

BLUE ANGEL

The German Ecolabel



Digital Cordless Phones

DE-UZ 131

Basic Award Criteria

Edition April 2014

Version 2

The Environmental Label is supported by the following four institutions:



The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety is the owner of the label. It regularly provides information on the decisions taken by the Environmental Label Jury.



The German Environmental Agency with its specialist department for "Ecodesign, Eco-Labeling and Environmentally friendly Procurement" acts as office of the Environmental Label Jury and develops the technical criteria of the Basic Criteria for Award of the Blue Angel.



The Environmental Label Jury is the independent, decision-making body for the Blue Angel and includes representatives from environmental and consumer associations, trade unions, industry, the trade, crafts, local authorities, academia, the media, churches, young people and the German federal states.



The RAL gGmbH is the awarding body for the Environmental Label. It organises the process for developing the relevant award criteria in independent expert hearings – which involve all relevant interest groups.

If you require further information please contact:

RAL gGmbH

RAL UMWELT

Fränkische Straße 7

53229 Bonn

Tel: +49 (0) 228 / 6 88 95 - 0

E-Mail: umweltzeichen@ral.de

www.blauer-engel.de

Version 1 (04/2014): First Edition, Expiry date: December 31, 2017

(02/2015): Changes in Chapter 3.2 and 3.3

Version 2 (12/2016): Prolongation without changes for 2 years, until 31.12.2019

Table of contents

1	Introduction.....	4
1.1	Preface	4
1.2	Background	4
1.3	Environmental and Health Aspects.....	4
1.4	Objectives of the Eco-Label Award.....	5
1.5	Basic Legal Provisions	6
2	Scope	7
3	Requirements and Compliance Verifications	7
3.1	Power Consumption in the Different Operating Modes	7
3.2	User-Adjustable Range Limitation	8
3.3	Automatic Adaptation of Transmission Power	9
3.4	Cut-Off of Transmission Signals in Standby Mode	10
3.5	Criteria for Further Exposure Reduction.....	11
3.6	Display	11
3.7	Exposure / SAR Value	11
3.8	Material Requirements for the Plastics used in Housings and Housing Parts	12
3.9	Requirements for the Plastics used in Printed Circuit Boards	13
3.10	Rechargeable Batteries	14
3.11	Provision of Spare Parts and Replacement Devices	14
3.12	Packaging.....	14
3.13	Operating Instructions	14
4	Applicants and Parties Involved.....	15
5	Use of the Environmental Label.....	15
	Appendix A Measurement Setup in Shielded Rooms (see paras. 3.2 and 3.3)	17

This document is a translation of a German original. In case of dispute, the original document should be taken as authoritative.

1 Introduction

1.1 Preface

In cooperation with the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, the German Environmental Agency and considering the results of the expert hearings conducted by RAL gGmbH, the Environmental Label Jury has set up these Basic Criteria for the Award of the Environmental Label. RAL gGmbH has been tasked with awarding the Environmental Label.

Upon application to RAL gGmbH and on the basis of a Contract on the Use of the Environmental Label to be concluded with RAL gGmbH, the permission to use the Environmental Label may be granted to all products, provided that they comply with the requirements as specified hereinafter.

The product must comply with all the legal requirements in the country in which it is to be marketed. The applicant shall declare that the product meets this requirement.

1.2 Background

Digital cordless phones are very popular and widely used today. In addition to various additional functions, they are primarily used to make phone calls and, more recently, to send text messages (SMS). Digital cordless phones consist of a base station and one or more handsets that communicate wirelessly with the base station by radio. The base station connects to landline or Internet. The rechargeable handset batteries are charged either by placing the handset on a separate charging tray or using the base station's integrated charging function. Radio waves within defined frequency ranges are used to transmit data between base station and handsets.

1.3 Environmental and Health Aspects

The Blue Angel eco-label for digital cordless phones places a strong focus on minimizing energy consumption and a precautionary reduction of radio radiation. In addition, the materials used must not contain any substances posing serious environmental and health concerns that may cause problems during use or disposal.

