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Conformity Assessment Procedure

of Energy-using Products (EuPs) for the compliance

with the EuP Directive 2005/32/EC

leading to CE marking certification



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工業貿易署
Trade and Industry Department

THE HONG KONG
POLYTECHNIC UNIVERSITY
香港理工大學

Department of
Industrial and Systems Engineering
工業及系統工程學系



Green Manufacturing and Eco-Design Research Group
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INTRODUCTION

Before placing an Energy-using Product (EuP) into the European market, manufacturers must ensure that their products conform to the essential requirements of the applicable directives. CE marking is an indication that the product has been subject to conformity assessment procedure as provided in the directives. However, **new dimension(s) has been added to the CE Marking for the EuP Directive by mandating manufacturers to implement ecodesign in product design and development.**

Often SMEs are not familiar with the conformity assessment procedure in the EuP Directive. In particular, no experience on its certification of CE marking of EuPs exists. This step by step procedure helps SMEs to comply CE marking requirements with EuP Directive.

INTRODUCTION (CON'T)

What are Energy-using Product (EuP)?

Energy-using products (EuPs), which use, generate, transfer or measure energy (electricity, gas, fossil fuel), such as boilers, computers, televisions, transformers, industrial fans, vacuum cleaners and set top boxes etc.



Boiler



Television



Refrigerator



Computer



Toaster

What are Implementing Measure (IM)?

The EuP Directive makes specific provisions by product category called **Implementing Measure (IM)**. Each IM acts as an individual standard, which provides the necessary conformity assessment regimen for a particular product category. Each implementing measure's conformity assessment regimen covers energy consumption limits and environmental regulations by product categories.

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Step by step procedure

To **conduct conformity assessment**, SMEs should follow the steps below :

Step 1: Identify applicable Implementing Measure (IM) to product

Step 2: Assess product by applicable standards and tests

Step 3: Conduct environmental performance assessment for product

Step 4: Identify significant environmental parameter(s)

Step 5: Conduct product redesign

Step 6: Conduct environmental performance assessment for redesigned product

Step 7: Establish Technical Documentation File (TDF)

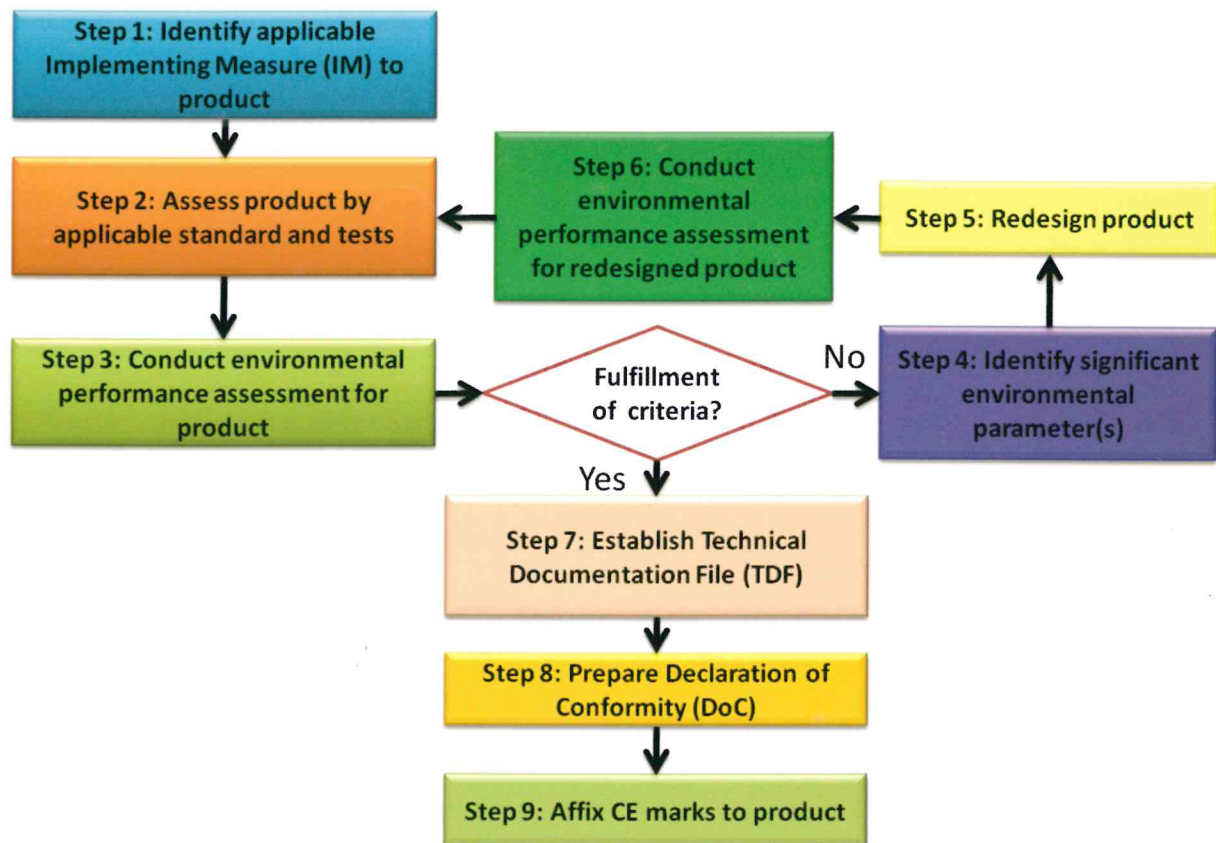
Step 8: Prepare Declaration of Conformity (DoC)

