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Test Method Interpretations, Tolerances and Communication of Results

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1. Test method interpretations and tolerances on specific parameters

The objective of this document is to explain the methodology adapted by the ComplianTV project to test specific parameters such as peak luminance ratio (PLR) and automatic power down (APD) as well as how and with which tolerances the measurement results will be interpreted. This document does not cover other parameters included under the testing programme for Energy Labelling and Eco-design because the project found no further issues on test method interpretation or tolerance beyond those covered below.

1.1 Peak Luminance Ratio (PLR):

Specifications according to the Commission Regulation:

Commission Regulation (EC) No 642/2009, Annex I, point 4 states with respect to the testing of PLR:

- *"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 condition provided by the television".*
- *"Televisions with forced menu: the peak luminance of the home-mode condition shall not be less than 65 % of the peak luminance of the brightest on-mode condition provided by the television."*

Market surveillance verification shall be carried out considering the verification procedure set out in Annex III, point 2 (c). Accordingly, "*the result for the peak luminance ratio set out in Annex I, Part 3 does not fall below 60 %".*

Furthermore, if the result referred to in point 2 (c) has not been achieved and three additional units of the same model have been tested, according to Annex III, point 4 (c) the following requirements apply: *"the average of the results for the latter three units for the peak luminance ratio set out in Annex I, Part 3 does not fall below 60 %."*

Procedure within the ComplianTV project:

In order to define the PLR, the test labs will check whether shop mode can be manually adjusted into a brighter setting or not and will ensure that the product setting is adjusted to the brightest mode. This setting will be documented in the final test report. The test labs might **adjust all available pre-settings** including home mode and shop mode in order to achieve the brightest setting.

If the brightness can be manually adjusted to a brighter setting in shop mode, the manufacturer will be informed that an adjustable shop mode exists, which is contradictory to the guidelines[1], but which is not legally binding. Therefore this will not have any influence on the compliance status of the TV.

ComplianTV will only rate tested products as being "suspected non-compliant" in the case that the PLR is below 60 %. This procedure is in line with the Commission Regulation as well as is a common practice among MSAs.

1.2 Automatic Power Down (APD):

Specifications according to the Commission Regulation:

Commission Regulation (EC) No 642/2009 states in Annex I, point 2/2 (d) with respect to the testing of APD that: "*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 to:*

- *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".

Procedure within the ComplianTV project:

ComplianTV will rate tested products as passing this requirement if the TV **starts switching** into standby-mode, off-mode or another condition (which does not exceed the applicable power consumption requirements for off-mode and/or standby-mode) after no more than 4 hours and 1 minute. Furthermore, ComplianTV will confirm the presence of an on-mode screen warning, which is displayed before the TV goes into APD.

[1] Guidelines accompanying Commission Regulation (EC) No 642/2009 of 22 July 2009 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for televisions

In the absence of any official guidance, ComplianTV considers 1 minute as an adequate time measurement tolerance for the specified value of 4 hours for the required APD.

ComplianTV will declare a product “suspected non-compliant” when the APD is available but not activated when the unit is taken out of the box.

ComplianTV will declare a product “suspected non-compliant” when the APD is activated after 4 hours and 1 minute.

1.3 Energy Efficiency Index (EEI) and Annual On-mode Power Consumption

Specifications according to the Commission Regulation:

Commission Regulation (EC) No 1062/2010 states in Annex II, point 1 with respect to Method for calculating the Energy Efficiency Index and the annual on-mode energy consumption of TVs: *“The Energy Efficiency Index (EEI) is calculated as EEI = P/Pref (A), where:*

- P_{ref} *(A)* = P_{basic} + *A* × *4,3224 Watts/dm*^{2}*,*
- P_{basic} *= 20 Watts for television sets with one tuner/receiver and no hard disc*
- P_{basic} *= 24 Watts for television sets with two or more tuners/receivers*
- P_{basic} *= 28 Watts for television sets with hard disc(s) and two or more tuners/receivers.”*

Furthermore, Annex II, point 3 permits the reduction of the EEI and the annual on-mode energy consumption by 5%, if the following requirements are fulfilled when the TV is placed on the market:

- *“the luminance of the television in the home-mode or the on-mode condition as set by the supplier, is automatically reduced between an ambient light intensity of at least 20 lux and 0 lux”;*
- *“the automatic brightness control is activated in the home-mode condition or the on-mode condition of the television as set by the supplier”.*

Procedure within the ComplianTV project:

In the absence of any official guidance on how to define "*two or more tuners*", ComplianTV refers to the interpretation elaborated as a result of the ADCO meeting in 2011 in Berlin[2] and cited in the DigitalEurope guide to the Commission Delegated Regulation (EU), 1062/2010[3]. Accordingly, *"the definition of "two or more tuners/receivers" depends upon the functionality of the TV rather than the physical number of tuning devices that are contained inside the TV".* Therefore, if a TV has the ability to decode two or more streams of TV broadcast even if both streams are decoded by the same physical tuning device, it will be referred as a device with two or more tuners/receivers and P_{basic} of 24 Watts will be used for the EEI calculation.

In the absence of any official guidance on how to define a **light intensity of at least 20 lux and 0 lux** and with reference to Annex II, point 3 ComplianTV applies the 5% rule when the following two requirements are fulfilled:

- The ABC is activated; and
- When the television decreases automatically the luminance by reduced ambient light intensity below 20 lux.

1.4 Information requirements

The laboratory testing of the technical ecodesign requirements described in the sections above provide the first indication of the compliance of that model. In addition, under the ComplianTV project the unit tested is considered compliant when the following information requirements are fulfilled:

- Requirements addressing the publicly available information provided on free-access websites as defined by EU Ecodesign Regulation No 642/2009, Annex I, point 5, section 2.

  Accordingly, if the television contains mercury, the content shall be given as X,X mg. In the absence of mercury, ComplianTV accepts when the manufacturer indicates the mercury content as follows: "0 mg", "none" and similar.

- Requirements addressing the product fiche as defined by the EU Energy Labelling Regulation for TVs No 1062/2010, Annex III.

[2] Frequently Asked Questions on the Ecodesign Directive 2009/125/EC, ADCO meeting of 22nd March 2011 in Berlin
[3] Energy Efficiency Labelling for Televisions, A guide to the Commission Delegated Regulation (EU), 1062/2010; DigitalEurope 2012.

1.5 Measurement uncertainties and tolerances

1.5.1 On-mode power consumption

Measurement uncertainty

On-mode power measurements are made with an uncertainty required in 642/2009 and 1062/2010, respectively in IEC 62087 edition 2 or edition 3.

Tolerances defined in the regulation

According to Commission Regulation (EC) No 642/2009, Annex III, point 2 (a) within the market surveillance checks a tolerance of 7% is accepted for the on mode power limit.

According to Commission Regulation (EC) No 1062/2010, Annex VIII, point 2 (a), within the market surveillance checks a tolerance of 7% is accepted for the declared on mode power consumption.

ComplianTV tolerance

ComplianTV will declare a product “suspected non-compliant” if the measured values of on mode power consumption are above the Ecodesign threshold as required in Annex III, point 2 (a) as well as if the measured values are above the declared power consumption, as required in Regulation 1062/2010, Annex VIII, point 2 (a).

1.5.2 Standby / Off-mode power consumption

Measurement uncertainty

The measurement uncertainty is done according to Commission Regulation No. 642/2009, respectively EN 50564.

Tolerances defined in the regulation

According to Commission Regulation (EC) No 642/2009, Annex III, point 2 (b) within the market surveillance checks a tolerance of 0.10 W is accepted for the standby power limit.

According to Commission Regulation (EC) No 1062/2010, Annex VIII, point 2 (b), within the market surveillance checks a tolerance of 0.10 Watts is accepted for the declared values of standby and off-mode power consumption.

ComplianTV tolerance

ComplianTV will declare a product “suspected non-compliant” if the measured values of standby/off-mode power consumption are above the Ecodesign threshold as required in Annex III, point 2 (b) as well as if the measured values are above the values declared in the product fiche and/or online, as required in Regulation 1062/2010, Annex VIII, point 2 (b).

1.5.3 Automatic power down

ComplianTV tolerance

Within ComplianTV a time measurement tolerance of 1 minute is accepted for the specified value of 4 hours for the required APD.

