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ANNEXES 1 to 5

ANNEXES

to the

COMMISSION REGULATION (EU) .../...

laying down ecodesign requirements for off mode, standby, and networked standby energy consumption of electrical and electronic household and office equipment pursuant to Directive 2009/125/EC of the European Parliament and of the Council and repealing Commission Regulations (EC) No 1275/2008

ANNEX I

List of energy-related products covered by this Regulation

1. Household appliances:

– clothes dryers;

– electric ovens;

– electric hot plates;

– microwave ovens;

– toasters;

– fryers;

– coffee machines;

– grinders;

– equipment for opening or sealing containers or packages;

– electric knives;

– other appliances for cooking and other processing of food, preparing beverages, cleaning, and maintenance of clothes, but excluding household dishwashers covered by Commission Regulation (EU) 2019/2022[1], and household washing machines and household washer-dryers covered by Commission Regulation (EU) 2019/2023[2];

– appliances for hair cutting, hair drying, hair treatments, tooth brushing, shaving, massage and other body care appliances;

– scales.

2. Information technology equipment intended primarily for use in the domestic environment, including copying and printing equipment, but excluding desktop computers, integrated desktop computers and notebook computers covered by Commission Regulation (EU) No 617/2013[3], as well as electronic displays covered by Commission Regulation (EU) 2019/2021[4].

3. Consumer equipment:

– radio sets;

– video cameras;

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1 Commission Regulation (EU) 2019/2022 of 1 October 2019 laying down ecodesign requirements for household dishwashers pursuant to Directive 2009/125/EC of the European Parliament and of the Council amending Commission Regulation (EC) No 1275/2008 and repealing Commission Regulation (EU) No 1016/2010 (OJ L 315, 5.12.2019, p. 267).

2 Commission Regulation (EU) 2019/2023 of 1 October 2019 laying down ecodesign requirements for household washing machines and household washer-dryers pursuant to Directive 2009/125/EC of the European Parliament and of the Council, amending Commission Regulation (EC) No 1275/2008 and repealing Commission Regulation (EU) No 1015/2010 (OJ L 315, 5.12.2019, p. 285).

3 Commission Regulation (EU) No 617/2013 of 26 June 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for computers and computer servers (OJ L 175, 27.6.2013, p. 13).

4 Commission Regulation (EU) 2019/2021 of 1 October 2019 laying down ecodesign requirements for electronic displays pursuant to Directive 2009/125/EC of the European Parliament and of the Council, amending Commission Regulation (EC) No 1275/2008 and repealing Commission Regulation (EC) No 642/2009 (OJ L 315, 5.12.2019, p. 241).

– video players;
– hi-fi players;
– audio amplifiers;
– audio speakers;
– home theatre systems;
– media streaming devices;
– musical instruments;
– other equipment for the purpose of recording or reproducing sound or images, including signals or other technologies for the distribution of sound and image other than by telecommunications, but excluding electronic displays covered by Regulation (EU) 2019/2021 and projectors with mechanisms for exchanging the lenses with others with different focal length.

4. Toys, leisure and sports equipment:

– electric trains or car racing sets;
– games consoles;
– sports equipment with electric or electronic components;
– other toys, leisure and sport equipment.

5. Adjustable furniture:

– height-adjustable desks;
– elevation beds and chairs;
– other adjustable furniture equipped with electric motors operated by cabled or wireless controls.

6. Motor-operated building elements:

– shutters;
– blinds;
– screens;
– awnings;
– pergolas;
– curtains;
– doors;
– gates;
– windows;
– skylights;
– other similar products equipped with electric motors operated by wired cabled or wireless controls;
– parts incorporating an electric motor or an actuator and a control unit, which are designed to work with other motor-operated building elements.

ANNEX II

Ecodesign requirements

1. Energy efficiency requirements:

(a) Power consumption in off mode:

Power consumption of equipment in off mode shall not exceed 0,50 W.

(b) Power consumption in standby mode:

The power consumption of equipment in any condition providing only a reactivation function, or providing only a reactivation function and an indication of enabled reactivation function, shall not exceed 0,50 W.

The power consumption of equipment in any condition providing only information or status display, or providing only a combination of reactivation function and information or status display, or providing only a reactivation function and an indication of enabled reactivation function and information or status display shall not exceed 0,80 W.

Networked equipment that has one or more standby modes shall comply with the requirements for those standby modes when all wired network ports are disconnected and all wireless network ports are deactivated.

