

Radio test report 99833930

based on:

- FCC Part 15 Subpart C, sections 15.209 and 15.247 (10-1-06 Edition)
- RSS-210, Issue 6 (Sept. 2005 edition)

Bridge scoring system
Bridgemate
BM11R11B; BS10R11B

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This report comprises of three modules. The total number of pages is: 28

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 17025:2005. 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	:	Bridge Systems BV
Address	:	Bulgersteyn 7085
Zipcode	:	3011 AB
City/town	:	Rotterdam
Country	:	The Netherlands
Date of order	:	11 January 2007

2 Product

A sample of the following product was submitted for testing:

Product description	: Bridge scoring system
Manufacturer	: Bridge Systems BV
Trade mark	: Bridgemate
Type designation	: BM11R11B; BS10R11B
FCC ID	: UVIBM11R11B; UVIBS10R11B
IC ID	: --
Hardware version	: --
Serial number	: --
Software release	: --

3 Test schedule

Tests are carried out in accordance with the specification detailed in chapter 7 “Summary” of this report.

Tests are carried out at the following locations:

- TNO Electronic Products & Services (EPS) B.V, Niekerk (radiated emissions)
- Telefication, Zevenaar (all other measurements)

The samples of the product were received on:

- 16 March 2007

Tests are carried out between:

- 20 March and 12 April 2007

4 Product documentation

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

Description:	Date:	Identification:
Manual	2004-2007	Bridgemate Pro Scoring System
Circuit diagram	Mar. 13, 2007	1014-2, CC1020-based RF modem
Circuit diagram	Jan 23, 2007	2217-01, BridgeMate Server
Circuit diagram	30-07-2000	30072000-1-3, BridgeMate with radio option
Description	--	Bridgemate server
Description	--	Bridgemate terminal
Block diagram	--	Bridgemate server
Block diagram	--	Bridgemate terminal

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

Radiated emission measurements are performed on the following Open Area Test Site:

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

FCC listed : 90828
Industry Canada : IC3501

All other measurements are performed at Telefication in Zevenaar.

The Device-Under-Test consists of two units:

- Bridgemate Pro scoring device
- Bridgemate Pro server + power supply unit

Both units contain the same 915 MHz transceiver. The antennas in the two units are different.

The Bridgemate Pro scoring device contains two antennas (A1 and A2).
The Bridgemate Pro server contains one antenna.

The Bridgemate Pro server is powered by a JOD-28U-36 AC-adaptor.

6 Modifications to the sample

No modifications are made to the sample.

7 Summary

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

DATA TRANSMISSION APPLICATION IN THE 902 - 928 MHz BAND

The sample is tested according to the following specification(s):

FCC Part 15 Subpart C, section 15.209 and 15.247 (10-1-06 Edition);
RSS-210, Issue 6 (Sept. 2005 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. J.C. le Clercq

function : Test Engineer

signature : 

Review of test report by:

name : ing. S.J. van Spijker

function : Test Engineer

signature : 

The above conclusions have been verified by the following signatory:

Date : 14 May 2007

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	5 mW
Operating frequency range	902.3 – 927.7 MHz (128 hop frequencies)
Modulation	FSK
Modulation bit rate	--
ITU emission class	48K0F1D
Duty Cycle	100 %. (during testing)
Antenna gain	-1 dBi
Type of antenna	Quarter wave monopole
IC ID	--
FCC ID	UVIBM11R11B; UVIBS10R11B

