



# **TEST REPORT**

Test report no.: 1-7988/14-02-06-A



### **Testing laboratory**

#### **CETECOM ICT Services GmbH**

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### **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 Communications & EMC (RCE)

### **Applicant**

### SBO Hearing A/S

Kongebakken 9 2765 Smørum / DENMARK

Phone: +45 3913 8538

Contact: Jørgen Peter Hanuscheck

e-mail: jnp@oticon.dk

#### Manufacturer

### SBO Hearing A/S

Kongebakken 9

2765 Smørum / DENMARK

#### 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 -

Licence-exempt Radio Apparatus (All Frequency Bands): Category I Equipment

RSS - Gen Issue 3 Spectrum Management and Telecommunications Radio Standards Specifications -

General Requirements and Information for the Certification of Radio Apparatus

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

**Test Item** 

Kind of test item: Programming device for Hearing aids
Model name: WLP Multi (used in FittingLINK WP2)

FCC ID: 2ACAHWLP020 IC: 11936A-WLP020

Frequency: 3.84 MHz

Technology tested: Magnetic coupling

Antenna: External neck loop - antenna

Power supply: 3.70V DC by Li – Po battery

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 Professional	Tobias Wittenmeier Experienced

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### 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.

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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: 2014-05-13
Date of receipt of test item: 2014-06-16
Start of test: 2014-06-17

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

### 3 Test standard/s

Test standard	Date	Test standard description
47 CFR Part 15	-/-	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 - Licence-exempt Radio Apparatus (All Frequency Bands): Category I Equipment
RSS - Gen Issue 3	2010-12	Spectrum Management and Telecommunications Radio Standards Specifications - General Requirements and Information for the Certification of Radio Apparatus

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### 4 Test environment

T<sub>nom</sub> +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: 55 %

Barometric pressure: not relevant for this kind of testing

V<sub>nom</sub> 3.70 V DC by Li – Po battery

Power supply:  $V_{max}$  4.10 V

V<sub>min</sub> 3.45 V

### 5 Test item

Kind of test item	:	Programming device for Hearing aids		
Type identification	:	WLP Multi (used in FittingLINK WP2)		
		TX units: EUT No. 1: 01901274		
		EUT No. 2: 01901277		
S/N serial number	:	EUT No. 3: 01901267		
		RX unit: EUT No. 4: 01901263		
		Photo unit: EUT No. 5: 01901276		
HW hardware status	:	assembly rev 00 - PCB rev 03		
SW software status	:	FW version 1.4.2 + Power table fix in BT radio		
Frequency band [MHz]	:	3.84 MHz		
Type of radio transmission	:			
Use of frequency spectrum	:	Modulated carrier		
Type of modulation	:	ASK		
Number of channels	:	1		
Antenna	:	External neck loop - antenna		
Power supply	:	3.70 V DC by Li – Po battery		
Temperature range	:	0°C to +40°C		

### 5.1 Additional information

The content of the following annexes is defined in the QA. It may be that not all of the listed annexes are necessary for this report, thus some values in between may be missing.

Test setup- and EUT-photos are included in test report: 1-7988/14-02-01\_AnnexA

1-7988/14-02-01\_AnnexB 1-7988/14-02-01\_AnnexD

### 6 Test laboratories sub-contracted

None

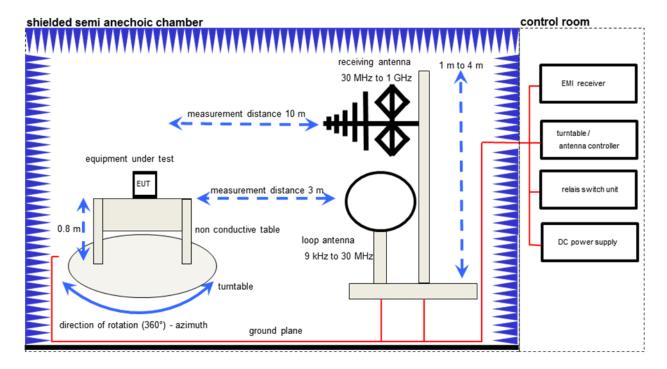
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## 7 Description of the test setup

### 7.1 Radiated measurements

The radiated measurements are performed in vertical and horizontal plane in the frequency range from 9 kHz to 1 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. 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.



