

TEST REPORT FROM RFI GLOBAL SERVICES LTD

Test of: Net2 Desktop Reader USB, Multi-format z99-2910

To: FCC Part 15 Subpart C: 2008 Clauses 15.207 & 15.209

Test Report Serial No:
RFI/RPT3/RP75097JD07A

Supersedes Test Report Serial No:
RFI/RPT2/RP75097JD07A

**This Test Report Is Issued Under The Authority
Of Brian Watson, Operations Director:**

pp 

Checked By:	R. Graham
Signature:	
Date of Issue:	10 July 2009

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1. Customer Information

Company Name:	Paxton Access Ltd.
Address:	Paxton House Home Farm Brighton Sussex BN1 9HU

2. Summary of Testing

2.1. General Information

Specification Reference:	47CFR15.207, 47CFR15.209
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications) 2008: Part 15 Subpart B (Radio Frequency Devices) - Sections 15.207 and 15.209
Location of Testing:	RFI Global Services Ltd, Wade Road, Basingstoke, Hampshire, RG24 8AH.
Site Registration:	FCC: 209735; Industry Canada: 3245B-2
Test Dates:	21 May 2009 to 26 May 2009

2.2. Summary of Test Results

FCC Reference (47CFR)	Measurement	Port Type	Result
Part 15.207(a)	Transmitter AC Conducted Spurious Emissions	AC Mains	
Part 15.209	Transmitter Radiated Spurious Emissions	Antenna	
Key to Results			
= Complied		= Did not comply	

2.3. Methods and Procedures

Reference:	ANSI C63.4 (2003)
Title:	American National Standard Methods of Measurement of Electromagnetic Emissions from Low Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.

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:	Net2 Desktop Reader USB, Multi-format
Model Number:	z99-2910
Serial Number:	None stated
Hardware Version Number:	z-dfdr rev 4, ppc-ddr rev C
Software Version Number:	Not stated
FCC ID Number:	USEZ992910

IMPORTANT NOTE: This unit was originally tested as the *NET2 desktop reader USB*, Model No. 514-326 and was recorded in RFI Test Report RFI/RPT2/RP75097JD07A as such. The customer has subsequently declared (Appendix 2) that these details have now been changed to those specified above.

3.2. Description of EUT

The equipment under test was a proximity reader for access control. It has dual frequency functionality for reading tokens with 125 kHz and 13.56 MHz carrier frequencies.

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	
Channel Spacing:	N/A as the EUT is a single channel device	
Transmit Frequency:	125 kHz	
Power Supply Requirement:	Nominal	5.0 V

3.5. Support Equipment

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

Description:	Laptop
Brand Name:	Dell
Model Name or Number:	Inspiron 510m
Serial Number:	CN-0H1908-48643-4CA-1988

4. Operation and Monitoring of the EUT during Testing

4.1. Operating Modes

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

- The reader has only one mode of operation (Load Modulation) and it is constantly transmitting.
- The EUT constantly transmitted at maximum power with a modulated carrier.

4.2. Configuration and Peripherals

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

- A 125 kHz tag was presented to the EUT in order to enable the transmitter.
- AC conducted emissions were performed with the EUT connected to the laptop PC via the USB and the laptop PC power supply connected to a LISN. The LISN was connected to a 120VAC 60 Hz mains supply.

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.

In lieu of a 20 dB bandwidth measurement result a 30 dB bandwidth measurement was performed and measured bandwidth was 9.339 kHz. The 20 dB bandwidth will always be less than the value measured for the 30 dB bandwidth.

