



Nemko Test Report: 6L0175RUS1

Applicant: Allflex-Boulder
2820 Wilderness Place, Suite A
Boulder, CO 80301
USA

**Equipment Under Test:
(E.U.T.)** RS200-V2

In Accordance With: **FCC Part 15, Subpart C, Paragraph 15.209**
General Limits For Low Power Transmitters

Tested By: Nemko USA Inc.
802 N. Kealy
Lewisville, TX 75057
USA

Authorized By:

A handwritten signature in black ink, appearing to read 'Abe Cox', is written over a thin red horizontal line.

Abe Cox, Key Account Manager

Date: July 14, 2006

EQUIPMENT: RS200-V2

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EQUIPMENT: RS200-V2

Section 1. Summary Of Test Results

Manufacturer: Allflex

Model No.: RS200-V2

Serial No.: 206251999

General: **All measurements are traceable to national standards.**

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC Part 15, Subpart C for low power devices. All tests were conducted using measurement procedure ANSI C63.4-2003. Radiated Emissions were made on an open area test site.



New Submission



Production Unit



Class II Permissive Change



Pre-Production Unit

THIS TEST REPORT RELATES ONLY TO THE ITEM(S) TESTED.

THE FOLLOWING DEVIATIONS FROM, ADDITIONS TO, OR EXCLUSIONS FROM THE TEST SPECIFICATIONS HAVE BEEN MADE.

See " Summary of Test Data".

**NVLAP LAB CODE: 100426-0**

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This report applies only to the items tested.

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Summary Of Test Data

NAME OF TEST	PARA. NO.	RESULT
Powerline Conducted Emissions	15.207	NA
Radiated Emissions	15.209	Complies
Occupied Bandwidth	Not Specified	NA

This device is battery powered.

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Section 2. General Equipment Specification

Frequency Range: 134.2 Fixed

Operating Frequency(ies) of Sample: 134.2 kHz

20 dB Bandwidth 3.67 kHz

Integral Antenna

Yes



No

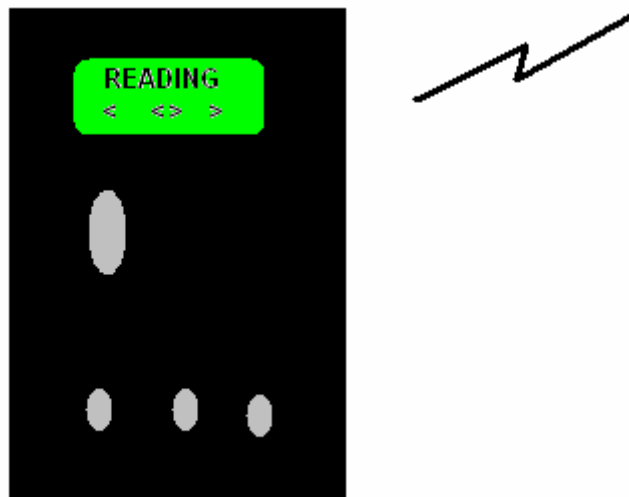


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Description of DUT

Handheld battery powered passive transponder reading device.

System Diagram



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Section 3. Radiated Emissions

NAME OF TEST: Radiated Emissions	PARA. NO.: 15.209
TESTED BY: David Light	DATE: 12 July 2006

Minimum Standard: The field strength of emissions from the device shall not exceed the following limits.

Fundamental (MHz)	Field Strength ($\mu\text{V/m}$)	Field Strength (dB μV)
0.009 - 0.490	2400/F(kHz) @ 300m	—
0.490 - 1.705	24000/F(kHz) @ 30m	—
1.705 - 30	30 @ 30m	—
30 - 88	100	40.0
88 - 216	150	43.5
216 - 960	200	46.0
Above 960	500	54.0

Test Results: Complies. The worst-case emission level is dB $\mu\text{V/m}$ @ 3m at MHz. This is dB below the specification limit.

