Frequency Demodulator

A PLL system can be used to implement an FM demodulator. When a PLL is locked on an FM signal, the VCO tracks the instantaneous frequency of that signal. Since the VCO output tracks the FM signal, and the VCO input voltage is proportional to the VCO output frequency, then the VCO input will be equal to the demodulated signal

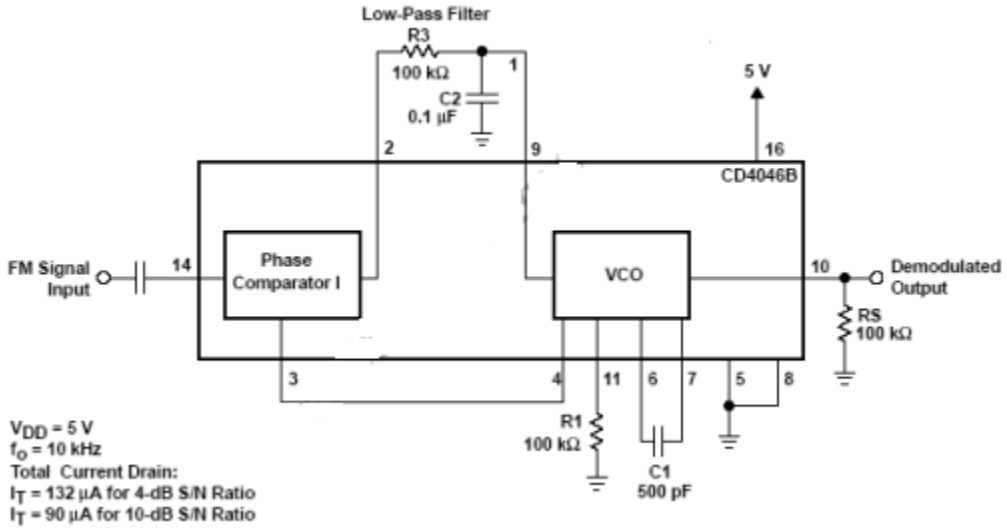

Figure 4.10

For this example, an FM signal consisting of a 10-kHz carrier frequency was modulated by a 400-Hz audio signal. The schematic diagram shows the connections of the CD4046B as an FM demodulator. The total FM signal amplitude is 500 mV, therefore, the signal must be ac coupled to the signal input (terminal 14). Phase comparator I is used for this application because a PLL system with a center frequency equal to the FM carrier frequency is needed. Phase comparator I lends itself to this application also because of its high signal-input-noise-rejection characteristics