distance by using the square of an inverse linear distance extrapolation factor (40dB/decade).
2. A transducer factor on the measuring instrument was used to extrapolate the results at 3 metres to a distance of 30 metres. The transducer factor has a 40 dB extrapolation at a distance of 30 metres (1 decade). Measurements below 490 kHz should be performed at a distance of 300 metres (2 decades) therefore another 40 dB was subtracted from the measured value. The average level was measured as $32.1 \text{ dB}\mu\text{V/m} - 40 = -7.9 \text{ dB}\mu\text{V/m}$.
3. The measurement used an average detector with a bandwidth > 6.0 kHz (99% Emission bandwidth) as per RSS-Gen section 4.8 & 7.2.5.

Transmitter Output Power (continued)



5.2.3. Transmitter Radiated Spurious Emissions**Test Summary:**

Test Engineer:	Andrew Edwards	Test Dates:	09 July 2012 & 10 July 2012
Test Sample Serial No.:	01-17-00-02-00-00-01-43		

FCC Part:	15.209
Industry Canada Reference:	RSS-Gen 4.9
Test Method Used:	As detailed in ANSI C63.10 Sections 6.3, 6.4 and 6.5 referencing ANSI C63.4
Frequency Range:	9 kHz to 1000 MHz

Environmental Conditions:

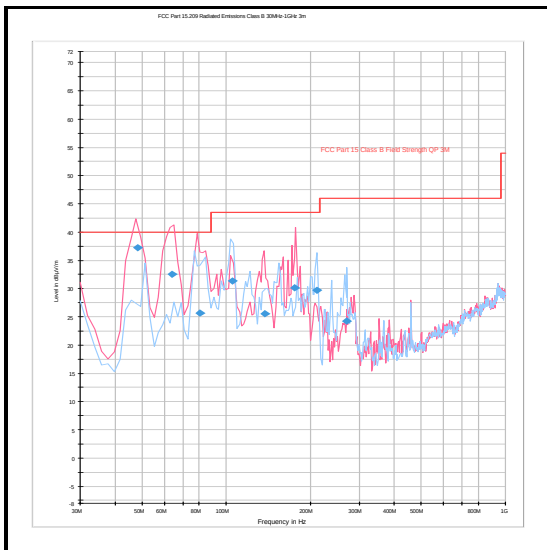
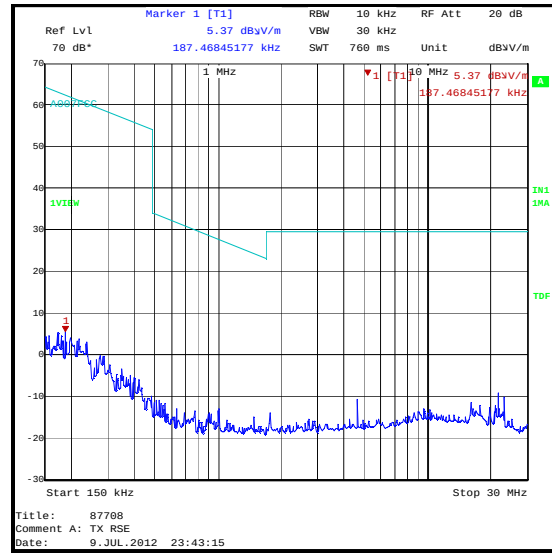
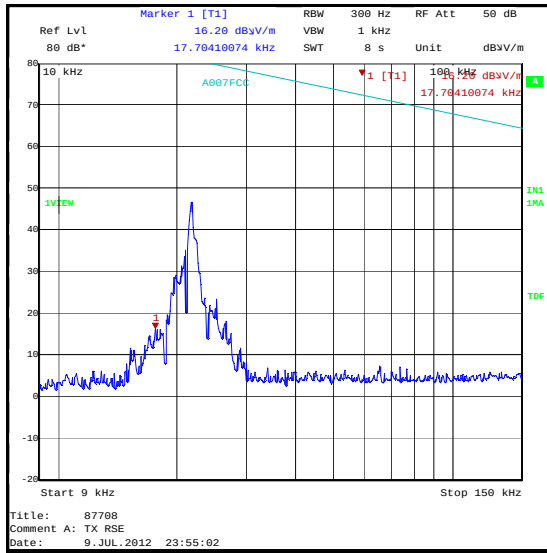
Temperature (°C):	26 to 27
Relative Humidity (%):	40 to 42

