

Application Note:

Procedure for selecting the correct clock prescaler and TOP for an N bit timer:

$$f_{cpu} = \text{CPU Frequency}$$

$$Clk_{ps} = \text{Clock Prescaler}$$

$$f_{tim} = \text{Desired Timer Frequency}$$

Choose Clk_{ps} such that:

$$Clk_{ps} > \frac{f_{cpu}}{(f_{tim})(2^N - 1)}$$

$$TOP = \frac{\left(\frac{f_{cpu}}{f_{tim}}\right)}{Clk_{ps}}$$