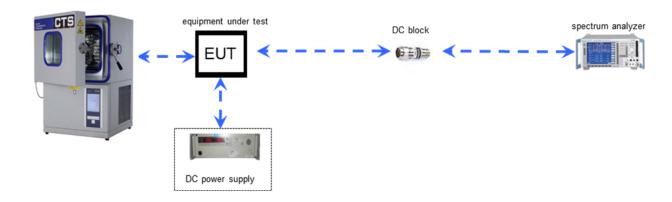
## **Equipment table:**

Equipment	Туре	Manufacturer	Serial No.	INV. No Cetecom
Switch-Unit	3488A	HP Meßtechnik	2719A14505	300000368
EMI Test Receiver	ESCI 3	R&S	100083	300003312
Amplifier	JS42-00502650-28-5A	MITEQ	1084532	300003379
Antenna Tower	Model 2175	ETS-LINDGREN	64762	300003745
Positioning Controller	Model 2090	ETS-LINDGREN	64672	300003746
Turntable Interface-Box	Model 105637	ETS-LINDGREN	44583	300003747
TRILOG Broadband Test- Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbeck	295	300003787
Test Receiver	ESH2	R&S	871921/095	300002505
Loop Antenna 9 KHz - 30 MHz	HFH2-Z2	R&S	872096/61	300001824
EMI Test Receiver 9 kHz - 3 GHz incl. Preselector	ESPI3	R&S	101713	300004059

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# 7.2 Conducted measurements



# **Equipment table:**

Equipment	Туре	Manufacturer	Serial No.	INV. No Cetecom
DC Power Supply 0 – 32V	1108-32	Heiden	001802	300001383
Temperature Test Chamber	T-40/50	CTS GmbH	064023	300003540
Spectrum Analyzer 20 Hz - 30 GHz	FSP30	R&S	100886	300003575

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8	Summary	y of	measurement	t results	3

$\boxtimes$	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	2014-07-18	-/-

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	$\boxtimes$				complies
§ 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					complies
§ 15.109 / RSS-210 Issue 8	Receiver spurious emissions	Nominal	Nominal	$\boxtimes$				complies
§ 15.107 / § 15.207	Conducted limits	Nominal	Nominal	$\boxtimes$				complies

**Note:** NA = Not Applicable; NP = Not Performed

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### 9 Additional comments

Reference documents: Oticon Wireless Hearing Aids and Accessories EMC and RF Test Setup, May 2014, JNP, Oticon A/S.

### **Manufacturer statement:**

The NL radio (at 3.84MHz) transmitters occupied bandwidth and fundamental field strength was measured on 3 devices under test in order to record some product variations for statistical analysis.

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

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### 10 Measurement results

### 10.1 Timing of the transmitter

### **Measurement:**

Measurement parameter				
Detector:	-/-			
Sweep time:	-/-			
Resolution bandwidth:	-/-			
Video bandwidth:	-/-			
Span:	-/-			
Trace-Mode:	-/-			

### Limits:

FCC	IC			
CFR 47 SUBCLAUSE §15.35(c)	RSS-GEN Issue3 Section 4.5			
Timing of the 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.

The EUT has a pulse train length in testmode of 62 ms. The pulse train is repeated in a endless loop.

Result: Passed.

