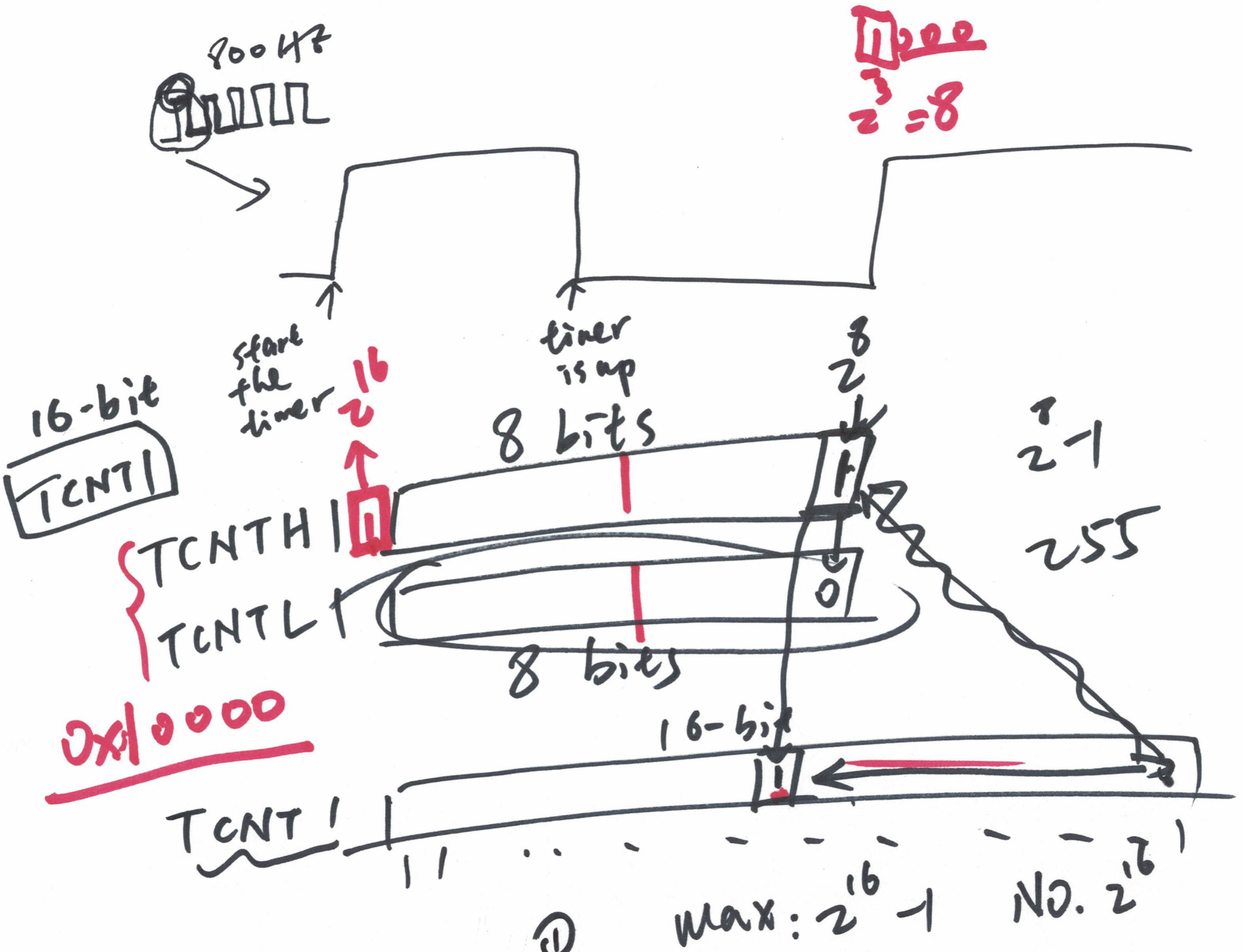
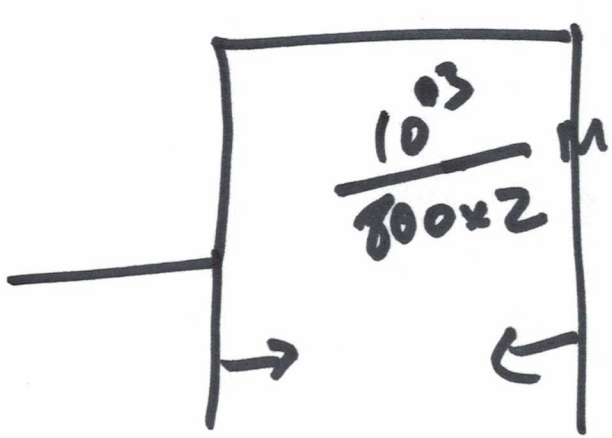

800 Hz
start the timer
timer is up
16-bit
TCNT
TCNTH
TCNTL
8 bits
8 bits
0x0000
16-bit
TCNT
255
max: 2^16 - 1
NO. 2^16



$= \frac{1}{800\times2}$ s

half period

16 bits $16\cdot10^6$ counts/s

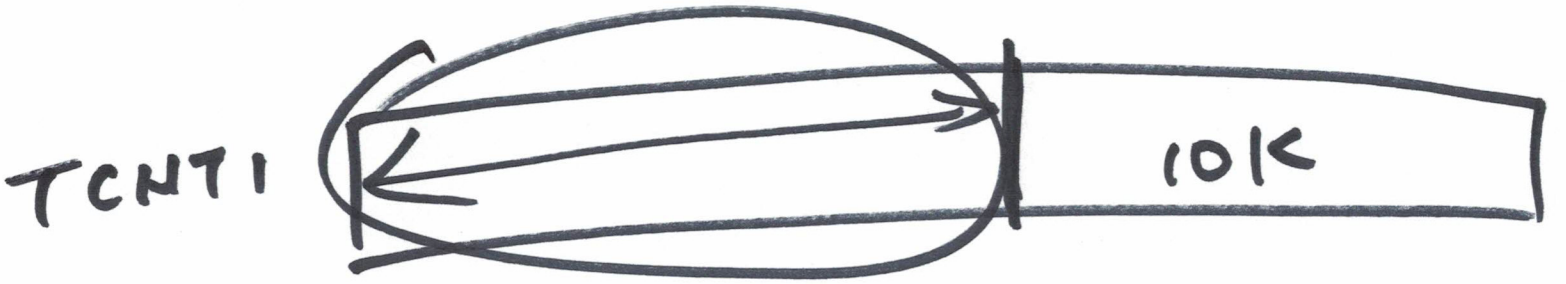
No. of counts

$16\cdot10^6 \frac{\text{counts}}{\text{s}} \times \frac{1}{800\times2}\text{ s}$

$= 16\cdot10^6 \times \frac{1}{800\times2}$ counts

$10K < 2^{16}$

(2)



TCNT1 = 0x10000 — 10K

10K counts

Counts are given, 16MHz ⇒ 16M counts/s

Time?

$$\frac{10K\ counts}{\frac{16M\ counts}{s}} = 10K\ counts \cdot \frac{s}{16M\ counts}$$

$$= \frac{10K}{16M}\ s \rightarrow \times 10^{6}$$

(3)