

Test report

20103899300 - Rev. 1.0

based on:

FCC part 15B, section 15.107 and 15.109; part 15C,
section 15.205, 15.207 and 15. 209 (10-01-09
edition)

Proximity RFID Decoder
DORSET ID
LID665-MULTI

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

Main module

1 Introduction

This report contains the result of tests performed by:

Telefication B.V.
Edisonstraat 12^a
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	:	Dorset Identification b.v.
Address	:	Weverij 26
Zipcode	:	7122 MS
City/town	:	Aalten
Country	:	The Netherlands
Date of order	:	16 July 2010

2 Product

A sample of the following product was submitted for testing:

Product name	:	Proximity RFID Decoder
Manufacturer	:	Dorset Identification b.v.
Trade mark	:	DORSET ID
Type designation	:	LID665-MULTI
FCC ID	:	TLH8471302
Emission designator	:	128KN0N
Hardware version	:	--
Software version	:	--
Serial number (host)	:	t5270001

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 location:

- Telefication, Zevenaar (registered as an accredited test laboratory with designation number NL0001 under the US-EU MRA)

The sample of the product was received on:

- 1 July 2010

Tests are carried out between:

- 19 July and 27 July 2010
-

4 Product documentation

For production of this report no product documentation has been used.

5 Observations and comments

The product comes with three different antennas. They are type designated as ANT 613, ANT614 and ANT614OEM.

The sample is intended to be used in the host type LID665.

Combinations of host type LID665, the antennas ANT 613, ANT614 , ANT614OEM and the module LID665-MULTI may have the following type designations:

LID665N, LID665A, LID665-MULTI, LID665-DT-USB and MUL/614W.

Radiated emission tests of the transmitter portion of the 128 kHz transceiver are carried out with each antenna type.

Radiated emission tests of the host are carried out with the antenna type ANT614 only.

Radiated emissions of the receiver portion of the 128 kHz transceiver are exempt from complying with the technical provisions of FCC part 15 pursuant to section 15.101(b).

6 Summary

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

- PART 15 LOW POWER TRANSMITTER BELOW 1705 kHz

The sample is tested according to the following specifications:

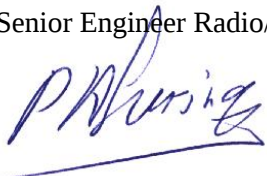
- FCC part 15B, section 15.107 and 15.109; part 15C, section 15.205, 15.207 and 15. 209 (10-01-09 edition)
-

7 Conclusions

The sample of the product showed **NO NON-COMPLIANCES** to the specifications 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 accepts no responsibility for any stated properties of product items in this test report, which are not supported by the tests as specified in section 6 “*Summary*”.

All tests are performed by:

name : ing. P.A. Suringa
function : Senior Engineer Radio/EMC
signature : 

Review of test methods and report by:

name : G.J. Gort
function : Senior Test Engineer
signature : 

The above conclusions have been verified by the following signatory:

date : 10 September 2010
name : ing. P.A.J.M. Robben
function : Manager Laboratory
signature : 

Test results module

1 Summary

According to FCC part 15B, section 15.107 and 15.109; part 15C, section 15.205, 15.207 and 15.209 (10-01-09 edition) the following tests are performed:

Port	Section	Phenomenon	Class A/B	Result
AC mains	15.107	Conducted Disturbance 0.15 – 30 MHz	B	P
AC mains	15.207	Conducted Disturbance 0.15 – 30 MHz	--	P
Enclosure	15.109	Radiated Disturbance 0.03 -1 GHz	B	P
Enclosure	15.209	Radiated Disturbance 0.009 -30 MHz	--	P

Results:

