

Switching circuit fulfills three functions

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With just a single switching system, one audio processor may be shared by many different recording stations. The system can without noise or interference switch the processor to the station where it is needed, cancels its use at the locations where it is not being employed, and identifies its switching mode. As an example, the circuit is set up for three stations, but more functions can be added by using extra identical stages.

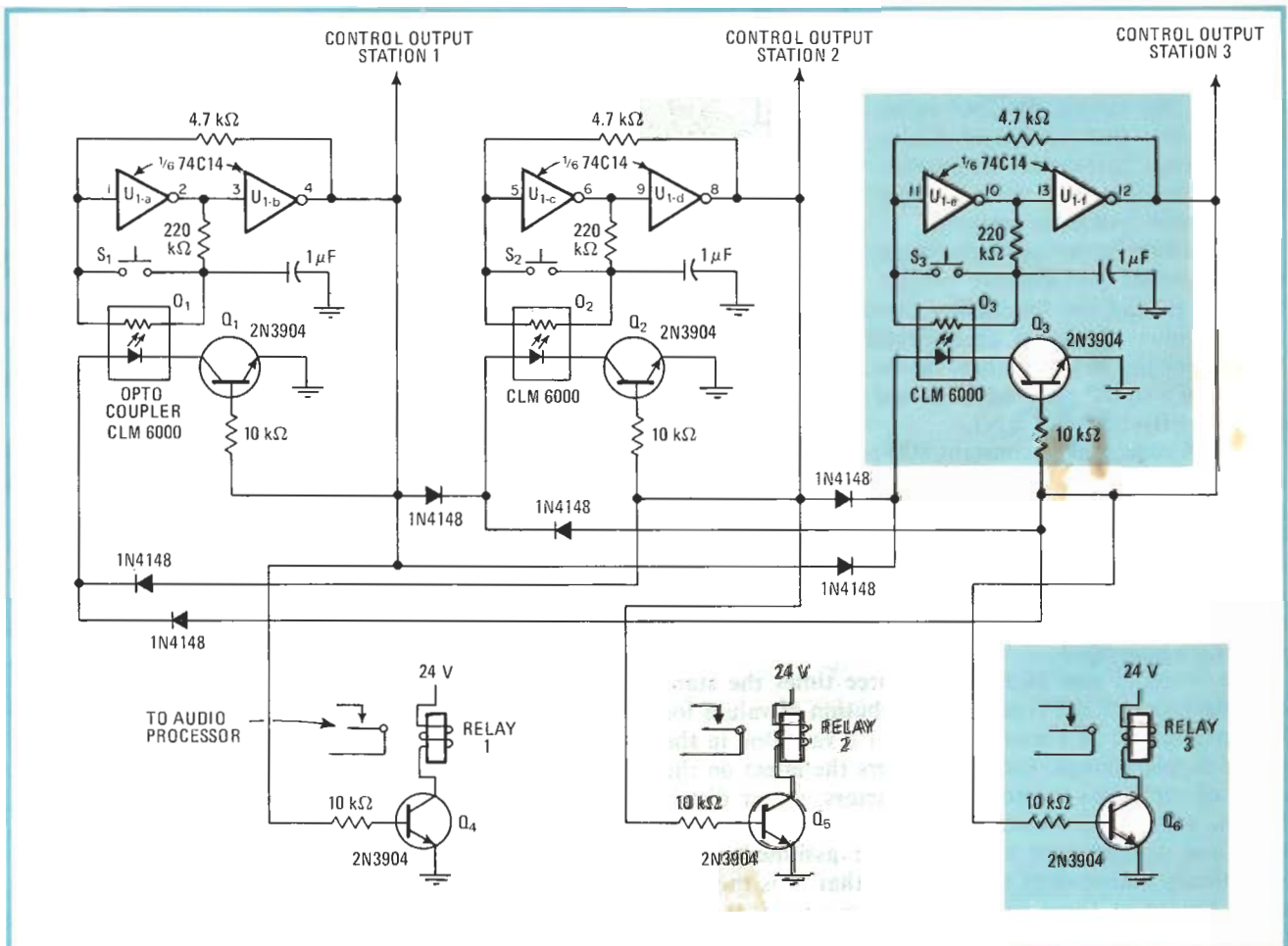
The output of the alternate-action switch consisting of inverters U_{1-a} and U_{1-b} changes state once S_1 is closed or optocoupler O_1 is turned on (Fig. 1). When the alternate-action switch's output at pin 4 is high, transistor Q_4

is turned on and relay 1 is energized. Also, this high output resets the other two alternate-action switches, turning them off. Closing S_1 again makes the output at pin 4 of U_{1-b} go low. As a result, relay 1 is disabled.

