

TEST REPORT

Test report no.: 1-4852/12-01-02-A



Deutsche
Akkreditierungsstelle
D-PL-12076-01-01

Testing laboratory

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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/Satellite Communications

Applicant

Oticon A/S
Kongebakken 9
2765 Smørum / DENMARK
Phone: +45 39 17 71 00
Fax: -/-
Contact: Jørgen Peter Hanuscheck
e-mail: jnp@oticon.dk
Phone: +45 39 13 85 38

Manufacturer

Oticon 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 Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment
RSS - Gen Issue 3	General Requirements and Information for the Certification of Radiocommunication Equipment

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

Test Item

Kind of test item:	Hearing Aid
Model name:	ITC/ITE Fusion 2
FCC ID:	U28FU2ITE
IC:	1350B-FU2ITE
Frequency:	3.8 MHz
Technology tested:	Magnetic coupling
Antenna:	Integrated coil antenna
Power Supply:	1.40 V DC by zinc - air battery / power supply
Temperature Range:	0°C to +35 °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:

Christoph Schneider

Test performed:

Marco Bertolino
Testing Manager

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2 General information

2.1 Notes and disclaimer

The test results of this test report relates 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:	2012-06-28
Date of receipt of test item:	2012-07-03
Start of test:	2012-07-03
End of test:	2012-07-03
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
RSS - Gen Issue 3	2010-12	General Requirements and Information for the Certification of Radiocommunication Equipment

4 Test environment

Temperature:	T_{nom}	+22 °C during room temperature tests
	T_{max}	+35 °C during high temperature tests
	T_{min}	0 °C during low temperature tests
Relative humidity content:		63 %
Barometric pressure:		not relevant for this kind of testing
Power supply:	V_{nom}	1.40 V DC by zinc - air battery / power supply
	V_{max}	1.40 V
	V_{min}	1.26 V

5 Test item

Kind of test item	:	Hearing Aid
Type identification	:	ITC/ITE Fusion 2
S/N serial number	:	TX units: EUT No. 1: 18731033 (P1) EUT No. 2: 19196685 (P3) EUT No. 3: 19197358 (P9)
	:	RX units: EUT No. 5: 18730166 (P4) EUT No. 6: 18737392 (P5)
	:	Photos unit: EUT No. 7: 19196749 (P8)
HW hardware status	:	117842 mainboard rev. 0 117844 engineblock rev. 0
SW software status	:	23-090.1.2
Frequency band [MHz]	:	EUT No. 1: 3.812 MHz EUT No. 2: 3.843 MHz EUT No. 3: 3.854 MHz
Type of radio transmission	:	Modulated carrier
Use of frequency spectrum	:	
Channel access method	:	-/-
Type of modulation	:	A1D
Number of channels	:	1
Antenna	:	Integrated coil antenna
Power supply	:	1.40 V DC by zinc - air battery / power supply
Temperature range	:	0°C to +35 °C

6 Test laboratories sub-contracted

None

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	2012-12-12	-/-

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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	complies
§ 15.223 / RSS-210 Issue 8	Bandwidth of the modulated carrier	Nominal	Nominal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	complies
§ 15.223 / RSS-210 Issue 8	Fieldstrength of fundamental	Nominal	Nominal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	complies
§ 15.209 (a) / RSS-210 Issue 8	Fieldstrength of harmonics and spurious	Nominal	Nominal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	complies
§ 15.109 / RSS-210 Issue 8	Receiver spurious emissions	Nominal	Nominal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	complies
§ 15.107 / § 15.207	Conducted limits	Nominal	Nominal	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	-/-