Step 9: Affix CE marking to product

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Conformity assessment procedure

to comply with CE marking requirements of Energy-using Products (EuPs)



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STEP 1: IDENTIFY APPLICABLE IM TO PRODUCT

Below is a list of 39 product categories which have been currently enforced with implementing measures or under studied. Manufacturers or their authorized representatives should identify the IMs which are applicable to their products.

Product category	Commission regulation No.	Status	Enforcement date
Standby and off mode electric power consumption of household and office equipment	1275 / 2008	EC Regulation in force	2010. 01. 07
Simple-set-top boxes	107 / 2009	EC Regulation in force	2010. 02. 25
Lighting products in the domestic and tertiary sectors	859 / 2009	EC Regulation in force	2009. 09. 01
External power supplies	347 / 2010	EC Regulation in force	2010. 04. 27
Televisions	278 / 2009	EC Regulation in force	2010. 01. 07
Refrigerators and Freezers	642 / 2009	EC Regulation in force	2010. 07. 01
Electric Motors	643 / 2009	EC Regulation in force	2011. 06. 16
Circulators	640 / 2009	EC Regulation in force	2013. 01. 01
Washing Machines	641 / 2009	EC Regulation in force	2011. 12. 01
Dishwashers	1015 / 2010	EC Regulation in force	2011. 12. 01
Fans driven by motors with an electric input power between 125 W and 500 kW	1016 / 2010	EC Regulation in force	2013. 1.1

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STEP 1: IDENTIFY APPLICABLE IM TO PRODUCT (CON'T)

Product category	Status
Personal Computers and computer monitors	Discussed by consultation forum. Regulation probable 2009. 10. 09
Vacuum cleaner	Study completed, discussed by consultation forum on 2010. 06. 25
Residential room conditioning appliances (airco and ventilation)	Study completed, discussed by consultation forum on 2010. 04. 23
Residential room conditioning appliances (comfort fans)	Study completed, discussed by consultation forum on 2010. 04. 23
Complex set top boxes (with conditional access and/or functions that are always on)	Study completed, discussed by consultation forum on 2009. 10. 12
Boilers and combi-boilers	Study completed, discussed by consultation forum on 2009. 06. 24
Ventilation fans (non-residential)	Study completed, discussed by consultation forum on 2008. 05. 27
Water pumps(commercial buildings, drinking water, food, agriculture)	Study completed, discussed by consultation forum 2008. 05. 29
Water heaters	Study completed, discussed by consultation forum on 2008. 07. 08
Laundry dryers	Study completed
Domestic lighting products II - reflector lamps and luminaries (directional)	Study completed

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STEP 1: IDENTIFY APPLICABLE IM TO PRODUCT (CON'T)

Product category	Status
Computer Tomography (CT), Ultrasound, X-Ray, Magnetic Resonance Imaging (MRI), Nuclear Medicine	Self regulatory initiative probably
Commercial refrigerators and freezers, including chillers, display cabinets and vending machines	Study completed
Solid fuel small combustion installations (in particular for heating)	Study completed
Local room heating products	Study underway
Central heating products using hot air to distribute heat(other than CHP)	Study underway
Domestic and commercial ovens (electric, gas, microwave), including when incorporated in cookers	Study underway
Domestic and commercial hobs and grills, including when incorporated in cookers	Study underway
Non-tertiary coffee machines	Study underway
Professional washing machines, dryers and dishwashers	Study underway
Networked standby losses of EuPs	Study underway

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STEP 1: IDENTIFY APPLICABLE IM TO PRODUCT (CON'T)

Product category	Status
Domestic uninterruptible power supplies (UPS)	Study underway
Refrigerating and freezing equipment: service cabinets, walk-in cold rooms, chillers, ice makers, ice cream and milk-shake machines, minibars	Study underway
Transformers: distribution transformers, power Transformers	Study underway
Sound and imaging equipment: DVD/video players and recorders, video projectors, video game consoles	Study underway
Machine tools	Study underway
Air-conditioning and ventilation systems	Study underway