Results: Quasi Peak

Frequency (MHz)	Antenna Polarity	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
48.250	Vertical	37.3	40.0	2.7	Complied
63.792	Vertical	32.6	40.0	7.4	Complied
80.737	Vertical	25.6	40.0	14.4	Complied
105.094	Horizontal	31.3	43.5	12.2	Complied
137.650	Vertical	25.5	43.5	18.0	Complied
175.384	Vertical	30.2	43.5	13.3	Complied
211.373	Horizontal	29.7	43.5	13.8	Complied
270.104	Horizontal	24.2	46.0	21.8	Complied

Transmitter Radiated Spurious Emissions (continued)**Note(s):**

1. Limits below 30 MHz are specified at a test distance of 30 metres, whilst below 0.49 MHz they are specified at a test distance of 300 metres. However, as specified by FCC Section 15.31 (f)(2), or RSS Gen Section 7.2.7(b), measurements may be performed at a closer distance and the measured level corrected to the specified measurement distance by using the square of an inverse linear distance extrapolation factor (40dB/decade).
2. A transducer factor on the measuring instrument was used to extrapolate the results at 3 metres to a distance of 300 metres where required. A distance extrapolation factor of 80 dB was used.
3. Final measurement values include corrections for antenna factor and cable losses.
4. The emission shown at approximately 21 kHz is the fundamental.
5. All other emissions shown on the pre-scan plots were investigated and found to be >20 dB below the applicable limit or below the measurement system noise floor.
6. Measurements in the range 30 MHz to 1 GHz were performed in a semi-anechoic chamber (Asset Number K0001) at a distance of 3 metres. The EUT was placed at a height of 80 cm above the reference ground plane in the centre of the chamber turntable. Maximum emission levels were determined by height searching the measurement antenna over the range 1 metre to 4 metres.

Transmitter Radiated Spurious Emissions (continued)

Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying table.

5.2.4. Transmitter 20 dB Bandwidth**Test Summary:**

Test Engineer:	Andrew Edwards	Test Date:	09 July 2012
Test Sample Serial No.:	01-17-00-02-00-00-01-43		

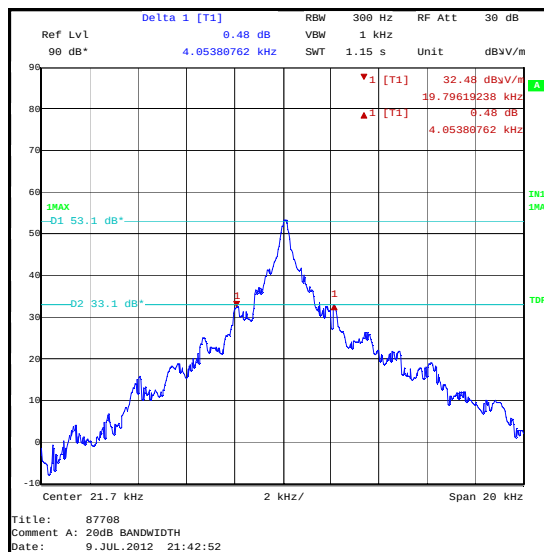
FCC Part:	15.215(c)
Test Method Used:	As detailed in ANSI C63.10 Section 6.9.1

Environmental Conditions:

Temperature (°C):	27
Relative Humidity (%):	41

Results:

20 dB Bandwidth (kHz)
4.054



5.2.5. Transmitter 99% Emission Bandwidth**Test Summary:**

Test Engineer:	Andrew Edwards	Test Date:	09 July 2012
Test Sample Serial No.:	01-17-00-02-00-00-01-43		

