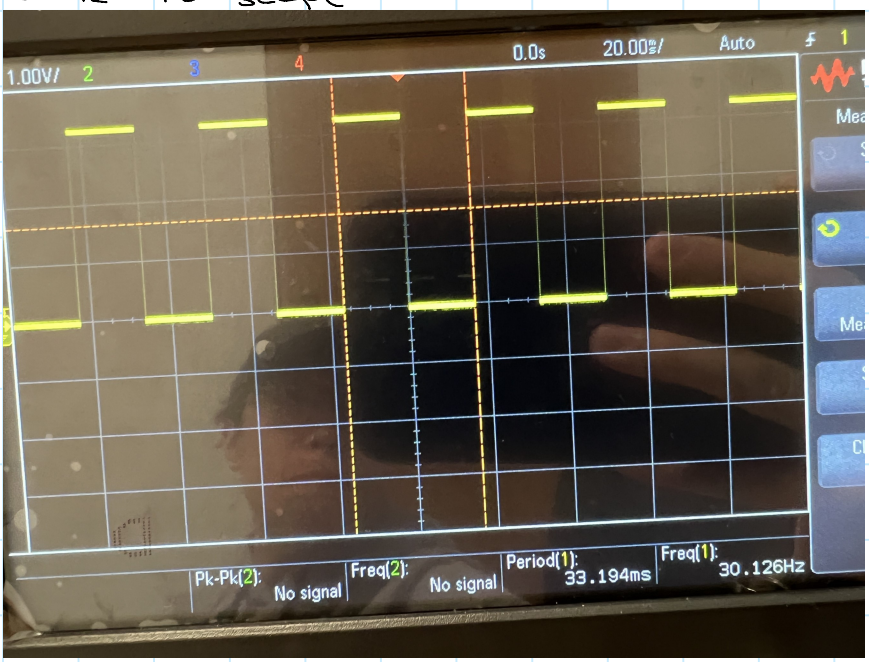
Timer Follow Up

Thursday, January 19, 2023 5:08 PM

30 Hz from scope



Clock frequency = 100000 (30)

= 3000000 Hz

Clock frequency 3 MHz 3000000 cycles per second

1000000 micro in one second

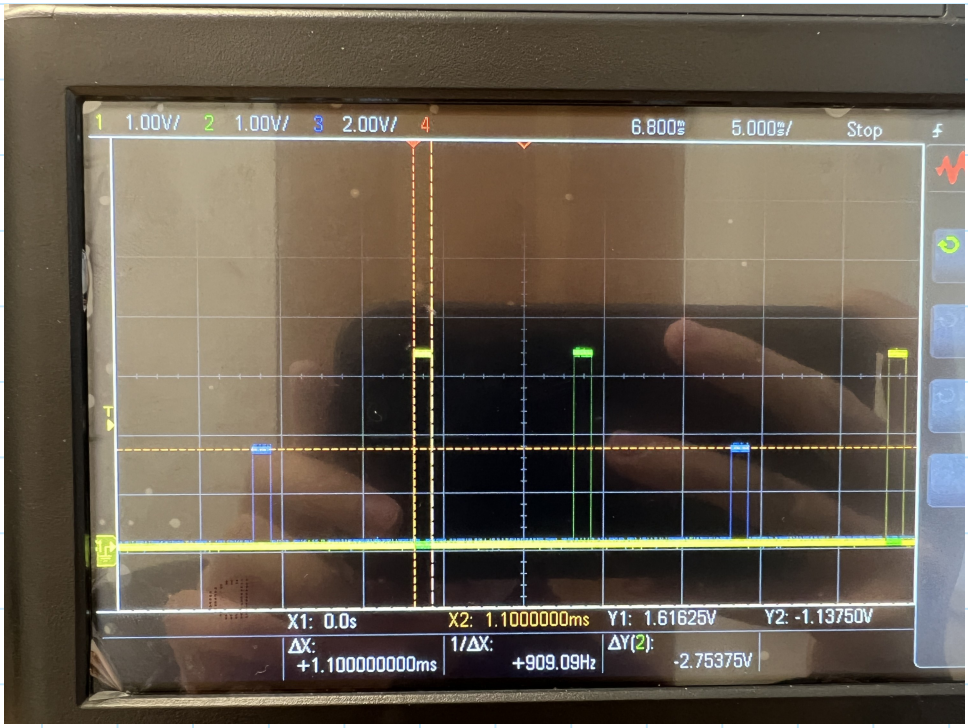
∴

3 cycles in one microsecond

```
int increments[] = {3000,300,2700,24000,3000,300,300,26400,3000,300,2700,24000};
int i = 0;

// Configure GPIO
P1->DIR |= BIT0;
P1->OUT |= BIT0;
P6->DIR |= BIT2;
P6->OUT |= BIT2;
P10->DIR |= BIT0 | BIT2;
P10->OUT = BIT0 | BIT2;
```

```
void TA0_0_IRQHandler(void) {
    TIMER_A0->CCTL[0] &= ~TIMER_A_CCTLN_CCIFG;
    P1->OUT ^= BIT0;
    if(i > 11){
            i=0;
    }
    switch(i){
        case 0:
            P6->OUT |= BIT2;
            break;
        case 1:
            //adc
            break;
        case 2:
            P6->OUT &= ~BIT2;
            break;
        case 3:
            //adc
            break;
        case 4:
            P10->OUT |= BIT0;
            break;
        case 5:
            //adc
            break;
        case 6:
            P10->OUT &= ~BIT0;
            break;
        case 7:
            //adc
            break;
        case 8:
            P10->OUT |= BIT2;
            break;
        case 9:
            //adc
            break;
        case 10:
            P10->OUT &= ~BIT2;
            break;
        case 11:
            //adc
            break;
    }
    TIMER_A0->CCR[0] += increments[i];
    i++;
}
```


1 1.00V/ 2 1.00V/ 3 2.00V/ 4
6.800ms 5.000ms/ Stop
X1: 0.0s X2: 1.1000000ms Y1: 1.61625V Y2: -1.13750V
ΔX: +1.100000000ms 1/ΔX: +909.09Hz ΔY(2): -2.75375V