

*Chapter 1*  
***Subject matter and scope***

This Regulation establishes ecodesign requirements for televisions.

*Chapter 2*  
***Definitions***

In addition to the definitions set out in Directive 2005/32/EC, the following definitions shall apply:

- (1) "television" means a television set or a television monitor;
- (2) "television set" means a product designed primarily for the display and reception of audiovisual signals which is marketed and sold under one model or system designation, and which consists of
  - (a) a display,
  - (b) one or more tuner(s)/receiver(s) and optional additional functions for data storage and/or display such as digital versatile disc (DVD), hard disk drive (HDD) or videocassette recorder (VCR), either in a single housing combined with the display, or in a separate housing.
- (3) "television monitor" means a product designed to display a broadcast video signal on an integrated screen, and optionally controls and reproduces audio signals from an external source device, which is linked through standardised video signal paths including cinch (component, composite), SCART, HDMI, and future wireless standards but cannot receive and process broadcast signals;
- (4) "on mode" means the condition where the television is connected to the mains power source and produces sound and picture;
- (5) "home mode" means the television setting which is recommended by the manufacturer for normal home use;
- (6) "standby mode(s)" means a condition where the equipment is connected to the mains power source, depends on energy input from the mains power source to function properly and offers the following functions *only*, which may persist for an indefinite time:
  - reactivation function, or reactivation function and only an indication of enabled reactivation function, and/or
  - information or status display.
- (7) "off mode" means a condition in which the equipment is connected to the mains power source and is not providing any function; the following shall also be considered as off mode:
  - (a) conditions providing only an indication of off mode condition,
  - (b) conditions providing only functionalities intended to ensure electromagnetic compatibility pursuant to Directive 2004/108/EC of the European Parliament and of the Council<sup>1</sup>.

---

<sup>1</sup> OJ L 390 of 31.12.2004, p. 24.

- (8) "reactivation function" means a function facilitating the activation of other modes, including on-mode, by remote switch including remote control, internal sensor, timer to a condition providing additional functions, including the main function;
- (9) "information or status display" means a continuous function providing information or indicating the status of the equipment on a display, including clocks;
- (10) "forced menu" means a set of television settings, such as contrast of brightness, pre-defined by the manufacturer, where the user of the television must select a particular setting upon initial start up of the television;
- (11) "full HD resolution" means a screen resolution with physical pixel count of at least 1920 x 1080 pixels.

### *Chapter 3* **Ecodesign requirements**

Televisions shall meet the ecodesign requirements set out in Annex I. Compliance with the ecodesign requirements shall be measured in accordance with the methods set out in Annex II.

### *Chapter 4* **Relationship with Commission Regulation (EC) No 1275/2008 of 17 December 2008**

The requirements laid down in this Regulation shall prevail over the requirements laid down in Commission Regulation (EC) No 1275/2008 of 17 December 2008.

### *Chapter 5* **Conformity assessment**

The conformity assessment procedure referred to in Article 8 of Directive 2005/32/EC shall be the internal design control system set out in Annex IV of that Directive or the management system for assessing conformity set out in Annex V of that Directive.

### *Chapter 6* **Verification procedure for market surveillance purposes**

Surveillance checks shall be carried out in accordance with the verification procedure set out in Annex II.

### *Chapter 7* **Revision**

The Commission shall review this Regulation no later than 3 years months after its entry into force in the light of technological progress and present the result of this review to the Ecodesign Consultation Forum.

### *Chapter 8* **Entry into force**

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

Points 1(a), 2(a), 2(b), 2(c), 2(d), 3(a) and 3(b) of Annex I shall apply as from one year after the date referred to in the first paragraph.

Point 1(b) of Annex I shall apply as from 1 April 2012.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels,

*For the Commission*

*Member of the Commission*

**ANNEX I**  
**Ecodesign requirements**

1. On-mode power consumption

- a) One year after this Regulation has come into force:

The on-mode power consumption of a television with visible screen area  $A$  expressed in  $\text{dm}^2$  shall not exceed the following limits:

	Full HD resolution	All other resolutions
Television sets	$20 \text{ Watts} + A \cdot 1.40 \cdot 4.3224 \text{ Watts/dm}^2$	$20 \text{ Watts} + A \cdot 4.3224 \text{ Watts/dm}^2$
Television monitors	$15 \text{ Watts} + A \cdot 1.40 \cdot 4.3224 \text{ Watts/dm}^2$	$15 \text{ Watts} + A \cdot 4.3224 \text{ Watts/dm}^2$

- b) From 1 April 2012:

The on-mode power consumption of a television with visible screen area  $A$  expressed in  $\text{dm}^2$  shall not exceed the following limits:

	All resolutions
Television sets	$20 \text{ Watts} + A \cdot 3.4579 \text{ Watts/dm}^2$
Television monitors	$15 \text{ Watts} + A \cdot 3.4579 \text{ Watts/dm}^2$

2. Standby/off-mode power consumption

One year after this Regulation has come into force:

- a) Power consumption in "Off mode":

Power consumption of televisions in any off mode condition shall not exceed 0.50 Watt.

