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a) $R_{\text{CH}} \text{ 1 } \mu\text{s} \quad \nu = 5 \cdot 10^{14} \text{ Hz}$

$$c = \lambda \cdot \nu, \quad c = 3 \cdot 10^8 \text{ m/s}$$

$$\lambda = \frac{c}{\nu} = 6 \cdot 10^{-7} \text{ m} = 600 \text{ nm}$$

b) $\nu = 50 \text{ Hz}$

$$\lambda = \frac{c}{\nu} = 6 \cdot 10^6 \text{ m} = 6000 \text{ km}$$