

April 29, 2016

Ms. Katherine Kaplan  
Manager, ENERGY STAR Product Development and Program Administration  
Office of Air and Radiation  
U.S. Environmental Protection Agency  
Washington, DC 20460

## Re: ENERGY STAR Version 5.0 Set-Top Box Specification and Test Method – Final Draft

Dear Ms. Kaplan:

CableLabs welcomes the opportunity to comment on the Final Draft of the ENERGY STAR Version 5.0 Set-Top Box (“STB”) Specification and Test Method, and provides the following suggestions.

### In the Specification:

- 1. The High Power WiFi allowance should be reinstated.** Data from the SNE VA has revealed that WiFi radios designed to support high output power consume more energy than low power radios even when in idle mode. STBs designed to stream video to clients would benefit from using high powered radios. Clients may still operate with lower power radios, so both the high power and low power allowances should be included. If products are constrained to using only radios rated for lower power, this may result in consumers requiring WiFi extenders in their home network, which defeats the goal of saving energy and cost to consumers.
- 2. HEVP should not be dependent on UHD.** EPA claims that ‘HEVP cannot be taken unless the device also supports UHD, because consumers don’t see any benefit to HEVP only’. HEVP alone offers many benefits to customers. More efficient compression technologies allow more HD video streams to be delivered over bandwidth constrained systems (such as IP Video and DSL networks). It can also improve quality of HD streams. Video distribution systems will be encoding their video with HEVP techniques even on HD streams, thus requiring this capability in STB receivers.
- 3. The DOCSIS 3.x adder is too open-ended for a specification.** The first draft acknowledged that there were no data points for STBs with DOCSIS 3.1 modems, yet the specification still calls out an open ended “.x” version of DOCSIS with no supporting note acknowledging that 3.1 (or 3.2, 3.3, etc.) may require more energy. DOCSIS 3.1, which enables increased data rates up to 10 Gbps downstream, uses a different modulation scheme and is significantly different from 3.0. This adder should just address 3.0 (up to 8x4 configuration) only. However, there should be a method for accommodating new features such as DOCSIS 3.1 when data is available.
- 4. The “Sleep” and “Deep Sleep” distinction are not clear.** EPA has now defined “Deep Sleep” to be a power state *within* Sleep Mode that is 1W or less and a recovery time of less than 15 seconds. First, this is very aggressive, especially with a 15 second recovery mode. Second, “Deep Sleep” is not ever applied in the TEC calculations. Only “Sleep” and “Scheduled Sleep” are part of the TEC calculation (Equation 2) and the Operation Mode Durations defined in Table 2 that are used in the TEC Calculation. There is no additional incentive to strive for a state that meets the “Deep Sleep” definition. Further,

Deep Sleep (currently defined as <1 Watt) has a more stringent recovery time than Scheduled Sleep (defined as <3 Watts), which also makes no sense. To avoid confusion, I recommend removing the term for Deep Sleep and just maintain Sleep (which is defined as a low power state that recovers within a certain time period) and Scheduled Sleep.

5. **The recovery period for Sleep should be restored to 30 seconds.** The comment in the specification observes that 48 out of 56 ENERGY STAR-certified STBs can recover from Sleep mode in less than 15 seconds. This recovery time is not indicated on ENERGY STAR's web site, nor is it in the spreadsheet provided with the 5.0 analysis. I will note, however, that the overall average delta in power consumption from On mode to Sleep mode is only 16.93% across the 56 ES-certified STBs, with a median delta of only 9.65%. A fast recovery is currently possible because these devices are not going into a very low power mode. Additionally, changing the recovery period to 15 seconds may further impact the adoption of lower power standby modes. I recommend this time be restored to 30 seconds.

## In the Test Method:

Section 5.1 B) Special Function Configuration, is confusing. It states:

- 1) If at any time during setup or on mode operation a message prompt is displayed requesting the configuration of special functions, such as automatic power down (APD), deep sleep, or scheduled sleep, the most power consumptive configuration shall be selected...

A good user experience would have the STB put up a prompt to verify the user is not still watching so it can go into sleep mode. This dialog would have a button with initial focus that would allow the user to indicate they are still watching and this dialog is then dismissed and the APD timer is restarted. But the dialog may also include the ability to navigate to a button that takes the user to the power save configuration screen, or at a minimum instructions (e.g. "To modify this setting go to Power Save in the Setup Menu"). Does this requirement imply that in this scenario, the tester would be required to go into that menu, and ultimately disable the APD option (as that would be the most power consumptive)? This requirement could disincen any service provider or manufacturer from including APD if it would not be applied during testing. It should simply be required that the Special Function Configuration should be tested in the "as-installed" configuration.

Thank you for the opportunity to provide feedback. Please feel free to contact me with any questions or further discussion.

Sincerely,

*/s/ Debbie Fitzgerald*

Debbie Fitzgerald  
Principal Architect, Office of the CTO  
CableLabs  
[d.fitzgerald@cablelabs.com](mailto:d.fitzgerald@cablelabs.com)