

Test report

20082293300 - rev. 1.0

based on:
FCC Part 15 Subpart C, section 15.209

MID range reader
Trovan
LID575

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This report comprises of four modules. The total number of pages is: 17

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 17025:2005. 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 : EID Aalten B.V.
Address : Vierde Broekdijk 37f
Zipcode : 7122 JD
City/town : Aalten
Country : The Netherlands
Date of order : 17 April 2008

2 Product

A sample of the following product was submitted for testing:

Product name	: MID range reader
Product category	: Intentional radiators
Manufacturer	: EID Aalten B.V.
Trade mark	: Trovan
Type designation	: LID575
FCC ID	: TLH8471301
Emission designator	: None
Hardware version	: --
Software version	: V1.02
Serial number	: --

3 Test schedule

Tests are carried out in accordance with the specification detailed in chapter 6 "Summary" of this report.

Tests are carried out at the following locations:

- Telefication, Zevenaar

Telefication is designated by the FCC as an Accredited Test Firm for compliance testing of equipment subject to Certification under Parts 15 & 18.
The Registration Number is: 282250.

The sample of the product was received on:

- 16 April 2008

Tests are carried out on:

- 16 and 17 April 2008
-

4 Product documentation

For production of this report the following product documentation has been used:

Description	Date	Identification
Quick start guide	April 8 th 2008	LID565AKC Mid Range Reader
Circuit diagram	25-07-2007	LID575v1.1 Rev 1, 5 pages
PCB layout	07-Sep-2007	LID575v11.ewprj

5 Observations and comments

None.

6 Summary

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

Short Range Device

The sample is tested according to the following specification:

FCC Part 15 Subpart C, section 15.209 (10-1-07 Edition)

7 Conclusions

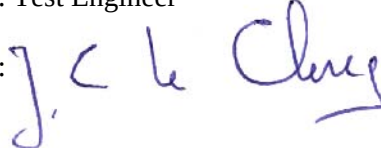
The sample of the product showed **NO NON-COMPLIANCES** to the specification stated in chapter 6 of this report.

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. J.C. le Clercq

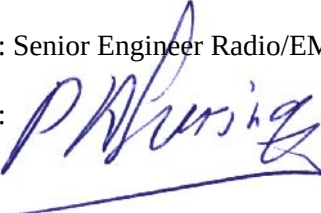
function : Test Engineer

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 : 26 May 2008

name : J.P. van de Poll

function : Co-ordinator Test Group

signature : 

Test results module

Summary

According to FCC Part 15 subparts C, section 15.209, the following tests have been performed:

Port	Reference	Phenomena	Result
Enclosure	Section 15.209	Radiated emissions	P

Results:

P = pass
F = fail

NA = not applicable
NP = not performed

Emission tests

1.1 Field strength of emissions (< 30 MHz)

Compliance standard

:

FCC part 15, subpart C, section 15.209.

Method of test

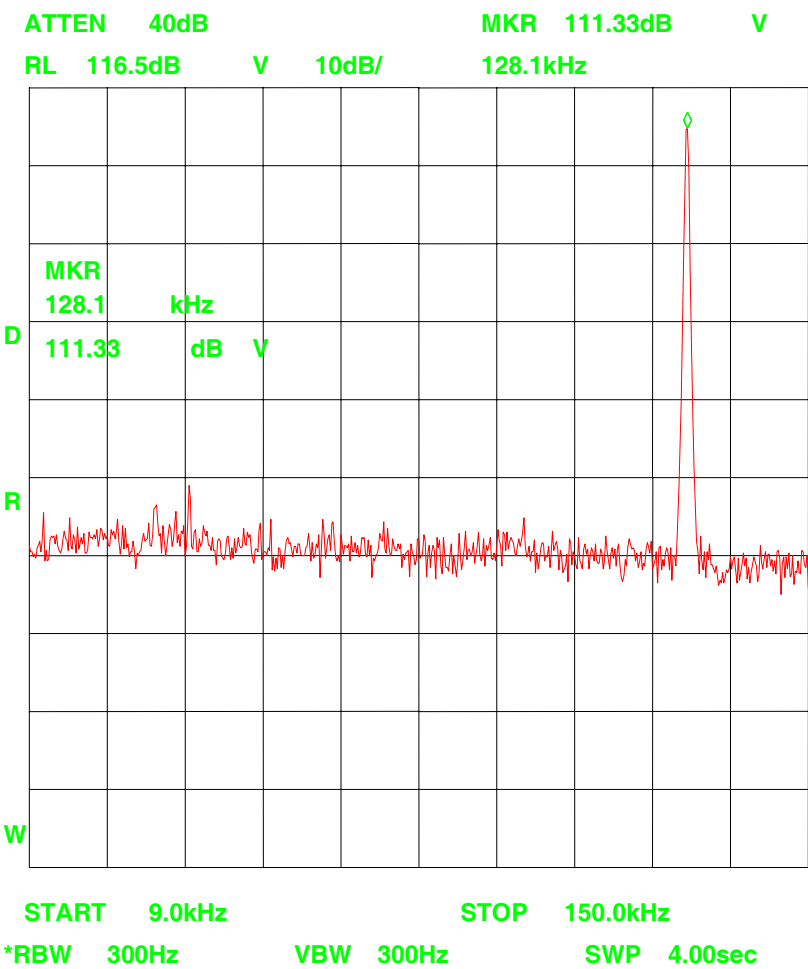
:

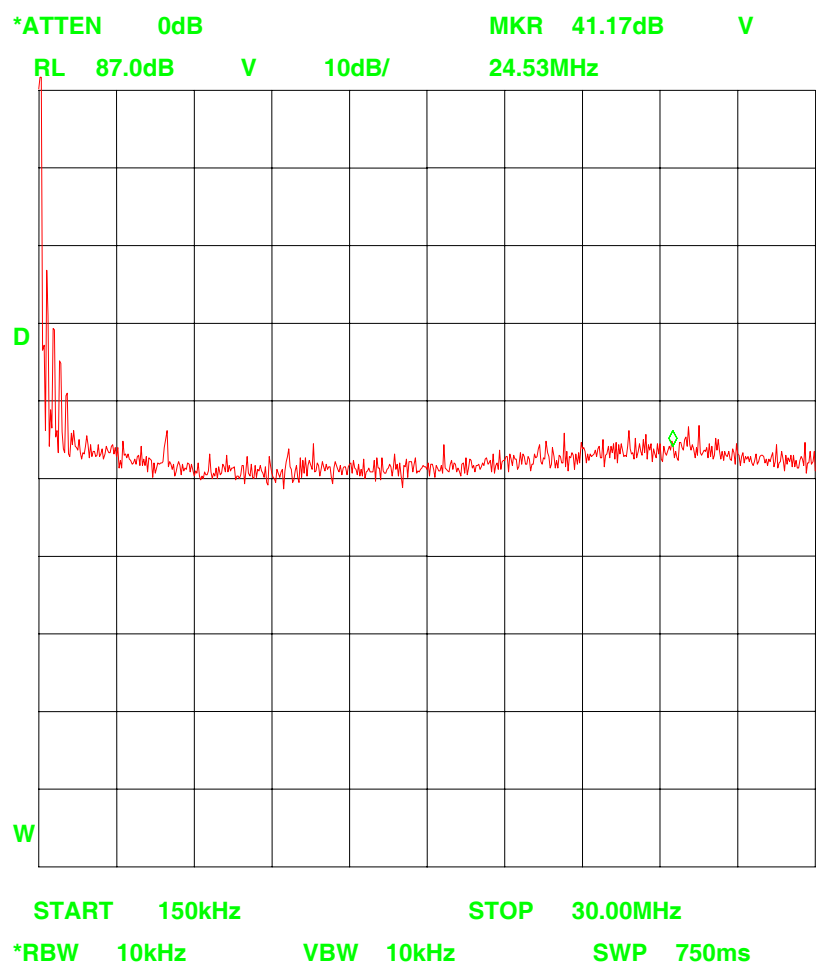
Exploratory measurements have been carried out in a large triple loop antenna

Test results

:

(dBμV/m, exploratory)





Test results :

(dB μ V/m, exploratory)