1.5.4 Peak luminance ratio

Tolerances defined in the regulation

According to the Annex III Verification procedure 3 (c), the result for the PLR should not fall below 60%.

ComplianTV tolerance

For the PLR test, ComplianTV uses the market surveillance limits, i.e the PLR should not fall below 60%.

2. Procedure in case of suspected non-compliance after the tests on a first sample

2.1 Procedure

Step 1 testing of a single unit of a specific model gives the first indication of the compliance of that model. The unit tested is declared “suspected non-compliant” when the following requirements are not fulfilled:

- Ecodesign – technical and information - requirements, both as required by EU Ecodesign Regulation 642/2009, Annex I, points 1 to 5.

- when its declared energy class, its on-mode power consumption as well as standby/off-mode power consumption differ from the measured class and/or the product fiche is not available or does not fulfil the requirements defined in Annex III, both as required by the Energy Labelling Regulation for TVs No 1062/2010.

If it is found to be “suspected non-compliant” with the technical requirements, TUB will liaise with the manufacturer and will provide the test results. The contact details of the responsible test lab will be specified so that the manufacturer has the opportunity to discuss the test results and procedure.

Upon receiving the test report the manufacturer has to provide a written statement within 14 days, which can go one of two ways (see Figure 1):

- The manufacturer accepts the test result and offers remedy action. With the acceptance of the test result and the approval and verification of the remedy actions by the Remedial Action Board, the product will be declared “non-compliant”, thus no further testing will be required and the case is closed.

- The manufacturer does not accept the results from Step 1 testing - in this case the ComplianTV project enters into Step 2 testing and will purchase and test three additional samples of the same TV model as required in Annex III, point 3.

It is important to note here the distinction between suspected non-compliance with technical requirements and the non-compliance with information requirements. For non-compliance with information requirements, Step 2 testing is not required in the verification procedure: in these cases, the discussions on remedial action begin.

At this point, it needs to be stressed that a failure to comply with the PLR requirements leads to a specific step within the ComplianTV procedure:

In case a single unit fails to meet the PLR requirements, the responsible lab will liaise with the manufacturer in order to enquire which test pattern has been used. The manufacturer can further support the study by stating their own test procedure used and by providing the test pattern. After verifying that the suggested test pattern does not cause any power limiting, the lab will repeat the PLR test on the same TV unit. However, if the suggested test pattern causes power limiting, ComplianTV will go to step 2 (3 additional units tested) without retesting the same unit, and further use the initial "three bar" test pattern for step 2.

If the suggested test pattern does not cause power limiting and if after the repeated testing with this pattern, the PLR is above 60%, the unit will be declared compliant. In case the unit fails the PLR test again, three additional samples of the same TV model will be purchased and tested with the manufacturer test pattern.

2.2 Communication of test results

One important objective of the ComplianTV project is to enhance the level of communication with all actors involved and to distribute the testing results. This will be done in the following way:

If a product has been tested and declared "suspected non-compliant" after Step 1, it will be regarded as *under test* until the above described testing procedure is fulfilled and there is a final result. These "suspected non-compliant" cases will not be communicated outside the consortium. Only final test results will be communicated to the MSAs, and published on the ComplianTV website. If a product has been tested as compliant after Step 1, the test results will be forwarded to the relevant MSAs. It should be stressed that the absence of disclosure of some test results is neither an indication for the final test outcome nor for suspected non-compliance.

