



TEST REPORT

Test report no.: 1-5178/12-01-05-C



Testing laboratory

CETECOM ICT Services GmbH

Untertuerkheimer Strasse 6 – 10
66117 Saarbruecken / Germany
Phone: + 49 681 5 98 - 0
Fax: + 49 681 5 98 - 9075
Internet: http://www.cetecom.com
ict@cetecom.com

Accredited Testing Laboratory:

The testing laboratory (area of testing) is accredited according to DIN EN ISO/IEC 17025 (2005) by the Deutsche Akkreditierungsstelle GmbH (DAkkS)

The accreditation is valid for the scope of testing procedures as stated in the accreditation certificate with

the registration number: D-PL-12076-01-01 Area of Testing: Radio/Satellite Communications

Applicant

Bernafon AG

Morgenstraße 131

3018 Bern / SWITZERLAND
Phone: +41 31 9 98 15 15
Contact: Thomas Leuzinger
e-mail: tle@bernafon.ch
Phone: +41 31 998 16 92

Manufacturer

Bernafon AG

Morgenstraße 131

3018 Bern / SWITZERLAND

Test standard/s

47 CFR Part 15 Title 47 of the Code of Federal Regulations; Chapter I

Part 15 - Radio frequency devices

RSS - 210 Issue 8 Spectrum Management and Telecommunications - Radio Standards Specification

Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands):

Category I Equipment

For further applied test standards please refer to section 3 of this test report.

Test Item

Kind of test item: Air Conduction Hearing Aid with Wireless Functionality

Model name: AR7 N, PC7 N, AR9 N, PC9 N

FCC ID: U6XF2BTE01 IC: 7031A-F2BTE01

Frequency: 3.84 MHz

Technology tested: Magnetic coupling
Antenna: Integrated coil antenna

Power Supply: 1.4 V DC by Zinc Air Cell (312)

Temperature Range: 0°C to +40 °C



This test report is electronically signed and valid without handwriting signature. For verification of the electronic signatures, the public keys can be requested at the testing laboratory.

Test report authorised:	Test performed:
	p.o.
Stefan Bös Senior Testing Manager	Andreas Luckenbill Expert

2012-12-20 Page 1 of 34



Table of contents

1	Table	of contents	2
2	Genera	al information	3
		Notes and disclaimer	
3		tandard/s	
4		nvironment	
5		em	
6		aboratories sub-contracted	
7		pary of measurement results	
, 8		easurements	
	8.1 8.2 8.2	Description of test setup	6 7
9	Measu	rement results	9
	9.2 9.3 9.4 9.5	Timing of the transmitter	10 12 13 17
10	Te	est equipment and ancillaries used for tests	21
11	Ol	bservations	22
Anr	nex A	Photographs of the test setup	23
Anr	nex B	External photographs of the EUT	
Anr	nex C	Internal photographs of the EUT	
	nex D	Document history	
	nex E	Further information	
	nex F	Accreditation Certificate	0.4



2 General information

2.1 Notes and disclaimer

The test results of this test report relate exclusively to the test item specified in this test report. CETECOM ICT Services GmbH does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item.

The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of CETECOM ICT Services GmbH.

The testing service provided by CETECOM ICT Services GmbH has been rendered under the current "General Terms and Conditions for CETECOM ICT Services GmbH".

CETECOM ICT Services GmbH will not be liable for any loss or damage resulting from false, inaccurate, inappropriate or incomplete product information provided by the customer.

Under no circumstances does the CETECOM ICT Services GmbH test report include any endorsement or warranty regarding the functionality, quality or performance of any other product or service provided.

Under no circumstances does the CETECOM ICT Services GmbH test report include or imply any product or service warranties from CETECOM ICT Services GmbH, including, without limitation, any implied warranties of merchantability, fitness for purpose, or non-infringement, all of which are expressly disclaimed by CETECOM ICT Services GmbH.

All rights and remedies regarding vendor's products and services for which CETECOM ICT Services GmbH has prepared this test report shall be provided by the party offering such products or services and not by CETECOM ICT Services GmbH.

In no case this test report can be considered as a Letter of Approval.

This test report is electronically signed and valid without handwritten signature. For verification of the electronic signatures, the public keys can be requested at the testing laboratory.

