



Radio test report

99645931

based on:
FCC part 15; subpart C; section 15.227 (10-1-04 edition)

Cordless Keyboard
Logitech Cordless Keyboard
Y-RAM74

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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 : Logitech Europe S.A.
Address : Z.I. Moulin du Choc D
Zipcode : CH-1122
City/town : Romanel sur Morges
Country : Switzerland
Date of order : 18 May 2005

2 Product

A sample of the following product was submitted for testing:

Product description	: Cordless Keyboard
Manufacturer	: Logitech Europe S.A.
Trade mark	: Logitech Cordless Keyboard
Type designation	: Y-RAM74
FCC ID	: DZL134041
Hardware version	: --
Serial number	: 0504220102
Software release	: --

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 location:

- TNO Electronic Products & Services (EPS) B.V
Smidshornerweg 18
9822 TL Niekerk
The Netherlands

FCC listed : 90828
Industry Canada : IC3501

The sample of the product was received on:

- 23 May 2005

Tests were carried out on:

- 30 May 2005

4 Product documentation

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

Description:	Date:	Identification:
Product description	May 2005	Y-RAM74_Description.doc
Test instructions	May 2005	Y-RAM74_Test_Inst.doc
Circuit diagram	23 May 2005	HADES-KBD-Agcy rev.02.pdf
Circuit diagram RFID module	23 May 2005	HADES-RFID-Agcy PA4.pdf
Block diagram	--	Visio-Hades Y-RAM74 Block diagram.pdf
PCB lay out	--	Hades-PA2_Gerber.pdf
PCB lay out RFID module	--	Hades-RFID-PA4.pdf
User manual	--	623877-0403 Hades Front.pdf 623877-0403 Hades Back.pdf

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

5 Observations and comments

During the tests the product was set in continuous transmit mode (CH1 & CH2 selectable), by means of a test mode.

6 Modifications to the sample

No modifications were made to the sample.

7 Summary

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

- INDUCTIVE DATA TRANSMISSION APPLICATION IN THE 27 MHz BAND

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

- FCC part 15; subpart C; section 15.227 (10-1-04 edition)

8 Conclusions

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

All tests are performed by:

name : ing. K.A. Roes

function : Test Engineer

signature :

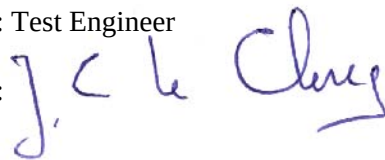


Review of test report by:

name : ing. J.C. le Clercq

function : Test Engineer

signature :



The above conclusions have been verified by the following signatory:

Date : 5 July 2005

name : J.P. van de Poll

function : Co-ordinator Test Group

signature :



Test results module

1 General information

1.1 Equipment information

Rated RF output power	n.a., integral antenna
Rated radiated RF power	400 nW
Operating frequencies	27.095 MHz; 27.145 MHz
Modulation	FSK
Modulation bit rate	2400 bit/s
ITU emission class	7K0F7D
FCC ID	DZL134041

2 Emission tests

2.1 Field strength of intentional signal

Compliance standard : FCC part 15, subpart C, section 15.227 (a).
Method of test : ANSI C63.4-2003, sections 5.3 & 8.2.1

Test results :

Radiated emissions (dB μ V/m) (AV)			
	27.095 MHz	27.145 MHz	
Orthogonal plane	Test result @ 3 m	Test result @ 3 m	Limit @ 3 m
X	< 51.0	< 51.0	80.0
Y	51.0	51.0	80.0
Z	< 51.0	< 51.0	80.0

Measurement uncertainty: ± 4.4 dB

2.2 Field strength of unwanted emissions

Compliance standard : FCC part 15, subpart C, section 15.227 (b).
 Method of test : ANSI C63.4-2003 sections 5.4, 8.2.3 & 8.3.1.2; FCC part 15, subpart A, section 15.31(m), 15.33, 15.35.
 EUT condition : 27.095 / 27.145 MHz channel
 Test results :

< 30 MHz

Frequency (MHz)	Test result @ 3 m (dBµV/m) (QP)	EUT orthogonal plane	Limit (dBµV/m)
< 30 MHz	no emission detected	--	--

> 30 MHz

Frequency (MHz)	Test result @ 3 m distance (dBµV/m) (QP)	Polarisation	Limit (dBµV/m)
109.20	36.0	H	43.5
122.70	39.6	H	43.5
135.80	41.1	H	43.5
149.70	41.8	H	43.5
162.50	38.9	H	43.5
176.10	36.3	H	43.5
190.00	31.5	H	43.5
203.20	32.6	H	43.5
217.20	32.9	H	46.0
230.70	41.5	H	46.0
243.80	44.0	H	46.0
257.70	40.5	H	46.0
270.90	35.1	H	46.0
298.00	34.2	H	43.5
311.60	35.5	H	46.0
325.20	34.3	H	46.0
338.70	31.4	H	46.0
365.80	28.7	H	46.0
379.30	27.6	H	46.0
406.60	26.6	H	46.0

Measurement uncertainty: ± 4.4 dB

Used test equipment module

The following measurement equipment was used:

Description	ID / SN	Manufacturer	Model
Plastic measurement room	12636	Polyforce	-
Open Area Test Site	13886	Comtest	-
Antenna mast 4m	--	EMCO	1070
Controller OATS	--	EMCO	1090
Loop Antenna	1107	Chase	HLA6120
Biconilog antenna 30MHz – 1000MHz	15633	Chase	CBL6111B
EMI test receiver	15667	Rohde & Schwarz	ESCS 30
Turntable OATS	99108	Heinrich Deisel	HD050