



Radio test report 99498730

based on:
FCC part 15; subpart C; section 15.227
(10-1-03 edition)

Cordless Keyboard
Logitech Cordless Keyboard
Y-RQ53



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This report comprises of four modules. The total number of pages exclusive of the pages enclosed in the additional information module is: 20

Main module

1 Introduction

This report contains the result of tests performed by:

Telefication bv
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 copyright of this test report is owned by Telefication bv and may not be reproduced except in full without the written approval of Telefication bv.

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	:	3 March 2004

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-RQ53
FCC ID	: DZL131139
Hardware version	: --
Serial number	: 0401200109
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 (EPS) B.V., Nieuwerkerk (FCC listed under no. 90828; Industry Canada listed under no.IC3501)

The sample of the product was received on:

- 5 March 2004

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

- 18 March 2004

4 Product documentation

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

Description:	Date:	Identification:
Testing indications for Cordless keyboard	March 2004	Y-RQ53
Label information, rev.05	21 November 2003	Drawing no. 131806
Electrical diagram of RF part, rev. PA5	2 March 2004	Y-RQ53 HERCULES RF
Bill of Materials	26 February 2004	Y-RQ53 HERCULES MAIN
Product description	March 2004	Y-RQ53



The fore mentioned documentation would be filed at Telefication for a period of 10 years following the issue of this report.

5 Observations and comments

No emissions above measurement noise floor have been detected at the crystal frequencies 13.5725 and 13.5475 MHz.

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 sample was tested according to the following specification(s):

FCC part 15; subpart C; section 15.227 (10-1-03 edition)

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 : ing. P.A. Suringa

function : Senior engineer Radio/EMC

signature :



Review of test report by:

name : ing. K.A. Roes

function : Test engineer

signature :



The above conclusions have been verified by the following signatory:

Date : 23 March 2004

name : J.P. van de Poll

function : Co-ordinator Test Group

signature :



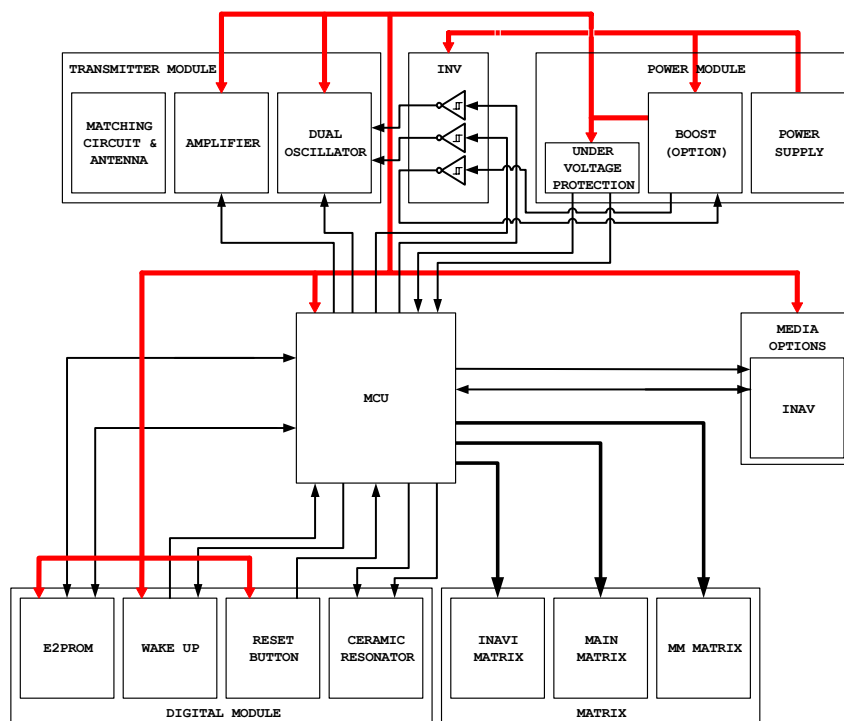
Test results module

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
ITU emission class	7K00F2D
FCC ID	DZL131139

Block diagram:



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 C63.4-2001, sections 5.3 & 8.2.1

Test results :

Radiated emissions (dB μ V/m) (AV)			
	27.145 MHz channel	27.095 MHz channel	
Orthogonal Plane	Test result @ 3 m distance	Test result @ 3 m distance	Limit @ 3 m distance
X	38.0	38.2	80.0
Y	55.2	55.3	80.0
Z	55.5	55.3	80.0

2.2 Field strength of unwanted emissions (> 30 MHz)

Compliance standard : FCC part 15, subpart C, section 15.227 (b).

Method of test : ANSI C63.4-2001, sections 5.4, 8.2.3 & 8.3.1.2; FCC part 15, subpart A, section 15.33, 15.35.