2.2 Application details

Date of receipt of order: 2012-09-14
Date of receipt of test item: 2012-09-17
Start of test: 2012-09-17
End of test: 2012-09-18

Person(s) present during the test: -/-

3 Test standard/s

Test standard	Date	Test standard description
47 CFR Part 15	2010-10	Title 47 of the Code of Federal Regulations; Chapter I Part 15 - Radio frequency devices
RSS - 210 Issue 8	2010-12	Spectrum Management and Telecommunications - Radio Standards Specification Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment

2012-12-20 Page 3 of 34



4 Test environment

T_{nom} +22 °C during room temperature tests

Temperature: T_{max} +40 °C during high temperature tests

T_{min} 0 °C during low temperature tests

Relative humidity content: 52 %

Barometric pressure: not relevant for this kind of testing

V_{nom} 1.4 V DC by Zinc Air Cell (312)

Power supply: V_{max} 1.5 V

 V_{min} 1.1 V

5 Test item

Kind of test item	:	Air Conduction Hearing Aid with Wireless Functionality
Type identification	:	AR7 N, PC7 N, AR9 N, PC9 N
S/N serial number	:	Rad. 2104 8298, 2104 8223, 2104 8241
HW hardware status	:	Accord 119441, PCB Rev. 0
SW software status	:	ALOHA22_1_1_SoC_Config_F
Frequency band [MHz]	:	3.84 MHz
Type of radio transmission	:	Single covies
Use of frequency spectrum	:	Single carrier
Type of modulation	:	A1D
Number of channels	:	1
Antenna	:	Integrated coil antenna
Power supply	:	1.4 V DC by Zinc Air Cell (312)
Temperature range	:	0°C to +40 °C

6 Test laboratories sub-contracted

None

2012-12-20 Page 4 of 34



7	Summary of measurement results		
		No deviations from the technical specifications were ascertained	
		There were deviations from the technical specifications ascertained	

TC Identifier	Description	Verdict	Date	Remark
RF-Testing	CFR Part 15 RSS 210, Issue 8	Passed	2012-12-20	-/-

Test Specification Clause	Test Case	Temperature Conditions	Power Source Voltages	Pass	Fail	NA	NP	Results
§ 15.35 (c) / RSS-GEN Issue 3 Section 4.5	Timing of the transmitter (Duty cycle correction factor)	Nominal	Nominal					Not rated!
§ 15.223 / RSS-210 Issue 8	Bandwidth of the modulated carrier	Nominal	Nominal	\boxtimes				complies
§ 15.223 / RSS-210 Issue 8	Fieldstrength of fundamental	Nominal	Nominal	\boxtimes				complies
§ 15.209 (a) / RSS-210 Issue 8	Fieldstrength of harmonics and spurious	Nominal	Nominal	\boxtimes				complies
§ 15.109 / RSS-210 Issue 8	Receiver spurious emissions	Nominal	Nominal	\boxtimes				complies
§ 15.107 / § 15.207	Conducted limits	Nominal	Nominal					-

Note: NA = Not Applicable; NP = Not Performed

2012-12-20 Page 5 of 34



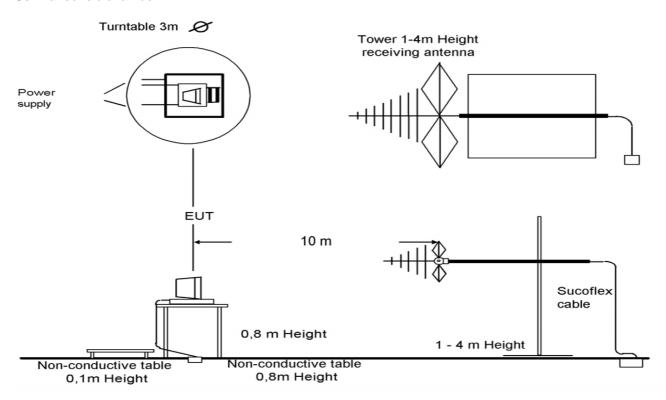
8 RF measurements

8.1 Description of test setup

8.1.1 Radiated measurements

The radiated measurements are performed in vertical and horizontal plane in the frequency range from 9 kHz to 25 GHz in semi-anechoic chambers. The EUT is positioned on a non-conductive support with a height of 0.80 m above a conductive ground plane that covers the whole chamber. The receiving antennas are confirmed with specifications ANSI C63.2-1996 and ANSI C63.4-2009. These antennas can be moved over the height range between 1.0 m and 4.0 m in order to search for maximum field strength emitted from EUT. The measurement distances between EUT and receiving antennas are indicated in the test setups for the various frequency ranges. For each measurement, the EUT is rotated in all three axes until the maximum field strength is received. The wanted and unwanted emissions are received by spectrum analysers where the detector modes and resolution bandwidths over various frequency ranges are set according to requirement ANSI C63-4-2003. Antennas are confirmed with ANSI C63.2-1996 item 15.

Semi anechoic chamber



Picture 1: Diagram radiated measurements

9 kHz - 30 MHz: active loop antenna

30 MHz – 1 GHz: tri-log antenna

> 1 GHz: horn antenna

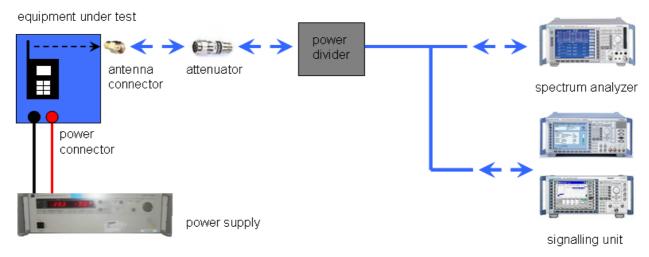
The EUT is powered by an external power supply with nominal voltage. The signalling (if needed) is performed from outside the chamber with a signalling unit by air link using signalling antenna.

