Stereophonic Power Line Audio Transmission

Abstract
A line out signal from an audio device will be placed onto a building's power lines by means of a transmitter, and received at a remote location within that building. The signal will be converted back into a stereo line out signal and sent to an amp and speaker combination.

Objective
As the name implies, SPLAT entails the transmission of stereo audio across power lines. This is to be achieved by the construction of circuitry that will enable the coupling of a line out signal from a stereo to the 120V power lines within a house, and the subsequent retrieval of that signal elsewhere within the house. The signal must remain unaffected by the 120V 60Hz signal and other stray noise found on the power lines, while complying with HI-FI stereo standards.

The benefit of the SPLAT system is that it will allow a consumer to transmit audio throughout their house in a simple and economic fashion, avoiding the hassle of laying new wires or the high cost of wireless systems or new stereo components in every room. A single music source, such as a CD player or a computer, can then be simultaneously listened to at several locations within the house.

Significance
The development of this project utilizes much of the knowledge acquired throughout the Electrical Engineering curriculum, such as communications and electronics, and supplies a concrete means of unifying classwork with a real-world product. Similar systems have been developed in industry to, for example, extend phone jacks to rooms having power outlets but lacking phone lines. SPLAT is focused on a practical and inexpensive way to extend audio throughout a house, utilizing the wires that already connect every room together.

Results
Listen for yourself!