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# 10.2 Bandwidth of the modulated carrier

## Limits:

FCC	IC		
CFR Part SUBCLAUSE § 15.223	RSS-210 Issue 8		
Bandwidth of the modulated carrier			

Measured with the integrated OBW-function of the spectrum analyser Rohde&Schwarz FSIQ26 (measurement criteria is the integrated power in %)

## Result:

EUT No. 1: 01901274

	Occupied Bandwidth (kHz)
6 dB (75%)	87
20 dB (99%)	359

### EUT No. 2: 01901277

	Occupied Bandwidth (kHz)			
6 dB (75%)	66			
20 dB (99%)	361			

## EUT No. 3: 01901267

	Occupied Bandwidth (kHz)
6 dB (75%)	106
20 dB (99%)	362

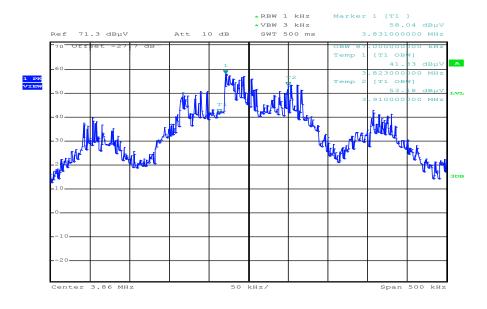
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### Plots of the measurements:

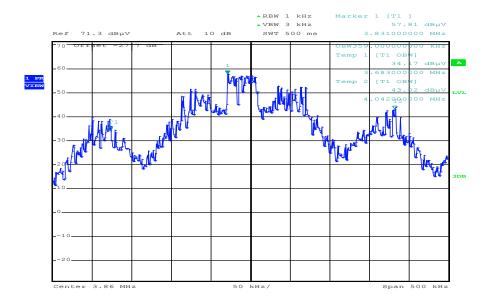
EUT No. 1: 01901274

Plot 1: 6dB (75%) - bandwidth



Date: 17.JUN.2014 10:24:46

Plot 2: 20dB (99%) - bandwidth



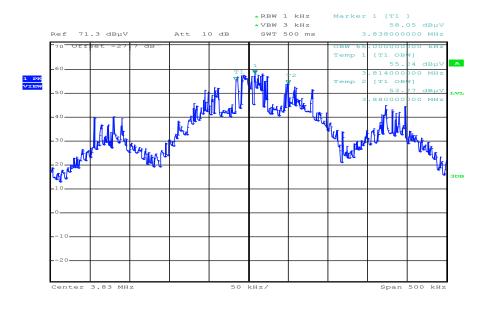
Date: 17.JUN.2014 10:21:31

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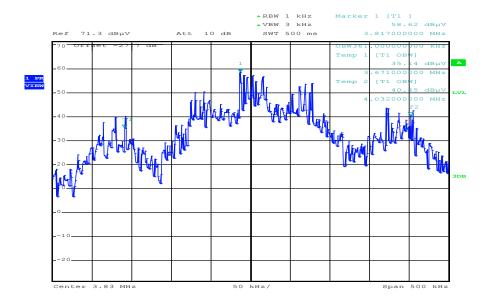
EUT No. 2: 01901277

Plot 1: 6dB (75%) - bandwidth



Date: 17.JUN.2014 10:34:50

Plot 2: 20dB (99%) - bandwidth



Date: 17.JUN.2014 10:33:51

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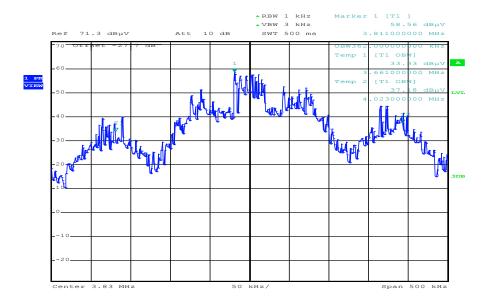
EUT No. 3: 01901267

Plot 1: 6dB (75%) - bandwidth



Date: 17.JUN.2014 10:26:43

Plot 2: 20dB (99%) - bandwidth



Date: 17.JUN.2014 10:27:35

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# 10.3 Fieldstrength of the fundamental

