



Product Service

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Prüfergebnisse / Test Results		Auftragsnummer / Order No. 71344359				
Auftraggeber <i>Applicant</i>	Karl Koch Thermometerfabrik					
Hersteller <i>Manufacturer</i>	Karl Koch Thermometerfabrik					
Geräteart <i>Type of equipment</i>	Multifunction alarm clock					
Typenbezeichnung <i>Type designation</i>	Light Vision, Art.No.11307					
Seriennummer <i>Serial number</i>	---					
Eingangsdatum <i>Date received</i>	October 22, 2008	Ausgangsdatum <i>Date returned</i>	---			
Test report no. 52208-081355 (Edition 1)	Die Prüfungen wurden nach folgenden Vorschriften durchgeführt: <i>Tests were performed according to:</i> EN 61000-6-3:2007 EN 61000-6-1:2007					
Durchgeführte Prüfung Test performed	Grenzwerte Limits		Prüfergebnis Test result			
	Abstand <i>Margin</i>	Überschritten <i>Exceeded by</i>	Erfüllt <i>Passed</i>	Nicht erfüllt <i>Not Passed</i>	Nicht zutreffend <i>Not applicable</i>	Kriterium <i>Criterion</i>
Störspannung / <i>Disturbance voltage</i>			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Störstrom / <i>Disturbance current</i>			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Gestrahlte Störgrößen / <i>Radiated disturbance</i>			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Oberschwingungen / <i>Harmonics</i>			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Spannungsschwankungen / <i>Flicker</i>			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Entladung statischer Elektrizität / <i>Electrostatic discharge</i>			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	B
Schnelle Transiente / <i>Electrical fast transients</i>			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	B
Elektromagnetische HF-Felder / <i>RF-electromagnetic fields</i>			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A
Induzierte leitungsgeführte Störgrößen / <i>Induced conducted disturbances</i>			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	A
Magnetfelder mit energietechnischer Frequenz / <i>Power magnetic fields</i>			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	A
Stoßspannungen / <i>Surges</i>			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	B
Spannungseinbrüche und -unterbrechungen / <i>Voltage dips and interruptions</i>			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	B/C

Bemerkungen / Remarks:

Die Prüfergebnisse beziehen sich ausschließlich auf das zur Prüfung vorgestellte Prüfmuster. Ohne schriftliche Genehmigung des Prüflabors darf der Prüfbericht auszugsweise nicht vervielfältigt werden. *The test results relate only to the individual item which has been tested. Without the written approval of the test laboratory this report may not be reproduced in extracts.*

Datum / <i>Date</i>	Geprüft von / <i>Tested by</i>	Freigabe durch / <i>Checked by</i>	Prüfergebnis / Test Result <input checked="" type="checkbox"/> Erfüllt / Passed <input type="checkbox"/> Nicht erfüllt / Not passed
05.11.2008	 Karl Roidt Responsible for testing	 Johann Roidt Laboratory manager	



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Table of Contents

1	Administrative Data.....	3
2	Details about the Test Laboratory	4
3	Description of the Equipment Under Test	5
4	Summary	6
5	Operation Mode and Configuration of EUT	7
6	Performance Criteria and Methods of Observation	8
7	Annotations to Performed Tests	9
7.1	Conducted emission tests.....	9
7.2	Radiated emission tests.....	9
8	Referenced Regulations	10
9	Measurement Uncertainty Values	11
10	Test Results	13
10.1	Radiated Emission Test.....	14
10.2	Electrostatic Discharge	19
10.3	RF-Electromagnetic Fields.....	23
11	Revision History.....	26



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1 Administrative Data

Application details	
Applicant:	Karl Koch Thermometerfabrik
Contact person:	Mr Werner Leistner, TÜV SÜD Product Service GmbH
Order number:	71344359
Receipt of EUT:	October 22, 2008
Return of EUT:	---
Date(s) of test:	November 05, 2008
Note(s):	---
Responsible for testing:	Mr. Karl Roidt
Responsible for test report:	Mr. Karl Roidt
Test report checked by:	Mr. Johann Roidt

Report details	
Report number:	52208-081355
Edition:	1
Issue date:	05.11.2008



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2 Details about the Test Laboratory

Details about the Test Laboratory	
Company name:	Senton GmbH EMI/EMC Test Center
Address:	Senton GmbH Äußere Frühlingstraße 45 D-94315 Straubing Germany
Laboratory accreditation:	DAR-Registration No. DAT-P-171/94-02
Contact:	Mr. Johann Roidt
	Phone: +49 9421 5522-0 Fax: +49 9421 5522-99



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3 Description of the Equipment Under Test

Equipment characteristics	
Type designation:	Light Vision, Art.No.11307
Parts of the system:	---
Options and accessories:	---
Type of equipment:	Multifunction alarm clock
Serial number:	---
Power supply:	Battery supply (gel-cell) Nominal: 4,5 V
Version of EUT:	as received



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4 Summary

Summary of test results

The tested sample complies with the requirements for electromagnetic compatibility set forth in

EN 61000-6-3:2007

EN 61000-6-1:2007



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5 Operation Mode and Configuration of EUT

Operation Mode(s)

on mode

List of ports and cables

No.	Description	Classification ¹	Cable type	Cable length
A1	---	ac power	Unshielded	
D1	---	dc power	Unshielded	
S1	---	signal/control port	Shielded	

List of devices connected to EUT

No.	Description	Type designation	Serial no. or ID	Manufacturer
1	----			

List of support devices

No.	Description	Type designation	Serial no. or ID	Manufacturer
1	---			

¹ Ports shall be classified as ac power, dc power or signal/control port.