By transposing the EU regulations on the recycling of electronic wastes and the restrictions on the use of certain hazardous substances into national law - the „Elektrogesetz“ (German Electric and Electronic Equipment Act) - aspects regarding the design, take-back and recycling of electronic devices have been taken into account and settled.

The health-related requirements were developed in close collaboration with the German Bundesamt für Strahlenschutz (Federal Office for Radiation Protection).

People often associate the pulsed radio signals that are continuously emitted from the base stations of digital cordless phones with health impairments. It should be noted in this connection that the maximum transmission power of ordinary cordless phone systems (base station and handset based on the DECT standard) is lower than that of mobile phones using similar frequencies. Based on the time slot method the average radiated power of the handset of a cordless phone based on the DECT standard is about 10 mW or 20 mW using CAT-iq technology, if two transmission channels are used. Devices using additional radio transmitters in addition to DECT or CAT-iq may feature higher average transmission power. The average transmission power of a base station equals that of the handsets. It may be increased if

several handsets are used on the same base station, for example in an office or professional environment. Cordless phones are often the primary source of high-frequency electromagnetic fields in private homes.

Even though scientific studies have not yet been able to establish a definitive correlation between electromagnetic field exposure below the EU recommendations [European Union Council Recommendation of 12th July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz – 300 GHz), (1999/519/EC)] and a health impairment, the existing technical options should be effectively used for preventive health reasons to reduce the personal exposure to electromagnetic fields as much as possible.

The user-adjustable range limitation as required in para. 3.2 allows the consumer to single-handedly reduce the maximum transmission power (in addition to the automatic adaptation of the transmission power required under para. 3.3). It should be borne in mind that a reduction of the maximum transmission power by 10 dB or more can be recommended for one-room apartments in particular or if handset and base station, are located in the same room because otherwise the voice transmission quality may deteriorate.

The specific absorption rate (SAR) is the unit of measurement for the amount of radio frequency absorbed by the body and represents an established measure in radiation protection. The maximum SAR value specified in these Basic Criteria is based on the DE-UZ 106 Basic Criteria for Mobile Phones, edition of February 2013. It is expected to be reviewed when next revising the DE-UZ 106 Basic Criteria.

1.4 Objectives of the Eco-Label Award

The Blue Angel eco-label for digital cordless phones is to signal the buyer of a device that – in comparison with others - the Blue Angel eco-labelled product pays greater regard to precautionary environmental, health and consumer protection aspects. Thus, the Blue Angel can help consumers make more informed decisions when purchasing new equipment.

As a voluntary label, the Blue Angel's task is to motivate manufacturers to develop devices with optimized, lowest-possible power consumption and reduced exposure to electromagnetic fields. It also allows the manufacturers to inform customers about this aspect of product properties in an easy-to-understand way.

Therefore, following benefits for the environment and health are stated in the explanatory box:



1.5 Basic Legal Provisions

It is a matter of course for Blue Angel eco-labelled products to comply with current laws and regulations, especially with the following ones:

- The EU directives¹ transposed into German law by Elektro- und Elektronikgesetz (ElektroG) (Electrical and Electronic Equipment Act)² and Verordnung zur Beschränkung der Verwendung gefährlicher Stoffe in Elektro- und Elektronikgeräten (Elektro- und Elektronikgeräte-Stoff-Verordnung - ElektroStoffV) (Ordinance on the restriction of the use of certain hazardous substances in electrical and electronic equipment)³ shall be complied with.
- EU Directive 2006/66/EC⁴ transposed into German Law by the Batteriegesetz (BattG) (Batteries Act)⁵ shall be complied with.
- The substance requirements defined by EU Chemicals Regulation REACH (1907/2006/EC)⁶ and Regulation EC No. 1272/2008⁷ (or Directive 67/548/EEC) shall be complied with.
- Regulation (EC) No 278/2009⁸ (External Power Supplies Regulation), provided that the device comes with an external power supply.
- Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity transposed into German law by the Gesetz über Funkanlagen und Telekommunikationsendeinrichtungen (FTEG) (Radio and Telecommunications Terminal Equipment Act)

