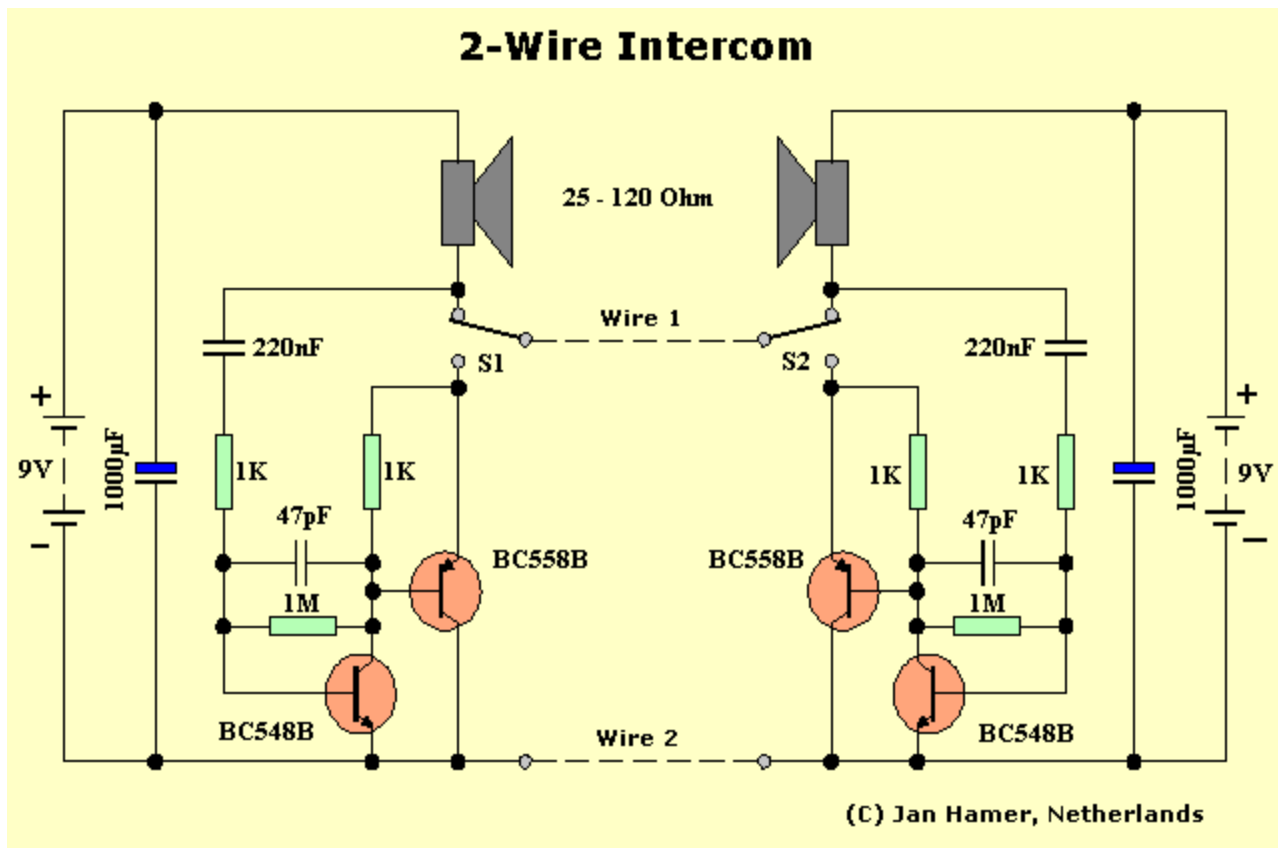


Intercom system - Feedback

You are to use the circuit shown below to work as an intercom/baby monitor/baby phone system:



Note that a wire (for Wire 1 and Wire 2) can be used or you can use a wireless transmitter on one side and a wireless receiver on the other and turn it into a baby monitor/phone if you desire. The loudspeakers act both as loudspeaker and as a microphone. When you press S1 and speak into the loudspeaker then this signal is amplified by the transistor stage and made audible in the right loudspeaker and vice-versa.

You must get this configuration to work correctly without distortions and noise so that you can hear the other person clearly. You will need to supply the following:

- Theoretical DC analysis to determine all voltages and currents in all branches of your amplifier.
- Comparison of measured and theoretical values.
- Calculate theoretical Bode Plots
- Measure and compare Bode Plots
- Perform feedback analysis by identifying the feedback topology and doing a theoretical analysis for R_{11} , R_{22} , and β , the A-circuit midband gain with feedback, A_f , R_{in} , and R_{out} .
- Measure the overall gain A_f , R_{in} , and R_{out} and compare your theoretical values with your measured values.