MICROPHONE CABLES

DOES STAR-QUAD ACTUALLY SOUND BETTER? (PART 1)

When used for low-impedance microphones, star-quad construction substantially reduces the inductive reactance of the cable. Inductance was previously mentioned in discussing impedance. An inductor can be thought of as a resistor whose resistance increases as frequency increases. Thus, series inductance has a low-pass filter characteristic, progressively attenuating high frequencies. While parallel capacitance, the enemy of high-frequency response in high-impedance instrument cable, is largely insignificant in low-impedance applications, series inductance (expressed in microHenries, or uH) is not. The inductance of a round conductor is largely independent of its diameter or gauge, and is not directly proportional to its length, either. Parallel inductors behave like parallel resistors: paralleling two inductors of equal value doesn't double the inductance, it halves it.

continued...

MICROPHONE CABLES

DOES STAR-QUAD ACTUALLY SOUND BETTER? (PART 2)

...continued from Part 1

In cable construction, using two 25 AWG conductors connected in parallel to replace each of the conductors of a 22 AWG twisted pair will result in the same DC resistance, but approximately half the series inductance. This will result in improved high-frequency performance: better clarity without the need for equalization to boost the high end.

Also of significance is skin effect, a phenomenon that causes current flow in a round conductor to be concentrated more to the surface of the conductor at higher frequencies, almost as if it were a hollow tube. This increases the apparent resistance of the conductor at high frequencies, and also brings significant phase shift.