P= Pass

F= Fail

NA= not applicable

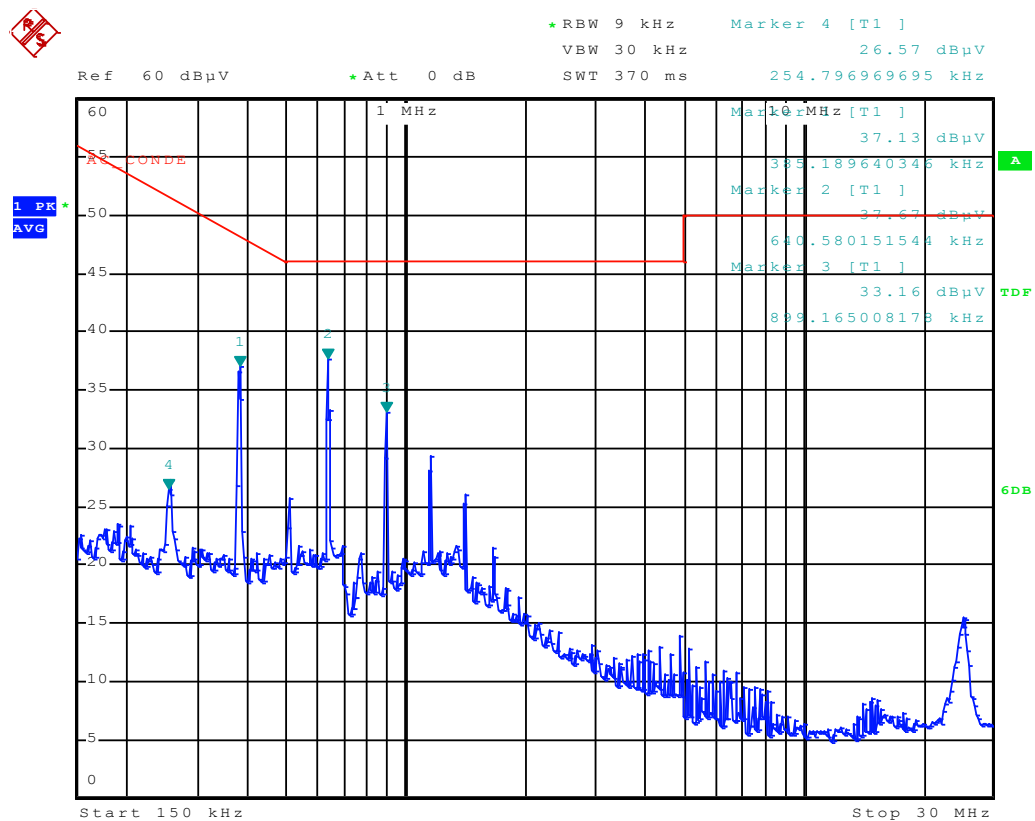
NP= not performed

2 Emission tests

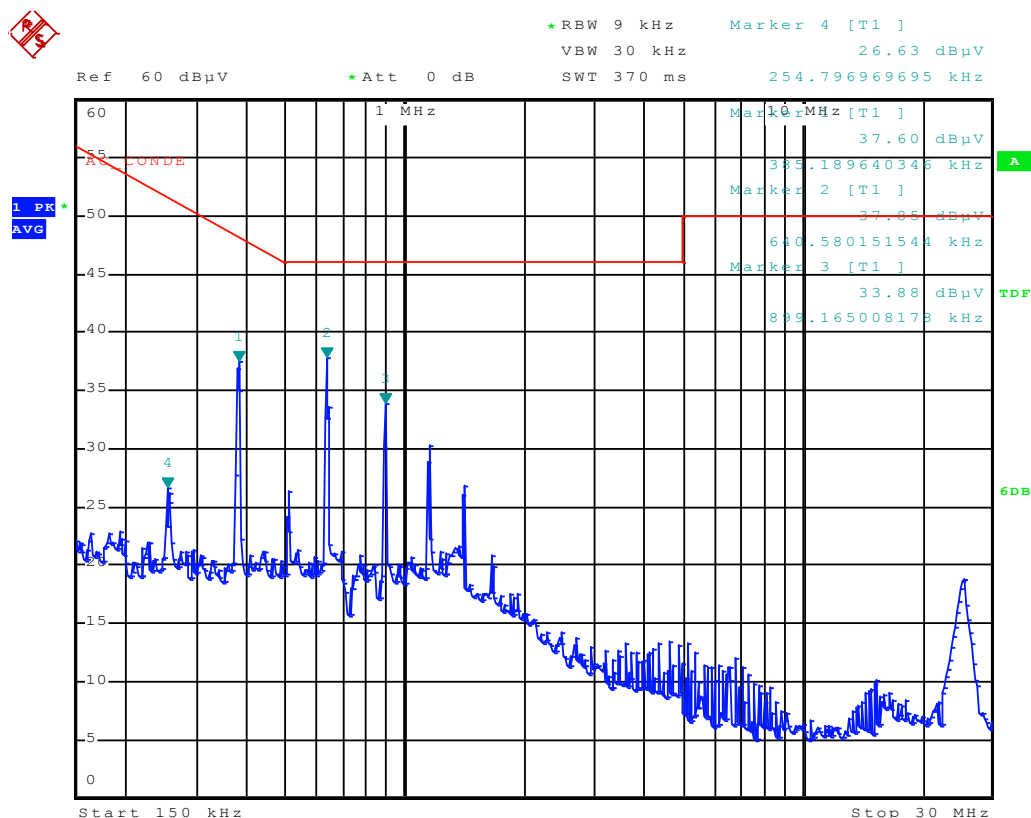
2.1 Conducted emissions

Compliance standard : FCC part 15, subpart B, section 15.107(a); subpart C, section 15.207((a))
 Method of test : ANSI C63.4: 2009, section 7.3.1
 Port : AC power input
 Configuration : LID665 + ANT614OEM
