

## **What Makes TruePower Different?**

If ever there was a product with the potential to cause consumer confusion, power supplies are probably it. Out of the box they all look the same, right? Perhaps, but the truth is that they are most definitely not the same. And as far as we're concerned, Antec's new TruePower line of power supplies has a number of new and even unique features that makes them demonstrably superior. Among those are:

- Dedicated output circuits for 3.3V, 5V, and 12V lines.
- Voltage feedback detection, and tighter performance tolerances.
- Antec Low Noise Technology.

Additionally, all TruePower models come equipped with two double-ball-bearing fans for increased ventilation and reliability, gold-plated power connectors for improved conductivity, and nylon sleeving on the main power cables for improved ease-of-use and less potential impact on case airflow.

### **Dedicated output circuits for 3.3V, 5V, and 12V.**

Traditional power supply designs typically feature circuit sharing for the 3.3V and 5V lines off the output transformer. That means that as you increase the load on one output circuit, the available capacity for the other decreases – for example as you load up on devices that use 5 volts (like drives and PCI cards), you have less and less ability to power devices that need 3.3 volt output (like your CPU). In addition, by connecting the two systems at this point you increase the chance of having interactions between the output circuits – for example, a sudden 5V draw could potentially cause the voltage on the 3.3V line to drop, harming system stability.

In evaluating a power supply, one important thing to look for is the “+3.3V and +5V combined output” rating. The total amount of power you can draw from those two output circuits *combined* is typically much less than the sum of the individual ratings for 3.3V and 5V listed elsewhere on the box. An example from a competitor's 430 Watt model:

+3.3V rated 38A = 125.4 Watts  
+5V rated 44A = 220.0 Watts  
+3.3V plus +5V : 220 (Watts) Max.

Thus, according to the label, if one fully loaded the 5V circuit in accordance with the manufacturer's specifications, there would be essentially no power left on the 3.3V line. Note that the total power available on the 3.3 and 5 volt circuits combined is barely more than half of the 430 Watt rating of the unit as a whole.

TruePower has dedicated output circuitry for each voltage line, which means that there is no combined output limit other than, of course, that of the entire power supply. Each voltage line can perform up to the specification on the label, without regard to or interaction with the loads on the other lines, until the full capacity of the power supply itself is reached.

### **Voltage feedback detection and tighter performance tolerances.**

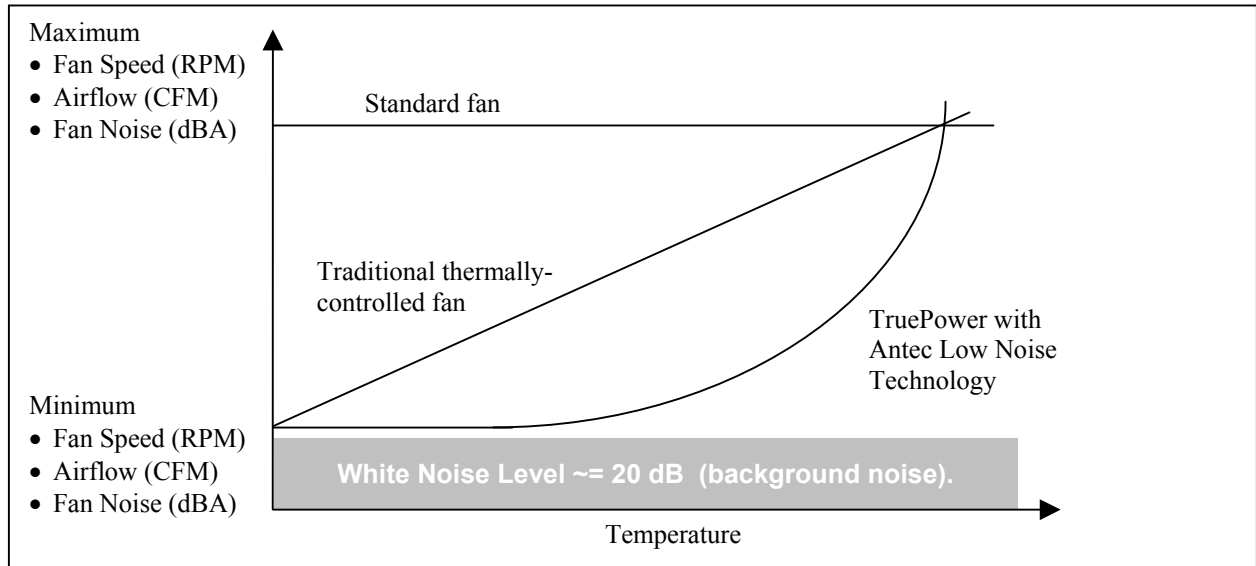
For added stability, TruePower is designed so that the power circuitry tests its own output voltages at the ATX connector and adjusts its output to compensate for any drop off, including for the resistance found in the wires. This feature allows us to tighten up our voltage regulation from Intel's specified  $\pm 5\%$  allowable variance to a tighter  $\pm 3\%$  allowable variance, and ensures that a more stable power signal is available to your devices.

For this reason you can be confident that the power being supplied to your motherboard is as close to accurate voltage as possible – more accurate, in most cases, than the voltage detectors built into the motherboard. (After all, who other than the manufacturer knows how long the traces are between the detector and the motherboard ATX power input connector and how much voltage drop that causes?) And more accurate voltages translate directly into more stable system performance.

### Antec Low Noise Technology.

This technology is a new approach that achieves optimum balance between noise reduction and necessary cooling with an advanced temperature response system that outperforms previous solutions. The system constantly monitors the temperature inside the power supply, and then runs the power supply fans at the lowest speed appropriate to load and conditions. Thus it is able to perform much more quietly than standard ATX power supplies or even those with traditional thermally-controlled variable-speed fans.

**Antec Low Noise Technology compared to traditional ATX and variable-speed fan solutions.**



*At lower temperatures, TruePower's fan speeds and noise levels are lower than both standard and traditional thermally-controlled ATX power supplies. Only when temperatures begin getting above optimum does the fan speed increase, and then quickly, since this is when the power supply really needs maximum cooling.*

Additionally, dedicated Fan Only power connectors allow TruePower power supplies to control the speed of case fans, too, turning normal case fans into variable speed fans. Overall system noise is thus reduced, since the case fans will only run at full speed when their maximum cooling is needed. The rest of the time the fans will spin more slowly and quietly.

You may have seen manually-adjustable fans on some "low noise" power supply designs. Antec Low Noise Technology eliminates the risk presented by these solutions, namely that users will forget to reach behind their computer to turn the fan speed up when their system gets hotter as their usage increases. And since that would be dangerous to the stability and longevity of not only their power supply, but of their whole system, this is a risk users should really want to avoid.

End result: the combination of these three major design improvements results in not only a more stable system with more available power, but a quieter one as well. Dedicated output circuits, voltage feedback, and design and manufacturing considerations that allow tighter regulation all make for a more stable power signal that will keep your system humming along for years to come. And with Antec Low Noise Technology keeping everything quiet and cool, your system certainly won't sound like a small jet taking off, as some PC users have been known to complain.