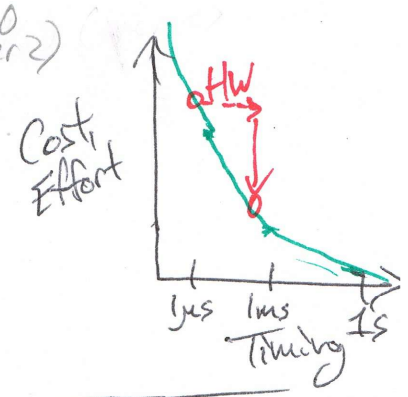
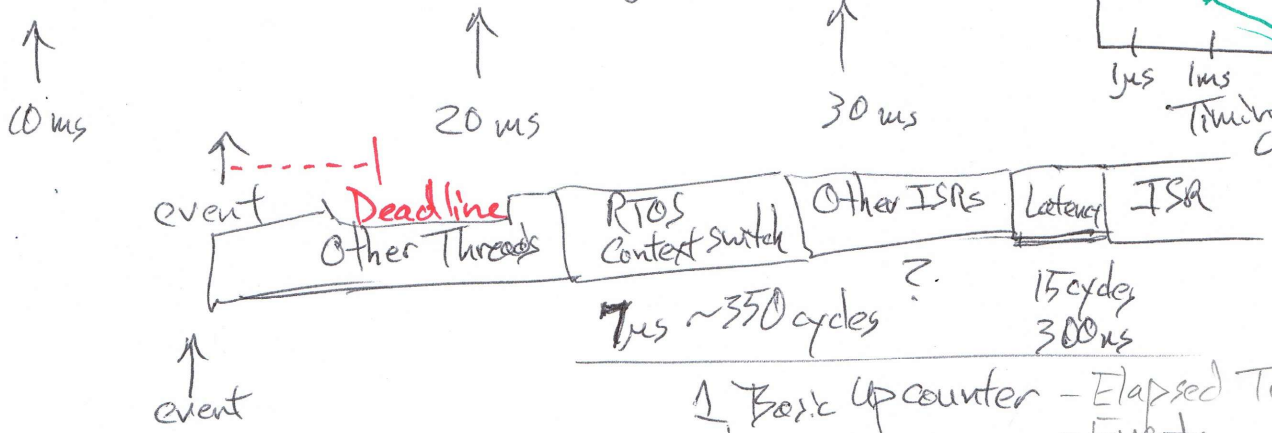
Timer/Counter Upgrades

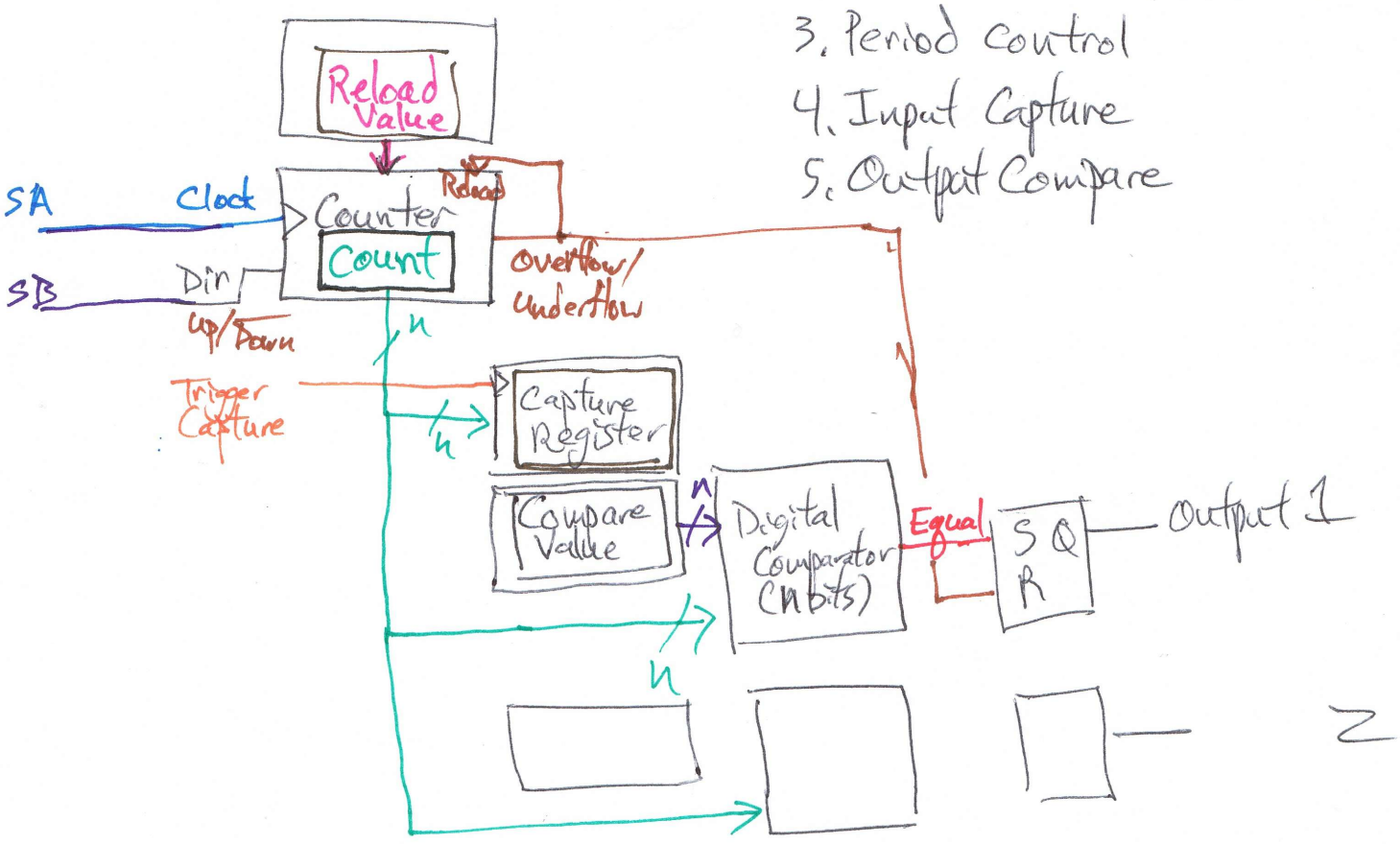
460 (ver 2)