2012-12-20 Page 6 of 34



8.1.2 Conducted measurements

The EUT's RF signal is coupled out by the antenna connector which is supplied by the manufacturer. The signal is first 10dB attenuated before it is power divided (~6dB loss per branch The measurement readings on the signalling unit/spectrum analyzer are corrected by the specific test set-up loss. The attenuator, power divider, and the spectrum analyzer are impedance matched on 50 Ohm.



Picture 2: Diagram conducted measurements

8.2 Additional comments

Reference documents: None

Special test descriptions: We perform the radiated pre-scans in different spherical positions and

consolidate the results in one result plot. The test procedure includes scans in the theta axes every 120° and in phi axes @ 0° and 90° for both polarizations

vertical & horizontal or magnetic emissions.

Configuration descriptions: None

2012-12-20 Page 7 of 34



8.3 RSP100 test report cover sheet / performance test data

Test Report Number		1-5178/12-01-05-C
Equipment Model Number	•	AR7 N, PC7 N, AR9 N, PC9 N
Certification Number	:	7031A-F2BTE01
Manufacturer (complete Address)	:	Bernafon AG Morgenstraße 131 3018 Bern / SWITZERLAND
Tested to radio standards specification no.	:	RSS 210, Issue 8, Annex 2
Open Area Test Site IC No.	:	IC 3462C-1
Frequency Range or fixed frequency	:	3.84 MHz
Field Strength [dBµV/m] :		56 @ 1m
Occupied bandwidth (99%-BW) [kHz]	:	373.5 kHz
Type of modulation	:	A1D
Emission Designator (TRC-43)	:	374KA1D
Antenna Information	:	Integrated coil antenna
Transmitter Spurious (worst case) [dBμV/m (10m]:	@	22.20 dBμV/m @ 946.0 MHz

ATTESTATION:

DECLARATION OF COMPLIANCE:

I attest that the testing was performed or supervised by me; that the test measurements were made in accordance with the above-mentioned Industry Canada standard(s); and that the equipment identified in this application has been subjected to all the applicable test conditions specified in the Industry Canada standards and all of the requirements of the standard have been met.

A. Cohenbill

Laboratory Manager:

2012-12-20 Andreas Luckenbill

Signature

2012-12-20 Page 8 of 34



9 Measurement results

9.1 Timing of the transmitter

Measurement:

Measurement parameter			
Detector:	Peak		
Sweep time:	10 ms		
Resolution bandwidth:	1 MHz		
Video bandwidth:	3 MHz		
Span:	Zero-Span		
Sweep mode:	Single Sweep		

Limits:

FCC	IC
Timing of the	e transmitter

(c) Unless otherwise specified, e.g. Section 15.255(b), when the radiated emission limits are expressed in terms of the average value of the emission, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value. The exact method of calculating the average field strength shall be submitted with any application for certification or shall be retained in the measurement data file for equipment subject to notification or verification.

Duty cycle of the sample with test mode: 40%

The device is sending for 2ms every 5ms.

Result: Passed

2012-12-20 Page 9 of 34



9.2 Bandwidth of the modulated carrier

Limits:

FCC	IC
Bandwidth of the	modulated carrier

Measured with the integrated OBW-function of the spectrum analyser Rohde & Schwarz ESPI (measurement criteria is the integrated power in %)

Result:

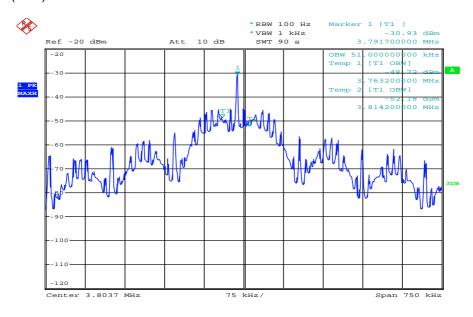
	Occupied Bandwidth (kHz)
6 dB (75%)	51 kHz
20 dB (99%)	373.5 kHz

2012-12-20 Page 10 of 34



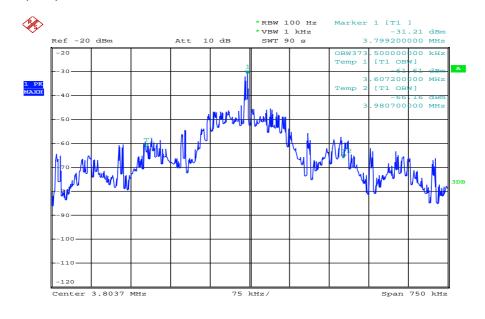
Plots of the measurement

Plot 1: 6dB (75%) - bandwidth



Date: 18.SEP.2012 15:08:43

Plot 2: 20dB (99%) - bandwidth



Date: 18.SEP.2012 15:03:43

2012-12-20 Page 11 of 34



9.3 Field strength of the fundamental

Measurement:

Measurement parameter					
Detector:	Quasi Peak (CISPR)				
Resolution bandwidth:	10kHz				
Trace-Mode:	Max Hold				

Limits:

FCC		IC		
Fundamental Frequency (MHz)	Field strength ο (μ۷/		Measurement distance (m)	
1.705 – 10.0	[15] [6dB-BW(kH Whichever	z) / F(MHz)	30	

Result:

TEST CO	NDITIONS	MAXIMUM POWER (dBμV/m)			
Frequ	uency	3.8 MHz	3.8 MHz		
Mo	Mode		at 30 m distance		
T _{nom}	V _{nom}	56	-4		
Measuremer	nt uncertainty	±30	dB		

Recalculation to a measurement distance of 30m with a correction of 40 dB/decade.

Result: Passed

2012-12-20 Page 12 of 34



9.4 Field strength of the harmonics and spurious

Measurement:

Measurement parameter					
Detector:	Average / Quasi Peak				
Sweep time:	Auto				
Resolution bandwidth:	100 kHz / 1 MHz				
Video bandwidth:	100 kHz / 1 MHz				
Span:	Steps				
Trace-Mode:	Max Hold				

Limits:

FCC		IC				
Fi	Field strength of the harmonics and spurious.					
Frequency (MHz)	Frequency (MHz) Field strengt		Measurement distance (m)			
0.009 - 0.490	2400/F	(kHz)	300			
0.490 - 1.705	24000/F	(kHz)	30			
1.705 – 30	30 (29.5 c	IBμV/m)	30			
30 – 88	100 (40 d	BμV/m)	3			
88 – 216	150 (43.5 dBμV/m)		3			
216 – 960	200 (46 d	BμV/m)	3			

Result:

	EMISSION LIMITATIONS							
f [MHz]	Limit Amplitude of emission Results [dBµV/m]							
	No critical peaks detected!							

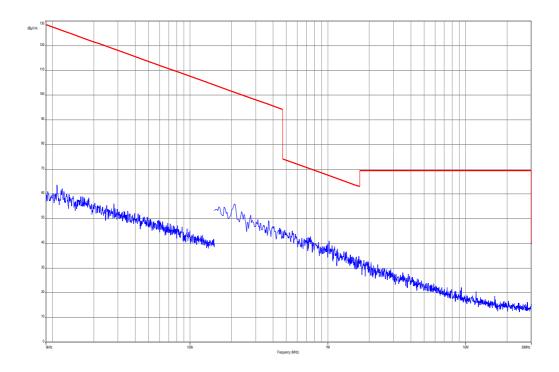
Result: Passed

2012-12-20 Page 13 of 34



Plots of the measurements

Plot 1: 9 kHz – 30 MHz



2012-12-20 Page 14 of 34



Plot 2: 30 MHz - 1000 MHz

Common Information

EUT: AR9 N Serial Number: 21048223

Test Description: FCC part 15 B class B @ 10 m

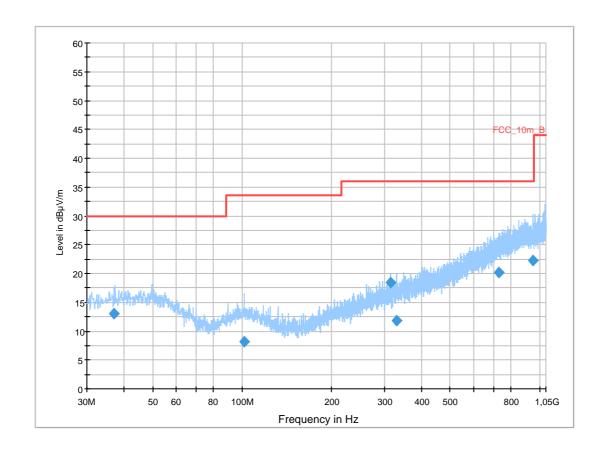
Operating Conditions: active
Operator Name: Wolsdorfer
Comment: bat powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup: Electric Field (NOS)

Receiver: [ESCI 3] Level Unit: dBµV/m

SubrangeStep SizeDetectorsIF BWMeas. Time30 MHz - 2 GHz60 kHzQPK120 kHz1 s20 dB



2012-12-20 Page 15 of 34



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Po Iari	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
()	(32,4777)	(ms)	()	(=)	zat	(==3)	()	()	(,	
00.000450	40.4	4000.0	400.000	450.0		400.0	40.0	40.0	00.0	
36.996450	13.1	1000.0	120.000	152.0	V	190.0	13.2	16.9	30.0	
101.313150	8.2	1000.0	120.000	160.0	V	268.0	11.8	25.3	33.5	
315.017850	18.5	1000.0	120.000	98.0	V	175.0	15.0	17.5	36.0	
329.335500	11.8	1000.0	120.000	168.0	V	265.0	15.4	24.2	36.0	
727.586850	20.1	1000.0	120.000	168.0	Н	-5.0	23.1	15.9	36.0	
945.965400	22.2	1000.0	120.000	168.0	V	0.0	25.3	13.8	36.0	

