

ENERGY STAR V7.0 Displays

Draft 2 Specification

– Comments from the European Commission

New Comments for the Published Draft 2 Specification

We provide some additional comments as a result of discussions from the Draft 2 Displays Stakeholder Webinar held on the 7th May 2015.

Line 395 – Sleep Mode Requirements for Signage Displays

Following stakeholder comments we are concerned that the 1 W allowance for networked sleep mode in signage products (0.5 W base plus the 0.5 W Full Network Connectivity Allowance) may be too stringent. We understand that it is technical feasible for products to perform at these power demands but that manufacturers have been designing products to meet higher allowances in the ENERGY STAR specification for televisions and the EU Ecodesign Regulation on Networked Standby. We would be supportive of a relaxed requirement, when the requirement takes effect, reflecting the manufacturers' position but would also suggest that a more ambitious Tier II requirement taking effect 1 year later at the current levels is also included.

Line 271 – Enhanced Performance Display Definition

Stakeholders commented that high brightness and colour gamut conformity across a display is a clear indication of a display being of enhanced performance. As such we request that two additional mandatory technical features are added to the Enhanced Performance Display definition to ensure that only displays offering truly enhanced performance are able to take advantage of the extra allowances:

- a brightness and colour uniformity of >90% across the image;
- colour and brightness stability at the delivered specified performance across the specific working temperature range and nominal working life

Previous Comments

This section of the report contains the previous comments that we raised during the development process of the ENERGY STAR v7.0 specification for displays as well as notes on how these comments were addressed during the process.

Major comments on levels and TEC

We have assessed compliance levels to the draft 1 and draft TEC based specifications using both the EU ENERGY STAR database and the US EPA ENERGY STAR dataset. The results of this analysis can be seen in the tables below.

Monitor Size		% Compliant			
Diagonal (inches)	Bins	EU Database		US Dataset	
		Draft 1 TEC Requirements	Draft 2 TEC Requirements	Draft 1 TEC Requirements	Draft 2 TEC Requirements
<14	14	16.7%	41.7%	28.6%	57.14%
14-16	16	66.7%	81.0%	75.0%	75.00%
16 - 19	19	48.8%	45.0%	51.2%	45.24%
19 - 20	20	24.3%	20.1%	29.9%	22.92%
20 - 22	22	17.6%	14.3%	19.8%	13.86%
22- 24	24	23.0%	21.6%	26.2%	25.32%
24 - 26	26	21.9%	21.9%	22.9%	22.92%
>26	28	10.0%	18.2%	12.5%	15.22%
Total		21.8%	22.2%	25.5%	23.19%

It is clear from the analysis that the proposed draft 2 TEC approach is slightly less stringent for products in the EU ENERGY STAR database and slightly more stringent for products in the draft 1 US EPA dataset. However, it is recognised that the compliance rates under each approach are satisfactory for a new ENERGY STAR specification under the assumption that the datasets are representative of the current market situation. We would not be supportive of any decrease in the level of ambition within the TEC formula.

It should be noted that it was not possible to assess the impact of the Full Network Connectivity Energy Allowance on compliance rates as no data was available to indicate which, if any, products employed this functionality. It was also not possible to assess the 65% extra allowance for Enhanced performance displays which met the “Color Gamut of a least 96% Adobe® RGB Version 2005-05” requirement.

Line 12: Signage Display Definition

We note that the proposed ENERGY STAR definition is not harmonised with the definition that is likely to be used in the Ecodesign Regulation for displays. It also appears that many displays meet the 400 cd/m² so only the size or pixel density may limit large number of normal computer monitors being defined as signage products.

Line 276: Enhanced Performance Displays

It is noted that an additional allowance of 65% has been included for products that have a Color Gamut of a least 96% Adobe® RGB Version 2005–05. This adder appears to be very large.

We suggest that the additional allowance for products that have a Color Gamut of a least 96% Adobe® RGB Version 2005–05 was reduced. On discussion it was clear that the US EPA felt that there were insufficient products in the dataset to support reducing this allowance. We recommend that the manufacturers submit qualified data to verify the need for an adder and the size of the adder for these product types. We believe that there is significant development of both enhanced performance and high resolution display technologies which includes development of displays in mobile products with low power demands. In order to facilitate a longer life for this display specification, we think it is a good idea to further assess the size of this adder.

Line 320: Automatic Brightness Control (Equation 4)

We have previously noted that there are many unknowns related to the performance of ABC in computer monitors and signage displays. We do know that ABC control curves can vary considerably between product models and manufacturers, and that it is a feature that is controlled by software.

Testing: Regarding the illuminance levels for testing of ABC, we suggest harmonising wherever possible with TV approaches, although recognise that signage may demand a different treatment due to the very variable high and low ambient lighting conditions in which it may be installed.

Data: We support a call for data from industry regarding ambient lighting conditions in which their products are used, and ABC control curves that operate in these conditions.

Adders: We previously suggested that the monitors listed in the dataset didn't appear to need the ABC allowance to reach the 25% qualification threshold. We therefore suggested that the incentive could more usefully be aimed at encouraging best practice ABC implementation. Examples of efficient control curves are available that show control curves that complement the characteristics of the ability of the human eye to resolve bright and dark sections of a display screen. If ABC allowances were awarded only to ABC functionality following this best practice characteristic, savings achieved as a result of ABC would be more certain. Whilst some of our recommendations on the adders have not been investigated we appreciate the fact that the ABC allowance has been reduced to 5% within the TEC approach.

Line 338 to 344: Additional Allowances

We previously noted that evidence to support the levels of some of the adders was not clear to us, and we would be grateful to EPA if they could share data/analysis to support the proposed adders – e.g. touch functionality.

We did not receive the evidence behind the proposed adder for touch technology but appreciate the fact that the allowance was withdrawn in the draft 2 specification document.

General Editorial Comments on Draft Specification Document

We also had some general editorial comments that propose small text changes in order to correct some of the language used in the draft specification. Some of these changes were made whilst others have not been made.

We have added some additional comments for the draft 2 specification.

Line 56: Automatic Brightness Control (ABC)

We noted that the specification contained the following statement:

“Automatic Brightness Control (ABC): The self-acting mechanism that controls the brightness of a Display as a function of Ambient Light Conditions”.

We commented that the wording suggested that ABC functions without user intervention (i.e. does not need to be enabled) and suggested that the wording be changed to:

“Automatic Brightness Control (ABC): The self-acting mechanism that, when enabled, controls the brightness of a Display as a function of Ambient Light Conditions”.

This suggested change was not included in the second draft of the specification and so the issue remains. We appreciate that the change is not of fundamental importance.

Line 70: Native Vertical Resolution

The previous and second draft specification contained the following statement:

“Native Vertical Resolution: The number of visible physical lines along the vertical axis of the Display”.

We commented that the wording suggests that each line of pixels can be seen by the user. It is therefore suggested that this text be changed to:

“Native Vertical Resolution: The number of physical lines along the vertical axis of the Display within the visible area of the Display that produces images”.

This suggested change was not included in the second draft of the specification and so the issue remains. We appreciate that the change is not of fundamental importance.