R051-24-11-100203-2/A Ed. 0

RADIO test report

according to standard:
EN 50364 (2001)

Equipment under test:
RFID MODULE HF-AM1-OMNII

Company:
PSION TEKLOGIX

DISTRIBUTION: Mr FORNIER **Company: PSION TEKLOGIX**

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PRODUCT:	**RFID MODULE HF-AM1-OMNII**
Reference / model:	ST 9210 HF RFID slim Pod
Serial number:	not communicated
MANUFACTURER:	PSION TEKLOGIX

COMPANY SUBMITTING THE PRODUCT:

Company:	PSION TEKLOGIX
Address:	135 rue René Descartes Parc de la Duranne 13591 AIX EN PROVENCE FRANCE
Responsible:	Mr FORNIER
DATE(S) OF TEST:	28 January 2011
TESTING LOCATION:	EMITECH ATLANTIQUE laboratory at ANGERS (49) FRANCE
TESTED BY:	L. BERTHAUD

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1. INTRODUCTION

This report presents the results of radio test carried out on the following radio equipment: RFID MODULE HF-AM1-OMNII , in accordance with normative reference.

2. REFERENCE SPECIFICATION

The standards and testing methods related throughout this report are those listed below.
They are applied on the whole test report even though the extensions (version, date and amendment) are not repeated.

EN 50364	October 2001 Limitation of human exposure to electromagnetic fields from devices operating in the frequency range 0 Hz to 10 GHz, used in Electronic Article Surveillance (EAS), Radio Frequency Identification (RFID) and similar applications.
EN 50357	October 2001 Evaluation of human exposure to electromagnetic fields from devices used in Electronic Article Surveillance (EAS), Radio Frequency Identification (RFID) and similar applications.
1999/519/EC	Council Recommendation of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz)

3. TESTS SUMMARY

Object	A	NA
Basic restrictions for electric, magnetic and electromagnetic fields	X	
Reference levels for electric, magnetic and electromagnetic fields	X	
Reference levels for contact currents from conductive objects	X	

A = Applicable
NA = Not Applicable

4. PRESENTATION OF EQUIPMENT FOR TESTING PURPOSES

ANNEX 1 Results board(s)

ANNEX 2 Photos of the equipment under test

ANNEX 3 Test Set up

5. FREQUENCY IDENTIFICATION

Equipment characteristics:

Band of frequencies used by the transmitter: I.S.M. band from 13.553 MHz to 13.567 MHz
Number of channel which it can operate: 1
Channel separation: not concerned

Equipment ⦿ single-frequency
○ two-frequency
○ multi-frequency

I.S.M.: Industrial, Scientific and Medical.

Choice of frequency:

sample N°= 1 ⇨ 13.56 MHz (full tests)

6. TESTS RESULTS SUMMARY

Object	Respected standard?				Remarks
	Yes	No	NE	I	
Basic restrictions for electric, magnetic and electromagnetic fields			X		*See below*
Reference levels for electric, magnetic and electromagnetic fields	X				
Reference levels for contact currents from conductive objects	X				

NE = Not Executed
I = Inconclusive

Remark(s):

- The reference levels are provided for practical exposure–assessment purposes to determine whether the basic restrictions are likely to be exceeded. These levels are derived from relevant basic restrictions.

- The basic restrictions are exposure to time-varying electric, magnetic and electromagnetic fields which are based directly on established health effect and biological considerations.

- Respect of the reference level will ensure respect of the relevant basic restriction.

7. REFERENCE LEVELS FOR ELECTRIC, MAGNETIC AND ELECTROMAGNETIC FIELDS

Standard: EN 50364

Test procedure: EN 50357

Test equipments used:

TYPE	MANUFACTURER	EMITECH NUMBER
Spectrum analyzer FSP40	Rohde & Schwarz	4088
Antenna 7.5 cm	Boucle	2464
Meteo station AB888	Oregon Scientific	1539

Measurement conditions:

The sensor is moved in front of the equipment under test according figure 2i of EN 50357.

Test operating conditions of the equipment:

The equipment is blocked in continuous transmission mode without detection tag.

Results:

Sample N° 1

Power supply: 3.7 Vd.c

See results board in annex 1.

Test conclusion:

RESPECTED STANDARD

8. REFERENCE LEVELS FOR CONTACT CURRENTS FROM CONDUCTIVE OBJECTS

Standard: EN 50364

Test procedure: EN 50357

Test equipments used:

TYPE	MANUFACTURER	EMITECH NUMBER
Spectrum analyzer FSP40	Rohde & Schwarz	4088
Meteo station AB888	Oregon Scientific	1539
Current probe F-80	FCC	2535

Measurement conditions:

The sensor is placed around the arm of a person and this person comes to touch the radio antenna of the equipment under test with the hand.