Note: NA = Not Applicable; NP = Not Performed

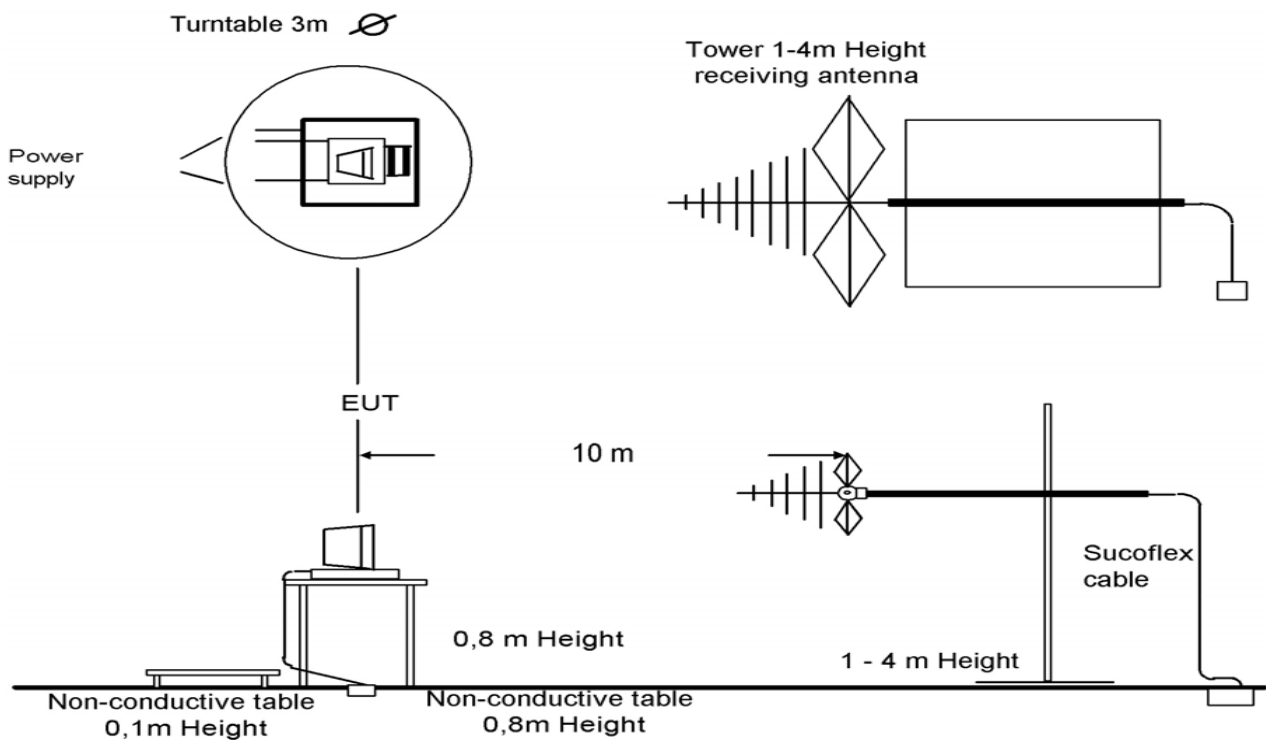
8 RF measurement testing

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



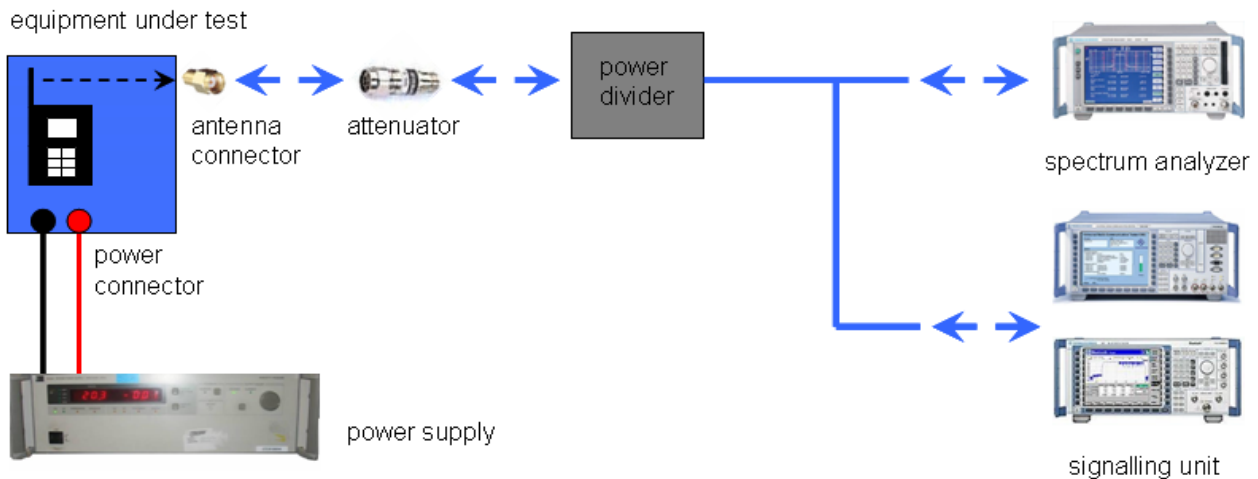
Picture 1: Diagram radiated measurements

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.

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: Oticon Wireless Hearing Aids – RF Test Setup 2010.

