

March 17, 2010

Kathleen Vokes
ENERGY STAR Set-Top Box Program
U.S. Environmental Protection Agency
1310 L Street, NW
Washington, DC 20460

Subject: Draft 1 Version 3.0 ENERGY STAR® Set-top Box Specification Comments
from DIRECTV

Dear Kathleen:

DIRECTV is an enthusiastic participant in the ENERGY STAR STB program. We are proud to have been selected by the EPA as one of the 2010 ENERGY STAR award winners for Excellence in Consumer Electronics Labeling. We boast about having manufactured and deployed more than 10 million ENERGY STAR qualified set-top boxes in customer homes in 2009, and are expecting over 20 million by the end of 2010. It is in this spirit of participation and cooperation that DIRECTV offers the following three comments regarding the Draft 1 Version 3.0 ENERGY STAR® Set-top Box specification released on February 23, 2010.

Thin Client / Remote STBs' Base Functionality must include Home Network Interface and Advanced Video Processing allowances

In the EPA's cover letter of February 23, you explained that "the Home Network Interface and Advanced Video Processing allowances from Tier 2 Version 2.0 have been removed from the list of additional functionalities, and added to the base type allowances for Cable STBs in response to recent technology trends." This is evident in the base allowance for Cable STBs, which has a Version 3 Tier 1 value of 72 equal to the sum of Version 2 Tier 2 base functionality (50 kWh/year), Advanced Video Processing (12 kWh/year) and Home Network Interface (10 kWh/year). The base allowance for satellite STBs is the same, having been aligned with that of Cable STBs. DIRECTV agrees with these proposed changes, as including both Advanced MPEG4 Video Processing and advanced MoCA Home Network Interfaces is consistent with DIRECTV's set-top box product roadmap.

In the case of Thin Client / Remote STBs, however, the base allowance is simply 22 kWh/year, identical to the Version 2 Tier 2 value. The base allowance is not shown to be 44 kWh/year as would be expected from summing Version 2 Tier 2 base functionality (22 kWh/year), Advanced Video Processing (12 kWh/year) and Home Network Interface (10 kWh/year). DIRECTV thin client / remote STBs, prototypes of which were shown at CES 2010, have both Advanced MPEG4 Video Processing and advanced MoCA Home

Network Interfaces. Unless these additional functionalities are accounted for in the annual energy allowance, neither these nor any other products with these features will qualify under ENERGY STAR Version 3 Tier 1. Table 1 should show a Tier 1 Annual Energy Allowance for Thin Client / Remote of at least 44 kWh/year.

Allowances for Additional Functionalities such as Additional tuners, Multi-room, Home Network Interface and Advanced Video Processing remain too aggressive

Referring again to the cover letter, the EPA “increased allowances for DVR and HD output for Tier 1 to 45 kWh/year and 25 kWh/year, respectively, in order to allow more full-featured STBs to qualify for ENERGY STAR”. The proposed DVR value of 45 kWh/year represents about half of the drop from the Version 2 Tier 1 DVR value of 60 to the Version 2 Tier 2 DVR value of 32; similarly, the proposed HD value of 25 is about half of the drop in the HD case from 35 to 12. The EPA did not increase the allowances for any other additional functionality, however. For example, the allowance for Additional tuners is not 35 (i.e. half of the drop from 53 to 16) nor is the allowance for Multi-room 35 (i.e. half of the drop from 44 to 25). Instead, the Version 2 Tier 2 value remain for each of these. This is also true of the two functionalities that have been added to the base allowances: that is, Advanced Video Processing isn’t 15 (i.e. half of the drop from 18 to 12) and advanced Home Network Interface isn’t 15 (i.e. half of the drop from 20 to 10).

ENERGY STAR is making excellent progress in driving the energy efficiency of set-top boxes, and DIRECTV fully supports the EPA’s proposal for a new Tier effective in 2011 that demonstrates continued progress in driving energy efficiency. However, it is DIRECTV’s view that equivalent progress is being made across all of the Additional Functionalities, not only DVR and HD as called out by the EPA. It would be more fitting, then, to apply the EPA’s algorithm (i.e. using about half of the drop from Version 2 Tier 1 to Version 2 Tier 2) in more cases than just DVR and HD.

Version 3 Tier 2 Annual Energy Allowances should be based on Version 2 Tier 2

Stakeholders in the ENERGY STAR STB program have been very consistent in describing to the EPA that the Version 2 Tier 2 numbers were very aggressive and simply unachievable in the 2011 timeframe. They are achievable, however, by the Version 3 Tier 2 effective date of June 2013, when DIRECTV believes the necessary hardware and software building blocks can be in place.

For example, by then silicon with built-in power management capabilities should be widely available. For example, the MoCA 2.0 specification, which included energy savings measures, will only be completed this year. It will take another year for silicon samples to become available and a year beyond that before production of STBs with MoCA 2.0 begins to ramp up (by the way, this is why the Home Network Interface allowance for Version 3 Tier 1 should be 20 kWh/year, not 10 kWh/year). Furthermore, new software will be needed to control this silicon. Significant changes will be needed at all layers: including drivers, middleware and applications such as the program guide. In

addition, necessary updates to developer tools for testing and debugging should be available in the Version 3 Tier 2 timeframe.

DIRECTV recommends that the Version 2 Tier 2 values be used for Version 3 Tier 2. These values are aggressive, yet achievable for properly motivated companies like DIRECTV in that time frame. There is no data currently available that suggests lower values are yet appropriate; furthermore if it appears that these values are too readily achieved they will be revised in 2012 when Version 3 Tier 2 is finalized by the EPA.

Conclusion

DIRECTV appreciates that the EPA is listening to stakeholder comments during this revision process, starting with the kickoff meeting in December. Moving the effective date to June instead of January better aligns the program with natural product release cycles, and DIRECTV is glad to see that change. Recognizing that the Version 2 Tier 2 energy efficiency values need to be revisited for guidelines effective in 2011 is also noteworthy. Only a few additional issues remain as described above, and I look forward to discussing them with you at the Stakeholder meeting this Friday, March 19, in Washington.

Sincerely,

Steve Dulac
Director, Engineering