Test results :
(27.145 MHz channel)

Frequency (MHz)	Test result @ 3 m distance (dB μ V/m) (QP)	Polarisa- tion	Limit (dB μ V/m)
54.290	22.2	H	40.0
81.43	23.0	H	40.0
108.58	31.4	H	43.5
135.72	31.3	H	43.5
162.875	30.3	H	43.5
190.00	42.0	H	43.5
217.16	44.1	H	46.0
244.29	38.5	H	46.0
271.44	40.9	H	46.0
298.57	35.4	H	46.0
325.72	27.2	H	46.0

Frequency (MHz)	Test result @ 3 m distance (dB μ V/m) (QP)	Polarisa- tion	Limit (dB μ V/m)
54.290	< 8.3	V	40.0
81.43	13.6	V	40.0
108.58	22.7	V	43.5
135.72	19.7	V	43.5
162.875	17.6	V	43.5
190.00	26.6	V	43.5
217.16	27.4	V	46.0
244.29	22.4	V	46.0
271.44	29.3	V	46.0
298.57	23.5	V	46.0
325.72	< 18.6	V	46.0

Used test equipment module

The following measurement equipment was used:

description	ident	manufacturer	model
Plastic measurement room	12636	Polyforce	-
Open Area Test Site	13886	Comtest	-
Antenna mast 4m	14277	Heinrich Deisel	MA240
Controller OATS	14278	Heinrich Deisel	HD100
Biconilog antenna 30MHz – 1000MHz	15633	Chase	CBL6111B
EMI test receiver	15667	Rohde & Schwarz	ESCS 30
Turntable OATS	99108	Heinrich Deisel	HD050

Photographs module

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Photograph 1: *Test set up: EUT on turntable*



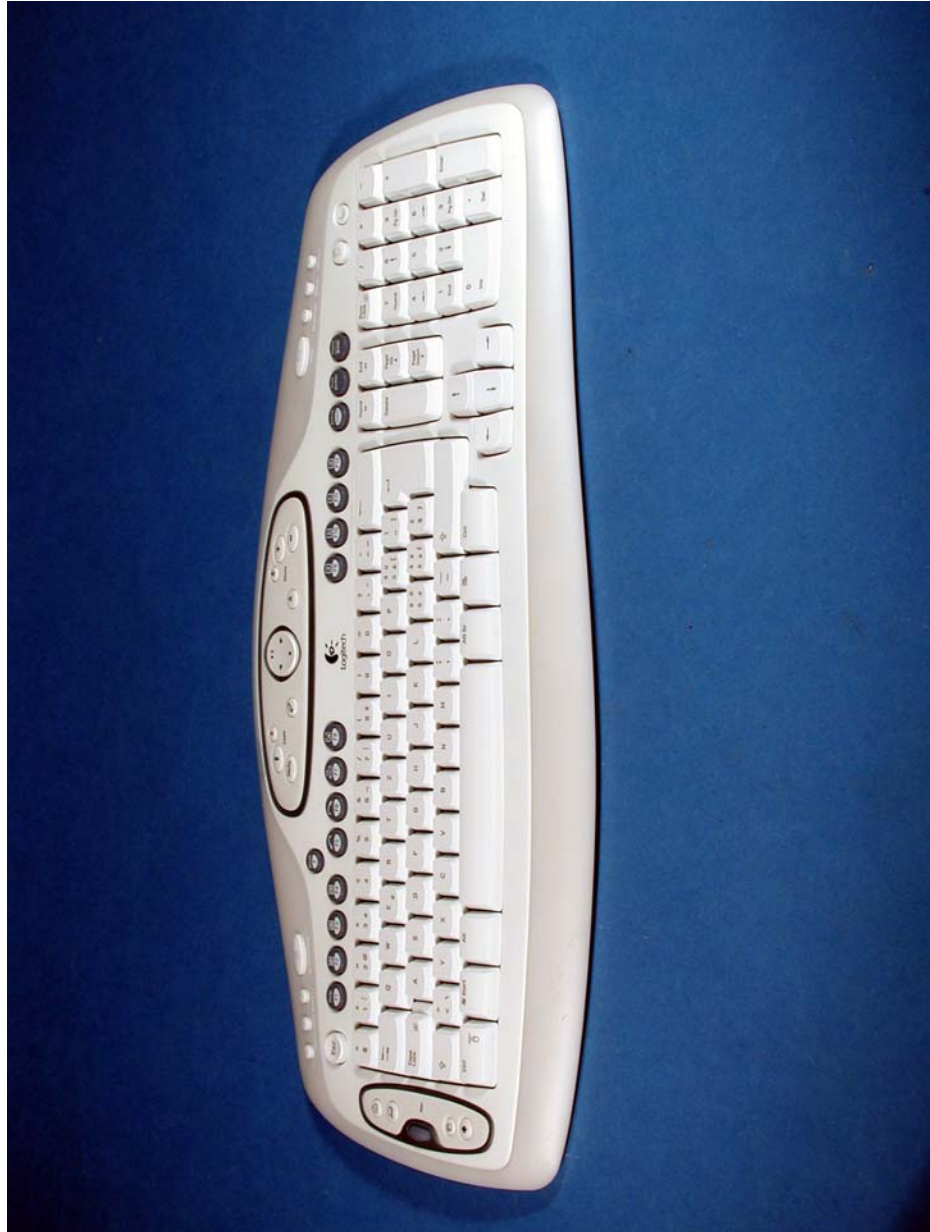
Photograph 2: *Test set up: magnetic radiated emissions at 3 m distance (EUT in X plane)*