Hardware Setup: EMI radiated\Electric Field (NOS) - [EMI radiated]

Subrange 1

Frequency Range: 30 MHz - 2 GHz

Receiver: Receiver [ESCI 3]

@ GPIB0 (ADR 20), SN 100083/003, FW 4.42

Signal Path: without Notch

FW 1.0

Antenna: VULB 9163

SN 9163-295, FW ---

Correction Table (vertical): VULP6113 Correction Table (horizontal): VULP6113

Correction Table (vertical): Cable_EN_1GHz (1005)
Correction Table (horizontal): Cable_EN_1GHz (1005)

Antenna Tower: Tower [EMCO 2090 Antenna Tower]

@ GPIB0 (ADR 8), FW REV 3.12

Turntable: Turntable [EMCO Turntable]

@ GPIB0 (ADR 9), FW REV 3.12

EMC 32 Version 8.52

2012-12-20 Page 16 of 34



9.5 Receiver spurious emissions

Measurement:

Measurement parameter					
Detector:	Average / Quasi Peak				
Sweep time:	Auto				
Resolution bandwidth:	100 kHz / 1 MHz				
Video bandwidth:	100 kHz / 1 MHz				
Span:	Steps				
Trace-Mode:	Max Hold				

Limits:

FCC		IC					
Fie	Field strength of the harmonics and spurious.						
Frequency (MHz)	Frequency (MHz) Field strengt		Measurement distance (m)				
0.009 - 0.490	2400/F	(kHz)	300				
0.490 – 1.705	24000/F	(kHz)	30				
1.705 – 30	30 (29.5 d	IBμV/m)	30				
30 – 88	100 (40 d	BμV/m)	3				
88 – 216	150 (43.5	dBµV/m)	3				
216 – 960	200 (46 d	BμV/m)	3				

Result:

EMISSION LIMITATIONS							
f [MHz]	Limit Amplitude of emission Results [dBµV/m]						
	No critical peaks detected!						

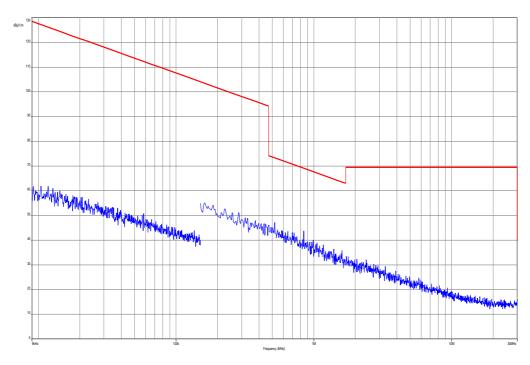
Result: Passed

2012-12-20 Page 17 of 34



Plots of the measurements

Plot 1: 9 kHz – 30 MHz



2012-12-20 Page 18 of 34



Plot 2: 30 MHz - 1000 MHz

Common Information

EUT: AR9 N Serial Number: 20615355

Test Description: FCC part 15 B class B @ 10 m

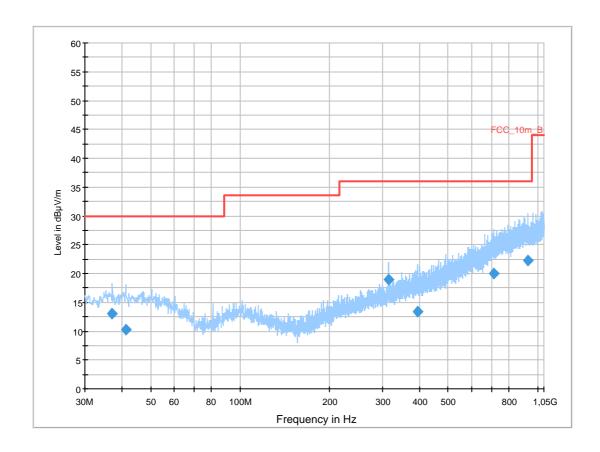
Operating Conditions: rx mode
Operator Name: Wolsdorfer
Comment: bat powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup: Electric Field (NOS)

Receiver: [ESCI 3] Level Unit: dBµV/m

SubrangeStep SizeDetectorsIF BWMeas. TimePreamp Time30 MHz - 2 GHz60 kHzQPK120 kHz1 s20 dB



