







## TYPE 4 SPERKER CABLES: STAR-QUAD GEOMETRY



## STAR-QUAD GEOMETRY

Overall: 2 x 15 AWG (1.54 mm<sup>2</sup>)

2 x 20 AWG Solid Long-Grain Copper (LGC) Conductors
2 x 17 AWG Solid Long-Grain Copper (LGC) Conductors

Blue or White PVC Jacket (UL CL3 Rated)

◆Nylon Braid - Black/Blue/Grey

At first glance, Type 4 looks like a normal round cable, but inside is a fully optimized and very sophisticated balance of quality ingredients and refined design.

**CONDUCTORS:** All four of Type 4's conductors are solid. Electrical and magnetic interaction between strands in a conventional cable is the single greatest source of distortion, often causing a somewhat harsh, dirty and confused sound. Solid conductors are the most important ingredients enabling Type 4's very clear sound. Whether a conductor is solid or stranded, skin-effect is a prime distortion mechanism in speaker cables. Type 4 very simply keeps this effect out of the audio range by using conductor sizes that are below the threshold for audible distortion.

**LONG-GRAIN COPPER:** Type 4's LGC (Long-Grain Copper) allows a smoother and clearer sound than cables using regular OFHC (Oxygen-Free High-Conductivity) copper. OFHC is a general metal industry specification regarding "loss," without any concern for distortion. LGC has fewer oxides within the conducting material, less impurities, less grain boundaries, and definitively better performance.

All drawn metal exhibits directionality, whether in hardware store wire or in the best AQ cable. We wish we could design away this awkwardness. Since we can't, we pay close attention to optimizing performance by clearly marking the cables and our terminations. Please watch for these markings when installing any audio cables.

**GEOMETRY:** The relationship between conductors defines a cable's most basic electrical values (capacitance and inductance). However, even when those variables are kept in a reasonable balance, the relationship between conductors can be varied in ways that greatly effect the sound. The spiral construction of Type 4 allows for significantly better dynamic contrast and information intelligibility than if the same conductors were run in parallel. The specific 4-cross geometry used in Type 4 maximizes this advantage.

**INSULATION:** In a low level cable the insulating material significantly affects the cable's performance. However, in a speaker cable the electrical effect of insulation is almost only heard as a dry irritating sound prior to a cable being fully "run-in" ... technically "adapting to a charged state." The term "break-in" does not apply because taking away the charge will slowly return the cable to its "new" condition. The insulation's mechanical (hard vs. soft) properties make an important difference in stranded cables. The harder the better in order to minimize strand movement. Since solid conductors don't need hard insulation, they can take advantage of the vibration damping advantage of a softer insulation.

**SST** (Spread Spectrum Technology): Any single size or shape of conductor has a specific distortion profile. Even though radially symmetrical conductors (solid round or tubular) have the fewest discontinuities, any particular size does have a sonic signature. SST is a method for significantly reducing the awareness of these character flaws by using a precise combination of different size conductors. SST has enabled Type 4 to be the biggest possible four conductor cable that avoids audible skin-effect.

**TERMINATIONS:** AudioQuest offers a wide range of high quality connectors that allow Type 4 to be securely attached to any type of equipment. "Quality" is in the low distortion sound, not necessarily in the eye-candy effect. AQ ends are either a dull looking gold or silver because these metals are plated directly over the connector. There is no shiny and harsh sounding nickel layer underneath. AQ spade lugs are soft because better metal is soft, and facilitates a higher quality connection. AQ spade lugs are available in several sizes. AQ Benda-Pins fit all equipment, except pieces requiring a banana plug or BFA connector, in which case the AQ Crimp BFA/Banana provides unprecedented performance at a fraction the cost of those not-so-good sounding big eye-candy versions.

A combination of these major ingredients, and many more subtle details add up to explain how even an affordable cable like Type 4 can sound so good.