Manufacturer statement:

The RF-carrier frequency in Oticons wireless hearing aids, targeted for 3.84 MHz, is in the current Fusion platform generated by an RC-oscillator in turn feeding an LC-tank circuit in the transceiver. In other words, there is NO stable crystal oscillator and NO closed phase lock loop keeping the oscillator frequency in place. Furthermore, due to tolerances of the self induction of the antenna coil, which is part of the RF-tank circuit, and tolerances of the parallel capacitors, the initial carrier frequency tolerance of the RF-carrier is about plus and minus 2.5%. Finally due to the configuration of the RF-carrier frequency generating parts as described above an uncorrelated temperature drift of about plus and minus 2.5% can be added to the initial tolerance, resulting in an overall frequency accuracy of about plus minus 5.0% worst case!

Note: The EUT with the maximum field strength was used to perform the radiated spurious emissions tests!

Manufacturer declaration:

The provided test sample for radiated measurements had a transmitter duty cycle of 22% for ease of test, while the transmitter duty cycle in normal use is approximately 2.5%.

Special test descriptions: None

Configuration descriptions: None

8.3 RSP100 test report cover sheet / performance test data

Test Report Number	:	1-4852/12-01-02-A
Equipment Model Number	:	ITC/ITE Fusion 2
Certification Number	:	1350B-FU2ITE
Manufacturer (complete Address)	:	Oticon A/S Kongebakken 9 2765 Smørum / DENMARK
Tested to radio standards specification no.	:	RSS 210, Issue 8, Annex 8
Open Area Test Site IC No.	:	IC 3462C-1
Frequency Range or fixed frequency	:	3.843 MHz
Field Strength [dBµV/m] (at which distance)	:	53.0 dBµV/m @ 1m
Occupied bandwidth (99%-BW) [kHz]	:	346
Type of modulation	:	A1D
Emission Designator (TRC-43)	:	346KA1D
Antenna Information	:	Integrated coil antenna
Transmitter Spurious (worst case) [dBµV/m @ 3m]:		30 @ 980 MHz (noise floor) Peak
Receiver Spurious (worst case) [dBµV/m @ 3m]:		31 @ 980 MHz (noise floor) Peak

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.

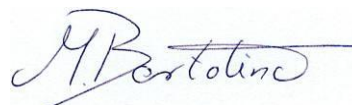
Laboratory Manager:

2012-11-12

Date

Marco Bertolino

Name



Signature

9 Measurement results

9.1 Timing of the transmitter

Measurement:

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

Limits:

FCC	IC
CFR Part SUBCLAUSE § 15.35 (c)	RSS-GEN Issue 3 Section 4.5
Timing of the transmitter	
<p>(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.</p>	

Duty cycle of the sample with test mode: 22 %

In normal use the duty cycle is approximately 2.5 % (declared by the manufacturer).

Result: Passed

9.2 Bandwidth of the modulated carrier

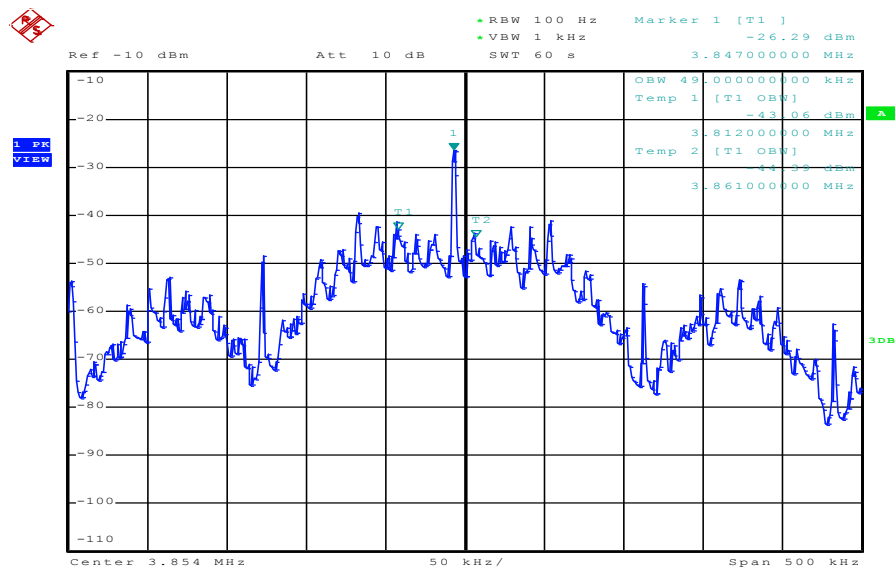
Limits:

