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**Sent:** Thursday, March 10, 2016 3:12 PM  
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**Cc:** Bill Ohtola <[ohtola@apple.com](mailto:ohtola@apple.com)>  
**Subject:** Fwd: ENERGY STAR Set-top Box Version 5.0 Draft 2 Specification

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Hi Katharine,

I'd like to apologize for providing this feedback after EPA's deadline. It was our intent to provide this feedback earlier, but it was delayed due to an oversight. I hope you can accept this feedback as I'd welcome the opportunity to engage and partner with the EPA on development of requirements.

**1. For Over the top (OTT) Set Top Box Program Requirements-**

Is EPA able to share the rationale or the dataset for the reduction to 7kWh/yr from 10kWh/yr (in Version 4.1)? We don't see the OTT in the dataset that was shared. Would like to understand how this target was set.

**2. Test method: Ultra HD Test Streams Clarification**

In the Test method and the Notes, it is clear that an Ultra HD Test stream be used if a manufacturer would like to claim the UltraHD adder. However, can EPA clarify what kind of Ultra HD test stream should be used to claim the adder? Would any UltraHD content be sufficient? Does bit rate need to be taken into account? What about dynamic range which allows deeper contrast ratio in certain displays. Please confirm our understanding is correct, the requirement is that the UUT's output resolution must match its input resolution (Ultra HD).

Let us know if a call would be better to discuss this. I can arrange it.

## 5 TEST CONDUCT

### 5.1 Implementation of CEA-2043 for STB Testing

The Test Conduct shall be carried out according to the requirements in CEA-2043 reference with the following guidance.

#### A) Required Test Results

- 1) Tests shall be performed using a live or simulated Service Provider or streaming video provider environment per Section 8.1.11 of CEA-2043.
- 2) The minimum required CEA-2043 tests, test parameters, and reported results are specified in Table 5. Parameters used in this section are defined in CEA-2043.
- 3) CEA-2043 Special Sleep test is not required if the STB does not support a Deep Sleep State or a Scheduled Sleep Mode.

**Note:** As explained in the Draft 2 V. 5.0 ENERGY STAR Specification for Set-top Boxes, EPA has redefined Deep Sleep State and the state formerly known as Deep Sleep has been renamed to Scheduled Sleep. Accordingly, DOE has updated the terminology in the Draft 2 Test Method to be consistent with the requirements in the specification.

- 4) As specified in section 8.1.3 of CEA-2043, all tests shall use source test streams that match the output capability of the UUT. However, UltraHD output capable STBs shall use an UltraHD Test Stream only if claiming the UltraHD adder. Otherwise, they shall use an HD Test Stream. The output resolution from the UUT shall be the same as the input resolution (e.g. 720p or 1080i for an HD STB).

**Note:** In the Draft 1 Test Method DOE requested feedback on the transition to UltraHD and the prevalence of UltraHD STBs in the market. DOE also requested feedback on what changes would be required to the test method if UltraHD streams are used for testing UltraHD STBs. DOE received one written comment, which specified that a standard test mechanism that specifies resolution, bitrates, etc. should be defined for the UltraHD and HEVP allowances.

Additionally, DOE received some feedback during the webinar meeting. Stakeholders commented that upscaling to UltraHD can happen at multiple places, such as within the STB or within the TV. A stakeholder also commented that one option is to specify that the test is performed using a stream at the highest resolution supported by the UUT and the UUT is connected to a TV that supports the highest output resolution of the UUT.

DOE is not making it mandatory to test UltraHD STBs with an UltraHD Test Stream in this version of the test method. Additionally, DOE has clarified that an UltraHD stream should be used only if claiming the adder and the output resolution must be the same as that of the input.

Thanks  
Adrian and Bill

Thanks for the help in clarifying.

Adrian