If you want to know more detail about the implementing measures, please go to:

http://ec.europa.eu/energy/efficiency/ecodesign/legislation_en.htm

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STEP 2: ASSESS PRODUCT BY APPLICABLE STANDARDS AND TESTS

Manufacturers should select appropriate standards and testing methods to assess their product compliance according to the applicable implementing measure. Measurement of energy consumption should be performed taking into account the generally recognized and updating standards. For example:

Standard No.	Standard name	Descriptions	Applicable products
EN/IEC 62301:2005	Measurement of electrical power consumption in the standby mode	The methods defined in this standard is intended to be used to measure power consumption of household appliances and equipments during standby mode.	Household Electrical Appliances
IEC 62087:2002/ EN 62087:2003	Methods of measurement for the power consumption of audio, video and related equipment	This standard specifies methods of measurement for the power consumption of television sets, video recording equipment, Set Top Boxes, audio equipment and multi-function equipment for consumer use.	Television sets, video recording equipment, Set Top Boxes, audio equipment and multi-function equipment for consumer use
EN 60312	Vacuum cleaners for household use - Methods of measuring the performance	The purpose of this standard is to specify essential performance characteristics of vacuum cleaners being of interest to the users and to describe methods for measuring these characteristics.	Vacuum cleaners
EN 50285	Energy efficiency of electric lamps for household use – Measurement methods	Specifies the test conditions and method of measurement of luminous flux, lamp wattage and lamp life as given on a label on the lamp packaging, together with a procedure for verification of the declared values.	Electric lamps for household use

If above standards are not applicable to your product, please refer to the preparatory studies which can be downloaded from: http://ec.europa.eu/energy/efficiency/studies/ecodesign_en.htm

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STEP 3: CONDUCT ENVIRONMENTAL PERFORMANCE ASSESSMENT FOR PRODUCT

Purposes of environmental performance assessment for product are:

1. Ascertain significant environmental parameters related to the products
2. Identify potential improvement areas

For example, some tools that can be used:

Matrices	MET Matrix (MET)
	AT&T Matrix and Target Plot
	Boeing Process Environmental Matrix
Checklists	ABC Analysis
	Recycling Checklist for European Council's Directive on WEEE
	Ecodesign Checklist Method (ECM)
	Eco-estimator
	Philips's Fast Five Checklist
	Sony's Green Product Check Sheet and Product Profile
Spiderweb Diagrams	Eco-compass
	E-concept Spiderweb Diagram
	Life-cycle Design Strategies Wheel (LiDS)
Parametric Methods	Cumulative Energy Demand Analysis (CED)
	Material Input per Service Unit (MIPS)
	Eco-indicator (EI)
Quantitative Software	Simapro
	Gabi
	EcoScan
	Umberto

Details of each tool can be found in the Ecodesign tool box from:

http://www.pctech.ise.polyu.edu.hk/ecodesign/10_e.html

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STEP 4: IDENTIFY SIGNIFICANT ENVIRONMENTAL PARAMETER(S)

After performing steps 2 and 3, manufacturers can conduct conformity assessment [\[go to Step 7\]](#) directly if their products comply with the IM requirements. Otherwise, they should redesign their products by identify significant environmental parameter(s) [\[go to Step 5\]](#). According to the EuP Directive (2005/32/EC), environmental parameter(s) can be classified as follows:

IM-focused environmental parameters:

- Consumption of energy, water and other resources throughout the life cycle
- Quantity and nature of consumables for use and maintenance

Other related environmental parameters:

- Weight and volume of product
- Use of substances classified as hazardous to health and/or the environment
- Use of recycled materials
- Incorporation of used components
- Ease of reuse and recycling
- Life time of product
- Amounts of (hazardous) waste generated
- Emission to air, water and soil

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STEP 5: CONDUCT PRODUCT REDESIGN

If the product cannot fulfill the requirements (e.g. energy consumption) of implementing measure, it is necessary to have product redesign. Some of the suggested redesign solutions for product improvement are listed below:

Environmental parameters	Redesign solutions
Consumption of energy, water and other resources throughout the life cycle	Raw material selection <ul style="list-style-type: none"> Minimize the energy, water and other resources content in conversion from raw materials
	Manufacturing <ul style="list-style-type: none"> Select processes which are efficient or renewable in use of energy, water and other resources Reduce the number of production steps Monitor the use of energy, water and other resources of production equipment Select product equipment with low consumption of energy, water and other resources
	Packaging, transportation and distribution <ul style="list-style-type: none"> Eliminate unnecessary packaging of product Select transportation / distribution methods that have lowest emissions Use energy efficient transportation / distribution methods
	Use <ul style="list-style-type: none"> Minimize energy consumption in stand-by mode Select the lowest appropriate power supply devices Make use of low voltage logic design
	End of life <ul style="list-style-type: none"> Use snap-fits to reduce the number of screws Minimize energy, water and other resources consumption in disassembly processes