2.3 Schematic of the Process

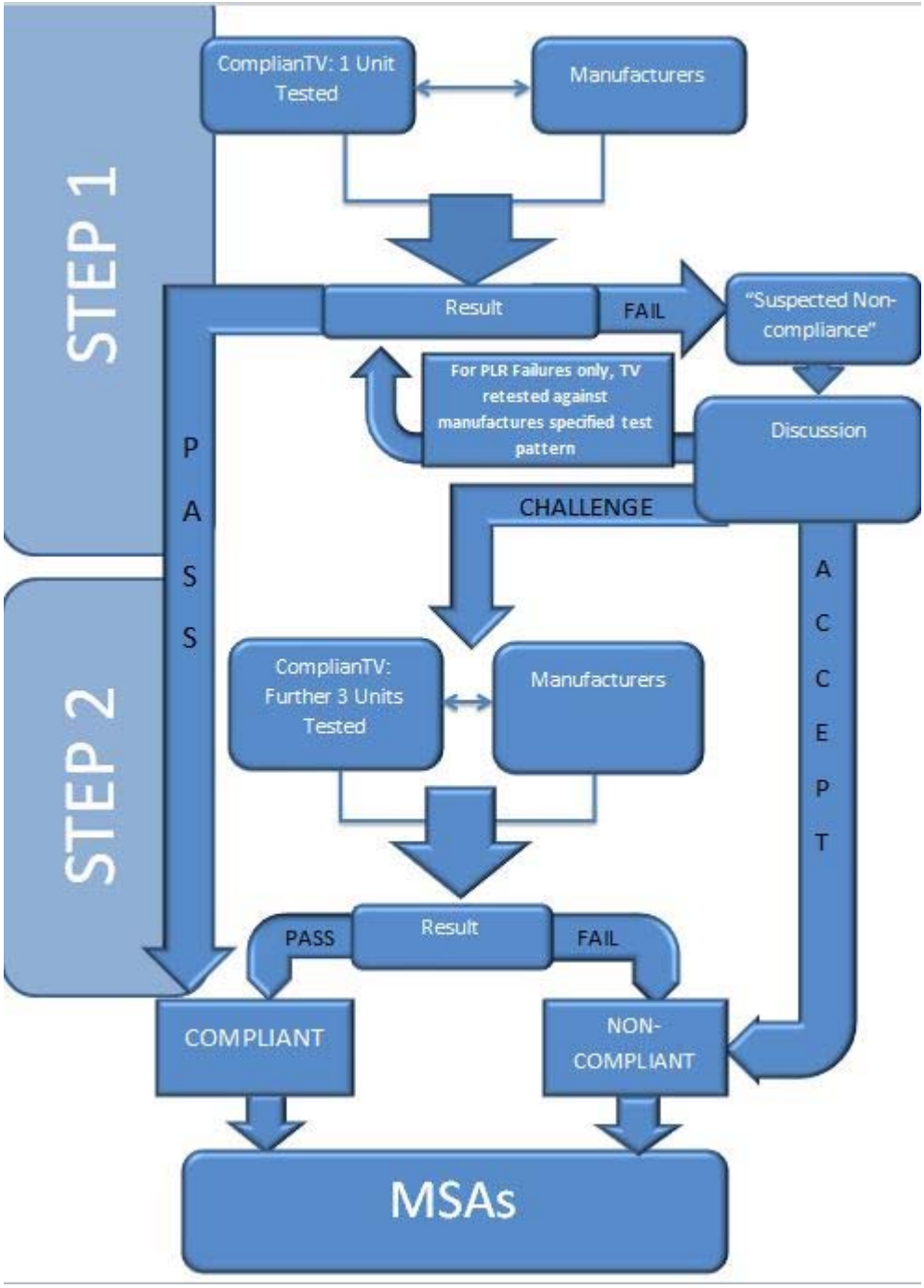

Figure 1: Schematic of the testing procedures under the ComplianTV project

2.4 Disclaimer and a note on Terminology

The ComplianTV Project aims at providing a fully-fledged and detailed methodological guidance to allow EU Member State MSAs to face the new legislative and market challenges for TVs in an effective and cost-efficient way (with a support of aligned concerted testing and the development of a database). It should be noted that the testing results published by the ComplianTV Project are results based only on the samples tested. These results are not legally binding and are without prejudice to any determination of compliance or non-compliance by a national MSA. In particular, they are not effective in law and cannot be used to declare if a TV unit is compliant or not. Only the MSAs of each Member State have the legal right to officially declare whether a TV placed on the market is compliant or non-compliant and it is up to each EU Member State MSA to decide if actions are needed. Each MSA will have to establish non-compliance in accordance with the rules that are applicable in its Member State.

Within the ComplianTV project, the use of the term non-compliant refers wholly to a conformity check performed by the project against the requirements specified. It is not a formal MSA check. This terminology will be used under the circumstances where the TV fails after Step 1 testing, and the manufacturer has accepted the results, and also where the TV fails after Step 2 testing. The use of the term “suspected non-compliant” will be under circumstances where there has been a failure after Step 1 testing and the product is still under test.

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More information
about the project activities
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