COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, xxx
COM(2008) YYY final

Draft

COMMISSION REGULATION (EC) No …/..

of

implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for simple set-top boxes

EXPLANATORY MEMORANDUM

1. CONTEXT OF THE PROPOSAL

- Grounds for and objectives of the proposal

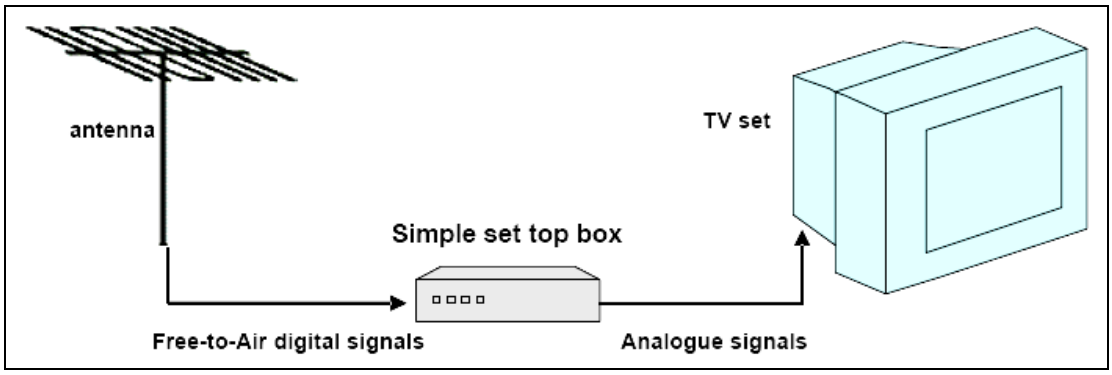
Directive 2005/32/EC lays down a framework for the Commission, assisted by a Regulatory Committee, to set ecodesign requirements for energy-using products. Ecodesign requirements are requirements that products covered by implementing measures must meet in order to be placed on the market, with the aim of improving their environmental performance.

Article 16 of the Directive states that 'the Commission shall, as appropriate, introduce (…) implementing measures starting with (…) products (…) offering a high potential for cost-effective reduction of greenhouse gas emissions, such as (…) consumer electronics (…)' in accordance with the criteria set out in Article 15 (in particular significant volume of sales and trade, significant environmental impact, significant potential for improvement and assessment of impacts).

A technical, environmental and economic analysis ('preparatory study') has shown that (i) simple set-top boxes (SSTBs) are placed in large quantities on the EU market, (ii) the environmental impact related to their electricity consumption in the EU is significant, (iii) there are wide disparities in the power consumption levels of these devices, and (iv) cost-effective technical solutions exist which could significantly improve their environmental impacts. In accordance with Article 15 of Directive 2005/32/EC, SSTBs should therefore be covered by an ecodesign implementing measure.

- General context

The ongoing transition from analogue to digital broadcasting will bring several benefits for consumers, such as better quality of picture and sound and the availability of new services. Recognising these benefits Member States have agreed to harmonise their national strategies for 'analogue switch off'. The process expected to be complete in the EU by 2015. During this transition period TV sets able to receive only analogue signals will need to be accompanied by special digital adapters, i.e. simple set-top boxes, which have the primary function of converting digital input to analogue output signals. The installed base of these devices will grow sharply over the coming years leading to a considerable increase of their overall energy consumption.



Graph 1. Scheme of a simple set-top box connected to an antenna and a TV set.

Because SSTBs have a simple functionality and a relatively short lifetime, consumers focus on price while disregarding their energy consumption. Consequently most manufacturers have paid no attention to driving down the energy consumption of SSTBs, even though technical solutions could be implemented at virtually no additional cost. In addition, as consumers are not aware of the power consumption of SSTBs, they tend to leave them permanently switched on, which leads to a substantial waste of energy and money.