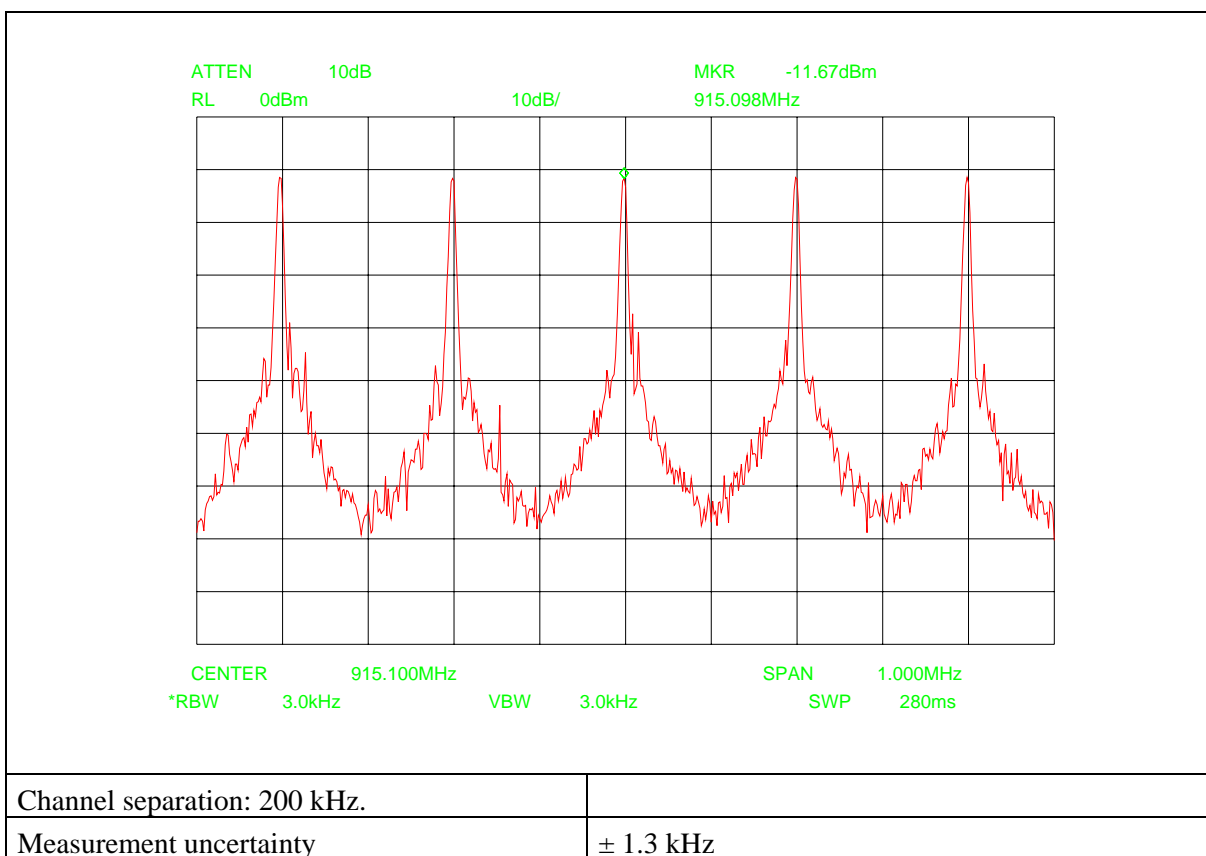
1.2 Frequency test channels

	TX	RX
Channel 1	902.3 MHz	902.3 MHz
Channel 65	915.1 MHz	915.1 MHz
Channel 128	927.7 MHz	927.7 MHz

