EFI Type 2 DFE Power Measurements and Discussion of Upcoming changes to the V3.0 Energy Star for Imaging Equipment Specification

EFI Fiery Servers are type 1 DFEs as currently defined in the Energy Star for Imaging Equipment Specifications. EFI manufactures a line of DFEs that span idle power energy usage from our embedded E-Series and A10 platforms that use desktop CPU from Intel and AMD (respectively) to our high end NX Premium Servers that use dual Intel Xeon CPUs.

EFI agrees with the EPA and its consultant for most DFEs are now utilizing desktop class CPUs and that the resulting energy usage of that class of product has come down over time. EFI also uses this class of products in a large percentage of its products. But, EFI also uses workstation class dual Xeon architectures in its products that require additional processing power.

EFI products are tailored in performance to drive the engines supported at rated speed. The engines supported generally use up to 10 or 20 times the energy of the DFE. If the DFE cannot supply print data to the engine, it will cycle down print jobs until the data required is ready. This cycle down/cycle up uses relatively large amounts of power compared to the DFE. From the overall energy usage of the system, EFI believes it is best to match the performance of the DFE to the needed data rate of the print engine to achieve the best power usage.

Here are idle power measurements for EFI's current platform families:

NX Premium (Dual Intel Xeon CPUs) 125 to 130 watts (variation depends on I/F board and system memory configuration).
NX Pro (Single Intel Desktop i5 or i7 CPU) 40 watts
NX One (Single Intel Desktop Pentium, i3, i5 or i7 CPU) 20 to 40 watts
E-Series (Single Intel Desktop Celeron, Pentium), 20 watts
A10 (Single AMD Embedded APU), 15 watts

It should be noted that for the past three Intel generations in desktop CPUs, idle power has declined from 60 watts three generations ago, to the 40 watts we measure today. However, in the dual Xeon Workstation architecture, idle power has declined less than 5 percent over those same generations. Here are power measurments over the last three EFI Xeon product generation:

QX100-VI (Intel Romley Xeon Architecture) – 133 watts
QX100-VIII/NX Premium Gen IO/II (Intel Grantley Architecture) – 130 watts
NX Premium Gen IIII (Intel Skylake Architecture) – 125 watts

EFI is very concerned that lowering the idle power wattage requirement for the V3.0 specification to the 71watt level proposed because it will mean that OEMs will consider the use of lower processing DFEs that will not keep up with the engine. This will cause the total system energy usage to increase.

EFI workstation based DFEs have either 3 or 4 CPU/APUs (2 in the form of dual Xeon CPUs and additional APUs on the EFI I/F PCBs). EFI would like to suggest that the EPA consider adding a third category allowing the usage of this level of processing power to allow for usage in these high performance systems in order to keep the system operating at best performance and lowest energy usage overall.