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6 Performance Criteria and Methods of Observation

Definition of General Performance Criteria	
Referenced Standard:	EN 61000-6-1:2007
Common Requirements:	The equipment shall not become dangerous or unsafe as a result of the application of the tests defined in this standard.
<i>Performance criterion</i>	<i>Specification</i>
A	The equipment shall continue to operate as intended without interference of the operator. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer when the equipment is used as intended. In certain cases the minimum performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer then either of these may be derived from the product description and documentation and what the user may reasonably expect from the equipment if used as intended.
B	The equipment shall continue to operate as intended after the test without interference of the operator. After test no degradation of performance or loss of function is allowed below a performance level specified by the manufacturer when the equipment is used as intended. The minimum performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed. After test no change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is not specified by the manufacturer then either of these may be derived from the product description and documentation and what the user may reasonably expect from the equipment if used as intended.
C	Loss of function is allowed, provided the function is self recoverable or can be restored by the operation of the controls in accordance with the instructions of the manufacturer. Functions and/or data not stored in temporary memory or protected by a backup battery may not be lost.

Methods of Observation			
<i>Function</i>	<i>Observed size</i>	<i>Permissible range</i>	<i>Observation method</i>



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7 Annotations to Performed Tests

7.1 Conducted emission tests

In general conducted emission tests in the frequency range 150 kHz - 30 MHz are required to be performed with quasi-peak and average detector. To simplify testing the following procedure is used: First the whole spectrum of emission caused by equipment under test (EUT) is recorded with detector set to peak. After that all emission levels having less margin than 20 dB to or exceeding the appropriate limit (in general average limit is 10 dB lower than quasi-peak limit) are retested with detector set to quasi-peak. If average limit is kept no additional scan with average detector is necessary. In cases of emission levels between quasi-peak and average limit an additional scan with detector set to average has to be recorded.

7.2 Radiated emission tests

Radiated emission tests in the frequency range 30 - 1000 MHz are performed in two steps: First a peak scan using an anechoic room with test distance of 3 m between measuring antenna and EUT is performed to get the whole spectrum of emission caused by EUT. During testing EUT is rotated all around. If test is performed in a semi-anechoic room with groundplane the measuring antenna is raised and lowered from 1 to 4 m to find the maximum emission levels. Testing in a fully anechoic room is performed with fixed antenna height. In the test report this measurement is characterized as prescan. Limit lines are added to these prescan charts to check margin to appropriate limit. If testing is performed without groundplane limit values are reduced by 5 dB (if applicable according to the standard used). In cases of required test distances differing from 3 metres limit levels are converted to 3 metres using the theoretical conversion factors. Finally emission levels having less margin than 6 dB to or exceeding the limit are retested using an open area test site with the required test distance and detector of the test receiver set to quasi-peak. Again EUT is rotated all around and measuring antenna is raised and lowered from 1 to 4 m to find the maximum emission levels.



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8 Referenced Regulations

<i>European publication</i>	<i>International publication</i>	<i>Title</i>
EN 61000-4-1:2000	IEC 61000-4-1:2000	Electromagnetic compatibility (EMC) Part 4-1: Testing and measuring techniques - Overview of IEC 61000-4 series
EN 61000-4-2:1995 + A1:1998 + A2:2001	IEC 61000-4-2:1995 + A1:1998 + A2:2000	Electromagnetic compatibility (EMC) Part 4-2: Testing and measuring techniques - Electrostatic discharge immunity test
EN 61000-4-3:2006 + A1:2008	IEC 61000-4-3:2006 + A1:2007	Electromagnetic compatibility (EMC) Part 4-3: Testing and measurement techniques - Radiated, radio-frequency electromagnetic field immunity test
EN 61000-6-1:2007	IEC 61000-6-1:2005	Electromagnetic compatibility (EMC) Part 6-1: Generic standards - Immunity for residential, commercial and light-industrial environments
EN 61000-6-3:2007	IEC 61000-6-3:2006	Electromagnetic compatibility (EMC) Part 6-3 Generic standards - Emission standard for residential, commercial and light-industrial environments



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9 Measurement Uncertainty Values

Radio Interference Emission Testing			
Test	k_p	Expanded Uncertainty	Note
Conducted Voltage Emission			
9 kHz to 150 kHz (50Ω/50μH V-NetznachbildungAMN)	2	± 3.8 dB	1
150 kHz to 30 MHz (50Ω/50μH V-NetznachbildungAMN)	2	± 3.4 dB	1
100 kHz to 200 MHz (50Ω/5μH NetznachbildungAMN)	2	± 3.6 dB	1
Discontinuous Conducted Emission			
9 kHz to 150 kHz (50Ω/50μH V-NetznachbildungAMN)	2	± 3.8 dB	1
150 kHz to 30 MHz (50Ω/50μH V-NetznachbildungAMN)	2	± 3.4 dB	1
Conducted Current Emission			
9 kHz to 200 MHz	2	± 3.5 dB	1
Magnetic Fieldstrength			
9 kHz to 30 MHz	2	± 3.9 dB	1
Radiated Emission			
Test distance 3 m			
30 MHz to 300 MHz	2	± 4.9 dB	1
300 MHz to 1 GHz	2	± 4.8 dB	1
Test distance 10 m			
30 MHz to 300 MHz	2	± 4.8 dB	1
300 MHz to 1 GHz	2	± 4.6 dB	1
Radio Interference Power			
30 MHz to 300 MHz	2	± 3.5 dB	1
Harmonic Current Emissions			
			4
Voltage Changes, Voltage Fluctuations and Flicker			
			4