¹ Directive on Waste Electrical and Electronic Equipment (WEEE), Directive 2002/96/EC of the European Parliament and of the Council, dated 27 January 2003, or its revision: Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on Waste Electrical and Electronic Equipment (WEEE);

Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment, Directive 2002/95/EC, OJ No. 37 of 13 February 2003 or its revision: Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment

² Gesetz über das Inverkehrbringen, die Rücknahme und die umweltverträgliche Entsorgung von Elektro- und Elektronikgeräten, (Act on the placing on the market, return and environmentally sound disposal of waste electrical and electronic equipment), Federal Law Gazette 2005, Part I, No.17 (23 May 2005)

³ Elektro- und Elektronikgeräte-Stoff-Verordnung (Ordinance on the restriction of the use of certain hazardous substances in electrical and electronic equipment) of 19 April 2013, Federal Law Gazette I, page 1111)

⁴ Directive 2006/66/EC of the European Parliament and of the Council of 6 September 2006 on batteries and accumulators and waste batteries and accumulators OJ No. L 339, page 39, 2007, No. L 139 page 40

⁵ Batteriegesetz (Batteries Act), of 25 June 2009, Federal Law Gazette I, page 1582

⁶ Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC

⁷ Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006

⁸ Commission Regulation (EC) No 278/2009 of 6 April 2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for no-load condition electric power consumption and average active efficiency of external power supplies

- Directive 2001/95/EC of the European Parliament and of the Council of 3 December 2001 on general product safety transposed into German law by the Gesetz über die Bereitstellung von Produkten auf dem Markt (Act regarding the marketing of products) (Produktsicherheitsgesetz – ProdSG - Product Safety Act)

1.6 Outlook on Possible Future Requirements

These Basic Criteria address, for the first time, CAT-iq Geräte. The requirements for CAT-iq devices differ from those for DECT devices, yet they go beyond the requirements of the current CAT-iq 2.0 Standard. At the time of developing these Basic Criteria the CAT-iq 2.1 standard is being developed. It will push „green features“. It is recommended to use future revisions of these Basic Criteria to at least conform the requirements for CAT-iq devices to those for DECT devices, regardless of the then valid CAT-iq standard.

2 Scope

These Basic Criteria apply to digital cordless phones based on DECT, DECT/CAT-iq or a similar (harmonised digital) standard. Included within the scope are devices or product sets consisting of the following components:

- Handset and charging cradle
- Handset and base station with integrated charging function
- Handset, charging cradle and base station

The devices shall be primarily designed for transmitting phone calls and messages. They may, however, also provide additional functions (e.g. answering machine, organizer or data transmission via bluetooth or WLAN).

Excluded from the scope are corded desktop phones with a built-in DECT station without handsets. Also excluded are mobile phones falling within the scope of the DE-UZ 106 Basic Criteria as well as routers falling within the scope of the RAL UZ 160 Basic Criteria.

3 Requirements and Compliance Verifications

The Blue Angel eco-label on page 1 may be used for the labelling of digital cordless phones under para. 2, provided that they meet the following requirements.

3.1 Power Consumption in the Different Operating Modes

The electrical power consumption of the devices shall not exceed the following limits:

Cordless Phone (Base Station + Handset):

- The power consumption of the base station shall be < 1.0 watts without the handset on the base station as well as with the charged handset on the base station (trickle charge).
- If the base station has a display the allowable power consumption of the base station with and without handset on the base may rise by 0.5 watts, i.e. it shall not exceed < 1.5 watts.

The above-mentioned limits are increased by 0.2 watts for ISDN phones.

Handset with Charging Cradle:

- Charged handset is placed on the charging cradle (trickle charge), average power consumption of the charging cradle < 0.6 watts.
- Handset is not on the charging cradle, power consumption of the charging cradle < 0.3 watts.

Handset with Charging Cradle (WLAN):

- Charged handset is placed on the charging cradle (trickle charge), power consumption of the charging cradle < 1.2 watts.
- Handset is not on the charging cradle, power consumption of the charging cradle < 0.3 watts.

