
Module activates appliances at preset clock time

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An inexpensive alarm clock module and an appropriate interface let this circuit activate or shut off any system at a time preselected by the user. The hours and minutes readout of its clocked liquid-crystal display allows direct and precise setting of the desired time, a major advantage over many commercial electromechanical units.

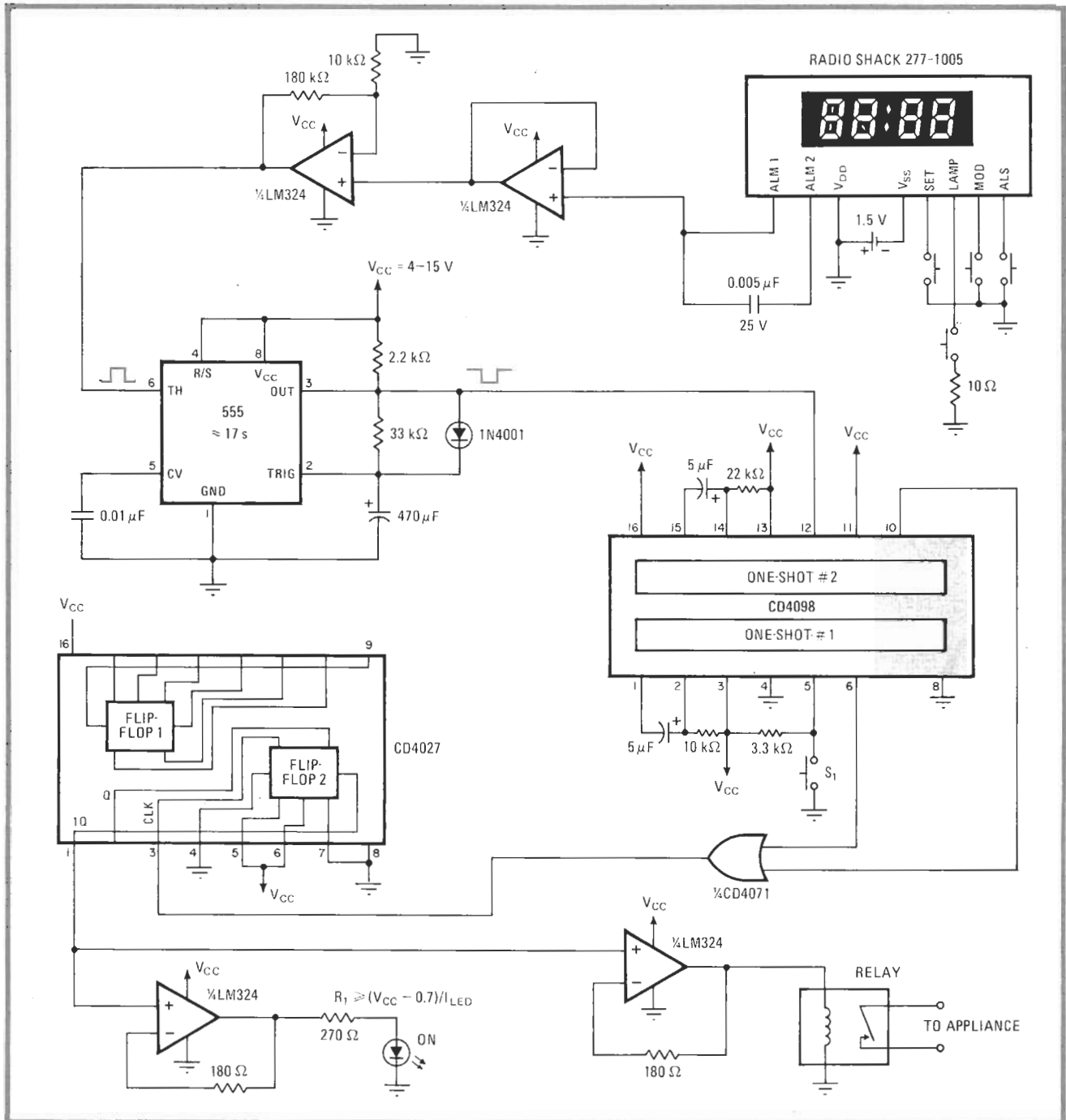
The module used is the Archer 277-1005, available from Radio Shack for about \$20. The time of day is set

by pressing the momentary-contact switch connected to the MOD input so that the hour digits flash. The SET switch is then pressed and held momentarily until the desired hour is displayed. The procedure is repeated for the minute display. A similar procedure sets the calendar day and date. Pressing the MOD and SET switch simultaneously starts the clock running.

To set the alarm time, the switch connected to the ALS port must be pressed twice within 3 seconds. The SET switch is then pressed and held until the desired alarm hour appears on the display. Again, ALS is pressed and SET is held for the setting of the minutes. Pressing ALS

once more will display the alarm time momentarily, then the display will return to actual time.

When the alarm time equals the actual time, ALM 1 and ALM 2 of the clock module generates a burst of 15 pulses, occurring at 1-s intervals for 15 s. This signal drives the 555 timer, which, configured as a non-retriggerable monostable, generates a 17-s pulse for setting the 4027 JK flip-flop through the dual 4098 one-shot. The flip-flop can then switch the relay on or off, depending on the quiescent state of one-shot 2 of the 4098. Depressing S_1 changes the relay state from active-high to active-low, and vice versa. □



On time. Archer LCD alarm-clock module allows direct and precise setting of time to activate or shut off appliances. Pulsed alarm-signal output, not directly suitable for turning external devices on or off, passes through C-MOS interface so that relay is switched.