The main environmental impact of SSTBs, which is their energy consumption, could be reduced in a cost-effective manner by a set of ecodesign requirements. It is estimated that in EU-25 such requirements would reduce the energy consumption of SSTBs 9 TWh from 14 TWh down to 5 TWh in 2014, which represents a reduction potential of 64% and a saving of EUR 1.4 billion at today's electricity prices, along with the abatement of 4 Mt of CO2 emissions. Although out of these 9 TWh 6 would stem from reduced power consumption in standby mode, the impact of the horizontal Ecodesign implementing measure on standby and off-mode losses alone would be considerably lower without a product-specific requirement to equip these devices with an 'automatic power down' function. Overall by 2020, when these devices will disappear from the market (most new TVs and video-recorders should be shipped with integrated digital tuners), around 47 TWh could be saved. Furthermore the life-cycle cost of a SSTB will fall from EUR 83 to EUR 58.

- **Existing provisions in the area of the proposal**

There are no existing provisions in the area of the proposal.

- **Consistency with the other policies and objectives of the Union**

The Ecodesign Directive 2005/32/EC is an important instrument for achieving the Community objective of a 20% increase in energy efficiency by 2020, and its implementation is one of the priorities of the Commission's Energy Efficiency Action Plan. Furthermore, implementation of Directive 2005/32/EC contributes to the EU's binding target to reduce greenhouse gases by at least 20% by 2020, or 30% by 2020 if there is an international agreement that commits other developed countries to comparable emissions reductions. The proposed Regulation is an important contribution to this process and to the Commission Action Plan on Sustainable Consumption and Production and on Sustainable Industrial Policy.

2. CONSULTATION OF INTERESTED PARTIES AND IMPACT ASSESSMENT

- **Consultation of interested parties**

Consultation methods, main sectors targeted and general profile of respondents

Stakeholders were consulted as part of the preparatory study, and in the Ecodesign Consultation Forum.

On 22 February 2008 the Ecodesign Consultation Forum (established under Article 18 of Directive 2005/32/EC) held a meeting on simple set-top boxes. Building on the results of the preparatory study, Commission staff presented a 'working document' suggesting ecodesign requirements for these devices. On 23 January 2008 the working document was sent to the members of the Consultation Forum, and to the secretariats of the ENVI (Environment, Public Health and Food Safety) and ITRE (Industry, Research and Energy) Committees of the European Parliament for

information. The working document was published on DG TREN's ecodesign website and placed on the Commission's CIRCA system alongside the stakeholder comments received in writing before and after the meeting.

In addition, the initiative was discussed at meetings of Commission staff with directly affected stakeholders, and with international partners, such as the International Energy Agency.

Summary of responses and how they have been taken into account

The positions of the main stakeholders, as expressed before, during and after the Consultation Forum meeting on 22 February in reaction to the Commission staff working document can be summarised as follows.

There was broad support for the quick introduction of ecodesign requirements for SSTBs. In the course of the study the industry had confirmed that the technology for reducing the power consumption of SSTBs would be available and could be integrated within these devices before the proposed deadlines without additional cost.

It was stressed that in order to ensure maximum compliance at an early stage, the measure should be kept simple and should focus on the key environmental impact of SSTBs, which is their energy consumption in use. Also important was the issue of waste, although the preparatory study and consultation process did not identify any viable policy options in this respect which would go beyond the existing provisions under relevant legislation, such as the "WEEE" Directive 2002/96/EC on waste electrical and electronic equipment.

There was broad support for the limit values proposed in the working document, although environmental and consumer NGOs and some Member States indicated that these values should be even lower. Environmental and consumer NGOs claimed that requirements could be imposed sooner than proposed in the working document, but this was challenged by some of the experts and by the industry, which indicated that the legislator had to take into consideration the time needed for re-design, manufacturing, and shipment.

Several stakeholders pointed to the need for a clear definition of these devices, differentiating them from devices performing more complex functions (complex set-top boxes or CSTBs), which may be regulated later in a separate Ecodesign Implementing Measure.

