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RE: ENERGY STAR® Product Specification for Set-top Boxes, Final Draft Version 4.1

Dear Ms. Kaplan:

On behalf of Entropic, I am responding to EPA's invitation of January 23, 2014 to submit comments on the Final Draft referenced above. As the leading supplier of MoCA HNI chips, we appreciate EPA's acceptance of our previous comments on Allowances for HNI home networks such as MoCA. Proper incentives for backbone home networks are necessary to help establish energy-efficient implementations of Use Cases consumers demand from modern Gateway/Client architectures.

We are glad to see EPA recognize the very rapid advent of UltraHD display, along with enabling technologies such as HEVP high-efficiency video processing. These new Use Cases are receiving tremendous demand from the greater ecosystem (content providers, OSP operator/service providers, STB manufacturers, tablet manufacturers, DTV manufacturers, and most importantly from consumers themselves). Even at this very early stage of deployment, prices for big-screen UltraHD TV sets are dropping rapidly (some already below \$1000), and small "2nd Screen" displays are already approaching 4k resolution (e.g., 326 pixel-per-inch 'retinal' displays, 2560x1440 handheld displays, and 3200x1800 laptop/tablet-size displays are already available).

Thin Clients should qualify for UltraHD and HEVP Allowances

Unfortunately, EPA's Final Draft attempts to restrict these new Use Cases, as evidenced by Section 3.3.3.ii which inappropriately disallows the UltraHD and HEVP Allowances for Thin Clients. Entropic is a leading supplier of Thin Client chips, and our comments previously submitted to EPA explained precisely how the requirements and performance of Thin Clients differ from those of OTT boxes. The overwhelming demand/requirement for such next-gen Thin Client SoCs is to support UltraHD and HEVP functionality. Consequently, EPA's restrictions on UltraHD and HEVP Allowances *dis*-incentivize efficient next-gen 4k-capable Thin Clients, and mistakenly incentivize higher-power full-featured STBs. EPA should correct this restriction so Thin Clients can qualify for UltraHD and HEVP Allowances.



Thin Clients should qualify for Wi-Fi Access Point Allowances

Consumers increasingly rely on Wi-Fi for mobile devices in the home, and in particular for video traffic which requires better Wi-Fi “Coverage” (a joint metric, such as good throughput at long range). OSPs try to satisfy consumer Wi-Fi demand with a single Access Point or Router located inside or near the Gateway. If the home requires greater Coverage in remote rooms, the consumer may opt to purchase at retail a fully-featured Wi-Fi Router needing installation remotely from the first AP.

Alternatively, the OSP can supply, only when necessary, a 2nd AP as part of their paid service. Since this 2nd AP should be located remotely to that in the Gateway, the most efficient implementation is to incorporate it within OSPs’ Remote Thin Clients. This is most efficient for the following reasons:

- a) The MoCA backbone HNI is **shared** by both Thin Client and AP backhaul functionalities;
- b) The power supply is **shared** by both Thin Client and AP functionalities; and,
- c) The enclosure (material resource) is **shared** by both Thin Client and AP.

Thus, some small percentage of Thin Clients will include Wi-Fi AP or Router functionality (EPA has already gone to great lengths to size these Allowances appropriately). IEEE, the developer of all 802.11 Standards, has already recognized the importance of this very Use Case: supporting remote Wi-Fi APs on the MoCA backbone home network (see IEEE Standard 1905.1-2013).

Unfortunately, EPA’s Final Draft attempts to restrict these efficient Use Cases, as evidenced by Section 3.3.3.ii which inappropriately disallows Wi-Fi AP and Router Allowances for Thin Clients. EPA should correct this restriction so Thin Clients can qualify for Wi-Fi AP or Router Allowances.

Respectfully submitted,

David Barr