## **Measurement:**

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

FCC		IC		
CFR Part SUBCLAUSE § 15.223		RSS-210 Issue 8		
Fundamental Frequency (MHz)	Field strength of Fundamental (μV/m)		Measurement distance (m)	
1.705 – 10.0	[15] [6dB-BW(kH Whichever	z) / F(MHz)	30	

# Results:

TEST CONDITIONS		MAXIMUM POWER (dBµV/m)			
Freq	uency	3.84 MHz	3.84 MHz		
EUT No. 1: 01901274		at 3 m distance	at 30 m distance		
$T_{nom}$	V <sub>nom</sub>	53.5	13.5		
EUT No. 2	EUT No. 2: 01901277		at 30 m distance		
$T_{nom}$	V <sub>nom</sub>	54.0	14.0		
EUT No. 3	EUT No. 3: 01901267		at 30 m distance		
$T_{nom}$	T <sub>nom</sub> V <sub>nom</sub>		12.0		
Measurement uncertainty		±3dB			

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

**Result: Passed** 

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Noise floor: 26.5 dBµV/m

## \*Note:

• Calculation: Measured maximum field strength @ 3 m: 54 dBµV/m

Correction factor from 3 m to 30 m: -40 dB (40 dB / decade)

54.0 dB $\mu$ V/m @ 3 meter - 40 dB = 14.0 dB $\mu$ V/m @ 30 meter

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# 10.4 Fieldstrength of the harmonics and spurious

# Measurement:

Measurement parameter				
Detector:	Average / Quasi Peak			
Sweep time:	Auto			
Resolution bandwidth:	3 kHz - 120 kHz			
Video bandwidth:	Comparable to RBW			
Trace-Mode:	Max hold			

# Limits:

FCC			IC
SUBCLAUSE § 15.2	SUBCLAUSE § 15.209 (a)		RSS-210 Issue 8
Fi	eld strength of the ha	armonics and spo	ırious.
Frequency (MHz)	Field strength (μV/m)		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 dBμv/m)		3
88 – 216	150 (43.5 dBµV/m)		3
216 – 960	200 (46 d	BμV/m)	3

# Result:

	EMISSION LIMITATIONS					
f [MHz]	f Detector					
	No peaks detected. All detected emissions are below the limit!					

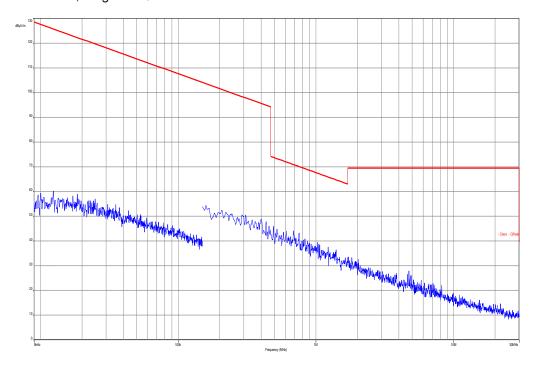
Result: Passed

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### Plots of the measurements: EUT No. 2: 01901277 TX MODE

