

SHARP LABORATORIES OF AMERICA

Via e-mail:
televisions@energystar.gov

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United States Environmental Protection Agency
Office of Air and Radiation
Washington, D.C. 20460

Subject: **ENERGY STAR[®] Draft 2 Version 7.0 Specification for Televisions**

COMMENTS OF SHARP LABS OF AMERICA

SHARP is an enthusiastic ENERGY STAR Partner and is committed to building high-efficiency, environmentally advanced products that deliver top performance to our customers. The ENERGY STAR program continues to be the most effective approach for SHARP to communicate the low power consumption of our products to retailers and consumers.

On September 2nd, EPA released ENERGY STAR Draft 2 Version 7.0 Specification for Televisions.

SHARP offers the following comments:

SHARP supports updating the definitions

First, SHARP supports EPA's clarification that TVs without Standby-passive mode may qualify for ENERGY STAR 7.0. We also agree with the removal of definitions for Power Overhang State, Point of Deployment (POD) Module, and HEVC. Wake-on-LAN (WoL) may be removed as it is redundant.

SHARP does not oppose including Gesture Recognition and Voice Recognition so long as reporting is simple and left to the manufacturer.

SHARP supports the inclusions of Figures 1 and 2 for clarity, though we note that these figures differ slightly from similar illustrations in CEA-2037-A and the upcoming IEC 62087-3.

Regarding resolution, SHARP notes that various 4K Ultra HD specifications include definitions for both vertical and horizontal resolutions. While a vertical resolution requirement alone may be compatible with scanning technologies such as CRTs, it would not ensure an exact alignment between TVs sold to consumers as 4K Ultra HD TVs and the TVs that qualify for the UHD power allowance. SHARP questions why EPA defines "native vertical resolution" and not just "native resolution".

SHARP supports updating the scope

Though CEA-2037-A and the upcoming IEC 62087-3 standard allow testing of TVs with main batteries if those main batteries can be removed, SHARP understands that there are few battery powered televisions on the market and that notebook computers and tablets have become popular for portable video playback. Thus, SHARP supports the exclusion of battery-powered television sets.

SHARP supports updating the general requirements

Clearly, for TVs with external power supplies, those supplies must meet federal regulations.

SHARP believes that ENERGY STAR 7.0 should not require user interface elements that would need to be removed from the firmware if the product is still being manufactured after it would no longer qualify for ENERGY STAR under a future version of the specification. SHARP recommends using wording in 3.2.4 that is similar to the wording of 3.2.5 on lines 251 and 252 to minimize product changes for products that cannot continue to qualify.

SHARP agrees that clock-based power management under Standby conditions should not be required.

SHARP supports reporting of thin client functions. If the television has such a feature and reports that an external STB is not needed, the TV should receive an allowance to help motivate this market transformation.

SHARP believes that the On mode requirements are overly aggressive

SHARP notes that large TVs (60-inches and larger) are not well represented in the data set as the ENERGY STAR database is not exhaustive. (It only includes qualifying TVs.) This, coupled with an overly aggressive percentage goal from EPA makes the On Mode requirements for large TVs exceedingly difficult to meet.

Large TVs are already more challenged by Energy Star than smaller TVs as can be seen in the EPA luminance data. Large TVs have a lower average measured peak luminance than small and medium sized TVs. This is likely due to companies needing to reduce brightness in order to qualify.

SHARP recommends that EPA expand its data gathering to include more large TVs that are not in the ENERGY STAR database. SHARP also recommends that EPA set a more reasonable 20% qualification goal, since no large technology changes beyond LED-backlighting and edge lighting are expected in the near future. Also, LED efficiency increased over recent years and it is likely that the easy improvements are now behind us.

