

Solid-state analog-data recorder runs for 7.4 days

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The solid-state data recorder in **Figure 1** can continuously record the temperature for approximately 178.42 hours, or 7.434 days. The LM-35DZ transducer converts the temperature to an analog-voltage equivalent. The analog voltage then goes to the HI5812 ADC, and the digital data gets stored in the nonvolatile DS1270W

SRAM at a rate of 3.265 samples/sec. To retrieve the analog signal, the digital data in memory goes to the DAC08. The output of the DAC then goes to the current-to-voltage converter, then to analog switch MC14066, and finally to the output buffer. The address generator is a simple counter, the MC14040. A record-and-play circuit uses an

MC14049, and analog switches control the read and write states of the nonvolatile SRAM. A 10-k Ω potentiometer sets the reference voltage of both the ADC and the DAC.

Pressing and releasing the reset button once causes the recording or playing to start from the beginning of the memory location; the recording or playing function depends on the position of the record-and-playback switch. If you close the record-and-playback switch, recording takes place; if the switch is open, playing occurs. **EDN**

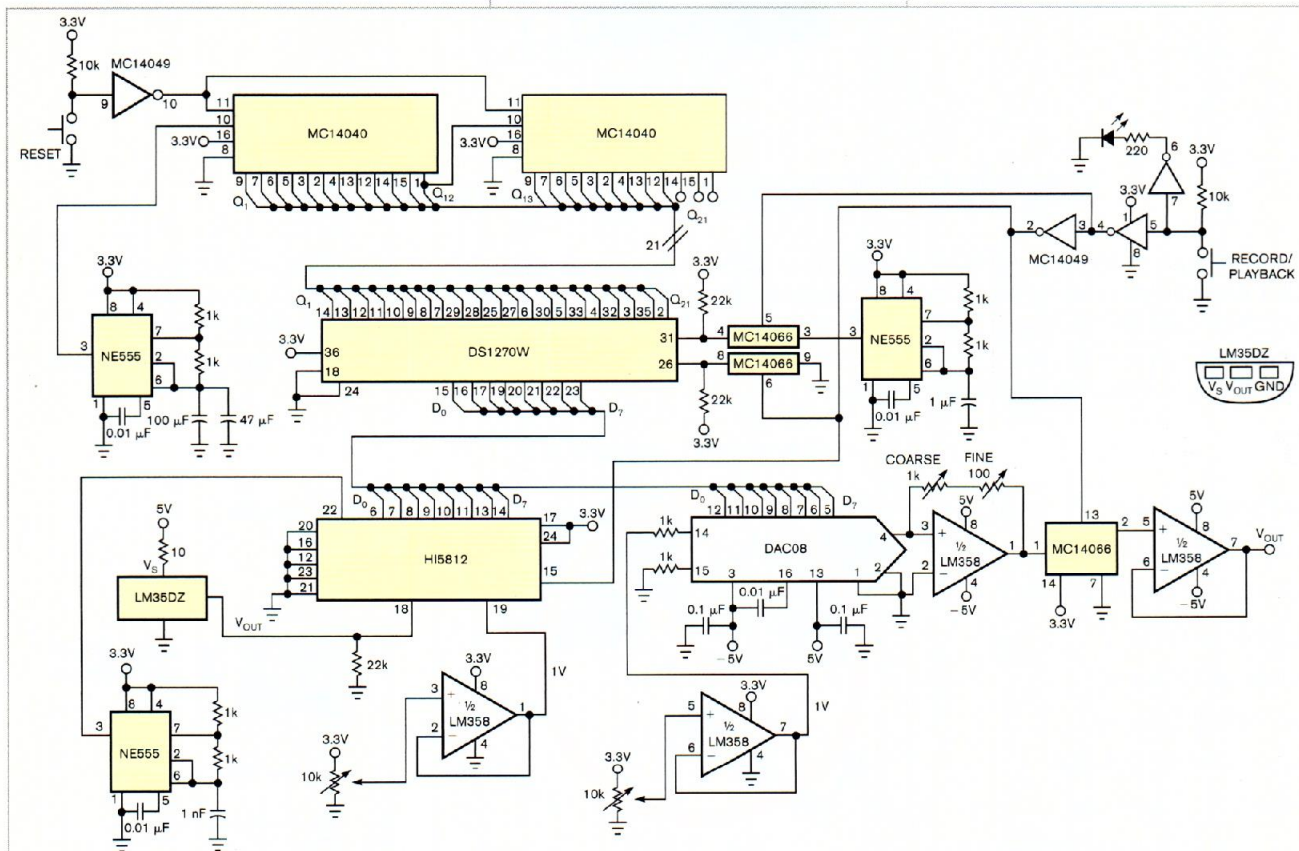


Figure 1 This solid-state data recorder uses an ADC to digitize data, which gets stored in a nonvolatile SRAM. To read back the analog data, the memory's contents shift to a DAC, depending on the state of the record-and-playback switch.