Plot 1: 9 kHz - 30 MHz; magnetic @ 3m distance

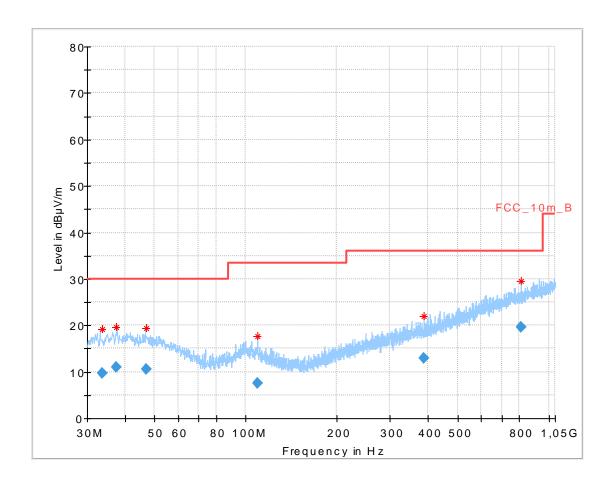


NOTE: During the TX spurious emission test below 30 MHz the neck loop antenna on the device was fixed and almost crumbled all together, why the NL carrier at 3.84 MHz is not visible in the measurement, but the functionality of the NL radio transmitter was verified the whole time by other means (e.g. blue LED flashing).

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Plot 2: 30 MHz – 1000 MHz, vertical & horizontal polarization, TX MODE



# Final\_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
33.605850	9.64	30.00	20.36	1000.0	120.000	141.0	Н	86	13.7
37.435050	11.03	30.00	18.97	1000.0	120.000	98.0	V	167	13.9
47.140650	10.50	30.00	19.50	1000.0	120.000	177.0	Н	222	13.8
109.588200	7.58	33.50	25.92	1000.0	120.000	220.0	Н	72	11.2
386.919000	12.92	36.00	23.08	1000.0	120.000	220.0	Н	86	16.7
809.678100	19.72	36.00	16.28	1000.0	120.000	209.0	٧	294	22.9

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# 10.5 Receiver spurious emissions

# **Measurement:**

Measurement parameter				
Detector:	Average / Quasi Peak			
Sweep time:	Auto			
Resolution bandwidth:	3 kHz - 120 kHz			
Video bandwidth:	Comparable to RBW			
Trace-Mode:	Max hold			

# Limits:

FCC		IC			
SUBCLAUSE § 15.109		RSS-210 Issue 8			
Field strength of the harmonics and spurious.					
Frequency (MHz)	Field strength (µV/m)		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 dBμV/m)		3		
88 – 216	150 (43.5 dBµV/m)		3		
216 – 960	200 (46 d	BμV/m)	3		

## Result:

	EMISSION LIMITATIONS						
f [MHz]	f [MHz] Detector Limit max. allowed [dBμV/m] Amplitude of emission [dBμV/m] Results						
	No traceable peaks detected. All detected emissions are below the limit!						

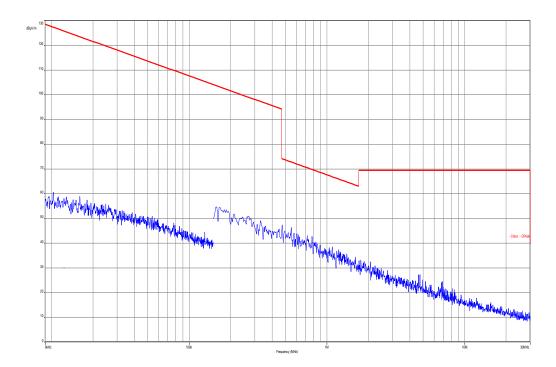
Result: Passed

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# Plots of the measurements: EUT No. 4: 01901263, RX MODE

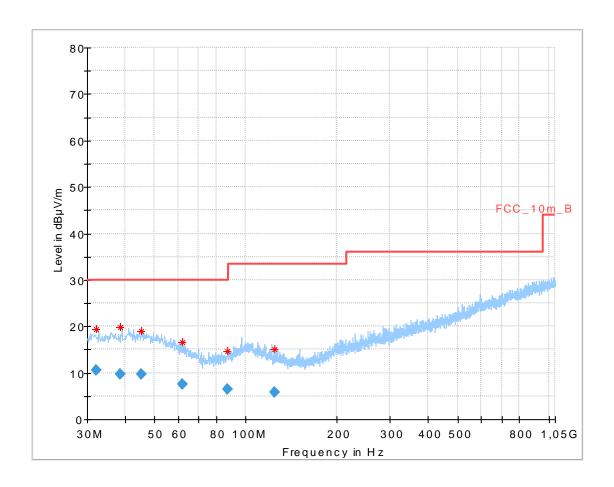
Plot 1: 9 kHz - 30 MHz; magnetic



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Plot 2: 30 MHz – 1000 MHz, vertical & horizontal polarization, RX MODE