 Atmospheric pressure : Between 86 kPa and 106 kPa
 Temperature : 29 °C
 Relative humidity : 41 %
 Test results : Plots (units in dBμV PK)

110 Vac: neutral



110 Vac: phase



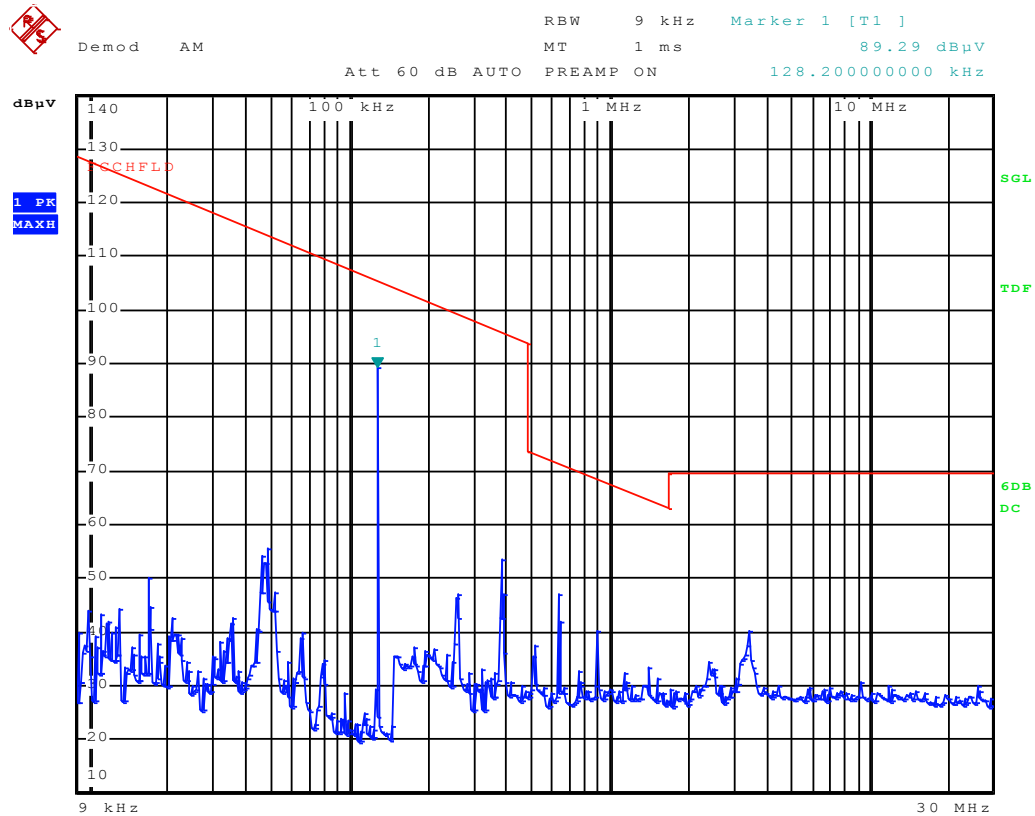
Measurement uncertainty : +/- 3.1 dB.
 The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approx. 95%, but excluding the effect of measurement system repeatability.

