

Radio Frequency Bands

| ITU (International Telecommunications Union) bands | Frequency Range | Wavelength | Examples of Uses |
|--|------------------|---------------------|--|
| Extremely Low Frequency (ELF) | 3-30 Hz | 100,000 – 10,000 km | Military communication with submarines |
| Super Low Frequency (SLF) | 30 Hz – 300 Hz | 10,000 - 1,000 km | Same as above |
| Ultra Low Frequency (ULF) | 300 Hz – 3000 Hz | 1,000 – 100 km | Underground communications in mines |
| Very Low Frequency (VLF) | 3 kHz – 30 kHz | 100 – 10 km | Geological surveys |
| Low Frequency (LF) | 30 – 300 kHz | 10 – 1 km | AM radio |
| Medium Frequency (MF) | 300kHz – 3 MHz | 1,000 – 100 m | Amateur radio |
| High Frequency (HF) | 3 – 30 MHz | 100 – 10 m | Marine communication |
| Very High Frequency (VHF) | 30 – 300 MHz | 10 – 1 m | FM radio, line of sight aircraft communication |
| Ultra High Frequency (UHF) | 300 MHz – 3 GHz | 1 – 0.1 m | TV broadcasts, cell phones, radio astronomy |
| Super High Frequency (SHF) | 3 – 30 GHz | 100 – 10 mm | Microwaves, radio astronomy, microwaves |
| Extremely High Frequency (EHF) | 30 – 300 GHz | 10 – 1 mm | Radio astronomy, amateur radio |

Figure 1: The International Telecommunications Union (ITU) designated radio bands (Cruz-Pol, 2019; Terahertz Technology, n.d.)

Sources

Cruz-Pol, S. (2019). *RF Spectrum Management*.

Terahertz Technology (n.d). *Radio Frequency Bands*. <https://terasense.com/terahertz-technology/radio-frequency-bands/>