Compliance Verification

The applicant shall declare compliance with the requirement in Annex 1 to the Contract and present a measurement protocol prepared by a DIN EN ISO/IEC 17025 accredited testing laboratory (General requirements for the competence of testing and calibration laboratories) as Annex 2. Test records prepared by the applicant will be considered equivalent if the latter uses a testing laboratory recognised by an independent body as an SMT laboratory (supervised manufacturer's testing laboratory). The devices shall be measured in the condition as delivered to the end user (factory setting). The power consumptions shall be measured as average power consumptions over a measuring period of 10 minutes. The measurement shall be taken on the mains voltage side at 230V ± 1%.

3.2 User-Adjustable Range Limitation

DECT cordless phones that come with a base station (device combination: handset + base station) or as a single handset (handset with charging cradle, as additional handset for a base station or for a router with a built-in base station) shall feature a user-adjustable range limitation that can be realised by reducing the maximum peak transmission power. It shall be possible to reduce the transmission power in at least three steps, i.e. the user shall be able to set a minimum of four different ranges (transmission power levels). The difference in the maximum peak transmission power between the highest and the lowest level shall be at least 10 dB (factor of 10). The reduction of the maximum peak transmission power shall be simultaneously effective on the base station and on the registered handsets. If the base station uses not only the transmission channel "traffic bearer" but also another channel to send a "dummy bearer" identity signal the transmission powers of all signals shall be reduced in accordance with the setting of the user-adjustable range limitation. This shall also apply if more than one handset is registered to the base station.

The peak transmission power (equivalent radiated power) must not exceed 250 mW EIRP in any setting. The range limitation shall be easy for the user to adjust and the current setting shall be shown on the display of the handset at least when no call is being made.

Notwithstanding the relevant requirements, the following shall apply to CAT-iq devices: The base station shall have a feature to reduce the maximum transmission power to 4 dBm at the most. The user shall be able to easily activate and deactivate this feature at the base station as well as on the handset.

Compliance Verification

The applicant shall declare compliance with the requirement in Annex 1 to the Contact and present a protocol of the conformity assessment according to ETSI EN 301406 as Annex 3 listing the measured equivalent radiated powers of the base station and one handset registered to the base station in all possible adjustable settings of range limitation. A measurement setup as shown in Appendix 1 shall be used. The equivalent radiated powers (EIRP) taking into account the antenna gain to be measured as well, and the calculated reduction factors for the transmission power levels shall be entered in a table. The measurement diagrams shall be attached to the test protocol as an Annex.

If more than one handset can be registered to the base station or if the system supports HQAudio, e.g. in CAT-iq devices, all channels (identification and transmission channels) shall be measured and documented. In the case of devices that additionally allow data transmission (e.g. devices with WLAN support) the corresponding test protocols shall be presented for these radio technologies too.

The measurements shall be made with the rechargeable handset batteries fully charged. Also, the applicant shall provide a description of how to adjust the range and present illustrations of the different messages appearing on the display (Annex 4). Testing laboratories hired to perform these measurements shall be affiliated with a notified body appointed by Bundesnetzagentur in accordance with R&TTE (Directive 1999/5/EC on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity).

3.3 Automatic Adaptation of Transmission Power

The handsets and the base station (if any) of DECT cordless phones shall adjust their transmission power to the connection quality: If the connection is good or at a short distance from each other the peak transmission power shall be automatically reduced. The power control dynamics between maximum and minimum transmission power shall comprise a minimum of four transmission power levels (or three transmission power steps). The difference between the highest and the lowest level shall be at least 10 dB (factor of 10). With the range limitation switched on (para. 3.2) the control dynamics may only diminish in line with the level set. If more than one handset is registered to the base station it shall be sufficient if the base station controls the transmission power of the transmission channels; the transmission power of the identity signal („dummy bearer“) may be kept at the value set in accordance with para. 3.2 for the period of an active voice or data connection. The automatic adaptation of the transmission powers of handsets and of the base station (if any) shall be activated in the factory setting and the user shall not be able to deactivate it.