2 Test results

2.1 Channel Separation

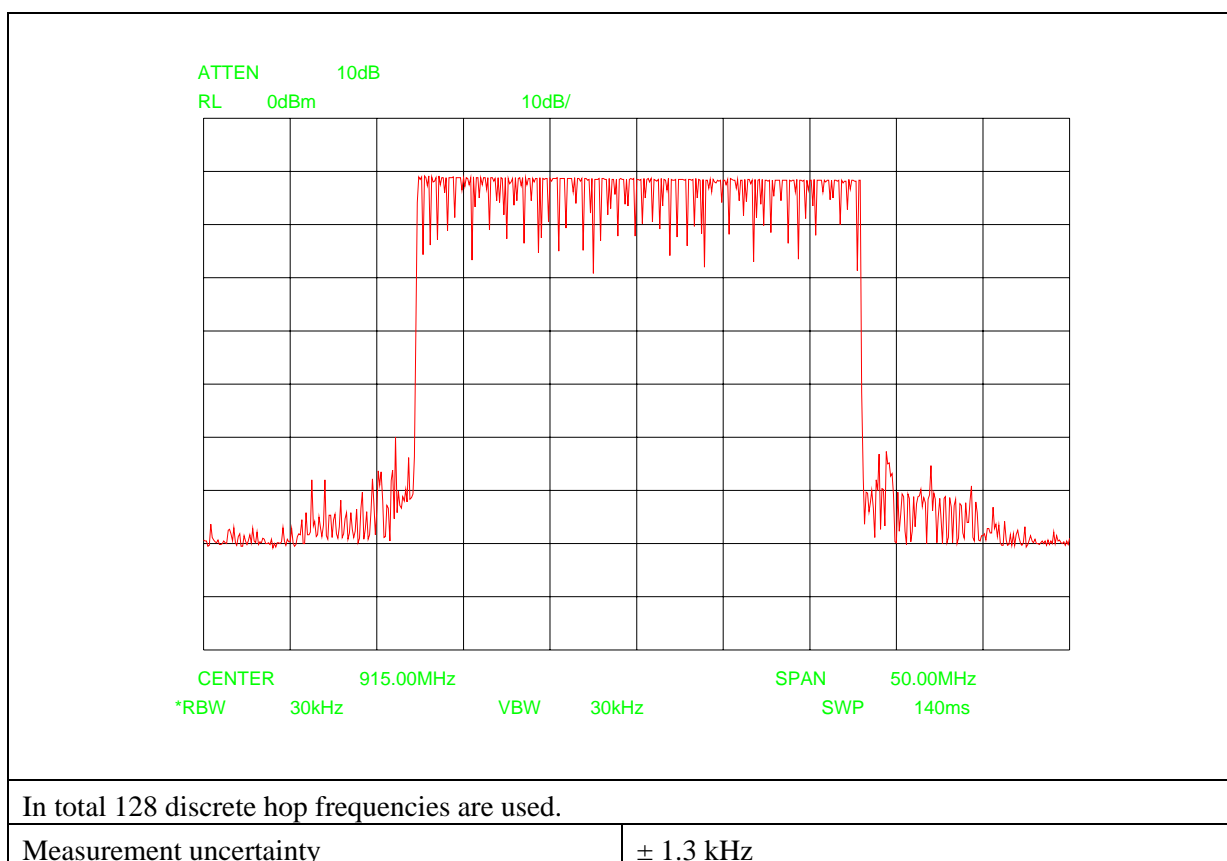
Compliance standard : FCC part 15, subpart C, section 15.247 (a)(1)
RSS-210 (Issue 6, Sept 2005) section A8.1(2)
Method of test : ANSI C63.4-2003, sections 5.5 & 8.2.4
RSS-GEN (Issue 1, Sept 2005) section 4.6
Test results :



Note: The plot above shows 5 adjacent channels.
Measurement equipment: 76

2.2 Number of hop frequencies

Compliance standard : FCC part 15, subpart C, section 15.247 (a)(1)
 RSS-210 (Issue 6, Sept 2005) section A8.1(3)
 Method of test : ANSI C63.4-2003, sections 5.5 & 8.2.4
 RSS-GEN (Issue 1, Sept 2005) section 4.6
 Test results :



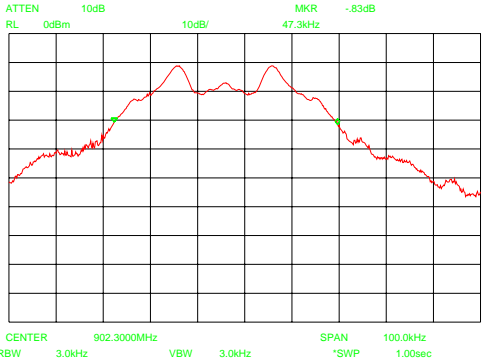
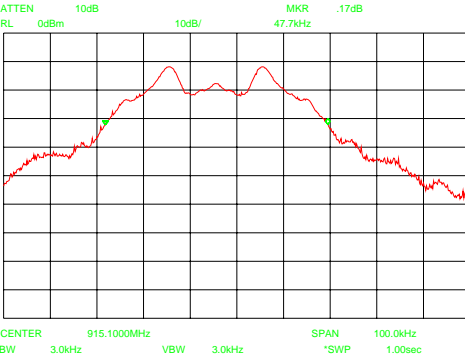
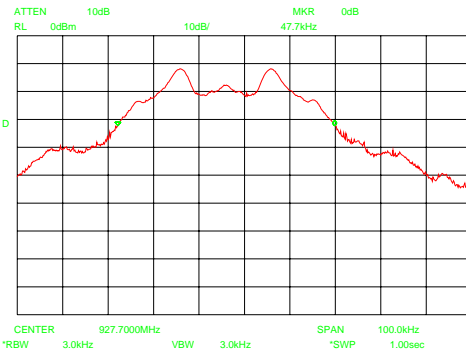
Time of occupancy on any hopping frequency is 0.4 seconds.
 One hopping sequence lasts 51.2 seconds.