(c) Power consumption in networked standby:

The power consumption of HiNA equipment or equipment with HiNA functionality, in networked standby, into which the equipment is switched by the power management function as described in point 2(c) of this Annex, shall not exceed 8,00 W.

The power consumption of networked equipment, other than HiNA equipment or equipment with HiNA functionality, in networked standby into which the equipment is switched by the power management function, shall not exceed 2,00 W.

The power consumption limits shall not apply to:

– large format printing equipment;

– desktop thin clients, workstations, mobile workstations, and small-scale servers as defined in Regulation (EU) No 617/2013.

2. Functional requirements:

(a) Availability of off mode and standby mode:

Unless this is inappropriate for the intended use, equipment shall provide one or more of the following conditions:

– off mode,

– standby mode,

– another condition which does not exceed the applicable power consumption requirements for off mode or standby mode when the equipment is connected to the mains power source.

(b) Power management for all equipment other than networked equipment:

(1) Unless inappropriate for the intended use, equipment shall provide a power management function. When equipment is not providing a main function, and

another energy-related product is not dependent on its functions, the power management function shall switch equipment, after the shortest possible period appropriate for the intended use of the equipment, automatically into either of the following conditions:

– standby mode,

– off mode,

– another condition which does not exceed the applicable power consumption requirements for off mode or standby mode when the equipment is connected to the mains power source.

(2) For coffee machines, the period referred to in point (1) shall be as follows:

– for drip filter household coffee machines storing the coffee in an insulated jug, a maximum of five minutes;

– for drip filter household coffee machines storing the coffee in a non-insulated jug, a maximum of 40 minutes;

– for household coffee machines other than drip filter household coffee machines, a maximum of 30 minutes.

(3) For other equipment, the period referred to in point (1) shall not exceed 20 minutes.

(4) The power management function described in point (1) shall be activated when the equipment is placed on the market or put into service, and after the equipment is reset to its factory default settings.

(5) The equipment may offer the user the option to deactivate the power management function. In such cases the users shall be warned about the increased energy consumption of that action. That warning shall be included in the instruction manuals and, where applicable, be made available on the displays integrated in or connected to the equipment. That option shall not be part of the installation procedure of the equipment and shall require a separate user action on the product.

(c) Power management for networked equipment:

Unless inappropriate for the intended use, equipment shall provide a power management function. When equipment is not performing a main function, and another energy-related product is not dependent on its functions, the power management function shall switch equipment, after the shortest possible period appropriate for the intended use of the equipment, automatically into networked standby. That period shall not exceed 20 minutes.

In networked standby, the power management function may switch equipment automatically into standby mode or off mode or another condition, which does not exceed the applicable power consumption requirements for standby or off mode.

The power management function shall be available for all network ports of the networked equipment.

Unless all network ports are deactivated, the power management function shall be activated when the equipment is placed on the market or put into service. After the equipment is reset to its factory default settings, the power management function shall be activated if any of the network ports is activated.

The equipment may offer the user the option to deactivate the power management function. In such cases, the user shall be warned about the increased energy consumption of that action. That warning shall be included in the instruction manuals and, where applicable, be made available on the displays integrated in or connected to the equipment. That option shall not be part of the installation procedure of the equipment and shall require a separate user action on the product.

Networked equipment other than HiNA equipment shall comply with the requirements set out in point 2(b) when all wired network ports are disconnected and all wireless network ports are deactivated.

(d) Possibility of deactivating wireless network connections:

Unless inappropriate for the intended use, any networked equipment that can be connected to a wireless network shall offer the user the possibility to deactivate the wireless network connections. That requirement does not apply to products that rely on a single wireless network connection for intended use and have no wired network connection.

3. Information requirements

(a) The instruction manuals for end-users, and free access websites of manufacturers, importers or authorised representatives shall include the following information for all equipment, as applicable:

(1) for each off mode, standby mode (or another condition which does not exceed the applicable power consumption requirements for off mode or standby mode) and networked standby into which the equipment is switched by the power management function or similar function:

– the power consumption data in watts rounded to the first decimal place;

– the period after which the power management function switches the equipment automatically into standby mode, off mode or networked standby;

(2) the power consumption of the product in networked standby if all wired network ports are connected and all wireless network ports are activated;

(3) guidance on how to activate and deactivate wireless network ports.