Notwithstanding the preceding requirements, the following shall apply to CAT-iq devices: Only the handset shall feature an automatic adaptation of transmission power with at least two transmission power levels, with the lowest transmission power level not exceeding 4 dBm (2.5 mW).

Compliance Verification

The applicant shall declare compliance with the requirement in Annex 1 to the Contact and present a test protocol as Annex 5 that lists the required control behaviour for a handset and a base station (except for CAT-iq devices) at the maximum and (except for CAT-iq devices) a medium user-adjustable transmission power level according to para. 3.2. The control behaviour of the base station (except for CAT-iq devices) and of the handset shall be determined by means of an HF probe mounted on the respective device housing and a measuring receiver or spectrum analyser. The measurement may be performed in normal indoor living environments. The distances at which the handset or the base station (except for CAT-iq devices) switches to the next transmission power level shall be listed in a table. The measurements shall be taken at increasing as well as at decreasing distances and both cases shall be documented. The respective transmission power levels shall be determined in a measurement setup as illustrated in Appendix 1 and also listed in a table. The measurements shall be made with the rechargeable handset batteries fully charged. Testing laboratories hired to perform these measurements shall be affiliated with a notified body appointed by Bundesnetzagentur in accordance with R&TTE (Directive 1999/5/EC on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity).

3.4 Cut-Off of Transmission Signals in Standby Mode

The telephones are configured in their factory setting so that in standby mode (no active voice or data connection) the radio signals of the base station (if any) and of the handsets (or handset) are completely cut off, i.e. including the identity signal („dummy bearer“). The base station shall switch off its radio signal in this operating mode regardless of the number of registered handsets. This shall also be ensured in the event of „faulty operation“, e.g. if one or more handsets are outside the radio range of the base station, if registered handsets are switched off by the user or can no longer be used because of low battery. A reset of the device to factory settings shall reset the above-described configuration. Separate information (see also paragraph 3.6) shall inform the user that a complete cut-off of the radio signals in standby mode can only be achieved in the preset mode.

CAT-iq base stations shall feature a “no-emission mode“. In such mode, the dummy bearer (identity signal) shall be completely disconnected in inactive phases (no active voice or data connection). In this operating mode the base station should switch off its radio signal regardless of the number of registered handsets. The requirements for “faulty operation“ (see above) should be set accordingly. The mode shall be shown on the handset display or the base station shall send corresponding information to the registered handsets. Separate information shall inform the user on how to activate the no-emission mode.

Compliance Verification

The applicant shall declare compliance with this requirement in Annex 1 to the Contract regardless of the number of handsets registered to the base station. Also, the applicant shall present a test protocol as Annex 6 verifying the required disconnection of the signals. For this purpose, a minimum of two handsets shall be registered to the base station and the radio signals shall be monitored in standby mode. If technical provisions have been put in place that preclude the registration of more than one handset to the base station the test shall be carried out on one registered handset. CAT-iq devices shall be tested in no-emission mode. The measurement shall cover the entire frequency band used in Germany for DECT or CAT-iq devices respectively. The sensitivity of the measurement system used shall allow the detection of transmission signals with a transmission power of -40 dBm. The measurement shall be made over a period of 6 hours in order to make sure that a complete disconnection is achieved. The measurement shall be made at all possible levels of range limitation pursuant to para. 3.2, for DECT devices this shall include the factory setting. No handset shall be placed on a charging tray or on the base station during the measurement. The measurements shall be made with the handset batteries fully charged.

Testing laboratories hired to perform these measurements shall be affiliated with a notified body appointed by Bundesnetzagentur in accordance with R&TTE (Directive 1999/5/EC on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity).

3.5 Criteria for Further Exposure Reduction

The handset shall come with at least one of the following features to further reduce the user's exposure:

- Hands-free mode or
- Use of corded headsets or
- Use of cordless headsets (maximum transmission power: 1 mW).

Compliance Verification

The applicant shall declare compliance with this requirement and specify the option realized in Annex 1 to the Contract.

3.6 Display

The handset display shall show the call duration after the end of the call at the latest. Also, the handset display shall show the actual range limitation before a call is set up and during the call it shall show the current transmission power level of the handset.

