

October 1, 2010

U.S. Environmental Protection Agency
ENERGYSTARVerificationProgram@energystar.gov

Re: Panasonic Comments on ENERGY STAR Televisions Version 4.2

Panasonic appreciates the opportunity to review and comment on the ENERGY STAR Partner Commitments and Product Specifications, per your correspondence to interested parties on September 14, 2010. Our letter specifically addresses comments on EPA's ENERGY STAR Televisions Version 4.2 eligibility criteria and the specification itself. We have provided comments following the sequence of the document, which contain specific references to the page and section numbers.

Comments on ENERGY STAR Program Requirements Product Specification for TVs Eligibility Criteria Draft Version 4.2

- 1) Page 5, Section 3.3.1: The definition for Po BROADCAST should specify a minimum ambient light level of 300 lux (not 0 lux).
- 2) Page 5, Section 3.3.1: The definition for Pabc BROADCAST should specify an ambient light level of 0 lux (not 300 lux).
- 3) Page 5, Section 3.3.2: The definition for Po BROADCAST should specify a minimum ambient light level of 300 lux (not 0 lux).
- 4) Page 7, Section 3.7.1: Should specify Equation 3 (not 2).
- 5) Page 7, Section 3.7, Table 2: The TEChosp_max equation for A<275 should be as follows:
(0.95 x A) + 124.0 (The 124.0 value should not be 104.0)

Panasonic also recommends that in Table 2, the original equations from TVs Version 4.1 be included because they show how they were derived. These original equations are as follows:

For A<275; $(([0.19 * A] + 5) * 5 \text{ hours}) + 99$

For A>=275; $(([0.12 * A] + 25) * 5 \text{ hours}) + 99$

- 6) Page 8, Section 4.2.2, Number of Units Required for Testing: This is a new requirement for Televisions and has not been previously discussed with stakeholders. Its adoption may result in three times the testing resources and cost to perform these tests. This will be burdensome especially when outside 3rd-party labs are utilized. Panasonic recommends that this Section be removed as is the case with ENERGY STAR Televisions Version 4.1.

Comments regarding ENERGY STAR Program Requirements Product Specification for Televisions Test Method

- 1) Page 2, Section 4.E.1 Crest Factor: The draft requirement is much more difficult to practically achieve than the original ENERGY STAR TVs Version 4.1 approach in Section 4.C which simply specifies; “An available current crest factor of 3 or more at its rated range value;” This is typical of many available current meters available on the market. Panasonic recommends the original Version 4.1 approach for these reasons.

On the other hand, the draft requirement is more difficult to achieve because it depends on an accurate determination of the peak current. It states; “The full-scale value of the selected current range multiplied by the crest factor for that range shall be at least 15% greater than the peak current.”

Since the peak current is transient (dynamic), it would require complicated measurements using an oscilloscope or power analysis equipment in order to determine the peak current. General practice would be to simply use a current meter with a crest factor of 3 or more at its rated range value as specified in the original TVs Version 4.1 Test Methodology section 4.C.

- 2) Page 2, Section 4.E.2 Bandwidth: This is an overly complicated requirement and requires an expensive power spectrum analyzer to determine the highest frequency component (harmonic) with a magnitude greater than 1% of the fundamental frequency. Panasonic recommends simply requiring a 3.0 kHz bandwidth as in section 4.E.3 which is 50 times the fundamental frequency of the 60 Hz fundamental.
- 3) Page 3, Section 5.2.A.3: Panasonic recommends removing the statement; “In the case that no “standard” mode or equivalent exists, the first mode listed in the on-screen menus shall be used for testing and noted in the test report”. It is not consistent with ENERGY STAR Eligibility Criteria Draft Version 4.2, Section 3.2.3 Forced Menu, which states; “Provides Users with a choice of “home” picture mode or “retail” picture mode. Partners may use alternative terminology if approved by the EPA.”