Given the fact that consumers tend to leave the SSTBs permanently in active mode, the proposed auto power-down function was considered by stakeholders to be an essential element in the ecodesign requirements for this product group.

NGOs argued that the proposed requirements should include provisions on labelling, the mandatory installation of a 'hard off switch' as well as a design option improving the recyclability of these devices.

These issues have been considered but not retained for the proposed Regulation because of limited potential benefit (labelling, 'hard off switch'), increased cost to the consumer ('hard off switch') and unavailability of the necessary materials (recyclability). Details are presented in the impact assessment.

- **Collection and use of expertise**

Scientific/expertise domains concerned

External expertise on SSTBs was mainly gathered through a preparatory study providing a technical, environmental and economic analysis, which was carried out by a consortium of external consultants on behalf of the Commission's Directorate-General for Energy and Transport.

Methodology used

The methodology followed the provisions of the Directive, in particular Article 15 and Annexes I and II. The technical, environmental and economic analysis followed the structure of the "Methodology Study for the Eco-design of Energy-using Products" developed for the Commission's Directorate-General for Enterprise and Industry and endorsed by stakeholders.

Main organisations/experts consulted

The preparatory study was conducted in an open process that took into account input from relevant stakeholders including manufacturers and manufacturing associations, environmental NGOs, consumer organisations, EU/EEA Member State experts, and international organisations such as the International Energy Agency (IEA).

Summary of advice received and used

No potentially serious risks with irreversible consequences were raised by any stakeholder, nor were any identified during the preparatory work.

The technical, market and economical analysis carried out in the preparatory study resulted in recommendations for power consumption levels of SSTBs in active and standby mode as well as additional elements such an the 'automatic power-down function' which would enable the environmental impact of these devices to be minimised. These recommendations were used as a basis for suggesting possible ecodesign requirements to the Consultation Forum.

Means used to make the expert advice publicly available

The preparatory study was accompanied by a dedicated website where interim results and further relevant materials were published regularly for timely stakeholder consultation and input. The study website was publicised on the ecodesign websites of the Transport and Energy DG and Enterprise and Industry DG. An open consultation meeting for directly affected stakeholders was organised on 17 October 2007 to discuss the preliminary results of the study.

The written submissions received in the course of the Consultation Forum process are available on the Commission's CIRCA portal. The minutes of the Forum meeting on SSTBs are available on Transport and Energy DG's website.

- **Impact assessment**

An impact assessment was carried out pursuant to Article 15(4) (b) of Directive 2005/32/EC. Several options for improving the power consumption of SSTBs were considered, and the outcome can be summarised as follows.

Option 1. No EU action:

This option implies that the market failure would persist, and it is to be expected that Member States would want to take individual, non-harmonised action on SSTBs. This would hamper the functioning of the internal market and lead to considerable administrative burdens and costs for manufacturers, contrary to the goals of the

Ecodesign Directive. In addition, this option ignores the mandate given to the Commission by the Council and Parliament.

Option 2. Self regulation:

The industry has not brought forward any initiative for self-regulation on SSTBs. The Code of Conduct on the energy efficiency of Digital TV Service Systems piloted by the Commission services (JRC Ispra), proposing energy efficiency performance levels for SSTBs as well, has had a limited impact on the manufacturers of these devices and cannot be considered as self-regulation in terms of the criteria laid down in Annex VIII of the Ecodesign Directive. In addition, this ignores the mandate granted to the Commission by the Legislator.

Option 3. Energy labelling of simple set-top boxes:

This policy option could have only a very limited impact because consumers are not driven in their decisions to purchase SSTBs by the energy consumption levels of these devices. For an individual consumer, the magnitude of potential electricity savings over the lifetime of an SSTB (approx. 25 euros) would not be decisive when buying such a device. In addition it is likely that a substantial volume of sales will be taken up by TV operators as part of their service package, which is a typical example of the 'Principal Agent' problem. Furthermore with an ecodesign measure taking off the market the worst performing products, there will be little variance between products in terms of their energy consumption, and hence little room for, and sense in, establishing a labelling scheme with different energy classes. This also ignores the mandate given by the Legislator.