Measurement equipment : 1, 24, 27 (the numbers listed refer to the module 'Used test equipment').

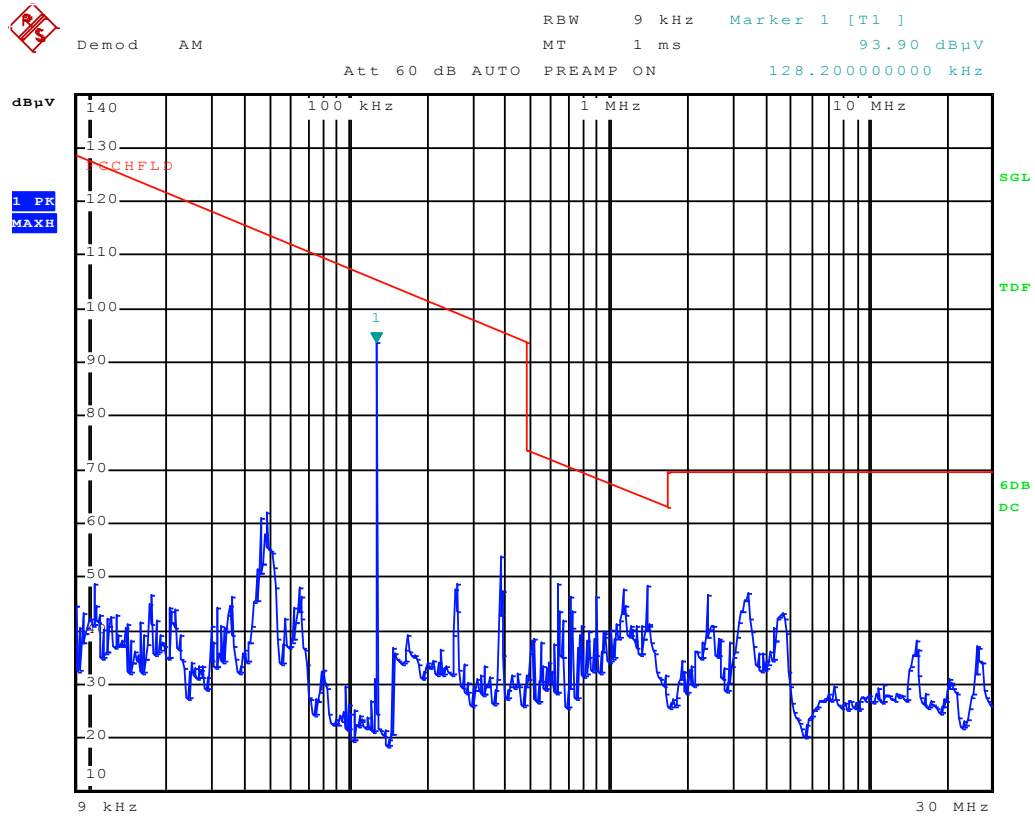
2.2 Radiated emissions (0.009 – 30 MHz)

