

Types of radio waves

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What is radio waves?

- electromagnetic waves propagating through space at the speed of light
- transferred through space energy emitted from an electromagnetic oscillation generator
- born at the change of the electric field
- characterized by frequency, wavelength and power portable energy

Radio waves range

- for aeronautical communications
- for ground connection
- **TV**
- **Radio transmission**
 - For space communications
- **For sea communications**
 - Transmission data and medicine
 - For radiolocation and radionavigation

| Frequency range | The name of the range | the wavelength range | Wave length |
|-----------------|--------------------------|----------------------|-------------|
| 3–30 кГц | Very low frequency | Myriametre | 100–10 км |
| 30–300 кГц | Low frequency | Kilometer | 10–1 км |
| 300–3000 кГц | MIDs | Hectometre | 1–0.1 км |
| 3–30 МГц | High frequency | Decameter | 100–10 м |
| 30–300 МГц | Very high frequency | Meter | 10–1 м |
| 300–3000 МГц | Ultra high frequency | UHF | 1–0.1 м |
| 3–30 ГГц | Over Ultrahigh frequency | Cm | 10–1 см |
| 30–300 ГГц | Extremely high frequency | Mm | 10–1 мм |
| 300–3000 ГГц | Hyper high frequency | Decimillimeter | 1–0.1 мм |


Range radio waves



How apply radio waves

- radio waves are emitted via an antenna
- the transmission of long-wave broadcasting stations can be taken at a distance of several thousand kilometers
- medium wave stations are audible within a thousand kilometers.
- The energy of the short waves dramatically decreases as the distance from the transmitter.
- study of short and ultrashort waves showed that they quickly disappear when you go near the Ground. When the direction radiation upward short wave back

- with decreasing wavelength increases their damping and absorption in the atmosphere.
on the propagation of waves shorter than 1 cm are affected by fog, rain, clouds, strongly limiting the communication range.



Wave of the radio spectrum
have different spreading
properties, and every part of
this range is used where it can
best be used to his advantage.