Option 4. Ecodesign implementing measure for simple set-top boxes:

This option would set staged ecodesign requirements for SSTBs. It would correct the market failure, thus leading in a cost-effective way to a considerable reduction (close to two thirds) in the energy consumption of SSTBs. It would not entail significant administrative burdens for manufacturers or retailers and would decrease the life-cycle cost for the consumer without reducing the profit margins of retailers/producers. In addition, the mandate from the Legislator would be respected.

Following the principle of proportionality in carrying out the analysis, Options 1-3 were assessed qualitatively and discarded for the detailed analysis, and the impact assessment focussed on Option 4. With a view to Article 15(4) and 15(5) of Directive 2005/32/EC, the impact on the environment, consumers and manufacturers of this option has been assessed. It has been concluded that the most appropriate policy option would be energy consumption limits in active and standby mode based on the function performed by an SSTB, with a basic allowance for decoding digital signals in standard definition (SD), and additional allowances for an integrated hard disk, a second tuner (allowing different programmes to be recorded and viewed at the same time), and the decoding of digital signals in high definition (HD). It is proposed to apply these requirements in two stages, 1 year and 3 years after the entry into force of the proposed Regulation. As the consultation and analysis have shown, this will provide the appropriate balance between improvement of the environmental impact of SSTBs and cost benefits for the user/consumer (due to a reduction in electricity consumption), on the one hand, and possible additional burdens for manufacturers (in particular due to unplanned redesign), on the other hand.

3. LEGAL ELEMENTS OF THE PROPOSAL

- **Summary of the proposed action**

Scope

The SSTBs targeted by this Implementing Measure are devices with the primary function of converting standard-definition (SD) or high-definition (HD), free-to-air digital broadcast signals to analogue broadcast signals suitable for analogue TVs. Time-shift and recording functions (also called Personal Video Recording) based on integrated hard disk, the conversion of HD broadcast signal reception to HD or SD video output, and a second tuner are all considered to be additional functions or parts of an SSTB, so additional power consumption allowances are provided for them. These allowances are cumulative. The decision to include them is based on the results of the preparatory study, which indicate that as of 2012 such functions will be routinely integrated within SSTBs due to the falling prices of hard disks suitable for consumer electronic products.

After analogue switch-off, the set-top box will still exist as a product genre to provide high functionality to basic television equipment as new broadcasting and home networking technologies emerge. These set-top boxes, termed Complex STBs, are differentiated from Simple STBs by having a conditional access (CA) function, which requires a paid broadcast subscription. Their functioning in a 'networked operating condition' allows multiple interactive services associated with digital broadcasting but requires these devices to be permanently in active mode. Due to these different characteristics, the environmental impact of Complex STBs will need to be addressed later through a distinct set of policy measures.

Staged implementation

It is proposed to introduce maximum power consumption levels in two stages. These levels are differentiated according to the operating mode — active mode or standby mode — and according to the function or service provided — decoding of SD or HD signals, an integrated hard disk, a second tuner, and a display function in standby mode. The timing of the requirements for additional SSTB functions or components, namely the hard disk and the decoding of HD signals, is based on the expected entry onto the market of products with such functions or components in significant quantities as well as technologies allowing their energy consumption to be reduced. Taking into consideration that SSTBs with integrated hard disks will start entering onto the market in bulk quantities only around 2012, and in order to minimise the burden imposed on manufacturers, first tier requirements do not apply to SSTBs with integrated hard disks.

Relation to the horizontal regulation on standby and off-mode

The power consumption allowance for standby mode follows the provisions set out in the horizontal measure for standby and off mode losses. However, the proposed second stage requirements for standby mode of SSTBs as well the requirements to install an 'automatic power-down' function are set to apply one year and three years earlier, respectively, than in the horizontal standby measure, as the redesign cycle for these devices is relatively short and the necessary technology is readily available.