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Immunity Testing			
Test	k_p	Expanded Uncertainty	Note
Electrostatic Discharges			4
Radiated RF-Field			
Pre-calibrated field level	2.05	+21.9 / -18.0 %	3
Dynamic feedback field level	2.05	+21.2 / -17.5 %	3
Electrical Fast Transients (EFT) / Bursts			4
Surges			4
Conducted Disturbances, induced by RF-Fields	2	+30.3 / -23.2 %	2
Power Frequency Magnetic Field	2	+20.7 / -17.1 %	2
Pulse Magnetic Field			4
Voltage Dips, Short Interruptions and Voltage Variations			4
Oscillatory Waves			4
Electrical Transient Transmission in Road Vehicles			4

Note 1:

The expanded uncertainty reported according to CISPR 16-4-2:2003-11 is based on a standard uncertainty multiplied by a coverage factor of $k_p = 2$, providing a level of confidence of $p = 95.45\%$

Note 2:

The expanded uncertainty reported according to UKAS Lab 34 (Edition 1, 2002-08) is based on a standard uncertainty multiplied by a coverage factor of $k_p = 2$, providing a level of confidence of $p = 95.45\%$

Note 3:

The expanded uncertainty reported according to UKAS Lab 34 (Edition 1, 2002-08) is based on a standard uncertainty multiplied by a coverage factor of $k_p = 2.05$, providing a level of confidence of $p = 95.45\%$

Note 4:

It has been demonstrated that the used test equipment meets the specified requirements in the standard with at least a 95% confidence.



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10 Test Results

Emission Tests

EN 61000-6-3:2007			
<i>Section(s)</i>	<i>Test performed</i>	<i>Page</i>	<i>Test Result</i>
5.1	Conducted disturbance at mains terminals 150 kHz - 30 MHz	---	Not applicable
5.2	Conducted disturbance at telecommunication ports Disturbance voltage 150 kHz - 30 MHz	---	Not applicable
	Disturbance current 150 kHz - 30 MHz	---	Not applicable
6	Radiated disturbance 30 MHz - 1 GHz	16	Test passed
EN 61000-3-2:2000			
<i>Section(s)</i>	<i>Test performed</i>	<i>Page</i>	<i>Test Result</i>
7	Harmonics	---	Not applicable
EN 61000-3-3:1995 + A1:2001			
<i>Section(s)</i>	<i>Test performed</i>	<i>Page</i>	<i>Test Result</i>
5	Flicker	---	Not applicable

Immunity Tests

EN 55024:1998 + A1:2001 + A2:2003			
<i>Section(s)</i>	<i>Test performed</i>	<i>Page</i>	<i>Test Result</i>
4.2.1	Electrostatic discharge	21	Test passed
4.2.2	Electrical fast transients (burst)	---	Not applicable
4.2.3.1	RF-electromagnetic fields	25	Test passed
4.2.3.2	Induced conducted disturbances	---	Not applicable
4.2.4	Power magnetic fields	---	Not applicable
4.2.5	Surges	---	Not applicable
4.2.6	Voltage dips and interruptions	---	Not applicable

10.1 Radiated Emission Test

10.1.1 Test Setup





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10.1.2 Test Equipment List

Type	Designation	Inv.-no.	Serial No. or ID	Manufacturer
<input type="checkbox"/> EMI test receiver	ESMI	1569	839379/013 839587/006	Rohde & Schwarz
<input checked="" type="checkbox"/> EMI test receiver	ESPI7	1711	836914/0002	Rohde & Schwarz
<input type="checkbox"/> EMI test receiver Cabin no. 3	ESPI7	2010	101018	Rohde & Schwarz
<input type="checkbox"/> EMI test receiver	ESCI3	1863	100008	Rohde & Schwarz
<input checked="" type="checkbox"/> Test receiver	ESVP	1025	881120/024	Rohde & Schwarz
<input type="checkbox"/> Spectrum analyzer	FSP30	1666	100036	Rohde & Schwarz
<input checked="" type="checkbox"/> Preamplifier Cabin no. 2	CPA9231A	1651	3393	Schaffner
<input type="checkbox"/> Preamplifier Cabin no. 2	AFS3-00100800-32-LN	1684	847743	Miteq
<input type="checkbox"/> Preamplifier Cabin no. 2	ACO/180-3530	1484	32641	CTT
<input type="checkbox"/> Preamplifier	CPA9231A	1716	3557	Schaffner
<input type="checkbox"/> Preamplifier	R14601	1142	13120026	Advantest
<input type="checkbox"/> Preamplifier	AMF-4D-005080-25-13P	1685	860149	Miteq
<input type="checkbox"/> Magnetic Field Pickup Coil	HZ-10	1605	827129/013	Rohde & Schwarz
<input type="checkbox"/> Loop antenna	HFH2-Z2	1016	882964/1	Rohde & Schwarz
<input type="checkbox"/> Rod antenna	HFH2-Z6	1017	893053/001	Rohde & Schwarz
<input checked="" type="checkbox"/> Trilog antenna Cabin no. 2	VULB 9163	1722	9163-188	Schwarzbeck
<input type="checkbox"/> Trilog antenna Cabin no. 3	VULB 9163	1802	9163-214	Schwarzbeck
<input type="checkbox"/> Biconical antenna Cabin no. 3	HK 116	1261	836239/02	Rohde & Schwarz
<input type="checkbox"/> Log. per. antenna Cabin no. 3	HL 223	1262	834408/12	Rohde & Schwarz
<input checked="" type="checkbox"/> Biconical antenna EG 1	HK 116	1518	842204/001	Rohde & Schwarz
<input checked="" type="checkbox"/> Log. per. antenna EG 1	HL 223	1519	841516/023	Rohde & Schwarz
<input type="checkbox"/> Shielded room	No. 1	1451	---	Albatross
<input checked="" type="checkbox"/> Fully anechoic room	No. 2	1452	---	Albatross
<input type="checkbox"/> Semi anechoic room	No. 3	1453	---	Siemens
<input type="checkbox"/> Shielded room	No. 4	1454	3FD 100 544	Euroshield
<input type="checkbox"/> Shielded room	No. 5	1537	5468	Ray Proof Division
<input type="checkbox"/> Fully anechoic room	No. 6	1865	---	Albatross
<input type="checkbox"/> Shielded room	No. 7	1866	---	Albatross
<input checked="" type="checkbox"/> Open field test site	EG 1	1450	---	Senton

10.1.3 Test Results

Results for radiated emission test are documented as listed below.