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STEP 5: CONDUCT PRODUCT REDESIGN (CON'T)

Environmental parameters	Redesign solutions
Quantity and nature of consumables for use and maintenance	<ul style="list-style-type: none"> Reduce number of consumables needed Reduce wastage of consumables
The weight and volume of product	<ul style="list-style-type: none"> Define realistic requirements for stiffness and strength Use ribbed structures for stiffness instead of thick walls Optimize wall thickness Use standardized components
Use of substances classified as hazardous to health and /or the environment	<ul style="list-style-type: none"> Use alternative materials instead of hazardous materials Use biodegradable materials
Use of recycled materials	<ul style="list-style-type: none"> Select recyclable materials Maximize the content of recycled materials
Incorporation of used materials	<ul style="list-style-type: none"> Minimize type of materials used Design with modularity
Ease of reuse and recycling	<ul style="list-style-type: none"> Avoid detrimental design of reuse and recycling Design for ease of disassembly
Life time of product	<ul style="list-style-type: none"> Improve reliability and durability Design for ease of maintenance and repairability Use modular product structure design
Amounts of (hazardous) waste generated	<ul style="list-style-type: none"> Increase utilization of materials Use alternative materials instead of hazardous materials Reduce the number of consumables Use recyclable/ renewable/ reusable consumables
Emission to air, water and soil	<ul style="list-style-type: none"> Select transportation methods with lower emission Increase percentage of loading

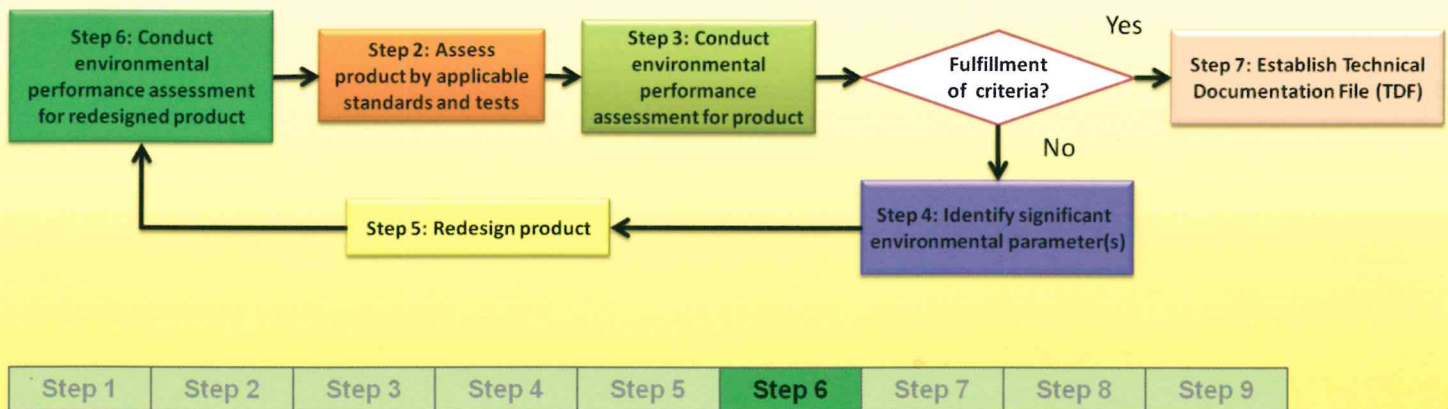
Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8	Step 9
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STEP 6: CONDUCT ENVIRONMENTAL PERFORMANCE ASSESSMENT FOR REDESIGNED PRODUCT

After redesigning the product, manufacturers should check its compliance with IM requirements [Go back to step 2]. The redesigned product should be assessed by the applicable standard (s) and environmental performance assessment again as specifications of the original product may be changed.

If non-compliance of redesigned product still exists, product should be redesigned until all requirements from IM of EuP Directive have been met.



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STEP 7: ESTABLISH TECHNICAL DOCUMENTATION FILE (TDF)

Manufacturers can carry out the conformity assessment procedure by choosing **internal design control (Annex IV)** or **management system for assessing conformity (Annex V)** of EuP Directive 2005/32/EC. Since internal design control focuses on product level while management system for assessing conformity focuses on corporate level, conformity assessment by internal design control is highly recommended for SMEs.

According to EuP directive, manufacturers have to compile a **Technical Documentation File (TDF)** to conduct conformity assessment by internal design control. A complete set of TDF must contain **seven elements**:

TDF elements:
Element 1. A general description of the product and of its intended use (same requirement of pervious EU directives)
Element 2. Results of relevant environmental performance assessments
Element 3. Ecological profile, where required by Implementing Measure (IM)
Element 4. Elements of product design specification relating to environmental design aspects of the product
Element 5. A list of appropriate testing standards applied
Element 6. A copy of information concerning the environmental design aspects of the product
Element 7. Testing report of measurements on the IM's requirements

A checklist of TDF can be found in P.26 and P.27.

