

## ENERGY STAR Program Requirements for Displays 5.0 – Draft Final – Comments from the European Commission

We present in the following comments from the European Commission (EC) on ENERGY STAR Program Requirements for Displays 5.0 – Draft Final.

### General remarks

We are positive regarding aspects in the revised specification such as broadening of the specification to include all displays and power management for all types of displays.

### Test methodology

We believe that the current test approach for displays under 30 inch diagonal is flawed for the following reasons:

- Not technology neutral – all products/technologies are not treated equally
- Lack of harmonisation – could have referenced IEC 62087 as for larger screens.
- Specified luminance testing not representative of actual consumption.

In addition, there is also the following issue for the use of the IEC test approach for displays over 30 inch diagonal:

- Use of only the static test pattern from the IEC 62087 test method does not provide meaningful luminance measurements. The static pattern test is not accurate for LCDs. Black level pattern often immediately triggers a low power state for the monitor giving an error in the final power calculation or making an accurate reading very transient and difficult to achieve.
- The use of static test patterns of more than 35% Average Picture Level (APL) is risky on PDP monitors since they will almost certainly trigger power supply protection and provide a meaningless power measurement in the final formula. In the static pattern test three of the patterns, colour bar, three bar and white are 50% APL or more. This was the reason for introducing the broadcast and internet test loop methodology (to avoid misleading readings on some display technologies)

Whilst it is believed that Tier 1 should ideally be aligned with IEC now, in order that the revised specification to be released as soon as possible, an alternative approach is suggested below. This approach should satisfy the interests of all parties and be in line with global harmonisation principles (although achieving these later than anticipated).

The following is requested:

1. A detailed outline of intentions for a Tier 2 specification is provided in the final display specification, stating that the Tier 2 revision will address the following:

- Testing at default luminance using the IEC test approach (most important)
- % peak luminance limit used to define reasonable boundaries for default luminance.
- Reassessment of the need for resolution in the on mode formula based upon new data sets.
- Harmonisation with developments in TV specifications (ENERGY STAR and EU Energy Using Products (EuP) directive).

2. In order to ensure that this harmonised Tier 2 approach can be taken into account in the development of EuP regulations, it will be necessary for the timescales for this specification to be shortened, so that a final specification is available much sooner:

- Tier 2 discussions commence 2nd quarter 2009
- Tier 2 test methodology and energy-efficiency criteria principles finalised by end 2009

This would also need to be specified in the text provided on Tier 2 intentions in the final version 5.0 display specification.

3. In order to ensure consistent testing of larger LCD screens using IEC 62087, the test loop methodology should be strictly adopted (without modification) at the delivered and other pre-set modes of the monitor.

To address concern over manufacturers using marginal luminance levels, the manufacturer can be asked declare the peak luminance capability of the monitor and the ratio of that to delivered and other pre-set modes. EPA could then prescribe limits based on market averages e.g. monitor shall never be less than xxx Cdl/M2 in maximum luminance pre-set mode and delivered mode should never be less than x % of this.

### **On mode levels**

We are concerned about the levels that might be too high. A recent test in the German computer magazine c't shows that 4 out of 8 monitors tested complies with Energy Star. The market might already have moved towards more efficient monitors since the data collection. See the attached data analysis from c't.

It seems further that the compliance level for devices with a screen size of less than 30" and a resolution of less than 1.1 megapixels is already about 30 %.

### **Off, sleep and on definitions**

The off, sleep and on definitions have been changed since last draft and the reason seems not obvious. E.g. the off mode definition is hardly not a definition.

### **Resolution vs area for on mode level requirement**

We request that the categories based on a combination of resolution and area for the on mode requirement will be re-evaluated in Tier 2.

### **Sleep and off mode requirements**

We further request to make the Energy Star specifications for sleep and off mode levels consistent with the EU ecodesign regulation (implementing directive for standby and off modes) for all monitors including the large (> 30 in) monitors.

Manufacturers who wish to sell their products on the EU market will have to comply by law with the EU regulation as early as January 2010. Harmonization of these requirements will be an advantage of both procurers and manufacturers.

The requirements are:

- 1 year after regulation has entered into force expected by January 2010: 1 watt (2 W if including an information or status display) for off and standby modes.
- 4 year after regulation has entered into force expected by January 2013: 0.5 W (1 W if including an information or status display) in off and standby. These requirements should be stated as a target in Tier 1 specification.

The on-mode levels should not be relaxed as a consequence of this request.