

the longest wavelengths (a kilometer or more)

RADIO

frequency

$10^6$  Hz

1000 kHz

wavelengths tens to hundreds of meters long

RADIO

frequency

$10^7$  Hz

10 MHz

wavelengths a few meters long

RADIO

frequency

$10^8$  Hz

100 MHz

wavelengths centimeters long

RADIO

frequency

$10^9$  Hz

1 GHz

wavelengths about a centimeter long

RADIO

frequency

$10^{10}$  Hz

10 GHz

wavelengths millimeters long

MICROWAVES

frequency

$10^{11}$  Hz

100 GHz

wavelengths about a millimeter long, like a pinpoint

MICROWAVES

frequency

$10^{12}$  Hz

1 THz

wavelengths about the size of a cell

INFRARED

frequency

$10^{13}$  Hz

10 THz

wavelengths just longer than a bacterium

INFRARED

frequency

$10^{14}$  Hz

100 THz

wavelengths just longer than the size of a virus

VISIBLE

frequency

$10^{15}$  Hz

1 PHz

wavelengths about the size of DNA

ULTRAVIOLET

frequency

$10^{16}$  Hz

10 PHz

wavelengths about the size of a protein

X-RAYS

frequency

$10^{17}$  Hz

100 PHz

wavelengths about the size of a water molecule

X-RAYS

frequency

$10^{18}$  Hz

1 EHz

wavelengths smaller than an atom

X-RAYS

frequency

$10^{19}$  Hz

10 EHz

wavelengths shorter than the width of an atomic nucleus

GAMMA RAYS

frequency

$10^{20}$  Hz

100 EHz