2012-12-20 Page 19 of 34



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Po lari zat ion	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
37.061250	13.1	1000.0	120.000	170.0	V	190.0	13.2	16.9	30.0	
41.108700	10.2	1000.0	120.000	120.0	Н	280.0	13.4	19.8	30.0	
314.999250	18.9	1000.0	120.000	119.0	V	260.0	15.0	17.1	36.0	
394.928700	13.3	1000.0	120.000	170.0	Н	85.0	16.8	22.7	36.0	
711.724650	20.0	1000.0	120.000	132.0	V	100.0	22.8	16.0	36.0	
924.943350	22.3	1000.0	120.000	170.0	V	92.0	25.3	13.7	36.0	

Hardware Setup: EMI radiated\Electric Field (NOS) - [EMI radiated]

Subrange 1

Frequency Range: 30 MHz - 2 GHz

Receiver: Receiver [ESCI 3]

@ GPIB0 (ADR 20), SN 100083/003, FW 4.42

Signal Path: without Notch

FW 1.0

Antenna: VULB 9163

SN 9163-295, FW ---

Correction Table (vertical): VULP6113 Correction Table (horizontal): VULP6113

Correction Table (vertical): Cable_EN_1GHz (1005) Correction Table (horizontal): Cable_EN_1GHz (1005)

Antenna Tower: Tower [EMCO 2090 Antenna Tower]

@ GPIB0 (ADR 8), FW REV 3.12

Turntable: Turntable [EMCO Turntable]

@ GPIB0 (ADR 9), FW REV 3.12

EMC 32 Version 8.52

9.6 Conducted limits

Not applicable

2012-12-20 Page 20 of 34



10 Test equipment and ancillaries used for tests

Typically, the calibrations of the test apparatus are commissioned to and performed by an accredited calibration laboratory. The calibration intervals are determined in accordance with the DIN EN ISO/IEC 17025. In addition to the external calibrations, the laboratory executes comparison measurements with other calibrated test systems or effective verifications. Weekly chamber inspections and range calibrations are performed. Where possible, rf-generating and signalling equipment as well as measuring receivers and analyzers are connected to an external high-precision 10 MHz reference (GPS-based or rubidium frequency standard).

In order to simplify the identification of the equipment used at some special tests, some items of test equipment and ancillaries can be provided with an identifier or number in the equipment list below (Labor/Item).

No.	Lab / Item	Equipment	Туре	Manufact.	Serial No.	INV. No Cetecom	Kind of Calibration	Last Calibration	Next Calibration
1	n. a.	Test Receiver	ESH2	R&S	871921/095	300002505	Ve	12.01.2012	12.01.2014
2	n. a.	Loop Antenna 9 KHz - 30 MHz	HFH2-Z2	R&S	872096/61	300001824	vIKI!	09.03.2012	09.03.2015
3	n. a.	EMI Test Receiver 9 kHz - 3 GHz incl. Preselector	ESPI3	R&S	101713	300004059	k	22.08.2012	22.08.2013
4	n. a.	DC Power Supply 0 – 32V	1108-32	Heiden	001802	300001383	Ve	23.06.2010	23.06.2013
5	n. a.	Temperature Test Chamber	VT 4002	Heraeus Voetsch	521/83761	300002326	Ve	20.09.2011	20.09.2013
6	n. a.	Double-Ridged Waveguide Horn Antenna 1-18.0GHz	3115	EMCO	8812-3088	300001032	vlKI!	11.05.2011	11.05.2013
7	n. a.	Active Loop Antenna	6502	EMCO	2210	300001015	ne		
8	n. a.	Anechoic chamber	FAC 3/5m	MWB / TDK	87400/02	300000996	ev		
9	n. a.	Relais Matrix	3488A	HP Meßtechnik	2719A15013	300001156	ne		
10	n. a.	Three-Way Power Splitter, 50 Ohm	11850C	HP Meßtechnik		300000997	ne		
11	n. a.	Switch / Control Unit	3488A	HP	2605e08770	300001443	ne		
12	n. a.	Amplifier	js42- 00502650- 28-5a	Parzich GMBH	928979	300003143	ne		
13	n. a.	TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbe ck	371	300003854	viKI!	14.10.2011	14.10.2014
14	n. a.	MXE EMI Receiver 20 Hz bis 26,5 GHz	N9038A	Agilent Technologi es	MY51210197	300004405	k	19.12.2011	19.12.2012
15	45	Switch-Unit	3488A	HP Meßtechnik	2719A14505	300000368	g		
16	50	DC power supply, 60Vdc, 50A, 1200 W	6032A	HP Meßtechnik	2920A04466	300000580	ne		
17	n. a.	software	SPS_PHE 1.4f	Spitzberger & Spieß	B5981; 5D1081;B597 9	300000210	ne		
18	n. a.	EMI Test Receiver	ESCI 1166.5950. 03	R&S	100083	300003312	k	04.01.2012	04.01.2013
19	n. a.	Analyzer- Reference- System (Harmonics and Flicker)	ARS 16/1	SPS	A3509 07/0 0205	300003314	k	14.07.2011	14.07.2013
20	n. a.	Amplifier	JS42- 00502650- 28-5A	MITEQ	1084532	300003379	ev		
21	n. a.	Antenna Tower	Model 2175	ETS- LINDGREN	64762	300003745	izw		
22	n. a.	Positioning Controller	Model 2090	ETS- LINDGREN	64672	300003746	izw		
23	n. a.	Turntable Interface-Box	Model 105637	ETS- LINDGREN	44583	300003747	izw		