# Final\_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
32.203050	10.65	30.00	19.35	1000.0	120.000	400.0	V	4	13.5
38.523900	9.73	30.00	20.27	1000.0	120.000	270.0	V	213	14.0
45.092550	9.68	30.00	20.32	1000.0	120.000	155.0	V	266	13.9
61.768800	7.65	30.00	22.35	1000.0	120.000	275.0	٧	95	11.2
87.342000	6.48	30.00	23.52	1000.0	120.000	200.0	Н	289	10.1
124.732800	5.89	33.50	27.61	1000.0	120.000	194.0	٧	189	9.8

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### 10.6 Conducted limits

### **Description:**

Measurement of the conducted spurious emissions in transmit mode below 30 MHz. The EUT is set to channel 6. This measurement is repeated for DSSS and OFDM modulation. If peaks are found channel 1 and channel 11 will be measured too. The measurement is performed with the data rate producing the highest output power. Both power lines, phase and neutral line, are measured. Found peaks are re-measured with average and quasi peak detection to show compliance to the limits.

### **Measurement:**

Measurement parameter						
Detector:	Peak - Quasi Peak / Average					
Sweep time:	Auto					
Video bandwidth:	F < 150 kHz: 200 Hz F > 150 kHz: 9 kHz					
Resolution bandwidth:	F < 150 kHz: 1 kHz F > 150 kHz: 100 kHz					
Span:	9 kHz to 30 MHz					
Trace-Mode:	Max Hold					

### **Limits:**

FCC		IC		
§ 15.107 / § 15.207	7	RSS-210 Issue 8		
T.	X Spurious Emissions	s Conducted < 30 MH	łz	
Frequency (MHz)	Quasi-Peak (dBµV/m)		Average (dBμV/m)	
0.15 – 0.5	66 to 56*		56 to 46*	
0.5 – 5	56		46	
5 – 30.0	60		50	

<sup>\*</sup>Decreases with the logarithm of the frequency

### Results:

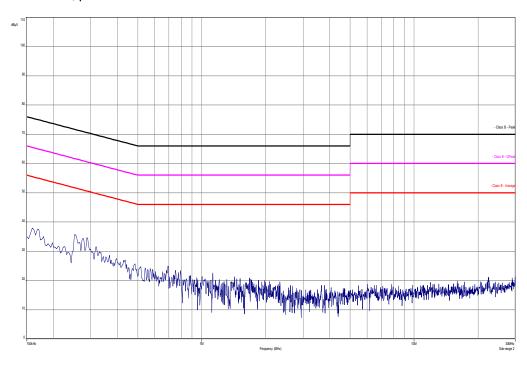
TX Spurious Emissions Conducted < 30 MHz [dBμV/m]							
F [MHz] Detector Level [dBµV/m]							
No peaks found							
Measurement uncertainty ± 3 dB							

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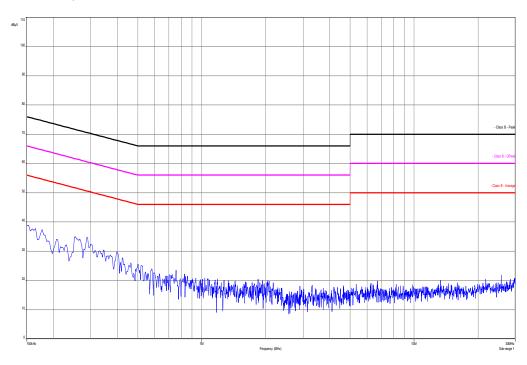


## Plots of the measurements: EUT No. 2: 01901277 TX MODE

Plot 1: 9 kHz - 30 MHz; phase line



Plot 2: 9 kHz - 30 MHz; neutral line



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## 11 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 (Lab/Item).