The preparatory study has shown that those levels are cost-effective and can be achieved with current state-of-the-art technology. The timing of the stages is set in such a way that negative impacts related to functionalities of equipment on the

market are avoided, and cost impacts for manufacturers, in particular SMEs, are taken into account, while ensuring timely achievement of the policy objectives.

The requirements laid down in this specific Regulation prevail over requirements laid down in Regulation 2009/../EC implementing directive 2005/32/EC with regard to ecodesign requirements for the standby and off mode power consumption of electrical and electronic household and office equipment.

Automatic power-down

Since studies have shown that consumers have the tendency to leave SSTBs permanently in active mode, an automatic power-down function is an essential element in this implementing measure, which will require this function to be integrated in all SSTBs one year after its entry into force.

Measurements

The proposed Regulation requires that measurements have to be accurate, reliable and reproducible. A mandate for a corresponding harmonised standard will be issued.

Verification procedure for market surveillance purposes

A number of Member States have argued that the procedure in EN 62301 leaves room for product design that could systematically exceed prescribed ecodesign power levels by several percent. The tolerance for the first test of the verification procedure is therefore reduced from 15% to 10% for power consumption greater than 1.0 watt, and from 0.15 watt to 0.10 watt for power consumption equal to, or less than, 1.0 watt.

In order to facilitate compliance checks manufacturers are requested to provide information in the technical documentation referred to in Annexes IV and V of Directive 2005/32/EC in so far as it relates to the requirements laid down in this implementing measure.

Date for evaluation and possible revision

The main issues for a revision of the proposed Regulation are

- the appropriateness of the levels for the specific ecodesign requirements
- the appropriateness of the product scope
- the possibility to improve environmental impacts other than energy in the use phase
- the appropriateness of repealing the regulation (depending on the market penetration of SSTBs)
- the development of new standards for digital broadcasting and associated technological and market developments regarding SSTBs

The first stage of the ecodesign requirements is proposed to become effective one year after entry into force of the Regulation. The second stage is proposed to become effective three years after entry into force of the Regulation. Taking into account the time needed to collect and analyse data and in order to properly assess technological progress, a review can be presented to the Consultation Forum no later than 5 years after entry into force of the Regulation. The ongoing preparatory study on Complex STBs should also feed into this process.

- **Legal basis**

The proposed Regulation is an implementing measure pursuant to Directive 2005/32/EC in particular its Article 15(1). The Directive is based on Article 95 of the Treaty.

- **Subsidiarity principle**

The proposed Regulation implements Directive 2005/32/EC. Since the objective of the proposed action, namely to ensure the functioning of the internal market by requiring products to reach an adequate level of environmental performance, cannot be sufficiently achieved by Member States acting alone and can therefore, by reason of it scales and effects, be better achieved at Community level, the Community may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty.

- **Proportionality principle**

In accordance with the principle of proportionality, this measure does not go beyond what is necessary in order to achieve the objective.

No costs arise for national administrations for transposition of the action into national legislation.

- **Choice of instruments**

Proposed instruments: Regulation.

Other means would be less adequate for the following reason(s).

The proposed form of action is a Commission Regulation (implementing framework Directive 2005/32/EC), because the objectives of the action can be achieved most efficiently by fully harmonized requirements throughout the EU, ensuring the free movement of compliant equipment.

Trade implications: WTO/TBT will be notified to ensure that no barrier to trade is introduced.

4. BUDGETARY IMPLICATION

The proposal has no implications for the Community budget.

5. ADDITIONAL INFORMATION

- **Review/revision/sunset clause**

The proposal includes a review clause.

- **European Economic Area**

The proposed act concerns an EEA matter and should therefore extend to the European Economic Area.