SHARP believes that Ultra HD addressable TVs require significantly more power

SHARP's data shows that Ultra HD TVs typically take twice as much power as a similarly equipped HD TV. Though it is likely that Ultra HD TVs will see some efficiency improvements, SHARP does not expect that the factor will be as low as 1.55. Again, SHARP notes difficulty in the larger sizes and questions the one large, low-power outlier in the data. Unless EPA can test or justify this anomalous data point, it should be removed from the data set.

Qualification of large HD TVs is already overly challenging. SHARP fears that with a 55% allocation, UHD TVs will abandon ENERGY STAR. SHARP recommends a 75% allocation as well as an easing of On Mode requirements for all larger TVs.

In addition, there is no reason for the UHD allocation to expire as this could distort the market and cause odd behaviors like rushing products to ship before an artificial date. Rather than simply expiring, the UHD allocation, should be set based on data gathered for the next version of Energy Star. It is incongruous to set values based on market data and to then have them expire, without analyzing future market performance, once the data becomes available.

Standby-passive mode

SHARP supports reducing Standby-passive mode from 1W to 0.5W.

Standby-active, low mode

SHARP prefers a 6W Standby-active, low mode requirement as this would harmonize with EU regulations that go into effect in 2015.

Luminance measurement

SHARP is happy that Draft 2 limits the 65% luminance ratio requirement by flattening the curve but the cutoff point does not seem to be based on EPA's stated goal for the luminance ratio. As stated on page 31 of the meeting presentation materials, EPA wishes to "prevent TVs from shipping too dim"; however, the flattening of the curve only occurs for the brightest four percent of TVs. Clearly, the other 96 percent of TVs are not nearly "too dim".

Based on the dataset, out-of-the-box luminance for the median television is 221 lux. It would be a bold statement for EPA to claim that half of all the TV models shipped are too dim. SHARP feels that the median television is a good basis for understanding what is clearly not too dim for the current marketplace.

SHARP recommends that the luminance ratio curve be flattened at 350 cd/m². Televisions with 350 cd/m² or greater luminance in the brightest selectable preset would be required to have a luminance of 228 lux or greater in the default setting, which is brighter than the median television set sold today. The market has clearly established that this is not too dim.

Effective Date

SHARP is very concerned about the timing of the effective date. If the final specification is not ready until late November, 2014 and becomes effective nine months later in late August, 2015, it will be extremely difficult for any of the 2015 model line to qualify. Retailers will already be actively planning their holiday shelf space allocations by late summer so very few new models have first shipment dates after August. Typically, new model year products are

introduced in the 2nd and 3rd quarters after being shown for the first time at CES at the start of the 1st quarter.

The Final Draft should set the effective date no earlier than March, 2016.

Conclusion

SHARP strongly supports the ENERGY STAR program and supports much of the text in the draft of ENERGY STAR V7.0 for Televisions. In addition, SHARP's comments include these main points:

- SHARP does not oppose including Gesture Recognition and Voice Recognition so long as reporting is simple and left to the manufacturer.
- SHARP questions why EPA defines “native vertical resolution” and not just “native resolution”.
- ENERGY STAR 7.0 should not require user interface elements that would need to be removed from the firmware at a future date.
- If a television has a thin client feature and reports that an external STB is not needed, that TV should receive an allowance to help motivate this market transformation.
- SHARP recommends that EPA expand its data gathering to include more large TVs that are not in the ENERGY STAR database.
- SHARP also recommends that EPA set a more reasonable 20% qualification goal.
- SHARP recommends a 75% allocation for UHD TVs.
- SHARP recommends that the UHD TV allocation not expire artificially.
- SHARP recommends a 6W Standby-active, low mode requirement.
- SHARP recommends that the luminance ratio curve be flattened at 350 cd/m².
- The Final Draft should set the effective date no earlier than March, 2016.

We hope that EPA strongly considers SHARPs comments as we work together to create an effective, accurate, and efficient next version of the ENERGY STAR program for televisions.

Respectfully submitted,

SHARP LABORATORIES OF AMERICA

By: _____

Jon Fairhurst
Head of CE Standards

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