Goal: Run SW part/function/thread at a given time

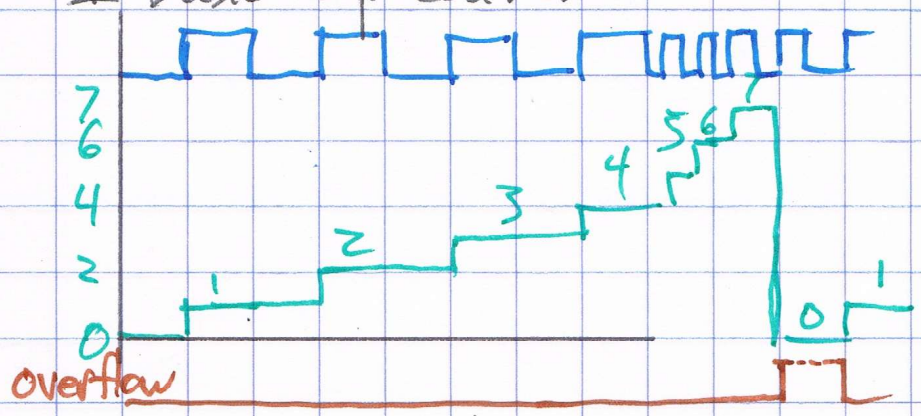




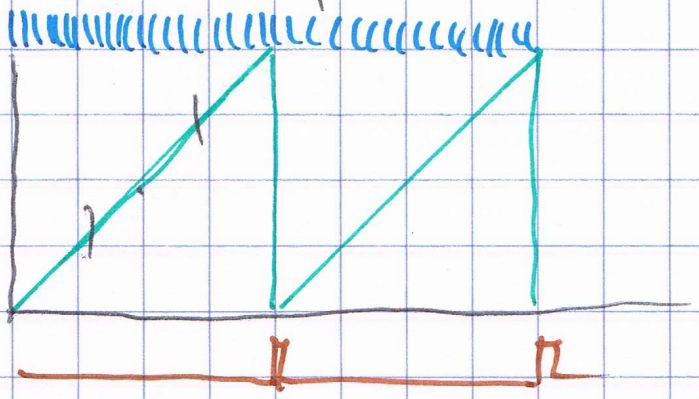
1. Basic Up counter - Elapsed Time
   - Events
2. Up/Down Dir. Control
   - Motor Pos Sensi
3. Period Control
4. Input Capture
5. Output Compare