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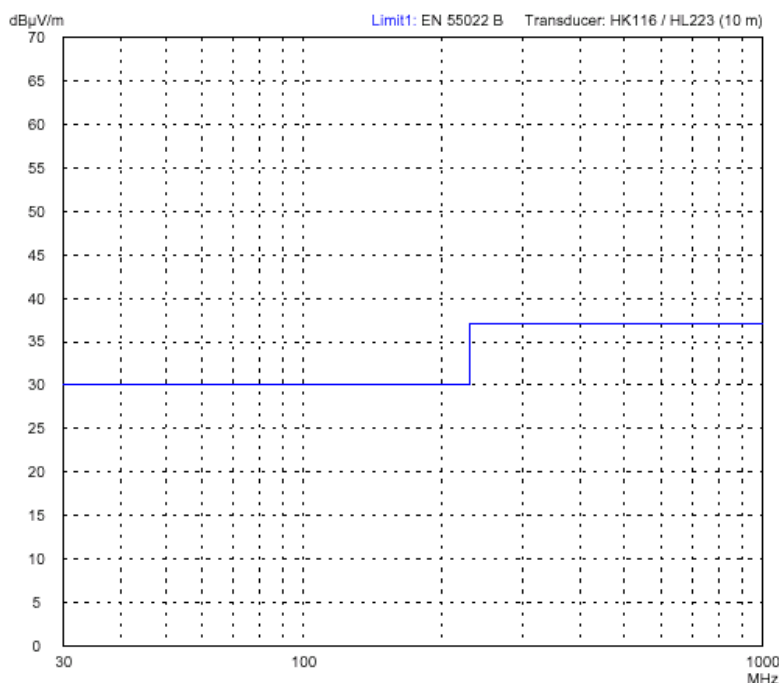
Radiated Emission Test 30 MHz - 1 GHz

Prüfdatum / <i>Date of test:</i>	November 03, 2008
Prüfer / <i>Operator:</i>	Karl Roidt
Messplatz / <i>Test site:</i>	Open field test site, EG 1

Prüfergebnis / <i>Test Result</i>	
<input checked="" type="checkbox"/>	Erfüllt / <i>Passed</i>
<input type="checkbox"/>	Nicht erfüllt / <i>Not passed</i>

Prüfgrundlage / <i>Specifications:</i>	EN 61000-6-3:2007
Betriebsart / <i>Operation mode:</i>	on mode
Kommentar / <i>Comment:</i>	---

Messentfernung / <i>Test distance:</i>	10 m
Polarisation / <i>Polarization:</i>	horizontal



Quasipeak					
Frequency (MHz)	Reading (dBµV)	Correction (dB/m)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)
no results					



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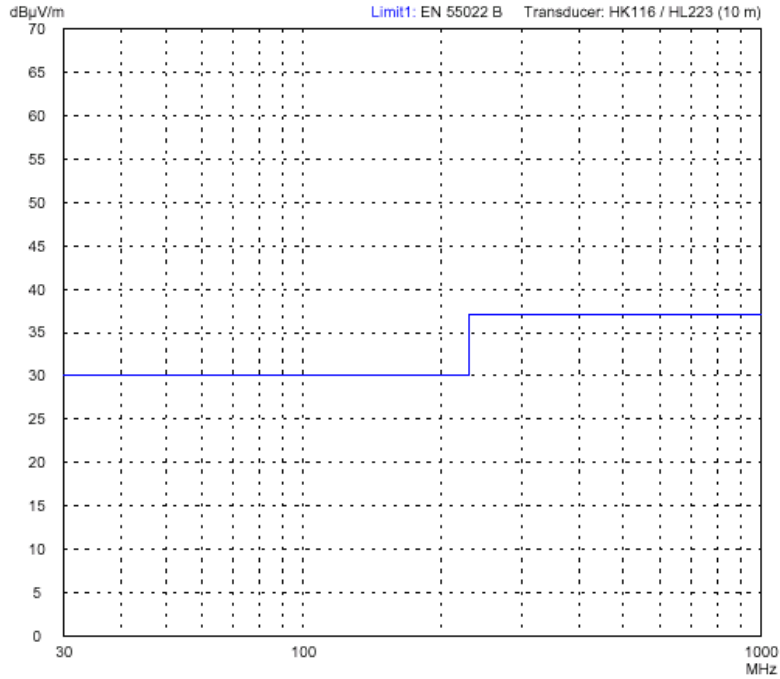
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Messentfernung / <i>Test distance:</i>	10 m
Polarisation / <i>Polarization:</i>	vertical



Quasipeak					
Frequency (MHz)	Reading (dBµV)	Correction (dB/m)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)
no results					



