

Circuit makes simple FSK modulator

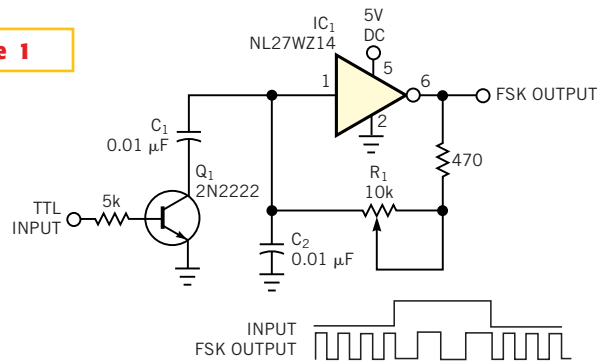
Shyam Tiwari, Sensors Technology Ltd, Gwalior, India

THE NEED FOR a compact telemetry system poses a challenge

for designing a small, light, low-component-count system. Interfacing serial data from the microprocessor is also difficult because most low-cost RF transmitters do not accept dc levels at the input. Commercial FSK (frequency-shift-keying) modulators are bulky and need many passive components. The circuit in **Figure 1** uses a single NOT gate (inverter), an On

Semiconductor NL27WZ14 in a surface-mount package, to generate continuous FSK data from TTL-level signals. The outputs from this circuit are compatible

Figure 1



An FSK modulator uses a single inverter with minimal added components.

with available transmitters. When the TTL input has a low level, the circuit is a continuously running oscillator, producing approximately 2400 Hz (adjustable

with R_1). When the input assumes a high level, the oscillator's frequency reduces by one-half with the introduction of a capacitor in the timing circuit via Q_1 . The inverter IC can accommodate an operating frequency of approximately 80 kHz. You can easily operate the FSK modulator at higher frequencies, such as 4800 and 9600 Hz, by reducing the values of the timing capacitors C_1 and C_2 .

Is this the best Design Idea in this issue? Vote at www.ednmag.com.