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

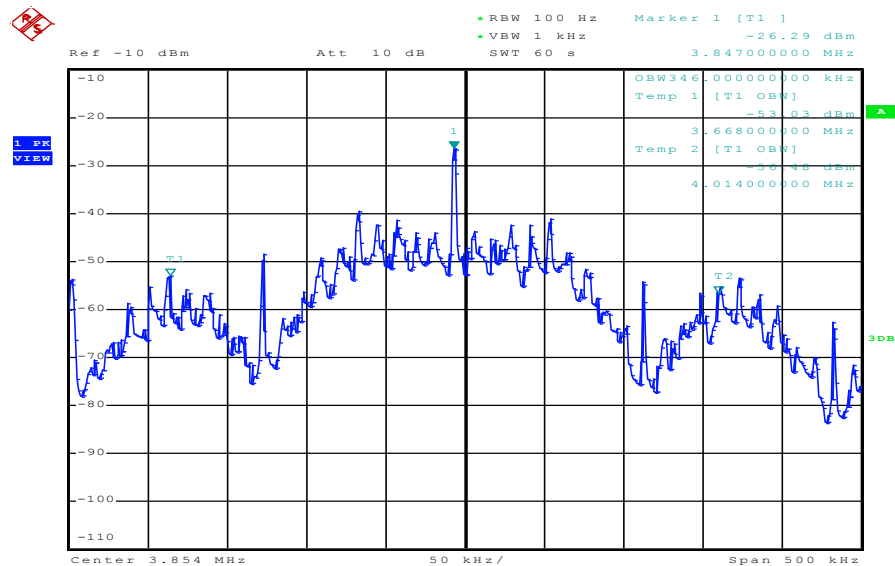
Measured with the integrated OBW-function of the spectrum analyser Rohde&Schwarz FSIQ26 (measurement criteria is the integrated power in %)

Result:

	Occupied Bandwidth (kHz)
6 dB (75%)	49.0
20 dB (99%)	346.0

Plots of the measurement: EUT No. 3: 19197358 (P9)**Plot 1: 6dB (75%) – bandwidth**

Date: 3.JUL.2012 12:01:38

Plot 2: 20dB (99%) - bandwidth

Date: 3.JUL.2012 12:02:28

9.3 Field strength of the fundamental

Measurement:

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

Limits:

FCC		IC
CFR Part SUBCLAUSE § 15.223		RSS-210 Issue 8
Fundamental Frequency (MHz)	Field strength of Fundamental ($\mu\text{V/m}$)	Measurement distance (m)
1.705 – 10.0	[15] or [6dB-BW(kHz) / F(MHz)] Whichever is higher	30

Results:

TEST CONDITIONS		MAXIMUM POWER (dB $\mu\text{V/m}$)	
Frequency		3.8 MHz	3.8 MHz
EUT No. 1: 18731033 (P1)		at 1 m distance	at 30 m distance
T _{nom}	V _{nom}	52.5	-7.5
EUT No. 2: 19196685 (P3)		at 1 m distance	at 30 m distance
T _{nom}	V _{nom}	53.0	-7.0
EUT No. 3: 19197358 (P9)		at 1 m distance	at 30 m distance
T _{nom}	V _{nom}	53.5	-6.5
Measurement uncertainty		±3dB	

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

Result: **Passed**

Noise floor: 26.5 dB μ V/m

***Note:**

- Calculation: Measured maximum field strength @ 1 m distance: 53.5 dB μ V/m

Correction factor from 1 m to 10 m: -40 dB (40 dB / decade)

53.5 dB μ V/m @ 1 meter - 40 dB = 13.5 dB μ V/m @ 10 meter

Correction factor from 1 m to 30 m: -60 dB (40 dB / decade)

53.5 dB μ V/m @ 1 meter - 60 dB = -6.5 dB μ V/m @ 30 meter

9.4 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
Span:	See plots!
Trace-Mode:	Max hold

Limits:

FCC		IC
SUBCLAUSE § 15.209 (a)		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 dBµV/m)	30
30 – 88	100 (40 dBµV/m)	3
88 – 216	150 (43.5 dBµV/m)	3
216 – 960	200 (46 dBµV/m)	3