Limit	≥ 50 hopping frequencies (for Channel BW < 250 kHz) ≥ 25 hopping frequencies (for Channel BW ≥ 250 kHz) maximum occupancy per channel: 0.4 sec per 20 seconds.
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Measurement equipment: 76

2.3 Bandwidth and Power Spectral Density

Compliance standard : FCC part 15, subpart C, section 15.247 (a)(1)(i) and (e)
RSS-210 (Issue 6, Sept 2005) section A8.1(1)
Method of test : ANSI C63.4-2003, sections 5.5 & 8.2.4
RSS-GEN (Issue 1, Sept 2005) section 4.4.1
Test results :

 <p>Channel 1 20 dB Bandwidth = 47.3 kHz Maximum PSD = -11.2 dBm / 3 kHz</p>	 <p>Channel 65 20 dB Bandwidth = 47.7 kHz Maximum PSD = -12.0 dBm / 3 kHz</p>
 <p>Channel 128 20 dB Bandwidth = 47.7 kHz Maximum PSD = -12.2 dBm / 3 kHz</p>	
Measurement uncertainty	± 1.3 kHz +4.5/-6.1 dB

Bandwidth Limit	20 dB BW < 500 kHz
Power spectral density	8 dBm in any 3 kHz band

Measurement equipment: 76

3 Emission tests

3.1 Peak power of intentional signal

Compliance standard : FCC part 15, subpart C, section 15.247 (b)
RSS-210 (Issue 6, Sept 2005) section A8.4(1)
Method of test : ANSI C63.4-2003, sections 5.5 & 8.2.4
RSS-GEN (Issue 6 Sept 2005) section 4.6
RSS-210 (Issue 6, Sept 2005) section A8.4(1)
Test results :

Peak power:

Frequency (MHz)	Test result, conducted power (dBm)	Limit (dBm)
902.3 MHz	4.3	30
915.1 MHz	4.0	30
927.7 MHz	3.5	30

Measurement uncertainty	+1.2 / -1.4 dB
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Limit	< 1 Watt
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Measurement equipment: 76
(The numbers listed refer to the module
'Used test equipment module'.)

3.2 Radiated Disturbance: Compliance Test (0.009 – 30 MHz)

Compliance standard : FCC part 15, subpart C, section 15.209(e).
 Method of test : ANSI C63.4-2001, sections 5.3 & 8.2.1; FCC part 15, subpart A, section 15.31 (f)(2), 15.33, 15.35.
 Atmospheric pressure : Between 86 kPa and 106 kPa
 Temperature : 23 °C
 Relative humidity : 40 %
 Test results : Table

Frequency (kHz)	Test result @ 3 m distance (dB μ V/m) (QP)	Extrapolation to 30/300 m distance (dB μ V/m)	Limit (dB μ V/m)
Any	≤ 28.0	$\leq -12.0 / -52.0$	See table in section 15.209(a)

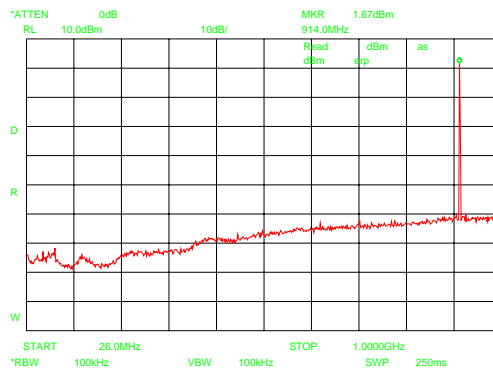
Result : Pass
 Measurement uncertainty : +1.9 / -2.1 dB
 Measurement equipment : 25, 49.
 (The numbers listed refer to the module
 'Used test equipment module'.)