Orientation of EUT: plane of EUT's loop parallel to plane of receive loop antenna			
Frequency (kHz)	Test result (dB μ V/m) QP	Extrapolation (dB μ V/m) QP	Limit (dB μ V/m)
128	111.67 @ 3 m	31.67 @ 300 m	25.46 @ 300 m
256	56.17 @ 3 m	-23.83 @ 300 m	19.44 @ 300 m
384	64.33 @ 3 m	-15.67 @ 300 m	15.92 @ 300 m
512	--	--	33.42 @ 30 m
640	57.50 @ 3 m	17.50 @ 30 m	31.48 @ 30 m
768	--	--	29.90 @ 30 m
896	52.67 @ 3 m	12.67 @ 30 m	28.56 @ 30 m
1024	--	--	27.40 @ 30 m
1152	49.33 @ 3 m	9.33 @ 30 m	26.38 @ 30 m
1280	--	--	25.46 @ 30 m
1408	44.67 @ 3 m	4.67 @ 30 m	24.63 @ 30 m
1536	--	--	23.88 @ 30 m
1660	43.83 @ 3 m	3.83 @ 30 m	23.18 @ 30 m

Remark: results due to other EUT orientations proved to be considerably lower than the results above.

Measurement uncertainty	n.a.
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Test equipment used: (Item numbers)	3, 5
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Item numbers refer to the used test equipment module.

Compliance standard : FCC part 15, subpart C, section 15.209.
 Method of test : ANSI C63.4-2003, sections 5.3 & 8.2.1; FCC part 15, subpart A, section 15.31 (f)(2), 15.33, 15.35.
 Remark : Compliance measurements have been carried out at 3 m and at 30 m distance on an Open Area Test Site (OATS) without ground plane.

Test results :

Orientation of EUT: plane of EUT's loop parallel to plane of receive loop antenna			
Frequency (kHz)	Test result (dB μ V/m) QP	Extrapolation (dB μ V/m) QP	Limit (dB μ V/m)
128	57.47 @ 30 m	17.47 @ 300 m	25.46 @ 300 m
256	--	--	19.44 @ 300 m
384	24.13 @ 30 m	-15.87 @ 300 m	15.92 @ 300 m
512	--	--	33.42 @ 30 m
640	--	--	31.48 @ 30 m
768	--	--	29.90 @ 30 m
896	54.35 @ 3 m	14.35 @ 30 m	28.56 @ 30 m
1024	--	--	27.40 @ 30 m
1152	47.69 @ 3 m	7.69 @ 30 m--	26.38 @ 30 m
1280	--	--	25.46 @ 30 m
1408	--	--	24.63 @ 30 m
1536	--	--	23.88 @ 30 m
1660	--	--	23.18 @ 30 m

Measurement uncertainty	+1.5 / -1.6 dB
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Test equipment used: (Item numbers)	1, 2
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Item numbers refer to the used test equipment module

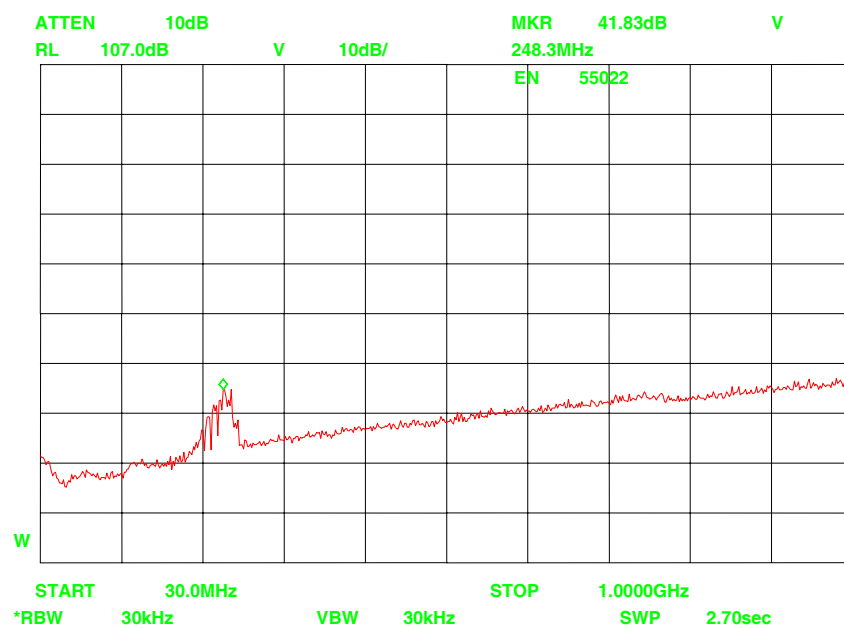
1.2 Field strength of unwanted emissions (> 30 MHz)

