

Radio test report 99721130

Tests based on:

FCC Part 15, Subpart C, 15.231 (10-1-04 edition)

Transmitter
VALEO
0602A1-A



Contents

MAIN MODULE.....	3
1 INTRODUCTION	3
2 PRODUCT	4
3 TEST SCHEDULE	4
4 PRODUCT DOCUMENTATION.....	4
5 OBSERVATIONS AND COMMENTS	5
6 MODIFICATIONS TO THE SAMPLE.....	5
7 SUMMARY.....	5
8 CONCLUSIONS.....	6
TEST RESULTS MODULE	7
1 TEST RESULTS.....	8
1.1 Field Strength	8
1.2 IC - FCC cross reference table.....	10
USED TEST EQUIPMENT MODULE	11

This report comprises of three modules. The total number of pages is: 11

Main module

1 Introduction

This report contains the result of tests performed by:

Telefication B.V.
Edisonstraat 12a
6902 PK Zevenaar
The Netherlands

Telefication complies with the accreditation criteria for test laboratories as laid down in ISO/IEC 17025:1999. The accreditation covers the quality system of the laboratory as well as the specific activities as described in the authorized annex bearing the accreditation number L021 and is granted on 30 November 1990 by the Dutch Council For Accreditation (RvA: Raad voor Accreditatie). The contents of this test report, if reproduced, shall be copied in full, unless special consent in writing for reproduction in part is granted by Telefication. Copyright of this test report is reserved to Telefication.

Ordering party:

Company name	:	VALEO SECURITE HABITACLE
Address	:	42, rue le Corbusier
Zipcode	:	94042
City/town	:	Créteil Cedex
Country	:	France
Date of order	:	13 February 2006

2 Product

Samples of the following products were submitted for testing:

Product description	:	Transmitter
Manufacturer	:	VALEO SECURITE HABITACLE
Trade mark	:	VALEO
Type designations	:	0602A1-A
Hardware version	:	--
Serial number	:	--
Software release	:	--
FCC-ID	:	N5F-0602A1A

3 Test schedule

Tests were carried out in accordance with the specification detailed in chapter 7 "Summary" of this report.

Tests were carried out at the following locations:

Measurements up to 1 GHz only:

KEMA
Utrechtseweg 310
6812 AR Arnhem
The Netherlands

FCC listed : 94775

All other tests:

Telefication, Zevenaar

The samples of the product were received on:

- 7 February 2006

Tests were carried out on the following date(s):

- 15 & 16 February 2006

4 Product documentation

For production of this report the following product documentation was used:

Description	Date	Identification
Technical approval document	17/01/06	644010-4301-001
Mechanical drawing	not dated	0602A1-A

The above-mentioned documentation will be filed at Telefication for a period of 10 years following the issue of this report.

5 Observations and comments

The operating frequency of the EUT is 313.850 MHz.

The products comes in 2 variants; a 3- and 4-button transmitter. They have the same electronics and PCB layout. Only the necessary switches are mounted.

During all measurements, the samples were powered by regular 3 Volts lithium batteries, type CR1616. It was verified that the batteries were full at the start of each measurement.

6 Modifications to the sample

None.

7 Summary

The product is intended for use in the following application area(s):

LAND MOBILE RADIO, SHORT RANGE DEVICE

The samples were tested according to the following specification(s):

- FCC Part 15, Subpart C, (10-1-04 edition), limited to section:
 - 15.231 (b)

8 Conclusions

The sample of the product showed **NO NON-COMPLIANCES** to the specification stated in chapter 7 of this report.

The results of the tests as stated in this report, are exclusively applicable to the product item as identified in this report. Telefication does not accept any responsibility for the results stated in this report, with respect to the properties of product items not involved in these tests.

All tests are performed by:

name : H.H. Lodewijk

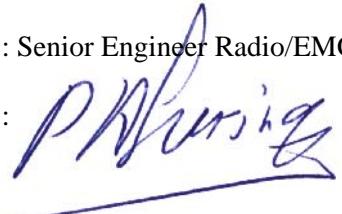
function : Test Engineer

signature : 

Review of test methods and report by:

name : ing. P.A. Suringa

function : Senior Engineer Radio/EMC

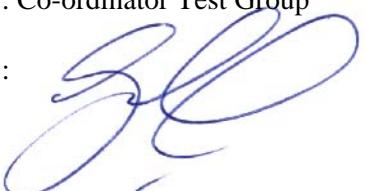
signature : 

The above conclusions have been verified by the following signatory:

date : 9 March 2006

name : J.P. van de Poll

function : Co-ordinator Test Group

signature : 

Test results module

1 Test results

1.1 Field Strength

Compliance standard:

FCC part 15, subpart C, section 15.231 (b)

Method of measurement:

ANSI C63.4-2003, sections 5.5, 8.2.3, 8.2.4 & 8.3.1.2; FCC part 15, subpart A, section 15.31(m), 15.33, 15.35.