3.3 Field strength of unwanted emissions 30 - 1000 MHz

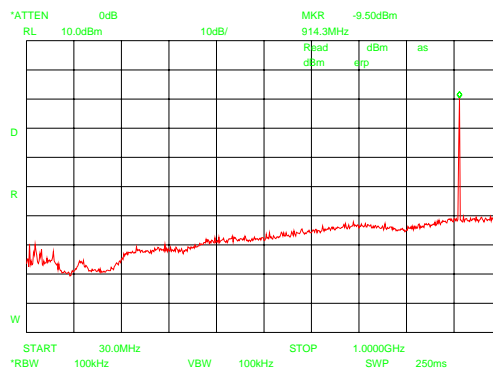
Compliance standard : FCC part 15, subpart C, section 15.209 (a)
RSS-GEN (Issue 1, Sept 2005) section 4.7 & 4.8
RSS-210 (Issue 6, Sept 2005) sections A8.4(1) & A8.5
Method of test : ANSI C63.4-2003, sections 5.5, 8.2.3, 8.2.4 & 8.3.1.2;
FCC part 15, subpart A, section 15.31(m), 15.33, 15.35.
EUT condition : center channel
Test results :

Exploratory measurements of unwanted emissions of Bridgemate Pro server in transmit mode, 30 - 1000 MHz

pre-scan data 30 - 1000 MHz Horizontal



pre-scan data 30 - 1000 MHz Vertical



Measurement uncertainty: N/A

The following unwanted emissions in the frequency range 30 - 1000 MHz were detected during the final measurements on the Open Area Test Site.

Bridgmate Pro server + power supply unit

Frequency (MHz)	Polarization	Test result @ 3 m distance (dB μ V/m) (QP)	Limit (dB μ V/m)
36.03	H	32.80	40
36.03	V	38.90	40
39.03	H	21.40	40
39.03	V	30.30	40
42.03	H	16.50	40
42.03	V	21.00	40
45.04	H	25.20	40
45.04	V	31.50	40
48.04	H	31.20	40
48.04	V	39.70	40
51.04	H	21.50	40
51.04	V	26.10	40
57.04	H	29.30	40
57.04	V	31.40	40
60.05	H	39.80	40
60.05	V	38.10	40
72.06	H	29.60	40
72.06	V	31.90	40
81.06	H	24.60	40
81.06	V	25.30	40
84.07	H	27.00	40
84.07	V	28.00	40
86.01	H	18.90	40
86.01	V	19.90	40

Measurement equipment : 89, 90, 91, 92, 94, 95, 96
(The numbers listed refer to the module
‘Used test equipment module’.)

3.4 Field strength of unwanted emissions > 1000 MHz

Compliance standard : FCC part 15, subpart C, 15.209 (a) & 15.247 (d)
RSS-GEN (Issue 1, Sept 2005) section 4.7
RSS-210 (Issue 6, Sept 2005) section A8.5

Method of test : 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.
RSS-GEN (Issue 1, Sept 2005) section 4.7
RSS-GEN (Issue 6, Sept 2005) section A8.5

Test results :

Note: Values in tables are converted from dBm (e.i.r.p) to dB μ V/m using the following formula:
dB μ V/m = dBm (e.i.r.p.) + 95.2

Transmitter tests:

Bridgemate Pro scoring device, antenna A1

Frequency (MHz)	Test result @ 3 m distance (dB μ V/m) (PK)	Polarization	Limit (dB μ V/m)
1804.6	40.2	H	74
1804.6	36.2	V	74
1830.4	42.2	H	74
1830.4	36.7	V	74
1855.4	44.4	H	74
1855.4	41.7	V	74

Frequency (MHz)	Test result @ 3 m distance (dB μ V/m) (AV)	Polarization	Limit (dB μ V/m)
1804.6	39.7	H	54
1804.6	35.7	V	54
1830.4	41.7	H	54
1830.4	36.2	V	54
1855.4	43.9	H	54
1855.4	41.2	V	54

Bridgemate Pro scoring device, antenna A2

Frequency (MHz)	Test result @ 3 m distance (dB μ V/m) (PK)	Polarization	Limit (dB μ V/m)
1804.6	41.9	H	74
1804.6	39.6	V	74
1830.4	37.9	H	74
1830.4	37.1	V	74
1855.4	42.6	H	74
1855.4	41.4	V	74

Frequency (MHz)	Test result @ 3 m distance (dB μ V/m) (AV)	Polarization	Limit (dB μ V/m)
1804.6	41.4	H	54
1804.6	39.1	V	54
1830.4	37.4	H	54
1830.4	36.6	V	54
1855.4	42.1	H	54
1855.4	39.9	V	54