No.	Lab / Item	Equipment	Туре	Manufact.	Serial No.	INV. No Cetecom	Kind of Calibration	Last Calibration	Next Calibration
1	n. a.	Spectrum Analyzer 9kHz to 30GHz - 140+30dBm	FSP30	R&S	100886	300003575	k	22.08.2012	22.08.2014
2	45	Switch-Unit	3488A	HP Meßtechnik	2719A14505	300000368	g		
3	n. a.	software	SPS_PHE 1.4f	Spitzberger & Spieß	B5981; 5D1081;B597 9	300000210	ne		
4	n. a.	EMI Test Receiver	ESCI 3	R&S	100083	300003312	k	27.01.2014	27.01.2015
5	n. a.	Amplifier	JS42- 00502650- 28-5A	MITEQ	1084532	300003379	ev		
6	n. a.	Antenna Tower	Model 2175	ETS- LINDGREN	64762	300003745	izw		
7	n. a.	Positioning Controller	Model 2090	ETS- LINDGREN	64672	300003746	izw		
8	n. a.	Turntable Interface-Box	Model 105637	ETS- LINDGREN	44583	300003747	izw		
9	n. a.	TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbe ck	295	300003787	k	22.04.2014	22.04.2016
10	n. a.	Spectrum- Analyzer	FSU26	R&S	200809	300003874	k	22.01.2014	22.01.2015
11	n. a.	Anechoic chamber	FAC 3/5m	MWB/TDK	87400/02	300000996	ev		
12	n. a.	Switch / Control Unit	3488A	HP Meßtechnik	*	300000199	ne		
13	9	Artificial Mains 9 kHz to 30 MHz	ESH3-Z5	R&S	828576/020	300001210	Ve	30.01.2014	30.01.2016
14	9	Isolating Transformer	MPL IEC625 Bus Regeltrennt ravo	Erfi	91350	300001155	ne		
15	90	Active Loop Antenna 10 kHz to 30 MHz	6502	Kontron Psychotech	8905-2342	300000256	k	13.06.2013	13.06.2015
16	n. a.	Amplifier	js42- 00502650- 28-5a	Parzich GMBH	928979	300003143	ne		
17	n. a.	Band Reject filter	WRCG185 5/1910- 1835/1925- 40/8SS	Wainwright	7	300003350	ev		
18	n. a.	Band Reject filter	WRCG240 0/2483- 2375/2505- 50/10SS	Wainwright	11	300003351	ev		
19	n. a.	Highpass Filter	WHKX7.0/1 8G-8SS	Wainwright	18	300003789	ne		
20	n. a.	MXE EMI Receiver 20 Hz bis 26,5 GHz	N9038A	Agilent Technologi es	MY51210197	300004405	k	13.03.2014	13.03.2015
21	n. a.	4U RF Switch Platform	L4491A	Agilent Technologi es	MY50000037	300004509	ne		

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### Agenda: Kind of Calibration

calibration / calibrated k ΕK limited calibration not required (k, ev, izw, zw not required) cyclical maintenance (external cyclical maintenance) ne ZW periodic self verification ev izw internal cyclical maintenance Ve long-term stability recognized blocked for accredited testing g vlkl! Attention: extended calibration interval \*) next calibration ordered / currently in progress NK! Attention: not calibrated

# 12 Observations

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

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#### Annex A **Document history**

Version	Applied changes	Date of release
	Initial release	2014-07-18
-A	Manufacturer declaration of duty cycle removed	2014-07-18