2012-12-20 Page 21 of 34



24	n. a.	TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbe ck	295	300003787	k	12.04.2012	12.04.2014
25	n. a.	Spectrum- Analyzer	FSU26	R&S	200809	300003874	k	06.01.2012	06.01.2014

Agenda: Kind of Calibration

k calibration / calibrated EK limited calibration not required (k, ev, izw, zw not required) EK cyclical maintenance (external cyclical maintenance)

ev periodic self verification izw internal cyclical maintenance
Ve long-term stability recognized g blocked for accredited testing
vlkl! Attention: extended calibration interval

NK! Attention: not calibrated *) next calibration ordered / currently in progress

11 Observations

No observations exceeding those reported with the single test cases have been made.

2012-12-20 Page 22 of 34



Annex A Photographs of the test setup

Photo documentation:

Photo 1:



Photo 2:



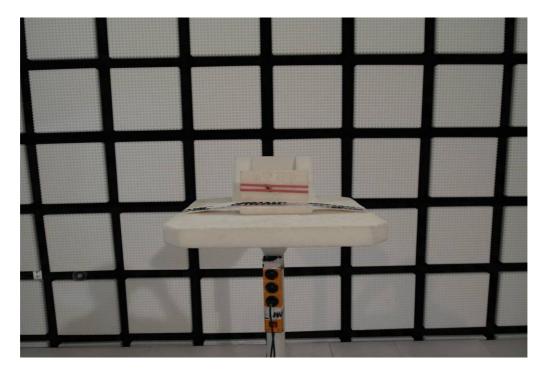
2012-12-20 Page 23 of 34



Photo 3:



Photo 4:



2012-12-20 Page 24 of 34



Photo 5:



Photo 6:



2012-12-20 Page 25 of 34



Annex B External photographs of the EUT

Photo documentation:

Photo 1:



Photo 2:



2012-12-20 Page 26 of 34



Photo 3:



Photo 4:



2012-12-20 Page 27 of 34



Photo 5:

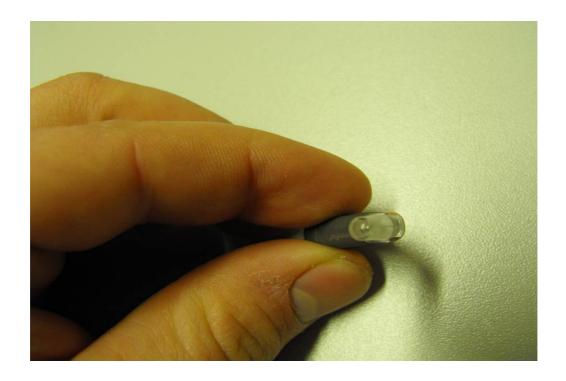
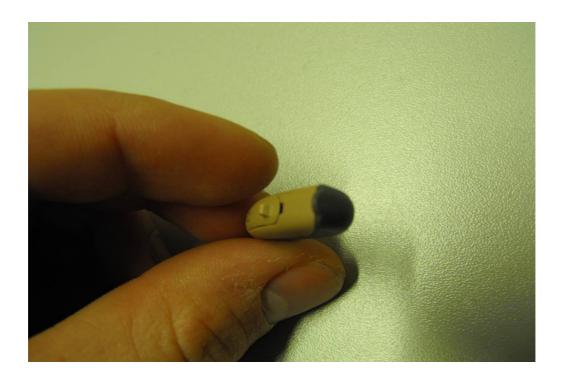


Photo 6:



2012-12-20 Page 28 of 34



Photo 7:

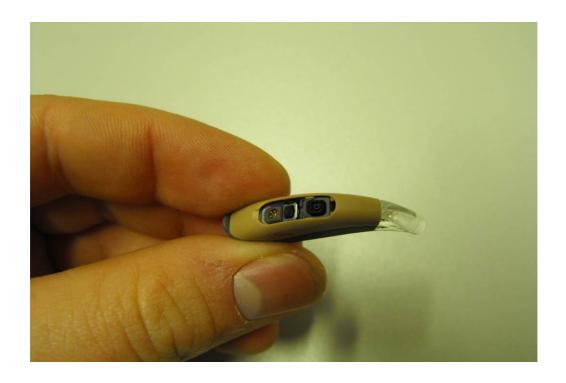
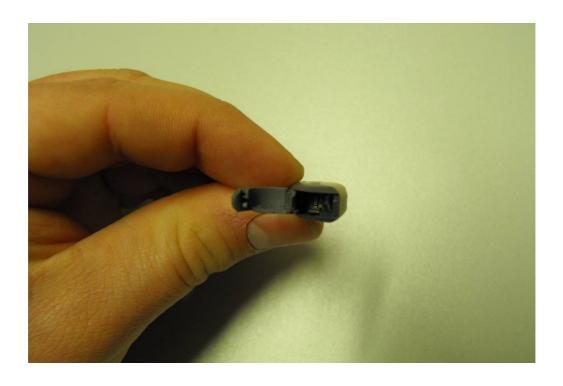