Draft

COMMISSION REGULATION (EC) No …/..

of

implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for simple set-top boxes

(Text with EEA relevance)

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Community,

Having regard to Directive 2005/32/EC of the European Parliament and of the Council of 6 July 2005 establishing a framework for the setting of ecodesign requirements for energy-using products and amending Council Directive 92/42/EEC and Directives 96/57/EC and 2000/55/EC of the European Parliament and of the Council[1] and in particular Article 15(1) thereof,

After consulting the Ecodesign Consultation Forum,

Whereas:

(1) Under Directive 2005/32/EC ecodesign requirements shouldbe set by the Commission for energy-using products representing significant volumes of sales and trade, having a significant environmental impact and presenting significant potential for improvement in terms of their environmental impact without entailing excessive costs.

(2) Article 16(2) first indent of Directive 2005/32/EC provides that in accordance with the procedure referred to in Article 19(3) and the criteria set out in Article 15(2), and after consulting the Consultation Forum, the Commission will as appropriate introduce implementing measures targeting consumer electronics.

(3) The Commission has carried out a preparatory study which analysed the technical, environmental and economic aspects of simple set-top boxes (hereinafter SSTBs). The study has been developed together with stakeholders and interested parties from the EU and third countries, and the results have been made publicly available.

(4) It has been stated in the preparatory study that the number of SSTBs placed on the Community market will grow from 28 million in 2008 to 56 million in 2014, and the annual electricity consumption of SSTBs will grow from 6 TWh in 2010 to 14 TWh in 2014, but that the electricity consumption of SSTBs can be significantly reduced in a cost effective manner.

(5) The electricity consumption of SSTBs can be reduced by implementing existing non-proprietary design solutions, which, despite being cost-effective, are not introduced onto the market in a satisfactory way because end-users are unaware of the running

[1] Directive 2005/32/EC (OJ L 191, 22.7.2005, p. 29). Directive as amended by Directive 2008/28/EC (OJ L 81, 20.3.2008, p. 48).

costs of SSTBs, providing manufacturers with no incentive to integrate such solutions to reduced power consumption during use.

(6) Ecodesign requirements for the power consumption of SSTBs should be set with a view to harmonising ecodesign requirements for these devices throughout the Community and contributing to the functioning of the internal market and to the improvement of the environmental performance of these devices.

(7) This Regulation should increase the market penetration of technologies yielding improved energy efficiency of SSTBs, leading to estimated annual energy savings of 9 TWh in 2014, compared to a business as usual scenario.

(8) The ecodesign requirements should not have a negative impact on the functionality of the product and should not negatively affect health, safety and the environment.

(9) A staged entry into force of the ecodesign requirements should provide an appropriate timeframe for manufacturers to redesign products. The timing of the stages should be set in such a way that negative impacts related to the functionalities of equipment on the market are avoided and cost impacts for manufacturers, in particular SMEs, are taken into account, while ensuring timely achievement of the policy objectives.

(10) Measurements of power consumption should be performed taking into account the generally recognised state of the art; manufacturers may apply harmonised standards established in accordance with Article 9 of Directive 2005/32/EC.

(11) The requirements laid down in this Regulation should prevail over the requirements laid down in Regulation 2009/../EC implementing Directive 2005/32/EC with regard to ecodesign requirements for the standby and off mode power consumption of electrical and electronic household and office equipment[2].

(12) Pursuant toArticle 8(2) of Directive 2005/32/EC, this Regulation should specify that the applicable conformity assessment procedures are the internal design control set out in Annex IV of Directive 2005/32/EC and the management system set out in Annex V of Directive 2005/32/EC.

(13) In order to facilitate compliance checks manufacturers should be requested to provide information in the technical documentation referred to in Annexes IV and V of Directive 2005/32/EC in so far as it relates to the requirements laid down in this implementing measure.

(14) Benchmarks for currently available SSTBs with low power consumption should be identified. The availability of a '0 W-mode' on SSTBs could support consumers' behaviour and decisions to reduce unnecessary loss of energy. Benchmarks help to ensure wide availability and easy accessto information, in particular for SMEs and very small firms, which further facilitates the integration of best design technologies for reducing the energy consumption of SSTBs.