Compliance standard : FCC part 15, subpart C, section 15.209;

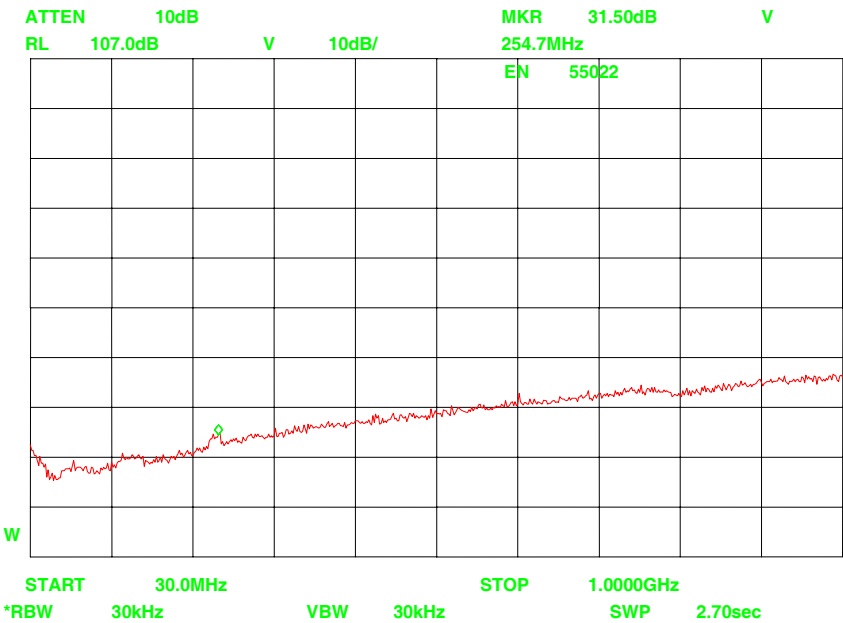
Method of test : Exploratory measurements have been performed in a compact full anechoic room.

Test results: :

Horizontal polarization



Vertical polarization



Measurement uncertainty	n.a.
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Test equipment used: (Item numbers)	4, 5, 6,
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Item numbers refer to the used test equipment module.

Compliance standard : FCC part 15, subpart C, section 15.209;

Method of test : ANSI C63.4-2003, sections 5.4.2, 8.2.3 & 8.3.1.2; FCC part 15, subpart A, section 15.31 (f)(2), 15.33, 15.35.

Remark : Compliance measurements have been performed in a semi anechoic room.

Test results:

Orientation of EUT: plane: horizontal Orientation of test antenna: horizontal		
Frequency (MHz)	Test result @ 3 m distance (dB μ V/m)	Limit (dB μ V/m)
253.9	42.3 (Quasi Peak)	46

Measurement uncertainty	+3.6 / -3.6 dB
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Test equipment used: (Item numbers)	2, 7, 8
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Item numbers refer to the used test equipment module.

Used test equipment module

This module contains the list of test equipment used.

Ref	Description	ID	Manufacturer	Model
1	Active loop antenna	TE 00746	R & S	HFH 2-Z2
2	Test receiver	TE 00091	R & S	ESCI
3	Large triple loop antenna	TE 01066	Telefication	--
4	Logper/bow-tie antenna	TE 00700	EMCO	3143
5	Spectrum analyzer	TE 00359	HP	8563E
6	Compact anechoic chamber (CFAC)	TE 01064	Euroshield	RFD-F-100
7	Semi anechoic chamber (SAC)	TE 00861	Comtest	--
8	Bilog antenna	TE 00967	Chase	CBL6112A

Revision history

REVISION	DATE	REMARKS
1.0	26 May 2008	Corrected FCC ID