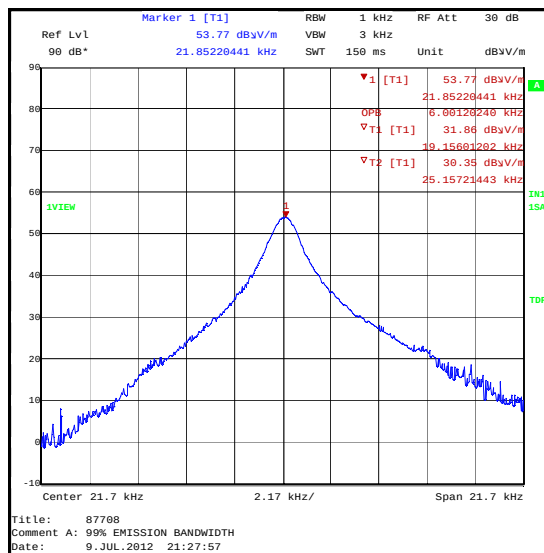
Industry Canada Reference:	RSS-Gen 4.6.1
Test Method Used:	Test receiver 99% occupied bandwidth function

Environmental Conditions:

Temperature (°C):	27
Relative Humidity (%):	41

Results:

99% Emission Bandwidth (kHz)
6.001

**Note(s):**

- The measurement was made using the test receiver's 99% occupied bandwidth function, however this set the span to 43.4 kHz which would not centre the signal in the middle of the test receiver as the signal was too close to the minimum frequency of the test receiver. The span was adjusted to compensate for this.

6. Measurement Uncertainty

No measurement or test can ever be perfect and the imperfections give rise to error of measurement in the results. Consequently the result of a measurement is only an approximation to the value of the measurand (the specific quantity subject to measurement) and is only complete when accompanied by a statement of the uncertainty of the approximation.

The expression of uncertainty of a measurement result allows realistic comparison of results with reference values and limits given in specifications and standards.

The uncertainty of the result may need to be taken into account when interpreting the measurement results.

The reported expanded uncertainties below are based on a standard uncertainty multiplied by an appropriate coverage factor such that a confidence level of approximately 95% is maintained. For the purposes of this document "approximately" is interpreted as meaning "effectively" or "for most practical purposes".

Measurement Type	Range	Confidence Level (%)	Calculated Uncertainty
20 dB Bandwidth	9 kHz to 30 MHz	95%	±0.92 ppm
99% Emission Bandwidth	9 kHz to 30 MHz	95%	±0.92 ppm
Radiated Spurious Emissions	9 kHz to 30 MHz	95%	±3.53 dB
Radiated Spurious Emissions	30 MHz to 1000 MHz	95%	±2.94 dB
Transmitter Output Power	9 kHz to 30 MHz	95%	±2.94 dB

The methods used to calculate the above uncertainties are in line with those recommended within the various measurement specifications. Where measurement specifications do not include guidelines for the evaluation of measurement uncertainty the published guidance of the appropriate accreditation body is followed.

7. Report Revision History

Version Number	Revision Details		
	Page No(s)	Clause	Details
1.0	-	-	Initial Version
2.0	-	-	Issue date changed
3.0	-	-	Updated to UL format, Location of testing updated and Note added to section 2.1, Industry Canada Certification number updated

Appendix 1. Test Equipment Used

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (months)
A1834	Attenuator	Hewlett Packard	8491B	10444	29 Jan 2013	12
A553	Antenna	Chase	CBL6111A	1593	15 Feb 2013	12
G0543	Amplifier	Sonoma	310N	230801	13 Jul 2012	3
K0001	5m RSE Chamber	Rainford EMC	N/A	N/A	31 Aug 2012	12
M1229	Digital Multimeter	Fluke	179	87640015	18 Jun 2013	12
M1273	Test Receiver	Rohde & Schwarz	ESIB 26	100275	03 Feb 2013	12
M1568	Magnetic Loop	Rohde & Schwarz	HFH2-Z2	879284/2	27 Jan 2013	12
S011	DC Power Supply Unit	INSTEK	PR-3010H	9401270	Calibrated before use	-

NB In accordance with UKAS requirements all the measurement equipment is on a calibration schedule.