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STEP 7: ESTABLISH TECHNICAL DOCUMENTATION FILE (TDF) (CON'T)

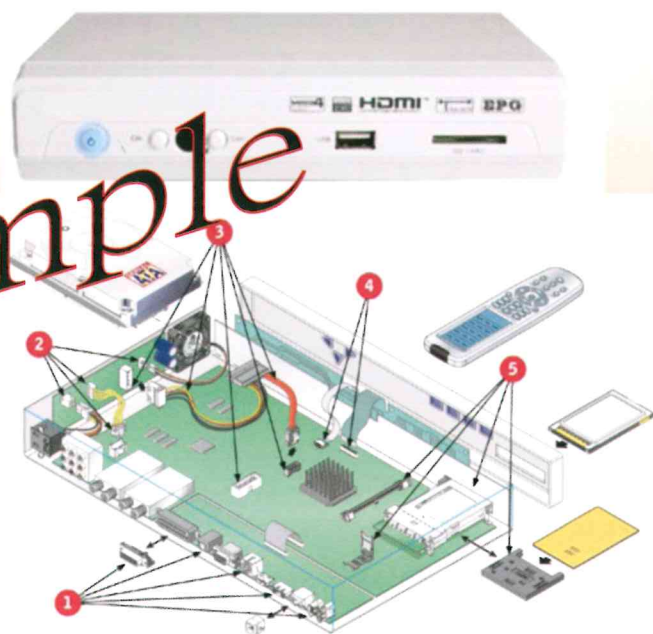
Element 1: A general description of the product and of its intended use (same requirement of pervious EU directives)

Product definition

Simple set top box: a device that connects to a television and some external source of signals, and turns the signal into content then displayed on the screen.

Functions

- Converts the compressed digital video signal to analog form and is presented to the TV monitor
- Support USB 2.0 PVR recording. MP3, JPG photo playback



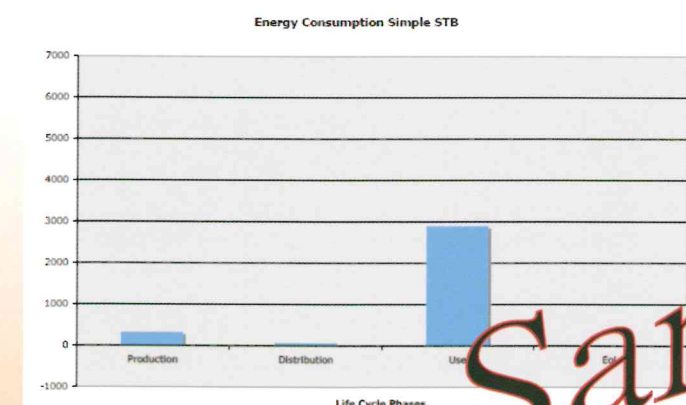
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STEP 7: ESTABLISH TECHNICAL DOCUMENTATION FILE (TDF) (CON'T)

Element 2: Results of relevant environmental performance assessments

Assessment tools can be referred to Step 3



Toggle Group-By Box	Quantity	Unit
Product: One unit of STB (498.08 g): 89.81 kg CO2-eq.		
Raw Materials	16.15	kg CO2-eq.
Manufacture	6.69	kg CO2-eq.
Distribution/Retail	0.17	kg CO2-eq.
Consumer Use	66.10	kg CO2-eq.
Disposal/Recycling	0.70	kg CO2-eq.
Sum:	89.81	kg CO2-eq.