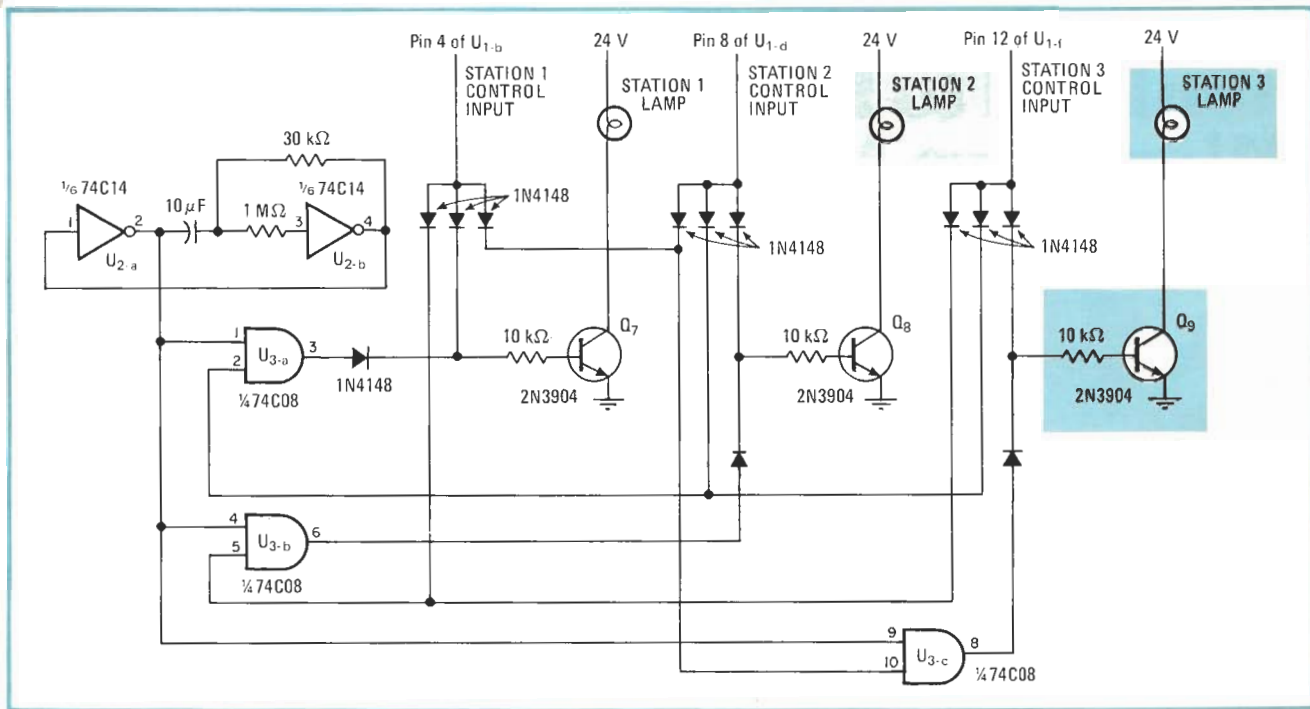
When station 1 is on, so is its corresponding lamp. The lamps for stations 2 and 3 flash to indicate that the system is in use elsewhere (Fig. 2). All the lamps are off when the system is not in use.

Inverters U_{2-a} and U_{2-b} form an astable oscillator operating at 1 hertz. Because transistor Q_7 is turned on when station 1 is on, the station's lamp burns continuously. The logic high is diode-coupled to AND gates U_{3-b} and U_{3-c} and now allows the output of the astable oscillator to be fed to transistors Q_8 and Q_9 through the gates and the diodes. This transistor output makes the lamps at the other two stations flash at 1 Hz. When the stations are idle, the control lines are in a low state, and consequently the indicator lamps remain off. □

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1. Switching. By means of this circuit, a single audio processor can switch between three recording stations. Inverters U_{1-a} and U_{1-b} form the alternate-action switch for station 1. Similarly inverters U_{1-c} through U_{1-f} simulate the switching action for stations 2 and 3. Relay 1 is energized when the output at pin 4 of U_{1-b} is high. In addition, this output resets the other two switches.



2. Indicator. This section of the circuit contains three lamps to indicate the switching mode. When station 1 is on, transistor Q_7 is activated and the lamp in its collector path burns continuously. The other two lamps flash at a frequency determined by oscillator U_{2-a} through U_{2-b} .