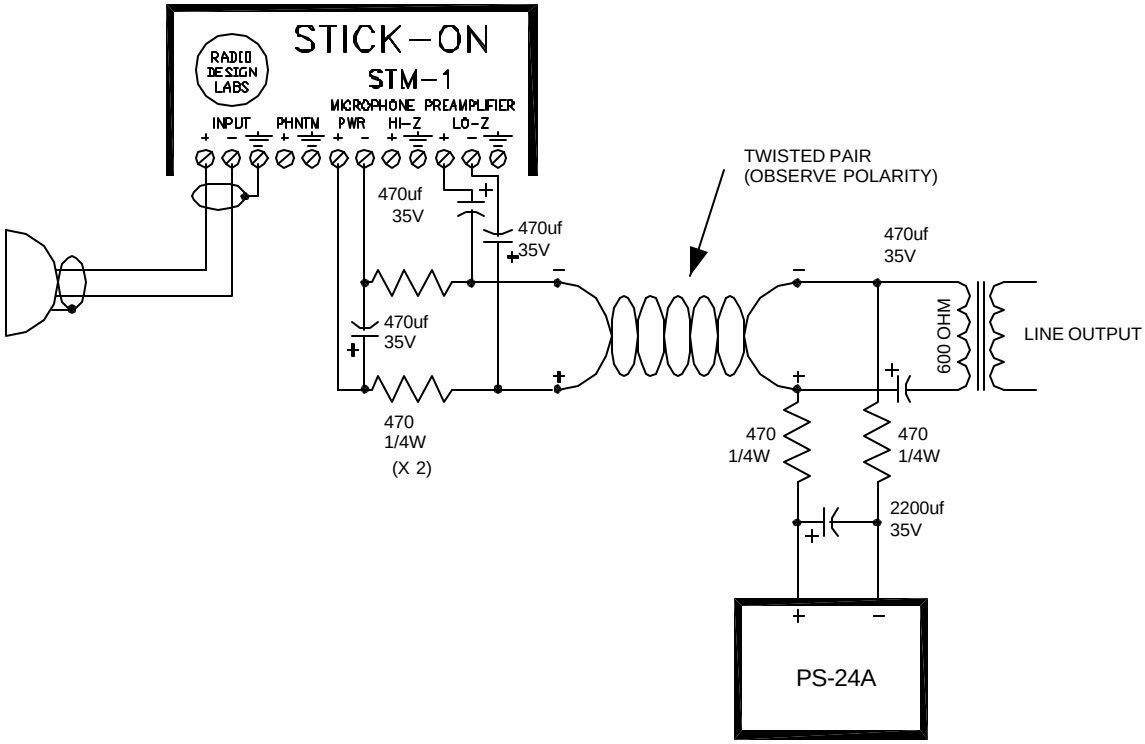
"PHANTOM" POWERING A MIC PREAMP AT A REMOTE LOCATION USING ONLY A SINGLE TWISTED PAIR



This application is designed for paging mic operation from a remote location where only a single twisted pair is available. The single pair is used to feed power to the remote STM-1, and to return the line-level audio for the system. The audio feed is kept balanced, and there is no DC "-" connection to ground, which could cause high levels of induced noise in the twisted pair. The resistors are necessary in order to allow the STM-1 to operate at a normal audio impedance, although they will lower the power supply voltage available to the STM-1. As shown, with 250 feet of 22 guage twisted pair, the operating voltage is 18 VDC with no input to the STM-1. This voltage drops to 16VDC with a sine wave producing a +4dB output from the STM-1. Therefore, there is still considerable headroom in the STM-1 which is more than ample for paging applications. Measured in our lab, across the output of a 1:1 600 ohm transformer, the frequency response is 70Hz to 28KHz (+/-1.5db). Noise is <62db below +4db operating level.