Life cycle Impact per product:		Date Author									
Simple STB Digital Terrestrial Television		04.10.07 ecostrb.org									
Life Cycle phases →		PRODUCTION			DIST. / RETAIL	USE	END-OF-LIFE*			TOTAL	
Resources Use and Emissions		Material	Misr. / n.f.	Total	Dispo. / n.f.	Dispo. / n.f.	Recycl.	Total	Total		
Materials		unit									
1	Bulk Plastics	g		426		383	43	426	0		
2	TecPlastics	g		33		30	3	33	0		
3	Ferro	g		293		15	278	293	0		
4	Non-ferro	g		27		1	26	27	0		
5	Coating	g		6		0	0	6	0		
6	Electronics	g		227		115	112	227	0		
7	Misc.	g		211		11	200	211	0		
Total weight		g		1216		554	652	1216	0		
Other Resources & Waste											
8	Total Energy (GJ)	GJ	259	53	311	56	2877	40	-2	3242	
9	of which: electricity (in kWh)	kWh	149	15	164	0	2876	0	13	3027	
10	Water (process)	l	132	3	135	0	193	0	12	-12	316
11	Water (cooling)	l	04	15	108	0	7666	0	3	-3	7771
12	Water (non-haz./landfill)	g	1363	11	1473	53	3347	75	38	36	4910
13	Water, hazardous/ incinerated	g	181	1	181	1	68	525	15	510	760
Emissions (Air)											
14	Greenhouse Gases in GWP100	kg CO2 eq.	14	3	18	5	126	3	3	0	148
15	Ozone Depletion, emissions	mg R-11 eq.	negligible								
16	Acidification, emissions	g SO2 eq.	136	17	153	13	742	6	12	-6	902
17	Volatile Organic Compounds (VOC)	g	1	1	2	0	1	0	0	0	3
18	Persistent Organic Pollutants (POP)	ng i-Teq	9	1	10	0	19	1	0	0	30
19	Heavy Metals	mg Ni eq.	27	2	29	3	50	11	2	9	91
20	PAHs	mg Ni eq.	17	1	18	3	6	0	1	-1	25
	Particulate Matter (PM, dust)	g	10	4	15	2	16	51	1	51	83
Emissions (Water)											
21	Heavy Metals	mg Hg20	59	0	59	0	19	3	7	-4	74
22	Eutrophication	g PO4	1	0	1	0	0	0	0	0	2
23	Persistent Organic Pollutants (POP)	ng i-Teq	negligible								

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STEP 7: ESTABLISH TECHNICAL DOCUMENTATION FILE (TDF) (CON'T)

Element 3: Ecological profile, where required by Implementing Measure (IM)

A description of inputs and outputs associated with an energy using product throughout its life cycle which expressed in measurable physical quantities.

For example:

- Materials (kg)
- Energy consumption (GJ)
- Water consumption (m³)
- Emission to water (kg)

Materials
Total (kg) of which
Disposal
Recycled (kg)
Other resources
Total energy (GJ)
Of which, electric (in primary) (GJ)
Water (process)(m3)
Water (cooling)(m3)
Waste, non-hazardous/landfill (kg)
Emissions to air
GHG in CO ₂ eq 100 (kg CO ₂ eq)
Acidification Potential AP (kg SO ₂ eq)
Volatile Organic Compounds VOC (kg)
Persistent organic pollutants PoPs(mg I-Teq)
Heavy metals (mg Ni)
Polycyclic aromatic hydrocarbons PAHs(mg)
Particulate matter (dust) (kg)
Emissions to water
Heavy metals (g Hg/20)

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STEP 7: ESTABLISH TECHNICAL DOCUMENTATION FILE (TDF) (CON'T)

Element 4: Elements of product design specification relating to environmental design aspects of the product

Sample: Product design specifications relating to environmental design aspects of a simple set top box

Life cycle stage	Type of specification		Name of specification	Explanation and value
Use stage	Fixed	Power consumption not exceeding 5 W	Indicate energy consumption in the on mode	Typical power consumption
	Fixed	Power consumption not exceeding 1 W	Indicate energy consumption in the standby mode	Active standby mode

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STEP 7: ESTABLISH TECHNICAL DOCUMENTATION FILE (TDF) (CON'T)

Element 5: A list of appropriate testing standards applied

Testing standards applied to the development of TDF of a simple set top box

Standard name	Contents	Application area
EN/IEC 62301:2005	Measurement of electrical power consumption in the standby mode	Household Electrical Appliances
IEC 62087:2002/ EN 62087:2003	Measurement of the power consumption of digital terrestrial, digital cable and digital satellite set top boxes	Specific to digital television set top boxes with detailed coverage of test signal and external loads
CEA-2013	Measurement and maximum limit of standby mode	Specific to digital television set top boxes includes Treatment of parasitic peripherals such as security cards
IEC 62430	Environmentally Conscious Design of electro technical products	All Electrical and Electronic Products

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STEP 7: ESTABLISH TECHNICAL DOCUMENTATION FILE (TDF) (CON'T)

Element 6: A copy of information concerning the environmental design aspects of the product

Disassembly / Recycling / WEEE information of a simple set top box

Process tree of Simple set top box

Disassembly tool:
The disassembly tools used for this product show as

Disassembly Tool	Pictures	Disasset
Cross screwdriver		Side cutt

Disassembly time:
3 minutes and 5 seconds

Component / Material Composition	Weight (g)	Percent Weight
Plastic Part	3.8	3.6
Other	2.0	1.9
Total Step	5.8	5.5
Crystal display	27.8	24.7
Total	112.8	100.0

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STEP 7: ESTABLISH TECHNICAL DOCUMENTATION FILE (TDF) (CON'T)

Element 7: Testing report on measurements of the ecodesign requirements

Testing report of a simple set top box

Page 1 of 10
Test Report issued under

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K0026C

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TEST REPORT
COMMISSION REGULATION (EC) No 642/2009
implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements

