The code below sets the TOD 50/60 Hz pre-scaler of CIA. It needs to correspond to the power line frequency which might or might not relate to the video standard.

The idea is to use the horizontal retrace frequency (15.6-16 KHz) as base to measure the TOD tick interval. If it takes longer then a threshold the 50 Hz pre-scaler is used otherwise the 60 Hz one.

Advantages:

- Independent of CPU clock so it works on SuperCPU
- Does not hang on DC only powered machines
- No need to switch off screen or sprites
- Does not mess with timers or anything else

Of course timer NMIs should be avoided during the measurement. If interrupts are already disabled it can be shortened by 3 bytes.

```
tod_cia     = $dc08            ; or $dd08

tod_calibrate   ldy #255
        jsr tod_prescale    ; use 50 Hz

        php             ; no interrupts
        sei             ; while measuring
        jsr tod_measure
        jsr tod_measure
        plp
tod_prescale    lda tod_cia+6
        asl a
        cpy #204        ; threshold
        ror a
        sta tod_cia+6       ; set pre-scaler
        rts

tod_measure ldy #0
        sty tod_cia
tod_lp2     lda #64
tod_lp      cpx $d012
        beq tod_lp
        ldx $d012
        lsr a
        bne tod_lp
        lda tod_cia
        bne tod_done
        iny
        bne tod_lp2
tod_done    rts
```