Compliance Verification

The applicant shall declare compliance with this requirement and present corresponding illustrations as Annex 7.

3.7 Exposure / SAR Value

The SAR (Specific Absorption Rate) of a handset must not exceed 0.60 watts per kg.

Compliance Verification

The maximum SAR value shall be determined in accordance with DIN EN 62209-1 (head) and DIN EN 62209-2 (body) taking into account the reasonably foreseeable use⁹ (see exemplary illustration in the table). This means that each operating mode of the device, including the simultaneous operation of all radio interfaces, has to be evaluated. Compliance with this requirement can be assumed without running a test for devices which - in addition to a radio interface complying with the DECT standard - are equipped with only one radio interface for connection of a cordless headset (maximum transmission power: 1mW). The applicant shall confirm in Annex 1 that the above exception is true or else submit the measurement report as Annex 8. Testing laboratories hired to perform these measurements shall be affiliated with a notified body appointed by Bundesnetzagentur in accordance with R&TTE (Directive 1999/5/EC on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity).

Examples of required SAR measurements:

Handset Features	SAR Measurement (head) required	SAR Measurements (body) required
DECT only	No	No
DECT and Bluetooth (<= 1mW)	No	No
DECT and Bluetooth (> 1mW)	Yes	No
DECT + WLAN, if both IP telephony via WLAN and WLAN data transmissions during a telephone call via DECT standard is technically ruled out.	No	Yes
Other radio services	Yes	Yes

3.8 Material Requirements for the Plastics used in Housings and Housing Parts

The plastics must not contain as constituent parts any substances that are classified as

- a) carcinogenic of category 1 or 2 according to table 3.2 or categories 1A and 1B according to table 3.1 of Annex VI to Regulation (EC) 1272/2008¹⁰

⁹ in accordance with Directive 2001/95/EC of the European Parliament and of the Council of 3 December 2001 on General Product Safety, see Chapter 1.5.

¹⁰ Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006, Annex VI Harmonised classification and labelling for certain hazardous substances, Part 3: Harmonised classification and labelling – Tables, Table 2.3 List of harmonised classification and labelling of hazardous substances from Annex I to Directive 67/548/EEC, short: GHS Regulation http://www.reach-info.de/ghs_verordnung.htm, as amended.

The GHS Regulation (Global Harmonization System), that has come into force on January 20, 2009, replaces the old Directives 67/548/EEC and 1999/45/EC. According to the said regulation, substances are classified, labelled and packed until December 1, 2010 according to Directive 67/548/EEC (Dangerous Substances Directive) while mixtures are classified, labelled and packed until June 1, 2015 according to Directive 1999/45/EC (Dangerous Preparations Directive). Notwithstanding this, substances and preparations may be classified, labelled and packed according to the provisions of the GHS Regulation already before December 1, 2010 or June 1, 2015, respectively. In such case, the provisions of Dangerous Substances Directive or Dangerous Preparations Directive shall not be applicable.

- b) mutagenic of category 1 or 2 according to table 3.2 or categories 1A and 1B according to table 3.1 of Annex VI to Regulation (EC)
- c) toxic to reproduction of category 1 or 2 according to table 3.2 or categories 1A and 1B according to table 3.1 of Annex VI to Regulation (EC) 1272/2008
- d) being of very high concern for other reasons according to the criteria of Annex XIII to the REACH Regulation, provided that they have been included in the List (so-called Candidate List¹¹) set up in accordance with REACH, Article 59, paragraph 1.

Halogenated polymers shall not be permitted. Nor may halogenated organic compounds be added as flame retardants. Moreover, no flame retardants may be added which are classified pursuant to Table 3.1 or 3.2 in Annex VI to Regulation (EC) 1272/2008 as very toxic to aquatic organisms with long-term adverse effect and assigned the Hazard Statement H410 or Risk Statement R50/53.

The following shall be exempt from this rule:

- displays;
- process-related, technically unavoidable impurities;
- fluoroorganic additives (as, for example, anti-dripping agents) used to improve the physical properties of plastics, provided that they do not exceed 0.5 weight percent;
- plastic parts less than 10 grams in mass.