Photo 8:



2012-12-20 Page 29 of 34



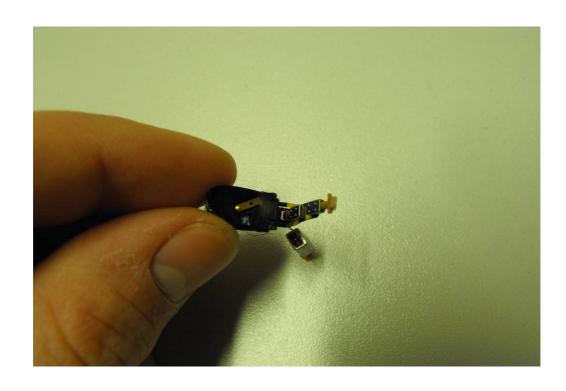
Annex C Internal photographs of the EUT

Photo documentation:

Photo 1:



Photo 2:



2012-12-20 Page 30 of 34



Photo 3:

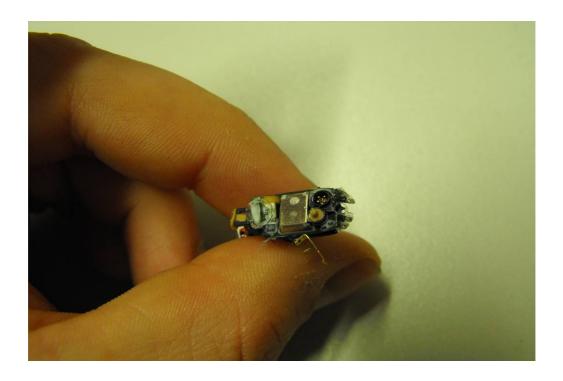
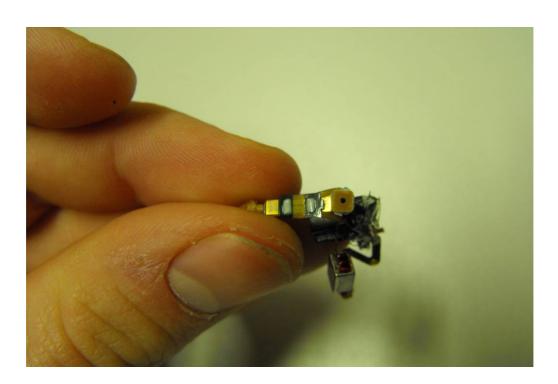


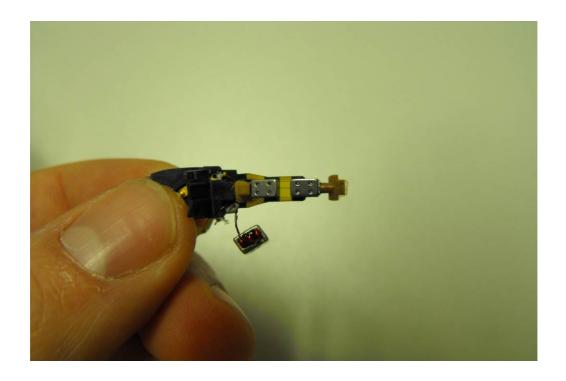
Photo 4:



2012-12-20 Page 31 of 34



Photo 5:



2012-12-20 Page 32 of 34



Annex D Document history

Version	Applied changes	Date of release	
1.0	Initial release	2012-09-24	
-A	changed model name	2012-10-09	
-B	changed model name, add internal & external photos	2012-12-14	
-C	Correction of cover sheet	2012-12-19	

Annex E Further information

Glossary

AVG - Average

DUT - Device under test

EMC - Electromagnetic Compatibility

EN - European Standard EUT - Equipment under test

ETSI - European Telecommunications Standard Institute

FCC - Federal Communication Commission

FCC ID - Company Identifier at FCC

HW - Hardware

IC - Industry Canada
Inv. No. - Inventory number
N/A - Not applicable
PP - Positive peak
QP - Quasi peak
S/N - Serial number
SW - Software

2012-12-20 Page 33 of 34



Annex F Accreditation Certificate



Front side of certificate

Back side of certificate

Note:

The current certificate including annex is published on our website (see link below) or may be received from CETECOM ICT Services on request.

http://www.cetecom.com/fileadmin/de/CETECOM_D_Saarbruecken/accreditations_Jan_2010/DAKKS_Akkredi_Urk_EN17025-En_incl_Annex.pdf

2012-12-20 Page 34 of 34