Bridgemate Pro server + power supply unit

Frequency (MHz)	Test result @ 3 m distance (dB μ V/m) (PK)	Polarization	Limit (dB μ V/m)
1804.6	43.4	H	74
1804.6	42.1	V	74
1830.4	45.2	H	74
1830.4	41.9	V	74
1855.4	46.7	H	74
1855.4	42.2	V	74

Frequency (MHz)	Test result @ 3 m distance (dB μ V/m) (AV)	Polarization	Limit (dB μ V/m)
1804.6	42.9	H	54
1804.6	41.6	V	54
1830.4	44.7	H	54
1830.4	41.2	V	54
1855.4	46.2	H	54
1855.4	41.7	V	54

Measurement equipment : 19, 20, 32, 75, 76, 81
(The numbers listed refer to the module
‘Used test equipment module’.)

3.5 Emissions in the restricted bands

Compliance standard	:	FCC part 15, subpart C, 15.205, 15.209 (a) & 15.247 (d) RSS-GEN (Issue 1, Sept 2005) section 4.7 RSS-210 (Issue 6, Sept 2005) section A8.5
Method of test	:	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. RSS-GEN (Issue 1, Sept 2005) section 4.7 RSS-GEN (Issue 6, Sept 2005) section A8.5
Test results	:	on following pages

Note: Values in tables are converted from dBm (e.i.r.p) to dB μ V/m using the following formula:
 $\text{dB}\mu\text{V/m} = \text{dBm (e.i.r.p.)} + 95.2$

Bridgemate Pro scoring device, A1 antenna

Average measurements on harmonics

Frequency (MHz)	Test result @ 3 m distance (dB μ V/m) (AV)	Polarization	Limit (dB μ V/m)
2706.9	40.7	H	54
2706.9	38.4	V	54
2745.6	39.5	H	54
2745.6	39.4	V	54
2783.1	40.5	H	54
2783.1	40.7	V	54
3609.2	31.0	H	54
3609.2	37.9	V	54
3660.4	28.5	H	54
3660.4	36.0	V	54
3710.8	25.0	H	54
3710.8	35.7	V	54

Peak measurements on harmonics

Frequency (MHz)	Test result @ 3 m distance (dB μ V/m) (PK)	Polarization	Limit (dB μ V/m)
2706.9	41.2	H	74
2706.9	38.9	V	74
2745.6	40.0	H	74
2745.6	39.9	V	74
2783.1	41.0	H	74
2783.1	41.2	V	74
3609.2	31.5	H	74
3609.2	38.4	V	74
3660.4	29.0	H	74
3660.4	36.5	V	74
3710.8	25.5	H	74
3710.8	36.2	V	74

Bridgemate Pro scoring device, A2 antenna

Average measurements on harmonics

Frequency (MHz)	Test result @ 3 m distance (dB μ V/m) (AV)	Polarization	Limit (dB μ V/m)
2706.9	40.0	H	54
2706.9	36.9	V	54
2745.6	41.7	H	54
2745.6	38.9	V	54
2783.1	40.5	H	54
2783.1	40.7	V	54
3609.2	30.2	H	54
3609.2	38.2	V	54
3660.4	28.5	H	54
3660.4	39.0	V	54
3710.8	24.4	H	54
3710.8	37.2	V	54

Peak measurements on harmonics

Frequency (MHz)	Test result @ 3 m distance (dB μ V/m) (PK)	Polarization	Limit (dB μ V/m)
2706.9	40.5	H	74
2706.9	37.4	V	74
2745.6	42.2	H	74
2745.6	39.4	V	74
2783.1	41.0	H	74
2783.1	41.2	V	74
3609.2	30.7	H	74
3609.2	38.7	V	74
3660.4	29.0	H	74
3660.4	39.5	V	74
3710.8	24.9	H	74
3710.8	37.7	V	74

Bridgemate Pro Server

Average measurements on harmonics

Frequency (MHz)	Test result @ 3 m distance (dB μ V/m) (AV)	Polarization	Limit (dB μ V/m)
2706.9	45.7	H	54
2706.9	44.9	V	54
2745.6	44.2	H	54
2745.6	46.4	V	54
2783.1	45.9	H	54
2783.1	46.5	V	54
3609.2	31.5	H	54
3609.2	27.0	V	54
3660.4	29.5	H	54
3660.4	35.2	V	54
3710.8	28.9	H	54
3710.8	35.4	V	54

