

The Electromagnetic Spectrum

| EMR | Frequencies (Hz) | | Wavelength (m) | | Notes |
|---|------------------|-----------|----------------|----------|-------|
| Military communication | 3.00E+03 | 3.00E+04 | 9993.33 | 99933.33 | Radio |
| Navigation/Time | 3.00E+04 | 3.00E+05 | 999.33 | 9993.33 | |
| AM radio (long wave - Europe) | 1.53E+05 | 2.79E+05 | 1074.55 | 1959.48 | |
| AM radio (medium wave - North America) | 5.35E+05 | 1.70E+06 | 176.35 | 560.37 | |
| AM radio (short wave - international) | 5.90E+06 | 2.61E+07 | 11.49 | 50.81 | |
| Citizens band radio | 2.696E+07 | 2.741E+07 | 10.94 | 11.12 | |
| Garage door openers | 4.000E+07 | | 7.50 | | |
| Cordless phones | 4.000E+07 | 5.000E+07 | 6.00 | 7.50 | |
| Baby monitors | 4.900E+07 | | 6.12 | | |
| Television (network) stations 2 through 6* | 5.40E+07 | 8.80E+07 | 3.41 | 5.55 | |
| Radio controlled airplanes | 7.200E+07 | | 4.16 | | |
| Radio controlled cars | 7.500E+07 | | 4.00 | | |
| FM radio | 8.80E+07 | 1.08E+08 | 2.78 | 3.41 | |
| Television (network) stations 7 through 13* | 1.74E+08 | 2.20E+08 | 1.36 | 1.72 | |
| Wildlife tracking collars | 2.150E+08 | 2.200E+08 | 1.36 | 1.39 | |
| Cell phones | 8.240E+08 | 8.490E+08 | 0.353 | 0.364 | |
| Air traffic control | 9.600E+08 | 1.215E+09 | 0.247 | 0.312 | |
| GPS (Global Positioning System) | 1.227E+09 | | 0.24 | | |
| GPS (Global Positioning System) | 1.58E+09 | | 0.19 | | |
| Deep space radio communication | 2.290E+09 | 2.300E+09 | 0.1303 | 0.1309 | |
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|--|-------------------------|-----------|-----------------------|----------------|----------------------|
| Microwaves - microwave oven | 2.450E+09 | | 0.12 | | Microwave |
| Microwaves - ultra-high frequency (UHF) | 3.000E+08 | 3.000E+09 | 0.0999 | 0.9993 | |
| Microwaves - super high frequency (SHF) | 3.000E+09 | 3.000E+10 | 0.0100 | 0.0999 | |
| Microwaves - extremely high frequency (EHF) | 3.000E+10 | 3.000E+11 | 0.0010 | 0.0100 | |
| Far infrared (FIR) | 3.00E+11 | 2.00E+13 | 1.5E-05 | 1.0E-03 | Infrared |
| Long wavelength infrared (LWIR) | 2.00E+13 | 3.75E+13 | 8.0E-06 | 1.5E-05 | |
| Mid wavelength infrared (MWIR) | 3.75E+13 | 9.99E+13 | 3.0E-06 | 8.0E-06 | |
| Short wavelength infrared (SWIR) | 9.99E+13 | 2.14E+14 | 1.4E-06 | 3.0E-06 | |
| Near infrared (NIR) | 2.14E+14 | 4.00E+14 | 7.5E-07 | 1.4E-06 | |
| Red | 4.00E+14 | 4.84E+14 | 6.20E-07 | 7.50E-07 | Visible Light |
| Orange | 4.84E+14 | 5.08E+14 | 5.90E-07 | 6.20E-07 | |
| Yellow | 5.08E+14 | 5.26E+14 | 5.70E-07 | 5.90E-07 | |
| Green | 5.26E+14 | 6.06E+14 | 4.95E-07 | 5.70E-07 | |
| Blue | 6.06E+14 | 6.66E+14 | 4.50E-07 | 4.95E-07 | |
| Violet | 6.66E+14 | 7.89E+14 | 3.80E-07 | 4.50E-07 | |
| Near ultraviolet (UVA or long wave/"blacklight") | 7.89E+14 | 9.52E+14 | 3.15E-07 | 3.80E-07 | Ultraviolet |
| Near ultraviolet (UVB or medium wave) | 9.52E+14 | 1.07E+15 | 2.80E-07 | 3.15E-07 | |
| Near ultraviolet (UVC or short wave) | 1.07E+15 | 1.50E+15 | 2.00E-07 | 2.80E-07 | |
| Extreme or Vacuum ultraviolet | 1.50E+15 | 3.00E+16 | 1.00E-08 | 2.00E-07 | |
| X-rays | 3.00E+16 | 3.00E+18 | 1.00E-10 | 1.00E-08 | X-rays |
| Gamma rays | 2.42E+18 | ...and up | 1.24E-10 | ...and shorter | Gamma rays |