

WHITE PAPER

DNA HELIX® & COMPOSILEX® TECHNOLOGIES

A perfect audio cable would transfer every sonic detail from one component to the next as if they were docked directly together, a condition called a 'cable-bypass.' Wireworld is the only company that follows through on this essential concept by designing cables to provide the closest sound to a direct connection. The current Wireworld cable designs incorporate the knowledge gained from over 30 years of continuous development based on this unique objective approach.

Progress in cable design has apparently been limited by a basic misconception of how signals flow through cables. The common belief that signal energy is transferred as electron flow within the conductors is not true. Most of the energy is actually transferred in the electromagnetic field surrounding the conductors. This misconception has led to the false assumption that using thicker conductors would improve sound quality. Increasing the thickness of conductors can only reduce the amount of energy that is lost as heat (resistive loss), while it actually increases the electromagnetic (inductive) loss that causes most of the audible degradation that we hear from cables. Resistive loss is less audible because it affects all frequencies equally, while electromagnetic loss is very uneven, changing the shape of the musical waveforms.

The inductive loss of cables is complex, as it includes skin effect, proximity effect, eddy current resistance and mechanical modulation effects caused by structural instability. The DNA designs were formulated to provide a comprehensive solution to these effects based on their audibility

in bypass testing. To minimize skin effect, the flat conductors in the DNA designs are as thin as a single strand, yet there are enough strands to provide very low resistance. The strands are completely parallel, providing the most direct signal path possible. The flat conductors are arranged in stacked arrays to channel the electromagnetic field energy as efficiently as possible (See blue lines in Illustrations). Furthermore, for each design, the spacing between the positive and negative conductors is fine tuned by ear to match the pure sound of a direct connection. The effect of that tuning is like focusing a lens, with the beautiful textures and dynamics of live music coming into vivid 3-D focus when the spacing is just right.

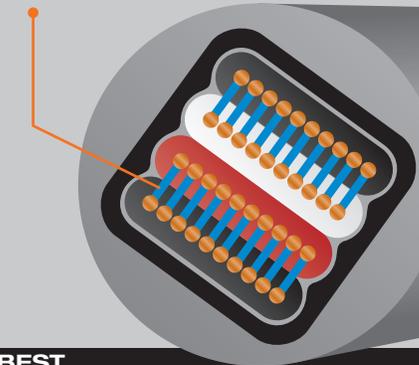
The DNA Helix design (patent pending) used in Wireworld interconnects consists of a stacked array of four flat conductors, which are twisted together and tightly compressed within a composite shield. In addition to channeling the electromagnetic field energy more efficiently than other designs, this configuration also provides superior immunity to EMI/RFI interference. The conductors in Wireworld interconnects are insulated with Composilex, a proprietary material technology that minimizes triboelectric noise and noise modulation distortion, resulting in quieter backgrounds and cleaner transients than cables that utilize conventional insulation materials.

By combining the most efficient designs with the best upgrade materials, Wireworld audio cables advance the art of preserving the natural tone quality, spatiality and effortless dynamics of live music.



DNA Helix® Cable Design

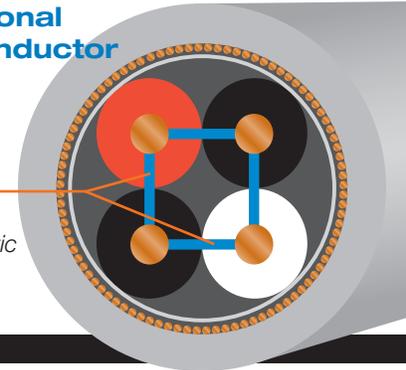
Twenty efficient paths for electromagnetic energy



BEST

Conventional Quad Conductor Design

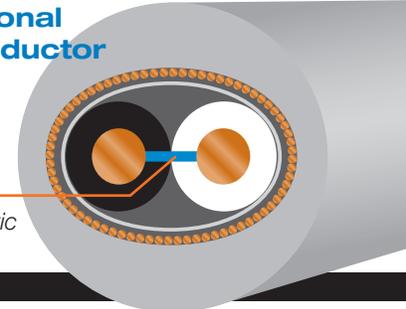
Only four efficient paths for electromagnetic energy



BETTER

Conventional Twin Conductor Design

Only one efficient path for electromagnetic energy



BASIC



WIREWORLD®
CABLE TECHNOLOGY

Engineered for Reality™