Compliance standard : FCC part 15, subpart C, section 15.205(a), 15.209(a).
 Method of test : ANSI C63.4: 2009, sections 8.3.2.1, 13.4.2; ANSI C63.10: 2009, section 6.4.4
 Port : Enclosure
 Configuration : LID665 + ANT613/ANT614/ANT614OEM
 Atmospheric pressure : Between 86 kPa and 106 kPa
 Temperature : 29 °C
 Relative humidity : 41 %
 Test results : Plots (units in dB μ V/m PK)

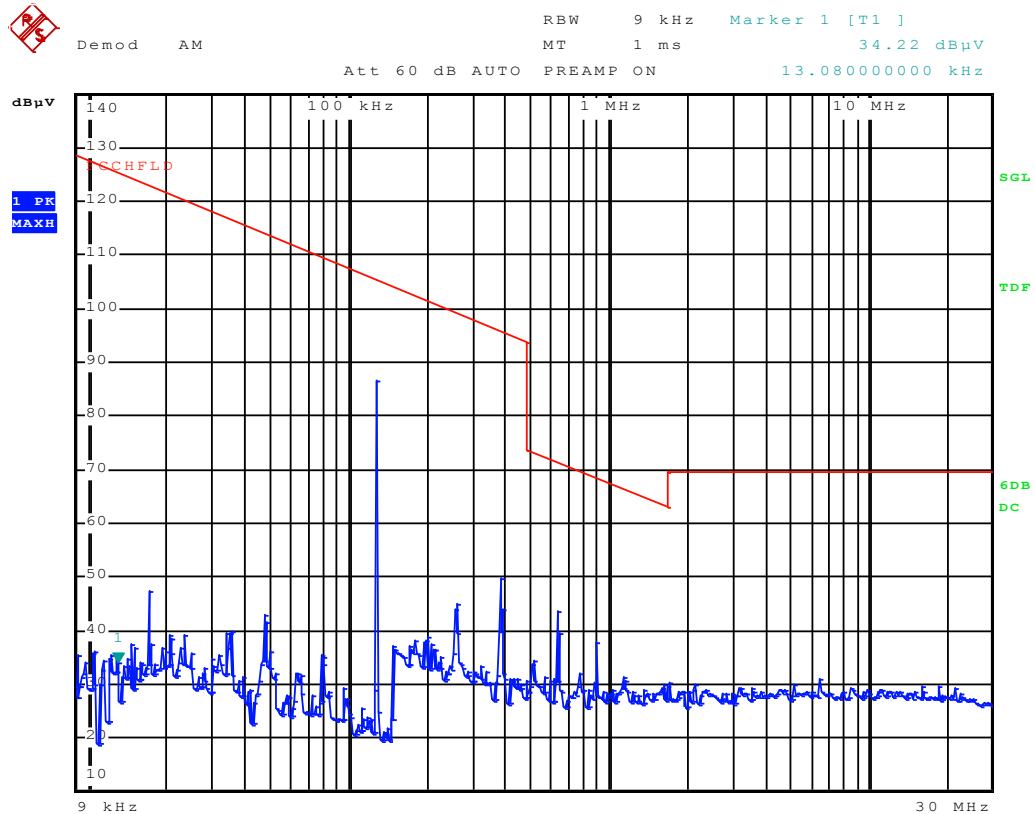
ANT 614



ANT 614 OEM



ANT 613



Measurement uncertainty : +/- 3.3 dB

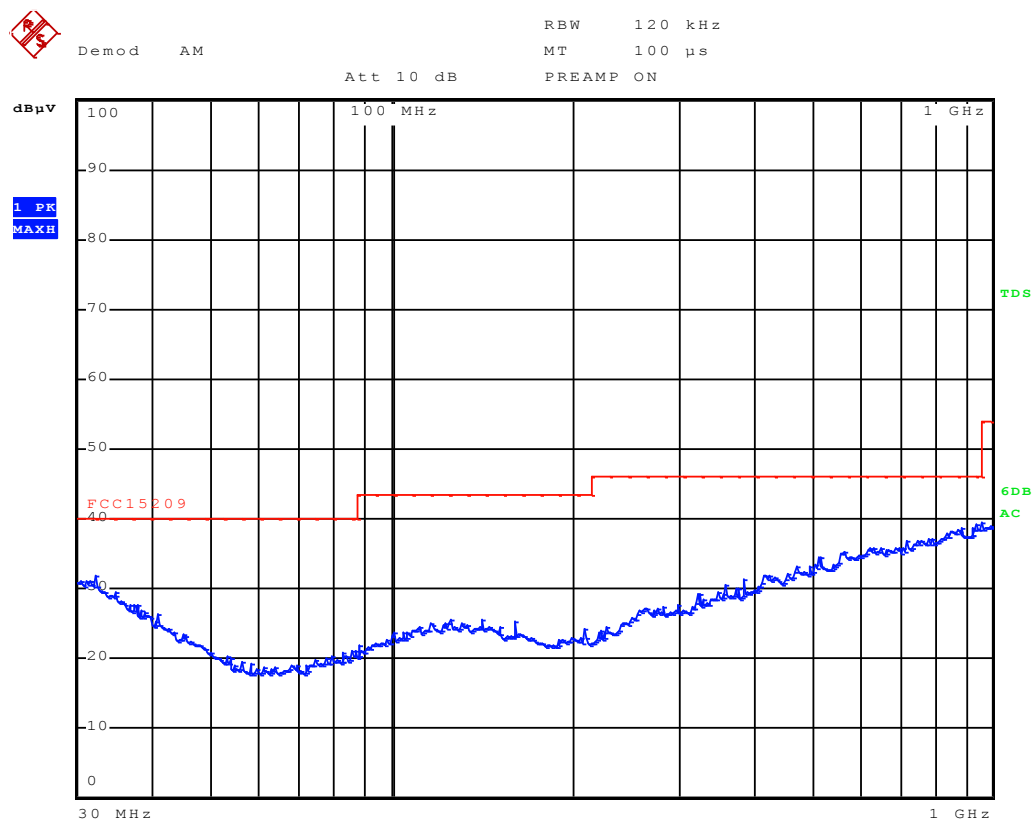
Measurement equipment : 28, 33, 49.
 (The numbers listed refer to the module 'Used test equipment module'.)

