

# 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/>