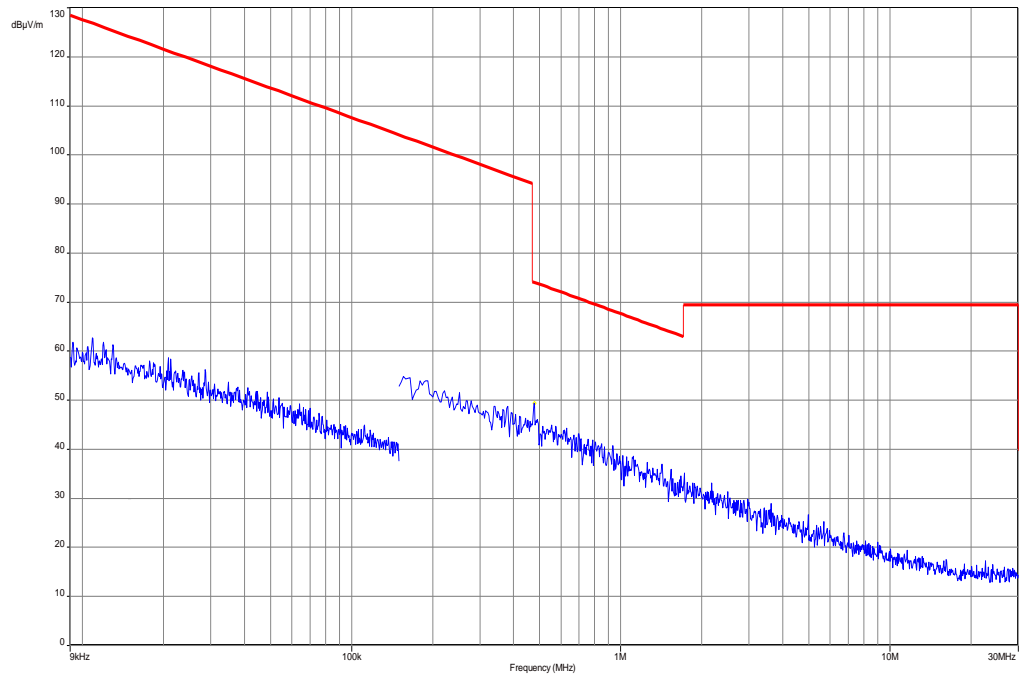
Result:

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

Result: **Passed**

Plots of the measurements: Radiated unit EUT No. 3: 19197358 (P9) (TX-mode)

Plot 1: 9 kHz – 30 MHz, magnetic emissions



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

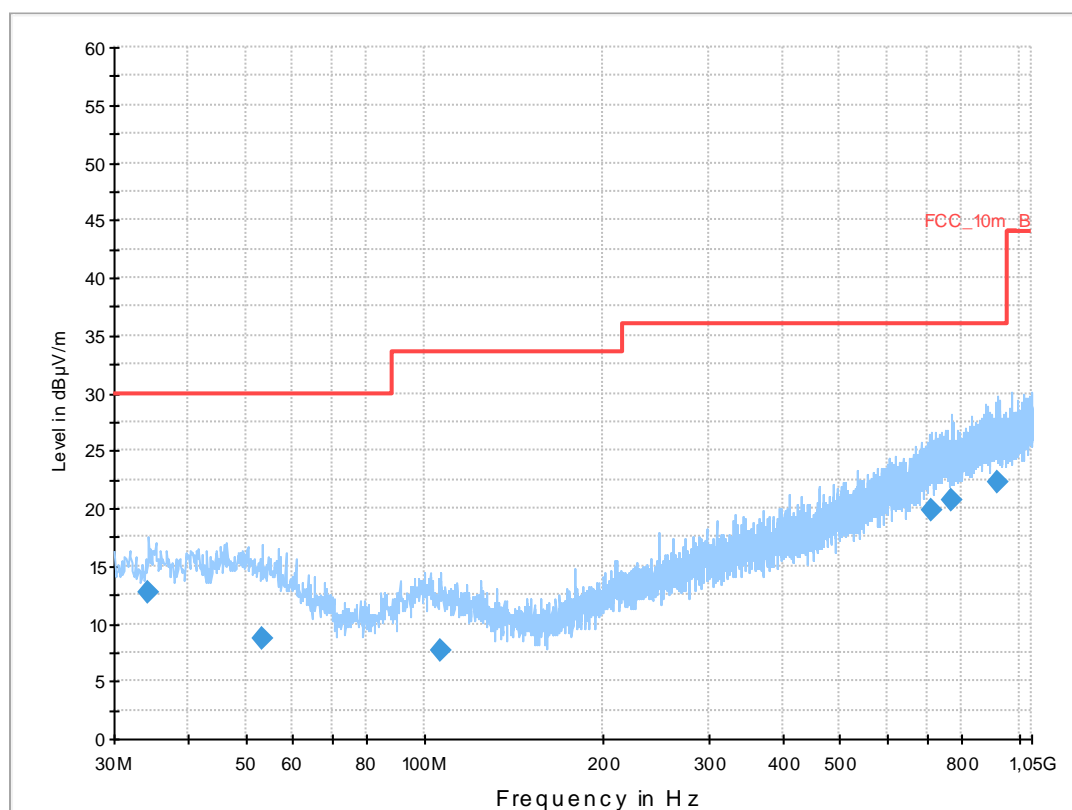
Common Information

EUT: ITC/ITE Fusion 2
 Serial Number: P9
 Test Description: FCC part 15 B class B @ 10 m
 Operating Conditions: cont. TX
 Operator Name: Hennemann
 Comment: battery powered 1,4 V