This means there are only two allowable scenarios:

- a) Default as-shipped picture mode if no “forced menu” upon initial start-up.
- b) If a product includes a “forced menu” upon initial start-up, then it shall be tested in “home” picture mode or an EPA approved alternative terminology.

Panasonic therefore recommends that section 5.2.A.3 read as follows:

Products that include a “forced menu” upon initial start-up shall be tested in “home” picture mode (or an EPA approved alternative terminology). Products that do not include a forced menu shall be tested in the default picture mode.

- 4) Page 3, Section 5.2.D True Power Factor: Commonly available power factor measurement instruments do not average the power factor value over a time period such as the 10-minute IEC 62087 dynamic-broadcast content.

CSA Draft Standard C382-10 Energy Efficiency Performance of Televisions (TVs) proposes the following method in Section 4.3.4 True Power factor: “Measurement shall also be made with the Automatic Brightness Control function, if such a function exists, disabled. If the Automatic Brightness Control function exists and cannot be disabled, then measurements shall be performed with light entering directly into the ambient light sensor at a level of 300 lux, or greater. Measurements shall be made by displaying the three bar video signal provided in IEC 62087 Ed. 2, Section 11.5.5, which displays three bars of white (100%) over a black (0%) background.”

Using the static three bar video signal allows a single repeatable measurement of the power factor without the need for averaging over a dynamic (varying) broadcast signal.

- 5) Page 5, Section 6.2.E, Items 3, 4, and 6: There is a conflict between the stabilization method specified in Items 3 and 6 versus that defined in Item 4.

Item 4 defines the stabilization requirement as in the original ENERGY STAR for TVs version 4.1; “For products that are known to stabilize within 10 minutes, the three-bar signal display duration may be reduced if the luminance measurement can be shown to be within 2% of the result that would be achieved with the full duration”.

Items 3 and 6 define a different stabilization method; “This 10-minute stabilization period may be reduced if luminance measurements are stable to within 2% over a period of not less than 60seconds”. A luminance which varies by 2% in 60 seconds could actually vary by 20% in a 10-minute interval, which seems not sufficiently stabilized.

Panasonic recommends using the Item 4 method (same as original ENERGY STAR version 4.1) in Items 3 and 6 as well.

- 6) Page 5, Section 6.3.A and 6.4.A: In order to avoid confusion Panasonic recommends specifying that Section 11 of the IEC 62087 is to be referenced. The actual text would become: “.... IEC 62087, Ed 2.0: Methods of Measurement for the Power Consumption of Audio, Video and Related Equipment; Section 11: Measuring Conditions for Television Sets in On (average) Mode; with the additional guidance in Section 5 of this ENERGY STAR Test Method”.

Comments regarding CEA Procedure for DAM Testing: FOR TVS (Revision 0.3)

- 1) Page 2 Section 3 and 4: The references to ENERGY STAR Version 4.1 should be changed to Version 4.2.
- 2) Page 2 Section 5.1: In order to be consistent with the ENERGY STAR Test Method Page 4 Section 5.3.C, the second sentence should read as follows:
“Note: All DAM functionalities, both frequent and infrequent must be declared, but those meeting the definition of infrequent can be excluded from the calculation of total DAM energy consumption.”
- 3) Page 4 Section 6.2.1 Item 7: Add “per day” to the definition of Time_DAM as follows:

Time_DAM – Time spent per day in DAM for each DAM function

- 4) Page 5, 7 Connection Diagram: This shows only one possible connection diagram. It would be better to change the title to “Connection Diagram (example)”.
- 5) Page 6 Table 8.2: Add a footnote to the E_DAM column heading as follows:

$E_DAM = (P_DAM - P_Sleep) \times Time_DAM$

Again, Panasonic appreciates the opportunity to comment on the ENERGY STAR Televisions Version 4.2 document. We welcome the opportunity to further clarify our comments and to work collaboratively with EPA in the process of finalizing this specification.

Sincerely,

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cc: Katharine Kaplan
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