(15) The measures provided for in this Regulation are in accordance with the opinion of the Committee established by Article 19(1) of Directive 2005/32/EC,

---

[2] OJ L …

HAS ADOPTED THIS REGULATION:

Article 1
Subject matter and scope

This Regulation establishes ecodesign requirements for simple set-top boxes.

Article 2
Definitions

For the purposes of this Regulation, the definitions set out in Directive 2005/32/EC shall apply. The following definitions shall also apply:

1. 'Simple set-top box' (SSTB) means a stand-alone device which, irrespectively of the interfaces used,

   (a) has the primary function of converting standard-definition (SD) or high-definition (HD), free-to-air digital broadcast signals to analogue broadcast signals suitable for analogue television or radio,

   (b) has no 'conditional access' (CA) function

   (c) offers no recording function based on removable media in a standard library format;

A SSTB can be equipped with the following additional functions and/or components which do not constitute a minimum specification of an SSTB:

   (a) time-shift and recording functions using an integrated hard disk

   (b) conversion of HD broadcast signal reception to HD or SD video output

   (c) second tuner.

2. '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 work as intended and provides *only* the following functions, which may persist for an indefinite time:

   (a) reactivation function, or reactivation function and only an indication of enabled reactivation function, and/or

   (b) information or status display;

3. 'Reactivation function' means a function enabling the activation of other modes, including active mode, by remote switch, including remote control, internal sensor, timer to a condition providing additional functions, including the main function;

4. 'Information or status display' means a continuous function providing information or indicating the status of the equipment in a display, including clocks;

5. 'Active mode(s)' means a condition in which the equipment is connected to the mains power source and at least one of the main function(s) providing the intended service of the equipment has been activated;

6. 'Automatic power down' means a function which switches the active mode of an SSTB into standby mode after a period in the active mode following the last user interaction and/or channel change;

7. 'Second tuner' means a part of the SSTB available for independent recording while allowing to watch a different programme;

8. 'Conditional access' (CA) means a provider-controlled broadcasting service requiring a market subscription television service.

Article 3
Ecodesign requirements

The ecodesign requirements for SSTBs are set out in Annex I.

Article 4
Relationship with Regulation 2009/../EC

The requirements laid down in this Regulation shall prevail over the requirements laid down in Regulation 2009/../EC.

Article 5
Conformity assessment

The procedure for assessing conformity referred to in Article 8(2) of Directive 2005/32/EC shall be the internal design control system set out in Annex IV of Directive 2005/32/EC or the management system set out in Annex V of Directive 2005/32/EC.

Article 6
Verification procedure for market surveillance purposes

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

Article 7
Benchmarks

The indicative benchmarks for best-performing products and technology currently available on the market are identified in Annex III.

Article 8
Revision

No later than 5 years after the entry into force of this Regulation the Commission shall review it in the light of technological progress and present the result of this review to the Consultation Forum.

Article 9
Entry into force

This Regulation shall enter into force on the 20th day following that of its publication in the *Official Journal of the European Union.*

Point 1 of Annex I shall apply as from one year after the date referred to in the first paragraph.

Point 2 of Annex I shall apply as from three years after the date referred to in the first paragraph.

Article 10

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. One year after this Regulation has come into force, SSTBs placed on the market shall not exceed the following power consumption limits; SSTBs with an integrated hard disk and/or second tuner are exempt from that requirement:

	Standby mode	Active mode
Simple STB	1.00 W	5.00 W

Allowance for display function in standby	+ 1.00 W	_
Allowance for decoding HD signals	_	+ 3.00 W

2. Three years after this Regulation has come into force SSTBs, placed on the market shall not exceed the following power consumption limits:

	Standby mode	Active mode
Simple STB	0.50 W	5.00 W

Allowance for display function in standby	+ 0.50 W	_
Allowance for hard disk	_	+ 6.00 W
Allowance for 2nd tuner	_	+ 1.00 W
Allowance for decoding HD signals	_	+ 1.00 W

3. Availability of standby mode

   One year after this Regulation has come into force, SSTBs shall provide standby mode.

