



MICROPHONE CABLES

WHAT ARE THE DIFFERENCES BETWEEN HIGH- AND LOW-IMPEDANCE MICROPHONES? (PART 1)

To answer this requires a little historical background. High-impedance microphones are capable of producing higher output voltages than low-impedance types. Until recently, “consumer” audio gear (small PA systems, home and semi-pro recording equipment, etc.) was always designed for high-Z mics because their relatively high output level required less amplification or gain. The lower output of low-Z mics required the equipment manufacturer to use input transformers in front of the mic preamplifiers to step up the strength of the signal, which substantially increased the cost of the circuitry. Hence, low-Z mics were rare outside of professional recording and broadcast studios. In these “big budget” facilities, low impedance lines offered several big advantages.

continued...



MICROPHONE CABLES

WHAT ARE THE DIFFERENCES BETWEEN HIGH- AND LOW-IMPEDANCE MICROPHONES? (PART 2)

...continued from Part 1

A high-Z mic's high source impedance approx. 10,000 ohms) combines with the capacitive shunt reactance of the mic cable to form a low-pass filter which progressively cuts high frequencies. The severity of the loss is determined primarily by the length and construction of the cable. The low source impedance (less than 200 ohms) of low-Z microphones proportionally reduces the high-frequency loss. Equally important, the high load impedances demanded by high-Z lines are much more susceptible to various forms of interference than low-Z lines, especially high-frequency noise and radio. Both of these high-Z liabilities made cable runs longer than 15-20 feet a problem.