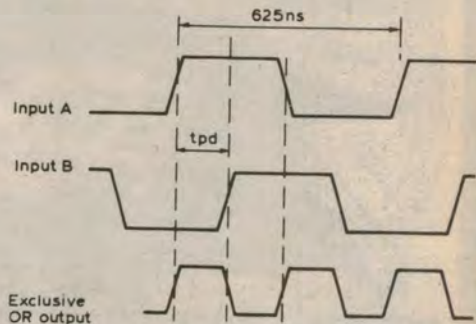
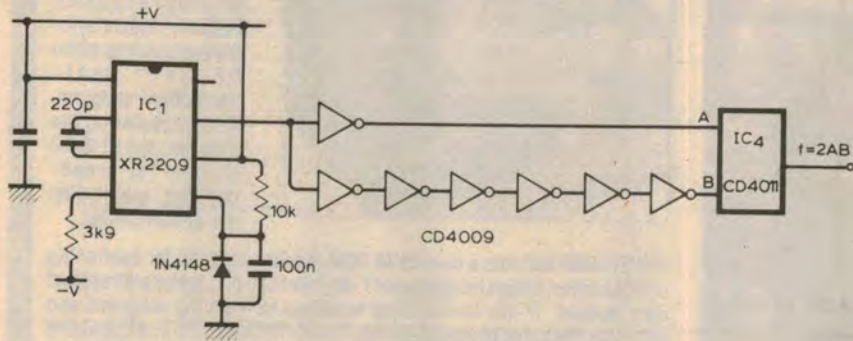


High frequency doubling with CMOS



High-frequency doubling can be achieved by using the propagation delay of CMOS together with exclusive-OR gating. The circuit shows an oscillator operating at 1.6MHz and an exclusive-OR gate fed with the oscillator output and an inverted and delayed output. Propagation delay of the buffers depends on V_{dd} and the load capacitance but for a

7.5V supply and a load capacitance of 50pF, the delay for each buffer is about 34ns. Therefore, the total delay for six buffers is 204ns and the difference between the two signals is 170ns, which produces a 3.2MHz output with an almost equal mark-to-space ratio.

(By D. J. Greenland, in "Wireless World", May, 1980.)

RESEARCH SCIENTIST
S17331-21243

Reference Science and Technology