

Example on computer CPU frequencys

The StrongARM processor, released by Acorn Computers Ltd in 1996, had a CPU clock speed of 233MHz. This means that the CPU is able to perform 233,000,000 data cycles per second.

Remember: *Mega*, as in *Megahertz*, means 10^6 , so 233MHz is 233×10^6 or 233,000,000 Hertz.

Definition:

$$1 \text{ Hertz} = \frac{1}{s} \text{ or } s^{-1} \quad \text{i.e. } 1 / \text{Time in Seconds}$$

So:

$$233,000,000 \text{ Hz} = \frac{1}{x} \text{ where } x \text{ is the time in seconds}$$

Therefore:

$$x = \frac{1}{233\,000\,000} = 4.29185 \times 10^{-9} \text{ seconds}$$

Meaning that one CPU cycle takes 4.29185×10^{-9} seconds, equivalent to 233,000,000 cycles per second.