Peak measurements on harmonics

Frequency (MHz)	Test result @ 3 m distance (dB μ V/m) (PK)	Polarization	Limit (dB μ V/m)
2706.9	46.2	H	74
2706.9	45.4	V	74
2745.6	44.7	H	74
2745.6	46.9	V	74
2783.1	44.0	H	74
2783.1	47.0	V	74
3609.2	32.0	H	74
3609.2	27.5	V	74
3660.4	30.0	H	74
3660.4	35.7	V	74
3710.8	29.4	H	74
3710.8	35.9	V	74

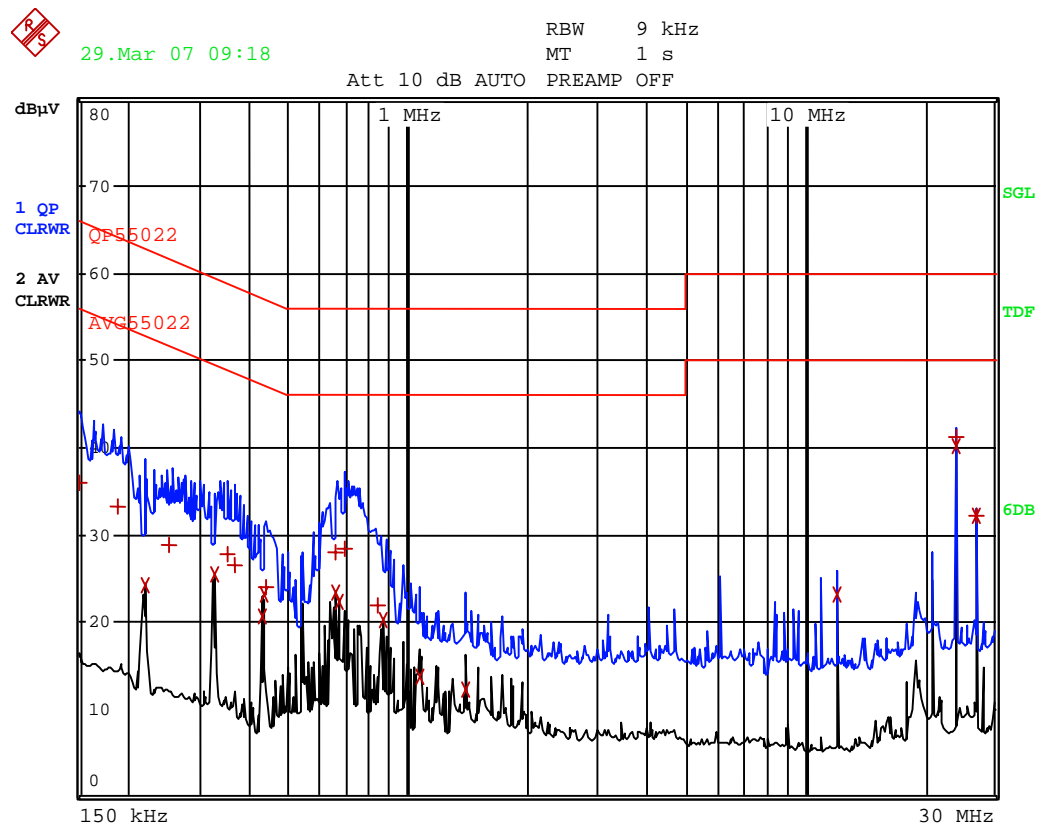
Measurement uncertainty : +4.5/-6.1 dB

Measurement equipment : 19, 20, 32, 75, 76, 81
(The numbers listed refer to the module
‘Used test equipment module’.)