- b) Power consumption in "Standby mode(s)":

The power consumption of televisions in any condition providing only a reactivation function, or providing only a reactivation function and a mere indication of enabled reactivation function, shall not exceed 0.50 Watt.

The power consumption of televisions in any condition providing only information or status display, or providing only a combination of reactivation function and information or status display shall not exceed 1.00 Watt.

- c) Availability of Off mode and/or Standby mode

Televisions shall have an Off mode and/or Standby mode, and/or another condition which does not exceed the applicable power consumption requirements for off mode and/or standby mode when the television is connected to the mains power source.

- d) Automatic power-down

Televisions shall provide a function with the following characteristics:

- After no more than 4 hours in on-mode following the last user interaction and/or a channel change, the television shall be automatically switched from on-mode into
  - Standby-mode, or
  - Off-mode, or
  - another condition which does not exceed the applicable power consumption requirements for off-mode and/or standby-mode.
- Televisions shall display an alert message before the automatic switch from on-mode to the applicable condition/modes.

This function shall be set as default.

### 3. "Home mode" for televisions which are delivered with a forced menu

One year after this Regulation has come into force:

- a) Televisions with forced menu on initial activation of the television shall provide a "home mode" in the forced menu, which shall be the default choice on initial activation of the television. If the user selects a mode other than "home mode" on initial activation of the television, a second selection process shall be prompted to confirm this choice.

### 4. Peak luminance

One year after this Regulation has come into force:

- Televisions without forced menu: the peak luminance of the on-mode condition of the television as delivered by the manufacturer shall not be less than 65% of the peak luminance of the brightest on-mode mode condition provided by the television.
- Televisions with forced menu: The peak luminance of the home mode shall not be less than 65% of the peak luminance of the brightest on-mode mode condition provided by the television.

### 5. Information to be provided by manufacturers

For the purposes of conformity assessment pursuant to Chapter 4, the technical documentation shall contain the following elements:

- a) test parameters for measurements
  - Ambient temperature
  - Test voltage in V and frequency in Hz
  - Total harmonic distortion of the electricity supply system
  - the input terminal for the audio and video test signals
  - information and documentation on the instrumentation, set-up and circuits used for electrical testing
- b) on-mode
  - the power consumption data in Watts rounded to the first decimal place for power measurements up to 100 Watts, and to the first integer for power measurements above 100 Watts

- the characteristics of the dynamic broadcast-content video signal representing typical broadcast TV content
  - the sequence of steps for achieving a stable condition with respect to power consumption
  - in addition for televisions with a forced menu, the ratio of the peak luminance of the home mode and the peak luminance of the brightest on-mode mode condition provided by the television, expressed in percent
  - in addition for television monitors, a description of the relevant characteristics of the tuner used for measurements.
- c) for each standby and/or off mode
- the power consumption data in Watts rounded to the second decimal place
  - the measurement method used
  - description of how the mode was selected or programmed
  - sequence of events to reach the mode where the television automatically changes modes
- d) automatic power down
- the duration of the on-mode condition before the television reaches automatically standby, or Off mode, or another condition which does not exceed the applicable power consumption requirements for off mode and/or standby mode.

## ANNEX II Measurements

### 1. Measurements of on-mode power consumption

Measurements of the power consumption referred to in Annex I, points 1 (a) and 1 (b) shall fulfil all of the following conditions.