(b) The technical documentation for the purposes of conformity assessment pursuant to Article 4 shall contain the following elements:

(1) category of equipment:

– specification whether it is networked or non-networked equipment;

– for networked equipment, specification whether it is HiNA equipment, equipment with HiNA functionality, or other type of equipment;

(2) for each off mode, standby mode and networked standby:

– the declared value of the power consumption in watts rounded to the first decimal place;

– the measurement method used;

– a description of how the equipment mode was selected or programmed;

– the sequence of events leading to the condition where the equipment automatically changes modes;

– any notes regarding the operation of the equipment, e.g. information on how the user switches the equipment into networked standby;

– if applicable, the default time after which the power management function, or similar function, has switched the equipment into the applicable low power mode or condition;

(3) for networked equipment:

– the number and type of network ports and, with the exception of wireless network ports, where those ports are located on the equipment; in particular it shall be declared if the same physical network port accommodates two or more types of network ports;

– whether all network ports are deactivated before the equipment is placed on the market or put into service ;

– whether the equipment qualifies as HiNA equipment or equipment with HiNA functionality; where no information is provided, the equipment is not considered HiNA equipment or equipment with HiNA functionality;

– whether there are ports relying on active wired connections for the intended use, and the procedure used for deactivating those ports;

– the power consumption of the product in networked standby if all wired network ports are connected and all wireless network ports are activated;

– guidance on how to activate and deactivate wireless network ports;

(4) for each type of network port:

– the period after which the power management function switches the equipment into networked standby;

– the remotely initiated trigger that is used to reactivate the equipment;

– the (maximum) performance specifications;

– the (maximum) power consumption of the equipment in networked standby into which the power management function will switch the equipment, if only that port is used for remote activation;

– the communication protocol used by the equipment;

(5) test parameters for measurements:

– ambient temperature;

– test voltage in V and frequency in Hz;

– total harmonic distortion of the electricity supply system;

– information and documentation on the instrumentation, set-up and circuits used for electrical testing;

(6) the equipment characteristics relevant for assessing conformity with the requirements set out in points 2(a), 2(b) and 2(c), as applicable, including the time taken to automatically reach networked standby, standby mode or off

mode, or another condition which does not exceed the applicable power consumption requirements for off mode or standby mode.

In particular, if applicable, a technical justification shall be provided that the requirements set out in point 2(a), 2(b), 2(c) and 2(d) are inappropriate for the intended use of equipment. The need to maintain one or more network connections or to wait for a remotely initiated trigger is not considered a technical justification for exemption from the requirements set out in point 2(b) in the case of equipment that is not defined as networked equipment by the manufacturer. For the requirements set out in point 2(c), the technical justification shall, in particular, provide evidence on why a main function needs to remain always active.

(7) the description of the product's main functions.

(c) The indication 'standby' and its translations in all Union official languages shall not be used in describing, either alone or in combination with other information, any condition in which the equipment is not compliant with the requirements set out in points 1(b) or 1(c).

ANNEX III

Measurement methods and calculations

Measurements and calculations shall be made using harmonised standards, the reference numbers of which have been published for this purpose in the *Official Journal of the European Union*, or other reliable, accurate and reproducible methods, which take into account the generally recognised state of the art.

The following general conditions shall apply when testing networked equipment:

(a) To measure the energy consumption in standby mode of networked equipment that has such mode, all network ports of the unit shall be deactivated or disconnected, as applicable.

(b) If a product relies on active wired connection to one or more network ports for the intended use, manual deactivation of those network ports is allowed instead of wire disconnection.

(c) The following procedure shall be used for measuring energy consumption in networked standby and for testing the power management function :

(1) If the equipment has one type of network port and if two or more ports of that type are available, one of those ports is randomly chosen and that port is connected to the appropriate network complying with the port's maximum specification. If the equipment has multiple wireless network ports of the same type, the other wireless ports shall be deactivated if possible. If the equipment has multiple wired network ports of the same type, the other network ports shall be disconnected. If only one network port is available, that port is connected to the appropriate network complying with the port's maximum specification.

The tested unit is switched on. The device that provides the remotely initiated trigger that will reactivate the tested unit is connected to the appropriate network, switched on, and ready to provide the trigger when required to. Once the tested unit is switched on and working properly, it is allowed to go into networked standby and the power consumption is measured. Then the appropriate trigger is given to the unit through the network port and a check is made on whether the equipment is reactivated.

(2) If the equipment has more than one type of network port, for each type of network port the following procedure is repeated. If two or more network ports of a type are available, one port is chosen randomly for each type of network port and that port is connected to the appropriate network complying with the port's maximum specification.