4. Automatic power-down

   One year after this implementing measure has come into force, SSTBs shall be equipped with an 'automatic power-down' or similar function with the following characteristics:

   – the SSTB shall be automatically switched from active mode into standby after less than 3 hours in active mode following the last user interaction and/or a channel change with an alert message 2 minutes before going into standby mode.

   – the 'automatic power-down' function shall be set as default.

5. Measurements

The power consumption referred to in Points 1 and 2 shall be established by a reliable, accurate and reproducible measurement procedure, which takes into account the generally recognised state of the art.

Measurements of power of 0.50 W 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 W shall be made with an uncertainty of less than or equal to 0.01 W at the 95% confidence level.

6. Information to be provided by the manufacturers for the purposes of conformity assessment

For the purposes of conformity assessment pursuant to Article 5, the technical documentation shall contain the following elements:

a) For standby and active modes

– The power consumption data in Watts rounded to the second decimal place including consumption data for the different additional functions and/or components

– The measurement method used

– Period of measurement

– Description of how the appliance mode was selected or programmed

– Sequence of events to reach the mode where the equipment automatically changes modes

– Any notes regarding the operation of the equipment

b) Test parameters for measurements

– Ambient temperature

– Test voltage in V and frequency in Hz

– Total harmonic distortion of the electricity supply system

– The fluctuation of the power supply voltage during the tests

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

– Input signals in RF (for digital terrestrial broadcasts) or IF (for satellite broadcasts)

– Audio/video test signals as described in the MPEG-2 transport stream

– Adjustment of controls

The power requirements of peripheral devices powered by the STB for broadcast reception, such as active terrestrial antenna, satellite LNB or any cable or telecom modem are not required to be included in the technical documentation.

7. Information to be provided by the manufacturers for the purposes of consumer information

Manufacturers shall ensure that consumers of SSTBs are provided with the power consumption in Watts rounded to the first decimal place of standby and active modes of the SSTB.

ANNEX II
Verification procedure

When performing the market surveillance checks referred to in Article 3(2) of Directive 2005/32/EC the authorities of the Member States shall apply the following verification procedure for the applicable requirements set out in Annex I, Points 1, 2 and 4, as applicable.

For power consumption larger than 1.00 W:

Member State authorities shall test one single unit.

The model shall be considered to comply with the provisions set out in Annex I, Points 1 and 2, as applicable, of this Regulation if the results for active and standby mode conditions, as applicable, do no exceed the limit values by more than 10%.

Otherwise, three more units shall be tested. The model shall be considered to comply with this Regulation if the average of the results of the latter three tests for active and standby mode conditions, as applicable, does not exceed the limit values by more than 10%.

For power consumption smaller than, or equal to, 1.00 W:

Member State authorities shall test one single unit.

The model shall be considered to comply with the provisions set out in Annex I, Points 1 and 2, as applicable, of this Regulation if the results for active and/or standby mode conditions, as applicable, do not exceed the limit values by more than 0.10W.

Otherwise, three more units shall be tested. The model shall be considered to comply with this Regulationif the average of the results of the latter three tests for active and/or standby conditions, as applicable, does not exceed the limit values by more than 0.10W.

Otherwise, the model shall be considered not to comply.

ANNEX III
Benchmarks

The following indicative benchmarks are identified for the purpose of Annex I, part 3, point 2, of Directive 2005/32/EC. They refer to the best available technology at the date of adopting this Regulation:

SSTB without any additional features:

– Active mode: 4.00 W

– Standby mode excluding the display function: 0.25 W

– Off-mode: 0 W

SSTB with an integrated hard drive

– Active mode: 10.00 W

– Standby mode excluding the display function: 0.25 W

– Off-mode: 0 W

The above benchmarks are established on the basis of a SSTB with a basic configuration, an 'automatic power down' function and a hard-off switch.