Measurement Data: (Procedure ANSI C63.4-2003)

Maximizing Emission Levels:

For hand held equipment or equipment that may be mounted in a variety of positions, the E.U.T. was tested on three orthogonal axis to determine orientation of worst-case emission levels. Below 30 MHz an active loop antenna is used at a fixed height of 1 meter. The loop is rotated about it's vertical axis to obtain worst-case results.

Spectrum Searched:

The spectrum was searched from the lowest frequency generated in the E.U.T. up to 1000 MHz, or the 10th harmonic of the fundamental emission.

Near-Field Measurement:

Emissions below 30 MHz are measured in the near-field and an extrapolation factor of 40 dB per decade is used to determine the 10m limit.

Example: Measurement Distance = 10m
Specification Distance = 300m

10m Limit: Specified limit (at 300m) - $(40 \log \frac{10}{300})$

Thus for measurement at 10m the specified limit is increased by 59 dB.

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Test Data - Radiated Emissions

Radiated Emissions Data											
Complete	<u>X</u>					Job # : <u>6L0175</u>	Test # : <u>REHE-01</u>				
Preliminary						Page <u>1</u>	of <u>1</u>				
EUT Model # : <u>RS200-V2</u>											
EUT Part # : <u>930042-001</u>											
EUT Serial # : <u>206251999</u>											
EUT Config. : <u>Tx AC Powered and Battery powered</u>											
Specification : <u>15.209</u>											
Reference :											
Loop Ant. #:	<u>1140</u>	Temp. (deg. C) :	<u>25</u>	Date :	<u>07/12/05</u>						
Bicon Ant.#:		Humidity (%) :	<u>42</u>	Time :	<u>8:00</u>						
Log Ant.#:				Staff :	<u>D. Light</u>						
Bilog Ant.#:				Photo ID:	<u>NA</u>						
Dipole Ant.#:				Peak Bandwidth:	<u>10 kHz</u>						
Cable 1 #:	<u>1484</u>			Video Bandwidth	<u>10 kHz</u>						
Cable 2 #:	<u>1485</u>	Distance:	<u>3 m</u>								
Limiter#:	<u>na</u>										
Atten #:	<u>na</u>										
Detector#:	<u>1464</u>										

Meas. Freq. (kHz)	Ant. Pol. (H/V)	Atten. (dB)	Meter Reading (dBuV)	Antenna Factor (dB)	Path Loss (dB)	RF Gain (dB)	Corrected Reading (dBuV/m)	Spec. limit (dBuV/m)	CR/SL Diff. (dB)	Pass Fail Unc.	Comment
134.2	Loop	0	31.8	3.6	1.0	0.0	36.4	105.0	-68.6	Pass	Carrier
268.4	Loop	0	33	0	1.0	0.0	34.0	99.0	-65.0	Pass	Noise floor
402.6	Loop	0	15	-4.2	1.0	0.0	11.8	95.5	-83.7	Pass	Noise floor
536.8	Loop	0	19	-6.1	1.0	0.0	13.9	73.0	-59.1	Pass	Noise floor
1342	Loop	0	15	-12	1.0	0.0	4.0	68.0	-64.0	Pass	Noise floor

Searched spectrum 9 kHz to 1.5 MHz (10th Harmonic) - No emissions were detected within 20 dB of specification.

The device was tested with fresh batteries.

The device was tested on three orthogonal axis'.