Compliance Verification

The applicant shall declare compliance with the requirements in Annex 1 to the Contract and submit a written declaration from the plastic manufacturers or ensure the submission of such declaration to RAL gGmbH. Such declaration in Annex P-M shall confirm that the banned substances have not been added to the plastics and give the chemical designation of the flame retardants used, including CAS No. and classifications.

The applicant shall name the housing plastics used for parts > 10 grams in mass and present a list of the housing plastics used pursuant to Annex P-L10.

3.9 Requirements for the Plastics used in Printed Circuit Boards

Neither PBBs (polybrominated biphenyls), nor PBDEs (polybrominated diphenyl ethers), nor chlorinated paraffins may be added to the carrier material of the printed circuit boards.

Compliance Verification

The applicant shall declare compliance with the requirement in Annex 1 to the Contract and present declarations from the suppliers of printed circuit boards stating that the printed circuit boards do not contain the banned substances (Annex 9).

¹¹ Link to the Candidate List in Regulation (EC) No. 1907/2006 concerning the Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH): <http://echa.europa.eu/web/guest/candidate-list-table>

3.10 Rechargeable Batteries

The user shall be easily able to replace the rechargeable batteries without the need of special tools.

The rechargeable batteries shall be readily available commercially. Moreover, they shall meet the current requirements of DIN EN IEC 62133 and DIN EN IEC 61951-2¹².

The manufacturer shall provide information on the take-back options in the product literature.

Compliance Verification

The applicant shall declare compliance with the requirements in Annex 1 to the Contract. Also, the applicant shall name the type of rechargeable battery and present the relevant page of the product literature (Annex 10).

3.11 Provision of Spare Parts and Replacement Devices

The applicant undertakes to make sure that the provision of spare parts or replacement devices is guaranteed for at least 2 years from the time that marketing ceases.

Spare parts are those parts which, typically, may break down within the scope of the ordinary use of a product, especially device-specific rechargeable batteries, whereas those parts which normally exceed the average life of the product (aesthetic parts) are not to be considered as spare parts.

Compliance Verification

The applicant shall declare compliance with this requirement in Annex 1 to the Contract.

3.12 Packaging

The plastics used for the packaging of the devices must not contain any halogenated polymers.

Compliance Verification

The applicant shall declare compliance with the requirement in Annex 1 to the Contract.

3.13 Operating Instructions

Easy-to-understand product information shall be enclosed with the product in printed form as well as made available for free-of-charge download on the Internet. In addition to the main technical data and operating instructions it shall at least include the following:

- Information on the possibility to individually reduce the exposure from the base station by not placing it close to a bedroom or child's room (recommended places of installation from the technical point of view),
- A note that the exposure can be reduced by limiting the range of the device,
- Information, provided that the energy and radiation-reducing requirements (paras. 3.1 to 3.4) are only met in dependence on a compatible base station or additional compatible handsets, if any. A corresponding note shall appear on the display if the modes mentioned in the above-mentioned paragraphs are deactivated.

¹² DIN EN IEC 62133: Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications and DIN EN IEC 61951-2: Secondary cells and batteries containing alkaline or other non-acid electrolytes - Portable sealed rechargeable single cells - Part 2: Nickel-metal hydride

- Information and advice on energy-saving options, if any, and on environmentally responsible consumer behaviour during extended periods of absence in order to minimize the absorption of electric energy,
- Instructions for proper disposal of the device in accordance with Elektroggesetz (German Electric and Electronic Equipment Act) and of the rechargeable batteries,
- Availability of spare parts according to para. 3.11,
- Detailed information on the fact that the factory setting of device has the radio signals of the base station switched off in standby mode and that this mode can be restored at any time by reset to factory setting,
- Notwithstanding this, the following shall apply to CAT-iq devices: Detailed information on how to activate the no-emission mode.

Compliance Verification

The applicant shall declare compliance with the requirements in Annex 1 and present the relevant pages of the product literature (Annex 10).

