Comments on Final Draft Specification
ENERGY STAR® Program Requirements
For Set-top Boxes
Version 2.0 – March 14, 2008

Introduction

This ENERGY STAR® draft specification, Version 2.0, is a big step forward that will lead to significant reductions of energy consumption for these devices, especially while not in *On/Active* state.

We are concerned however about two issues:

- Language informs thinking and unfortunately this specification introduces a new concept, *Auto Power Down*, without also naming the corresponding *State*.
- Greater power reductions can be achieved if the STB performs *Auto Power Down*, not only due to user inactivity but also due to user specified *Sleep Time Periods*.

Following discusses these issues in detail.

Names of Power States

The specification is hampered by the lack of distinct *names* for the two Sleep states – user power down and auto power down – that may have different energy consumption characteristics. Since these two states figure as independent variables in the *Annual energy (kWh/yr)* formula, the specification will be improved by having separate names for each.

We suggest the following three state names, although other names could be used:

- *On/Active* – An operational state in which the STB is actively delivering one or more of its principal function and some or all of its applicable secondary functions. [Unchanged]
- *Standby* – A state in which the STB has less power consumption, capability and responsiveness than in the *On/Active* state. The STB may enter a *Standby* state from the *On/Active* state after the user pushes a power/standby button on the remote or on the unit.
- *Sleep* – A state in which the STB has less power consumption, capability and responsiveness than in the *On/Active* state, and optionally less power consumption than the *Standby* state. The STB may enter the *Sleep* state from the *On/Active* state, after the user pushes a power/sleep button on the remote or on the unit (e.g., a *double-click* of the power button), or from the *Standby* state after the STB auto powers down to it.

Definition of Auto Power Down

- *Auto Power Down:* The capability to automatically switch from the *On/Active* state or from the *Standby* state to the *Sleep* state after:
    - A period of time without user input, generally based on the amount of time the unit has remained "idle" from last active use (i.e., user input such as channel change, volume change, menu access, etc).
    - Optionally based on user-settable parameters indicating *Sleep Time Periods* when human viewing is unlikely because they are *away* or *asleep*.

This optional capability will enable the STB to be in the *Sleep* state for longer periods of time than if device idleness were the sole criteria for entry. User interface concepts of Programmable Thermostats are applicable: up to two *Sleep* time periods per day; potentially distinct programs for each day of the week, temporary exit from *Sleep* for user-specified number of hours and provision for a vacation override.

Impact on TEC Assessment Formulas

The TEC Assessment Formulas remain the same except for changing the names of the variables to correspond to the updated state names. Thus P_{TV}, P_{Sleep} and P_{AutoPD} become P_{TV}, $P_{Standby}$ and P_{Sleep}, respectively.

Recommendation Summary

We recommend that this specification be edited to:

- Introduce a distinct name for the *Sleep* state entered into as a result of *Auto Power Down* that is differentiated from the *Standby* state entered into as a result of user actions by pressing a button on the remote or on the unit.
- Modify the definition of Auto Power Down to include an optional capability for the user to specify a schedule for *Sleep Time Periods*.

Submitted by
Steven Bruckner, Conservation Chair
Great Falls Group; VA Chapter
Sierra Club
sbruckner@cox.net