



## 4 Phase Clock Generator

Generating multiple clock sources is a common requirement for digital circuit design. With this simple circuit, you can generate several clocks from a single clock source.

Multiphase clock distribution is accomplished using standard TTL IC's.

The above circuit is a 4-phase clock generator producing non-overlapping clock pulses. The enable input of the 139 is used as the clock input, eliminating glitches by framing address changes which occur when the flip-flops change state on the rising edge. This circuit can easily be expanded to an 8 or 16 phase clock generator by adding flip-flops and using a 138 decoder.