Test operating conditions of the equipment:

The equipment is blocked in continuous transmission mode without detection tag.

Results:

Sample N° 1

Power supply: 3.7 Vd.c

See results board in annex 1.

Test conclusion:

RESPECTED STANDARD

□□□ End of report, 3 annexes to be forwarded □□□

ANNEX 1: RESULT BOARD(S)

RFID module HF-AM1-OMNII

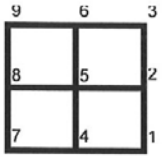
Test configuration : 2 i

X= 0.1m | T 21
a/b/c 0,15 m | Hr 27
Pa 1006

Equipment height 1,1 m

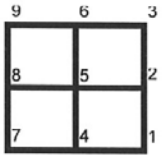
measurement height 0.8 m

measurement point (dBµV)	Records (mV)	corrected level (mA/m)	H*H
1	67,6	2,40	6,43	41,33
2	72,3	4,12	11,04	121,97
3	53,3	0,46	1,24	1,54
4	68,5	2,66	7,13	50,85
5	71,2	3,63	9,73	94,68
6	50,2	0,32	0,87	0,75
7	62,9	1,40	3,74	14,00
8	68	2,51	6,73	45,32
9	58,3	0,82	2,20	4,86



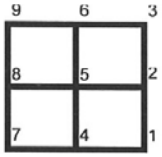
measurement height 0.95 m

measurement point (dBµV)	Records (mV)	corrected level (mA/m)	H*H
1	67,6	2,40	6,43	41,33
2	72,3	4,12	11,04	121,97
3	53,3	0,46	1,24	1,54
4	68,5	2,66	7,13	50,85
5	71,2	3,63	9,73	94,68
6	50,2	0,32	0,87	0,75
7	62,9	1,40	3,74	14,00
8	68	2,51	6,73	45,32
9	58,3	0,82	2,20	4,86



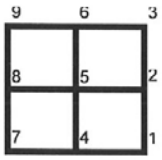
measurement height 1.1 m

measurement point (dBµV)	Records (mV)	corrected level (mA/m)	H*H
1	67,6	2,40	6,43	41,33
2	72,3	4,12	11,04	121,97
3	53,3	0,46	1,24	1,54
4	68,5	2,66	7,13	50,85
5	71,2	3,63	9,73	94,68
6	50,2	0,32	0,87	0,75
7	62,9	1,40	3,74	14,00
8	68	2,51	6,73	45,32
9	58,3	0,82	2,20	4,86



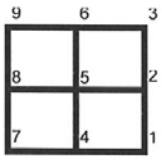
measurement height 1.25 m

measurement point (dBµV)	Records (mV)	corrected level (mA/m)	H*H
1	67,6	2,40	6,43	41,33
2	72,3	4,12	11,04	121,97
3	53,3	0,46	1,24	1,54
4	68,5	2,66	7,13	50,85
5	71,2	3,63	9,73	94,68
6	50,2	0,32	0,87	0,75
7	62,9	1,40	3,74	14,00
8	68	2,51	6,73	45,32
9	58,3	0,82	2,20	4,86



measurement height 1,45 m

measurement point (dBµV)	Records (mV)	corrected level (mA/m)	H*H
1	67,6	2,40	6,43	41,33
2	72,3	4,12	11,04	121,97
3	53,3	0,46	1,24	1,54
4	68,5	2,66	7,13	50,85
5	71,2	3,63	9,73	94,68
6	50,2	0,32	0,87	0,75
7	62,9	1,40	3,74	14,00
8	68	2,51	6,73	45,32
9	58,3	0,82	2,20	4,86



		Limits	
Spatially averaged measure	6,46 mA/m	73mA/m	1876,51

	measurement point (dBµV)	Records (mV)	Levels (mA)	Limits
Measurement at 1 cm (for information only)	91,9	39,36	105,47	
Current measurement in arm	41	0,11	0,02	45mA
Current measurement in ankle	29	0,03	0,01	45mA

ANNEX 2: PHOTOS OF THE EQUIPMENT UNDER TEST

GENERAL VIEW

INTERNAL VIEW

ANNEX 3: TEST SET UP

ELECTROMAGNETIC FIELD

CONTACT CURRENT