If for a certain type of network port only one port is available, that port is connected to the appropriate network complying with the port's maximum specification. Wired network ports not used shall be disconnected and wireless ports not used shall be deactivated if possible.

The tested unit is switched on. The device that provides the remotely initiated trigger that will reactivate the tested unit is connected to the appropriate network, switched on, and ready to provide the trigger when required to. Once the tested unit is switched on and working properly, it is allowed to go into

networked standby and the power consumption is measured. Then the appropriate trigger is given to the unit through the network port and a check is made on whether the equipment is reactivated. If one physical network port is shared by two or more types of (logical) network ports, that procedure is repeated for each type of logical network port, with the other logical network ports being logical-disconnected.

ANNEX IV

Verification procedure for market surveillance purposes

The verification tolerances defined in this Annex apply only to the verification by Member State authorities of the declared values. They shall not be used by the manufacturer, importer or authorised representative as an allowed tolerance for establishing the values in the technical documentation or in interpreting those values with a view to achieving compliance or for communicating better performance by any means.

Any model in breach of the first paragraph of Article 6 of this Regulation and all equivalent models shall be considered not compliant.

As part of verifying the compliance of a product model with the requirements referred to in Annex II under Article 3(2) of Directive 2009/125/EC, the authorities of the Member States shall follow the following procedure:

1. The Member State authorities shall verify one single unit of the model.

2. The model shall be considered to comply with the applicable requirements if all the following conditions are met:

   (a) the values given in the technical documentation pursuant to point 2 of Annex IV to Directive 2009/125/EC (declared values), and, where applicable, the values used to calculate those values, are not more favourable for the manufacturer, importer or authorised representative than the results of the corresponding measurements carried out pursuant to point 2(g) of that Annex;

   (b) the declared values meet any requirements laid down in this Regulation, and any required product information published by the manufacturer, importer or authorised representative does not contain values that are more favourable for the manufacturer, importer or authorised representative than the declared values;

   (c) the manufacturer, importer or authorised representative has put in place a system that complies with the requirements in the second paragraph of Article 6;

   (d) the model complies with the functional requirements in point 2 of Annex II and with the information requirements in point 3 of Annex II;

   (e) the determined values (the values of the relevant parameters as measured in testing and the values calculated from those measurements) comply with the respective verification tolerances as set out in Table 1.

3. If the conditions set out in point 2(a), (b), (c) or (d) are not met, the model and all equivalent models shall be considered not to comply with this Regulation.

4. If the condition set out in point 2(e) is not met, the Member State authorities shall select three additional units of the same model for testing. As an alternative, the three additional units selected may be of one or more equivalent models.

5. The model shall be considered to comply with the applicable requirements if, for those three units, the arithmetical mean of the determined values complies with the respective verification tolerances given in Table 1.

6. If the result referred to in point 5 is not achieved, the model and all equivalent models shall be considered not to comply with this Regulation.

7. The Member State authorities shall provide all relevant information to the authorities of the other Member States and to the Commission without delay after a decision is taken on non-compliance of the model pursuant to points 3 or 6.

The Member State authorities shall use the measurement and calculation methods set out in Annex III.

For the requirements referred to in this Annex, Member State authorities shall apply only the verification tolerances set out in Table 1 below and shall use only the procedure described in points 1 to 7 above. For the parameters in Table 1, no other tolerances, such as those set out in harmonised standards or in any other measurement method, shall be applied.

Table 1 - Verification tolerances

Parameters	*Verification tolerances*
Power consumption in off mode	The determined value* shall not exceed the declared value by more than 0,10 W.
Power consumption in standby mode	The determined value* shall not exceed the declared value by more than 0,10 W.
Power consumption in networked standby	The determined value* shall not exceed the declared value by more than 10 %.

*if three additional units are tested as provided for in point 4, the determined value means the arithmetical mean of the values determined for those three additional units.

ANNEX V

Benchmarks

At the time of entry into force of this Regulation, the best available technology on the market in terms of power consumption in off mode, standby mode and networked standby was identified as follows:

(a) Off mode: 0 W - 0,2 W with hard-off switch on the primary side, depending, inter alia, on the characteristics related to electromagnetic compatibility under Directive 2014/30/EU[5].

(b) Standby mode: 0,1 W with reactivation function; 0,1 W with simple or low power LEDs information or status display (larger displays - e.g. for clocks - require more power).

(c) Networked standby: 3 W for HiNA equipment; 1 W or less for non-HiNA equipment.

[5] Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility (OJ L 96, 29.3.2014, p. 79).