4 Applicants and Parties Involved

Manufacturers or distributors of final products according to Paragraph 2 shall be eligible for application.

Parties involved in the award process are:

- RAL gGmbH to award the Blue Angel Environmental Label,
- the federal state being home to the applicant's production site,
- Umweltbundesamt (German Environmental Agency) which after the signing of the contract receives all data and documents submitted in applications for the Blue Angel in order to be able to further develop the Basic Award Criteria.

5 Use of the Environmental Label

The use of the Environmental Label by the applicant is governed by a contract on the use of the Environmental Label concluded with RAL gGmbH.

Within the scope of such contract, the applicant undertakes to comply with the requirements under Paragraph 3 while using the Environmental Label.

Contracts on the Use of the Environmental Label are concluded to fix the terms for the certification of products under Paragraph 2. Such contracts shall run until December 31, 2019. They shall be extended by periods of one year each, unless terminated in writing by March 31, 2019 or March 31 of the respective year of extension.

After the expiry of the contract, the Environmental Label may neither be used for labelling nor for advertising purposes. This regulation shall not affect products being still in the market.

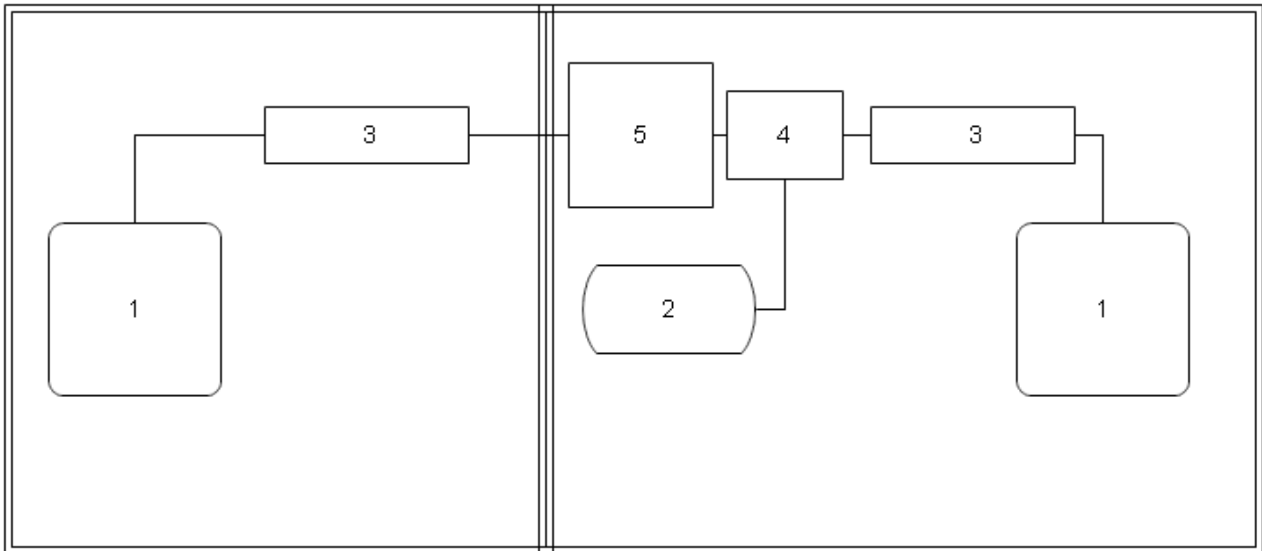
The applicant (manufacturer) shall be entitled to apply to RAL gGmbH for an extension of the right to use the ecolabel on the product entitled to the label if it is to be marketed under another brand/trade name and/or other marketing organisations.

The Contract on the Use of the Environmental Label shall specify:

- Applicant (manufacturer/distributor)
- Brand/trade name, product description
- Distributor (label user), i.e. the above-mentioned marketing organisations.

© 2017 RAL gGmbH, Bonn

Appendix A Measurement Setup in Shielded Rooms (see paras. 3.2 and 3.3)



- 1: Base station or handset
- 2: Spectrum analyser
- 3: Attenuators 10dB
- 4: Coupling element, directional coupler
- 5: Reference circuit