Report Reference No.: QZES100900262101

Tested by (name + signature): Selisa Xie

Approved by (+ signature): Hiden Li

Date of issue: 2013-09-28

Total number of pages: 10 pages

Testing Laboratory: SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou

Address: 158 Kejiu Road, Science & Technology Development D (51063)

Applicant's name: Address:

Test specification: STR: COMMISSION REGULATION (EC) No 642/2009

Test procedure: STR: COMMISSION REGULATION (EC) No 642/2009

Non-standard test method: None

Test Report Form No.: 642/2009/EC_C

Test Report Form(s) Original: SGS-CSTC

Master TRF: 2010-08-10

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TRF No. 642/2009/EC_C

Table 1 Test parameters for measurements

The measurement method used: IEC 62087: 2005 2nd Edition
EN 62031: 2005 1st Edition

Test ambient temperature (°C): 24.2 °C

Test voltage in V and frequency in Hz: 230 V ~, 50 Hz

Total harmonic distortion (THD) of the electricity supply system: 0.18%

Input terminal for the audio and video test signals: AV mode

The dynamic broadcast content video signal defined in IEC 62087 Ed 2, sub-clause 11.3

Test set-up and circuits used for electrical testing

Table 2 Test results

Operating mode(s): Measured (W) Limit (W)

On condition: 0 1.00 0.30 (from 07.01.2010) (from 20.08.2011)

For televisions with an easily visible switch, which puts the television in a condition with power consumption not exceeding 0.01 Watts when operated to the off position

Power consumption in standby mode(s) in any condition providing only a reactivation function, or providing only a reactivation function and a mere indication of enabled reactivation function: 0.73 1.00 0.50 (from 07.01.2010) (from 20.08.2011)

any condition providing only information or status display, or providing only a combination of reactivation function and information or status display: 1.00 1.00 (from 20.08.2011)

TRF No. 642/2009/EC_C

Table 3 Test instruments

Name Brand Model Last cal. date Next cal. date

Spectroradiometer SENSING SPR-900UV 2010-04-08 2011-04-08

Digital Power meter Yokogawa WT210 2010-08-11 2011-08-11

Power supply Kikusui PCR4000V -- --

TRF No. 642/2009/EC_C

Operating mode(s): Measured (W) Limit (W)

Description of how the appliance mode was selected or programmed: During on mode, press the button on remote control, the unit turn to standby mode with LED light in red. During on mode or standby mode, press the mains switch, the unit turn to off mode

Sequence of events to reach the mode where the appliance automatically changes modes: --

On mode: 65.1 77.4 61.9 (from 20.08.2010) (from 01.04.2012)

Characteristics of the dynamic broadcast content video signal representing typical broadcast TV content: --

Sequence of events to reach the mode where the appliance automatically changes modes: --

Measurements shall be made after the television has been in the off-mode for a minimum of 1 hour immediately followed by a minimum of 1 hour in the on-mode and shall be completed before a maximum of 3 hours in on-mode. The relevant video signal shall be displayed during the entire on-mode duration.

Peak luminance of the home-mode: 173 cd/m²

Peak luminance of the brightest on-mode condition provided by the television: 160 cd/m²

Ratio of the peak luminance: 95.9 % 65 %

Duration of the on-mode condition before the television reaches automatically standby or off-mode: --

Result: The EUP complies with the ecodesign requirements before 20 August 2011 of Annex I of COMMISSION REGULATION (EC) No 642/2009

Step 1 Step 2 Step 3 Step 4 Step 5 Step 6 Step 7 Step 8 Step 9

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STEP 8: PREPARE DECLARATION OF CONFORMITY (DoC)

According to the EuP Directive 2005/32/EC Annex VI, EC Declaration of Conformity (DoC) must contain the following elements:

1. Name and address of the manufacturer
2. A description of the model
3. References of the harmonized standards applied
4. Other technical standards and specifications used
5. Reference to other Community legislation providing for the affixing of the CE mark that is applied
6. Identification and signature of the person empowered to bind the manufacturer

Declaration of Conformity

CE

Name:

declares that under our sole responsibility the products

Description of the model

are in conformity with the provisions of the following EC Directives, including all amendments, and with national legislation implementing these directives:

Low Voltage Directive 2006/95/EC
EMC Directive 2004/108/EC

The following harmonized standards were applied:

EN 300 386 V1.4.1: 2008
EN 55022 Class A: 2006, including A1: 2007
EN 55024 + A1+A2: 1998
EN 60950-1: 2005

This product carries the CE Mark, which was affixed on 2010.