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Radiated Photographs (Worst Case Configuration)



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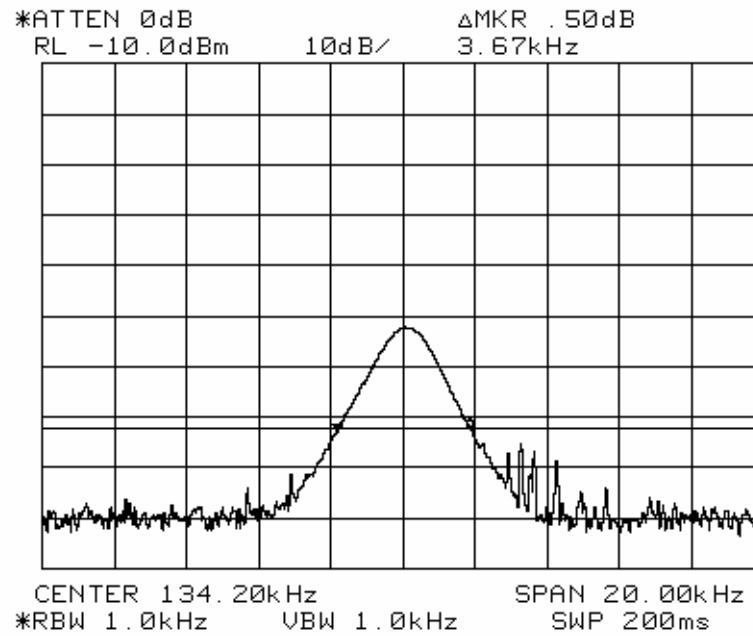
Section 4. Occupied Bandwidth

NAME OF TEST: Occupied Bandwidth	PARA. NO.: N/A
TESTED BY: David Light	DATE: 12 July 2006

Minimum Standard: Not specified.**Test Results:** The 99% power occupied bandwidth is 3.67 kHz.**Measurement Data:** See attached graph(s).**Method of Measurement:**

A spectrum analyzer was used to measure the 99% power occupied bandwidth of the fundamental emission. This value is used as the bandwidth for the emission designator.

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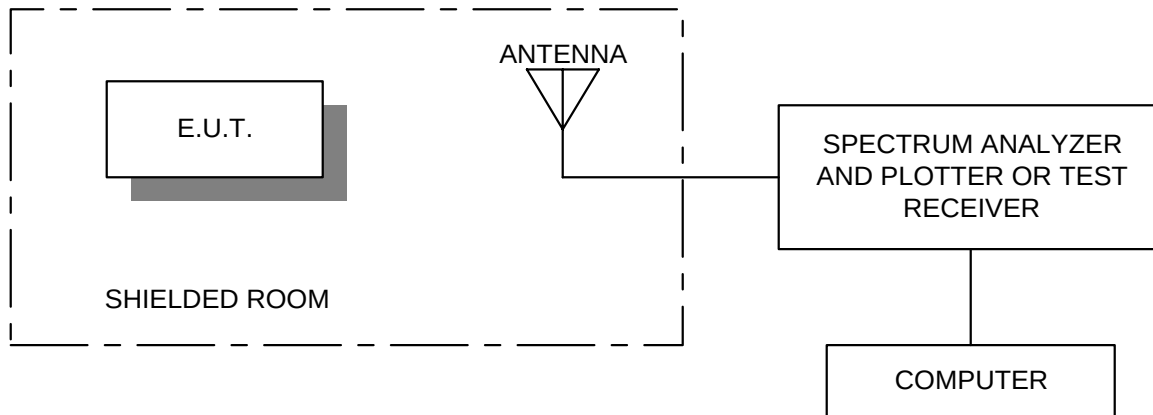
Section 5. Test Equipment List

Nemko ID	Description	Manufacturer Model Number	Serial Number	Calibration Date	Calibration Due
1464	Spectrum analyzer	Hewlett Packard 8563E	3551A04428	01/14/05	01/15/07
1484	Cable	Storm PR90-010-072	N/A	08/26/05	08/26/06
1485	Cable	Storm PR90-010-216	N/A	08/26/05	08/26/06
1140	ACTIVE LOOP ANTENNA	A.H. SYSTEMS SAS-200/562B	213	03/09/06	03/09/08

ANNEX A
TEST DIAGRAMS

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Radiated Prescan



Test Site For Radiated Emissions

