

April 9, 2010

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

Subject: Draft 1 Version 3.0 Tier 2 Proposal for ENERGY STAR® Set-top Box
Specification Comments from DIRECTV

Dear Kathleen:

In response to the EPA's request at the March 19 Stakeholders meeting, DIRECTV would like to offer comments regarding the Draft 1 Version 3.0 Tier 2 Proposal for ENERGY STAR® Set-top Box specification that was released on March 23, 2010.

Thin Client / Remote STB Base Functionality must include Home Network Interface and Advanced Video Processing allowances in Version 3.0 Tier 2 as well as in Version 3.0 Tier 1

DIRECTV's concern, expressed in comments submitted on March 17, 2010 with respect to the Version 3.0 Tier 1 allowances, remains the same for the newly proposed Version 3.0 Tier 2 allowances.

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. The base allowance for Thin Client / Remote STBs must include these additional functionalities, which for draft Version 3.0 Tier 1 should be at least 44 kWh/year. This value was obtained in DIRECTV's March 17 comments by summing Version 2 Tier 2 base functionality of 22 kWh/year, Advanced Video Processing of 12 kWh/year and Home Network Interface of 10 kWh/year. An equivalent calculation for draft Version 3.0 Tier 2 results in a value of 36 kWh/year (obtained by summing Version 3 Tier 2 base functionality of 18 kWh/year, an estimated Advanced Video Processing of 10 kWh/year and estimated Home Network Interface of 8 kWh/year).

Unless these additional functionalities are accounted for in the annual energy allowance, no DIRECTV thin client / remote STB will ever be able to qualify under ENERGY STAR Version 3.0. Table 1 must show an Annual Energy Allowance for Thin Client / Remote of at least 44 kWh/year for Tier 1 and at least 36 kWh/year for Tier 2.

Allowance for Replaceable Conditional Access Functionality for Satellite STBs is needed in Version 3.0 Tier 2 as well as in Version 3.0 Tier 1

DIRECTV’s March 17 comments regarding the lack of an allowance for the smart card-based conditional access used by satellite service operators are also applicable to the proposed Version 3.0 Tier 2 allowances. For Tier 2, the EPA has proposed an allowance for CableCARD that is unchanged from the draft Tier 1 value of 15 kWh/year.

DIRECTV reiterates its request that the additional functionality currently called “CableCard” be renamed “Replaceable Conditional Access” and, in order to be aligned for both Satellite STBs and Cable STBs, this additional functionality must be applicable to each.

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

In the 2013 time frame, when Version 3 Tier 2 is proposed to take effect, DIRECTV expects to be manufacturing only HD products: an HD receiver, a DIRECTV Plus HD DVR, a Home Media Center Multi-Room HD DVR and corresponding HD clients. For DIRECTV HD products, the proposed V3.0 Tier 1 TEC limit represents a decrease on average of 19% when compared with the most efficient HD product that DIRECTV has today. The proposed V3.0 Tier 2 allowances show a decrease on average of 36% when compared with the V3.0 Tier 1 allowances, whereas the previous V2.0 Tier 2 allowances represented an average decrease of 27%. These are shown in the table that follows:

Best Product Measured	V3.0 draft Tier 1	V3.0 draft Tier 2	V2 Tier 2
TEC, kWh/yr	TEC, kWh/yr	TEC, kWh/yr	TEC, Kwh/yr
(H23-600) 118.8	97 (-19%)	76 (-36%)	90 (-24%)
(HR23-700) 194.68	158 (-19%)	125 (-36%)	138 (-29%)
(HMC-30) 227	183 (-19%)	147 (-35%)	163 (-28%)
<i>Ave. Decrease:</i>	<i>-19%</i>	<i>-36%</i>	<i>-27%</i>

DIRECTV maintains its recommendation, from its March 17 comments, that the previous Version 2 Tier 2 numbers are appropriate for the V3.0 effective date of June 2013. Requiring an average improvement of 27% over the current state-of-the-art, the Version 2 Tier 2 numbers are extremely aggressive targets for aspiring participants. At the same time, these limits are less likely to dissuade set-top box manufacturers from joining the ENERGY STAR program due to the concern that the 2013 limits will not be achievable.

Regarding draft V3.0 Tier 1, the EPA includes in its March 23 letter a data analysis that demonstrates that the EPA proposal is simply too aggressive. Using the EPA’s assumptions that Automatic Power-down is active and that an additional 25% reduction in Sleep mode power consumption is achieved, DIRECTV’s best-performing HD products only just align with the draft Tier 1 limits. With no margin for laboratory test tolerances or for manufacturing variances, however, there is no assurance that these best-in-class products will qualify for V3.0 Tier 1. (That said, if the additional functionality

currently called “CableCard” is renamed “Replaceable Conditional Access,” appropriate margin will be available).

Qualification and Verification Testing comment

DIRECTV would like to draw EPA’s attention to the un-attributed comments provided earlier in this proceeding, titled “Comment to Energy Star – STB Testing procedure and power distribution.” These comments describe how “outlier” STBs can exist due to variations in the parts (e.g. chips, hard drives, supplies) that comprise a STB. The comments note that an STB product line can fail ENERGY STAR qualification, even though more than 99% of the STBs would have passed, if an “outlier” happens to be selected and tested.

DIRECTV agrees fully that a disconnect exists between the ENERGY STAR allowances, developed using average STB power measurements, and ENERGY STAR testing procedures which require 100% compliance across all products measured. There are two processes underway that make this issue more important than ever. First, the STB program proposed allowances are being driven down aggressively (as described earlier). Second, a new qualification and verification regime is being implemented by the EPA which will result in additional testing being performed after a STB product is on the market. The risk is simply becoming too great that a single “outlier” (even if it were one in a hundred or a thousand) or a carelessly executed test would force an STB product line, and perhaps a Service Provider as well, to drop out from ENERGY STAR program participation. This would be an extraordinary punishment indeed!

Unless this issue is addressed, participation in the ENERGY STAR program may again be reduced. Happily, there are a number of ways to address this problem, including the use of an average of measurements to determine if a product passes ENERGY STAR qualification and verification testing and/or building some margin into all ENERGY STAR allowances.

Conclusion

DIRECTV appreciates these opportunities to provide, along with other stakeholders, comments on this STB process. As I was able to say in person at the March 19 Stakeholder meeting in Washington, DIRECTV is very pleased to be participating in this program and is honored to have been one of the 2010 ENERGY STAR award winners for Excellence in Consumer Electronics Labeling. I look forward to continued discussions with the EPA and welcome any questions you may have.

Sincerely,

Steve Dulac
Director, Engineering