2.3 Radiated emissions (0.030 – 1 GHz)

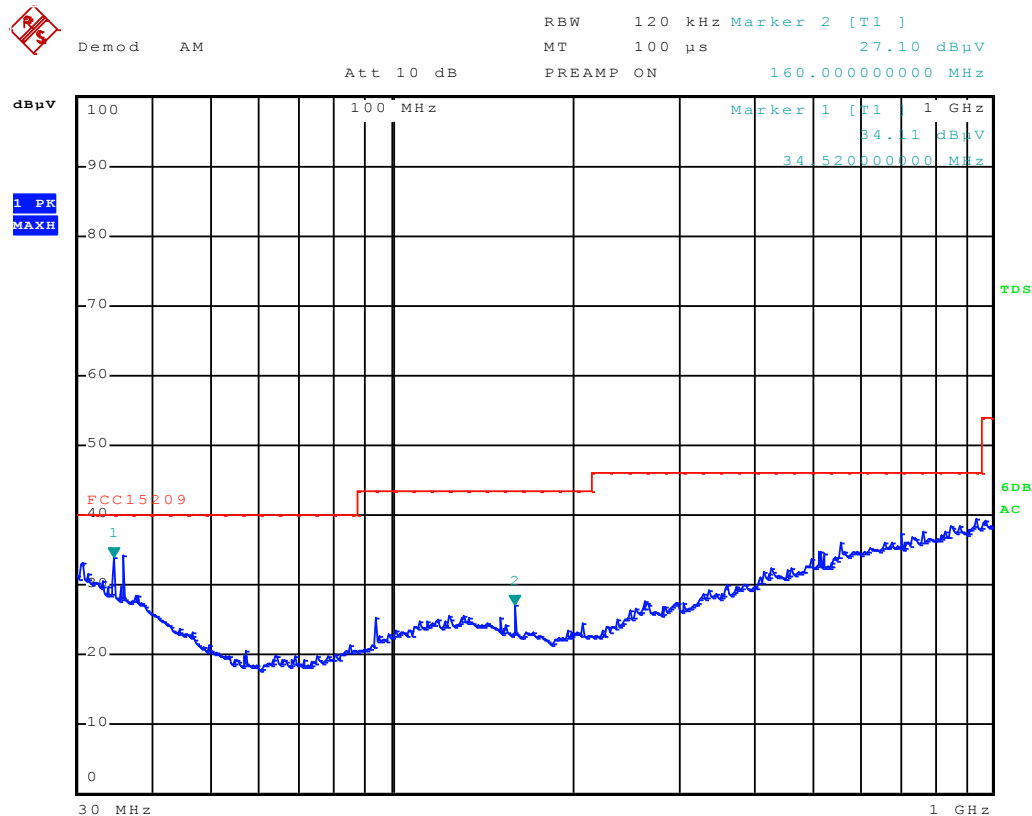
Compliance standard : FCC part 15, subpart B, section 15.109(a).
 Method of test : ANSI C63.4: 2009, sections 8.3.2.1, 13.4.2
 Port : Enclosure
 Configuration : LID665 + ANT613/ANT614/ANT614OEM + notebook computer
 Atmospheric pressure : Between 86 kPa and 106 kPa
 Temperature : 26 °C
 Relative humidity : 51 %
 Test results : Plots (units in dB μ V/m PK)

ANT614

Horizontal polarization



Vertical polarization



Measurement uncertainty:

Horizontal polarization	
30 – 200 MHz	4.5 dB
200 – 1000 MHz	3.6 dB
Vertical polarization	
30 – 200 MHz	5.4 dB
200 – 1000 MHz	4.6 dB

Measurement equipment : 2, 28, 33.
(The numbers listed refer to the module 'Used test equipment module'.)

Used test equipment module

Ref	Description	Manufacturer	Model	ID
1	Pulse limiter	R & S	ESH3-Z2	TEB00756
2	BiLog antenna	Chase--	CBL6112A--	TE 00967
3	--	--	--	--
3	Capacitive clamp	Keytek	CCL-4/S	TE 00761
5	ESD simulator	Keytek	MZ-15/EC	TE 00516
6	ESD air discharge tip	Keytek	TPA-2	TE 00755
7	ESD contact discharge tip	Keytek	TPC-2	TE 00709
11	Logper/bow-tie antenna	EMCO	3143	TE 00700
12	Biconical antenna	Schwarzbeck	BBA 9106	TE
13	RF amplifier	Kalmus	737FC	TE 00750
14	RF generator	Adret	7200A	TE 00474
15	Isotropic field sensor	Holaday	HI-4422	TE 00748
16	Fibre optic RS232 interface	Holaday	HI-4413G	--
17	System readout	Holaday	HI-4416	TE 00749
18	Antenna tower	HD	AS 620p	--
19	Turntable	HD	DS 412	--
20	Turntable controller	HD	HD 050	--
21	RF voltmeter	Boonton	9200B	TE 00707
22	40 dB coupler	Kalmus	DC100HHR	TE 00752
23	RF probe (2x)	Boonton	952001B	TE 00753 TE 00754
24	Artificial mains network	R & S	ESH2-Z5	TE 00208
25	--	--	--	--
26	--	--	--	--
27	Spectrum analyzer	R & S	FSP	TE 11125
28	EMI test receiver	R & S	ESCI	TE 11128
29	Antenna mast	EMCO	1070	--
30	Turn table	EMCO	1060-2M	--
31	Absorbing clamp	R & S	MDS 21	TE 00777
32	Anechoic Chamber	Euroshield	RFD-F-100	--