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup: Electric Field (NOS)
 Receiver: [ESCI 3]
 Level Unit: dB μ V/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)	Comment
34.305000	12.7	1000.0	120.000	105.0	V	88.0	13.0	17.3	30.0	
53.272200	8.8	1000.0	120.000	170.0	H	190.0	13.1	21.2	30.0	
106.530150	7.7	1000.0	120.000	170.0	V	268.0	11.3	25.8	33.5	
713.436450	19.9	1000.0	120.000	98.0	V	190.0	22.8	16.1	36.0	
768.210750	20.7	1000.0	120.000	120.0	H	190.0	23.7	15.3	36.0	
918.809850	22.2	1000.0	120.000	105.0	V	100.0	25.3	13.8	36.0	

9.5 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 dBµV/m)	30
30 – 88	100 (40 dBµV/m)	3
88 – 216	150 (43.5 dBµV/m)	3
216 – 960	200 (46 dBµV/m)	3

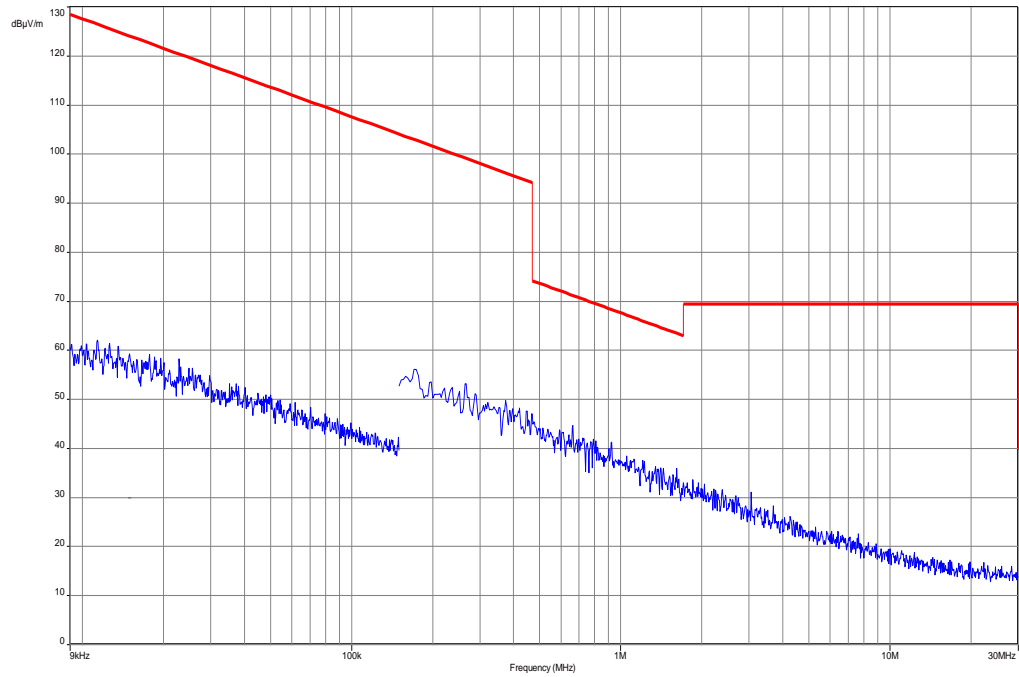
Result:

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

Result: **Passed**

Plots of the measurements: Radiated unit EUT No. 5: 18730166 (P4) (RX – mode)

