

Electromagnetic Wave

A disturbance that transfers energy in a field.

Electromagnetic Spectrum

The range of all EM frequencies.

Vacuum

Space that contains few or no particles of matter

Radiation

The transfer of energy by EM waves

Radio Waves

(uses)

- Baby monitors
- Remote control cars
- Broadcast TV and Radio
- Garage Door openers

Microwaves

(uses)

- Microwave ovens
- Satellite communication
- Cell phones
- RADAR

Infrared Radiation

(uses)

- Conventional oven
- Heat lamp
- Thermal telescope/camera
- Space heater

Visible Light

(uses)

- Eye sight
- Colors

Ultra Violet

(uses)

- Sterilizing equipment
- Sterilizing food
- DNA Analysis

<p>X- Rays (uses)</p>	<ul style="list-style-type: none">• Detecting fractures in bones• Detecting cavities in teeth• Seeing dense tissues• Airport scanners
<p>Gamma Rays (uses)</p>	<ul style="list-style-type: none">• Treatment of illnesses, cancer• Viewing soft tissues – imaging, scans
<p>Radio Waves (frequency, wavelength, energy)</p>	<ul style="list-style-type: none">• Lowest frequency• Lowest energy level• Longest wavelength
<p>Microwaves (frequency, wavelength, energy)</p>	<ul style="list-style-type: none">• Lower frequency• Lower energy level• Longer wavelength• Than all EM waves except for Radio Waves
<p>Infrared Radiation (frequency, wavelength, energy)</p>	<ul style="list-style-type: none">• Low frequency• Low energy level• Long wavelength• When compared to Visible Light, UV, X-Rays and Gamma Rays

<p style="text-align: center;">Visible Light (frequency, wavelength, energy)</p>	<ul style="list-style-type: none"> • intermediate frequency • intermediate energy level • intermediate wavelength • because these waves fall in the middle of the EM Spectrum
<p style="text-align: center;">Ultra Violet (frequency, wavelength, energy)</p>	<ul style="list-style-type: none"> • high frequency • high energy level • short wavelength • when compared to Visible Light, Infrared Radiation, Microwaves, and Radio Waves
<p style="text-align: center;">X- Rays (frequency, wavelength, energy)</p>	<ul style="list-style-type: none"> • higher frequency • higher energy level • shorter wavelength • than all waves except for Gamma Rays
<p style="text-align: center;">Gamma Rays (frequency, wavelength, energy)</p>	<ul style="list-style-type: none"> • highest frequency • highest energy level • shortest wavelength
<p>How are Frequency and Energy level of EM waves related to each other?</p>	<ul style="list-style-type: none"> • Frequency determines Energy Level • High Frequency waves = High Energy Level • Low Frequency waves = Low Energy Level