SHUNYATA RESEARCH

KPIP™ and Burn-In

Designer Caelin Gabriel of Shunyata Research has been studying the effects of burn-in, cable directionality, and cryogenic treatment for 20 years. They are all somewhat related in that the effects of each cannot be easily measured, but they seem to have an effect on perceived performance. Burn-in has proven particularly challenging from a manufacturing perspective. Let burn-in of a power cord serve as an illustration. Typically, a cable will go through several very definable stages of burn-in with corresponding sound qualities. Unfortunately, those changes in performance can be very radical ranging from "OK but a bit fuzzy" to downright bright and aggressive to completely opaque in a period of just 3-5 days. This causes wildly differing opinions on the performance of a product depending on when a person happens to check on the sonics and how much patience they might have to get through the roller coaster ride. Users on some forums even accuse manufactures of simply inventing burn-in as a way to trick people into keeping a product that they are not satisfied with. It is also tough on dealers even when the customer has the patience to tough it out for a 5-day trial. The turn-around time for the dealer's demo cables hurts their ability to expose it to very many people. Burn-in is no fun for manufacturers, customers, or dealers.

There is also a whole micro-industry of burn-in devices that claim to improve or accelerate the burn-in process. The performance of these devices is variable, and some actually require a periodic "tune-up" or repeat wash to keep the performance up.

After years of research into burn-in and directionality, Caelin Gabriel developed a working theory to explain all of the effects described above as well as what actually happens during the cryogenic process. From that theory, he was able to create a device that would theoretically resolve all of the negative effects simultaneously with a single process. Shunyata Research created several working prototypes with the goal of making a device that it could supply to its dealers and distributors to solve the dreaded burn-in problem.

After creating the device, now called the KPIP™ processor, it quickly became apparent that the effects were simply too profound to release to anyone outside of the company. The process and the processor give an enormous performance advantage to Shunyata Research products, and achieved the same burn-in result in a single day as could be achieved with weeks of normal burn-in procedures. With 2-4 days of processing time the effects further improved cable performance beyond what could be achieved with an unlimited amount of normal burn-in time.

Now onto "settling time," a separate concept from burn-in. Burn-in is characterized by very radical shifts in performance over a period of a few hours or days. Settling, on the other hand, is what occurs when a cable is disconnected or reconnected, and/or disturbed physically in some way. For instance, imagine a fully burned-in cable sent via UPS to a customer. The customer would receive the cable and complain

that it sounds terrible. Shunyata Research would tell the customer that the cable will require a period of "settling," lasting from a few hours to a few days depending on the severity of the disturbance experienced in transit. Many people report this when comparing cables. Even if they are very careful with the cable, it would take a few minutes for the sound quality to stabilize and return to its normal state. The type of signal and the relative voltage and current levels can also cause a change in the sound of the cable until it adjusts to the new voltage/current states. This is also what would be called a settling period.

A cable treated with the KPIP™ processor does not go through the typical, radical ups and downs associated with "burn-in" when plugged in. It should therefore sound pretty good right out of the box. However, since it was probably shipped (vibrated) and is now inserted into a specific system with specific transfer functions, it will gradually "settle" – which means it will improve over a period of time. The good news is that the effects of the KPIP™ process are permanent and the process does not need to be repeated. There are some burn-in devices that can interfere with or negate the beneficial effects, so advise users NOT to use a burn-in device with Shunyata Research products. Doing so will require that the product be returned for re-treatment to restore it.