#### Annex B **Further information**

## Glossary

AVG Average

DUT Device under test

**EMC Electromagnetic Compatibility** 

ΕN European Standard Equipment under test EUT

European Telecommunications Standard Institute

**Federal Communication Commission** 

ETSI -FCC -FCC ID -Company Identifier at FCC

Hardware HW

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

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#### Annex C **Accreditation Certificate**

Front side of certificate

Back side of certificate

((DAkkS

Deutsche Akkreditierungsstelle GmbH

Bellehene gemäß § 8 Absatz 1 AkkStelleG i.V.m. § 1 Absatz 1 AkkStelleGBV Unterzeichnerin der Multilateralen Abkommen von EA, ILAC und IAF zur gegenseitigen Anerkennung

Akkreditierung



Die Deutsche Akkreditierungsstelle GmbH bestätigt hiermit, dass das Prüflaboratorium

Untertürkheimer Straße 6-10, 66117 Saarbrücken

die Kompetenz nach DIN EN ISO/IEC 17025:2005 besitzt, Prüfungen in folgenden Bereichen durchzuführen:

Drahtgebundene Kommunikation einschließlich xDSL VoIP und DECT

VoIP und DECT
Akustik
Funk einschließlich WLAN
Short Range Devices (SRD)
RFID
Wilmax und Richtfunk
Mobilitunk (OSN / DCS, Over the Air (OTA) Performance)
Elektromagnetische Verträglichkeit (EMV) einschließlich Automotive Elektromagnetische Verträglichkeit (EMV) Produktsicherheit SAR und Hearing Aid Compatibility (HAC) Umweltsimulation

Smart Card Terminals Bluetooth Wi-Fi- Services

Die Akkreditierungsurkunde gilt nur in Verbindung mit dem Bescheld vom 07.03.2014 mit der Akkreditierungsnummer D-Pt-17076-01 und ist giltig 17.01.2018. Sie besteht aus diesem Deckblatt, der Rückseite des Deckblatts und der fulgenden Anlage mit Insgesamt 77 Seiten.

Registrierungsnummer der Urkunde: D-PL-12076-01-00

Frankfurt om Main, 07.03.2014

Deutsche Akkreditierungsstelle GmbH

Standort Frankfurt am Main

Die auszugsweise Veröffentlichung der Akkreditierungsunkunde becamf der wurhenigen schriftlichen Zusämmung der Deutsche Akkreditierungsstelle Gribh (DANKS). Ausgenommen diesen ist die separate Weiterveroreitung des Deckliattes durch die umseitig genennte Kunformitätsbewertungsstelle in unweränderter Form.

Es darf nicht der Ansthein erweckt werden, dass sich die Akkreditierung auch auf Bereichs erstreed, die über den durch die DAkkS bestätigten Akkreditierungsbereich hinausgehen.

Die Akkreditierung erfolgte gemöß des Grachten über din Akkreditierungsstells (Akkstellect) vom 31 Juli 2009 (Boß). I. S. 2675) sowie der Verordrung (161) Nr. 7657/2008 des Europäischen Parlament und des Rates vom S. 1.11 2008 (Boß der Verordrung). In R. 7657/2008 des Europäischen Parlament im Zusammenhang mit der Vermanktung von Produkten (Abl. L. 218 vom S. 1.11 2008, S. 30). Die DAkk Sist Uterrer descein der Wildhaltenstein Akkannenn auf gegenste Bigen Areste enung der European ers operation für Ausreditätien (EA), des Hebraatienal Acceptation form (IAI) and der International Labestury Ausredition on Ecoporation (LIAC). Die Unterzeichner eleser Abkommen erkomeen ihre Akkreditierungen gegenstellig an.

Der aktue in Stund der Villiglindsmaß kom folgen den Websetten ertnommen werden: FSL: www.naropisch-accord tellon.org IIAC: www.lacurg IIAC: www.lacurg

### 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/eu/de/cetecom-group/europa/deutschland-saarbruecken/akkreditierungen.html

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