Plot 1: 9 kHz – 30 MHz, magnetic emissions



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

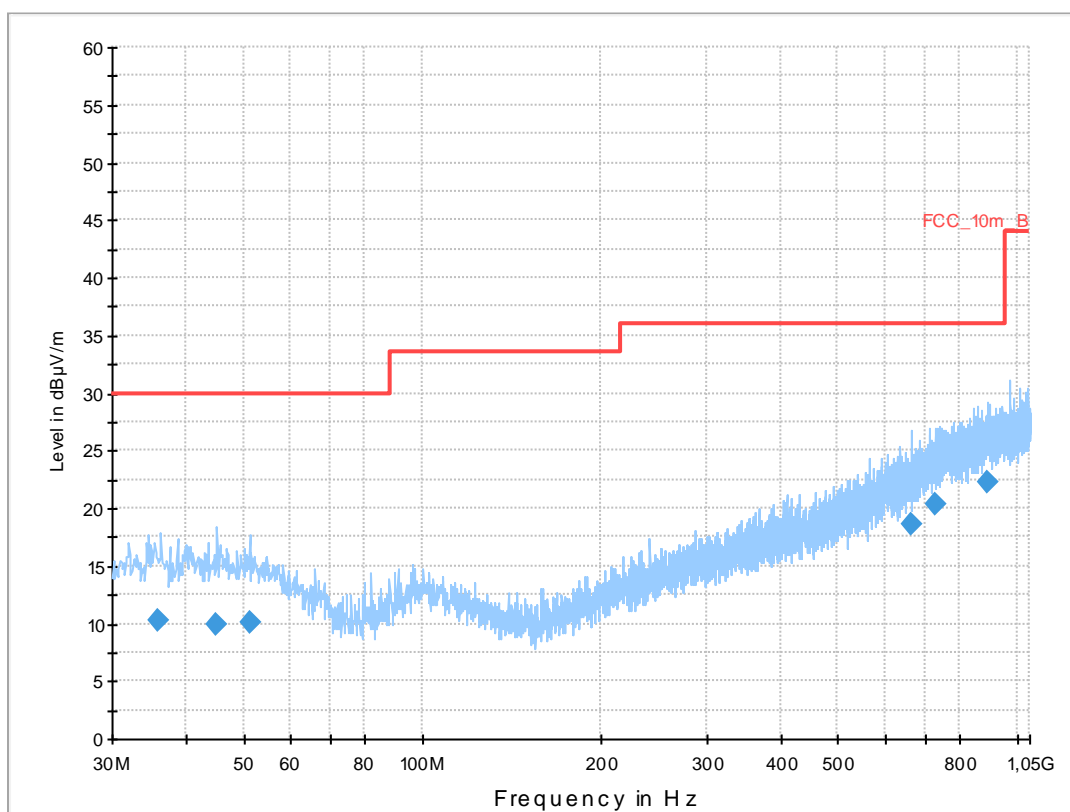
Common Information

EUT: ITC/ITE Fusion 2
 Serial Number: P4
 Test Description: FCC part 15 B class B @ 10 m
 Operating Conditions: cont. RX
 Operator Name: Hennemann
 Comment: battery powered 1,4 V

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup: Electric Field (NOS)
 Receiver: [ESCI 3]
 Level Unit: dB μ V/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)	Comment
35.933100	10.3	1000.0	120.000	105.0	H	100.0	13.1	19.7	30.0	
44.839950	9.8	1000.0	120.000	170.0	V	100.0	13.3	20.2	30.0	
51.145050	10.1	1000.0	120.000	170.0	H	190.0	13.3	19.9	30.0	
665.295450	18.6	1000.0	120.000	160.0	H	10.0	21.5	17.4	36.0	
731.379750	20.3	1000.0	120.000	170.0	H	190.0	23.2	15.7	36.0	
892.380300	22.3	1000.0	120.000	170.0	H	190.0	25.1	13.7	36.0	

9.6 Conducted limits

Not applicable!

The EUT is battery powered only!

No possibility to connect the mains power supply!

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	Type	Manufact.	Serial No.	INV. No Cetecom	Kind of Calibration	Last Calibration	Next Calibration
1	45	Switch-Unit	3488A	HP Meßtechnik	2719A14505	300000368	g		
2	50	DC power supply, 60Vdc, 50A, 1200 W	6032A	HP Meßtechnik	2920A04466	300000580	ne		
3	n. a.	software	SPS_PHE 1.4f	Spitzberger & Spieß	B5981; 5D1081; B5979	300000210	ne		
4	n. a.	EMI Test Receiver	ESCI 1166.5950.03	R&S	100083	300003312	k	04.01.2012	04.01.2013
5	n. a.	Analyzer-Reference-System (Harmonics and Flicker)	ARS 16/1	SPS	A3509 07/0 0205	300003314	k	14.07.2011	14.07.2013
6	n. a.	Amplifier	JS42-00502650-28-5A	MITEQ	1084532	300003379	ev		
7	n. a.	Antenna Tower	Model 2175	ETS-LINDGREN	64762	300003745	izw		
8	n. a.	Positioning Controller	Model 2090	ETS-LINDGREN	64672	300003746	izw		
9	n. a.	Turntable Interface-Box	Model 105637	ETS-LINDGREN	44583	300003747	izw		
10	n. a.	TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbeck	295	300003787	k		
11	n. a.	Spectrum-Analyzer	FSU26	R&S	200809	300003874	k	06.01.2012	06.01.2014
12	n. a.	Active Loop Antenna	6502	EMCO	2210	300001015	ne		
13	n. a.	Anechoic chamber	FAC 3/5m	MWB / TDK	87400/02	300000996	ev		
14	n. a.	Relais Matrix	3488A	HP Meßtechnik	2719A15013	300001156	ne		
15	n. a.	Relais Matrix	PSU	R&S	890167/024	300001168	ne		
16	n. a.	Three-Way Power Splitter, 50 Ohm	11850C	HP Meßtechnik		300000997	ne		
17	n. a.	Switch / Control Unit	3488A	HP	2605e08770	300001443	ne		
18	n. a.	TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbeck	371	300003854	vIKI!	14.10.2011	14.10.2014
19	n. a.	MXE EMI Receiver 20 Hz bis 26,5 GHz	N9038A	Agilent Technologies	MY51210197	300004405	k	19.12.2011	19.12.2012
20	n. a.	EMI Test Receiver 9 kHz - 3 GHz incl. Preselector	ESPI3	R&S	101713	300004059	k	16.08.2011	16.08.2012
21	n. a.	Test Receiver	ESH2	R&S	871921/095	300002505	Ve	12.01.2012	12.01.2014
22	n. a.	Loop Antenna 9 KHz - 30 MHz	HFH2-Z2	R&S	872096/61	300001824	vIKI!	09.03.2012	09.03.2015