1 Basic Up Counter

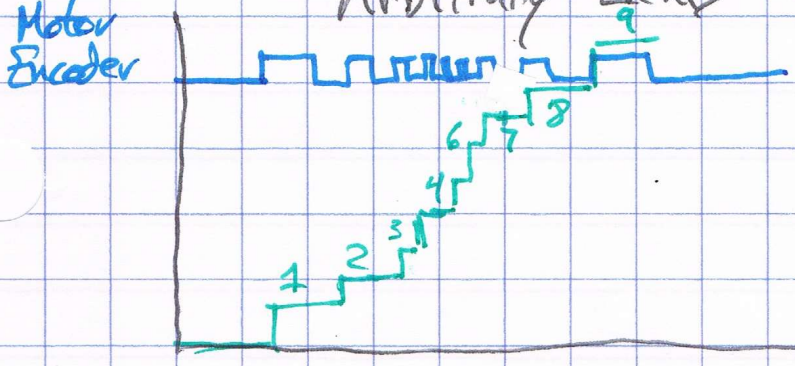


fixed period clock → Elapsed Time

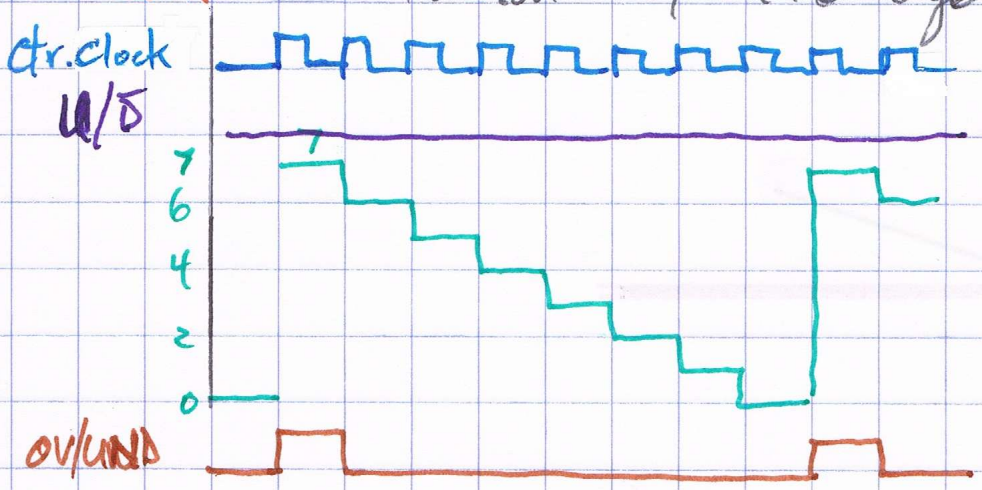


Arbitrary Events

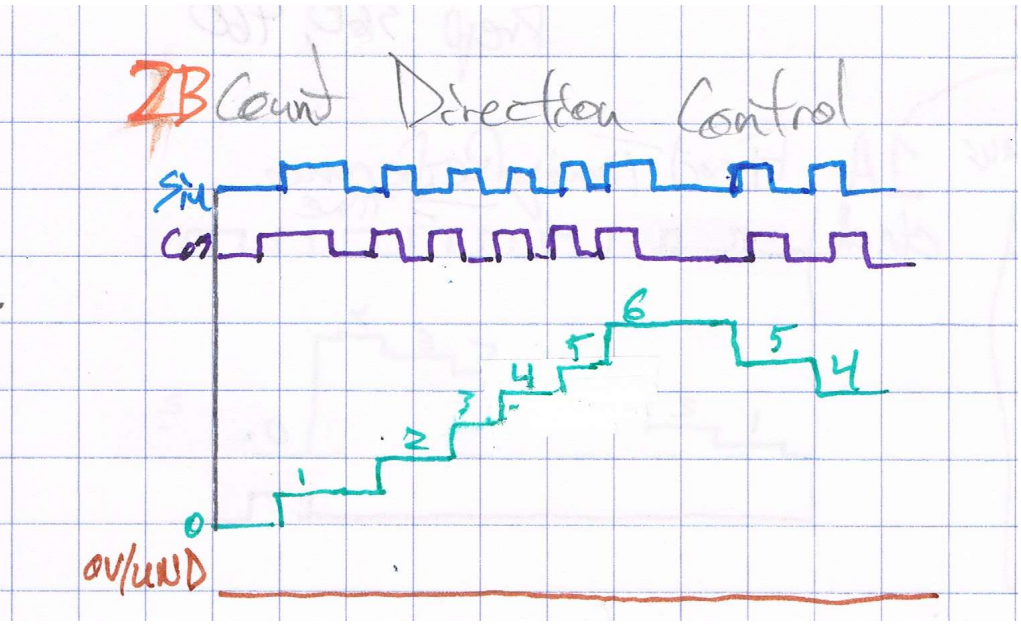
Motor Encoder



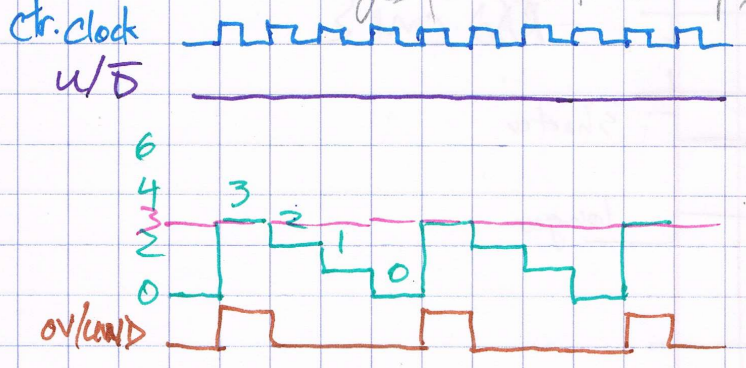
2A. Set Direction once, don't change