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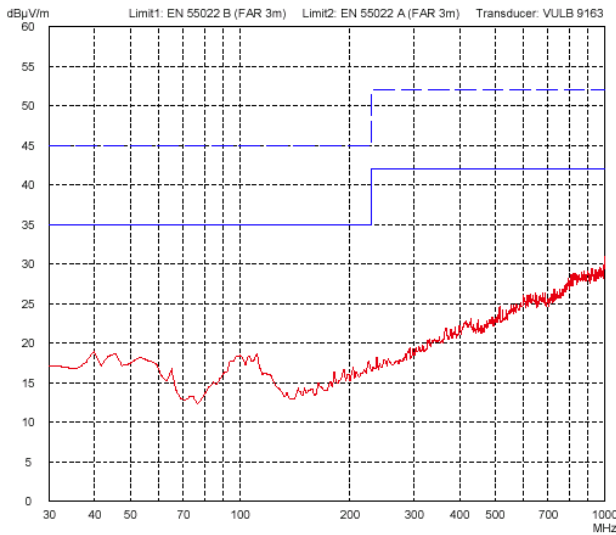
Radiated Emission Test (Prescans) 30 MHz - 1 GHz

Prüfdatum / <i>Date of test:</i>	November 03, 2008
Prüfer / <i>Operator:</i>	Karl Roidt
Messplatz / <i>Test site:</i>	Fully anechoic room, cabin no. 2

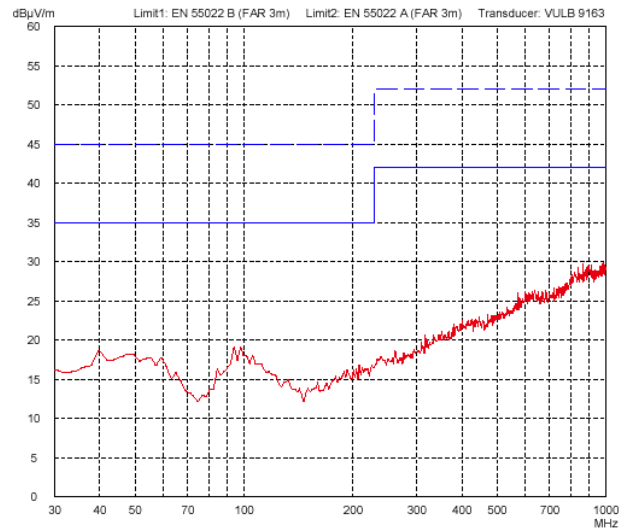
Vormessungen / Prescans

Prüfgrundlage / <i>Specifications:</i>	EN 61000-6-3:2007
Messentfernung / <i>Test distance:</i>	3 m
Betriebsart / <i>Operation mode:</i>	on mode
Kommentar / <i>Comment:</i>	---

Horizontal Polarization



Vertical Polarization



10.2 Electrostatic Discharge

10.2.1 Test Setup





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10.2.2 Test Equipment List

Type	Designation	Inv.-no.	Serial No. or ID	Manufacturer
<input checked="" type="checkbox"/> ESD simulator	NSG 435	1223	000290	Schaffner
<input type="checkbox"/> ESD Generator	ESD 30	1650	0500-09	EM Test
<input checked="" type="checkbox"/> Shielded room	No. 1	1451	---	Albatross
<input type="checkbox"/> Fully anechoic room	No. 2	1452	---	Albatross
<input type="checkbox"/> Semi anechoic room	No. 3	1453	---	Siemens
<input type="checkbox"/> Shielded room	No. 4	1454	3FD 100 544	Euroshield
<input type="checkbox"/> Shielded room	No. 5	1537	5468	Ray Proof Division
<input type="checkbox"/> Fully anechoic room	No. 6	1865	---	Albatross
<input type="checkbox"/> Shielded room	No. 7	1866	---	Albatross

10.2.3 Test Results

Results for electrostatic discharge test are documented as listed below.



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Electrostatic Discharge

Prüfdatum / <i>Date of test:</i>	November 03, 2008
Prüfer / <i>Operator:</i>	Karl Roidt
Messplatz / <i>Test site:</i>	Shielded room, cabin no. 1

Prüfergebnis / <i>Test Result</i>	
<input checked="" type="checkbox"/>	Erfüllt / <i>Passed</i>
<input type="checkbox"/>	Nicht erfüllt / <i>Not passed</i>

Luftdruck / <i>Barometric pressure:</i>	996 hPa
Relative Luftfeuchtigkeit / <i>Relative humidity:</i>	48 %
Temperatur / <i>Ambient temperature:</i>	21 °C