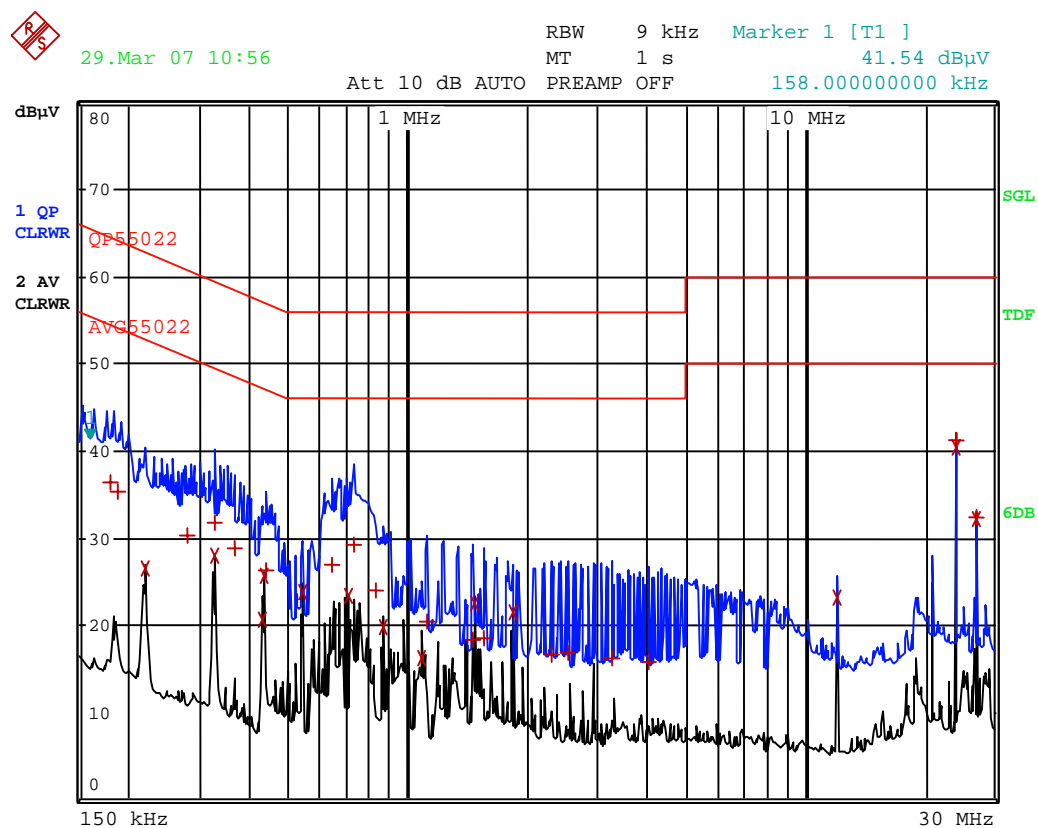
3.6 Conducted emissions on AC power line

Compliance standard	:	FCC part 15, subpart C, section 15.207 (a).
EUT condition	:	In test mode
Method of test	:	ANSI C63.4-2003, sections 5.2 & 6.2.2; FCC part 15, subpart A, section 15.35.
Test results	:	

Live conductor



Neutral conductor



Measurement uncertainty : -2.2 dB / +2.0 dB

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

Used test equipment module

The following measurement equipment was used at Telefication in Zevenaar:

Ref	Description	Manufacturer	Model	ID
1	EFT generator	Keytek	E411	TE 00760
2	EFT/surge coupler	Keytek	E4551	TE 00759
3	Capacitive clamp	Keytek	CCL-4/S	TE 00761
4	Controller	Keytek	E103	TE 00023
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
8	Surge comb. wave generator	Keytek	E501A	TE 00757
9	Surge telecom wave gen.	Keytek	E502A	TE 00022
10	Surge coupler/decoupler	Keytek	E571	TE 00758
11	Logper/bow-tie antenna (Anec)	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	Test receiver	R & S	ESH3	TE 00205
26	Pulse limiter	R & S	ESH3-Z2	TE 00227

Ref	Description	Manufacturer	Model	ID
27	EMI test receiver	R & S	ESCI	TE 11128
28	Test receiver	R & S	ESV(P)	TE 00091
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	--
33	Open Area Test Site	Telefication	--	--
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

Ref	Description	Manufacturer	Model	ID
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
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

The following measurement equipment is used at TNO Nieuwerkerk:

Ref	Description	Manufacturer	Model	ID
89	Plastic measurement room	Polyforce	--	12636
90	Open area Test Site	Comtest	--	13886
91	Antenna mast 4m	Heinrich Deisel	MA240	14277
92	Controller OATS	Heinrich Deisel	HD100	14278
93	Loop antenna	Chase	HLA6120	1107
94	Biconilog antenna 30 MHz – 1000 MHz	Chase	CBL6111B	15633
95	Measuring Receiver	R&S	ESU	15667
96	Turntable OATS	Heinrich Deisel	HD050	99108