Results:

Ambient temperature > 1000 MHz : +22 °C
 Ambient temperature < 1000 MHz : +16 °C

Relative humidity: 46 %
 Relative humidity: 40 %

Transmitter operating

Modulation: present

< 1000 MHz

Frequency (MHz)	Nature of emission	Level @ 3 m distance (dB μ V/m)	Polarization	Limit (dB μ V/m)
313.850	Fundamental	75.0 AV	Horizontal	75.6
313.850	Fundamental	80.2 PK	Horizontal	95.6
627.700	Harmonic	27.4 AV	Horizontal	55.6
627.700	Harmonic	38.5 PK	Horizontal	75.6
941.550	Harmonic	Ambient	Horizontal	Ambient
941.550	Harmonic	Ambient	Horizontal	Ambient

Measurement uncertainty: -2.4 dB / +1.6 dB

>1000 MHz

Frequency (MHz)	Nature of emission	Level @ 3 m distance (dB μ V/m)	Polarization	Limit (dB μ V/m)
1255.200	Harmonic	42.5 AV	Horizontal	55.6
1569.000	Harmonic	39.7 AV	Horizontal	55.6
1882.800	Harmonic	38.0 AV	Horizontal	55.6
2196.600	Harmonic	42.7 AV	Horizontal	55.6
1255.200	Harmonic	31.5 AV	Vertical	55.6
1569.000	Harmonic	32.0 AV	Vertical	55.6
1882.800	Harmonic	35.9 AV	Vertical	55.6
2196.600	Harmonic	36.7 AV	Vertical	55.6

Measurement uncertainty: +1.26 dB / -1.34 dB

Limits @ 3 m distance

Frequency	Field strength fundamental	Field strength spurious emissions
40.66 - 40.70 MHz	2250 μ V/m	225 μ V/m
70 - 130 MHz	1250 μ V/m	125 μ V/m
130 - 174 MHz	1250 to 3750 μ V/m (linearly interpolated)	125 to 375 μ V/m (linearly interpolated)
174 - 260 MHz	3750 μ V/m	375 μ V/m
260 - 470 MHz	3750 to 12500 μ V/m (linearly interpolated)	375 to 1250 μ V/m (linearly interpolated)
\geq 470 MHz	12500 μ V/m	1250 μ V/m

Test equipment:

Test equipment used: (Item numbers)	< 30 MHz: 1 30 - 1000 MHz: 11, 12, 13 > 1000 MHz: 1, 2, 3, 4, 5, 6, 7, 8, 9 , 10
-------------------------------------	--

1.2 IC - FCC cross reference table

Cross reference table		
Transmitter		
CNR RSS-210 Issue 5	FCC 47 CFR Ch. 1 part 15, subpart C (10-1-04 Edition)	
par. 6.1.1 (a)		§ 15.231 (a)
Par. 6.1.1 (b)		§ 15.231 (b)
par. 6.1.1 (c)		§ 15.231 (c)
par. 6.1.1 (d)		§ 15.231 (d)
Par. 6.1.1 (e)		§ 15.231 (e)
Par. 6.1.1 (f)	Par. 6.3	§ 15.205
	Par. 6.4	§ 15.231 (d)
	Par. 6.5	§ 15.35 (b), (c)
	Par. 6.6	§ 15.207

Used test equipment module

This module contains the total list of test equipment used.

Item	Test equipment	Manufacturer	Type	ident
Measurement Equipment at Telefication, Zevenaar				
1	Spectrum Analyser	Hewlett Packard	HP8563E	TE 00481
2	RF Preamplifier 1 – 26.5 GHz	Hewlett Packard	HP8489B	TE 00093
3	Pre-amplifier 10dB	Rohde & Schwarz	ESV-Z3	TE 00097
4	Horn Antenna	EMCO	3115	TE 00532
5	Biconilog Antenna	EMCO	3143	TE 00700
6	Anechoic chamber	Euroshield	RFB-F-100	TE 01064
7	Antenna tower	HD	AS 620P	--
8	Turntable	HD	DS-412	--
9	Turntable controller	HD	HD-050	--
10	Climate chamber	CTS	C-40/350	TE00741
Measurement Equipment at KEMA, Arnhem				
11	Measurement receiver	Rohde & Schwarz	ESVS10	N5692464
12	Biconilog antenna	Schwarzbeck	VULB 9161	ORS-I116982
13	Open area test site	KEMA	--	--