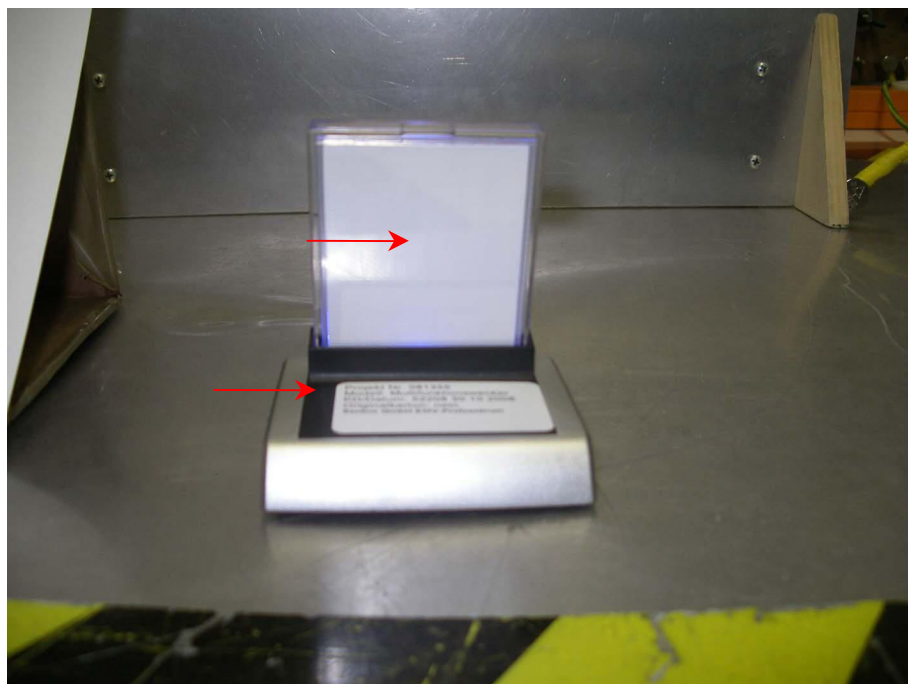
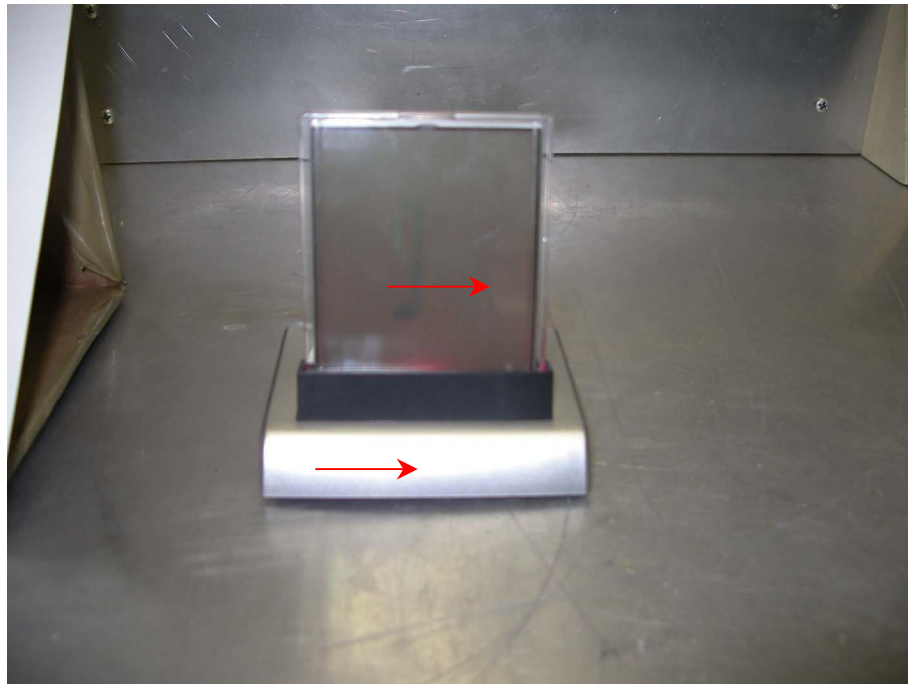
Prüfgrundlage / <i>Specifications:</i>	EN 61000-6-1:2007
Bewertungskriterium / <i>Performance criterion:</i>	B
Anforderung / <i>Requirement:</i>	Contact discharge: ± 4 kV Air discharge: ± 8 kV
Basisnorm / <i>Basic standard:</i>	IEC 61000-4-2:1995 + A1:1998 + A2:2000 EN 61000-4-2:1995 + A1:1998 + A2:2001
Betriebsart / <i>Operation mode:</i>	on mode
Kommentar / <i>Comment:</i>	---

<i>Discharge method</i>	<i>Discharge voltage</i>	<i>Test points</i>	<i>Result</i>	<i>Note</i>
Via contact to horizontal coupling plane	± 2 kV, ± 4 kV	Several points on horizontal coupling plane (around EUT)	Passed	
Via contact to vertical coupling plane	± 2 kV, ± 4 kV	On vertical coupling plane placed in the vicinity of EUT	Passed	
Via air gap to EUT	± 2 kV, ± 4 kV, ± 8 kV	All non conductive parts of EUT accessible to normal user	Passed	

Note(s):

Immunity to electrostatic discharge

Air discharge
Contact discharge





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10.3 RF-Electromagnetic Fields