5.2. Test Results

5.3. Transmitter AC Conducted Spurious Emissions

Test Summary:

FCC Part:	15.207(a)
Test Method Used:	As detailed in ANSI C63.4 Section 7 and relevant annexes

Environmental Conditions:

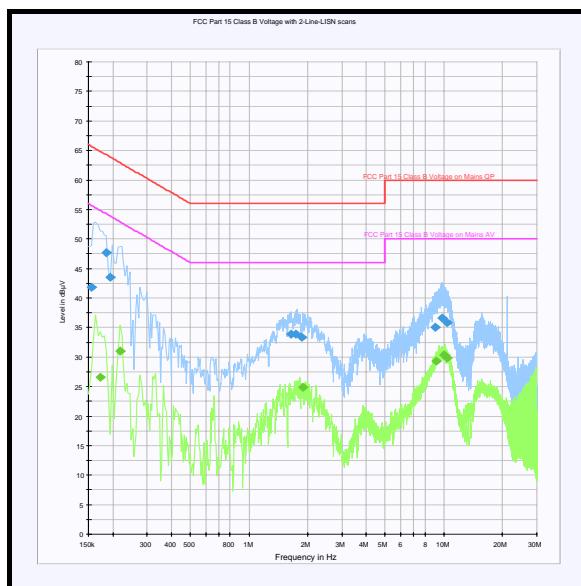
Temperature (°C):	23
Relative Humidity (%):	32

Results: Quasi Peak Detector Measurements

Frequency (MHz)	Line	Quasi Peak Level (dB μ V)	Limit (dB μ V)	Margin (dB)	Result
0.154500	Live	41.8	65.8	24.0	Complied
0.186000	Neutral	47.7	64.2	16.5	Complied
0.195000	Live	43.5	63.8	20.3	Complied
1.639500	Neutral	33.9	56.0	22.1	Complied
1.734000	Neutral	33.9	56.0	22.1	Complied
1.860000	Neutral	33.3	56.0	22.7	Complied
8.997000	Neutral	35.1	60.0	24.9	Complied
9.753000	Neutral	36.7	60.0	23.3	Complied
10.423500	Neutral	35.8	60.0	24.2	Complied

Results: Average Detector Measurements

Frequency (MHz)	Line	Average Level (dB μ V)	Limit (dB μ V)	Margin (dB)	Result
0.172500	Live	26.6	54.8	28.2	Complied
0.217500	Neutral	31.1	52.9	21.8	Complied
1.878000	Neutral	24.9	46.0	21.1	Complied
9.105000	Neutral	29.3	50.0	20.7	Complied
10.072500	Neutral	30.4	50.0	19.6	Complied
10.419000	Neutral	29.9	50.0	20.1	Complied

Transmitter AC Conducted Spurious Emissions (continued)

Note: This plot is a pre-scan for indication purposes only. For final measurements, see accompanying table.

5.4. Transmitter Radiated Spurious Emissions

Test Summary:

FCC Part:	15.209
Test Method Used:	As detailed in ANSI C63.4 Section 8 and relevant annexes
Frequency Range:	9 kHz to 1000 MHz

Environmental Conditions:

Temperature (°C):	27
Relative Humidity (%):	35

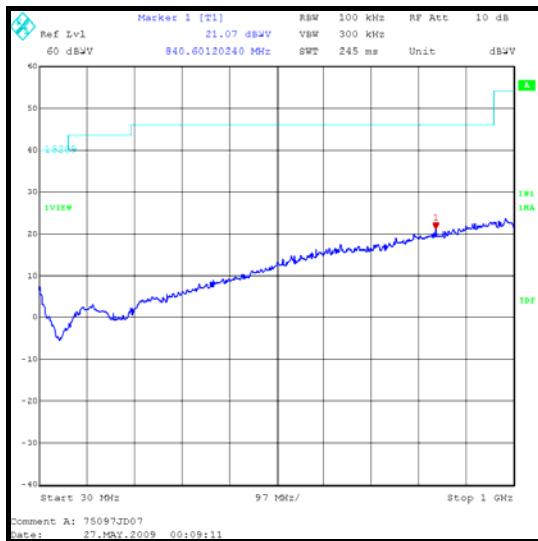
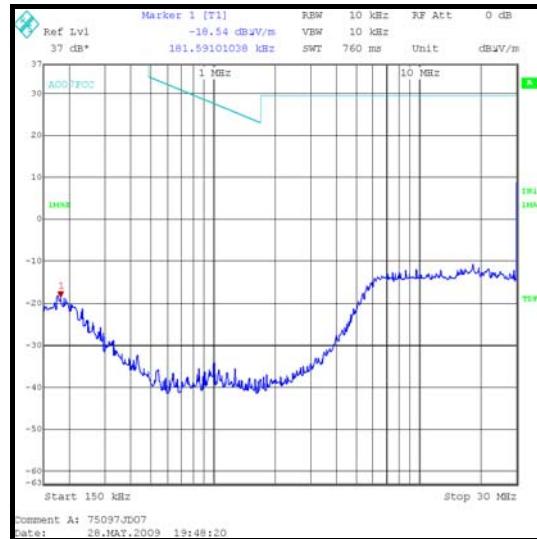
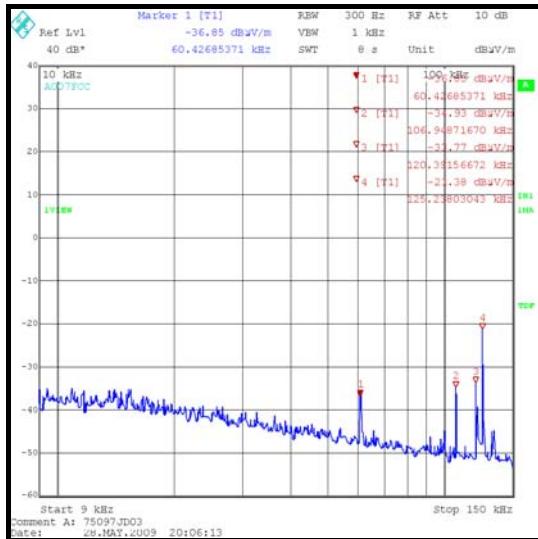
Results: Electric Field Strength Measurements