Place: Sunnyvale, CA Signature: Date: 21/2010

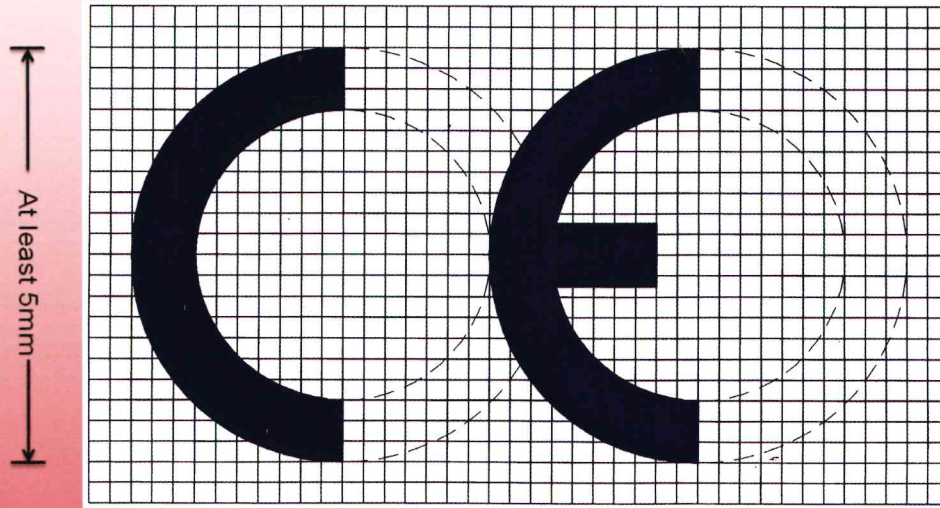
DoC: 10-03-000

Step 1 Step 2 Step 3 Step 4 Step 5 Step 6 Step 7 Step 8 Step 9

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STEP 9: AFFIX CE MARKING TO PRODUCT

The CE marking must be affixed to the **product**. Where this is not possible, it must be affixed to the **packaging** and to the **accompanying documents**. The CE marking must have a height of at least 5 mm. If the CE marking is reduced or enlarged the proportions given in the above graduated drawing must be respected.



Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8	Step 9
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REFERENCES

- Directive 2009/125/EC of the European parliament and of the council of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products
- Commission Regulation (EC) No 107/2009 of 4 February 2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for simple set-top boxes

APPENDIX: CHECKLIST OF TECHNICAL DOCUMENTATION FILE (TDF)

Element 1 of Step 7 (P.16)

- | | |
|-------------------------|--------------------------|
| 1. Name of manufacturer | <input type="checkbox"/> |
| 2. Address | <input type="checkbox"/> |
| 3. Product name | <input type="checkbox"/> |
| 4. Model | <input type="checkbox"/> |
| 5. Input voltage | <input type="checkbox"/> |
| 6. Power consumption | <input type="checkbox"/> |
| 7. Product description | <input type="checkbox"/> |
| 8. Product function(s) | <input type="checkbox"/> |

Element 2 of step 7 (P.17)

- | | |
|---|--------------------------|
| 9. Environmental performance assessment results | <input type="checkbox"/> |
|---|--------------------------|

Element 3 of step 7 (P.18)

- | | |
|-----------------------------------|--------------------------|
| 10. Ecological profile (optional) | <input type="checkbox"/> |
|-----------------------------------|--------------------------|

Element 4 of step 7 (P.19)

- | | |
|--|--------------------------|
| 11. Product design specifications relating to environmental design aspects | <input type="checkbox"/> |
|--|--------------------------|

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APPENDIX: CHECKLIST OF TECHNICAL DOCUMENTATION FILE (TDF)(CON'T)

Element 5 of step 7 (P.20)

- | | |
|---|--------------------------|
| 12. List of testing standard(s) applied | <input type="checkbox"/> |
| 13. Testing specification | <input type="checkbox"/> |
| 14. Testing procedure | <input type="checkbox"/> |
| 15. Test item description | <input type="checkbox"/> |
| 16. Summary of testing | <input type="checkbox"/> |

Element 6 of step 7 (P.21)

- | | |
|---|--------------------------|
| 17. A copy of information concerning environmental design aspects | <input type="checkbox"/> |
|---|--------------------------|

Element 7 of step 7 (P.22)

- | | |
|--|--------------------------|
| 18. Testing report on measurements of ecodesign requirements | <input type="checkbox"/> |
| 19. Technical reports and certificates | <input type="checkbox"/> |
| 20. Documentation of inspection and testing | <input type="checkbox"/> |
| 21. Inspection, measuring and test equipment | <input type="checkbox"/> |

Step 8 (P.23)

- | | |
|--|--------------------------|
| 22. Declaration of Conformity signed by manufacturer | <input type="checkbox"/> |
| 23. Declaration of Conformity signed by subcontractors | <input type="checkbox"/> |
| 24. Declaration of Conformity signed by sub-suppliers | <input type="checkbox"/> |
| 25. Technical documentation from subcontractors | <input type="checkbox"/> |
| 26. CE marking affixed to the product, packaging or accompanying documents | <input type="checkbox"/> |

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