2B Count Direction Control

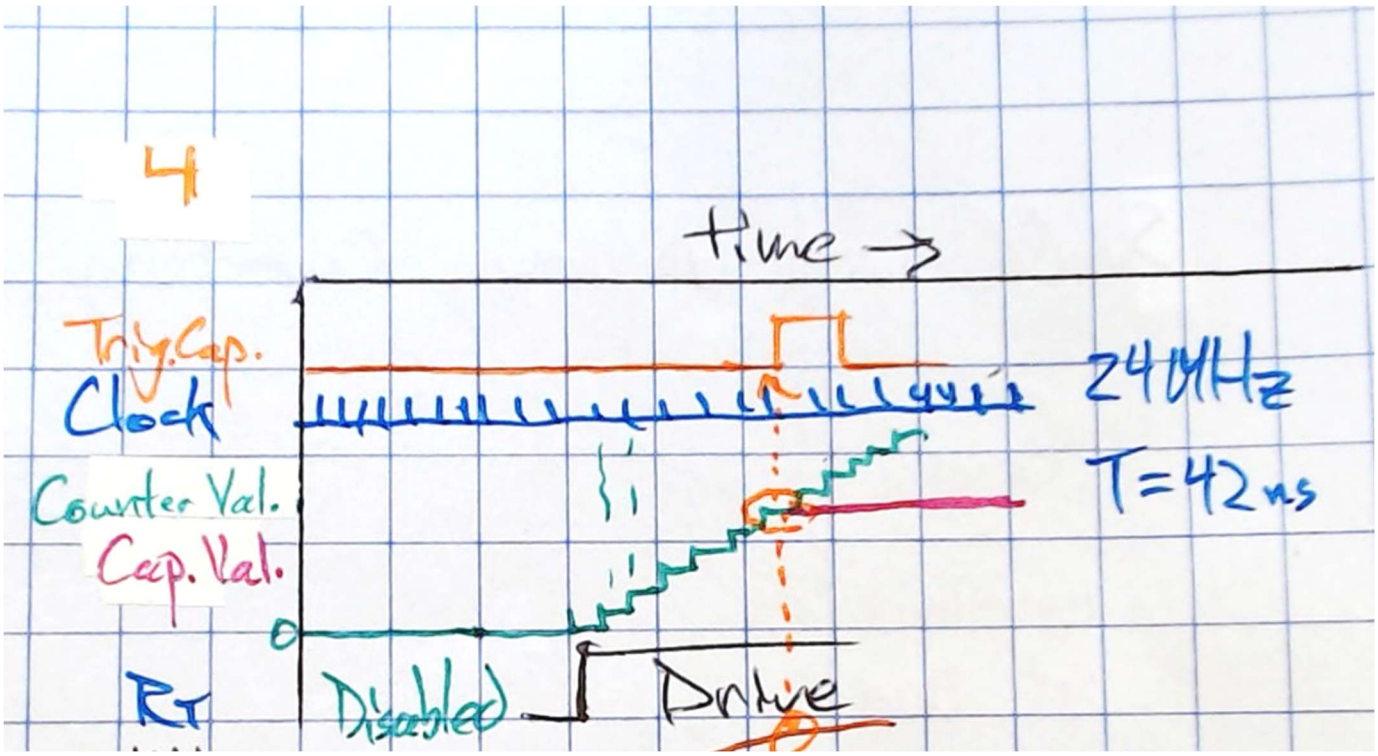


3. Reload Value - Use Down Counting (easier math)
Changes period of interrupts. Reload with 3 (load too, when started)



overflow period = (Reload Value+1) · T_{clock}

4



5. Output Compare