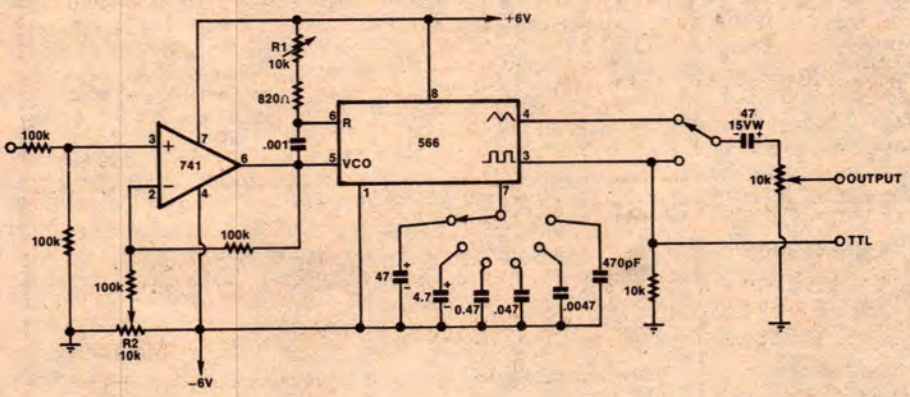
FM square & triangular wave generator



A useful signal generator that can provide both square and triangular waveforms is shown in the circuit. It can be made to oscillate over a wide range of frequencies. The device will operate from 0.5Hz to 500kHz with the values of components illustrated.

The maximum output voltage of the square waveform is approximately 6Vp-p into a load greater than 2K and approximately 2.2Vp-p for a triangular waveform. R1 provides a 10 to 1 frequency variation while the selector switch S1 selects the frequency range by switching different values of capacitance into the circuit.

The 741 operational amplifier not only acts as a buffer stage to the input but also provides the correct DC level to the input of the VCO. This DC level is adjusted with the potentiometer R2. It should be set at approximately 4V to obtain minimum FM distortion.

The maximum VCO input voltage is $\pm 0.5V$ and the corresponding frequency deviation is $\pm 3.3kHz$. The frequency of the modulating signal may extend from DC to about 100kHz which is adequate for most applications.

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