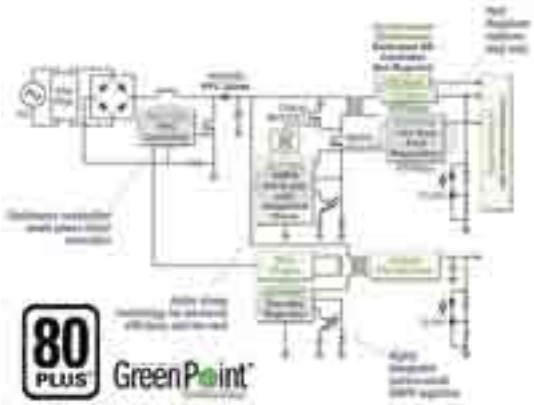
Reference Design Exceeds Energy Standards for Desktop Computers



ON Semiconductor unveiled an open ATX reference design that meets the new Energy Star requirements for ATX power supplies used in desktop PCs. The design offers efficiency that is said to exceed the Energy Star requirements under all specified load conditions, and it allows power supply manufacturers to bring highly efficient power supplies to market with readily available technology. The design achieves full-load efficiency of 86.5 percent at high-line and 82.5 percent efficiency at 20 percent of load and low-line. The ATX reference design meets IEC61000-3-2 power factor requirements, and it addresses all functional blocks of the ATX power supply including power factor correction, switch-mode power supply control and regulation, post regulation and standby power. The design uses several of the company newest power management devices such as the NCP1653 CCM PFC controller; NCP1562 active clamp PWM controller with a ±5 percent duty cycle limit with a soft-stop to prevent typical oscillations in the forward active-clamp topology; the NCP1027 high voltage switcher with power MOSFET and startup current source directly connected to the bulk capacitor to prevent lethal runaway in low input voltage conditions; and the NCP4330 synchronous post-regulator which replaces the mag-amp to provide higher efficiency in the output section of the ATX power supply.
ON Semiconductor
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