- a) Measurements shall be made using a reliable, accurate and reproducible measurement procedure, which takes into account the generally recognised state of the art.
- b) Conditions of televisions for measuring the on-mode power consumption
  - Television sets without forced menu: The power consumption referred to in points 1 (a) and 1 (b) shall be measured in the on-mode condition of the television as delivered by the manufacturer, i.e. the controls of the television shall be in the position adjusted by the manufacturer for the end user.
  - Television sets with forced menu: the power consumption referred to in points 1. (a) and 1. (b) shall be measured in the "home mode" condition.
  - Television monitors without forced menu: The television monitor shall be connected to an appropriate tuner. The power consumption referred to in points 1 (a) and 1 (b) shall be measured in the on-mode condition of the television as delivered by the manufacturer, i.e. the controls of the television monitor shall be in the position adjusted by the manufacturer for shipment to the end user. The power consumption of the tuner is not relevant for the measurements of on-mode power consumption of the television monitor.
  - Television monitors with forced menu: The television monitor shall be connected to an appropriate tuner. The power consumption referred to in points 1. (a) and 1. (b) shall be established in the "home mode" condition.
- c) General conditions
  - Measurements shall be made at an ambient temperature of  $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$ .
  - Measurements shall be made using a dynamic broadcast-content video signal representing typical broadcast TV content. The measurement shall be the average power consumed over ten consecutive minutes.
  - Measurements shall be made after the television has been in the off mode for a minimum of one hour immediately followed by a minimum of one hour in the on mode and shall be completed before a maximum of three hours in on mode. The relevant video signal shall be displayed during the entire on mode duration. For televisions that are known to stabilize within one hour, these durations may be reduced if the resulting measurement can be shown to be within 2 % of the results that would otherwise be achieved using the durations described here.
  - Measurements shall be made with an uncertainty of less than or equal to 2% at the 95% confidence level.

### 2. Measurements of standby/off-mode power consumption

Measurements of the power consumption referred to in Annex I, points 2 (a) and 2 (b) shall fulfil all of the following conditions.

- a) The power consumption referred to in points 2 (a) and 2 (b) shall be measured by a reliable, accurate and reproducible measurement procedure, which takes into account the generally recognised state of the art.
- b) Measurements of power of 0.50 Watt or greater shall be made with an uncertainty of less than or equal to 2% at the 95% confidence level. Measurements of power of less than 0.50 Watt shall be made with an uncertainty of less than or equal to 0.01 Watt at the 95% confidence level.

**ANNEX III**  
**Verification procedure**

When performing the market surveillance checks referred to in Chapter 3 (2) of Directive 2005/32/EC, the authorities of the Member States shall apply the following verification procedure for the requirements set out in Annex I.

1. Authorities of the Member State shall test one single unit.
2. The model shall be considered to comply with the provisions set out in Annex I, if:
  - a) the result for on-mode power consumption does not exceed the applicable limit value set out in Annex I, points 1 (a) and 1 (b) by more than 5%, and
  - b) the results for off-mode/standby conditions, as applicable, do not exceed the applicable limit values set out in Annex I, points 2 (a) and 2 (b) by more than 0.10 Watt.
3. If the results referred to in points 2(a) or (b) are not achieved, three additional units of the same model shall be tested.
4. After three additional units of the same model have been tested, the model shall be considered to comply with the requirements if:
  - a) the average of the results for the latter three units for on-mode power consumption does not exceed the applicable limit value set out in Annex I, points 1 (a) and 1 (b) by more than 5%, and
  - b) the average of the results for the latter three units for off-mode/standby conditions, as applicable, do not exceed the applicable limit values set out in Annex I, 2 (a) and 2 (b) by more than 0.10 Watt.
5. If the results referred to in points 4(a) and (b) are not achieved, the model shall be considered not to comply with the requirements.
6. For the purposes of checking conformity with the requirements, the authorities of the Member States shall use the procedure set out in Annex II, and related procedures including:
  - where available, harmonised standards the reference numbers of which have been published for that purpose in the Official Journal of the European Union in accordance with Articles 9 and 10 of Directive 2005/32/EC,
  - otherwise, the methods set out in the following documents:

Measured parameter	Organisation <sup>2</sup>	Reference	Title
On-mode power consumption	International Electrotechnical Commission	IEC 62087 Edition 2.0	Methods of measurement for the power consumption of audio, video and related equipment, Section 2; Section 3 with the exception of point 3.1.12; Section 5; Section 11, points (1) to (4) and (6)
Standby/off-mode power consumption	International Electrotechnical Commission	IEC 62301 Edition 2.0	Household electrical appliances – Measurement of standby power, Section 2; Section 3, points (8) and (9); Section 4; Section 5 with the exception of point (3.1); Section 6.

<sup>2</sup> International Electrotechnical Commission (IEC), IEC Central Office, 3 rue de Varembe, CH-1211 Geneva 20, Switzerland, tel. +41 22 919 02 11, fax +41 22 919 03 00, email [csc@iec.org](mailto:csc@iec.org), <http://www.iec.ch>