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
0.125	90° to EUT	-21.3	19.2 (at 300 m)	40.5	Complied
970.0	Horizontal	24.0	54.0	30.0	Complied

Note(s):

1. Measurements were performed at 3 metres.
2. 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), measurements may be performed at a closer distance and the measured level corrected to the specified measurement distance by making the measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor.
3. A transducer factor on the test equipment was used to extrapolate the result obtained at 3 metres to the required measurement distance.

Transmitter Radiated Spurious Emissions (continued)



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

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
AC Conducted Spurious Emissions	0.15 MHz to 30 MHz	95%	±3.72 dB
20 dB Bandwidth	N/A	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

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.

Appendix 1. Test Equipment Used

RFI No.	Instrument	Manufacturer	Type No.	Serial No.	Date Last Calibrated	Cal. Interval (Months)
A007	Antenna	Rohde & Schwarz	HFH2-Z2	880 458/020	29 Mar 2009	12
A1830	Pulse Limiter	Rhode & Schwarz	ESH3-Z2	100668	05 Jan 2009	12
A259	Antenna	Chase	CBL6111	1513	25 Jul 2008	12
A649	LISN	Rohde & Schwarz	ESH3-Z5	825562/008	19 Mar 2009	12
K0001	5m SA Chamber	Rainford EMC	N/A	N/A	26 Aug 2008	12
M1263	Test Receiver	Rohde & Schwarz	ESIB7	100265	22 Apr 2009	12
M1273	Test Receiver	Rhode & Schwarz	ESIB26	100275	01 Apr 2009	12

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

Appendix 2. Customer's Official Declaration of Name Change

This appendix contains a copy of the customer's official declaration detailing the change of Brand Name, Model Number and FCC ID Number.

The appendix contains 1 page and is not included in the total number of pages of this report.



R F I Global Services Ltd
Pavilion A
Ashwood Park, Ashwood Way
Basingstoke
Hampshire
RG23 8BG

8 July, 2009

RE: RFI ref 75097 - Official declaration of model number and name change of EUT.

We,
Paxton Access Ltd, Paxton House, Home Farm Road, Brighton, BN1 9HU, UK.
Declare that the sample originally tested as:

Name: Net2 Desktop Reader USB
Model No: 514-326
FCC ID: USE514326

Will now be known and marketed as the following, but remains technically identical to the sample originally tested at RFI:

Name: Net2 Desktop Reader USB, Multi-format
Model No: z99-2910
FCC ID: USEZ992910

Please keep this letter on your files as an official notice for traceability.

Regards,

B. D. Glass

Brett Glass
Quality Manager
Paxton Access Ltd