Agenda: Kind of Calibration

k	calibration / calibrated	EK	limited calibration
ne	not required (k, ev, izw, zw not required)	zw	cyclical maintenance (external cyclical maintenance)
ev	periodic self verification	izw	internal cyclical maintenance
Ve	long-term stability recognized	g	blocked for accredited testing
vkI!	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.

Annex A Document history

Version	Applied changes	Date of release
1.0	Initial release	2012-07-03
-A	Changed RSP	2012-11-12

Annex B 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

Annex C Accreditation Certificate



Deutsche Akkreditierungsstelle GmbH
German Accreditation Body

Entrusted according to Section 8 subsection 1 AkkStelleG in connection with Section 1 subsection 1 AkkStelleGBV
Signatory to the Multilateral Agreements of EA, ILAC and IAF for Mutual Recognition

Accreditation



The Deutsche Akkreditierungsstelle GmbH (German Accreditation Body) attests that the testing laboratory

CETECOM ICT Services GmbH
Untertürkheimer Straße 6-10
66117 Saarbrücken

is competent under the terms of DIN EN ISO/IEC 17025:2005 to carry out tests in the following fields:

Wired communications and DECT
Acoustic
Radio
Short Range Devices (SRD)
RFID
WiMax and Richtfunk
Mobile radio (GSM / DCS), Over the Air (OTA) Performance
Electromagnetic Compatibility (EMC) incl. Automotive
Product safety
SAR and Hearing Aid Compatibility (HAC)
Environmental simulation
Smart Card Terminals
Bluetooth
Wi-Fi-Services

The accreditation certificate shall only apply in connection with the notice of accreditation of 13.04.2011 with the accreditation number D-PL-12076-01 and is valid until 03.09.2014. It comprises the cover sheet, the reverse side of the cover sheet and the following annex with a total of 82 pages.

Registration number of the certificate: D-PL-12076-01-01

Frankfurt am Main, 13.04.2011

Dipl.-Ing. (FH) Rüdiger Eger
Head of Division 2

This document is a translation. The definitive version is the original German accreditation certificate.
See notes overleaf.

Deutsche Akkreditierungsstelle GmbH

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Spittelmarkt 10
10117 Berlin

Office Frankfurt am Main
Gartenstraße 6
60594 Frankfurt am Main

Office Braunschweig
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38116 Braunschweig

The publication of extracts of the accreditation certificate is subject to the prior written approval by Deutsche Akkreditierungsstelle GmbH (DAKKS). Exempted is the unchanged form of separate disseminations of the cover sheet by the conformity assessment body mentioned overleaf.

No impression shall be made that the accreditation also extends to fields beyond the scope of accreditation attested by DAKKS.

The accreditation was granted pursuant to the Act on the Accreditation Body (AkkStelleG) of 31 July 2009 (Federal Law Gazette I p. 2625) and the Regulation (EC) No 765/2008 of the European Parliament and of the Council of 9 July 2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products (Official Journal of the European Union L 218 of 9 July 2008, p. 30). DAKKS is a signatory to the Multilateral Agreements for Mutual Recognition of the European co-operation for Accreditation (EA), International Accreditation Forum (IAF) and International Laboratory Accreditation Cooperation (ILAC). The signatories to these agreements recognise each other's accreditations.

The up-to-date state of membership can be retrieved from the following websites:

EA: www.european-accreditation.org
ILAC: www.ilac.org
IAF: www.iaf.nu

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_Akkred_Urk_EN17025-En_incl_Annex.pdf