WAVELENGTH: FREQUENCY: WAVE-NUMBER

Converting Frequency, Wavelength and Wave-number

Problem-solving Example 2

An FM radio station transit its signal at 122.5 MHz. What is the wavelength of the signal?

Solution

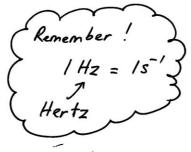


$$V = (122.5 \text{ MHz} \times \frac{10^6 \text{Hz}}{1 \text{ MHz}})$$

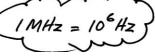
$$= 1.23 \times 10^8 \text{ Hz}$$

$$C = 2.998 \times 10^8 \text{ ms}^{-1}$$

$$\lambda = \frac{?}{10^8} \text{ m}$$



$$C = \lambda V$$
 or $\lambda = \frac{c}{v} = \frac{2.998 \times 10^8 \, \text{ms}^{-1}}{1.23 \times 10^8 \, \text{Hz}} = 2.437 \, \text{m}$



Prepared by V. Mancharan vmano@usm.my manovv1955@yahoo.com 04-6533888 ext 3566