Ref	Description	Manufacturer	Model	ID
33	Semi Anechoic Room	Comtest	--	TE 00861
34	Power/Arb. waveform source	Keytek	EP72	TE 00711
35	Reference impedance	Keytek	ERI-1	TE 00712
36	Power analyzer	Xitron Technologies	2501AH	TE 00763
37	AC power simulator	Kikusui	PCR4000L	TE 00762
38	Signal generator	Marconi	2042	TE 00413
39	RF amplifier	Amplifier Research	25A250A	TE 00515
40	T-network	R & S	ESH3-Z4	TE 00026
41	Mains coupl./dec. network	Telefication	9403S1	TE 00766
42	Power meter	R & S	NRVS	TE 00414
43	Measurement probe	R & S	URV5-Z4	TE 00415
44	Attenuator 6 dB	Narda	766-6	TE 00514
45	Pulse generator	HP	8012 B	TE 00225
46	Coaxial coupl./dec. network	Telefication	CDN-S1	TE 00766
47	Voltage swell/DIP/interrupt source	Keytek	EP62	TE 00710
48	Digital multimeter	Fluke	Fluke 87	TE 00329
49	Active loop antenna	R & S	HFH2-Z2	TE 00746
50	EM clamp	Lüthi	EM101	TE 00764
51	Ferrite tube	Lüthi	FTC101	TE 00765
52	Distortion meter	HP	HP 8903 B	TE 00416
53	Artificial Mains Network	Telefication	JOZ191194	TE
54	Attenuator 3 dB, 100 W	Tenuline	8343-030	TE 00751
55	Log periodic antenna	EMCO	3147	TE 00744
56	Modulation analyzer	R & S	FAM	TE 00412
57	Audio amplifier	Solar Electronics	6552-1A	TE 00517
58	Acoustic Pipe Coupler	Telefication	JOZ110395	TE 00775
59	Antenna	Kathrein	K 51164	--
60	Pulse modulator	Schaffner	CPM9830	TE 00708

Ref	Description	Manufacturer	Model	ID
61	RF power amplifier	Schaffner	CBA9546	TE 00714
62	Adjustable transformer	KSL	RU8	--
63	100 μ F decoupling capacitor	Telefication	JOZ	TE 00769
64	Mains coupling/decoupling Network	Telefication	CDN - M2/M3	TE 00767
65	Coupling/decoupling device for screened cables	MEB	CDN-S25	TE 00771
66	Audio isolation transformer	Solar	6220-2	TE 00772
67	Current probe	Eaton	93686-2	TE 00773
68	Triple loop antenna	Telefication	--	TE
69	Pre-amplifier	R&S	ESV-Z3	TE 00344
70	800 mm strip line	Telefication	--	--
71	Measurement probe	R & S	URV5-Z2	TE 00009
72	Standard gain horn antenna	Scientific Atlanta	12-1.7	TE 00602
73	Frequency doubler	HP	11721A	TE 00569
74	Microwave amplifier	HP	8349A	TE 00124
75	Preamplifier	HP	8449B	TE 00092
76	Spectrum analyzer	HP	8563E	TE 00481
77	Controller	Keytek	E103	TE 00713
78	Arbitrary waveform generator	HP	33120A	TE 00144
79	Power supply	Kepco	BOP100	TE 00362
80	Oscilloscope	Nicolet	Pro34	TE 00129
81	Horn Antenna 1- 18 GHz	EMCO	3115	TE 00532
82	Power meter	HP	437	TE 00489
83	Power sensor	HP	8481A	TE 00485
84	RF signal generator	Marconi	2042	TE 00030
85	RF power amplifier	Schaffner	GRF 5046	TE 00714
86	AC power source	California	2001RP	TE 00010