



September 13, 2013

Ms. Katharine Kaplan, EPA  
ENERGY STAR Set Top Box Program  
U.S. Environmental Protection Agency  
1310 L Street, NW  
Washington, DC 20460  
[stbs@energystar.gov](mailto:stbs@energystar.gov)

Subject: Comments on ENERGY STAR V4.1 STB Program Proposal Memo (dated 8/29/13)

Dear Katharine,

Thank you for the opportunity to review and submit comments for the ENERGY STAR V4.1 STB Program Proposal Memo dated 8/29/13. The comments we provide represent the collective views of EchoStar Technologies L.L.C., EchoStar Global B.V., and DISH Network L.L.C., all current ENERGY STAR Set-top Box Partners. We appreciate the effort that the EPA has invested to propose modifications to several base and feature allowances based on the comments received from industry earlier this year. In general we are satisfied with the proposed values. However we have provided additional comments on important issues we would like to bring to your attention:

- 1) **Home Network Interface (HNI)** – EPA continues to propose insufficient energy allowances to support both MoCA 1.x and MoCA 2 implementations. The proposed HNI allowance of 15 (up from the previous DRAFT #2 allowance of 10) is an improvement however it does not address the reality of implementing a MoCA interface. We strongly recommend that EPA adopt a total allowance for a MoCA interface of 22. This is best accomplished by a MoCA specific adder (12) to the HNI allowance (10).
- 2) **Transcoding** – Transcoding is primarily used to support streaming or file transfer to mobile devices. Consumers are rapidly adopting mobile devices as preferred viewing platforms both inside and outside of the home in lieu of TVs. This feature provided by Transcoding capability, Mobile Device Support, is rapidly becoming a required feature of STBs and will be shipped in large volumes within the V4.1 program lifetime. The capability to support real-time and faster-than-real-time transcoding requires dedicated hardware capabilities implemented as part of a STB SOC (system-on-chip) or as a dedicated transcoding SOC (e.g. Zenverge, ViXS, etc.). Despite numerous requests from several stakeholders EPA has not yet accommodated this critical capability with an energy allowance. If EPA does not create an allowance for this nascent capability then industry will have no choice but to promulgate additional devices into subscribers homes to meet this requirement and use far more energy than would be required if integrated into a STB. Existing devices such as DIRECTV's Genie GO®, TiVo's STREAM®, DISH SlingBox®, and Motorola TELEVATION® are examples of devices that could be eliminated in household configurations if integrated into STBs.

Additional energy savings are also realized by subscribers utilizing their mobile devices in lieu of purchasing and installing additional STBs and TVs. This trend should be encouraged by the EPA by providing a “Mobile Device Support” allowance of 13.

- 3) **High Efficiency Video Processing (HEVP)** – EPA has provided an allowance for UltraHD and has indicated that this allowance “...is expected to also offset power needs for High Efficiency Video Processing...”. Although UltraHD and HEVP are often used together there will be a large use of HEVP without supporting UltraHD since this allows service providers to realize a 50% savings of data transmission requirements over today’s AVC implementations for all output formats. We will definitely use HEVP but we will only use UltraHD if that TV feature becomes common in the consumer marketplace. We recommend an HEVP allowance of 20 in addition to the proposed UltraHD allowance of 20.
  
- 4) **Deep Sleep** – EPA is considering a requirement that a STB enter a pre-scheduled Deep Sleep mode between 1am and 5am by default in order to receive the Deep Sleep credit. Additionally EPA is considering allowing recovery times longer than 30 seconds after a pre-scheduled Deep Sleep time period. We do not agree that EPA should impose specific operational or user interface requirements as a prerequisite for Deep Sleep since these additional requirements only discourage developers from implementing additional energy saving modes and will limit innovation in this important energy saving area. We recommend that the TEC formula be modified to provide a credit proportional to the Deep Sleep power level achieved and the default as-installed Deep Sleep time duration.
  - a) Proposed definition of Deep Sleep:

*“A range of reduced power states where the STB is connected to a mains power source and is not providing any Principal STB Function. DEEP SLEEP represents the lowest average power consumption state where Principal STB Functions can be re-activated without user action and without the transition time requirement of SLEEP Mode.”*
  - b) The following Deep Sleep operational examples would be supported by this definition:
    - i) A STB includes (as a default feature) a pre-scheduled 4 hours period of time each evening that the STB enters a Deep Sleep. Shortly before Deep Sleep is entered a notification is presented to the user with an option to postpone (e.g. 1 hour, etc.) or cancel entering Deep Sleep mode (for that evening only). The user may also access a “settings” interface to modify the default Deep Sleep start time and duration, or disable the feature completely, if they normally watch TV during the default time period or wish to add additional pre-scheduled Deep Sleep time periods.
    - ii) A STB automatically enters a Deep Sleep Mode if no user activity is detected for a period of 2 hours after 11pm unless a user recording has been scheduled during that time period. If a user recording is planned the STB will remain in Sleep Mode until 15 minutes after the completion of the user scheduled recording before it enters Deep Sleep mode. The STB will exit Deep Sleep mode at 5am (similar to the UK’s Sky “Eco Standby” implementation<sup>1</sup>).
    - iii) Two hours after an STB has entered Deep Sleep mode a user presses the ON button. The STB begins its 2-8 minute startup procedure and, when completed, allows the user to make their channel selection.

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<sup>1</sup> see [http://helpforum.sky.com/t5/tkb/articleprintpage/tkb-id/sky\\_programmingchannels@tkb/article-id/14](http://helpforum.sky.com/t5/tkb/articleprintpage/tkb-id/sky_programmingchannels@tkb/article-id/14)

- iv) A Service Provider plans a 3AM software update to a STB. The STB does not enter Deep Sleep mode until 15 minutes after the software update has completed.
- v) A STB automatically enters a Deep Sleep Mode at 1AM for a period of 4 hours. A user presses the remote control ON button at 4:48AM and video is available in 5 minutes.
- vi) A STB automatically enters a Deep Sleep Mode at 1AM for a period of 4 hours. A user pressed the remote control ON button at 5:01AM and video can be viewed in 30 seconds.
- c) Example of a situation created by current Deep Sleep proposal:
  - i) A Service Provider determines that numerous subscribers are complaining and disabling the pre-scheduled Deep Sleep period since they want to watch the 4am news report before heading off to work. The Service Provider responds by downloading a software update to end the pre-scheduled Deep Sleep time at 3:45AM and reinstates a new default Deep Sleep time period from 11:45pm to 3:45am to assure the STB displays video in less than 30 seconds before 4am and to maintain the ENERGY STAR program requirements. The very next day the Service Provider receives 50,000 support telephone calls in less than one hour (costing over \$100,000 dollars) with the common complaint that the STB is notifying users it is entering Deep Sleep mode at 11:45pm and customers are losing the last 45 minutes of the “Jay Leno Show”. The Service Provider is at a loss about how to address this issue since lowering the default Deep Sleep duration to less than 4 hours violates the ENERGY STAR requirements.

I am available to answer any questions you may have about our comments and requests. We look forward to continuing our ENERGY STAR partnership with the EPA.

Sincerely,



Gary Langille  
Technology and Standards Management  
[gary.langille@echostar.com](mailto:gary.langille@echostar.com)  
303-706-5409

cc:

Tom Bolioli, Terranovum  
Matt Malinowski, ICF International  
Rachel Unger, ICF International