10.3.1 Test Setup





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10.3.2 Test Equipment List

Type	Designation	Inv.-no.	Serial No. or ID	Manufacturer
<input type="checkbox"/> Signal generator	Cabin no. 2 SML 02	1759	836926/016	Rohde & Schwarz
<input checked="" type="checkbox"/> Signal generator	Cabin no. 3 SML 03	1729	101495	Rohde & Schwarz
<input type="checkbox"/> Signal generator	Cabin no. 6 SML 03	1867	102131	Rohde & Schwarz
<input type="checkbox"/> Power amplifier	Cabin no. 6 HVV 250	1508	836956/004	Rohde & Schwarz
<input type="checkbox"/> Power amplifier	Cabin no. 3 1000L	1704	8923	Amplifier Research
<input type="checkbox"/> Power amplifier	Cabin no. 2 10W1000	1119	5239	Amplifier Research
<input checked="" type="checkbox"/> Power amplifier	Cabin no. 3 200W1000	1225	12904	Amplifier Research
<input type="checkbox"/> Power amplifier	Cabin no. 6 1000W1000B	1827	307669	Amplifier Research
<input checked="" type="checkbox"/> Power amplifier	25S1G4	1587	23171	Amplifier Research
<input type="checkbox"/> Power amplifier	Cabin no. 6 TD81-250	1829	H040-0204	IFI
<input type="checkbox"/> Power amplifier	Cabin no. 6 T188-20	1864	G119-0703	IFI
<input type="checkbox"/> Power meter	Cabin no. 2 NRVS	1726	100808	Rohde & Schwarz
<input checked="" type="checkbox"/> Power meter	Cabin no. 3 NRVD	1797	101092	Rohde & Schwarz
<input type="checkbox"/> Power meter	Cabin no. 6 NRP	1818	100006	Rohde & Schwarz
<input type="checkbox"/> Power sensor	Cabin no. 2 NRV-Z4	1727	100179	Rohde & Schwarz
<input checked="" type="checkbox"/> Power sensor	Cabin no. 3 NRV-Z4	1798	100238	Rohde & Schwarz
<input checked="" type="checkbox"/> Power sensor	Cabin no. 3 NRV-Z4	1799	100236	Rohde & Schwarz
<input type="checkbox"/> Power sensor	Cabin no. 6 NRP-Z91	1819	100064	Rohde & Schwarz
<input type="checkbox"/> Power sensor	Cabin no. 6 NRP-Z91	1820	100065	Rohde & Schwarz
<input type="checkbox"/> E-field generator	3107 B	1019	2302	Emco
<input type="checkbox"/> Trilog antenna	VULB 9163	1722	9163-188	Schwarzbeck
<input checked="" type="checkbox"/> Hybrid log. periodic antenna	HLP-2603	1655	120500	EMC Automation
<input type="checkbox"/> Stacked log. per. antenna	STLP 9128 E special	1854	019	Schwarzbeck
<input type="checkbox"/> Horn antenna	3115	1516	9508-4553	Emco
<input type="checkbox"/> Horn antenna	3160-03	1010	9112-1003	Emco
<input type="checkbox"/> Horn antenna	3160-04	1011	9112-1001	Emco
<input type="checkbox"/> Horn antenna	3160-05	1012	9112-1001	Emco
<input type="checkbox"/> Horn antenna	3160-06	1013	9112-1001	Emco
<input type="checkbox"/> Horn antenna	3160-07	1014	9112-1008	Emco
<input type="checkbox"/> Horn antenna	3160-08	1015	9112-1002	Emco
<input type="checkbox"/> Horn antenna	3161-01	1749	1091	Emco
<input type="checkbox"/> Stripline	SL 150	1604	---	Senton
<input type="checkbox"/> Stripline 90 Ohms (3.2 m)	SL 090	1811	---	Stimpfl
<input checked="" type="checkbox"/> Isotropic field probe	FP 2000	1228	12847	Amplifier Research
<input checked="" type="checkbox"/> Isotropic field monitor	FM 2004	1229	12632	Amplifier Research
<input type="checkbox"/> Electromagnetic radiation meter	EMR-200	1723	AT-0023	Narda
<input type="checkbox"/> Electric field probe	Type 8.3	1724	AU-0008	Narda
<input type="checkbox"/> Fully anechoic room	No. 2	1452	---	Albatross
<input checked="" type="checkbox"/> Semi anechoic room	No. 3	1453	---	Siemens
<input type="checkbox"/> Fully anechoic room	No. 6	1865	---	Albatross

10.3.3 Test Results

Results for RF-electromagnetic fields test are documented as listed below.



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RF-Electromagnetic Fields

Prüfdatum / <i>Date of test:</i>	November 03, 2008
Prüfer / <i>Operator:</i>	Karl Roidt
Messplatz / <i>Test site:</i>	Semi anechoic room, cabin no. 3

Prüfergebnis / <i>Test Result</i>	
<input checked="" type="checkbox"/>	Erfüllt / <i>Passed</i>
<input type="checkbox"/>	Nicht erfüllt / <i>Not passed</i>

Luftdruck / <i>Barometric pressure:</i>	996 hPa
Relative Luftfeuchtigkeit / <i>Relative humidity:</i>	48 %
Temperatur / <i>Ambient temperature:</i>	21 °C

Prüfgrundlage / <i>Specifications:</i>	EN 61000-6-1:2007		
Bewertungskriterium / <i>Performance criterion:</i>	A		
Anforderung / <i>Requirement:</i>	80 MHz - 1 GHz:	3 V/m	
	1,4 GHz - 2,0 GHz	3 V/m	
	2,0 GHz - 2,7 GHz	1 V/m	
Störsignal / <i>Interfering signal:</i>	Modulation:	AM	
	Modulation depth:	80 %	
	Modulation frequency:	1 kHz	
Schrittweite / <i>Step size:</i>	1 %		
Verweildauer / <i>Dwell time:</i>	3 s		
Antennenpolarisation / <i>Antenna polarization:</i>	<input checked="" type="checkbox"/> horizontal	<input checked="" type="checkbox"/> vertical	
Basisnorm / <i>Basic standard:</i>	IEC 61000-4-3 :2006 + A1 :2007 EN 61000-4-3 :2006 + A1 :2008		
Betriebsart / <i>Operation mode:</i>	on mode		
Kommentar / <i>Comment:</i>	---		

<i>Position of EUT</i>	<i>Field strength level</i>	<i>Result</i>	<i>Note</i>
Front to antenna	3 V/m	Passed	
Rear side to antenna	3 V/m	Passed	
Left side to antenna	3 V/m	Passed	
Right side to antenna	3 V/m	Passed	

Note(s):



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11 Revision History

Revision History			
<i>Edition</i>	<i>Date</i>	<i>Issued by</i>	<i>Modifications</i>
1	November 05, 2008	Karl Roidt (aw)	First Edition

Analytik - Fotodokumentation – Prüfergebnisse /

analysis - foto documentation – test results



Product Service

Auftragsnummer ~~ order no.: 028-71344359

Auftraggeber ~~ client : TEC Leitung

Probeneingang ~~ receipt of test sample: 21.10.2008

Storix-Nr. ~~ storix no.: 89521-1

Prozess ~~ process:

Produkt ~~ product: Multifunktionswecker

Modell ~~ model: Light Vision Art.-Nr. 11307

Auftragstext ~~ order of purchase: PAK/GS

Projektleiter ~~ project leader: Nickl, Cornelia

Prüfberichtsnummer(n) ~~ report no.:	20085174		
Produktbild ~~ picture of product	Proben-Nr. (siehe Foto) ~~ sample no. (see foto)	Bezeichnung ~ sample description	Kategorie ~~ category
	1	Kunststoff transparent / plastic transparent	3
	2	Kunststoff schwarz / plastic black	3
	3	Fuß / stand	3
	4	Kunststoff silber / plastic silver	3
	5	Gummiknopf grau / rubber button grey	3

Prüfmethode ~~ test specification:	PAK ~~ PAH: SAA-L-1510 (GC/MS) (ZEK 01-08)
------------------------------------	--

Prüfergebnis ~~ test result

Die Anforderungen für PAKs gem. ZEK 01-08 werden <u>erfüllt</u> .~~ The requirements according to ZEK 01-08 for PAH are <u>complied</u> .	Y
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Analytik - Fotodokumentation – Prüfergebnisse /

analysis - foto documentation – test results



Product Service

Auftragsnummer ~~ order no.: **028-71344359**

Auftraggeber ~~ client : TEC Leitung

Probeneingang ~~ receipt of test sample:**21.10.2008**

Storix-Nr. ~~ storix no.: **89521-1**

Prozess ~~ process:

Produkt ~~ product: Multifunktionswecker

Modell ~~ model: Light Vision Art.-Nr. 11307

Auftragstext ~~ order of purchase: PAK/GS

Projektleiter ~~ project leader: Nickl, Cornelia

Anforderung PAK ~~ requirement PAH:

Parameter ~~ parameter	Kategorie 1 ~~ category 1	Kategorie 2 ~~ category 2	Kategorie 3 ~~ category 3
	Materialien im Kontakt mit Lebensmitteln oder die dazu bestimmt sind, in den Mund genommen zu werden und Spielzeug für Kinder < 36 Monaten ~~ materials which come into contact with food or which are placed into the mouth and toys for children under 36 months	Materialien mit vorhersehbarem Hautkontakt länger als 30 s (Längerfristiger Hautkontakt) und Spielzeug, das nicht unter Kategorie 1 fällt ~~ materials with foreseeable skin contact longer 30 s and toys other than category 1	Materialien mit vorhersehbarem Hautkontakt bis zu 30 s (kurzfristiger Hautkontakt) oder ohne Hautkontakt ~~ materials with foreseeable skin contact shorter 30 s or without skin contact
Benzo[a]pyren ~~ Benzo(a)pyrene	Not detectable (< 0,2 mg/kg)	1 mg/kg	20 mg/kg
Summe 16 PAK (EPA) ~~ sum 16 EPA-PAH	Not detectable (< 0,2 mg/kg)	10 mg/kg	200 mg/kg

Analytik - Fotodokumentation – Prüfergebnisse /

analysis - foto documentation – test results



Product Service

Auftragsnummer ~~ order no.: **028-71344359**

Auftraggeber ~~ client : TEC Leitung

Probeneingang ~~ receipt of test sample:**21.10.2008**

Storix-Nr. ~~ storix no.: **89521-1**

Prozess ~~ process:

Produkt ~~ product: Multifunktionswecker

Modell ~~ model: Light Vision Art.-Nr. 11307

Auftragstext ~~ order of purchase: PAK/GS

Projektleiter ~~ project leader: Nickl, Cornelia

Prüftabelle PAK-Analyse							
Bezeichnung	Phase	Einheit	P 1	P 2	P 3	P 4	P 5
Naphthalin		mg/kg	<0,2	0,8	<0,2	2	<0,2
Acenaphthen		mg/kg	<0,2	<0,2	<0,2	<0,2	<0,2
Acenaphthylen		mg/kg	<0,2	<0,2	<0,2	0,2	<0,2
Fluoren		mg/kg	<0,2	<0,2	<0,2	<0,2	<0,2
Phenanthren		mg/kg	0,2	0,3	1,4	0,3	<0,2
Anthracen		mg/kg	<0,2	<0,2	0,3	<0,2	<0,2
Fluoranthen		mg/kg	<0,2	0,2	0,2	0,2	<0,2
Pyren		mg/kg	<0,2	<0,2	0,6	0,3	<0,2
Benz(a)anthracen		mg/kg	<0,2	<0,2	<0,2	<0,2	<0,2
Chrysen		mg/kg	<0,2	<0,2	<0,2	<0,2	<0,2
Benzo(b)fluoranthen		mg/kg	<0,2	<0,2	<0,2	<0,2	<0,2
Benzo(k)fluoranthen		mg/kg	<0,2	<0,2	<0,2	<0,2	<0,2
Benzo(a)pyren		mg/kg	<0,2	<0,2	<0,2	<0,2	<0,2
Dibenz(ah)anthracen		mg/kg	<0,2	<0,2	<0,2	<0,2	<0,2
Benzo(ghi)perylen		mg/kg	<0,2	<0,2	<0,2	<0,2	<0,2
Indeno(1,2,3-cd)pyren		mg/kg	<0,2	<0,2	<0,2	<0,2	<0,2
Summe PAK (16 EPA)		mg/kg	0,2	1,3	2,5	3	<0,2

TÜV SÜD PRODUCT SERVICE GMBH

Prüfer ~~ Test engineer

Technischer Bericht geprüft ~~ Checked by