Photograph 3: *Test set up: radiated emissions above 30 MHz at 3 m distance*



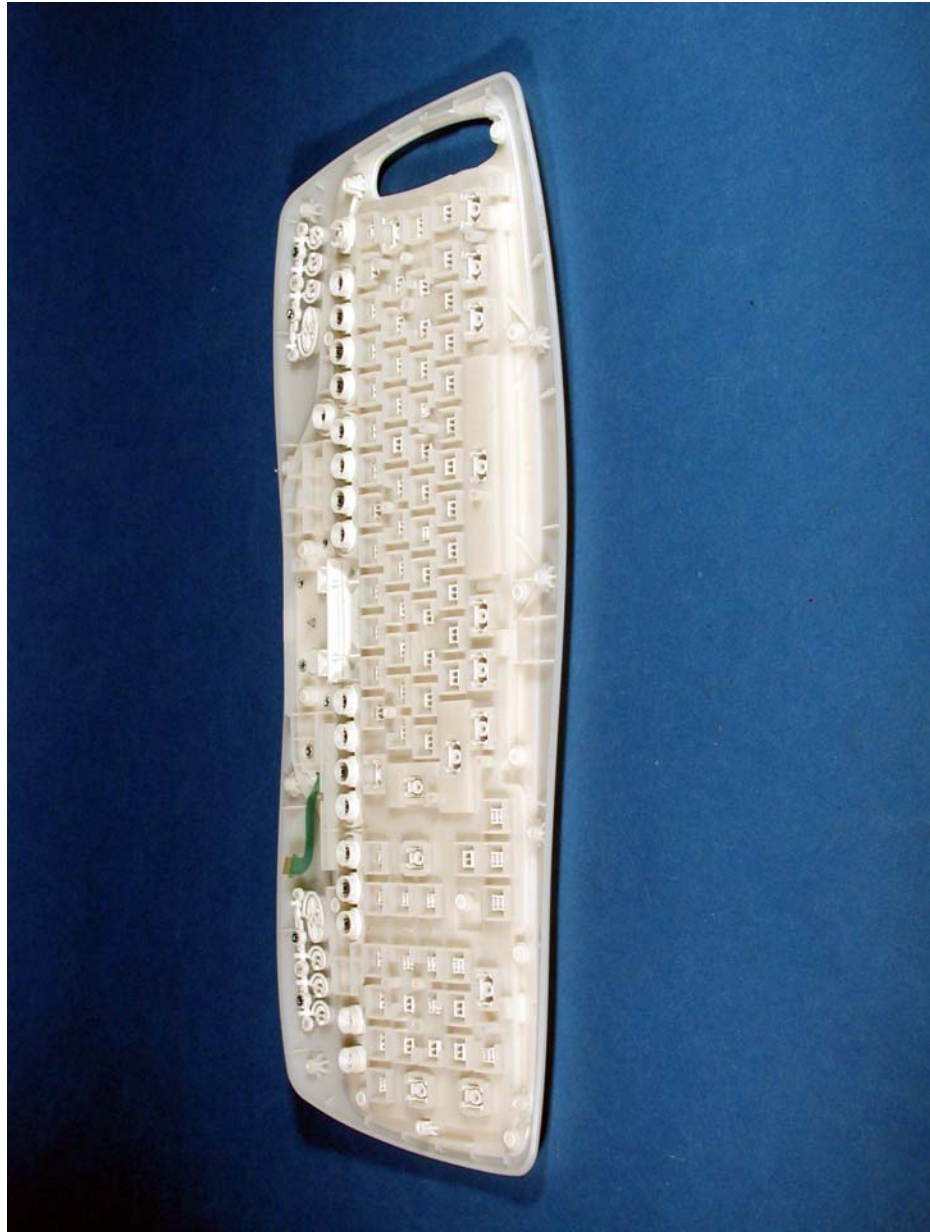
Photograph 4: *Top view*



Photograph 5: *Bottom view*



Photograph 6: *Inside view of upper part*



Photograph 7: *Inside view of bottom part*



Photograph 8: *View on RF part*

